Joint Symposium:

ESC Council of Cardiology Practice/Privat Praktisierende Kardiologers//Norwegian Society for Cardiology

Tromso,June 18th 2009

Cardiology Practice in Europe.

How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?


Straßenansicht
Verkehr
Karte
Satellit
Gelände
Thank you for the kind invitation to TROMSØ!
Baffin Sea
Greenland
Iceland
Sverige
Sweden
Suomi
Finland
Norge
Norway
Россия
Russia
United Kingdom
Ireland
Polska
Poland
Беларусь
Belarus
Deutschland
Germany
Україна
Ukraine
Österreich
Austria
France
Romania
Kazakhstan
Italia
Italy
España
Spain
Portugal
Ελλάς
Greece
Türkiye
Turkey
Uzbekistan
Kyrgyzstan
Turkmenistan
Tunisia
Syria
Iraq
Iran
Afghanistan
Pakistan
Morocco
Algeria
Libya
Egypt
Saudi Arabia
India
Nepal
Myanmar (Burma)
Western Sahara
Mauritania
Mali
Niger
Chad
Sudan
Yemen
Oman
Burkina Faso
Guinea
Ghana
Nigeria
Ivory Coast
Ethiopia
Somalia
Kenya
North Atlantic Ocean
Cuba
PR
Venezuela
Guyana
Suriname
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Cardiology Practice
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It has been a great pleasure and honour for me

„Midsummernight“ in Tromso- A very recent article in our „yellow press“!

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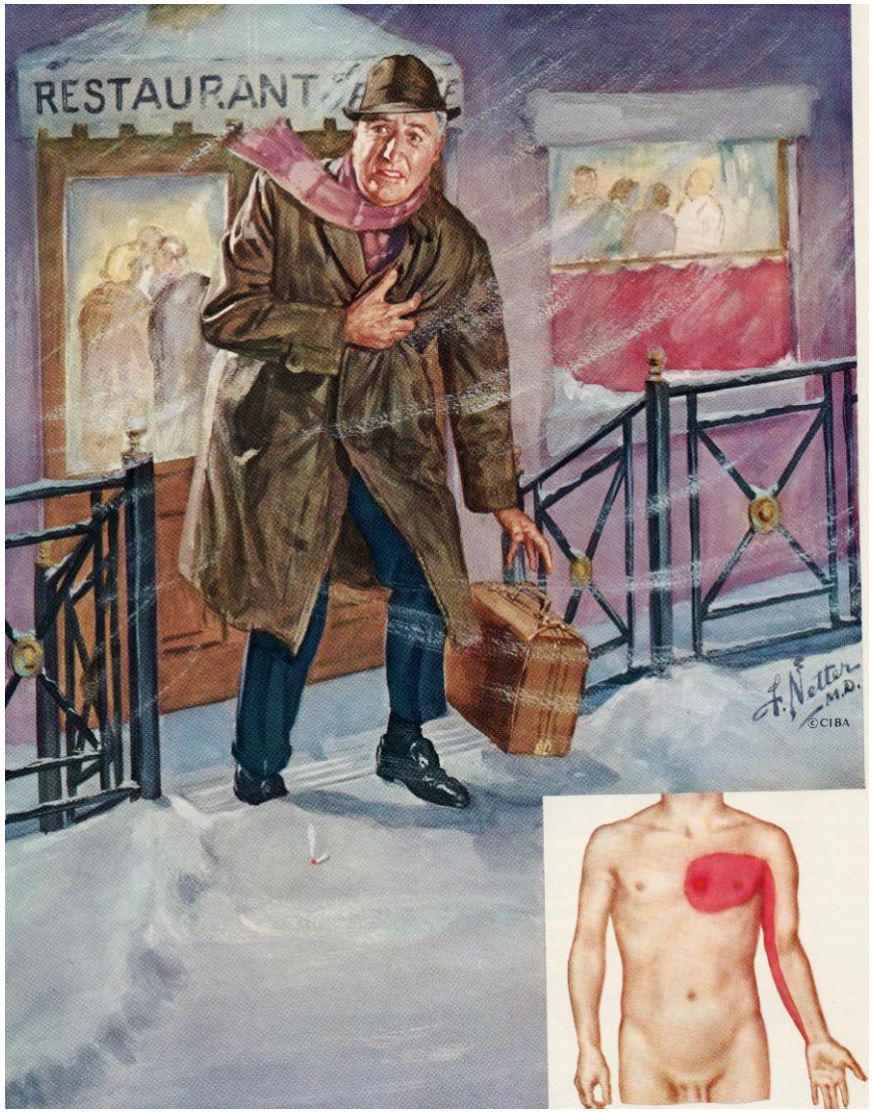

Cardiology Practice in Europe

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INTRODUCTION

Stable angina
Coronary Artery Disease
Our daily bred….but:

**„Do not fear to repeat
what already has been said.
People need repetition.“**

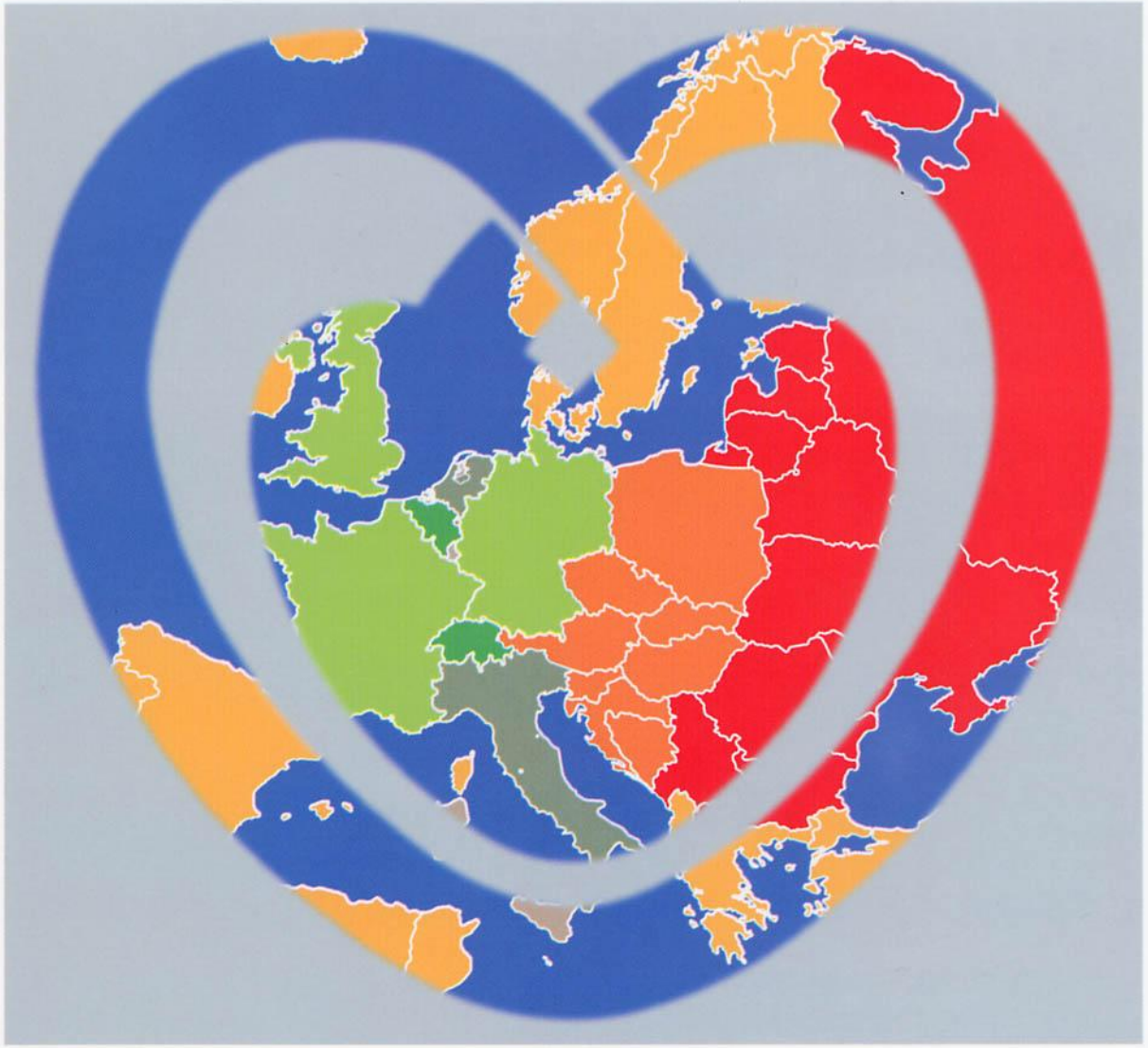
Laennec 1781-1826

Stable angina
Coronary Artery Disease
Our daily bred….but:

