

**Systematische  
Leitlinienrecherche und  
-bewertung sowie Extraktion  
neuer und relevanter  
Empfehlungen für das DMP  
Koronare Herzkrankheit**

**Vorbericht (vorläufige Leitlinienbewertung)**

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Schlagwörter: Disease-Management-Programm, Koronare Herzkrankheit, methodische Leitlinienbewertung, evidenzbasierte Leitlinien

Der vorliegende Bericht soll wie folgt zitiert werden:

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Tabelle 1: Abkürzungsverzeichnis

<b>Abkürzung</b>	<b>Bedeutung</b>
ACC	American College of Cardiology
ACE-Hemmer	Angiotensin-Conversions-Enzym-Hemmer
ACS	Akutes Koronarsyndrom
ACVB	Aortokoronarer Venenbypass
AGREE	Appraisal of Guidelines for Research & Evaluation
AHA	American Heart Association
AkDÄ	Arzneimittelkommission der deutschen Ärzteschaft
AP	Angina pectoris
AWMF	Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften
ÄZQ	Ärztliches Zentrum für Qualität in der Medizin
BGS	Bundesgesundheitsurvey
BMI	Body-Mass-Index
CABG	Coronary Artery Bypass Grafting
CAD	Coronary Artery Disease
CHD	Coronary Heart Disease
CMA	Canadian Medical Association
CHSR	Center for Health Services Research
CCS	Canadian Cardiovascular Society
DELBI	Deutsches Instrument zur methodischen Leitlinienbewertung
DGPR	Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen
DMP	Disease-Management-Programm
EMBASE	Excerpta Medica Database
ESC	European Society of Cardiology
FMS	Finnish Medical Society
G-BA	Gemeinsamer Bundesausschuss

(Fortsetzung)

Tabelle 1 (Fortsetzung): Abkürzungsverzeichnis

<b>Abkürzung</b>	<b>Bedeutung</b>
G-I-N	Guidelines International Network
GoR	Grade of Recommendation
HDL	High-Density-Lipoprotein
HERS	Heart and Estrogen/Progestin Replacement Studie
HTA	Health Technology Assessment
ICSI	Institute for Clinical Systems Improvement
KHK	Koronare Herzkrankheit
KORA	Kooperative Gesundheitsforschung in der Region Augsburg
ICSI	Institute for Clinical Systems Improvement
IOM	Institute of Medicine
IQWiG	Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen
LDL	Low-Density-Lipoprotein
LoE	Level of Evidence
LVEF	Linksventrikuläre Ejektionsfraktion
MEDLINE	Medical Literature Analysis and Retrieval System Online
MeSH	Medical Subject Headings
n.a.	nicht angegeben
NCC	National Collaborating Centre
NGC	National Guideline Clearinghouse
NVL	Nationale VersorgungsLeitlinien
NZGG	New Zealand Guidelines Group
PCI	Perkutane Koronararterienintervention
PTCA	Perkutane Transluminale Koronare Angioplastie
PROCAM	Prospektive Cardiovasculäre Münster-Studie
RSA-ÄndV	Verordnung zur Änderung der Risikostrukturausgleichsverordnung
RSaV	Risikostrukturausgleichsverordnung

(Fortsetzung)

Tabelle 1 (Fortsetzung): Abkürzungsverzeichnis

SCAI	Society for Cardiovascular Angiography and Interventions
SGB	Sozialgesetzbuch
SIGN	Scottish Intercollegiate Guidelines Network
WHI	Women's Health Initiative

## **1 Hintergrund**

### **1.1 Auftrag**

Der Gemeinsame Bundesausschuss (G-BA) hat mit Beschluss vom 19.12.2006 das Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen beauftragt, eine Updaterecherche der Leitlinien zum Thema Koronare Herzkrankheit (KHK) durchzuführen. Die hierbei aus evidenzbasierten Leitlinien extrahierten Empfehlungen dienen als Grundlage der gesetzlich festgelegten regelmäßigen Aktualisierung des Disease-Management-Programms (DMP).

Der Auftrag gliedert sich in folgende Teilbereiche:

- Recherche, Auswahl und methodische Bewertung von aktuellen Leitlinien zum Thema KHK, die auf das deutsche Gesundheitssystem übertragbar sind
- Extraktion neuer und für das bestehende DMP KHK relevanter Empfehlungen aus den bewerteten Leitlinien

### **1.2 DMP**

DMP sind strukturierte Behandlungsprogramme für chronisch kranke Menschen, die auf den Erkenntnissen der evidenzbasierten Medizin beruhen. Im Rahmen der Programme werden vorrangig Behandlungsmethoden eingesetzt, die dem aktuellen Stand der Wissenschaft entsprechen [1]. Die Patienten erhalten damit eine Versorgung, die das Risiko von Folgeschäden und akuten Verschlechterungen der Krankheit so weit wie möglich verringern und die Lebensqualität der Patienten verbessern soll. Neben der Optimierung der Behandlung ist es Ziel der DMP, die Zusammenarbeit der Leistungserbringer zu fördern und somit diagnostische und therapeutische Abläufe besser miteinander zu verzahnen [2].

Mit der 7. Verordnung zur Änderung der Risikostrukturausgleichsverordnung vom 30.04.2003 wurden die Anforderungen an strukturierte Behandlungsprogramme für Patienten mit KHK festgelegt [3]. Mit der 9. Verordnung zur Änderung der Risikostrukturausgleichsverordnung vom 01.03.2004 wurde darüber hinaus die Rechtsgrundlage für eine Vereinfachung der Dokumentation und Abläufe des DMP KHK geschaffen [4].

Das DMP KHK bezieht alle Versorgungsebenen des KHK-Patienten (Diagnostik, Therapie, Rehabilitation, Langzeitbetreuung) ein, einschließlich der Schnittstellen innerhalb der Versorgungskette (Haus- und Facharzt, Krankenhaus, qualifizierte Einrichtungen, Rehabilitationszentren).

KHK-spezifisches Therapieziel, das mit dem DMP KHK effizienter umgesetzt werden soll, ist eine Reduktion der Mortalität und Morbidität, insbesondere durch die Vermeidung von Herzinfarkten und der Entwicklung einer Herzinsuffizienz. Außerdem ist eine Verbesserung

der Lebensqualität wesentliches Therapieziel, das insbesondere durch die Verminderung der Angina-pectoris(AP)-Häufigkeit sowie -Intensität erreicht werden kann [5].

### 1.3 Koronare Herzkrankheit

Die KHK ist die Manifestation der Arteriosklerose an den Herzkranzarterien [6,7]. Ausgangspunkt der Erkrankung sind Schädigungen der endothelialen Funktion. In der Folge kommt es zu pathologischen Lipideinlagerungen in der Gefäßwand sowie zur Entwicklung atherosklerotischer Plaques. Im Frühstadium der Erkrankung sind meist noch keine klinischen Symptome vorhanden. Im fortgeschrittenen Stadium entsteht mit zunehmender Einengung der Gefäße ein Missverhältnis zwischen Sauerstoffbedarf und -angebot im Herzmuskel mit der Folge einer Myokardischämie. Diese äußert sich klinisch häufig als Angina pectoris, d. h. in Form plötzlich einsetzender, Sekunden bis Minuten anhaltender Schmerzen im Brustkorb [8].

Grundsätzlich ist bei der KHK zwischen der chronischen KHK und den akuten Ereignissen zu unterscheiden. Während die stabile AP eine klinische Ausprägungsform der KHK bezeichnet, die regelmäßig nur bei körperlicher Anstrengung auftritt und die über Monate konstant bleibt, werden unter dem Begriff „Akutes Koronarsyndrom“ (ACS) die Phasen der KHK zusammengefasst, die unmittelbar lebensbedrohlich sind. Dazu gehören die auch schon bei leichter oder ohne Anstrengung auftretende instabile AP, der Myokardinfarkt mit oder ohne ST-Hebungen sowie der plötzliche Herztod.

In der Literatur werden die zuvor beschriebenen Begrifflichkeiten (chronische) KHK und stabile bzw. chronische AP häufig synonym verwendet. Im englischsprachigen Raum werden darüber hinaus die Begriffe „Coronary Artery Disease“ (CAD), „Coronary Heart Disease“ (CHD) sowie der symptombezogene Krankheitsbegriff „Stable“ oder „Chronic Stable Angina Pectoris“ synonym verwendet. Ein weiteres, häufig in Leitlinien verwendetes Synonym für KHK ist „Ischämische Herzkrankheit“. Sofern die Begriffe KHK und AP in Leitlinien synonym verwendet werden, muss aus der Leitliniendokumentation unmissverständlich hervorgehen, dass es sich bei der beschriebenen AP um die KHK-induzierte AP handelt. In den vorliegenden Vorbericht wurden Leitlinien zu den verschiedenen Begrifflichkeiten einbezogen. Leitlinien, die sich primär mit dem ACS befassen, wurden nicht berücksichtigt, da die akute Behandlung des ACS nicht Gegenstand des DMP KHK ist.

Die chronische KHK sowie deren klinische Manifestationen als akuter Myokardinfarkt oder Herzinsuffizienz stellen die häufigsten Todesursachen in Deutschland dar. Sie begründeten in 2005 fast 23 % aller Todesfälle (21,4 % aller Todesfälle bei Männern und 24,2 % bei Frauen) [9].

Die genaue Prävalenz der KHK in Deutschland ist nicht bekannt. Es liegen jedoch für den Myokardinfarkt sowohl Inzidenz- als auch Prävalenzschätzungen aus nicht repräsentativen Bevölkerungsstudien vor. So hat der Bundesgesundheitsurvey 98 (BGS 98) eine Lebenszeitprävalenz überlebter oder nicht letaler Myokardinfarkte von insgesamt 2,45 %,

davon 3,3 % bei Männern und 1,7 % bei Frauen, ermittelt [10,11]. Aktuellere Zahlen aus dem Jahr 2004 geben auf Grundlage der Kooperativen Gesundheitsforschung in der Region Augsburg (KORA) eine altersstandardisierte 1-Jahres-Prävalenz von 381 Fällen pro 100 000 Einwohnern bei Männern und 107 Fällen pro 100 000 Einwohnern bei Frauen im Alter von 25 bis 74 Jahren an (inzidente Infarkte und Reinfarkte) [12].

Wichtigste Risikofaktoren für das Entstehen bzw. den Verlauf der KHK sind das Alter, Rauchen, Bluthochdruck, Übergewicht, Hypercholesterinämie und Diabetes. Module zur Berechnung des absoluten Risikos, ein koronares Ereignis zu erleiden, beziehen das individuelle Risikofaktorprofil eines Patienten ein. Derartige Module wurden zum Beispiel auf Basis der US-amerikanischen Framingham-Studie, des European Heart Surveys, der Prospektiven Cardiovasculären Münster-Studie (PROCAM) u. a. erstellt [13-16]. Risikoberechnungsmodule sind ein Instrument zur Risikostratifizierung von Patienten und sollen Diagnose- bzw. Behandlungsentscheidungen unterstützen.

#### **1.4 Leitlinien**

Für den vorliegenden Vorbericht wird der Begriff „Leitlinien“ entsprechend der Definition des Institutes of Medicine (IOM) verwendet: Leitlinien sind systematisch entwickelte Entscheidungshilfen für Leistungserbringer und Patienten zur angemessenen Vorgehensweise bei speziellen Gesundheitsproblemen [17].

Darüber hinaus sind evidenzbasierte Leitlinien gemäß den Empfehlungen des Europarates aus dem Jahre 2001 folgendermaßen definiert: „Evidenzbasierte Leitlinien werden auf der Grundlage der besten verfügbaren wissenschaftlichen Evidenz erstellt. Sie sind das Resultat einer systematischen Zusammenstellung und Aufarbeitung der Literatur, werden regelmäßig aktualisiert oder enthalten einen Hinweis auf ihre Geltungsdauer.“ [18,19]

Betrachtet wurden in dieser Untersuchung sowohl primär erstellte Leitlinien (De-novo-Leitlinien) als auch adaptierte Leitlinien, die im Folgenden beschrieben sind.

#### **1.5 Adaptierte Leitlinien**

Bisher gibt es keine allgemeingültige, akzeptierte Definition von adaptierten Leitlinien bzw. von dem Prozess zu deren Erstellung.

Eine Leitlinienadaptation ist die Modifikation einer oder mehrerer bereits bestehender Quell-Leitlinien (De-novo-Leitlinien), um sie an organisatorische oder kontextuelle Rahmenbedingungen anzupassen [20]. Hierbei kann der Adaptierungsprozess auf unterschiedlichen Ebenen stattfinden. Die Adaptierung kann formaler Art sein (wie z. B. Übersetzung einer Leitlinie, Überarbeitung des Formats) oder aus inhaltlichen Erwägungen geschehen (Anpassung einzelner Empfehlungen an den Kontext der Versorgungssituation). Häufig wird auch eine oder werden mehrere De-novo-Leitlinien zugrunde gelegt, auf deren



Basis ergänzend zu speziellen Fragestellungen nach aktueller Literatur recherchiert und Empfehlungen bei Bedarf neu formuliert werden. Eine solche „Ergänzungsrecherche“ kann dazu dienen, Lücken zu vorab identifizierten Themenfeldern zu füllen, die in der Quell-Leitlinie nicht (ausreichend) abgedeckt sind oder ein entstandenes Zeitfenster (Abschluss der Recherche in der Quell-Leitlinie bis zum Formulieren der Empfehlungen der adaptierten Leitlinie) zu überbrücken.

## 2 Ziel der Untersuchung

Ziel der vorliegenden Untersuchung ist es, durch eine systematische Recherche aktueller evidenzbasierter Leitlinien und eine Synthese der generierten Kernempfehlungen einen möglichen Überarbeitungsbedarf des bestehenden DMP KHK zu spezifizieren.

Die Untersuchung gliederte sich in folgende Arbeitsschritte:

- Recherche und Auswahl evidenzbasierter aktueller Leitlinien zum Thema KHK, die auf das deutsche Gesundheitswesen übertragbar sind
- Bewertung der methodischen Qualität der ausgewählten Leitlinien
- Synthese der Leitlinien-Kernempfehlungen und Extraktion von Empfehlungen, die für das bestehende DMP KHK relevant sind
- Dokumentation der Evidenz, auf der die Kernempfehlungen laut Leitlinie beruhen

Ziel der Untersuchung ist es nicht, Empfehlungen im Sinne einer Nutzenbewertung des Instituts für Qualität und Wirtschaftlichkeit im Gesundheitswesen (IQWiG) abzugeben. Die Empfehlungen aus den Leitlinien sind somit als Zitate zu verstehen, deren zugrunde liegende Evidenz als solche nicht erneut geprüft wird.

### 3 Projektablauf

Der Gemeinsame Bundesausschuss (G-BA) hat mit Schreiben vom 19.12.2006 das IQWiG mit der Erstellung des Berichts V06-03 beauftragt. In die Bearbeitung des Projekts wurden externe Sachverständige eingebunden, die an der Erstellung des Berichtsplans, an der Informationsbeschaffung und -bewertung sowie an der Erstellung des Vorberichts beteiligt waren.

Der Berichtsplan in der Version vom 04.04.2007 wurde am 17.04.2007 im Internet veröffentlicht. Zu dieser Version konnten bis zum 15.05.2007 Stellungnahmen eingereicht werden. Die Stellungnahmen und die Dokumentation der Erörterung sind in einem gesonderten Dokument („Dokumentation und Würdigung der Stellungnahmen zum Berichtsplan“) im Internet veröffentlicht. Im Anschluss an das Stellungnahmeverfahren wurde ein überarbeiteter Berichtsplan (Version 2.0 vom 11.07.2007) publiziert.

Bei dem vorliegenden Vorbericht handelt es sich um eine vorläufige Bewertung des IQWiG, zu der Stellungnahmen eingereicht werden können. Das Ende der Stellungnahmefrist wird auf den Internetseiten des Instituts unter [www.iqwig.de](http://www.iqwig.de) bekannt gegeben. Stellungnahmen können von allen interessierten Personen, Institutionen und Gesellschaften einschließlich Privatpersonen, Fachgesellschaften und Industrieunternehmen abgegeben werden. Die Stellungnahmen müssen bestimmten formalen Anforderungen genügen, die ebenfalls auf den Internetseiten des Instituts in einem entsprechenden Leitfaden dargelegt sind. Gegebenenfalls wird eine wissenschaftliche Erörterung zur Klärung unklarer Aspekte aus den schriftlichen Stellungnahmen durchgeführt. Der Vorbericht wird zusätzlich einem externen Review unterzogen.

Im Anschluss an die wissenschaftliche Erörterung wird das IQWiG einen Abschlussbericht erstellen. Dieser Bericht wird an den G-BA übermittelt und 8 Wochen später im Internet veröffentlicht.

## **4 Methoden**

### **4.1 Kriterien für den Einschluss von Leitlinien in die Untersuchung**

#### **4.1.1 Population**

Die Zielpopulation der bewerteten Leitlinien waren Patienten mit dem Verdacht auf eine (chronische) KHK oder mit einer bereits diagnostizierten (chronischen) KHK.

#### **4.1.2 Versorgungsaspekte**

In Anlehnung an das bestehende DMP KHK wurden Leitlinien eingeschlossen, die Empfehlungen zu folgenden Versorgungsaspekten beinhalten:

- **Diagnose**

Einzelne diagnostische Maßnahmen bzw. eine Kombination im Sinne eines diagnostischen Algorithmus, die der Sicherung der Diagnose KHK dienen. Unterschieden wird in eine Basis- und in eine weiterführende Diagnostik.

- **Therapie**

Nichtmedikamentöse sowie medikamentöse Therapien, die:

- dem Risikomanagement des Patienten dienen (Übergewicht, Rauchen u. a.).
- die Verminderung der AP-Häufigkeit und -Intensität anstreben.
- die Prävention der fortschreitenden KHK bzw. die Vermeidung des ACS erreichen wollen.

Interventionelle Therapien (Aortokoronarer Venenbypass [ACVB], Perkutane Koronararterienintervention [PCI])

- **Rehabilitation**

### 4.1.3 Leitlinienscreening

#### 4.1.3.1 Allgemeine Ein-/Ausschlusskriterien

Die in die Untersuchung einbezogenen Leitlinien:

- mussten alle nachfolgenden Einschlusskriterien erfüllen.
- durften keines der nachfolgenden Ausschlusskriterien erfüllen.

Tabelle 2: Einschlusskriterien

<b>Einschlusskriterien</b>	
E1	Leitlinie beinhaltet Empfehlungen zu den unter 4.1.2 definierten Versorgungsaspekten der (chronischen) KHK
E2	Publikationszeitraum 2002–2007
E3	Publikationssprachen: Deutsch, Englisch, Französisch

Tabelle 3: Ausschlusskriterien

<b>Ausschlusskriterien</b>	
A1	Anderer Publikationstyp (z. B. Evidenzreport, Review, HTA-Bericht)
A2	Mehrfachpublikationen ohne relevante Zusatzinformation
A3	Es existiert eine aktualisierte Version dieser Leitlinie.
A4	Es handelt sich um eine Entwurfsfassung einer Leitlinie.
A5	Die Leitlinie ist nicht mehr aktuell (Überarbeitungsdatum überschritten bzw. von den Autoren als nicht mehr aktuell eingestuft).
A6	Keine Vollpublikation verfügbar
A7	Klinikinterne Behandlungspfade oder Leitlinien mit regionalem Geltungsanspruch

Eingeschlossen wurden nur Leitlinien, die Empfehlungen zu den unter 4.1.2 genannten Versorgungsaspekten der (chronischen) KHK (Diagnostik, Therapie, Rehabilitation) enthalten, jedoch keine Leitlinien, die sich primär mit der Akutbehandlung des ACS (Akuten Koronarsyndroms) oder ausschließlich mit einzelnen Aspekten des Risikofaktormanagements oder den Begleiterkrankungen der KHK beschäftigen (z. B. Hypertoniemanagement, Lipidmanagement, Raucherentwöhnung, Ernährungs- und Bewegungsleitlinien oder Leitlinien zu einzelnen Wirkstoffklassen). Leitlinien wurden darüber hinaus nur dann eingeschlossen, wenn die definierte Zielgruppe der Leitlinien Patienten mit KHK (oder den im Berichtsplan genannten Krankheitssynonymen) waren.

Leitlinien, die eine Adaptation in Form einer wortgetreuen Übersetzung einer anderen Leitlinie darstellten, wurden gemäß dem Ausschlusskriterium A2 („Mehrfachpublikationen ohne relevante Zusatzinformation“) ausgeschlossen.

Gemäß dem Auftrag sollten Leitlinien recherchiert und ausgewählt werden, deren Empfehlungen grundsätzlich im deutschen Gesundheitswesen anwendbar sind. Entscheidend für den Einschluss einer Leitlinie war hierbei die Nachvollziehbarkeit der Formulierung der Empfehlungen. Ausländische Leitlinien wurden klar gekennzeichnet, um zu verdeutlichen, dass einige ihrer Empfehlungen nicht unkritisch auf den deutschen Kontext übertragbar sind.

#### 4.1.3.2 Methodische Ausschlusskriterien

Bei den in die Bewertung eingeschlossenen Leitlinien musste erkennbar sein, dass bei der Generierung und Formulierung der Leitlinie eine methodische Systematik zur Anwendung kam, die die Evidenzbasierung der Leitlinie dokumentiert.

Ausgeschlossen wurden Leitlinien, in denen keine systematische Literaturrecherche und keine Evidenz im Sinne von Literaturzitierten in Kombination mit Evidenzeinstufungen bzw. Empfehlungsgraden angegeben wurden.

Für jede der gesichteten Leitlinien wurde dokumentiert, aufgrund welcher der genannten Kriterien ein Ein- bzw. Ausschluss stattfand.

## 4.2 Leitlinienrecherche

Die Suche nach relevanten Leitlinien wurde in folgenden Quellen durchgeführt:

Tabelle 4: Quellen für die Leitlinienrecherche

Quelle	Kommentar
Leitliniendatenbanken	<ul style="list-style-type: none"> <li>• Guidelines International Network (G-I-N)</li> <li>• Leitlinien.de</li> </ul>
Bibliographische Datenbanken	<ul style="list-style-type: none"> <li>• Excerpta Medica Database (EMBASE)</li> <li>• Medical Literature Analysis and Retrieval System Online (MEDLINE)</li> </ul>
Unterlagen des G-BA	Es wurden keine Unterlagen durch den G-BA übermittelt.
Sonstiges	<p>Ggf. Kontaktaufnahme mit Sachverständigen/Experten/ Fachgesellschaften</p> <p>Ggf. Kontaktaufnahme mit Autoren einzelner Publikationen</p>

Die Recherche erfolgte in mehreren Schritten. Zunächst wurde über die Leitliniendatenbank des Guidelines International Networks (G-I-N) sowie über deren Verlinkung zu anderen Leitlinienanbietern nach potenziell relevanten Leitlinien gesucht. Im zweiten Schritt wurden Leitlinien sowohl über die thematische Suche als auch über die Linksammlung von Leitlinien.de identifiziert. Hierbei wurden systematisch die Webseiten der auf Leitlinien.de gelisteten Leitlinienanbieter bzw. -datenbanken (Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften [AWMF], National Guideline Clearinghouse [NGC] etc.) durchsucht. Im letzten Schritt erfolgte eine Recherche nach Leitlinien in den bibliographischen Datenbanken MEDLINE und EMBASE. Sofern die genannten Datenbanken auf tote Links verwiesen, wurden die jeweiligen Leitlinienanbieter bzw. Institutionen direkt aufgerufen. Der gesamte Rechercheablauf und die Rechercheergebnisse sind im Folgenden detailliert beschrieben und dokumentiert.

#### **4.2.1 Identifizierung relevanter Leitlinien**

##### *Titel- und Abstractscreening*

Die durch die Suche in den Leitliniendatenbanken und bibliographischen Datenbanken identifizierten Zitate wurden anhand ihres Titels und, sofern vorhanden, ihrer Abstracts von 2 Reviewern unabhängig voneinander hinsichtlich ihrer Relevanz bewertet (1. Screening). Leitlinien, die von einem der beiden Reviewer als potenziell relevant erachtet wurden, wurden anhand ihres Volltextes auf Relevanz geprüft.

##### *Screening potenziell relevanter Volltexte*

Die Überprüfung der Volltexte erfolgte wiederum von 2 Reviewern unabhängig voneinander. Dabei wurden die inhaltliche Relevanz, die Erfüllung der Ein- und Ausschlusskriterien gemäß Abschnitt 4.1.3.1 (2. Screening) und die Evidenzbasierung gemäß Abschnitt 4.1.3.2 (3. Screening) überprüft. Es wurden alle Leitlinien eingeschlossen, die von beiden Reviewern als relevant angesehen wurden. Bei unterschiedlichen Einschätzungen wurden die Abweichungen diskutiert und die Leitlinien einer erneuten Bewertung unterzogen. Sofern ein Dissens bestehen blieb, wurden die unklaren Aspekte gesondert dokumentiert.

#### **4.3 Leitlinienbewertung**

Die angewandten Methoden zur Informationsbewertung beruhen auf dem derzeit gültigen Methodenpapier des Instituts für Qualität und Wirtschaftlichkeit im Gesundheitswesen [21].

##### **4.3.1 Methodische Bewertung von De-novo-Leitlinien**

Die strukturierte methodische Bewertung der eingeschlossenen nicht adaptierten (=De-novo-) Leitlinien erfolgte mithilfe des Deutschen Instrumentes zur methodischen Leitlinienbewertung (DELBI) [22]. DELBI ist ein Instrument zur Einschätzung der methodischen Qualität einer Leitlinie und kann nicht für die Bewertung der inhaltlichen Angemessenheit

von Leitlinienempfehlungen genutzt werden. DELBI enthält 29 Beurteilungskriterien. Diese Kriterien sind 7 Domänen, die jeweils eine separate Dimension methodologischer Leitlinienqualität beschreiben, zugeordnet. Die Domänen 1–6 entsprechen dabei den Domänen des validierten und international genutzten Appraisal-of-Guidelines-for-Research-&-Evaluation (AGREE)-Instrumentes [23]. Sie decken folgende Dimensionen der Leitlinienqualität ab:

- Domäne 1: Geltungsbereich und Zweck
- Domäne 2: Beteiligung von Interessengruppen
- Domäne 3: Methodologische Exaktheit der Leitlinienentwicklung
- Domäne 4: Klarheit und Gestaltung
- Domäne 5: Anwendbarkeit
- Domäne 6: Redaktionelle Unabhängigkeit

Die von den DELBI-Entwicklern (Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften [AWMF] und Ärztliches Zentrum für Qualität in der Medizin [ÄZQ]) hinzugefügte Domäne 7 beschreibt spezielle Anforderungen an die bewerteten Leitlinien in Bezug auf deren Anwendbarkeit im deutschen Gesundheitswesen sowie im Hinblick auf Verbreitungs- und Implementierungskonzepte der Leitlinie.

Jede Leitlinienbewertung wurde durch 2 Wissenschaftler unabhängig voneinander durchgeführt. Bei unterschiedlichen Einschätzungen wurden die Fragen diskutiert und die Leitlinien einer erneuten Bewertung unterzogen. Sofern ein Dissens bestehen blieb, der durch eine Autorenanfrage nicht zu lösen war, wurden die unklaren Aspekte gesondert dokumentiert.

Da die 7 DELBI-Domänen voneinander unabhängig sind und ein einzelner Summenwert, bezogen auf die Gesamtbewertung, nicht aussagekräftig ist, wurden für jede Leitlinie Summenwerte für die einzelnen Domänen berechnet. Zur besseren Vergleichbarkeit der Domänen untereinander erfolgte, wie im Instrument vorgegeben, eine Standardisierung durch Darstellung der erreichten Gesamtpunktzahl als prozentualer Anteil der maximal möglichen Punktzahl dieser Domäne:  $\text{standardisierter Domänenwert} = (\text{erreichte Punktzahl} - \text{minimal mögliche Punktzahl}) / (\text{maximal mögliche Punktzahl} - \text{minimal mögliche Punktzahl})$ . Die standardisierten Summenwerte der einzelnen Domänen wurden in einer Tabelle vergleichend gegenübergestellt. Die Berechnung des standardisierten Domänenwertes erfolgte nur für die Domänen 1–6, da diese den Domänen des validierten AGREE-Instrumentes entsprechen. Gemäß den Ausführungen der DELBI-Entwickler ist es nicht zulässig, Schwellenwerte für die Domänen festzusetzen, anhand derer Leitlinien als mehr oder weniger „gut“ oder „schlecht“ bewertet werden [22].



Die Anwendung des DELBI-Instrumentes zur Bewertung der methodischen Qualität von Leitlinien ist deskriptiv und kein Kriterium für den Einschluss von Leitlinien in die Untersuchung. Mithilfe des DELBI soll aufgezeigt werden, ob und in welchen Domänen des Instrumentes die eingeschlossenen evidenzbasierten Leitlinien besondere Stärken oder Schwächen aufweisen.

#### **4.3.2 Methodische Bewertung adaptierter Leitlinien**

Leitlinien wurden in dieser Untersuchung als „adaptierte Leitlinien“ bezeichnet, wenn die Adaptation von bestehenden Quell-Leitlinien aus inhaltlichen Erwägungen durchgeführt wurde (siehe Abschnitt 1.5). Leitlinien, die lediglich Übersetzungen einer anderen Leitlinie darstellten, wurden hingegen ausgeschlossen (Ausschlusskriterium A2: „Mehrfachpublikation ohne relevante Zusatzinformation“).

Die methodische Bewertung erfolgte analog zu den De-novo-Leitlinien unter Berücksichtigung der Besonderheiten adaptierter Leitlinien. Einige der DELBI-Fragen, die sich auf die methodologische Exaktheit der Recherche und Dokumentation der Evidenz beziehen (Domäne 3), sind auf adaptierte Leitlinien nur eingeschränkt anwendbar. Hierbei handelt es sich um die Fragen 8 (Dokumentation der systematischen Recherche nach Primär-/ Sekundärliteratur), 9 (Dokumentation der Kriterien, nach denen Evidenz ein- oder ausgeschlossen wurde) sowie 12 (Durchgängigkeit der Verknüpfung von Empfehlungen mit der zugrunde liegenden Evidenz). Diese Fragen sind bei adaptierten Leitlinien nur auf die Bereiche anwendbar, in denen eine Primärrecherche durchgeführt wurde (z. B. Updaterecherchen), jedoch nicht auf die Leitlinie in ihrer Gesamtheit. Diese Fragen waren daher nur dann sinnvoll anwendbar, wenn eine Primärrecherche zumindest in Teilbereichen durchgeführt wurde, und dann auch nur in Bezug auf diese Teilbereiche der Leitlinie.

Um darüber hinaus auch die Qualität des Adaptationsprozesses beschreiben zu können, wurden entsprechende Bewertungskriterien festgelegt und ergänzt. Bislang wurde kein Bewertungsinstrument für adaptierte Leitlinien entwickelt und validiert. Es war für den vorliegenden Bericht jedoch notwendig, auch adaptierte Leitlinien in ihrer methodischen Qualität vergleichen zu können. Daher wurden für diesen Bericht, orientierend an der Arbeit der ADAPTE Group [20], Qualitätskriterien festgelegt, die die Kernprozesse des Adaptationsprozesses beschreiben sollen. Zusätzlich zu den auch auf die adaptierten Leitlinien sinnvoll anwendbaren DELBI-Fragen wurden daher folgende Fragen zur Bewertung der methodischen Qualität der Adaptation betrachtet:

- Ist der Prozess der Identifizierung der Quell-Leitlinie(n) transparent und nachvollziehbar beschrieben?
- Wurden die Quell-Leitlinien bezüglich ihrer Evidenzbasierung geprüft?

- Ist der Auswahlprozess der Quell-Leitlinie(n) transparent und nachvollziehbar beschrieben?

Die Beantwortung dieser Fragen erfolgte abweichend von DELBI nicht anhand einer 4-Punkte-Skala, sondern mithilfe einer dichotomen Einteilung. Es wurde bewertet, ob die festgelegten Kriterien erfüllt wurden, ohne dies jedoch weiter abzustufen. Sowohl die anwendbaren DELBI-Fragen als auch die ergänzenden Fragen zur Adaptation wurden auf die adaptierte Leitlinie bezogen, nicht auf die Quell-Leitlinien.

#### **4.4 Synthese der Kernempfehlungen**

Im Anschluss an die Bewertung der methodischen Qualität der Leitlinien wurden diese einer strukturierten Informationssynthese unterzogen. Diese Synthese erfolgte separat für die Versorgungsaspekte Diagnosestellung, Therapie und Rehabilitation. Nach der Informationssynthese erfolgte eine inhaltliche Gegenüberstellung der aus den Leitlinien extrahierten Kernempfehlungen und der bereits im DMP KHK eingeschlossenen Maßnahmen. Als Kernempfehlungen wurden diejenigen Empfehlungen identifiziert, die als solche von den Autoren der Leitlinie gekennzeichnet waren.

Für jede Kernempfehlung wurde hierbei dargestellt, auf welcher Evidenz diese beruht (systematische Literaturrecherche und/oder Konsens), und jede mit den jeweiligen Evidenzleveln bzw. Empfehlungsgraden versehen. Sofern möglich, wurden für jede Empfehlung die entsprechenden Referenzen, die zur Formulierung der Empfehlung geführt haben, dokumentiert.

Innerhalb der adaptierten Leitlinien wurden Empfehlungen, analog zu den De-novo-Leitlinien, mit den jeweiligen Evidenzleveln bzw. Empfehlungsgraden sowie mit den entsprechenden Literaturreferenzen versehen, sofern diese angegeben waren. Sofern in einer adaptierten Leitlinie eine Empfehlung wortgetreu der Empfehlung in der Primärleitlinie entsprechend wiedergegeben und auch nur diese zitiert wurde, wurde in den Tabellen diese Empfehlung ausschließlich mit einer Referenz auf die Primärleitlinie versehen.

#### **4.5 Änderungen im Vergleich zum Berichtsplan**

##### **4.5.1 Änderungen durch die Stellungnahmen zum Berichtsplan**

Der überarbeitete Berichtsplan (Version 2.0) wurde am 11.07.2007 zeitgleich mit der Würdigung der Stellungnahmen publiziert. In diesen Dokumenten wurden die Änderungen des Berichtsplans (Version 1.0) dokumentiert. Weitere Änderungen bzw. Ergänzungen zur Version 2.0 ergaben sich im Verlauf der Erstellung des Vorberichtes und sind unter 4.5.2 erläutert.

Folgende Veränderungen des Berichtsplans, die sich in der Version 2.0 manifestieren, haben sich aus den Stellungnahmen zum Berichtsplan Version 1.0 ergeben:

1. Die Publikationssprachen wurden auf Deutsch, Englisch und Französisch eingegrenzt (Abschnitt 4.1.3.1).
2. Der Ausschluss von Leitlinien zur ausschließlichen Behandlung von ACS und einzelnen Risikofaktoren wurde erläutert (Abschnitt 4.1.3.1).
3. Ergänzende Erläuterungen zur Berücksichtigung internationaler Leitlinien und derer Übertragbarkeit auf Deutschland wurden eingefügt (Abschnitt 4.1.3.1).
4. Ein Abschnitt zum Ablauf der Recherche in Leitliniendatenbanken wurde ergänzt (Abschnitt 4.2).
5. Eine Definition des Begriffes „Kernempfehlungen“ wurde eingefügt (Abschnitt 4.4).

#### **4.5.2 Änderungen während der Erstellung des Vorberichts**

Als Ergänzung zu Abschnitt 4.2 (Leitlinienrecherche) wurde der neue Abschnitt 4.2.1 hinzugefügt, in dem die Screeningschritte, die zur Identifizierung relevanter Leitlinien geführt haben, beschrieben werden. In Abschnitt 4.3.1 wurden außerdem Details zum Vorgehen bei der Bewertung von De-novo-Leitlinien mithilfe des DELBI-Instrumentes ergänzt.

Während der Erstellung des Vorberichtes ergab sich des Weiteren die Notwendigkeit, sich differenzierter mit dem Thema „adaptierte Leitlinien“ und der methodischen Bewertung adaptierter Leitlinien auseinanderzusetzen. Hierzu wurde in Kapitel 1 („Hintergrund“) ein Abschnitt über adaptierte Leitlinien ergänzt (Abschnitt 1.5). Darüber hinaus wurden in Abschnitt 4.3.2 die Besonderheiten bei der Bewertung adaptierter Leitlinien und der Umgang mit diesen Besonderheiten erläutert. Letztlich wurden auch bei der Beschreibung des Vorgehens bei der Synthese der Kernempfehlungen einige Details in Bezug auf den Umgang mit adaptierten Leitlinien ergänzt (Abschnitt 4.4).

## 5 Ergebnisse

### 5.1 Ergebnisse der Recherche in Leitliniendatenbanken

Dieser Teil der Recherche wurde zwischen dem 19.03.2007 und dem 22.03.2007 durchgeführt. Insgesamt wurden 108 Webseiten durchsucht. Bei den meisten Webseiten handelte es sich um die Seiten der Institutionen bzw. Fachgesellschaften, die die Leitlinien herausgeben. Nur wenige Webseiten ermöglichten eine Suche mit Schlagwörtern, so dass in der Regel jeweils die gesamte Liste von veröffentlichten Leitlinien durchsucht wurde. Die Liste aller durchsuchten Leitliniendatenbanken bzw. -anbieter befindet sich in Anhang B. Alle gelisteten Leitliniendatenbanken oder -anbieter wurden über die Datenbanken oder Linksammlungen von G-I-N oder Leitlinien.de identifiziert. In den Leitliniendatenbanken von AWMF, NGC, CMA (Canadian Medical Association), CHSR (Center for Health Services Research) und G-I-N wurde über die in Anhang A gelisteten Suchbegriffe nach potenziell relevanten Leitlinien gesucht. Darüber hinaus war im G-I-N und in der CMA eine Schlagwortsuche über so genannte MeSH (Medical Subject Headings)-Begriffe möglich. Die hier durchsuchten Schlagwortkategorien sind ebenfalls in Anhang A dargestellt.

Um auch Leitlinien zu identifizieren, die zwischen der Erstrecherche und dem in den Methoden quantifizierten Recherchezeitraum (bis Ende Juni 2007) veröffentlicht wurden, wurde zwischen dem 25.06.2007 und dem 29.06.2007 eine Nachrecherche durchgeführt, ohne jedoch weitere relevante Leitlinien identifizieren zu können, die den allgemeinen und/oder methodischen Einschlusskriterien entsprachen.

Insgesamt wurden, nach Dublettenbereinigung, 87 Leitlinien als potenziell relevant erachtet und im Volltext gesichtet. Im Rahmen des Stellungnahmeverfahrens wurde auf eine weitere relevante Leitlinie hingewiesen, die zum Zeitpunkt der Stellungnahme bereits in der Entwurfsfassung vorlag und im Verlauf der Vorberichtserstellung sowohl online als auch in einer medizinischen Fachzeitschrift veröffentlicht wurde. Letztlich wurden insgesamt 21 Dokumente eingeschlossen.

Die folgende Tabelle 5 gibt eine Übersicht über die Anzahl von Treffern der Recherche in Leitliniendatenbanken bzw. bei Leitlinienanbietern. Darüber hinaus befindet sich in Anhang C eine Liste der im Volltext gesichteten aber ausgeschlossenen Leitlinien (Anhang C: Liste der im Volltext überprüften, aber ausgeschlossenen Leitlinien mit Ausschlussgründen).

Tabelle 5: Recherche auf den Webseiten von Leitliniendatenbanken und -anbietern

	Treffer ↓
<b>G-I-N</b>	<b>37</b>
<b>Leitlinien.de</b>	<b>74</b>
<b>Potenziell relevant gesamt</b>	<b>111</b>
<b>Potenziell relevant ohne Dubletten</b>	<b>87</b>
<b>Relevante Leitlinien (ohne Dubletten) aus diesen Recherchen</b>	<b>20</b>
<b>Relevante Leitlinie aus dem Stellungnahmeverfahren</b>	<b>1</b>
<b>Eingeschlossene Leitlinien GESAMT</b>	<b>21</b>

## 5.2 Ergebnisse der Recherche in bibliographischen Datenbanken

Die Suche in den bibliographischen Datenbanken EMBASE und MEDLINE fand am 29.03.2007 statt. Insgesamt wurden 3322 Treffer im Titel und Abstract gescreent. Diese Recherche lieferte nach Dublettenbereinigung 15 potenziell relevante Treffer, die durch die Handsuche in Leitliniendatenbanken bzw. auf Leitlinienwebseiten noch nicht identifiziert worden waren. Nach Anwendung der allgemeinen und der methodischen Ein- und Ausschlusskriterien wurden keine weiteren Leitlinien eingeschlossen. Die hier ebenfalls am 28.06.2007 durchgeführte Nachrecherche lieferte 243 zusätzliche Treffer, von denen 2 als potenziell relevant erachtet und im Volltext überprüft wurden. Keine der beiden Leitlinien erfüllte jedoch die allgemeinen und/oder methodischen Einschlusskriterien.

## 5.3 Anfrage an Autoren (oder Fachgesellschaften)

Es wurden keine Anfragen an Fachgesellschaften gestellt.

## 5.4 Stellungnahmen zum Berichtsplan

Im Rahmen des Stellungnahmeverfahrens wurde das Projektteam auf eine potenziell relevante Leitlinie, die „Deutsche Leitlinie zur Rehabilitation von Patienten mit Herz-Kreislaufkrankungen“ der Deutschen Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR), aufmerksam gemacht, die sich zum Zeitpunkt der Recherche im Druck befand. Die Leitlinie wurde am 05.06.2007 online auf der Webseite der DGPR publiziert und ist in der Folge im Juli 2007 in der Zeitschrift „Clinical Research in Cardiology“ im 2. Supplement veröffentlicht worden [24] (siehe 5).

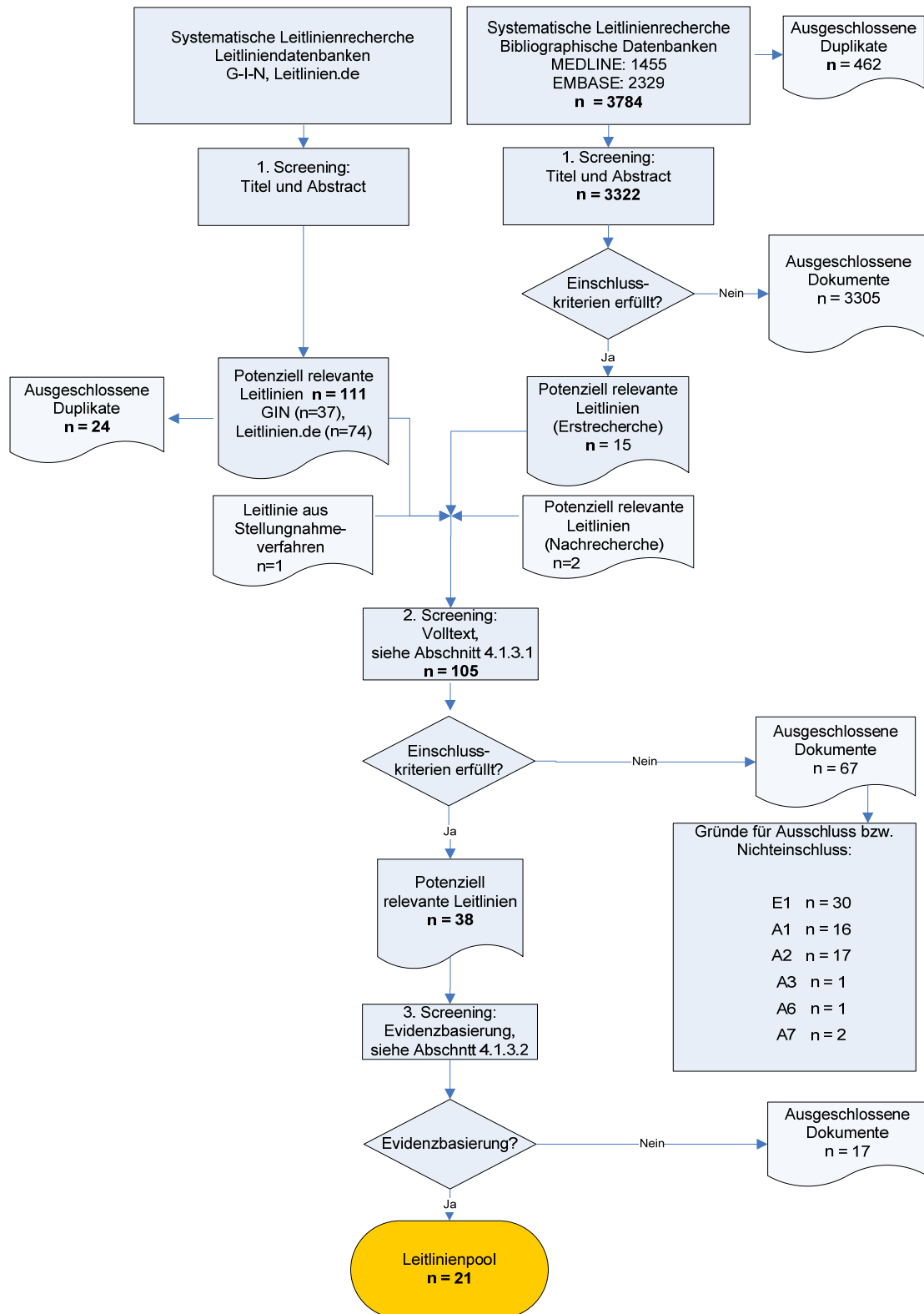


Abbildung 1: Leitlinienrecherche und -screening, Leitlinienpool für die Bewertung

## 5.5 Resultierender Leitlinienpool

Insgesamt wurden 21 Leitlinien eingeschlossen. Diese wurden mit dem DELBI-Instrument und, sofern es sich um adaptierte Leitlinien handelte, mit den Fragen zum Adaptationsprozess bewertet und deren Kernempfehlungen extrahiert. Die verwendeten Leitlinienabkürzungen sind Tabelle 6 zu entnehmen. Die eingeschlossenen Leitlinien wurden von Institutionen aus den USA (n=7), Großbritannien (n=4), Deutschland (n=3), Neuseeland (n=2), Kanada (n=1), Finnland (n=1) und in den Niederlanden (n=1) sowie von internationalen Gesellschaften (n=2) (European Society of Cardiology) herausgegeben.

Nur 7 der 21 eingeschlossenen Leitlinien thematisieren alle Versorgungsaspekte der chronischen bzw. stabilen KHK (NVL, SIGN A, ESC A, FMS, ICSI, AHA A, CCS). Alle anderen eingeschlossenen Leitlinien konzentrieren sich auf einen der Teilaspekte Diagnostik, Behandlung (einschließlich Primär- und Sekundärprävention) oder Rehabilitation der KHK.

Die 21 eingeschlossenen Leitlinien verwenden unterschiedliche Systeme zur Evidenz- und Empfehlungsgraduierung (siehe Anhang E: Systeme zur Evidenzgraduierung und Anhang F: Systeme zur Empfehlungsgraduierung).

Tabelle 5 enthält darüber hinaus die Information, ob eine Leitlinie als De-novo- oder adaptierte Leitlinie klassifiziert wurde. Folgende 5 Leitlinien wurden als adaptierte Leitlinien klassifiziert: DGPR, NVL, NZGG REHA, NZGG CR sowie SIGN R (siehe Tabelle 6). Der Bezug auf die Adaptierung bereits bestehender Leitlinien war in den als adaptiert bezeichneten Leitlinien explizit, d. h. es befanden sich im Methodenteil Angaben zur Zugrundelegung anderer Leitlinien, und diese Leitlinien wurden auch benannt (siehe Anhang G: Angaben zur Adaptierung in den Leitlinien“). Unsicherheit über eine mögliche Adaptation bestand bei der ICSI-Leitlinie, die sich selbst nicht als adaptierte Leitlinie bezeichnet, jedoch bei einem Großteil der Empfehlungen andere Leitlinien als Quellen angibt. Die ICSI-Leitlinie wurde letztlich aufgrund mangelnder Information in bezug auf eine Adaptierung als nicht adaptiert klassifiziert.

In allen adaptierten Leitlinien wurden zu wesentlichen Teilbereichen der Thematik Primärrecherchen (zum Teil Updaterecherchen) und Eigenbewertungen der Evidenz durch die Leitlinienersteller vorgenommen. Diese umfangreichen Primärrecherchen dienten dazu, Lücken in vorab identifizierten Themenfeldern zu füllen, die in der Quell-Leitlinie nicht (oder nicht ausreichend) abgedeckt waren (z. B. NVL), oder ein entstandenes Zeitfenster (zwischen dem Abschluss der Recherche in der Quell-Leitlinie und dem Formulieren der Empfehlungen der adaptierten Leitlinie) zu überbrücken (z. B. NZGG REHA). Sofern aktuelle De-novo-Leitlinien der jeweiligen eigenen Gesellschaft/en integriert bzw. zitiert wurden, ging man hier nicht von einer Leitlinienadaptation im strengen Sinne aus. Dies war zum Beispiel bei der American Heart Association (AHA) der Fall, die häufig eigene Leitlinien zu Grunde legt.

Tabelle 6: Eingeschlossene Leitlinien

Leitliniename	Jahr	Herausgeber	Verwendete Abkürzung	Zielsetzung	Adaptierung
<b>Deutsche Leitlinien</b>					
Deutsche Leitlinie zur Rehabilitation von Patienten mit Herz-Kreislauferkrankungen [25]	2007	Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislauferkrankungen e. V. (DGPR)	<b>DGPR</b>	Teilaspekt Rehabilitation	Ja*
Nationale VersorgungsLeitlinie Chronische KHK [26]	2006	Programm für Nationale Versorgungs Leitlinien	<b>NVL</b>	Gesamte Versorgung	Ja*
Therapieempfehlungen der Arzneimittelkommission der deutschen Ärzteschaft-Koronare Herzkrankheit [27]	2004	Arzneimittelkommission der deutschen Ärzteschaft (AKDÄ)	<b>AkDÄ</b>	Teilaspekt Medikamentöse Behandlung	Nein
<b>Europäische Leitlinien</b>					
Clinical Guidelines and Evidence Review for Post Myocardial Infarction: Secondary Prevention in primary and secondary care for patients following a myocardial infarction [28]	2007	National Collaborating Centre (NCC) for Primary Care, Royal College of General Practitioners	<b>NCC</b>	Teilaspekt Sekundärprävention	Nein
Management of stable angina [29]	2007	Scottish Intercollegiate Guideline Network (SIGN)	<b>SIGN A</b>	Gesamte Versorgung	Nein
Risk estimation and the prevention of cardiovascular disease [30]	2007	Scottish Intercollegiate Guideline Network (SIGN)	<b>SIGN REP</b>	Teilaspekt Primär- und Sekundärprävention	Nein
* Informationen zu den Quell-Leitlinien, die der Adaptation zugrunde lagen, siehe Anhang G: Angaben zur Adaptierung in den Leitlinien					

(Fortsetzung)



Tabelle 6 (Fortsetzung): Eingeschlossene Leitlinien

Leitliniename	Jahr	Herausgeber	Verwendete Abkürzung	Zielsetzung	Adaptierung
Guidelines on the management of stable angina [31]	2006	European Society of Cardiology (ESC)	ESC A	Gesamte Versorgung	Nein
Coronary heart disease (CHD): symptoms, diagnosis and treatment [32]	2006	Finnish Medical Society Duodecim	FMS	Gesamte Versorgung	Nein
Guidelines for Percutaneous Coronary Interventions [33]	2005	European Society of Cardiology (ESC)	ESC PCI	Teilaspekt Interventionelle Behandlung	Nein
Guideline for Cardiac Rehabilitation [34]	2004	Netherlands Society of Cardiology /Netherlands Heart Foundation Rehabilitation Committee	NLSC	Teilaspekt Rehabilitation	Nein
Cardiac rehabilitation [35]	2002	Scottish Intercollegiate Guideline Network (SIGN)	SIGN R	Teilaspekt Rehabilitation	Ja*
<b>Internationale Leitlinien</b>					
Evidence-Based Guideline for Cardiovascular Disease Prevention in Women: 2007 Update [36]	2007	American Heart Association (AHA)	AHA W	Teilaspekt Prävention	Nein
Health Care Guideline: Stable Coronary Artery Disease [37]	2006	Institute for Clinical Systems Improvement (ICSI)	ICSI	Gesamte Versorgung	Nein
* Informationen zu den Quell-Leitlinien, die der Adaptation zugrunde lagen, siehe Anhang G: Angaben zur Adaptierung in den Leitlinien					

(Fortsetzung)

Tabelle 6 (Fortsetzung): Eingeschlossene Leitlinien

Leitliniename	Jahr	Herausgeber	Verwendete Abkürzung	Zielsetzung	Adaptierung
AHA/ACC Guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 Update [38]	2006	American Heart Association (AHA)/ American College of Cardiologists (ACC)	<b>AHA SP</b>	Teilaspekt Sekundärprävention	Nein
ACC/AHA/SCAI 2005 Guideline Update for Percutaneous Coronary Intervention [39]	2005	American College of Cardiologists/ American Heart Association (ACC/ AHA)	<b>AHA PCI</b>	Teilaspekt Interventionelle Behandlung	Nein
ACC/AHA 2004 Guideline Update for Coronary Artery Bypass Graft Surgery [40]	2004	American College of Cardiologists/ American Heart Association (ACC/ AHA)	<b>AHA CABG</b>	Teilaspekt Interventionelle Behandlung	Nein
The assessment and management of cardiovascular risk [41]	2003	New Zealand Guidelines Group (NZGG)	<b>NZGG CR</b>	Teilaspekt Prävention	Ja*
ACC/AHA 2002 Guideline Update for the Management of Patients with Chronic Stable Angina [42]	2002	American College of Cardiology/American Heart Association (ACC/AHA)	<b>AHA A</b>	Gesamte Versorgung	Nein
Cardiac Rehabilitation [43]	2002	New Zealand Guidelines Group (NZGG)	<b>NZGG REHA</b>	Teilaspekt Rehabilitation	Ja*
Management of Heart Disease in the Elderly Patients [44]	2002	Canadian Cardiovascular Society	<b>CCS</b>	Gesamte Versorgung	Nein
ACC/AHA 2002 Guideline Update for Exercise Testing [45]	2002	American College of Cardiologists/ American Heart Association (ACC/ AHA)	<b>AHA ET</b>	Teilaspekt Diagnose	Nein

\* Informationen zu den Quell-Leitlinien, die der Adaptation zugrunde lagen, siehe Anhang G: Angaben zur Adaptierung in den Leitlinien

## **5.6 Ergebnisse der Leitlinienbewertung**

Die eingeschlossenen De-novo- bzw. adaptierten Leitlinien wurden, wie in Abschnitt 4.3 erläutert, bezüglich ihrer methodischen Qualität bewertet. Diejenigen Leitlinien, die als De-novo-Leitlinien klassifiziert wurden, wurden mit dem DELBI bewertet. Auf alle adaptierten Leitlinien wurde darüber hinaus das Fragenset zur Bewertung des Adaptierungsprozesses angelegt (siehe Abschnitt 4.3.2 „Methodische Bewertung adaptierter Leitlinien“).

Vergleicht man alle Leitlinien hinsichtlich der standardisierten Werte innerhalb der jeweiligen DELBI-Domänen, so fallen insgesamt als positive Beispiele hinsichtlich der methodischen Kriterien insbesondere die Leitlinien SIGN A, NZGG REHA, NZGG CR, NCC sowie die deutsche NVL auf, die im Vergleich zu den übrigen größtenteils höhere Domänenwerte aufweisen. Eher geringe Domänenscores erhielten hingegen die FMS und die CCS (siehe Anhang H: Grafische Darstellung der DELBI-Bewertung).

### **5.6.1 Ergebnisse der Bewertung von De-novo-Leitlinien**

Die Ergebnisse der Bewertung der De-novo-Leitlinien sind Tabelle 7 zu entnehmen.

Die höchsten Bewertungen wurden in den Domänen 1 (Geltungsbereich) und 4 (Klarheit und Gestaltung) erreicht, die niedrigsten in den Domänen 2 (Beteiligung von Interessengruppen), 5 (Generelle Anwendbarkeit) und 6 (Redaktionelle Unabhängigkeit). Für die Bewertung der Domäne 3 (Methodologische Exaktheit der Leitlinienentwicklung) konnte innerhalb der De-novo-Leitlinien selbst für die am besten bewertete Leitlinie nur ein standardisierter Domänenwert von 0,76 berechnet werden. Häufig waren die geforderten Kriterien in dieser Domäne unzureichend erfüllt, d. h. die Dokumentation der methodologischen Exaktheit der Leitlinienentwicklung war nicht oder nicht vollständig vorhanden (siehe Tabelle 7).

Um den Vergleich zwischen den Leitlinien übersichtlicher zeigen zu können, erfolgte in den Tabellen 6 und 7 eine Schattierung der jeweils höchsten standardisierten Domänenwerte innerhalb einer Domäne und der niedrigsten standardisierten Domänenwerte innerhalb einer Domäne.

### **5.6.2 Ergebnisse der Bewertung von adaptierten Leitlinien**

Bei den adaptierten Leitlinien wurden bei der DELBI-Bewertung die höchsten Werte ebenfalls in den Domänen 1 (Geltungsbereich) und 4 (Klarheit und Gestaltung) und die niedrigsten in der Domäne 5 (Generelle Anwendbarkeit) erreicht (siehe Tabelle 8). Da alle adaptierten Leitlinien eine wesentliche Primärrecherche zu wichtigen Themenbereichen durchgeführt haben, wurden die Fragen 8, 9 und 12 der Domäne 3 des DELBI-Instrumentes (Methodologische Exaktheit der Leitlinienentwicklung) auf diese Primärrecherchen angelegt, wie in der Methodik in Abschnitt 4.3.2 erläutert.

Für die Domäne 3 ist auch hier festzuhalten, dass die Qualität der Dokumentation des methodischen Vorgehens bei der Suche nach Evidenz im Rahmen von Ergänzungs- oder Update-Recherchen in vielen Aspekten unzureichend war.

Die Bewertung der Qualität des Adaptierungsprozesses (siehe Tabelle 9: Ergebnisse des Fragensegments zur Beurteilung des Adaptierungsprozesses) zeigt, dass die Leitlinien, die als adaptiert klassifiziert wurden, den Prozess und die Methodik der Adaptierung überwiegend wenig transparent darstellen. Nur die NVL und die beiden Leitlinien der NZGG (NZGG REHA und NZGG CR) sowie die SIGN-Leitlinie zur Rehabilitation (SIGN R) erfüllten 2 (NVL) bzw. eines der abgefragten Qualitätskriterien (siehe Tabelle 9: Ergebnisse des Fragensegments zur Beurteilung des Adaptierungsprozesses). Insbesondere der Auswahlprozess der Quell-Leitlinien war unzureichend oder gar nicht dokumentiert.

Tabelle 7: DELBI-Bewertungen der eingeschlossenen De-novo-Leitlinien (standardisierte Domänenwerte)

Domäne → Leitlinie ↓	1- Geltungs- bereich*	2- Interessen- gruppen*	3- Methoden*	4- Klarheit*	5- Anwendbar- keit*	6- Unabhängig- keit*
AHA A	0,72 (2)	0,29 (10)	0,55 (5)	0,79 (4)	0,06 (5)	0,42 (3)
AHA ET	0,67 (4)	0,33 (7)	0,48 (8)	0,83 (2)	0,06 (5)	0,08 (13)
AHA PCI	0,67 (4)	0,33 (7)	0,60 (2)	0,75 (6)	0,06 (5)	0,42 (3)
AHA CABG	0,61 (8)	0,33 (7)	0,53 (7)	0,75 (6)	0,06 (5)	0,42 (3)
AHA SP	0,61 (8)	0,04 (15)	0,38 (11)	0,58 (11)	0,06 (5)	0,50 (1)
AHA W	0,50 (14)	0,36 (5)	0,57 (4)	0,71 (10)	0,06 (5)	0,50 (1)
AKdÄ	0,67 (4)	0,17 (11)	0,38 (11)	0,75 (6)	0** (12)	0,17 (9)
CCS	0,61 (8)	0,13 (13)	0,19 (15)	0,42 (14)	0** (12)	0** (14)
ESC A	0,67 (4)	0,17 (11)	0,48 (8)	0,92 (1)	0,06 (5)	0,17 (9)
ESC PCI	0,50 (14)	0,08 (14)	0,31 (13)	0,38 (15)	0** (12)	0,17 (9)
FMS	0,11 (16)	0** (16)	0,10 (16)	0,21 (16)	0** (12)	0** (14)
ICSI	0,61 (8)	0,42 (4)	0,41 (10)	0,58 (11)	0,17 (3)	0,42 (3)
NCC	0,83 (1)	0,54 (1)	0,55 (5)	0,79 (4)	0,33 (1)	0,17 (9)
NLSC	0,72 (2)	0,36 (5)	0,24 (14)	0,46 (13)	0** (12)	0** (14)
SIGN A	0,61 (7)	0,54 (1)	0,76 (1)	0,83 (2)	0,22 (2)	0,42 (3)
SIGN REP	0,56 (13)	0,46 (3)	0,60 (2)	0,75 (6)	0,17 (3)	0,33 (8)

\* Standardisierter Domänenwert: (erreichte Punktzahl – minimal mögliche Punktzahl) / (maximal mögliche Punktzahl – minimal mögliche Punktzahl). In Klammern Rangfolge, bei gleichem standardisiertem Domänenwert wurden gleiche Ränge vergeben.  
Farblegende: ■ höchster standardisierter Domänenwert dieser Domäne, ■ niedrigster standardisierter Domänenwert dieser Domäne  
\*\* Es wurde die minimal mögliche Punktzahl erreicht (und damit Zähler=0).

Tabelle 8: DELBI-Bewertungen der adaptierten Leitlinien (standardisierte Domänenwerte)

<b>Domäne → Leitlinie ↓</b>	<b>1- Geltungs- bereich*</b>	<b>2- Interessen- gruppen*</b>	<b>3- Methoden*</b>	<b>4- Klarheit*</b>	<b>5- Anwendbar- keit*</b>	<b>6- Unabhängig- keit*</b>
DGPR	0,61 (4)	0,29 (5)	0,5 (4)	0,83 (1)	0** (4)	0,08 (5)
NVL	0,44 (5)	0,63 (1)	0,57 (1)	0,83 (1)	0** (4)	0,50 (1)
NZGG CR	0,83 (1)	0,54 (3)	0,5 (4)	0,79 (4)	0,17 (3)	0,50 (1)
NZGG REHA	0,78 (2)	0,58 (2)	0,57 (1)	0,83 (1)	0,33 (1)	0,50 (1)
SIGN R	0,67 (3)	0,38 (4)	0,52 (3)	0,54 (5)	0,22 (2)	0,25 (4)

\* Standardisierter Domänenwert: (erreichte Punktzahl – minimal mögliche Punktzahl) / (maximal mögliche Punktzahl – minimal mögliche Punktzahl). In Klammern Rangfolge, bei gleichem standardisiertem Domänenwert wurden gleiche Ränge vergeben.  
Farblegende: ■ höchster standardisierter Domänenwert dieser Domäne, ■ niedrigster standardisierter Domänenwert dieser Domäne  
\*\* Es wurde die minimal mögliche Punktzahl erreicht (und damit Zähler=0).

Tabelle 9: Ergebnisse des Fragensegments zur Beurteilung des Adaptierungsprozesses

<b>Frage →</b>	<b>Prozess der Identifizierung der Quell-Leitlinie(n) ist beschrieben</b>	<b>Quell-Leitlinien wurden bzgl. ihrer Evidenzbasierung geprüft</b>	<b>Auswahlprozess der Quell-Leitlinien ist nachvollziehbar beschrieben</b>	<b>Summe erfüllter Kriterien</b>
<b>Leitlinie ↓</b>				
<b>DGPR</b>	Nein	Nein	Nein	<b>0</b>
<b>NVL</b>	Ja	Ja	Nein	<b>2</b>
<b>NZGG CR</b>	Nein	Ja	Nein	<b>1</b>
<b>NZGG REHA</b>	Nein	Ja	Nein	<b>1</b>
<b>SIGN R</b>	Ja	Nein	Nein	<b>1</b>

## 5.7 Synthese der Kernempfehlungen

In den folgenden Abschnitten werden die Kernempfehlungen der eingeschlossenen Leitlinien dargestellt. Dabei folgt die Darstellung der Gliederung der Anlage 5 der 7. Verordnung zur Änderung der Risikostrukturausgleichsverordnung vom 28.04.2003 (7. RSA-ÄndV), die die Grundlage für die DMP-Erstellung bildet. Die Empfehlungen wurden nach ihrem Inhalt den Gliederungspunkten 1.3 bis 1.7 der Anlage 5 zugeordnet.

Die Ersteller der hier eingeschlossenen Leitlinien verwenden unterschiedliche Systeme zur Evidenzgraduierung (Level of Evidence) und Empfehlungsgraduierung (Grade of Recommendation). Die vergebenen Einstufungen beim Level of Evidence (LoE) bzw. beim Grade of Recommendation (GoR) haben folglich bei den einzelnen Erstellerinstitutionen unterschiedliche Bedeutungen. Diese sind in Anhang E und F erläutert (siehe Anhang E: Systeme zur Evidenzgraduierung und Anhang F: Systeme zur Empfehlungsgraduierung). Bei der Synthese wurden die Originalangaben in Bezug auf LoE und GoR dokumentiert, da für eine Standardisierung auf ein einheitliches Graduierungssystem geeignete und validierte Instrumente fehlen. Die Extraktionstabellen (Tabelle 13 bis Tabelle 32 in Kapitel 8 „Tabellarische Darstellung der Kernempfehlungen“) enthalten ausschließlich Empfehlungen, die in der Originalsprache belassen wurden (alle waren in Englisch oder Deutsch), um subjektive Interpretationen bei der Übersetzung zu vermeiden.

Tabelle 10 gibt einen Überblick über die in den jeweiligen Leitlinien abgedeckten Bereiche der Anlage 5 (siehe Tabelle 10: Übersicht über die DMP-Gliederungspunkte, zu denen die einzelnen Leitlinien Empfehlungen enthalten). Im folgenden Text zur Extraktion der Kernempfehlungen sind Aussagen, die auf Bereiche hinweisen, in denen potenzieller Änderungsbedarf des DMP besteht, in kursiver Schriftform verfasst.



Tabelle 10: Übersicht über die DMP-Gliederungspunkte, zu denen die einzelnen Leitlinien Empfehlungen enthalten

DMP – KHK-Gliederungspunkt / Aspekt ↓	LEITLINIE										
	NCC	DGPR	SIGN A	SIGN REP	AHA W	ESC A	FMS	NVL	ICSI	AHA SP	ESC PCI
Hinreichende Diagnostik											
Therapieplanung auf der Basis der Risikoabschätzung											
Allgemeine Maßnahmen											
Ernährungsberatung											
Raucherberatung											
Körperliche Aktivitäten											
Psychosomatische und psychosoziale Betreuung											
Medikamentöse Therapie											
Koronarangiographie											
Koronarrevaskularisation											
Rehabilitation											
Kooperation der Versorgungsebenen											

(Fortsetzung)

Tabelle 10 (Fortsetzung): Übersicht über die DMP-Gliederungspunkte, zu denen die einzelnen Leitlinien Empfehlungen enthalten

DMP – KHK-Gliederungspunkt / Aspekt ↓	LEITLINIE									
	AHA PCI	AKdÄ	NLSC	AHA CABG	NZGG CR	AHA ET	CCS	AHA A	SIGN R	NZGG REHA
Hinreichende Diagnostik										
Therapieplanung auf der Basis der Risikoabschätzung										
Allgemeine Maßnahmen										
Ernährungsberatung										
Raucherberatung										
Körperliche Aktivitäten										
Psychosomatische und psychosoziale Betreuung										
Medikamentöse Therapie										
Koronarangiographie										
Koronarrevaskularisation										
Rehabilitation										
Kooperation der Versorgungsebenen										

### 5.7.1 Hinreichende Diagnostik

In Abschnitt 1.3 „Hinreichende Diagnostik für die Aufnahme in ein strukturiertes Behandlungsprogramm“ der Anlage 5 werden die Kriterien zur Diagnose einer KHK und zur Aufnahme in das DMP dargestellt.

Die Empfehlungen zur Diagnosesicherung wurden folgendermaßen unterteilt:

1. Diagnostischer Algorithmus, bestehend aus klinischer Untersuchung und Anamnese
2. EKG, Belastungs-EKG
3. Nicht invasive Methoden der Diagnosesicherung
4. Koronarangiographie – in Anlehnung an die Struktur der Anlage 5 wurden Empfehlungen hierzu unter den „Empfehlungen zu therapeutischen Maßnahmen“ abgehandelt (siehe Tabelle 29: Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie)

In 6 der hier eingeschlossenen Leitlinien wurden Empfehlungen zu diagnostischen Maßnahmen abgegeben (SIGN A, ESC A, FMS, NVL, AHA ET, AHA A), wobei es in keiner dieser Leitlinien um eine hinreichende Diagnose ging. Die Empfehlungen gehen vor allem auf Maßnahmen zur Sicherung der Diagnose bzw. zur Abschätzung des Risikos und der Komorbidität der Patienten mit KHK ein. In manchen Leitlinien (z. B. ESC A) werden einzelne Laborparameter gelistet, die im Rahmen der diagnostischen Abklärung und Risikostratifizierung erhoben werden können oder sollten. Insgesamt sind die Empfehlungen der deutschen und internationalen Leitlinien sehr detailliert (siehe Tabelle 13). In manchen der Leitlinien wird zwischen Diagnose, Abschätzung des Risikos und Kontrolluntersuchungen unterschieden. Diese Unterteilung wird in Anlage 5 nicht vorgenommen.

Insgesamt lassen die hier eingeschlossenen Leitlinien keinen relevanten Änderungsbedarf im Vergleich zu den Kernaussagen der Anlage 5 in Bezug auf die hinreichende Diagnostik erkennen.

Die extrahierten Kernempfehlungen sind Tabelle 13 zu entnehmen.

### 5.7.2 Differenzierte Therapieplanung auf der Basis einer individuellen Risikoabschätzung

In Anlage 5 wird eine jährliche Erfassung der Risikofaktoren empfohlen, wobei die Faktoren Alter, Geschlecht, Diabetes mellitus, Fettstoffwechselstörung, Hypertonie, linksventrikuläre Funktionsstörung, Rauchen und genetische Disposition berücksichtigt werden sollten.

In 6 der eingeschlossenen Leitlinien (SIGN REP, ESC A, FMS, NVL, AHA SP, NZGG CR) werden Empfehlungen abgegeben, die für diesen Abschnitt potenziell relevant sind (Tabelle 14).

Neben einer Bewertung der o. g. Risikofaktoren wird in den internationalen Leitlinien auch die Berücksichtigung weiterer Risikofaktoren empfohlen, insbesondere die Berücksichtigung des Übergewichtes. In Bezug auf die zunehmend wichtige Rolle des Übergewichtes vergeben die entsprechenden Leitlinien folgende Empfehlungsgrade (GoR) bzw. Evidenzniveaus (LoE): NZGG REHA: GoR B, LoE 2++; SIGN REP: GoR , LoE 1+, 4; FMS: GoR n. a., LoE B; ESC A: GoR I, LoE B (Evidenz- und Empfehlungsgraduierung siehe Anhang D und E). Dieser Risikofaktor wird in Anlage 5 nicht explizit benannt. Die American Heart Association empfiehlt ebenfalls die Berechnung des Body-Mass-Index als Teil der Risikoabschätzung (GoR I; LoE B).

Die deutsche NVL schlägt kürzere Abstände für Kontakte mit dem Hausarzt vor (viertel- bis halbjährlich; GoR B, LoE n. a.), wobei neben der Risikoabschätzung die Erfragung von Symptomen, Wohlbefinden und emotionalen Aspekten sowie die Unterstützung der Verhaltensänderungen zur Risikomodifizierung auch Gegenstand dieser Empfehlungen sind.

Die extrahierten Kernempfehlungen sind Tabelle 14 zu entnehmen. Darüber hinaus befinden sich in den Leitlinien ESC A, AHA A und AHA ET Empfehlungen zum Einsatz diagnostischer Untersuchungen (z. B. Belastungs-EKG) zur Risikostratifizierung, die in Tabelle 13 aufgeführt wurden.

*Im Gegensatz zu Anlage 5 wird in zahlreichen Leitlinien das Übergewicht als wichtiges Kriterium zur Risikostratifizierung genannt.*

### **5.7.3 Allgemeine Maßnahmen**

In Anlage 5 werden unter 1.5.1 allgemeine Maßnahmen aufgelistet, die in Abhängigkeit vom Vorliegen bestimmter Risikofaktoren als nichtmedikamentöse Therapien durchgeführt werden sollten. Hierzu gehören laut Anlage 5 die Ernährungsberatung, die Raucherberatung, die körperliche Aktivität sowie die psychosomatische und psychosoziale Betreuung. Die Empfehlungen zu diesen Themen werden im Folgenden in gesonderten Kapiteln des Vorberichtes abgehandelt.

*In 8 der eingeschlossenen Leitlinien (NCC, SIGN REP, AHA W, DGPR, NVL, AHA SP, AHA A, NZGG REHA) werden nichtmedikamentöse therapeutische Maßnahmen empfohlen, die eine Ergänzung zum Inhalt von Anlage 5 darstellen (siehe Tabelle 15: Empfehlungen zur nichtmedikamentösen Therapie und allgemeine Maßnahmen). Diese Erweiterungen beziehen sich im Wesentlichen auf die Behandlung der Risikofaktoren Übergewicht und Rauchen sowie auf die präventive Maßnahme einer Grippeimpfung bei Patienten mit KHK.*

6 internationale Leitlinien (NCC, SIGN REP, AHA W, AHA SP, AHA A, NZGG REHA) empfehlen übereinstimmend eine Gewichtsreduktion bei übergewichtigen Patienten, wobei die American Heart Association das Erreichen eines BMI zwischen 18,5 und 24,9 kg/m<sup>2</sup> empfiehlt (GoR I; LoE B, C). In Neuseeland wird eine Reduktion von 10 % des Körpergewichtes empfohlen (GoR A; LoE 1+). Um eine Gewichtsreduktion zu erreichen und ein Idealgewicht längerfristig erhalten zu können, wird eine Kombination aus diätetischen Maßnahmen, körperlicher Aktivität und eventuell verhaltenspsychologischen Interventionen befürwortet (siehe Tabelle 15). In einer Leitlinie (NZGG REHA) wird von einseitigen Diäten abgeraten, die nicht im Einklang mit einer ausgewogenen Ernährung stehen (GoR D). Deutsche Leitlinien (NVL, DGPR) empfehlen eine Gewichtsreduktion von 5 % bis 10 % für Patienten mit einem BMI zwischen 27 und 35 kg/m<sup>2</sup> und von mehr als 10 % für Patienten mit einem BMI über 35 kg/m<sup>2</sup> (NVL: GoR B; DGPR: LoE B, GoR I).

*In Erweiterung von Anlage 5 empfehlen die o. g. Leitlinien eine Gewichtsreduktion unterschiedlichen Ausmaßes.*

Die American Heart Association empfiehlt bei Patienten mit KHK darüber hinaus die Impfung gegen das Influenzavirus (GoR I; LoE B) in Anlehnung an die Empfehlungen des US Centers for Disease Control. Dies wird auch in der deutschen NVL empfohlen (GoR A). *Diese Empfehlung zur Grippeimpfung bei KHK-Patienten stellt ebenfalls eine Erweiterung zu den Ausführungen in Anlage 5 dar.*

Die American Heart Association spricht sich gegen den Einsatz von Akupunktur als allgemeine Maßnahme zur Risikoreduktion bei KHK aus (GoR III; LoE C).

Die extrahierten Kernempfehlungen sind Tabelle 15 zu entnehmen.

#### **5.7.4 Ernährungsberatung**

In Anlage 5 wird unter 1.5.1.1 erwähnt, dass der behandelnde Arzt den Patienten über eine KHK-spezifische gesunde Ernährung beraten soll. In 14 der eingeschlossenen Leitlinien werden Empfehlungen zu einer KHK-spezifischen Ernährung gegeben (SIGN REP, AHA W, DGPR, NCC, FMS, NVL, ICSI, AHA SP, AKdÄ, NLSC, NZGG CR, CCS, NZGG REHA, AHA A) (Tabelle 16). Es wird eine ausgewogene ballaststoffreiche Ernährung, bestehend aus reichlich Obst, Gemüse und Vollkornprodukten und wenig gesättigten Fetten, Salz und Alkohol, empfohlen (NCC, SIGN REP, AHA W, NVL, AHA SP, NLSC, NZGG CR, CCS, NZGG REHA). Der Konsum von Omega-3-Fettsäuren, zum Beispiel in Form von mindestens 2 Fischmahlzeiten pro Woche, wird von den meisten Leitlinien angeraten (NCC, SIGN REP, AHA W, DGPR, AHA SP, NZGG CR, NZGG REHA).

Eine Supplementierung mit Antioxidanzien oder Folsäure wird nicht empfohlen (NCC, SIGN REP, AHA W, FMS, AKdÄ, NZGG CR, AHA A, NZGG REHA).

5 Leitlinien weisen auf den Nutzen von Ernährungsberatungen bzw. Verhaltenstraining hin (SIGN REP, DGPR, NCC, NZGG CR, NZGG REHA).

Die extrahierten Kernempfehlungen sind Tabelle 16 zu entnehmen.

### 5.7.5 Raucherberatung

In Anlage 5 wird unter 1.5.1.2 empfohlen, dass der behandelnde Arzt den Raucherstatus regelmäßig überprüfen und den Raucher zum Aufhören motivieren soll. Dabei sollte bei änderungsbereiten Rauchern professionelle Beratungshilfe angeboten werden.

In 13 der eingeschlossenen Leitlinien werden Empfehlungen bezüglich des Rauchens abgegeben (SIGN REP, AHA W, DGPR, NCC, FMS, NVL, AHA SP, AKdÄ, NLSC, NZGG CR, CCS, AHA A, NZGG REHA) (vgl. Tabelle 17).

In 10 dieser Leitlinien wird neben einer professionellen Unterstützung auch die Nikotinersatztherapie und/oder eine medikamentöse Therapie (z. B. mit Bupropion oder Nortryptilin) ausdrücklich empfohlen (NCC, SIGN REP, AHA W, DGPR, NVL, AHA SP, AKdÄ, CCS, AHA A, NZGG REHA). Die Empfehlungen bezüglich der medikamentösen Unterstützung bzw. Nikotinersatztherapie erreichen den jeweiligen höchsten Empfehlungsgrad in 6 dieser Leitlinien, wobei entweder die Cochrane-Übersichten von Silagy et al. [46] und von Hughes et al. [47] oder andere Empfehlungen bzw. Leitlinien als Evidenzgrundlage angegeben werden. Die deutsche AKdÄ stellt auch fest, dass Nikotinersatztherapie und Bupropion für die Verbesserung der Abstinenzrate wirksam sind (LoE ↑↑), und weist auf die fehlenden Wirksamkeitsnachweise für Akupunktur oder Hypnose hin (LoE ↔). Die deutsche NVL empfiehlt, die Nikotinersatztherapie bzw. medikamentöse Therapien „änderungsbereiten Rauchern“ anzubieten (GoR B). Die deutsche DGPR und die britische NCC empfehlen die Nikotinersatztherapie bei Rauchern, bei denen Beratung und Motivation nicht Erfolg versprechend sind (DGPR LoE A, GoR I, NCC GoR A).

4 internationale Leitlinien thematisieren das passive Rauchen (SIGN REP, AHA W, AHA SP, NZGG REHA). In 3 wird empfohlen, dem Patienten eine Reduktion der passiven Tabakexposition dringend anzuraten (bei 2 mit der höchsten, bei einer mit dem zweithöchsten Evidenzgrad). In einer Leitlinie aus Neuseeland (NZGG REHA) wird darüber hinaus empfohlen, die Angehörigen der Patienten dringend zur Abstinenz zu motivieren, wobei diese Empfehlung mit dem niedrigsten Grad gekennzeichnet wird (Expertenmeinung bzw. Extrapolation aus Studien mit niedrigem Evidenzlevel). Die deutsche DGPR spricht diese Empfehlung ebenso aus, wobei hier die Evidenzstufe und der Empfehlungsgrad höher sind (LoE B, GoR I).

*Sowohl die Empfehlungen zur Nikotinersatztherapie bzw. zur medikamentösen Raucherbehandlung, als auch die Beratung bezüglich des passiven Rauchens stellen eine Erweiterung der in Anlage 5 gestellten Anforderungen an strukturierte Behandlungsprogramme dar.*

Die extrahierten Kernempfehlungen sind Tabelle 17 zu entnehmen.

### **5.7.6 Körperliche Aktivitäten**

In Anlage 5 wird unter 1.5.1.3 empfohlen, dass Patienten zur körperlichen Aktivität motiviert werden sollten, ohne dabei allerdings mögliche Interventionen zu spezifizieren.

In 10 Leitlinien werden Empfehlungen zu körperlicher Aktivität bei KHK-Patienten gegeben (NCC, SIGN REP, AHA W, NVL, AHA SP, FMS, NLSC, NZGG CR, NZGG REHA, AHA A). Sie stehen nicht im Widerspruch zu den Aussagen der Anlage 5 RSAV, sondern stellen eine Ergänzung bzw. Spezifizierung dar.

In 7 der 10 Leitlinien wird empfohlen, dass sich KHK-Patienten möglichst täglich mindestens 30 Minuten moderat bewegen sollen (NCC [GoR:GPP], AHA W [GoR:I], NVL [GoR:B], AHA SP [GoR:I], NZGG CR [GoR:C], NZGG REHA [GoR:B], AHA A [GoR:IIa]).

Darüber hinaus befürworten 3 Leitlinien ein professionell supervisiertes Trainingsprogramm, insbesondere für Hochrisikogruppen (NCC [GoR:GPP], AHA SP [GoR:I], NZGG REHA [GoR:B]).

In 2 Leitlinien wird darauf hingewiesen, dass KHK-Patienten von übermäßiger körperlicher Anstrengung abgeraten bzw. zuvor Rücksprache mit dem Arzt gehalten werden soll (NZGG REHA [GoR:C], NZGG CR [GoR:B]).

Die extrahierten Kernempfehlungen sind Tabelle 18 zu entnehmen.

### **5.7.7 Psychosomatische und psychosoziale Betreuung**

In Anlage 5 wird unter 1.5.1.4 auf die Notwendigkeit einer psychotherapeutischen, psychiatrischen und/oder verhaltenstherapeutischen Betreuung mancher KHK-Patienten hingewiesen. Insbesondere soll auf das Vorliegen von Depression geachtet werden und entsprechende Maßnahmen ergriffen werden.

In 8 Leitlinien werden Aussagen zu psychosomatischer und psychosozialer Betreuung von KHK-Patienten gemacht (SIGN A, SIGN REP, NZGG REHA, SIGN R, NVL, AHA W, NLSC, AHA A). Die Angaben decken sich in der Zusammenfassung mit dem Text von Anlage 5 aus dem Jahr 2003.

Insbesondere wird auf die Notwendigkeit des Depressionsscreenings und der Selbstbeurteilung des Patienten hingewiesen (SIGN REP, SIGN R, NVL, NZGG REHA, AHA W, NLSC), aus denen die Erfordernis psychotherapeutischer, psychiatrischer und/oder verhaltensmedizinischer Maßnahmen abgeleitet werden soll.

Die extrahierten Kernempfehlungen sind Tabelle 19 zu entnehmen.

## 5.7.8 Medikamentöse Therapie

### 5.7.8.1 Thrombozytenaggregationshemmer

In insgesamt 13 Leitlinien wird eine Empfehlung zum Einsatz von Thrombozytenaggregationshemmern für alle Patienten mit KHK abgegeben (NCC, NVL, AKdÄ, CCS, NZGG REHA, NZGG CR, SIGN A, AHA SP, AHA W, ICSI, FMS, AHA A, ESC PCI). Diese Empfehlungen stehen nicht im Widerspruch zu den Aussagen von Anlage 5, spezifizieren diese aber.

Die Leitlinien empfehlen übereinstimmend mit dem jeweils höchsten Empfehlungsgrad, dass jeder Angina-pectoris-Patient lebenslang mit Acetylsalicylsäure (75–325 mg/d) behandelt werden soll, sofern keine Kontraindikationen vorliegen (ASS-Allergie oder -Intoleranz, Ulkus, Blutungsneigung, Schwangerschaft). Diese Empfehlung ist in Anlage 5 abgedeckt.

8 Leitlinien befürworten bei Kontraindikationen bzw. Unverträglichkeit einer ASS-Gabe die Behandlung mit Clopidogrel (75 mg/d) (NCC [GoR:A], NVL [GoR:A], NZGG CR [GoR:A], ESC A [GoR:IIa], AHA A [GoR: IIa], SIGN A [GoR:1++], AKdÄ [keine Angaben zu GoR], FMS [keine Angaben zu GoR]).

Nach Akutem Koronarsyndrom oder PCI wird von 3 Leitlinien eine bis zu 12-monatige Kombination aus ASS und Clopidogrel empfohlen (NCC [GoR:A], SIGN A [GoR:I], ESC PCI [GoR:I]).

Die extrahierten Kernempfehlungen sind Tabelle 20 zu entnehmen.

### 5.7.8.2 Betablocker und Kalziumantagonisten

Der Einsatz von Betablockern wird von 12 Leitlinien thematisiert und mit dem jeweils höchsten Empfehlungsgrad für alle KHK-Patienten empfohlen (NCC, NVL, CCS, NZGG REHA, SIGN A, NZGG CR, ESC A, AHA W, AKdÄ, FMS, ICSI, AHA A). Die Empfehlungen decken sich grundsätzlich mit den Aussagen von Anlage 5.

Ergänzend zu diesen Aussagen wird in 6 Leitlinien der Nutzen von Betablockern bei Patienten mit KHK und zusätzlicher eingeschränkter LVEF bzw. Herzinsuffizienz unterstrichen (NCC, NVL, NZGG CR, SIGN A, ESC A, FMS, jeweils höchster Empfehlungsgrad) (siehe Tabelle 21).

7 Leitlinien geben Empfehlungen zum Einsatz von Kalziumantagonisten bei Betablockerunverträglichkeiten bzw. zur Kombination von Betablockern und Kalziumantagonisten (NCC, ICSI, SIGN A, FMS, AHA A, ESC A, NZGG CR, jeweils höchster Empfehlungsgrad). Es wird empfohlen, nur lang wirkende bzw. Retardformulierungen kurz wirkender Kalziumantagonisten zu verwenden (AHA A, NZGG CR).



Kalziumantagonisten stellen als Monotherapie für die antianginöse Therapie der Angina pectoris gegenüber Betablockern das Mittel der zweiten Wahl dar (NVL, AKdÄ, AHA A). Dies entspricht auch den Aussagen der deutschen NVL.

Die extrahierten Kernempfehlungen sind Tabelle 22 zu entnehmen.

### 5.7.8.3 Nitrate

6 Leitlinien geben Empfehlungen zum Einsatz von Nitraten bei der Koronaren Herzkrankheit (NVL, SIGN A, AHA A, ESC A, AKdÄ, NZGG CR). Diese decken sich mit den Aussagen von Anlage 5.

Die extrahierten Kernempfehlungen sind Tabelle 23 zu entnehmen.

### 5.7.8.4 ACE-Hemmer / Angiotensin-II-Blocker / Aldosteronblocker

In 9 Leitlinien werden Aussagen zum Einsatz von ACE-Hemmern bei Patienten mit Koronarer Herzkrankheit gemacht (NCC, SIGN A, NVL, NZGG REHA, NZGG CR, AHA SP, ESC A, AHA W, AHA A). *Diese Empfehlungen stellen eine Erweiterung im Vergleich zu den Aussagen der Anlage 5 dar.*

In allen 9 Leitlinien wird die Anwendung von ACE-Hemmern bei Patienten mit KHK und Herzinsuffizienz oder einer LVEF  $\leq 40\%$  oder Diabetes oder Hypertonie mit dem jeweils höchsten Empfehlungsgrad angeraten. In 4 dieser Leitlinien wird darüber hinaus empfohlen, auch unabhängig vom Vorliegen dieser zusätzlichen Risikofaktoren ACE-Hemmer bei allen Patienten nach Myokardinfarkt einzusetzen (NCC, AHA W, ESC A, AHA A). Uneinheitlich wird der Nutzen für alle übrigen KHK-Patienten beurteilt. Während in 3 Leitlinien der höchste Empfehlungsgrad uneingeschränkt für alle KHK-Patienten gilt (SIGN A, NZGG REHA, NZGG CR), weisen 3 Leitlinien auf die unklare Evidenzlage für KHK-Patienten ohne die oben beschriebenen Risikofaktoren hin (ESC A [GoR:Ia], AHA A [GoR:Ia], AHA SP [GoR:IIa für Patienten mit normaler LVEF, bei denen kardiovaskuläre Risikofaktoren gut eingestellt sind und bei denen eine Revaskularisierung durchgeführt wurde; GoR:I für alle anderen]). In der NVL wird darauf hingewiesen, dass ACE-Hemmer bei Patienten mit KHK und normaler kardialer Pumpfunktion als Medikamente der zweiten Wahl zur Blutdrucksenkung angesehen werden.

4 Leitlinien geben Empfehlungen zum Einsatz von Angiotensin-II-Blockern im Falle von ACE-Hemmer-Unverträglichkeit bei Patienten mit KHK und Herzinsuffizienz oder einer LVEF  $\leq 40\%$  oder Diabetes bzw. nach Myokardinfarkt (NCC [GoR:A], AHA SP [GoR:I], AHA W [GoR:I], NVL [GoR:B]). Die Leitlinie der AHA (AHA 06 Sec) empfiehlt darüber hinaus den Einsatz von Angiotensin-II-Blockern auch bei allen anderen KHK-Patienten mit ACE-Hemmer-Unverträglichkeit (GoR:I). *Diese Substanzgruppe ist nicht Bestandteil von*

*Anlage 5, sodass diese Empfehlungen eine Ergänzung zu den bisherigen Empfehlungen darstellen.*

Der Einsatz von Aldosteronblockern wird von 3 Leitlinien thematisiert (NCC, AHA SP, AHA W). Für Patienten nach Myokardinfarkt, die keine signifikante renale Dysfunktion aufweisen, bereits mit ACE-Hemmern und Betablockern behandelt werden und eine LVEF  $\leq 40\%$ , Herzinsuffizienz und Diabetes haben, wird die Anwendung von Aldosteronblockern von allen 3 Leitlinien mit dem höchsten Empfehlungsgrad angeraten. *Der Einsatz von Aldosteronblockern in den genannten Patientengruppen stellt eine potenziell relevante Erweiterung zu den in Anlage 5 genannten Empfehlungen dar.*

Die extrahierten Kernempfehlungen sind Tabelle 24 zu entnehmen.

### **5.7.8.5 Lipidsenker**

13 Leitlinien geben Empfehlungen zum Einsatz von Lipidsenkern bei Patienten mit Koronarer Herzkrankheit (NCC, NZGG REHA, NZGG CR, CCS, ESC A, ICSI, AKdÄ, NVL, SIGN A, AHA A, AHA W, DGPR, FMS). *Auch diese Empfehlungen stehen nicht im Widerspruch zu den Aussagen des Koordinierungsausschusses, erweitern diese allerdings.*

9 der 11 Leitlinien empfehlen einen generellen Einsatz von Statinen bei KHK-Patienten, unabhängig vom Ausgangslipidwert der Patienten (NCC, AHA W, DGPR, SIGN A, NVL, ESC A, ICSI, AKdÄ, NZGG REHA, jeweils höchster Empfehlungsgrad). Eine weitere Leitlinie empfiehlt den grundsätzlichen Einsatz von Statinen für KHK-Patienten nach Myokardinfarkt (NZGG CR). In der Leitlinie der AHA A wird der Einsatz von Statinen bei KHK-Patienten mit einem Ausgangslipidwert von  $\geq 130$  mg/dl unterstützt (GoR:I), bei einem Ausgangslipidwert von 100–129 mg/dl wird jedoch empfohlen, auch andere (nichtmedikamentöse) Maßnahmen in Erwägung zu ziehen (GoR:IIa). Nur 4 Leitlinien machen Angaben zu der Höhe des LDL-Zielwertes (AKdÄ, AHA W, AHA A, NZGG CR). Dieser sollte demnach einen Wert  $< 100$  mg/dl erreichen.

4 Leitlinien thematisieren darüber hinaus den Einsatz von Fibraten (AKdÄ, AHA W, ESC A, AHA A). Sie werden als Mittel der zweiten Wahl angesehen und insbesondere bei Patienten mit metabolischem Syndrom empfohlen (niedrige HDL-Werte, hohe Triglyceridwerte, Übergewicht: AHA W [GoR:Iia], ESC A [GoR:Iib], AHA A [GoR:Iia], AKdÄ [keine Angabe zu GoR]). Der Nutzen einer Kombinationstherapie aus Statinen und Fibraten bei KHK-Patienten mit niedrigen HDL- und hohen Triglyceridwerten wird als unklar bewertet (ESC A [GoR:Iib]).

Die extrahierten Kernempfehlungen sind Tabelle 25 zu entnehmen.

### 5.7.8.6 Sonstige Koronartherapeutika

Eine Leitlinie (ESC A) erwähnt darüber hinaus die Möglichkeit, bei KHK-Patienten Ranolazin als Zusatztherapie oder bei Unverträglichkeit der konventionellen antianginösen Therapie als Alternativtherapie zu geben (GoR:IIb). Eine weitere Leitlinie diskutiert den Einsatz von Antikoagulanzen als Zusatztherapie zu ASS (AHA A [GoR:IIb]).

5 Leitlinien machen Angaben zu Maßnahmen, die bei Patienten mit Koronarer Herzkrankheit nicht empfohlen werden können: Antiarrhythmika (außer Betablocker), Langzeittherapie mit Vitamin-K-Antagonisten bei KHK-Patienten ohne Myokardinfarkt, Chelattherapie, Trapidil, Molsidomin, Dipyridadmol, Komplementär- bzw. Alternativtherapien (NCC, AHA A, AKdÄ, NZGG CR). *Die genannten Substanzgruppen finden bisher in Anlage 5 keine Erwähnung.*

Die extrahierten Kernempfehlungen sind Tabelle 26 zu entnehmen.

### 5.7.8.7 Antihypertensive Therapie

5 Leitlinien geben separate Angaben zur Therapie einer Hypertonie bei KHK-Patienten (NCC, NVL, AKdÄ, AHA W, SIGN A). Eine medikamentöse antihypertensive Therapie gilt demnach als indiziert, wenn der Blutdruck einen Wert von 140/90 mm Hg, bzw. 130/80 mm Hg (bei Patienten mit zusätzlicher Nierenerkrankung oder Diabetes) übersteigt. Diuretika und Betablocker gelten als Antihypertensiva der ersten Wahl. ACE-Hemmer sollen v. a. bei KHK-Patienten mit verringerter koronarer Pumpfunktion oder Diabetes eingesetzt werden.

*Empfehlungen zur antihypertensiven Therapie bei KHK-Patienten sind bisher nicht Bestandteil von Anlage 5.*

Die extrahierten Kernempfehlungen sind Tabelle 27 zu entnehmen.

### 5.7.8.8 Hormonersatztherapie

Die 4 Leitlinien, die sich zum Thema Hormonersatztherapie äußern, kommen übereinstimmend zu dem Ergebnis, dass eine Hormongabe weder als Primär- noch als Sekundärprävention bei Patienten mit KHK empfohlen werden kann (NZGG CR, AHA A, AHA W, FMS). Diese Empfehlung leitet sich im Wesentlichen aus den Ergebnissen der Womens Health Initiative (WHI) Studie und der Heart and Estrogen/Progestin Replacement Studie (HERS) ab.

*Der Einsatz der Hormonersatztherapie ist nicht in Anlage 5 thematisiert.*

Die extrahierten Kernempfehlungen sind Tabelle 28 zu entnehmen.

### 5.7.9 Koronarangiographie

In Anlage 5 wird der Einsatz der Koronarangiographie in Anlehnung an die Empfehlungen der American Heart Association empfohlen.

In 4 der eingeschlossenen Leitlinien werden Empfehlungen zur Indikationsstellung der Koronarangiographie gegeben (SIGN A, ESC A, NVL, AHA A). In den Leitlinien der ESC und der ACC/AHA wird zwischen der Anwendung der Koronarangiographie zur Diagnose bei Verdacht auf bzw. Verschlechterung der KHK und derjenigen zur Risikostratifizierung unterschieden, wobei die Empfehlungen in beiden Situationen teilweise überlappend sind. *Eine solche Differenzierung bei der Indikationsstellung der Koronarangiographie wird in Anlage 5 nicht vorgenommen.*

Die deutsche NVL gibt hierzu 5 Empfehlungen ab (alle mit dem höchsten Empfehlungsgrad), die eine Auswahl der Empfehlungen der ACC/AHA darstellen. Die in der NVL zitierten Indikationen zur Durchführung einer Koronarangiographie entsprechen fast im Wortlaut den in Anlage 5 aufgelisteten Indikationen.

Die Indikationslisten der Leitlinien, die zu diesem Aspekt ausführliche Empfehlungen abgeben, stimmen nur in wenigen Empfehlungen vollständig überein. Es gibt sowohl in der Anzahl der aufgelisteten Indikationen als auch in der Formulierung bzw. den vergebenen Empfehlungsgraden zwischen den Leitlinien Unterschiede. So empfiehlt z. B. die NVL im Einklang mit Anlage 5 die Koronarangiographie für „Patienten mit Hochrisikomerkmale bei der nicht invasiven Vortestung unabhängig von der Schwere der Angina“ (GoR A, LoE n. a.). Hingegen empfiehlt die European Society of Cardiology eine Koronarangiographie auch bei Patienten mit Mittelrisiko (GoR IIa, LoE C). Laut ACC/AHA wird der Einsatz einer Koronarangiographie bei nicht eindeutigen nicht invasivem Befund empfohlen, sofern der Nutzen der sicheren Diagnose die Risiken und Kosten der Koronarangiographie übersteigt (GoR IIa, LoE C).

*Im Vergleich zu der deutschen NVL und Anlage 5 wird bei den ESC- und ACC/AHA-Leitlinien somit das Indikationsspektrum der Koronarangiographie erweitert.*

Die extrahierten Kernempfehlungen sind Tabelle 29 zu entnehmen.

### 5.7.10 Revaskularisation

Anlage 5 listet unter dem Abschnitt 1.5.3.2 „Interventionelle Therapie und Koronarrevaskularisation“ Indikationen zur PCI bzw. CABG aus der Leitlinie der ACC/AHA „Chronic Stable Angina“ aus dem Jahr 2002 (AHA A) auf. Insgesamt werden die 8 Empfehlungen mit einem Empfehlungsgrad I und die 3 Empfehlungen mit einem Empfehlungsgrad IIa für Patienten mit einer „stable angina“ (siehe Tabelle 11) aufgelistet, Empfehlungen des Grads Iib oder III (negative Empfehlungen) wurden in Anlage 5 nicht aufgelistet. Diese Leitlinie differenzierte zwischen asymptomatischen Patienten und Patienten mit stabiler Angina, wobei die Empfehlungen der Klasse I für beide Gruppen identisch sind (siehe Tabelle 11).

*Inzwischen hat die ACC/AHA 2 Leitlinien veröffentlicht (AHA CABG und AHA PCI), bei denen die Indikationen sich zum Teil bedeutend verändert haben. Es finden sich keine Empfehlungen mit Grad I zur PCI mehr, sodass in Situationen, für die in den Leitlinien der ACC/AHA von 2002 entweder eine PCI oder CABG empfohlen wurde, jetzt die CABG zu bevorzugen wäre (in diesen Situationen sind laut der Leitlinie zu CABG die Empfehlungen beim Grad I geblieben [mit Ausnahme der Restenose einer PCI]) (siehe Tabelle 11). Darüber hinaus wurde eine neue Indikation für die CABG empfohlen: Patienten mit proximaler RIA-Stenose > 70 % (GoR I, LoE A). Auch die Empfehlungen zur PCI der ACC/AHA haben sich in der Formulierung verändert. Hier besteht potentieller Änderungsbedarf des DMP KHK.*

Tabelle 11: Veränderungen der Empfehlungen der Anlage 5 laut ACC / AHA

Empfehlung Anlage 5	AHA A		AHA CABG		AHA PCI	
	GoR	LoE	GoR	LoE	GoR	LoE
Koronare Bypassoperationen (ACVB) für Patienten mit signifikanter linker Hauptstammstenose	I	A	I	A	-	-
ACVB für Patienten mit Dreigegefäßerkrankung. Der Überlebensvorteil ist größer bei Patienten mit verminderter linksventrikulärer Funktion (ejection fraction < 50 %)	I	A	I	A	-	-
ACVB für Patienten mit Zweigegefäßerkrankung mit einer signifikanten, proximalen Stenose des RIA und entweder verminderter linksventrikulärer Funktion (ejection fraction <50 %) oder nachweisbarer Ischämie bei nicht invasiver Untersuchung	I	A	I	A	-	-
PCI für Patienten mit Zwei- oder Dreigegefäßerkrankung mit einer signifikanten proximalen RIA-Stenose und mit einem Situs, der für eine kathetergestützte Therapie geeignet ist, und mit normaler linksventrikulärer Funktion und ohne behandelten Diabetes mellitus	I	B	-	-	Iia*	B*

(Fortsetzung)

Tabelle 11 (Fortsetzung): Veränderungen der Empfehlungen der Anlage 5 laut ACC / AHA

PCI oder ACVB für Patienten mit Ein- oder Zweigefäßerkrankung ohne signifikante proximale RIA-Stenose, aber mit einem großen Areal vitalen Myokardiums und Hochrisikokriterien nach nicht invasiver Untersuchung.	I	B	I	B	IIb	B
ACVB für Patienten mit Ein- oder Zweigefäßerkrankung ohne signifikante proximale RIA-Stenose, die einen plötzlichen Herzstillstand oder anhaltende ventrikuläre Tachykardie überlebt haben	I	C	n. g.	n. g.	n. g.	n. g.
PCI oder ACVB für Patienten mit vorausgegangenen PTCA und Rezidivstenose, zusammen mit einem großen Areal von vitalem Myokardium oder mit Hochrisikokriterien nach nicht invasiver Untersuchung	I	C	n. g.	n. g.	IIa	C
PCI oder ACVB bei Patienten nach erfolgloser medikamentöser Therapie, bei denen eine Revaskularisierung mit zumutbarem Risiko durchgeführt werden kann	I	B	I	B	IIb	B
Wiederholte ACVB bei Patienten mit multiplen Bypass-Stenosen, insbesondere bei signifikanter Stenose eines Bypasses zum RIA. PCI kann angezeigt sein für isolierte Bypass-Stenosen oder multiple Stenosen bei Patienten mit Kontraindikation für wiederholte ACVB	IIa	C	I	B	IIa	C
PCI oder ACVB für Patienten mit Ein- oder Zweigefäßerkrankung ohne signifikante proximale RIA-Stenose, aber mit einem mittelgroßen Areal von vitalem Myokardium und nachweisbarer Ischämie bei der nicht invasiven Untersuchung.	IIa	B	IIa	B	IIa*	B*
* Höchstens, da die Empfehlung nicht in diesem Wortlaut wiederzufinden ist n. g.: nicht genannt						

In 6 weiteren Leitlinien werden auch Empfehlungen zur Revaskularisation abgegeben (NCC, SIGN A, NVL, ESC A, ESC PCI 06, FMS) (siehe Tabelle 30), die vergleichbar mit den amerikanischen Empfehlungen sind. Allerdings erhält die PCI in den europäischen Leitlinien (SIGN A, ESC A, ESC PCI) bei ausgewählten Indikationen den höchsten Empfehlungsgrad, wenn die Symptomatik unter maximaler medikamentöser Therapie nicht kontrollierbar ist.

Die extrahierten Kernempfehlungen sind Tabelle 30 zu entnehmen.

### 5.7.11 Rehabilitation

In Anlage 5 werden die Grundzüge der Rehabilitation für KHK-Patienten beschrieben. Diese bestehen aus 4 Ebenen (somatische, psychosoziale, edukative und sozialmedizinische) und 3 Phasen (Frührehabilitation während der Akutbehandlung, Anschlussrehabilitation nach der Akutbehandlung und langfristige Nachsorge).

Insgesamt finden sich in 8 der eingeschlossenen Leitlinien Empfehlungen zum Inhalt bzw. der Organisation von Rehabilitation bei KHK (NCC-PC Sec 07, DGPR, FMS, NVL, NLSC, CCS, SIGN R, NZGG REHA). Diese Empfehlungen sind in der folgenden Tabelle 31 aufgelistet. Darüber hinaus enthalten 8 der eingeschlossenen Leitlinien Empfehlungen bzgl. der Indikation zur Rehabilitation, die im nächsten Abschnitt 1.7 „Kooperation der Versorgungsebenen“ (siehe Tabelle 31) dargestellt werden, da im DMP die Empfehlungen zur Veranlassung einer Rehabilitationsmaßnahme in diesem Abschnitt zu finden sind.