I think everything has been said concerning this topic- but not by everybody“

F. Sonntag, 2009

CARDIOVASCULAR DISEASES IN EUROPE



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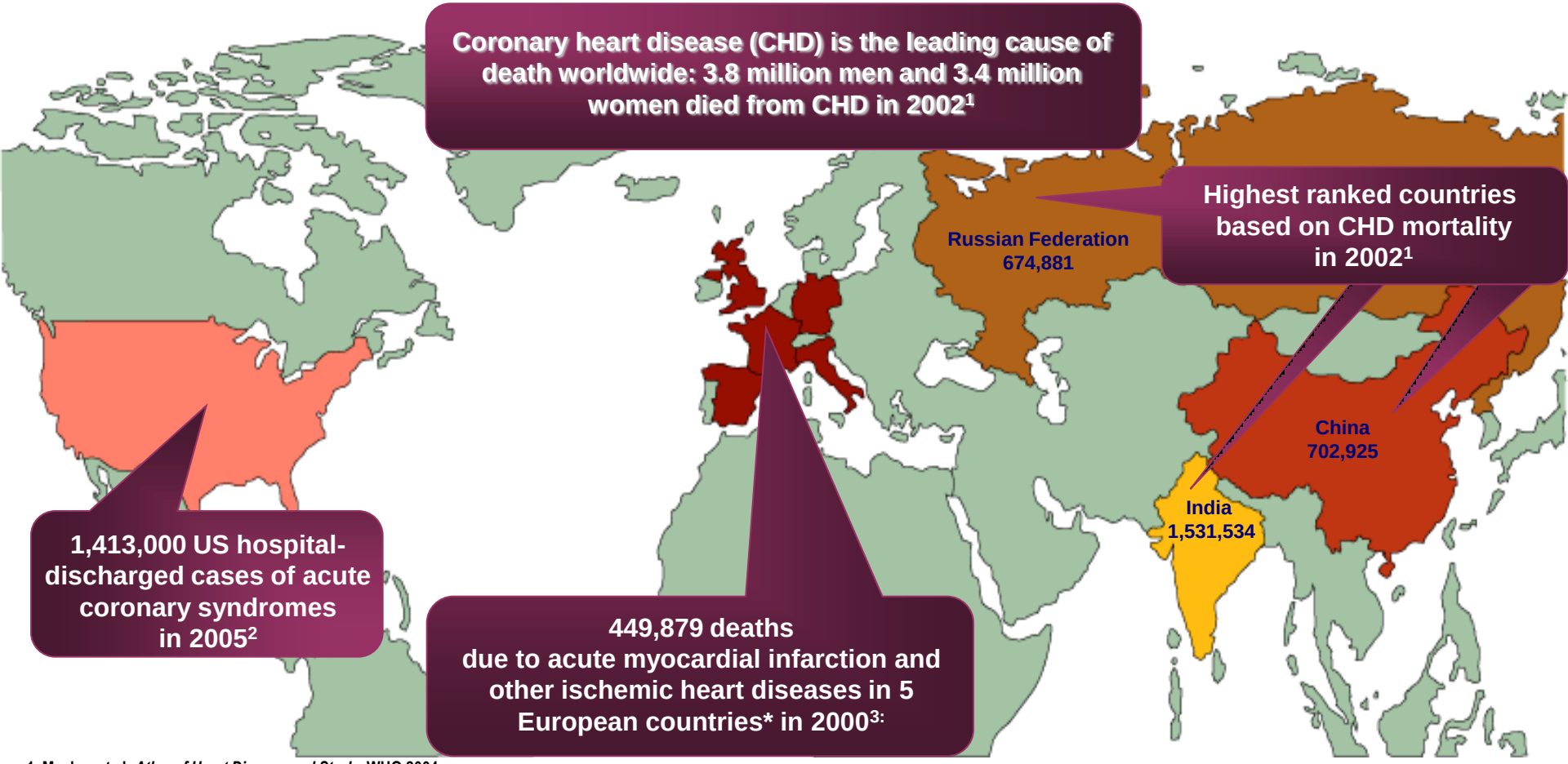
Burden of CV diseases- a world wide challenge



1. Mackay et al. *Atlas of Heart Disease and Stroke* WHO 2004
2. *Heart Disease and Stroke Statistics – 2008 Update* AHA
3. World Health Organization. WHO Statistics, Mortality Database

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Burden of CV disease in Europe

- Despite all modern therapies, the burden of CV disease in Europe, is still unbearable.
- CVD causes about 450 thousand deaths annually in Europe
- CVD causes nearly half of all deaths in Europe (49%) and in the EU (42%)
- Overall CVD is estimated to cost the EU economy €169 billion a year

✓ Therefore, a tremendous need exists to save more lives, to help patients to maintain a good quality of life, and to find ways to do so without exhausting the financial HC sources

- **One way must be an early diagnosis !**
- **The best way –of course- would be Primary Prevention**

Cardiology Practice in Europe.
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

0 3 5 140 5 3 0

People who stay healthy tend to have certain characteristics:

0 No tobacco

3 Walk 3 km daily, or 30 mins any moderate activity

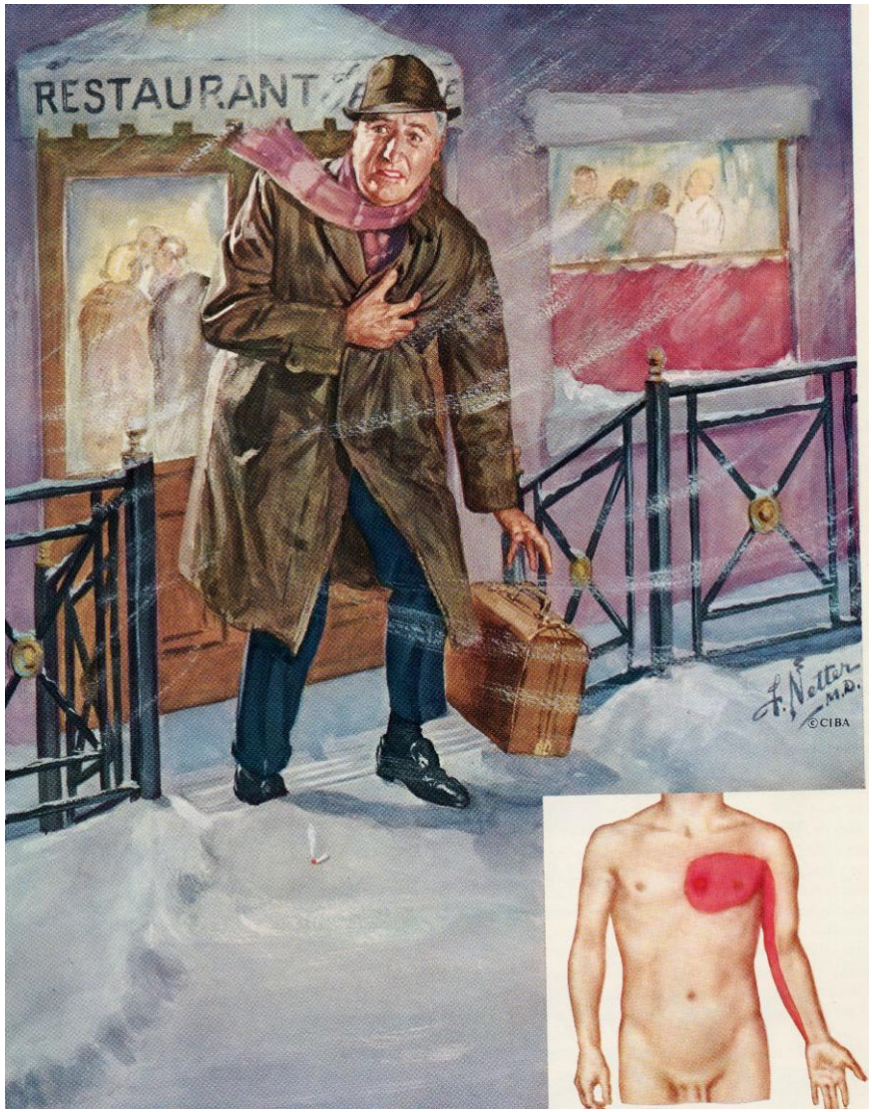
5 Portions of fruit and vegetables a day