Die Empfehlungen bzgl. der Inhalte der Rehabilitation stellen keine Erweiterungen bzw. Veränderung im Vergleich zu Anlage 5 dar. Die dort dargestellten konzeptionellen Grundlagen und Inhalte der Rehabilitation sind mit denen der internationalen und deutschen (NVL, DGPR) Empfehlungen vergleichbar. Teilweise gehen die Empfehlungen tiefer ins Detail, insbesondere bei der Beschreibung der Bestandteile der Rehabilitation (z. B. Training), als die Ausführungen in Anlage 5. Die DGPR gibt ausführliche Empfehlungen zu allen Bereichen der Rehabilitation.

Empfehlungen bezüglich der Organisation bzw. des Managements der Rehabilitation finden sich in 4 der eingeschlossenen Leitlinien, jedoch nicht in Anlage 5. Nur wenige dieser Empfehlungen erreichen jedoch den höchsten Empfehlungsgrad. Darüber hinaus sind viele dieser Empfehlungen sehr kontextspezifisch und deshalb wenig übertragbar. Diese Empfehlungen stammen überwiegend aus Leitlinien, die in erster Linie Empfehlungen zur praktischen Durchführung der Rehabilitation bei KHK beinhalten. Sie sind daher zu spezifisch für Leitlinien, deren Zielsetzung die gesamte Versorgung der KHK ist, und daher wahrscheinlich auch zu spezifisch für eine Berücksichtigung im DMP KHK.

Die extrahierten Kernempfehlungen sind Tabelle 31 zu entnehmen.

### **Kooperation der Versorgungsebenen**

Keine der eingeschlossenen internationalen Leitlinien widmet diesem Thema ein gesondertes Kapitel. *Dennoch finden sich in 7 der eingeschlossenen internationalen Leitlinien (SIGN A, AHA W, NZGG CR, CCS, AHA A, SIGN R, NZGG REHA) vereinzelte Empfehlungen unter anderen Rubriken (z. B. Rehabilitation), die für diesen Abschnitt der Anlage 5 zu RSAV bedingt relevant sein könnten.* Diese Empfehlungen sind in Tabelle 32 extrahiert worden. Daraus lassen sich jedoch keine Neuigkeiten im Vergleich zu den in Deutschland geltenden Anforderungen an strukturierte Behandlungsprogramme erkennen. Neben den in Tabelle 32 berücksichtigten Empfehlungen finden sich in manchen Leitlinien vereinzelte Hinweise auf die Notwendigkeit bzw. Angemessenheit einer Überweisung zu bzw. Beratung mit Fachärzten oder anderen Berufsgruppen (z. B. Ernährungsberatern). Diese Empfehlung entspricht sinngemäß den im Absatz 1.7.2 der Anlage 5 aufgeführten Kooperationsempfehlungen.

Die NVL, die u. a. an den Herausgeber der strukturierten Behandlungsprogramme (DMP) adressiert ist, gibt Empfehlungen zu diesem Aspekt, die – mit Ausnahme der Indikationen zur

Rehabilitation – jedoch nicht mit Empfehlungsgraden gekennzeichnet sind und deshalb in Tabelle 32 nicht extrahiert wurden. Diese entsprechen teilweise dem Wortlaut der Anlage 5 des RSAV und stellen keine inhaltliche Abweichung von bzw. Ergänzung zu Letzterer da.

Die Leitlinie der DGPR erläutert ebenfalls die Indikationen zur Durchführung einer Rehabilitationsmaßnahme bei KHK; diese entsprechen den in Anlage 5 unter 1.7.4 aufgeführten Indikationen.



## 5.8 Zusammenfassung der Extraktion der Kernempfehlungen

Die Empfehlungen der hier eingeschlossenen Leitlinien sind im Vergleich zu denen von Anlage 5 (7. RSA-ÄndV vom 28.04.2003) überwiegend ausführlicher und detaillierter ausgeführt. Dennoch stimmt der Kern der Empfehlungen der Leitlinien mit den Vorgaben des DMP überwiegend überein, so dass sich hier bis auf wenige Bereiche kein relevanter Änderungs- bzw. Ergänzungsbedarf identifizieren lässt. Für einige Bereiche des DMP besteht jedoch potenzieller Änderungs- bzw. Ergänzungsbedarf (s. Tabelle 12).

Dies betrifft insbesondere die Bereiche der Therapieplanung auf Basis individueller Risikoabschätzung, allgemeine Maßnahmen (insbesondere in Bezug auf eine Reduzierung von Übergewicht, die Behandlung des Risikofaktors Rauchen und die präventive Grippeimpfung des KHK-Patienten), einzelne Bereiche der medikamentösen Therapie sowie eine Veränderung in der Indikationsstellung zur Koronarangiographie bzw. zur Koronarrevaskularisation.

Im Bereich der medikamentösen Therapie gibt es im Wesentlichen 4 große Substanzgruppen, hinsichtlich derer die Spezifizierungen der gesichteten Leitlinien möglicherweise eine Änderung des DMP Empfehlungstextes notwendig machen könnten. So wird in einigen Leitlinien der Einsatz von ACE-Hemmern bei KHK-Patienten grundsätzlich – auch ohne zusätzliche Herzinsuffizienz oder eingeschränkte LVEF – beziehungsweise zumindest nach Myokardinfarkt, bei zusätzlichem Diabetes oder zusätzlicher Hypertonie empfohlen. Der Einsatz von Aldosteronblockern wird in bestimmten Patientengruppen (nach Myokardinfarkt, keine signifikante renale Dysfunktion, bereits mit ACE-Hemmern und Betablockern behandelt und eine LVEF  $\leq 40$  %, mit bestehender Herzinsuffizienz und Diabetes) mit den höchsten Empfehlungsgraden belegt. Die Therapie mit Lipidsenkern wird von einigen Leitlinien grundsätzlich, unabhängig vom LDL-Wert der KHK-Patienten, empfohlen, während andere den Einsatz von der Höhe des Ausgangslipidwertes abhängig machen. Eine Substanzgruppe, die in den Empfehlungen des Koordinierungsausschusses bislang nicht thematisiert wurde, ist die Gruppe der postmenopausalen Hormone. Überwiegend aufgrund der Ergebnisse der WHI und der HERS Studien wird die Hormonersatztherapie in den Leitlinien übereinstimmend nicht als Sekundärprävention bei Patienten mit KHK empfohlen.

Letztlich zeigt die Untersuchung, dass in den Bereichen „Koronarangiographie“ und „Revaskularisation“ Anlage 5 insbesondere die Empfehlungen der ACC/AHA berücksichtigt. Die Empfehlungsgraduierung sowie der Wortlaut mancher Indikationen (insbesondere für PCI) sind von der ACC/AHA durch die Herausgabe neuerer Leitlinien zum Teil verändert worden, sodass auch hier potenzieller Änderungsbedarf für die gesetzliche Grundlage der DMP besteht (siehe Tabelle 12).

Tabelle 12: Übersicht über die Bereiche der Anlage 5 mit potenziell relevantem Änderungsbedarf

	kein relevanter Änderungs- bzw. Ergänzungsbedarf	potenziell relevanter Änderungs- bzw. Ergänzungsbedarf
Hinreichende Diagnostik		
Therapieplanung auf der Basis der Risikoabschätzung		
Allgemeine Maßnahmen		
Ernährungsberatung		
Raucherberatung		
Körperliche Aktivitäten		
Psychosomatische und psychosoziale Betreuung		
Medikamentöse Therapie		
Koronarangiographie		
Koronarrevaskularisation		
Rehabilitation		
Kooperation der Versorgungsebenen		

## 6 Diskussion

Mit der 7. Verordnung zur Änderung der Risikostrukturausgleichsverordnung aus dem Jahr 2003 wurden die Anforderungen an die Ausgestaltung strukturierter Behandlungsprogramme für Patienten mit Koronarer Herzkrankheit festgelegt [3]. Diese Anforderungen gliedern sich in die Versorgungsaspekte Diagnostik, Therapie und Rehabilitation der chronischen KHK. Das IQWiG wurde im Dezember 2006 beauftragt, eine „Update-Recherche zu neuen, auf das deutsche Gesundheitssystem übertragbaren Leitlinien durchzuführen, diese anhand methodischer Kriterien zu bewerten und neue Leitlinienempfehlungen, die inhaltlich für das DMP relevante Versorgungsaspekte betreffen, zu extrahieren“ (vgl. Beschluss über die Beauftragung des Institutes für Qualität und Wirtschaftlichkeit im Gesundheitswesen vom 19.12.2006). Die in diesem Bericht beschriebene Leitlinienbewertung und Empfehlungsextraktion wurden mit dem Ziel durchgeführt, einen möglichen Überarbeitungsbedarf des aktuellen DMP KHK zu spezifizieren.

Insgesamt wurden 21 Leitlinien eingeschlossen, bewertet und deren Empfehlungen extrahiert. Ein Teil dieser Leitlinien bezieht sich explizit (d. h. es finden sich im Methodenteil Angaben zur Verwendung anderer Leitlinien) auf bereits bestehende Leitlinien. Leitlinien, bei denen aus dem Leitlinientext oder einem Methodenpapier hervorging, dass sie sich maßgeblich auf andere Leitlinien stützen, wurden im vorliegenden Bericht als „adaptierte Leitlinien“ bezeichnet. Die binäre Einteilung der eingeschlossenen Leitlinien in „adaptiert“ oder „de novo“ war jedoch schwierig, denn nicht alle tatsächlich „adaptierten“ Leitlinien dokumentieren dies eindeutig. Entsprechend war es möglich, dass einige Leitlinien als „de novo“ klassifiziert wurden, weil eine eindeutige Information zur Adaptation fehlte und eine Adaptation auch aus der Referenzangabe für die Empfehlungen nicht eindeutig abgeleitet werden konnte. Bei allen adaptierten Leitlinien wurden ergänzende systematische Recherchen nach Primärliteratur bzw. Sekundärliteratur (systematischen Übersichten, Meta-Analysen) in wesentlichen Bereichen durchgeführt.

3 der 21 insgesamt eingeschlossenen Leitlinien sind in Deutschland nach einer systematischen Aufarbeitung der wissenschaftlichen Evidenz und überwiegend unter Berücksichtigung internationaler Leitlinien entwickelt worden, wobei die relevanten deutschen Fachgesellschaften am Entwicklungs- und Konsensprozess beteiligt waren (NVL, DGPR, AkDÄ). Die Nationale VersorgungsLeitlinie richtet sich dabei explizit an die Herausgeber von strukturierten Behandlungsprogrammen mit dem Ziel, als Grundlage für die Gestaltung dieser zu dienen. Die Spezifität der NVL für das deutsche Gesundheitssystem und insbesondere für das DMP KHK sollte bei der Beurteilung eines potenziellen Änderungs- bzw. Ergänzungsbedarfs von Anlage 5 beachtet werden.

Die DELBI-Bewertungen sowohl der De-novo-Leitlinien als auch der adaptierten Leitlinien haben gezeigt, dass es durchaus Potenzial für Verbesserungen in der Leitliniendokumentation gibt, insbesondere in den Bereichen „Beteiligung von Interessengruppen“ (Domäne 2) und

„Generelle Anwendbarkeit der Leitlinie“ (Domäne 5), aber auch im Bereich der methodologischen Exaktheit der Leitlinienentwicklung (Domäne 3). Obwohl Leitlinien immer häufiger auf einer systematischen Literaturrecherche beruhen und Kriterien zum Einschluss der Primärliteratur vorliegen, so ist dies selten ausreichend in den Leitlinien selbst oder einem veröffentlichten Methodenpapier zur Leitlinie dokumentiert. Auch das methodische Vorgehen bei der Adaptation anderer Leitlinien ist häufig unzureichend beschrieben. Eine erhöhte Transparenz der Leitlinienerstellung wäre durch eine bessere Dokumentation des Vorgehens bei der Recherche (z. B. Information zu Recherchestrategien) und der Auswahlkriterien zur Identifizierung von Primär-/Sekundärliteratur bzw. Quell-Leitlinien zu erreichen.

Das in diesem Bericht gewählte Vorgehen zur Bewertung adaptierter Leitlinien entspricht keinem validierten Prozess, da ein validiertes Instrument zur Bewertung adaptierter Leitlinien noch nicht entwickelt wurde. Es wurde versucht, das DELBI-Instrument für die methodische Bewertung zu nutzen, soweit dies sinnvoll möglich war. Darüber hinaus wurde ein Fragenset entwickelt, das helfen sollte, die Qualität des Adaptationsprozesses der adaptierten Leitlinien abzubilden. Die gewählte Methodik soll als Grundlage für weitere Diskussionen dienen und die mögliche Entwicklung eines entsprechenden Bewertungsinstrumentes für adaptierte Leitlinien unterstützen.

Bei allen eingeschlossenen Leitlinien wurden diejenigen Empfehlungen extrahiert, die sich inhaltlich einem der Versorgungsaspekte der Gliederungspunkte 1.3 bis 1.7 der Anlage 5 zuordnen ließen und mit einem Empfehlungsgrad und/oder Evidenzgrad gekennzeichnet waren. Beim Vergleich zwischen Anlage 5 und den jeweiligen Empfehlungen aus Leitlinien lassen sich zwar Unterschiede erkennen, eine Beurteilung, ob es sich dabei um „neue“, „veränderte“ oder „ergänzende“ Empfehlungen im Vergleich zur aktuellen Rechtsverordnung handelt, war jedoch nicht immer eindeutig abzugeben. Die eingeschlossenen Leitlinien behandeln viele Versorgungsaspekte detaillierter, als dies in Anlage 5 der Fall ist. Diese Erweiterungen stellen jedoch überwiegend keine Neuheiten dar, die eine inhaltlich notwendige Veränderung des DMP implizieren. Diesbezüglich ist auch zu bemerken, dass bereits 2003 bei der Erstellung der Anlage 5 3 der hier eingeschlossenen Leitlinien vorlagen (SIGN R, AHA A und AHA ET), jedoch nicht alle Empfehlungen aus diesen Leitlinien in der Rechtsverordnung abgebildet wurden. Manche dieser Empfehlungen finden sich jedoch in der später erschienenen NVL-Leitlinie wieder (z. B. bezüglich der medikamentösen bzw. durch Nikotinersatz unterstützten Raucherentwöhnung).

Festzuhalten ist, dass den eingeschlossenen Leitlinien für die Bereiche „Hinreichende Diagnostik“, „Ernährungsberatung“, „Körperliche Aktivitäten“, „Psychische Aspekte“, „Rehabilitation“ und „Kooperation der Versorgungsebenen“ zwar detailliertere Empfehlungen als Anlage 5 zu entnehmen sind, diese aber keinen relevanten Änderungs- bzw. Ergänzungsbedarf implizieren. Erweiterungen zu den im DMP spezifizierten Empfehlungen finden sich hingegen in den Bereichen „Risikoabschätzung“, „Allgemeine Maßnahmen“ und

„Raucherberatung“ (Einschätzung und Management des Risikofaktors Übergewicht, Grippeimpfung, Nikotinersatztherapie/medikamentöse Therapie von Rauchern). Für diese Bereiche besteht potenzieller Ergänzungsbedarf von Anlage 5. Auch hinsichtlich der medikamentösen KHK-Therapie gibt es zwar keine Widersprüche zwischen den Inhalten von Anlage 5 und den extrahierten Leitlinienempfehlungen, jedoch einige Erweiterungen bzw. Spezifizierungen. In den Bereichen „Koronarangiographie“ und „Revaskularisation“ berücksichtigt Anlage 5 bislang insbesondere die Empfehlungen der ACC/AHA. Die Empfehlungsgraduierung sowie der Wortlaut mancher Indikationen (insbesondere für PCI) sind von der ACC/AHA durch die Herausgabe neuerer Leitlinien zum Teil verändert worden, sodass auch hier potenzieller Änderungsbedarf besteht (siehe Abschnitt 5.8: Zusammenfassung der Extraktion der Kernempfehlungen)

Schlussendlich soll noch einmal darauf hingewiesen werden, dass die Empfehlungen von Leitlinien, die in einem anderen als dem deutschen Gesundheitssystem erstellt worden sind, nicht immer auf das deutsche System übertragbar sind. Ausländische Leitlinien sind klar gekennzeichnet worden, um zu verdeutlichen, dass einige der hier extrahierten Empfehlungen nicht unkritisch auf den deutschen Kontext übertragbar sind. Im Zweifel muss eine Prüfung der Übertragbarkeit einzelner Empfehlungen auf das deutsche Gesundheitssystem erfolgen. Dies würde gegebenenfalls eine Analyse der landesspezifischen Bedürfnisse, Wertesysteme, Organisations- bzw. Versorgungsstrukturen des Gesundheitssystems, der Kosten-Nutzen-Verhältnisse, der Zulassungsbedingungen oder der Verfügbarkeit von Ressourcen voraussetzen [48-51].

## 7 Fazit

Durch den Vergleich der extrahierten Kernempfehlungen aktueller evidenzbasierter KHK-Leitlinien mit den Inhalten von Anlage 5 der 7. RSA-Änderungsverordnung aus dem Jahr 2003 konnten Themenbereiche identifiziert werden, für die ein Aktualisierungsbedarf zu diskutieren ist.

Erweiterungen zu den im DMP spezifizierten Empfehlungen finden sich insbesondere in den Bereichen „Risikoabschätzung“, „Allgemeine Maßnahmen“ und „Raucherberatung“ (Assessment und Management des Risikofaktors Übergewicht, Grippeimpfung, Nikotinersatztherapie bzw. medikamentöse Therapie, z.B. mit Bupropion).

Hinsichtlich der medikamentösen Therapie der chronischen KHK finden sich Spezifizierungen und weiterführende Aspekte im Vergleich zu den Empfehlungen des Koordinierungsausschusses aus dem Jahr 2003. Diese beziehen sich im Wesentlichen auf 4 Substanzgruppen: ACE-Hemmer, Aldosteronblocker, Lipidsenker und die Hormonersatztherapie.

In den Bereichen „Koronarangiographie“ und „Revaskularisation“ ist ein potenzieller Änderungsbedarf des DMP durch Modifikationen, insbesondere bezüglich der Indikation der PCI, zu diskutieren.

## 8 Tabellarische Darstellung der Kernempfehlungen

Tabelle 13: Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Anamnese, klinische Untersuchung, Labor</b>				
<b>SIGN A</b>	Patients with suspected angina should have a detailed initial clinical assessment which includes history, examination and an assessment of blood pressure, haemoglobin, thyroid function, cholesterol and glucose levels.	n. a.	<input checked="" type="checkbox"/>	n.a
<b>SIGN A</b>	If the diagnosis is uncertain, clinicians should not give the impression that the patient has angina. This may lead the patient to have false believes, which may be difficult to change even after further investigations have ruled this out.	n. a.	<input checked="" type="checkbox"/>	n.a.
<b>NVL</b>	Bei Patienten mit V. a. KHK sollen bei der initialen Vorstellung die kardiovaskulären Risikofaktoren wie Nikotinabusus, arterielle Hypertonie, positive Familienanamnese und Adipositas abgeklärt und ggf. folgende Blutuntersuchungen durchgeführt werden: <ul style="list-style-type: none"> <li>• Hämoglobin.</li> <li>• Nüchtern-glucose.</li> <li>• Nüchternfette (Gesamtcholesterin mit LDL und HDL-Fractionen, Triglyzeride).</li> </ul>	n.a.	A	[42,52-54]

(Fortsetzung )

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Anamnese, klinische Untersuchung, Labor</b>				
<b>NVL</b>	<p>Patienten mit chronischer KHK und eingeschränkter LV-Funktion, Mehrgefäßerkrankung, proximaler RIVA-Stenose, überlebtem plötzlichen Herztod, Diabetes mellitus, suboptimalem Interventionsergebnis oder mit gefahrgeneigten Tätigkeiten gehören zu den Hochrisikopersonen.</p> <p>Bei diesen sollte in enger Kooperation mit Kardiologen eine Risikostratifizierung und ein regelmäßiges Monitoring durch nicht invasive Verfahren durchgeführt werden (siehe auch Überweisungskriterien Kapitel 15).</p>	n.a.	B	[55,56,56-65]
<b>ESC A</b>	<b>Recommendations for laboratory investigation in initial assessment of stable angina:</b>			
	1) Fasting lipid profile, including TC, LDL, HDL, and triglycerides	B	I	[66-71]
	2) Fasting glucose	B	I	[72-79]
	3) Full blood count including Hb and white cell count	B	I	[80]
	4) Creatinine	C	I	[81,82]
	5) Markers of myocardial damage if evaluation suggests clinical instability or acute coronary syndromes (ACS)	A	I	[80]

(Fortsetzung)



Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Anamnese, klinische Untersuchung, Labor</b>				
<b>ESC A</b>	<b>Recommendations for laboratory investigation in initial assessment of stable angina:</b>			
	6) Thyroid function if clinically indicated	C	I	[80]
	7) Oral glucose tolerance test	B	IIa	[83,84]
	8) High-sensitivity C-reactive protein	B	IIb	[68,85,86]
	9) Lipoprotein a, apolipoprotein A (ApoA), and apolipoprotein B (ApoB)	B	IIb	[87,88]
	10) Homocysteine	B	IIb	[89,90]
	11) Glycosylated haemoglobin (HbA1c)	B	IIb	[83,84]
	12) N-terminal brain natriuretic peptide NT-BNP	B	IIb	[91]
<b>FMS</b>	<b>Laboratory investigations</b> The assessment of basic lipid profile is useful in determining the cardiovascular disease risk of a patient.	A	n.a.	[92,93]
	Elevated serum homocysteine concentration is associated with vascular diseases; however, it does not appear to act as a predictor of arterial disease in healthy individuals	C	n.a.	[92-94]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Anamnese, klinische Untersuchung, Labor</b>				
<b>AHA A</b>	In patients presenting with chest pain, a detailed symptom history, focused physical examination, and directed risk-factor assessment should be performed. With this information, the clinician should estimate the probability of significant CAD (i.e., low, intermediate, or high).	B	I	[52,95-107]
<b>AHA A</b>	<b>Recommendations for Initial Laboratory Tests for Diagnosis</b> 1. Hemoglobin. 2. Fasting glucose. 3. Fasting lipid panel, including total cholesterol, highdensity lipoprotein (HDL) cholesterol, triglycerides, and calculated low-density lipoprotein (LDL) cholesterol.	C	I	n.a.
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
<b>SIGN A</b>	Patients with suspected angina should usually be investigated by a baseline electrocardiogram and an exercise tolerance test.	2++ 2+ 3 4	C	[108]  [55] <i>keinem LoE eindeutig zuzuweisen</i> : [109-112]
<b>NVL</b>	Bei allen Patienten ohne offensichtlich nicht-kardialen thorakalen Schmerz soll ein Ruhe-EKG mit 12 Ableitungen angefertigt werden.	n.a.	A	[110,113-121]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
NVL	<ul style="list-style-type: none"> <li>• Ein Belastungs-EKG soll bei Patienten mit mittlerer Vortestwahrscheinlichkeit einer KHK aufgrund von Alter, Geschlecht und klinischer Symptomatik durchgeführt werden.</li> <li>• Aufgrund der eingeschränkten Beurteilbarkeit der ST-Strecken sollten Patienten mit WPW-Syndrom, Schrittmacher-Stimulation (VVI /DDD), ST-Strecken-Senkungen in Ruhe &gt;1mm oder Linksschenkelblock nicht ergometrisch untersucht werden.</li> <li>• Patienten mit Zeichen der linksventrikulären Hypertrophie oder Digitalismedikation und ST-Strecken-Senkungen in Ruhe &lt; 1mm können eingeschränkt untersucht werden.</li> </ul>	n.a.	A	[55,122-131]
NVL	Ein Belastungs-EKG kann bei Patienten mit hoher Vortestwahrscheinlichkeit einer KHK aufgrund Alter, Geschlecht und klinischer Symptomatik zur Ischämiediagnostik durchgeführt werden.	n.a.	C	[42,132,133]
NVL	Bei Patienten mit bekannter KHK und Veränderungen der Symptome und Befunde und Verdacht auf Progression soll ein Belastungs-EKG empfohlen werden.	n.a.	A	[55,134-136]
NVL	Vor Revaskularisation sollte ein Ischämienachweis vorliegen.	n.a.	B	[55,137-139]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
NVL	<ul style="list-style-type: none"> <li>• Ein Belastungs-EKG ist bei Patienten mit WPW-Syndrom, VVI/DDD-Stimulation, komplettem Linksschenkelblock, mehr als 1 mm ST-Senkungen in Ruhe oder Linksherzhypertrophie nicht ausreichend aussagefähig.</li> <li>• In diesen Fällen sollte ein bildgebendes Verfahren eingesetzt werden.</li> </ul>	n.a.	B	[55,129,140-190]
NVL	Die Ergometrie zur Risikostratifizierung bei asymptomatischen Patienten mit bekannter KHK nach Revaskularisation soll nicht durchgeführt werden, da das Untersuchungsergebnis keine sichere Vorhersage zulässt (insuffiziente Daten für definitive Empfehlungen hinsichtlich Testverfahren und Häufigkeit).	n.a.	A	[55,56,56-65]
NVL	Bei asymptomatischen Patienten mit KHK kann vor Aufnahme eines Fitnessprogramms eine Belastungsuntersuchung zur Risikostratifizierung durchgeführt werden. Dies darf keine Barriere darstellen zur Aktivität im Alltag.	n.a.	C	[191-194]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
<b>ESC A</b>	<b>Recommendations for Resting ECG for Initial Diagnostic Assessment of Angina</b>			
	Resting ECG while pain free	C	I	[195-197]
	Resting ECG during episode of pain (if possible)	B	I	[198,199]
<b>ESC A</b>	<b>Recommendations for Exercise ECG for Initial Diagnostic Assessment of Angina</b>			[55,104,108,123,124,200,201,201-211] (Keinem LoE eindeutig zuzuweisen)
	Patients with symptoms of angina and intermediate pre-test probability of coronary disease based on age, gender, and symptoms, unless unable to exercise or displays ECG changes which make ECG non-evaluable	B	I	
	Patients with >1 mm ST-depression on resting ECG or taking digoxin	B	IIb	
	In patients with low pre-test probability (<10 % probability) of coronary disease based on age, gender, and symptoms	B	IIb	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
<b>FMS</b>	<b>ECG</b> Continuous monitoring in the CCU or by the Holter method may reveal silent ischaemia (ST depression). Silent ischaemia is more common than symptomatic ischaemia but it is not harmless, and its diagnosis is dependent on the Holter technique. The assessment of silent ischaemia with Holter monitoring is difficult and technically demanding. In the diagnosis of ischaemia its significance is limited to risk stratification of a patient with unstable angina.	B	n.a.	[212]
<b>AHA ET</b>	Excercise testing to diagnose obstructive CAD for adult patients (including those with complete right bundle-branch block or less than 1 mm of resting ST depression) with an intermediate pretest probability of CAD (Table 4) on the basis of gender, age, and symptoms (specific exceptions are noted under Classes II and III below).	n.a.	I	[98,104,105,114-118,118-122,124,129,131,202,208,213-232]
<b>AHA ET</b>	Excercise testing to diagnose obstructive CAD for patients with vasospastic angina.	n.a.	IIa	[98,104,105,114-118,118-122,124,129,131,202,208,213-232]
<b>AHA ET</b>	Excercise testing to diagnose obstructive CAD for patients with a high pretest probability of CAD by age, symptoms, and gender. Patients with a low pretest probability of CAD by age, symptoms, and gender. Patients with less than 1 mm of baseline ST depression and taking digoxin.	n.a.	IIb	[98,104,105,114-118,118-122,124,129,131,202,208,213-232]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
AHA ET	Patients with electrocardiographic criteria for left ventricular hypertrophy (LVH) and less than 1 mm of baseline ST depression.			
AHA ET	Excercise testing to diagnose obstructive CAD for tients with the following baseline ECG abnormalities: <ul style="list-style-type: none"> <li>• Pre-excitation (Wolff-Parkinson-White) syndrome</li> <li>• Electronically paced ventricular rhythm</li> <li>• Greater than 1 mm of resting ST depression</li> <li>• Complete left bundle-branch block</li> </ul>	n.a.	III*	[98,104,105,114-118,118-122,124,129,131,202,208,213-232]
AHA A	<p><b>Recommendations for Diagnosis of Obstructive CAD With Exercise ECG Testing Without an Imaging Modality</b></p> <p>Patients with an intermediate pretest probability of CAD based on age, gender, and symptoms, including those with complete right bundle-branch block or less than 1 mm of ST depression at rest (exceptions are listed below in classes II and III).</p> <p>Patients with suspected vasospastic angina.</p> <p>Patients with a high pretest probability of CAD by age, gender, and symptoms.</p> <p>Patients with a low pretest probability of CAD by age, gender, and symptoms.</p> <p>Patients taking digoxin whose ECG has less than 1 mm of baseline ST-segment depression.</p>	<p>B</p> <p>C</p> <p>B</p> <p>B</p> <p>B</p>	<p>I</p> <p>IIa</p> <p>IIb</p> <p>IIb</p> <p>IIb</p>	[45,114-121,123,129,131,202,206,222,227,231-261] (Keinem LoE eindeutig zuzuweisen)

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG</b>				
<b>AHA A</b>	<p>Patients with ECG criteria for LVH and less than 1 mm of baseline ST-segment depression.</p> <p>Patients with the following baseline ECG abnormalities.</p> <ul style="list-style-type: none"> <li>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</li> <li>b. Electronically paced ventricular rhythm.</li> <li>c. More than 1 mm of ST depression at rest.</li> <li>d. Complete left bundle-branch block.</li> </ul> <p>Patients with an established diagnosis of CAD owing to prior MI or coronary angiography; however, testing can assess functional capacity and prognosis, as discussed in Section III.</p>	<p>B</p> <p>B</p> <p>B</p>	<p>IIb</p> <p>III*</p> <p>III*</p>	
<b>AHA A</b>	<p><b>Recommendations for Diagnosis of Obstructive CAD With Exercise ECG Testing Without an Imaging Modality in Asymptomatic Patients</b></p> <p>Asymptomatic patients with possible myocardial ischemia on ambulatory ECG monitoring or with severe coronary calcification on EBCT (exceptions based on the rest ECG are the same as those listed above under Class III for symptomatic patients).</p>	C	IIb	[45,262,263](Keinem LoE eindeutig zuzuweisen)

(Fortsetzung)



Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, Belastungs-EKG, nicht invasive Methoden der Diagnosesicherung</b>				
<b>AHA A</b>	<p>Exercise ECG Testing in asymptomatic patients</p> <p>These recommendations are identical to those for symptomatic patients:</p> <p>Patients with the following baseline ECG abnormalities.</p> <p>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</p> <p>b. Electronically paced ventricular rhythm.</p> <p>c. More than 1 mm of ST depression at rest.</p> <p>d. Complete left bundle-branch block.</p> <p>Patients with an established diagnosis of CAD owing to prior MI or coronary angiography; however, testing can assess functional capacity and prognosis,.</p>	<p>B</p> <p>B</p> <p>B</p> <p>B</p> <p>B</p>	<p>III*</p> <p>III</p> <p>III</p> <p>III</p> <p>III*</p>	
<b>SIGN A</b>	<p>Patients unable to undergo exercise tolerance testing or who have pre-existing electrocardiogram abnormalities should be considered for myocardial perfusion scintigraphy.</p>	<p>2++</p> <p>4</p>	<p>B</p>	<p>keinem LoE eindeutig zuzuweisen: [264-266]</p>
<b>NVL</b>	<p>Bei der Wahl der bildgebenden Verfahren soll die jeweilige Verfügbarkeit und Erfahrung der Einrichtung mit in Betracht gezogen werden. Die Wahl der bildgebenden Verfahren soll zur Erreichung der bestmöglichen Bildqualität an den jeweiligen Patienten angepasst werden.</p>	<p>n.a.</p>	<p>A</p>	<p>[42]</p>

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
NVL	<p>Eine echokardiographische Untersuchung in Ruhe sollen alle Patienten mit</p> <ul style="list-style-type: none"> <li>• vitienverdächtigen Herzgeräuschen;</li> <li>• Hinweisen für eine Herzinsuffizienz;</li> <li>• Zustand nach Myokardinfarkt oder Q-Zacken im EKG;</li> <li>• ventrikulären Arrhythmien</li> </ul> <p>erhalten.</p> <p>Regelmäßige echokardiographische Routineuntersuchungen bei stabiler Klinik und ohne geplante Therapieänderung sollen nicht durchgeführt werden.</p>	n.a.	A	[122,267-287]
NVL	Ein Röntgenthorax kann zur Abklärung von differenzialdiagnostischen Erwägungen eingesetzt werden.	n.a.	C	[42]
NVL	Bei Patienten mit mittlerer Vortestwahrscheinlichkeit oder bei Patienten, die nicht so weit belastungsfähig sind, dass sich im Belastungs-EKG ein relevanter Befund ergeben würde, soll ein bildgebendes Verfahren mit pharmakologischer Belastung durchgeführt werden.	n.a.	A	[42]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
NVL	Bei Patienten mit hoher Wahrscheinlichkeit für eine KHK, bei denen eine Ergometrie nicht sinnvoll ist, kann eine Untersuchung mit einem bildgebenden Verfahren mit körperlicher Belastung durchgeführt werden, wenn sie im Ruhe-EKG folgende Veränderungen aufweisen: <ul style="list-style-type: none"> <li>• Präexzitations-Syndrom (WPW);</li> <li>• mehr als einen Millimeter ST-Senkung.</li> </ul> oder es kann eine Myokardperfusions-Untersuchung mit Adenosin oder Dipyridamol durchgeführt werden bei: <ul style="list-style-type: none"> <li>• Kammer-Rhythmus durch Schrittmacher;</li> <li>• Linksschenkelblock.</li> </ul>	n.a.	C	[288-290]
NVL	Ein bildgebendes Verfahren mit körperlicher oder pharmakologischer Belastung (abhängig von den Ruhe-EKG-Veränderungen) kann bei Patienten mit stabiler Angina pectoris zur Bestimmung von Ausmaß, Schweregrad und Lokalisation von Ischämie durchgeführt werden.	n.a.	C	[55,140-177]
NVL	Ein Myokardperfusions-Untersuchung mit Adenosin oder Dipyridamol soll bei Patienten mit einer mittleren Vortestwahrscheinlichkeit für KHK durchgeführt werden, wenn eine der folgenden EKG-Veränderungen vorliegt: <ul style="list-style-type: none"> <li>• Kammer-Rhythmus durch Schrittmacher;</li> <li>• Linksschenkelblock.</li> </ul>	n.a.	A	[129,178-190]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
NVL	Bei Patienten mit folgenden Ruhe-EKG-Veränderungen soll eine bildgebende Belastungsuntersuchung als Alternative zum Belastungs-EKG bei mittlerer Vortestwahrscheinlichkeit durchgeführt werden: <ul style="list-style-type: none"> <li>• Präexzitations-Syndrom (WPW) ;</li> <li>• mehr als einem Millimeter ST-Senkung in Ruhe inklusive derer mit LVH/Digitalis-Medikation.</li> </ul>	n.a.	A	[42]
NVL	Bei mittlerer Vortestwahrscheinlichkeit und nicht aussagekräftiger Ergometrie soll eine bildgebende Belastungsuntersuchung durchgeführt werden.	n.a.	A	[42,291]
NVL	Bei Patienten mit bekannter KHK und Veränderungen der Symptome und Befunde, die nicht so weit belastungsfähig sind, dass sich im Belastungs-EKG ein relevanter Befund ergeben würde, soll eine bildgebende Untersuchung mittels pharmakologischer Belastung als Alternative zum Belastungs-EKG durchgeführt werden.	n.a.	A	[42,122-131]
NVL	Bei Patienten mit bekannter KHK, die trotz Therapie nach symptomfreiem Intervall erneut symptomatisch werden und bei denen die Ischämie-lokalisierung, die funktionelle Relevanz einer Stenose und / oder Vitalität von Bedeutung ist, sollte eine bildgebende Untersuchung mit körperlicher oder pharmakologischer Belastung als Alternative zum Belastungs-EKG durchgeführt werden.	n.a.	B	[55,57,140-177,292-302]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
NVL	<p>Zur Evaluierung von Vitalität in dysfunktionalem Myokard können eine Szintigraphie, eine Stressechokardiographie, eine Stress-MRT, eine kontrastmittelverstärkte MRT oder eine PET durchgeführt werden.</p> <ul style="list-style-type: none"> <li>• Die Hauptindikation für die Vitalitätsdiagnostik sind Patienten mit stabiler chronischer KHK, myokardialer Dysfunktion und Luftnot als Hauptsymptom. Die Wahl des nicht invasiven Verfahrens sollte anhand der Verfügbarkeit und Erfahrung des jeweiligen Zentrums erfolgen.</li> <li>• Die meisten Daten liegen für die Szintigraphie und die Stress-Echokardiographie vor. In den letzten Jahren kommt die MRT mit Dobutamin und kontrastmittelverstärkt zum Einsatz und zeigt gute Ergebnisse im Vergleich mit den anderen Techniken und der kontraktile Erholung.</li> </ul>	n.a.	C	[57,292-302]
ESC A	<b>Recommendations for Chest X-ray (CXR) for Initial Diagnostic Assessment of Angina</b>			
	CXR in patients with suspected heart failure	C	I	[303,304]
	CXR in patients with evidence of significant pulmonary disease	B	I	[305-310]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
ESC A	<b>Recommendations for the Use of Exercise Stress with Imaging Techniques (Either Echocardiography or Perfusion) in the Initial Diagnostic Assessment of Angina</b>			[122,125,292,311-329] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
	Patients with resting ECG abnormalities, left bundle branch block (LBBB) >1mm ST-depression, paced rhythm, or Wolff-Parkinson-White (WPW) syndrome which prevent accurate interpretation of ECG changes during stress	B	I	
	Patients with a non-conclusive exercise ECG but reasonable exercise tolerance, who do not have a high probability of significant coronary disease and in whom the diagnosis is still in doubt	B	I	
	Patients with prior revascularization (percutaneous coronary intervention [PCI] or coronary artery bypass graft [CABG]) in whom localization of ischaemia is important	B	IIa	
	As an alternative to exercise ECG in patients where facilities, costs, and personnel resources allow	B	IIa	
	As an alternative to exercise ECG in patients with a low pre-test possibility of disease such as women with atypical chest pain	B	IIa	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
ESC A	To assess functional severity of intermediate lesions on coronary arteriography	C	Ia	
ESC A	To localize ischaemia when planning revascularization options in patients who have already had arteriography	B	Ia	
ESC A	<b>Recommendations for the Use of Pharmacological Stress with Imaging Techniques (Either Echocardiography or Perfusion) in the Initial Diagnostic Assessment of Angina</b>			
	Class I, Ia and Ib indications as above if the patient is unable to exercise adequately.	n.a.	n.a.	[122,125,292,311-329]
ESC A	<b>Recommendations for Echocardiography for Initial Diagnostic Assessment of Angina</b>			
	Patients with abnormal auscultation suggesting valvular heart disease or hypertrophic cardiomyopathy	B	I	[330,331]
	Patients with suspected heart failure	B	I	[332-335]
	Patients with prior myocardial infarction (MI)	B	I	[336,337]
	Patients with LBBB, Q-waves, or other significant pathological changes on ECG, including ECG left ventricular hypertrophy (LVH)	C	I	[331,338]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG EKG, nicht invasive Methoden der Diagnosesicherung</b>				
<b>ESC A</b>	<b>Recommendations for Ambulatory ECG for Initial Diagnostic Assessment of Angina</b>			[339,340] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
	Angina with suspected arrhythmia	B	I	
	Suspected vasospastic angina	C	IIa	
<b>ESC A</b>	<b>Recommendations for the Use of Computed Tomography (CT) Angiography in Stable Angina</b>			
	Patients with a low pre-test probability of disease, with a non-conclusive exercise ECG or stress imaging test	C	IIb	[262,341-348]
<b>AHA A</b>	<b>Recommendations for Electrocardiography, Chest XRay, or Electron-Beam Computed Tomography in the Diagnosis of Chronic Stable Angina</b>			
	Rest ECG in patients without an obvious noncardiac cause of chest pain.	B	I	[110,113]
	Rest ECG during an episode of chest pain.	B	I	[349]
	Chest X-ray in patients with signs or symptoms of congestive heart failure (CHF), valvular heart disease, pericardial disease, or aortic dissection/aneurysm.	B	I	[350]
	Chest X-ray in patients with signs or symptoms of pulmonary disease.	B	IIa	
	Chest X-ray in other patients.	C	IIb	
	Electron-beam computed tomography.	B	IIb	[347,351-354]

(Fortsetzung)



Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
AHA A	<b>Recommendations for Echocardiography for Diagnosis of Cause of Chest Pain in Patients With Suspected Chronic Stable Angina Pectoris</b>			
	Patients with systolic murmur suggestive of aortic stenosis or hypertrophic cardiomyopathy	C	I	[122]
	Evaluation of extent (severity) of ischemia (e.g., LV segmental wall-motion abnormality) when the echocardiogram can be obtained during pain or within 30 min after its abatement.	C	I	[122]
	Patients with a click or murmur to diagnose mitral valve prolapse .	C	IIb	[280]
	Patients with a normal ECG, no history of MI, and no signs or symptoms suggestive of heart failure, valvular heart disease, or hypertrophic cardiomyopathy.	C	III*	[278,279]
AHA A	<b>Recommendations for Cardiac Stress Imaging as the Initial Test for Diagnosis in Patients With Chronic Stable Angina Who Are Able to Exercise</b>			[45,122,355-364](Keinem LoE eindeutig zuzuweisen)
	Exercise myocardial perfusion imaging or exercise echocardiography in patients with an intermediate pretest probability of CAD who have one of the following baseline ECG abnormalities:			
	a. Pre-excitation (Wolff-Parkinson-White) syndrome.	B	I	
	b. More than 1 mm of ST depression at rest.	B	I	
	Exercise myocardial perfusion imaging or exercise echocardiography in patients with prior revascularization (either PCI or CABG).	B	I	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
<b>AHA A</b>	<p>Adenosine or dipyridamole myocardial perfusion imaging in patients with an intermediate pretest probability of CAD and one of the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Electronically paced ventricular rhythm.</li> <li>b. Left bundle-branch block.</li> </ul> <p>Exercise myocardial perfusion imaging or exercise echocardiography in patients with a low or high probability of CAD who have one of the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</li> <li>b. More than 1 mm of ST depression.</li> </ul> <p>Adenosine or dipyridamole myocardial perfusion imaging in patients with a low or high probability of CAD and one of the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Electronically paced ventricular rhythm.</li> <li>b. Left bundle-branch block.</li> </ul> <p>Exercise myocardial perfusion imaging or exercise echocardiography in patients with an intermediate probability of CAD who have one of the following:</p> <ul style="list-style-type: none"> <li>a. Digoxin use with less than 1 mm ST depression on the baseline ECG.</li> <li>b. LVH with less than 1 mm ST depression on the baseline ECG.</li> </ul>	<p>C B</p> <p>B B</p> <p>C B</p> <p>B B</p>	<p>I I</p> <p>IIb IIb</p> <p>IIb IIb</p> <p>IIb IIb</p>	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
<b>AHA A</b>	Exercise myocardial perfusion imaging, exercise echocardiography, adenosine or dipyridamole myocardial perfusion imaging, or dobutamine echocardiography as the initial stress test in a patient with a normal rest ECG who is not taking digoxin.	B	IIb	
	Exercise or dobutamine echocardiography in patients with left bundle-branch block.	C	IIb	
<b>AHA A</b>	<p><b>Recommendations for Cardiac Stress Imaging as the Initial Test for Diagnosis in Patients With Chronic Stable Angina Who Are Unable to Exercise</b></p> <p>Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in patients with an intermediate pretest probability of CAD.</p> <p>Adenosine or dipyridamole stress myocardial perfusion imaging or dobutamine echocardiography in patients with prior revascularization (either PCI or CABG).</p> <p>Adenosine or dipyridamole stress myocardial perfusion imaging or dobutamine echocardiography in patients with a low or high probability of CAD in the absence of electronically paced ventricular rhythm or left bundle-branch block.</p> <p>Adenosine or dipyridamole myocardial perfusion imaging in patients with a low or a high probability of CAD and one of the following baseline ECG abnormalities</p> <p>a. Electronically paced ventricular rhythm.</p> <p>b. Left bundle-branch block.</p>	B	I	[45,122,355-364](Keinem LoE eindeutig zuzuweisen)
		B	I	
		B	IIb	
		C	IIb	
		B	IIb	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
AHA A	Dobutamine echocardiography in patients with left bundle-branch block.	C	IIb	
AHA A	<p><b>Recommendations for Cardiac Stress Imaging as the Initial Test for Diagnosis in Asymptomatic Patients</b></p> <p>Exercise perfusion imaging or exercise echocardiography in asymptomatic patients with severe coronary calcification on EBCT who are able to exercise and have one of the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</li> <li>b. More than 1 mm of ST depression at rest.</li> </ul> <p>Adenosine or dipyridamole myocardial perfusion imaging in asymptomatic patients with severe coronary calcification on EBCT but with one of the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Electronically paced ventricular rhythm.</li> <li>b. Left bundle-branch block.</li> </ul> <p>Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in patients with possible myocardial ischemia on ambulatory ECG monitoring or with severe coronary calcification on EBCT who are unable to exercise.</p> <p>Exercise or dobutamine echocardiography in asymptomatic patients with left bundle-branch block.</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>IIb</p> <p>IIb</p> <p>IIb</p> <p>IIb</p> <p>III*</p>	[278,363,365,366](Keinem LoE eindeutig zuzuweisen)

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
AHA A	Exercise myocardial perfusion imaging, exercise echocardiography, adenosine or dipyridamole myocardial perfusion imaging, or dobutamine echocardiography as the initial stress test in an asymptomatic patient with a normal rest ECG who is not taking digoxin.	C	III*	
	Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in asymptomatic patients who are able to exercise and do not have left bundle-branch block or electronically paced ventricular rhythm.	C	III*	
AHA A	<p><b>Recommendations for Cardiac Stress Imaging After Exercise ECG Testing for Diagnosis in Asymptomatic Patients</b></p> <p>Exercise myocardial perfusion imaging or exercise echocardiography in asymptomatic patients with an intermediate-risk or high-risk Duke treadmill score on exercise ECG testing.</p> <p>Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in asymptomatic patients with a previously inadequate exercise ECG.</p> <p>Exercise myocardial perfusion imaging, exercise echocardiography, adenosine or dipyridamole myocardial perfusion imaging, or dobutamine echocardiography in asymptomatic patients with a low-risk Duke treadmill score on exercise ECG testing.</p>	C	IIb	[278,363,365,366](Keinem LoE eindeutig zuzuweisen)
		C	IIb	
		C	III*	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG</b>				
<b>Kontrolluntersuchungen</b>				
ESC A	<b>Recommendations for Blood Tests for Routine Reassessment in Patients with Chronic Stable Angina</b> Fasting lipid profile and fasting glucose on an annual basis	C	IIa	n.a.
<b>EKG, Belastungs EKG</b>				
ESC A	<b>Recommendations for Resting ECG for Routine Assessment in Patients with Chronic Stable Angina</b> Routine periodic ECG in the absence of clinical change	C	IIb	n.a.
ESC A	<b>Recommendations for Exercise ECG for Routine Re-Assessment in Patients with Chronic Stable Angina</b> Routine periodic exercise ECG in the absence of clinical change.	C	IIb	n.a.
<b>Weitere nicht invasive Untersuchungen</b>				
AHA A	<b>Recommendations for Echocardiography, Treadmill Exercise Testing, Stress Radionuclide Imaging, Stress Echocardiography Studies, and Coronary Angiography During Patient Follow-up</b>			
	Chest X-ray for patients with evidence of new or worsening CHF.	C	I	n.a.

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
<b>AHA A</b>	Assessment of LV ejection fraction and segmental wall motion by echocardiography or radionuclide imaging in patients with new or worsening CHF or evidence of intervening MI by history or ECG.	C	I	n.a.
<b>AHA A</b>	Echocardiography for evidence of new or worsening valvular heart disease.	C	I	n.a.
<b>AHA A</b>	Treadmill exercise test for patients without prior revascularization who have a significant change in clinical status, are able to exercise, and do not have any of the ECG abnormalities listed below in number	C	I	n.a.
<b>AHA A</b>	Stress radionuclide imaging or stress echocardiography procedures for patients without prior revascularization who have a significant change in clinical status and are unable to exercise or have one of the following ECG abnormalities: a. Pre-excitation (Wolff-Parkinson-White) syndrome. b. Electronically paced ventricular rhythm. c. More than 1 mm of rest ST depression. d. Complete left bundle-branch block.	C	I	n.a.

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung</b>				
<b>AHA A</b>	Stress radionuclide imaging or stress echocardiography procedures for patients who have a significant change in clinical status and required a stress imaging procedure on their initial evaluation because of equivocal or intermediate-risk treadmill results.	C	I	n.a.
<b>AHA A</b>	Stress radionuclide imaging or stress echocardiography procedures for patients with prior revascularization who have a significant change in clinical status.	C	I	n.a.
<b>AHA A</b>	Annual treadmill exercise testing in patients who have no change in clinical status, can exercise, have none of the ECG abnormalities listed in number 5, and have an estimated annual mortality rate greater than 1 %.	C	IIb	n.a.
<b>AHA A</b>	Echocardiography or radionuclide imaging for assessment of LV ejection fraction and segmental wall motion in patients with a normal ECG, no history of MI, and no evidence of CHF.	C	III*	n.a.

(Fortsetzung)



Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	Repeat treadmill exercise testing in less than three years in patients who have no change in clinical status and an estimated annual mortality rate less than 1 % on their initial evaluation, as demonstrated by one of the following: a. Low-risk Duke treadmill score (without imaging). b. Low-risk Duke treadmill score with negative imaging. c. Normal LV function and a normal coronary angiogram. d. Normal LV function and insignificant CAD.	C	III*	
<b>AHA A</b>	Stress imaging or echocardiography for patients who have no change in clinical status and a normal rest ECG, are not taking digoxin, are able to exercise, and did not require a stress imaging or echocardiographic procedure on their initial evaluation because of equivocal or intermediate-risk treadmill results.	C	III*	
<b>ESC A</b>	<b>Recommendations for Risk Stratification by Clinical Evaluation, Including ECG and Laboratory Tests in Stable Angina</b>			
	Detailed clinical history and physical examination including BMI and/or waist circumference in all patients, also including a full description of symptoms, quantification of functional impairment, past medical history, and cardiovascular risk profile	B	I	[68,70,118,120,305,306,367-370]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>ESC A</b>	<b>Recommendations for Risk Stratification by Clinical Evaluation, Including ECG and Laboratory Tests in Stable Angina</b>			
	Detailed clinical history and physical examination including BMI and/or waist circumference in all patients, also including a full description of symptoms, quantification of functional impairment, past medical history, and cardiovascular risk profile	B	I	[68,70,118,120,305,306,367-370]
	Resting ECG in all patients	B	I	[371-375]
<b>AHA A</b>	<b>Risk assessment: Recommendations for Measurement of Rest LV Function by Echocardiography or Radionuclide Angiography in Patients With Chronic Stable Angina</b> Echocardiography or RNA in patients with a history of prior MI, pathologic Q waves, or symptoms or signs suggestive of heart failure to assess LV function. Echocardiography in patients with a systolic murmur that suggests mitral regurgitation to assess its severity and etiology. Echocardiography or RNA in patients with complex ventricular arrhythmias to assess LV function.	B C B	I I I	[120,122,267,285-287,376-394](Keinem LoE eindeutig zuzuweisen)

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	Routine periodic reassessment of stable patients for whom no new change in therapy is contemplated. Patients with a normal ECG, no history of MI, and nosymptoms or signs suggestive of CHF.	C B	III* III*	
<b>ESC A</b>	<b>Recommendations for Risk Stratification According to <u>Exercise Stress ECG</u> in Stable Angina in Patients Who Can Exercise</b>			[103,107,203,305,395-399]( <i>Keinem LoE eindeutig zuzuweisen</i> )
	All patients without significant resting ECG abnormalities undergoing initial evaluation	B	I	
	Patients with stable coronary disease after a significant change in symptom level	C	I	
	Patients post-revascularization with a significant deterioration in symptomatic status	B	IIa	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	<p><b>Risk assessment: Recommendations for Risk Assessment and Prognosis in Patients With an Intermediate or High Probability of CAD</b></p> <p>Patients undergoing initial evaluation. (Exceptions are listed below in Classes IIb and III)</p> <p>Patients after a significant change in cardiac symptoms.</p> <p>Patients with the following ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</li> <li>b. Electronically paced ventricular rhythm.</li> <li>c. More than 1 mm of ST depression at rest.</li> <li>d. Complete left bundle-branch block.</li> </ul> <p>Patients who have undergone cardiac catheterization to identify ischemia in the distribution of coronary lesion of borderline severity.</p> <p>Postrevascularization patients who have a significant change in anginal pattern suggestive of ischemia.</p> <p>Patients with severe comorbidity likely to limit life expectancy or prevent revascularization.</p>	<p>B</p> <p>C</p> <p>B</p> <p>B</p> <p>B</p> <p>C</p> <p>C</p> <p>C</p>	<p>I</p> <p>I</p> <p>IIb</p> <p>IIb</p> <p>IIb</p> <p>IIb</p> <p>IIb</p> <p>III*</p>	<p>[400-405](Keinem LoE eindeutig zuzuweisen)</p>
<b>AHA A</b>	<p><b>Risk assessment: Recommendation for Exercise Testing in Patients With Chest Pain 6 Months or More After Revascularization</b></p> <p>Patients with a significant change in anginal pattern suggestive of ischemia.</p>	<p>B</p>	<p>IIb</p>	<p>[58,59]</p>

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	<p><b>Risk assessment: Recommendations for Exercise Testing for Risk Assessment and Prognosis in Asymptomatic Patients</b></p> <p>Asymptomatic patients with possible myocardial ischemia on ambulatory ECG monitoring or with severe coronary calcification on EBCT (exceptions are listed below in III).</p> <p>Asymptomatic patients with possible myocardial ischemia on ambulatory ECG monitoring or with severe coronary calcification on EBCT, but with the following baseline ECG abnormalities:</p> <ul style="list-style-type: none"> <li>a. Pre-excitation (Wolff-Parkinson-White) syndrome.</li> <li>b. Electronically paced ventricular rhythm.</li> <li>c. More than 1 mm of ST depression at rest.</li> <li>d. Complete left bundle-branch block.</li> </ul>	C  B	IIb  III*	n.a.
<b>AHA ET</b>	<p>[Exercise testing for risk assessment and prognosis in patients with symptoms or a prior history of CAD for]**</p> <p>Patients undergoing initial evaluation with suspected or known CAD, including those with complete right bundle-branch block or less than 1 mm of resting ST depression. Specific exceptions are noted below in Class Iib.</p> <p>Patients with suspected or known CAD, previously evaluated, now presenting with significant change in clinical status.</p>	n.a.	I	[40,138,305,396-398,406-420]

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA ET</b>	<p>Patients with the following resting ECG abnormalities:</p> <ul style="list-style-type: none"> <li>• Pre-excitation (Wolff-Parkinson-White) syndrome</li> <li>• Electronically paced ventricular rhythm</li> <li>• 1 mm or more of resting ST depression</li> <li>• Complete left bundle-branch block or any interventricular conduction defect with a QRS duration greater than 120 ms.</li> </ul> <p>Patients with a stable clinical course who undergo periodic monitoring to guide treatment.</p>	n.a.	IIb	[40,138,305,396-398,406-420]
<b>ESC A</b>	<b>Recommendations for Risk Stratification According to Exercise Stress Imaging (Perfusion or Echocardiography) in Stable Angina in Patients Who Can Exercise</b>			[143,145,292,315,326,327]( <i>Keinem LoE eindeutig zuzuweisen</i> )
	Patients with resting ECG abnormalities, LBBB, >1 mm ST-depression, paced rhythm, or WPW which prevent accurate interpretation of ECG changes during stress	C	I	
	Patients with a non-conclusive exercise ECG, but intermediate or high probability of disease	B	I	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
ESC A	In patients with a deterioration in symptoms post-revascularization	B	Iia	
ESC A	As an alternative to exercise ECG in patients where facilities, cost, and personnel resources allow	B	Iia	
ESC A	<b>Recommendations for Risk Stratification According to Pharmacological Stress Imaging (Perfusion or Echocardiography) in Stable Angina</b>			
	Patients who cannot exercise Other class I and II indications as for exercise stress imaging (perfusion or echocardiography) in stable angina in patients who can exercise, but where local facilities do not include exercise imaging.	-	I	n.a.
ESC A	<b>Recommendations for Risk Stratification by Echocardiographic Evaluation of Ventricular Function in Stable Angina</b>			[107,111,305,306,394,421-423](Keinem LoE eindeutig zuzuweisen)
	Resting echocardiography in patients with prior MI symptoms or signs of heart failure, or resting ECG abnormalities	B	I	
	Resting echocardiography in patients with hypertension	B	I	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
ESC A	Resting echocardiography in patients with diabetes	C	I	
ESC A	Resting echocardiography in patients with a normal resting ECG without prior MI who are not otherwise to be considered for coronary arteriography	C	IIa	
AHA A	<p><b>Risk assessment: Recommendations for Cardiac Stress Imaging as the Initial Test for Risk Stratification of Patients With Chronic Stable Angina Who Are Able to Exercise</b></p> <p>Exercise myocardial perfusion imaging or exercise echocardiography to identify the extent, severity, and location of ischemia in patients who do not have left bundle-branch block or an electronically paced ventricular rhythm and who either have an abnormal rest ECG or are using digoxin.</p> <p>Dipyridamole or adenosine myocardial perfusion imaging in patients with left bundle-branch block or electronically paced ventricular rhythm.</p> <p>Exercise myocardial perfusion imaging or exercise echocardiography to assess the functional significance of coronary lesions (if not already known) in planning PCI.</p> <p>Exercise or dobutamine echocardiography in patients with left bundle-branch block.</p>	<p>B</p> <p>B</p> <p>B</p> <p>C</p>	<p>I</p> <p>I</p> <p>I</p> <p>IIb</p>	<p>[55,145,149,151,152,170,172-174,176,177,424-434](Keinem LoE eindeutig zuzuweisen)</p>

(Fortsetzung)



Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	<p>Exercise, dipyridamole, or adenosine myocardial perfusion imaging, or exercise or dobutamine echocardiography as the initial test in patients who have a normal rest ECG and who are not taking digoxin.</p> <p>Exercise myocardial perfusion imaging in patients with left bundle-branch block.</p> <p>Exercise, dipyridamole, or adenosine myocardial perfusion imaging, or exercise or dobutamine echocardiography in patients with severe comorbidity likely to limit life expectation or prevent revascularization.</p>	<p>B</p> <p>C</p> <p>C</p>	<p>IIb</p> <p>III</p> <p>III*</p>	
<b>AHA A</b>	<p><b>Risk assessment: Recommendations for Cardiac Stress Imaging as the Initial Test for Risk Stratification of Patients With Chronic Stable Angina Who Are Unable to Exercise</b></p> <p>Dipyridamole or adenosine myocardial perfusion imaging or dobutamine echocardiography to identify the extent, severity, and location of ischemia in patients who do not have left bundle-branch block or electronically paced ventricular rhythm.</p> <p>Dipyridamole or adenosine myocardial perfusion imaging in patients with left bundle-branch block or electronically paced ventricular rhythm.</p> <p>Dipyridamole or adenosine myocardial perfusion imaging or dobutamine echocardiography to assess the functional significance of coronary lesions (if not already known) in planning PCI.</p>	<p>B</p> <p>B</p> <p>B</p>	<p>I</p> <p>I</p> <p>I</p>	<p>[122,125,435,436](Keinem LoE eindeutig zuzuweisen)</p>

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
<b>AHA A</b>	Dobutamine echocardiography in patients with left bundle-branch block.  Dipyridamole or adenosine myocardial perfusion imaging or dobutamine echocardiography in patients with severe comorbidity likely to limit life expectation or prevent revascularization.	C  C	IIb  III*	
<b>AHA A</b>	<b>Risk assessment: Recommendations for Cardiac Stress Imaging as the Initial Test for Risk Stratification in Asymptomatic Patients</b>  Exercise perfusion imaging or exercise echocardiography in asymptomatic patients with severe coronary calcification on EBCT who are able to exercise and have one of the following baseline ECG abnormalities: a. Pre-excitation (Wolff-Parkinson-White) syndrome. b. More than 1 mm of ST depression at rest.  Adenosine or dipyridamole myocardial perfusion imaging in patients with severe coronary calcification on EBCT, but with one of the following baseline ECG abnormalities: a. Electronically paced ventricular rhythm. b. Left bundle-branch block.  Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in patients with possible myocardial ischemia on ambulatory ECG monitoring or with severe coronary calcification on EBCT who are unable to exercise.	  C  C  C	  IIb  IIb  IIb	n.a.

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Nicht invasive Methoden der Diagnosesicherung, Risikoabschätzung</b>				
AHA A	Exercise or dobutamine echocardiography in asymptomatic patients with left bundle-branch block.	C	III*	
	Exercise myocardial perfusion imaging, exercise echocardiography, adenosine or dipyridamole myocardial perfusion imaging, or dobutamine echocardiography as the initial stress test in an asymptomatic patient with a normal rest ECG who is not taking digoxin.	C	III*	
	Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in asymptomatic patients who are able to exercise.	C	III*	
AHA A	<b>Risk assessment: Recommendations for Cardiac Stress Imaging After Exercise ECG Testing for Risk Stratification in Asymptomatic Patients</b>			n.a.
	Exercise myocardial perfusion imaging or exercise echocardiography in asymptomatic patients with an intermediate-risk or high-risk Duke treadmill score on exercise ECG testing.	C	IIb	
	Adenosine or dipyridamole myocardial perfusion imaging or dobutamine echocardiography in asymptomatic patients with a previously inadequate exercise ECG.	C	IIb	
	Exercise myocardial perfusion imaging, exercise echocardiography, adenosine or dipyridamole myocardial perfusion imaging, or dobutamine echocardiography in asymptomatic patients with a low-risk Duke treadmill score on exercise ECG testing.	C	III*	

(Fortsetzung)

Tabelle 13 (Fortsetzung): Empfehlungen zur Basisdiagnostik

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIAGNOSESTELLUNG Koronarangiographie, Risikoabschätzung, siehe Tabelle 29</b>				

Tabelle 14: Empfehlungen zur differenzierten Therapieplanung auf Basis einer individuellen Risikoabschätzung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIFFERENZIERTE THERAPIEPLANUNG</b>				
<b>NZGG CR</b>	All those with cardiovascular disease should have comprehensive risk factor measurements to determine the best management approach.	n.a.	C	n.a.
<b>NZGG CR</b>	Annual cardiovascular risk assessments are recommended in people with: <ul style="list-style-type: none"> <li>• a 5-year cardiovascular risk greater than 15 %*</li> <li>• diabetes</li> <li>• people receiving treatment with lipid-modifying or blood pressure lowering medication.</li> </ul>	n.a.	C	n.a.
<b>NZGG CR</b>	Risk assessments should be provided at the primary care level by health practitioners with appropriate training, infrastructure support, systems for follow-up and systems that improve quality.	n.a.	C	n.a.
<b>NZGG CR</b>	Everyone with a history of a cardiovascular event and any risk factor above optimal levels should be considered for treatment to reduce their cardiovascular risk. Treatment should aim to lower the risk factors to optimal levels.	n.a.	A	n.a.

(Fortsetzung)

Tabelle 14 (Fortsetzung): Empfehlungen zur differenzierten Therapieplanung auf Basis einer individuellen Risikoabschätzung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIFFERENZIERTE THERAPIEPLANUNG</b>				
<b>NZGG CR</b>	<p>Everyone with cardiovascular disease, a 5-year cardiovascular risk of greater than 20 %*, genetic lipid disorders, diabetes or the metabolic syndrome should receive intensive lifestyle advice. Lifestyle changes that have been shown to benefit people with these risk profiles include:</p> <ul style="list-style-type: none"> <li>• dietary change (A)</li> <li>• smoking cessation (A)</li> <li>• physical activity (B).</li> </ul>	<p>1+</p> <p>2+</p> <p>1++</p> <p>2++</p>	<p>A</p> <p>B</p>	<p>[437-440]</p> <p>[441,442]</p> <p><i>Keinem LoE eindeutig zuzuweisen: [443]</i></p> <p>[444]</p> <p>[445,446]</p>
<b>NZGG CR</b>	<p>People with a 5-year cardiovascular risk greater than 20 %* should receive intensive lifestyle advice and drug treatment of all modifiable risk factors simultaneously.</p>	<p>1+</p>	<p>C</p>	<p>[447-457]</p>
<b>NZGG CR</b>	<p>Measure body mass index (BMI) and waist circumference as part of a comprehensive cardiovascular risk assessment.</p>	<p>2++</p>	<p>B</p>	<p>[458-461]</p>
<b>SIGN REP</b>	<p>Individuals with symptoms of cardiovascular disease [or who are over the age of 40 years and have diabetes (type 1 or 2) or familial hypercholesterolaemia] should be considered at high risk (<math>\geq 20\%</math> risk over ten years) of cardiovascular events.</p> <p>Individuals at high cardiovascular risk warrant intervention with lifestyle changes and consideration for drug therapy, to reduce their absolute risk.</p>	<p>2++</p> <p>4</p>	<p>D</p>	<p>[462]</p> <p>[463,464]</p>

(Fortsetzung)

Tabelle 14 (Fortsetzung): Empfehlungen zur differenzierten Therapieplanung auf Basis einer individuellen Risikoabschätzung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIFFERENZIERTE THERAPIEPLANUNG</b>				
<b>SIGN REP</b>	<p>Risk factors should be monitored at least annually in people who are on hypertensive or lipid lowering therapy.</p> <p>Individuals from deprived socioeconomic groups must be regarded as being at higher total cardiovascular risk than indicated by risk estimation tools that do not use social deprivation to calculate risk.</p> <p>Other risk factors not included in the CVD risk prediction should be taken into account in assessing and managing a person's overall CVD risk. These include: ethnicity, abdominal obesity, impaired glucose tolerance, raised fasting triglyceride and a family history of premature CVD</p>	1+ 4.	<input checked="" type="checkbox"/>	n.a.
<b>FMS</b>	<p>Waist-to-hip ratio appears to have a graded and highly significant association with myocardial infarction risk in most ethnic groups worldwide. The use of waist-to-hip ratio instead of BMI appears to improve the risk estimate of myocardial infarction.</p>	B	n.a.	[465]
<b>ESC A</b>	<p>Detailed clinical history and physical examination including BMI and/or waist circumference in all patients, also including a full description of symptoms, quantification of functional impairment, past medical history, and cardiovascular risk profile</p>	B	I	[68,70,120,305,306,339,367-370]

(Fortsetzung)

Tabelle 14 (Fortsetzung): Empfehlungen zur differenzierten Therapieplanung auf Basis einer individuellen Risikoabschätzung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIFFERENZIERTE THERAPIEPLANUNG</b>				
NVL	Patienten mit KHK werden von ihrem Hausarzt zu regelmäßigen Untersuchungen in die Praxis eingeladen (viertel- bis halbjährlich), die unabhängig von Kontakten geplant werden, die z. B. wegen Verschlechterung, notwendiger Abklärung oder Komorbidität erforderlich sind.	n.a.	B	[466-482]
NVL	Bei der regelmäßigen Untersuchung wird eine Anamnese in Bezug auf aktuelle Beschwerden (spezifisch kardiale, aber auch Müdigkeit, Leistungsknick), Belastbarkeit, funktionellen Status (Auswirkungen auf Familie, Beruf, Alltagsaktivitäten, Sport, Sexualleben) erhoben.	n.a.	B	[466-482]
NVL	Raucherstatus, körperliche Aktivität, Ernährung, regelmäßige Medikamenten-Einnahme werden evaluiert; ggf. wird der Patient zu einer Verhaltensänderung motiviert, die den Krankheitsverlauf positiv beeinflusst.	n.a.	A	[466-482]
NVL	Der Informationsstand des Patienten in Bezug auf Prognose, die Bedeutung und Behandlung von Beschwerden, Alarmsymptome und Konsequenzen daraus sind regelmäßig zu überprüfen und mit entsprechenden edukativen Angeboten zu verbinden.	n.a.	B	[466-482]

(Fortsetzung)



Tabelle 14 (Fortsetzung): Empfehlungen zur differenzierten Therapieplanung auf Basis einer individuellen Risikoabschätzung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DIFFERENZIERTE THERAPIEPLANUNG</b>				
NVL	Der Patient wird dazu angeregt, individuelle Therapieziele zu formulieren, die vom Hausarzt dokumentiert werden. Bei der Untersuchung wird die Umsetzung besprochen.	n.a.	C	[466-482]
<p>n. a. : nicht angegeben</p> <p>* Einer Person mit KHK wird (unabhängig von anderen Risikofaktoren) ein 5-Jahres-Risiko von &gt;20 % zugewiesen.</p> <p><input checked="" type="checkbox"/>: „Good Practice Point“ bezeichnet („Best Practice“ empfohlen auf der Basis der klinischen Expertise der LL-Gruppe)</p>				

Tabelle 15: Empfehlungen zur nichtmedikamentösen Therapie und allgemeine Maßnahmen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>GEWICHTSREDUKTION</b>				
<b>AHA A</b>	Weight reduction in obese patients in the presence of hypertension, hyperlipidemia, or diabetes mellitus. (Goal: BMI: 18,5-24,9 kg/m <sup>2</sup> )	C	I	n.a.
<b>NZGG REHA</b>	For overweight and obese patients with coronary heart disease, the combination of a reduced-energy diet and increased physical activity is recommended. The initial goal of therapy should be to reduce the patient's weight by 10 %. An energy deficit is most readily achieved through choice of foods low in total fat content, particularly saturated fat. Further reductions in total energy intake can be achieved by reducing carbohydrate intake, especially highly sweetened foods or drinks such as sugar, confectionery, cakes, biscuits, soft drinks and chocolate.	1+	A	[483] <i>keinem LoE eindeutig zuzuweisen: [484]</i>
<b>NZGG REHA</b>	Popular high protein weight loss diets are not recommended for long term weight loss because they restrict consumption of healthy foods and do not provide the variety of foods needed to meet nutritional needs.	n.a.	D	[485]

(Fortsetzung)

Tabelle 15 (Fortsetzung): Empfehlungen zur nichtmedikamentösen Therapie und allgemeine Maßnahmen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>GEWICHTSREDUKTION</b>				
<b>AHA SP</b>	<p>Assess body mass index and/or waist circumference on each visit and consistently encourage weight maintenance/reduction through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to maintain/achieve a body mass index between 18.5 and 24.9 kg/m<sup>2</sup>.</p> <p>If waist circumference (88,9 cm) measured horizontally at the iliac crest is <math>\geq 35</math> inches ( in women and <math>\geq 40</math> inches (101,6 cm) in men, initiate lifestyle changes and consider treatment strategies for metabolic syndrome as indicated.</p> <p>The initial goal of weight loss therapy should be to reduce body weight by approximately 10 % from baseline. With success, further weight loss can be attempted if indicated through further assessment.</p>	B	I	[484,486-490]
<b>SIGN REP</b>	Patients and individuals at risk of cardiovascular disease who are overweight should be targeted with interventions designed to reduce weight and to maintain this reduction.	1++ 1+ 4	B	[491-494] [495]
<b>AHA W</b>	Women should maintain or lose weight through an appropriate balance of physical activity, caloric intake, and formal behavioral programs when indicated to maintain/achieve a BMI between 18.5 and 24.9 kg/m <sup>2</sup> and a waist circumference $\leq 35$ in.	B	I	[496]

(Fortsetzung)

Tabelle 15 (Fortsetzung): Empfehlungen zur nichtmedikamentösen Therapie und allgemeine Maßnahmen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>GEWICHTSREDUKTION</b>				
NVL	Patienten mit einem Body-Mass-Index von 27-35 kg/m <sup>2</sup> und einer KHK ist nahe zu legen, ihr Gewicht innerhalb der nächsten 6 Monate um 5-10 % zu reduzieren.	n.a.	B	[444,497]
NVL	Patienten mit einem Body-Mass-Index > 35 kg/m <sup>2</sup> wird empfohlen, ihr Gewicht innerhalb der nächsten 6 Monate um mehr als 10 % zu reduzieren.	n.a.	B	[444,497]
DGPR	Eine Gewichtsabnahme ist anzustreben bei BMI > 30 kg/m <sup>2</sup> , BMI > 27 kg/m <sup>2</sup> und zusätzlichen Risikofaktoren oder einer manifesten KHK, Taillenumfang >102 cm bei Männern, >94 cm bei Frauen. Patienten mit einem Body-Mass-Index > 35 kg/m <sup>2</sup> wird empfohlen, ihr Gewicht innerhalb der nächsten 6 Monate um mehr als 10 % zu reduzieren. Patienten mit einem Body-Mass-Index von 27-35 kg/m <sup>2</sup> und zusätzlichen Risikofaktoren oder einer sollten ihr Gewicht innerhalb der nächsten 6 Monate um 5-10 % zu reduzieren.	B B B	I I I	[484,498-513]
NCC	After an MI, all patients who are overweight or obese should be offered advice and support to achieve and maintain a healthy weight in line with 'Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children. NICE clinical guideline 43'.	n.a.	A	

(Fortsetzung)

Tabelle 15 (Fortsetzung): Empfehlungen zur nichtmedikamentösen Therapie und allgemeine Maßnahmen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ANDERE ALLGEMEINE MASSNAHMEN</b>				
<b>AHA A</b>	Acupuncture [is not useful/effective and in some cases may be harmful as Treatment to Can Reduce the Risk for Coronary Disease Events]	C	III	n.a.
<b>AHA SP</b>	Patients with cardiovascular disease should have an influenza vaccination	B	I	[514]
<b>NVL</b>	Im Herbst wird jedem KHK-Patienten die Grippeimpfung angeboten.	n.a.	A	[43,446,515-518]

Tabelle 16: Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN / THEMENÜBERGREIFENDE EMPFEHLUNGEN</b>				
NLSC	It has been shown that nutritional interventions can favourably influence different risk factors for cardiovascular disease and limit the risk of illness and death for coronary heart patients.	A	I	[437,442,484,492,519-541,541-574]
NVL	Im Rahmen der Therapie soll der behandelnde Arzt den Patienten über eine KHK-spezifische gesunde Ernährung beraten. Es wird eine kaloriengerechte, fettarme, ballaststoffreiche Ernährung empfohlen, die reich an Früchten, Gemüse und Kohlenhydraten ist und wenig gesättigte Fette enthält.	n.a.	B	[437,442,540,552,574,575]
NZGG REHA	In all patients with cardiovascular disease, the adoption of a cardioprotective dietary pattern is recommended. This pattern includes large servings of fruit, vegetables and whole grains, low fat dairy products, small servings of unsalted nuts and seeds regularly and fish or legumes frequently in place of fatty meat and full fat dairy products. Small lean meat servings can be part of this dietary pattern.  Intensive dietary advice, compliance checks and long term follow up, preferably from a dietitian, are recommended to facilitate the adoption and maintenance of this dietary pattern.  There is currently insufficient evidence to recommend nutrition supplements of antioxidant vitamins, minerals or trace elements for the treatment or prevention of cardiovascular disease.	1+          1-	A	[438,442,450,544,573,576-584]          [545,585-590]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN / THEMENÜBERGREIFENDE EMPFEHLUNGEN</b>				
<b>NZGG REHA</b>	Fish and fish oil supplements may reduce the risk of sudden cardiac death, however it remains to be determined whether fish oil supplements are more beneficial than eating fish.	n.a.	n.a.	
<b>NZGG CR</b>	Dietary intervention is strongly recommended as an integral component of the management of cardiovascular risk.	1+ 2+	A A	[437-440] [441,442]
<b>NZGG CR</b>	Everyone should be encouraged to adopt a cardioprotective dietary pattern that includes fruit and vegetables, whole grains, fish and/or dried peas and beans or soy products, oil, margarine spreads, nuts or seeds, very low-fat milk products, and optional small servings of lean meat or skinned poultry. This dietary pattern avoids regular consumption of foods prepared with meat or dairy fats.	1+ 2+	A	n.a.
<b>DGPR</b>	Die Ernährung soll sich an folgenden Richtlinien orientieren: kaloriengerecht, ballaststoffreich (>20g/ Tag), fettarm (gesättigte Fettsäuren <10 % der Gesamtkalorien, Cholesterin <300mg/ Tag), hoher Anteil an ein- oder mehrfach ungesättigten Fettsäuren, hoher Anteil an Omega-3-Fettsäuren. Dies entspricht der so genannten Mittelmeerkost.  Bei hohem individuellem Beratungsbedarf sollen Einzelberatungen erfolgen, wiederum nach Möglichkeit mit Einbeziehung des Lebenspartners.	A  C	I  I	[437,442,575,591-595]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN / THEMENÜBERGREIFENDE EMPFEHLUNGEN</b>				
NCC	Patients should be advised to eat a Mediterranean-style diet (more bread, fruit, vegetables and fish; less meat; and replace butter and cheese with products based on vegetable and plant oils)	1+	A	[437]
<b>SCHULUNG / VERHALTENSTRAINING</b>				
NCC	Patients should be given consistent dietary advice, tailored to their needs. Patients should be offered an individual consultation to discuss diet, including their current eating habits, and advice on improving their diet. Patients should be given healthy eating advice that can be extended to the whole family.	n.a. 2+ n.a.	GPP B GPP	[529,585,596,597]
NZGG CR	Use behavioural and motivational strategies in education and counselling to achieve and sustain dietary change	1+	A	[598-600]
NZGG CR	Intensive dietary advice should be given in individual/group sessions with a dietitian.	1+	A	n.a.
SIGN REP	Interventions to improve diet should be based on educational competencies (improved knowledge, relevance, individualisten, feedback, reinforcement and facilitation).	4	n.a.	[517]

(Fortsetzung)



Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>OBST/GEMÜSE/BALLASTSTOFFE</b>				
<b>AHA SP</b>	Adding plant stanol/sterols (2 g/d) and viscous fiber (>10 g/d) will further lower LDL-C.	n.a.	n.a.	[486,601,602]
<b>AHA SP</b>	Emphasis on increased consumption of fresh fruits, vegetables, and alcohol moderation	B	I	[486,603]
<b>SIGN REP</b>	Increased fruit and vegetable consumption is recommended to reduce cardiovascular risk for the entire population	2++ 2+	C	[551,604] [605]
<b>AHA W</b>	Women should consume a diet rich in fruits and vegetables; choose whole-grain, high-fiber foods; consume fish, especially oily fish,* at least twice a week; limit intake of saturated fat to <10 % of energy, and if possible to <7 %, cholesterol to <300 mg/d, alcohol intake to no more than 1 drink per day,† and sodium intake to <2.3 g/d (approximately 1 tsp salt). Consumption of trans-fatty acids should be as low as possible (eg, <1 % of energy).	B	I	[543,606,606-631,631,632]
<b>FETTE</b>				
<b>CCS</b>	A reasonable diet is low in saturated fats and refined carbohydrates (e.g. refined grains, sugar and potatoes) supplemented by poly-unsaturated fats, fruits and vegetables  Simple dietary instruction sheets should be made available for dissemination by physicians to patients.	C	II	[633,634]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>FETTE</b>				
<b>SIGN REP</b>	Diets low in total and saturated fats should be recommended to all for the reduction of cardiovascular risk	1++	A	[605]
<b>SIGN REP</b>	A reduction in saturated fat, if followed for a period of at least 2 years, in people with angina or post-MI, results in a small but potentially important reduction in risk of cardiovascular events. The reduction in fat intake should be permanent to obtain maximum benefit.	1A	n.a.	[528,529]
<b>ICSI</b>	Dietary and non-dietary intake of n-3 polyunsaturated fatty acids may reduce overall mortality, mortality due to myocardial infarction, and sudden death in patients with Stable CAD	M/A	II	[540,578]
<b>AHA W</b>	Women should consume a diet rich in fruits and vegetables; choose whole-grain, high-fiber foods; consume fish, especially oily fish,* at least twice a week; limit intake of saturated fat to <10 % of energy, and if possible to <7 %, cholesterol to <300 mg/d, alcohol intake to no more than 1 drink per day,† and sodium intake to <2.3 g/d (approximately 1 tsp salt). Consumption of trans-fatty acids should be as low as possible (eg, <1 % of energy).	B	I	[543,606,606-631,631,632]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALKOHOL</b>				
<b>NCC</b>	Patients who drink alcohol should be advised to keep weekly consumption within safe limits (no more than 21 units of alcohol per week for men, or 14 units per week for women) and to avoid binge drinking (more than 3 alcoholic drinks in 1–2 hours).	2+	GPP	[578,635-643]
<b>NVL</b>	Moderater Alkoholgenuss ist – sofern keine Kontraindikationen existieren – in Grenzen erlaubt: Männer < 30 g/Tag, Frauen < 20 g/Tag (1 g Alkohol = 7,1 kcal; Alkoholgehalt gebräuchlicher Getränke in g/100 ml: Bier 2-5; Wein 6-11; Sekt 7-10; Branntwein 32-50). Alkoholgenuss soll mit dem Arzt besprochen werden.	n.a.	B	[644,645]
<b>NZGG REHA</b>	A small amount of alcohol may provide health benefits. The protective effect of alcohol is seen at doses as low as one standard drink every second day.	2+	C	[646]
<b>SIGN REP</b>	Patients with established coronary heart disease may be advised that light to moderate alcohol consumption may be protective against further coronary events.	2+	C	[638,647]
<b>SIGN REP</b>	When giving advice to patients with coronary heart disease, the current general advice of no more than two to three units of alcohol per day for women and no more than three to four units of alcohol per day for men, with at least two drink-free days per week for both men and women, should be recommended. Examples to what constitutes a “drink” should be given to the patient.	n.a.	n.a.	[648,649]

(Fortsetzung)

Tabelle16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALKOHOL</b>				
NLSC	It is reasonable to assume that moderate alcohol consumption reduces the chance of relapse and of dying in patients with coronary vascular disease.	B	IIa	[636,641,646,650-659]
AHA W	Women should consume a diet rich in fruits and vegetables; choose whole-grain, high-fiber foods; consume fish, especially oily fish,* at least twice a week; limit intake of saturated fat to <10 % of energy, and if possible to <7 %, cholesterol to <300 mg/d, alcohol intake to no more than 1 drink per day,† and sodium intake to <2.3 g/d (approximately 1 tsp salt). Consumption of trans-fatty acids should be as low as possible (eg, <1 % of energy).	B	I	[543,606,606-631,631,632]
<b>OMEGA-3-FETTSÄUREN</b>				
NCC	Patients should be advised to consume at least 7 g of omega 3 fatty acids per week from two to four portions of oily fish per week (see appendix H for the equivalent quantity of oily fish consumption required to provide 7 g of omega 3 fatty acids per week).	1+	B	[442,660]
	For patients who have had an MI within 3 months and who are not achieving this, consider providing at least 1g daily of omega-3-acid ethyl esters treatment licensed for secondary prevention post MI for up to 4 years.	1++	B	[578,661]
	Initiation of omega-3-acid ethyl esters supplement treatment is not routinely recommended in patients that have had an MI more than 3 months earlier.		GPP	

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>OMEGA-3-FETTSÄUREN</b>				
<b>AHA SP</b>	Encourage increased consumption of omega-3 fatty acids in the form of fish* or in capsule form (1 g/d) for risk reduction. For treatment of elevated triglycerides, higher doses are usually necessary for risk reduction.	B	IIb	[486,601,602]
<b>NZGG CR</b>	Fish oil supplements, 1 g/day EPA and DHA combined, may be offered post myocardial infarction.	1++	A	[540,602]
<b>SIGN REP</b>	All individual should eat at least two portions of fish per week, one of which should be a fatty fish	1+ 4	n.a.	[540,662] [663]
<b>AHA W</b>	As an adjunct to diet, omega-3 fatty acids in capsule form (approximately 850 to 1000 mg of EPA and DHA) may be considered in women with CHD, and higher doses (2 to 4 g) may be used for treatment of women with high triglyceride levels.	B	IIb	[664-670]
<b>AHA W</b>	Women should consume a diet rich in fruits and vegetables; choose whole-grain, high-fiber foods; consume fish, especially oily fish,* at least twice a week; limit intake of saturated fat to <10 % of energy, and if possible to <7 %, cholesterol to <300 mg/d, alcohol intake to no more than 1 drink per day,† and sodium intake to <2.3 g/d (approximately 1 tsp salt). Consumption of trans-fatty acids should be as low as possible (eg, <1 % of energy).	B	I	[543,606,606-631,631,632]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SALZ</b>				
<b>SIGN REP</b>	People with hypertension should be advised to reduce their salt intake as much as possible to lower blood pressure.	1+	A	[671-673]
<b>SIGN REP</b>	All individuals should aim to consume less than 6g of salt per day	4	n.a.	[674]
<b>AHA W</b>	Women should consume a diet rich in fruits and vegetables; choose whole-grain, high-fiber foods; consume fish, especially oily fish,* at least twice a week; limit intake of saturated fat to <10 % of energy, and if possible to <7 %, cholesterol to <300 mg/d, alcohol intake to no more than 1 drink per day,† and sodium intake to <2.3 g/d (approximately 1 tsp salt). Consumption of trans-fatty acids should be as low as possible (eg, <1 % of energy).	B	I	[543,606,606-631,631,632]
<b>ANTIOXIDANZIEN/FOLSÄURE</b>				
<b>NCC</b>	Patients should be advised not to take supplements containing beta-carotene, and should not be advised to take antioxidant supplements (vitamin E and/or C) or folic acid to reduce cardiovascular risk.	1+ 1++	B A	[579,594] [578,579,675-677]
<b>NZGG CR</b>	The use of antioxidant supplements is not recommended for the prevention or treatment of cardiovascular disease.	1+	A	[678-680]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ANTIOXIDANZIEN/FOLSÄURE</b>				
<b>SIGN REP</b>	Antioxidant vitamin supplementation is not recommended for the prevention or treatment of coronary heart disease	1++ 4	A	[675,681,682] [594]
<b>AKdÄ</b>	Für Vitamin E, C oder Betacaroten liegen keine hinreichenden und konsistenten Daten vor, die eine Absenkung des Risikos für Herzerkrankungen belegen.	↔	n.a.	[679,683,684]
<b>AHA A</b>	Vitamin C and E supplementation [is not recommended].	A	III	[679,684-686]
<b>AHA W</b>	Antioxidant vitamin supplements (eg, vitamin E, C, and beta carotene) should not be used for the primary or secondary prevention of CVD..	A	III	[610,618,675,681,687-690]
<b>FMS</b>	Folic acid (and vitamins B6 and B12) lower serum homocysteine concentration, but evidence on its effect in slowing down the progression of vascular disease is scant (only one study in which the administration of vitamins after PTCA lowered the incidence of restenosis ). Several studies on secondary prevention are ongoing, but so far there is no evidence that vitamin substitution would reduce the incidence of cardiovascular diseases.	B	n.a.	[677,691,692]
<b>AHA A</b>	Folate therapy in patients with elevated homocysteine levels.	C	Ila	[693]
<b>AHA W</b>	Folic acid**, with or without B6 and B12 supplementation, should not be used for the primary or secondary prevention of CVD.	A	III	[676,677,692,694-698]

(Fortsetzung)

Tabelle 16 (Fortsetzung): Empfehlungen zur Ernährungsberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ANDERE</b>				
<b>AHA A</b>	Garlic [is not recommended]	C	III	[581,699-701]
<b>AHA A</b>	Coenzyme Q [is not recommended].	C	III	n.a.
<p>* Anmerkung: <i>Pregnant and lactating women should avoid eating fish potentially high in methylmercury (eg, shark, swordfish, king mackerel, or tile fish) and should eat up to 12 oz/wk of a variety of fish and shellfish low in mercury and check the Environmental Protection Agency and the US Food and Drug Administration's Web sites for updates and local advisories about safety of local catch.</i></p> <p>** Anmerkung: <i>Folic acid supplementation should be used in the childbearing years to prevent neural tube defects.</i></p> <p>† Anmerkung : <i>A drink equivalent is equal to a 12-oz bottle of beer, a 5-oz glass of wine, or a 1.5-oz shot of 80-proof spirit.</i></p>				



Tabelle 17: Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA A</b>	Smoking cessation therapy.	B	I	[574,702-704]
<b>NZGG REHA</b>	All patients with cardiovascular disease should be advised to quit smoking. They should be supported to stop smoking as a priority measure.  For smokers with coronary heart disease, medical advice, individual and group counselling, nicotine replacement therapy and some antidepressant medications improve success in quitting and are recommended.	n.a.	A	[705]
<b>NZGG REHA</b>	The spouses, partners, whānau* and family of patients with coronary heart disease should be strongly encouraged to stop smoking to avoid the risk of second-hand smoke to the patient.	n.a.	D	[705]
<b>CCS</b>	Smoking cessation is to be encouraged in elderly patients with or without vascular disease.	A	I	[706,707]
<b>CCS</b>	Both nicotine replacement therapy and other pharmacological agents are safe in elderly patients with cardiovascular disease.	C	II	[706,707]
<b>NZGG CR</b>	All smokers should be encouraged to stop smoking. Smoking cessation has major and immediate health benefits for smokers of all ages	n.a.	A	[708]

(Fortsetzung)

Tabelle 17 (Fortsetzung): Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NZGG CR</b>	Nicotine replacement therapy (NRT) is recommended as first-line pharmacotherapy for smoking cessation in New Zealand. Bupropion and nortriptyline hydrochloride are alternatives and recommended as second-line agents.	n.a.	A	[709]
<b>NZGG CR</b>	Use NRT cautiously (after discussion with a specialist) in the immediate post-myocardial infarction period (4 weeks) and in those with serious arrhythmias, or severe or worsening angina.	1++	C	[710]
<b>NZGG CR</b>	Nortriptyline hydrochloride is contraindicated during the acute recovery period after myocardial infarction.	n.a.	C	n.a.
<b>AKdÄ</b>	Für die Wirksamkeit einiger nichtmedikamentöser Verfahren zur Raucherentwöhnung wie z. B. ärztliche Beratung, Selbsthilfeinterventionen, aber insbesondere auch verhaltenstherapeutische Methoden gibt es gute Belege.	↑↑	n.a.	[704,711,712]
	Für andere nichtmedikamentöse Verfahren wie Hypnose, Akupunktur oder reduziertes Rauchen liegen keine hinreichenden Wirksamkeitsnachweise vor.	↔	n.a.	[712]
<b>AKdÄ</b>	Die Wirksamkeit von Nikotin und Bupropion hinsichtlich der Verbesserung der Abstinenzrate ist anhand klinischer Studien nachgewiesen.	↑↑	n.a.	[712]
	Interventionsstudien zur Morbidität oder Mortalität liegen für die stabile KHK nicht vor.	↔	n.a.	

(Fortsetzung)

Tabelle 17 (Fortsetzung): Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
NLSC	It has been shown that a smoker with a coronary heart disease can reduce the risk of a (new) cardiac incident by stopping smoking.	A	I	[702,713-724]
NLSC	It has been shown that discussing smoking behaviour and offering support with smoking cessation provided by professionals are more effective approaches than self-help or help provided by non-professionals.	A	I	[484,519,573,598,600,725-739]
AHA SP	Ask about tobacco use status at every visit. Advise every tobacco user to quit. Assess the tobacco user's willingness to quit. Assist by counseling and developing a plan for quitting. Arrange follow-up, referral to special programs, or pharmacotherapy (including nicotine replacement and bupropion). Urge avoidance of exposure to environmental tobacco smoke at work and home.	B	I	[486,489,490,740]
FMS	Smoking should be stopped. The risk of an MI is 3-fold in smokers and even higher in women. Smoking cessation reduces mortality from ischaemic heart disease as well as non-fatal myocardial infarctions by more than 30 %.	A	n.a.	[720]
SIGN REP	All people who smoke should be advised to stop and offered support to help facilitate this in order to minimise cardiovascular and general health risks.	2++ 2+	B	[741] [742]

(Fortsetzung)

Tabelle 17 (Fortsetzung): Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN REP</b>	Exposure to passive smoking increases cardiovascular risk and should be minimised.	2++ 2+	B	[743-745] [746] <i>keinem LoE eindeutig zuzuweisen: [747,748]</i>
<b>SIGN REP</b>	Nicotine replacement therapies or bupropion should be used as part of a smoking cessation programme to augment professional advice and increase long term abstinence rates.	1++ 1+ 2++ 4	A	[46,47,749] [611,750] [751] [752]
<b>SIGN REP</b>	Smokers with coronary heart disease and comorbid clinical depression should have their depression treated both for alleviation of depressive symptoms and to increase the likelihood of stopping smoking	1+ 1- 2++	B	[753,754] [755] [756]
<b>AHA W</b>	Women should not smoke and should avoid environmental tobacco smoke. Provide counseling, nicotine replacement, and other pharmacotherapy as indicated in conjunction with a behavioral program or formal smoking cessation program.	B	I	[757]
<b>NVL</b>	Die vollständige Beendigung des Rauchens (Abstinenz) ist die wichtigste therapeutische Einzelmaßnahme bei Patienten mit Gefäßerkrankungen.	n.a.	A	[712,758-762]
<b>NVL</b>	Der behandelnde Arzt soll den Patienten über die besonderen Risiken des Rauchens für die KHK aufklären, spezifisch beraten und dringlich empfehlen, das Rauchen aufzugeben.	n.a.	B	[704,711,758]

(Fortsetzung)

Tabelle 17 (Fortsetzung): Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NVL</b>	Es ist festzustellen, ob der Raucher zu dieser Zeit bereit ist, einen Ausstiegsversuch zu beginnen. Für änderungsbereite Raucher sollen – je nach Bedarf – nichtmedikamentöse und medikamentöse Hilfen zur Raucherentwöhnung zur Verfügung gestellt werden.	n.a.	B	[712,758]
<b>DGPR</b>	<p>Alle Herz-Kreislauf-Patienten sollen intensiv und wiederholt über die Risiken des Rauchens aufgeklärt werden.</p> <p>Raucher sollen zu einer Beendigung des Rauchens noch während des Rehabilitationsaufenthalts motiviert und unterstützt werden. Mit den Patienten sollen dabei definitive Zielvereinbarungen getroffen werden.</p> <p>Die Beratung sollte durch psychologisch gestützte Antiraucherprogramme in Gruppen und durch individuelle Arbeitsmaterialien (z. B. Patientenheft) ergänzt werden.</p> <p>Eine ergänzende und ärztlich überwachte Nikotinersatztherapie ist bei Rauchern, bei denen die intensive Beratung und Motivation allein nicht Erfolg versprechend ist, zu erwägen. Kontraindikationen (innerhalb 4 Wochen nach akutem Koronarsyndrom, bei schwerwiegenden ventrikulären Rhythmusstörungen) sind zu beachten.</p> <p>Angehörige sollten in die Beratungen mit einbezogen und es sollte ihnen geraten werden, das Rauchen ebenfalls zu beenden.</p>	<p>A</p> <p>A</p> <p>B</p> <p>A</p> <p>B</p>	<p>I</p> <p>I</p> <p>I</p> <p>I</p> <p>I</p>	[46,758,759,761,763-774]

(Fortsetzung)

Tabelle 17 (Fortsetzung): Empfehlungen zur Raucherberatung

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	<p>All patients who smoke should be advised to quit and be offered assistance from a smoking cessation service in line with 'Brief interventions and referral for smoking cessation in primary care and other settings' (NICE public health intervention guidance 1).</p> <p>All patients who smoke and who have expressed a desire to quit should be offered support and advice, and referral to an intensive support service (for example the NHS Stop Smoking Services) in line with 'Brief interventions and referral for smoking cessation in primary care and other settings' (NICE public health intervention guidance 1) (Grade A). If a patient is unable or unwilling to accept a referral they should be offered pharmacotherapy in line with the recommendations in 'Nicotine replacement therapy (NRT) and bupropion for smoking cessation' (NICE technology appraisal guidance 39).</p>		A	[775]
			A	[776]
<p>n.a.: nicht angegeben</p> <p>* Maori-Begriff für „erweiterte Familie“</p>				

Tabelle 18: Empfehlungen zur körperlichen Aktivität

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN</b>				
<b>NLSC</b>	It has been shown that coronary heart patients who participate in a physical training programme and then maintain a physically active lifestyle reduce their mortality risk.	A	I	[444,777-787]
<b>FMS</b>	Moderate to high levels of physical activity may reduce the risk of non-fatal and fatal coronary heart disease.	C	n.a.	[788]
<b>SIGN REP</b>	All patients, irrespective of health, fitness, or activity level should be encouraged to increase activity levels gradually.	n.a.	<input checked="" type="checkbox"/>	
<b>NZGG REHA</b>	In people with coronary heart disease, vigorous exercise is generally not encouraged.	n.a.	C	[194,444-446,778,782,789-830]
<b>NZGG CR</b>	Individuals with a history of cardiovascular disease should consult their doctor before they undertake vigorous physical activity. Vigorous activity is generally not encouraged in people with impaired left ventricular function, severe coronary artery disease, recent myocardial infarction, significant ventricular arrhythmias or stenotic valve disease.	2++	B	[809,811]
<b>NCC</b>	Advice on physical activity should involve a discussion about current and past activity levels and preferences. The benefit of exercise may be enhanced by tailored advice from a suitably qualified professional (GPP).	n.a.	GPP	n.a.

(Fortsetzung)

Tabelle 18 (Fortsetzung): Empfehlungen zur körperlichen Aktivität

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>FREQUENZ UND DAUER</b>				
NCC	<p>Patients should be advised to undertake regular physical activity sufficient to increase exercise capacity.</p> <p>Patients should be advised to be physically active for 20–30 minutes a day to the point of slight breathlessness. Patients who are not achieving this should be advised to increase their activity in a gradual, step by step way, aiming to increase their exercise capacity. They should start at a level that is comfortable, and increase the duration and intensity of activity as they gain fitness.</p>	<p>1+</p> <p>n.a.</p>	<p>B</p> <p>GPP</p>	[794,831-835]
NVL	Als Anhalt wird ein regelmäßiges aerobes Ausdauertraining (3-7 x pro Woche, je 15-60 Minuten) bei 40-60 % der maximalen Leistungsfähigkeit und im ischämiefreien Bereich empfohlen.	n.a.	B	[43,192,444,497,515-518,801,836-839]
NZGG REHA	<p>Exercise advice should be individualised and consider clinical characteristics, lifestyle, attitudes, culture and environment.</p> <p>For sedentary people, at least 30 minutes of moderate intensity activity on most days of the week is recommended.</p> <p>Short periods of physical activity are beneficial.</p> <p>Where possible, people with coronary heart disease should be referred to a comprehensive cardiac rehabilitation programme for exercise training.</p>	n.a.	B	[194,444-446,778,782,789-830]

(Fortsetzung)



Tabelle 18: Empfehlungen zur körperlichen Aktivität

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>FREQUENZ UND DAUER</b>				
<b>AHA W</b>	<p>Women should accumulate a minimum of 30 minutes of moderate-intensity physical activity (eg, brisk walking) on most, and preferably all, days of the week.</p> <p>Women who need to lose weight or sustain weight loss should accumulate a minimum of 60 to 90 minutes of moderate-intensity physical activity (eg, brisk walking) on most, and preferably all, days of the week.</p>	B  C	I  I	[496,616,831,839-847]
<b>AHA A</b>	<p>Weight reduction and increased physical activity in persons with the metabolic syndrome.</p> <p>Minnum goal: 30 min 3-4 days per week, optimal:daily</p>	B	IIa	[52,783,848]
<b>AHA SP</b>	<p>For all patients, assess risk with a physical activity history and/or an exercise test, to guide prescription.</p> <p>For all patients, encourage 30 to 60 minutes of moderate-intensity aerobic activity, such as brisk walking, on most, preferably all, days of the week, supplemented by an increase in daily lifestyle activities (eg, walking breaks at work, gardening, household work).</p> <p>Advise medically supervised programs for high-risk patients (eg, recent acute coronary syndrome or revascularization, heart failure).</p>	B	I	[486,489,490,779,782,849,850]
<b>AHA SP</b>	Encourage resistance training 2 days per week.	C	IIb	[486,489,490,779,782,849,850]

(Fortsetzung)

Tabelle 18 (Fortsetzung): Empfehlungen zur körperlichen Aktivität

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>FREQUENZ UND DAUER</b>				
<b>NZGG REHA</b>	Physical activity for people with coronary heart disease should begin at low intensity and gradually increase over several weeks.	n.a.	D	[194,444-446,778,782,789-830]
<b>NZGG CR</b>	Everyone should aim to do a minimum of 30 minutes of moderate intensity physical activity (3 to 6 METs) on most days of the week.	1++ 2++	B	[444] [445,446]
<b>NZGG CR</b>	Physical activity for people with coronary heart disease should begin at a low intensity and gradually increase over several weeks.	2++	C	[809,811]
<b>SIGN REP</b>	Physical activity of at least moderate intensity (eg makes person slightly out of breath) is recommended for the whole population. Physical activity should include occupational and/ or leisure time activity and incorporate accumulated bouts of moderate intensity activities such as brisk walking. Those who are moderately active and are able to increase their activity should be encouraged to do so. Activity can be increased through a combination of changes to intensity, duration or frequency.	2++  2+  4	B	[851-855]  [795,856,857]  keinem LoE eindeutig zuzuweisen: [809,849]

Tabelle 19: Empfehlungen zur psychischen, psychosomatischen und psychosozialen Betreuung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Patients with angina should be assessed for the impact of angina on mood, quality of life and function, to monitor progress and inform treatment decisions	1+ 2+ 3	D	[858-861] keinem LoE eindeutig zuzuweisen: [862-867]
<b>SIGN A</b>	Patient's beliefs about angina should be assessed when discussing the management of risk factors and how to cope with symptoms	3	D	[868-872]
<b>NZGG REHA</b>	Simple questions regarding the patient's illness perception, coping skills and external support followed by a validated questionnaire such as the HADS questionnaire are recommended.	n.a.	D	[862,873-877]
<b>NVL</b>	Beim Risikofaktoren-Management sollten die individuellen psychosozialen Risikofaktoren des KHK-Patienten berücksichtigt werden.	n.a.	B	[878-880]
<b>NVL</b>	Emotionale Aspekte (Depression, Angst, Sorgen, Enttäuschung), psychosoziale Situation, Krankheitsvorstellungen und Verhaltensweisen (z. B. übertriebene Schonung) werden erfragt. Im hausärztlichen Gespräch wird eine optimistische Grundeinstellung bzgl. der therapeutischen Möglichkeiten vermittelt.	n.a.	C	[466-482]
<b>SIGN A</b>	Patients undergoing coronary artery bypass grafting, should receive screening for anxiety and depression pre-surgery and during the following year as part of postsurgical assessment, rehabilitation and coronary heart disease secondary prevention clinics. Where required patients should receive appropriate treatment (psychological therapy, rehabilitation, medication)	3 4	D	[881-894]

(Fortsetzung)

Tabelle 19 (Fortsetzung): Empfehlungen zur psychischen, psychosomatischen und psychosozialen Betreuung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN REP</b>	Depression and social isolation or lack of quality social support are risk factors for the development of and prognosis with coronary heart disease and should be taken into account when assessing individual risk.	1+ 2++	B	[895] [878,896,897]
<b>AHA W</b>	Consider screening women with CHD for depression and refer/treat when indicated .	B	IIa	[831,897-905]
<b>NLSC</b>	It has been shown that depression is an independent risk factor for cardiovascular disease.	A	n.a.	[878,879,906-913] 1-10
<b>SIGN R</b>	Patients with coronary disease should be screened for anxiety and depression using a validated assessment tool.	2++	B	[472,914-919]
<b>SIGN R</b>	Screening for anxiety and depression should take place at discharge, 6-12 weeks post MI or following a decision on surgical intervention, and repeated at three month intervals if appropriate. This will allow measurement of baseline risk in order to assess prognosis and tailor treatment, and subsequent monitoring of improvement following intervention.	n.a.	<input checked="" type="checkbox"/>	[582,862,864,920,921]
<b>NZGG REHA</b>	An assessment of the social support available to the patient is recommended for all patients with coronary heart disease.	1+ 2++ 2+ 2-	C	[910,922-924] [909,911,925-929] [859,911,930,931] [879,932,933]
<b>NLSC</b>	It has been shown that a lack of social support or leading a socially isolated life is an independent risk factor for cardiovascular disease.	A	n.a.	[878,879,934]

(Fortsetzung)

Tabelle 19 (Fortsetzung): Empfehlungen zur psychischen, psychosomatischen und psychosozialen Betreuung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NZGG REHA</b>	All patients with coronary heart disease who demonstrate a high level of anxiety or depression should be referred to a trained practitioner for assessment and treatment of their anxiety and depression.	1+ 2++ 2+ 2-	B	[910,922-924] [909,911,925-929] [859,911,930,931] [879,932,933]
<b>SIGN REP</b>	Cognitive behaviour therapy should be considered for increasing physical function and improving mood in patients with coronary heart disease.	1++ 4	A	[935-937] [935]
<b>SIGN REP</b>	Motivational interviewing should be considered in patients with cardiovascular disease who require to change health behaviours including diet, exercise, alcohol, and compliance with treatment.	2+	B	[938-940]
<b>SIGN REP</b>	Practitioners using techniques which involve cognitive behaviour therapy or motivational interviewing should receive appropriate training.	1+ 4	n.a.	[941] [942]
<b>SIGN REP</b>	Patients who are resistant to change or who present with more complex problems should be considered for referral to a clinical psychologist or therapist with a similar level of expertise.	n.a.	<input checked="" type="checkbox"/>	
<b>NLSC</b>	It is reasonable to assume that psychological interventions are effective for patients who develop serious psychological symptoms as a result of heart disease.	B	IIa	[910,943-946]
<b>NVL</b>	Dazu [Risikofaktoren-Management] sind ggf. geeignete unterstützende psychotherapeutische und/oder medikamentöse Maßnahmen einzuleiten.	n.a.	C	n.a.

(Fortsetzung)

Tabelle 19 (Fortsetzung): Empfehlungen zur psychischen, psychosomatischen und psychosozialen Betreuung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN R</b>	All cardiac patients in whom anxiety or depression is diagnosed should be treated appropriately. Caution must be exercised in selecting an antidepressant which does not have significant cardiac side effects. Relevant guidelines should be consulted.	1++ 1+ n.a.	A  b	[947] [948-951]
<b>SIGN R</b>	Patients with moderate to severe psychological difficulties should be treated by staff with specialist training in techniques such as cognitive behavioural therapy.	1+,1++	B	[952-955] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>AHA A</b>	Identification and appropriate treatment of clinical depression to improve CAD outcomes. Intervention directed at psychosocial stress reduction.	C  C	IIa  IIa	[52,848,956-962] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN A</b>	Patients with stable angina whose symptoms remain uncontrolled or who are experiencing reduced physical functioning despite optimal medical therapy should be considered for the Angina Plan*	1++ 1+ 1-	B	[963] [935] [964]
<b>SIGN A</b>	Interventions based on psychological principles designed to alter beliefs about heart disease and angina, such as the Angina Plan*, should be considered	1+	B	[965]
<b>SIGN REP</b>	Stress management training is not recommended as a technique to reduce coronary heart disease mortality or morbidity or conventional risk factors. It may have a role in improving patients' mood, including depressed mood.	1++	A	[966]

(Fortsetzung)

Tabelle 19 (Fortsetzung): Empfehlungen zur psychischen, psychosomatischen und psychosozialen Betreuung

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN REP</b>	Use of the stages of change model alone is not recommended as a method for changing the health behaviour of individuals with coronary heart disease.	1++	A	[967,968]
<b>SIGN R</b>	Psychological and behavioural interventions should be targeted at the needs of individual patients.	1++ 1	B	[910,943] [969,970]

Tabelle 20: Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
NVL	Alle Patienten mit KHK sollten mit Thrombozytenfunktionshemmern behandelt werden. Acetylsalicylsäure soll hierfür aufgrund der zahlreichen Belege zur Wirksamkeit Mittel der ersten Wahl sein. Bei Unverträglichkeit oder Kontraindikationen kommt Clopidogrel zum Einsatz. (siehe Leitlinie der DGK zur Diagnose und Behandlung der chronischen koronaren Herzerkrankung <a href="http://www.dgk.org/leitlinien/LL_KHK_DGK.pdf">http://www.dgk.org/leitlinien/LL_KHK_DGK.pdf</a> )	n.a.	A	[971-985]
CCS	ASA should be prescribed for an indefinite period for all elderly patients with coronary heart disease with or without a recent acute coronary syndrome, unless contraindicated.	B	I	n.a.
NZZG REHA	In all patients with coronary heart disease pharmacotherapy with aspirin, a betablocker, an ACE inhibitor and a statin should be considered unless contraindicated, regardless of initial levels.	1++	A	[971,986-990]
NZGG CR	Everyone with a 5-year cardiovascular risk greater than 15 % should be started on low-dose aspirin (75 – 150 mg/day) if there are no contraindications. Aspirin is contraindicated in people with aspirin allergies or intolerance, active peptic ulceration, uncontrolled blood pressure and in people with other major bleeding risks. Aspirin 75 to 150 mg/day should be given routinely and continued for life. These doses are at least as effective as higher doses.	1++  2++	A	[981,982,991]  [992]

(Fortsetzung)



Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN REP</b>	Individuals with established atherosclerotic disease should be treated with 75mg aspirin daily.	1++	A	[971,978,981]
<b>AHA SP</b>	Start aspirin 75 to 162 mg/d and continue indefinitely in all patients unless contraindicated.	A	I	[39,291,486,489,490,993-995]
<b>ESC A</b>	Aspirin 75 mg daily in all patients without specific contradictions (i.e. active gastrointestinal [GI] bleeding, aspirin allergy, or previous aspirin intolerance)	A	I	[971,981,996-998,998,999]
<b>AHA W</b>	<p><i>Aspirin, high risk</i> Aspirin therapy (75 to 325 mg/d)¶ should be used in high-risk‡ women unless contraindicated.</p> <p>If a high-risk‡ woman is intolerant of aspirin therapy, clopidogrel should be substituted.</p> <p><i>Aspirin— other at-risk or healthy women</i> In women ≥65 years of age, consider aspirin therapy (81 mg daily or 100 mg every other day) if blood pressure is controlled and benefit for ischemic stroke and MI prevention is likely to outweigh risk of gastrointestinal bleeding and hemorrhagic stroke and</p> <p>in women &lt;65 years of age when benefit for ischemic stroke prevention is likely to outweigh adverse effects of therapy.</p> <p><i>Aspirin for MI in women &lt;65 years of age†</i> Routine use of aspirin in healthy women &lt;65 years of age is not recommended to prevent MI.</p>	<p>A</p> <p>B</p> <p>B</p> <p>B</p> <p>B</p>	<p>I</p> <p>I</p> <p>IIa</p> <p>IIb</p> <p>III</p>	<p>[1000-1002] [985,1003-1016]</p>

(Fortsetzung)

Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ICSI</b>	The use of one aspirin tablet daily (81-162 mg) is strongly recommended unless there are medical contraindications.	n.a.	n.a.	[971,974,977,979,1017,1018]
<b>FMS</b>	Aspirin is recommended for all patients with CHD at the dose of 75-150 mg/day, unless it is contraindicated. However, aspirin is ineffective in approximately 20 % of the patients, and clopidogrel should be prescribed.	n.a.	n.a.	[981]
<b>AHA A</b>	Aspirin in the absence of contraindications.	A	I	[637,971,974,977,981,1019,1020]
<b>AHA A</b>	Aspirin in the absence of contraindication in patients with prior MI. (asymptomatic patients).	A	I	[1021]
<b>AHA A</b>	Aspirin in the absence of contraindications in patients without prior MI. (asymptomatic patients).	B	IIa	n.a.
<b>SIGN A</b>	All patients with stable angina due to atherosclerotic disease should receive long term standard aspirin and statin therapy.	1++ 2++	A	[981,1022]  keinem LoE eindeutig zuzuweisen: [992,1023,1024]

(Fortsetzung)

Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AKdÄ</b>	<p>Thrombozytenfunktionshemmer wirken über ihre aggregationshemmenden Eigenschaften antithrombotisch. Acetylsalicylsäure (ASS) hemmt die Cyclooxygenase und die Synthese von Thromboxan-A2 in Thrombozyten. ASS (75–325 mg/Tag) reduziert bei Patienten mit hohem kardiovaskulären Risiko oder stabiler Angina pectoris das Risiko nicht tödlicher Myokardinfarkte und Schlaganfälle sowie der vaskulären und der gesamten Mortalität um etwa ein Drittel. Wirksamkeitsunterschiede im genannten Dosisbereich fanden sich nicht.</p> <p>Die Wirksamkeit von Clopidogrel im Vergleich zu ASS wurde in der CAPRIE-Studie an 19 185 Patienten mit kardiovaskulären Erkrankungen (Herzinfarkt, Schlaganfall, pAVK) über einen Beobachtungszeitraum von 1 bis 3 Jahren untersucht. Im Gesamtkollektiv fand sich hierbei für den kombinierten Endpunkt (ischämischer Schlaganfall, Herzinfarkt, vaskulär bedingter Tod) unter Clopidogrel (5,32 %) im Vergleich zu ASS (5,83 %) eine geringfügige, aber statistisch signifikante (p = 0,043) Reduktion des absoluten Risikos (–0,51 %). Vergleichende Studien bei Patienten mit stabiler KHK liegen nicht vor.</p>	<p>↑↑</p> <p>↑</p>	n.a.	<p>[971-977,979]</p> <p>[973,979]</p>
<b>NZGG CR</b>	Clopidogrel (75 mg/day) is an effective alternative to aspirin for people with contraindications to aspirin or those who are intolerant of aspirin.	1++	A	[979,981,1025,1026]
<b>ESC A</b>	Clopidogrel as an alternative antiplatelet agent in patients with stable angina who cannot take aspirin (e.g. aspirin allergic)	B	IIa	[979,1027,1028]

(Fortsetzung)

Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA A</b>	Clopidogrel when aspirin is absolutely contraindicated.	B	IIa	[979,1029]
<b>SIGN A</b>	Clopidogrel should be considered in patients with symptomatic cardiovascular disease who have aspirin hypersensitivity or intolerance or in whom aspirin causes unacceptable side effects.	1++ 4	n.a.	[1030]
<b>AHA SP</b>	Start and continue clopidogrel 75 mg/d in combination with aspirin for up to 12 months in patients after acute coronary syndrome or percutaneous coronary intervention with stent placement ( $\geq 1$ month for bare metal stent, $\geq 3$ months for sirolimus-eluting stent, and $\geq 6$ months for paclitaxel-eluting stent).	B	I	[39,291,486,489,490,993-995]
<b>ESC PCI</b>	Clopidogrel prolonged for 9-12 months after NSTEMI-ACS	B	I	[999,1026,1031-1034]
<b>ESC PCI</b>	Clopidogrel for 3-4 weeks after all bare metal stent procedures.	A	I	[980,1035-1044]
<b>ESC PCI</b>	Clopidogrel for 6-12 months after drug-eluting stent s.	C	I	n.a.
<b>ESC PCI</b>	Clopidogrel for 12 months after vascular brachytherapy	C	I	n.a.
<b>NCC</b>	Aspirin should be offered to all patients after an MI, and should be continued indefinitely .	1++	A	[981,1045-1051]
<b>NCC</b>	Clopidogrel should not be offered as first-line monotherapy after an MI .	1++	A	[979]

(Fortsetzung)

Tabellen 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	Clopidogrel, in combination with low-dose aspirin, is recommended for use in the management of non-ST-segment-elevation acute coronary syndrome in people who are at moderate to high risk of MI or death .	1++	A	[1026,1052]
NCC	People at moderate to high risk of MI or death, presenting with non-ST-segment-elevation acute coronary syndrome can be determined by clinical signs and symptoms, accompanied by one or both of the following: <ul style="list-style-type: none"> <li>•the results of clinical investigations, such as new ECG changes (other than persistent ST segment elevation) indicating ongoing myocardial ischaemia, particularly dynamic or unstable patterns</li> <li>•the presence of raised blood levels of markers of cardiac cell damage such as troponin.</li> </ul>	1++	A	n.a.
NCC	Treatment with clopidogrel in combination with low-dose aspirin should be continued for 12 months after the most recent acute episode of non-ST- segment-elevation acute coronary syndrome. Thereafter, standard care, including treatment with low-dose aspirin alone, is recommended unless there are other indications to continue dual antiplatelet therapy.	n.a.	A	[1026,1052]

(Fortsetzung)

Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	After an ST-segment-elevation MI, patients treated with a combination of aspirin and clopidogrel during the first 24 hours after the MI should continue this treatment for at least 4 weeks. Thereafter, standard treatment including low-dose aspirin should be given, unless there are other indications to continue dual antiplatelet therapy.	1+	A	[1001,1053,1054]
NCC	If the patient has not been treated with a combination of aspirin and clopidogrel during the acute phase of an MI, this combination should not routinely be initiated.	n.a.	GPP	n.a.
NCC	The combination of aspirin and clopidogrel is not recommended for routine use for any longer than 12 months after the acute phase of MI, unless there are other indications to continue dual anti-platelet therapy, and the combination is usually recommended for a shorter duration after an ST-elevation MI.	n.a.	A	[1026,1052]
NCC	For patients with aspirin hypersensitivity, clopidogrel monotherapy should be considered as an alternative treatment.	n.a.	B	[999,1001,1026,1054]
NCC	In patients with a history of dyspepsia, treatment with a proton pump inhibitor and low-dose aspirin should be considered in line with 'Dyspepsia. NICE clinical guideline 17'.	n.a.	A	[1055]

(Fortsetzung)

Tabelle 20 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Thrombozytenaggregationshemmer

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	After appropriate treatment, patients with a history of aspirin-induced ulcer bleeding whose ulcers have healed and who are negative for <i>Helicobacter pylori</i> should be considered for treatment with a full-dose proton pump inhibitor and low-dose aspirin. Refer to 'Dyspepsia. NICE clinical guideline 17'.	n.a.	A	[1055]

Tabelle 21: Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NZGG REHA</b>	In all patients with coronary heart disease pharmacotherapy with aspirin, a betablocker, an ACE inhibitor and a statin should be considered unless contraindicated, regardless of initial levels.	1++	A	[971,986-990]
<b>NVL</b>	Betablocker senken den kardialen Sauerstoffbedarf durch Hemmung der Katecholaminwirkung auf Herzfrequenz, Kontraktilität und Blutdruck. Betablocker sind daher zur Verminderung von Angina-pectoris-Symptomen und zur Verbesserung der Belastungstoleranz indiziert.	n.a.	A	[1056-1080]
<b>NVL</b>	Alle Patienten nach Myokardinfarkt sollen einen Betablocker erhalten, da für sie die Senkung der Sterblichkeit belegt ist. Patienten mit KHK und Herzinsuffizienz sollen mit einem Betablocker behandelt werden (Reduktion der Sterblichkeit gesichert z. B. für Bisoprolol, Carvedilol, Metoprolol).	n.a.	A	[564,640,986,1056-1070,1072-1078,1078,1079,1079,1080,1080-1084]
<b>NZGG CR</b>	The initial dose of beta-blockers should be low and the dose should be titrated upwards slowly. Everyone should receive an explanation of the benefits and risks of treatment. Beta-blockers given at night may reduce the risks of postural hypotension and alleviate symptoms of tiredness and lethargy. Before discontinuing beta-blockers because of side effects a lower dose or alternative beta-blocker should be tried. If full doses of a beta-blocker and ACE-inhibitor are not tolerated moderate doses of both are preferable to a high dose of a single agent.	n.a.	n.a.	n.a, wird als „Good Practice Point“ bezeichnet („Best Practice“ empfohlen auf der Basis der klinischen Expertise der LL-Gruppe).

(Fortsetzung)



Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Beta blockers should be used as first line therapy for the relief of symptoms of stable angina.	1++ 3 1+ 4	A	[1085-1087] [1088] [1089] [752] keinem LoE eindeutig zuzuweisen: [987,1090]
<b>CCS</b>	Beta adrenergic blockers should be prescribed to most elderly patients after both NSTE and STE myocardial infarction. The treatment period should be a minimum of 2 years.	B	I	n.a.
<b>NZGG CR</b>	Beta-blockers should be considered for everyone following myocardial infarction unless there are contraindications. Beta-blockers are also recommended in those with left ventricular dysfunction and heart failure.	1++	A	[987,1080,1091,1092]
<b>AHA SP</b>	Start and continue [beta-blockers] indefinitely in all patients who have had myocardial infarction, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless contraindicated.	A	I	[39,291,486,489,490,993-995]
<b>AHA SP</b>	Consider chronic [beta-blockers] therapy for all other patients with coronary or other vascular disease or diabetes unless contraindicated.	C	IIa	[39,291,486,489,490,993-995]
<b>AHA W</b>	$\beta$ -Blockers should be used indefinitely in all women after MI, acute coronary syndrome, or left ventricular dysfunction with or without heart failure symptoms, unless contraindicated.	A	I	[1088,1093-1096]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	Oral beta-blocker therapy in patients post-MI or with heart failure.	A	I	[58,1097-1104]
ESC A	Test the effects of a beta-1 blocker, and titrate to full dose; consider the need for 24 hour protection against ischaemia.	A	I	[1101,1105-1109]
AKdÄ	Betarezeptorenblocker senken den kardialen Sauerstoffbedarf durch Hemmung der Katecholaminwirkung auf Herzfrequenz, Kontraktilität und Blutdruck. Sie vermindern hierdurch bei langfristiger Gabe die Angina-pectoris-Symptome und verbessern die Belastungstoleranz. Betarezeptorenblocker haben sich in der Sekundärprävention nach Myokardinfarkt als prognostisch günstig erwiesen. Bei Patienten mit Hypertonie reduzieren sie nachweislich die kardiovaskuläre Morbidität und Mortalität. Obwohl speziell für Patienten mit stabiler Angina pectoris keine entsprechenden Daten vorliegen, werden diese Ergebnisse als Indikatoren für eine vorteilhafte Wirksamkeit auch bei KHK-Patienten akzeptiert.	↑↑	n.a.	[1056-1062,1064-1067,1069,1070,1072-1076,1110-1112]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
FMS	A selective beta-blocker reduces both the heart rate and blood pressure. Beta-blockers are also the first-line drugs for the treatment of arrhythmias of CHD patients. Heart failure is not a contraindication. Carvedilol might be the best choice in these cases. In heart failure an ACE inhibitor is usually combined with a beta-blocker. Beta-blockers are not only for symptomatic therapy; they also reduce the risk of reinfarctions and sudden deaths in MI survivors by 10–30 %. The prognosis is also improved in CHD patients who have not suffered an MI.	n.a.	n.a.	[1080]
AHA A	Beta-blockers as initial therapy in the absence of contraindications in patients with prior MI or without prior MI.	A B	I I	[1074] [58,1113,1114]
AHA A	Beta-blockers as initial therapy in the absence of contraindications in patients with prior MI. ( <i>asymptomatic patients</i> )	B	I	[58,1115-1117]
AHA A	Beta-blockers as initial therapy in the absence of contraindications in patients without prior MI. ( <i>asymptomatic patients</i> )	C	IIa	[58,1115-1117]
NCC	Early after an acute MI, all patients without left ventricular systolic dysfunction or with left ventricular systolic dysfunction (symptomatic or asymptomatic) should be offered treatment with a beta-blocker .	1++	A	[640,1058,1080,1083,1118-1123]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	For patients after an MI with left ventricular systolic dysfunction, who are being offered treatment with a beta-blocker, clinicians may prefer to consider treatment with a beta-blocker licensed for use in heart failure.	1++	B	[1058,1080,1118-1120]
NCC	Beta-blockers should be continued indefinitely after an acute MI.	n.a.	GPP	n.a.
NCC	After aproven MI in the past, all patients with left ventricular systolic dysfunction should be offered treatment with a beta-blocker whether or not they have symptoms, and those with heart failure plus left ventricular systolic dysfunction should be managed in line with 'Chronic heart failure. NICE clinical guideline 5'.	1++	A	[640,1058,1080,1083,1118-1123]
NCC	After aproven MI in the past, patients with preserved left ventricular function who are asymptomatic should not be routinely offered treatment with a beta-blocker, unless they are identified to be at increased risk of further CVD events, or there are other compelling indications for beta-blocker treatment.	n.a.	GPP	n.a.
NCC	Beta-blockers should be initiated as soon as possible when the patient is clinically stable and titrated upwards to the maximum tolerated dose (GPP).	n.a.	GPP	n.a.
NCC	If beta-blockers are contraindicated or need to be discontinued, diltiazem or verapamil may be considered for secondary prevention in patients without pulmonary congestion or left ventricular systolic dysfunction.	1++	B	[1124-1128]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ICSI</b>	For relief of angina, prescribe beta-blockers as first line medication. If beta-blockers are contraindicated, nitrates are the preferred alternative. Calcium channel blockers may be an alternative medication if the patient is unable to take beta-blockers or nitrates.  Combination therapy may be necessary in selected patients, but it increases side effects and cost. A combination of beta-blockers and long acting nitrates is preferred because of cost, efficacy, and reduced potential for adverse side effects.	A/R	n.a.	[97,1129-1135]
<b>SIGN A</b>	Patients who are intolerant of beta-blockers should be treated with either rate limiting calcium channel blockers, long-acting nitrates or nicorandil	1++ 1+	A	[1136] [1137-1142] keinem LoE eindeutig zuzuweisen: [1085-1087,1143,1144]
<b>FMS</b>	Calcium-channel blockers may be considered if beta-blockers are unsuitable.	B	n.a.	[1086]
<b>AHA A</b>	Calcium antagonists (short acting, dihydropyridine calcium antagonists should be avoided) or long-acting nitrates as initial therapy for reduction of symptoms when beta-blockers are contraindicated.	B	I	[1145-1148]
<b>ESC A</b>	In case of beta-blocker intolerance try sinus node inhibitor	B	IIa	[1149-1151]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	In case of beta-blocker intolerance or poor efficacy attempt monotherapy with a calcium channel blocker (CCB), long-acting nitrate, or nicorandil	A C C	I	[42,1086,1089,1106-1108,1138,1152-1156] [1086]
AHA A	Calcium antagonists (short acting, dihydropyridine calcium antagonists should be avoided) and long-acting nitrates as a substitute for beta-blockers if initial treatment with beta-blockers leads to unacceptable side effects.	C	I	[1145-1148,1157-1161]
NZGG CR	Rate-limiting non-dihydropyridine calcium channel blockers may be considered for people with normal ventricular function where beta-blockers are contraindicated and treatment is required for concurrent angina or hypertension.	1++	A	[1125,1162]
ESC A	If the effects of beta-blocker monotherapy are insufficient, add a dihydropyridine CCB.	B	I	[1138]
SIGN A	When adequate control of anginal symptoms is not achieved with beta-blockade a calcium channel blocker should be added.	1++ 1+ 4	A	[1163,1164] [752]
AHA A	Calcium antagonists (short acting, dihydropyridine calcium antagonists should be avoided) or long-acting nitrates in combination with beta-blockers when initial treatment with beta-blockers is not successful.	B	I	[1074,1089,1097,1114,1134,1165,1166]

(Fortsetzung)

Tabelle 21 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Betarezeptorenblocker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Rate-limiting calcium channel-blockers should be used with caution when combined with beta-blockers.	n.a.	<input checked="" type="checkbox"/>	n.a.
<b>ESC A</b>	Consider triple therapy only if optimal two drug regimens are insufficient, and evaluate the effects of additional drugs carefully. Patients whose symptoms are poorly controlled on double therapy should be assessed for suitability for revascularization, as should those who express a strong preference for revascularization rather than pharmacological therapy. The ongoing need for medication to improve prognosis irrespective of revascularization status, and the balance of risk and benefit on an individual basis, should be explained in detail.	n.a.	n.a.	[1135,1167]

Tabelle 22: Empfehlungen zur medikamentösen Therapie – Kalziumantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Patients with Prinzmetal (vasospastic) angina should be treated with a dihydropyridine derivative calcium channel blocker	1+ 2+	B	[1168] [1169]
<b>AKdÄ</b>	<p>Kalziumantagonisten wirken bei der Behandlung der Angina pectoris insbesondere durch Verringerung von Kontraktilität und Nachlast. Lang wirkende oder Retardformulierungen kurz wirkender Kalziumantagonisten verbessern bei Dauermedikation Symptomatik und Belastungstoleranz bei Angina pectoris im gleichen Ausmaß wie Betarezeptorenblocker.</p> <p>Die Datenlage zur Beeinflussung kardiovaskulärer Ereignisse durch lang wirkende Kalziumantagonisten aus randomisierten kontrollierten Studien ist widersprüchlich.</p> <p>Kalziumantagonisten sollten zur Prophylaxe von Angina pectoris als Mittel der zweiten Wahl angesehen werden, ggf. als Kombinationspartner für Betarezeptorenblocker, wenn mit diesen keine ausreichende Symptomreduktion erzielt werden kann.</p>	<p>↑↑</p> <p>↔</p>	n.a.	[1074,1168,1170,1171]  [42,490,1074,1112,1146,1148,1172-1175]
<b>NVL</b>	<p>Für kurzwirksame Kalziumkanalblocker wurde keine Senkung der KHK-Morbidität nachgewiesen. Langwirksame Kalziumkanalblocker (z. B. Verapamil SR, Amlodin) senken die Morbidität bei Patienten mit KHK und Hypertonus.</p> <p>Sie können als Medikamente der zweiten Wahl zur Blutdrucksenkung und zur symptomatischen Behandlung der Angina pectoris eingesetzt werden.</p> <p>Bei einer symptomatischen Behandlung der Angina pectoris ist die Indikation im Rahmen einer Dauertherapie immer wieder zu überprüfen.</p>	n.a.	B	[314,490,1074,1112,1146,1148,1163,1168,1170-1175]

(Fortsetzung)



Tabelle 22 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Kalziumantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA A</b>	Long-acting nondihydropyridine calcium antagonists instead of beta-blockers as initial therapy.	B	IIa	[1176-1183]
<b>ESC A</b>	If CCB monotherapy or combination therapy (CCB with beta-blocker) is unsuccessful, substitute the CCB with a long-acting nitrate or nicorandil. Be careful to avoid nitrate tolerance	C	IIa	n.a.
<b>NCC</b>	Calciumchannel blockers should not routinely be used to reduce cardiovascular risk after an MI.	1++/1+	A	[1124-1128]
<b>NCC</b>	For patients who are stable after an MI, calcium channel blockers may be used to treat hypertension and/or angina. For patients with heart failure, amlodipine should be used, and verapamil, diltiazem and short-acting dihydropyridine agents should be avoided in line with 'Chronic heart failure. NICE clinical guideline 5'.	1++/1+	A	[1124-1128]

Tabelle 23: Empfehlungen zur medikamentösen Therapie – Nitratre

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Sublingual glyceryl trinitrate tablets or spray should be used for the immediate relief of angina and before performing activities that are known to bring on angina	I+	A	[1184,1185]
<b>AHA A</b>	Sublingual nitroglycerin or nitroglycerin spray for the immediate relief of angina.	B	I	n.a.
<b>ESC A</b>	Provide short-acting nitroglycerin for acute symptom relief and situational prophylaxis, with appropriate instructions on how to use the treatment	B	I	[314,1106,1133,1186]
<b>NVL</b>	<p>Patienten mit stabiler Angina pectoris sollten über ein schnell wirkendes Nitrat zur Kupierung akuter Anfälle verfügen.</p> <p>Nitrate haben keinen Einfluss auf die Prognose der KHK. Nitrate und Nitratanaloga sollen deshalb nur zur symptomatischen Behandlung der Angina pectoris eingesetzt werden.</p> <p>Die Indikation für eine Dauertherapie ist immer wieder zu überprüfen.</p>	n.a.	A	[1133,1134,1157-1160,1165,1166,1186-1189]

(Fortsetzung)

Tabelle 23 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Nitrate

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AKdÄ</b>	<p>Nitrate senken durch Reduktion von Vor- und Nachlast den myokardialen Sauerstoffverbrauch. In sublingualer Applikation haben sich Glyceroltrinitrat und Isosorbiddinitrat als wirksam zur Kupierung eines Angina-pectoris-Anfalls erwiesen. Lang wirkende Nitrate verbessern die Symptomatik und Belastungstoleranz bei Angina pectoris.</p> <p>Belege für eine Reduktion klinischer Endpunkte (kardiovaskuläre Morbidität und Mortalität) durch Nitrate liegen nicht vor.</p> <p><i>Schnell wirkende Nitrate sind Mittel der ersten Wahl zur Anfallskupierung. Lang wirkende Nitrate sind für die Prophylaxe von Angina-pectoris-Anfällen wie Kalziumantagonisten als Therapeutika der zweiten Wahl anzusehen. Sie können bei Kontraindikationen für Betarezeptorenblocker sowie bei unzureichender antianginöser Wirkung einer Monotherapie mit Betarezeptorenblockern in Kombination mit diesen eingesetzt werden. Es besteht eine synergistische antianginöse Wirkung in Kombination mit Betarezeptorenblockern.</i></p>	<p>↑↑</p> <p>↔</p>	n.a.	[1133,1134,1157-1160,1165,1166,1186-1189]
<b>NZGG CR</b>	<p>Nitrates can be used after myocardial infarction for controlling symptoms of angina and heart failure, but are not indicated for reducing the risk of further events.</p>	<p>1+</p> <p>4</p>	A	[1190,1191]

Tabelle 24: Empfehlungen zur medikamentösen Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ACE-HEMMER, ANGIOTENSIN-II-BLOCKER</b>				
<b>SIGN A</b>	All patients with stable angina should be considered for treatment with angiotensin-converting enzyme inhibitors.	1++ 2++	A	[986,1149,1192-1195]  keinem LoE eindeutig zuzuweisen: [1196,1197]
<b>NZZG 02</b>	In all patients with coronary heart disease pharmacotherapy with aspirin, a betablocker, an ACE inhibitor and a statin should be considered unless contraindicated, regardless of initial levels.	1++	A	[971,986-990]
<b>NVL</b>	Alle Patienten mit Linksherzinsuffizienz sollen aufgrund der belegten Senkung der Morbidität und Sterblichkeit mit einem ACE-Hemmer behandelt werden. Alle Patienten nach Myokardinfarkt mit Linksherzinsuffizienz sollen aufgrund der belegten Senkung der Morbidität und Sterblichkeit mit einem ACE-Hemmer behandelt werden. Bei Patienten mit erhöhtem vaskulärem Risiko und Hypertonie reduzieren ACE-Hemmer die Morbidität und Sterblichkeit. Sie reduzieren im Unterschied zu Betablockern jedoch nicht die Angina-pectoris-Beschwerden. Sie werden daher bei Patienten mit KHK und normaler kardialer Pumpfunktion als Medikamente der zweiten Wahl zur Blutdrucksenkung empfohlen.	n.a.	A	[38,564,640,986,1063,1074,1081-1084,1149,1196,1198-1203](Keinem LoE eindeutig zuzuweisen)
<b>NVL</b>	Bei Unverträglichkeit von ACE-Hemmern sollen Angiotensin-1-Blocker eingesetzt werden.	n.a.	B	[1063,1128,1204-1207]

(Fortsetzung)

Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ACE-HEMMER, ANGIOTENSIN-II-BLOCKER</b>				
<b>NZGG CR</b>	An ACE-inhibitor should be prescribed for everyone after myocardial infarction, regardless of left ventricular function. Treatment should be started early and continued long-term especially in those with anterior infarction, left ventricular dysfunction or heart failure. Long-term ACE-inhibitor therapy should be prescribed for all people with coronary heart disease.	1++	A	[986,1195]
<b>NCC</b>	<p>Early after presenting with an acute MI, all patients should be offered an ACE inhibitor.</p> <p>ACE inhibitor therapy should be initiated at the appropriate dose, and titrated upwards at short intervals (for example every 1 to 2 weeks) until the maximum tolerated or target dose is reached.</p> <p>After an MI, all patients with preserved left ventricular function or with left ventricular systolic dysfunction should continue treatment with an ACE inhibitor indefinitely, whether or not they have symptoms of heart failure.</p>	<p>1++</p> <p>n.a.</p> <p>1++</p>	<p>A</p> <p>GPP</p> <p>A</p>	<p>[1124,1190,1191]</p> <p>[640,1083,1124,1149,1192,1195,1196]</p>
	In patients with a proven MI in the past (more than 1 year ago) and with heart failure and left ventricular systolic dysfunction, ACE inhibitor and ARB treatment should be in line with 'Chronic heart failure. NICE clinical guideline 5'.	1++	A	[1208]

(Fortsetzung)

Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ACE-HEMMER, ANGIOTENSIN-II-BLOCKER</b>				
NCC	In patients with a proven MI in the past and with left ventricular systolic dysfunction, who are asymptomatic, ACE inhibitor treatment should be offered and the dose titrated upwards, as tolerated, to the effective clinical dose for patients with heart failure and left ventricular systolic dysfunction.	1++	A	[640,1083,1124,1149,1192,1195,1196]
NCC	In patients with a proven MI in the past without heart failure and with preserved left ventricular function, ACE inhibitor treatment should be offered and the dose titrated upwards, as tolerated, to the effective clinical dose.	1++	A	[1124,1190,1191]
AHA W	ACE inhibitors should be used (unless contraindicated) in women after MI and in those with clinical evidence of heart failure or an LVEF $\leq$ 40 % or with diabetes m. In women after MI and in those with clinical evidence of heart failure or an LVEF $\leq$ 40 % or with diabetes mellitus who are intolerant of ACE inhibitors, ARBs should be used instead.	A B	I I	[1149,1152,1209-1215] [1192,1216-1222]
ESC A	ACE-inhibitor therapy in patients with coincident indications for ACEinhibition, such as hypertension, heart failure, LV dysfunction, prior MI with LV dysfunction, or diabetes.	A	I	[986,1149,1152,1196,1221,1223-1233]
AHA SP	Start and continue [ACE inhibitors] indefinitely in all patients with left ventricular ejection fraction $\leq$ 40 % and in those with hypertension, diabetes, or chronic kidney disease, unless contraindicated.	A	I	[291,486,489,490,994,1198,1213,1234,1235]

(Fortsetzung)

Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ACE-HEMMER, ANGIOTENSIN-II-BLOCKER</b>				
<b>AHA SP</b>	Consider [ACE inhibitors] for all other patients.	B	I	[291,486,489,490,994,1198,1213,1234,1235]
<b>AHA SP</b>	Among lower-risk patients with normal left ventricular ejection fraction in whom cardiovascular risk factors are well controlled and revascularization has been performed, use of ACE inhibitors may be considered optional.	B	IIa	[291,486,489,490,994,1198,1213,1234,1235]
<b>ESC A</b>	ACE-inhibitor therapy in all patients with angina and proven coronary disease	B	IIa	[986,1149,1152,1196,1225]
<b>AHA A</b>	Angiotensin converting enzyme inhibitor in all patients with CAD (significant CAD by angiography or previous MI) who also have diabetes and/or LV systolic dysfunction.	A	I	[986,1236-1238]
<b>AHA A</b>	ACE inhibitor in [asymptomatic] patients with CAD who also have diabetes and/or systolic dysfunction.	A	I	n.a.
<b>AHA A</b>	Angiotensin converting enzyme inhibitor in patients with CAD or other vascular disease.	B	IIa	[1181,1239,1240]
<b>AHA A</b>	Angiotensin converting enzyme inhibitor in all [asymptomatic] patients with diabetes who do not have contraindications due to severe renal disease.	B	IIa	n.a.

(Fortsetzung)

Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ACE-HEMMER, ANGIOTENSIN-II-BLOCKER</b>				
<b>AHA SP</b>	Use [ARB] in patients who are intolerant of ACE inhibitors and have heart failure or have had a myocardial infarction with left ventricular ejection fraction $\leq 40\%$ .	A	I	[291,486,489,490,994,1198,1213,1234,1235]
	Consider [ARB] in other patients who are ACE inhibitor intolerant.	B	I	[291,486,489,490,994,1198,1213,1234,1235]
<b>NCC</b>	Routine prescription of angiotensin receptor blockers (ARBs) after an acute MI is not recommended. For patients after an acute MI who have had to discontinue an ACE inhibitor because of intolerance (for example because of cough) or allergy, an ARB should be substituted.	n.a. 1++/1-	GPP A	n.a. [1195,1212,1213,1241]
<b>NCC</b>	In patients with a proven MI in the past with left ventricular systolic dysfunction, who are asymptomatic and who have had to discontinue an ACE inhibitor because of intolerance (for example because of cough) or allergy, an ARB should be substituted	1++/1-	A	[1195,1212,1213,1241]
<b>NCC</b>	Combined treatment with an ACE inhibitor and an ARB is not recommended for routine use in patients early after an acute MI with heart failure and/or left ventricular systolic dysfunction.	n.a.	A	[1213]
<b>AHA SP</b>	Consider use [of angiotensin receptor blockers] in combination with ACE inhibitors in systolic-dysfunction heart failure.	B	Iib	[291,486,489,490,994,1198,1213,1234,1235]

(Fortsetzung)



Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-1-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALDOSTERONANTAGONISTEN</b>				
<b>AHA SP</b>	Use [aldosterone blockade] in post–myocardial infarction patients, without significant renal dysfunction [Cr<2,5mg/dL M, <2,0mg/dL W] or hyperkalemia [K+ <5mEq/L], who are already receiving therapeutic doses of an ACE inhibitor and β-blocker, have a left ventricular ejection fraction ≤40 %, and have either diabetes or heart failure.	A	I	[291,486,489,490,994,1198,1213,1234,1235]
<b>AHA W</b>	Use aldosterone blockade after MI in women who do not have significant renal dysfunction or hyperkalemia who are already receiving therapeutic doses of an ACE inhibitor and β-blocker, and have LVEF ≤40 % with symptomatic heart failure	B	I	[1242-1245]
<b>NCC</b>	For patients who have had an acute MI and who have symptoms and/or signs of heart failure and left ventricular systolic dysfunction, treatment with an aldosterone antagonist licensed for post-MI treatment should be initiated within 3–14 days of the MI, preferably after ACE inhibitor therapy.	1++	B	[1208,1242]
<b>NCC</b>	Patients who have recently had an acute MI and have clinical heart failure and left ventricular systolic dysfunction, but who are already being treated with an aldosterone antagonist for a concomitant condition (for example, chronic heart failure), should continue with the aldosterone antagonist or an alternative, licensed for early post-MI treatment.	n.a.	GPP	n.a.

(Fortsetzung)

Tabelle 24 (Fortsetzung): Empfehlungen zur medik. Therapie – ACE-Hemmer/Angiotensin-II-Blocker/Aldosteronantagonisten

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALDOSTERONANTAGONISTEN</b>				
NCC	For patients who have had a proven MI in the past and heart failure due to left ventricular systolic dysfunction, treatment with an aldosterone antagonist should be in line with 'Chronic heart failure. NICE clinical guideline 5'.	n.a.	GPP	n.a.

Tabelle 25: Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>NCC</b>	<p>Statin therapy is recommended for adults with clinical evidence of cardiovascular disease in line with ‘Statins for the prevention of cardiovascular events’ (NICE technology appraisal guidance 94).</p> <p>After an MI, all patients should be offered treatment with a statin as soon as possible (GPP).</p> <p>Patients who are intolerant of statins should be considered for other lipid lowering agents (GPP).</p>	1++	GPP GPP	[1246]
<b>DGPR</b>	<p>Bei Patienten mit KHK sollen die erforderlichen Lebensstiländerungen durch eine medikamentöse Therapie ergänzt werden. Medikamente der ersten Wahl sind HMG-CoA-Reduktase-Hemmer (Statine).</p> <p>Bei nicht ausreichender Wirkung oder Unverträglichkeit höherer Statin-Dosen kann eine Kombination mit Etzetimib oder Nikotinsäure erfolgen.</p> <p>Im ersten Jahr nach akutem Herzinfarkt ist eine ergänzende Therapie mit hoch konzentrierten Omega-3-Fettsäuren zu erwägen.</p>	A  B  B	I  I  IIa	[515,524,784,989,990,1247-1252]
<b>NVL</b>	<p>Im Rahmen einer medikamentösen Lipid-Senkung stellen aufgrund der überlegenen Datenlage Statine die Medikamente der ersten Wahl dar.</p>	n.a.	A	[989,990,1252-1260]

(Fortsetzung)

Tabelle 25 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>NVL</b>	HMG-CoA-Reduktasehemmer (Statine) werden als Therapeutika der ersten Wahl eingesetzt, da für sie eine Reduktion der kardiovaskulären Morbidität und Sterblichkeit bei Patienten mit KHK belegt wurde. Auch das Herzinfarkt- und Schlaganfallrisiko von Patienten mit hohem vaskulärem Risiko und LDL-Cholesterin < 100 mg/dl (< 2,6 mmol/L) kann durch Statine gesenkt werden. Alle Patienten mit Koronarer Herzkrankheit profitieren von einer Behandlung mit Statinen – unabhängig von der Höhe der Blutfettwerte.	n.a.	A	[42,314,601,989,1081,1252-1255,1261-1273]
<b>NZGG REHA</b>	In all patients with coronary heart disease pharmacotherapy with aspirin, a betablocker, an ACE inhibitor and a statin should be considered unless contraindicated, regardless of initial levels.	1++	A	[971,986-990]
<b>CCS</b>	Lipid lowering treatment, especially with a statin should be considered in most elderly patients after an ACS.	B	IIa	n.a.
<b>ESC A</b>	Statin therapy for all patients with coronary disease.	A	I	[989,990,1022,1248,1254,1255,1259,1274-1283]
<b>ICSI</b>	Patients with chronic stable coronary artery disease should be on statin therapy regardless of their lipid levels unless contraindicated.	A	I	[989,990,1252,1254,1284]

(Fortsetzung)

Tabelle 25 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>AKdÄ</b>	Eine Lipid senkende Therapie mit HMG-CoA-Reduktasehemmern (Statinen) senkt bei Patienten mit stabiler KHK sowohl die kardiovaskuläre Morbidität und Mortalität als auch die Gesamtmortalität. Statine vermindern Komplikationen der Atherosklerose wie Schlaganfall und pAVK. Nach aktueller Datenlage ist hierbei von einem Klasseneffekt der Statine auszugehen. Die absolute Risikoreduktion hängt vom globalen Risiko eines Patienten ab. Es wurde gezeigt, dass auch Patienten mit KHK und LDL-Ausgangswerten < 100 mg/dl von einer Behandlung mit Statinen profitieren (ASCOT, HPS).	↑↑	n.a.	[42,314,601,989,1081,1252-1255,1261,1263-1266] [1266,1285-1288]
<b>NZGG CR</b>	A statin equivalent to simvastatin 40 mg/day should be prescribed to everyone after myocardial infarction. Statin therapy should preferably be started in hospital. Treatment should aim to lower LDL-C to less than 2.5 mmol/L.**  In people with venous CABG, treatment should aim to lower the total cholesterol to less than 3.5 mmol/L and LDL-C to less than 2.0 mmol/L.**	1++	A	[989,990,1257,1275,1289]
<b>SIGN A</b>	All patients with stable angina due to atherosclerotic disease should receive long term standard aspirin and statin therapie.	1++ 2++	A	[981,1022]  keinem LoE eindeutig zuzuweisen: [992,1023,1024]

(Fortsetzung)

Tabelle 25 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>SIGN A</b>	The existing total cholesterol target of <5 mmol/l (193 mg/dl) in individuals with established symptomatic cardiovascular disease should be regarded as the minimum standard of care.	1+ 2++ 4	n.a.	[1290] [1291] [265,1292-1294]
<b>AHA A</b>	Low-density lipoprotein-lowering therapy in patients with documented or suspected CAD and LDL cholesterol greater than 130 mg per dl, with a target LDL of less than 100 mg per dl.	A	I	[989,1254,1295]
<b>AHA A</b>	Lipid-lowering therapy in [asymptomatic] patients with documented CAD and LDL cholesterol greater than 130 mg per dl, with a target LDL of less than 100 mg per dl.	A	I	[989,990,1254]
<b>AHA A</b>	In patients with documented or suspected CAD and LDL cholesterol 100 to 129 mg per dl, several therapeutic options are available: a. Lifestyle and/or drug therapies to lower LDL to less than 100 mg per dl. b. Weight reduction and increased physical activity in persons with the metabolic syndrome (see RF). c. Institution of treatment of other lipid or nonlipid risk factors; consider use of nicotinic acid or fibric acid for elevated triglycerides or low HDL cholesterol.	B	IIa	[1296]

(Fortsetzung)

Tabelle 25 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>AHA A</b>	Lipid-lowering therapy in [asymptomatic] patients with documented CAD and LDL cholesterol of 100 to 129 mg per dl, with a target LDL of 100 mg per dl.	C	IIa	n.a.
<b>AHA A</b>	Therapy to lower non-HDL cholesterol in patients with documented or suspected CAD and triglycerides of greater than 200 mg per dl, with a target non-HDL cholesterol of less than 130 mg per dl.	B	IIa	[989,990,1254]
<b>AHA W</b>	<p><b>Lipids—pharmacotherapy for LDL lowering, other at-risk women</b></p> <p>Utilize LDL-C-lowering therapy if LDL-C level is <math>\geq 130</math> mg/dL with lifestyle therapy and there are multiple risk factors and 10-year absolute risk 10 % to 20 %.</p> <p>Utilize LDL-C-lowering therapy if LDL-C level is <math>\geq 160</math> mg/dL with lifestyle therapy and multiple risk factors even if 10-year absolute risk is <math>&lt; 10</math> %.</p> <p>Utilize LDL-C-lowering therapy if LDL <math>\geq 190</math> mg/dL regardless of the presence or absence of other risk factors or CVD on lifestyle therapy.</p>	A B B	I I IIa	[676,1022,1297-1308]

(Fortsetzung)





Tabelle 25 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Lipidsenker

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>STATINE</b>				
<b>ESC A</b>	High dose statin therapy in high-risk (>2 % annual CV mortality) patients with proven coronary disease	B	IIa	[1282,1283]
<b>SIGN A</b>	All patients with established symptomatic atherosclerotic cardiovascular disease should be considered for more intensive statin therapy following informed discussion of risks and benefits between the individual and the responsible clinician.	1++ 1+	B	[1320] [1290,1321,1322]
<b>FIBRATE</b>				
<b>ESC A</b>	Fibrate therapy in patients with low HDL and high triglycerides who have diabetes or the metabolic syndrome.	B	IIb	[1248,1323-1330]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>ESC A</b>	Fibrate or nicotinic acid as adjunctive therapy to statin in patients with low HDL and high triglycerides at high risk (>2 % annual CV mortality)	C	IIb	n.a.
<p>** Es wird darauf hingewiesen, dass <i>“Where risk factor thresholds are given these should be interpreted as approximate guides to clinical practice only.”</i></p> <p>§ Hinweis: <i>Criteria for very high risk include established CVD plus any of the following: multiple major risk factors, severe and poorly controlled risk factors, diabetes mellitus.</i></p>				

Tabelle 26: Empfehlungen zur medikamentösen Therapie – Sonstiges

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>Vitamin-K-Antagonisten</b>				
DGPR	For patients who have had an MI, high-intensity warfarin (INR >3) should not be considered as an alternative to aspirin in first-line treatment .	1+	A	[1331,1332]
DGPR	For patients who have had an MI and are unable to tolerate either aspirin or clopidogrel, treatment with moderate-intensity warfarin (INR 2–3) should be considered for up to 4 years, and possibly longer .	1+	A	[1331,1332]
DGPR	For patients who have had an acute MI, are intolerant to clopidogrel and have a low risk of bleeding, treatment with aspirin and moderate-intensity warfarin (INR 2–3) combined should be considered .	n.a.	GPP	n.a.
DGPR	For patients already being treated for another indication (mechanical valve, recurrent deep vein thrombosis, atrial fibrillation, left ventricular thrombus), warfarin should be continued. For patients treated with moderate-intensity warfarin (INR 2–3) and who are at low risk of bleeding, the addition of aspirin should be considered .	1+	B	[1005]
DGPR	The combination of warfarin and clopidogrel is not routinely recommended.	n.a.	GPP	n.a.
AHA A	Low-intensity anticoagulation with <i>warfarin</i> in addition to aspirin.	B	IIb	[1333]

(Fortsetzung)

Tabelle 26 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Sonstiges

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ANDERE</b>				
<b>NCC</b>	Nicorandil is not recommended to reduce cardiovascular risk in patients after an MI.	1+	A	[1124]
<b>NZGG CR</b>	Antiarrhythmic therapy, apart from beta-blockers, is not recommended for routine use after myocardial infarction.	1++	A	[1091]
<b>AHA A</b>	Chelation therapy.	B	III	n.a.
<b>AHA A</b>	Dipyridamole.	B	III	[1334]
<b>ESC A</b>	Metabolic agents [Trimetazidin, Ranolazin (nicht in Deutschland verfügbar)], may be used, where available, as add-on therapy, or as substitution therapy when conventional drugs are not tolerated	B	IIb	[1335-1338]
<b>AKdÄ</b>	Molsidomin hat eine den Nitraten vergleichbare Wirkung, jedoch ohne sichere Toleranzentwicklung. Belege für eine Reduktion klinischer Endpunkte (kardiovaskuläre Morbidität und Mortalität) liegen nicht vor.	↔	n.a.	[1110,1339]

(Fortsetzung)

Tabelle 26 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Sonstiges

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ANDERE</b>				
<b>AKdÄ</b>	<p>Trapidil werden antiproliferative, Thrombozyten hemmende und vasodilatierende Eigenschaften zugesprochen. Kleine Studien weisen darauf hin, dass bei Patienten nach Myokardinfarkt ein kombinierter Endpunkt aus verschiedenen kardiovaskulären Ereignissen durch Trapidil reduziert wird. Im Unterschied zu ASS zeigte sich allerdings kein Einfluss auf die Reinfarktrate.</p> <p>Es finden sich Hinweise aus kleinen Studien mit kurzer Laufzeit, dass Trapidil bei Patienten mit KHK antianginöse Eigenschaften besitzen könnte.</p> <p>Die aufgrund kleiner PTCA-Studien postulierte Senkung der Restenoserate nach PTCA hat sich in einer größeren Studie bei Patienten nach koronarer Stentimplantation nicht bestätigt.</p>	<p>↔</p> <p>↔</p> <p>↓↓</p>	<p>n.a.</p>	<p>[1340]</p> <p>[1341]</p> <p>[1342]</p>
<b>NZGG CR</b>	<p>There is insufficient evidence to recommend the following complementary and alternative therapies for the treatment or prevention of cardiovascular disease:</p> <ul style="list-style-type: none"> <li>• herbal medicines, botanicals</li> <li>• garlic/ginkgo biloba/rosemary/horse-chestnut seeds/xin bao</li> <li>• acupuncture, • chelation, • oriental medicine</li> <li>• aromatherapy, • homeopathy, • hypnosis, • meditation</li> <li>• yoga/tai chi, • intercessory prayer, • Strauss heart drops</li> </ul>	n.a.	I	[1343-1348]

Tabelle 27: Empfehlungen zur medikamentösen Therapie – Antihypertensiva

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA W	Pharmacotherapy is indicated when blood pressure is $\geq 140/90$ mm Hg or at an even lower blood pressure in the setting of chronic kidney disease or diabetes ( $\geq 130/80$ mm Hg). Thiazide diuretics should be part of the drug regimen for most patients unless contraindicated or if there are compelling indications for other agents in specific vascular diseases. Initial treatment of high-risk women <sup>‡</sup> should be with $\beta$ -blockers and/or ACE inhibitors/ARBs, with addition of other drugs such as thiazides as needed to achieve goal blood pressure.	B	I	[1349-1359]
NVL	Bei allen Patienten mit Koronarer Herzkrankheit und arterieller Hypertonie soll der Blutdruck regelmäßig kontrolliert und behandelt werden. Bei Patienten mit KHK und Blutdruckwerten $> 140/90$ mm Hg (Behandlungsziel) ist eine medikamentöse Behandlung indiziert. [Bei zusätzlichem Diabetes: Blutdrucksenkung $< 130/80$ mm Hg].	n.a.	A	[38,423,564,644,1063,1064,1202,1360-1365]
NVL	Hierbei sollten prioritär Antihypertensiva zum Einsatz kommen, deren Wirksamkeit zur Reduktion kardiovaskulärer Ereignisse belegt ist (Diuretika, Betarezeptorenblocker, ACE-Hemmer, langwirksame Kalziumantagonisten, Angiotensin-1-Blocker).	n.a.	A	[42,314,423,564,1062-1064,1067-1070,1072-1074,1112,1146,1148,1172-1174,1224,1360,1361,1366-1375]

(Fortsetzung)

Tabelle 27 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Antihypertensiva

Leitlinie	Empfehlung	LoE	GoR	Literatur
NVL	Bei Patienten mit Hypertonie reduzieren Betablocker Morbidität und Letalität. Obwohl speziell für Patienten mit stabiler Angina pectoris keine derartigen Daten vorliegen, werden diese Ergebnisse als Indikatoren für eine vorteilhafte Wirksamkeit auch bei diesen Patienten akzeptiert. Betablocker werde als Blutdruck senkende Medikamente der ersten Wahl empfohlen, da eine günstige sekundärpräventive Beeinflussung des kardiovaskulären Risikos und der KHK-Symptomatik zu erwarten ist.	n.a.	B	[1056-1080]
AKdÄ	Die beste Datenlage zur Wirksamkeit anhand klinischer Endpunkte (Reduktion der kardiovaskulären Morbidität und Mortalität) existiert für Diuretika, Betarezeptorenblocker und ACE-Hemmer. Diese Wirkstoffe werden daher als Therapeutika der ersten Wahl zur Monotherapie der unkomplizierten Hypertonie angesehen. -Betarezeptorenblocker (s.o.) -ACE-Hemmer wirken günstig bei Patienten mit stabiler KHK und Herzinsuffizienz, nach Myokardinfarkt und bei diabetischer Nephropathie. Der ACE-Hemmer Ramipril senkte in der HOPE-Studie die kardiovaskuläre Morbidität und Mortalität bei Patienten mit vaskulären Erkrankungen sowie bei Patienten mit Diabetes mellitus und einem weiteren vaskulären Risikofaktor. Bei den Patienten bestand keine nachweisbare Einschränkung der LV-Funktion, und die Ausgangsblutdruckwerte lagen im normotonen Bereich (im Mittel < 140/80 mm Hg). Weitere Studien sind jedoch notwendig um zu klären, ob ACE-Hemmer die Progression der Atherosklerose unabhängig von der Blutdrucksenkung beeinflussen.	↑↑  ↑↑ ↑ ↑	n.a.	[314,423,564,1062,1064,1067-1070,1072,1111,1112,1175,1376]  [564,640,1061,1074,1081,1111,1199] [986,1082-1084]  [986,1201]  [1349]

(Fortsetzung)

Tabelle 27 (Fortsetzung): Empfehlungen zur medikamentösen Therapie – Antihypertensiva

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Individuals with established cardiovascular disease, who also have chronic renal disease or diabetes with complications, or target organ damage may be considered for treatment at the lower threshold of systolic >130 mmHg and/ or diastolic >80 mmHg	1++ 4	A	[1377]
<b>SIGN A</b>	Individuals with sustained systolic blood pressures of >140 mmHg systolic and/ or diastolic blood pressures >90 mmHg and clinical evidence of cardiovascular disease should be considered for blood pressure lowering drug therapy.	1++	A	[1378-1380]
<b>NCC</b>	[For patients with diagnosed CHD] Hypertension should be treated to the currently recommended target of 140/90 mmHg or lower given in 'Hypertension' (NICE clinical guideline 34). Patients with relevant comorbidities, for example diabetes or renal disease, should be treated to a lower blood pressure target (Grade A).	n.a.	A	[1381]
<p>‡ Hinweis: <i>Criteria for high risk include established CHD, cerebrovascular disease, peripheral arterial disease, abdominal aortic aneurysm, end-stage or chronic renal disease, diabetes mellitus, and 10-year Framingham risk &gt;20 %.</i></p>				

Tabelle 28: Empfehlungen zur medikamentösen Therapie – Hormonersatztherapie

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NZGG CR</b>	Combined Hormone Replacement Therapy should not be used for the prevention of coronary heart disease/stroke or after a cardiovascular event.	n.a.	A	[1382-1384]
<b>AHA A</b>	Initiation of hormone replacement therapy in postmenopausal women for the purpose of reducing cardiovascular risk.	A	III	[1384-1387]
<b>AHA W</b>	Hormone therapy and selective estrogen-receptor modulators (SERMs) should not be used for the primary or secondary prevention of CVD.	A	III	[1388-1398]
<b>FMS</b>	Based on a randomised secondary prevention study (HERS) and a primary prevention study (WHI), hormone replacement therapy offers no benefit.	A	n.a.	[1384]



Tabelle 29: Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Coronary angiography should be considered after non-invasive testing where patients are identified to be at high risk or where a diagnosis remains unclear.	4	☑	[1399]
<b>NVL</b>	Die diagnostische Koronarangiographie soll Patienten, die ein Akutes Koronarsyndrom entwickelt haben, empfohlen werden (siehe Verweis in Kapitel 8. Differenzialdiagnose).	n.a.	A	[42,644]
<b>NVL</b>	Die diagnostische Koronarangiographie soll Patienten mit unter leitliniengerechter medikamentöser Therapie anhaltender Angina pectoris (CCS Klasse III und IV) empfohlen werden.	n.a.	A	[42,644]
<b>NVL</b>	Die diagnostische Koronarangiographie soll Patienten mit pathologischem Ergebnis der nicht invasiven Untersuchungen (siehe Kapitel 7. Spezielle Diagnostik, Nicht invasive Verfahren: Indikationen), unabhängig von der Schwere der Angina pectoris, empfohlen werden.	n.a.	A	[42,644]
<b>NVL</b>	Die diagnostische Koronarangiographie soll Patienten, die einen plötzlichen Herzstillstand oder eine lebensbedrohliche ventrikuläre Arrhythmie überlebt haben, empfohlen werden.	n.a.	A	[42,644]
<b>NVL</b>	Die diagnostische Koronarangiographie soll Patienten mit Symptomen einer chronischen Herzinsuffizienz bei unbekanntem Koronarstatus bzw. V. a. Progression der KHK empfohlen werden.	n.a.	A	[42,644]

(Fortsetzung)

Tabelle 29 (Fortsetzung): Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	Angiography: Severe stable angina (Class 3 or greater of Canadian Cardiovascular Society Classification), with a high pre-test probability of disease, particularly if the symptoms are inadequately responding to medical treatment	B	I	[1400-1408]( <i>Keinem LoE eindeutig zuzuweisen</i> )
ESC A	Survivors of cardiac arrest	B	I	
ESC A	Patients with serious ventricular arrhythmias	C	I	
ESC A	Patients previously treated by myocardial revascularization (PCI, CABG) who develop early recurrence of moderate or severe angina pectoris	C	I	
ESC A	Patients with an inconclusive diagnosis on non-invasive testing, or conflicting results from different non-invasive modalities at intermediate to high risk of coronary disease	C	Ia	
ESC A	Patients with a high risk of restenosis after PCI, if PCI has been performed in a prognostically important site	C	Ia	
ESC A	Patients determined to be at high risk for adverse outcome on the basis of non-invasive testing even if they present with mild or moderate symptoms of angina	B	I	[309,334,394,421,1409-1412] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
ESC A	Severe stable angina (Class 3 of Canadian Cardiovascular Society Classification [CCS]), particularly if the symptoms are inadequately responding to medical treatment	B	I	

(Fortsetzung)

Tabelle 29 (Fortsetzung): Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	Stable angina in patients who are being considered for major non-cardiac surgery, especially vascular surgery (repair of aortic aneurysm, femoral bypass, carotid endarterectomy) with intermediate or high risk features on non-invasive testing	B	I	
ESC A	Patients with an inconclusive diagnosis on non-invasive testing, or conflicting results from different non-invasive modalities	C	IIa	
ESC A	Patients with a high risk of restenosis after PCI if PCI has been performed in a prognostically important site	C	IIa	
AHA A	<p><b>Risk assessment: Coronary Angiography for Risk Stratification in Asymptomatic Patients</b></p> <p>Patients with high-risk criteria suggesting ischemia on noninvasive testing.</p> <p>Patients with inadequate prognostic information after noninvasive testing.</p> <p>Patients with clinical characteristics that indicate a high likelihood of severe CAD.</p> <p>Patients who prefer to avoid revascularization.</p>	<p>C</p> <p>C</p> <p>C</p> <p>C</p>	<p>IIa</p> <p>IIb</p> <p>IIb</p> <p>III*</p>	n.a.

(Fortsetzung)

Tabelle 29 (Fortsetzung): Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A	<b>Recommendations for Coronary Angiography to Establish a Diagnosis in Patients With Suspected Angina, Including Those With Known CAD Who Have a Significant Change in Anginal Symptoms</b>			[366,1400,1413-1426] (Keinem LoE eindeutig zuzuweisen)
	Patients with known or possible angina pectoris who have survived sudden cardiac death.	B	I	
	Patients with an uncertain diagnosis after noninvasive testing in whom the benefit of a more certain diagnosis outweighs the risk and cost of coronary angiography.	C	IIa	
	Patients who cannot undergo noninvasive testing because of disability, illness, or morbid obesity.	C	IIa	
	Patients with an occupational requirement for a definitive diagnosis.	C	IIa	
	Patients who by virtue of young age at onset of symptoms, noninvasive imaging, or other clinical parameters are suspected of having a nonatherosclerotic cause for myocardial ischemia (coronary artery anomaly, Kawasaki disease, primary coronary artery dissection, radiation-induced vasculopathy).	C	IIa	
	Patients in whom coronary artery spasm is suspected and provocative testing may be necessary.	C	IIa	
	Patients with a high pretest probability of left main or three-vessel CAD.	C	IIa	
	Patients with recurrent hospitalization for chest pain in whom a definite diagnosis is judged necessary.	C	IIb	
Patients with an overriding desire for a definitive diagnosis and a greater-than-low probability of CAD.	C	IIb		

(Fortsetzung)

Tabelle 29 (Fortsetzung): Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A	Patients with significant comorbidity in whom the risk of coronary arteriography outweighs the benefit of the procedure.	C	III*	
	Patients with an overriding personal desire for a definitive diagnosis and a low probability of CAD.	C	III*	
AHA A	Patient follow-up Coronary angiography in patients with marked limitation of ordinary activity (CCS class III) despite maximal medical therapy.	C	I	n.a.
AHA A	Patient follow-up Repeat coronary angiography in patients with no change in clinical status, no change on repeat exercise testing or stress imaging, and insignificant CAD on initial evaluation.	C	III*	n.a.

(Fortsetzung)

Tabelle 29 (Fortsetzung): Empfehlungen zu therapeutischen Maßnahmen – Koronarangiographie

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A	<b>Risk assessment: Coronary Angiography for Risk Stratification in Patients With Chronic Stable Angina</b> Patients with disabling (CCS classes III and IV) chronic stable angina despite medical therapy.	B	I	[1411,1427-1435] ( <i>Keinem LoE eindeutig zuzuweisen</i> )
	Patients with high-risk criteria on noninvasive testing regardless of anginal severity.	B	I	
	Patients with angina who have survived sudden cardiac death or serious ventricular arrhythmia.	B	I	
	Patients with angina and symptoms and signs of CHF.	C	I	
	Patients with clinical characteristics that indicate a high likelihood of severe CAD.	C	I	
	Patients with significant LV dysfunction (ejection fraction less than 45 %), CCS class I or II angina, and demonstrable ischemia but less than high-risk criteria on noninvasive testing.	C	IIa	
	Patients with inadequate prognostic information after noninvasive testing.	C	IIa	
	Patients with CCS class I or II angina, preserved LV function (ejection fraction greater than 45 %), and less than high-risk criteria on noninvasive testing.	C	IIb	
	Patients with CCS class III or IV angina, which with medical therapy improves to class I or II.	C	IIb	
	Patients with CCS class I or II angina but intolerance (unacceptable side effects) to adequate medical therapy.	C	IIb	
	Patients with CCS class I or II angina who respond to medical therapy and who have no evidence of ischemia on non-invasive testing	C	III	
Patients who prefer to avoid revascularization	C	C		

Tabelle 30: Empfehlungen zu therapeutischen Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Coronary artery bypass grafting and percutaneous coronary interventions are both appropriate options for alleviation of anginal symptoms	n.a.	☑	n. a.
<b>SIGN A</b>	Patients who have been assessed and are anticipated to receive symptomatic relief from revascularisation should be offered either coronary artery bypass grafting or percutaneous coronary interventions	1++ 1+	A	[1436-1450]
<b>SIGN A</b>	Patients with refractory angina may benefit from an educational and rehabilitation approach based on cognitive behaviour principles prior to considering other invasive treatments	4	D	[937,1451]
<b>SIGN A</b>	Patients with single or double vessel disease, where optimal medical therapy fails to control angina symptoms, should be offered percutaneous coronary intervention or where unsuitable, considered for coronary artery bypass grafting	1++ 2++ 3 4	A	[1452,1453] [1454]  <i>keinem LoE eindeutig zuzuweisen:[139,993,1455-1458]</i>
<b>SIGN A</b>	Patients with significant left main stem disease should undergo coronary artery disease bypass grafting	1++ 2++ 3 4	A	[1452,1453] [1454]  <i>keinem LoE eindeutig zuzuweisen:[139,993,1455-1458]</i>

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Patients with triple vessel disease should be considered for coronary bypass grafting to improve prognosis, but where unsuitable be offered percutaneous coronary intervention	1++ 2++ 3 4	A	[1452,1453] [1454]  <i>keinem LoE eindeutig zuzuweisen:[139,993,1455-1458]</i>
<b>SIGN A</b>	Patients undergoing surgical revascularisation of the left anterior descending coronary artery should receive an internal mammary graft, where feasible	1+ 2+ 3	D	[1459]  [1460-1464] <i>keinem LoE eindeutig zuzuweisen: [1465-1467]</i>
<b>SIGN A</b>	Off-pump coronary artery bypass grafting should not be used as the basis of providing long term protection against cognitive decline	1++ 1+ 2++ 2+	A	[1468] [1469] [1470]  <i>keinem LoE eindeutig zuzuweisen: [1471-1474]</i>
<b>SIGN A</b>	Patients undergoing coronary artery bypass grafting should be advised that cognitive decline is relatively common in the first two months after surgery	1++ 2++ 2+ 3	B	[1475] [1378,1472,1476] [1477] [1379,1478,1479] <i>keinem LoE eindeutig zuzuweisen: [1480]</i>

(Fortsetzung)



Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN A</b>	Patients who are older and have other evidence of atherosclerosis and/or cognitive impairment may be more at risk of increasing decline and these factors should be considered when evaluating options for revascularisation to achieve symptom relief	3	D	[1379,1380,1478-1480]
<b>NVL</b>	<b>Patienten mit stabiler Angina pectoris / Anginaäquivalent und planbarer Revaskularisation (unabhängig von der Ventrikelfunktion)</b>			
	Vor einer Revaskularisation sind Patienten über die Wirksamkeit konservativer, interventioneller und chirurgischer Maßnahmen in Bezug auf die Therapieziele Symptomatik / Lebensqualität und Prognose zu informieren.	n.a.	A	[1481]
<b>NVL</b>	<p><b>Koronare Herzkrankheit mit signifikanter (<math>\geq 50\%</math>) linkskoronarer Hauptstammstenose</b></p> <p>Bei linkskoronarer signifikanter Hauptstammstenose soll die operative Revaskularisation (ACB) angestrebt werden. Sie ist in Bezug auf Überleben, MACE und Lebensqualität der PCI und der konservativen Therapie überlegen.</p> <p>Inoperablen Patienten und Patienten, die nach sorgfältiger Aufklärung eine operative Revaskularisation ablehnen, kann alternativ die PCI empfohlen werden. Dies gilt für die Therapieziele Verbesserung der Prognose und Lebensqualität.</p>	n.a.	A	[1428,1482-1493]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NVL	<b>Patienten mit stabiler Angina pectoris / Anginaäquivalent und planbarer Revaskularisation (unabhängig von der Ventrikelfunktion)</b>			
	<p><b>Koronare Mehrgefäßerkrankung mit hochgradigen proximalen Stenosen (&gt; 70 %)</b></p> <p>Bei Patienten mit Mehrgefäßerkrankung sollen revaskularisierende Maßnahmen empfohlen werden, da dadurch die Lebensqualität erhöht werden kann und sie – nach Expertenmeinung und Registerdaten – auch zu einer Verbesserung der Prognose führen.</p> <p>Bei Mehrgefäßerkrankung soll eine komplette Revaskularisation angestrebt werden.</p> <p>Bei 3-Gefäßerkrankung ist der ACB das primäre Vorgehen und die PCI das sekundäre Vorgehen.</p>	n.a.	A	[33,40,993,1436,1437,1439-1441,1445-1449,1453,1455,1494-1510]
	<p>Patienten mit proximaler RIVA-Stenose (&gt;=70 %) sollten unabhängig von der Symptomatik einer revaskularisierenden Maßnahme zugeführt werden.</p>	n.a.	B	[1442,1450,1511-1515]
	<p>Alle anderen Patienten ohne RIVA-Stenose mit symptomatischer, medikamentös nicht adäquat beherrschbarer Eingefäßerkrankung sollen mit einer revaskularisierenden Maßnahme (in der Regel PCI) aus antianginöser Indikation behandelt werden.</p>	n.a.	A	[1494,1516,1517]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NVL	<b>Patienten mit stabiler Angina pectoris / Anginaäquivalent und planbarer Revaskularisation (unabhängig von der Ventrikelfunktion)</b>			
	<p>Älteren Patienten (&gt; 75 Jahre) mit ausgeprägter, persistierender, trotz medikamentöser Therapie bestehender Symptomatik soll die Revaskularisation empfohlen werden.</p> <p>PCI und ACB führen im Vergleich zur medikamentösen Therapie zu einer deutlichen symptomatischen Verbesserung der KHK, ohne eine erhöhte Sterblichkeit zu bedingen. Sie sollten auch bei alten Patienten mit ausgeprägter persistierender Symptomatik trotz medikamentöser Therapie empfohlen werden.</p>	n.a.	A	[1518-1523]
ESC A	<b>Recommendations for <u>Revascularization to Improve Prognosis</u> in Patients with Stable Angina</b>			[33,40,138,334,1409-1411,1439,1445,1449,1450,1452,1453,1455,1460,1465,1466,1490,1492,1495,1499,1511,1524-1552]( <i>Keinem LoE eindeutig zuzuweisen</i> )
	CABG for significant left main (LM) CAD or its equivalent (i.e. severe stenosis of ostial/proximal segment of left descending and circumflex coronary arteries)	A	I	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	CABG for significant proximal stenosis of three major vessels, particularly in those patients with abnormal LV function or with early or extensive reversible ischaemia on functional testing	A	I	
ESC A	CABG for one- or two-vessel disease with high-grade stenosis of proximal left anterior descending artery (LAD) with reversible ischaemia on non-invasive testing	A	I	
ESC A	CABG for significant disease with impaired LV function and viability demonstrated by non-invasive testing	B	I	
ESC A	CABG for one- or two-vessel CAD without significant proximal LAD stenosis in patients who have survived sudden cardiac death or sustained ventricular tachycardia	B	IIa	
ESC A	CABG for significant three-vessel disease in diabetics with reversible ischaemia on functional testing	C	IIa	
ESC A	PCI or CABG for patients with reversible ischaemia on functional testing and evidence of frequent episodes of ischaemia during daily activities	C	IIa	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	<b>Recommendations for <u>Revascularization to Improve Symptoms</u> in Patients with Stable Angina</b>			[33,40,138,334,1409-1411,1439,1445,1449,1450,1452,1453,1455,1460,1465,1466,1490,1492,1495,1499,1511,1524-1552](Keinem LoE eindeutig zuzuweisen)
	PCI for one-vessel disease technically suitable for percutaneous revascularization in patients with moderate-to-severe symptoms not controlled by medical therapy, in whom procedural risks do not outweigh potential benefits	A	I	
	PCI for multi-vessel disease without high-risk coronary anatomy, technically suitable for percutaneous revascularization in patients with moderate-to severe symptoms not controlled by medical therapy, in whom procedural risks do not outweigh potential benefits	A	I	
	PCI for one-vessel disease technically suitable for percutaneous revascularization in patients with mild-to-moderate symptoms which are nonetheless unacceptable to the patient, in whom procedural risks do not outweigh potential benefits	A	IIa	
	PCI for multi-vessel disease technically suitable for percutaneous revascularization in patients with mild-to-moderate symptoms which are nonetheless unacceptable to the patient, in whom procedural risks do not outweigh potential benefits	A	IIa	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
ESC A	CABG for multi-vessel disease technically suitable for surgical revascularization in patients with moderate-to-severe symptoms not controlled by medical therapy, in whom risks of surgery do not outweigh potential benefits	A	I	
ESC A	CABG for one-vessel disease technically suitable for surgical revascularization in patients with moderate-to-severe symptoms not controlled by medical therapy, in whom operative risk does not outweigh potential benefit	A	IIa	
ESC A	CABG for multi-vessel disease technically suitable for surgical revascularization in patients with mild-to-moderate symptoms which are nonetheless unacceptable to the patient, in whom operative risk does not outweigh potential benefit	A	IIa	
ESC A	CABG for one-vessel disease technically suitable for surgical revascularization in patients with mild-to-moderate symptoms which are nonetheless unacceptable to the patient, in whom operative risk is not greater than the estimated annual mortality	B	IIb	
FMS	1-2 vessel coronary artery disease is an established indication for PTCA.	n.a.	n.a.	[1553]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>FMS</b>	Insertion of a stent is an important part of PTCA. Over 80 % of patients are fitted with stents. This has greatly diminished the number of complications and risk of restenosis. In most cases, a drug-eluting stent impregnated with a smooth muscle growth inhibitor is used. The use of drug-eluting stents has further extended the indications for PTCA.	A	n.a.	[1554]
<b>FMS</b>	Stenosis of the left main coronary artery (LCA) or three-vessel disease, which is of equal significance, are established indications for surgery.	n.a.	n.a.	[1553] [1409]
<b>FMS</b>	CABG is often a better option if the patient has several total occlusions, the coronary anatomy is unfavourable for PTCA, or if the patient has diabetes, uraemia, significant left ventricular dysfunction or a significant valvular disease.	C	n.a.	[1555-1557]
<b>FMS</b>	Minimally invasive off-pump bypass grafting, OP-CAB, is a new surgical method that does not require the use of the heart-lung machine and thoracotomy is not needed.	C	n.a.	[1558]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA PCI</b>	The effectiveness of PCI for patients with asymptomatic ischemia or CCS class I or II angina who have 2- or 3-vessel disease with significant proximal LAD CAD who are otherwise eligible for CABG with 1 arterial conduit and who have treated diabetes or abnormal LV function is not well established.	B	IIb	[1436,1439-1441,1443,1446,1447,1449,1453,1496,1497,1509] [The Writing Committee recognizes that the majority of patients with CCS class I or II angina should be treated medically.PCI is recommended without evidence that it will reduce cardiovascular mortality but in which it does hold a promise to reduce symptoms.]
<b>AHA PCI</b>	PCI might be considered for patients with asymptomatic ischemia or CCS class I or II angina with nonproximal LAD CAD that subtends a moderate area of viable myocardium and demonstrates ischemia on noninvasive testing.	C	IIb	[1436,1439-1441,1443,1446,1447,1449,1453,1496,1497,1509] [The Writing Committee recognizes that the majority of patients with CCS class I or II angina should be treated medically.PCI is recommended without evidence that it will reduce cardiovascular mortality but in which it does hold a promise to reduce symptoms.]

(Fortsetzung)



Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA PCI	<p>PCI is not recommended in patients with asymptomatic ischemia or CCS class I or II angina who do not meet the criteria as listed under the class II recommendations or who have 1 or more of the following:</p> <ul style="list-style-type: none"> <li>b. Only a small area of viable myocardium at risk</li> <li>b. No objective evidence of ischemia. <ul style="list-style-type: none"> <li>n. Lesions that have a low likelihood of successful dilatation.</li> <li>n. Mild symptoms that are unlikely to be due to myocardial ischemia.</li> </ul> </li> <li>e. Factors associated with increased risk of morbidity or mortality.</li> <li>f. Left main disease and eligibility for CABG.</li> <li>g. Insignificant disease (less than 50 % coronary stenosis).</li> </ul>	C	III*	[1436,1439-1441,1443,1446,1447,1449,1453,1496,1497,1509]
AHA PCI	It is reasonable that PCI be performed in patients with CCS class III angina and single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more significant lesions in 1 or more coronary arteries suitable for PCI with a high likelihood of success and low risk of morbidity or mortality.	B	IIa	n. a.
AHA PCI	It is reasonable that PCI be performed in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy with focal saphenous vein graft lesions or multiple stenoses who are poor candidates for reoperative surgery.	C	IIa	n. a.

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA PCI	Use of PCI is reasonable in patients with CCS class III angina with significant left main CAD (greater than 50 % diameter stenosis) who are candidates for revascularization but are not eligible for CABG	B	IIa	n.a.
AHA PCI	PCI may be considered in patients with CCS class III angina with single-vessel or multivessel CAD who are undergoing medical therapy and who have 1 or more lesions to be dilated with a reduced likelihood of success.	B	IIb	n.a.
AHA PCI	PCI may be considered in patients with CCS class III angina and no evidence of ischemia on noninvasive testing or who are undergoing medical therapy and have 2- or 3- vessel CAD with significant proximal without prior CABG surgery. The randomized trials comparing LAD CAD and treated diabetes or abnormal LV function.	B	IIb	[1409,1428,1559,1560]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA PCI</b>	<p>PCI is not recommended for patients with CCS class III angina with single-vessel or multivessel CAD, no evidence of myocardial injury or ischemia on objective testing, and no trial of medical therapy, or who have 1 of the following:</p> <p>b. Only a small area of myocardium at risk.</p> <p>b. All lesions or the culprit lesion to be dilated with morphology that conveys a low likelihood of success.</p> <p>n. A high risk of procedure-related morbidity or mortality.</p> <p>n. Insignificant disease (less than 50 % coronary stenosis).</p> <p>e. Significant left main CAD and candidacy for CABG.</p>	C	III*	n.a.
<b>ESC PCI</b>	General indication for PCI in stable coronary artery disease to treat objective large ischaemia.	A	I	[1516,1525,1561,1562]
<b>ESC PCI</b>	Indication for PCI in patients with chronic total occlusion	C	IIa	[1563-1571]
<b>ESC PCI</b>	Indication for PCI in high surgical risk patients.	B	IIa	[1572-1574]
<b>ESC PCI</b>	Indication for PCI in patients with multi-vessel disease and/or diabetes mellitus.	C	IIb	[1456,1495,1496,1575-1577]
<b>ESC PCI</b>	Indication for PCI in patients with unprotected left main stenosis in the absence of other revascularization options.	C	IIb	[1578-1581]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ESC PCI</b>	Indication for PCI for routine stenting of de novo lesions in native coronary arteries or venous bypass grafts in patients with stable CAD.	A	I	[1538,1539,1582-1594]
<b>AHA CABG</b>	CABG should be performed in patients with asymptomatic or mild angina who have significant left main coronary artery stenosis.	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG should be performed in patients with asymptomatic or mild angina who have left main equivalent: significant (greater than or equal to 70 %) stenosis of the proximal LAD and proximal left circumflex artery.	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is useful in patients with asymptomatic ischemia or mild angina who have 3-vessel disease. (Survival benefit is greater in patients with abnormal LV function; e.g., EF less than 0.50 and/or large areas of demonstrable myocardial ischemia.)	C	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG can be beneficial for patients with asymptomatic or mild angina who have proximal LAD stenosis with 1- or 2-vessel disease. (This recommendation becomes a Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50.)	A	IIb	[1428,1485,1559]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA CABG</b>	CABG may be considered for patients with asymptomatic or mild angina who have 1- or 2-vessel disease not involving the proximal LAD (If a large area of viable myocardium and high-risk criteria are met on noninvasive testing, this recommendation becomes Class I).	B	IIb	[1428,1485,1559]
<b>AHA CABG</b>	CABG is recommended for patients with stable angina who have significant left main coronary artery stenosis.	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is recommended for patients with stable angina who have left main equivalent: Significant (greater than or equal to 70 %) stenosis of the proximal LAD and proximal left circumflex artery.	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is recommended for patients with stable angina who have 3-vessel disease. (Survival benefit is greater when LVEF is less than 0.50.)	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is recommended in patients with stable angina who have 2-vessel disease with significant proximal LAD stenosis and either EF less than 0.50 or demonstrable ischemia on noninvasive testing.	A	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is beneficial for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but with a large area of viable myocardium and high-risk criteria on noninvasive testing.	B	I	[1428,1485,1559]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA CABG</b>	CABG is beneficial for patients with stable angina who have developed disabling angina despite maximal noninvasive therapy, when surgery can be performed with acceptable risk. If angina is not typical, objective evidence of ischemia should be obtained.	B	I	[1428,1485,1559]
<b>AHA CABG</b>	CABG is reasonable in patients with stable angina who have proximal LAD stenosis with 1-vessel disease. (This recommendation becomes Class I if extensive ischemia is documented by noninvasive study and/or LVEF is less than 0.50).	A	IIa	[1428,1485,1559]
<b>AHA CABG</b>	CABG may be useful for patients with stable angina who have 1- or 2-vessel CAD without significant proximal LAD stenosis but who have a moderate area of viable myocardium and demonstrable ischemia on noninvasive testing.	B	IIa	[1428,1485,1559]
<b>AHA CABG</b>	CABG is not recommended for patients with stable angina who have 1- or 2-vessel disease not involving significant proximal LAD stenosis, patients who have mild symptoms that are unlikely due to myocardial ischemia, or patients who have not received an adequate trial of medical therapy and b. have only a small area of viable myocardium or b. have no demonstrable ischemia on noninvasive testing.	B	III*	[1428,1485,1559]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>AHA CABG</b>	CABG is not recommended for patients with stable angina who have borderline coronary stenoses (50 % to 60 % diameter in locations other than the left main coronary artery) and no demonstrable ischemia on noninvasive testing.	B	III*	[1428,1485,1559]
<b>AHA CABG</b>	CABG is not recommended for patients with stable angina who have insignificant coronary stenosis (less than 50 % diameter reduction).	B	III*	[1428,1485,1559]
<b>AHA CABG</b>	Coronary bypass should be performed in patients with prior CABG for disabling angina despite optimal nonsurgical therapy. (If angina is not typical, then objective evidence of ischemia should be obtained.)	B	I	n.a.
<b>AHA CABG</b>	Coronary bypass should be performed in patients with prior CABG without patent bypass grafts but with Class I indications for surgery for native-vessel CAD (significant left main coronary stenosis, left main equivalent, 3-vessel disease).	B	I	n.a.
<b>AHA CABG</b>	Coronary bypass is reasonable in patients with prior CABG and bypassable distal vessel(s) with a large area of threatened myocardium by noninvasive studies.	B	IIa	n.a.
<b>AHA CABG</b>	Coronary bypass is reasonable in patients who have prior CABG if atherosclerotic vein grafts with stenoses greater than 50 % supplying the LAD coronary artery or large areas of myocardium are present.	B	IIa	n.a.

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	<b>Recommendations for Revascularization With PCI (or Other Catheter-Based Techniques) and CABG in Patients With Stable Angina</b>			[1409,1440,1453,1461,1466,1494,1495,1499,1511,1516,1517,1525,1537,1552,1591,1595-1601]( <i>Keinem LoE eindeutig zuzuweisen</i> )
AHA A**	Coronary artery bypass grafting for patients with significant left main coronary disease.	A	I	
AHA A**	Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50 %).	A	I	
AHA A**	Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50 %) or demonstrable ischemia on non-invasive testing.	A	I	
AHA A**	Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter based therapy and normal LV function and who do not have treated diabetes.	B	I	
AHA A**	[Percutaneous coronary intervention or ] CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on non-invasive testing.	B	I	

(Fortsetzung)



Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Coronary artery bypass grafting for patients with one- or two-vessel CAD without significant proximal LAD CAD who have survived sudden cardiac death or sustained ventricular tachycardia.	C	I	
AHA A**	In patients with prior PCI, CABG or PCI for recurrent stenosis associated with a large area of viable myocardium or high-risk criteria on <input type="checkbox"/> on-invasive testing.	C	I	
AHA A**	[Percutaneous coronary intervention] or CABG for patients who have not been successfully treated by medical therapy (see text) and can undergo revascularization with acceptable risk.	B	I	
AHA A**	Repeat CABG for patients with multiple saphenous vein graft stenoses, especially when there is significant stenosis of a graft supplying the LAD. It may be appropriate to use PCI for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery.	C	IIa	
AHA A**	Use of PCI or CABG for patients with one- or two-vessel CAD without significant proximal LAD disease but with a moderate area of viable myocardium and demonstrable ischemia on <input type="checkbox"/> on-invasive testing.	B	IIa	
AHA A**	Use of PCI or CABG for patients with one-vessel disease with significant proximal LAD disease.	B	IIa	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Compared with CABG, PCI for patients with two- or three-vessel disease with significant proximal LAD CAD, who have anatomy suitable for catheter-based therapy, and who have treated diabetes or abnormal LV function.	B	IIb	
AHA A**	Use of PCI for patients with significant left main coronary disease who are not candidates for CABG.	C	IIb	
AHA A**	PCI for patients with one- or two-vessel CAD without significant proximal LAD CAD who have survived sudden cardiac death or sustained ventricular tachycardia.	C	IIb	
AHA A**	Use of PCI or CABG for patients with one- or two vessel CAD without significant proximal LAD CAD, who have mild symptoms that are unlikely due to myocardial ischemia, or who have not received an adequate trial of medical therapy and a. have only a small area of viable myocardium or b. have no demonstrable ischemia on <input type="checkbox"/> on-invasive testing.	C	III*	
AHA A**	Use of PCI or CABG for patients with borderline coronary stenoses (50 % to 60 % diameter in locations other than the left main coronary artery) and no demonstrable ischemia on <input type="checkbox"/> on-invasive testing.	C	III*	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Use of PCI or CABG for patients with insignificant coronary stenosis (less than 50 % diameter).	C	III*	
AHA A**	Use of PCI in patients with significant left main coronary artery disease who are candidates for CABG.	B	III*	
AHA A**	<b>Recommendations for Revascularization with PCI and CABG in Asymptomatic Patients</b>			[1525,1597,1602](Keinem LoE eindeutig zuzuweisen)
	Coronary artery bypass grafting for patients with significant left main coronary disease.	B	I	
	Coronary artery bypass grafting for patients with three-vessel disease. The survival benefit is greater in patients with abnormal LV function (ejection fraction less than 50 %).	C	I	
	Coronary artery bypass grafting for patients with two-vessel disease with significant proximal LAD CAD and either abnormal LV function (ejection fraction less than 50 %) or demonstrable ischemia on non-invasive testing.	C	I	
	Percutaneous coronary intervention for patients with two- or three-vessel disease with significant proximal LAD CAD who have anatomy suitable for catheterbased therapy and normal LV function and who do not have treated diabetes.	C	I	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a large area of viable myocardium and high-risk criteria on noninvasive testing.	C	I	
AHA A**	Coronary artery bypass grafting for patients with one- or two-vessel CAD without significant proximal LAD CAD who have survived sudden cardiac death or sustained ventricular tachycardia.	C	I	
AHA A**	In patients with prior PCI, CABG or PCI for recurrent stenosis associated with a large area of viable myocardium or high-risk criteria on noninvasive testing.	C	I	
AHA A**	Percutaneous coronary intervention or CABG for patients with one-vessel disease with significant proximal LAD CAD. (This recommendation is identical to the Class IIa recommendation for symptomatic patients.)	C	IIa	
AHA A**	Compared with CABG, PCI for patients with 2- or 3- vessel disease with significant proximal LAD CAD who have anatomy suitable for catheter-based therapy and who have treated diabetes or abnormal LV function.( identical to the recommendations for symptomatic patients)	B	IIb	
AHA A**	Use of PCI for patients with significant left main coronary disease who are not candidates for CABG. (identical to the recommendations for symptomatic patients)	C	IIb	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Percutaneous coronary intervention for patients with one- or two-vessel CAD without significant proximal LAD CAD who have survived sudden cardiac death or sustained ventricular tachycardia. (identical to the recommendations for symptomatic patients)	C	IIb	
AHA A**	Repeat CABG for patients with multiple saphenous vein graft stenoses, with high-risk criteria on non-invasive testing, especially when there is significant stenosis of a graft supplying the LAD. Percutaneous coronary intervention may be appropriate for focal saphenous vein graft lesions or multiple stenoses in poor candidates for reoperative surgery. (identical to Class Iia recommendations for symptomatic patients)	C	IIb	
AHA A**	Percutaneous coronary intervention or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD but with a moderate area of viable myocardium and demonstrable ischemia on □on-invasive testing. (identical to Class Iia recommendations for symptomatic patients)	C	IIb	
AHA A**	Use of PCI or CABG for patients with one- or two-vessel CAD without significant proximal LAD CAD and a. only a small area of viable myocardium or b. no demonstrable ischemia on □on-invasive testing. (identical to the Class III recommendations for symptomatic patients.)	C	III*	

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
AHA A**	Use of PCI or CABG for patients with borderline coronary stenoses (50 % to 60 % diameter in locations other than the left main coronary artery) and no demonstrable ischemia on noninvasive testing. (identical to the Class III recommendations for symptomatic patients.)	C	III*	
AHA A**	Use of PCI or CABG for patients with insignificant coronary stenosis (less than 50 % diameter). (identical to the Class III recommendations for symptomatic patients.)	C	III*	
AHA A**	Use of PCI in patients with significant left main CAD who are candidates for CABG. (identical to the Class III recommendations for symptomatic patients.)	B	III*	
AHA A**	<b>Recommendations for Alternative Therapies for Chronic Stable Angina in Patients Refractory to Medical Therapy Who Are Not Candidates for Percutaneous Intervention or Surgical Revascularization</b>			
	Surgical laser transmyocardial revascularization.	A	IIa	[246,1603-1608]
	Enhanced external counterpulsation.	B	IIb	[1609-1611]
	Spinal cord stimulation.	B	IIb	[1612-1621]

(Fortsetzung)

Tabelle 30 (Fortsetzung): Empfehlungen zu therap. Maßnahmen – Interventionelle Therapie und Koronarrevaskularisation

Leitlinie	Empfehlung	LoE	GoR	Literatur
CCS	The combination of recently published randomized trial data and observational data should be sufficiently compelling evidence to support a shift towards an aggressive treatment strategy in appropriate subsets of elderly patients. Age alone should not be viewed as a contraindication to these procedures.	B	I	nicht zuzuweisen aufgrund fehlender Nummerierung in der Literaturliste.
NCC	All patients should be offered a cardiological assessment to consider whether coronary revascularisation is appropriate. This should take into account comorbidity	1++	A	[1409,1494,1517,1525,1537,1622,1623]
<p>* Negative Empfehlung, d. h. die Organisation rät von der Intervention in der geschilderten Situation ab.                  ** Die Empfehlungen zu PCI bzw. CABG sind durch die Empfehlungen der Leitlinien AHA PCI und AHA CABG überholt und werden hier zum Vergleich dargestellt.                  n. a.: nicht angegeben  <input checked="" type="checkbox"/>: „Good Practice Point“ bezeichnet („Best Practice“ empfohlen auf der Basis der klinischen Expertise der LL-Gruppe)</p>				

Tabelle 31: Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>NZGG REHA</b>	Psychosocial interventions (patient education, counselling and cognitive behavioural techniques) should be included in comprehensive cardiac rehabilitation programmes. Comprehensive cardiac rehabilitation programmes should include vocational guidance to facilitate an appropriate and realistic return to work.	1+ 1-	B	[910,1624] [478,943,948,1625,1626]
<b>NZGG REHA</b>	The educational component of a comprehensive cardiac rehabilitation programme should be individually tailored to the specific circumstances, readiness to change, cultural background and socio-economic circumstances of the patient. Varied methods of providing patients with information during their hospital stay need to be considered to optimise patient learning and recovery.	1+ 1-	B	[1627,1628] [478,1629] <i>Keinem LoE eindeutig zuzuweisen:[1629-1636]</i>
<b>NZGG REHA</b>	Prior to commencing Phase II cardiac rehabilitation, all patients should be assessed and a programme developed that meets their individual needs and sets realistic goals.	n.a.	D	[816,1637-1644]
<b>NZGG REHA</b>	Comprehensive cardiac rehabilitation programmes should include discussion of sexual activity in an open, frank and sensitive manner.	n.a.	D	[1645-1654]
<b>NZGG REHA</b>	Women's needs should be addressed in comprehensive cardiac rehabilitation programmes.	1+	D	[1655] <i>keinem LoE zugewiesen:[1656-1660]</i>

(Fortsetzung)



Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
CCS	A comprehensive cardiac rehabilitation program should be considered for older cardiac patients. Such a program not only improves body dimensions and blood lipids, but also has been shown to improve quality of life, enhance mood state, and alleviate depression.	B	I	[640,1103,1259,1661-1663]
CCS	Older coronary patients of both sexes should be considered as prime candidates for aerobic exercise training, since this has been shown to result in significant gains in submaximal and maximal effort tolerance, improvement in symptoms, a loss of body fat and an increase in lean body mass, all without increased risk of complications or adverse events	B	I	[990,1254,1257,1258,1664]
CCS	When prescribing aerobic exercise for older cardiac patients, the initial training intensity should be low and progression gradual, with longer warm-up and cool-down and avoidance of high heat and humidity. Walking is the training mode of choice.	C	1	n.a.
CCS	Resistance training should be considered for low-risk older coronary patients, since it has the potential to reverse the loss of lean tissue associated with aging, increase muscle mass and strength, improve balance, and allow activities of daily living to be carried out with greater ease and safety.	C	I	[1070,1071,1112,1173,1174,1665-1667]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
CCS	Low risk older patients with good ventricular function can commence supervised resistance training 4 to 6 weeks after starting aerobic exercise. Sessions should be carried out twice weekly, utilizing light weights (30 % to 50 % of 1 RM) with one set of 10-15 repetitions for major muscle groups. Blood pressure can be monitored in the non-exercising limb.	C	I	n.a.
NLSC	It is recommended to strive for return to work from the beginning of the cardiac rehabilitation. Contact between the cardiologist and company doctor at an early stage can contribute to a more rapid return to work.	B	IIb	[789,833,1668-1672]
NLSC	The rehabilitation committee advises offering an exercise programme oriented to training skills and improving balance and coordination to improve the economy of movement of cardiac patients.	C	IIb	n.a.
NLSC	The rehabilitation committee feels that patients can safely participate in resistance training, if this training is done in a balanced manner. The blood pressure can rise more in resistance training than in aerobic training. This should be taken into account with patients with a considerably reduced left ventricular function and those with poorly controlled hypertension.  It is reasonable to assume that resistance training in patients with a clinically stable coronary heart disease will lead to increased muscular strength and endurance.	C  B	IIb  IIb	[789,1673,1674]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NLSC	It is reasonable to assume that the patient must remain physically active for the rest of his/her life to maintain the useful effects of the cardiac rehabilitation. The rehabilitation committee feels that patients in an early stage must be stimulated to undertake activities that they enjoy and that they can keep doing for a long time.	B B	IIa IIb	[816]
NLSC	It has been shown that relaxation therapy reduces the heart rate at rest.	A	I	[960,1675-1683]
NLSC	It is reasonable to assume that relaxation therapy increases the exercise tolerance	B	IIb	[960,1676,1683,1684]
NLSC	It has been shown that relaxation therapy reduces the frequency of symptoms of angina pectoris, both in patients who have already suffered a myocardial infarction and in those with stable angina pectoris.	A	IIa	[1626,1675,1685-1687]
NLSC	It is reasonable to assume that relaxation therapy lowers the frequency of ST-depression or delays the moment of their occurrence during exercise.	B	IIb	[960,1679,1683,1688]
NLSC	It is reasonable to assume that relaxation therapy reduces heart rhythm disturbances.	B	IIb	[1686,1687]
NLSC	It is reasonable to assume that relaxation therapy lowers the level of anxiety.	B	IIa	[959,960,1677,1689] [1626,1680,1685,1686,1690,1691]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NLSC	It is reasonable to assume that relaxation training promotes the return to work.	B	IIb	[1687,1692,1693]
NLSC	It is reasonable to assume that relaxation therapy can reduce the risk of (new) cardiac pathology.	B	IIb	[1624,1678,1687,1693-1695]
NLSC	It has been shown that optimising the social support has a positive effect on the rehabilitation process and the recovery of social performance.	A	I	[946,1413,1696-1708]
FMS	Exercise-based cardiac rehabilitation reduces all cause and cardiac mortality and reduces a number of cardiac risk factors in coronary heart disease.	A	n.a.	[497] [444]
SIGN R	Exercise training should form a core element of cardiac rehabilitation programmes.	1+	A	[1709]
SIGN R	Clinical risk stratification is sufficient for low to moderate risk patients undergoing low to moderate intensity exercise.	4	D	[1710,1711]
SIGN R	Exercise testing and echocardiography are recommended for high risk patients and/or high intensity exercise training (and to assess residual ischaemia and ventricular function where appropriate).	4	D	[1710,1711]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN R</b>	Functional capacity should be evaluated before and on completion of exercise training using a valid and reliable measure.	4	D	[1710,1711]
<b>SIGN R</b>	People with stable coronary disease should be encouraged to continue regular moderate intensity aerobic exercise.	1+ 2+ 3 4	B	[944,1712,1713](Zuordnung zu LoE nicht möglich)
<b>SIGN R</b>	If more than five years has elapsed since the individual's last assessment, if cardiac symptoms have recurred, or if the patient is beginning long term supervised exercise without having first completed a Phase 3 programme, (re)assessment by clinical risk stratification and a test of functional capacity with or without a formal exercise test is recommended.	4	<input checked="" type="checkbox"/>	[1714]
<b>SIGN R</b>	Comprehensive cardiac rehabilitation should be delivered by healthcare staff using established principles of adult education and behavioural change.	1++	A	[948,949,1715]
<b>SIGN R</b>	Use of the Heart Manual is recommended to facilitate comprehensive cardiac rehabilitation.	1+ 2+	A	[949,1716,1717]
<b>SIGN R</b>	Rehabilitation staff should identify and address health beliefs and cardiac misconceptions in patients with coronary heart disease.	2++ 2+ 4	B	[919] [1718] [1697,1719,1720]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>SIGN R</b>	Cardiac rehabilitation programmes should include both psychological and educational interventions as part of comprehensive rehabilitation.	1++ 1+ 4	A	[478,910,943] [478] [948,951]
<b>NVL</b>	Die kardiologische Rehabilitation soll ein integraler Bestandteil einer am langfristigen Erfolg orientierten, umfassenden Versorgung von Herzpatienten sein.	n.a.	A	[43,444,497,516,517,789,1124]
<b>NVL</b>	Individuell angepasste Trainingsprogramme sollen die Grundlage der kardiologischen Rehabilitation bilden.	n.a.	A	[43,444,497,516,517,789,1124]
<b>NVL</b>	Zu den Aufgaben der Phase-II-Rehabilitation soll die Risikostratifizierung, medizinische Überwachung, Betreuung und Mobilisierung der Patienten, die Optimierung der medikamentösen Therapie und die Umsetzung oder Intensivierung der Maßnahmen zur Sekundärprävention (einschließlich körperlichem Training) gehören.	n.a.	A	[43,490,497,516,517,524,644,878-880,911,914,943,966,1200,1721-1723]
<b>NVL</b>	Auch Angehörige betroffener Patienten sollen in die Beratungen und Schulungen einbezogen werden, wobei deren spezielle Problematik berücksichtigt werden soll (Partnerprobleme, sexuelle Probleme, Lebensbewältigung).	n.a.	A	[43,490,497,516,517,524,644,878-880,911,914,943,966,1200,1721-1723]
<b>NVL</b>	Bei schweren oder zeitlich andauernden Depressionen sollte eine adäquate Diagnostik und Therapie eingeleitet werden.	n.a.	B	[43,490,497,516,517,524,644,878-880,911,914,943,966,1200,1721-1723]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NVL	In der kardiologischen Rehabilitation sollte eine bedarfsgerechte, individuelle soziale Beratung und Unterstützung des Patienten bei der beruflichen und sozialen Wiedereingliederung erfolgen. Dabei sollte die enge Kooperation mit den nachsorgenden Hausärzten, Betriebsärzten sowie ambulanten sozialen Einrichtungen (ältere Patienten) sowie Kostenträgern empfohlen werden.	n.a.	B	[43,490,497,516,517,524,644,878-880,911,914,943,966,1200,1721-1723]
DGPR	Auf der Basis vorhandener Befunde und der rehabilitationsspezifischen Diagnostik soll zu Beginn jeder Rehabilitationsmaßnahme eine medizinische Evaluation mit individueller Risikostratifizierung durchgeführt werden.	B	I	[43,784,1724-1742]
	Aus Evaluation und Risikostratifizierung ergeben sich individuelle Therapieziele, die dem Patienten erläutert und mit ihm abgestimmt werden. Der Rehabilitations- und Therapieplan sollte auf der Basis dieser gemeinsam vereinbarten Ziele erstellt werden.	C	I	
	Individuelle Risikostratifizierung und Therapiegestaltung soll auch die geschlechterspezifischen Risikoprofile und Lebenslagen berücksichtigen.	B	I	
	Abhängig vom Verlauf der Rehabilitation und der Erkrankung sollen die diagnostischen und therapeutischen Maßnahmen, ggf. auch die Therapieziele, verändert und angepasst werden.	B	I	

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
DGPR	Vor Beginn eines Trainingsprogramms soll eine Stratifizierung des Patienten zur Ermittlung des individuellen Risikos und der aktuellen individuellen Leistungsfähigkeit und Belastbarkeit erfolgen.	A	I	[497,833,835,839,1672,1743-1752]
	Während der kardiologischen Rehabilitation soll bei allen Patienten ein überwachtes, individuell dosiertes und gestaltetes körperliches Training durchgeführt werden. Beginnend auf niedrigem Niveau sollen nach dem Prinzip der progressiven Belastungssteigerung Trainingsintensität, -dauer und -häufigkeit schrittweise gesteigert werden.	A	I	
	Die Basis des Trainings bildet ein regelmäßiges <i>aerobes Ausdauertraining</i> (5-7 Mal Woche) bei 40-80 % der maximalen Leistungsfähigkeit im ischämiefreien Bereich.	A	I	
	Dies erfolgt in der Regel durch ein EKG-überwachtes Ergometertraining. Ergänzend sollen alltagsadaptierte, aerobe Ausdauerleistungen angeboten werden.	n.a.	n.a.	
	Für geeignete Patienten sollte ergänzend ein individuell dosiertes, überwachtes, dynamisches <i>Kraftausdauertraining</i> durchgeführt werden (Übungen bei 30-60 % der Maximalkraft und 12-15 Mal ohne Pressatmung)	B	I	
Während der kardiologischen Rehabilitation sollte jeder Patient eine gezielte Anleitung und Motivation zum selbständigen und individuell angepassten Training sowie zur Förderung der körperlichen Aktivität im Alltag erhalten.	C	I		

(Fortsetzung)



Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DGPR</b>	Aufklärung und Beratung, Schulung sowie Unterstützung bei der Verhaltensmodifikation sind feste Bestandteile der multidisziplinären kardiologischen Rehabilitation und sollen von Ärzten, Psychologen und von in der Erwachsenenbildung geschultem Personal durchgeführt werden.	A	I	[43,478,517,784,910,1742,1753-1758]
	Ein Schwerpunkt edukativer Maßnahmen ist die an psychologischen Gesichtspunkten orientierte Gruppenarbeit, welche in ein pädagogisches Gesamtkonzept eingebettet werden soll.	B	I	

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DGPR</b>	Zu Beginn einer kardiologischen Rehabilitation ist ein validiertes psychodiagnostisches Screening zu empfehlen. Bei positivem Befund ist ein psychodiagnostisches Interview indiziert.	B	I	[895,1759]
	Bei Männern sollten psychologische und psychoedukative Maßnahmen (psychologische Beratung, psychologische Interventionen einschließlich Psychotherapie) als Hilfe zur Krankheitsverarbeitung, zur Reduktion der Risikofaktoren und zur Verbesserung der Lebensqualität fester Bestandteil der Rehabilitation sein. Bei Patienten mit erhöhtem Distress sollten diese Maßnahmen Stressbewältigung und Entspannungsverfahren einschließen.	B	Ila	
	Frauen sollten nicht ohne vorausgehende individuelle psychologische Beurteilung an allgemeinen psychoedukativen Programmen teilnehmen.	B	Iib	
	Bei Frauen sollte eine an individuellen Bedürfnissen und Belange angepasste psychoedukative Betreuung bevorzugt werden.	C	Ila	
	Angehörige sollten nach Möglichkeit in die Rehabilitationsbehandlung mit einbezogen und spezielle Partnerschaftsprobleme (inklusive sexueller Dysfunktionen) thematisiert werden.	C	Ila	
	Bei Patienten mit KHK und Depression oder Angststörung sollte eine multidisziplinäre kardiologische Rehabilitation unter Einbeziehung einer fachärztlichen, psychosomatischen Betreuung erfolgen, wobei bereits bei mittelschweren psychischen Beeinträchtigungen eine psychotherapeutische Mitbehandlung erforderlich ist.	B	I	

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>DGPR</b>	Die kardiologische Rehabilitation soll eine sozialmedizinische Beratung und Beurteilung einschließen, um eine angemessene und realistische Wiedereingliederung in den Beruf und Alltag zu fördern.	B	I	[833,1744,1755,1760]
	Die sozialmedizinische Beratung sollte auch Fragen zum alltäglichen Leben beantworten (Führen eines Fahrzeugs, Freizeit, Hobby, Fliegen, Reisen, Sexualität).	C	I	
	Der Lebenspartner sollte in die soziale Beratung abhängig von der individuellen Situation des Patienten mit eingeschlossen werden.	C	IIa	
<b>DGPR</b>	Während der Rehabilitation soll eine strukturierte Ernährungsschulung unter Betonung praktischer Elemente (Lehrküche) in Gruppen und möglichst unter Einbeziehung der Lebenspartner erfolgen.	C	I	[437,442,575,591-595]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	All patients (regardless of their age) should be given advice about and offered a cardiac rehabilitation programme with an exercise component.	1++	A	[497,1755,1761]
	Cardiac rehabilitation programmes should provide a range of options, and patients should be encouraged to attend all those appropriate to their clinical needs. Patients should not be excluded from the entire programme if they choose not to attend certain components.	n.a.	GPP	
	If a patient has cardiac or other clinical conditions that may worsen during exercise, these should be treated if possible before the patient is offered the exercise component of cardiac rehabilitation. For some patients, the exercise component may be adapted by an appropriately qualified healthcare professional .	n.a.	GPP	
	Patients with left ventricular dysfunction who are stable can safely be offered the exercise component of cardiac rehabilitation.	1+	B	[1762-1764]
	Comprehensive cardiac rehabilitation programmes should include health education and stress management components.	1++	A	[910,951,965]
	A homebased programme validated for patients who have had an MI (such as ‘The Edinburgh heart manual’; see <a href="http://www.cardiacrehabilitation.org.uk/heart_manual/heartmanual.htm">http://www.cardiacrehabilitation.org.uk/heart_manual/heartmanual.htm</a> ) that incorporates education, exercise and stress management components with follow-ups by a trained facilitator may be used to provide comprehensive cardiac rehabilitation.	1+	A	[949]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
NCC	Stressmanagement should be offered in the context of comprehensive cardiac rehabilitation. Complex psychological interventions such as cognitive behavioural therapy should not be offered routinely (GPP). There should be provision to involve partners or carers in the cardiac rehabilitation programme if the patient wishes. For recommendations on the management of patients with clinical anxiety and/or depression, refer to 'Anxiety. NICE clinical guideline 22' and 'Depression. NICE clinical guideline 23'.	1++ n.a. 1++ n.a.	A GPP GPP A	[913,966,1765,1766]  [1767-1774]
<b>MANAGEMENT / ORGANISATION</b>				
NZGG REHA	Comprehensive cardiac rehabilitation should embrace a case management approach.	1++ 1+ 2++	A	[1775] [584,944,1776-1778] <i>Keinem LoE eindeutig zuzuweisen:[583,1779,1780]</i>
NZGG REHA	Hospital based cardiac rehabilitation must be comprehensive and should be individualised to meet the needs of each patient.	n.a.	D	n.a.
NZGG REHA	Cardiac rehabilitation programmes should be offered within the primary care setting for which workforce development is required.	1+	B	[1781] <i>Keinem LoE eindeutig zuzuweisen:[1782-1788]</i>
NZGG REHA	The involvement of spouses, partners, whānau* and family should be encouraged in all phases of comprehensive cardiac rehabilitation.	n.a.	C	[1789-1792]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
<b>NZGG REHA</b>	For those who see work as a potential barrier to participation in an outpatient based programme, options such as home based cardiac rehabilitation should be considered. Home based cardiac rehabilitation is recommended for patients who are either unable to attend or unwilling to use a hospital based service.	n.a.	D	n.a.
<b>NZGG REHA</b>	A range of knowledge and skills are recommended for a comprehensive cardiac rehabilitation service. The disciplines of medicine, cardiology, dietetics, nursing, exercise physiology, occupational therapy, physiotherapy, psychology and social work all contribute to ensuring a comprehensive service. The model chosen locally will vary but all disciplines included need to be committed to a coordinated and collaborative approach.	1+	D	[1781] <i>Keinem LoE eindeutig zuzuweisen:[708-710,1793-1803],</i>
<b>NZGG REHA</b>	All patients should be referred to comprehensive cardiac rehabilitation irrespective of age. Disadvantaged patients may need extra support to attend and complete programmes. Rural patients need options for rehabilitation at home or within a primary care setting. Patients with diabetes warrant priority for rehabilitation. Spouse, partner, whānau* and family should be offered access to an appropriate support group and be involved in all stages of the rehabilitation process.	n. a.	D	<i>Keinem LoE eindeutig zuzuweisen:[1638,1803-1806]</i>

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
CCS	It is recommended that, when dealing with older patients, home-based as well as center-based cardiac rehabilitation programs be considered and that cardiac rehabilitation personnel ensure good communication with the primary physician, cardiologist, and, on occasion, with geriatric services.	C	I	n.a.
<b>SIGN R</b>	The ratio of patients to trained staff should be no more than 10:1 during exercise classes.	4	D	[1789,1807]
<b>SIGN R</b>	Staff with basic life support training and the ability to use a defibrillator are required for group exercise of low to moderate risk patients.	4	D	[1789,1807]
<b>SIGN R</b>	Immediate access to on-site staff (hospital emergency team) with advanced life support training is required for high risk patients and classes offering high intensity exercise training.	4	D	[1789,1807]
<b>SIGN R</b>	Low to moderate intensity exercise training can be undertaken as safely and effectively in the home and community as in a hospital setting for low to moderate risk patients.	1+ 2++ 2+	B	[770,1716,1808-1819]( <i>Keinem LoE eindeutig zuzuweisen</i> )

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
<b>SIGN R</b>	Exercise training for high-risk patients and for those who require high intensity exercise should be hospital-based or in a venue with full resuscitation facilities.	1+ 2++ 2+	D	[770,1716,1808-1819]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN R</b>	Patients exercising at home should have access to regular review and support by cardiac rehabilitation staff.	1+ 2++ 2+	<input checked="" type="checkbox"/>	[770,1716,1808-1819]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN R</b>	Aerobic, low to moderate intensity exercise, designed to suit a range of fitness levels, is recommended for most patients undergoing exercise training.	1+ 3 4	B	[194,789,1789,1820-1830]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN R</b>	The formal exercise component of cardiac rehabilitation should be offered at least twice a week for a minimum of eight weeks.	1+ 4	A	[444,789,1812,1831]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN R</b>	Once weekly group exercise with two equivalent home-based sessions improves exercise capacity as effectively as thrice weekly hospital-based exercise.	1+ 4	C	[444,789,1812,1831]( <i>Keinem LoE eindeutig zuzuweisen</i> )
<b>SIGN R</b>	Exercise intensity should be monitored and adjusted by perceived exertion using the Borg scale or by pulse monitor.  Patients should be taught how perceived exertion can be used to regulate exercise intensity.	4	D  <input checked="" type="checkbox"/>	[1807,1830,1832-1834]

(Fortsetzung)



Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
<b>SIGN R</b>	<p>Low to moderate risk cardiac patients can undertake resistance training.</p> <p>Patients may benefit from supervised aerobic training prior to resistance training to allow them to master the skills of self monitoring and regulating exercise intensity.</p> <p>Blood pressure may increase more during resistance training than during aerobic training. Hypertensive patients should not be enrolled in such a programme until their blood pressure is well controlled.</p>	1+ 2+ 4	C  <input checked="" type="checkbox"/>  <input checked="" type="checkbox"/>	n.a.
<b>SIGN R</b>	Self help groups should be encouraged and enabled to use the same evidence-based approach to cardiac rehabilitation advocated for professionally led programmes.	2+ 3 4	<input checked="" type="checkbox"/>	[1766,1835-1841](Keinem LoE eindeutig zuzuweisen)
<b>SIGN R</b>	Fitness instructors delivering maintenance exercise programmes should be on the Exercise and Fitness Register and hold an S/NVQ Level 3 Instructor qualification.	4	<input checked="" type="checkbox"/>	[1714]
<b>NVL</b>	Phase III sollte als lebenslange Nachsorge und Betreuung am Wohnort in der Regel von niedergelassenen Ärzten ggf. in Verbindung mit ambulanten Herzgruppen geleistet werden.	n. a.	B	[43,444,516,517,1124]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
<b>NVL</b>	Die Entscheidung, ob die Phase-II-Rehabilitation ambulant oder stationär erfolgt, sollte medizinische und psychosoziale Gesichtspunkte, den Wunsch des Patienten und die Verfügbarkeit von geeigneten Rehabilitationseinrichtungen berücksichtigen.	n.a.	B	[1842]
<b>DGPR</b>	Am Ende jeder Rehabilitationsmaßnahme sollten eine Abschlussuntersuchung und ein beratendes Abschlussgespräch mit dem verantwortlichen Rehabilitationsarzt stattfinden, in dem auch eine konkrete Empfehlung für die Nachsorge gegeben wird.	I	C	[43,1724-1728]
<b>DGPR</b>	Die Angehörigen betroffener Patienten sollten einbezogen werden.	C	IIa	[43,517,784,1698,1742]
<b>DGPR</b>	Längerfristige Interventionen sollten im Interesse nachhaltiger Wirksamkeit bei Bedarf in die Wege geleitet werden (z. B. ambulante Psychotherapie). Bei schweren, rezidivierenden oder anhaltenden Depressionen bzw. schweren Angststörungen ist ein Facharzt für psychosomatische Medizin oder für Psychiatrie hinzuziehen und eine medikamentöse und psychotherapeutische Behandlung sicherzustellen.	B B	I I	[895,1759]

(Fortsetzung)

Tabelle 31 (Fortsetzung): Empfehlungen zur Rehabilitation

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>MANAGEMENT / ORGANISATION</b>				
<b>DGPR</b>	In kardiologischen Rehabilitationseinrichtungen sollen neben fachgerechten Ernährungsschulungen die zur Therapie der Fettstoffwechselstörungen erforderlichen Kostformen integraler Bestandteil sein.	C	I	n.a.
<p>* Maori-Begriff für "erweiterte Familie"</p> <p>n. a.: nicht angegeben</p> <p><input checked="" type="checkbox"/>: „Good Practice Point“ bezeichnet („Best Practice“ empfohlen auf der Basis der klinischen Expertise der LL-Gruppe</p>				

Tabelle 32: Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN</b>				
<b>SIGN A</b>	Those patients who should be considered for early referral to secondary care include those with new onset angina and those with established coronary heart disease with an increase in symptoms	n. a.	<input checked="" type="checkbox"/>	n.a
<b>SIGN A</b>	Following initial assessment in primary care, patients with suspected angina should, wherever possible, have the diagnosis confirmed and the severity of the underlying coronary heart disease assessed in the chest pain evaluation service which offers the earliest appointment, regardless of model.	2++ 3 4	B	[109] [1843] [1622]
<b>SIGN A</b>	Patients whose symptoms are not controlled on maximum therapeutic doses of two drugs should be considered for referral to a cardiologist	n.a.	<input checked="" type="checkbox"/>	n.a.
<b>SIGN A</b>	Early acces to angiography and coronary artery bypass surgery may reduce the risk of adverse events and impaired quality of life.	1+ 2+	C	[1844] [1845,1846]
<b>SIGN A</b>	Patients presenting with angina and with a diagnosis of coronary heart disease sholud recevie long term structured follow up in primary care	1++ 1+ 3	A	[468,1781,1847] [481,1755,1848,1849]
<b>SIGN R</b>	Structured care and follow-up in primary care should be provided for patients with coronary heart disease.	1+	A	[466-468,481,1781,1848-1851]

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>ALLGEMEIN</b>				
<b>NZZG REHA</b>	A cardiac rehabilitation co-ordinator should have overall responsibility for liaison with patients, their health practitioners and other members of the team. The coordinator should implement strategies to minimise missed referrals.	n.a.	D	[816,1637-1644]
<b>NZGG CR</b>	Consider referral to weight management health care practitioners for motivational counselling or specific energy balance assessment and advice when general lifestyle advice does not achieve a sustained weight loss.	n.a.	<input checked="" type="checkbox"/>	n.a.
<b>DGPR</b>	<p>Patienten nach STEMI, NSTEMI, Patienten nach chirurgischen und interventionellen Koronareingriffen und KHK-Patienten mit ausgeprägtem Risikoprofil und Compliance-Problemen soll die Teilnahme am DMP-KHK und in einer ambulanten Herzgruppe empfohlen werden.</p> <p>Nachsorgekonzepte zur Erhaltung und Verbesserung des in der Rehabilitation Erreichten sollten weiterentwickelt und evaluiert werden.</p>	<p>B</p> <p>B</p>	<p>I</p> <p>I</p>	[589,738,763,839,1672,1744,1745,1852-1859]

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
<b>SIGN A</b>	Rehabilitation programmes should be implemented after revascularisation for patients with stable angina	3 4	D	[881-893,1860] [517]
<b>SIGN A</b>	Particular interest should be paid to women, those living alone and those under 55 years	n. a.	<input checked="" type="checkbox"/>	n.a.
<b>NZGG REHA</b>	Comprehensive cardiac rehabilitation should be considered in all patients after myocardial infarction, coronary artery bypass surgery and angioplasty. All patients following a coronary event should receive a recommendation and referral for rehabilitation from a clinician. Prior to discharge, all eligible patients should receive a written discharge plan. All patients should receive written information regarding their nearest cardiac club.	n.a.	D	[816,1637-1644]
<b>AHA W</b>	A comprehensive risk-reduction regimen, such as cardiovascular or stroke rehabilitation or a physician-guided home- or community-based exercise training program, should be recommended to women with a recent acute coronary syndrome or coronary intervention, new-onset or chronic angina, recent cerebrovascular event, peripheral arterial disease, or current/prior symptoms of heart failure and an LVEF <40 %	A B	I I	[444,497,1755,1847,1861,1862]( <i>Keinem LoE eindeutig zuzuweisen</i> )

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
<b>SIGN R</b>	Comprehensive cardiac rehabilitation is recommended following myocardial infarction.	1+	A	[789,944,1776,1863]
<b>SIGN R</b>	Comprehensive cardiac rehabilitation is recommended for patients who have undergone coronary revascularisation.	1+	A	[597,1864-1870]
<b>SIGN R</b>	Patients with stable angina should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.	1++ 1+	A	[1863] [467,517,573,789,1451,1628,1850,1871-1876]
<b>SIGN R</b>	Patients with chronic heart failure should be considered for comprehensive cardiac rehabilitation if they have limiting symptoms.	1+ 2+	A	[517,789,1863,1871,1872,1877-1883]
<b>SIGN R</b>	Older people should be included in comprehensive cardiac rehabilitation programmes.	1+ 2+ 2++	B	[789,1871,1872,1880] [1884] [819,1885,1886]
<b>SIGN R</b>	Women should be included in programmes of comprehensive cardiac rehabilitation.	1+ 2+ 2++	B	[910] [1879,1887] [1871,1888]
<b>AHA A</b>	Comprehensive cardiac rehabilitation program (including exercise) [... can Reduce the Risk for Coronary Disease Events]	B	I	n.a.