140 Blood pressure less than 140 mm Hg systolic

5 Total blood cholesterol <5mmol/l

3 LDL cholesterol <3 mmol/l

0 Avoidance of overweight and diabetes



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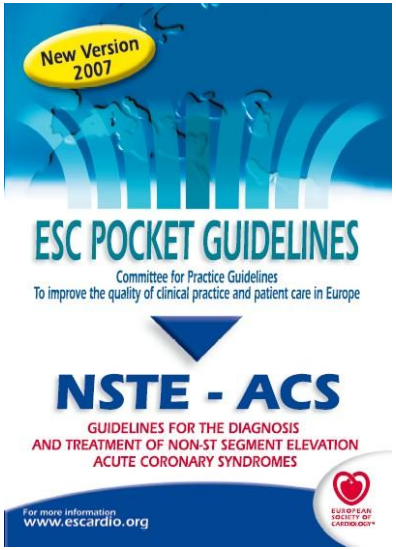
1. INTRODUCTION

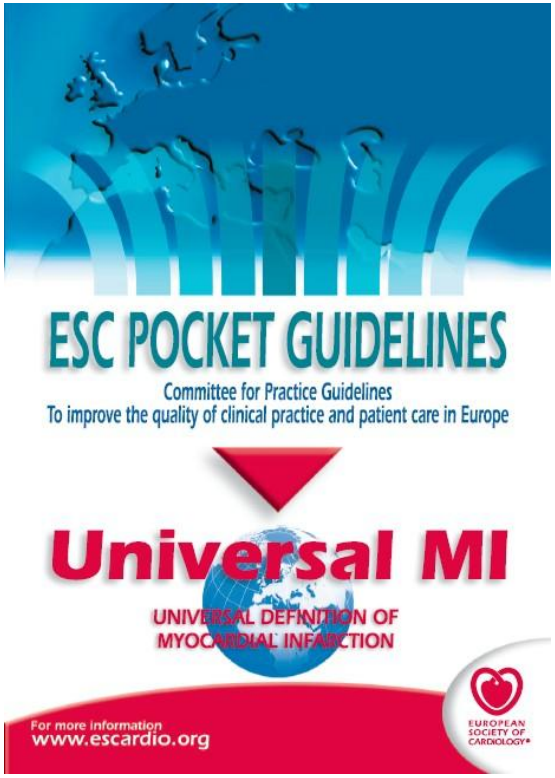
2. How should a patient with chronic stable angina best be investigated outside hospital ?

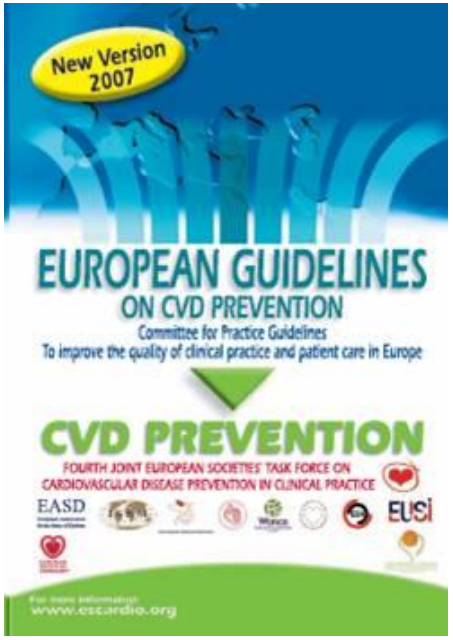
3.Reimbursment

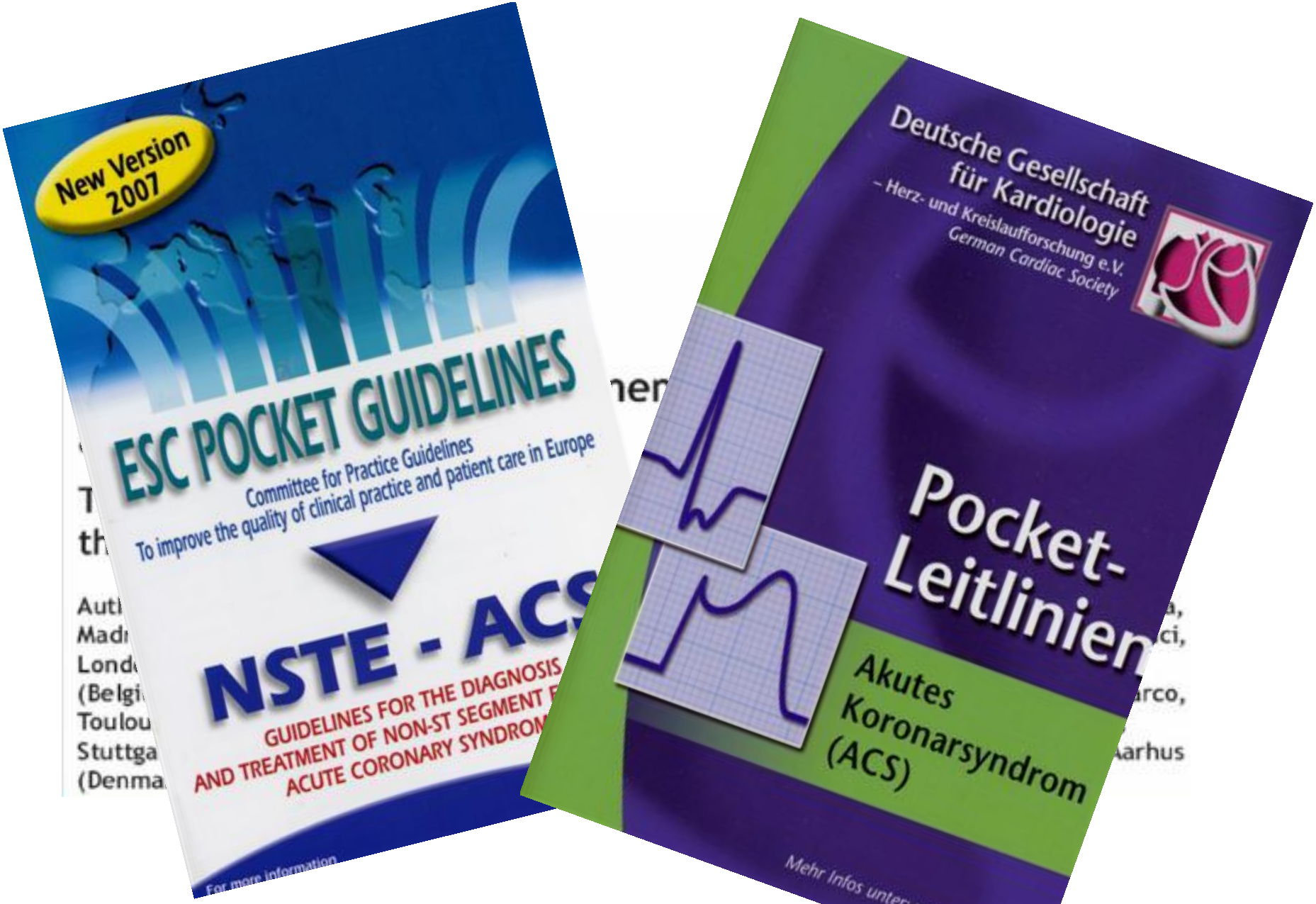
Mission: Reduce the Burden of Cardiovascular Disease in Europe

New ESC Guidelines








New Version 2007
ESC POCKET GUIDELINES
Committee for Practice Guidelines
To improve the quality of clinical practice and patient care in Europe
NSTE - ACS
GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF NON-ST SEGMENT
ACUTE CORONARY SYNDROM
For more information
Deutsche Gesellschaft für Kardiologie
– Herz- und Kreislaufforschung e.V.
German Cardiac Society
Pocket-Leitlinien
Akutes Koronarsyndrom (ACS)
Mehr Infos unter: www.dgk

European Heart Journal
doi:10.1093/eurheartj/ehl002

ESC Guidelines

Guidelines on the management of stable angina pectoris: full text‡

The Task Force on the Management of Stable Angina Pectoris of the European Society of Cardiology