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
CCS	Physicians should recognize that the older patient may have a high level of physical and psychological disability following a coronary event, as well as greater co-morbidity, and should be considered for rehabilitation services.	B	I	[1889-1893]
CCS	Elderly patients should be strongly encouraged to participate in a rehabilitation program, as the most powerful predictor of adherence to a rehabilitation program is the strength of the referring physician's recommendation.	B	I	[1889-1893]
NVL	Die Durchführung einer multidisziplinären Rehabilitation soll nach ST-Hebungsinfarkt empfohlen werden.	n.a.	A	[444,1894]
NVL	Die Durchführung einer multidisziplinären Rehabilitation sollte auch nach einem Nicht-ST-Hebungsinfarkt (Non-STEMI) empfohlen werden.	n.a.	B	n.a.
NVL	Die Durchführung einer multidisziplinären Rehabilitation soll nach koronarer Bypassoperation (auch in Kombination mit Klappenoperation) empfohlen werden.	n.a.	A	[444,497]

(Fortsetzung)



Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
<b>NVL</b>	Die Durchführung einer multidisziplinären Rehabilitation sollte in ausgewählten Fällen nach elektiver PCI empfohlen werden bei ausgeprägtem Risikoprofil, bei besonderem Schulungsbedarf, bei Compliance-Problemen.	n.a.	B	[1869,1870,1895,1896]
<b>NVL</b>	Bei KHK-Patienten mit limitierender Symptomatik trotz Standardtherapie, ausgeprägtem und unzureichend eingestelltem Risikoprofil, ausgeprägter psychosozialer Problematik sowie bei drohender Berufs-/ Erwerbsunfähigkeit oder Pflegebedürftigkeit sollte eine zeitlich begrenzte Rehabilitationsmaßnahme in spezialisierten Rehabilitationseinrichtungen (Heilverfahren: ambulant oder stationär) empfohlen werden.	n.a.	B	[43,517,763,833,1672,1744,1897]
<b>DGPR</b>	Nach STEMI und NSTEMI ist eine kardiologische Rehabilitationsmaßnahme indiziert.	A	I	[497,763,835,1777,1852,1898-1901]

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
<b>DGPR</b>	<p>Die Indikation zur Rehabilitation nach instabiler Angina pectoris richtet sich nach dem individuellen Rehabilitationsbedarf.</p> <p>Ein solcher Bedarf besteht bei einem oder mehreren der folgenden Probleme:</p> <ul style="list-style-type: none"> <li>fortbestehende Beschwerden nach Ausschöpfung interventioneller Maßnahmen</li> <li>Fortbestehen vermeidbarer Risikofaktoren</li> <li>Einschränkung der körperlichen Leistungsfähigkeit</li> <li>Unsicherheit bezüglich der physischen und psychischen Belastbarkeit</li> <li>gefährdete soziale Wiedereingliederung</li> <li>besonderer Schulungsbedarf</li> </ul>	<p>B</p> <p>B</p> <p>A</p> <p>C</p> <p>C</p> <p>C</p>	<p>I</p> <p>I</p> <p>I</p> <p>IIa</p> <p>I</p> <p>I</p>	[497,763,835,1777,1852,1898-1901]
<b>DGPR</b>	Nach koronarer Bypassoperation ist eine kardiologische Rehabilitationsmaßnahme indiziert.	A	I	[769,1760,1864,1902-1909]

(Fortsetzung)

Tabelle 32 (Fortsetzung): Empfehlungen zur Kooperation der Versorgungsebenen

Leitlinie	Empfehlung	LoE	GoR	Literatur
<b>VERANLASSUNG VON REHABILITATION</b>				
<b>DGPR</b>	Die Indikation zur Rehabilitation nach elektiver PCI richtet sich nach dem individuellen Rehabilitationsbedarf. Ein solcher Bedarf besteht bei Patienten mit einem oder mehreren der folgenden Probleme: fortbestehenden Beschwerden eingeschränkte körperliche Leistungsfähigkeit Bedarf der psychischen Stabilisierung Gefährdung der sozialen Wiedereingliederung und Teilhabe (Beruf, Familie, Selbstständigkeit alter Patienten) ausgeprägtes Risikoprofil und besonderer Schulungsbedarf	B  B A C C  C	I  I I IIa I  I	[769,1743,1869,1895,1905-1910]
<b>DGPR</b>	Im klinisch stabilen Stadium der KHK besteht dann eine Indikation zu einer kardiologischen Rehabilitation, wenn eine besondere und schwer therapierbare kardiovaskuläre Risikokonstellation vorliegt und/oder wenn krankheitsbedingt eine vorzeitige Berentung oder vorzeitige Pflegebedürftigkeit (Einschränkung der Teilhabe) droht.	C	I	[573,589,597,798,839,1777,1899,1911]
n. a.: nicht angegeben <input checked="" type="checkbox"/> : „Good Practice Point“ bezeichnet („Best Practice“ empfohlen auf der Basis der klinischen Expertise der LL-Gruppe				

## 9 Literatur

1. Sozialgesetzbuch (SGB) Fünftes Buch (V) - Gesetzliche Krankenversicherung - §137f Absatz 2 [Online-Text]. 2006 [Zugriff am: 22.Dez.2006]. Gelesen unter: [http://bundesrecht.juris.de/bundesrecht/sgb\\_5/gesamt.pdf](http://bundesrecht.juris.de/bundesrecht/sgb_5/gesamt.pdf).
2. Bundesministerium für Gesundheit. Glossar zur Gesundheitsreform: Strukturierte Behandlungsprogramme [Online-Text]. 2007 [Zugriff am: 7.März.2006]. Gelesen unter: [http://www.gesundheitsglossar.de/glossar/strukturierte\\_behandlungsprogramme.html](http://www.gesundheitsglossar.de/glossar/strukturierte_behandlungsprogramme.html).
3. Bundesministerium für Gesundheit. Siebente Verordnung zur Änderung der Risikostruktur-Ausgleichsverordnung (7. RSA-ÄndV) vom 28. April 2003. Bundesgesetzblatt 2003;(Teil 1 Nr. 16): 553-568.
4. Bundesministerium für Gesundheit. Neunte Verordnung zur Änderung der Risikostruktur-Ausgleichsverordnung (9. RSA-ÄndV) vom 18. Februar. Bundesgesetzblatt 2004;(Teil 1 Nr. 8): 271-299.
5. Gemeinsamer Bundesausschuss. Beschluss des Koordinierungsausschusses vom 31.3.2003 für ein DMP KHK: Empfehlungen des Koordinierungsausschusses gemäß § 137 f Abs. 2 Satz 2 SGB V; "Anforderungen" an die Ausgestaltung von strukturierten Behandlungsprogrammen für Patienten mit Koronarer Herzkrankheit. Bonn: G-BA; 2003.
6. Ross R. Atherosclerosis: An Inflammatory Disease. N Engl J Med 1999; 340(2): 115-126.
7. Libby P, Ridker PM, Maseri A. Inflammation and atherosclerosis. Circulation 2002; 105(9): 1135-1143.
8. Davies SW. Clinical presentation and diagnosis of coronary artery disease: Stable angina. Br Med Bull 2001; 59(1): 17-27.
9. Statistisches Bundesamt Deutschland. Gesundheitswesen - Sterbefälle nach den zehn häufigsten Todesursachen insgesamt und nach Geschlecht, 2005 [Online-Text]. 2006 [Zugriff am: 18.Okt.2006]. Gelesen unter: <http://www.destatis.de/basis/d/gesu/gesutab20.php>.
10. Wiesner G, Grimm J, Bittner E. Vorausberechnungen des Herzinfarktgeschehens in Deutschland: Zur Entwicklung von Inzidenz und Prävalenz bis zum Jahre 2050. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz 2002; 45(5): 438-445.
11. Wiesner G, Grimm J, Bittner E. Zum Herzinfarktgeschehen in der Bundesrepublik Deutschland: Prävalenz, Inzidenz, Trend, Ost-West-Vergleich. Gesundheitswesen 1999; 61(Suppl 2): S72-S78.

12. Löwel H, Meisinger C. Epidemiologie und demographische Entwicklung am Beispiel kardiovaskulärer Erkrankungen in Deutschland. *Med Klin (Munich)* 2006; 101(10): 804-811.
13. Anderson KM, Wilson PW, Odell P, Kannel W. An updated coronary risk profile: A statement for health professionals. *Circulation* 1991; 83(1): 356-362.
14. Kannel WB, D'Agostino RB, Sullivan L, Wilson PW. Concept and usefulness of cardiovascular risk profiles. *Am Heart J* 2004; 148(1): 16-26.
15. Daly CA, De Stavola B, Lopez Sendon JL, Tavazzi L, Boersma E, Clemens F et al. Predicting prognosis in stable angina: Results from the Euro heart survey of stable angina. Prospective observational study. *BMJ* 2006; 332(7536): 262-267.
16. Assmann G, Cullen P, Schulte H. Simple scoring scheme for calculating the risk of acute coronary events based on the 10-year follow-up of the prospective cardiovascular Munster (PROCAM) study. *Circulation* 2002; 105(3): 310-315.
17. Field MJ, Lohr KN. Clinical practice guidelines: Directions for a new program. Washington (DC): National Academy Press; 1990.
18. Council of Europe. Developing a methodology for drawing-up guidelines on best medical practices: Recommendation Rec(2001)13 adopted by the Committee of Ministers of the Council of Europe on 10 October 2001 and explanatory memorandum. Straßbourg: Council of Europe Publishing; 2001.
19. Europarat. Entwicklung einer Methodik für die Ausarbeitung von Leitlinien für optimale medizinische Praxis: Empfehlung Rec(2001)13 des Europarates und erläuterndes Memorandum. *Z Arztl Fortbild Qualitätssich* 2002; 96(Suppl 3): 1-60.
20. Fervers B, Burgers JS, Haugh MC, Latreille J, Mlika-Cabanne N, Paquet L et al. Adaptation of clinical guidelines: Literature review and proposition for a framework and procedure. *Int J Qual Health Care* 2006; 18(3): 167-176.
21. Institut für Qualität und Wirtschaftlichkeit im Gesundheitswesen. Methoden: Version 2.0 vom 19. Dezember 2006. Köln: IQWiG; 2006.
22. Ärztliches Zentrum für Qualität in der Medizin. DELBI-Einführung [Online-Text]. 2005 [Zugriff am: 7.Juni.2005]. Gelesen unter: [http://www.versorgungsleitlinien.de/methodik/delbi/index\\_html](http://www.versorgungsleitlinien.de/methodik/delbi/index_html).
23. AGREE Collaboration. Appraisal of Guidelines for REsearch and Evaluation (AGREE) Instrument 2001.
24. Bjarnason-Wehrens B, Held K, Hoberg E, Karoff M, Rauch B. Deutsche Leitlinie zur Rehabilitation von Patienten mit Herz-Kreislaufkrankungen (DLL-KardReha). *Clin Res Cardiol* 2007; 96(Suppl 2): 1-54.

25. Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen. Deutsche Leitlinie zur Rehabilitation von Patienten mit Herz-Kreislaufkrankungen (DLL-KardReha). Clin Res Cardiol 2007;(Suppl 2): III/1-III/54.
26. Ärztliches Zentrum für Qualität in der Medizin. Nationale VersorgungsLeitlinie: Chronische KHK. Berlin: ÄZQ; 2006.
27. Arzneimittelkommission der deutschen Ärzteschaft. Empfehlungen zur Therapie und Prophylaxe der Koronaren Herzkrankheit. Berlin: Lehmanns; 2004. (Arzneiverordnung in der Praxis; Vol 1).
28. National Institute of Clinical Excellence. Clinical guidelines and evidence review for post myocardial infarction: secondary prevention in primary and secondary care for patients following a myocardial infarction (NICE clinical guidelines; no 48). London: National Collaborating Centre for Primary Care and Royal College of General Practitioners; 2007.
29. Scottish Intercollegiate Guidelines Network. Management of stable angina: A national clinical guideline. Edinburgh: SIGN; 2007.
30. Scottish Intercollegiate Guidelines Network. Risk estimation and the prevention of cardiovascular disease: A national clinical guideline. Edinburgh: SIGN; 2007.
31. Fox K, Garcia MA, Ardissino D, Buszman P, Camici PG, Crea F et al. Guidelines on the management of stable angina pectoris: Executive summary. Eur Heart J 2006; 27(11): 1341-1381.
32. Finnish Medical Society Duodecim. Coronary heart disease (CHD): Symptoms, diagnosis and treatment. In: Duodecim Medical Publications (Ed). EBM Guidelines. Evidence-Based Medicine [CD-ROM]. Helsinki 2006.
33. Silber S, Albertsson P, Aviles FF, Camici PG, Colombo A, Hamm C et al. Guidelines for percutaneous coronary interventions. Eur Heart J 2005; 26(8): 804-847.
34. Rehabilitation Committee NHS/NVVC. Guidelines for Cardiac Rehabilitation 2004. Den Haag: Netherlands Heart Foundation; 2004.
35. Scottish Intercollegiate Guidelines Network. Cardiac rehabilitation: A national clinical guideline. Edinburgh: SIGN; 2002.
36. Mosca L, Banka CL, Benjamin EJ, Berra K, Bushnell C, Dolor RJ et al. Evidence-based guidelines for cardiovascular disease prevention in women: 2007 update. Circulation 2007; 115(11): 1481-1501.
37. Institute for Clinical Systems Improvement. Health care guideline: stable coronary artery disease. Bloomington (MN): ICSI; 2006.

38. Smith SC, Jr., Allen J, Blair SN, Bonow RO, Brass LM, Fonarow GC et al. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update. *Circulation* 2006; 113(19): 2363-2372.
39. Smith SC, Jr., Feldman TE, Hirshfeld JW, Jr., Jacobs AK, Kern MJ, King SB, III et al. ACC/AHA/SCAI 2005 guideline update for percutaneous coronary intervention: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/SCAI Writing Committee to Update 2001 Guidelines for Percutaneous Coronary Intervention). *Circulation* 2006; 113(7): e166-e286.
40. Eagle KA, Guyton RA, Davidoff R, Edwards FH, Ewy GA, Gardner TJ et al. ACC/AHA 2004 guideline update for coronary artery bypass graft surgery: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for Coronary Artery Bypass Graft Surgery). *J Am Coll Cardiol* 2004; 44(5): e213-e310.
41. New Zealand Guidelines Group. Evidence-based best practice guideline: the assessment and management of cardiovascular risk. Wellington: NZGG; 2003.
42. Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS et al. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines (Committee on the management of patients with chronic stable angina). *J Am Coll Cardiol* 2003; 41(1): 159-168.
43. New Zealand Guidelines Group. Evidence-based best practice guideline: Cardiac rehabilitation. Wellington: NZGG; 2002.
44. Canadian Cardiovascular Society. Management of heart disease in the elderly patient: executive summary. Ottawa: CSS; 2002.
45. Gibbons RJ, Balady GJ, Bricker JT, Chaitman BR, Fletcher GF, Froelicher VF et al. ACC/AHA 2002 guideline update for exercise testing: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). *J Am Coll Cardiol* 2002; 40(8): 1531-1540.
46. Silagy C, Lancaster T, Stead L, Mant D, Fowler G. Nicotine replacement therapy for smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 3. Chichester: John Wiley & Sons Ltd.
47. Hughes J, Stead L, Lancaster T. Antidepressants for smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 4. Chichester: John Wiley & Sons Ltd.

48. Schunemann HJ, Fretheim A, Oxman AD. Improving the use of research evidence in guideline development: 10. Integrating values and consumer involvement. *Health Res Policy Syst* 2006; 4: 22
49. Oxman AD, Schunemann HJ, Fretheim A. Improving the use of research evidence in guideline development: 12. Incorporating considerations of equity. *Health Res Policy Syst* 2006; 4: 24
50. Schunemann HJ, Fretheim A, Oxman AD. Improving the use of research evidence in guideline development: 13. Applicability, transferability and adaptation. *Health Res Policy Syst* 2006; 4: 25
51. Oxman AD, Schunemann HJ, Fretheim A. Improving the use of research evidence in guideline development: 16. Evaluation. *Health Res Policy Syst* 2006; 4: 28
52. 27th Bethesda Conference: Matching the intensity of risk factor management with the hazard for coronary disease events. September 14-15, 1995. *J Am Coll Cardiol* 1996; 27(5): 957-1047.
53. Wilson PW, D'Agostino RB, Levy D, Belanger AM, Silbershatz H, Kannel WB. Prediction of coronary heart disease using risk factor categories. *Circulation* 1998; 97(18): 1837-1847.
54. Grundy SM, Pasternak R, Greenland P, Smith SJ, Fuster V. Assessment of cardiovascular risk by use of multiple-risk-factor assessment equations: A statement for healthcare professionals from the American Heart Association and the American College of Cardiology. *Circulation* 1999; 100(13): 1481-1492.
55. Gibbons RJ, Balady GJ, Bricker JT, Chaitman BR, Fletcher GF, Froelicher VF et al. ACC/AHA 2002 guideline update for exercise testing: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). *Circulation* 2002; 106(14): 1883-1892.
56. Klocke FJ, Baird MG, Lorell BH, Bateman TM, Messer JV, Berman DS et al. ACC/AHA/ASNC guidelines for the clinical use of cardiac radionuclide imaging: Executive summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASNC Committee to Revise the 1995 Guidelines for the Clinical Use of Cardiac Radionuclide Imaging). *Circulation* 2003; 108(11): 1404-1418.
57. Cheitlin MD, Armstrong WF, Aurigemma GP, Beller GA, Bierman FZ, Davis JL et al. ACC/AHA/ASE 2003 guideline update for the clinical application of echocardiography: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/ASE Committee to Update the 1997 Guidelines for the Clinical Application of Echocardiography). *Circulation* 2003; 108(9): 1146-1162.



58. Pepine CJ, Cohn PF, Deedwania PC, Gibson RS, Handberg E, Hill JA et al. Effects of treatment on outcome in mildly symptomatic patients with ischemia during daily life: The Atenolol Silent Ischemia Study (ASIST). *Circulation* 1994; 90(2): 762-768.
59. Knatterud GL, Bourassa MG, Pepine CJ, Geller NL, Sopko G, Chaitman BR et al. Effects of treatment strategies to suppress ischemia in patients with coronary artery disease: 12-week results of the Asymptomatic Cardiac Ischemia Pilot (ACIP) study. *J Am Coll Cardiol* 1994; 24(1): 11-20.
60. Krone RJ, Hardison RM, Chaitman BR, Gibbons RJ, Sopko G, Bach R et al. Risk stratification after successful coronary revascularization: The lack of a role for routine exercise testing. *J Am Coll Cardiol* 2001; 38(1): 136-142.
61. Bengtson JR, Mark DB, Honan MB, Rendall DS, Hinohara T, Stack RS et al. Detection of restenosis after elective percutaneous transluminal coronary angioplasty using the exercise treadmill test. *Am J Cardiol* 1990; 65(1): 28-34.
62. Hecht HS, Shaw RE, Chin HL, Ryan C, Stertz SH, Myler RK. Silent ischemia after coronary angioplasty: Evaluation of restenosis and extent of ischemia in asymptomatic patients by tomographic thallium-201 exercise imaging and comparison with symptomatic patients. *J Am Coll Cardiol* 1991; 17(3): 670-677.
63. Hecht HS, DeBord L, Shaw R, Dunlap R, Ryan C, Stertz SH et al. Usefulness of supine bicycle stress echocardiography for detection of restenosis after percutaneous transluminal coronary angioplasty. *Am J Cardiol* 1993; 71(4): 293-296.
64. Garzon PP, Eisenberg MJ. Functional testing for the detection of restenosis after percutaneous transluminal coronary angioplasty: A meta-analysis. *Can J Cardiol* 2001; 17(1): 41-48.
65. Chin AS, Goldman LE, Eisenberg MJ. Functional testing after coronary artery bypass graft surgery: A meta-analysis. *Can J Cardiol* 2003; 19(7): 802-808.
66. Stampfer MJ, Krauss RM, Ma J, Blanche PJ, Holl LG, Sacks FM et al. A prospective study of triglyceride level, low-density lipoprotein particle diameter, and risk of myocardial infarction. *JAMA* 1996; 276(11): 882-888.
67. Rosengren A, Dotevall A, Eriksson H, Wilhelmsen L. Optimal risk factors in the population: Prognosis, prevalence, and secular trends. Data from Göteborg population studies. *Eur Heart J* 2001; 22(2): 136-144.
68. Anderson JL, Muhlestein JB, Horne BD, Carlquist JF, Bair TL, Madsen TE et al. Plasma homocysteine predicts mortality independently of traditional risk factors and C-reactive protein in patients with angiographically defined coronary artery disease. *Circulation* 2000; 102(11): 1227-1232.
69. Rosengren A, Hagman M, Wedel H, Wilhelmsen L. Serum cholesterol and long-term prognosis in middle-aged men with myocardial infarction and angina pectoris: A 16-year follow-up of the Primary Prevention Study in Göteborg, Sweden. *Eur Heart J* 1997; 18(5): 754-761.

70. Pekkanen J, Linn S, Heiss G, Suchindran CM, Leon A, Rifkind BM et al. Ten-year mortality from cardiovascular disease in relation to cholesterol level among men with and without preexisting cardiovascular disease. *N Engl J Med* 1990; 322(24): 1700-1707.
71. Hokanson JE, Austin MA. Plasma triglyceride level is a risk factor for cardiovascular disease independent of high-density lipoprotein cholesterol level: a meta-analysis of population-based prospective studies. *J Cardiovasc Risk* 1996; 3(2): 213-219.
72. Miettinen H, Lehto S, Salomaa V, Mahonen M, Niemela M, Haffner SM et al. Impact of diabetes on mortality after the first myocardial infarction: The FINMONICA Myocardial Infarction Register Study Group. *Diabetes Care* 1998; 21(1): 69-75.
73. Melchior T, Kober L, Madsen CR, Seibaek M, Jensen GV, Hildebrandt P et al. Accelerating impact of diabetes mellitus on mortality in the years following an acute myocardial infarction. *Eur Heart J* 1999; 20(13): 973-978.
74. Herlitz J, Karlson BW, Lindqvist J, Sjolín M. Rate and mode of death during five years of follow-up among patients with acute chest pain with and without a history of diabetes mellitus. *Diabet Med* 1998; 15(4): 308-314.
75. Kjaergaard SC, Hansen HH, Fog L, Bülow I, Christensen PD. In-hospital outcome for diabetic patients with acute myocardial infarction in the thrombolytic era. *Scand Cardiovasc J* 1999; 33(3): 166-170.
76. Haffner SM. Coronary heart disease in patients with diabetes. *N Engl J Med* 2000; 342(14): 1040-1042.
77. Haffner SM, Lehto S, Ronnema T, Pyorala K, Laakso M. Mortality from coronary heart disease in subjects with type 2 diabetes and in nondiabetic subjects with and without prior myocardial infarction. *N Engl J Med* 1998; 339(4): 229-234.
78. Gerstein HC, Pais P, Pogue J, Yusuf S. Relationship of glucose and insulin levels to the risk of myocardial infarction: A case-control study. *J Am Coll Cardiol* 1999; 33(3): 612-619.
79. Hu FB, Stampfer MJ, Solomon CG, Liu S, Willett WC, Speizer FE et al. The impact of diabetes mellitus on mortality from all causes and coronary heart disease in women: 20 years of follow-up. *Arch Intern Med* 2001; 161(14): 1717-1723.
80. Horne BD, Anderson JL, John JM, Weaver A, Bair TL, Jensen KR et al. Which white blood cell subtypes predict increased cardiovascular risk? *J Am Coll Cardiol* 2005; 45(10): 1638-1643.
81. Shlipak MG, Stehman-Breen C, Vittinghoff E, Lin F, Varosy PD, Wenger NK et al. Creatinine levels and cardiovascular events in women with heart disease: Do small changes matter? *Am J Kidney Dis* 2004; 43(1): 37-44.

82. Fried LF, Shlipak MG, Crump C, Bleyer AJ, Gottdiener JS, Kronmal RA et al. Renal insufficiency as a predictor of cardiovascular outcomes and mortality in elderly individuals. *J Am Coll Cardiol* 2003; 41(8): 1364-1372.
83. Norhammar A, Malmberg K, Diderholm E, Lagerqvist B, Lindahl B, Ryden L et al. Diabetes mellitus: The major risk factor in unstable coronary artery disease even after consideration of the extent of coronary artery disease and benefits of revascularization. *J Am Coll Cardiol* 2004; 43(4): 585-591.
84. Bartnik M, Ryden L, Ferrari R, Malmberg K, Pyorala K, Simoons M et al. The prevalence of abnormal glucose regulation in patients with coronary artery disease across Europe: The Euro Heart Survey on diabetes and the heart. *Eur Heart J* 2004; 25(21): 1880-1890.
85. Blake GJ, Ridker PM. Inflammatory bio-markers and cardiovascular risk prediction. *J Intern Med* 2002; 252(4): 283-294.
86. Zebrack JS, Muhlestein JB, Horne BD, Anderson JL. C-reactive protein and angiographic coronary artery disease: Independent and additive predictors of risk in subjects with angina. *J Am Coll Cardiol* 2002; 39(4): 632-637.
87. Held C, Hjemdahl P, Rehnqvist N, Wallen NH, Björkander I, Eriksson SV et al. Fibrinolytic variables and cardiovascular prognosis in patients with stable angina pectoris treated with verapamil or metoprolol: Results from the Angina Prognosis study in Stockholm. *Circulation* 1997; 95(10): 2380-2386.
88. Held C, Hjemdahl P, Rehnqvist N, Björkander I, Forslund L, Brodin U et al. Cardiovascular prognosis in relation to apolipoproteins and other lipid parameters in patients with stable angina pectoris treated with verapamil or metoprolol: Results from the Angina Prognosis Study in Stockholm (APSIS). *Atherosclerosis* 1997; 135(1): 109-118.
89. Nygard O, Nordrehaug JE, Refsum H, Ueland PM, Farstad M, Vollset SE. Plasma homocysteine levels and mortality in patients with coronary artery disease. *N Engl J Med* 1997; 337(4): 230-236.
90. Boushey CJ, Beresford SA, Omenn GS, Motulsky AG. A quantitative assessment of plasma homocysteine as a risk factor for vascular disease: Probable benefits of increasing folic acid intakes. *JAMA* 1995; 274(13): 1049-1057.
91. Kragelund C, Gronning B, Kober L, Hildebrandt P, Steffensen R. N-terminal pro-B-type natriuretic peptide and long-term mortality in stable coronary heart disease. *N Engl J Med* 2005; 352(7): 666-675.
92. Institute for Clinical Systems Improvement. Biochemical markers of cardiovascular disease risk. Bloomington (MN): ICSI; 2003.
93. Institute for Clinical Systems Improvement. Biochemical markers of cardiovascular disease risk. Biochemical markers of cardiovascular disease risk. *Bloomington, MN: ICSI; 2003.*

94. Knekt P, Alfthan G, Aromaa A, Heliovaara M, Marniemi J, Rissanen H et al. Homocysteine and major coronary events: A prospective population study amongst women. *J Intern Med* 2001; 249(5): 461-465.
95. Sackett DL, Haynes RB, Guyatt GH, Tugwell P. *Clinical epidemiology: A basic science for clinical medicine*. Boston: Little Brown; 1991.
96. Harris PJ, Behar VS, Conley MJ, Harrell FE, Jr., Lee KL, Peter RH et al. The prognostic significance of 50% coronary stenosis in medically treated patients with coronary artery disease. *Circulation* 1980; 62(2): 240-248.
97. Rutherford JD, Braunwald E. Chronic ischemic heart disease. In: Braunwald E (Ed). *Heart disease: A textbook of cardiovascular medicine*. Philadelphia: Saunders; 1992. S. 1293-1295.
98. Diamond GA. A clinically relevant classification of chest discomfort. *J Am Coll Cardiol* 1983; 1(2 Pt 1): 574-575.
99. Chatterjee K. Recognition and management of patients with stable angina pectoris. In: Goldman L, Braunwald E (Ed). *Primary cardiology*. Philadelphia: Saunders; 1998. S. 234-256.
100. Levine HJ. Difficult problems in the diagnosis of chest pain. *Am Heart J* 1980; 100(1): 108-118.
101. Wise CM, Semble EL, Dalton CB. Musculoskeletal chest wall syndromes in patients with noncardiac chest pain: A study of 100 patients. *Arch Phys Med Rehabil* 1992; 73(2): 147-149.
102. Sackett DL, Haynes RB, Guyatt GH, Tugwell P. *Clinical epidemiology: A basic science for clinical medicine*. Boston: Little Brown; 1991.
103. Mark DB, Shaw L, Harrell FE, Jr., Hlatky MA, Lee KL, Bengtson JR et al. Prognostic value of a treadmill exercise score in outpatients with suspected coronary artery disease. *N Engl J Med* 1991; 325(12): 849-853.
104. Diamond GA, Forrester JS. Analysis of probability as an aid in the clinical diagnosis of coronary-artery disease. *N Engl J Med* 1979; 300(24): 1350-1358.
105. Pryor DB, Harrell FE, Jr., Lee KL, Califf RM, Rosati RA. Estimating the likelihood of significant coronary artery disease. *Am J Med* 1983; 75(5): 771-780.
106. Sox HC, Jr., Hickam DH, Marton KI, Moses L, Skeff KM, Sox CH et al. Using the patient's history to estimate the probability of coronary artery disease: A comparison of primary care and referral practices. *Am J Med* 1990; 89(1): 7-14.
107. Pryor DB, Shaw L, McCants CB, Lee KL, Mark DB, Harrell FE, Jr. et al. Value of the history and physical in identifying patients at increased risk for coronary artery disease. *Ann Intern Med* 1993; 118(2): 81-90.

108. Kwok Y, Kim C, Grady D, Segal M, Redberg R. Meta-analysis of exercise testing to detect coronary artery disease in women. *Am J Cardiol* 1999; 83(5): 660-666.
109. Mant J, McManus RJ, Oakes RA, Delaney BC, Barton PM, Deeks JJ et al. Systematic review and modelling of the investigation of acute and chronic chest pain presenting in primary care. *Health Technol Assess* 2004; 8(2): iii1-iii158.
110. Connolly DC, Elveback LR, Oxman HA. Coronary heart disease in residents of Rochester, Minnesota. IV: Prognostic value of the resting electrocardiogram at the time of initial diagnosis of angina pectoris. *Mayo Clin Proc* 1984; 59(4): 247-250.
111. Daly C, Norrie J, Murdoch DL, Ford I, Dargie HJ, Fox K. The value of routine non-invasive tests to predict clinical outcome in stable angina. *Eur Heart J* 2003; 24(6): 532-540.
112. Salerno SM, Alguire PC, Waxman HS. Competency in interpretation of 12-lead electrocardiograms: A summary and appraisal of published evidence. *Ann Intern Med* 2003; 138(9): 751-760.
113. Levy D, Salomon M, D'Agostino RB, Belanger AJ, Kannel WB. Prognostic implications of baseline electrocardiographic features and their serial changes in subjects with left ventricular hypertrophy. *Circulation* 1994; 90(4): 1786-1793.
114. Blackburn H. Canadian Colloquium on Computer-Assisted Interpretation of Electrocardiograms. VI: Importance of the electrocardiogram in populations outside the hospital. *Can Med Assoc J* 1973; 108(10): 1262-1265.
115. Miranda CP, Lehmann KG, Froelicher VF. Correlation between resting ST segment depression, exercise testing, coronary angiography, and long-term prognosis. *Am Heart J* 1991; 122(6): 1617-1628.
116. Cullen K, Stenhouse NS, Wearne KL, Cumpston GN. Electrocardiograms and 13 year cardiovascular mortality in Busselton study. *Br Heart J* 1982; 47(3): 209-212.
117. Aronow WS. Correlation of ischemic ST-segment depression on the resting electrocardiogram with new cardiac events in 1,106 patients over 62 years of age. *Am J Cardiol* 1989; 64(3): 232-233.
118. Califf RM, Mark DB, Harrell FE, Jr., Hlatky MA, Lee KL, Rosati RA et al. Importance of clinical measures of ischemia in the prognosis of patients with documented coronary artery disease. *J Am Coll Cardiol* 1988; 11(1): 20-26.
119. Harris FJ, DeMaria AN, Lee G, Miller RR, Amsterdam EA, Mason DT. Value and limitations of exercise testing in detecting coronary disease with normal and abnormal resting electrocardiograms. *Adv Cardiol* 1978; 22: 11-15.
120. Harris PJ, Harrell FE, Jr., Lee KL, Behar VS, Rosati RA. Survival in medically treated coronary artery disease. *Circulation* 1979; 60(6): 1259-1269.

121. Kansal S, Roitman D, Sheffield LT. Stress testing with ST-segment depression at rest: An angiographic correlation. *Circulation* 1976; 54(4): 636-639.
122. Cheitlin MD, Alpert JS, Armstrong WF, Aurigemma GP, Beller GA, Bierman FZ et al. ACC/AHA guidelines for the clinical application of echocardiography: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Clinical Application of Echocardiography). Developed in collaboration with the American Society of Echocardiography. *Circulation* 1997; 95(6): 1686-1744.
123. Stuart RJ, Jr., Ellestad MH. Current management of severe exercise-related cardiac events. *Chest* 1980; 77(1): 94-97.
124. Froelicher VF, Lehmann KG, Thomas R, Goldman S, Morrison D, Edson R et al. The electrocardiographic exercise test in a population with reduced workup bias: Diagnostic performance, computerized interpretation, and multivariable prediction. *Ann Intern Med* 1998; 128(12 Pt 1): 965-974.
125. Ritchie JL, Bateman TM, Bonow RO, Crawford MH, Gibbons RJ, Hall RJ et al. Guidelines for clinical use of cardiac radionuclide imaging: Report of the American College of Cardiology/American Heart Association Task Force on Assessment of Diagnostic and Therapeutic Cardiovascular Procedures (Committee on Radionuclide Imaging), developed in collaboration with the American Society of Nuclear Cardiology. *J Am Coll Cardiol* 1995; 25(2): 521-547.
126. Diamond GA, Forrester JS, Hirsch M, Staniloff HM, Vas R, Berman DS et al. Application of conditional probability analysis to the clinical diagnosis of coronary artery disease. *J Clin Invest* 1980; 65(5): 1210-1221.
127. Goldman L, Cook EF, Mitchell N, Flatley M, Sherman H, Rosati R et al. Incremental value of the exercise test for diagnosing the presence or absence of coronary artery disease. *Circulation* 1982; 66(5): 945-953.
128. Melin JA, Wijns W, Vanbutsele RJ, Robert A, De Coster P, Brasseur LA et al. Alternative diagnostic strategies for coronary artery disease in women: Demonstration of the usefulness and efficiency of probability analysis. *Circulation* 1985; 71(3): 535-542.
129. Whinnery JE, Froelicher VF, Jr., Stewart AJ, Longo MR, Jr., Triebwasser JH, Lancaster MC. The electrocardiographic response to maximal treadmill exercise of asymptomatic men with left bundle branch block. *Am Heart J* 1977; 94(3): 316-324.
130. Trappe HJ, Löllgen H. Leitlinien zur Ergometrie. *Z Kardiol* 2000; 89(9): 821-831.
131. Sketch MH, Mooss AN, Butler ML, Nair CK, Mohiuddin SM. Digoxin-induced positive exercise tests: Their clinical and prognostic significance. *Am J Cardiol* 1981; 48(4): 655-659.
132. Guidelines and indications for coronary artery bypass graft surgery: A report of the American College of Cardiology/American Heart Association Task Force on

- Assessment of Diagnostic and Therapeutic Cardiovascular Procedures (Subcommittee on Coronary Artery Bypass Graft Surgery). *J Am Coll Cardiol* 1991; 17(3): 543-589.
133. Guidelines for percutaneous transluminal coronary angioplasty: A report of the American College of Cardiology/American Heart Association Task Force on Assessment of Diagnostic and Therapeutic Cardiovascular Procedures (Committee on Percutaneous Transluminal Coronary Angioplasty). *J Am Coll Cardiol* 1993; 22(7): 2033-2054.
  134. Assad-Morell JL, Frye RL, Connolly DC, Davis GD, Pluth JR, Wallace RB et al. Aorta-coronary artery saphenous vein bypass surgery: Clinical and angiographic results. *Mayo Clin Proc* 1975; 50(7): 379-386.
  135. Visser FC, Van Campen L, De Feyter PJ. Value and limitations of exercise stress testing to predict the functional results of coronary artery bypass grafting. *Int J Card Imaging* 1993; 9(Suppl 1): 41-47.
  136. Kafka H, Leach AJ, Fitzgibbon GM. Exercise echocardiography after coronary artery bypass surgery: correlation with coronary angiography. *J Am Coll Cardiol* 1995; 25(5): 1019-1023.
  137. Topol EJ, Ellis SG, Cosgrove DM, Bates ER, Muller DW, Schork NJ et al. Analysis of coronary angioplasty practice in the United States with an insurance-claims data base. *Circulation* 1993; 87(5): 1489-1497.
  138. Smith SC, Jr., Dove JT, Jacobs AK, Kennedy JW, Kereiakes D, Kern MJ et al. ACC/AHA guidelines of percutaneous coronary interventions (revision of the 1993 PTCA guidelines): Executive summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (committee to revise the 1993 guidelines for percutaneous transluminal coronary angioplasty). *J Am Coll Cardiol* 2001; 37(8): 2215-2239.
  139. Eagle KA, Guyton RA, Davidoff R, Ewy GA, Fonger J, Gardner TJ et al. ACC/AHA Guidelines for Coronary Artery Bypass Graft Surgery: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1991 Guidelines for Coronary Artery Bypass Graft Surgery). *J Am Coll Cardiol* 1999; 34(4): 1262-1347.
  140. Boyne TS, Koplan BA, Parsons WJ, Smith WH, Watson DD, Beller GA. Predicting adverse outcome with exercise SPECT technetium-99m sestamibi imaging in patients with suspected or known coronary artery disease. *Am J Cardiol* 1997; 79(3): 270-274.
  141. Marcovitz PA. Prognostic issues in stress echocardiography. *Prog Cardiovasc Dis* 1997; 39(6): 533-542.

142. Bonow RO. Diagnosis and risk stratification in coronary artery disease: Nuclear cardiology versus stress echocardiography. *J Nucl Cardiol* 1997; 4(2 Pt 2): S172-S178.
143. Brown KA. Prognostic value of thallium-201 myocardial perfusion imaging: A diagnostic tool comes of age. *Circulation* 1991; 83(2): 363-381.
144. National Center for Health Statistics. Vital statistics of the United States: 1979; vol II; mortality; part A. Washington: US Government Printing Office; 1984.
145. Hachamovitch R, Berman DS, Shaw LJ, Kiat H, Cohen I, Cabico JA et al. Incremental prognostic value of myocardial perfusion single photon emission computed tomography for the prediction of cardiac death: Differential stratification for risk of cardiac death and myocardial infarction. *Circulation* 1998; 97(6): 535-543.
146. Kiat H, Berman DS, Maddahi J. Comparison of planar and tomographic exercise thallium-201 imaging methods for the evaluation of coronary artery disease. *J Am Coll Cardiol* 1989; 13(3): 613-616.
147. Kiat H, Maddahi J, Roy LT, Van Train K, Friedman J, Resser K et al. Comparison of technetium 99m methoxy isobutyl isonitrile and thallium 201 for evaluation of coronary artery disease by planar and tomographic methods. *Am Heart J* 1989; 117(1): 1-11.
148. Brown KA, Boucher CA, Okada RD, Guiney TE, Newell JB, Strauss HW et al. Prognostic value of exercise thallium-201 imaging in patients presenting for evaluation of chest pain. *J Am Coll Cardiol* 1983; 1(4): 994-1001.
149. Ladenheim ML, Pollock BH, Rozanski A, Berman DS, Staniloff HM, Forrester JS et al. Extent and severity of myocardial hypoperfusion as predictors of prognosis in patients with suspected coronary artery disease. *J Am Coll Cardiol* 1986; 7(3): 464-471.
150. Hendel RC, Layden JJ, Leppo JA. Prognostic value of dipyridamole thallium scintigraphy for evaluation of ischemic heart disease. *J Am Coll Cardiol* 1990; 15(1): 109-116.
151. Iskandrian AS, Heo J, Decoskey D, Askenase A, Segal BL. Use of exercise thallium-201 imaging for risk stratification of elderly patients with coronary artery disease. *Am J Cardiol* 1988; 61(4): 269-272.
152. Kaul S, Lilly DR, Gascho JA, Watson DD, Gibson RS, Oliner CA et al. Prognostic utility of the exercise thallium-201 test in ambulatory patients with chest pain: Comparison with cardiac catheterization. *Circulation* 1988; 77(4): 745-758.
153. Staniloff HM, Forrester JS, Berman DS, Swan HJ. Prediction of death, myocardial infarction, and worsening chest pain using thallium scintigraphy and exercise electrocardiography. *J Nucl Med* 1986; 27(12): 1842-1848.



154. Stratmann HG, Mark AL, Walter KE, Williams GA. Prognostic value of atrial pacing and thallium-201 scintigraphy in patients with stable chest pain. *Am J Cardiol* 1989; 64(16): 985-990.
155. Younis LT, Byers S, Shaw L, Barth G, Goodgold H, Chaitman BR. Prognostic importance of silent myocardial ischemia detected by intravenous dipyridamole thallium myocardial imaging in asymptomatic patients with coronary artery disease. *J Am Coll Cardiol* 1989; 14(7): 1635-1641.
156. Iskandrian AS, Heo J, Kong B, Lyons E, Marsch S. Use of technetium-99m isonitrile (RP-30A) in assessing left ventricular perfusion and function at rest and during exercise in coronary artery disease, and comparison with coronary arteriography and exercise thallium-201 SPECT imaging. *Am J Cardiol* 1989; 64(5): 270-275.
157. Taillefer R, Laflamme L, Dupras G, Picard M, Phaneuf DC, Leveille J. Myocardial perfusion imaging with 99mTc-methoxy-isobutyl-isonitrile (MIBI): Comparison of short and long time intervals between rest and stress injections. Preliminary results. *Eur J Nucl Med* 1988; 13(10): 515-522.
158. Maddahi J, Kiat H, Van Train KF, Prigent F, Friedman J, Garcia EV et al. Myocardial perfusion imaging with technetium-99m sestamibi SPECT in the evaluation of coronary artery disease. *Am J Cardiol* 1990; 66(13): 55E-62E.
159. Kahn JK, McGhie I, Akers MS, Sills MN, Faber TL, Kulkarni PV et al. Quantitative rotational tomography with 201Tl and 99mTc 2-methoxy-isobutyl-isonitrile: A direct comparison in normal individuals and patients with coronary artery disease. *Circulation* 1989; 79(6): 1282-1293.
160. Wackers FJ, Berman DS, Maddahi J, Watson DD, Beller GA, Strauss HW et al. Technetium-99m hexakis 2-methoxyisobutyl isonitrile: Human biodistribution, dosimetry, safety, and preliminary comparison to thallium-201 for myocardial perfusion imaging. *J Nucl Med* 1989; 30(3): 301-311.
161. Maisey MN, Mistry R, Sowton E. Planar imaging techniques used with technetium-99m sestamibi to evaluate chronic myocardial ischemia. *Am J Cardiol* 1990; 66(13): 47E-54E.
162. Maddahi J, Kiat H, Friedman JD, Berman DS, Van Train KF, Garcia EV. Technetium-99m-sestamibi myocardial perfusion imaging for evaluation of coronary artery disease. In: Zaret BL, Beller GA (Ed). *Nuclear cardiology: State of the art and future directions*. St. Louis: Mosby; 1993. S. 191-200.
163. Verani MS. Thallium-201 and technetium-99m perfusion agents: Where we are in 1992. In: Zaret BL, Beller GA (Ed). *Nuclear cardiology: State of the art and future directions*. St. Louis: Mosby; 1993. S. 216-224.

164. Verani MS, Marcus ML, Razzak MA, Ehrhardt JC. Sensitivity and specificity of thallium-201 perfusion scintigrams under exercise in the diagnosis of coronary artery disease. *J Nucl Med* 1978; 19(7): 773-782.
165. Okada RD, Boucher CA, Strauss HW, Pohost GM. Exercise radionuclide imaging approaches to coronary artery disease. *Am J Cardiol* 1980; 46(7): 1188-1204.
166. Kaul S, Boucher CA, Newell JB, Chesler DA, Greenberg JM, Okada RD et al. Determination of the quantitative thallium imaging variables that optimize detection of coronary artery disease. *J Am Coll Cardiol* 1986; 7(3): 527-537.
167. Fintel DJ, Links JM, Brinker JA, Frank TL, Parker M, Becker LC. Improved diagnostic performance of exercise thallium-201 single photon emission computed tomography over planar imaging in the diagnosis of coronary artery disease: A receiver operating characteristic analysis. *J Am Coll Cardiol* 1989; 13(3): 600-612.
168. Nohara R, Kambara H, Suzuki Y, Tamaki S, Kadota K, Kawai C et al. Stress scintigraphy using single-photon emission computed tomography in the evaluation of coronary artery disease. *Am J Cardiol* 1984; 53(9): 1250-1254.
169. Sawada SG, Ryan T, Conley MJ, Corya BC, Feigenbaum H, Armstrong WF. Prognostic value of a normal exercise echocardiogram. *Am Heart J* 1990; 120(1): 49-55.
170. Krivokapich J, Child JS, Gerber RS, Lem V, Moser D. Prognostic usefulness of positive or negative exercise stress echocardiography for predicting coronary events in ensuing twelve months. *Am J Cardiol* 1993; 71(8): 646-651.
171. Mazeika PK, Nadazdin A, Oakley CM. Prognostic value of dobutamine echocardiography in patients with high pretest likelihood of coronary artery disease. *Am J Cardiol* 1993; 71(1): 33-39.
172. Severi S, Picano E, Michelassi C, Lattanzi F, Landi P, Distanto A et al. Diagnostic and prognostic value of dipyridamole echocardiography in patients with suspected coronary artery disease: Comparison with exercise electrocardiography. *Circulation* 1994; 89(3): 1160-1173.
173. Coletta C, Galati A, Greco G, Burattini M, Ricci R, Carunchio A et al. Prognostic value of high dose dipyridamole echocardiography in patients with chronic coronary artery disease and preserved left ventricular function. *J Am Coll Cardiol* 1995; 26(4): 887-894.
174. Williams MJ, Odabashian J, Lauer MS, Thomas JD, Marwick TH. Prognostic value of dobutamine echocardiography in patients with left ventricular dysfunction. *J Am Coll Cardiol* 1996; 27(1): 132-139.
175. Afridi I, Quinones MA, Zoghbi WA, Cheirif J. Dobutamine stress echocardiography: Sensitivity, specificity, and predictive value for future cardiac events. *Am Heart J* 1994; 127(6): 1510-1515.

176. Kamaran M, Teague SM, Finkelhor RS, Dawson N, Bahler RC. Prognostic value of dobutamine stress echocardiography in patients referred because of suspected coronary artery disease. *Am J Cardiol* 1995; 76(12): 887-891.
177. Marcovitz PA, Shayna V, Horn RA, Hepner A, Armstrong WF. Value of dobutamine stress echocardiography in determining the prognosis of patients with known or suspected coronary artery disease. *Am J Cardiol* 1996; 78(4): 404-408.
178. Mairesse GH, Marwick TH, Arnese M, Vanoverschelde JL, Cornel JH, Detry JM et al. Improved identification of coronary artery disease in patients with left bundle branch block by use of dobutamine stress echocardiography and comparison with myocardial perfusion tomography. *Am J Cardiol* 1995; 76(5): 321-325.
179. Braat SH, Brugada P, Bar FW, Gorgels AP, Wellens HJ. Thallium-201 exercise scintigraphy and left bundle branch block. *Am J Cardiol* 1985; 55(1): 224-226.
180. Hirzel HO, Senn M, Nuesch K, Buettner C, Pfeiffer A, Hess OM et al. Thallium-201 scintigraphy in complete left bundle branch block. *Am J Cardiol* 1984; 53(6): 764-769.
181. DePuey EG, Guertler-Krawczynska E, Robbins WL. Thallium-201 SPECT in coronary artery disease patients with left bundle branch block. *J Nucl Med* 1988; 29(9): 1479-1485.
182. Burns RJ, Galligan L, Wright LM, Lawand S, Burke RJ, Gladstone PJ. Improved specificity of myocardial thallium-201 single-photon emission computed tomography in patients with left bundle branch block by dipyridamole. *Am J Cardiol* 1991; 68(5): 504-508.
183. Rockett JF, Wood WC, Moinuddin M, Loveless V, Parrish B. Intravenous dipyridamole thallium-201 SPECT imaging in patients with left bundle branch block. *Clin Nucl Med* 1990; 15(6): 401-407.
184. O'Keefe JH, Jr., Bateman TM, Barnhart CS. Adenosine thallium-201 is superior to exercise thallium-201 for detecting coronary artery disease in patients with left bundle branch block. *J Am Coll Cardiol* 1993; 21(6): 1332-1338.
185. Vaduganathan P, He ZX, Raghavan C, Mahmarian JJ, Verani MS. Detection of left anterior descending coronary artery stenosis in patients with left bundle branch block: Exercise, adenosine or dobutamine imaging? *J Am Coll Cardiol* 1996; 28(3): 543-550.
186. Morais J, Soucy JP, Sestier F, Lamoureux F, Lamoureux J, Danais S. Dipyridamole testing compared to exercise stress for thallium-201 imaging in patients with left bundle branch block. *Can J Cardiol* 1990; 6(1): 5-8.
187. Jukema JW, Van der Wall EE, Van der Vis-Melsen MJ, Kruyswijk HH, Brusckhe AV. Dipyridamole thallium-201 scintigraphy for improved detection of left anterior descending coronary artery stenosis in patients with left bundle branch block. *Eur Heart J* 1993; 14(1): 53-56.

188. Larcos G, Brown ML, Gibbons RJ. Role of dipyridamole thallium-201 imaging in left bundle branch block. *Am J Cardiol* 1991; 68(10): 1097-1098.
189. Patel R, Bushnell DL, Wagner R, Stumbris R. Frequency of false-positive septal defects on adenosine/201Tl images in patients with left bundle branch block. *Nucl Med Commun* 1995; 16(3): 137-139.
190. Lebtahi NE, Stauffer JC, Delaloye AB. Left bundle branch block and coronary artery disease: Accuracy of dipyridamole thallium-201 single-photon emission computed tomography in patients with exercise anteroseptal perfusion defects. *J Nucl Cardiol* 1997; 4(4): 266-273.
191. 26th Bethesda Conference: Recommendations for determining eligibility for competition in athletes with cardiovascular abnormalities. January 6-7, 1994. *J Am Coll Cardiol* 1994; 24(4): 845-899.
192. Fletcher GF, Balady GJ, Amsterdam EA, Chaitman B, Eckel R, Fleg J et al. Exercise standards for testing and training: a statement for healthcare professionals from the American Heart Association. *Circulation* 2001; 104(14): 1694-1740.
193. Balady GJ, Chaitman B, Driscoll D, Foster C, Froelicher E, Gordon N et al. Recommendations for cardiovascular screening, staffing, and emergency policies at health/fitness facilities. *Circulation* 1998; 97(22): 2283-2293.
194. Van Camp SP, Peterson RA. Cardiovascular complications of outpatient cardiac rehabilitation programs. *JAMA* 1986; 256(9): 1160-1163.
195. Proudfit WJ, Brusckhe AV, MacMillan JP, Williams GW, Sones FM, Jr. Fifteen year survival study of patients with obstructive coronary artery disease. *Circulation* 1983; 68(5): 986-997.
196. Frank CW, Weinblatt E, Shapiro DR. Angina pectoris in men: Prognostic significance of selected medical factors. *Circulation* 1973; 74(3): 509-517.
197. Ruberman W, Weinblatt E, Goldberg JD, Frank CW, Shapiro S, Chaudhary BS. Ventricular premature complexes in prognosis of angina. *Circulation* 1980; 61(6): 1172-1182.
198. Kjekshus JK, Maroko PR, Sobel BE. Distribution of myocardial injury and its relation to epicardial ST-segment changes after coronary artery occlusion in the dog. *Cardiovasc Res* 1972; 6(5): 490-499.
199. Kleber AG. ST-segment elevation in the electrocardiogram: A sign of myocardial ischemia. *Cardiovasc Res* 2000; 45(1): 111-118.
200. Lee TH, Boucher CA. Clinical practice. Noninvasive tests in patients with stable coronary artery disease. *N Engl J Med* 2001; 344(24): 1840-1845.
201. The ESC Working Group on Exercise Physiology PaE. Guidelines for cardiac exercise testing. *Eur Heart J* 1993; 14(7): 969-988.

202. Gianrossi R, Detrano R, Mulvihill D, Lehmann K, Dubach P, Colombo A et al. Exercise-induced ST depression in the diagnosis of coronary artery disease: A meta-analysis. *Circulation* 1989; 80(1): 87-98.
203. Ashley EA, Myers J, Froelicher V. Exercise testing in clinical medicine. *Lancet* 2000; 356(9241): 1592-1597.
204. Hung J, Chaitman BR, Lam J, Lesperance J, Dupras G, Fines P et al. Noninvasive diagnostic test choices for the evaluation of coronary artery disease in women: A multivariate comparison of cardiac fluoroscopy, exercise electrocardiography and exercise thallium myocardial perfusion scintigraphy. *J Am Coll Cardiol* 1984; 4(1): 8-16.
205. Lauer MS. Exercise electrocardiogram testing and prognosis: Novel markers and predictive instruments. *Cardiol Clin* 2001; 19(3): 401-414.
206. Elamin MS, Boyle R, Kardash MM, Smith DR, Stoker JB, Whitaker W et al. Accurate detection of coronary heart disease by new exercise test. *Br Heart J* 1982; 48(4): 311-320.
207. Okin PM, Grandits G, Rautaharju PM, Prineas RJ, Cohen JD, Crow RS et al. Prognostic value of heart rate adjustment of exercise-induced ST segment depression in the multiple risk factor intervention trial. *J Am Coll Cardiol* 1996; 27(6): 1437-1443.
208. Yamada H, Do D, Morise A, Atwood JE, Froelicher V. Review of studies using multivariable analysis of clinical and exercise test data to predict angiographic coronary artery disease. *Prog Cardiovasc Dis* 1997; 39(5): 457-481.
209. Jette M, Sidney K, Blümchen G. Metabolic equivalents (METs) in exercise testing, exercise prescription, and evaluation of functional capacity. *Clin Cardiol* 1990; 13(8): 555-565.
210. Long-term comprehensive care of cardiac patients: Recommendations by the Working Group on Rehabilitation of the European Society of Cardiology. *Eur Heart J* 1992; 13(Suppl C): 1-45.
211. Borg G, Holmgren A, Lindblad I. Quantitative evaluation of chest pain. *Acta Med Scand Suppl* 1981; 644: 43-45.
212. Tresch DD. Diagnostic and prognostic value of ambulatory electrographic monitoring in older patients. *J Am Geriatr Soc* 1995; 43(1): 66-70.
213. Marcus ML, Wilson RF, White CW. Methods of measurement of myocardial blood flow in patients: A critical review. *Circulation* 1987; 76(2): 245-253.
214. Ellestad MH, Savitz S, Bergdall D, Teske J. The false positive stress test: Multivariate analysis of 215 subjects with hemodynamic, angiographic and clinical data. *Am J Cardiol* 1977; 40(5): 681-685.

215. Lee KL, Pryor DB, Harrell FE, Jr., Califf RM, Behar VS, Floyd WL et al. Predicting outcome in coronary disease: Statistical models versus expert clinicians. *Am J Med* 1986; 80(4): 553-560.
216. Detrano R, Bobbio M, Olson H, Shandling A, Ellestad MH, Alegria E et al. Computer probability estimates of angiographic coronary artery disease: Transportability and comparison with cardiologists' estimates. *Comput Biomed Res* 1992; 25(5): 468-485.
217. Guyatt GH. Readers' guide for articles evaluating diagnostic tests: What ACP Journal Club does for you and what you must do yourself. *ACP J Club* 1996; 115: A-16.
218. Detrano R, Gianrossi R, Froelicher V. The diagnostic accuracy of the exercise electrocardiogram: A meta-analysis of 22 years of research. *Prog Cardiovasc Dis* 1989; 32(3): 173-206.
219. Reid MC, Lachs MS, Feinstein AR. Use of methodological standards in diagnostic test research: getting better but still not good. *JAMA* 1995; 274(8): 645-651.
220. Morise AP, Diamond GA. Comparison of the sensitivity and specificity of exercise electrocardiography in biased and unbiased populations of men and women. *Am Heart J* 1995; 130(4): 741-747.
221. DelCampo J, Do D, Umann T, McGowan V, Froning J, Froelicher VF. Comparison of computerized and standard visual criteria of exercise ECG for diagnosis of coronary artery disease. *Ann Noninvasive Electrocardiol* 1996; 1(4): 430-442.
222. LeWinter MM, Crawford MH, O'Rourke RA, Karliner JS. The effects of oral propranolol, digoxin and combination therapy on the resting and exercise electrocardiogram. *Am Heart J* 1977; 93(2): 202-209.
223. Sundqvist K, Atterhog JH, Jogestrand T. Effect of digoxin on the electrocardiogram at rest and during exercise in healthy subjects. *Am J Cardiol* 1986; 57(8): 661-665.
224. Herbert WG, Dubach P, Lehmann KG, Froelicher VF. Effect of beta-blockade on the interpretation of the exercise ECG: ST level versus delta ST/HR index. *Am Heart J* 1991; 122(4 Pt 1): 993-1000.
225. Cantwell JD, Murray PM, Thomas RJ. Current management of severe exercise-related cardiac events. *Chest* 1988; 93(6): 1264-1269.
226. Anastasiou-Nana MI, Anderson JL, Stewart JR, Crevey BJ, Yanowitz FG, Lutz JR et al. Occurrence of exercise-induced and spontaneous wide complex tachycardia during therapy with flecainide for complex ventricular arrhythmias: A probable proarrhythmic effect. *Am Heart J* 1987; 113(5): 1071-1077.
227. Whinnery JE, Froelicher VF, Jr., Longo MR, Jr., Triebwasser JH. Current management of severe exercise-related cardiac events. *Chest* 1977; 71(3): 335-340.

228. Morise AP, Haddad WJ, Beckner D. Development and validation of a clinical score to estimate the probability of coronary artery disease in men and women presenting with suspected coronary disease. *Am J Med* 1997; 102(4): 350-356.
229. Shaw LJ, Peterson ED, Shaw LK, Kesler KL, DeLong ER, Harrell FE, Jr. et al. Use of a prognostic treadmill score in identifying diagnostic coronary disease subgroups. *Circulation* 1998; 98(16): 1622-1630.
230. Fearon WF, Lee DP, Froelicher VF. The effect of resting ST segment depression on the diagnostic characteristics of the exercise treadmill test. *J Am Coll Cardiol* 2000; 35(5): 1206-1211.
231. Sapin PM, Blauwet MB, Koch GG, Gettes LS. Exaggerated atrial repolarization waves as a predictor of false positive exercise tests in an unselected population. *J Electrocardiol* 1995; 28(4): 313-321.
232. Sapin PM, Koch G, Blauwet MB, McCarthy JJ, Hinds SW, Gettes LS. Identification of false positive exercise tests with use of electrocardiographic criteria: A possible role for atrial repolarization waves. *J Am Coll Cardiol* 1991; 18(1): 127-135.
233. Fletcher GF, Balady G, Froelicher VF, Hartley LH, Haskell WL, Pollock ML. Exercise standards: A statement for healthcare professionals from the American Heart Association. *Circulation* 1995; 91(2): 580-615.
234. Pina IL, Balady GJ, Hanson P, Labovitz AJ, Madonna DW, Myers J. Guidelines for clinical exercise testing laboratories: a statement for healthcare professionals from the Committee on Exercise and Cardiac Rehabilitation, American Heart Association. *Circulation* 1995; 91(3): 912-921.
235. Lewis WR, Amsterdam EA. Utility and safety of immediate exercise testing of low-risk patients admitted to the hospital for suspected acute myocardial infarction. *Am J Cardiol* 1994; 74(10): 987-990.
236. Gomez MA, Anderson JL, Karagounis LA, Muhlestein JB, Mooers FB. An emergency department-based protocol for rapidly ruling out myocardial ischemia reduces hospital time and expense: Results of a randomized study (ROMIO). *J Am Coll Cardiol* 1996; 28(1): 25-33.
237. Polanczyk CA, Johnson PA, Hartley LH, Walls RM, Shaykevich S, Lee TH. Clinical correlates and prognostic significance of early negative exercise tolerance test in patients with acute chest pain seen in the hospital emergency department. *Am J Cardiol* 1998; 81(3): 288-292.
238. Brown KA, O'Meara J, Chambers CE, Plante DA. Ability of dipyridamole-thallium-201 imaging one to four days after acute myocardial infarction to predict in-hospital and late recurrent myocardial ischemic events. *Am J Cardiol* 1990; 65(3): 160-167.
239. Mahmarian JJ, Mahmarian AC, Marks GF, Pratt CM, Verani MS. Role of adenosine thallium-201 tomography for defining long-term risk in patients after acute myocardial infarction. *J Am Coll Cardiol* 1995; 25(6): 1333-1340.

240. Dakik HA, Mahmarian JJ, Kimball KT, Koutelou MG, Medrano R, Verani MS. Prognostic value of exercise 201Tl tomography in patients treated with thrombolytic therapy during acute myocardial infarction. *Circulation* 1996; 94(11): 2735-2742.
241. Heller GV, Brown KA, Landin RJ, Haber SB. Safety of early intravenous dipyridamole technetium 99m sestamibi SPECT myocardial perfusion imaging after uncomplicated first myocardial infarction. *Am Heart J* 1997; 134(1): 105-111.
242. Egstrup K. Transient myocardial ischemia after abrupt withdrawal of antianginal therapy in chronic stable angina. *Am J Cardiol* 1988; 61(15): 1219-1222.
243. Psaty BM, Koepsell TD, Wagner EH, LoGerfo JP, Inui TS. The relative risk of incident coronary heart disease associated with recently stopping the use of beta-blockers. *JAMA* 1990; 263(12): 1653-1657.
244. Miranda CP, Liu J, Kadar A, Janosi A, Froning J, Lehmann KG et al. Usefulness of exercise-induced ST-segment depression in the inferior leads during exercise testing as a marker for coronary artery disease. *Am J Cardiol* 1992; 69(4): 303-307.
245. Rijneke RD, Ascoop CA, Talmon JL. Clinical significance of upsloping ST segments in exercise electrocardiography. *Circulation* 1980; 61(4): 671-678.
246. Stuart RJ, Ellestad MH. Upsloping S-T segments in exercise stress testing: Six year follow-up study of 438 patients and correlation with 248 angiograms. *Am J Cardiol* 1976; 37(1): 19-22.
247. Manvi KN, Ellestad MH. Elevated ST segments with exercise in ventricular aneurysm. *J Electrocardiol* 1972; 5(4): 317-323.
248. Haines DE, Beller GA, Watson DD, Kaiser DL, Sayre SL, Gibson RS. Exercise-induced ST segment elevation 2 weeks after uncomplicated myocardial infarction: Contributing factors and prognostic significance. *J Am Coll Cardiol* 1987; 9(5): 996-1003.
249. Margonato A, Ballarotto C, Bonetti F, Cappelletti A, Sciammarella M, Cianflone D et al. Assessment of residual tissue viability by exercise testing in recent myocardial infarction: Comparison of the electrocardiogram and myocardial perfusion scintigraphy. *J Am Coll Cardiol* 1992; 19(5): 948-952.
250. Margonato A, Chierchia SL, Xuereb RG, Xuereb M, Fragasso G, Cappelletti A et al. Specificity and sensitivity of exercise-induced ST segment elevation for detection of residual viability: Comparison with fluorodeoxyglucose and positron emission tomography. *J Am Coll Cardiol* 1995; 25(5): 1032-1038.
251. Lombardo A, Loperfido F, Pennestri F, Rossi E, Patrizi R, Cristinziani G et al. Significance of transient ST-T segment changes during dobutamine testing in Q wave myocardial infarction. *J Am Coll Cardiol* 1996; 27(3): 599-605.



252. Kentala E, Luurila O. Response of R wave amplitude to postural changes and to exercise: A study of healthy subjects and patients surviving acute myocardial infarction. *Ann Clin Res* 1975; 7(4): 258-263.
253. Bonoris PE, Greenberg PS, Christison GW, Castellanet MJ, Ellestad MH. Evaluation of R wave amplitude changes versus ST-segment depression in stress testing. *Circulation* 1978; 57(5): 904-910.
254. De Feyter PJ, De Jong JP, Roos JP, Van Eenige MJ. Diagnostic incapacity of exercise-induced QRS wave amplitude changes to detect coronary artery disease and left ventricular dysfunction. *Eur Heart J* 1982; 3(1): 9-16.
255. Okin PM, Kligfield P. Computer-based implementation of the ST-segment/heart rate slope. *Am J Cardiol* 1989; 64(14): 926-930.
256. Detrano R, Salcedo E, Passalacqua M, Friis R. Exercise electrocardiographic variables: A critical appraisal. *J Am Coll Cardiol* 1986; 8(4): 836-847.
257. Kligfield P, Ameisen O, Okin PM. Heart rate adjustment of ST segment depression for improved detection of coronary artery disease. *Circulation* 1989; 79(2): 245-255.
258. Lachterman B, Lehmann KG, Detrano R, Neutel J, Froelicher VF. Comparison of ST segment/heart rate index to standard ST criteria for analysis of exercise electrocardiogram. *Circulation* 1990; 82(1): 44-50.
259. Pryor DB. The academic life cycle of a noninvasive test. *Circulation* 1990; 82(1): 302-304.
260. Milliken JA, Abdollah H, Burggraf GW. False-positive treadmill exercise tests due to computer signal averaging. *Am J Cardiol* 1990; 65(13): 946-948.
261. Washington RL, Bricker JT, Alpert BS, Daniels SR, Deckelbaum RJ, Fisher EA et al. Guidelines for exercise testing in the pediatric age group: From the Committee on Atherosclerosis and Hypertension in Children, Council on Cardiovascular Disease in the Young, the American Heart Association. *Circulation* 1994; 90(4): 2166-2179.
262. O'Rourke RA, Brundage BH, Froelicher VF, Greenland P, Grundy SM, Hachamovitch R et al. American College of Cardiology/American Heart Association expert consensus document on electron-beam computed tomography for the diagnosis and prognosis of coronary artery disease. *J Am Coll Cardiol* 2000; 36(1): 326-340.
263. Crawford MH, Bernstein SJ, Deedwania PC, DiMarco JP, Ferrick KJ, Garson A, Jr. et al. ACC/AHA Guidelines for Ambulatory Electrocardiography: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the Guidelines for Ambulatory Electrocardiography). Developed in collaboration with the North American Society for Pacing and Electrophysiology. *J Am Coll Cardiol* 1999; 34(3): 912-948.

264. Kim C, Kwok YS, Heagerty P, Redberg R. Pharmacologic stress testing for coronary disease diagnosis: A meta-analysis. *Am Heart J* 2001; 142(6): 934-944.
265. National Institute for Health and Clinical Excellence. Myocardial perfusion on scintigraphy for the diagnosis and management of angina and myocardial infarction (NICE Technology appraisal; no 73). London: NICE; 2003.
266. Mowatt G, Vale L, Brazzelli M, Hernandez R, Murray A, Scott N et al. Systematic review of the effectiveness and cost-effectiveness, and economic evaluation, of myocardial perfusion scintigraphy for the diagnosis and management of angina and myocardial infarction. *Health Technol Assess* 2004; 8(30): iii-207.
267. Heger JJ, Weyman AE, Wann LS, Rogers EW, Dillon JC, Feigenbaum H. Cross-sectional echocardiographic analysis of the extent of left ventricular asynergy in acute myocardial infarction. *Circulation* 1980; 61(6): 1113-1118.
268. Jaarsma W, Visser CA, Eenige van MJ, Verheugt FW, Kupper AJ, Roos JP. Predictive value of two-dimensional echocardiographic and hemodynamic measurements on admission with acute myocardial infarction. *J Am Soc Echocardiogr* 1988; 1(3): 187-193.
269. Roger VL, Pellikka PA, Oh JK, Miller FA, Seward JB, Tajik AJ. Stress echocardiography. Part I: exercise echocardiography. Techniques, implementation, clinical applications, and correlations. *Mayo Clin Proc* 1995; 70(1): 5-15.
270. Aurigemma GP, Gaasch WH, Villegas B, Meyer TE. Noninvasive assessment of left ventricular mass, chamber volume, and contractile function. *Curr Probl Cardiol* 1995; 20(6): 361-440.
271. Horowitz RS, Morganroth J, Parrotto C, Chen CC, Soffer J, Pauletto FJ. Immediate diagnosis of acute myocardial infarction by two-dimensional echocardiography. *Circulation* 1982; 65(2): 323-329.
272. Gibson RS, Bishop HL, Stamm RB, Crampton RS, Beller GA, Martin RP. Value of early two dimensional echocardiography in patients with acute myocardial infarction. *Am J Cardiol* 1982; 49(5): 1110-1119.
273. Kerber RE, Abboud FM. Echocardiographic detection of regional myocardial infarction: An experimental study. *Circulation* 1973; 47(5): 997-1005.
274. Weiss JL, Bulkley BH, Hutchins GM, Mason SJ. Two-dimensional echocardiographic recognition of myocardial injury in man: Comparison with postmortem studies. *Circulation* 1981; 63(2): 401-408.
275. Nixon JV, Narahara KA, Smitherman TC. Estimation of myocardial involvement in patients with acute myocardial infarction by two-dimensional echocardiography. *Circulation* 1980; 62(6): 1248-1255.

276. Distante A, Picano E, Moscarelli E, Palombo C, Benassi A, L'Abbate A. Echocardiographic versus hemodynamic monitoring during attacks of variant angina pectoris. *Am J Cardiol* 1985; 55(11): 1319-1322.
277. Tennant R, Wiggers CJ. The effect of coronary artery occlusion on myocardial contraction. *Am J Physiol* 1935; 112(2): 351-361.
278. O'Keefe JH, Jr., Zinsmeister AR, Gibbons RJ. Value of normal electrocardiographic findings in predicting resting left ventricular function in patients with chest pain and suspected coronary artery disease. *Am J Med* 1989; 86(6 Pt 1): 658-662.
279. Christian TF, Miller TD, Chareonthaitawee P, Hodge DO, O'Connor MK, Gibbons RJ. Prevalence of normal resting left ventricular function with normal rest electrocardiograms. *Am J Cardiol* 1997; 79(9): 1295-1298.
280. Bonow RO, Carabello B, De Leon AC, Jr., Edmunds LH, Fedderly BJ, Freed MD et al. ACC/AHA guidelines for the management of patients with valvular heart disease: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines (Committee on management of patients with valvular heart Disease). *J Am Coll Cardiol* 1998; 32(5): 1486-1588.
281. Kaul S, Spotnitz WD, Glasheen WP, Touchstone DA. Mechanism of ischemic mitral regurgitation: An experimental evaluation. *Circulation* 1991; 84(5): 2167-2180.
282. Kono T, Sabbah HN, Rosman H, Alam M, Jafri S, Stein PD et al. Mechanism of functional mitral regurgitation during acute myocardial ischemia. *J Am Coll Cardiol* 1992; 19(5): 1101-1105.
283. Godley RW, Wann LS, Rogers EW, Feigenbaum H, Weyman AE. Incomplete mitral leaflet closure in patients with papillary muscle dysfunction. *Circulation* 1981; 63(3): 565-571.
284. Nishimura RA, Schaff HV, Shub C, Gersh BJ, Edwards WD, Tajik AJ. Papillary muscle rupture complicating acute myocardial infarction: Analysis of 17 patients. *Am J Cardiol* 1983; 51(3): 373-377.
285. Weyman AE, Peskoe SM, Williams ES, Dillon JC, Feigenbaum H. Detection of left ventricular aneurysms by cross-sectional echocardiography. *Circulation* 1976; 54(6): 936-944.
286. Visser CA, Kan G, David GK, Lie KI, Durrer D. Echocardiographic-cineangiographic correlation in detecting left ventricular aneurysm: A prospective study of 422 patients. *Am J Cardiol* 1982; 50(2): 337-341.
287. Barrett MJ, Charuzi Y, Corday E. Ventricular aneurysm: Cross-sectional echocardiographic approach. *Am J Cardiol* 1980; 46(7): 1133-1137.
288. Nallamothu N, Bagheri B, Acio ER, Heo J, Iskandrian AE. Prognostic value of stress myocardial perfusion single photon emission computed tomography imaging

- in patients with left ventricular bundle branch block. *J Nucl Cardiol* 1997; 4(6): 487-493.
289. Nigam A, Humen DP. Prognostic value of myocardial perfusion imaging with exercise and/or dipyridamole hyperemia in patients with preexisting left bundle branch block. *J Nucl Med* 1998; 39(4): 579-581.
290. Gil VM, Almeida M, Ventosa A, Ferreira J, Aguiar C, Calqueiro J et al. Prognosis in patients with left bundle branch block and normal dipyridamole thallium-201 scintigraphy. *J Nucl Cardiol* 1998; 5(4): 414-417.
291. Braunwald E, Antman EM, Beasley JW, Califf RM, Cheitlin MD, Hochman JS et al. ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: Summary article. A report of the American College of Cardiology/American Heart Association task force on practice guidelines (Committee on the Management of Patients With Unstable Angina). *J Am Coll Cardiol* 2002; 40(7): 1366-1374.
292. Underwood SR, Bax JJ, Vom Dahl J, Henein MY, Knuuti J, Van Rossum AC et al. Imaging techniques for the assessment of myocardial hibernation: Report of a Study Group of the European Society of Cardiology. *Eur Heart J* 2004; 25(10): 815-836.
293. Klein C, Nekolla SG, Bengel FM, Momose M, Sammer A, Haas F et al. Assessment of myocardial viability with contrast-enhanced magnetic resonance imaging: Comparison with positron emission tomography. *Circulation* 2002; 105(2): 162-167.
294. Wagner A, Mahrholdt H, Holly TA, Elliott MD, Regenfus M, Parker M et al. Contrast-enhanced MRI and routine single photon emission computed tomography (SPECT) perfusion imaging for detection of subendocardial myocardial infarcts: An imaging study. *Lancet* 2003; 361(9355): 374-379.
295. Kuhl HP, Beek AM, Van der Weerd AP, Hofman MB, Visser CA, Lammertsma AA et al. Myocardial viability in chronic ischemic heart disease: Comparison of contrast-enhanced magnetic resonance imaging with (18)F-fluorodeoxyglucose positron emission tomography. *J Am Coll Cardiol* 2003; 41(8): 1341-1348.
296. Mahrholdt H, Wagner A, Holly TA, Elliott MD, Bonow RO, Kim RJ et al. Reproducibility of chronic infarct size measurement by contrast-enhanced magnetic resonance imaging. *Circulation* 2002; 106(18): 2322-2327.
297. Flacke SJ, Fischer SE, Lorenz CH. Measurement of the gadopentetate dimeglumine partition coefficient in human myocardium in vivo: Normal distribution and elevation in acute and chronic infarction. *Radiology* 2001; 218(3): 703-710.
298. Kim RJ, Fieno DS, Parrish TB, Harris K, Chen EL, Simonetti O et al. Relationship of MRI delayed contrast enhancement to irreversible injury, infarct age, and contractile function. *Circulation* 1999; 100(19): 1992-2002.

299. Kim RJ, Wu E, Rafael A, Chen EL, Parker MA, Simonetti O et al. The use of contrast-enhanced magnetic resonance imaging to identify reversible myocardial dysfunction. *N Engl J Med* 2000; 343(20): 1445-1453.
300. Selvanayagam JB, Kardos A, Francis JM, Wiesmann F, Petersen SE, Taggart DP et al. Value of delayed-enhancement cardiovascular magnetic resonance imaging in predicting myocardial viability after surgical revascularization. *Circulation* 2004; 110(12): 1535-1541.
301. Knuesel PR, Nanz D, Wyss C, Buechi M, Kaufmann PA, Von Schulthess GK et al. Characterization of dysfunctional myocardium by positron emission tomography and magnetic resonance: Relation to functional outcome after revascularization. *Circulation* 2003; 108(9): 1095-1100.
302. Allman KC, Shaw LJ, Hachamovitch R, Udelson JE. Myocardial viability testing and impact of revascularization on prognosis in patients with coronary artery disease and left ventricular dysfunction: A meta-analysis. *J Am Coll Cardiol* 2002; 39(7): 1151-1158.
303. Dash H, Lipton MJ, Chatterjee K, Parmley WW. Estimation of pulmonary artery wedge pressure from chest radiograph in patients with chronic congestive cardiomyopathy and ischaemic cardiomyopathy. *Br Heart J* 1980; 44(3): 322-329.
304. Chakko S, Woska D, Martinez H, De Marchena E, Futterman L, Kessler KM et al. Clinical, radiographic, and hemodynamic correlations in chronic congestive heart failure: Conflicting results may lead to inappropriate care. *Am J Med* 1991; 90(3): 353-359.
305. Weiner DA, Ryan TJ, McCabe CH, Chaitman BR, Sheffield LT, Ferguson JC et al. Prognostic importance of a clinical profile and exercise test in medically treated patients with coronary artery disease. *J Am Coll Cardiol* 1984; 3(3): 772-779.
306. Hammermeister KE, DeRouen TA, Dodge HT. Variables predictive of survival in patients with coronary disease: Selection by univariate and multivariate analyses from the clinical, electrocardiographic, exercise, arteriographic, and quantitative angiographic evaluations. *Circulation* 1979; 59(3): 421-430.
307. Witteman JC, Kok FJ, Van Saase JL, Valkenburg HA. Aortic calcification as a predictor of cardiovascular mortality. *Lancet* 1986; 2(8516): 1120-1122.
308. Hemingway H, Shipley M, Christie D, Marmot M. Cardiothoracic ratio and relative heart volume as predictors of coronary heart disease mortality: The Whitehall study 25 year follow-up. *Eur Heart J* 1998; 19(6): 859-869.
309. McCarthy JH, Palmer FJ. Incidence and significance of coronary artery calcification. *Br Heart J* 1974; 36(5): 499-506.
310. Eggen DA, Strong JP, McGill HC, Jr. Coronary calcification: Relationship to clinically significant coronary lesions and race, sex, and topographic distribution. *Circulation* 1965; 32(6): 948-955.

311. Ciaroni S, Bloch A, Hoffmann JL, Bettoni M, Fournet D. Prognostic value of dobutamine echocardiography in patients with intermediate coronary lesions at angiography. *Echocardiography* 2002; 19(7 Pt 1): 549-553.
312. Davidavicius G, Kowalski M, Williams RI, D'hooge J, Di Salvo G, Pierre-Justin G et al. Can regional strain and strain rate measurement be performed during both dobutamine and exercise echocardiography, and do regional deformation responses differ with different forms of stress testing? *J Am Soc Echocardiogr* 2003; 16(4): 299-308.
313. Marwick TH. Current status of stress echocardiography for diagnosis and prognostic assessment of coronary artery disease. *Coron Artery Dis* 1998; 9(7): 411-426.
314. Gibbons RJ, Chatterjee K, Daley J, Douglas JS, Fihn SD, Gardin JM et al. ACC/AHA/ACP-ASIM guidelines for the management of patients with chronic stable angina: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Management of Patients With Chronic Stable Angina). *J Am Coll Cardiol* 1999; 33(7): 2092-2197.
315. Schinkel AF, Bax JJ, Geleijnse ML, Boersma E, Elhendy A, Roelandt JR et al. Noninvasive evaluation of ischaemic heart disease: Myocardial perfusion imaging or stress echocardiography? *Eur Heart J* 2003; 24(9): 789-800.
316. Korosoglou G, Labadze N, Hansen A, Selter C, Giannitsis E, Katus H et al. Usefulness of real-time myocardial perfusion imaging in the evaluation of patients with first time chest pain. *Am J Cardiol* 2004; 94(10): 1225-1231.
317. Rocchi G, Fallani F, Bracchetti G, Rapezzi C, Ferlito M, Levorato M et al. Non-invasive detection of coronary artery stenosis: A comparison among power-Doppler contrast echo, 99Tc-Sestamibi SPECT and echo wall-motion analysis. *Coron Artery Dis* 2003; 14(3): 239-245.
318. Moir S, Marwick TH. Combination of contrast with stress echocardiography: A practical guide to methods and interpretation. *Cardiovasc Ultrasound* 2004; 2: 15.
319. Cain P, Baglin T, Case C, Spicer D, Short L, Marwick TH. Application of tissue Doppler to interpretation of dobutamine echocardiography and comparison with quantitative coronary angiography. *Am J Cardiol* 2001; 87(5): 525-531.
320. Cain P, Marwick TH, Case C, Baglin T, Dart J, Short L et al. Assessment of regional long-axis function during dobutamine echocardiography. *Clin Sci (Lond)* 2001; 100(4): 423-432.
321. Voigt JU, Exner B, Schmiedehausen K, Huchzermeyer C, Reulbach U, Nixdorff U et al. Strain-rate imaging during dobutamine stress echocardiography provides objective evidence of inducible ischemia. *Circulation* 2003; 107(16): 2120-2126.
322. Yip G, Abraham T, Belohlavek M, Khandheria BK. Clinical applications of strain rate imaging. *J Am Soc Echocardiogr* 2003; 16(12): 1334-1342.

323. Madler CF, Payne N, Wilkenshoff U, Cohen A, Derumeaux GA, Pierard LA et al. Non-invasive diagnosis of coronary artery disease by quantitative stress echocardiography: Optimal diagnostic models using off-line tissue Doppler in the MYDISE study. *Eur Heart J* 2003; 24(17): 1584-1594.
324. Yip G, Khandheria B, Belohlavek M, Pislaru C, Seward J, Bailey K et al. Strain echocardiography tracks dobutamine-induced decrease in regional myocardial perfusion in nonocclusive coronary stenosis. *J Am Coll Cardiol* 2004; 44(8): 1664-1671.
325. Marwick TH, Case C, Leano R, Short L, Baglin T, Cain P et al. Use of tissue Doppler imaging to facilitate the prediction of events in patients with abnormal left ventricular function by dobutamine echocardiography. *Am J Cardiol* 2004; 93(2): 142-146.
326. Zaret BL, Wackers FJ. *Nuclear Cardiology* (1/2). *N Engl J Med* 1993; 329(11): 775-783.
327. Zaret BL, Wackers FJ. *Nuclear Cardiology* (2/2). *N Engl J Med* 1993; 329(12): 855-863.
328. Daou D, Delahaye N, Lebtahi R, Vilain D, Peker C, Faraggi M et al. Diagnosis of extensive coronary artery disease: Intrinsic value of increased lung 201 Tl uptake with exercise SPECT. *J Nucl Med* 2000; 41(4): 567-574.
329. Morel O, Pezard P, Furber A, Le Jeune JJ, Vielle B, Denizot B et al. Thallium-201 right lung/heart ratio during exercise in patients with coronary artery disease: Relation to thallium-201 myocardial single-photon emission tomography, rest and exercise left ventricular function and coronary angiography. *Eur J Nucl Med* 1999; 26(6): 640-646.
330. Xu M, McHaffie DJ. Nonspecific systolic murmurs: An audit of the clinical value of echocardiography. *N Z Med J* 1993; 106(950): 54-56.
331. Nagueh SF, Bachinski LL, Meyer D, Hill R, Zoghbi WA, Tam JW et al. Tissue Doppler imaging consistently detects myocardial abnormalities in patients with hypertrophic cardiomyopathy and provides a novel means for an early diagnosis before and independently of hypertrophy. *Circulation* 2001; 104(2): 128-130.
332. Echeverria HH, Bilsker MS, Myerburg RJ, Kessler KM. Congestive heart failure: Echocardiographic insights. *Am J Med* 1983; 75(5): 750-755.
333. Aguirre FV, Pearson AC, Lewen MK, McCluskey M, Labovitz AJ. Usefulness of Doppler echocardiography in the diagnosis of congestive heart failure. *Am J Cardiol* 1989; 63(15): 1098-1102.
334. Rihal CS, Raco DL, Gersh BJ, Yusuf S. Indications for coronary artery bypass surgery and percutaneous coronary intervention in chronic stable angina: Review of the evidence and methodological considerations. *Circulation* 2003; 108(20): 2439-2445.

335. Fonseca C, Mota T, Morais H, Matias F, Costa C, Oliveira AG et al. The value of the electrocardiogram and chest X-ray for confirming or refuting a suspected diagnosis of heart failure in the community. *Eur J Heart Fail* 2004; 6(6): 807-812.
336. Shaw LJ, Peterson ED, Kesler K, Hasselblad V, Califf RM. A metaanalysis of pre-discharge risk stratification after acute myocardial infarction with stress electrocardiographic, myocardial perfusion, and ventricular function imaging. *Am J Cardiol* 1996; 78(12): 1327-1337.
337. Marchioli R, Avanzini F, Barzi F, Chieffo C, Di Castelnuovo A, Franzosi MG et al. Assessment of absolute risk of death after myocardial infarction by use of multiple-risk-factor assessment equations: GISSI-Prevenzione mortality risk chart. *Eur Heart J* 2001; 22(22): 2085-2103.
338. Rakowski H, Sasson Z, Wigle ED. Echocardiographic and Doppler assessment of hypertrophic cardiomyopathy. *J Am Soc Echocardiogr* 1988; 1(1): 31-47.
339. Ambrose JA, Fuster V. Can we predict future acute coronary events in patients with stable coronary artery disease? *JAMA* 1997; 277(4): 343-344.
340. Mulcahy D, Knight C, Patel D, Curzen N, Cunningham D, Wright C et al. Detection of ambulatory ischaemia is not of practical clinical value in the routine management of patients with stable angina: A long-term follow-up study. *Eur Heart J* 1995; 16(3): 317-324.
341. Knez A, Becker A, Leber A, White C, Becker CR, Reiser MF et al. Relation of coronary calcium scores by electron beam tomography to obstructive disease in 2,115 symptomatic patients. *Am J Cardiol* 2004; 93(9): 1150-1152.
342. Becker CR. Noninvasive assessment of coronary atherosclerosis by multidetector-row computed tomography. *Expert review of cardiovascular therapy* 2004; 2(5): 721-727.
343. Stanford W, Thompson BH, Burns TL, Heery SD, Burr MC. Coronary artery calcium quantification at multi-detector row helical CT versus electron-beam CT. *Radiology* 2004; 230(2): 397-402.
344. Nasir K, Budoff MJ, Post WS, Fishman EK, Mahesh M, Lima JA et al. Electron beam CT versus helical CT scans for assessing coronary calcification: current utility and future directions. *Am Heart J* 2003; 146(6): 969-977.
345. Agatston AS, Janowitz WR, Hildner FJ, Zusmer NR, Viamonte M, Jr., Detrano R. Quantification of coronary artery calcium using ultrafast computed tomography. *J Am Coll Cardiol* 1990; 15(4): 827-832.
346. Hoff JA, Chomka EV, Krainik AJ, Daviglius M, Rich S. Age and gender distributions of coronary artery calcium detected by electron beam tomography in 35,246 adults. *Am J Cardiol* 2001; 87(12): 1335-1339.



347. Rumberger JA, Simons DB, Fitzpatrick LA, Sheedy PF, Schwartz RS. Coronary artery calcium area by electron-beam computed tomography and coronary atherosclerotic plaque area: A histopathologic correlative study. *Circulation* 1995; 92(8): 2157-2162.
348. Daly C, Saravanan P, Fox K. Is calcium the clue? *Eur Heart J* 2002; 23(20): 1562-1565.
349. Fisch C. Electrocardiography and vectorcardiography. In: Braunwald E (Ed). *Heart disease: A textbook of cardiovascular medicine*. Philadelphia: Saunders; 1992. S. 116-160.
350. Margolis JR, Chen JT, Kong Y, Peter RH, Behar VS, Kisslo JA. The diagnostic and prognostic significance of coronary artery calcification: A report of 800 cases. *Radiology* 1980; 137(3): 609-616.
351. Mautner SL, Mautner GC, Froehlich J, Feuerstein IM, Proschan MA, Roberts WC et al. Coronary artery disease: Prediction with in vitro electron beam CT. *Radiology* 1994; 192(3): 625-630.
352. Janowitz WR, Agatston AS, Viamonte M, Jr. Comparison of serial quantitative evaluation of calcified coronary artery plaque by ultrafast computed tomography in persons with and without obstructive coronary artery disease. *Am J Cardiol* 1991; 68(1): 1-6.
353. Devries S, Wolfkiel C, Shah V, Chomka E, Rich S. Reproducibility of the measurement of coronary calcium with ultrafast computed tomography. *Am J Cardiol* 1995; 75(14): 973-975.
354. Detrano R, Wang S, Tang W, Brundage B, Wong N. Thick slice electron beam tomographic scanning allows reproducible and accurate assessments of coronary calcific deposits. *Circulation* 1995; 92(8 Suppl): I650.
355. Abreu A, Mahmarian JJ, Nishimura S, Boyce TM, Verani MS. Tolerance and safety of pharmacologic coronary vasodilation with adenosine in association with thallium-201 scintigraphy in patients with suspected coronary artery disease. *J Am Coll Cardiol* 1991; 18(3): 730-735.
356. Verani MS. Adenosine thallium 201 myocardial perfusion scintigraphy. *Am Heart J* 1991; 122(1 Pt 1): 269-278.
357. Mason JR, Palac RT, Freeman ML, Virupannavar S, Loeb HS, Kaplan E et al. Thallium scintigraphy during dobutamine infusion: Nonexercise-dependent screening test for coronary disease. *Am Heart J* 1984; 107(3): 481-485.
358. Pennell DJ, Underwood SR, Swanton RH, Walker JM, Ell PJ. Dobutamine thallium myocardial perfusion tomography. *J Am Coll Cardiol* 1991; 18(6): 1471-1479.
359. Marwick T, Willemart B, D'Hondt AM, Baudhuin T, Wijns W, Detry JM et al. Selection of the optimal nonexercise stress for the evaluation of ischemic regional

- myocardial dysfunction and malperfusion: Comparison of dobutamine and adenosine using echocardiography and <sup>99m</sup>Tc-MIBI single photon emission computed tomography. *Circulation* 1993; 87(2): 345-354.
360. Hays JT, Mahmarian JJ, Cochran AJ, Verani MS. Dobutamine thallium-201 tomography for evaluating patients with suspected coronary artery disease unable to undergo exercise or vasodilator pharmacologic stress testing. *J Am Coll Cardiol* 1993; 21(7): 1583-1590.
361. Mertes H, Sawada SG, Ryan T, Segar DS, Kovacs R, Foltz J et al. Symptoms, adverse effects, and complications associated with dobutamine stress echocardiography: Experience in 1118 patients. *Circulation* 1993; 88(1): 15-19.
362. Hiro J, Hiro T, Reid CL, Ebrahimi R, Matsuzaki M, Gardin JM. Safety and results of dobutamine stress echocardiography in women versus men and in patients older and younger than 75 years of age. *Am J Cardiol* 1997; 80(8): 1014-1020.
363. Kaul S. Technical, economic, interpretative, and outcomes issues regarding utilization of cardiac imaging techniques in patients with known or suspected coronary artery disease. *Am J Cardiol* 1995; 75(11 Suppl 1): 18D-24D.
364. Iftikhar I, Koutelou M, Mahmarian JJ, Verani MS. Simultaneous perfusion tomography and radionuclide angiography during dobutamine stress. *J Nucl Med* 1996; 37(8): 1306-1310.
365. Fleischmann KE, Hunink MG, Kuntz KM, Douglas PS. Exercise echocardiography or exercise SPECT imaging? A meta-analysis of diagnostic test performance. *JAMA* 1998; 280(10): 913-920.
366. Kim C, Kwok YS, Saha S, Redberg RF. Diagnosis of suspected coronary artery disease in women: A cost-effectiveness analysis. *Am Heart J* 1999; 137(6): 1019-1027.
367. Brewer HB, Jr. Hypertriglyceridemia: Changes in the plasma lipoproteins associated with an increased risk of cardiovascular disease. *Am J Cardiol* 1999; 83(9B): 3F-12F.
368. Schlant RC, Forman S, Stamler J, Canner PL. The natural history of coronary heart disease: prognostic factors after recovery from myocardial infarction in 2789 men: The 5-year findings of the coronary drug project. *Circulation* 1982; 66(2): 401-414.
369. Phillips AN, Shaper AG, Pocock SJ, Walker M, Macfarlane PW. The role of risk factors in heart attacks occurring in men with pre-existing ischaemic heart disease. *Br Heart J* 1988; 60(5): 404-410.
370. Hultgren HN, Peduzzi P. Relation of severity of symptoms to prognosis in stable angina pectoris. *Am J Cardiol* 1984; 54(8): 988-993.