Authors/Task Force Members, Kim Fox, Chairperson, London (UK)*, Maria Angeles Alonso Garcia, Madrid (Spain), Diego Ardissino, Parma (Italy), Pawel Buszman, Katowice (Poland), Paolo G. Camici, London (UK), Filippo Crea, Roma (Italy), Caroline Daly, London (UK), Guy De Backer, Ghent (Belgium), Paul Hjemdahl, Stockholm (Sweden), José Lopez-Sendon, Madrid (Spain), Jean Marco, Toulouse (France), João Morais, Leiria (Portugal), John Pepper, London (UK), Udo Sechtem, Stuttgart (Germany), Maarten Simoons, Rotterdam (The Netherlands), Kristian Thygesen, Aarhus (Denmark)

Cardiology Practice in Europe.
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Definition, diagnosis and assessment

- Stable angina: clinical syndrome characterized by discomfort in the chest, jaw, shoulder, back or arms
  - Elicited by exertion or emotional stress
  - Relieved by rest or nitroglycerin
- Term is usually confined to cases in which the syndrome can be attributed to myocardial ischaemia
- Purpose of diagnosis and assessment:
  - Confirmation of the presence of ischaemia in patients with suspected stable angina
  - Identification or exclusion of associated conditions or precipitating factors
  - Risk stratification
  - To plan treatment options
  - Evaluation of the efficacy of treatment

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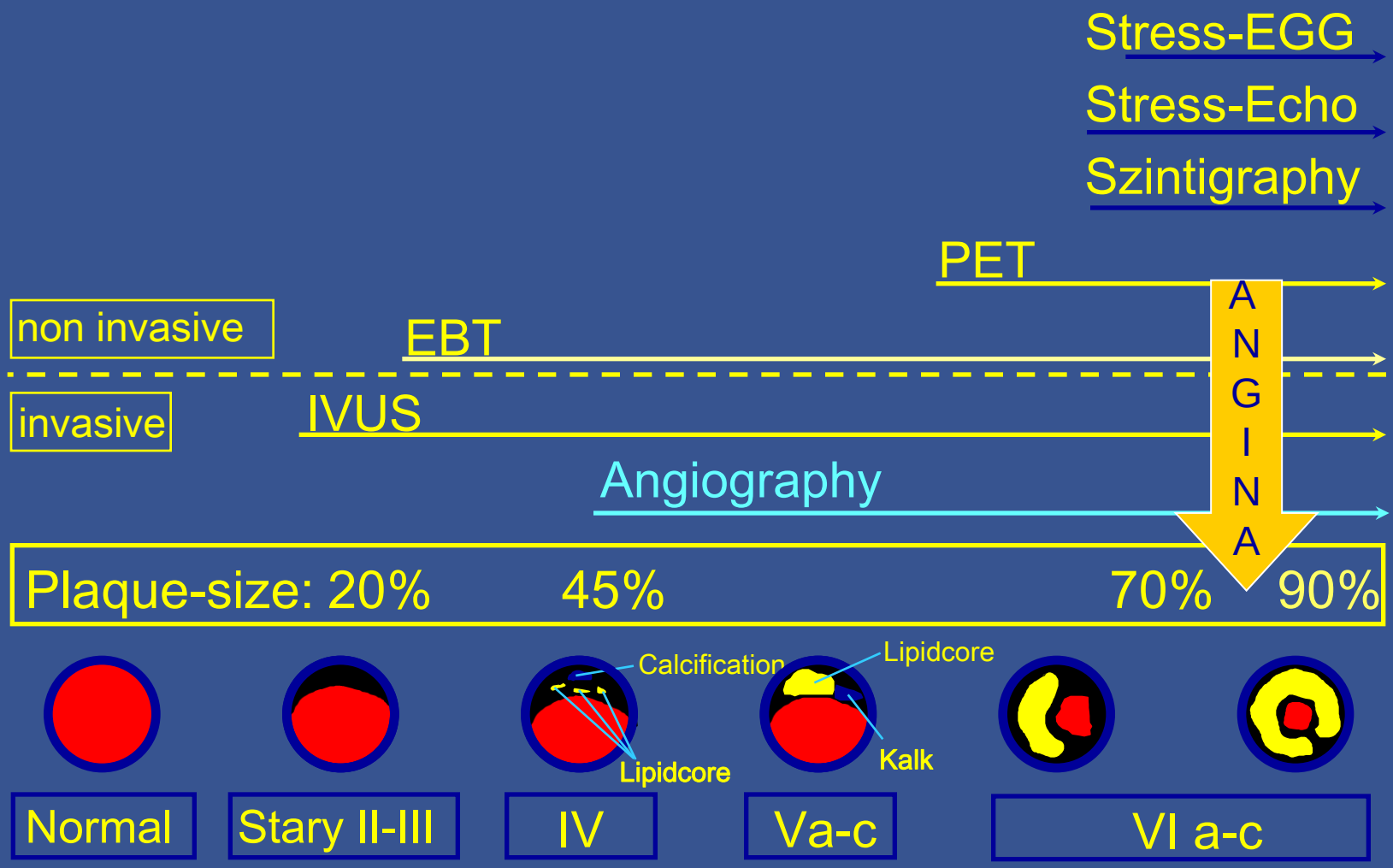
The leading symptom!

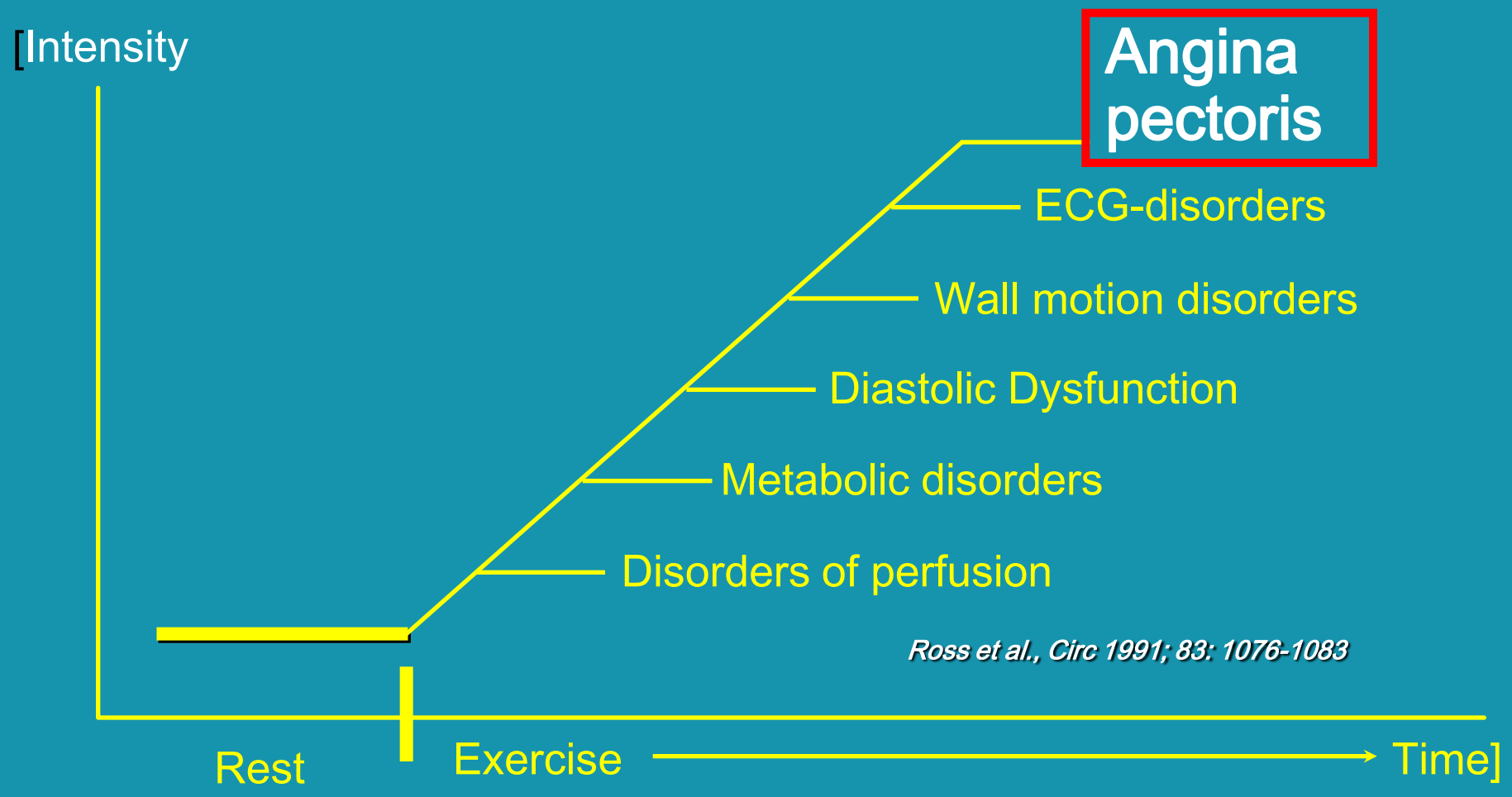
CAD with regard to time and development of stenosis compared to relevance of testing procedures