371. Rosengren A, Wilhelmsen L, Hagman M, Wedel H. Natural history of myocardial infarction and angina pectoris in a general population sample of middle-aged men: A 16-year follow-up of the Primary Prevention Study, Göteborg, Sweden. *J Intern Med* 1998; 244(6): 495-505.
372. Block WJ, Crumpacker EL, Dry TJ, Gage RP. Prognosis of angina pectoris: Observations in 6,882 cases. *JAMA* 1952; 150(4): 259-264.
373. Kannel WB, Abbott RD. A prognostic comparison of asymptomatic left ventricular hypertrophy and unrecognized myocardial infarction: The Framingham Study. *Am Heart J* 1986; 111(2): 391-397.
374. Sullivan JM, Vander Zwaag RV, el-Zeky F, Ramanathan KB, Mirvis DM. Left ventricular hypertrophy: Effect on survival. *J Am Coll Cardiol* 1993; 22(2): 508-513.
375. Biagini E, Elhendy A, Schinkel AF, Nelwan S, Rizzello V, Van Domburg RT et al. Prognostic significance of left anterior hemiblock in patients with suspected coronary artery disease. *J Am Coll Cardiol* 2005; 46(5): 858-863.
376. Henry WL, Ware J, Gardin JM, Hepner SI, McKay J, Weiner M. Echocardiographic measurements in normal subjects; Growth-related changes that occur between infancy and early adulthood. *Circulation* 1978; 57(2): 278-285.
377. Vuille C, Weyman AE. Left ventricle I: General considerations, assessment of chamber size and function. In: Weyman AE (Ed). *Principles and practice of echocardiography*. Philadelphia: Lea & Febiger; 1994. S. 575-624.
378. Levy D, Garrison RJ, Savage DD, Kannel WB, Castelli WP. Left ventricular mass and incidence of coronary heart disease in an elderly cohort: The Framingham Heart Study. *Ann Intern Med* 1989; 110(2): 101-107.
379. Levy D, Garrison RJ, Savage DD, Kannel WB, Castelli WP. Prognostic implications of echocardiographically determined left ventricular mass in the Framingham Heart Study. *N Engl J Med* 1990; 322(22): 1561-1566.
380. Koren MJ, Devereux RB, Casale PN, Savage DD, Laragh JH. Relation of left ventricular mass and geometry to morbidity and mortality in uncomplicated essential hypertension. *Ann Intern Med* 1991; 114(5): 345-352.
381. Smith VE, Schulman P, Karimeddini MK, White WB, Meeran MK, Katz AM. Rapid ventricular filling in left ventricular hypertrophy: II. Pathologic hypertrophy. *J Am Coll Cardiol* 1985; 5(4): 869-874.
382. Bonow RO, Vitale DF, Bacharach SL, Maron BJ, Green MV. Effects of aging on asynchronous left ventricular regional function and global ventricular filling in normal human subjects. *J Am Coll Cardiol* 1988; 11(1): 50-58.
383. Martin ET, Fuisz AR, Pohost GM. Imaging cardiac structure and pump function. *Cardiol Clin* 1998; 16(2): 135-160.

384. Horowitz RS, Morganroth J. Immediate detection of early high-risk patients with acute myocardial infarction using two-dimensional echocardiographic evaluation of left ventricular regional wall motion abnormalities. *Am Heart J* 1982; 103(5): 814-822.
385. Bhatnagar SK, Moussa MA, Al-Yusuf AR. The role of prehospital discharge two-dimensional echocardiography in determining the prognosis of survivors of first myocardial infarction. *Am Heart J* 1985; 109(3 Pt 1): 472-477.
386. Nelson GR, Cohn PF, Gorlin R. Prognosis in medically-treated coronary artery disease: Influence of ejection fraction compared to other parameters. *Circulation* 1975; 52(3): 408-412.
387. Keren A, Goldberg S, Gottlieb S, Klein J, Schuger C, Medina A et al. Natural history of left ventricular thrombi: their appearance and resolution in the posthospitalization period of acute myocardial infarction. *J Am Coll Cardiol* 1990; 15(4): 790-800.
388. Visser CA, Kan G, Meltzer RS, Dunning AJ, Roelandt J. Embolic potential of left ventricular thrombus after myocardial infarction: A two-dimensional echocardiographic study of 119 patients. *J Am Coll Cardiol* 1985; 5(6): 1276-1280.
389. DeMaria AN, Bommer W, Neumann A, Grehl T, Weinart L, DeNardo S et al. Left ventricular thrombi identified by cross-sectional echocardiography. *Ann Intern Med* 1979; 90(1): 14-18.
390. Spirito P, Bellotti P, Chiarella F, Domenicucci S, Sementa A, Vecchio C. Prognostic significance and natural history of left ventricular thrombi in patients with acute anterior myocardial infarction: A two-dimensional echocardiographic study. *Circulation* 1985; 72(4): 774-780.
391. Gueret P, Dubourg O, Ferrier A, Farcot JC, Rigaud M, Bourdarias JP. Effects of full-dose heparin anticoagulation on the development of left ventricular thrombosis in acute transmural myocardial infarction. *J Am Coll Cardiol* 1986; 8(2): 419-426.
392. Keating EC, Gross SA, Schlamowitz RA, Glassman J, Mazur JH, Pitt WA et al. Mural thrombi in myocardial infarctions: Prospective evaluation by two-dimensional echocardiography. *Am J Med* 1983; 74(6): 989-995.
393. Stratton JR, Lighty GW, Jr., Pearlman AS, Ritchie JL. Detection of left ventricular thrombus by two-dimensional echocardiography: sensitivity, specificity, and causes of uncertainty. *Circulation* 1982; 66(1): 156-166.
394. Mock MB, Ringqvist I, Fisher LD, Davis KB, Chaitman BR, Kouchoukos NT et al. Survival of medically treated patients in the coronary artery surgery study (CASS) registry. *Circulation* 1982; 66(3): 562-568.
395. Dagenais GR, Rouleau JR, Christen A, Fabia J. Survival of patients with a strongly positive exercise electrocardiogram. *Circulation* 1982; 65(3): 452-456.

396. McNeer JF, Margolis JR, Lee KL, Kisslo JA, Peter RH, Kong Y et al. The role of the exercise test in the evaluation of patients for ischemic heart disease. *Circulation* 1978; 57(1): 64-70.
397. Morrow K, Morris CK, Froelicher VF, Hideg A, Hunter D, Johnson E et al. Prediction of cardiovascular death in men undergoing noninvasive evaluation for coronary artery disease. *Ann Intern Med* 1993; 118(9): 689-695.
398. Mark DB, Hlatky MA, Harrell FE, Jr., Lee KL, Califf RM, Pryor DB. Exercise treadmill score for predicting prognosis in coronary artery disease. *Ann Intern Med* 1987; 106(6): 793-800.
399. Prakash M, Myers J, Froelicher VF, Marcus R, Do D, Kalisetti D et al. Clinical and exercise test predictors of all-cause mortality: Results from > 6,000 consecutive referred male patients. *Chest* 2001; 120(3): 1003-1013.
400. Christian TF, Miller TD, Bailey KR, Gibbons RJ. Exercise tomographic thallium-201 imaging in patients with severe coronary artery disease and normal electrocardiograms. *Ann Intern Med* 1994; 121(11): 825-832.
401. Gibbons RJ, Zinsmeister AR, Miller TD, Clements IP. Supine exercise electrocardiography compared with exercise radionuclide angiography in noninvasive identification of severe coronary artery disease. *Ann Intern Med* 1990; 112(10): 743-749.
402. Mattera JA, Arain SA, Sinusas AJ, Finta L, Wackers FJ. Exercise testing with myocardial perfusion imaging in patients with normal baseline electrocardiograms: Cost savings with a stepwise diagnostic strategy. *J Nucl Cardiol* 1998; 5(5): 498-506.
403. Ladenheim ML, Kotler TS, Pollock BH, Berman DS, Diamond GA. Incremental prognostic power of clinical history, exercise electrocardiography and myocardial perfusion scintigraphy in suspected coronary artery disease. *Am J Cardiol* 1987; 59(4): 270-277.
404. Nallamothu N, Ghods M, Heo J, Iskandrian AS. Comparison of thallium-201 single-photon emission computed tomography and electrocardiographic response during exercise in patients with normal rest electrocardiographic results. *J Am Coll Cardiol* 1995; 25(4): 830-836.
405. Simari RD, Miller TD, Zinsmeister AR, Gibbons RJ. Capabilities of supine exercise electrocardiography versus exercise radionuclide angiography in predicting coronary events. *Am J Cardiol* 1991; 67(7): 573-577.
406. Froelicher VF. Prognostic applications of the exercise test. In: Froelicher VF, Myers J (Ed). *Exercise and the Heart*. St. Louis: Mosby; 1993. S. 148-174.
407. Smith RF, Johnson G, Ziesche S, Bhat G, Blankenship K, Cohn JN. Functional capacity in heart failure: Comparison of methods for assessment and their relation to other indexes of heart failure. *Circulation* 1993; 87(6 Suppl): VI88-VI93.

408. Hachamovitch R, Berman DS, Kiat H, Cohen I, Cabico JA, Friedman J et al. Exercise myocardial perfusion SPECT in patients without known coronary artery disease: Incremental prognostic value and use in risk stratification. *Circulation* 1996; 93(5): 905-914.
409. Bogaty P, Dagenais GR, Cantin B, Alain P, Rouleau JR. Prognosis in patients with a strongly positive exercise electrocardiogram. *Am J Cardiol* 1989; 64(19): 1284-1288.
410. Kwok JM, Miller TD, Christian TF, Hodge DO, Gibbons RJ. Prognostic value of a treadmill exercise score in symptomatic patients with nonspecific ST-T abnormalities on resting ECG. *JAMA* 1999; 282(11): 1047-1053.
411. Lauer MS, Okin PM, Larson MG, Evans JC, Levy D. Impaired heart rate response to graded exercise: Prognostic implications of chronotropic incompetence in the Framingham Heart Study. *Circulation* 1996; 93(8): 1520-1526.
412. Lauer MS, Francis GS, Okin PM, Pashkow FJ, Snader CE, Marwick TH. Impaired chronotropic response to exercise stress testing as a predictor of mortality. *JAMA* 1999; 281(6): 524-529.
413. Cole CR, Blackstone EH, Pashkow FJ, Snader CE, Lauer MS. Heart-rate recovery immediately after exercise as a predictor of mortality. *N Engl J Med* 1999; 341(18): 1351-1357.
414. Cole CR, Foody JM, Blackstone EH, Lauer MS. Heart rate recovery after submaximal exercise testing as a predictor of mortality in a cardiovascularly healthy cohort. *Ann Intern Med* 2000; 132(7): 552-555.
415. Diaz LA, Brunken RC, Blackstone EH, Snader CE, Lauer MS. Independent contribution of myocardial perfusion defects to exercise capacity and heart rate recovery for prediction of all-cause mortality in patients with known or suspected coronary heart disease. *J Am Coll Cardiol* 2001; 37(6): 1558-1564.
416. Watanabe J, Thamilarasan M, Blackstone EH, Thomas JD, Lauer MS. Heart rate recovery immediately after treadmill exercise and left ventricular systolic dysfunction as predictors of mortality: The case of stress echocardiography. *Circulation* 2001; 104(16): 1911-1916.
417. Nishime EO, Cole CR, Blackstone EH, Pashkow FJ, Lauer MS. Heart rate recovery and treadmill exercise score as predictors of mortality in patients referred for exercise ECG. *JAMA* 2000; 284(11): 1392-1398.
418. Shetler K, Marcus R, Froelicher VF, Vora S, Kalisetti D, Prakash M et al. Heart rate recovery: Validation and methodologic issues. *J Am Coll Cardiol* 2001; 38(7): 1980-1987.
419. McHam SA, Marwick TH, Pashkow FJ, Lauer MS. Delayed systolic blood pressure recovery after graded exercise: an independent correlate of angiographic coronary disease. *J Am Coll Cardiol* 1999; 34(3): 754-759.

420. Gibbons RJ, Hodge DO, Berman DS, Akinboboye OO, Heo J, Hachamovitch R et al. Long-term outcome of patients with intermediate-risk exercise electrocardiograms who do not have myocardial perfusion defects on radionuclide imaging. *Circulation* 1999; 100(21): 2140-2145.
421. Emond M, Mock MB, Davis KB, Fisher LD, Holmes DR, Jr., Chaitman BR et al. Long-term survival of medically treated patients in the Coronary Artery Surgery Study (CASS) Registry. *Circulation* 1994; 90(6): 2645-2657.
422. Cuspidi C, Ambrosioni E, Mancia G, Pessina AC, Trimarco B, Zanchetti A. Role of echocardiography and carotid ultrasonography in stratifying risk in patients with essential hypertension: The Assessment of Prognostic Risk Observational Survey. *J Hypertens* 2002; 20(7): 1307-1314.
423. 2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of arterial hypertension. *J Hypertens* 2003; 21(6): 1011-1053.
424. Pollock SG, Abbott RD, Boucher CA, Beller GA, Kaul S. Independent and incremental prognostic value of tests performed in hierarchical order to evaluate patients with suspected coronary artery disease: Validation of models based on these tests. *Circulation* 1992; 85(1): 237-248.
425. Machecourt J, Longere P, Fagret D, Vanzetto G, Wolf JE, Polidori C et al. Prognostic value of thallium-201 single-photon emission computed tomographic myocardial perfusion imaging according to extent of myocardial defect: Study in 1,926 patients with follow-up at 33 months. *J Am Coll Cardiol* 1994; 23(5): 1096-1106.
426. Marie PY, Danchin N, Durand JF, Feldmann L, Grentzinger A, Olivier P et al. Long-term prediction of major ischemic events by exercise thallium-201 single-photon emission computed tomography: Incremental prognostic value compared with clinical, exercise testing, catheterization and radionuclide angiographic data. *J Am Coll Cardiol* 1995; 26(4): 879-886.
427. Geleijnse ML, Elhendy A, Van Domburg RT, Cornel JH, Reijts AE, Roelandt JR et al. Prognostic value of dobutamine-atropine stress technetium-99m sestamibi perfusion scintigraphy in patients with chest pain. *J Am Coll Cardiol* 1996; 28(2): 447-454.
428. Kamal AM, Fattah AA, Pancholy S, Aksut S, Cave V, Heo J et al. Prognostic value of adenosine single-photon emission computed tomographic thallium imaging in medically treated patients with angiographic evidence of coronary artery disease. *J Nucl Cardiol* 1994; 1(3): 254-261.
429. Stratmann HG, Tamesis BR, Younis LT, Wittry MD, Miller DD. Prognostic value of dipyridamole technetium-99m sestamibi myocardial tomography in patients with stable chest pain who are unable to exercise. *Am J Cardiol* 1994; 73(9): 647-652.

430. Stratmann HG, Williams GA, Wittry MD, Chaitman BR, Miller DD. Exercise technetium-99m sestamibi tomography for cardiac risk stratification of patients with stable chest pain. *Circulation* 1994; 89(2): 615-622.
431. Iskandrian AS, Hakki AH, Kane-Marsch S. Prognostic implications of exercise thallium-201 scintigraphy in patients with suspected or known coronary artery disease. *Am Heart J* 1985; 110(1 Pt 1): 135-143.
432. Heupler S, Mehta R, Lobo A, Leung D, Marwick TH. Prognostic implications of exercise echocardiography in women with known or suspected coronary artery disease. *J Am Coll Cardiol* 1997; 30(2): 414-420.
433. Marwick TH, Mehta R, Arheart K, Lauer MS. Use of exercise echocardiography for prognostic evaluation of patients with known or suspected coronary artery disease. *J Am Coll Cardiol* 1997; 30(1): 83-90.
434. Chuah SC, Pellikka PA, Roger VL, McCully RB, Seward JB. Role of dobutamine stress echocardiography in predicting outcome in 860 patients with known or suspected coronary artery disease. *Circulation* 1998; 97(15): 1474-1480.
435. Verani MS. Pharmacologic stress myocardial perfusion imaging. *Curr Probl Cardiol* 1993; 18(8): 481-525.
436. Leppo JA. Comparison of pharmacologic stress agents. *J Nucl Cardiol* 1996; 3(6 Pt 2): S22-S26.
437. De Lorgeril M, Salen P, Martin JL, Monjaud I, Delaye J, Mamelle N. Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardial infarction: Final report of the Lyon Diet Heart Study. *Circulation* 1999; 99(6): 779-785.
438. Singh RB, Rastogi SS, Verma R, Laxmi B, Singh R, Ghosh S et al. Randomised controlled trial of cardioprotective diet in patients with recent acute myocardial infarction: Results of one year follow up. *BMJ* 1992; 304(6833): 1015-1019.
439. Singh RB, Dubnov G, Niaz MA, Ghosh S, Singh R, Rastogi SS et al. Effect of an Indo-Mediterranean diet on progression of coronary artery disease in high risk patients (Indo-Mediterranean Diet Heart Study): A randomised single-blind trial. *Lancet* 2002; 360(9344): 1455-1461.
440. Bremer J, Chisholm A. Dietary patterns. An evidence-based nutritional statement from the National Heart Foundation of New Zealand's Nutrition Advisory Committee. Auckland: National Heart Foundation; 1999.
441. McCullough ML, Feskanich D, Stampfer MJ, Giovannucci EL, Rimm EB, Hu FB et al. Diet quality and major chronic disease risk in men and women: Moving toward improved dietary guidance. *Am J Clin Nutr* 2002; 76(6): 1261-1271.



442. Burr ML, Fehily AM, Gilbert JF, Rogers S, Holliday RM, Sweetnam PM et al. Effects of changes in fat, fish, and fibre intakes on death and myocardial reinfarction: Diet and reinfarction trial (DART). *Lancet* 1989; 2(8666): 757-761.
443. Silagy C, Stead L. Physician advice for smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 2. Chichester: John Wiley & Sons Ltd.
444. Jolliffe JA, Rees K, Taylor RS, Thompson D, Oldridge N, Ebrahim S. Exercise-based rehabilitation for coronary heart disease [Cochrane Review]. *Cochrane Database Syst Rev* 2000; Issue 4. Chichester: John Wiley & Sons Ltd.
445. Sesso HD, Paffenbarger RS, Jr., Lee IM. Physical activity and coronary heart disease in men: The Harvard Alumni Health Study. *Circulation* 2000; 102(9): 975-980.
446. Manson JE, Hu FB, Rich-Edwards JW, Colditz GA, Stampfer MJ, Willett WC et al. A prospective study of walking as compared with vigorous exercise in the prevention of coronary heart disease in women. *N Engl J Med* 1999; 341(9): 650-658.
447. Cobb MM, Teitelbaum HS, Breslow JL. Lovastatin efficacy in reducing low-density lipoprotein cholesterol levels on high- vs low-fat diets. *JAMA* 1991; 265(8): 997-1001.
448. Chisholm A, Mann J, Sutherland W, Williams S, Ball M. Dietary management of patients with familial hypercholesterolaemia treated with simvastatin. *Q J Med* 1992; 85(307-308): 825-831.
449. Clifton PM, Wight MB, Nestel PJ. Is fat restriction needed with HMGCoA reductase inhibitor treatment? *Atherosclerosis* 1992; 93(1-2): 59-70.
450. Hunninghake DB, Stein EA, Dujovne CA, Harris WS, Feldman EB, Miller VT et al. The efficacy of intensive dietary therapy alone or combined with lovastatin in outpatients with hypercholesterolemia. *N Engl J Med* 1993; 328(17): 1213-1219.
451. Gylling H, Radhakrishnan R, Miettinen TA. Reduction of serum cholesterol in postmenopausal women with previous myocardial infarction and cholesterol malabsorption induced by dietary sitostanol ester margarine: Women and dietary sitostanol. *Circulation* 1997; 96(12): 4226-4231.
452. Blair SN, Capuzzi DM, Gottlieb SO, Nguyen T, Morgan JM, Cater NB. Incremental reduction of serum total cholesterol and low-density lipoprotein cholesterol with the addition of plant stanol ester-containing spread to statin therapy. *Am J Cardiol* 2000; 86(1): 46-52.
453. Vuorio AF, Gylling H, Turtola H, Kontula K, Ketonen P, Miettinen TA. Stanol ester margarine alone and with simvastatin lowers serum cholesterol in families with familial hypercholesterolemia caused by the FH-North Karelia mutation. *Arterioscler Thromb Vasc Biol* 2000; 20(2): 500-506.

454. Nordoy A, Bonna KH, Nilsen H, Berge RK, Hansen JB, Ingebretsen OC. Effects of Simvastatin and omega-3 fatty acids on plasma lipoproteins and lipid peroxidation in patients with combined hyperlipidaemia. *J Intern Med* 1998; 243(2): 163-170.
455. Nordoy A, Bonna KH, Sandset PM, Hansen JB, Nilsen H. Effect of omega-3 fatty acids and simvastatin on hemostatic risk factors and postprandial hyperlipemia in patients with combined hyperlipemia. *Arterioscler Thromb Vasc Biol* 2000; 20(1): 259-265.
456. Jula A, Marniemi J, Huupponen R, Virtanen A, Rastas M, Ronnema T. Effects of diet and simvastatin on serum lipids, insulin, and antioxidants in hypercholesterolemic men: A randomized controlled trial. *JAMA* 2002; 287(5): 598-605.
457. Ferrara LA, Raimondi AS, D'Episcopo L, Guida L, lo Russo A, Marotta T. Olive oil and reduced need for antihypertensive medications. *Arch Intern Med* 2000; 160(6): 837-842.
458. Revicki DA, Israel RG. Relationship between body mass indices and measures of body adiposity. *Am J Public Health* 1986; 76(8): 992-994.
459. Bray GA, Greenway FL, Molitch ME, Dahms WT, Atkinson RL, Hamilton K. Use of anthropometric measures to assess weight loss. *Am J Clin Nutr* 1978; 31(5): 769-773.
460. Garrow JS, Webster J. Quetelet's index (W/H<sup>2</sup>) as a measure of fatness. *Int J Obes* 1985; 9(2): 147-153.
461. Sonmez K, Akcakoyun M, Akcay A, Demir D, Duran NE, Gencbay M et al. Which method should be used to determine the obesity, in patients with coronary artery disease? (Body mass index, waist circumference or waist-hip ratio). *Int J Obes Relat Metab Disord* 2003; 27(3): 341-346.
462. Stamler J, Stamler R, Neaton JD. Blood pressure, systolic and diastolic, and cardiovascular risks: US population data. *Arch Intern Med* 1993; 153(5): 598-615.
463. British Cardiac Society. JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice. *Heart* 2005; 91(Suppl 5): v1-52.
464. Williams B, Poulter NR, Brown MJ, Davis M, McInnes GT, Potter JF et al. Guidelines for management of hypertension: Report of the fourth working party of the British Hypertension Society, 2004-BHS IV. *J Hum Hypertens* 2004; 18(3): 139-185.
465. Yusuf S, Hawken S, Ounpuu S, Bautista L, Franzosi MG, Commerford P et al. Obesity and the risk of myocardial infarction in 27,000 participants from 52 countries: A case-control study. *Lancet* 2005; 366(9497): 1640-1649.

466. Campbell NC, Thain J, Deans HG, Ritchie LD, Rawles JM, Squair JL. Secondary prevention clinics for coronary heart disease: Randomised trial of effect on health. *BMJ* 1998; 316(7142): 1434-1437.
467. Cupples ME, McKnight A. Randomised controlled trial of health promotion in general practice for patients at high cardiovascular risk. *BMJ* 1994; 309(6960): 993-996.
468. McAlister FA, Lawson FM, Teo KK, Armstrong PW. Randomised trials of secondary prevention programmes in coronary heart disease: Systematic review. *BMJ* 2001; 323(7319): 957-962.
469. Weingarten SR, Henning JM, Badamgarav E, Knight K, Hasselblad V, Gano A, Jr. et al. Interventions used in disease management programmes for patients with chronic illness-which ones work? Meta-analysis of published reports. *BMJ* 2002; 325(7370): 925.
470. Peduzzi PN, Detre KM, Chan YK, Oberman A, Cutter GR. Validation of a risk function to predict mortality in a VA population with coronary artery disease. *Control Clin Trials* 1982; 3(1): 47-60.
471. Spertus JA, Jones P, McDonnell M, Fan V, Fihn SD. Health status predicts long-term outcome in outpatients with coronary disease. *Circulation* 2002; 106(1): 43-49.
472. Frasure-Smith N, Lesperance F, Talajic M. Depression following myocardial infarction: Impact on 6-month survival. *JAMA* 1993; 270(15): 1819-1825.
473. Ladwig KH, Roll G, Breithardt G, Budde T, Borggrefe M. Post-infarction depression and incomplete recovery 6 months after acute myocardial infarction. *Lancet* 1994; 343(8888): 20-23.
474. Ruberman W, Weinblatt E, Goldberg JD, Chaudhary BS. Psychosocial influences on mortality after myocardial infarction. *N Engl J Med* 1984; 311(9): 552-559.
475. Glassman AH, O'Connor CM, Califf RM, Swedberg K, Schwartz P, Bigger JT, Jr. et al. Sertraline treatment of major depression in patients with acute MI or unstable angina. *JAMA* 2002; 288(6): 701-709.
476. Ketola E, Sipila R, Makela M. Effectiveness of individual lifestyle interventions in reducing cardiovascular disease and risk factors. *Ann Med* 2000; 32(4): 239-251.
477. Hill DR, Kelleher K, Shumaker SA. Psychosocial interventions in adult patients with coronary heart disease and cancer: A literature review. *Gen Hosp Psychiatry* 1992; 14(6 Suppl): 28S-42S.
478. Mullen PD, Mains DA, Velez R. A meta-analysis of controlled trials of cardiac patient education. *Patient Educ Couns* 1992; 19(2): 143-162.

479. Maynard C, Althouse R, Olsufka M, Ritchie JL, Davis KB, Kennedy JW. Early versus late hospital arrival for acute myocardial infarction in the western Washington thrombolytic therapy trials. *Am J Cardiol* 1989; 63(18): 1296-1300.
480. Epidemiology of avoidable delay in the care of patients with acute myocardial infarction in Italy: A GISSI-generated study. *Arch Intern Med* 1995; 155(14): 1481-1488.
481. Moher M, Yudkin P, Wright L, Turner R, Fuller A, Schofield T et al. Cluster randomised controlled trial to compare three methods of promoting secondary prevention of coronary heart disease in primary care. *BMJ* 2001; 322(7298): 1338.
482. Flanagan DE, Cox P, Paine D, Davies J, Armitage M. Secondary prevention of coronary heart disease in primary care: A healthy heart initiative. *QJM* 1999; 92(5): 245-250.
483. Astrup A, Ryan L, Grunwald GK, Storgaard M, Saris W, Melanson E et al. The role of dietary fat in body fatness: Evidence from a preliminary meta-analysis of ad libitum low-fat dietary intervention studies. *Br J Nutr* 2000; 83(Suppl 1): S25-S32.
484. National Institutes of Health. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: The evidence report. *Obes Res* 1998; 6(Suppl 2): 51S-209S.
485. St Jeor ST, Howard BV, Prewitt TE, Bovee V, Bazzarre T, Eckel RH. Dietary protein and weight reduction: A statement for healthcare professionals from the Nutrition Committee of the Council on Nutrition, Physical Activity, and Metabolism of the American Heart Association. *Circulation* 2001; 104(15): 1869-1874.
486. Mosca L, Appel LJ, Benjamin EJ, Berra K, Chandra-Strobos N, Fabunmi RP et al. Evidence-based guidelines for cardiovascular disease prevention in women. *Circulation* 2004; 109(5): 672-693.
487. Klein S, Burke LE, Bray GA, Blair S, Allison DB, Pi-Sunyer X et al. Clinical implications of obesity with specific focus on cardiovascular disease: A statement for professionals from the American Heart Association Council on Nutrition, Physical Activity, and Metabolism: endorsed by the American College of Cardiology Foundation. *Circulation* 2004; 110(18): 2952-2967.
488. Grundy SM, Cleeman JI, Daniels SR, Donato KA, Eckel RH, Franklin BA et al. Diagnosis and management of the metabolic syndrome: An American Heart Association/National Heart, Lung, and Blood Institute Scientific Statement. *Circulation* 2005; 112(17): 2735-2752.
489. Antman EM, Anbe DT, Armstrong PW, Bates ER, Green LA, Hand M et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1999

- Guidelines for the Management of Patients with Acute Myocardial Infarction). *Circulation* 2004; 110(9): e82-292.
490. Gibbons RJ, Abrams J, Chatterjee K, Daley J, Deedwania PC, Douglas JS et al. ACC/AHA 2002 guideline update for the management of patients with chronic stable angina: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients With Chronic Stable Angina). *Circulation* 2003; 107(1): 149-158.
491. Neter JE, Stam BE, Kok FJ, Grobbee DE, Geleijnse JM. Influence of weight reduction on blood pressure: A meta-analysis of randomized controlled trials. *Hypertension* 2003; 42(5): 878-884.
492. Dattilo AM, Kris-Etherton PM. Effects of weight reduction on blood lipids and lipoproteins: A meta-analysis. *Am J Clin Nutr* 1992; 56(2): 320-328.
493. Anderson JW, Konz EC. Obesity and disease management: Effects of weight loss on comorbid conditions. *Obes Res* 2001; 9(Suppl 4): 326S-334S.
494. O'Meara S, Glenny AM, Wilson C, Melville A, Sheldon TA. Effective management of obesity. *Qual Health Care* 1997; 6(3): 170-175.
495. Mulrow CD, Chiquette E, Angel L, Cornell J, Summerbell C, Anagnostelis B et al. Dieting to reduce body weight for controlling hypertension in adults. *Nurs Times* 2001; 97(20): 42.
496. Li TY, Rana JS, Manson JE, Willett WC, Stampfer MJ, Colditz GA et al. Obesity as compared with physical activity in predicting risk of coronary heart disease in women. *Circulation* 2006; 113(4): 499-506.
497. Taylor RS, Brown A, Ebrahim S, Jolliffe J, Noorani H, Rees K et al. Exercise-based rehabilitation for patients with coronary heart disease: systematic review and meta-analysis of randomized controlled trials. *Am J Med* 2004; 116(10): 682-692.
498. Grundy SM, Brewer HB, Jr., Cleeman JI, Smith SC, Jr., Lenfant C. Definition of metabolic syndrome: Report of the National Heart, Lung, and Blood Institute/American Heart Association conference on scientific issues related to definition. *Arterioscler Thromb Vasc Biol* 2004; 24(2): e13-e18.
499. Creager MA, Luscher TF, Cosentino F, Beckman JA. Diabetes and vascular disease: Pathophysiology, clinical consequences, and medical therapy. Part I. *Circulation* 2003; 108(12): 1527-1532.
500. Huang Z, Willett WC, Manson JE, Rosner B, Stampfer MJ, Speizer FE et al. Body weight, weight change, and risk for hypertension in women. *Ann Intern Med* 1998; 128(2): 81-88.
501. Colditz GA, Willett WC, Rotnitzky A, Manson JE. Weight gain as a risk factor for clinical diabetes mellitus in women. *Ann Intern Med* 1995; 122(7): 481-486.

502. Rexrode KM, Buring JE, Manson JE. Abdominal and total adiposity and risk of coronary heart disease in men. *Int J Obes Relat Metab Disord* 2001; 25(7): 1047-1056.
503. Kenchaiah S, Evans JC, Levy D, Wilson PW, Benjamin EJ, Larson MG et al. Obesity and the risk of heart failure. *N Engl J Med* 2002; 347(5): 305-313.
504. McGill HC, Jr., McMahan CA, Herderick EE, Zieske AW, Malcom GT, Tracy RE et al. Obesity accelerates the progression of coronary atherosclerosis in young men. *Circulation* 2002; 105(23): 2712-2718.
505. Willett WC, Manson JE, Stampfer MJ, Colditz GA, Rosner B, Speizer FE et al. Weight, weight change, and coronary heart disease in women: Risk within the 'normal' weight range. *JAMA* 1995; 273(6): 461-465.
506. Rowlands AV, Ingledew DK, Eston RG. The effect of type of physical activity measure on the relationship between body fatness and habitual physical activity in children: A meta-analysis. *Ann Hum Biol* 2000; 27(5): 479-497.
507. DiPietro L. Physical activity in the prevention of obesity: Current evidence and research issues. *Med Sci Sports Exerc* 1999; 31(11 Suppl): S542-S546.
508. Wei M, Kampert JB, Barlow CE, Nichaman MZ, Gibbons LW, Paffenbarger RS, Jr. et al. Relationship between low cardiorespiratory fitness and mortality in normal-weight, overweight, and obese men. *JAMA* 1999; 282(16): 1547-1553.
509. Yanovski SZ, Yanovski JA. Obesity. *N Engl J Med* 2002; 346(8): 591-602.
510. Miller WC, Koceja DM, Hamilton EJ. A meta-analysis of the past 25 years of weight loss research using diet, exercise or diet plus exercise intervention. *Int J Obes Relat Metab Disord* 1997; 21(10): 941-947.
511. Jakicic JM, Winters C, Lang W, Wing RR. Effects of intermittent exercise and use of home exercise equipment on adherence, weight loss, and fitness in overweight women: A randomized trial. *JAMA* 1999; 282(16): 1554-1560.
512. Ross R, Janssen I. Physical activity, total and regional obesity: Dose-response considerations. *Med Sci Sports Exerc* 2001; 33(6 Suppl): S521-S527.
513. Curioni CC, Lourenco PM. Long-term weight loss after diet and exercise: A systematic review. *Int J Obes (Lond)* 2005; 29(10): 1168-1174.
514. Harper SA, Fukuda K, Uyeki TM, Cox NJ, Bridges CB. Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Recomm Rep* 2005; 54(RR-8): 1-40.
515. Gohlke H, Kübler W, Mathes P, Meinertz T, Schuler G, Gysan DB et al. Empfehlungen zur umfassenden Risikoverringerung für Patienten mit koronarer Herzerkrankung, Gefässerkrankungen und Diabetes. *Z Kardiol* 2002; 91(Suppl 2): 61-62.

516. Goble AJ, Worcester MUC. Best practice guidelines for cardiac rehabilitation and secondary prevention. Melbourne: Department of Human Services Victoria; 1999.
517. Scottish Intercollegiate Guidelines Network. Cardiac rehabilitation (SIGN guideline; no 57). Edinburgh: SIGN; 2000.
518. Agency for Health Care Policy and Research. Cardiac rehabilitation: AHCPR publication no. 96-0672 (Clinical practice guideline; no 17). Rockville, MD: AHCPR; 1995.
519. Gezondheidsraad. Overgewicht en obesitas. Den Haag: Gezondheidsraad; 2003.
520. Stevens VJ, Obarzanek E, Cook NR, Lee IM, Appel LJ, Smith West D et al. Long-term weight loss and changes in blood pressure: Results of the Trials of Hypertension Prevention, phase II. *Ann Intern Med* 2001; 134(1): 1-11.
521. Effects of weight loss and sodium reduction intervention on blood pressure and hypertension incidence in overweight people with high-normal blood pressure: The Trials of Hypertension Prevention, phase II. *Arch Intern Med* 1997; 157(6): 657-667.
522. He J, Whelton PK, Appel LJ, Charleston J, Klag MJ. Long-term effects of weight loss and dietary sodium reduction on incidence of hypertension. *Hypertension* 2000; 35(2): 544-549.
523. Van Gaal LF, Wauters MA, De Leeuw IH. The beneficial effects of modest weight loss on cardiovascular risk factors. *Int J Obes Relat Metab Disord* 1997; 21(Suppl 1): S5-S9.
524. Expert Panel on Detection EaToHBCiA. Executive Summary of The Third Report of The National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, And Treatment of High Blood Cholesterol In Adults (Adult Treatment Panel III). *JAMA* 2001; 285(19): 2486-2497.
525. World Health Organization. Obesity: preventing and managing the global epidemic. Report of a WHO Consultation. Norwich: Stationery Office Books; 2000.
526. Mensink RP, Katan MB. Effect of dietary fatty acids on serum lipids and lipoproteins: A meta-analysis of 27 trials. *Arterioscler Thromb* 1992; 12(8): 911-919.
527. Agren JJ, Väisänen S, Hanninen O, Muller AD, Hornstra G. Hemostatic factors and platelet aggregation after a fish-enriched diet or fish oil or docosahexaenoic acid supplementation. *Prostaglandins Leukot Essent Fatty Acids* 1997; 57(4-5): 419-421.
528. Truswell AS. Review of dietary intervention studies: Effect on coronary events and on total mortality. *Aust N Z J Med* 1994; 24(1): 98-106.

529. Hooper L, Summerbell CD, Higgins JP, Thompson RL, Capps NE, Smith GD et al. Dietary fat intake and prevention of cardiovascular disease: Systematic review. *BMJ* 2001; 322(7289): 757-763.
530. Law MR, Wald NJ. Risk factor thresholds: Their existence under scrutiny. *BMJ* 2002; 324(7353): 1570-1576.
531. Law MR, Wald NJ, Thompson SG. By how much and how quickly does reduction in serum cholesterol concentration lower risk of ischaemic heart disease? *BMJ* 1994; 308(6925): 367-372.
532. Tang JL, Armitage JM, Lancaster T, Silagy CA, Fowler GH, Neil HA. Systematic review of dietary intervention trials to lower blood total cholesterol in free-living subjects. *BMJ* 1998; 316(7139): 1213-1220.
533. Voedingscentrum. Zo eet Nederland: resultaten van de voedselconsumptiepeiling 1997-1998. Den Haag: Voedingscentrum; 1998.
534. Zock PL, Urgert R, Hulshof PJ, Katan MB. [Dietary trans-fatty acids: A risk factor for coronary disease]. *Ned Tijdschr Geneesk* 1998; 142(30): 1701-1704.
535. Health Council of the Netherlands. Dietary references intakes: energy, proteins, fats and digestible carbohydrates. Den Haag: Health Council of the Netherlands; 2003.
536. Clarke R, Frost C, Collins R, Appleby P, Peto R. Dietary lipids and blood cholesterol: Quantitative meta-analysis of metabolic ward studies. *BMJ* 1997; 314(7074): 112-117.
537. Law M. Plant sterol and stanol margarines and health. *BMJ* 2000; 320(7238): 861-864.
538. Denke MA. Lack of efficacy of low-dose sitostanol therapy as an adjunct to a cholesterol-lowering diet in men with moderate hypercholesterolemia. *Am J Clin Nutr* 1995; 61(2): 392-396.
539. Van Heyningen C. Cholesterol lowering margarine may not be useful in healthy fat modified diet. *BMJ* 1999; 319(7203): 186.
540. Bucher HC, Hengstler P, Schindler C, Meier G. N-3 polyunsaturated fatty acids in coronary heart disease: A meta-analysis of randomized controlled trials. *Am J Med* 2002; 112(4): 298-304.
541. Kris-Etherton PM, Hecker KD, Bonanome A, Coval SM, Binkoski AE, Hilpert KF et al. Bioactive compounds in foods: Their role in the prevention of cardiovascular disease and cancer. *Am J Med* 2002; 113(Suppl 9B): 71S-88S.
542. Zock PL, Kromhout D. [Nutrition and health: Fish fatty acids against fatal coronary heart disease]. *Ned Tijdschr Geneesk* 2002; 146(47): 2229-2233.



543. Hu FB, Stampfer MJ, Manson JE, Rimm EB, Wolk A, Colditz GA et al. Dietary intake of alpha-linolenic acid and risk of fatal ischemic heart disease among women. *Am J Clin Nutr* 1999; 69(5): 890-897.
544. De Lorgeril M, Renaud S, Mamelle N, Salen P, Martin JL, Monjaud I et al. Mediterranean alpha-linolenic acid-rich diet in secondary prevention of coronary heart disease. *Lancet* 1994; 343(8911): 1454-1459.
545. Singh RB, Niaz MA, Sharma JP, Kumar R, Rastogi V, Moshiri M. Randomized, double-blind, placebo-controlled trial of fish oil and mustard oil in patients with suspected acute myocardial infarction: The Indian experiment of infarct survival 4. *Cardiovasc Drugs Ther* 1997; 11(3): 485-491.
546. Lemaitre RN, King IB, Mozaffarian D, Kuller LH, Tracy RP, Siscovick DS. N-3 polyunsaturated fatty acids, fatal ischemic heart disease, and nonfatal myocardial infarction in older adults: The Cardiovascular Health Study. *Am J Clin Nutr* 2003; 77(2): 319-325.
547. Bemelmans WJ, Broer J, Feskens EJ, Smit AJ, Muskiet FA, Lefrandt JD et al. Effect of an increased intake of alpha-linolenic acid and group nutritional education on cardiovascular risk factors: The Mediterranean Alpha-linolenic Enriched Groningen Dietary Intervention (MARGARIN) study. *Am J Clin Nutr* 2002; 75(2): 221-227.
548. Voskuil DW, Feskens EJ, Katan MB, Kromhout D. Intake and sources of alpha-linolenic acid in Dutch elderly men. *Eur J Clin Nutr* 1996; 50(12): 784-787.
549. Bazzano LA, He J, Ogden LG, Loria C, Vupputuri S, Myers L et al. Dietary intake of folate and risk of stroke in US men and women: NHANES I Epidemiologic Follow-up Study. *Stroke* 2002; 33(5): 1183-1188.
550. Ness AR, Powles JW. Fruit and vegetables, and cardiovascular disease: A review. *Int J Epidemiol* 1997; 26(1): 1-13.
551. Law MR, Morris JK. By how much does fruit and vegetable consumption reduce the risk of ischaemic heart disease? *Eur J Clin Nutr* 1998; 52(8): 549-556.
552. Joshipura KJ, Hu FB, Manson JE, Stampfer MJ, Rimm EB, Speizer FE et al. The effect of fruit and vegetable intake on risk for coronary heart disease. *Ann Intern Med* 2001; 134(12): 1106-1114.
553. Appel LJ, Moore TJ, Obarzanek E, Vollmer WM, Svetkey LP, Sacks FM et al. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med* 1997; 336(16): 1117-1124.
554. Sacks FM, Svetkey LP, Vollmer WM, Appel LJ, Bray GA, Harsha D et al. Effects on blood pressure of reduced dietary sodium and the Dietary Approaches to Stop Hypertension (DASH) diet. *N Engl J Med* 2001; 344(1): 3-10.

555. Appel LJ, Champagne CM, Harsha DW, Cooper LS, Obarzanek E, Elmer PJ et al. Effects of comprehensive lifestyle modification on blood pressure control: Main results of the PREMIER clinical trial. *JAMA* 2003; 289(16): 2083-2093.
556. Miller ER, III, Appel LJ, Risby TH. Effect of dietary patterns on measures of lipid peroxidation: Results from a randomized clinical trial. *Circulation* 1998; 98(22): 2390-2395.
557. Appel LJ, Miller ER, III, Jee SH, Stolzenberg-Solomon R, Lin PH, Erlinger T et al. Effect of dietary patterns on serum homocysteine: Results of a randomized, controlled feeding study. *Circulation* 2000; 102(8): 852-857.
558. Singh RB, Rastogi SS, Verma R, Bolaki L, Singh R. An Indian experiment with nutritional modulation in acute myocardial infarction. *Am J Cardiol* 1992; 69(9): 879-885.
559. He FJ, MacGregor GA. Fortnightly review: Beneficial effects of potassium. *BMJ* 2001; 323(7311): 497-501.
560. Truswell AS. Meta-analysis of the cholesterol-lowering effects of dietary fiber. *Am J Clin Nutr* 1999; 70(5): 942-943.
561. Van't Veer P, Jansen MC, Klerk M, Kok FJ. Fruits and vegetables in the prevention of cancer and cardiovascular disease. *Public Health Nutr* 2000; 3(1): 103-107.
562. Rimm EB, Ascherio A, Giovannucci E, Spiegelman D, Stampfer MJ, Willett WC. Vegetable, fruit, and cereal fiber intake and risk of coronary heart disease among men. *JAMA* 1996; 275(6): 447-451.
563. Mozaffarian D, Kumanyika SK, Lemaitre RN, Olson JL, Burke GL, Siscovick DS. Cereal, fruit, and vegetable fiber intake and the risk of cardiovascular disease in elderly individuals. *JAMA* 2003; 289(13): 1659-1666.
564. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL, Jr. et al. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: The JNC 7 report. *JAMA* 2003; 289(19): 2560-2572.
565. Geleijnse JM, Grobbee DE. [Nutrition and health: Hypertension]. *Ned Tijdschr Geneesk* 2003; 147(21): 996-1000.
566. Midgley JP, Matthew AG, Greenwood CM, Logan AG. Effect of reduced dietary sodium on blood pressure: A meta-analysis of randomized controlled trials. *JAMA* 1996; 275(20): 1590-1597.
567. Cutler JA, Follmann D, Allender PS. Randomized trials of sodium reduction: An overview. *Am J Clin Nutr* 1997; 65(2 Suppl): 643S-651S.

568. Graudal NA, Galloe AM, Garred P. Effects of sodium restriction on blood pressure, renin, aldosterone, catecholamines, cholesterols, and triglyceride: A meta-analysis. *JAMA* 1998; 279(17): 1383-1391.
569. Joint WHO/FAO Expert Consultation. Diet, nutrition and the prevention of chronic disease. Report of a joint WHO/FAO consultation (WHO Technical Report Series 916). Genf: WHO; 2003.
570. Artsenwijzer dietetiek [Online-Text]. 2003 . Gelesen unter: <http://www.artsenwijzer.info/index.html>.
571. Barzi F, Woodward M, Marfisi RM, Tavazzi L, Valagussa F, Marchioli R. Mediterranean diet and all-causes mortality after myocardial infarction: Results from the GISSI-Prevenzione trial. *Eur J Clin Nutr* 2003; 57(4): 604-611.
572. Kromhout D, Nauta ILD. Preventie van coronaire hartziekten door voeding en leefstijl. *Klinische Cardiologie* 2003; 1: 5-9.
573. Ornish D, Scherwitz LW, Billings JH, Brown SE, Gould KL, Merritt TA et al. Intensive lifestyle changes for reversal of coronary heart disease. *JAMA* 1998; 280(23): 2001-2007.
574. Hjermann I, Velve Byre K, Holme I, Leren P. Effect of diet and smoking intervention on the incidence of coronary heart disease: Report from the Oslo Study Group of a randomised trial in healthy men. *Lancet* 1981; 2(8259): 1303-1310.
575. De Lorgeril M, Salen P, Defaye P, Mabo P, Paillard F. Dietary prevention of sudden cardiac death. *Eur Heart J* 2002; 23(4): 277-285.
576. Bemelmans WJ, Broer J, De Vries JH, Hulshof KF, May JF, Meyboom-De Jong B. Impact of Mediterranean diet education versus posted leaflet on dietary habits and serum cholesterol in a high risk population for cardiovascular disease. *Public Health Nutr* 2000; 3(3): 273-283.
577. Mhurchu CN, Margetts BM, Speller V. Randomized clinical trial comparing the effectiveness of two dietary interventions for patients with hyperlipidaemia. *Clin Sci (Lond)* 1998; 95(4): 479-487.
578. Dietary supplementation with n-3 polyunsaturated fatty acids and vitamin E after myocardial infarction: Results of the GISSI-Prevenzione trial. *Lancet* 1999; 354(9177): 447-455.
579. Rapola JM, Virtamo J, Ripatti S, Huttunen JK, Albanes D, Taylor PR et al. Randomised trial of alpha-tocopherol and beta-carotene supplements on incidence of major coronary events in men with previous myocardial infarction. *Lancet* 1997; 349(9067): 1715-1720.
580. Homocysteine Lowering Trialists' Collaboration. Lowering blood homocysteine with folic acid based supplements: Meta-analysis of randomised trials. *BMJ* 1998; 316(7135): 894-898.

581. Silagy CA, Neil HA. A meta-analysis of the effect of garlic on blood pressure. *J Hypertens* 1994; 12(4): 463-468.
582. Oldridge N, Gottlieb M, Guyatt G, Jones N, Streiner D, Feeny D. Predictors of health-related quality of life with cardiac rehabilitation after acute myocardial infarction. *J Cardiopulm Rehabil* 1998; 18(2): 95-103.
583. Hedback B, Perk J. 5-year results of a comprehensive rehabilitation programme after myocardial infarction. *Eur Heart J* 1987; 8(3): 234-242.
584. Hedback B, Perk J, Wodlin P. Long-term reduction of cardiac mortality after myocardial infarction: 10-year results of a comprehensive rehabilitation programme. *Eur Heart J* 1993; 14(6): 831-835.
585. Karvetti RL. Effects of nutrition education. *J Am Diet Assoc* 1981; 79(6): 660-667.
586. Ball K, McAllen P. Low fat diet in myocardial infarction. *Lancet* 1965; 2(7411): 501-504.
587. Morris J, Ball K, Antonis A. Controlled trial of soya bean oil in myocardial infarction. *Lancet* 1968; 2(7570): 696-700.
588. Rose GA, Thomson WB, Williams RT. Corn oil in treatment of ischaemic heart disease. *Br Med J* 1965; 1(5449): 1531-1533.
589. Schuler G, Hambrecht R, Schlierf G, Niebauer J, Hauer K, Neumann J et al. Regular physical exercise and low-fat diet: Effects on progression of coronary artery disease. *Circulation* 1992; 86(1): 1-11.
590. Woodhill JM, Palmer AJ, Leelarthapin B, McGilchrist C, Blacket RB. Low fat, low cholesterol diet in secondary prevention of coronary heart disease. *Adv Exp Med Biol* 1978; 109: 317-330.
591. De Lorgeril M, Salen P. Modified cretan mediterranean diet in the prevention of coronary heart disease and cancer. *World Rev Nutr Diet* 2000; 87: 1-23.
592. De Simopoulos AP, Sidossis LS. What is so special about the traditional diet of Greece. *World Rev Nutr Diet* 2000; 87: 24-42.
593. Kris-Etherton P, Eckel RH, Howard BV, St Jeor S, Bazzarre TL. Lyon Diet Heart Study: Benefits of a mediterranean-style, national cholesterol education program/American Heart Association step I dietary pattern on cardiovascular disease. *Circulation* 2001; 103(13): 1823-1825.
594. Morris CD, Carson S. Routine vitamin supplementation to prevent cardiovascular disease: A summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2003; 139(1): 56-70.
595. Gohlke H. Ernährung und Gewicht. *Z Kardiol* 2002; 91(Suppl 2): II/12-II/24.

596. Timlin MT, Shores KV, Reicks M. Behavior change outcomes in an outpatient cardiac rehabilitation program. *J Am Diet Assoc* 2002; 102(5): 664-671.
597. Carlsson R. Serum cholesterol, lifestyle, working capacity and quality of life in patients with coronary artery disease: Experiences from a hospital-based secondary prevention programme. *Scand Cardiovasc J* 1998; 32(Suppl 50): 1-20.
598. Pignone MP, Ammerman A, Fernandez L, Orleans CT, Pender N, Woolf S et al. Counseling to promote a healthy diet in adults: A summary of the evidence for the U.S. Preventive Services Task Force. *Am J Prev Med* 2003; 24(1): 75-92.
599. Calfas KJ, Zabinski MF, Rupp J. Practical nutrition assessment in primary care settings: A review. *Am J Prev Med* 2000; 18(4): 289-299.
600. Whitlock EP, Orleans CT, Pender N, Allan J. Evaluating primary care behavioral counseling interventions: An evidence-based approach. *Am J Prev Med* 2002; 22(4): 267-284.
601. Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on detection, evaluation, and treatment of high blood cholesterol in adults (Adult Treatment Panel III): Final report. *Circulation* 2002; 106(25): 3143-3421.
602. Kris-Etherton PM, Harris WS, Appel LJ. Fish consumption, fish oil, omega-3 fatty acids, and cardiovascular disease. *Circulation* 2003; 106(21): 2747-2757.
603. Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, Izzo JL, Jr. et al. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* 2003; 42(6): 1206-1252.
604. Anderson JW, Hanna TJ, Peng X, Kryscio RJ. Whole grain foods and heart disease risk. *J Am Coll Nutr* 2000; 19(3 Suppl): 291S-299S.
605. Hooper L, Summerbell CD, Higgins JPT, Thompson RL, Clements G, Capps N et al. Reduced or modified dietary fat for preventing cardiovascular disease [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 3. Chichester: John Wiley & Sons Ltd.
606. Abbott RD, Ando F, Masaki KH, Tung KH, Rodriguez BL, Petrovitch H et al. Dietary magnesium intake and the future risk of coronary heart disease (the Honolulu Heart Program). *Am J Cardiol* 2003; 92(6): 665-669.
607. Al-Delaimy WK, Rimm E, Willett WC, Stampfer MJ, Hu FB. A prospective study of calcium intake from diet and supplements and risk of ischemic heart disease among men. *Am J Clin Nutr* 2003; 77(4): 814-818.
608. Bazzano LA, He J, Ogden LG, Loria CM, Whelton PK. Dietary fiber intake and reduced risk of coronary heart disease in US men and women: The National Health and Nutrition Examination Survey I Epidemiologic Follow-up Study. *Arch Intern Med* 2003; 163(16): 1897-1904.

609. Boniface DR, Tefft ME. Dietary fats and 16-year coronary heart disease mortality in a cohort of men and women in Great Britain. *Eur J Clin Nutr* 2002; 56(8): 786-792.
610. Dauchet L, Ferrieres J, Arveiler D, Yarnell JW, Gey F, Ducimetiere P et al. Frequency of fruit and vegetable consumption and coronary heart disease in France and Northern Ireland: The PRIME study. *Br J Nutr* 2004; 92(6): 963-972.
611. Ellingsen I, Hjermann I, Abdelnoor M, Hjerkin EM, Tonstad S. Dietary and antismoking advice and ischemic heart disease mortality in men with normal or high fasting triacylglycerol concentrations: A 23-y follow-up study. *Am J Clin Nutr* 2003; 78(5): 935-940.
612. Erkkila AT, Booth SL, Hu FB, Jacques PF, Manson JE, Rexrode KM et al. Phylloquinone intake as a marker for coronary heart disease risk but not stroke in women. *Eur J Clin Nutr* 2005; 59(2): 196-204.
613. Howard BV, Van Horn L, Hsia J, Manson JE, Stefanick ML, Wasserthiel-Smoller S et al. Low-fat dietary pattern and risk of cardiovascular disease: The Women's Health Initiative Randomized Controlled Dietary Modification Trial. *JAMA* 2006; 295(6): 655-666.
614. Hu FB, Rimm EB, Stampfer MJ, Ascherio A, Spiegelman D, Willett WC. Prospective study of major dietary patterns and risk of coronary heart disease in men. *Am J Clin Nutr* 2000; 72(4): 912-921.
615. Jensen MK, Koh-Banerjee P, Hu FB, Franz M, Sampson L, Gronbaek M et al. Intakes of whole grains, bran, and germ and the risk of coronary heart disease in men. *Am J Clin Nutr* 2004; 80(6): 1492-1499.
616. Knoops KT, De Groot LC, Kromhout D, Perrin AE, Moreiras-Varela O, Menotti A et al. Mediterranean diet, lifestyle factors, and 10-year mortality in elderly European men and women: The HALE project. *JAMA* 2004; 292(12): 1433-1439.
617. Kromhout D, Bloemberg BP, Feskens EJ, Hertog MG, Menotti A, Blackburn H. Alcohol, fish, fibre and antioxidant vitamins intake do not explain population differences in coronary heart disease mortality. *Int J Epidemiol* 1996; 25(4): 753-759.
618. Lee DH, Folsom AR, Harnack L, Halliwell B, Jacobs DR, Jr. Does supplemental vitamin C increase cardiovascular disease risk in women with diabetes? *Am J Clin Nutr* 2004; 80(5): 1194-1200.
619. Liu S, Manson JE, Lee IM, Cole SR, Hennekens CH, Willett WC et al. Fruit and vegetable intake and risk of cardiovascular disease: The Women's Health Study. *Am J Clin Nutr* 2000; 72(4): 922-928.
620. Liu S, Sesso HD, Manson JE, Willett WC, Buring JE. Is intake of breakfast cereals related to total and cause-specific mortality in men? *Am J Clin Nutr* 2003; 77(3): 594-599.

621. McCullough ML, Feskanich D, Stampfer MJ, Rosner BA, Hu FB, Hunter DJ et al. Adherence to the Dietary Guidelines for Americans and risk of major chronic disease in women. *Am J Clin Nutr* 2000; 72(5): 1214-1222.
622. Mukamal KJ, Maclure M, Muller JE, Sherwood JB, Mittleman MA. Caffeinated coffee consumption and mortality after acute myocardial infarction. *Am Heart J* 2004; 147(6): 999-1004.
623. Nestel PJ, Baghurst K, Colquhoun DM, Simes RJ, Mehalski K, White HD et al. Relation of diet to cardiovascular disease risk factors in subjects with cardiovascular disease in Australia and New Zealand: Analysis of the Long-Term Intervention with Pravastatin in Ischaemic Disease trial. *Am J Clin Nutr* 2005; 81(6): 1322-1329.
624. Osler M, Helms Andreasen A, Heitmann B, Hoidrup S, Gerdes U, Mørch Jørgensen L et al. Food intake patterns and risk of coronary heart disease: A prospective cohort study examining the use of traditional scoring techniques. *Eur J Clin Nutr* 2002; 56(7): 568-574.
625. Sesso HD, Gaziano JM, Liu S, Buring JE. Flavonoid intake and the risk of cardiovascular disease in women. *Am J Clin Nutr* 2003; 77(6): 1400-1408.
626. Steffen LM, Jacobs DR, Jr., Stevens J, Shahar E, Carithers T, Folsom AR. Associations of whole-grain, refined-grain, and fruit and vegetable consumption with risks of all-cause mortality and incident coronary artery disease and ischemic stroke: The Atherosclerosis Risk in Communities (ARIC) study. *Am J Clin Nutr* 2003; 78(3): 383-390.
627. Trichopoulos A, Bamia C, Trichopoulos D. Mediterranean diet and survival among patients with coronary heart disease in Greece. *Arch Intern Med* 2005; 165(8): 929-935.
628. Trichopoulos A, Costacou T, Bamia C, Trichopoulos D. Adherence to a Mediterranean diet and survival in a Greek population. *N Engl J Med* 2003; 348(26): 2599-2608.
629. Van der A DL, Peeters PH, Grobbee DE, Marx JJ, Van der Schouw YT. Dietary haem iron and coronary heart disease in women. *Eur Heart J* 2005; 26(3): 257-262.
630. Van der Schouw YT, Kreijkamp-Kaspers S, Peeters PH, Keinan-Boker L, Rimm EB, Grobbee DE. Prospective study on usual dietary phytoestrogen intake and cardiovascular disease risk in Western women. *Circulation* 2005; 111(4): 465-471.
631. Yano K, Rhoads GG, Kagan A. Coffee, alcohol and risk of coronary heart disease among Japanese men living in Hawaii. *N Engl J Med* 1977; 297(8): 405-409.
632. Huxley RR, Neil HA. The relation between dietary flavonol intake and coronary heart disease mortality: A meta-analysis of prospective cohort studies. *Eur J Clin Nutr* 2003; 57(8): 904-908.

633. Bartlett S, Marian M, Taren D, Muramoto ML. Geriatric nutrition handbook. New York: Chapman & Hall; 1998.
634. CardiacCareNetwork of Ontario. CCN consensus panel on cardiac rehabilitation and secondary prevention services in Ontario: final report and recommendations June 1999 [Online-Text]. Gelesen unter: <http://www.ccn.on.ca/pdfs/cons-panel-car-rehab-june1999.pdf>.
635. Mukamal KJ, Jensen MK, Gronbaek M, Stampfer MJ, Manson JE, Pischon T et al. Drinking frequency, mediating biomarkers, and risk of myocardial infarction in women and men. *Circulation* 2005; 112(10): 1406-1413.
636. Muntwyler J, Hennekens CH, Buring JE, Gaziano JM. Mortality and light to moderate alcohol consumption after myocardial infarction. *Lancet* 1998; 352(9144): 1882-1885.
637. Steering Committee of the Physicians' Health Study Research Group. Final report on the aspirin component of the ongoing Physicians' Health Study. *N Engl J Med* 1989; 321(3): 129-135.
638. Aguilar D, Skali H, Moyer LA, Lewis EF, Gaziano JM, Rutherford JD et al. Alcohol consumption and prognosis in patients with left ventricular systolic dysfunction after a myocardial infarction. *J Am Coll Cardiol* 2004; 43(11): 2015-2021.
639. Moyer LA, Pfeffer MA, Braunwald E. Rationale, design and baseline characteristics of the survival and ventricular enlargement trial. *Am J Cardiol* 1991; 68(14): 70-79.
640. Pfeffer MA, Braunwald E, Moyer LA, Basta L, Brown EJ, Jr., Cuddy TE et al. Effect of captopril on mortality and morbidity in patients with left ventricular dysfunction after myocardial infarction: Results of the survival and ventricular enlargement trial. *N Engl J Med* 1992; 327(10): 669-677.
641. Shaper AG, Wannamethee SG. Alcohol intake and mortality in middle aged men with diagnosed coronary heart disease. *Heart* 2000; 83(4): 394-399.
642. Shaper AG, Pocock SJ, Walker M, Cohen NM, Wale CJ, Thomson AG. British Regional Heart Study: Cardiovascular risk factors in middle-aged men in 24 towns. *Br Med J (Clin Res Ed)* 1981; 283(6285): 179-186.
643. De Vreede-Swagemakers JJ, Gorgels AP, Weijnenberg MP, Dubois-Arbouw WI, Golombeck B, Van Ree JW et al. Risk indicators for out-of-hospital cardiac arrest in patients with coronary artery disease. *J Clin Epidemiol* 1999; 52(7): 601-607.
644. Dietz R, Rauch B. Leitlinie zur Diagnose und Behandlung der chronischen koronaren Herzerkrankung der Deutschen Gesellschaft für Kardiologie - Herz- und Kreislaufforschung. *Z Kardiologie* 2003; 92(6): 501-521.
645. Ajani UA, Gaziano JM, Lotufo PA, Liu S, Hennekens CH, Buring JE et al. Alcohol consumption and risk of coronary heart disease by diabetes status. *Circulation* 2000; 102(5): 500-505.



646. Corrao G, Rubbiati L, Bagnardi V, Zambon A, Poikolainen K. Alcohol and coronary heart disease: A meta-analysis. *Addiction* 2000; 95(10): 1505-1523.
647. Reims HM, Kjeldsen SE, Brady WE, Dahlof B, Devereux RB, Julius S et al. Alcohol consumption and cardiovascular risk in hypertensives with left ventricular hypertrophy: The LIFE study. *J Hum Hypertens* 2004; 18(6): 381-389.
648. UK Department of Health. Sensible drinking: the report of an inter-departmental working group. London: DoH; 1995.
649. MacGregor J. Lord President's report on action against alcohol misuse. London: HMSO; 1991.
650. Poikolainen K. It can be bad for the heart, too: Drinking patterns and coronary heart disease. *Addiction* 1998; 93(12): 1757-1759.
651. Xin X, He J, Frontini MG, Ogden LG, Motsamai OI, Whelton PK. Effects of alcohol reduction on blood pressure: A meta-analysis of randomized controlled trials. *Hypertension* 2001; 38(5): 1112-1117.
652. Criqui MH. Do known cardiovascular risk factors mediate the effect of alcohol on cardiovascular disease? *Novartis Found Symp* 1998; 216: 159-167.
653. Cleophas TJ. Wine, beer and spirits and the risk of myocardial infarction: A systematic review. *Biomed Pharmacother* 1999; 53(9): 417-423.
654. Smith-Warner SA, Spiegelman D, Yaun SS, Van den Brandt PA, Folsom AR, Goldbohm RA et al. Alcohol and breast cancer in women: A pooled analysis of cohort studies. *JAMA* 1998; 279(7): 535-540.
655. Meyer F, White E. Alcohol and nutrients in relation to colon cancer in middle-aged adults. *Am J Epidemiol* 1993; 138(4): 225-236.
656. Thun MJ, Peto R, Lopez AD, Monaco JH, Henley SJ, Heath CW, Jr. et al. Alcohol consumption and mortality among middle-aged and elderly U.S. adults. *N Engl J Med* 1997; 337(24): 1705-1714.
657. De Lorgeril M, Salen P, Martin JL, Boucher F, Paillard F, De Leiris J. Wine drinking and risks of cardiovascular complications after recent acute myocardial infarction. *Circulation* 2002; 106(12): 1465-1469.
658. Scottish Intercollegiate Guidelines Network. Secondary prevention of coronary heart disease following myocardial infarction: a national clinical guideline (SIGN guideline; no 41). Edinburgh: SIGN; 2000.
659. Centraal Bureau voor de Statistiek. Permanent onderzoek levenssituatie: gezondheid en arbeid 2003. Voorburg/Heerlen: CBS; 2005.

660. Ness AR, Hughes J, Elwood PC, Whitley E, Smith GD, Burr ML. The long-term effect of dietary advice in men with coronary disease: Follow-up of the Diet and Reinfarction trial (DART). *Eur J Clin Invest* 2002; 56(6): 512-518.
661. Nilsen DW, Albrektsen G, Landmark K, Moen S, Aarsland T, Woie L. Effects of a high-dose concentrate of n-3 fatty acids or corn oil introduced early after an acute myocardial infarction on serum triacylglycerol and HDL cholesterol. *Am J Clin Nutr* 2001; 74(1): 50-56.
662. Hooper L, Thompson RL, Harrison RA, Summerbell CD, Moore H, Worthington HV et al. Omega 3 fatty acids for prevention and treatment of cardiovascular disease [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 4. Chichester: John Wiley & Sons Ltd.
663. Food Standards Agency. Fish and shellfish [Online-Text]. Gelesen unter: <http://www.eatwell.gov.uk/healthydiet/nutritionessentials/fishandshellfish/>.
664. Albert CM, Oh K, Whang W, Manson JE, Chae CU, Stampfer MJ et al. Dietary alpha-linolenic acid intake and risk of sudden cardiac death and coronary heart disease. *Circulation* 2005; 112(21): 3232-3238.
665. Iso H, Kobayashi M, Ishihara J, Sasaki S, Okada K, Kita Y et al. Intake of fish and n3 fatty acids and risk of coronary heart disease among Japanese: The Japan Public Health Center-Based (JPHC) Study Cohort I. *Circulation* 2006; 113(2): 195-202.
666. Mozaffarian D, Ascherio A, Hu FB, Stampfer MJ, Willett WC, Siscovick DS et al. Interplay between different polyunsaturated fatty acids and risk of coronary heart disease in men. *Circulation* 2005; 111(2): 157-164.
667. Mozaffarian D, Lemaitre RN, Kuller LH, Burke GL, Tracy RP, Siscovick DS. Cardiac benefits of fish consumption may depend on the type of fish meal consumed: The Cardiovascular Health Study. *Circulation* 2003; 107(10): 1372-1377.
668. Brouwer IA, Katan MB, Zock PL. Dietary alpha-linolenic acid is associated with reduced risk of fatal coronary heart disease, but increased prostate cancer risk: A meta-analysis. *J Nutr* 2004; 134(4): 919-922.
669. Whelton SP, He J, Whelton PK, Muntner P. Meta-analysis of observational studies on fish intake and coronary heart disease. *Am J Cardiol* 2004; 93(9): 1119-1123.
670. Yzebe D, Lievre M. Fish oils in the care of coronary heart disease patients: A meta-analysis of randomized controlled trials. *Fundam Clin Pharmacol* 2004; 18(5): 581-592.
671. He FJ, MacGregor GA. Effect of modest salt reduction on blood pressure: A meta-analysis of randomized trials. Implications for public health. *J Hum Hypertens* 2002; 16(11): 761-770.
672. Jürgens G, Graudal NA. Effects of low sodium diet versus high sodium diet on blood pressure, renin, aldosterone, catecholamines, cholesterols, and triglyceride

- [Cochrane Review]. Cochrane Database Syst Rev 2004; Issue 1. Chichester: John Wiley & Sons Ltd.
673. Hooper L, Bartlett C, Davey SG, Ebrahim S. Advice to reduce dietary salt for prevention of cardiovascular disease [Cochrane Review]. Cochrane Database Syst Rev 2004; Issue 1. Chichester: John Wiley & Sons Ltd.
674. Food Standards Agency. Science on salt [Online-Text]. 2007. Gelesen unter: [http://www.salt.gov.uk/science\\_on\\_salt.html](http://www.salt.gov.uk/science_on_salt.html).
675. Shekelle PG, Morton SC, Jungvig LK, Udani J, Spar M, Tu W et al. Effect of supplemental vitamin E for the prevention and treatment of cardiovascular disease. *J Gen Intern Med* 2004; 19(4): 380-389.
676. Liem AH, Van Boven AJ, Veeger NJ, Withagen AJ, Robles de Medina RM, Tijssen JG et al. Efficacy of folic acid when added to statin therapy in patients with hypercholesterolemia following acute myocardial infarction: A randomised pilot trial. *Int J Cardiol* 2004; 93(2-3): 175-179.
677. Bona KH, Njolstad I, Ueland PM, Schirmer H, Tverdal A, Steigen T et al. Homocysteine lowering and cardiovascular events after acute myocardial infarction. *N Engl J Med* 2006; 354(15): 1578-1588.
678. Asplund K. Antioxidant vitamins in the prevention of cardiovascular disease: A systematic review. *J Intern Med* 2002; 251(5): 372-392.
679. Heart Protection Study Collaborative Group. MRC/BHF Heart Protection Study of antioxidant vitamin supplementation in 20,536 high-risk individuals: A randomised placebo-controlled trial. *Lancet* 2002; 360(9326): 23-33.
680. Rapola JM, Virtamo J, Haukka JK, Heinonen OP, Albanes D, Taylor PR et al. Effect of vitamin E and beta carotene on the incidence of angina pectoris: A randomized, double-blind, controlled trial. *JAMA* 1996; 275(9): 693-698.
681. Eidelman RS, Hollar D, Hebert PR, Lamas GA, Hennekens CH. Randomized trials of vitamin E in the treatment and prevention of cardiovascular disease. *Arch Intern Med* 2004; 164(14): 1552-1556.
682. Miller ER, III, Pastor-Barriuso R, Dalal D, Riemersma RA, Appel LJ, Guallar E. Meta-analysis: High-dosage vitamin E supplementation may increase all-cause mortality. *Ann Intern Med* 2005; 142(1): 37-46.
683. Hauner H, Husemann B, Klose G, Pudiel V, Schudsziarra V, Wechsler JG et al. Leitlinien der Deutschen Adipositas-Gesellschaft zur Therapie der Adipositas. *Adipositas* 1998; 16: 6-28.
684. Yusuf S, Dagenais G, Pogue J, Bosch J, Sleight P. Vitamin E supplementation and cardiovascular events in high-risk patients. *N Engl J Med* 2000; 342(3): 154-160.

685. Cheung MC, Zhao XQ, Chait A, Albers JJ, Brown BG. Antioxidant supplements block the response of HDL to simvastatin-niacin therapy in patients with coronary artery disease and low HDL. *Arterioscler Thromb Vasc Biol* 2001; 21(8): 1320-1326.
686. Brown BG, Zhao XQ, Chait A, Fisher LD, Cheung MC, Morse JS et al. Simvastatin and niacin, antioxidant vitamins, or the combination for the prevention of coronary disease. *N Engl J Med* 2001; 345(22): 1583-1592.
687. Arad Y, Spadaro LA, Roth M, Newstein D, Guerci AD. Treatment of asymptomatic adults with elevated coronary calcium scores with atorvastatin, vitamin C, and vitamin E: The St. Francis Heart Study randomized clinical trial. *J Am Coll Cardiol* 2005; 46(1): 166-172.
688. Osganian SK, Stampfer MJ, Rimm E, Spiegelman D, Hu FB, Manson JE et al. Vitamin C and risk of coronary heart disease in women. *J Am Coll Cardiol* 2003; 42(2): 246-252.
689. Tornwall ME, Virtamo J, Korhonen PA, Virtanen MJ, Taylor PR, Albanes D et al. Effect of alpha-tocopherol and beta-carotene supplementation on coronary heart disease during the 6-year post-trial follow-up in the ATBC study. *Eur Heart J* 2004; 25(13): 1171-1178.
690. Knekt P, Ritz J, Pereira MA, O'Reilly EJ, Augustsson K, Fraser GE et al. Antioxidant vitamins and coronary heart disease risk: A pooled analysis of 9 cohorts. *Am J Clin Nutr* 2004; 80(6): 1508-1520.
691. Hung J, Beilby JP, Knuiman MW, Divitini M. Folate and vitamin B-12 and risk of fatal cardiovascular disease: Cohort study from Busselton, Western Australia. *BMJ* 2003; 326(7381): 131.
692. Lonn E, Yusuf S, Arnold MJ, Sheridan P, Pogue J, Micks M et al. Homocysteine lowering with folic acid and B vitamins in vascular disease. *N Engl J Med* 2006; 354(15): 1567-1577.
693. Selhub J, Jacques PF, Wilson PW, Rush D, Rosenberg IH. Vitamin status and intake as primary determinants of homocysteinemia in an elderly population. *JAMA* 1993; 270(22): 2693-2698.
694. Anderson JL, Jensen KR, Carlquist JF, Bair TL, Horne BD, Muhlestein JB. Effect of folic acid fortification of food on homocysteine-related mortality. *Am J Med* 2004; 116(3): 158-164.
695. Lange H, Suryapranata H, De Luca G, Borner C, Dille J, Kallmayer K et al. Folate therapy and in-stent restenosis after coronary stenting. *N Engl J Med* 2004; 350(26): 2673-2681.
696. Schnyder G, Roffi M, Flammer Y, Pin R, Hess OM. Effect of homocysteine-lowering therapy with folic acid, vitamin B12, and vitamin B6 on clinical outcome

- after percutaneous coronary intervention: the Swiss Heart study: A randomized controlled trial. *JAMA* 2002; 288(8): 973-979.
697. Schnyder G, Roffi M, Pin R, Flammer Y, Lange H, Eberli FR et al. Decreased rate of coronary restenosis after lowering of plasma homocysteine levels. *N Engl J Med* 2001; 345(22): 1593-1600.
698. Toole JF, Malinow MR, Chambless LE, Spence JD, Pettigrew LC, Howard VJ et al. Lowering homocysteine in patients with ischemic stroke to prevent recurrent stroke, myocardial infarction, and death: The Vitamin Intervention for Stroke Prevention (VISP) randomized controlled trial. *JAMA* 2004; 291(5): 565-575.
699. Warshafsky S, Kamer RS, Sivak SL. Effect of garlic on total serum cholesterol: A meta-analysis. *Ann Intern Med* 1993; 119(7 Pt 1): 599-605.
700. Berthold HK, Sudhop T, Von Bergmann K. Effect of a garlic oil preparation on serum lipoproteins and cholesterol metabolism: A randomized controlled trial. *JAMA* 1998; 279(23): 1900-1902.
701. Isaacsohn JL, Moser M, Stein EA, Dudley K, Davey JA, Liskov E et al. Garlic powder and plasma lipids and lipoproteins: A multicenter, randomized, placebo-controlled trial. *Arch Intern Med* 1998; 158(11): 1189-1194.
702. U.S.Department of Health and Human Services. The health benefits of smoking cessation: a report of the surgeon general. Washington: HHS; 1990.
703. Rose GA, Hamilton PJS, Colwell L, Shipley MJ. A randomised controlled trial of antismoking advice: 10 year results. *J Epidemiol Community Health* 1982; 36(2): 102-108.
704. Multiple Risk Factor Intervention Trial Research Group. Multiple risk factor intervention trial: Risk factor changes and mortality results. *JAMA* 1982; 248(12): 1465-1477.
705. National Advisory Committee on Health and Disability. Guidelines for smoking cessation. Wellington (NZ): National Health Committee; 2002.
706. Williams MA, Fleg JL, Ades PA, Chaitman BR, Miller NH, Mohiuddin SM et al. Secondary prevention of coronary heart disease in the elderly (with emphasis on patients > or =75 years of age): An American Heart Association scientific statement from the Council on Clinical Cardiology Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention. *Circulation* 2002; 105(14): 1735-1743.
707. Ockene IS, Miller NH. Cigarette smoking, cardiovascular disease, and stroke: A statement for healthcare professionals from the American Heart Association. *Circulation* 1997; 96(9): 3243-3247.
708. Casale PN, Jones JL, Wolf FE, Pei Y, Eby LM. Patients treated by cardiologists have a lower in-hospital mortality for acute myocardial infarction. *J Am Coll Cardiol* 1998; 32(4): 885-889.

709. Nash IS, Corrado RR, Dlutowski MJ, O'Connor JP, Nash DB. Generalist versus specialist care for acute myocardial infarction. *Am J Cardiol* 1999; 83(5): 650-654.
710. Willison DJ, Soumerai SB, McLaughlin TJ, Gurwitz JH, Gao X, Guadagnoli E et al. Consultation between cardiologists and generalists in the management of acute myocardial infarction: Implications for quality of care. *Arch Intern Med* 1998; 158(16): 1778-1783.
711. Peto R, Darby S, Deo H, Silcocks P, Whitley E, Doll R. Smoking, smoking cessation, and lung cancer in the UK since 1950: Combination of national statistics with two case-control studies. *BMJ* 2000; 321(7257): 323-329.
712. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Tabakabhängigkeit. Köln: AkdÄ; 2001.
713. Menotti A, Blackburn H, Kromhout D, Nissinen A, Adachi H, Lanti M. Cardiovascular risk factors as determinants of 25-year all-cause mortality in the seven countries study. *Eur J Epidemiol* 2001; 17(4): 337-346.
714. Wilhelmsson C, Vedin JA, Elmfeldt D, Tibblin G, Wilhelmsen L. Smoking and myocardial infarction. *Lancet* 1975; 1(7904): 415-420.
715. Sparrow D, Dawber TR. The influence of cigarette smoking on prognosis after a first myocardial infarction: A report from the Framingham study. *J Chronic Dis* 1978; 31(6-7): 425-432.
716. Salonen JT. Stopping smoking and long-term mortality after acute myocardial infarction. *Br Heart J* 1980; 43(4): 463-469.
717. Sato I, Nishida M, Okita K, Nishijima H, Kojima S, Matsumura N et al. Beneficial effect of stopping smoking on future cardiac events in male smokers with previous myocardial infarction. *Jpn Circ J* 1992; 56(3): 217-222.
718. Voors AA, Van Brussel BL, Plokker HW, Ernst SM, Ernst NM, Koomen EM et al. Smoking and cardiac events after venous coronary bypass surgery: A 15-year follow-up study. *Circulation* 1996; 93(1): 42-47.
719. Van Berkel TF, Boersma H, Roos-Hesselink JW, Erdman RA, Simoons ML. Impact of smoking cessation and smoking interventions in patients with coronary heart disease. *Eur Heart J* 1999; 20(24): 1773-1782.
720. Critchley J, Capewell S. Smoking cessation for the secondary prevention of coronary heart disease [Cochrane Review]. *Cochrane Database Syst Rev* 2003; Issue 4. Chichester: John Wiley & Sons Ltd.
721. Bottcher M, Falk E. Pathology of the coronary arteries in smokers and non-smokers. *J Cardiovasc Risk* 1999; 6(5): 299-302.
722. Pech-Amsellem MA, Myara I, Storogenko M, Demuth K, Proust A, Moatti N. Enhanced modifications of low-density lipoproteins (LDL) by endothelial cells from

- smokers: A possible mechanism of smoking-related atherosclerosis. *Cardiovasc Res* 1996; 31(6): 975-983.
723. Powell JT. Vascular damage from smoking: Disease mechanisms at the arterial wall. *Vasc Med* 1998; 3(1): 21-28.
724. Prescott E, Hippe M, Schnohr P, Hein HO, Vestbo J. Smoking and risk of myocardial infarction in women and men: Longitudinal population study. *BMJ* 1998; 316(7137): 1043-1047.
725. Fiore MC, Baily WC, Cohen SJ. Treating tobacco use and dependence: Clinical practice guideline. Rockville, MD: U.S. Department of Health and Human Services; 2000.
726. Dutch Institute for Healthcare. Richtlijn tabaksverslaving: in press. Utrecht: CBO.
727. Bolman C. Smoking cessation among patients hospitalized with cardiac disease: evaluation of a minimal-contact intervention [Dissertation]. Maastricht: Universitaire Pers; 2001.
728. Rigotti NA, Munafo MR, Stead LF. Interventions for smoking cessation in hospitalised patients [Cochrane Review]. *Cochrane Database Syst Rev* 2003; Issue 1. Chichester: John Wiley & Sons Ltd.
729. Lancaster T, Silagy C, Fowler G. Training health professionals in smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2000; Issue 3. Chichester: John Wiley & Sons Ltd.
730. Revalidatie Commissie Nederlandse Hartstichting. Hartrevalidatie: PEP-module; handleiding voor professionals. Den Haag: Nederlandse Hartstichting, 2002.
731. Snel J. Alcohol, nuchter bekeken: positieve effecten van matig gebruik. Assen: Koninklijke Van Gorcum; 2002.
732. Lemonick MD, Park A. Eating smart - the conventional wisdom about what's good for you and what's bad has been changed over years. *Time* 1999; 44-46.
733. Cotugna N, Subar AF, Heimendinger J, Kahle L. Nutrition and cancer prevention knowledge, beliefs, attitudes, and practices: The 1987 National Health Interview Survey. *J Am Diet Assoc* 1992; 92(8): 963-968.
734. Ornish D, Brown SE, Scherwitz LW, Billings JH, Armstrong WT, Ports TA et al. Lifestyle changes and heart disease. *Lancet* 1990; 336(8717): 741-742.
735. Franklin TL, Kolasa KM, Griffin K, Mayo C, Badenhop DT. Adherence to very-low-fat diet by a group of cardiac rehabilitation patients in the rural southeastern United States. *Arch Fam Med* 1995; 4(6): 551-554.
736. Hjermmann I, Holme I, Leren P. Oslo Study Diet and Antismoking Trial: Results after 102 months. *Am J Med* 1986; 80(2A): 7-11.

737. Barnard ND, Akhtar A, Nicholson A. Factors that facilitate compliance to lower fat intake. *Arch Fam Med* 1995; 4(2): 153-158.
738. The EUROASPIRE II Study Group. Lifestyle and risk factor management and use of drug therapies in coronary patients from 15 countries: Principal results from EUROASPIRE II Euro Heart Survey Programme. *Eur Heart J* 2001; 22(7): 554-572.
739. Wood D, De Backer G, Faergeman O, Graham I, Mancia G, Pyorala K. Prevention of coronary heart disease in clinical practice: Recommendations of the Second Joint Task Force of European and other societies on coronary prevention. *Atherosclerosis* 1998; 140(2): 199-270.
740. U.S.Department of Health and Human Services. The health consequences of smoking: a report of the surgeon general. Washington: U.S. Government Printing Office; 2004.
741. Jacobs EJ, Thun MJ, Apicella LF. Cigar smoking and death from coronary heart disease in a prospective study of US men. *Arch Intern Med* 1999; 159(20): 2413-2418.
742. Sauer WH, Berlin JA, Strom BL, Miles C, Carson JL, Kimmel SE. Cigarette yield and the risk of myocardial infarction in smokers. *Arch Intern Med* 2002; 162(3): 300-306.
743. Steenland K. Risk assessment for heart disease and workplace ETS exposure among nonsmokers. *Environ Health Perspect* 1999; 107(Suppl 6): 859-863.
744. Thun M, Henley J, Apicella L. Epidemiologic studies of fatal and nonfatal cardiovascular disease and ETS exposure from spousal smoking. *Environ Health Perspect* 1999; 107(Suppl 6): 841-846.
745. Rosenlund M, Berglind N, Gustavsson A, Reuterwall C, Hallqvist J, Nyberg F et al. Environmental tobacco smoke and myocardial infarction among never-smokers in the Stockholm Heart Epidemiology Program (SHEEP). *Epidemiology* 2001; 12(5): 558-564.
746. Law MR, Morris JK, Wald NJ. Environmental tobacco smoke exposure and ischaemic heart disease: An evaluation of the evidence. *BMJ* 1997; 315(7114): 973-980.
747. Pitsavos C, Panagiotakos DB, Chrysohoou C, Tzioumis K, Papaioannou I, Stefanadis C et al. Association between passive cigarette smoking and the risk of developing acute coronary syndromes: The CARDIO2000 study. *Heart Vessels* 2002; 16(4): 127-130.
748. Pitsavos C, Panagiotakos DB, Chrysohoou C, Skoumas J, Tzioumis K, Stefanadis C et al. Association between exposure to environmental tobacco smoke and the development of acute coronary syndromes: The CARDIO2000 case-control study. *Tob Control* 2002; 11(3): 220-225.



749. Boshier A, Wilton LV, Shakir SA. Evaluation of the safety of bupropion (Zyban) for smoking cessation from experience gained in general practice use in England in 2000. *Eur J Clin Pharmacol* 2003; 59(10): 767-773.
750. Vestfold Heartcare Study Group. Influence on lifestyle measures and five-year coronary risk by a comprehensive lifestyle intervention programme in patients with coronary heart disease. *Eur J Cardiovasc Prev Rehabil* 2003; 10(6): 429-437.
751. Critchley JA, Capewell S. Mortality risk reduction associated with smoking cessation in patients with coronary heart disease: A systematic review. *JAMA* 2003; 290(1): 86-97.
752. Joint Formulary Committee. British National Formulary. London: Pharmaceutical Press; 2006.
753. Hall SM, Reus VI, Munoz RF, Sees KL, Humfleet G, Hartz DT et al. Nortriptyline and cognitive-behavioral therapy in the treatment of cigarette smoking. *Arch Gen Psychiatry* 1998; 55(8): 683-690.
754. Covey LS, Glassman AH, Stetner F, Rivelli S, Stage K. A randomized trial of sertraline as a cessation aid for smokers with a history of major depression. *Am J Psychiatry* 2002; 159(10): 1731-1737.
755. Patten CA, Martin JE, Myers MG, Calfas KJ, Williams CD. Effectiveness of cognitive-behavioral therapy for smokers with histories of alcohol dependence and depression. *J Stud Alcohol* 1998; 59(3): 327-335.
756. Hitsman B, Borrelli B, McChargue DE, Spring B, Niaura R. History of depression and smoking cessation outcome: A meta-analysis. *J Consult Clin Psychol* 2003; 71(4): 657-663.
757. Godtfredsen NS, Osler M, Vestbo J, Andersen I, Prescott E. Smoking reduction, smoking cessation, and incidence of fatal and non-fatal myocardial infarction in Denmark 1976-1998: A pooled cohort study. *J Epidemiol Community Health* 2003; 57(6): 412-416.
758. Critchley J, Capewell S. Smoking cessation for the secondary prevention of coronary heart disease [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 1. Chichester: John Wiley & Sons Ltd.
759. Hermanson B, Omenn GS, Kronmal RA, Gersh BJ. Beneficial six-year outcome of smoking cessation in older men and women with coronary artery disease: Results from the CASS registry. *N Engl J Med* 1988; 319(21): 1365-1369.
760. Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ* 2004; 328(7455): 1519.
761. Lancaster T, Stead L. Physician advice for smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 4. Chichester: John Wiley & Sons Ltd.

762. Fichtenberg CM, Glantz SA. Effect of smoke-free workplaces on smoking behaviour: Systematic review. *BMJ* 2002; 325(7357): 188.
763. Willich SN, Müller-Nordhorn J, Kulig M, Binting S, Gohlke H, Hahmann H et al. Cardiac risk factors, medication, and recurrent clinical events after acute coronary disease: A prospective cohort study. *Eur Heart J* 2001; 22(4): 307-313.
764. Gohlke H. Prävention durch Lebensstiländerung: Was ist gesichert? *Herz* 2004; 29: 139-144.
765. Nakanishi N, Nakamura K, Matsuo Y, Suzuki K, Tatara K. Cigarette smoking and risk for impaired fasting glucose and type 2 diabetes in middle-aged Japanese men. *Ann Intern Med* 2000; 133(3): 183-191.
766. He J, Vupputuri S, Allen K, Prerost MR, Hughes J, Whelton PK. Passive smoking and the risk of coronary heart disease: A meta-analysis of epidemiologic studies. *N Engl J Med* 1999; 340(12): 920-926.
767. Daly LE, Mulcahy R, Graham IM, Hickey N. Long term effect on mortality of stopping smoking after unstable angina and myocardial infarction. *Br Med J (Clin Res Ed)* 1983; 287(6388): 324-326.
768. Wilson K, Gibson N, Willan A, Cook D. Effect of smoking cessation on mortality after myocardial infarction: Meta-analysis of cohort studies. *Arch Intern Med* 2000; 160(7): 939-944.
769. Hasdai D, Garratt KN, Grill DE, Lerman A, Holmes DR, Jr. Effect of smoking status on the long-term outcome after successful percutaneous coronary revascularization. *N Engl J Med* 1997; 336(11): 755-761.
770. Taylor CB, Houston-Miller N, Haskell WL, DeBusk RF. Smoking cessation after acute myocardial infarction: The effects of exercise training. *Addict Behav* 1988; 13(4): 331-335.
771. Lancaster T, Stead LF. Self-help interventions for smoking cessation [Cochrane Review]. *Cochrane Database Syst Rev* 2005; Issue 3. Chichester: John Wiley & Sons Ltd.
772. Krumholz HM, Cohen BJ, Tsevat J, Pasternak RC, Weinstein MC. Cost-effectiveness of a smoking cessation program after myocardial infarction. *J Am Coll Cardiol* 1993; 22(6): 1697-1702.
773. Ranney L, Melvin C, Lux L, McClain E, Lohr KN. Systematic review: Smoking cessation intervention strategies for adults and adults in special populations. *Ann Intern Med* 2006; 145(11): 845-856.
774. Barth J, Critchley J, Bengel J. Efficacy of psychosocial interventions for smoking cessation in patients with coronary heart disease: A systematic review and meta-analysis. *Ann Behav Med* 2006; 32(1): 10-20.

775. National Institute of Clinical Excellence. Smoking cessation - brief interventions and referral for smoking cessation in primary care and other settings (Public health intervention guidance; no 1). London: NICE; 2006.
776. National Institute of Clinical Excellence. Smoking cessation - Bupropion and nicotine replacement therapy (Number 39) The clinical effectiveness and cost effectiveness of bupropion (Zyban) and Nicotine Replacement Therapy for smoking cessation. London: NICE; 2002.
777. Berlin JA, Colditz GA. A meta-analysis of physical activity in the prevention of coronary heart disease. *Am J Epidemiol* 1990; 132(4): 612-628.
778. U.S.Department of Health and Human Services. Physical activity and health: a report of the surgeon general. McLean (VA): International Medical Publishing; 1996.
779. Thompson PD, Buchner D, Pina IL, Balady GJ, Williams MA, Marcus BH et al. Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease: A statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity). *Circulation* 2003; 107(24): 3109-3116.
780. Reincke C, Verstappen F. [Biological mechanisms in explanation of the beneficial effects of physical exercise on cardiovascular diseases]. *Geneeskd Sport* 2001; 34(3): 110-118.
781. Kemper HCG, Ooijendijk WTM, Stiggelbout M. Consensus over de Nederlandse Norm Gezond Bewegen. *Tijdschr Soc Gezondheidsz* 2000; 78(3): 180-183.
782. Pate RR, Pratt M, Blair SN, Haskell WL, Macera CA, Bouchard C et al. Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA* 1995; 273(5): 402-407.
783. Fletcher GF, Balady G, Blair SN, Blumenthal J, Caspersen C, Chaitman B et al. Statement on exercise: Benefits and recommendations for physical activity programs for all Americans. A statement for health professionals by the Committee on Exercise and Cardiac Rehabilitation of the Council on Clinical Cardiology, American Heart Association. *Circulation* 1996; 94(4): 857-862.
784. De Backer G, Ambrosioni E, Borch-Johnsen K, Brotons C, Cifkova R, Dallongeville J et al. European guidelines on cardiovascular disease prevention in clinical practice. *Eur Heart J* 2003; 24(17): 1601-1610.
785. McKechnie R, Mosca L. Physical activity and coronary heart disease: Prevention and effect on risk factors. *Cardiol Rev* 2003; 11(1): 21-25.
786. Saris WH, Blair SN, Van Baak MA, Eaton SB, Davies PS, Di Pietro L et al. How much physical activity is enough to prevent unhealthy weight gain? Outcome of the

- IASO 1st Stock Conference and consensus statement. *Obes Rev* 2003; 4(2): 101-114.
787. Van Elderen T, Dusseldorp E. Lifestyle effects of group health education for patients with coronary heart disease. *Psychology and Health* 2001; 16(3): 327-341.
788. Foster C, Pollock ML, Anholm JD, Squires RW, Ward A, Dymond DS et al. Work capacity and left ventricular function during rehabilitation after myocardial revascularization surgery. *Circulation* 1984; 69(4): 748-755.
789. Agency for Health Care Policy and Research. Cardiac rehabilitation: AHCPR publication no. 96-0672 (Clinical practice guideline; no 17). Rockville, MD: AHCPR; 1995.
790. Sandvik L, Erikssen J, Thaulow E, Erikssen G, Mundal R, Rodahl K. Physical fitness as a predictor of mortality among healthy, middle-aged Norwegian men. *N Engl J Med* 1993; 328(8): 533-537.
791. Paffenbarger RS, Jr., Hyde RT, Wing AL, Hsieh CC. Physical activity, all-cause mortality, and longevity of college alumni. *N Engl J Med* 1986; 314(10): 605-613.
792. Laukkanen JA, Lakka TA, Rauramaa R, Kuhanen R, Venalainen JM, Salonen R et al. Cardiovascular fitness as a predictor of mortality in men. *Arch Intern Med* 2001; 161(6): 825-831.
793. Williams PT. Relationships of heart disease risk factors to exercise quantity and intensity. *Arch Intern Med* 1998; 158(3): 237-245.
794. Dorn J, Naughton J, Imamura D, Trevisan M. Results of a multicenter randomized clinical trial of exercise and long-term survival in myocardial infarction patients: The National Exercise and Heart Disease Project (NEHDP). *Circulation* 1999; 100(17): 1764-1769.
795. Lee IM, Sesso HD, Paffenbarger RS, Jr. Physical activity and coronary heart disease risk in men: Does the duration of exercise episodes predict risk? *Circulation* 2000; 102(9): 981-986.
796. Murphy MH, Hardman AE. Training effects of short and long bouts of brisk walking in sedentary women. *Med Sci Sports Exerc* 1998; 30(1): 152-157.
797. Pollock ML, Franklin BA, Balady GJ, Chaitman BL, Fleg JL, Fletcher B et al. AHA Science Advisory. Resistance exercise in individuals with and without cardiovascular disease: Benefits, rationale, safety, and prescription. An advisory from the Committee on Exercise, Rehabilitation, and Prevention, Council on Clinical Cardiology, American Heart Association; Position paper endorsed by the American College of Sports Medicine. *Circulation* 2000; 101(7): 828-833.
798. Niebauer J, Hambrecht R, Velich T, Hauer K, Marburger C, Kalberer B et al. Attenuated progression of coronary artery disease after 6 years of multifactorial risk intervention: Role of physical exercise. *Circulation* 1997; 96(8): 2534-2541.

799. Hambrecht R, Niebauer J, Marburger C, Grunze M, Kalberer B, Hauer K et al. Various intensities of leisure time physical activity in patients with coronary artery disease: Effects on cardiorespiratory fitness and progression of coronary atherosclerotic lesions. *J Am Coll Cardiol* 1993; 22(2): 468-477.
800. Clarkson P, Montgomery HE, Mullen MJ, Donald AE, Powe AJ, Bull T et al. Exercise training enhances endothelial function in young men. *J Am Coll Cardiol* 1999; 33(5): 1379-1385.
801. Gielen S, Schuler G, Hambrecht R. Exercise training in coronary artery disease and coronary vasomotion. *Circulation* 2001; 103(1): E1-E6.
802. Watkins AJ, Kligman EW. Attendance patterns of older adults in a health promotion program. *Public Health Rep* 1993; 108(1): 86-90.
803. Hillsdon M, Thorogood M, Anstiss T, Morris J. Randomised controlled trials of physical activity promotion in free living populations: A review. *J Epidemiol Community Health* 1995; 49(5): 448-453.
804. Green L, Kreuter M, Deeds S. Health education planning, a diagnostic approach. Baltimore: Mayfield Publishing Company; 1991.
805. Brown S, Conn V. The relationship between self-efficacy and walking in the rehabilitation of post-operative CABG patients. *Rehabilitation Nursing Research* 1995; 4(2): 64-71.
806. Lee JY, Jensen BE, Oberman A, Fletcher GF, Fletcher BJ, Raczynski JM. Adherence in the training levels comparison trial. *Med Sci Sports Exerc* 1996; 28(1): 47-52.
807. Muller JE, Mittleman MA, Maclure M, Sherwood JB, Tofler GH. Triggering myocardial infarction by sexual activity: Low absolute risk and prevention by regular physical exertion. *JAMA* 1996; 275(18): 1405-1409.
808. Siscovick DS, Weiss NS, Fletcher RH, Lasky T. The incidence of primary cardiac arrest during vigorous exercise. *N Engl J Med* 1984; 311(14): 874-877.
809. Albert CM, Mittleman MA, Chae CU, Lee IM, Hennekens CH, Manson JE. Triggering of sudden death from cardiac causes by vigorous exertion. *N Engl J Med* 2000; 343(19): 1355-1361.
810. Cobb LA, Weaver WD. Exercise: A risk for sudden death in patients with coronary heart disease. *J Am Coll Cardiol* 1986; 7(1): 215-219.
811. Mittleman MA, Maclure M, Tofler GH, Sherwood JB, Goldberg RJ, Muller JE. Triggering of acute myocardial infarction by heavy physical exertion. Protection against triggering by regular exertion. *N Engl J Med* 1993; 329(23): 1677-1683.

812. Willich SN, Lewis M, Löwel H, Arntz HR, Schubert F, Schröder R. Physical exertion as a trigger of acute myocardial infarction. *N Engl J Med* 1993; 329(23): 1684-1690.
813. Lemaitre RN, Siscovick DS, Raghunathan TE, Weinmann S, Arbogast P, Lin DY. Leisure-time physical activity and the risk of primary cardiac arrest. *Arch Intern Med* 1999; 159(7): 686-690.
814. Haskell WL. The efficacy and safety of exercise programs in cardiac rehabilitation. *Med Sci Sports Exerc* 1994; 26(7): 815-823.
815. Hossack KF, Hartwig R. Cardiac arrest associated with supervised cardiac rehabilitation. *Journal of Cardiac Rehabilitation* 1982; 2(5): 402-408.
816. Ades PA, Maloney A, Savage P, Carhart RL, Jr. Determinants of physical functioning in coronary patients: Response to cardiac rehabilitation. *Arch Intern Med* 1999; 159(19): 2357-2360.
817. Lavie CJ, Milani RV. Effects of cardiac rehabilitation and exercise training programs in patients  $\geq$  75 years of age. *Am J Cardiol* 1996; 78(6): 675-677.
818. Sullivan MJ, Higginbotham MB, Cobb FR. Exercise training in patients with chronic heart failure delays ventilatory anaerobic threshold and improves submaximal exercise performance. *Circulation* 1989; 79(2): 324-329.
819. Stahle A, Mattsson E, Ryden L, Unden A, Nordlander R. Improved physical fitness and quality of life following training of elderly patients after acute coronary events: A 1 year follow-up randomized controlled study. *Eur Heart J* 1999; 20(20): 1475-1484.
820. Balady G, Berra K, Golding L. ACSM's guidelines for exercise testing and prescription. Baltimore, USA: Williams & Wilkins; 2000. S. 57-90.
821. Kay P, Kittelson J, Stewart RA. Relation between duration and intensity of first exercise and "warm up" in ischaemic heart disease. *Heart* 2000; 83(1): 17-21.
822. Feigenbaum MS, Pollock ML. Prescription of resistance training for health and disease. *Med Sci Sports Exerc* 1999; 31(1): 38-45.
823. MacDougall JD, Tuxen D, Sale DG, Moroz JR, Sutton JR. Arterial blood pressure response to heavy resistance exercise. *J Appl Physiol* 1985; 58(3): 785-790.
824. Lentini AC, McKelvie RS, McCartney N, Tomlinson CW, MacDougall JD. Left ventricular response in healthy young men during heavy-intensity weight-lifting exercise. *J Appl Physiol* 1993; 75(6): 2703-2710.
825. Kelemen MH. Resistive training safety and assessment guidelines for cardiac and coronary prone patients. *Med Sci Sports Exerc* 1989; 21(6): 675-677.

826. McCartney N, McKelvie RS, Haslam DR, Jones NL. Usefulness of weightlifting training in improving strength and maximal power output in coronary artery disease. *Am J Cardiol* 1991; 67(11): 939-945.
827. Featherstone JF, Holly RG, Amsterdam EA. Physiologic responses to weight lifting in coronary artery disease. *Am J Cardiol* 1993; 71(4): 287-292.
828. Daub WD, Knapik GP, Black WR. Strength training early after myocardial infarction. *J Cardiopulm Rehabil* 1996; 16(2): 100-108.
829. Logan R, Burridge P. Pre-discharge exercise testing involving weight carrying after myocardial infarction. *N Z Med J* 1981; 93(677): 69-71.
830. Markiewicz W, Houston N, DeBusk R. A comparison of static and dynamic exercise soon after myocardial infarction. *Isr J Med Sci* 1979; 15(11): 894-897.
831. Blumenthal JA, Babyak MA, Carney RM, Huber M, Saab PG, Burg MM et al. Exercise, depression, and mortality after myocardial infarction in the ENRICH trial. *Med Sci Sports Exerc* 2004; 36(5): 746-755.
832. Barefoot JC, Burg MM, Carney RM, Cornell CE, Czajkowski SM, Freedland KE et al. Aspects of social support associated with depression at hospitalization and follow-up assessment among cardiac patients. *J Cardiopulm Rehabil* 2003; 23(6): 404-412.
833. Dugmore LD, Tipson RJ, Phillips MH, Flint EJ, Stentiford NH, Bone MF et al. Changes in cardiorespiratory fitness, psychological wellbeing, quality of life, and vocational status following a 12 month cardiac exercise rehabilitation programme. *Heart* 1999; 81(4): 359-366.
834. Holmback AM, Sawe U, Fagher B. Training after myocardial infarction: Lack of long-term effects on physical capacity and psychological variables. *Arch Phys Med Rehabil* 1994; 75(5): 551-554.
835. Marchionni N, Fattirolli F, Fumagalli S, Oldridge N, Del Lungo F, Morosi L et al. Improved exercise tolerance and quality of life with cardiac rehabilitation of older patients after myocardial infarction: Results of a randomized, controlled trial. *Circulation* 2003; 107(17): 2201-2206.
836. Hambrecht R, Wolf A, Gielen S, Linke A, Hofer J, Erbs S et al. Effect of exercise on coronary endothelial function in patients with coronary artery disease. *N Engl J Med* 2000; 342(7): 454-460.
837. Miller TD, Balady GJ, Fletcher GF. Exercise and its role in the prevention and rehabilitation of cardiovascular disease. *Ann Behav Med* 1997; 19(3): 220-229.
838. Stewart KJ. Exercise training and the cardiovascular consequences of type 2 diabetes and hypertension: Plausible mechanisms for improving cardiovascular health. *JAMA* 2002; 288(13): 1622-1631.

839. Hambrecht R, Walther C, Mobius-Winkler S, Gielen S, Linke A, Conradi K et al. Percutaneous coronary angioplasty compared with exercise training in patients with stable coronary artery disease: A randomized trial. *Circulation* 2004; 109(11): 1371-1378.
840. Conroy MB, Cook NR, Manson JE, Buring JE, Lee IM. Past physical activity, current physical activity, and risk of coronary heart disease. *Med Sci Sports Exerc* 2005; 37(8): 1251-1256.
841. Hillsdon M, Thorogood M, Murphy M, Jones L. Can a simple measure of vigorous physical activity predict future mortality? Results from the OXCHECK study. *Public Health Nutr* 2004; 7(4): 557-562.
842. Lee IM, Sesso HD, Oguma Y, Paffenbarger RS, Jr. Relative intensity of physical activity and risk of coronary heart disease. *Circulation* 2003; 107(8): 1110-1116.
843. Noda H, Iso H, Toyoshima H, Date C, Yamamoto A, Kikuchi S et al. Walking and sports participation and mortality from coronary heart disease and stroke. *J Am Coll Cardiol* 2005; 46(9): 1761-1767.
844. Sjol A, Thomsen KK, Schroll M, Andersen LB. Secular trends in acute myocardial infarction in relation to physical activity in the general Danish population. *Scand J Med Sci Sports* 2003; 13(4): 224-230.
845. Sundquist K, Qvist J, Johansson SE, Sundquist J. The long-term effect of physical activity on incidence of coronary heart disease: A 12-year follow-up study. *Prev Med* 2005; 41(1): 219-225.
846. Yu S, Yarnell JW, Sweetnam PM, Murray L. What level of physical activity protects against premature cardiovascular death? The Caerphilly study. *Heart* 2003; 89(5): 502-506.
847. McGrath PD. Review: Exercise-based cardiac rehabilitation reduces all-cause and cardiac mortality in coronary heart disease. *ACP J Club* 2004; 141(3): 62.
848. Wenger NK, Froelicher ES, Smith LK, Ades PA, Berra K, Blumenthal JA et al. Cardiac rehabilitation as secondary prevention. *Clin Pract Guidel Quick Ref Guide Clin* 1995;(17): 1-23.
849. UK Department of Health. At least five a week: evidence on the impact of physical activity and its relationship to health; a report from the Chief Medical Officer. London: Wellington House; 2004.
850. U.S.Department for Health and Human Services. Physical activity and health: a report of the surgeon general. McLean (VA): International Medical Publishing; 1996.
851. Yusuf S, Hawken S, Ounpuu S, Dans T, Avezum A, Lanas F et al. Effect of potentially modifiable risk factors associated with myocardial infarction in 52



- countries (the INTERHEART study): Case-control study. *Lancet* 2004; 364(9438): 937-952.
852. Altieri A, Tavani A, Gallus S, La Vecchia C. Occupational and leisure time physical activity and the risk of nonfatal acute myocardial infarction in Italy. *Ann Epidemiol* 2004; 14(7): 461-466.
853. Barengo NC, Hu G, Lakka TA, Pekkarinen H, Nissinen A, Tuomilehto J. Low physical activity as a predictor for total and cardiovascular disease mortality in middle-aged men and women in Finland. *Eur Heart J* 2004; 25(24): 2204-2211.
854. Hakim AA, Curb JD, Petrovitch H, Rodriguez BL, Yano K, Ross GW et al. Effects of walking on coronary heart disease in elderly men: The Honolulu Heart Program. *Circulation* 1999; 100(1): 9-13.
855. Tanasescu M, Leitzmann MF, Rimm EB, Willett WC, Stampfer MJ, Hu FB. Exercise type and intensity in relation to coronary heart disease in men. *JAMA* 2002; 288(16): 1994-2000.
856. Hu G, Tuomilehto J, Silventoinen K, Barengo N, Jousilahti P. Joint effects of physical activity, body mass index, waist circumference and waist-to-hip ratio with the risk of cardiovascular disease among middle-aged Finnish men and women. *Eur Heart J* 2004; 25(24): 2212-2219.
857. Manson JE, Greenland P, LaCroix AZ, Stefanick ML, Mouton CP, Oberman A et al. Walking compared with vigorous exercise for the prevention of cardiovascular events in women. *N Engl J Med* 2002; 347(10): 716-725.
858. Smith K, Ross D, Connolly E. Investigating six-month health outcomes of patients with angina discharged from a chest pain service. *Eur J Cardiovasc Nurs* 2002; 1(4): 253-264.
859. Spertus JA, McDonnell M, Woodman CL, Fihn SD. Association between depression and worse disease-specific functional status in outpatients with coronary artery disease. *Am Heart J* 2000; 140(1): 105-110.
860. Wandell P, Brorsson B, Aberg H. Functioning and well-being of patients with type 2 diabetes or angina pectoris, compared with the general population. *Diabetes Metab* 2000; 26(6): 465-471.
861. Wandell P, Brorsson B. Assessing sexual functioning in patients with chronic disorders by using a generic health-related quality of life questionnaire. *Qual Life Res* 2001; 9(10): 1081-1092.
862. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand* 1983; 67(6): 361-370.
863. Ware JE, Jr., Sherbourne CD. The MOS 36-item short-form health survey (SF-36). I: Conceptual framework and item selection. *Med Care* 1992; 30(6): 473-483.

864. Lewin RJ, Thompson DR, Martin CR, Stuckey N, Devlen J, Michaelson S et al. Validation of the Cardiovascular Limitations and Symptoms Profile (CLASP) in chronic stable angina. *J Cardiopulm Rehabil* 2002; 22(3): 184-191.
865. Garratt AM, Hutchinson A, Russell I. The UK version of the Seattle Angina Questionnaire (SAQ-UK): Reliability, validity and responsiveness. *J Clin Epidemiol* 2001; 54(9): 907-915.
866. Brorsson B, Bernstein SJ, Brook RH, Werko L. Quality of life of patients with chronic stable angina before and four years after coronary revascularisation compared with a normal population. *Heart* 2002; 87(2): 140-145.
867. Kiebzak GM, Pierson LM, Campbell M, Cook JW. Use of the SF36 general health status survey to document health-related quality of life in patients with coronary artery disease: Effect of disease and response to coronary artery bypass graft surgery. *Heart Lung* 2002; 31(3): 207-213.
868. Furze G, Lewin B. Causal attributions for angina: Results of an interview study. *Coronary Health Care* 2000; 4(3): 130-134.
869. Furze G, Lewin RJ, Roebuck A, Thompson DR, Bull P. Attributions and misconceptions in angina: An exploratory study. *J Health Psychol* 2001; 6(5): 501-510.
870. Furze G, Roebuck A, Bull P, Lewin RJ, Thompson DR. A comparison of the illness beliefs of people with angina and their peers: A questionnaire study. *BMC Cardiovasc Disord* 2002; 2: 4.
871. Furze G, Bull P, Lewin RJ, Thompson DR. Development of the York Angina Beliefs Questionnaire. *J Health Psychol* 2003; 8(3): 307-315.
872. Astin F, Jones K. Heart disease attributions of patients prior to elective percutaneous transluminal coronary angioplasty. *J Cardiovasc Nurs* 2004; 19(1): 41-47.
873. Lewin B. Cardiac rehabilitation, a cognitive behavioural model, the heart manual and other topics [Online-Text]. 1998 .Gelesen unter:  
[http://www.cardiacrehabilitation.org.uk/heart\\_manual/chapter.htm](http://www.cardiacrehabilitation.org.uk/heart_manual/chapter.htm).
874. Billing E, Bar-On D, Rehnqvist N. Determinants of lifestyle changes after a first myocardial infarction. *Cardiology* 1997; 88(1): 29-35.
875. Paynter E. (Psychologist ). Auckland: 2001.
876. Sotile W. Psychosocial interventions for cardiopulmonary patients: a guide for health professionals. Champaign (IL): Human Kinetics; 1996.
877. Heaven CM, Maguire P. Training hospice nurses to elicit patient concerns. *J Adv Nurs* 1996; 23(2): 280-286.

878. Bunker SJ, Colquhoun DM, Esler MD, Hickie IB, Hunt D, Jelinek VM et al. "Stress" and coronary heart disease: Psychosocial risk factors. *Med J Aust* 2003; 178(6): 272-276.
879. Rozanski A, Blumenthal JA, Kaplan J. Impact of psychological factors on the pathogenesis of cardiovascular disease and implications for therapy. *Circulation* 1999; 99(16): 2192-2217.
880. Hemingway H, Malik M, Marmot M. Social and psychosocial influences on sudden cardiac death, ventricular arrhythmia and cardiac autonomic function. *Eur Heart J* 2001; 22(13): 1082-1101.
881. Blumenthal JA, Lett HS, Babyak MA, White W, Smith PK, Mark DB et al. Depression as a risk factor for mortality after coronary artery bypass surgery. *Lancet* 2003; 362(9384): 604-609.
882. Baker RA, Andrew MJ, Schrader G, Knight JL. Preoperative depression and mortality in coronary artery bypass surgery: Preliminary findings. *ANZ J Surg* 2001; 71(3): 139-142.
883. Burg MM, Benedetto MC, Soufer R. Depressive symptoms and mortality two years after coronary artery bypass graft surgery (CABG) in men. *Psychosom Med* 2003; 65(4): 508-510.
884. Connerney I, Shapiro PA, McLaughlin JS, Bagiella E, Sloan RP. Relation between depression after coronary artery bypass surgery and 12-month outcome: A prospective study. *Lancet* 2001; 358(9295): 1766-1771.
885. Borowicz L, Jr., Royall R, Grega M, Selnes O, Lyketsos C, McKhann G. Depression and cardiac morbidity 5 years after coronary artery bypass surgery. *Psychosomatics* 2002; 43(6): 464-471.
886. Rymaszewska J, Kiejna A, Hadrys T. Depression and anxiety in coronary artery bypass grafting patients. *Eur Psychiatry* 2003; 18(4): 155-160.
887. Pirraglia PA, Peterson JC, Williams-Russo P, Gorkin L, Charlson ME. Depressive symptomatology in coronary artery bypass graft surgery patients. *Int J Geriatr Psychiatry* 1999; 14(8): 668-680.
888. Koivula M, Tarkka MT, Tarkka M, Laippala P, Paunonen-Ilmonen M. Fear and anxiety in patients at different time-points in the coronary artery bypass process. *Int J Nurs Stud* 2002; 39(8): 811-822.
889. Phillips-Bute B, Mathew J, Blumenthal JA, Welsh-Bohmer K, White WD, Mark D et al. Female gender is associated with impaired quality of life 1 year after coronary artery bypass surgery. *Psychosom Med* 2003; 65(6): 944-951.
890. Keresztes PA, Merritt SL, Holm K, Penckofer S, Patel M. The coronary artery bypass experience: Gender differences. *Heart Lung* 2003; 32(5): 308-319.

891. Boudrez H, De Backer G. Psychological status and the role of coping style after coronary artery bypass graft surgery: Results of a prospective study. *Qual Life Res* 2001; 10(1): 37-47.
892. Saur CD, Granger BB, Muhlbaier LH, Forman LM, McKenzie RJ, Taylor MC et al. Depressive symptoms and outcome of coronary artery bypass grafting. *Am J Crit Care* 2001; 10(1): 4-10.
893. Helgeson VS. Cognitive adaptation, psychological adjustment, and disease progression among angioplasty patients: 4 years later. *Health Psychol* 2003; 22(1): 30-38.
894. Scottish Intercollegiate Guidelines Network. Rehabilitation (SIGN guideline; no 57). Edinburgh: SIGN; 2002.
895. Rosengren A, Hawken S, Ounpuu S, Sliwa K, Zubaid M, Almahmeed WA et al. Association of psychosocial risk factors with risk of acute myocardial infarction in 11119 cases and 13648 controls from 52 countries (the INTERHEART study): Case-control study. *Lancet* 2004; 364(9438): 953-962.
896. Kuper H, Marmot M, Hemingway H. Systematic review of prospective cohort studies of psychosocial factors in the etiology and prognosis of coronary heart disease. *Semin Vasc Med* 2002; 2(3): 267-314.
897. Carney RM, Blumenthal JA, Freedland KE, Youngblood M, Veith RC, Burg MM et al. Depression and late mortality after myocardial infarction in the Enhancing Recovery in Coronary Heart Disease (ENRICH) study. *Psychosom Med* 2004; 66(4): 466-474.
898. Eng PM, Rimm EB, Fitzmaurice G, Kawachi I. Social ties and change in social ties in relation to subsequent total and cause-specific mortality and coronary heart disease incidence in men. *Am J Epidemiol* 2002; 155(8): 700-709.
899. Jenkinson CM, Madeley RJ, Mitchell JR, Turner ID. The influence of psychosocial factors on survival after myocardial infarction. *Public health* 1993; 107(5): 305-317.
900. Monster TB, Johnsen SP, Olsen ML, McLaughlin JK, Sorensen HT. Antidepressants and risk of first-time hospitalization for myocardial infarction: A population-based case-control study. *Am J Med* 2004; 117(10): 732-737.
901. Reed D, McGee D, Yano K, Feinleib M. Social networks and coronary heart disease among Japanese men in Hawaii. *Am J Epidemiol* 1983; 117(4): 384-396.
902. Sauer WH, Berlin JA, Kimmel SE. Effect of antidepressants and their relative affinity for the serotonin transporter on the risk of myocardial infarction. *Circulation* 2003; 108(1): 32-36.
903. Schlienger RG, Fischer LM, Jick H, Meier CR. Current use of selective serotonin reuptake inhibitors and risk of acute myocardial infarction. *Drug Saf* 2004; 27(14): 1157-1165.

904. Schneiderman N, Saab PG, Catellier DJ, Powell LH, DeBusk RF, Williams RB et al. Psychosocial treatment within sex by ethnicity subgroups in the Enhancing Recovery in Coronary Heart Disease clinical trial. *Psychosom Med* 2004; 66(4): 475-483.
905. Taylor CB, Youngblood ME, Catellier D, Veith RC, Carney RM, Burg MM et al. Effects of antidepressant medication on morbidity and mortality in depressed patients after myocardial infarction. *Arch Gen Psychiatry* 2005; 62(7): 792-798.
906. Von Kanel R, Dimsdale JE. Effects of sympathetic activation by adrenergic infusions on hemostasis in vivo. *Eur J Haematol* 2000; 65(6): 357-369.
907. Von Kanel R, Mills PJ, Fainman C, Dimsdale JE. Effects of psychological stress and psychiatric disorders on blood coagulation and fibrinolysis: A biobehavioral pathway to coronary artery disease? *Psychosom Med* 2001; 63(4): 531-544.
908. Van Diest R, Hamulyak K, Kop WJ, Van Zandvoort C, Appels A. Diurnal variations in coagulation and fibrinolysis in vital exhaustion. *Psychosom Med* 2002; 64(5): 787-792.
909. Frasure-Smith N, Lesperance F, Gravel G, Masson A, Juneau M, Talajic M et al. Social support, depression, and mortality during the first year after myocardial infarction. *Circulation* 2000; 101(16): 1919-1924.
910. Dusseldorp E, Van Elderen T, Maes S, Meulman J, Kraaij V. A meta-analysis of psychoeducational programs for coronary heart disease patients. *Health Psychol* 1999; 18(5): 506-519.
911. Mayou RA, Gill D, Thompson DR, Day A, Hicks N, Volmink J et al. Depression and anxiety as predictors of outcome after myocardial infarction. *Psychosom Med* 2000; 62(2): 212-219.
912. Denollet J, Brutsaert DL. Reducing emotional distress improves prognosis in coronary heart disease: 9-year mortality in a clinical trial of rehabilitation. *Circulation* 2001; 104(17): 2018-2023.
913. Berkman LF, Blumenthal J, Burg M, Carney RM, Catellier D, Cowan MJ et al. Effects of treating depression and low perceived social support on clinical events after myocardial infarction: The Enhancing Recovery in Coronary Heart Disease Patients (ENRICH) Randomized Trial. *JAMA* 2003; 289(23): 3106-3116.
914. Ladwig KH, Kieser M, König J, Breithardt G, Borggrefe M. Affective disorders and survival after acute myocardial infarction: Results from the post-infarction late potential study. *Eur Heart J* 1991; 12(9): 959-964.
915. Frasure-Smith N, Lesperance F, Talajic M. Depression and 18-month prognosis after myocardial infarction. *Circulation* 1995; 91(4): 999-1005.

916. Carney RM, Freedland KL, Rich MW, Jaffe AS. Depression as a risk factor for cardiac events in established coronary heart disease: A review of possible mechanisms. *Ann Behav Med* 1995; 17: 142-149.
917. Mayou R. Rehabilitation after heart attack. *BMJ* 1996; 313(7071): 1498-1499.
918. Ahern DK, Gorkin L, Anderson JL, Tierney C, Hallstrom A, Ewart C et al. Biobehavioral variables and mortality or cardiac arrest in the Cardiac Arrhythmia Pilot Study (CAPS). *Am J Cardiol* 1990; 66(1): 59-62.
919. Thomas SA, Friedmann E, Wimbush F, Schron E. Psychological factors and survival in the cardiac arrhythmia suppression trial (CAST): A reexamination. *Am J Crit Care* 1997; 6(2): 116-126.
920. Beaufait DW, Nelson E, Landgraf JM, Hays RD, Kirk JW, Wasson JH et al. COOP measures of functional status. In: Stewart M, Tudiver F, Bass MJ, Dunn EV, Norton PG (Ed). *Tools for primary care research*. Newbury Park: Sage; 1992. S. 151-167.
921. Jenkinson C, Mayou R, Day A, Garratt A, Juszczak E. Evaluation of the Dartmouth COOP charts in a large-scale community survey in the United Kingdom. *J Public Health Med* 2002; 24(2): 106-111.
922. Hemingway H, Marmot M. Evidence based cardiology: Psychosocial factors in the aetiology and prognosis of coronary heart disease. Systematic review of prospective cohort studies. *BMJ* 1999; 318(7196): 1460-1467.
923. Irvine J, Basinski A, Baker B, Jandciu S, Paquette M, Cairns J et al. Depression and risk of sudden cardiac death after acute myocardial infarction: Testing for the confounding effects of fatigue. *Psychosom Med* 1999; 61(6): 729-737.
924. Meland E, Maeland JG, Laerum E. The importance of self-efficacy in cardiovascular risk factor change. *Scand J Public Health* 1999; 27(1): 11-17.
925. Perski A, Osuchowski K, Andersson L, Sanden A, Feleke E, Anderson G. Intensive rehabilitation of emotionally distressed patients after coronary by-pass grafting. *J Intern Med* 1999; 246(3): 253-263.
926. Ziegelstein RC, Fauerbach JA, Stevens SS, Romanelli J, Richter DP, Bush DE. Patients with depression are less likely to follow recommendations to reduce cardiac risk during recovery from a myocardial infarction. *Arch Intern Med* 2000; 160(12): 1818-1823.
927. Allison TG, Williams DE, Miller TD, Patten CA, Bailey KR, Squires RW et al. Medical and economic costs of psychologic distress in patients with coronary artery disease. *Mayo Clin Proc* 1995; 70(8): 734-742.
928. Welin C, Lappas G, Wilhelmsen L. Independent importance of psychosocial factors for prognosis after myocardial infarction. *J Intern Med* 2000; 247(6): 629-639.

929. Moser DK, Dracup K. Psychosocial recovery from a cardiac event: The influence of perceived control. *Heart Lung* 1995; 24(4): 273-280.
930. Soejima Y, Steptoe A, Nozoe S, Tei C. Psychosocial and clinical factors predicting resumption of work following acute myocardial infarction in Japanese men. *Int J Cardiol* 1999; 72(1): 39-47.
931. Barefoot JC, Brummett BH, Clapp-Channing NE, Siegler IC, Vitaliano PP, Williams RB et al. Moderators of the effect of social support on depressive symptoms in cardiac patients. *Am J Cardiol* 2000; 86(4): 438-442.
932. Taylor D, Barber K, McIntosh BA, Khan M. The impact of post acute myocardial infarction (AMI) depression on patient compliance and risk factor modification. *Psychol Health Med* 1998; 3(4): 439-442.
933. Levine JB, Covino NA, Slack WV, Safran C, Safran DB, Boro JE et al. Psychological predictors of subsequent medical care among patients hospitalized with cardiac disease. *J Cardiopulm Rehabil* 1996; 16(2): 109-116.
934. Lesperance F, Frasere-Smith N. Depression in patients with cardiac disease: A practical review. *J Psychosom Res* 2000; 48(4-5): 379-391.
935. Lewin RJ, Furze G, Robinson J, Griffith K, Wiseman S, Pye M et al. A randomised controlled trial of a self-management plan for patients with newly diagnosed angina. *Br J Gen Pract* 2002; 52(476): 194-201.
936. Price JR, Couper J. Cognitive behaviour therapy for adults with chronic fatigue syndrome [Cochrane Review]. *Cochrane Database Syst Rev* 2000; Issue 2. Chichester: John Wiley & Sons Ltd.
937. Morley S, Eccleston C, Williams A. Systematic review and meta-analysis of randomized controlled trials of cognitive behaviour therapy and behaviour therapy for chronic pain in adults, excluding headache. *Pain* 1999; 80(1-2): 1-13.
938. Burke BL, Arkowitz H, Menchola M. The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *J Consult Clin Psychol* 2003; 71(5): 843-861.
939. Hettema J, Steele J, Miller W. Motivational interviewing. *Ann Rev Clin Psychol* 2005; 1: 91-111.
940. Amrhein PC, Miller WR, Yahne CE, Palmer M, Fulcher L. Client commitment language during motivational interviewing predicts drug use outcomes. *J Consult Clin Psychol* 2003; 71(5): 862-878.
941. Miller WR, Yahne CE, Moyers TB, Martinez J, Pirritano M. A randomized trial of methods to help clinicians learn motivational interviewing. *J Consult Clin Psychol* 2004; 72(6): 1050-1062.

942. Department of Health. Treatment choice in psychological therapies and counselling: An evidence based clinical practice guideline. London: Department of Health; 2001.
943. Linden W, Stossel C, Maurice J. Psychosocial interventions for patients with coronary artery disease: A meta-analysis. *Arch Intern Med* 1996; 156(7): 745-752.
944. Oldridge NB, Guyatt GH, Fischer ME, Rimm AA. Cardiac rehabilitation after myocardial infarction: Combined experience of randomized clinical trials. *JAMA* 1988; 260(7): 945-950.
945. Witkin G. Healthy living. In: Ellis A, Bernard ME (Ed). *Clinical applications of rational emotive therapy*. New York: Plenum Press; 1985.
946. Giannuzzi P, Saner H, Bjornstad H, Fioretti P, Mendes M, Cohen-Solal A et al. Secondary prevention through cardiac rehabilitation: Position paper of the Working Group on Cardiac Rehabilitation and Exercise Physiology of the European Society of Cardiology. *Eur Heart J* 2003; 24(13): 1273-1278.
947. Gill D, Hatcher S. Antidepressants for depression in people with medical illness [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 1. Chichester: John Wiley & Sons Ltd.
948. Johnston M, Foulkes J, Johnston DW, Pollard B, Gudmundsdottir H. Impact on patients and partners of inpatient and extended cardiac counseling and rehabilitation: A controlled trial. *Psychosom Med* 1999; 61(2): 225-233.
949. Lewin B, Robertson IH, Cay EL, Irving JB, Campbell M. Effects of self-help post-myocardial-infarction rehabilitation on psychological adjustment and use of health services. *Lancet* 1992; 339(8800): 1036-1040.
950. Thompson DR, Meddis R. A prospective evaluation of in-hospital counselling for first time myocardial infarction men. *J Psychosom Res* 1990; 34(3): 237-248.
951. Mayou RA, Thompson DR, Clements A, Davies CH, Goodwin SJ, Normington K et al. Guideline-based early rehabilitation after myocardial infarction: A pragmatic randomised controlled trial. *J Psychosom Res* 2002; 52(2): 89-95.
952. Department of Health. Treatment choice in psychological therapies and counselling: An evidence based clinical practice guideline. London: Department of Health; 2001.
953. Balestrieri M, Williams P, Wilkinson G. Specialist mental health treatment in general practice: A meta-analysis. *Psychol Med* 1988; 18(3): 711-717.
954. Stein DM, Lambert MJ. Graduate training in psychotherapy: are therapy outcomes enhanced? *J Consult Clin Psychol* 1995; 63(2): 182-196.
955. Dennis M, O'Rourke S, Slattery J, Staniforth T, Warlow C. Evaluation of a stroke family care worker: Results of a randomised controlled trial. *BMJ* 1997; 314(7087): 1071-1076.



956. Frasure-Smith N, Prince R. The ischemic heart disease life stress monitoring program: Impact on mortality. *Psychosom Med* 1985; 47(5): 431-445.
957. Friedman M, Thoresen CE, Gill JJ, Powell LH, Ulmer D, Thompson L et al. Alteration of type A behavior and reduction in cardiac recurrences in postmyocardial infarction patients. *Am Heart J* 1984; 108(2): 237-248.
958. Nunes EV, Frank KA, Kornfeld DS. Psychologic treatment for the type A behavior pattern and for coronary heart disease: A meta-analysis of the literature. *Psychosom Med* 1987; 49(2): 159-173.
959. Bohachick P. Progressive relaxation training in cardiac rehabilitation: Effect on psychologic variables. *Nurs Res* 1984; 33(5): 283-287.
960. Blumenthal JA, Jiang W, Babyak MA, Krantz DS, Frid DJ, Coleman RE et al. Stress management and exercise training in cardiac patients with myocardial ischemia: Effects on prognosis and evaluation of mechanisms. *Arch Intern Med* 1997; 157(19): 2213-2223.
961. Carney RM, Rich MW, Tevelde A, Saini J, Clark K, Jaffe AS. Major depressive disorder in coronary artery disease. *Am J Cardiol* 1987; 60(16): 1273-1275.
962. Schleifer SJ, Macari-Hinson MM, Coyle DA, Slater WR, Kahn M, Gorlin R et al. The nature and course of depression following myocardial infarction. *Arch Intern Med* 1989; 149(8): 1785-1789.
963. McGillion M, Watt-Watson J, Kim J, Yamada J. A systematic review of psychoeducational intervention trials for the management of chronic stable angina. *J Nurs Manag* 2004; 12(3): 174-182.
964. Kanji N, White AR, Ernst E. Autogenic training reduces anxiety after coronary angioplasty: A randomized clinical trial. *Am Heart J* 2004; 147(3): E10.
965. Petrie KJ, Cameron LD, Ellis CJ, Buick D, Weinman J. Changing illness perceptions after myocardial infarction: An early intervention randomized controlled trial. *Psychosom Med* 2002; 64(4): 580-586.
966. Rees K, Bennett P, West R, Davey SG, Ebrahim S. Psychological interventions for coronary heart disease [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 2. Chichester: John Wiley & Sons Ltd.
967. Riemsma RP, Pattenden J, Bridle C, Sowden AJ, Mather L, Watt IS et al. Systematic review of the effectiveness of stage based interventions to promote smoking cessation. *BMJ* 2003; 326(7400): 1175-1177.
968. Riemsma RP, Pattenden J, Bridle C, Sowden AJ, Mather L, Watt IS et al. A systematic review of the effectiveness of interventions based on a stages-of-change approach to promote individual behaviour change. *Health Technol Assess* 2002; 6(24): 1-231.

969. Scottish Needs Assessment Program. Provision of cardiac rehabilitation services in Scotland: needs assessment and guidelines for decision-makers. Glasgow: Public Health Institute of Scotland; 2001.
970. Coates A, McGhee H, Stokes H, Thompson D. BACR Guideline for cardiac rehabilitation. Oxford: Blackwell Scientific; 1995.
971. Antiplatelet Trialists' Collaboration. Collaborative overview of randomised trials of antiplatelet therapy. I: Prevention of death, myocardial infarction, and stroke by prolonged antiplatelet therapy in various categories of patients. *BMJ* 1994; 308(6921): 81-106.
972. Gum PA, Thamarasan M, Watanabe J, Blackstone EH, Lauer MS. Aspirin use and all-cause mortality among patients being evaluated for known or suspected coronary artery disease: A propensity analysis. *JAMA* 2001; 286(10): 1187-1194.
973. Lauer MS. Clinical practice: Aspirin for primary prevention of coronary events. *N Engl J Med* 2002; 346(19): 1468-1474.
974. Juul-Möller S, Edvardsson N, Jahnmatz B, Rosen A, Sorensen S, Omblus R. Double-blind trial of aspirin in primary prevention of myocardial infarction in patients with stable chronic angina pectoris. *Lancet* 1992; 340(8833): 1421-1425.
975. Manson JE, Grobbee DE, Stampfer MJ, Taylor JO, Goldhaber SZ, Gaziano JM et al. Aspirin in the primary prevention of angina pectoris in a randomized trial of United States physicians. *Am J Med* 1990; 89(6): 772-776.
976. Manson JE, Tosteson H, Ridker PM, Satterfield S, Hebert P, O'Connor GT et al. The primary prevention of myocardial infarction. *N Engl J Med* 1992; 326(21): 1406-1416.
977. Ridker PM, Manson JE, Gaziano JM, Buring JE, Hennekens CH. Low-dose aspirin therapy for chronic stable angina: A randomized, placebo-controlled clinical trial. *Ann Intern Med* 1991; 114(10): 835-839.
978. Weisman SM, Graham DY. Evaluation of the benefits and risks of low-dose aspirin in the secondary prevention of cardiovascular and cerebrovascular events. *Arch Intern Med* 2002; 162(19): 2197-2202.
979. CAPRIE Steering Committee. A randomised, blinded, trial of clopidogrel versus aspirin in patients at risk of ischaemic events (CAPRIE). *Lancet* 1996; 348(9038): 1329-1339.
980. Bhatt DL, Bertrand ME, Berger PB, L'Allier PL, Moussa I, Moses JW et al. Meta-analysis of randomized and registry comparisons of ticlopidine with clopidogrel after stenting. *J Am Coll Cardiol* 2002; 39(1): 9-14.
981. Antithrombotic Trialists' Collaboration. Collaborative meta-analysis of randomised trials of antiplatelet therapy for prevention of death, myocardial infarction, and stroke in high risk patients. *BMJ* 2002; 324(7329): 71-86.

982. Hayden M, Pignone M, Phillips C, Mulrow C. Aspirin for the primary prevention of cardiovascular events: A summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2002; 136(2): 161-172.
983. Lip GY, Felmeden DC. Antiplatelet agents and anticoagulants for hypertension [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 3. Chichester: John Wiley & Sons Ltd.
984. Lip GY, Gibbs CR. Anticoagulation for heart failure in sinus rhythm: A Cochrane systematic review. *QJM* 2002; 95(7): 451-459.
985. De Schryver EL, Algra A, Van Gijn J. Dipyridamole for preventing stroke and other vascular events in patients with vascular disease [Cochrane Review]. *Cochrane Database Syst Rev* 2006; Issue 2. Chichester: John Wiley & Sons Ltd.
986. Yusuf S, Sleight P, Pogue J, Bosch J, Davies R, Dagenais G. Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients. *N Engl J Med* 2000; 342(3): 145-153.
987. Yusuf S, Peto R, Lewis J, Collins R, Sleight P. Beta blockade during and after myocardial infarction: An overview of the randomized trials. *Prog Cardiovasc Dis* 1985; 27(5): 335-371.
988. Flather M, Kober L, Pfeffer M, Torp-Pedersen C, Hall A, Murray G et al. Meta-analysis of individual patient data from trials of long term ACE inhibitor treatment after acute myocardial infarction. *Circulation* 1997; 96(8 Suppl): I706.
989. Randomised trial of cholesterol lowering in 4444 patients with coronary heart disease: The Scandinavian Simvastatin Survival Study (4S). *Lancet* 1994; 344(8934): 1383-1389.
990. The Long-Term Intervention with Pravastatin in Ischaemic Disease (LIPID) Study Group. Prevention of cardiovascular events and death with pravastatin in patients with coronary heart disease and a broad range of initial cholesterol levels. *N Engl J Med* 1998; 339(19): 1349-1357.
991. Sanmuganathan PS, Ghahramani P, Jackson PR, Wallis EJ, Ramsay LE. Aspirin for primary prevention of coronary heart disease: Safety and absolute benefit related to coronary risk derived from meta-analysis of randomised trials. *Heart* 2001; 85(3): 265-271.
992. Garcia Rodriguez LA, Hernandez-Diaz S, De Abajo FJ. Association between aspirin and upper gastrointestinal complications: Systematic review of epidemiologic studies. *Br J Clin Pharmacol* 2001; 52(5): 563-571.
993. Eagle KA, Guyton RA, Davidoff R, Edwards FH, Ewy GA, Gardner TJ et al. ACC/AHA 2004 guideline update for coronary artery bypass graft surgery: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1999 Guidelines for Coronary Artery Bypass Graft Surgery). *Circulation* 2004; 110(14): e340-e437.

994. Ferraris VA, Ferraris SP, Moliterno DJ, Camp P, Walenga JM, Messmore HL et al. The Society of Thoracic Surgeons practice guideline series: Aspirin and other antiplatelet agents during operative coronary revascularization (executive summary). *Ann Thorac Surg* 2005; 79(4): 1454-1461.
995. Coull BM, Williams LS, Goldstein LB, Meschia JF, Heitzman D, Chaturvedi S et al. Anticoagulants and antiplatelet agents in acute ischemic stroke: Report of the Joint Stroke Guideline Development Committee of the American Academy of Neurology and the American Stroke Association (a division of the American Heart Association). *Stroke* 2002; 33(7): 1934-1942.
996. Patrono C, Bachmann F, Baigent C, Bode C, De Caterina R, Charbonnier B et al. [Expert consensus document on the use of antiplatelet agents]. *Rev Esp Cardiol* 2004; 57(10): 963-980.
997. Patrono C, Collier B, FitzGerald GA, Hirsh J, Roth G. Platelet-active drugs: The relationships among dose, effectiveness, and side effects. The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy. *Chest* 2004; 126(3 Suppl): 234S-264S.
998. Patrono C. Aspirin resistance: Definition, mechanisms and clinical read-outs. *J Thromb Haemost* 2003; 1(8): 1710-1713.
999. Peters RJ, Mehta SR, Fox KA, Zhao F, Lewis BS, Kopecky SL et al. Effects of aspirin dose when used alone or in combination with clopidogrel in patients with acute coronary syndromes: Observations from the Clopidogrel in Unstable angina to prevent Recurrent Events (CURE) study. *Circulation* 2003; 108(14): 1682-1687.
1000. Yusuf S, Mehta SR, Zhao F, Gersh BJ, Commerford PJ, Blumenthal M et al. Early and late effects of clopidogrel in patients with acute coronary syndromes. *Circulation* 2003; 107(7): 966-972.
1001. Bhatt DL, Fox KA, Hacke W, Berger PB, Black HR, Boden WE et al. Clopidogrel and aspirin versus aspirin alone for the prevention of atherothrombotic events. *N Engl J Med* 2006; 354(16): 1706-1717.
1002. Collet JP, Montalescot G, Blanchet B, Tanguy ML, Golmard JL, Choussat R et al. Impact of prior use or recent withdrawal of oral antiplatelet agents on acute coronary syndromes. *Circulation* 2004; 110(16): 2361-2367.
1003. Frilling B, Schiele R, Gitt AK, Zahn R, Schneider S, Glunz HG et al. Too little aspirin for secondary prevention after acute myocardial infarction in patients at high risk for cardiovascular events: Results from the MITRA study. *Am Heart J* 2004; 148(2): 306-311.
1004. Herlitz J, Holm J, Peterson M, Karlson BW, Evander MH, Erhardt L. Factors associated with development of stroke long-term after myocardial infarction: Experiences from the LoWASA trial. *J Intern Med* 2005; 257(2): 201-207.

1005. Herlitz J, Holm J, Peterson M, Karlson BW, Haglid Evander M, Erhardt L. Effect of fixed low-dose warfarin added to aspirin in the long term after acute myocardial infarction: the LoWASA Study. *Eur Heart J* 2004; 25(3): 232-239.
1006. Lee SW, Park SW, Hong MK, Lee CW, Kim YH, Park JH et al. Comparison of cilostazol and clopidogrel after successful coronary stenting. *Am J Cardiol* 2005; 95(7): 859-862.
1007. Maresta A, Balducelli M, Latini R, Bernardi G, Moccetti T, Sosa C et al. Starc II, a multicenter randomized placebo-controlled double-blind clinical trial of trapidil for 1-year clinical events and angiographic restenosis reduction after coronary angioplasty and stenting. *Catheter Cardiovasc Interv* 2005; 64(3): 375-382.
1008. Mueller C, Roskamm H, Neumann FJ, Hunziker P, Marsch S, Perruchoud A et al. A randomized comparison of clopidogrel and aspirin versus ticlopidine and aspirin after the placement of coronary artery stents. *J Am Coll Cardiol* 2003; 41(6): 969-973.
1009. Pekdemir H, Cin VG, Camsari A, Cicek D, Akkus MN, Doven O et al. A comparison of 1-month and 6-month clopidogrel therapy on clinical and angiographic outcome after stent implantation. *Heart Vessels* 2003; 18(3): 123-129.
1010. Quinn MJ, Aronow HD, Califf RM, Bhatt DL, Sapp S, Kleiman NS et al. Aspirin dose and six-month outcome after an acute coronary syndrome. *J Am Coll Cardiol* 2004; 43(6): 972-978.
1011. Sekiguchi M, Hoshizaki H, Adachi H, Ohshima S, Taniguchi K, Kurabayashi M. Effects of antiplatelet agents on subacute thrombosis and restenosis after successful coronary stenting: A randomized comparison of ticlopidine and cilostazol. *Circ J* 2004; 68(7): 610-614.
1012. Cosmi B, Rubboli A, Castelvetti C, Milandri M. Ticlopidine versus oral anticoagulation for coronary stenting [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 4. Chichester: John Wiley & Sons Ltd.
1013. Rothberg MB, Celestin C, Fiore LD, Lawler E, Cook JR. Warfarin plus aspirin after myocardial infarction or the acute coronary syndrome: Meta-analysis with estimates of risk and benefit. *Ann Intern Med* 2005; 143(4): 241-250.
1014. Casella G, Ottani F, Pavesi PC, Sangiorgio P, Rubboli A, Galvani M et al. Safety and efficacy evaluation of clopidogrel compared to ticlopidine after stent implantation: An updated meta-analysis. *Ital Heart J* 2003; 4(10): 677-684.
1015. Lim E, Ali Z, Ali A, Routledge T, Edmonds L, Altman DG et al. Indirect comparison meta-analysis of aspirin therapy after coronary surgery. *BMJ* 2003; 327(7427): 1309.
1016. Rubboli A, Milandri M, Castelvetti C, Cosmi B. Meta-analysis of trials comparing oral anticoagulation and aspirin versus dual antiplatelet therapy after coronary

- stenting: Clues for the management of patients with an indication for long-term anticoagulation undergoing coronary stenting. *Cardiology* 2005; 104(2): 101-106.
1017. Fuster V, Dyken ML, Vokonas PS, Hennekens C. Aspirin as a therapeutic agent in cardiovascular disease. *Circulation* 1993; 87(2): 659-675.
1018. Kurth T, Glynn RJ, Walker AM, Chan KA, Buring JE, Hennekens CH et al. Inhibition of clinical benefits of aspirin on first myocardial infarction by nonsteroidal antiinflammatory drugs. *Circulation* 2003; 108(10): 1191-1195.
1019. Lewis HD, Jr., Davis JW, Archibald DG, Steinke WE, Smitherman TC, Doherty JE, III et al. Protective effects of aspirin against acute myocardial infarction and death in men with unstable angina: Results of a Veterans Administration Cooperative Study. *N Engl J Med* 1983; 309(7): 396-403.
1020. Cairns JA, Gent M, Singer J, Finnie KJ, Froggatt GM, Holder DA et al. Aspirin, sulfinpyrazone, or both in unstable angina: Results of a Canadian multicenter trial. *N Engl J Med* 1985; 313(22): 1369-1375.
1021. Ryan TJ, Antman EM, Brooks NH, Califf RM, Hillis LD, Hiratzka LF et al. 1999 update: ACC/AHA guidelines for the management of patients with acute myocardial infarction. A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines (Committee on management of acute myocardial infarction). *J Am Coll Cardiol* 1999; 34(3): 890-911.
1022. Baigent C, Keech A, Kearney PM, Blackwell L, Buck G, Pollicino C et al. Efficacy and safety of cholesterol-lowering treatment: prospective meta-analysis of data from 90,056 participants in 14 randomised trials of statins. *Lancet* 2005; 366(9493): 1267-1278.
1023. Kelly JP, Kaufman DW, Jurgelson JM, Sheehan J, Koff RS, Shapiro S. Risk of aspirin-associated major upper-gastrointestinal bleeding with enteric-coated or buffered product. *Lancet* 1996; 348(9039): 1413-1416.
1024. Derry S, Loke YK. Risk of gastrointestinal haemorrhage with long term use of aspirin: Meta-analysis. *BMJ* 2000; 321(7270): 1183-1187.
1025. Steinhubl SR, Berger PB, Mann JT, III, Fry ET, DeLago A, Wilmer C et al. Early and sustained dual oral antiplatelet therapy following percutaneous coronary intervention: A randomized controlled trial. *JAMA* 2002; 288(19): 2411-2420.
1026. Yusuf S, Zhao F, Mehta SR, Chrolavicius S, Tognoni G, Fox KK. Effects of clopidogrel in addition to aspirin in patients with acute coronary syndromes without ST-segment elevation. *N Engl J Med* 2001; 345(7): 494-502.
1027. Kapetanakis EI, Medlam DA, Boyce SW, Haile E, Hill PC, Dullum MK et al. Clopidogrel administration prior to coronary artery bypass grafting surgery: The cardiologist's panacea or the surgeon's headache? *Eur Heart J* 2005; 26(6): 576-583.

1028. Lau WC, Waskell LA, Watkins PB, Neer CJ, Horowitz K, Hopp AS et al. Atorvastatin reduces the ability of clopidogrel to inhibit platelet aggregation: A new drug-drug interaction. *Circulation* 2003; 107(1): 32-37.
1029. Savi P, Laplace MC, Maffrand JP, Herbert JM. Binding of [<sup>3</sup>H]-2-methylthio ADP to rat platelets: Effect of clopidogrel and ticlopidine. *J Pharmacol Exp Ther* 1994; 269(2): 772-777.
1030. Liao L, Sarria-Santamera A, Matchar DB, Huntington A, Lin S, Whellan DJ et al. Meta-analysis of survival and relief of angina pectoris after transmyocardial revascularization. *Am J Cardiol* 2005; 95(10): 1243-1245.
1031. Berger PB, Steinhubl S. Clinical implications of percutaneous coronary intervention-clopidogrel in unstable angina to prevent recurrent events (PCI-CURE) study: A US perspective. *Circulation* 2002; 106(17): 2284-2287.
1032. Fox KA, Mehta SR, Peters R, Zhao F, Lakkis N, Gersh BJ et al. Benefits and risks of the combination of clopidogrel and aspirin in patients undergoing surgical revascularization for non-ST-elevation acute coronary syndrome: The Clopidogrel in Unstable angina to prevent Recurrent ischemic Events (CURE) Trial. *Circulation* 2004; 110(10): 1202-1208.
1033. Braunwald E, Antman EM, Beasley JW, Califf RM, Cheitlin MD, Hochman JS et al. ACC/AHA guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction--2002: Summary article. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the Management of Patients With Unstable Angina). *Circulation* 2002; 106(14): 1893-1900.
1034. Mehta SR, Yusuf S, Peters RJ, Bertrand ME, Lewis BS, Natarajan MK et al. Effects of pretreatment with clopidogrel and aspirin followed by long-term therapy in patients undergoing percutaneous coronary intervention: The PCI-CURE study. *Lancet* 2001; 358(9281): 527-533.
1035. Leon MB, Baim DS, Popma JJ, Gordon PC, Cutlip DE, Ho KK et al. A clinical trial comparing three antithrombotic-drug regimens after coronary-artery stenting. *N Engl J Med* 1998; 339(23): 1665-1671.
1036. Bertrand ME, Legrand V, Boland J, Fleck E, Bonnier J, Emmanuelson H et al. Randomized multicenter comparison of conventional anticoagulation versus antiplatelet therapy in unplanned and elective coronary stenting: The full anticoagulation versus aspirin and ticlopidine (fantastic) study. *Circulation* 1998; 98(16): 1597-1603.
1037. Urban P, Macaya C, Rupprecht HJ, Kiemeneij F, Emanuelsson H, Fontanelli A et al. Randomized evaluation of anticoagulation versus antiplatelet therapy after coronary stent implantation in high-risk patients: The multicenter aspirin and ticlopidine trial after intracoronary stenting (MATTIS). *Circulation* 1998; 98(20): 2126-2132.

1038. Bertrand ME, Rupprecht HJ, Urban P, Gershlick AH. Double-blind study of the safety of clopidogrel with and without a loading dose in combination with aspirin compared with ticlopidine in combination with aspirin after coronary stenting: The clopidogrel aspirin stent international cooperative study (CLASSICS). *Circulation* 2000; 102(6): 624-629.
1039. Taniuchi M, Kurz HI, Lasala JM. Randomized comparison of ticlopidine and clopidogrel after intracoronary stent implantation in a broad patient population. *Circulation* 2001; 104(5): 539-543.
1040. Muller C, Buttner HJ, Petersen J, Roskamm H. A randomized comparison of clopidogrel and aspirin versus ticlopidine and aspirin after the placement of coronary-artery stents. *Circulation* 2000; 101(6): 590-593.
1041. Calver AL, Blows LJ, Harmer S, Dawkins KD, Gray HH, Morgan JH et al. Clopidogrel for prevention of major cardiac events after coronary stent implantation: 30-day and 6-month results in patients with smaller stents. *Am Heart J* 2000; 140(3): 483-491.
1042. Moussa I, Oetgen M, Roubin G, Colombo A, Wang X, Iyer S et al. Effectiveness of clopidogrel and aspirin versus ticlopidine and aspirin in preventing stent thrombosis after coronary stent implantation. *Circulation* 1999; 99(18): 2364-2366.
1043. Berger PB. Clopidogrel instead of ticlopidine after coronary stent placement: Is the switch justified? *Am Heart J* 2000; 140(3): 354-358.
1044. Berger PB, Bell MR, Rihal CS, Ting H, Barsness G, Garratt K et al. Clopidogrel versus ticlopidine after intracoronary stent placement. *J Am Coll Cardiol* 1999; 34(7): 1891-1894.
1045. Elwood PC, Cochrane AL, Burr ML, Sweetnam PM, Williams G, Welsby E et al. A randomized controlled trial of acetyl salicylic acid in the secondary prevention of mortality from myocardial infarction. *Br Med J* 1974; 1(5905): 436-440.
1046. Elwood PC, Sweetnam PM. Aspirin and secondary mortality after myocardial infarction. *Lancet* 1979; 2(8156-8157): 1313-1315.
1047. The aspirin myocardial infarction study: Final results. *Circulation* 1980; 62(6 Pt 2): V79-V84.
1048. The Coronary Drug Project Research Group. Aspirin in coronary heart disease. *Circulation* 1980; 62(6 Pt 2): V59-V62.
1049. Breddin K, Loew D, Lechner K, Uberla K, Walter E. Secondary prevention of myocardial infarction: Comparison of acetylsalicylic acid, phenprocoumon and placebo. A multicenter two-year prospective study. *Thromb Haemost* 1979; 41(1): 225-236.
1050. Baigent C, Collins R, Appleby P, Parish S, Sleight P, Peto R. ISIS-2: 10 year survival among patients with suspected acute myocardial infarction in randomised



- comparison of intravenous streptokinase, oral aspirin, both, or neither. *BMJ* 1998; 316(7141): 1337-1343.
1051. Verheugt FW, Van der Laarse A, Funke-Kupper AJ, Sterkman LG, Galema TW, Roos JP. Effects of early intervention with low-dose aspirin (100 mg) on infarct size, reinfarction and mortality in anterior wall acute myocardial infarction. *Am J Cardiol* 1990; 66(3): 267-270.
1052. National Institute of Clinical Excellence. Clopidogrel in the Treatment of Non-ST-segment-elevation Acute Coronary Syndrome (Technology appraisal; no 80). London: NICE; 2004.
1053. Sabatine MS, Cannon CP, Gibson CM, Lopez-Sendon JL, Montalescot G, Theroux P et al. Addition of clopidogrel to aspirin and fibrinolytic therapy for myocardial infarction with ST-segment elevation. *N Engl J Med* 2005; 352(12): 1179-1189.
1054. Chen ZM, Jiang LX, Chen YP, Xie JX, Pan HC, Peto R et al. Addition of clopidogrel to aspirin in 45,852 patients with acute myocardial infarction: Randomised placebo-controlled trial. *Lancet* 2005; 366(9497): 1607-1621.
1055. National Institute of Clinical Excellence. Dyspepsia (NICE clinical guideline; no 17). London: NICE; 2004.
1056. Psaty BM, Heckbert SR, Koepsell TD, Siscovick DS, Raghunathan TE, Weiss NS et al. The risk of myocardial infarction associated with antihypertensive drug therapies. *JAMA* 1995; 274(8): 620-625.
1057. Bradford WD, Chen J, Krumholz HM. Under-utilisation of beta-blockers after acute myocardial infarction: Pharmacoeconomic implications. *Pharmacoeconomics* 1999; 15(3): 257-268.
1058. Gottlieb SS, McCarter RJ, Vogel RA. Effect of beta-blockade on mortality among high-risk and low-risk patients after myocardial infarction. *N Engl J Med* 1998; 339(8): 489-497.
1059. Miller DB. Secondary prevention for ischemic heart disease: Relative numbers needed to treat with different therapies. *Arch Intern Med* 1997; 157(18): 2045-2052.
1060. Teerlink JR, Massie BM. Beta-adrenergic blocker mortality trials in congestive heart failure. *Am J Cardiol* 1999; 84(Suppl 1): 94R-102R.
1061. Hunt SA, Baker DW, Chin MH, Cinquegrani MP, Feldman AM, Francis GS et al. ACC/AHA guidelines for the evaluation and management of chronic heart failure in the adult: Executive summary. A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Revise the 1995 Guidelines for the Evaluation and Management of Heart Failure). Developed in collaboration with the International Society for Heart and Lung Transplantation. *Circulation* 2001; 104(24): 2996-3007.

1062. UK Prospective Diabetes Study Group. Efficacy of atenolol and captopril in reducing risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 39. *BMJ* 1998; 317(7160): 713-720.
1063. Arzneimittelkommission der deutschen Ärzteschaft. Empfehlungen zur Therapie der arteriellen Hypertonie. Köln: AkdÄ; 2004.
1064. Deutsche Hochdruckliga. Empfehlungen zur Hochdruckbehandlung. Heidelberg: DHL; 2001.
1065. Laufs U, Erdmann E. Therapie der Herzinsuffizienz mit Beta-Rezeptorenblockern. *Herz Kreislauf* 1999; 31: 363-366.
1066. Smith SC, Jr., Blair SN, Bonow RO, Brass LM, Cerqueira MD, Dracup K et al. AHA/ACC guidelines for preventing heart attack and death in patients with atherosclerotic cardiovascular disease: 2001 update. A statement for healthcare professionals from the American Heart Association and the American College of Cardiology. *J Am Coll Cardiol* 2001; 38(5): 1581-1583.
1067. The Australian therapeutic trial in mild hypertension: Report by the Management Committee. *Lancet* 1980; 1(8181): 1261-1267.
1068. Mild hypertension: MRC working party report. *BMJ* 1988; 297(6650): 739.
1069. Medical Research Council trial of treatment of hypertension in older adults: Principal results. *BMJ* 1992; 304(6824): 405-412.
1070. Dahlof B, Lindholm LH, Hansson L, Schersten B, Ekbom T, Wester PO. Morbidity and mortality in the Swedish Trial in Old Patients with Hypertension (STOP-Hypertension). *Lancet* 1991; 338(8778): 1281-1285.
1071. Hansson L, Lindholm LH, Ekbom T, Dahlof B, Lanke J, Schersten B et al. Randomised trial of old and new antihypertensive drugs in elderly patients: Cardiovascular mortality and morbidity the Swedish Trial in Old Patients with Hypertension-2 study. *Lancet* 1999; 354(9192): 1751-1756.
1072. Messerli FH, Grossman E, Goldbourt U. Are beta-blockers efficacious as first-line therapy for hypertension in the elderly? A systematic review. *JAMA* 1998; 279(23): 1903-1907.
1073. Olsson G, Wikstrand J, Warnold I, Manger Cats V, McBoyle D, Herlitz J et al. Metoprolol-induced reduction in postinfarction mortality: Pooled results from five double-blind randomized trials. *Eur Heart J* 1992; 13(1): 28-32.
1074. Psaty BM, Smith NL, Siscovick DS, Koepsell TD, Weiss NS, Heckbert SR et al. Health outcomes associated with antihypertensive therapies used as first-line agents: A systematic review and meta-analysis. *JAMA* 1997; 277(9): 739-745.

1075. Tuomilehto J, Wikstrand J, Warnold I, Olsson G, Elmfeldt D, Berglund G. Coronary artery disease can be prevented by antihypertensive therapy: Experiences from the MAPHY Study. *J Cardiovasc Pharmacol* 1990; 16(Suppl 7): S75-S76.
1076. Wikstrand J, Warnold I, Olsson G, Tuomilehto J, Elmfeldt D, Berglund G. Primary prevention with metoprolol in patients with hypertension: Mortality results from the MAPHY study. *JAMA* 1988; 259(13): 1976-1982.
1077. Shibata MC, Flather MD, Wang D. Systematic review of the impact of beta blockers on mortality and hospital admissions in heart failure. *Eur J Heart Fail* 2001; 3(3): 351-357.
1078. Bonet S, Agusti A, Arnau JM, Vidal X, Diogene E, Galve E et al. Beta-adrenergic blocking agents in heart failure: Benefits of vasodilating and non-vasodilating agents according to patients' characteristics. A meta-analysis of clinical trials. *Arch Intern Med* 2000; 160(5): 621-627.
1079. Thackray S, Easthaugh J, Freemantle N, Cleland JG. The effectiveness and relative effectiveness of intravenous inotropic drugs acting through the adrenergic pathway in patients with heart failure-a meta-regression analysis. *Eur J Heart Fail* 2002; 4(4): 515-529.
1080. Freemantle N, Cleland J, Young P, Mason J, Harrison J. Beta blockade after myocardial infarction: Systematic review and meta regression analysis. *BMJ* 1999; 318(7200): 1730-1737.
1081. Fihn SD, Williams SV, Daley J, Gibbons RJ. Guidelines for the management of patients with chronic stable angina: Treatment. *Ann Intern Med* 2001; 135(8 Pt 1): 616-632.
1082. The CONSENSUS Trial Study Group. Effects of enalapril on mortality in severe congestive heart failure: Results of the Cooperative North Scandinavian Enalapril Survival Study (CONSENSUS). *N Engl J Med* 1987; 316(23): 1429-1435.
1083. The SOLVD Investigators. Effect of enalapril on survival in patients with reduced left ventricular ejection fractions and congestive heart failure. *N Engl J Med* 1991; 325(5): 293-302.
1084. Wing LM, Reid CM, Ryan P, Beilin LJ, Brown MA, Jennings GL et al. A comparison of outcomes with angiotensin-converting--enzyme inhibitors and diuretics for hypertension in the elderly. *N Engl J Med* 2003; 348(7): 583-592.
1085. Heidenreich PA, McDonald KM, Hastie T, Fadel B, Hagan V, Lee BK et al. An evaluation of beta-blockers, calcium antagonists, nitrates, and alternative therapies for stable angina: Summary. *Evidence report/technology assessment* 1999;(10): 1-2.
1086. Heidenreich PA, McDonald KM, Hastie T, Fadel B, Hagan V, Lee BK et al. Meta-analysis of trials comparing beta-blockers, calcium antagonists, and nitrates for stable angina. *JAMA* 1999; 281(20): 1927-1936.

1087. Sculpher MJ, Petticrew M, Kelland JL, Elliott RA, Holdright DR, Buxton MJ. Resource allocation for chronic stable angina: A systematic review of effectiveness, costs and cost-effectiveness of alternative interventions. *Health Technol Assess* 1998; 2(10): i-176.
1088. Bunch TJ, Muhlestein JB, Bair TL, Renlund DG, Lappe DL, Jensen KR et al. Effect of beta-blocker therapy on mortality rates and future myocardial infarction rates in patients with coronary artery disease but no history of myocardial infarction or congestive heart failure. *Am J Cardiol* 2005; 95(7): 827-831.
1089. Von Arnim T. Medical treatment to reduce total ischemic burden: Total ischemic burden bisoprolol study (TIBBS), a multicenter trial comparing bisoprolol and nifedipine. *J Am Coll Cardiol* 1995; 25(1): 231-238.
1090. Nidorf SM, Parsons RW, Thompson PL, Jamrozik KD, Hobbs MS. Reduced risk of death at 28 days in patients taking a beta blocker before admission to hospital with myocardial infarction. *BMJ* 1990; 300(6717): 71-74.
1091. Teo KK, Yusuf S, Furberg CD. Effects of prophylactic antiarrhythmic drug therapy in acute myocardial infarction: An overview of results from randomized controlled trials. *JAMA* 1993; 270(13): 1589-1595.
1092. Dargie HJ. Effect of carvedilol on outcome after myocardial infarction in patients with left-ventricular dysfunction: The CAPRICORN randomised trial. *Lancet* 2001; 357(9266): 1385-1390.
1093. Ellis K, Tcheng JE, Sapp S, Topol EJ, Lincoff AM. Mortality benefit of beta blockade in patients with acute coronary syndromes undergoing coronary intervention: Pooled results from the Epic, Epilog, Epistent, Capture and Rapport Trials. *J Interv Cardiol* 2003; 16(4): 299-305.
1094. Harjai KJ, Stone GW, Boura J, Grines L, Garcia E, Brodie B et al. Effects of prior beta-blocker therapy on clinical outcomes after primary coronary angioplasty for acute myocardial infarction. *Am J Cardiol* 2003; 91(6): 655-660.
1095. Janosi A, Ghali JK, Herlitz J, Czuriga I, Klibaner M, Wikstrand J et al. Metoprolol CR/XL in postmyocardial infarction patients with chronic heart failure: Experiences from MERIT-HF. *Am Heart J* 2003; 146(4): 721-728.
1096. Wikstrand J, Wedel H, Ghali J, Deedwania P, Fagerberg B, Goldstein S et al. How should subgroup analyses affect clinical practice? Insights from the Metoprolol Succinate Controlled-Release/Extended-Release Randomized Intervention Trial in Heart Failure (MERIT-HF). *Card Electrophysiol Rev* 2003; 7(3): 264-275.
1097. Dargie HJ, Ford I, Fox KM. Total Ischaemic Burden European Trial (TIBET): Effects of ischaemia and treatment with atenolol, nifedipine SR and their combination on outcome in patients with chronic stable angina. *Eur Heart J* 1996; 17(1): 104-112.

1098. Rehnqvist N, Hjemdahl P, Billing E, Björkander I, Eriksson SV, Forslund L et al. Effects of metoprolol vs verapamil in patients with stable angina pectoris: The Angina Prognosis Study in Stockholm (APSYS). *Eur Heart J* 1996; 17(1): 76-81.
1099. Yusuf S, Wittes J, Friedman L. Overview of results of randomized clinical trials in heart disease. II: Unstable angina, heart failure, primary prevention with aspirin, and risk factor modification. *JAMA* 1988; 260(15): 2259-2263.
1100. Freemantle N, Urdahl H, Eastaugh J, Hobbs FD. What is the place of beta-blockade in patients who have experienced a myocardial infarction with preserved left ventricular function? Evidence and (mis)interpretation. *Prog Cardiovasc Dis* 2002; 44(4): 243-250.
1101. Hjemdahl P, Eriksson SV, Held C, Forslund L, Näsman P, Rehnqvist N. Favourable long term prognosis in stable angina pectoris: An extended follow up of the angina prognosis study in Stockholm (APSYS). *Heart* 2006; 92(2): 177-182.
1102. Effect of metoprolol CR/XL in chronic heart failure: Metoprolol CR/XL Randomised Intervention Trial in Congestive Heart Failure (MERIT-HF). *Lancet* 1999; 353(9169): 2001-2007.
1103. The Cardiac Insufficiency Bisoprolol Study II (CIBIS-II): A randomised trial. *Lancet* 1999; 353(9146): 9-13.
1104. Packer M, Bristow MR, Cohn JN, Colucci WS, Fowler MB, Gilbert EM et al. The effect of carvedilol on morbidity and mortality in patients with chronic heart failure. *N Engl J Med* 1996; 334(21): 1349-1355.
1105. Gibbons RJ, Chatterjee K, Daley J, Douglas JS, Fihn SD, Gardin JM et al. ACC/AHA/ACP-ASIM guidelines for the management of patients with chronic stable angina: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on Management of Patients With Chronic Stable Angina). *J Am Coll Cardiol* 1999; 33(7): 2092-2197.
1106. Kerins DM, Robertson RM, Robertson D. Drugs used for the treatment of myocardial ischaemia. In: Hardman JG, Limbird LE (Ed). *Goodman & Gilman's the pharmacological basis of therapeutics*. New York: McGraw-Hill; 2001. S. 843-870.
1107. Savonitto S, Ardissino D. Selection of drug therapy in stable angina pectoris. *Cardiovasc Drugs Ther* 1998; 12(2): 197-210.
1108. Thadani U. Treatment of stable angina. *Curr Opin Cardiol* 1999; 14(4): 349-358.
1109. Ko DT, Hebert PR, Coffey CS, Sedrakyan A, Curtis JP, Krumholz HM. Beta-blocker therapy and symptoms of depression, fatigue, and sexual dysfunction. *JAMA* 2002; 288(3): 351-357.
1110. Mutschler E. Nitro-Verbindungen. In: Mutschler EW (Ed). *Arzneimittelwirkungen*. Stuttgart: Wissenschaftliche Verlagsgesellschaft; 1997. S. 467-471.

1111. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Arterielle Hypertonie. Köln: AkdÄ; 1998.
1112. Hansson L, Lindholm LH, Niskanen L, Lanke J, Hedner T, Niklason A et al. Effect of angiotensin-converting-enzyme inhibition compared with conventional therapy on cardiovascular morbidity and mortality in hypertension: The Captopril Prevention Project (CAPPP) randomised trial. *Lancet* 1999; 353(9153): 611-616.
1113. Rehnqvist N, Hjemdahl P, Billing E, Björkander I, Eriksson SV, Forslund L et al. Treatment of stable angina pectoris with calcium antagonists and beta-blockers: The APSIS study. *Cardiologia* 1995; 40(12 Suppl 1): 301.
1114. Savonitto S, Ardissiono D, Egstrup K, Rasmussen K, Bae EA, Omland T et al. Combination therapy with metoprolol and nifedipine versus monotherapy in patients with stable angina pectoris: Results of the International Multicenter Angina Exercise (IMAGE) Study. *J Am Coll Cardiol* 1996; 27(2): 311-316.
1115. Deedwania PC, Carbajal EV, Nelson JR, Hait H. Anti-ischemic effects of atenolol versus nifedipine in patients with coronary artery disease and ambulatory silent ischemia. *J Am Coll Cardiol* 1991; 17(4): 963-969.
1116. Chaitman BR, Stone PH, Knatterud GL, Forman SA, Sopko G, Bourassa MG et al. Asymptomatic Cardiac Ischemia Pilot (ACIP) study: Impact of anti-ischemia therapy on 12-week rest electrocardiogram and exercise test outcomes. *J Am Coll Cardiol* 1995; 26(3): 585-593.
1117. Davies RF, Habibi H, Klinke WP, Dessain P, Nadeau C, Phaneuf DC et al. Effect of amlodipine, atenolol and their combination on myocardial ischemia during treadmill exercise and ambulatory monitoring. *J Am Coll Cardiol* 1995; 25(3): 619-625.
1118. Chen ZM, Pan HC, Chen YP, Peto R, Collins R, Jiang LX et al. Early intravenous then oral metoprolol in 45,852 patients with acute myocardial infarction: Randomised placebo-controlled trial. *Lancet* 2005; 366(9497): 1622-1632.
1119. Krumholz HM, Radford MJ, Wang Y, Chen J, Heiat A, Marciniak TA. National use and effectiveness of beta-blockers for the treatment of elderly patients after acute myocardial infarction: National Cooperative Cardiovascular Project. *JAMA* 1998; 280(7): 623-629.
1120. Houghton T, Freemantle N, Cleland JG. Are beta-blockers effective in patients who develop heart failure soon after myocardial infarction? A meta-regression analysis of randomised trials. *Eur J Heart Fail* 2000; 2(3): 333-340.
1121. Vantrimpont P, Rouleau JL, Wun CC, Ciampi A, Klein M, Sussex B et al. Additive beneficial effects of beta-blockers to angiotensin-converting enzyme inhibitors in the Survival and Ventricular Enlargement (SAVE) Study. *J Am Coll Cardiol* 1997; 29(2): 229-236.
1122. Exner DV, Dries DL, Waclawiw MA, Shelton B, Domanski MJ. Beta-adrenergic blocking agent use and mortality in patients with asymptomatic and symptomatic

left ventricular systolic dysfunction: A post hoc analysis of the studies of left ventricular dysfunction. *J Am Coll Cardiol* 1999; 33(4): 916-923.

1123. Aronow WS, Ahn C, Kronzon I. Effect of beta blockers alone, of angiotensin-converting enzyme inhibitors alone, and of beta blockers plus angiotensin-converting enzyme inhibitors on new coronary events and on congestive heart failure in older persons with healed myocardial infarcts and asymptomatic left ventricular systolic dysfunction. *Am J Cardiol* 2001; 88(11): 1298-1300.
1124. National Institute of Clinical Excellence. Myocardial infarction: prophylaxis for patients who have experienced a myocardial infarction: drug treatment, cardiac rehabilitation and dietary manipulation. London: NICE; 2001.
1125. The Multicenter Diltiazem Postinfarction Trial Research Group. The effect of diltiazem on mortality and reinfarction after myocardial infarction. *N Engl J Med* 1988; 319(7): 385-392.
1126. Effect of verapamil on mortality and major events after acute myocardial infarction (the Danish Verapamil Infarction Trial II: DAVIT II). *Am J Cardiol* 1990; 66(10): 779-785.
1127. Boden WE, Van Gilst WH, Scheldewaert RG, Starkey IR, Carlier MF, Julian DG et al. Diltiazem in acute myocardial infarction treated with thrombolytic agents: A randomised placebo-controlled trial. *Lancet* 2000; 355(9217): 1751-1756.
1128. Pitt B, Poole-Wilson PA, Segal R, Martinez FA, Dickstein K, Camm AJ et al. Effect of losartan compared with captopril on mortality in patients with symptomatic heart failure: Randomised trial. *Lancet* 2000; 355(9215): 1582-1587.
1129. Cucherat M, Boissel JP, Leizorovicz A. Persistent reduction of mortality for five years after one year of acebutolol treatment initiated during acute myocardial infarction. *Am J Cardiol* 1997; 79(5): 587-589.
1130. Frye RL, Gibbons RJ, Schaff HV, Vlietstra RE, Gersh BJ, Mock MB. Treatment of coronary artery disease. *J Am Coll Cardiol* 1989; 13(5): 957-968.
1131. Shub C. Stable angina pectoris. 1: Clinical patterns. *Mayo Clin Proc* 1990; 65(2): 233-242.
1132. Cheitlin MD, Hutter AM, Jr., Brindis RG, Ganz P, Kaul S, Russell RO, Jr. et al. Use of sildenafil (Viagra) in patients with cardiovascular disease: Technology and Practice Executive Committee. *Circulation* 1999; 99(1): 168-177.
1133. Parker JD, Parker JO. Nitrate therapy for stable angina pectoris. *N Engl J Med* 1998; 338(8): 520-531.
1134. Akhras F, Jackson G. Efficacy of nifedipine and isosorbide mononitrate in combination with atenolol in stable angina. *Lancet* 1991; 338(8774): 1036-1039.

1135. Tolins M, Weir EK, Chesler E, Pierpont GL. "Maximal" drug therapy is not necessarily optimal in chronic angina pectoris. *J Am Coll Cardiol* 1984; 3(4): 1051-1057.
1136. Stason WB, Schmid CH, Niedzwiecki D, Whiting GW, Caubet JF, Cory D et al. Safety of nifedipine in angina pectoris: A meta-analysis. *Hypertension* 1999; 33(1): 24-31.
1137. Cohn JN, Ziesche S, Smith R, Anand I, Dunkman WB, Loeb H et al. Effect of the calcium antagonist felodipine as supplementary vasodilator therapy in patients with chronic heart failure treated with enalapril: V-HeFT III. *Circulation* 1997; 96(3): 856-863.
1138. Packer M, O'Connor CM, Ghali JK, Pressler ML, Carson PE, Belkin RN et al. Effect of amlodipine on morbidity and mortality in severe chronic heart failure. *N Engl J Med* 1996; 335(15): 1107-1114.
1139. Guermonprez JL, Blin P, Peterlongo F. A double-blind comparison of the long-term efficacy of a potassium channel opener and a calcium antagonist in stable angina pectoris. *Eur Heart J* 1993; 14(Suppl B): 30-34.
1140. Chatterjee T, Fleisch M, Meier B, Eber A. Comparison of the antiischaemic and antianginal effects of nicorandil and amlodipine in patients with symptomatic stable angina pectoris: The SWAN study. *Journal of Clinical and Basic Cardiology* 1999; 2(2): 213-217.
1141. IONA Study Group. Effect of nicorandil on coronary events in patients with stable angina: The Impact Of Nicorandil in Angina (IONA) randomised trial. *Lancet* 2002; 359(9314): 1269-1275.
1142. Hall R, Chong C. A double-blind, parallel-group study of amlodipine versus long-acting nitrate in the management of elderly patients with stable angina. *Cardiology* 2001; 96(2): 72-77.
1143. Midtbo K, Molstad P. Amlodipine versus slow release metoprolol in the treatment of stable exertional angina pectoris (AMSA). *Scand Cardiovasc J* 2000; 34(5): 475-479.
1144. Chugh SK, Dignpal K, Hutchinson T, McDonald CJ, Miller AJ, Lahiri A. A randomized, double-blind comparison of the efficacy and tolerability of once-daily modified-release diltiazem capsules with once-daily amlodipine tablets in patients with stable angina. *J Cardiovasc Pharmacol* 2001; 38(3): 356-364.
1145. Parmley WW, Nesto RW, Singh BN, Deanfield J, Gottlieb SO. Attenuation of the circadian patterns of myocardial ischemia with nifedipine GITS in patients with chronic stable angina. *J Am Coll Cardiol* 1992; 19(7): 1380-1389.
1146. Estacio RO, Jeffers BW, Hiatt WR, Biggerstaff SL, Gifford N, Schrier RW. The effect of nisoldipine as compared with enalapril on cardiovascular outcomes in



- patients with non-insulin-dependent diabetes and hypertension. *N Engl J Med* 1998; 338(10): 645-652.
1147. Thadani U, Zellner SR, Glasser S, Bittar N, Montoro R, Miller AB et al. Double-blind, dose-response, placebo-controlled multicenter study of nisoldipine: A new second-generation calcium channel blocker in angina pectoris. *Circulation* 1991; 84(6): 2398-2408.
1148. Tatti P, Pahor M, Byington RP, Di Mauro P, Guarisco R, Strollo G et al. Outcome results of the Fosinopril versus Amlodipine Cardiovascular Events Randomized Trial (FACET) in patients with hypertension and NIDDM. *Diabetes Care* 1998; 21(4): 597-603.
1149. Fox KM. Efficacy of perindopril in reduction of cardiovascular events among patients with stable coronary artery disease: Randomised, double-blind, placebo-controlled, multicentre trial (the EUROPA study). *Lancet* 2003; 362(9386): 782-788.
1150. Borer JS, Fox K, Jaillon P, Lerebours G. Antianginal and antiischemic effects of ivabradine, an I(f) inhibitor, in stable angina: A randomized, double-blind, multicentered, placebo-controlled trial. *Circulation* 2003; 107(6): 817-823.
1151. Tardif JC, Ford I, Tendera M, Bourassa MG, Fox K. Efficacy of ivabradine, a new selective I(f) inhibitor, compared with atenolol in patients with chronic stable angina. *Eur Heart J* 2005; 26(23): 2529-2536.
1152. Nissen SE, Tuzcu EM, Libby P, Thompson PD, Ghali M, Garza D et al. Effect of antihypertensive agents on cardiovascular events in patients with coronary disease and normal blood pressure: The CAMELOT study. A randomized controlled trial. *JAMA* 2004; 292(18): 2217-2225.
1153. Poole-Wilson PA, Lubsen J, Kirwan BA, Van Dalen FJ, Wagener G, Danchin N et al. Effect of long-acting nifedipine on mortality and cardiovascular morbidity in patients with stable angina requiring treatment (ACTION trial): Randomised controlled trial. *Lancet* 2004; 364(9437): 849-857.
1154. Deanfield JE, Detry JM, Lichtlen PR, Magnani B, Sellier P, Thaulow E. Amlodipine reduces transient myocardial ischemia in patients with coronary artery disease: Double-blind Circadian Anti-Ischemia Program in Europe (CAPE Trial). *J Am Coll Cardiol* 1994; 24(6): 1460-1467.
1155. Ardissino D, Savonitto S, Egstrup K, Rasmussen K, Bae EA, Omland T et al. Selection of medical treatment in stable angina pectoris: Results of the International Multicenter Angina Exercise (IMAGE) Study. *J Am Coll Cardiol* 1995; 25(7): 1516-1521.
1156. Forslund L, Hjemdahl P, Held C, Björkander I, Eriksson SV, Brodin U et al. Prognostic implications of results from exercise testing in patients with chronic

- stable angina pectoris treated with metoprolol or verapamil: A report from the Angina Prognosis Study In Stockholm (APSIS). *Eur Heart J* 2000; 21(11): 901-910.
1157. Bassan MM, Weiler-Ravell D, Shalev O. Comparison of the antianginal effectiveness of nifedipine, verapamil, and isosorbide dinitrate in patients receiving propranolol: A double-blind study. *Circulation* 1983; 68(3): 568-575.
1158. Schneider W, Maul FD, Bussmann WD, Lang E, Hor G, Kaltenbach M. Comparison of the antianginal efficacy of isosorbide dinitrate (ISDN) 40 mg and verapamil 120 mg three times daily in the acute trial and following two-week treatment. *Eur Heart J* 1988; 9(2): 149-158.
1159. Ankier SI, Fay L, Warrington SJ, Woodings DF. A multicentre open comparison of isosorbide-5-mononitrate and nifedipine given prophylactically to general practice patients with chronic stable angina pectoris. *J Int Med Res* 1989; 17(2): 172-178.
1160. Emanuelsson H, Ake H, Kristi M, Arina R. Effects of diltiazem and isosorbide-5-mononitrate, alone and in combination, on patients with stable angina pectoris. *Eur J Clin Pharmacol* 1989; 36(6): 561-566.
1161. Akhras F, Chambers J, Jefferies S, Jackson G. A randomised double-blind crossover study of isosorbide mononitrate and nifedipine retard in chronic stable angina. *Int J Cardiol* 1989; 24(2): 191-196.
1162. Vaage-Nilsen M, Rasmussen V, Hansen JF, Hagerup L, Sorensen MB, Pedersen-Bjergaard O et al. Prognostic implications of ventricular ectopy one week, one month, and sixteen months after an acute myocardial infarction. *Clin Cardiol* 1998; 21(12): 905-911.
1163. Klein WW, Jackson G, Tavazzi L. Efficacy of monotherapy compared with combined antianginal drugs in the treatment of chronic stable angina pectoris: A meta-analysis. *Coron Artery Dis* 2002; 13(8): 427-436.
1164. Heller GV, Sridharan M, Morse J, Glasser S, Beach CL. Antianginal response to once-daily diltiazem CD in patients receiving concomitant beta-blockers, long-acting nitrates, or both. *Pharmacotherapy* 1997; 17(4): 760-766.
1165. Bassan MM, Weiler-Ravell D. The additive antianginal action of oral isosorbide dinitrate in patients receiving propranolol: Magnitude and duration of effect. *Chest* 1983; 83(2): 233-240.
1166. Tirlapur VG, Mir MA. Cardiorespiratory effects of isosorbide dinitrate and nifedipine in combination with nadolol: A double-blind comparative study of beneficial and adverse antianginal drug interactions. *Am J Cardiol* 1984; 53(4): 487-492.
1167. Jackson G. Stable angina: Maximal medical therapy is not the same as optimal medical therapy. *Int J Clin Pract* 2000; 54(6): 351.

1168. Chahine RA, Feldman RL, Giles TD, Nicod P, Raizner AE, Weiss RJ et al. Randomized placebo-controlled trial of amlodipine in vasospastic angina. *J Am Coll Cardiol* 1993; 21(6): 1365-1370.
1169. Tilmant PY, LaBlanche JM, Thieuleux FA, Dupuis BA, Bertrand ME. Detrimental effect of propranolol in patients with coronary arterial spasm countered by combination with diltiazem. *Am J Cardiol* 1983; 52(3): 230-233.
1170. Johnson SM, Mauritson DR, Willerson JT, Hillis LD. A controlled trial of verapamil for Prinzmetal's variant angina. *N Engl J Med* 1981; 304(15): 862-866.
1171. Johnson SM, Mauritson DR, Willerson JT, Cary JR, Hillis LD. Verapamil administration in variant angina pectoris: Efficacy shown by ecg monitoring. *JAMA* 1981; 245(18): 1849-1851.
1172. Brown MJ, Palmer CR, Castaigne A, De Leeuw PW, Mancia G, Rosenthal T et al. Morbidity and mortality in patients randomised to double-blind treatment with a long-acting calcium-channel blocker or diuretic in the International Nifedipine GITS study: Intervention as a Goal in Hypertension Treatment (INSIGHT). *Lancet* 2000; 356(9227): 366-372.
1173. Staessen JA, Fagard R, Thijs L, Celis H, Arabidze GG, Birkenhager WH et al. Randomised double-blind comparison of placebo and active treatment for older patients with isolated systolic hypertension. *Lancet* 1997; 350(9080): 757-764.
1174. Hansson L, Hedner T, Lund-Johansen P, Kjeldsen SE, Lindholm LH, Syvertsen JO et al. Randomised trial of effects of calcium antagonists compared with diuretics and beta-blockers on cardiovascular morbidity and mortality in hypertension: The Nordic Diltiazem (NORDIL) study. *Lancet* 2000; 356(9227): 359-365.
1175. ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Major outcomes in high-risk hypertensive patients randomized to angiotensin-converting enzyme inhibitor or calcium channel blocker vs diuretic: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *JAMA* 2002; 288(23): 2981-2997.
1176. Steffensen R, Grande P, Pedersen F, Haunso S. Effects of atenolol and diltiazem on exercise tolerance and ambulatory ischaemia. *Int J Cardiol* 1993; 40(2): 143-153.
1177. Bowles MJ, Bala Subramanian V, Davies AB, Raftery EB. Double-blind randomized crossover trial of verapamil and propranolol in chronic stable angina. *Am Heart J* 1983; 106(6): 1297-1306.
1178. Findlay IN, MacLeod K, Gillen G, Elliott AT, Aitchison T, Dargie HJ. A double blind placebo controlled comparison of verapamil, atenolol, and their combination in patients with chronic stable angina pectoris. *Br Heart J* 1987; 57(4): 336-343.
1179. Frishman WH, Klein NA, Klein P, Strom JA, Tawil R, Strair R et al. Comparison of oral propranolol and verapamil for combined systemic hypertension and angina

- pectoris: A placebo-controlled double-blind randomized crossover trial. *Am J Cardiol* 1982; 50(5): 1164-1172.
1180. Frishman WH. Comparative efficacy and concomitant use of bepridil and beta blockers in the management of angina pectoris. *Am J Cardiol* 1992; 69(11): 50D-55D.
1181. Nadazdin A, Davies GJ. Investigation of therapeutic mechanisms of atenolol and diltiazem in patients with variable-threshold angina. *Am Heart J* 1994; 127(2): 312-317.
1182. Pflugfelder PW, Humen DP, O'Brien PA, Purves PD, Jablonsky G, Kostuk WJ. Comparison of bepridil with nadolol for angina pectoris. *Am J Cardiol* 1987; 59(15): 1283-1288.
1183. Rae AP, Beattie JM, Lawrie TD, Hutton I. Comparative clinical efficacy of bepridil, propranolol and placebo in patients with chronic stable angina. *Br J Clin Pharmacol* 1985; 19(3): 343-352.
1184. Parker JO, Vankoughnett KA, Farrell B. Nitroglycerin lingual spray: Clinical efficacy and dose-response relation. *Am J Cardiol* 1986; 57(1): 1-5.
1185. Chien KL, Sung FC, Chao CL, Su TC, Chen MF, Lee YT. A randomized crossover evaluation of antianginal efficacy and safety of nitrolingual-spray and nitroglycerin tablet form in coronary artery disease patients. *Cardiology* 2000; 93(3): 137-141.
1186. Thadani U, Lipicky RJ. Short and long-acting oral nitrates for stable angina pectoris. *Cardiovasc Drugs Ther* 1994; 8(4): 611-623.
1187. Abrams J. A reappraisal of nitrate therapy. *JAMA* 1988; 259(3): 396-401.
1188. Corwin S, Reiffel JA. Nitrate therapy for angina pectoris. Current concepts about mechanism of action and evaluation of currently available preparations. *Arch Intern Med* 1985; 145(3): 538-543.
1189. Held P. Effects of nitrates on mortality in acute myocardial infarction and in heart failure. *Br J Clin Pharmacol* 1992; 34(Suppl 1): 25S-28S.
1190. ISIS-4 Collaborative Group. ISIS-4: A randomised factorial trial assessing early oral captopril, oral mononitrate, and intravenous magnesium sulphate in 58,050 patients with suspected acute myocardial infarction. *Lancet* 1995; 345(8951): 669-685.
1191. GISSI-3: Effects of lisinopril and transdermal glyceryl trinitrate singly and together on 6-week mortality and ventricular function after acute myocardial infarction. *Lancet* 1994; 343(8906): 1115-1122.
1192. Al-Mallah MH, Tleyjeh IM, Abdel-Latif AA, Weaver WD. Angiotensin-converting enzyme inhibitors in coronary artery disease and preserved left ventricular systolic function: A systematic review and meta-analysis of randomized controlled trials. *J Am Coll Cardiol* 2006; 47(8): 1576-1583.

1193. Dagenais GR, Pogue J, Fox K, Simoons ML, Yusuf S. Angiotensin-converting-enzyme inhibitors in stable vascular disease without left ventricular systolic dysfunction or heart failure: A combined analysis of three trials. *Lancet* 2006; 368(9535): 581-588.
1194. Garg R, Yusuf S. Overview of randomized trials of angiotensin-converting enzyme inhibitors on mortality and morbidity in patients with heart failure. *JAMA* 1995; 273(18): 1450-1456.
1195. Flather MD, Yusuf S, Kober L, Pfeffer M, Hall A, Murray G et al. Long-term ACE-inhibitor therapy in patients with heart failure or left-ventricular dysfunction: A systematic overview of data from individual patients. *Lancet* 2000; 355(9215): 1575-1581.
1196. Braunwald E, Domanski MJ, Fowler SE, Geller NL, Gersh BJ, Hsia J et al. Angiotensin-converting-enzyme inhibition in stable coronary artery disease. *N Engl J Med* 2004; 351(20): 2058-2068.
1197. Pitt B, O'Neill B, Feldman R, Ferrari R, Schwartz L, Mudra H et al. The QUinapril Ischemic Event Trial (QUIET): Evaluation of chronic ACE inhibitor therapy in patients with ischemic heart disease and preserved left ventricular function. *Am J Cardiol* 2001; 87(9): 1058-1063.
1198. Hunt SA, Abraham WT, Chin MH, Feldman AM, Francis GS, Ganiats TG et al. ACC/AHA 2005 guideline update for the diagnosis and management of chronic heart failure in the adult: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Update the 2001 Guidelines for the Evaluation and Management of Heart Failure). Developed in collaboration with the American College of Chest Physicians and the International Society for Heart and Lung Transplantation. Endorsed by the Heart Rhythm Society. *Circulation* 2005; 112(12): e154-e235.
1199. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Chronische Herzinsuffizienz. Köln: AkdÄ; 2001.
1200. Yusuf S. From the HOPE to the ONTARGET and the TRANSCEND studies: Challenges in improving prognosis. *Am J Cardiol* 2002; 89(2 Suppl 1): 18A-25A.
1201. Dzau VJ, Bernstein K, Celermajer D, Cohen J, Dahlof B, Deanfield J et al. Pathophysiologic and therapeutic importance of tissue ACE: A consensus report. *Cardiovasc Drugs Ther* 2002; 16(2): 149-160.
1202. Deutsche Gesellschaft für Kardiologie (DGK). Primärprävention kardiovaskulärer Erkrankungen. *Z Kardiol* 2005; 94(III1): 114
1203. Teo KK, Yusuf S, Pfeffer M, Torp-Pedersen C, Kober L, Hall A et al. Effects of long-term treatment with angiotensin-converting-enzyme inhibitors in the presence or absence of aspirin: A systematic review. *Lancet* 2002; 360(9339): 1037-1043.

1204. Brenner BM, Cooper ME, De Zeeuw D, Keane WF, Mitch WE, Parving HH et al. Effects of losartan on renal and cardiovascular outcomes in patients with type 2 diabetes and nephropathy. *N Engl J Med* 2001; 345(12): 861-869.
1205. Parving HH, Lehnert H, Brochner-Mortensen J, Gomis R, Andersen S, Arner P. The effect of irbesartan on the development of diabetic nephropathy in patients with type 2 diabetes. *N Engl J Med* 2001; 345(12): 870-878.
1206. Lewis EJ, Hunsicker LG, Clarke WR, Berl T, Pohl MA, Lewis JB et al. Renoprotective effect of the angiotensin-receptor antagonist irbesartan in patients with nephropathy due to type 2 diabetes. *N Engl J Med* 2001; 345(12): 851-860.
1207. Dahlof B, Devereux RB, Kjeldsen SE, Julius S, Beevers G, De Faire U et al. Cardiovascular morbidity and mortality in the Losartan Intervention For Endpoint reduction in hypertension study (LIFE): A randomised trial against atenolol. *Lancet* 2002; 359(9311): 995-1003.
1208. National Institute of Clinical Excellence. Chronic heart failure (NICE clinical guideline; no 5). London: NICE; 2004.
1209. Demers C, McMurray JJ, Swedberg K, Pfeffer MA, Granger CB, Olofsson B et al. Impact of candesartan on nonfatal myocardial infarction and cardiovascular death in patients with heart failure. *JAMA* 2005; 294(14): 1794-1798.
1210. Gottlieb S, Leor J, Shotan A, Harpaz D, Boyko V, Rott D et al. Comparison of effectiveness of angiotensin-converting enzyme inhibitors after acute myocardial infarction in diabetic versus nondiabetic patients. *Am J Cardiol* 2003; 92(9): 1020-1025.
1211. Kjoller-Hansen L, Steffensen R, Grande P. Extended follow-up of patients randomly assigned in the Angiotensin-converting enzyme inhibition Post-Revascularization Study (APRES). *Am Heart J* 2004; 148(3): 475-480.
1212. Kondo J, Sone T, Tsuboi H, Mukawa H, Morishima I, Uesugi M et al. Effects of low-dose angiotensin II receptor blocker candesartan on cardiovascular events in patients with coronary artery disease. *Am Heart J* 2003; 146(6): E20.
1213. Pfeffer MA, McMurray JJ, Velazquez EJ, Rouleau JL, Kober L, Maggioni AP et al. Valsartan, captopril, or both in myocardial infarction complicated by heart failure, left ventricular dysfunction, or both. *N Engl J Med* 2003; 349(20): 1893-1906.
1214. Suzuki H, Kanno Y. Effects of candesartan on cardiovascular outcomes in Japanese hypertensive patients. *Hypertens Res* 2005; 28(4): 307-314.
1215. Tardif JC, Ducharme A, Yu H, Wogen J, Guertin MC. Retrospective longitudinal cohort study comparing the effects of angiotensin-converting enzyme inhibitors and long-acting calcium channel blockers on total and cardiovascular mortality in patients with hypertension. *Clin Ther* 2004; 26(7): 1073-1083.

1216. Ueshima K, Fukami K, Hiramori K, Hosoda S, Kishida H, Kato K et al. Is angiotensin-converting enzyme inhibitor useful in a Japanese population for secondary prevention after acute myocardial infarction? A final report of the Japanese Acute Myocardial Infarction Prospective (JAMP) study. *Am Heart J* 2004; 148(2): e8.
1217. Danchin N, Cucherat M, Thuillez C, Durand E, Kadri Z, Steg PG. Angiotensin-converting enzyme inhibitors in patients with coronary artery disease and absence of heart failure or left ventricular systolic dysfunction: An overview of long-term randomized controlled trials. *Arch Intern Med* 2006; 166(7): 787-796.
1218. Lee VC, Rhew DC, Dylan M, Badamgarav E, Braunstein GD, Weingarten SR. Meta-analysis: Angiotensin-receptor blockers in chronic heart failure and high-risk acute myocardial infarction. *Ann Intern Med* 2004; 141(9): 693-704.
1219. McDonald MA, Simpson SH, Ezekowitz JA, Gyenes G, Tsuyuki RT. Angiotensin receptor blockers and risk of myocardial infarction: Systematic review. *BMJ* 2005; 331(7521): 873.
1220. Rodrigues EJ, Eisenberg MJ, Pilote L. Effects of early and late administration of angiotensin-converting enzyme inhibitors on mortality after myocardial infarction. *Am J Med* 2003; 115(6): 473-479.
1221. Staessen JA, Wang JG, Thijs L. Cardiovascular prevention and blood pressure reduction: A quantitative overview updated until 1 March 2003. *J Hypertens* 2003; 21(6): 1055-1076.
1222. Verdecchia P, Reboldi G, Angeli F, Gattobigio R, Bentivoglio M, Thijs L et al. Angiotensin-converting enzyme inhibitors and calcium channel blockers for coronary heart disease and stroke prevention. *Hypertension* 2005; 46(2): 386-392.
1223. Turnbull F. Effects of different blood-pressure-lowering regimens on major cardiovascular events: Results of prospectively-designed overviews of randomised trials. *Lancet* 2003; 362(9395): 1527-1535.
1224. Psaty BM, Lumley T, Furberg CD, Schellenbaum G, Pahor M, Alderman MH et al. Health outcomes associated with various antihypertensive therapies used as first-line agents: A network meta-analysis. *JAMA* 2003; 289(19): 2534-2544.
1225. Gustafsson I, Torp-Pedersen C, Kober L, Gustafsson F, Hildebrandt P. Effect of the angiotensin-converting enzyme inhibitor trandolapril on mortality and morbidity in diabetic patients with left ventricular dysfunction after acute myocardial infarction. *J Am Coll Cardiol* 1999; 34(1): 83-89.
1226. Luft FC. Recent clinical trial highlights in hypertension. *Curr Hypertens Rep* 2001; 3(2): 133-138.
1227. Svensson P, De Faire U, Sleight P, Yusuf S, Östergren J. Comparative effects of ramipril on ambulatory and office blood pressures: A HOPE substudy. *Hypertension* 2001; 38(6): E28-E32.

1228. Daly CA, Fox KM, Remme WJ, Bertrand ME, Ferrari R, Simoons ML. The effect of perindopril on cardiovascular morbidity and mortality in patients with diabetes in the EUROPA study: Results from the PERSUADE substudy. *Eur Heart J* 2005; 26(14): 1369-1378.
1229. Lewington S, Clarke R, Qizilbash N, Peto R, Collins R. Age-specific relevance of usual blood pressure to vascular mortality: S meta-analysis of individual data for one million adults in 61 prospective studies. *Lancet* 2002; 360(9349): 1903-1913.
1230. Julius S, Kjeldsen SE, Weber M, Brunner HR, Ekman S, Hansson L et al. Outcomes in hypertensive patients at high cardiovascular risk treated with regimens based on valsartan or amlodipine: The VALUE randomised trial. *Lancet* 2004; 363(9426): 2022-2031.
1231. Poulter NR, Wedel H, Dahlof B, Sever PS, Beevers DG, Caulfield M et al. Role of blood pressure and other variables in the differential cardiovascular event rates noted in the Anglo-Scandinavian Cardiac Outcomes Trial - Blood Pressure Lowering Arm (ASCOT-BPLA). *Lancet* 2005; 366(9489): 907-913.
1232. Staessen JA, Birkenhager WH. Evidence that new antihypertensives are superior to older drugs. *Lancet* 2005; 366(9489): 869-871.
1233. Jackson R, Lawes CM, Bennett DA, Milne RJ, Rodgers A. Treatment with drugs to lower blood pressure and blood cholesterol based on an individual's absolute cardiovascular risk. *Lancet* 2005; 365(9457): 434-441.
1234. McMurray JJ, Östergren J, Swedberg K, Granger CB, Held P, Michelson EL et al. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function taking angiotensin-converting-enzyme inhibitors: The CHARM-Added trial. *Lancet* 2003; 362(9386): 767-771.
1235. Granger CB, McMurray JJ, Yusuf S, Held P, Michelson EL, Olofsson B et al. Effects of candesartan in patients with chronic heart failure and reduced left-ventricular systolic function intolerant to angiotensin-converting-enzyme inhibitors: The CHARM-Alternative trial. *Lancet* 2003; 362(9386): 772-776.
1236. Lonn EM, Yusuf S, Jha P, Montague TJ, Teo KK, Benedict CR et al. Emerging role of angiotensin-converting enzyme inhibitors in cardiac and vascular protection. *Circulation* 1994; 90(4): 2056-2069.
1237. Zuanetti G, Latini R, Maggioni AP, Franzosi M, Santoro L, Tognoni G. Effect of the ACE inhibitor lisinopril on mortality in diabetic patients with acute myocardial infarction: Data from the GISSI-3 study. *Circulation* 1997; 96(12): 4239-4245.
1238. Shindler DM, Kostis JB, Yusuf S, Quinones MA, Pitt B, Stewart D et al. Diabetes mellitus, a predictor of morbidity and mortality in the Studies of Left Ventricular Dysfunction (SOLVD) trials and registry. *Am J Cardiol* 1996; 77(11): 1017-1020.



1239. Ikram H, Low CJ, Shirlaw TM, Foy SG, Crozier IG, Richards AM et al. Angiotensin converting enzyme inhibition in chronic stable angina: Effects on myocardial ischaemia and comparison with nifedipine. *Br Heart J* 1994; 71(1): 30-33.
1240. Klein WW, Khurmi NS, Eber B, Dusleag J. Effects of benazepril and metoprolol OROS alone and in combination on myocardial ischemia in patients with chronic stable angina. *J Am Coll Cardiol* 1990; 16(4): 948-956.
1241. Dickstein K, Kjekshus J. Effects of losartan and captopril on mortality and morbidity in high-risk patients after acute myocardial infarction: The OPTIMAAL randomised trial. *Lancet* 2002; 360(9335): 752-760.
1242. Pitt B, Remme W, Zannad F, Neaton J, Martinez F, Roniker B et al. Eplerenone, a selective aldosterone blocker, in patients with left ventricular dysfunction after myocardial infarction. *N Engl J Med* 2003; 348(14): 1309-1321.
1243. Pitt B, White H, Nicolau J, Martinez F, Gheorghide M, Aschermann M et al. Eplerenone reduces mortality 30 days after randomization following acute myocardial infarction in patients with left ventricular systolic dysfunction and heart failure. *J Am Coll Cardiol* 2005; 46(3): 425-431.
1244. Pitt B, Zannad F, Remme WJ, Cody R, Castaigne A, Perez A et al. The effect of spironolactone on morbidity and mortality in patients with severe heart failure. *N Engl J Med* 1999; 341(10): 709-717.
1245. Sligl W, McAlister FA, Ezekowitz J, Armstrong PW. Usefulness of spironolactone in a specialized heart failure clinic. *Am J Cardiol* 2004; 94(4): 443-447.
1246. National Institute of Clinical Excellence. Statins for the prevention of cardiovascular events (Technology appraisal; no 94). London: NICE; 2006.
1247. Lorenz H, Junger C, Seidl K, Gitt A, Schneider S, Schiele R et al. Do statins influence the prognostic impact of non-sustained ventricular tachycardia after ST-elevation myocardial infarction? *Eur Heart J* 2005; 26(11): 1078-1085.
1248. Grundy SM, Cleeman JI, Merz CN, Brewer HB, Jr., Clark LT, Hunninghake DB et al. Implications of recent clinical trials for the National Cholesterol Education Program Adult Treatment Panel III Guidelines. *J Am Coll Cardiol* 2004; 44(3): 720-732.
1249. Brown G, Albers JJ, Fisher LD, Schaefer SM, Lin JT, Kaplan C et al. Regression of coronary artery disease as a result of intensive lipid-lowering therapy in men with high levels of apolipoprotein B. *N Engl J Med* 1990; 323(19): 1289-1298.
1250. LaRosa JC, He J, Vupputuri S. Effect of statins on risk of coronary disease: A meta-analysis of randomized controlled trials. *JAMA* 1999; 282(24): 2340-2346.
1251. Brown BG, Zhao XQ, Sacco DE, Albers JJ. Lipid lowering and plaque regression: New insights into prevention of plaque disruption and clinical events in coronary disease. *Circulation* 1993; 87(6): 1781-1791.

1252. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: A randomised placebo-controlled trial. *Lancet* 2002; 360(9326): 7-22.
1253. Shepherd J, Cobbe SM, Ford I, Isles CG, Lorimer AR, Macfarlane PW et al. Prevention of coronary heart disease with pravastatin in men with hypercholesterolemia. *N Engl J Med* 1995; 333(20): 1301-1307.
1254. Sacks FM, Pfeffer MA, Moyer LA, Rouleau JL, Rutherford JD, Cole TG et al. The effect of pravastatin on coronary events after myocardial infarction in patients with average cholesterol levels. *N Engl J Med* 1996; 335(14): 1001-1009.
1255. Sever PS, Dahlof B, Poulter NR, Wedel H, Beevers G, Caulfield M et al. Prevention of coronary and stroke events with atorvastatin in hypertensive patients who have average or lower-than-average cholesterol concentrations, in the Anglo-Scandinavian Cardiac Outcomes Trial - Lipid Lowering Arm (ASCOT-LLA): A multicentre randomised controlled trial. *Lancet* 2003; 361(9364): 1149-1158.
1256. Laufs U, Donner-Banzhoff N, Popert U. Lipidsenkung mit Statinen: Titration oder feste Dosis. *Dtsch Arztebl* 2004; 101(23): A1649-A1651.
1257. Downs JR, Clearfield M, Weis S, Whitney E, Shapiro DR, Beere PA et al. Primary prevention of acute coronary events with lovastatin in men and women with average cholesterol levels: Results of AFCAPS/TexCAPS. Air Force/Texas Coronary Atherosclerosis Prevention Study. *JAMA* 1998; 279(20): 1615-1622.
1258. ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Major outcomes in moderately hypercholesterolemic, hypertensive patients randomized to pravastatin vs usual care: The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT). *JAMA* 2002; 288(23): 2998-3007.
1259. Shepherd J, Blauw GJ, Murphy MB, Bollen EL, Buckley BM, Cobbe SM et al. Pravastatin in elderly individuals at risk of vascular disease (PROSPER): A randomised controlled trial. *Lancet* 2002; 360(9346): 1623-1630.
1260. Holdaas H, Fellström B, Jardine AG, Holme I, Nyberg G, Fauchald P et al. Effect of fluvastatin on cardiac outcomes in renal transplant recipients: A multicentre, randomised, placebo-controlled trial. *Lancet* 2003; 361(9374): 2024-2031.
1261. Hebert PR, Gaziano JM, Chan KS, Hennekens CH. Cholesterol lowering with statin drugs, risk of stroke, and total mortality: An overview of randomized trials. *JAMA* 1997; 278(4): 313-321.
1262. Wilt TJ, Bloomfield HE, MacDonald R, Nelson D, Rutks I, Ho M et al. Effectiveness of statin therapy in adults with coronary heart disease. *Arch Intern Med* 2004; 164(13): 1427-1436.

1263. Mosca L, Grundy SM, Judelson D, King K, Limacher M, Oparil S et al. AHA/ACC scientific statement: Consensus panel statement. Guide to preventive cardiology for women. *J Am Coll Cardiol* 1999; 33(6): 1751-1755.
1264. Byington RP, Davis BR, Plehn JF, White HD, Baker J, Cobbe SM et al. Reduction of stroke events with pravastatin: The Prospective Pravastatin Pooling (PPP) Project. *Circulation* 2001; 103(3): 387-392.
1265. Endres M, Laufs U. HMG-CoA-Reduktasehemmer und Schlaganfallrisiko. *Nervenarzt* 1998; 69(8): 717-721.
1266. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Fettstoffwechselstörung. Köln: AkdÄ; 1999.
1267. Pignone M, Phillips C, Mulrow C. Use of lipid lowering drugs for primary prevention of coronary heart disease: Meta-analysis of randomised trials. *BMJ* 2000; 321(7267): 983-986.
1268. National Horizon Scanning Centre. Ezetimibe. Edgbaston: University of Birmingham; 2001.
1269. Ezetimibe for lowering blood cholesterol. *Issues Emerg Health Technol* 2003;(49): 1-4.
1270. Ho C. Rosuvastatin: Do we need another statin? *Issues Emerg Health Technol* 2001;(20): 1-4.
1271. Law MR, Wald NJ, Rudnicka AR. Quantifying effect of statins on low density lipoprotein cholesterol, ischaemic heart disease, and stroke: Systematic review and meta-analysis. *BMJ* 2003; 326(7404): 1423.
1272. Muldoon MF, Manuck SB, Mendelsohn AB, Kaplan JR, Belle SH. Cholesterol reduction and non-illness mortality: Meta-analysis of randomised clinical trials. *BMJ* 2001; 322(7277): 11-15.
1273. Schedlbauer A, Schroeder K, Peters TJ, Fahey T. Interventions to improve adherence to lipid lowering medication [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 4. Chichester: John Wiley & Sons Ltd.
1274. Goldberg RB, Mellies MJ, Sacks FM, Moye LA, Howard BV, Howard WJ et al. Cardiovascular events and their reduction with pravastatin in diabetic and glucose-intolerant myocardial infarction survivors with average cholesterol levels: Subgroup analyses in the cholesterol and recurrent events (CARE) trial. *Circulation* 1998; 98(23): 2513-2519.
1275. Collins R, Armitage J, Parish S, Sleight P, Peto R. MRC/BHF Heart Protection Study of cholesterol-lowering with simvastatin in 5963 people with diabetes: A randomised placebo-controlled trial. *Lancet* 2003; 361(9374): 2005-2016.