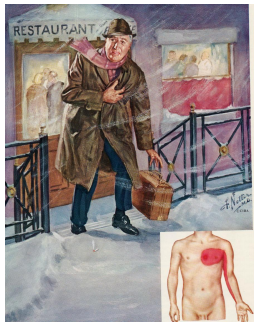


Frank Sonntag,
Henstedt Ulzburg , Germany

Quelle: Erbel, Dtsch Ärzteblatt 1998; 95: 1092-1098

Developement of ischemic events with regard increasing exercise





Definition of the clinical differential diagnosis of chronic stable chest pain in accordance with the guidelines of the ESC

Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Typical angina (definite): Meets three of the following characteristics

- Substernal chest discomfort of characteristic quality and duration
- Provoked by excertion or emotional stress
- Relieved by rest and / or GTN

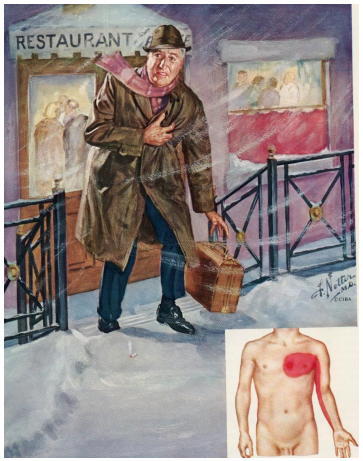
Atypical angina (probable) :Meets two of these characteristics

Non cardiac chest pain: Meets one or none of the characteristics

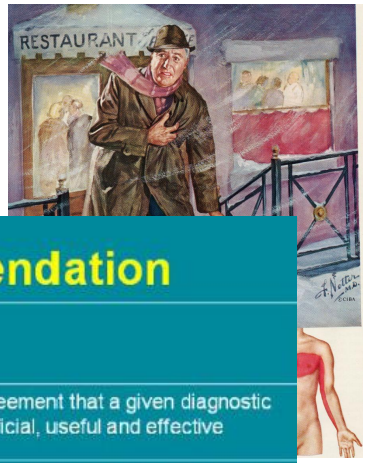
Canadian Cardiovascular Society classification of angina severity

Class	Level of symptoms
Class I	"Ordinary activity does not cause angina" Angina with strenuous or rapid or prolonged exertion only
Class II	"Slight limitation of ordinary activity" Angina on walking or climbing stairs rapidly, walking uphill or exertion after meals, in cold weather, when under emotional stress, or only during the first few hours after awakening
Class III	"Marked limitation of ordinary physical activity" Angina on walking one or two blocks* on the level or one flight of stairs at a normal pace under normal conditions
Class IV	"Inability to carry out any physical activity without discomfort" or "angina at rest"

* Equivalent to 100–200 m.



Cardiology Practice
How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries? In Europe.



Levels of evidence

Level of evidence	Available evidence
A	Multiple randomized clinical trials or meta-analyses
B	Single randomized clinical trial or large non-randomized studies
C	Consensus opinion of experts and/or small studies, retrospective studies, registries

Levels of recommendation

Strength of recommendation	Definition
Class I	Evidence and/or general agreement that a given diagnostic procedure/treatment is beneficial, useful and effective
Class II	Conflicting evidence and/or divergence of opinions about the usefulness/efficacy of a treatment or procedure
IIa	Weight of evidence/opinion is in favour of usefulness/efficacy
IIb	Usefulness/efficacy is less well established by evidence/opinion
Class III	Evidence or general agreement that the treatment or procedure is not useful/effective and in some cases may be harmful

Recommendations for routine non-invasive investigations for stable angina (1)

Test	For Diagnosis	For Prognosis
Laboratory tests		
Full blood count, creatinine	I C	I B
Fasting glucose	I B	I B
Fasting lipid profile	I B	I B
hs CRP, homocysteine, lp(a), apoA, apoB	IIb B	IIb B
ECG		
Initial evaluation	I C	I B
During episode of angina	I B	
Routine periodic ECG on successive visits	IIb C	IIb C
Ambulatory ECG monitoring		
Suspected arrhythmia	I B	
Suspected vasospastic angina	IIa C	
Suspected angina with normal exercise test	IIa C	

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A	Multiple randomized clinical trials or meta-analyses
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Recommendations for routine non-invasive investigations for stable angina (2)

Test	For Diagnosis	For Prognosis
Chest X-ray		
Suspected heart failure, or abnormal cardiac auscultation	I B	I B
Suspected significant pulmonary disease	I B	
Echocardiogram		
Suspected heart failure, abnormal auscultation, abnormal ECG, Q waves, BBB, marked ST changes	I B	I B
Previous myocardial infarction	I B	
Hypertension or diabetes mellitus	I C	I B/C
Intermediate or low risk patient not due to have alternative assessment of LV function		IIa C
Exercise ECG		
First line for initial evaluation, unless unable to exercise/ECG not evaluable	I B	I B
Patients with known CAD and significant deterioration in symptoms		I B
Routine periodic testing once angina controlled	IIb C	IIb C

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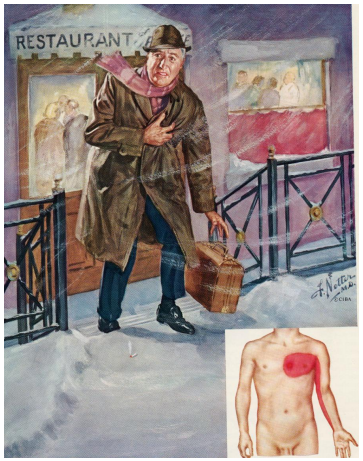

Recommendations for routine non-invasive investigations for stable angina (3)

Test	For Diagnosis	For Prognosis
Exercise imaging technique (echo or radionuclide)		
Initial evaluation in patients with uninterpretable ECG	I B	I B
Patients with non-conclusive exercise test (but adequate exercise tolerance	I B	I B
For angina post-revascularization	IIa B	IIa B
To identify location of ischaemia in planning revascularization	IIa B	
Assessment of functional severity of intermediate lesions on arteriography	IIa C	
Pharmacological stress imaging technique		
Patients unable to exercise	I B	I B
Patients with non-conclusive exercise test due to poor exercise tolerance	I B	I B
To evaluate myocardial viability	IIa B	
Other indications as for exercise imaging where local facilities favour pharmacological rather than exercise stress	IIa B	IIa B
Non-invasive CT arteriography		
Patients with low probability of disease and non-conclusive or positive stress test	IIb C	

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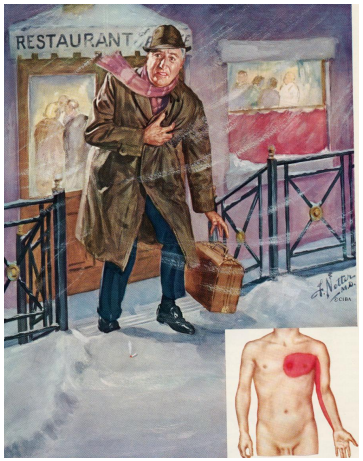

Reasons to terminate exercise stress test

- Symptom limitation, e.g., pain, fatigue, dyspnoea, and claudication
- Combination of symptoms such as pain with significant ST changes
- Safety reasons:
  - Marked ST-depression
  - ST-elevation ≥ 1 mm
  - Significant arrhythmia
  - Sustained fall in systolic blood pressure > 10 mmHg
  - Marked hypertension (>250 mmHg systolic or > 115 mmHg diastolic
- Achievement of maximum predicted heart rate in patients with excellent exercise tolerance who are not tired and at the discretion of the supervising physician

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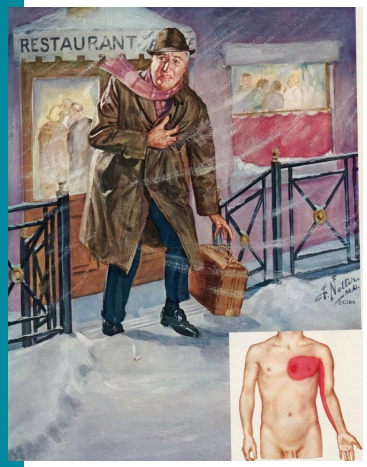