1276. Colhoun HM, Betteridge DJ, Durrington PN, Hitman GA, Neil HA, Livingstone SJ et al. Primary prevention of cardiovascular disease with atorvastatin in type 2 diabetes in the Collaborative Atorvastatin Diabetes Study (CARDS): Multicentre randomised placebo-controlled trial. *Lancet* 2004; 364(9435): 685-696.
1277. Faggiotto A, Paoletti R. State-of-the-Art lecture: Statins and blockers of the renin-angiotensin system. Vascular protection beyond their primary mode of action. *Hypertension* 1999; 34(4 Pt 2): 987-996.
1278. Bonetti PO, Lerman LO, Napoli C, Lerman A. Statin effects beyond lipid lowering: Are they clinically relevant? *Eur Heart J* 2003; 24(3): 225-248.
1279. Rosenson RS, Tangney CC. Antiatherothrombotic properties of statins: Implications for cardiovascular event reduction. *JAMA* 1998; 279(20): 1643-1650.
1280. Ridker PM, Cannon CP, Morrow D, Rifai N, Rose LM, McCabe CH et al. C-reactive protein levels and outcomes after statin therapy. *N Engl J Med* 2005; 352(1): 20-28.
1281. Pasceri V, Patti G, Nusca A, Pristipino C, Richichi G, Di Sciascio G. Randomized trial of atorvastatin for reduction of myocardial damage during coronary intervention: Results from the ARMYDA (Atorvastatin for Reduction of MYocardial Damage during Angioplasty) study. *Circulation* 2004; 110(6): 674-678.
1282. LaRosa JC, Grundy SM, Waters DD, Shear C, Barter P, Fruchart JC et al. Intensive lipid lowering with atorvastatin in patients with stable coronary disease. *N Engl J Med* 2005; 352(14): 1425-1435.
1283. Pedersen TR, Faergeman O, Kastelein JJ, Olsson AG, Tikkanen MJ, Holme I et al. High-dose atorvastatin vs usual-dose simvastatin for secondary prevention after myocardial infarction: The IDEAL study. A randomized controlled trial. *JAMA* 2005; 294(19): 2437-2445.
1284. Hunninghake DB. Therapeutic efficacy of the lipid-lowering armamentarium: The clinical benefits of aggressive lipid-lowering therapy. *Am J Med* 1998; 104(2A): 9S-13S.
1285. Ballantyne CM, Hourii J, Notarbartolo A, Melani L, Lipka LJ, Suresh R et al. Effect of ezetimibe coadministered with atorvastatin in 628 patients with primary hypercholesterolemia: A prospective, randomized, double-blind trial. *Circulation* 2003; 107(19): 2409-2415.
1286. Gagne C, Bays HE, Weiss SR, Mata P, Quinto K, Melino M et al. Efficacy and safety of ezetimibe added to ongoing statin therapy for treatment of patients with primary hypercholesterolemia. *Am J Cardiol* 2002; 90(10): 1084-1091.
1287. Melani L, Mills R, Hassman D, Lipetz R, Lipka L, LeBeaut A et al. Efficacy and safety of ezetimibe coadministered with pravastatin in patients with primary hypercholesterolemia: A prospective, randomized, double-blind trial. *Eur Heart J* 2003; 24(8): 717-728.

1288. Sudhop T, Lutjohann D, Kodal A, Igel M, Tribble DL, Shah S et al. Inhibition of intestinal cholesterol absorption by ezetimibe in humans. *Circulation* 2002; 106(15): 1943-1948.
1289. West of Scotland Coronary Prevention Study: Identification of high-risk groups and comparison with other cardiovascular intervention trials. *Lancet* 1996; 348(9038): 1339-1342.
1290. Devereaux PJ, Beattie WS, Choi PT, Badner NH, Guyatt GH, Villar JC et al. How strong is the evidence for the use of perioperative beta blockers in non-cardiac surgery? Systematic review and meta-analysis of randomised controlled trials. *BMJ* 2005; 331(7512): 313-321.
1291. Lindenauer PK, Pekow P, Wang K, Mamidi DK, Gutierrez B, Benjamin EM. Perioperative beta-blocker therapy and mortality after major noncardiac surgery. *N Engl J Med* 2005; 353(4): 349-361.
1292. Breen P, Lee JW, Pomposelli F, Park KW. Timing of high-risk vascular surgery following coronary artery bypass surgery: A 10-year experience from an academic medical centre. *Anaesthesia* 2004; 59(5): 422-427.
1293. Raby KE, Brull SJ, Timimi F, Akhtar S, Rosenbaum S, Naimi C et al. The effect of heart rate control on myocardial ischemia among high-risk patients after vascular surgery. *Anesth Analg* 1999; 88(3): 477-482.
1294. Shammash JB, Trost JC, Gold JM, Berlin JA, Golden MA, Kimmel SE. Perioperative beta-blocker withdrawal and mortality in vascular surgical patients. *Am Heart J* 2001; 141(1): 148-153.
1295. Gould AL, Rossouw JE, Santanello NC, Heyse JF, Furberg CD. Cholesterol reduction yields clinical benefit: Impact of statin trials. *Circulation* 1998; 97(10): 946-952.
1296. LaRosa JC, Hunninghake D, Bush D, Criqui MH, Getz GS, Gotto AM, Jr. et al. The cholesterol facts: A summary of the evidence relating dietary fats, serum cholesterol, and coronary heart disease. A joint statement by the American Heart Association and the National Heart, Lung, and Blood Institute. *Circulation* 1990; 81(5): 1721-1733.
1297. Brophy JM, Brassard P, Bourgault C. The benefit of cholesterol-lowering medications after coronary revascularization: A population study. *Am Heart J* 2005; 150(2): 282-286.
1298. Foody JM, Rathore SS, Galusha D, Masoudi FA, Havranek EP, Radford MJ et al. Hydroxymethylglutaryl-CoA reductase inhibitors in older persons with acute myocardial infarction: Evidence for an age-statin interaction. *J Am Geriatr Soc* 2006; 54(3): 421-430.
1299. Keech A, Colquhoun D, Best J, Kirby A, Simes RJ, Hunt D et al. Secondary prevention of cardiovascular events with long-term pravastatin in patients with

- diabetes or impaired fasting glucose: Results from the LIPID trial. *Diabetes Care* 2003; 26(10): 2713-2721.
1300. Keough-Ryan TM, Kiberd BA, Dipchand CS, Cox JL, Rose CL, Thompson KJ et al. Outcomes of acute coronary syndrome in a large Canadian cohort: Impact of chronic renal insufficiency, cardiac interventions, and anemia. *Am J Kidney Dis* 2005; 46(5): 845-855.
1301. Koren MJ, Hunninghake DB. Clinical outcomes in managed-care patients with coronary heart disease treated aggressively in lipid-lowering disease management clinics: The alliance study. *J Am Coll Cardiol* 2004; 44(9): 1772-1779.
1302. Pan W, Pintar T, Anton J, Lee VV, Vaughn WK, Collard CD. Statins are associated with a reduced incidence of perioperative mortality after coronary artery bypass graft surgery. *Circulation* 2004; 110(11 Suppl 1): II45-II49.
1303. Sever PS, Poulter NR, Dahlof B, Wedel H, Collins R, Beevers G et al. Reduction in cardiovascular events with atorvastatin in 2,532 patients with type 2 diabetes: Anglo-Scandinavian Cardiac Outcomes Trial - Lipid-Lowering Arm (ASCOT-LLA). *Diabetes Care* 2005; 28(5): 1151-1157.
1304. Smith CS, Cannon CP, McCabe CH, Murphy SA, Bentley J, Braunwald E. Early initiation of lipid-lowering therapy for acute coronary syndromes improves compliance with guideline recommendations: Observations from the Orbofiban in Patients with Unstable Coronary Syndromes (OPUS-TIMI 16) trial. *Am Heart J* 2005; 149(3): 444-450.
1305. Chen JT, Wesley R, Shamburek RD, Pucino F, Csako G. Meta-analysis of natural therapies for hyperlipidemia: Plant sterols and stanols versus policosanol. *Pharmacotherapy* 2005; 25(2): 171-183.
1306. Corvol JC, Bouzamondo A, Sirol M, Hulot JS, Sanchez P, Lechat P. Differential effects of lipid-lowering therapies on stroke prevention: A meta-analysis of randomized trials. *Arch Intern Med* 2003; 163(6): 669-676.
1307. Tonelli M, Isles C, Curhan GC, Tonkin A, Pfeffer MA, Shepherd J et al. Effect of pravastatin on cardiovascular events in people with chronic kidney disease. *Circulation* 2004; 110(12): 1557-1563.
1308. Vreecer M, Turk S, Drinovec J, Mrhar A. Use of statins in primary and secondary prevention of coronary heart disease and ischemic stroke: Meta-analysis of randomized trials. *Int J Clin Pharmacol Ther* 2003; 41(12): 567-577.
1309. Bucher HC, Griffith LE, Guyatt GH. Systematic review on the risk and benefit of different cholesterol-lowering interventions. *Arterioscler Thromb Vasc Biol* 1999; 19(2): 187-195.
1310. Bucher HC, Griffith LE, Guyatt GH. Systematic review on the risk and benefit of different cholesterol-lowering interventions. *Arterioscler Thromb Vasc Biol* 1999; 19(2): 187-195.

1311. The Post Coronary Artery Bypass Graft Trial Investigators. The effect of aggressive lowering of low-density lipoprotein cholesterol levels and low-dose anticoagulation on obstructive changes in saphenous-vein coronary-artery bypass grafts. *N Engl J Med* 1997; 336(3): 153-162.
1312. Schectman G, Hiatt J. Dose-response characteristics of cholesterol-lowering drug therapies: Implications for treatment. *Ann Intern Med* 1996; 125(12): 990-1000.
1313. Schectman G, Hiatt J. Dose-response characteristics of cholesterol-lowering drug therapies: Implications for treatment. *Ann Intern Med* 1996; 125(12): 990-1000.
1314. Illingworth DR, Tobert JA. A review of clinical trials comparing HMG-CoA reductase inhibitors. *Clin Ther* 1994; 16(3): 366-384.
1315. Hsu I, Spinler SA, Johnson NE. Comparative evaluation of the safety and efficacy of HMG-CoA reductase inhibitor monotherapy in the treatment of primary hypercholesterolemia. *Ann Pharmacother* 1995; 29(7-8): 743-759.
1316. Hsu I, Spinler SA, Johnson NE. Comparative evaluation of the safety and efficacy of HMG-CoA reductase inhibitor monotherapy in the treatment of primary hypercholesterolemia. *Ann Pharmacother* 1995; 29(7-8): 743-759.
1317. Tanis BC, Westendorp GJ, Smelt HM. Effect of thyroid substitution on hypercholesterolaemia in patients with subclinical hypothyroidism: A reanalysis of intervention studies. *Clin Endocrinol (Oxf)* 1996; 44(6): 643-649.
1318. Law MR, Wald NJ, Thompson SG. By how much and how quickly does reduction in serum cholesterol concentration lower risk of ischaemic heart disease? *BMJ* 1994; 308(6925): 367-372.
1319. Massy ZA, Ma JZ, Louis TA, Kasiske BL. Lipid-lowering therapy in patients with renal disease. *Kidney Int* 1995; 48(1): 188-198.
1320. Stevens RD, Burri H, Tramer MR. Pharmacologic myocardial protection in patients undergoing noncardiac surgery: A quantitative systematic review. *Anesth Analg* 2003; 97(3): 623-633.
1321. Poldermans D, Boersma E, Bax JJ, Thomson IR, Van de Ven LL, Blankensteijn JD et al. The effect of bisoprolol on perioperative mortality and myocardial infarction in high-risk patients undergoing vascular surgery. *N Engl J Med* 1999; 341(24): 1789-1794.
1322. Mangano DT, Layug EL, Wallace A, Tateo I. Effect of atenolol on mortality and cardiovascular morbidity after noncardiac surgery. *N Engl J Med* 1996; 335(23): 1713-1720.
1323. Studer M, Briel M, Leimenstoll B, Glass TR, Bucher HC. Effect of different antilipidemic agents and diets on mortality: A systematic review. *Arch Intern Med* 2005; 165(7): 725-730.

1324. Rubins HB, Robins SJ, Collins D, Fye CL, Anderson JW, Elam MB et al. Gemfibrozil for the secondary prevention of coronary heart disease in men with low levels of high-density lipoprotein cholesterol. *N Engl J Med* 1999; 341(6): 410-418.
1325. Farnier M. Combination therapy with an HMG-CoA reductase inhibitor and a fibric acid derivative: A critical review of potential benefits and drawbacks. *Am J Cardiovasc Drugs* 2003; 3(3): 169-178.
1326. Robins SJ, Rubins HB, Faas FH, Schaefer EJ, Elam MB, Anderson JW et al. Insulin resistance and cardiovascular events with low HDL cholesterol: The Veterans Affairs HDL Intervention Trial (VA-HIT). *Diabetes Care* 2003; 26(5): 1513-1517.
1327. Prueksaritanont T, Tang C, Qiu Y, Mu L, Subramanian R, Lin JH. Effects of fibrates on metabolism of statins in human hepatocytes. *Drug Metab Dispos* 2002; 30(11): 1280-1287.
1328. Pan WJ, Gustavson LE, Achari R, Rieser MJ, Ye X, Gutterman C et al. Lack of a clinically significant pharmacokinetic interaction between fenofibrate and pravastatin in healthy volunteers. *J Clin Pharmacol* 2000; 40(3): 316-323.
1329. Keech A, Simes RJ, Barter P, Best J, Scott R, Taskinen MR et al. Effects of long-term fenofibrate therapy on cardiovascular events in 9795 people with type 2 diabetes mellitus (the FIELD study): Randomised controlled trial. *Lancet* 2005; 366(9500): 1849-1861.
1330. Brousseau ME, Schaefer EJ, Wolfe ML, Bloedon LT, Digenio AG, Clark RW et al. Effects of an inhibitor of cholesteryl ester transfer protein on HDL cholesterol. *N Engl J Med* 2004; 350(15): 1505-1515.
1331. Smith P. Long-term anticoagulant treatment after acute myocardial infarction: The Warfarin Re-Infarction Study. *Ann Epidemiol* 1992; 2(4): 549-552.
1332. Anand SS, Yusuf S. Oral anticoagulant therapy in patients with coronary artery disease: A meta-analysis. *JAMA* 1999; 282(21): 2058-2067.
1333. Thrombosis prevention trial: Randomised trial of low-intensity oral anticoagulation with warfarin and low-dose aspirin in the primary prevention of ischaemic heart disease in men at increased risk. *Lancet* 1998; 351(9098): 233-241.
1334. Tsuya T, Okada M, Horie H, Ishikawa K. Effect of dipyridamole at the usual oral dose on exercise-induced myocardial ischemia in stable angina pectoris. *Am J Cardiol* 1990; 66(3): 275-278.
1335. Marzilli M, Klein WW. Efficacy and tolerability of trimetazidine in stable angina: A meta-analysis of randomized, double-blind, controlled trials. *Coron Artery Dis* 2003; 14(2): 171-179.
1336. Cross HR. Trimetazidine for stable angina pectoris. *Expert Opin Pharmacother* 2001; 2(5): 857-875.



1337. Chazov EI, Lepakchin VK, Zharova EA, Fitilev SB, Levin AM, Rumiantzeva EG et al. Trimetazidine in Angina Combination Therapy: The TACT study. Trimetazidine versus conventional treatment in patients with stable angina pectoris in a randomized, placebo-controlled, multicenter study. *Am J Ther* 2005; 12(1): 35-42.
1338. Chaitman BR, Skettino SL, Parker JO, Hanley P, Meluzin J, Kuch J et al. Anti-ischemic effects and long-term survival during ranolazine monotherapy in patients with chronic severe angina. *J Am Coll Cardiol* 2004; 43(8): 1375-1382.
1339. Schächinger V, Zeiher AM. NO in der Therapie der Angina pectoris: Nitrate oder Molsidomin? *Internist (Berl)* 1997; 38(5): 438-447.
1340. Yasue H, Ogawa H, Tanaka H, Miyazaki S, Hattori R, Saito M et al. Effects of aspirin and trapidil on cardiovascular events after acute myocardial infarction. *Am J Cardiol* 1999; 83(9): 1308-1313.
1341. Raubach KH, Vlahov V, Wolter K, Bussmann WD. Double-blind randomized multicenter study on the efficacy of trapidil versus isosorbide dinitrate in stable angina pectoris. *Clin Cardiol* 1997; 20(5): 483-488.
1342. Serruys PW, Foley DP, Pieper M, Kleijne JA, De Feyter PJ. The TRAPIST Study: A multicentre randomized placebo controlled clinical trial of trapidil for prevention of restenosis after coronary stenting, measured by 3-D intravascular ultrasound. *Eur Heart J* 2001; 22(20): 1938-1947.
1343. Lin MC, Nahin R, Gershwin ME, Longhurst JC, Wu KK. State of complementary and alternative medicine in cardiovascular, lung, and blood research: Executive summary of a workshop. *Circulation* 2001; 103(16): 2038-2041.
1344. Banerjee SK, Maulik SK. Effect of garlic on cardiovascular disorders: A review. *Nutr J* 2002; 1: 4.
1345. Beaglehole R. Garlic for flavour, not cardioprotection. *Lancet* 1996; 348(9036): 1186-1187.
1346. Neil HA, Silagy CA, Lancaster T, Hodgeman J, Vos K, Moore JW et al. Garlic powder in the treatment of moderate hyperlipidaemia: A controlled trial and meta-analysis. *J R Coll Physicians Lond* 1996; 30(4): 329-334.
1347. Villarruz MV, Dans A, Tan F. Chelation therapy for atherosclerotic cardiovascular disease [Cochrane Review]. *Cochrane Database Syst Rev* 2002; Issue 4. Chichester: John Wiley & Sons Ltd.
1348. Aviles JM, Whelan SE, Hernke DA, Williams BA, Kenny KE, O'Fallon WM et al. Intercessory prayer and cardiovascular disease progression in a coronary care unit population: A randomized controlled trial. *Mayo Clin Proc* 2001; 76(12): 1192-1198.
1349. ALLHAT Officers and Coordinators for the ALLHAT Collaborative Research Group. Diuretic versus alpha-blocker as first-step antihypertensive therapy: Final

- results from the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT). *Hypertension* 2003; 42(3): 239-246.
1350. Almgren T, Persson B, Wilhelmsen L, Rosengren A, Andersson OK. Stroke and coronary heart disease in treated hypertension: A prospective cohort study over three decades. *J Intern Med* 2005; 257(6): 496-502.
1351. Bakris GL, Gaxiola E, Messerli FH, Mancia G, Erdine S, Cooper-DeHoff R et al. Clinical outcomes in the diabetes cohort of the INternational VERapamil SR-Trandolapril study. *Hypertension* 2004; 44(5): 637-642.
1352. Benetos A, Thomas F, Bean KE, Guize L. Why cardiovascular mortality is higher in treated hypertensives versus subjects of the same age, in the general population. *J Hypertens* 2003; 21(9): 1635-1640.
1353. Blacher J, Evans A, Arveiler D, Amouyel P, Ferrieres J, Bingham A et al. Residual coronary risk in men aged 50-59 years treated for hypertension and hyperlipidaemia in the population: The PRIME study. *J Hypertens* 2004; 22(2): 415-423.
1354. Black HR, Elliott WJ, Grandits G, Grambsch P, Lucente T, White WB et al. Principal results of the Controlled Onset Verapamil Investigation of Cardiovascular End Points (CONVINCE) trial. *JAMA* 2003; 289(16): 2073-2082.
1355. Pepine CJ, Handberg EM, Cooper-DeHoff RM, Marks RG, Kowey P, Messerli FH et al. A calcium antagonist vs a non-calcium antagonist hypertension treatment strategy for patients with coronary artery disease: The International Verapamil-Trandolapril Study (INVEST). A randomized controlled trial. *JAMA* 2003; 290(21): 2805-2816.
1356. Rahman M, Pressel S, Davis BR, Nwachuku C, Wright JT, Jr., Whelton PK et al. Cardiovascular outcomes in high-risk hypertensive patients stratified by baseline glomerular filtration rate. *Ann Intern Med* 2006; 144(3): 172-180.
1357. Rodgers A, Chapman N, Woodward M, Liu LS, Colman S, Lee A et al. Perindopril-based blood pressure lowering in individuals with cerebrovascular disease: Consistency of benefits by age, sex and region. *J Hypertens* 2004; 22(3): 653-659.
1358. Staessen JA, Thijs L, Fagard R, Celis H, Birkenhager WH, Bulpitt CJ et al. Effects of immediate versus delayed antihypertensive therapy on outcome in the Systolic Hypertension in Europe Trial. *J Hypertens* 2004; 22(4): 847-857.
1359. Mulrow C, Lau J, Cornell J, Brand M. Pharmacotherapy for hypertension in the elderly [Cochrane Review]. *Cochrane Database Syst Rev* 2000; Issue 2. Chichester: John Wiley & Sons Ltd.
1360. Bundesministerium für Gesundheit. Bundesgesundheitsurvey 1998 [Online-Text]. 1999 .

1361. Thefeld W. Verbreitung der Herz-Kreislauf-Risikofaktoren Hypercholesterinämie, Übergewicht, Hypertonie und Rauchen in der Bevölkerung. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz 2000; 43(6): 415-423.
1362. Van den Hoogen PC, Feskens EJ, Nagelkerke NJ, Menotti A, Nissinen A, Kromhout D. The relation between blood pressure and mortality due to coronary heart disease among men in different parts of the world. N Engl J Med 2000; 342(1): 1-8.
1363. Deutsche Diabetes Gesellschaft. Leitlinien der Deutschen Diabetes-Gesellschaft: Diabetes mellitus Typ 2 [Online-Text]. 2002 .Gelesen unter: <http://www.uni-duesseldorf.de/AWMF/II/057-012k.htm>.
1364. Leitlinien für die Prävention, Erkennung, Diagnostik und Therapie der arteriellen Hypertonie der Deutschen Liga zur Bekämpfung des hohen Blutdruckes e.V. (Deutsche Hochdruckliga). Dtsch Med Wochenschr 2001; 126(Suppl 4): S201-S238.
1365. National Institutes of Health. The sixth report of the Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure. Bethesda (MD): NIH; 1997.
1366. 1999 World Health Organization-International Society of Hypertension Guidelines for the Management of Hypertension. J Hypertens 1999; 17(2): 151-183.
1367. Beilin LJ, Puddey IB. Alcohol, hypertension and cardiovascular disease: Implications for management. Clin Exp Hypertens 1993; 15(6): 1157-1170.
1368. De Wardener HE, MacGregor GA. Sodium and blood pressure. Curr Opin Cardiol 2002; 17(4): 360-367.
1369. Whelton SP, Chin A, Xin X, He J. Effect of aerobic exercise on blood pressure: A meta-analysis of randomized, controlled trials. Ann Intern Med 2002; 136(7): 493-503.
1370. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Hormontherapie im Klimakterium. Köln: AkdÄ; 2003.
1371. Carlberg B, Samuelsson O, Lindholm LH. Atenolol in hypertension: Is it a wise choice? Lancet 2004; 364(9446): 1684-1689.
1372. Lindholm LH, Carlberg B, Samuelsson O. Should beta blockers remain first choice in the treatment of primary hypertension? A meta-analysis. Lancet 2005; 366(9496): 1545-1553.
1373. Dahlof B, Sever PS, Poulter NR, Wedel H, Beevers DG, Caulfield M et al. Prevention of cardiovascular events with an antihypertensive regimen of amlodipine adding perindopril as required versus atenolol adding bendroflumethiazide as required, in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm (ASCOT-BPLA): A multicentre randomised controlled trial. Lancet 2005; 366(9489): 895-906.

1374. Schroeder K, Fahey T, Ebrahim S. Interventions for improving adherence to treatment in patients with high blood pressure in ambulatory settings [Cochrane Review]. *Cochrane Database Syst Rev* 2004; Issue 2. Chichester: John Wiley & Sons Ltd.
1375. Law MR, Wald NJ, Morris JK, Jordan RE. Value of low dose combination treatment with blood pressure lowering drugs: Analysis of 354 randomised trials. *BMJ* 2003; 326(7404): 1427.
1376. Arzneimittelkommission der deutschen Ärzteschaft. Therapieempfehlung Hormontherapie im Klimakterium. Köln: AkdÄ; 2001.
1377. Ahlgren E, Lundqvist A, Nordlund A, Aren C, Rutberg H. Neurocognitive impairment and driving performance after coronary artery bypass surgery. *Eur J Cardiothorac Surg* 2003; 23(3): 334-340.
1378. Van Dijk D, Keizer AM, Diephuis JC, Durand C, Vos LJ, Hijman R. Neurocognitive dysfunction after coronary artery bypass surgery: A systematic review. *J Thorac Cardiovasc Surg* 2000; 120(4): 632-639.
1379. Millar K, Asbury AJ, Murray GD. Pre-existing cognitive impairment as a factor influencing outcome after cardiac surgery. *Br J Anaesth* 2001; 86(1): 63-67.
1380. Khatri P, Babyak M, Clancy C, Davis R, Croughwell N, Newman M et al. Perception of cognitive function in older adults following coronary artery bypass surgery. *Health Psychol* 1999; 18(3): 301-306.
1381. National Institute of Clinical Excellence. Hypertension (NICE clinical guideline; no 34). London: NICE; 2004.
1382. Hulley S, Furberg C, Barrett-Connor E, Cauley J, Grady D, Haskell W et al. Noncardiovascular disease outcomes during 6.8 years of hormone therapy: Heart and Estrogen/progestin Replacement Study follow-up (HERS II). *JAMA* 2002; 288(1): 58-66.
1383. Grady D, Herrington D, Bittner V, Blumenthal R, Davidson M, Hlatky M et al. Cardiovascular disease outcomes during 6.8 years of hormone therapy: Heart and Estrogen/progestin Replacement Study follow-up (HERS II). *JAMA* 2002; 288(1): 49-57.
1384. Rossouw JE, Anderson GL, Prentice RL, LaCroix AZ, Kooperberg C, Stefanick ML et al. Risks and benefits of estrogen plus progestin in healthy postmenopausal women: Principal results From the Women's Health Initiative randomized controlled trial. *JAMA* 2002; 288(3): 321-333.
1385. Hulley S, Grady D, Bush T, Furberg C, Herrington D, Riggs B et al. Randomized trial of estrogen plus progestin for secondary prevention of coronary heart disease in postmenopausal women. *JAMA* 1998; 280(7): 605-613.

1386. Herrington DM, Reboussin DM, Brosnihan KB, Sharp PC, Shumaker SA, Snyder TE et al. Effects of estrogen replacement on the progression of coronary-artery atherosclerosis. *N Engl J Med* 2000; 343(8): 522-529.
1387. Viscoli CM, Brass LM, Kernan WN, Sarrel PM, Suissa S, Horwitz RI. A clinical trial of estrogen-replacement therapy after ischemic stroke. *N Engl J Med* 2001; 345(17): 1243-1249.
1388. Anderson GL, Limacher M, Assaf AR, Bassford T, Beresford SA, Black H et al. Effects of conjugated equine estrogen in postmenopausal women with hysterectomy: The Women's Health Initiative randomized controlled trial. *JAMA* 2004; 291(14): 1701-1712.
1389. Barrett-Connor E, Mosca L, Collins P, Geiger MJ, Grady D, Kornitzer M et al. Effects of raloxifene on cardiovascular events and breast cancer in postmenopausal women. *N Engl J Med* 2006; 355(2): 125-137.
1390. Grodstein F, Manson JE, Stampfer MJ. Hormone therapy and coronary heart disease: The role of time since menopause and age at hormone initiation. *J Womens Health (Larchmt)* 2006; 15(1): 35-44.
1391. Hsia J, Langer RD, Manson JE, Kuller L, Johnson KC, Hendrix SL et al. Conjugated equine estrogens and coronary heart disease: The Women's Health Initiative. *Arch Intern Med* 2006; 166(3): 357-365.
1392. Lokkegaard E, Jovanovic Z, Heitmann BL, Keiding N, Ottesen B, Pedersen AT. The association between early menopause and risk of ischaemic heart disease: Influence of hormone therapy. *Maturitas* 2006; 53(2): 226-233.
1393. Manson JE, Hsia J, Johnson KC, Rossouw JE, Assaf AR, Lasser NL et al. Estrogen plus progestin and the risk of coronary heart disease. *N Engl J Med* 2003; 349(6): 523-534.
1394. Nordenskjold B, Rosell J, Rutqvist LE, Malmstrom PO, Bergh J, Bengtsson NO et al. Coronary heart disease mortality after 5 years of adjuvant tamoxifen therapy: Results from a randomized trial. *J Natl Cancer Inst* 2005; 97(21): 1609-1610.
1395. Parsons E, Newby LK, Bhapkar MV, Alexander KP, White HD, Shah SH et al. Postmenopausal hormone use in women with acute coronary syndromes. *J Womens Health (Larchmt)* 2004; 13(8): 863-871.
1396. Pentti K, Honkanen R, Tuppurainen MT, Sandini L, Kroger H, Saarikoski S. Hormone replacement therapy and mortality in 52- to 70-year-old women: The Kuopio Osteoporosis Risk Factor and Prevention Study. *Eur J Endocrinol* 2006; 154(1): 101-107.
1397. Simon JA, Lin F, Vittinghoff E, Bittner V. The relation of postmenopausal hormone therapy to serum uric acid and the risk of coronary heart disease events: The Heart and Estrogen-Progestin Replacement Study (HERS). *Ann Epidemiol* 2006; 16(2): 138-145.

1398. Magliano DJ, Rogers SL, Abramson MJ, Tonkin AM. Hormone therapy and cardiovascular disease: A systematic review and meta-analysis. *BJOG* 2006; 113(1): 5-14.
1399. NHS National Services. Information and Statistics Division. (Personal communication). unklar 9999;
1400. Spaulding CM, Joly LM, Rosenberg A, Monchi M, Weber SN, Dhainaut JF et al. Immediate coronary angiography in survivors of out-of-hospital cardiac arrest. *N Engl J Med* 1997; 336(23): 1629-1633.
1401. Borger van der Burg AE, Bax JJ, Boersma E, Bootsma M, Van Erven L, Van der Wall EE et al. Impact of percutaneous coronary intervention or coronary artery bypass grafting on outcome after nonfatal cardiac arrest outside the hospital. *Am J Cardiol* 2003; 91(7): 785-789.
1402. Noto TJ, Jr., Johnson LW, Krone R, Weaver WF, Clark DA, Kramer J.R. Jr et al. Cardiac catheterization 1990: A report of the registry of the Society for Cardiac Angiography and Interventions (SCA&I). *Cathet Cardiovasc Diagn* 1991; 24(2): 75-83.
1403. Yock PG, Linker DT, Angelsen BA. Two-dimensional intravascular ultrasound: Technical development and initial clinical experience. *J Am Soc Echocardiogr* 1989; 2(4): 296-304.
1404. Di Mario C, Gorge G, Peters R, Fearney P, Pinto F, Hausmann D et al. Clinical application and image interpretation in intracoronary ultrasound. *Eur Heart J* 1998; 19(2): 207-229.
1405. Mintz GS, Nissen SE, Anderson WD, Bailey SR, Erbel R, Fitzgerald PJ et al. American College of Cardiology clinical expert consensus document on standards for acquisition, measurement and reporting of IntraVascular Ultrasound Studies (IVUS): A report of the American College of Cardiology Task Force on clinical expert consensus documents. *J Am Coll Cardiol* 2001; 37(5): 1478-1492.
1406. Di Carli M, Czernin J, Hoh CK, Gerbaudo VH, Brunken RC, Huang SC et al. Relation among stenosis severity, myocardial blood flow, and flow reserve in patients with coronary artery disease. *Circulation* 1995; 91(7): 1944-1951.
1407. Pijls NH, De Bruyne B, Peels K, Van der Voort PH, Bonnier HJ, Bartunek J et al. Measurement of fractional flow reserve to assess the functional severity of coronary-artery stenoses. *N Engl J Med* 1996; 334(26): 1703-1708.
1408. Legalery P, Schiele F, Seronde MF, Meneveau N, Wei H, Didier K et al. One-year outcome of patients submitted to routine fractional flow reserve assessment to determine the need for angioplasty. *Eur Heart J* 2005; 26(24): 2623-2629.
1409. Yusuf S, Zucker D, Peduzzi P, Fisher LD, Takaro T, Kennedy JW et al. Effect of coronary artery bypass graft surgery on survival: Overview of 10-year results from

- randomised trials by the Coronary Artery Bypass Graft Surgery Trialists Collaboration. *Lancet* 1994; 344(8922): 563-570.
1410. European Coronary Surgery Study Group. Long-term results of prospective randomised study of coronary artery bypass surgery in stable angina pectoris. *Lancet* 1982; 2(8309): 1173-1180.
1411. Mark DB, Nelson CL, Califf RM, Harrell FE, Jr., Lee KL, Jones RH et al. Continuing evolution of therapy for coronary artery disease: Initial results from the era of coronary angioplasty. *Circulation* 1994; 89(5): 2015-2025.
1412. Nakagomi A, Celermajer DS, Lumley T, Freedman SB. Angiographic severity of coronary narrowing is a surrogate marker for the extent of coronary atherosclerosis. *Am J Cardiol* 1996; 78(5): 516-519.
1413. 20th Bethesda Conference: Insurability and employability of the patient with ischemic heart disease. October 3-4, 1988, Bethesda, Maryland. *J Am Coll Cardiol* 1989; 14(4): 1003-1044.
1414. Harding MB, Leithe ME, Mark DB, Nelson CL, Harrison JK, Hermiller JB et al. Ergonovine maleate testing during cardiac catheterization: A 10-year perspective in 3,447 patients without significant coronary artery disease or Prinzmetal's variant angina. *J Am Coll Cardiol* 1992; 20(1): 107-111.
1415. Mark DB, Califf RM, Morris KG, Harrell FE, Jr., Pryor DB, Hlatky MA et al. Clinical characteristics and long-term survival of patients with variant angina. *Circulation* 1984; 69(5): 880-888.
1416. Hillis LD, Braunwald E. Coronary-artery spasm. *N Engl J Med* 1978; 299(13): 695-702.
1417. Roberts WC. Major anomalies of coronary arterial origin seen in adulthood. *Am Heart J* 1986; 111(5): 941-963.
1418. Serota H, Barth CW, III, Seuc CA, Vandormael M, Aguirre F, Kern MJ. Rapid identification of the course of anomalous coronary arteries in adults: The "dot and eye" method. *Am J Cardiol* 1990; 65(13): 891-898.
1419. Burks JM, Rothrock DR. Anomalous right coronary artery from the left sinus of Valsalva: Demonstration of extensive collateral circulation. *Cathet Cardiovasc Diagn* 1996; 39(1): 67-70.
1420. Hamada S, Yoshimura N, Takamiya M. Images in cardiovascular medicine: Noninvasive imaging of anomalous origin of the left coronary artery from the pulmonary artery. *Circulation* 1998; 97(2): 219.
1421. Burns JC, Shike H, Gordon JB, Malhotra A, Schoenwetter M, Kawasaki T. Sequelae of Kawasaki disease in adolescents and young adults. *J Am Coll Cardiol* 1996; 28(1): 253-257.

1422. DeMaio SJ, Jr., Kinsella SH, Silverman ME. Clinical course and long-term prognosis of spontaneous coronary artery dissection. *Am J Cardiol* 1989; 64(8): 471-474.
1423. Om A, Ellahham S, Vetrovec GW. Radiation-induced coronary artery disease. *Am Heart J* 1992; 124(6): 1598-1602.
1424. Patterson RE, Eisner RL, Horowitz SF. Comparison of cost-effectiveness and utility of exercise ECG, single photon emission computed tomography, positron emission tomography, and coronary angiography for diagnosis of coronary artery disease. *Circulation* 1995; 91(1): 54-65.
1425. Johnson LW, Lozner EC, Johnson S, Krone R, Pichard AD, Vetrovec GW et al. Coronary arteriography 1984-1987: A report of the registry of the Society for Cardiac Angiography and Interventions. I: Results and complications. *Cathet Cardiovasc Diagn* 1989; 17(1): 5-10.
1426. Pepine CJ. Ergonovine echocardiography for coronary spasm: Facts and wishful thinking. *J Am Coll Cardiol* 1996; 27(5): 1162-1163.
1427. Ringqvist I, Fisher LD, Mock M, Davis KB, Wedel H, Chaitman BR et al. Prognostic value of angiographic indices of coronary artery disease from the Coronary Artery Surgery Study (CASS). *J Clin Invest* 1983; 71(6): 1854-1866.
1428. The Veterans Administration Coronary Artery Bypass Surgery Cooperative Study Group. Eleven-year survival in the Veterans Administration randomized trial of coronary bypass surgery for stable angina. *N Engl J Med* 1984; 311(21): 1333-1339.
1429. Alderman EL, Bourassa MG, Cohen LS, Davis KB, Kaiser GG, Killip T et al. Ten-year follow-up of survival and myocardial infarction in the randomized Coronary Artery Surgery Study. *Circulation* 1990; 82(5): 1629-1646.
1430. Gersh BJ, Califf RM, Loop FD, Akins CW, Pryor DB, Takaro TC. Coronary bypass surgery in chronic stable angina. *Circulation* 1989; 79(6 Pt 2): I46-I59.
1431. Califf RM, Phillips HR, III, Hindman MC, Mark DB, Lee KL, Behar VS et al. Prognostic value of a coronary artery jeopardy score. *J Am Coll Cardiol* 1985; 5(5): 1055-1063.
1432. Waller BF, Rothbaum DA, Gorfinkel HJ, Ulbright TM, Linnemeier TJ, Berger SM. Morphologic observations after percutaneous transluminal balloon angioplasty of early and late aortocoronary saphenous vein bypass grafts. *J Am Coll Cardiol* 1984; 4(4): 784-792.
1433. Neitzel GF, Barboriak JJ, Pintar K, Qureshi I. Atherosclerosis in aortocoronary bypass grafts: Morphologic study and risk factor analysis 6 to 12 years after surgery. *Arteriosclerosis* 1986; 6(6): 594-600.



1434. Walts AE, Fishbein MC, Sustaita H, Matloff JM. Ruptured atheromatous plaques in saphenous vein coronary artery bypass grafts: A mechanism of acute, thrombotic, late graft occlusion. *Circulation* 1982; 65(1): 197-201.
1435. Tilli FV, Kaplan BM, Safian RD. Angioscopic plaque friability: A new risk factor for procedural complications following saphenous vein graft interventions. *J Am Coll Cardiol* 1996; 27(Suppl A): 364A.
1436. Coronary angioplasty versus coronary artery bypass surgery: The Randomized Intervention Treatment of Angina (RITA) trial. *Lancet* 1993; 341(8845): 573-580.
1437. Rodriguez A, Bouillon F, Perez-Balino N, Paviotti C, Liprandi MI, Palacios IF. Argentine randomized trial of percutaneous transluminal coronary angioplasty versus coronary artery bypass surgery in multivessel disease (ERACI): In-hospital results and 1-year follow-up. *J Am Coll Cardiol* 1993; 22(4): 1060-1067.
1438. Goy JJ, Eeckhout E, Burnand B, Vogt P, Stauffer JC, Hurni M et al. Coronary angioplasty versus left internal mammary artery grafting for isolated proximal left anterior descending artery stenosis. *Lancet* 1994; 343(8911): 1449-1453.
1439. Hamm CW, Reimers J, Ischinger T, Rupprecht HJ, Berger J, Bleifeld W. A randomized study of coronary angioplasty compared with bypass surgery in patients with symptomatic multivessel coronary disease. *N Engl J Med* 1994; 331(16): 1037-1043.
1440. King SB, III, Lembo NJ, Weintraub WS, Kosinski AS, Barnhart HX, Kutner MH et al. A randomized trial comparing coronary angioplasty with coronary bypass surgery: Emory Angioplasty versus Surgery Trial (EAST). *N Engl J Med* 1994; 331(16): 1044-1050.
1441. CABRI Trial Participants. First-year results of CABRI (Coronary Angioplasty versus Bypass Revascularisation Investigation). *Lancet* 1995; 346(8984): 1179-1184.
1442. Hueb WA, Soares PR, meida De Oliveira S, Arie S, Cardoso RH, Wajsbrodt DB et al. Five-year follow-up of the medicine, angioplasty, or surgery study (MASS): A prospective, randomized trial of medical therapy, balloon angioplasty, or bypass surgery for single proximal left anterior descending coronary artery stenosis. *Circulation* 1999; 100(19 Suppl): II107-II113.
1443. Carrie D, Elbaz M, Puel J, Fourcade J, Karouny E, Fournial G et al. Five-year outcome after coronary angioplasty versus bypass surgery in multivessel coronary artery disease: Results from the French Monocentric Study. *Circulation* 1997; 96(9 Suppl): II1-II6.
1444. Berger PB, Velianou JL, Aslanidou VH, Feit F, Jacobs AK, Faxon DP et al. Survival following coronary angioplasty versus coronary artery bypass surgery in anatomic subsets in which coronary artery bypass surgery improves survival compared with

- medical therapy: Results from the Bypass Angioplasty Revascularization Investigation (BARI). *J Am Coll Cardiol* 2001; 38(5): 1440-1449.
1445. Rodriguez A, Rodriguez Alemparte M, Baldi J, Navia J, Delacasa A, Vogel D et al. Coronary stenting versus coronary bypass surgery in patients with multiple vessel disease and significant proximal LAD stenosis: Results from the ERACI II study. *Heart* 2003; 89(2): 184-188.
1446. Morrison DA, Sethi G, Sacks J, Henderson W, Grover F, Sedlis S et al. Percutaneous coronary intervention versus coronary artery bypass graft surgery for patients with medically refractory myocardial ischemia and risk factors for adverse outcomes with bypass: A multicenter, randomized trial. *J Am Coll Cardiol* 2001; 38(1): 143-149.
1447. Hueb W, Soares PR, Gersh BJ, Cesar LA, Luz PL, Puig LB et al. The medicine, angioplasty, or surgery study (MASS-II): A randomized, controlled clinical trial of three therapeutic strategies for multivessel coronary artery disease. One-year results. *J Am Coll Cardiol* 2004; 43(10): 1743-1751.
1448. Serruys PW, Ong AT, Van Herwerden LA, Sousa JE, Jatene A, Bonnier JJ et al. Five-year outcomes after coronary stenting versus bypass surgery for the treatment of multivessel disease: The final analysis of the Arterial Revascularization Therapies Study (ARTS) randomized trial. *J Am Coll Cardiol* 2005; 46(4): 575-581.
1449. SoS Investigators. Coronary artery bypass surgery versus percutaneous coronary intervention with stent implantation in patients with multivessel coronary artery disease (the Stent or Surgery trial): A randomised controlled trial. *Lancet* 2002; 360(9338): 965-970.
1450. Goy JJ, Kaufmann U, Goy-Eggenberger D, Garachemani A, Hurni M, Carrel T et al. A prospective randomized trial comparing stenting to internal mammary artery grafting for proximal, isolated de novo left anterior coronary artery stenosis: The SIMA trial. *Stenting vs Internal Mammary Artery*. *Mayo Clin Proc* 2000; 75(11): 1116-1123.
1451. Lewin B, Cay EL, Todd I, Sorgal I, Gordfield N, Bloomfield P et al. The Angina Management Programme: A rehabilitation treatment. *British Journal of Cardiology* 1995; 2(8): 221-226.
1452. Hoffman SN, TenBrook JA, Wolf MP, Pauker SG, Salem DN, Wong JB. A meta-analysis of randomized controlled trials comparing coronary artery bypass graft with percutaneous transluminal coronary angioplasty: One- to eight-year outcomes. *J Am Coll Cardiol* 2003; 41(8): 1293-1304.
1453. The BARI Investigators. Seven-year outcome in the Bypass Angioplasty Revascularization Investigation (BARI) by treatment and diabetic status. *J Am Coll Cardiol* 2000; 35(5): 1122-1129.

1454. Boodhwani M, Rubens FD, Sellke FW, Mesana TG, Ruel M. Mortality and myocardial infarction following surgical versus percutaneous revascularization of isolated left anterior descending artery disease: A meta-analysis. *Eur J Cardiothorac Surg* 2006; 29(1): 65-70.
1455. Hannan EL, Racz MJ, Walford G, Jones RH, Ryan TJ, Bennett E et al. Long-term outcomes of coronary-artery bypass grafting versus stent implantation. *N Engl J Med* 2005; 352(21): 2174-2183.
1456. Brener SJ, Lytle BW, Casserly IP, Schneider JP, Topol EJ, Lauer MS. Propensity analysis of long-term survival after surgical or percutaneous revascularization in patients with multivessel coronary artery disease and high-risk features. *Circulation* 2004; 109(19): 2290-2295.
1457. Niles NW, McGrath PD, Malenka D, Quinton H, Wennberg D, Shubrooks SJ et al. Survival of patients with diabetes and multivessel coronary artery disease after surgical or percutaneous coronary revascularization: Results of a large regional prospective study. *J Am Coll Cardiol* 2001; 37(4): 1008-1015.
1458. Pell JP, Pell AC, Jeffrey RR, Jennings K, Oldroyd K, Eteiba H et al. Comparison of survival following coronary artery bypass grafting vs. percutaneous coronary intervention in diabetic and non-diabetic patients: Retrospective cohort study of 6320 procedures. *Diabet Med* 2004; 21(7): 790-792.
1459. Muneretto C, Negri A, Manfredi J, Terrini A, Rodella G, Elqarra S et al. Safety and usefulness of composite grafts for total arterial myocardial revascularization: A prospective randomized evaluation. *J Thorac Cardiovasc Surg* 2003; 125(4): 826-835.
1460. Lytle BW, Loop FD, Cosgrove DM, Ratliff NB, Easley K, Taylor PC. Long-term (5 to 12 years) serial studies of internal mammary artery and saphenous vein coronary bypass grafts. *J Thorac Cardiovasc Surg* 1985; 89(2): 248-258.
1461. Loop FD, Lytle BW, Cosgrove DM, Stewart RW, Goormastic M, Williams GW et al. Influence of the internal-mammary-artery graft on 10-year survival and other cardiac events. *N Engl J Med* 1986; 314(1): 1-6.
1462. Cameron J, Trivedi S, Stafford G, Bett JH. Five-year angiographic patency of radial artery bypass grafts. *Circulation* 2004; 110(11 Suppl 1): II23-II26.
1463. Maniar HS, Sundt TM, Barner HB, Prasad SM, Peterson L, Absi T et al. Effect of target stenosis and location on radial artery graft patency. *J Thorac Cardiovasc Surg* 2002; 123(1): 45-52.
1464. Gaudino M, Alessandrini F, Pragliola C, Cellini C, Glieca F, Luciani N et al. Effect of target artery location and severity of stenosis on mid-term patency of aorta-anastomosed vs. internal thoracic artery-anastomosed radial artery grafts. *Eur J Cardiothorac Surg* 2004; 25(3): 424-428.

1465. Lytle BW, Blackstone EH, Loop FD, Houghtaling PL, Arnold JH, Akhrass R et al. Two internal thoracic artery grafts are better than one. *J Thorac Cardiovasc Surg* 1999; 117(5): 855-872.
1466. Cameron A, Davis KB, Green G, Schaff HV. Coronary bypass surgery with internal-thoracic-artery grafts: Effects on survival over a 15-year period. *N Engl J Med* 1996; 334(4): 216-219.
1467. Taggart DP, D'Amico R, Altman DG. Effect of arterial revascularisation on survival: a systematic review of studies comparing bilateral and single internal mammary arteries. *Lancet* 2001; 358(9285): 870-875.
1468. Van Dijk D, Moons KG, Keizer AM, Jansen EW, Hijman R, Diephuis JC et al. Association between early and three month cognitive outcome after off-pump and on-pump coronary bypass surgery. *Heart* 2004; 90(4): 431-434.
1469. Rankin KP, Kochamba GS, Boone KB, Petitti DB, Buckwalter JG. Presurgical cognitive deficits in patients receiving coronary artery bypass graft surgery. *J Int Neuropsychol Soc* 2003; 9(6): 913-924.
1470. McKhann GM, Grega MA, Borowicz LM, Jr., Bailey MM, Barry SJ, Zeger SL et al. Is there cognitive decline 1 year after CABG? Comparison with surgical and nonsurgical controls. *Neurology* 2005; 65(7): 991-999.
1471. Cheng DC, Bainbridge D, Martin JE, Novick RJ. Does off-pump coronary artery bypass reduce mortality, morbidity, and resource utilization when compared with conventional coronary artery bypass? A meta-analysis of randomized trials. *Anesthesiology* 2005; 102(1): 188-203.
1472. Van Dijk D, Jansen EW, Hijman R, Nierich AP, Diephuis JC, Moons KG et al. Cognitive outcome after off-pump and on-pump coronary artery bypass graft surgery: A randomized trial. *JAMA* 2002; 287(11): 1405-1412.
1473. Zamvar V, Williams D, Hall J, Payne N, Cann C, Young K et al. Assessment of neurocognitive impairment after off-pump and on-pump techniques for coronary artery bypass graft surgery: Prospective randomised controlled trial. *BMJ* 2002; 325(7375): 1268.
1474. Stroobant N, Van Nooten G, Belleghem Y, Vingerhoets G. Short-term and long-term neurocognitive outcome in on-pump versus off-pump CABG. *Eur J Cardiothorac Surg* 2002; 22(4): 559-564.
1475. Rees K, Baranek-Stanley M, Burke M, Ebrahim S. Hypothermia to reduce neurological damage following coronary artery bypass surgery [Cochrane review]. *Cochrane Database Syst Rev* 2001; Issue 1. Chichester: John Wiley & Sons Ltd.
1476. Selnes OA, Royall RM, Grega MA, Borowicz LM, Jr., Quaskey S, McKhann GM. Cognitive changes 5 years after coronary artery bypass grafting: Is there evidence of late decline? *Arch Neurol* 2001; 58(4): 598-604.

1477. Knipp SC, Matatko N, Wilhelm H, Schlamann M, Massoudy P, Forsting M et al. Evaluation of brain injury after coronary artery bypass grafting: A prospective study using neuropsychological assessment and diffusion-weighted magnetic resonance imaging. *Eur J Cardiothorac Surg* 2004; 25(5): 791-800.
1478. Ho PM, Arciniegas DB, Grigsby J, McCarthy M, Jr., McDonald GO, Moritz TE et al. Predictors of cognitive decline following coronary artery bypass graft surgery. *Ann Thorac Surg* 2004; 77(2): 597-603.
1479. Di Carlo A, Perna AM, Pantoni L, Basile AM, Bonacchi M, Pracucci G et al. Clinically relevant cognitive impairment after cardiac surgery: A 6-month follow-up study. *J Neurol Sci* 2001; 188(1-2): 85-93.
1480. Newman MF, Kirchner JL, Phillips-Bute B, Gaver V, Grocott H, Jones RH et al. Longitudinal assessment of neurocognitive function after coronary-artery bypass surgery. *N Engl J Med* 2001; 344(6): 395-402.
1481. Deutsch E. *Medizinrecht - Arztrecht, Arzneimittelrecht und Medizinproduktrecht*. Berlin: Springer; 2005.
1482. Caracciolo EA, Davis KB, Sopko G, Kaiser GC, Corley SD, Schaff H et al. Comparison of surgical and medical group survival in patients with left main equivalent coronary artery disease: Long-term CASS experience. *Circulation* 1995; 91(9): 2335-2344.
1483. Prospective randomised study of coronary artery bypass surgery in stable angina pectoris: Second interim report by the European Coronary Surgery Study Group. *Lancet* 1980; 2(8193): 491-495.
1484. Detre K, Murphy ML, Hultgren H. Effect of coronary bypass surgery on longevity in high and low risk patients: Report from the V.A. Cooperative Coronary Surgery Study. *Lancet* 1977; 2(8051): 1243-1245.
1485. Varnauskas E. Twelve-year follow-up of survival in the randomized European Coronary Surgery Study. *N Engl J Med* 1988; 319(6): 332-337.
1486. Valgimigli M, Van Mieghem CA, Ong AT, Aoki J, Granillo GA, McFadden EP et al. Short- and long-term clinical outcome after drug-eluting stent implantation for the percutaneous treatment of left main coronary artery disease: Insights from the Rapamycin-Eluting and Taxus Stent Evaluated At Rotterdam Cardiology Hospital registries (RESEARCH and T-SEARCH). *Circulation* 2005; 111(11): 1383-1389.
1487. Chieffo A, Stankovic G, Bonizzoni E, Tsagalou E, Iakovou I, Montorfano M et al. Early and mid-term results of drug-eluting stent implantation in unprotected left main. *Circulation* 2005; 111(6): 791-795.
1488. Lee MS, Kapoor N, Jamal F, Czer L, Aragon J, Forrester J et al. Comparison of coronary artery bypass surgery with percutaneous coronary intervention with drug-eluting stents for unprotected left main coronary artery disease. *J Am Coll Cardiol* 2006; 47(4): 864-870.

1489. Lee SH, Ko YG, Jang Y, Kwon HM, Lee SH, Yoon JH et al. Sirolimus- versus paclitaxel-eluting stent implantation for unprotected left main coronary artery stenosis. *Cardiology* 2005; 104(4): 181-185.
1490. Park SJ, Kim YH, Lee BK, Lee SW, Lee CW, Hong MK et al. Sirolimus-eluting stent implantation for unprotected left main coronary artery stenosis: Comparison with bare metal stent implantation. *J Am Coll Cardiol* 2005; 45(3): 351-356.
1491. Price MJ, Cristea E, Sawhney N, Kao JA, Moses JW, Leon MB et al. Serial angiographic follow-up of sirolimus-eluting stents for unprotected left main coronary artery revascularization. *J Am Coll Cardiol* 2006; 47(4): 871-877.
1492. Silvestri M, Barragan P, Sainsous J, Bayet G, Simeoni JB, Roquebert PO et al. Unprotected left main coronary artery stenting: Immediate and medium-term outcomes of 140 elective procedures. *J Am Coll Cardiol* 2000; 35(6): 1543-1550.
1493. Scheld HH, Deng MC. Proposal for an urgency classification in cardiac surgery. *Thorac Cardiovasc Surg* 1998; 46(4): 183-187.
1494. RITA-2 trial participants. Coronary angioplasty versus medical therapy for angina: The second Randomised Intervention Treatment of Angina (RITA-2) trial. *Lancet* 1997; 350(9076): 461-468.
1495. Serruys PW, Unger F, Sousa JE, Jatene A, Bonnier HJ, Schönberger JP et al. Comparison of coronary-artery bypass surgery and stenting for the treatment of multivessel disease. *N Engl J Med* 2001; 344(15): 1117-1124.
1496. Legrand VM, Serruys PW, Unger F, Van Hout BA, Vrolix MCM, Franssen GMP et al. Three-year outcome after coronary stenting versus bypass surgery for the treatment of multivessel disease. *Circulation* 2004; 109(9): 1114-1120.
1497. Rodriguez A, Bernardi V, Navia J, Baldi J, Grinfeld L, Martinez J et al. Argentine randomized study: Coronary angioplasty with stenting versus coronary Bypass surgery in patients with multiple-vessel disease (ERACI II): 30-day and one-year follow-up results. *J Am Coll Cardiol* 2001; 37(1): 51-58.
1498. Rodriguez AE, Baldi J, Fernandez Pereira C, Navia J, Rodriguez Alemparte M, Delacasa A et al. Five-year follow-up of the Argentine randomized trial of coronary angioplasty with stenting versus coronary bypass surgery in patients with multiple vessel disease (ERACI II). *J Am Coll Cardiol* 2005; 46(4): 582-588.
1499. The Bypass Angioplasty Revascularization Investigation (BARI) Investigators. Comparison of coronary bypass surgery with angioplasty in patients with multivessel disease. *N Engl J Med* 1996; 335(4): 217-225.
1500. King SB, III, Kosinski AS, Guyton RA, Lembo NJ, Weintraub WS. Eight-year mortality in the Emory Angioplasty versus Surgery Trial (EAST). *J Am Coll Cardiol* 2000; 35(5): 1116-1121.

1501. Henderson RA, Pocock SJ, Sharp SJ, Nanchahal K, Sculpher MJ, Buxton MJ et al. Long-term results of RITA-1 trial: Clinical and cost comparisons of coronary angioplasty and coronary-artery bypass grafting. *Lancet* 1998; 352(9138): 1419-1425.
1502. Stables RH. Design of the 'Stent or Surgery' trial (SoS): A randomized controlled trial to compare coronary artery bypass grafting with percutaneous transluminal coronary angioplasty and primary stent implantation in patients with multi-vessel coronary artery disease. *Semin Interv Cardiol* 1999; 4(4): 201-207.
1503. Bourassa MG, Kip KE, Jacobs AK, Jones RH, Sopko G, Rosen AD et al. Is a strategy of intended incomplete percutaneous transluminal coronary angioplasty revascularization acceptable in nondiabetic patients who are candidates for coronary artery bypass graft surgery? The Bypass Angioplasty Revascularization Investigation (BARI). *J Am Coll Cardiol* 1999; 33(6): 1627-1636.
1504. Holubkov R, Detre KM, Sopko G, Sutton-Tyrrell K, Kelsey SF, Frye RL. Trends in coronary revascularization 1989 to 1997: The Bypass Angioplasty Revascularization Investigation (BARI) survey of procedures. *Am J Cardiol* 1999; 84(2): 157-161.
1505. Mullany CJ, Mock MB, Brooks MM, Kelsey SF, Keller NM, Sutton-Tyrrell K et al. Effect of age in the Bypass Angioplasty Revascularization Investigation (BARI) randomized trial. *Ann Thorac Surg* 1999; 67(2): 396-403.
1506. Schwartz L, Kip KE, Frye RL, Alderman EL, Schaff HV, Detre KM. Coronary bypass graft patency in patients with diabetes in the Bypass Angioplasty Revascularization Investigation (BARI). *Circulation* 2002; 106(21): 2652-2658.
1507. Whitlow PL, Dimas AP, Bashore TM, Califf RM, Bourassa MG, Chaitman BR et al. Relationship of extent of revascularization with angina at one year in the Bypass Angioplasty Revascularization Investigation (BARI). *J Am Coll Cardiol* 1999; 34(6): 1750-1759.
1508. Kurbaan AS, Rickards AF, Ilsley CD, Foale RA, Sigwart U, Bowker TJ. Relation between coronary artery disease, baseline clinical variables, revascularization mode, and mortality. *Am J Cardiol* 2000; 86(9): 938-942.
1509. Rodriguez A, Mele E, Peyregne E, Bullon F, Perez-Balino N, Liprandi MI et al. Three-year follow-up of the Argentine Randomized Trial of Percutaneous Transluminal Coronary Angioplasty Versus Coronary Artery Bypass Surgery in Multivessel Disease (ERACI). *J Am Coll Cardiol* 1996; 27(5): 1178-1184.
1510. Lenzen MJ, Boersma E, Bertrand ME, Maier W, Moris C, Piscione F et al. Management and outcome of patients with established coronary artery disease: The Euro Heart Survey on coronary revascularization. *Eur Heart J* 2005; 26(12): 1169-1179.
1511. Hueb WA, Bellotti G, De Oliveira SA, Arie S, De Albuquerque CP, Jatene AD et al. The Medicine, Angioplasty or Surgery Study (MASS): a prospective, randomized

- trial of medical therapy, balloon angioplasty or bypass surgery for single proximal left anterior descending artery stenoses. *J Am Coll Cardiol* 1995; 26(7): 1600-1605.
1512. Diegeler A, Thiele H, Falk V, Hambrecht R, Spyranis N, Sick P et al. Comparison of stenting with minimally invasive bypass surgery for stenosis of the left anterior descending coronary artery. *N Engl J Med* 2002; 347(8): 561-566.
1513. Drenth DJ, Veeger NJ, Grandjean JG, Mariani MA, Van Boven AJ, Boonstra PW. Isolated high-grade lesion of the proximal LAD: A stent or off-pump LIMA? *Eur J Cardiothorac Surg* 2004; 25(4): 567-571.
1514. Herz I, Moshkovitz Y, Hendler A, Adam SZ, Uretzky G, Ben-Gal Y et al. Revascularization of left anterior descending artery with drug-eluting stents: Comparison with off-pump surgery. *Ann Thorac Surg* 2005; 79(1): 88-92.
1515. Drenth DJ, Veeger NJ, Winter JB, Grandjean JG, Mariani MA, Boven van AJ et al. A prospective randomized trial comparing stenting with off-pump coronary surgery for high-grade stenosis in the proximal left anterior descending coronary artery: Three-year follow-up. *J Am Coll Cardiol* 2002; 40(11): 1955-1960.
1516. Parisi AF, Folland ED, Hartigan P. A comparison of angioplasty with medical therapy in the treatment of single-vessel coronary artery disease. *N Engl J Med* 1992; 326(1): 10-16.
1517. Pitt B, Waters D, Brown WV, Van Boven AJ, Schwartz L, Title LM et al. Aggressive lipid-lowering therapy compared with angioplasty in stable coronary artery disease. *N Engl J Med* 1999; 341(2): 70-76.
1518. Scott R, Blackstone EH, McCarthy PM, Lytle BW, Loop FD, White JA et al. Isolated bypass grafting of the left internal thoracic artery to the left anterior descending coronary artery: Late consequences of incomplete revascularization. *J Thorac Cardiovasc Surg* 2000; 120(1): 173-184.
1519. Bonetti PO, Kaiser C, Zellweger MJ, Grize L, Erne P, Schoenenberger RA et al. Long-term benefits and limitations of combined antianginal drug therapy in elderly patients with symptomatic chronic coronary artery disease. *J Cardiovasc Pharmacol Ther* 2005; 10(1): 29-37.
1520. Graham MM, Ghali WA, Faris PD, Galbraith PD, Norris CM, Knudtson ML. Survival after coronary revascularization in the elderly. *Circulation* 2002; 105(20): 2378-2384.
1521. Kaehler J, Koester R, Hamm CW, Meinertz T. Perkutane Koronarinterventionen verbessern die Lebensqualität von Patienten nach dem 80. Lebensjahr. *Dtsch Med Wochenschr* 2005; 130(12): 639-643.
1522. Pfisterer M. Long-term outcome in elderly patients with chronic angina managed invasively versus by optimized medical therapy: Four-year follow-up of the randomized Trial of Invasive versus Medical therapy in Elderly patients (TIME). *Circulation* 2004; 110(10): 1213-1218.



1523. Pfisterer M, Buser P, Osswald S, Allemann U, Amann W, Angehrn W et al. Outcome of elderly patients with chronic symptomatic coronary artery disease with an invasive vs optimized medical treatment strategy: One-year results of the randomized TIME trial. *JAMA* 2003; 289(9): 1117-1123.
1524. Henderson RA, Pocock SJ, Clayton TC, Knight R, Fox KA, Julian DG et al. Seven-year outcome in the RITA-2 trial: Coronary angioplasty versus medical therapy. *J Am Coll Cardiol* 2003; 42(7): 1161-1170.
1525. Davies RF, Goldberg AD, Forman S, Pepine CJ, Knatterud GL, Geller N et al. Asymptomatic Cardiac Ischemia Pilot (ACIP) study two-year follow-up: Outcomes of patients randomized to initial strategies of medical therapy versus revascularization. *Circulation* 1997; 95(8): 2037-2043.
1526. Jones RH, Kesler K, Phillips HR, III, Mark DB, Smith PK, Nelson CL et al. Long-term survival benefits of coronary artery bypass grafting and percutaneous transluminal angioplasty in patients with coronary artery disease. *J Thorac Cardiovasc Surg* 1996; 111(5): 1013-1025.
1527. Myocardial infarction and mortality in the coronary artery surgery study (CASS) randomized trial. *N Engl J Med* 1984; 310(12): 750-758.
1528. Goy JJ, Eeckhout E, Moret C, Burnand B, Vogt P, Stauffer JC et al. Five-year outcome in patients with isolated proximal left anterior descending coronary artery stenosis treated by angioplasty or left internal mammary artery grafting: A prospective trial. *Circulation* 1999; 99(25): 3255-3259.
1529. Nilsson J, Algotsson L, Hoglund P, Luhrs C, Brandt J. Early mortality in coronary bypass surgery: The EuroSCORE versus The Society of Thoracic Surgeons risk algorithm. *Ann Thorac Surg* 2004; 77(4): 1235-1239.
1530. Nashef SA, Roques F, Michel P, Gauducheau E, Lemeshow S, Salamon R. European system for cardiac operative risk evaluation (EuroSCORE). *Eur J Cardiothorac Surg* 1999; 16(1): 9-13.
1531. Goldman S, Zadina K, Moritz T, Ovitt T, Sethi G, Copeland JG et al. Long-term patency of saphenous vein and left internal mammary artery grafts after coronary artery bypass surgery: Results from a Department of Veterans Affairs Cooperative Study. *J Am Coll Cardiol* 2004; 44(11): 2149-2156.
1532. Brodman RF, Frame R, Camacho M, Hu E, Chen A, Hollinger I. Routine use of unilateral and bilateral radial arteries for coronary artery bypass graft surgery. *J Am Coll Cardiol* 1996; 28(4): 959-963.
1533. Acar C, Ramsheyi A, Pagny JY, Jebara V, Barrier P, Fabiani JN et al. The radial artery for coronary artery bypass grafting: Clinical and angiographic results at five years. *J Thorac Cardiovasc Surg* 1998; 116(6): 981-989.

1534. Van Dijk D, Nierich AP, Jansen EW, Nathoe HM, Suyker WJ, Diephuis JC et al. Early outcome after off-pump versus on-pump coronary bypass surgery: Results from a randomized study. *Circulation* 2001; 104(15): 1761-1766.
1535. Angelini GD, Taylor FC, Reeves BC, Ascione R. Early and midterm outcome after off-pump and on-pump surgery in Beating Heart Against Cardioplegic Arrest Studies (BHACAS 1 and 2): A pooled analysis of two randomised controlled trials. *Lancet* 2002; 359(9313): 1194-1199.
1536. Khan NE, De Souza A, Mister R, Flather M, Clague J, Davies S et al. A randomized comparison of off-pump and on-pump multivessel coronary-artery bypass surgery. *N Engl J Med* 2004; 350(1): 21-28.
1537. Bucher HC, Hengstler P, Schindler C, Guyatt GH. Percutaneous transluminal coronary angioplasty versus medical treatment for non-acute coronary heart disease: Meta-analysis of randomised controlled trials. *BMJ* 2000; 321(7253): 73-77.
1538. Brophy JM, Belisle P, Joseph L. Evidence for use of coronary stents: A hierarchical bayesian meta-analysis. *Ann Intern Med* 2003; 138(10): 777-786.
1539. Al Suwaidi J, Holmes DR, Jr., Salam AM, Lennon R, Berger PB. Impact of coronary artery stents on mortality and nonfatal myocardial infarction: Meta-analysis of randomized trials comparing a strategy of routine stenting with that of balloon angioplasty. *Am Heart J* 2004; 147(5): 815-822.
1540. Morice MC, Serruys PW, Sousa JE, Fajadet J, Ban Hayashi E, Perin M et al. A randomized comparison of a sirolimus-eluting stent with a standard stent for coronary revascularization. *N Engl J Med* 2002; 346(23): 1773-1780.
1541. Lansky AJ, Costa RA, Mintz GS, Tsuchiya Y, Midei M, Cox DA et al. Non-polymer-based paclitaxel-coated coronary stents for the treatment of patients with de novo coronary lesions: Angiographic follow-up of the DELIVER clinical trial. *Circulation* 2004; 109(16): 1948-1954.
1542. Moses JW, Leon MB, Popma JJ, Fitzgerald PJ, Holmes DR, O'Shaughnessy C et al. Sirolimus-eluting stents versus standard stents in patients with stenosis in a native coronary artery. *N Engl J Med* 2003; 349(14): 1315-1323.
1543. Stone GW, Ellis SG, Cox DA, Hermiller J, O'Shaughnessy C, Mann JT et al. A polymer-based, paclitaxel-eluting stent in patients with coronary artery disease. *N Engl J Med* 2004; 350(3): 221-231.
1544. Pfisterer ME, Kiowski W, Brunner H, Burckhardt D, Burkart F. Long-term benefit of 1-year amiodarone treatment for persistent complex ventricular arrhythmias after myocardial infarction. *Circulation* 1993; 87(2): 309-311.
1545. Pocock SJ, Henderson RA, Rickards AF, Hampton JR, King SB, III, Hamm CW et al. Meta-analysis of randomised trials comparing coronary angioplasty with bypass surgery. *Lancet* 1995; 346(8984): 1184-1189.

1546. Mercado N, Wijns W, Serruys PW, Sigwart U, Flather MD, Stables RH et al. One-year outcomes of coronary artery bypass graft surgery versus percutaneous coronary intervention with multiple stenting for multisystem disease: A meta-analysis of individual patient data from randomized clinical trials. *J Thorac Cardiovasc Surg* 2005; 130(2): 512-519.
1547. Joyce D, Loebe M, Noon GP, McRee S, Southard R, Thompson L et al. Revascularization and ventricular restoration in patients with ischemic heart failure: The STICH trial. *Curr Opin Cardiol* 2003; 18(6): 454-457.
1548. Black A, Cortina R, Bossi I, Choussat R, Fajadet J, Marco J. Unprotected left main coronary artery stenting: Correlates of midterm survival and impact of patient selection. *J Am Coll Cardiol* 2001; 37(3): 832-838.
1549. Flaherty JD, Davidson CJ. Diabetes and coronary revascularization. *JAMA* 2005; 293(12): 1501-1508.
1550. Brooks RC, Detre KM. Clinical trials of revascularization therapy in diabetics. *Curr Opin Cardiol* 2000; 15(4): 287-292.
1551. Lytle BW, Loop FD, Taylor PC, Simpfendorfer C, Kramer JR, Ratliff NB et al. Vein graft disease: The clinical impact of stenoses in saphenous vein bypass grafts to coronary arteries. *J Thorac Cardiovasc Surg* 1992; 103(5): 831-840.
1552. Lytle BW, Loop FD, Taylor PC, Goormastic M, Stewart RW, Novoa R et al. The effect of coronary reoperation on the survival of patients with stenoses in saphenous vein bypass grafts to coronary arteries. *J Thorac Cardiovasc Surg* 1993; 105(4): 605-612.
1553. Chase D, Best L, Milne R. Stents for coronary artery disease (CAD). Bristol: Wessex Institute for Health, Research and Development; 1998. (Development and evaluation committee report; Vol 87).
1554. Indolfi C, Pavia M, Angelillo IF. Drug-eluting stents versus bare metal stents in percutaneous coronary interventions (a meta-analysis). *Am J Cardiol* 2005; 95(10): 1146-1152.
1555. Sim I, Gupta M, McDonald K, Bourassa MG, Hlatky MA. A meta-analysis of randomized trials comparing coronary artery bypass grafting with percutaneous transluminal coronary angioplasty in multivessel coronary artery disease. *Am J Cardiol* 1995; 76(14): 1025-1029.
1556. Bakhai A, Hill RA, Dunder Y, Dickson R, Walley T. Percutaneous transluminal coronary angioplasty with stents versus coronary artery bypass grafting for people with stable angina or acute coronary syndromes [Cochrane Review]. *Cochrane Database Syst Rev* 2005; Issue 1. Chichester: John Wiley & Sons Ltd.
1557. Baker DW, Jones R, Hodges J, Massie BM, Konstam MA, Rose EA. Management of heart failure. III: The role of revascularization in the treatment of patients with

- moderate or severe left ventricular systolic dysfunction. *JAMA* 1994; 272(19): 1528-1534.
1558. Mack MJ, Osborne JA, Shennib H. Arterial graft patency in coronary artery bypass grafting: What do we really know? *Ann Thorac Surg* 1998; 66(3): 1055-1059.
1559. Coronary artery surgery study (CASS): A randomized trial of coronary artery bypass surgery. *Circulation* 1983; 68(5): 951-960.
1560. Varnauskas E. Survival, myocardial infarction, and employment status in a prospective randomized study of coronary bypass surgery. *Circulation* 1985; 72(6 Pt 2): V90-V101.
1561. Hartigan PM, Giacomini JC, Folland ED, Parisi AF. Two- to three-year follow-up of patients with single-vessel coronary artery disease randomized to PTCA or medical therapy (results of a VA cooperative study). *Am J Cardiol* 1998; 82(12): 1445-1450.
1562. Pepine CJ, Geller NL, Knatterud GL, Bourassa MG, Chaitman BR, Davies RF et al. The Asymptomatic Cardiac Ischemia Pilot (ACIP) study: Design of a randomized clinical trial, baseline data and implications for a long-term outcome trial. *J Am Coll Cardiol* 1994; 24(1): 1-10.
1563. Rubartelli P, Verna E, Niccoli L, Giachero C, Zimarino M, Bernardi G et al. Coronary stent implantation is superior to balloon angioplasty for chronic coronary occlusions: Six-year clinical follow-up of the GISSOC trial. *J Am Coll Cardiol* 2003; 41(9): 1488-1492.
1564. Rahel BM, Suttrop MJ, Laarman GJ, Kiemeneij F, Bal ET, Rensing BJ et al. Primary stenting of occluded native coronary arteries: Final results of the Primary Stenting of Occluded Native Coronary Arteries (PRISON) study. *Am Heart J* 2004; 147(5): e22.
1565. Sievert H, Rohde S, Utech A, Schulze R, Scherer D, Merle H et al. Stent or angioplasty after recanalization of chronic coronary occlusions? (The SARECCO Trial). *Am J Cardiol* 1999; 84(4): 386-390.
1566. Sirnes PA, Golf S, Myreng Y, Molstad P, Emanuelsson H, Albertsson P et al. Stenting in Chronic Coronary Occlusion (SICCO): A randomized, controlled trial of adding stent implantation after successful angioplasty. *J Am Coll Cardiol* 1996; 28(6): 1444-1451.
1567. Hoher M, Wohrle J, Grebe OC, Kochs M, Osterhues HH, Hombach V et al. A randomized trial of elective stenting after balloon recanalization of chronic total occlusions. *J Am Coll Cardiol* 1999; 34(3): 722-729.
1568. Lotan C, Rozenman Y, Hendler A, Turgeman Y, Ayzenberg O, Beyar R et al. Stents in total occlusion for restenosis prevention: The multicentre randomized STOP study. *Eur Heart J* 2000; 21(23): 1960-1966.

1569. Buller CE, Dzavik V, Carere RG, Mancini GB, Barbeau G, Lazzam C et al. Primary stenting versus balloon angioplasty in occluded coronary arteries: The Total Occlusion Study of Canada (TOSCA). *Circulation* 1999; 100(3): 236-242.
1570. Werner GS, Krack A, Schwarz G, Prochnau D, Betge S, Figulla HR. Prevention of lesion recurrence in chronic total coronary occlusions by paclitaxel-eluting stents. *J Am Coll Cardiol* 2004; 44(12): 2301-2306.
1571. Hoyer A, Tanabe K, Lemos PA, Aoki J, Saia F, Arampatzis C et al. Significant reduction in restenosis after the use of sirolimus-eluting stents in the treatment of chronic total occlusions. *J Am Coll Cardiol* 2004; 43(11): 1954-1958.
1572. Morrison DA, Sethi G, Sacks J, Grover F, Sedlis S, Esposito R et al. A multicenter, randomized trial of percutaneous coronary intervention versus bypass surgery in high-risk unstable angina patients. *Control Clin Trials* 1999; 20(6): 601-619.
1573. Morrison DA, Sethi G, Sacks J, Henderson WG, Grover F, Sedlis S et al. Percutaneous coronary intervention versus repeat bypass surgery for patients with medically refractory myocardial ischemia: AWESOME randomized trial and registry experience with post-CABG patients. *J Am Coll Cardiol* 2002; 40(11): 1951-1954.
1574. Sedlis SP, Ramanathan KB, Morrison DA, Sethi G, Sacks J, Henderson W et al. Outcome of percutaneous coronary intervention versus coronary bypass grafting for patients with low left ventricular ejection fractions, unstable angina pectoris, and risk factors for adverse outcomes with bypass (the AWESOME randomized trial and registry). *Am J Cardiol* 2004; 94(1): 118-120.
1575. Hlatky MA, Boothroyd DB, Melsop KA, Brooks MM, Mark DB, Pitt B et al. Medical costs and quality of life 10 to 12 years after randomization to angioplasty or bypass surgery for multivessel coronary artery disease. *Circulation* 2004; 110(14): 1960-1966.
1576. Ijsselmuiden AJ, Ezechiels J, Westendorp IC, Tijssen JG, Kiemeneij F, Slagboom T et al. Complete versus culprit vessel percutaneous coronary intervention in multivessel disease: A randomized comparison. *Am Heart J* 2004; 148(3): 467-474.
1577. Botman KJ, Pijls NH, Bech JW, Aarnoudse W, Peels K, Van Straten B et al. Percutaneous coronary intervention or bypass surgery in multivessel disease? A tailored approach based on coronary pressure measurement. *Catheter Cardiovasc Interv* 2004; 63(2): 184-191.
1578. Lopez JJ, Ho KK, Stoler RC, Caputo RP, Carrozza JP, Kuntz RE et al. Percutaneous treatment of protected and unprotected left main coronary stenoses with new devices: Immediate angiographic results and intermediate-term follow-up. *J Am Coll Cardiol* 1997; 29(2): 345-352.

1579. Kelley MP, Klugherz BD, Hashemi SM, Meneveau NF, Johnston JM, Matthai WH, Jr. et al. One-year clinical outcomes of protected and unprotected left main coronary artery stenting. *Eur Heart J* 2003; 24(17): 1554-1559.
1580. Arampatzis CA, Lemos PA, Tanabe K, Hoye A, Degertekin M, Saia F et al. Effectiveness of sirolimus-eluting stent for treatment of left main coronary artery disease. *Am J Cardiol* 2003; 92(3): 327-329.
1581. De Lezo JS, Medina A, Pan M, Delgado A, Segura J, Pavlovic D et al. Rapamycin-eluting stents for the treatment of unprotected left main coronary disease. *Am Heart J* 2004; 148(3): 481-485.
1582. Serruys PW, De Jaegere P, Kiemeneij F, Macaya C, Rutsch W, Heyndrickx G et al. A comparison of balloon-expandable-stent implantation with balloon angioplasty in patients with coronary artery disease. *N Engl J Med* 1994; 331(8): 489-495.
1583. Fischman DL, Leon MB, Baim DS, Schatz RA, Savage MP, Penn I et al. A randomized comparison of coronary-stent placement and balloon angioplasty in the treatment of coronary artery disease. *N Engl J Med* 1994; 331(8): 496-501.
1584. Erbel R, Haude M, Hopp HW, Franzen D, Rupprecht HJ, Heublein B et al. Coronary-artery stenting compared with balloon angioplasty for restenosis after initial balloon angioplasty. *N Engl J Med* 1998; 339(23): 1672-1678.
1585. Versaci F, Gaspardone A, Tomai F, Crea F, Chiariello L, Gioffre PA. A comparison of coronary-artery stenting with angioplasty for isolated stenosis of the proximal left anterior descending coronary artery. *N Engl J Med* 1997; 336(12): 817-822.
1586. Serruys PW, Van Hout B, Bonnier H, Legrand V, Garcia E, Macaya C et al. Randomised comparison of implantation of heparin-coated stents with balloon angioplasty in selected patients with coronary artery disease (Benestent II). *Lancet* 1998; 352(9129): 673-681.
1587. Betriu A, Masotti M, Serra A, Alonso J, Fernandez-Aviles F, Gimeno F et al. Randomized comparison of coronary stent implantation and balloon angioplasty in the treatment of de novo coronary artery lesions (START): A four-year follow-up. *J Am Coll Cardiol* 1999; 34(5): 1498-1506.
1588. Al Suwaidi J, Berger PB, Holmes DR, Jr. Coronary artery stents. *JAMA* 2000; 284(14): 1828-1836.
1589. Nordmann AJ, Hengstler P, Leimenstoll BM, Harr T, Young J, Bucher HC. Clinical outcomes of stents versus balloon angioplasty in non-acute coronary artery disease: A meta-analysis of randomized controlled trials. *Eur Heart J* 2004; 25(1): 69-80.
1590. Moreno R, Fernandez C, Alfonso F, Hernandez R, Perez-Vizcayno MJ, Escaned J et al. Coronary stenting versus balloon angioplasty in small vessels: A meta-analysis from 11 randomized studies. *J Am Coll Cardiol* 2004; 43(11): 1964-1972.

1591. Savage MP, Douglas JS, Jr., Fischman DL, Pepine CJ, King SB, III, Werner JA et al. Stent placement compared with balloon angioplasty for obstructed coronary bypass grafts. *N Engl J Med* 1997; 337(11): 740-747.
1592. Hanekamp CE, Koolen JJ, Den Heijer P, Schalijs MJ, Piek JJ, Bar FW et al. Randomized study to compare balloon angioplasty and elective stent implantation in venous bypass grafts: The Venestent study. *Catheter Cardiovasc Interv* 2003; 60(4): 452-457.
1593. Cutlip DE, Chhabra AG, Baim DS, Chauhan MS, Marulkar S, Massaro J et al. Beyond restenosis: Five-year clinical outcomes from second-generation coronary stent trials. *Circulation* 2004; 110(10): 1226-1230.
1594. Versaci F, Gaspardone A, Tomai F, Proietti I, Ghini AS, Altamura L et al. A comparison of coronary artery stenting with angioplasty for isolated stenosis of the proximal left anterior descending coronary artery: Five year clinical follow up. *Heart* 2004; 90(6): 672-675.
1595. Myers WO, Schaff HV, Gersh BJ, Fisher LD, Kosinski AS, Mock MB et al. Improved survival of surgically treated patients with triple vessel coronary artery disease and severe angina pectoris: A report from the Coronary Artery Surgery Study (CASS) registry. *J Thorac Cardiovasc Surg* 1989; 97(4): 487-495.
1596. Califf RM, Harrell FE, Jr., Lee KL, Rankin JS, Hlatky MA, Mark DB et al. The evolution of medical and surgical therapy for coronary artery disease: A 15-year perspective. *JAMA* 1989; 261(14): 2077-2086.
1597. Sharaf BL, Williams DO, Miele NJ, McMahon RP, Stone PH, Bjerregaard P et al. A detailed angiographic analysis of patients with ambulatory electrocardiographic ischemia: Results from the Asymptomatic Cardiac Ischemia Pilot (ACIP) study angiographic core laboratory. *J Am Coll Cardiol* 1997; 29(1): 78-84.
1598. Influence of diabetes on 5-year mortality and morbidity in a randomized trial comparing CABG and PTCA in patients with multivessel disease: The Bypass Angioplasty Revascularization Investigation (BARI). *Circulation* 1997; 96(6): 1761-1769.
1599. O'Rourke RA. Role of myocardial revascularization in sudden cardiac death. *Circulation* 1992; 85(1 Suppl): I112-I117.
1600. Holmes DR, Jr., Davis K, Gersh BJ, Mock MB, Pettinger MB. Risk factor profiles of patients with sudden cardiac death and death from other cardiac causes: A report from the Coronary Artery Surgery Study (CASS). *J Am Coll Cardiol* 1989; 13(3): 524-530.
1601. Tresch DD, Wetherbee JN, Siegel R, Troup PJ, Keelan MH, Jr., Olinger GN et al. Long-term follow-up of survivors of prehospital sudden cardiac death treated with coronary bypass surgery. *Am Heart J* 1985; 110(6): 1139-1145.

1602. Taylor HA, Deumite NJ, Chaitman BR, Davis KB, Killip T, Rogers WJ. Asymptomatic left main coronary artery disease in the Coronary Artery Surgery Study (CASS) registry. *Circulation* 1989; 79(6): 1171-1179.
1603. Burkhoff D, Schmidt S, Schulman SP, Myers J, Resar J, Becker LC et al. Transmyocardial laser revascularisation compared with continued medical therapy for treatment of refractory angina pectoris: A prospective randomised trial. *Lancet* 1999; 354(9182): 885-890.
1604. Aaberge L, Nordstrand K, Dragsund M, Saatvedt K, Endresen K, Golf S et al. Transmyocardial revascularization with CO2 laser in patients with refractory angina pectoris: Clinical results from the Norwegian randomized trial. *J Am Coll Cardiol* 2000; 35(5): 1170-1177.
1605. Allen KB, Dowling RD, Fudge TL, Schoettle GP, Selinger SL, Gangahar DM et al. Comparison of transmyocardial revascularization with medical therapy in patients with refractory angina. *N Engl J Med* 1999; 341(14): 1029-1036.
1606. Frazier OH, March RJ, Horvath KA. Transmyocardial revascularization with a carbon dioxide laser in patients with end-stage coronary artery disease. *N Engl J Med* 1999; 341(14): 1021-1028.
1607. Held C, Hjemdahl P, Hakan Wallen N, Björkander I, Forslund L, Wiman B et al. Inflammatory and hemostatic markers in relation to cardiovascular prognosis in patients with stable angina pectoris: Results from the APSIS study. *Atherosclerosis* 2000; 148(1): 179-188.
1608. Society of Thoracic Surgeons. STS National Database [Online-Text]. Gelesen unter: <http://www.sts.org/sections/stsnationaldatabase/>.
1609. Arora RR, Chou TM, Jain D, Fleishman B, Crawford L, McKiernan T et al. The MULTicenter STudy of Enhanced External CounterPulsation (MUST-EECP): Effect of EECP on exercise-induced myocardial ischemia and anginal episodes. *J Am Coll Cardiol* 1999; 33(7): 1833-1840.
1610. Barsness G, Feldman AM, Holmes DR, Jr., Holubkov R, Kelsey SF, Kennard ED. The International EECP Patient Registry (IEPR): Design, methods, baseline characteristics, and acute results. *Clin Cardiol* 2001; 24(6): 435-442.
1611. Lawson WE, Hui JC, Lang G. Treatment benefit in the enhanced external counterpulsation consortium. *Cardiology* 2000; 94(1): 31-35.
1612. Hautvast RW, DeJongste MJ, Staal MJ, Van Gilst WH, Lie KI. Spinal cord stimulation in chronic intractable angina pectoris: A randomized, controlled efficacy study. *Am Heart J* 1998; 136(6): 1114-1120.
1613. Jessurun GA, DeJongste MJ, Hautvast RW, Tio RA, Brouwer J, Van Lelieveld S et al. Clinical follow-up after cessation of chronic electrical neuromodulation in patients with severe coronary artery disease: a prospective randomized controlled



- study on putative involvement of sympathetic activity. *Pacing Clin Electrophysiol* 1999; 22(10): 1432-1439.
1614. Jessurun GA, Ten Vaarwerk IA, DeJongste MJ, Tio RA, Staal MJ. Sequelae of spinal cord stimulation for refractory angina pectoris: Reliability and safety profile of long-term clinical application. *Coron Artery Dis* 1997; 8(1): 33-38.
1615. TenVaarwerk IA, Jessurun GA, DeJongste MJ, Andersen C, Mannheimer C, Eliasson T et al. Clinical outcome of patients treated with spinal cord stimulation for therapeutically refractory angina pectoris. *Heart* 1999; 82(1): 82-88.
1616. Murray S, Carson KG, Ewings PD, Collins PD, James MA. Spinal cord stimulation significantly decreases the need for acute hospital admission for chest pain in patients with refractory angina pectoris. *Heart* 1999; 82(1): 89-92.
1617. De Landsheere C, Mannheimer C, Habets A, Guillaume M, Bourgeois I, Augustinsson LE et al. Effect of spinal cord stimulation on regional myocardial perfusion assessed by positron emission tomography. *Am J Cardiol* 1992; 69(14): 1143-1149.
1618. Eliasson T, Albertsson P, Hardhammar P, Emanuelsson H, Augustinsson LE, Mannheimer C. Spinal cord stimulation in angina pectoris with normal coronary arteriograms. *Coron Artery Dis* 1993; 4(9): 819-827.
1619. DeJongste MJ, Nagelkerke D, Hooschuur CM, Journee HL, Meyler PW, Staal MJ et al. Stimulation characteristics, complications, and efficacy of spinal cord stimulation systems in patients with refractory angina: A prospective feasibility study. *Pacing Clin Electrophysiol* 1994; 17(11 Pt 1): 1751-1760.
1620. Hautvast RW, Blanksma PK, DeJongste MJ, Pruim J, Van der Wall EE, Vaalburg W et al. Effect of spinal cord stimulation on myocardial blood flow assessed by positron emission tomography in patients with refractory angina pectoris. *Am J Cardiol* 1996; 77(7): 462-467.
1621. Greco S, Auriti A, Fiume D, Gazzeri G, Gentilucci G, Antonini L et al. Spinal cord stimulation for the treatment of refractory angina pectoris: A two-year follow-up. *Pacing Clin Electrophysiol* 1999; 22(1 Pt 1): 26-32.
1622. Department of Health. Coronary heart disease: national framework of coronary heart disease. London: DH; 2000.
1623. Folland ED, Hartigan PM, Parisi AF. Percutaneous transluminal coronary angioplasty versus medical therapy for stable angina pectoris: Outcomes for patients with double-vessel versus single-vessel coronary artery disease in a Veterans Affairs Cooperative randomized trial. *J Am Coll Cardiol* 1997; 29(7): 1505-1511.
1624. Van Dixhoorn JJ, Duivenvoorden HJ. Effect of relaxation therapy on cardiac events after myocardial infarction: A 5-year follow-up study. *J Cardiopulm Rehabil* 1999; 19(3): 178-185.

1625. Oldenburg B, Martin A, Greenwood J, Bernstein L, Allan R. A controlled trial of a behavioral and educational intervention following coronary artery bypass surgery. *J Cardiopulm Rehabil* 1995; 15(1): 39-46.
1626. Trzcieniecka-Green A, Steptoe A. The effects of stress management on the quality of life of patients following acute myocardial infarction or coronary bypass surgery. *Eur Heart J* 1996; 17(11): 1663-1670.
1627. Mahler HI, Kulik JA, Tarazi RY. Effects of a videotape information intervention at discharge on diet and exercise compliance after coronary bypass surgery. *J Cardiopulm Rehabil* 1999; 19(3): 170-177.
1628. Arthur HM, Daniels C, McKelvie R, Hirsh J, Rush B. Effect of a preoperative intervention on preoperative and postoperative outcomes in low-risk patients awaiting elective coronary artery bypass graft surgery: A randomized, controlled trial. *Ann Intern Med* 2000; 133(4): 253-262.
1629. Mahler HI, Kulik JA. Effects of preparatory videotapes on self-efficacy beliefs and recovery from coronary bypass surgery. *Ann Behav Med* 1998; 20(1): 39-46.
1630. Tooth L, McKenna K. The effects of pre-coronary angioplasty education and counselling on patients and their spouses: A preliminary report. *Patient Educ Couns* 1995; 32(3): 185-196.
1631. Kingsbury K. Taking AIM: How to teach primary and secondary prevention effectively. *Can J Cardiol* 1998; 14(Suppl A): 22A-26A.
1632. Newens AJ, Bond S, Priest J, McColl E. Nurse involvement in cardiac rehabilitation prior to hospital discharge. *J Clin Nurs* 1995; 4(6): 390-396.
1633. Wang WW. The educational needs of myocardial infarction patients. *Prog Cardiovasc Nurs* 1994; 9(4): 28-36.
1634. Ashton KC. Perceived learning needs of men and women after myocardial infarction. *J Cardiovasc Nurs* 1997; 12(1): 93-100.
1635. Gulanick M, Bliley A, Perino B, Keough V. Recovery patterns and lifestyle changes after coronary angioplasty: The patient's perspective. *Heart Lung* 1998; 27(4): 253-262.
1636. Dickerson SS. Support needs of spouses of cardiac patients. *J N Y State Nurses Assoc* 1993; 24(2): 17-21.
1637. Halm M, Penque S, Doll N, Beahrs M. Women and cardiac rehabilitation: Referral and compliance patterns. *J Cardiovasc Nurs* 1999; 13(3): 83-92.
1638. Pell J, Pell A, Morrison C, Blatchford O, Dargie H. Retrospective study of influence of deprivation on uptake of cardiac rehabilitation. *BMJ* 1996; 313(7052): 267-268.

1639. Burns KJ, Camaione DN, Froman RD, Clark BA, III. Predictors of referral to cardiac rehabilitation and cardiac exercise self-efficacy. *Clin Nurs Res* 1998; 7(2): 147-163.
1640. Kalayi C, Rimmer F, Maxwell M. Improving referral for cardiac rehabilitation: An interface audit. *Journal of Clinical Governance* 1999; 7(3): 143-145.
1641. Bittner V, Sanderson B, Breland J, Green D. Referral patterns to a University-based cardiac rehabilitation program. *Am J Cardiol* 1999; 83(2): 252-255.
1642. Bunker S, McBurney H, Cox H, Jelinek M. Identifying participation rates at outpatient cardiac rehabilitation programs in Victoria, Australia. *J Cardiopulm Rehabil* 1999; 19(6): 334-338.
1643. Daniel B, Williams AN, Levine BD. Compliance and efficacy of cardiac rehabilitation and risk factor modification in the medically indigent. *Am J Cardiol* 1997; 79(3): 281-285.
1644. Moore SM, Kramer FM. Women's and men's preferences for cardiac rehabilitation program features. *J Cardiopulm Rehabil* 1996; 16(3): 163-168.
1645. Hellerstein H, Friedman E. Sexual activity and the postcoronary patient. *Med Aspects Hum Sex* 1969; 3: 70-96.
1646. Nemeč ED, Mansfield L, Kennedy JW. Heart rate and blood pressure responses during sexual activity in normal males. *Am Heart J* 1976; 92(3): 274-277.
1647. Ueno M. [The so-called coition death]. *Nihon Hoigaku Zasshi* 1963; 17: 330-340.
1648. Drory Y, Kravetz S, Florian V, Weingarten M. Sexual activity after first acute myocardial infarction in middle-aged men: Demographic, psychological and medical predictors. *Cardiology* 1998; 90(3): 207-211.
1649. Friedman S. Cardiac disease, anxiety, and sexual functioning. *Am J Cardiol* 2000; 86(2 Suppl 1): 46F-50F.
1650. Petrie KJ, Buick DL, Weinman J, Booth RJ. Positive effects of illness reported by myocardial infarction and breast cancer patients. *J Psychosom Res* 1999; 47(6): 537-543.
1651. Steinke EE, Patterson-Midgley P. Importance and timing of sexual counseling after myocardial infarction. *J Cardiopulm Rehabil* 1998; 18(6): 401-407.
1652. Steinke E, Patterson-Midgley P. Sexual counseling following acute myocardial infarction. *Clin Nurs Res* 1996; 5(4): 462-472.
1653. Steinke EE, Patterson P. Sexual counseling of MI patients by cardiac nurses. *J Cardiovasc Nurs* 1995; 10(1): 81-87.

1654. Ketchell A. Addressing the sexual concerns of patients following myocardial infarction. *Nurs Crit Care* 1998; 3(3): 122-129.
1655. Allen JK. Coronary risk factor modification in women after coronary artery bypass surgery. *Nurs Res* 1996; 45(5): 260-265.
1656. Conn VS, Taylor SG, Abele PB. Myocardial infarction survivors: Age and gender differences in physical health, psychosocial state and regimen adherence. *J Adv Nurs* 1991; 16(9): 1026-1034.
1657. Cristian A, Mandy K, Root B. Comparison between men and women admitted to an inpatient rehabilitation unit after cardiac surgery. *Arch Phys Med Rehabil* 1999; 80(2): 183-185.
1658. O'Farrell P, Murray J, Huston P, LeGrand C, Adamo K. Sex differences in cardiac rehabilitation. *Can J Cardiol* 2000; 16(3): 319-325.
1659. Brezinka V, Dusseldorp E, Maes S. Gender differences in psychosocial profile at entry into cardiac rehabilitation. *J Cardiopulm Rehabil* 1998; 18(6): 445-449.
1660. Fleury J, Cameron-Go K. Women's rehabilitation and recovery. *Crit Care Nurs Clin North Am* 1997; 9(4): 577-587.
1661. Cohn JN, Johnson G, Ziesche S, Cobb F, Francis G, Tristani F et al. A comparison of enalapril with hydralazine-isosorbide dinitrate in the treatment of chronic congestive heart failure. *N Engl J Med* 1991; 325(5): 303-310.
1662. Acute Infarction Ramipril Efficacy (AIRE) Study Investigators. Effect of ramipril on mortality and morbidity of survivors of acute myocardial infarction with clinical evidence of heart failure. *Lancet* 1993; 342(8875): 821-828.
1663. PROGRESS Collaborative Group. Randomised trial of a perindopril-based blood-pressure-lowering regimen among 6,105 individuals with previous stroke or transient ischaemic attack. *Lancet* 2001; 358(9287): 1033-1041.
1664. Rochon PA, Anderson GM, Tu JV, Clark JP, Gurwitz JH, Szalai JP et al. Use of beta-blocker therapy in older patients after acute myocardial infarction in Ontario. *CMAJ* 1999; 161(11): 1403-1408.
1665. Amery A, Birkenhager W, Brixko P, Bulpitt C, Clement D, Deruyttere M et al. Mortality and morbidity results from the European Working Party on High Blood Pressure in the Elderly trial. *Lancet* 1985; 1(8442): 1349-1354.
1666. Prevention of stroke by antihypertensive drug treatment in older persons with isolated systolic hypertension: Final results of the Systolic Hypertension in the Elderly Program (SHEP). SHEP Cooperative Research Group. *JAMA* 1991; 265(24): 3255-3264.
1667. Hansson L, Zanchetti A, Carruthers SG, Dahlof B, Elmfeldt D, Julius S et al. Effects of intensive blood-pressure lowering and low-dose aspirin in patients with

- hypertension: Principal results of the Hypertension Optimal Treatment (HOT) randomised trial. *Lancet* 1998; 351(9118): 1755-1762.
1668. Pilote L, Thomas RJ, Dennis C, Goins P, Houston-Miller N, Kraemer H et al. Return to work after uncomplicated myocardial infarction: A trial of practice guidelines in the community. *Ann Intern Med* 1992; 117(5): 383-389.
1669. Mulcahy R, Kennedy C, Conroy R. The long-term work record of post-infarction patients subjected to an informal rehabilitation and secondary prevention programme. *Eur Heart J* 1988; 9(Suppl L): 84-88.
1670. Dumont S, Jobin J, Deshaies G, Trudel L, Chantale M. Rehabilitation and the socio-occupational reintegration of workers who have had a myocardial infarct: A pilot study. *Can J Cardiol* 1999; 15(4): 453-461.
1671. Noyez L, Onundu JW, Janssen DP, Stotnicki SH, Lacquet LK. Myocardial revascularization in patients  $\leq 45$  years old: Evaluation of cardiac and functional capacity, and return to work. *Cardiovasc Surg* 1999; 7(1): 128-133.
1672. Karoff M, Röseler S, Lorenz C, Kittel J. Intensivierte Nachsorge (INA): Ein Verfahren zur Verbesserung der beruflichen Reintegration nach Herzinfarkt und/oder Bypassoperation. *Z Kardiol* 2000; 89(5): 423-433.
1673. Adams KJ, Barnard KL, Swank AM, Mann E, Kushnick MR, Denny DM. Combined high-intensity strength and aerobic training in diverse phase II cardiac rehabilitation patients. *J Cardiopulm Rehabil* 1999; 19(4): 209-215.
1674. Beniamini Y, Rubenstein JJ, Faigenbaum AD, Lichtenstein AH, Crim MC. High-intensity strength training of patients enrolled in an outpatient cardiac rehabilitation program. *J Cardiopulm Rehabil* 1999; 19(1): 8-17.
1675. Amarosa-Tuppler B, Tapp J, Carida RV. Stress management through relaxation and imagery in the treatment of angina pectoris. *J Cardiopulm Rehabil* 1989; 9(9): 348-353.
1676. Bundy C, Carroll D, Wallace L. Stress management and exercise training in chronic stable angina pectoris. *Psychology and Health* 1998; 13(1): 147-155.
1677. Collins JA, Rice VH. Effects of relaxation intervention in phase II cardiac rehabilitation: Replication and extension. *Heart Lung* 1997; 26(1): 31-44.
1678. Cowan MJ, Pike KC, Budzynski HK. Psychosocial nursing therapy following sudden cardiac arrest: Impact on two-year survival. *Nurs Res* 2001; 50(2): 68-76.
1679. Van Dixhoorn J, Duivenvoorden HJ, Staal HA, Pool J. Physical training and relaxation therapy in cardiac rehabilitation assessed through a composite criterion for training outcome. *Am Heart J* 1989; 118(3): 545-552.
1680. Wilk C, Turkoski B. Progressive muscle relaxation in cardiac rehabilitation: A pilot study. *Rehabil Nurs* 2001; 26(6): 238-242.

1681. Winterfeld HJ, Risch A, Siewert H, Strangfeld D, Kruse J, Engelmann U et al. Der Einfluss der konzentrativen Entspannung auf Blutdruck und Haemodynamik bei hypertonen Patienten mit koronaren Herzkrankheit und aortokoronarer Venenbypassoperation (ACVB). *Z Physiother* 1991; 43(4): 220-224.
1682. Winterfeld HJ, Siewert HB. Autogenes Training bei hypertonen Regulationsstörungen nach aortokoronarer Venenbypass-Operation (ACVB) bei koronarer Herzkrankheit. *Innere Medizin* 1993; 48: 201-204.
1683. Zamarra JW, Schneider RH, Besseghini I, Robinson DK, Salerno JW. Usefulness of the transcendental meditation program in the treatment of patients with coronary artery disease. *Am J Cardiol* 1996; 77(10): 867-870.
1684. Bundy C, Carroll D, Wallace L. Psychological treatment of chronic stable angina pectoris. *Psychology and Health* 1994; 10(1): 69-77.
1685. Gallagher JEJ, Hopkinson CA, Bennett P. Effect of stress management on angina. *Psychology and Health* 1997; 12(4): 523-532.
1686. Hase S, Douglas A. Effects of relaxation training on recovery from myocardial infarction. *Aust J Adv Nurs* 1987; 5(1): 18-27.
1687. Nelson DV, Baer PE, Cleveland SE, Revel KF, Montero AC. Six-month follow-up of stress management training versus cardiac education during hospitalization for acute myocardial infarction. *J Cardiopulm Rehabil* 1994; 14(9): 384-390.
1688. Kavanagh T, Shephard RJ, Pandit V, Doney H. Exercise and hypnotherapy in the rehabilitation of the coronary patient. *Arch Phys Med Rehabil* 1970; 51(10): 578-587.
1689. Van Dixhoorn J, Duivenvoorden HJ, Pool J, Verhage F. Psychic effects of physical training and relaxation therapy after myocardial infarction. *J Psychosom Res* 1990; 34(3): 327-337.
1690. Polackova J, Bockova E, Sedivec V. Autogenic training: Application in secondary prevention of myocardial infarction. *Act Nerv Super (Praha)* 1982; 24(3): 178-180.
1691. Valliant PM, Leith B. Impact of relaxation-training and cognitive-therapy on coronary patients post surgery. *Psychol Rep* 1986; 59(3): 1271-1278.
1692. Van Dixhoorn J. Significance of breathing awareness and exercise training for recovery after myocardial infarction. In: Carlson JG, Seifert AR, Birbaumer N (Ed). *Clinical applied psychophysiology*. New York: Plenum Press; 1994. S. 113-132.
1693. Ohm D. Entspannungstraining und Hypnose bei Patienten mit koronarer Herzkrankheit in der stationären Rehabilitation: Entwicklung, Durchführung und empirische Überprüfung eines psychologischen Behandlungsprogramms. Regensburg: Roderer; 1987.

1694. Appels A, Bar F, Lasker J, Flamm U, Kop W. The effect of a psychological intervention program on the risk of a new coronary event after angioplasty: A feasibility study. *J Psychosom Res* 1997; 43(2): 209-217.
1695. Blumenthal JA, Babyak M, Wei J, O'Connor C, Waugh R, Eisenstein E et al. Usefulness of psychosocial treatment of mental stress-induced myocardial ischemia in men. *Am J Cardiol* 2002; 89(2): 164-168.
1696. Billings JH, Scherwitz LW, Sullivan R, Sparler S, Ornish DM. The Life Style Heart Trial: Comprehensive treatment and group support therapy. In: Allen R, Scheidt S (Ed). *Heart and mind: The practice of cardiac psychology*. Washington DC: American Scientological Association; 1996. S. 233-253.
1697. Petrie KJ, Weinman J, Sharpe N, Buckley J. Role of patients' view of their illness in predicting return to work and functioning after myocardial infarction: Longitudinal study. *BMJ* 1996; 312(7040): 1191-1194.
1698. Mittag O, Kolenda KD, Nordman KJ, Bernien J, Maurischat C. Return to work after myocardial infarction/coronary artery bypass grafting: patients' and physicians' initial viewpoints and outcome 12 months later. *Soc Sci Med* 2001; 52(9): 1441-1450.
1699. Budde HG, Keck M. Prädiktoren der beruflichen Wiedereingliederung nach stationärer kardiologischer Rehabilitation im Rahmen der Arbeiterrentenversicherung. *Rehabilitation (Stuttg)* 2001; 40(4): 208-216.
1700. Vrijkotte T. *Workstress and cardiovascular disease risk [Dissertation]*. Amsterdam: VU University; 2001.
1701. Kivimaki M, Leino-Arjas P, Luukkonen R, Riihimaki H, Vahtera J, Kirjonen J. Work stress and risk of cardiovascular mortality: Prospective cohort study of industrial employees. *BMJ* 2002; 325(7369): 857.
1702. Schnall PL, Belkic K, Landsbergis P, Baker D. *The workplace and cardiovascular disease*. Philadelphia: Hanley & Belfus; 2000.
1703. Harenstam A, Theorell T, Orth-Gomer K, Palm UB, Uden AL. Shift work, decision latitude and ventricular ectopic activity: A study of 24 hour electrocardiograms in Swedish prison personnel. *Work Stress* 1987; 1(4): 341-350.
1704. Van Amelsvoort L. *Cardiovascular risk profile in shift workers: cardiac control, biological and lifestyle risk factors [Dissertation]* Wageningen: University; 2000.
1705. Tuchsén F. Working hours and ischaemic heart disease in Danish men: A 4-year cohort study of hospitalization. *Int J Epidemiol* 1993; 22(2): 215-221.
1706. Sokejima S, Kagamimori S. Working hours as a risk factor for acute myocardial infarction in Japan: Case-control study. *BMJ* 1998; 317(7161): 775-780.