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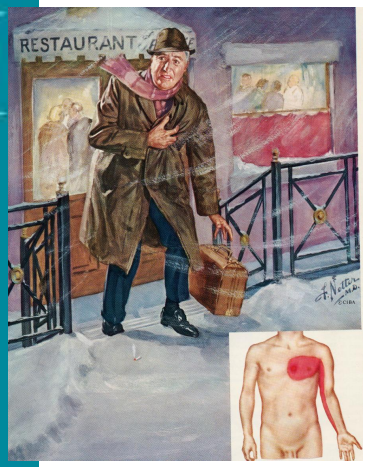
Test characteristics for investigations used in the diagnosis of stable angina

	Diagnosis of coronary artery disease	
	Sensitivity (%)	Specificity (%)
Exercise ECG	68	77
Exercise echo	80–85	84–86
Exercise myocardial perfusion	85–90	70–75
Dobutamine stress echo	40–100	62–100
Vasodilator stress echo	56–92	87–100
Vasodilator stress myocardial perfusion	83–94	64–90



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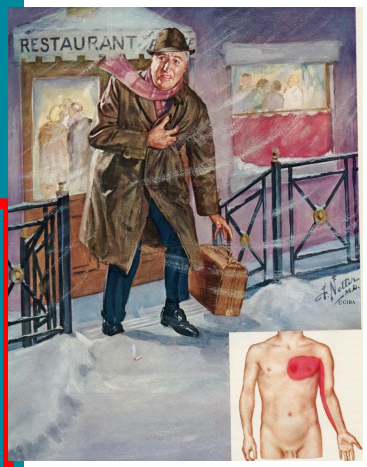
Vasodilator stress echo	56–[illegible]	87–100
Vasodilator stress myocardial perfusion	83–94	64–[illegible]

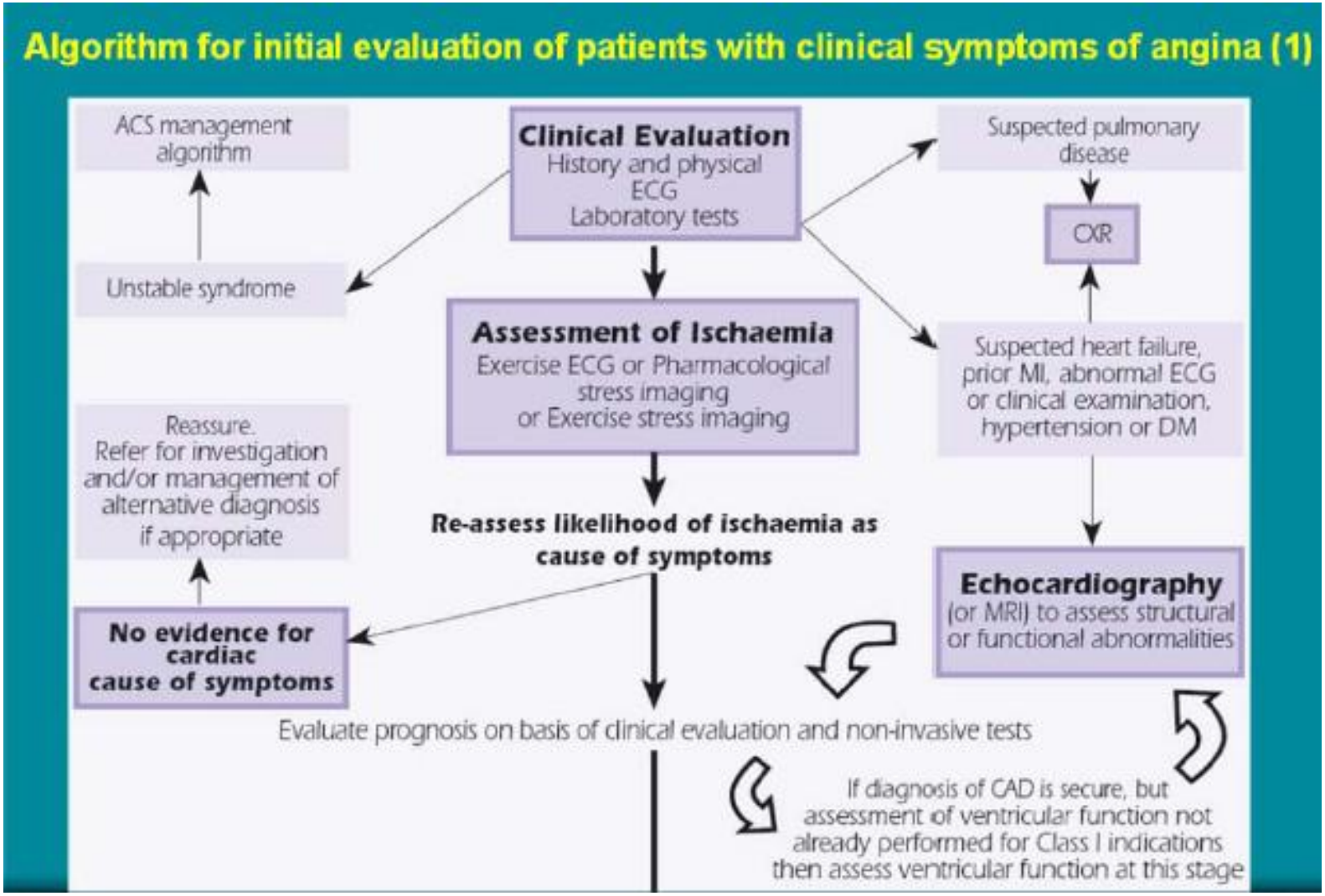
Not available in many private practices in several European countries



Availability of diagnostic procedures in private practice

Cardiology Practice in Europe. How should a patient with chronic stable angina best be investigated outside hospital and what is the reimbursement in various European countries?

Clinical evaluation/History	100 %
Exercise stresstest	nearly 100 %
Echocardiographie	50 – 100 %
Stress Echocardiography - Physical stress - Pharmacological stress	0 - 70 %
Calcium Scoring	Usually in cooperation with radiologist
Coronarangiography by -Non invasive MSCT	dito



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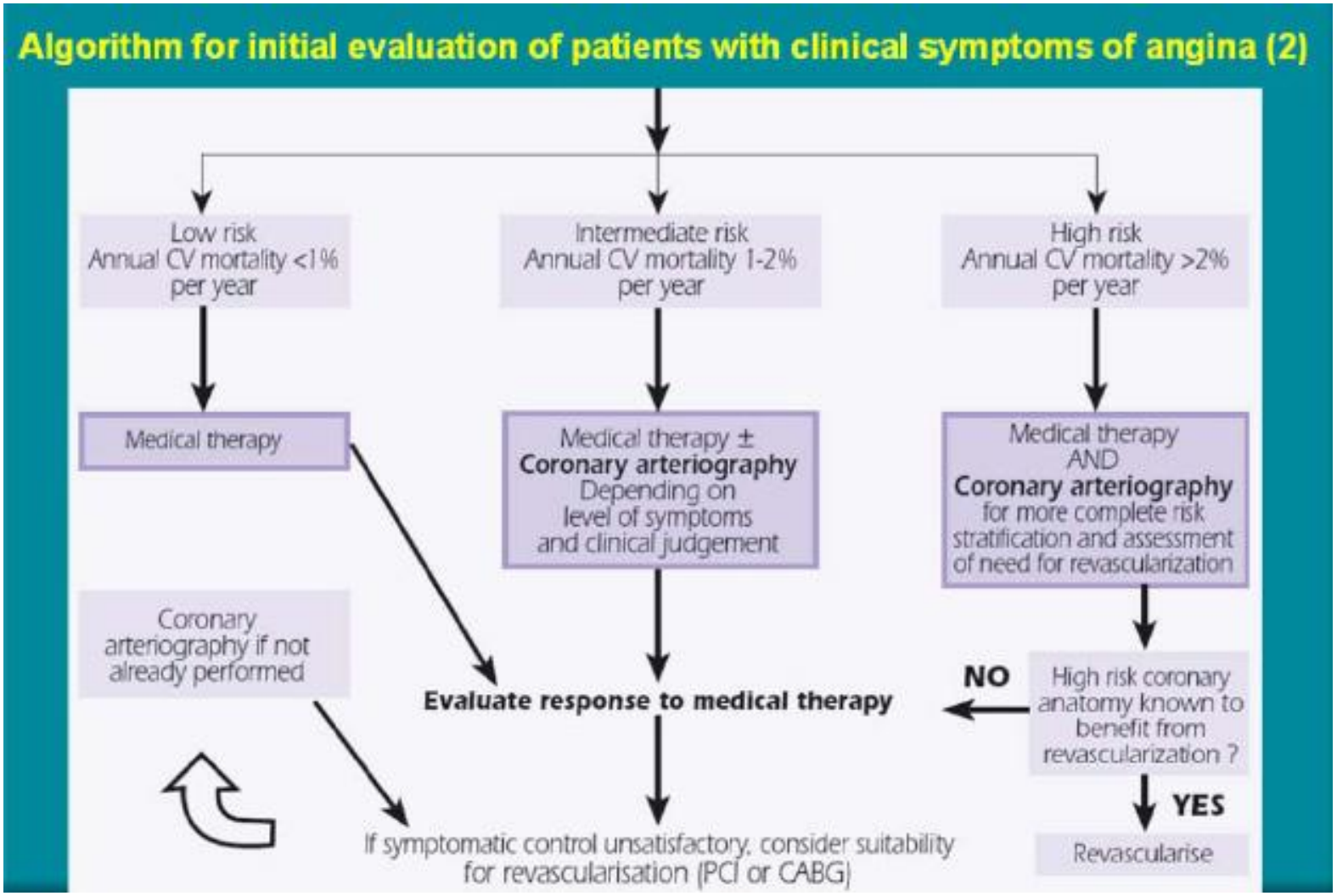