1707. Van Dijk JL, Senden PJ. Cardiologische aandoeningen en belastbaarheid. In: Willems JHBM, Croon NHT (Ed). Handboek arbeid en belastbaarheid. Houten: Bohn Stafleu Van Loghum; 1997.
1708. Petronio L. Chemical and physical agents of work-related cardiovascular diseases. *Eur Heart J* 1988; 9(Suppl L): 26-34.
1709. Health Education Board for Scotland. Indicators for health education in Scotland: summary findings from the 1998 health education population survey. Edinburgh: HEBS; 2000.
1710. Tobin D, Thow MK. The 10m Shuttle Walk Test with Holter Monitoring: An objective outcome measure for cardiac rehabilitation. *Coronary Health Care* 1999; 3(1): 3-17.
1711. Demers C, McKelvie RS, Negassa A, Yusuf S. Reliability, validity, and responsiveness of the six-minute walk test in patients with heart failure. *Am Heart J* 2001; 142(4): 698-703.
1712. Campbell N, Ritchie L, Rawles Je. Cardiac rehabilitation: The agenda set by post myocardial infarction patients. *Health Educ J* 1994; 53: 409-420.
1713. Mutrie N, Blamey A, Davison R, Kelly M. Class-based and home-based activities for older people. Edinburgh: Scottish Sports Council; 1993.
1714. Brodie D. Cardiac rehabilitation: An educational resource. London: British Association for Cardiac Rehabilitation; 1999.
1715. Mullen PD, Simons-Morton DG, Ramirez G, Frankowski RF, Green LW, Mains DA. A meta-analysis of trials evaluating patient education and counseling for three groups of preventive health behaviors. *Patient Educ Couns* 1997; 32(3): 157-173.
1716. Bell JM. A comparison of multidisciplinary home based cardiac rehabilitation programme with comprehensive conventional rehabilitation in post-myocardial infarction patients [Dissertation]. London: University of London; 1998.
1717. O'Rourke A, Hampson SE. Psychosocial outcomes after an MI: an evaluation of two approaches to rehabilitation. *Psychol Health Med* 1999; 4(4): 393-402.
1718. Haynes SG, Feinleib M, Kannel WB. The relationship of psychosocial factors to coronary heart disease in the Framingham Study. III: Eight-year incidence of coronary heart disease. *Am J Epidemiol* 1980; 111(1): 37-58.
1719. Bar-On D. Causal attributions and the rehabilitation of myocardial infarction victims. *J Social Clin Psychol* 1987; 5(1): 114-122.
1720. Maeland JG, Havik OE. Return to work after a myocardial infarction: The influence of background factors, work characteristics and illness severity. *Scand J Soc Med* 1986; 14(4): 183-195.



1721. The EUROASPIRE Study Group. EUROASPIRE: A European Society of Cardiology survey of secondary prevention of coronary heart disease. Principal results. *Eur Heart J* 1997; 18(10): 1569-1582.
1722. Ladwig KH, Lehmacher W, Roth R, Breithardt G, Budde T, Borggrefe M. Factors which provoke post-infarction depression: Results from the post-infarction late potential study (PILP). *J Psychosom Res* 1992; 36(8): 723-729.
1723. ENRICHD Investigators. Enhancing Recovery in Coronary Heart Disease (ENRICHD) study intervention: Rationale and design. *Psychosom Med* 2001; 63(5): 747-755.
1724. Swedberg K, Cleland J, Dargie H, Drexler H, Follath F, Komajda M et al. Guidelines for the diagnosis and treatment of chronic heart failure: Executive summary (update 2005). *Eur Heart J* 2005; 26(11): 1115-1140.
1725. Hoppe UC, Erdmann E. Leitlinien zur Therapie der chronischen Herzinsuffizienz. *Z Kardiol* 2001; 90(3): 218-237.
1726. Kuhlmann E. Gender Mainstreaming in den Disease Management Programmen: Das Beispiel koronare Herzerkrankung. Expertise im Auftrag der Bundeskoordination Frauengesundheit, des Arbeitskreises Frauengesundheit, gefördert durch das Bundesministerium für Familie, Senioren, Frauen und Jugend. Bremen: Universität Bremen; 2004.
1727. Vaccarino V, Krumholz HM, Yarzebski J, Gore JM, Goldberg RJ. Sex differences in 2-year mortality after hospital discharge for myocardial infarction. *Ann Intern Med* 2001; 134(3): 173-181.
1728. Daly C, Clemens F, Lopez Sendon JL, Tavazzi L, Boersma E, Danchin N et al. Gender differences in the management and clinical outcome of stable angina. *Circulation* 2006; 113(4): 490-498.
1729. Van de Werf F, Ardissino D, Betriu A, Cokkinos DV, Falk E, Fox KA et al. Management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J* 2003; 24(1): 28-66.
1730. Eagle KA, Lim MJ, Dabbous OH, Pieper KS, Goldberg RJ, Van de Werf F et al. A validated prediction model for all forms of acute coronary syndrome: Estimating the risk of 6-month postdischarge death in an international registry. *JAMA* 2004; 291(22): 2727-2733.
1731. Hochman JS, Tamis JE, Thompson TD, Weaver WD, White HD, Van de Werf F et al. Sex, clinical presentation, and outcome in patients with acute coronary syndromes. *N Engl J Med* 1999; 341(4): 226-232.
1732. Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR). Empfehlungen zu Standards der Prozessqualität in der kardiologischen Rehabilitation (Teil I). *Herz Kreislauf* 2000; 32: 141-145.

1733. Shumaker SA, Brooks MM, Schron EB, Hale C, Kellen JC, Inkster M et al. Gender differences in health-related quality of life among postmyocardial infarction patients: brief report. *Womens Health* 1997; 3(1): 53-60.
1734. Deshotels A, Planchock N, Dech Z, Prevost S. Gender differences in perceptions of quality of life in cardiac rehabilitation patients. *J Cardiopulm Rehabil* 1995; 15(2): 143-148.
1735. Regitz-Zagrosek V, Lehmkuhl E, Weickert MO. Gender differences in the metabolic syndrome and their role for cardiovascular disease. *Clin Res Cardiol* 2006; 95(3): 136-147.
1736. Abramov D, Tamariz MG, Sever JY, Christakis GT, Bhatnagar G, Heenan AL et al. The influence of gender on the outcome of coronary artery bypass surgery. *Ann Thorac Surg* 2000; 70(3): 800-805.
1737. Jochmann N, Stangl K, Garbe E, Baumann G, Stangl V. Female-specific aspects in the pharmacotherapy of chronic cardiovascular diseases. *Eur Heart J* 2005; 26(16): 1585-1595.
1738. Huxley R, Barzi F, Woodward M. Excess risk of fatal coronary heart disease associated with diabetes in men and women: Meta-analysis of 37 prospective cohort studies. *BMJ* 2006; 332(7533): 73-78.
1739. Härtel U. Krankheiten des Herz-Kreislaufsystems bei Männern und Frauen. In: Hurrelmann K, Kolip P (Ed). *Geschlecht, Gesundheit und Krankheit: Männer und Frauen im Vergleich*. Bern: Huber; 2002. S. 273-290.
1740. Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR). Empfehlungen zu Standards der Prozessqualität in der kardiologischen Rehabilitation (Teil 2). *Herz Kreislauf* 2000; 32: 294-297.
1741. Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR). Empfehlungen zu Standards der Prozessqualität in der kardiologischen Rehabilitation (Teil 3). *Herz Kreislauf* 2000; 32: 378-380.
1742. Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR). Empfehlungen zu Standards der Prozessqualität in der kardiologischen Rehabilitation (Teil 4). *Z Kardiol* 2002; 91: 100-102.
1743. Belardinelli R, Paolini I, Cianci G, Piva R, Georgiou D, Purcaro A. Exercise training intervention after coronary angioplasty: The ETICA trial. *J Am Coll Cardiol* 2001; 37(7): 1891-1900.
1744. Buchwalsky G, Buchwalsky R, Held K. Langzeitwirkungen der Nachsorge in einer ambulanten Herzgruppe: Eine Fall-/Kontrollstudie. *Z Kardiol* 2002; 91(2): 139-146.
1745. Piepoli MF, Davos C, Francis DP, Coats AJ. Exercise training meta-analysis of trials in patients with chronic heart failure (ExTraMATCH). *BMJ* 2004; 328(7433): 189.

1746. Gonthier J, Guallar-Castillon P, Banegas JR, Rodriguez-Artalejo F. The effectiveness of disease management programmes in reducing hospital re-admission in older patients with heart failure: A systematic review and meta-analysis of published reports. *Eur Heart J* 2004; 25(18): 1570-1595.
1747. Myers J, Prakash M, Froelicher V, Do D, Partington S, Atwood JE. Exercise capacity and mortality among men referred for exercise testing. *N Engl J Med* 2002; 346(11): 793-801.
1748. Leon AS, Franklin BA, Costa F, Balady GJ, Berra KA, Stewart KJ et al. Cardiac rehabilitation and secondary prevention of coronary heart disease: An American Heart Association scientific statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Cardiac Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity), in collaboration with the American association of Cardiovascular and Pulmonary Rehabilitation. *Circulation* 2005; 111(3): 369-376.
1749. Ades PA. Cardiac rehabilitation and secondary prevention of coronary heart disease. *N Engl J Med* 2001; 345(12): 892-902.
1750. Ades PA, Waldmann ML, Meyer WL, Brown KA, Poehlman ET, Pendlebury WW et al. Skeletal muscle and cardiovascular adaptations to exercise conditioning in older coronary patients. *Circulation* 1996; 94(3): 323-330.
1751. Kavanagh T, Mertens DJ, Hamm LF, Beyene J, Kennedy J, Corey P et al. Prediction of long-term prognosis in 12 169 men referred for cardiac rehabilitation. *Circulation* 2002; 106(6): 666-671.
1752. Kavanagh T, Mertens DJ, Hamm LF, Beyene J, Kennedy J, Corey P et al. Peak oxygen intake and cardiac mortality in women referred for cardiac rehabilitation. *J Am Coll Cardiol* 2003; 42(12): 2139-2143.
1753. Mittag O, Brusis OA, Held K. Patientenschulung in der kardiologischen Rehabilitation. *Praxis Klinische Verhaltensmedizin und Rehabilitation* 2001; 14(54): 137-144.
1754. LaRosa JC. Poor compliance: The hidden risk factor. *Curr Atheroscler Rep* 2000; 2(1): 1-4.
1755. Clark AM, Hartling L, Vandermeer B, McAlister FA. Meta-analysis: Secondary prevention programs for patients with coronary artery disease. *Ann Intern Med* 2005; 143(9): 659-672.
1756. Sebrechts EH, Falger PR, Bar FW. Risk factor modification through nonpharmacological interventions in patients with coronary heart disease. *J Psychosom Res* 2000; 48(4-5): 425-441.
1757. Balady GJ, Ades PA, Comoss P, Limacher M, Pina IL, Southard D et al. Core components of cardiac rehabilitation/secondary prevention programs: A statement for healthcare professionals from the American Heart Association and the American

Association of Cardiovascular and Pulmonary Rehabilitation Writing Group.  
Circulation 2000; 102(9): 1069-1073.

1758. McDermott MM, Schmitt B, Wallner E. Impact of medication nonadherence on coronary heart disease outcomes: A critical review. *Arch Intern Med* 1997; 157(17): 1921-1929.
1759. Glazer KM, Emery CF, Frid DJ, Banyaasz RE. Psychological predictors of adherence and outcomes among patients in cardiac rehabilitation. *J Cardiopulm Rehabil* 2002; 22(1): 40-46.
1760. Engblom E, Korpilahti K, Hamalainen H, Puukka P, Ronnema T. Effects of five years of cardiac rehabilitation after coronary artery bypass grafting on coronary risk factors. *Am J Cardiol* 1996; 78(12): 1428-1431.
1761. Jolliffe JA, Rees K, Taylor RS, Thompson D, Oldridge N, Ebrahim S. Exercise-based rehabilitation for coronary heart disease [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 1. Chichester: John Wiley & Sons Ltd.
1762. Otsuka Y, Takaki H, Okano Y, Satoh T, Aihara N, Matsumoto T et al. Exercise training without ventricular remodeling in patients with moderate to severe left ventricular dysfunction early after acute myocardial infarction. *Int J Cardiol* 2003; 87(2-3): 237-244.
1763. Giannuzzi P, Tavazzi L, Temporelli PL, Corra U, Imparato A, Gattone M et al. Long-term physical training and left ventricular remodeling after anterior myocardial infarction: Results of the Exercise in Anterior Myocardial Infarction (EAMI) trial. *J Am Coll Cardiol* 1993; 22(7): 1821-1829.
1764. Dubach P, Myers J, Dziekan G, Goebbels U, Reinhart W, Vogt P et al. Effect of exercise training on myocardial remodeling in patients with reduced left ventricular function after myocardial infarction: Application of magnetic resonance imaging. *Circulation* 1997; 95(8): 2060-2067.
1765. Jones DA, West RR. Psychological rehabilitation after myocardial infarction: Multicentre randomised controlled trial. *BMJ* 1996; 313(7071): 1517-1521.
1766. Stern MJ, Gorman PA, Kaslow L. The group counseling v exercise therapy study: A controlled intervention with subjects following myocardial infarction. *Arch Intern Med* 1983; 143(9): 1719-1725.
1767. Mookadam F, Arthur HM. Social support and its relationship to morbidity and mortality after acute myocardial infarction: Systematic overview. *Arch Intern Med* 2004; 164(14): 1514-1518.
1768. Van Horn E, Fleury J, Moore S. Family interventions during the trajectory of recovery from cardiac event: An integrative literature review. *Heart Lung* 2002; 31(3): 186-198.

1769. Dracup K, Meleis A, Baker K, Edlefsen P. Family-focused cardiac rehabilitation: A role supplementation program for cardiac patients and spouses. *Nurs Clin North Am* 1984; 19(1): 113-124.
1770. Buls P. The effects of home visits on anxiety levels of the client with a coronary artery bypass graft and of the family. *Home Healthc Nurse* 1995; 13(1): 22-29.
1771. Taylor CB, Bandura A, Ewart CK, Miller NH, DeBusk RF. Exercise testing to enhance wives' confidence in their husbands' cardiac capability soon after clinically uncomplicated acute myocardial infarction. *Am J Cardiol* 1985; 55(6): 635-638.
1772. Gortner SR, Gilliss CL, Shinn JA, Sparacino PA, Rankin S, Leavitt M et al. Improving recovery following cardiac surgery: A randomized clinical trial. *J Adv Nurs* 1988; 13(5): 649-661.
1773. Gilliss CL, Neuhaus JM, Hauck WW. Improving family functioning after cardiac surgery: A randomized trial. *Heart Lung* 1990; 19(6): 648-654.
1774. Fridlund B, Hogstedt B, Lidell E, Larsson PA. Recovery after myocardial infarction: Effects of a caring rehabilitation programme. *Scand J Caring Sci* 1991; 5(1): 23-32.
1775. Bobbio M. Does post myocardial infarction rehabilitation prolong survival? A meta-analytic survey. *G Ital Cardiol* 1989; 19(11): 1059-1067.
1776. O'Connor GT, Buring JE, Yusuf S, Goldhaber SZ, Olmstead EM, Paffenbarger RS, Jr. et al. An overview of randomized trials of rehabilitation with exercise after myocardial infarction. *Circulation* 1989; 80(2): 234-244.
1777. Haskell WL, Alderman EL, Fair JM, Maron DJ, Mackey SF, Superko HR et al. Effects of intensive multiple risk factor reduction on coronary atherosclerosis and clinical cardiac events in men and women with coronary artery disease: The Stanford Coronary Risk Intervention Project (SCRIP). *Circulation* 1994; 89(3): 975-990.
1778. Hamalainen H, Luurila OJ, Kallio V, Knuts LR. Reduction in sudden deaths and coronary mortality in myocardial infarction patients after rehabilitation: 15 year follow-up study. *Eur Heart J* 1995; 16(12): 1839-1844.
1779. DeBusk RF. MULTIFIT: A new approach to risk factor modification. *Cardiol Clin* 1996; 14(1): 143-157.
1780. Ades PA, Balady GJ, Berra K. Transforming exercise-based cardiac rehabilitation programs into secondary prevention centers: A national imperative. *J Cardiopulm Rehabil* 2001; 21(5): 263-272.
1781. Jolly K, Bradley F, Sharp S, Smith H, Thompson S, Kinmonth AL et al. Randomised controlled trial of follow up care in general practice of patients with myocardial infarction and angina: Final results of the Southampton heart integrated care project (SHIP). *BMJ* 1999; 318(7185): 706-711.

1782. Doolan-Noble F. National audit of cardiac rehabilitation facilities [unpublished]. Auckland: National Heart Foundation; 2000.
1783. Wiles R. Empowering practice nurses in the follow-up of patients with established heart disease: Lessons from patients' experiences. *J Adv Nurs* 1997; 26(4): 729-735.
1784. Bowman G, Bryar R, Thompson D. Is the place for cardiac rehabilitation in the community? *Social Sciences in Health* 1998; 4(4): 243-254.
1785. Imich J. Home-based cardiac rehabilitation. *Nurs Times* 1997; 93(50): 48-49.
1786. Miller NH. The use of the telephone in cardiac and pulmonary rehabilitation. *J Cardiopulm Rehabil* 1996; 16(6): 349-352.
1787. DeBusk RF, Miller NH, Superko HR, Dennis CA, Thomas RJ, Lew HT et al. A case-management system for coronary risk factor modification after acute myocardial infarction. *Ann Intern Med* 1994; 120(9): 721-729.
1788. Hildingh C, Fridlund B, Segesten K. Social support in self-help groups, as experienced by persons having coronary heart disease and their next of kin. *Int J Nurs Stud* 1995; 32(3): 224-232.
1789. Goble AJ, Worcester MU. Best practice guidelines for cardiac rehabilitation and secondary prevention. Melbourne: Department of Human Services Victoria; 1999.
1790. Bennett P, Connell H. Dyadic processes in response to myocardial infarction. *Psychol Health Med* 1999; 4(1): 45-55.
1791. Suls J, Green P, Rose G, Lounsbury P, Gordon E. Hiding worries from One's spouse: Associations between coping via protective buffering and distress in male post-myocardial infarction patients and their wives. *J Behav Med* 1997; 20(4): 333-349.
1792. Berkhuisen MA, Nieuwland W, Buunk BP, Sanderman R, Rispens P. Change in self-efficacy during cardiac rehabilitation and the role of perceived overprotectiveness. *Patient Educ Couns* 1999; 38(1): 21-32.
1793. Stokes HC. Education and training towards competency for cardiac rehabilitation nurses in the United Kingdom. *J Clin Nurs* 2000; 9(3): 411-419.
1794. National Criminal Justice Reference Service. Gelesen unter: <http://www.ncjrs.gov/>.
1795. Bradshaw A. Defining 'competency' in nursing (Part II): An analytical review. *J Clin Nurs* 1998; 7(2): 103-111.
1796. Nash IS, Nash DB, Fuster V. Do cardiologists do it better? *J Am Coll Cardiol* 1997; 29(3): 475-478.

1797. Chen J, Radford MJ, Wang Y, Krumholz HM. Care and outcomes of elderly patients with acute myocardial infarction by physician specialty: The effects of comorbidity and functional limitations. *Am J Med* 2000; 108(6): 460-469.
1798. Hevey D, McGee H, Cahill A, Newton H, Horgan J. Training cardiac rehabilitation coordinators. *Coronary Health Care* 2000; 4: 142-145.
1799. Wright L, Jolly K, Speller V, Smith H. The success of an integrated care programme for patients with ischaemic heart disease: The practice nurses' perspective of SHIP. *J Clin Nurs* 1999; 8(5): 519-526.
1800. Bradley F, Wiles R, Kinmonth AL, Mant D, Gantley M. Development and evaluation of complex interventions in health services research: Case study of the Southampton heart integrated care project (SHIP). *BMJ* 1999; 318(7185): 711-715.
1801. Wagner EH. The role of patient care teams in chronic disease management. *BMJ* 2000; 320(7234): 569-572.
1802. Thompson R, Summerbell C, Hooper L, Higgins JPT, Little PS, Talbot D et al. Dietary advice given by a dietitian versus other health professional or self help resources to reduce blood cholesterol [Cochrane Review]. *Cochrane Database Syst Rev* 2001; Issue 1. Chichester: John Wiley & Sons Ltd.
1803. Beney J, Bero L, Bond C. Expanding the roles of outpatient pharmacists: Effects on health services utilisation, costs and patient outcomes, 2000 [Cochrane Review]. *Cochrane Database Syst Rev* 2000; Issue 2. Chichester: John Wiley & Sons Ltd.
1804. Bosma H, Schrijvers C, Mackenbach JP. Socioeconomic inequalities in mortality and importance of perceived control: Cohort study. *BMJ* 1999; 319(7223): 1469-1470.
1805. Milani RV, Lavie CJ. Behavioral differences and effects of cardiac rehabilitation in diabetic patients following cardiac events. *Am J Med* 1996; 100(5): 517-523.
1806. Suresh V, Harrison RA, Houghton P, Naqvi N. Standard cardiac rehabilitation is less effective for diabetics. *Int J Clin Pract* 2001; 55(7): 445-448.
1807. Chartered Society of Physiotherapy. Standards for the exercise component of phase III cardiac rehabilitation. London: Chartered Society of Physiotherapy; 1999.
1808. Miller NH, Haskell WL, Berra K, DeBusk RF. Home versus group exercise training for increasing functional capacity after myocardial infarction. *Circulation* 1984; 70(4): 645-649.
1809. DeBusk RF, Haskell WL, Miller NH, Berra K, Taylor CB, Berger WE, III et al. Medically directed at-home rehabilitation soon after clinically uncomplicated acute myocardial infarction: A new model for patient care. *Am J Cardiol* 1985; 55(4): 251-257.

1810. Taylor CB, Houston-Miller N, Ahn DK, Haskell W, DeBusk RF. The effects of exercise training programs on psychosocial improvement in uncomplicated postmyocardial infarction patients. *J Psychosom Res* 1986; 30(5): 581-587.
1811. Sparks KE, Shaw DK, Eddy D, Hanigosky P, Vantrese J. Alternatives for cardiac rehabilitation patients unable to return to a hospital-based program. *Heart Lung* 1993; 22(4): 298-303.
1812. Kugler J, Dimsdale JE, Hartley LH, Sherwood J. Hospital supervised vs home exercise in cardiac rehabilitation: Effects on aerobic fitness, anxiety, and depression. *Arch Phys Med Rehabil* 1990; 71(5): 322-325.
1813. Brubaker PH, Rejeski WJ, Smith MJ, Sevensky KH, Lamb KA, Sotile WM et al. A home-based maintenance exercise program after center-based cardiac rehabilitation: Effects on blood lipids, body composition, and functional capacity. *J Cardiopulm Rehabil* 2000; 20(1): 50-56.
1814. Kodis J, Smith KM, Arthur HM, Daniels C, Suskin N, McKelvie RS. Changes in exercise capacity and lipids after clinic versus home-based aerobic training in coronary artery bypass graft surgery patients. *J Cardiopulm Rehabil* 2001; 21(1): 31-36.
1815. Ades PA, Pashkow FJ, Fletcher G, Pina IL, Zohman LR, Nestor JR. A controlled trial of cardiac rehabilitation in the home setting using electrocardiographic and voice transtelephonic monitoring. *Am Heart J* 2000; 139(3): 543-548.
1816. Heath GW, Maloney PM, Fure CW. Group exercise versus home exercise in coronary artery bypass graft patients: Effects in physical activity habits. *J Cardiopulm Rehabil* 1987; 7(4): 190-195.
1817. Stevens R, Hanson P. Comparison of supervised and unsupervised exercise training after coronary bypass surgery. *Am J Cardiol* 1984; 53(11): 1524-1528.
1818. Barnason S, Zimmerman L. A comparison of patient teaching outcomes among postoperative coronary artery bypass graft (CABG) patients. *Prog Cardiovasc Nurs* 1995; 10(4): 11-20.
1819. Taylor CB, Miller NH, Smith PM, DeBusk RF. The effect of a home-based, case-managed, multifactorial risk-reduction program on reducing psychological distress in patients with cardiovascular disease. *J Cardiopulm Rehabil* 1997; 17(3): 157-162.
1820. Shaw A, McKunn A, Field J. *The Scottish health survey 1998*. Edinburgh: Scottish Executive Department of Health; 2000.
1821. Haskell WL. Cardiovascular complications during exercise training of cardiac patients. *Circulation* 1978; 57(5): 920-924.
1822. Blumenthal JA, Rejeski WJ, Walsh-Riddle M, Emery CF, Miller H, Roark S et al. Comparison of high- and low-intensity exercise training early after acute myocardial infarction. *Am J Cardiol* 1988; 61(1): 26-30.



1823. Blumenthal JA, Emery CF, Rejeski WJ. The effects of exercise training on psychosocial functioning after myocardial infarction. *J Cardiopulm Rehabil* 1988; 8(5): 183-193.
1824. Worcester MC, Hare DL, Oliver RG, Reid MA, Goble AJ. Early programmes of high and low intensity exercise and quality of life after acute myocardial infarction. *BMJ* 1993; 307(6914): 1244-1247.
1825. Goble AJ, Hare DL, Macdonald PS, Oliver RG, Reid MA, Worcester MC. Effect of early programmes of high and low intensity exercise on physical performance after transmural acute myocardial infarction. *Br Heart J* 1991; 65(3): 126-131.
1826. American Association of Cardiovascular and Pulmonary Rehabilitation. Guidelines for cardiac rehabilitation programs. Champaign (IL): Human Kinetics; 1995.
1827. American College of Sports Medicine. ACSM's guidelines for exercise testing and prescription. London: Williams and Wilkins; 2000.
1828. Cardiac rehabilitation programs: A statement for healthcare professionals from the American Heart Association. *Circulation* 1994; 90(3): 1602-1610.
1829. DeBusk RF, Blomqvist CG, Kouchoukos NT, Luepker RV, Miller HS, Moss AJ et al. Identification and treatment of low-risk patients after acute myocardial infarction and coronary-artery bypass graft surgery. *N Engl J Med* 1986; 314(3): 161-166.
1830. Hall LK. Developing and managing cardiac rehabilitation programs. Champaign (IL): Human Kinetics; 1993.
1831. Dressendorfer RH, Franklin BA, Cameron JL, Trahan KJ, Gordon S, Timmis GC. Exercise training frequency in early post-infarction cardiac rehabilitation: Influence on aerobic conditioning. *J Cardiopulm Rehabil* 1995; 15(4): 269-276.
1832. Borg G. Borg's perceived exertion and pain scales. Champaign (IL): Human Kinetics; 1998.
1833. Borg G. Perceived exertion as an indicator of somatic stress. *Scand J Rehabil Med* 1970; 2(2): 92-98.
1834. Whaley MH, Brubaker PH, Kaminsky LA, Miller CR. Validity of rating of perceived exertion during graded exercise testing in apparently healthy adults and cardiac patients. *J Cardiopulm Rehabil* 1997; 17(4): 261-267.
1835. Campbell NC, Grimshaw JM, Rawles JM, Ritchie LD. Cardiac rehabilitation in Scotland: Is current provision satisfactory? *J Public Health Med* 1996; 18(4): 478-480.
1836. Rahe RH, Ward HW, Hayes V. Brief group therapy in myocardial infarction rehabilitation: Three- to four-year follow-up of a controlled trial. *Psychosom Med* 1979; 41(3): 229-242.

1837. Campbell NC, Grimshaw JM, Ritchie LD, Rawles JM. Outpatient cardiac rehabilitation: Are the potential benefits being realised? *J R Coll Physicians Lond* 1996; 30(6): 514-519.
1838. Clark NM, Janz NK, Becker MH, Schork MA, Wheeler J, Liang J et al. Impact of self-management education on the functional health status of older adults with heart disease. *Gerontologist* 1992; 32(4): 438-443.
1839. Fielding R. A note on behavioural treatment in the rehabilitation of myocardial infarction patients. *Br J Soc Clin Psychol* 1980; 19(2): 157-161.
1840. Horlick L, Cameron R, Firor W, Bhalerao U, Baltzan R. The effects of education and group discussion in the post myocardial infarction patient. *J Psychosom Res* 1984; 28(6): 485-492.
1841. Schulte MB, Plyum B, Van Schendel G. Reintegration with duos: A self care program following myocardial infarction. *Patient Educ Couns* 1986; 8(3): 233-244.
1842. Dubach P, Myers J, Wagner D. Optimal timing of phase II rehabilitation after cardiac surgery: The cardiologist's view. *Eur Heart J* 1998; 19(Suppl O): O35-O37.
1843. Dougan JP, Mathew TP, Riddell JW, Spence MS, McGlinchey PG, Nesbitt GS et al. Suspected angina pectoris: A rapid-access chest pain clinic. *QJM* 2001; 94(12): 679-686.
1844. Harkness K, Morrow L, Smith K, Kiczula M, Arthur HM. The effect of early education on patient anxiety while waiting for elective cardiac catheterization. *Eur J Cardiovasc Nurs* 2003; 2(2): 113-121.
1845. Rosanio S, Tocchi M, Cutler D, Uretsky BF, Stouffer GA, DeFilippi CR et al. Queuing for coronary angiography during severe supply-demand mismatch in a US public hospital: Analysis of a waiting list registry. *JAMA* 1999; 282(2): 145-152.
1846. Koomen EM, Hutten BA, Kelder JC, Redekop WK, Tijssen JG, Kingma JH. Morbidity and mortality in patients waiting for coronary artery bypass surgery. *Eur J Cardiothorac Surg* 2001; 19(3): 260-265.
1847. Murchie P, Campbell NC, Ritchie LD, Simpson JA, Thain J. Secondary prevention clinics for coronary heart disease: Four year follow up of a randomised controlled trial in primary care. *BMJ* 2003; 326(7380): 84.
1848. Cupples ME, McKnight A. Five year follow up of patients at high cardiovascular risk who took part in randomised controlled trial of health promotion. *BMJ* 1999; 319(7211): 687-688.
1849. Feder G, Griffiths C, Eldridge S, Spence M. Effect of postal prompts to patients and general practitioners on the quality of primary care after a coronary event (POST): Randomised controlled trial. *BMJ* 1999; 318(7197): 1522-1526.

1850. O'Neill C, Normand C, Cupples M, McKnight A. A comparison of three measures of perceived distress: Results from a study of angina patients in general practice in Northern Ireland. *J Epidemiol Community Health* 1996; 50(2): 202-206.
1851. Campbell NC, Ritchie LD, Thain J, Deans HG, Rawles JM, Squair JL. Secondary prevention in coronary heart disease: A randomised trial of nurse led clinics in primary care. *Heart* 1998; 80(5): 447-452.
1852. Rauch B, Schneider S, Gitt A, Liebhart C, Junger C, Winkler R et al. Short-term cardiac rehabilitation after myocardial infarction: Results from the acute coronary syndrom registry. *Eur Heart J* 2005; 26(Suppl 1): 503.
1853. Clinical reality of coronary prevention guidelines: A comparison of EUROASPIRE I and II in nine countries. *Lancet* 2001; 357(9261): 995-1001.
1854. Völler H, Hahmann H, Gohlke H, Klein G, Rombeck B, Binting S et al. Auswirkung stationärer Rehabilitation auf kardiovaskuläre Risikofaktoren bei Patienten mit koronarer Herzerkrankung. *Dtsch Med Wochenschr* 1999; 124(27): 817-823.
1855. Gohlke H, Jarmatz H, Zaumseil J, Besthorn K, Jansen C, Hasford J. Einfluss eines optimierten Schnittstellenmanagements auf die Langzeiteffektivität der kardiologischen Rehabilitation. *Dtsch Med Wochenschr* 2000; 125(48): 1452-1456.
1856. Hoberg E, Stockinger J, Besthorn K, Wegscheider K. Verbesserung des Risikofaktorenprofils durch drei halbtägige Auffrischkurse innerhalb des ersten Jahres nach kardiologischer Rehabilitation: Ergebnisse der HANSA-Studie. *Z Kardiol* 2007; S5 abstract: 28.
1857. Küpper-Nybelen J, Rothenbacher D, Hahmann H, Wüsten B, Brenner H. Veränderungen von Risikofaktoren nach stationärer Rehabilitation bei Patienten mit koronarer Herzkrankheit. *Dtsch Med Wochenschr* 2003; 128(28-29): 1525-1530.
1858. Cleland JG, Cohen-Solal A, Aguilar JC, Dietz R, Eastaugh J, Follath F et al. Management of heart failure in primary care (the IMPROVEMENT of Heart Failure Programme): An international survey. *Lancet* 2002; 360(9346): 1631-1639.
1859. Beckmann U, Pallenberg C, Klosterhuis H. Berichte zur Qualitätssicherung. *Die Angestellten-Versicherung* 2000; 47(3): 88-89.
1860. Sullivan MD, LaCroix AZ, Spertus JA, Hecht J, Russo J. Depression predicts revascularization procedures for 5 years after coronary angiography. *Psychosom Med* 2003; 65(2): 229-236.
1861. Kovoov P, Lee AK, Carrozzi F, Wiseman V, Byth K, Zecchin R et al. Return to full normal activities including work at two weeks after acute myocardial infarction. *Am J Cardiol* 2006; 97(7): 952-958.
1862. Lisspers J, Sundin O, Ohman A, Hofman-Bang C, Ryden L, Nygren A. Long-term effects of lifestyle behavior change in coronary artery disease: Effects on recurrent

- coronary events after percutaneous coronary intervention. *Health Psychol* 2005; 24(1): 41-48.
1863. McCormack A, Fleming D, Charlton J. Morbidity statistics from general practice: fourth national study 1991-1992: a study carried out by the Royal College of General Practitioners, Office of Population Censuses and Surveys, and the Department of Health. London: HMSO; 1995.
1864. Engblom E, Korpilahti K, Hamalainen H, Ronnema T, Puukka P. Quality of life and return to work 5 years after coronary artery bypass surgery: Long-term results of cardiac rehabilitation. *J Cardiopulm Rehabil* 1997; 17(1): 29-36.
1865. Wosornu D, Bedford D, Ballantyne D. A comparison of the effects of strength and aerobic exercise training on exercise capacity and lipids after coronary artery bypass surgery. *Eur Heart J* 1996; 17(6): 854-863.
1866. Krachler M, Lindschinger M, Eber B, Watzinger N, Wallner S. Trace elements in coronary heart disease: Impact of intensified lifestyle modification. *Biol Trace Elem Res* 1997; 60(3): 175-185.
1867. Gaw-Ens B, Laing GP. Risk factor reduction behaviours in coronary angioplasty and myocardial infarction patients. *Can J Cardiovasc Nurs* 1994; 5(1): 4-12.
1868. Smith K. Report for the CHD Task Force on Cardiac Rehabilitation
1869. Hofman-Bang C, Lisspers J, Nordlander R, Nygren A, Sundin O, Ohman A et al. Two-year results of a controlled study of residential rehabilitation for patients treated with percutaneous transluminal coronary angioplasty: A randomized study of a multifactorial programme. *Eur Heart J* 1999; 20(20): 1465-1474.
1870. Wallner S, Watzinger N, Lindschinger M, Smolle KH, Toplak H, Eber B et al. Effects of intensified lifestyle modification on the need for further revascularization after coronary angioplasty. *Eur J Clin Invest* 1999; 29(5): 372-379.
1871. NHS Centre for Reviews and Dissemination. Cardiac rehabilitation. *Eff Health Care* 1998; 4(4): 1-12.
1872. Thompson DR, Bowman GS. Evidence for the effectiveness of cardiac rehabilitation. *Intensive Crit Care Nurs* 1998; 14(1): 38-48.
1873. NIH Consensus Development Panel on Physical Activity and Cardiovascular Health. Physical activity and cardiovascular health. *JAMA* 1996; 276(3): 241-246.
1874. LaFontaine T. The role of lipid management by diet and exercise in the progression, stabilization, and regression of coronary artery atherosclerosis. *J Cardiopulm Rehabil* 1995; 15(4): 262-268.
1875. Nieuwland W, Berkhuisen MA, Van Veldhuisen DJ, Brugemann J, Landsman ML, Van Sonderen E et al. Differential effects of high-frequency versus low-frequency

- exercise training in rehabilitation of patients with coronary artery disease. *J Am Coll Cardiol* 2000; 36(1): 202-207.
1876. Oberman A, Fletcher GF, Lee J, Nanda N, Fletcher BJ, Jensen B et al. Efficacy of high-intensity exercise training on left ventricular ejection fraction in men with coronary artery disease (the Training Level Comparison Study). *Am J Cardiol* 1995; 76(10): 643-647.
1877. Dracup K, Baker DW, Dunbar SB, Dacey RA, Brooks NH, Johnson JC et al. Management of heart failure. II: Counseling, education, and lifestyle modifications. *JAMA* 1994; 272(18): 1442-1446.
1878. Belardinelli R, Georgiou D, Cianci G, Purcaro A. Randomized, controlled trial of long-term moderate exercise training in chronic heart failure: Effects on functional capacity, quality of life, and clinical outcome. *Circulation* 1999; 99(9): 1173-1182.
1879. The European Heart Failure Training Group. Experience from controlled trials of physical training in chronic heart failure: Protocol and patient factors in effectiveness in the improvement in exercise tolerance. *Eur Heart J* 1998; 19(3): 466-475.
1880. Rich MW. Heart failure disease management: A critical review. *J Card Fail* 1999; 5(1): 64-75.
1881. Blue L, Lang E, McMurray JJ, Davie AP, McDonagh TA, Murdoch DR et al. Randomised controlled trial of specialist nurse intervention in heart failure. *BMJ* 2001; 323(7315): 715-718.
1882. Jaarsma T, Halfens R, Huijter Abu-Saad H, Dracup K, Gorgels T, Van Ree J et al. Effects of education and support on self-care and resource utilization in patients with heart failure. *Eur Heart J* 1999; 20(9): 673-682.
1883. Rosenberg SG. Patient education leads to better care for heart patients. *HSMHA Health Rep* 1971; 86(9): 793-802.
1884. Bondestam E, Breikss A, Hartford M. Effects of early rehabilitation on consumption of medical care during the first year after acute myocardial infarction in patients > or = 65 years of age. *Am J Cardiol* 1995; 75(12): 767-771.
1885. Stahle A, Nordlander R, Bergfeldt L. Aerobic group training improves exercise capacity and heart rate variability in elderly patients with a recent coronary event: A randomized controlled study. *Eur Heart J* 1999; 20(22): 1638-1646.
1886. Stahle A, Nordlander R, Ryden L, Mattsson E. Effects of organized aerobic group training in elderly patients discharged after an acute coronary syndrome: A randomized controlled study. *Scand J Rehabil Med* 1999; 31(2): 101-107.
1887. Toobert DJ, Strycker LA, Glasgow RE. Lifestyle change in women with coronary heart disease: What do we know? *J Womens Health* 1998; 7(6): 685-699.

1888. Brezinka V, Kittel F. Psychosocial factors of coronary heart disease in women: A review. *Soc Sci Med* 1996; 42(10): 1351-1365.
1889. Xhignesse M, Laplante P, Grant AM, Niyonsenga T, Delisle E, Vanasse N et al. Antiplatelet and lipid-lowering therapies for the secondary prevention of cardiovascular disease: Are we doing enough? *Can J Cardiol* 1999; 15(2): 185-189.
1890. Carruthers SG. Elderly patients with hypertension should retain 'special' status. *Can J Cardiol* 2002; 18(6): 645-647.
1891. Khan N, Chockalingam A, Campbell NR. Lack of control of high blood pressure and treatment recommendations in Canada. *Can J Cardiol* 2002; 18(6): 657-661.
1892. UK Prospective Diabetes Study Group. Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. *BMJ* 1998; 317(7160): 703-713.
1893. UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998; 352(9131): 837-853.
1894. Skof E, Span M, Keber I. Secondary prevention in patients several years after myocardial infarction: Comparison of an outpatient and an inpatient rehabilitation programme. *J Cardiovasc Risk* 2001; 8(3): 119-126.
1895. Higgins HC, Hayes RL, McKenna KT. Rehabilitation outcomes following percutaneous coronary interventions (PCI). *Patient Educ Couns* 2001; 43(3): 219-230.
1896. Yoshida T, Yoshida K, Yamamoto C, Nagasaka M, Tadaura H, Meguro T et al. Effects of a two-week, hospitalized phase II cardiac rehabilitation program on physical capacity, lipid profiles and psychological variables in patients with acute myocardial infarction. *Jpn Circ J* 2001; 65(2): 87-93.
1897. Lear SA, Ignaszewski A, Linden W, Brozic A, Kiess M, Spinelli JJ et al. The Extensive Lifestyle Management Intervention (ELMI) following cardiac rehabilitation trial. *Eur Heart J* 2003; 24(21): 1920-1927.
1898. Witt BJ, Jacobsen SJ, Weston SA, Killian JM, Meverden RA, Allison TG et al. Cardiac rehabilitation after myocardial infarction in the community. *J Am Coll Cardiol* 2004; 44(5): 988-996.
1899. Kotseva K, Wood D, De Bacquer D, Heidrich J, De Backer G. Cardiac rehabilitation for coronary patients: Lifestyle, risk factor and therapeutic management. Results from the EUROASPIRE II survey. *Eur Heart J Suppl* 2004; 6(Suppl J): J17-J26.
1900. Baessler A, Hengstenberg C, Holmer S, Fischer M, Mayer B, Hubauer U et al. Long-term effects of in-hospital cardiac rehabilitation on the cardiac risk profile: A

- case-control study in pairs of siblings with myocardial infarction. *Eur Heart J* 2001; 22(13): 1111-1118.
1901. Detry JR, Vierendeel IA, Vanbutsele RJ, Robert AR. Early short-term intensive cardiac rehabilitation induces positive results as long as one year after the acute coronary event: A prospective one-year controlled study. *J Cardiovasc Risk* 2001; 8(6): 355-361.
1902. Hedback B, Perk J, Hornblad M, Ohlsson U. Cardiac rehabilitation after coronary artery bypass surgery: 10-year results on mortality, morbidity and readmissions to hospital. *J Cardiovasc Risk* 2001; 8(3): 153-158.
1903. Wright DJ, Williams SG, Riley R, Marshall P, Tan LB. Is early, low level, short term exercise cardiac rehabilitation following coronary bypass surgery beneficial? A randomised controlled trial. *Heart* 2002; 88(1): 83-84.
1904. Simchen E, Naveh I, Zitser-Gurevich Y, Brown D, Galai N. Is participation in cardiac rehabilitation programs associated with better quality of life and return to work after coronary artery bypass operations? The Israeli CABG Study. *Isr Med Assoc J* 2001; 3(6): 399-403.
1905. Pasquali SK, Alexander KP, Coombs LP, Lytle BL, Peterson ED. Effect of cardiac rehabilitation on functional outcomes after coronary revascularization. *Am Heart J* 2003; 145(3): 445-451.
1906. Cho L, Bhatt DL, Wolski K, Lincoff M, Topol EJ, Moliterno DJ. Effect of smoking status and abciximab use on outcome after percutaneous coronary revascularization: Pooled analysis from EPIC, EPILOG, and EPISTENT. *Am Heart J* 2001; 141(4): 599-602.
1907. Saia F, De Feyter P, Serruys PW, Lemos PA, Arampatzis CA, Hendrickx GR et al. Effect of fluvastatin on long-term outcome after coronary revascularization with stent implantation. *Am J Cardiol* 2004; 93(1): 92-95.
1908. Brophy JM, Bourgault C, Brassard P. The use of cholesterol-lowering medication after coronary revascularization. *Can Med Assoc J* 2003; 169(11): 1153-1157.
1909. Flaker GC, Warnica JW, Sacks FM, Moye LA, Davis BR, Rouleau JL et al. Pravastatin prevents clinical events in revascularized patients with average cholesterol concentrations. *J Am Coll Cardiol* 1999; 34(1): 106-112.
1910. Kotseva K, Tuniz D, Bernardi G, Molinis G, Valente M, Dodrigo N et al. Ambulatory cardiac rehabilitation with individualized care after elective coronary angioplasty: One year outcome. *Eur Heart J Suppl* 2004; 6(Suppl J): J37-J46.
1911. Gutenbrunner C, Schreiber C, Beck K, Walter N, Ehlebracht-König I, Von Petzold E et al. Prospektive kontrollierte Studie über die Langzeitwirksamkeit stationärer Heilverfahren auf das kardiovaskuläre Risikoprofil. *Physikalische Medizin, Rehabilitationsmedizin, Kurortmedizin* 2007; 12(5): 272-283.

## **Anhang A: Suchstrategien**

### **1. Recherche in Leitliniendatenbanken**

#### **Suchbegriffe für die Freitextsuche in Leitliniendatenbanken:**

Folgende Suchbegriffe wurden für die Recherche in der Leitliniendatenbank der AWMF, der Canadian Medical Association, des National Guideline Clearing House und der Leitliniendatenbanken G-I-N verwendet:

coronary heart disease

CHD

coronary artery disease

CAD

ischemic heart disease

ischaemic heart disease

heart disease

coronary ischemia

coronary ischaemia

angina pectoris

KHK

Die Webseiten aller übrigen Leitlinienanbieter (siehe Anhang B: Liste aller durchsuchten Leitlinienanbieter bzw. -datenbanken) wurden manuell durchsucht.

#### **Suchbegriffe für Schlagwortsuche in Leitliniendatenbanken (MeSH):**

Die Leitliniendatenbank G-I-N und die Datenbank der Canadian Medical Association bieten darüber hinaus die Möglichkeit, über Schlagworte (Mesh-Terms) zu suchen.

Für die Suche in G-I-N wurde folgender MeSH-Term zusätzlich zur Freitextsuche verwendet:

Myocardial ischemic disorders / Myocardial ischemia (MeSH C14.280.647)

Für die Suche in der Datenbank der Canadian Medical Association wurden folgende MeSH-Terms zusätzlich zur Freitextsuche verwendet:

Cardiovascular disease

Angina pectoris



## 2. Recherche in den bibliographischen Datenbanken EMBASE und MEDLINE

### Embase (Ovid)

Recherchezeitraum: 2002-2007

Datum der Recherche: 28.03.2007

	Suchbegriffe	Treffer
1	exp Coronary Artery Disease/di, dm, rh, dt, th or ischemic heart disease/di, dm, rh, dt, th or exp angina pectoris/di, dm, rh, dt, th	37960
2	(Angina or Stenocardia\$ or Cardiac rehabilitation or CHD or CAD or CVD).ti.	5388
3	((Heart or Myocard\$ or coronary) adj2 (Ischemi\$ or Ischaemi\$ or Disease\$ or Infarction)).ti.	38059
4	or/1-3	69081
5	PRACTICE GUIDELINE/ OR CLINICAL PATHWAY/ OR CLINICAL PROTOCOL/ OR CONSENSUS DEVELOPMENT/ OR GOOD CLINICAL PRACTICE/ OR CONSENSUS/	117276
6	guideline\$.ti.	15535
7	recommendation.ti.	589
8	consensus.ti.	4774
9	(standard or standards).ti.	11863
10	position paper.ti.	307
11	clinical pathway.ti.	189
12	clinical protocol.ti.	38
13	good clinical practice.ti.	123
14	or/5-12	133457
15	4 and 14	3798
16	limit 15 to yr="2002 - 2007"	2449
17	limit 16 to (dutch or english or french or german or spanish)	2344
18	limit 17 to human	2329

**MEDLINE (Ovid)**

Recherchezeitraum: 2002-2007

Datum der Recherche: 28.03.2007

	<b>Suchbegriffe</b>	<b>Treffer</b>
1	EXP MYOCARDIAL ISCHEMIA/	262898
2	EXP ANGINA PECTORIS/	33938
3	(Angina or Coronary or Stenocardia\$ or Cardiac rehabilitation or CHD or CAD or CVD).ti.	121827
4	((Heart or Myocard\$ or coronary) adj2 (Ischemi\$ or Ischaemi\$ or Disease\$ or Infarction)).ti.	107107
5	or/1-4	312615
6	exp GUIDELINES/	58623
7	exp PRACTICE GUIDELINES/	37583
8	exp CONSENSUS DEVELOPMENT CONFERENCES/	1291
9	exp CONSENSUS DEVELOPMENT CONFERENCES, NIH/	260
10	guideline.pt.	14045
11	practice guideline.pt.	10724
12	Consensus Development Conference.pt.	5301
13	Consensus Development Conference, NIH.pt.	560
14	guideline\$.ti.	27780
15	recommendation.ti.	1183
16	consensus.ti.	8038
17	standard.ti.	18272
18	standards.ti.	13519
19	position paper.ti.	829
20	clinical pathway.ti.	258
21	clinical protocol.ti.	92

22	good clinical practice.ti.	143
23	or/6-22	122721
24	5 and 23	3444
25	limit 24 to yr="2002-2007"	1625
26	limit 25 to (english or french or dutch or german or spanish)	1473
27	limit 26 to humans	1455

**Anhang B: Liste aller durchsuchten Leitlinienanbieter bzw. -datenbanken**

Fachübergreifende Leitliniendatenbanken	Fachspezifische Leitliniendatenbanken
<ul style="list-style-type: none"> <li>• AHRQ (Agency for Health Care Research and Quality; früher AHCPR), USA</li> <li>• AHRQ Guide to Clinical Preventive Services, USA</li> <li>• AMA (Alberta Medical Association), CDN</li> <li>• AMA (Australian Medical Association), AUS</li> <li>• AMDA (Am. Medical Directors Assoc.), USA</li> <li>• ANAES(Agence Nationale d'Accréditation et d'Evaluation en Santé), F</li> <li>• Arzneimittelkommission der deutschen Ärzteschaft, D</li> <li>• Asociación Colombiana de Facultades de Medicina, Kolumbien</li> <li>• AWMF(Arbeitsgemeinschaft der Wissenschaftlichen Fachgesellschaften), D</li> <li>• BÄK (Bundesärztekammer), D</li> <li>• BCC (British Columbia Council on Clinical Practice Guidelines), CDN</li> <li>• CBO (Kwaliteitsinstituut voor de Gezondheidszorg/Dutch Institute for Healthcare Improvement), NL</li> <li>• CCGC (Colorado Clinical Guidelines Collaborative), USA</li> <li>• CTFPHC (Canadian Task Force on Preventive Health Care), CDN</li> <li>• CDC (Centers for Disease Control and Prevention), USA</li> <li>• Centro para el Desarrollo de la Farmacoepidemiología, Kuba</li> </ul>	<ul style="list-style-type: none"> <li>• AACVPR (American Association of Cardiovascular and Pulmonary Rehabilitation), USA</li> <li>• AAFP (Am. Academy of Family Physicians), USA</li> <li>• AAPMR (American Academy of Physical Medicine and Rehabilitation), USA</li> <li>• ABFP (American Board of Family Practice), USA</li> <li>• ACC (American College of Cardiology), USA</li> <li>• ACCM/SCCM (American College of Critical Care Medicine/Society of Critical Care Medicine), USA</li> <li>• ACEP (American College of Emergency Physicians), USA</li> <li>• ACP-ASIM (American College of Physicians, American Society of Internal Medicine), USA</li> <li>• ACPM, American College of Preventive Medicine, USA</li> <li>• ACS (American College of Surgeons), USA</li> <li>• AGS (American Geriatrics Society), USA</li> <li>• AHA (American Heart Association), USA</li> <li>• Alfediam, F</li> <li>• American Diabetes Association, USA</li> <li>• American Dietetic Association, USA</li> <li>• ANZCA (Australian and New Zealand College of Anaesthetists), AUS</li> <li>• ASA (American Society of Anesthesiologists), USA</li> </ul>

(Fortsetzung)

**Anhang B: Liste aller durchsuchten Leitlinienanbieter bzw. -datenbanken (Fortsetzung)**

Fachübergreifende Leitliniendatenbanken	Fachspezifische Leitliniendatenbanken
<ul style="list-style-type: none"> <li>• CHSR (Centre for Health Services Research), UK</li> <li>• CMA/CMAJ (Canadian Medical Association), CDN</li> <li>• Consejería de Salud de la Junta de Andalucía, ES</li> <li>• CREST (Clinical Ressource Efficiency support team), IR</li> <li>• Department of Health, Südafrika</li> <li>• eGuidelines (Mededenium Group Pulishing Ltd.), UK</li> <li>• Equip Online, UK</li> <li>• Finnish Medical Society Duodecim, FN</li> <li>• Generalitat Valenciana - Conselleria de Sanitat, ES</li> <li>• Government of Victoria, Australia, Department of Human Services, Public Health Division , AU</li> <li>• GAC (Guidelines Advisory Committee), CDN</li> <li>• Guidelines International Network (G-I-N)</li> <li>• Health Canada LCDC (Laboratory Centre for Disease Control) STD-Guidelines, CDN</li> <li>• HSTAT (Health Services Technology Assessment Texts), USA</li> <li>• Humana Quality Improvement, USA</li> <li>• ICSI (Institute for Clinical Systems Integration)</li> <li>• Instituto de Securo Sociales, Kolumbien</li> <li>• Kaiser Permanente, USA</li> <li>• Leitliniengruppe Hessen, D</li> <li>• MJA (Medical Journal of Australia), AUS</li> <li>• MOH (Ministry of Health Singapore), SI</li> </ul>	<ul style="list-style-type: none"> <li>• Asociacion Catalana de Diabetes, ES</li> <li>• Australian Diabetes Society, AU</li> <li>• BCS (British Cardiac Society), GB</li> <li>• BDA (British Diabetes Association), GB</li> <li>• CAEP (Canadian Association of Emergency ), CDN</li> <li>• CAS (Canadian Anesthesiologists Society), CDN</li> <li>• CCS (Canadian Cardiovascular Society), CDN</li> <li>• College of Physicians &amp; Surgeons of Manitoba, CDN</li> <li>• CSANZ (The Cardiac Society of Australia and New Zealand), AUS</li> <li>• DEGAM (Deutsche Gesellschaft für Allgemeinmedizin), D</li> <li>• DGKG (Deutsche Gesellschaft für Kardiologie, Herz- und Kreislaufforschung), D</li> <li>• ESC (The European Society of Cardiology), EU</li> <li>• Federación Espanola de Asociaciones de Educadores en Diabetes, ES</li> <li>• GRAS (Groupe de Recherche et d'Action pour la Santé), B</li> <li>• Heartfoundation of Australia, AUS</li> <li>• HFSA (Heart Failure Society of America), USA</li> <li>• IDF (International Diabetes Federation)</li> <li>• Instituto Mexicano del seguro social, Mexiko</li> <li>• Lipid and Atherosclerotic Society of Southern Africa, Südafrika</li> </ul>

(Fortsetzung)

**Anhang B: Liste aller durchsuchten Leitlinienanbieter bzw. -datenbanken (Fortsetzung)**

Fachübergreifende Leitliniendatenbanken	Fachspezifische Leitliniendatenbanken
<ul style="list-style-type: none"> <li>• National Electronic Guidelines Finder, UK (NeLH)</li> <li>• Nederlands Huisartsen Genootschap, NL</li> <li>• NeLH Care Pathways Library, UK</li> <li>• New Zealand Guidelines Group, NZ</li> <li>• NGC (National Guideline Clearinghouse), USA</li> <li>• NHG (Nederlands Huisartsen Genootschap), NL</li> <li>• NHMRC (National Health and Medical Research Council), AUS</li> <li>• NICE (National Institute for Clinical Excellence), UK</li> <li>• NIH (National Institutes of Health), USA</li> <li>• NSW Health, AUS</li> <li>• PBM (Pharmacy Benefits Management Strategic Healthcare Group), USA</li> <li>• PVA (Paralyzed Veterans of America), USA</li> <li>• SIGN (Scottish Intercollegiate Guidelines Network), UK</li> <li>• SGHMS (St. George's Hospital Medical School), UK</li> <li>• Sociedad Española de Cardiología: Guías de Práctica Clínica, ES</li> <li>• Superintendencia de Servicios de Salud, AR</li> <li>• Tufts Health Plan, USA</li> <li>• UCSD (University of California, San Diego Medical Center), USA</li> <li>• UCSF (University of California, San Francisco School of Medicine), USA</li> <li>• VA (Dep. of Veterans Affairs), USA</li> </ul>	<ul style="list-style-type: none"> <li>• NHLBI (The National Heart, Lung, and Blood Institute), USA</li> <li>• NVVC (Nederlandse Vereniging voor Cardiologie), NL</li> <li>• RACGP (Royal Australian College of General Practitioners), AU</li> <li>• RCA (Royal College of Anaesthetists), GB</li> <li>• RCP (Royal College of Physicians of London), GB</li> <li>• RCGP (Royal College of General Practitioners), GB</li> <li>• RCGP (Royal College of General Practitioners, GB): Quick guides</li> <li>• RCSE (Royal College of Surgeons of England), UK</li> <li>• RNZCGP (Royal New Zealand College of General Practitioners), NZ</li> <li>• Society for Endocrinology, Metabolism, and Diabetes of South Africa, Südafrika</li> <li>• SSC (Swiss Society of Cardiology), CH</li> <li>• Thrombosis Interest Group of Canada, CDN</li> </ul>

(Fortsetzung)

**Anhang B: Liste aller durchsuchten Leitlinienanbieter bzw. -datenbanken (Fortsetzung)**

Fachübergreifende Leitliniendatenbanken	Fachspezifische Leitliniendatenbanken
<ul style="list-style-type: none"><li>• VPQHC (Vermont Program for Quality in Health Care), CDN</li><li>• WHO (World Health Organization)</li></ul>	

**Anhang C: Liste der im Volltext überprüften, aber ausgeschlossenen Leitlinien mit Ausschlussgründen****Ausschlussgrund A1 (Anderer Publikationstyp, z. B. Evidenzreport, Review)**

1. ASHP therapeutic position statement on the use of beta-blockers in survivors of acute myocardial infarction. *Am J Health Syst Pharm* 2002; 59(22): 2226-2232.
2. ASHP therapeutic position statement on the use of statins in the prevention of atherosclerotic vascular disease in adults. *Am J Health Syst Pharm* 2003; 60(6): 593-598.
3. Dawkins KD, Gershlick T, De Belder M, Chauhan A, Venn G, Schofield P et al. Percutaneous coronary intervention: Recommendations for good practice and training. *Heart* 2005; 91(Suppl 6): vi1-vi27.
4. Thompson PD, Buchner D, Pina IL, Balady GJ, Williams MA, Marcus BH et al. Exercise and physical activity in the prevention and treatment of atherosclerotic cardiovascular disease: A statement from the Council on Clinical Cardiology (Subcommittee on Exercise, Rehabilitation, and Prevention) and the Council on Nutrition, Physical Activity, and Metabolism (Subcommittee on Physical Activity). *Circulation* 2003; 107(24): 3109-3116.
5. Hung J. Aspirin for cardiovascular disease prevention. *Med J Aust* 2003; 179(3): 147-152.
6. NHS-Modernisation Agency. Coronary heart disease collaborative service improvement guide: Angina. London: NHS; 2002.
7. NHS-Modernisation Agency. Coronary heart disease collaborative service improvement guide: Secondary prevention. London: NHS; 2002.
8. NHS-Modernisation Agency. Coronary heart disease collaborative service improvement guide: Rehabilitation. London: NHS; 2002.
9. NHS-Modernisation Agency. Coronary heart disease collaborative service improvement guide: Revascularisation. London: NHS; 2002.
10. National Institute for Clinical Excellence. Guidance for the use of coronary artery stents. London: NICE; 2003. (Technology Appraisal; Vol 71).
11. National Institute for Clinical Excellence. Statins for the prevention of cardiovascular events. London: NICE; 2006. (Technology Appraisal; Vol 94).
12. National Institute for Clinical Excellence. Clopidogrel and modified-release dipyridamole in the prevention of occlusive vascular events. London: NICE; 2005. (Technology Appraisal; Vol 90).



13. National Institute for Clinical Excellence. Clopidogrel in the treatment of non-ST-segment-elevation acute coronary syndrome. London: NICE; 2007. (Technology Appraisal; Vol 80).
14. Patrono C, Bachmann F, Baigent C, Bode C, De Caterina R, Charbonnier B et al. Expert consensus document on the use of antiplatelet agents: The Task Force on the Use of Antiplatelet Agents in Patients With Atherosclerotic Cardiovascular Disease of the European Society of Cardiology. *Eur Heart J* 2004; 25(2): 166-181.
15. Hayden M, Pignone M, Phillips C, Mulrow C. Aspirin for the primary prevention of cardiovascular events: A summary of the evidence for the U.S. Preventive Services Task Force. *Ann Intern Med* 2002; 136(2): 161-172.
16. Fowler-Brown A, Pignone M, Pletcher M, Tice JA, Sutton SF, Lohr KN. Exercise tolerance testing to screen for coronary heart disease: A systematic review for the technical support for the U.S. Preventive Services Task Force. *Ann Intern Med* 2004; 140(7): W9-W24.
17. Ausschlussgrund A2 (Mehrfachpublikation ohne relevante Zusatzinformation)
18. Snow V, Barry P, Fihn SD, Gibbons RJ, Owens DK, Williams SV et al. Evaluation of primary care patients with chronic stable angina: Guidelines from the American College of Physicians. *Ann Intern Med* 2004; 141(1): 57-64.
19. Snow V, Barry P, Fihn SD, Gibbons RJ, Owens DK, Williams SV et al. Primary care management of chronic stable angina and asymptomatic suspected or known coronary artery disease: A clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2004; 141(7): 562-567.
20. De Backer G, De Bacquer D, Brohet C, De Ceukelier S, Franck A, Krzentowski G et al. [Guidelines on cardiovascular disease prevention in clinical practice]. *Tijdschr Geneesk* 2005; 61(8): 601-613.
21. Kwaliteitsinstituut voor de Gezondheidszorg. Multidisciplinaire richtlijn: Cardiovasculair risicomanagement 2006. Utrecht: CBO; 2006.
22. Legrand V, Wijns W, Vandenbranden F, Benit E, Boland J, Claeys M et al. Guidelines for percutaneous coronary intervention by the Belgian Working Group on Invasive Cardiology. *Acta Cardiol* 2003; 58(4): 341-348.
23. [Recommendations of the French Society of Cardiology on the question of including adults, excepting emergencies, in waiting lists for cardiac transplantation]. *Arch Mal Coeur Vaiss* 1998;(1 Suppl): 80-85.

24. National Heart Foundation of Australia (NHFA) & Cardiac society of Australia and New Zealand (2007). Reducing risk in Heart disease [Online-Text]. 2007 [Zugriff am 22.März.2007]. Gelesen unter: [http://www.heartfoundation.org.au/document/NHF/ReducingRisk\\_HeartDisease\\_FullGuide\\_2007.pdf](http://www.heartfoundation.org.au/document/NHF/ReducingRisk_HeartDisease_FullGuide_2007.pdf)
25. Nederlandse Huisartsen Genotschap (2007). Standaard Cardiovasculair risicomangement [Online-Text]. 2007 [Zugriff am 22.März.2007]. Gelesen unter: [http://nhg.artsennet.nl/uri/?uri=AMGATE\\_6059\\_104\\_TICH\\_R183129611676033](http://nhg.artsennet.nl/uri/?uri=AMGATE_6059_104_TICH_R183129611676033).
26. Nederlandse Vereniging voor Cardiologie. Acuut myocardinfarct met ST-segmentelevatie. Utrecht: NVVC; 2003.
27. Nederlandse Vereniging voor Cardiologie. Acuut myocardinfarct zonder persisterende ST-segmentelevatie. Utrecht: NVVC; 2002.
28. Nederlandse Vereniging voor Cardiologie. Cardiovasculaire preventie. Utrecht: NVVC; 2003.
29. Nederlandse Vereniging voor Cardiologie. Richtlijnen voor percutane coronaire interventie. Utrecht: NVVC; 2005.
30. New Zealand Guidelines Group. New Zealand cardiovascular guidelines handbook: Developed for primary care practitioners. Risk assessment, atrial fibrillation, heart disease, stroke, diabetes, smoking cessation. Wellington: NZGG; 2005.
31. PRODIGY (2007): Prodigy Guidance: Angina [Online-Text]. 2007 [Zugriff am 22.März.2007]. Gelesen unter: <http://www.cks.library.nhs.uk/angina/>.
32. PRODIGY (2006): Coronary heart disease risk identification and management [Online-Text]. 2006 [Zugriff am 22.März.2007]. Gelesen unter: [http://cks.library.nhs.uk/cardiovascular\\_risk](http://cks.library.nhs.uk/cardiovascular_risk).
33. López Bescós L, Arós Borau F, Lidón Corbi RM, Cequier Fillat A, Bueno H, Alonso JJ et al. [2002 update of the guidelines of the Spanish Society of Cardiology for unstable angina/without ST-segment elevation myocardial infarction]. Rev Esp Cardiol 2002; 55(6): 631-642.
34. Amsterdam EA. Updated secondary prevention guidelines for atherosclerotic disease. Prev Cardiol 2006; 9(4): 239-240.
35. Ausschlussgrund A3 (Es existiert eine aktualisierte Version der Leitlinie)
36. Mosca L, Appel LJ, Benjamin EJ, Berra K, Chandra-Strobos N, Fabunmi RP et al. Evidence-based guidelines for cardiovascular disease prevention in women. Circulation 2004; 109(5): 672-693.
37. Ausschlussgrund A6 (Keine Vollpublikation verfügbar)

38. American Association of Cardiovascular and Pulmonary Rehabilitation. Guidelines for cardiac rehabilitation and secondary prevention programs. Champaign: Human Kinetics; 2004.

**Ausschlussgrund A7 (Klinikinterne Behandlungspfade oder Leitlinien mit regionalem Geltungsanspruch)**

1. Kaiser Permanente's Care Management Institute. Secondary prevention of coronary artery disease clinical practice guideline. Oakland: CMI; 2006.
2. Leitliniengruppe Hessen. Hausärztliche Leitlinie: Stabile Angina pectoris und KHK. Therapie der stabilen Angina pectoris und der asymptomatischen koronaren Herzkrankheit [Online-Text]. 11.Okt.2006 [Zugriff am: 22.März.2007]. Gelesen unter: <http://www.leitlinien.de/leitlinienanbieter/deutsch/pdf/hessenkhk>.

**Ausschlussgrund „fehlende Evidenzeinstufung“**

39. Alberta Medical Association. Guidelines for management of modifiable risk factors in adults at high risk for cardiovascular events. Edmonton: AMA; 2005.
40. Fulcher GR, Amarena JV, Conner GW, Gilbert RE, Hankey GJ. Prevention of cardiovascular disease: An evidence-based clinical aid 2004. *Med J Aust* 2004; 181(6 Suppl): F4-F14.
41. Becher H, Chambers J, Fox K, Jones R, Leech GJ, Masani N et al. BSE procedure guidelines for the clinical application of stress echocardiography, recommendations for performance and interpretation of stress echocardiography: A report of the British Society of Echocardiography Policy Committee. *Heart* 2004; 90(Suppl 6): vi23-vi30.
42. Benzer W. Guidelines für die ambulante kardiologische Rehabilitation und Prävention in Österreich. *Journal für Kardiologie* 2005; 12(11-12): 303-309.
43. JBS 2: Joint British Societies' guidelines on prevention of cardiovascular disease in clinical practice. *Heart* 2005; 91(Suppl 5): v1-v52.
44. Clinical Resource Efficiency Support Team. Guidelines for cardiac rehabilitation in Northern Ireland. Belfast: CREST; 2007.
45. Dietz R, Rauch B. Leitlinie zur Diagnose und Behandlung der chronischen koronaren Herzerkrankung der Deutschen Gesellschaft fuer Kardiologie, Herz- und Kreislaufforschung (DGK): In Kooperation mit der Deutschen Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen (DGPR) und der Deutschen Gesellschaft fuer Thorax-, Herz- und Gefäßchirurgie (DGTHG). *Z Kardiologie* 2003; 92(6): 501-521.
46. Third Joint Task force of European and other Societies on Cardiovascular Disease Prevention in Clinical Practice. European guidelines on cardiovascular disease prevention in clinical practice. *Eur J Cardiovasc Prevention Rehab* 2003; 10(Suppl 1): S1-S78.
47. Giannuzzi P, Mezzani A, Saner H, Björnstad H, Fioretti P, Mendes M et al. Physical activity for primary and secondary prevention: Position paper of the Working Group on Cardiac Rehabilitation and Exercise Physiology of the European Society of Cardiology. *Eur J Cardiovasc Prev Rehabil* 2003; 10(5): 319-327.
48. American Healthways. Specialty referral guidelines for cardiovascular evaluation and management. Nashville: Healthways Inc.; 2002.
49. Asociación Colombiana de Facultades de Medicina. Enfermedad coronaria: Angina estable e inestable. Bogotá: Ascofame; 2006.

50. Van der Wall EE. [The practice guideline 'Stable angina pectoris' (second revision) from the Dutch College of General Practitioners: A response from the perspective of cardiology]. *Ned Tijdschr Geneeskd* 2004; 148(45): 2214-2216.
51. Stone JA, Arthur HM. Canadian guidelines for cardiac rehabilitation and cardiovascular disease prevention, second edition, 2004: Executive summary. *Can J Cardiol* 2005; 21(Suppl D): 3D-19D.
52. Thrombosis Interest Group of Canada. Clinical Guide: Post MI [Online-Text]. Aug.2005 [Zugriff am 22.März.2007]. Gelesen unter: <http://www.tigc.org/pdf/postmi05.pdf>.
53. Veterans Health Administration, Department of Defense. VA/DoD clinical practice guideline for the management of ischemic heart disease. Washington (DC): Veterans Health Administration, Department of Defense; 2003 Nov.
54. Balady GJ, Williams MA, Ades PA, Bittner V, Comoss P, Foody JM et al. Core components of cardiac rehabilitation/secondary prevention programs: 2007 update. A scientific statement from the American Heart Association Exercise, Cardiac Rehabilitation, and Prevention Committee, the Council on Clinical Cardiology; the Councils on Cardiovascular Nursing, Epidemiology and Prevention, and Nutrition, Physical Activity, and Metabolism and the American Association of Cardiovascular and Pulmonary Rehabilitation. *Circulation* 2007; 115(20): 2675-2682.

**Ausschlussgrund „Erfüllt nicht E1“**

1. American College of Cardiology. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to revise the 1999 guidelines for the management of patients with acute myocardial infarction). Washington DC: ACC; 2004.
2. American College of Cardiology. ACC/AHA 2002 guideline update for the management of patients with unstable angina and non-ST-segment elevation myocardial infarction: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee on the management of patients with unstable angina). Washington DC: ACC; 2002.
3. American College of Chest Physicians (ACCP). Antithrombotic and Thrombolytic Therapy Disease: The Seventh ACCP Conference on Antithrombotic Therapy for Coronary Artery. Chest 2004;126(Suppl 1):172-187
4. American College of Chest Physicians (ACCP). Antithrombotic and Thrombolytic Therapy Disease: The Seventh ACCP Conference on Antithrombotic Therapy for Coronary Artery. Chest 2004;126(Suppl 1):234-264
5. American College of Chest Physicians (ACCP). Antithrombotic and Thrombolytic Therapy Disease: The Seventh ACCP Conference on Antithrombotic Therapy for Coronary Artery. Chest 2004;126(Suppl 1):513-548.
6. Agencia de Evaluación de Tecnologías Sanitarias de Andalucía. Angina estable, angina inestable/IAM sin elevación del ST et IAM con elevación del ST. Sevilla: AETAS; 2002.
7. Deutsche Gesellschaft für Sozialmedizin und Prävention. Sozialmedizinische Leistungsbeurteilung bei koronarer Herzkrankheit: Leitlinien für den beratungsärztlichen Dienst der Deutschen Rentenversicherung Bund. AWMF online; 2005. Gelesen unter: <http://www.uni-duesseldorf.de/AWMF/II/074-003.htm>.
8. Brindis RG, Fischer E, Besinque G, Gjedsted A, Lee PC, Padgett T et al. Acute coronary syndromes clinical practice guidelines. Crit Pathw Cardiol 2006; 5(2): 69-102.
9. Deutschen Gesellschaft für Kardiologie- Herz- und Kreislaufforschung (DGK). Empfehlungen zur Diagnostik und Behandlung von Patienten mit koronarer Herzkrankheit und Niereninsuffizienz. Teil I: Pathophysiologie und Diagnostik Clin Res Cardiol (Suppl) 2006; 1:8–30.

10. Deutschen Gesellschaft für Kardiologie- Herz- und Kreislaufforschung (DGK). Empfehlungen zur Diagnostik und Behandlung von Patienten mit koronarer Herzkrankheit und Niereninsuffizienz. Teil II: Therapie, perkutane koronare Intervention, Bypass-Chirurgie und spezielle Aspekte bei Niereninsuffizienz und kardiovaskulären Erkrankungen. *Clin Res Cardiol (Suppl)* 2006; 1:103-117.
11. Hamm CW. Leitlinien: Akutes Koronarsyndrom (ACS). Teil 1: ACS ohne persistierende ST-Hebung. *Z Kardiol* 2007; 93(1): 72-90.
12. Hamm CW. Leitlinien: Akutes Koronarsyndrom (ACS). Teil 2: Akutes Koronarsyndrom mit ST-Hebung. *Z Kardiol* 2007; 93(4): 324-341.
13. The Task Force on diabetes and cardiovascular diseases of the European Society of Cardiology (ESC) and of the European Association for the Study of Diabetes (EASD): Guideline on diabetes, pre-diabetes and cardiovascular disease. *Eur Heart J* 2007; 9 (Suppl): C3-C74.
14. Van de Werf F, Ardissino D, Betriu A, Cokkinos DV, Falk E, Fox KA et al. Management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J* 2003; 24(1): 28-66.
15. Bertrand ME, Simoons ML, Fox KA, Wallentin LC, Hamm CW, McFadden E et al. Management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. *Eur Heart J* 2002; 23(23): 1809-1840.
16. Lopez-Sendon J, Swedberg K, McMurray J, Tamargo J, Maggioni AP, Dargie H et al. Expert consensus document on beta-adrenergic receptor blockers. *Eur Heart J* 2004; 25(15): 1341-1362.
17. Lopez-Sendon J, Swedberg K, McMurray J, Tamargo J, Maggioni AP, Dargie H et al. Expert consensus document on angiotensin converting enzyme inhibitors in cardiovascular disease. *Eur Heart J* 2004; 25(16): 1454-1470.
18. Finnish Medical Society Duodecim. Myocardial infarction. In: EBM Guidelines. Evidence-Based Medicine. Helsinki, Finland: Duodecim Medical Publications Ltd.; 2006.
19. Heart Failure Society of America. HFSA 2006 comprehensive heart failure practice guideline. *J Card Fail* 2006; 12(1): e1-e122.
20. Institute for Clinical Systems Improvement. Diagnosis and treatment of chest pain and acute coronary syndrome (ACS). Bloomington: ICSI; 2006.
21. Asociación Colombiana de Facultades de Medicina. Enfermedad coronaria: Infarto agudo del miocardio. Bogotá: Ascofame; 2006.

22. Lupi-Herrera E. [Mexican Cardiology Society guidelines on the management of patients with unstable angina and non-ST-segment elevation myocardial infarction]. Arch Cardiol Mex 2002; 72(Suppl 2): S5-S44.
23. Mead A, Atkinson G, Albin D, Alphey D, Baic S, Boyd O et al. Dietetic guidelines on food and nutrition in the secondary prevention of cardiovascular disease: Evidence from systematic reviews of randomized controlled trials (second update, January 2006). J Hum Nutr Diet 2006; 19(6): 401-419.
24. Ministry of Health, Singapore: Clinical Practice Guidelines: Lipids. 2006. ISBN 981-05-5844-9.
25. Acute Coronary Syndrome Guidelines Working Group. Guidelines for the management of acute coronary syndromes 2006. Med J Aust 2006; 184(8 Suppl): S1-S32.
26. Tonkin A, Barter P, Best J, Boyden A, Furler J, Hossack K et al. National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand: Position Statement on Lipid Management: Heart Lung Circulation 2005; 14:275-291.
27. Briffa TG, Maiorana A, Sheerin NJ, Stubbs AG, Oldenburg BF, Sammel NL et al. Physical activity for people with cardiovascular disease: Recommendations of the National Heart Foundation of Australia. Med J Aust 2006; 184(2): 71-75.
28. Bunker SJ, Colquhoun DM, Esler MD, Hickie IB, Hunt D, Jelinek VM et al. "Stress" and coronary heart disease: Psychosocial risk factors. Med J Aust 2003; 178(6): 272-276.
29. Rutten FH, Grundmeijer HGLM, Grijseels EWM, Van Bentum STB, Hendrick JMA, Bouma M et al. [The standard for acute coronary syndrome (acute myocardial infarction and unstable angina pectoris) of one Dutch College of General Practitioners]. Huisarts Wet 2003; 46(14): 831-843.
30. PRODIGY: Prodigy guidance Myocardial infarction - previous, no heart failure. 2006. [Online-Text]. 2006 [Zugriff am 22.März.2007]. Gelesen unter: [http://www.cks.library.nhs.uk/mi\\_previous\\_no\\_heart\\_failure](http://www.cks.library.nhs.uk/mi_previous_no_heart_failure).
31. Scottish Intercollegiate Guidelines Network. Acute coronary syndromes: A national clinical guideline. Edinburgh: SIGN; 2007. (SIGN publication; Vol 93).
32. Scottish Intercollegiate Guidelines Network. Cardiac arrhythmias in coronary heart disease: A national clinical guideline. Edinburgh: SIGN; 2007. (SIGN publication; Vol 94).
33. Thompson PD, Balady GJ, Chaitman BR, Clark LT, Levine BD, Myerburg RJ. Task Force 6: Coronary artery disease. J Am Coll Cardiol 2005; 45(8): 1348-1353.



**Anhang D: Extraktionsbogen DELBI-Bewertungstool****Formular zur Bewertung von Leitlinien mit dem DELBI-Instrument der AWMF / ÄZQ**

Leitlinie:			
Quelle/Jahr:			
BewerterIn 1:		BewerterIn 2:	
Bewertet am:			
<b>Summary<sup>1</sup></b>			
Frage	Punkte		Kommentar <sup>2</sup>
	BewerterIn		
	1	2	
Trifft überhaupt nicht zu 1 – 2 – 3 – 4 Trifft uneingeschränkt zu			
<b>Domäne 1: Geltungsbereich und Zweck</b>			
1. Das Gesamtziel der Leitlinie ist differenziert beschrieben.			
2. Die in der Leitlinie behandelten medizinischen Fragen / Probleme sind differenziert beschrieben.			
3. Die Patienten, für die die Leitlinie gelten soll, sind eindeutig beschrieben.			
<b>Punkte Domäne 1:            von 24</b>			
<b>Domäne 2: Beteiligung von Interessengruppen</b>			
4. Die Entwicklergruppe der Leitlinie schließt Mitglieder aller relevanten Berufsgruppen ein.			

<sup>1</sup> Der Summary beinhaltet Aussagen zum Titel und Gegenstand der Leitlinie sowie zu ihrer Methodik de/ Gesamteindruck.

<sup>2</sup> Beschreibender Kommentar: Was zeichnet die Leitlinie aus, was fehlt?

5. Die Ansichten und Präferenzen der Patienten wurden ermittelt.			
6. Die Anwenderzielgruppe der Leitlinie ist definiert.			
7. Die Leitlinie wurde in einer Pilotstudie von Mitgliedern der Anwenderzielgruppe getestet.			
<b>Punkte Domäne 2:            von 32</b>			
<b>Domäne 3: Methodologische Exaktheit der Leitlinienentwicklung</b>			
8. Bei der Suche nach der Evidenz wurden systematische Methoden angewandt.			
9. Die Kriterien für die Auswahl der Evidenz sind klar beschrieben.			
10. Die zur Formulierung der Empfehlungen verwendeten Methoden sind klar beschrieben.			
11. Bei der Formulierung der Empfehlungen wurden gesundheitlicher Nutzen, Nebenwirkungen und Risiken berücksichtigt.			
12. Die Verbindung zwischen Empfehlungen und der zugrunde liegenden Evidenz ist explizit dargestellt.			
13. Die Leitlinie ist vor ihrer Veröffentlichung durch externe Experten begutachtet worden.			
14. Ein Verfahren zur Aktualisierung der Leitlinie ist angegeben.			
			Erstellungsdatum:
			Letzte Überarbeitung:

<b>Punkte Domäne 3: von 56</b>		
<b>Domäne 4: Klarheit und Gestaltung</b>		
15. Die Empfehlungen der Leitlinie sind spezifisch und eindeutig.		
16. Die verschiedenen Handlungsoptionen [Handlungsalternativen] für das Versorgungsproblem sind dargestellt. <sup>3</sup>		
17. Schlüsselempfehlungen der Leitlinie sind leicht zu identifizieren.		
18. Es existieren Instrumente bzw. Materialien, die die Anwendung der Leitlinie unterstützen.		
<b>Punkte Domäne 4: von 32</b>		
<b>Domäne 5: Anwendbarkeit</b>		
19. Die möglichen organisatorischen Barrieren gegenüber der Anwendung der Empfehlungen werden diskutiert.		
20. Die durch die Anwendung der Empfehlungen der Leitlinie möglicherweise entstehenden finanziellen Auswirkungen werden berücksichtigt.		
21. Die Leitlinie benennt wesentliche Messgrößen für das Monitoring und / oder die Überprüfungskriterien.		
<b>Punkte Domäne 5: von 24</b>		
<b>Domäne 6: Redaktionelle Unabhängigkeit</b>		
22. Die Leitlinie ist redaktionell von der (den) finanzierenden Organisation(en) unabhängig.		
23. Interessenkonflikte von Mitgliedern der Leitlinienentwicklungsgruppe wurden dokumentiert.		

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<sup>3</sup> Ggf. inhaltliche Expertise im IQWiG nutzen.

<b>Punkte Domäne 6: von 16</b>			
<b>Domäne 7: Anwendbarkeit im deutschen Gesundheitssystem</b>			
24. Es liegen Empfehlungen zu präventiven, diagnostischen, therapeutischen und rehabilitativen Maßnahmen in den verschiedenen Versorgungsbereichen vor. <sup>4</sup>			
25. Es existieren Angaben, welche Maßnahmen unzweckmäßig, überflüssig oder obsolet erscheinen.			
26. Die klinische Information der Leitlinie ist so organisiert, dass der Ablauf des medizinischen Entscheidungsprozesses systematisch nachvollzogen wird und schnell erfassbar ist.			
27. Es ist eine Strategie / ein Konzept für die einfache Zugänglichkeit und für die Verbreitung der Leitlinie dargelegt. [Dissemination]			
28. Ein Konzept zur Implementierung der Leitlinie wird beschrieben.			
29. Der Leitlinie ist eine Beschreibung zum methodischen Vorgehen (Leitlinien-Report) hinterlegt.			

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<sup>4</sup> Frage 24 bezieht sich auf die Darstellung in der Leitlinie. Die Übertragbarkeit auf das deutsche Versorgungssystem wird hier nicht diskutiert.

**Anhang E: Systeme zur Evidenzgraduierung****American Cardiology College / American Heart Association**

<b>Symbol</b>	<b>Bedeutung</b>
A	If the data were derived from multiple randomized clinical trials with large numbers of patients.
B	If the data were derived from a limited number of randomized trials with small numbers of patients, careful analyses of nonrandomized studies, or observational registries.
C	When expert consensus was the primary basis for the recommendation.

**European Society of Cardiology**

<b>Symbol</b>	<b>Bedeutung</b>
A	Data derived from multiple randomized clinical trials or meta-analyses.
B	Data derived from a single randomized clinical trials or large nonrandomized studies..
C	Consensus of the opinion of the experts and/or small studies, retrospective studies and registers.

**Finnish Medical Society Duodecim**

<b>Symbol</b>	<b>Bedeutung</b>
A	Strong research based evidence (Multiple relevant, high-quality scientific studies with homogenic results)
B	Moderate research based evidence (At least one relevant, high-quality study or multiple adequate studies)
C	Limited research based evidence (At least one adequate scientific study)
D	No research based evidence (Expert panel evaluation of other information)

**Institute for Clinican Systems Improvement**

<b>Symbol</b>	<b>Bedeutung</b>
Class A	Randomized, controlled trial
Class B	Cohort study
Class D	Cross-sectional study, Case series, Case report
Class M	Meta-analysis, Systematic review, Decision analysis, Cost-effectiveness analysis
Class R	Consensus statement, Consensus report, Narrative review
Class X	Medical opinion

**National Collaboration Centre for Primary Care and Royal College of General Practitioners**

<b>Level of evidence</b>	<b>Type of evidence</b>
1++	High-quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias
1–	Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias
2++	High-quality systematic reviews of case–control or cohort studies  High-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2–	Case–control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal
3	Non-analytical studies (for example, case reports, case series)
4	Expert opinion, formal consensus

**Netherlands Society of Cardiology/Netherlands Heart Foundation**

Wie ESC Guidelines

**Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislaufkrankungen**

Wie ESC Guidelines

**Scottish Intercollegiate Guidelines Network**

<b>Symbol</b>	<b>Bedeutung</b>
1++	High quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias.
1+	Well-conducted meta-analyses, systematic reviews, or RCTs with a low risk of bias.
1-	Meta-analyses, systematic reviews, or RCTs with a high risk of bias.
2++	High quality systematic reviews of case control or cohort or studies High quality case control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal.
2+	Well-conducted case control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal.
2-	Case control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal.
3	Non-analytic studies, e.g. case reports, case series.
4	Expert opinion.



**Anhang F: Systeme zur Empfehlungsgraduierung****American College of Cardiology / American Heart Association**

<b>Symbol</b>	<b>Bedeutung</b>
Class I	Conditions for which there is evidence or general agreement that a given procedure or treatment is useful and effective.
Class II	Conditions for which there is conflicting evidence or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa	Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb	Usefulness/efficacy is less well established by evidence/opinion.
Class III	Conditions for which there is evidence and/or general agreement that the procedure/treatment is not useful/effective and in some cases may be harmful.

**Arzneimittelkommission der Ärzteschaft**

<b>Symbol</b>	<b>Bedeutung</b>
↑↑	Aussage (z. B. zur Wirksamkeit) wird gestützt durch mehrere adäquate, valide klinische Studien (z. B. randomisierte kontrollierte klinische Studie) bzw. durch eine oder mehrere valide Meta-analysen oder systematische Reviews randomisierter kontrollierter klinischer Studien. Positive Aussage gut belegt.
↑	Aussage (z. B. zur Wirksamkeit) wird gestützt durch zumindest eine adäquate, valide klinische Studie (z. B. randomisierte kontrollierte klinische Studie). Positive Aussage belegt.
↓↓	Negative Aussage (z. B. zu Wirksamkeit oder Risiko) wird gestützt durch eine oder mehrere adäquate, valide klinische Studien (z. B. randomisierte kontrollierte klinische Studie), durch eine oder mehrere Meta-analysen bzw. systematische Reviews randomisierter kontrollierter klinischer Studien. Negative Aussage gut belegt.
↔	Es liegen keine sicheren Studienergebnisse vor, die eine günstige oder schädigende Wirkung belegen. Dies kann begründet sein durch das Fehlen adäquater Studien, aber auch durch das Vorliegen mehrerer, aber widersprüchlicher Studienergebnisse.

**Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislauferkrankungen**

Wie ESC Guidelines

**European Society of Cardiology**

<b>Symbol</b>	<b>Bedeutung</b>
Class I	Evidence and/or general agreement that a given procedure/treatment is beneficial, useful and effective.
Class II	Conflicting evidence and/or a divergence of opinion about the usefulness/efficacy of a procedure or treatment.
Class IIa	Weight of evidence/opinion is in favor of usefulness/efficacy.
Class IIb	Usefulness/efficacy is less well established by evidence/opinion.
Class III	Evidence or general agreement that the procedure/treatment is not useful/effective and in some cases may be harmful.

**Institute for Clinical Systems Improvement**

<b>Symbol</b>	<b>Bedeutung</b>
Grade I:	<p>The evidence consists of results from studies of strong design for answering the question addressed. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design. Studies with negative results have sufficiently large samples to have adequate statistical power.</p>
Grade II:	<p>The evidence consists of results from studies of strong design for answering the question addressed, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about generalizability, bias, research design flaws,</p> <p>or adequacy of sample size. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent with minor exceptions at most.</p>
Grade III:	<p>The evidence consists of results from studies of strong design for answering the question addressed, but there is substantial uncertainty attached to the conclusion because of inconsistencies</p> <p>among the results from different studies or because of serious doubts about generalizability, bias, research</p> <p>design flaws, or adequacy of sample size. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed.</p>

**National Collaboration Centre for Primary Care and Royal College of General Practitioners**

<b>Recommendation grade</b>	<b>Evidence</b>
A	<p>At least one meta analysis, systematic review, or randomised controlled trial (RCT) that is rated as 1++, and is directly applicable to the target population, or</p> <p>A systematic review of RCTs or a body of evidence that consists principally of studies rated as 1+, is directly applicable to the target population and demonstrates overall consistency of results, or</p> <p>Evidence drawn from a NICE technology appraisal</p>
B	<p>A body of evidence that includes studies rated as 2++, is directly applicable to the target population and demonstrates overall consistency of results, or</p> <p>Extrapolated evidence from studies rated as 1++ or 1+</p>
C	<p>A body of evidence that includes studies rated as 2+, is directly applicable to the target population and demonstrates overall consistency of results, or</p> <p>Extrapolated evidence from studies rated as 2++</p>
D	<p>Evidence level 3 or 4, or</p> <p>Extrapolated evidence from studies rated as 2+, or</p> <p>Formal consensus</p>

**Nationale Versorgungs Leitlinie**

Symbol	Bedeutung
A	Starke Empfehlung
B	Empfehlung
C	Offen

**Netherlands Society of Cardiology/Netherlands Heart Foundation**

Wie ESC Guidelines

**Scottish Intercollegiate Guidelines Network**

Symbol	Bedeutung
A	At least one meta-analysis, systematic review, or RCT rated as 1++, and directly applicable to the target population; <i>or</i> A body of evidence consisting principally of studies rated as 1+, directly applicable to the target population, and demonstrating overall consistency of results.
B	A body of evidence including studies rated as 2++, directly applicable to the target population, and demonstrating overall consistency of results; <i>or</i> Extrapolated evidence from studies rated as 1++ or 1+.
C	A body of evidence including studies rated as 2+, directly applicable to the target population and demonstrating overall consistency of results; <i>or</i> Extrapolated evidence from studies rated as 2++.
D	Evidence level 3 or 4; <i>or</i> Extrapolated evidence from studies rated as 2+.
<input checked="" type="checkbox"/>	Good practice points  Recommended best practice based on the clinical experience of the guideline development group.

**Anhang G: Angaben zur Adaptierung in den Leitlinien**

Leitliniename	Jahr	Herausgeber	Angaben zu Quelleitlinien
<b>DGPR</b>	2007	Deutsche Gesellschaft für Prävention und Rehabilitation von Herz-Kreislauferkrankungen	New Zealand Heart Foundation , Best practice evidence based guideline – cardiac rehabilitation, 2002 European guidelines on cardiovascular disease prevention in clinical practice – Third Joint Task Force of European and other Societies on Cardiovascular Disease Prevention in Clinical Practice, 2003
<b>NVL</b>	2006	Programm für Nationale VersorgungsLeitlinien	ACC/AHA 2002 Guideline Update for the Management of Patients With Chronic Stable Angina: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines, 2002 Leitlinie zur Diagnose und Behandlung der chronischen koronaren Herzerkrankung der Deutschen Gesellschaft für Kardiologie, Herz- und Kreislaufforschung (DGK) in Kooperation mit der Deutschen Gesellschaft für Prävention und Rehabilitation von Herz-Kreislauferkrankungen (DGPR) und der Deutschen Gesellschaft für Thorax-, Herz- und Gefäßchirurgie (DGTHG), 2003 Koronare Herzkrankheit - Empfehlungen zur Prophylaxe und Therapie der stabilen koronaren Herzkrankheit in der Reihe Arzneiverordnung in der Praxis, Therapieempfehlungen der Arzneimittelkommission der deutschen Ärzteschaft, 2004
<b>NZGG CR</b>	2003	New Zealand Guidelines Group	SIGN Hypertension in older people (Nr. 49), 2001 SIGN Management of Diabetes (Nr. 55), 2001 SIGN Secondary prevention of coronary heart disease following myocardial infarction (Nr. 41), 2000

(Fortsetzung)

**Anhang G (Fortsetzung): Angaben zur Adaptierung in den Leitlinien**

Leitlinienname	Jahr	Herausgeber	Angaben zu Quelleitlinien
<b>NZGG REHA</b>	2002	New Zealand Guidelines Group	Department of Human Services, Victoria. Best practice guidelines for cardiac rehabilitation and secondary prevention, Australia, 1999 U.S. Department of Health and Human Services. Agency for Health Care Policy and Research. National Heart, Lung, and Blood Institute (NHLBI). Cardiac Rehabilitation. Clinical Practice Guideline Number 17, 1995
<b>SIGN R</b>	2002	Scottish Intercollegiate Guideline Network	US Department for Health and Human Services, Agency for Health Care Policy and Research (AHCPR), Cardiac Rehabilitation. Clinical Practice Guideline Number 17, 1995 Außerdem wurden mehrere (systematische) Reviews zur kardiovaskulären Rehabilitation zu Grunde gelegt.



**Anhang H: Grafische Darstellung der DELBI-Bewertung**

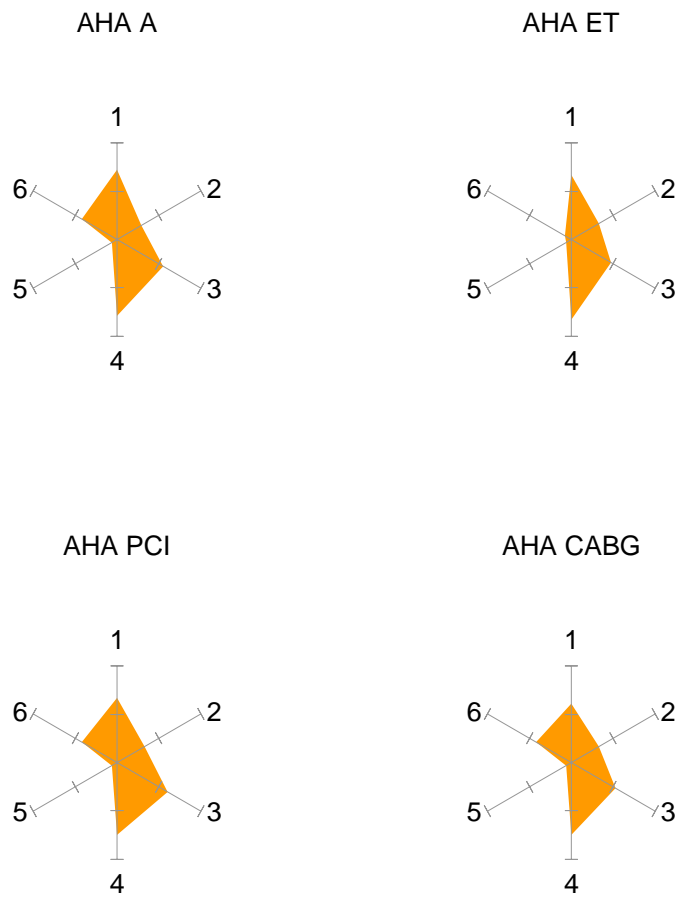


Abbildung 2: Grafische Darstellung der DELBI-Bewertung (Domänen 1–6)

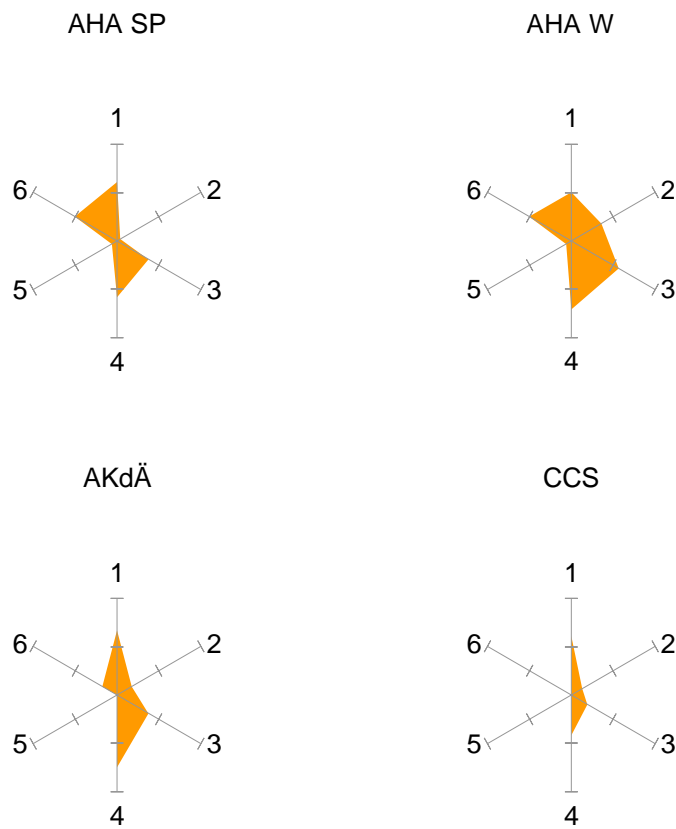


Abbildung 2 (Fortsetzung): Grafische Darstellung der DELBI-Bewertung (Domänen 1-6)

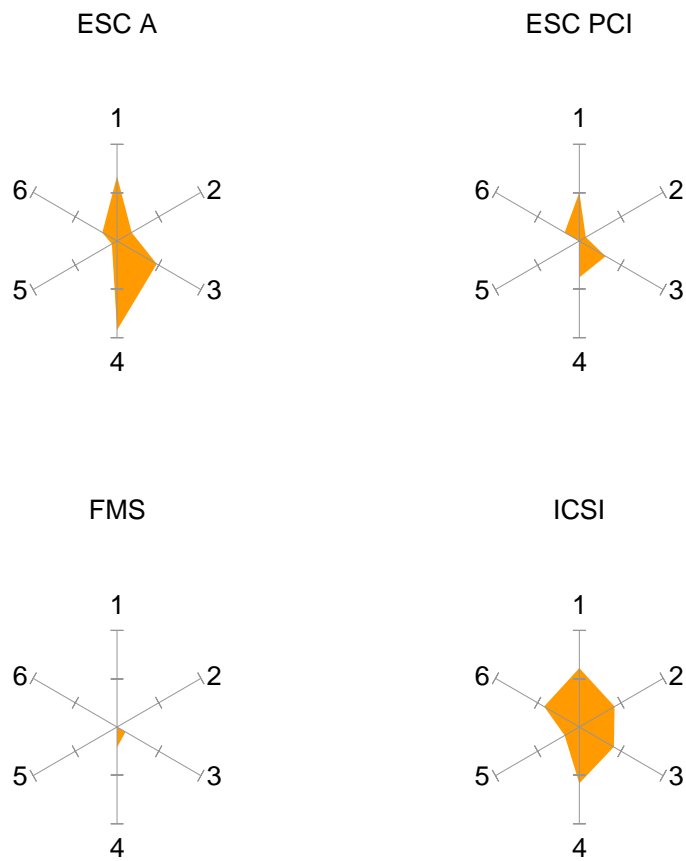


Abbildung 2 (Fortsetzung): Grafische Darstellung der DELBI-Bewertung (Domänen 1-6)

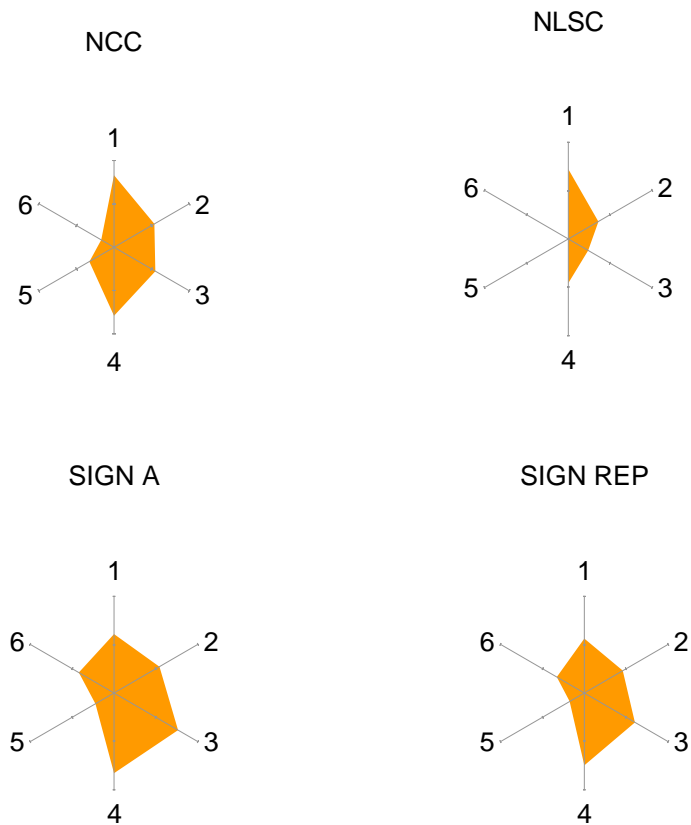


Abbildung 2 (Fortsetzung): Grafische Darstellung der DELBI-Bewertung (Domänen 1-6)

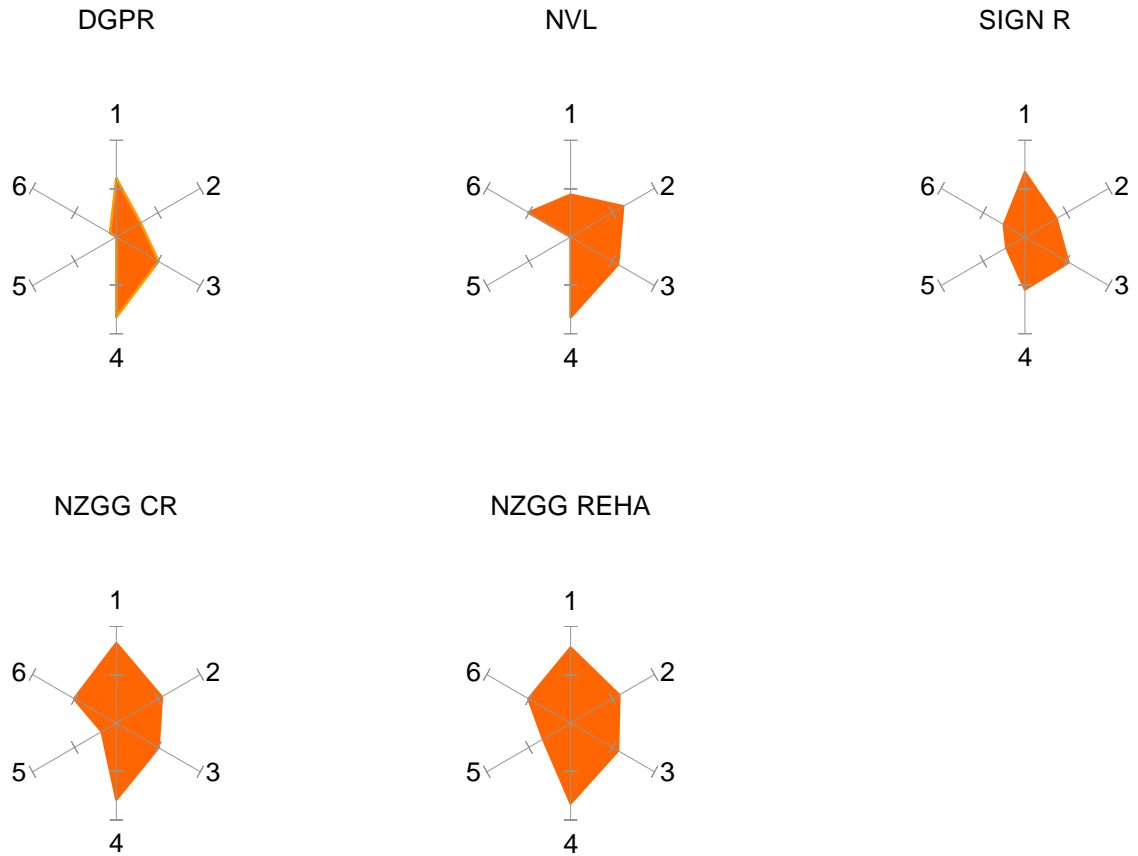


Abbildung 3: Grafische Darstellung der DELBI-Bewertung der adaptierten Leitlinien (Domänen 1-6)