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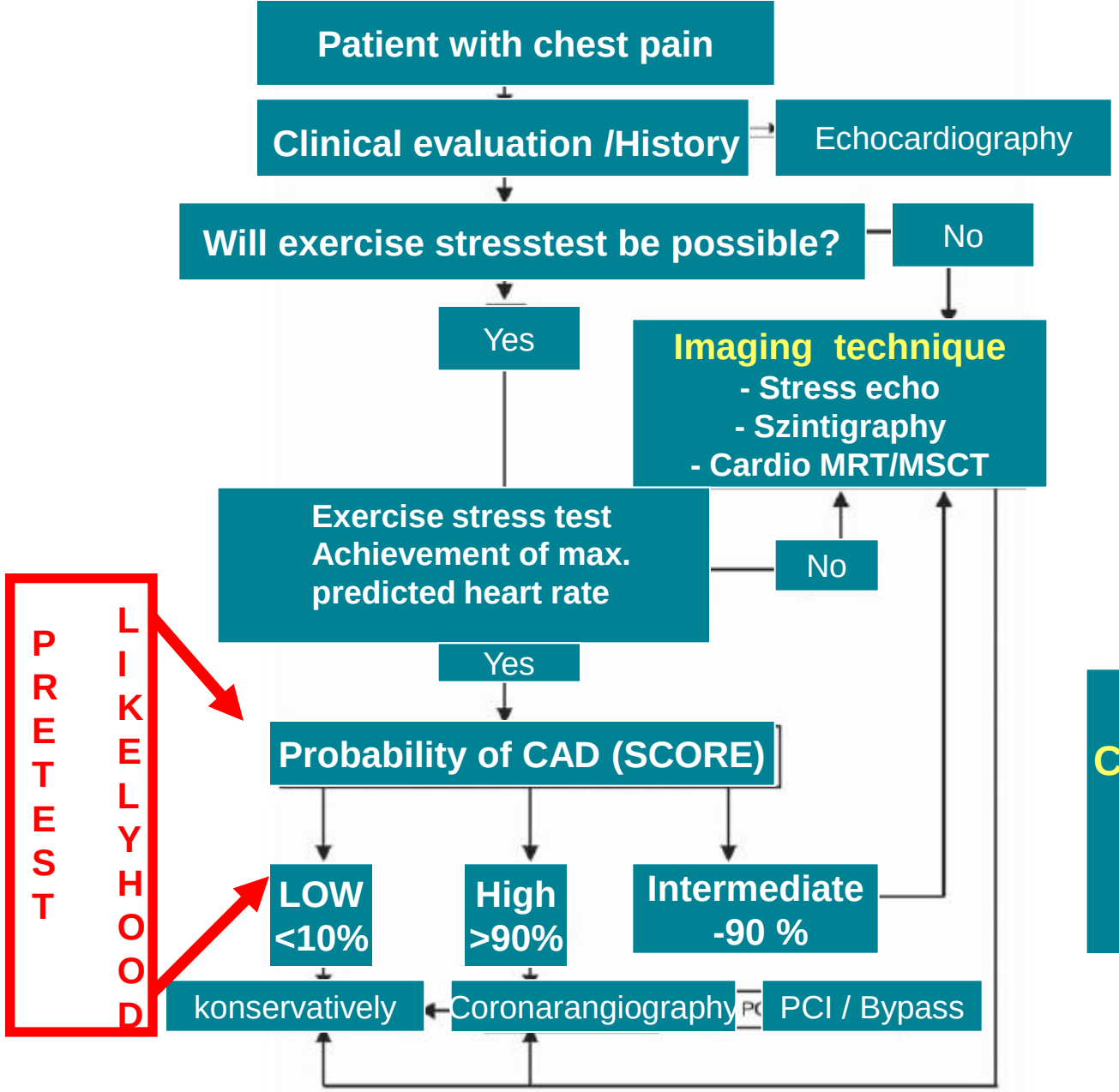

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Flowchart of Conventional clarification of chest pain

mod .n .Silber S ,R,ichartz B, HERZ 2007;32:,139-58, 2007 Nr 2.

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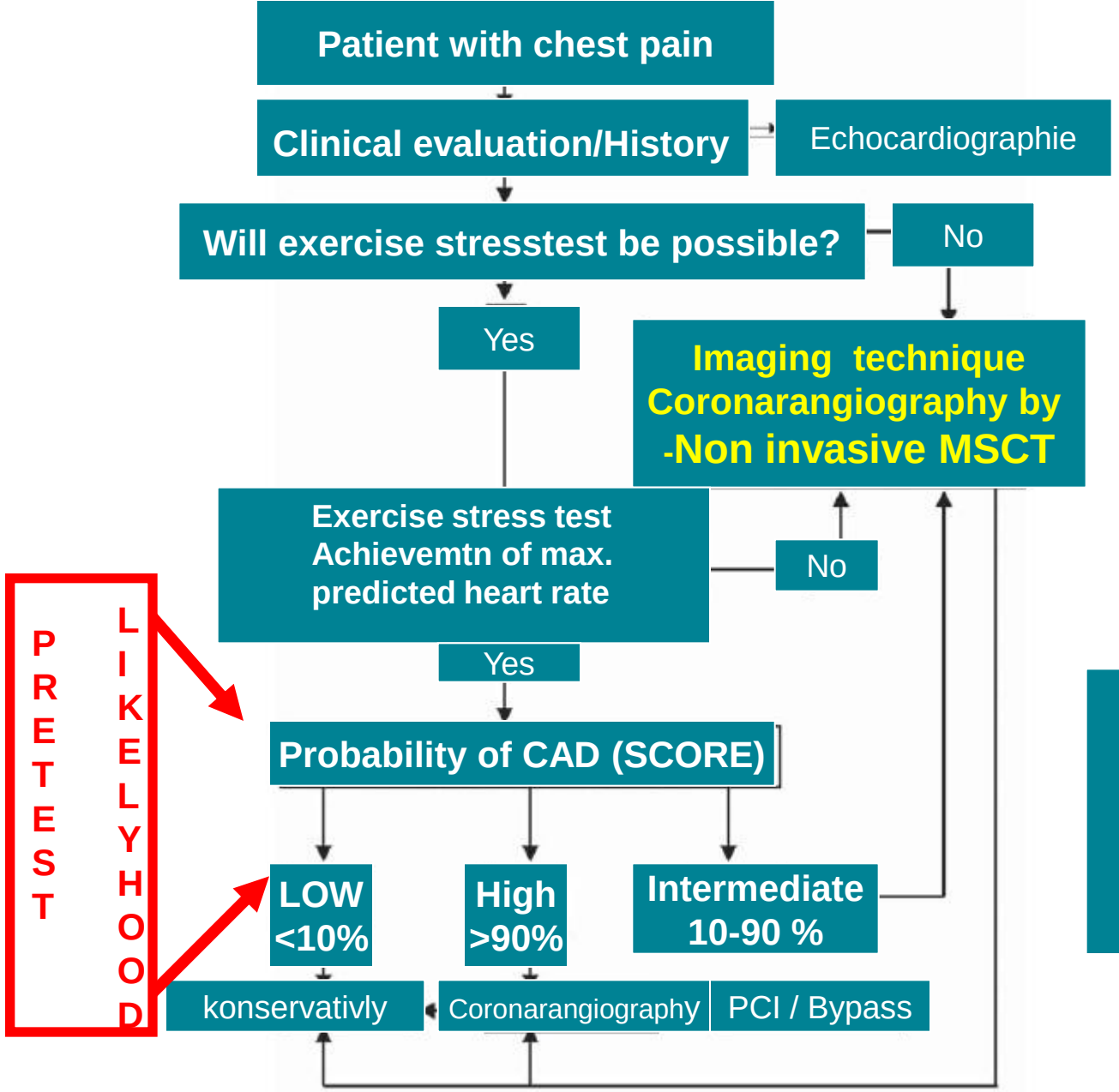
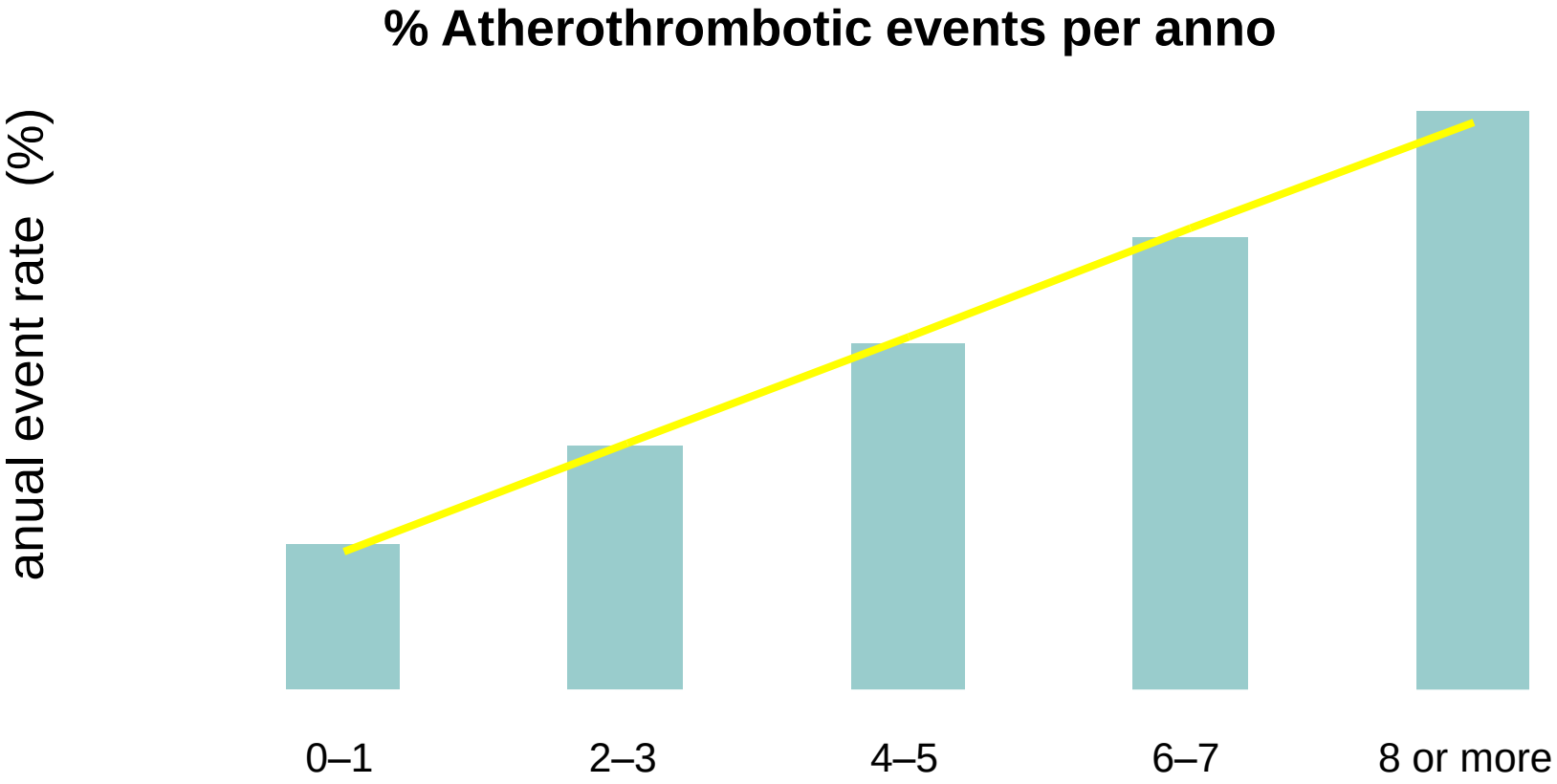


Flowchart of
Modern clarification
of chest pain

mod. n. Silber S, Richartz B,
HERZ 2007;32:,139-582007 Nr 2.

Event rate rises with number of risk factors



Caro J. *Eur Heart J* 2001;**22**(abstr suppl):522

How do I assess CVD risk quickly and easily?

- Those with-

  ~known CVD

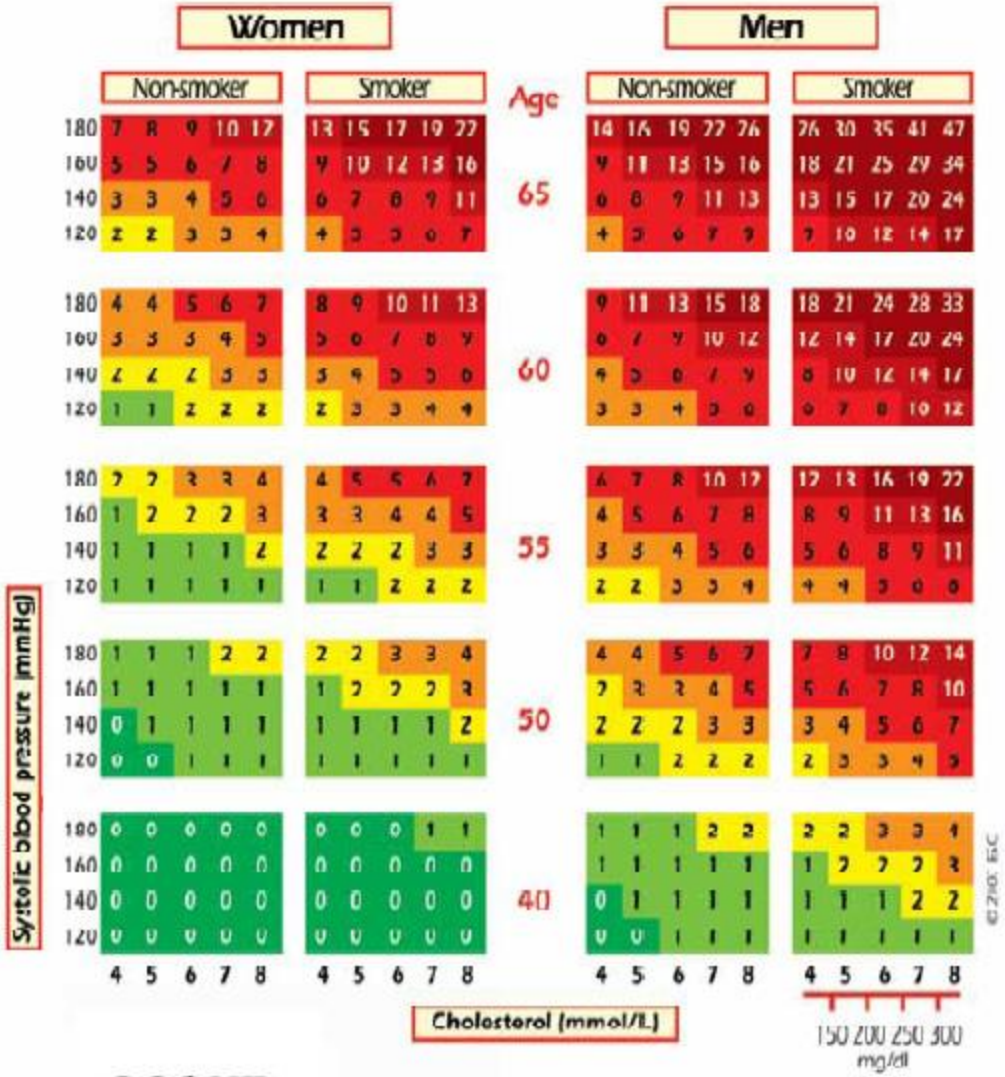
  ~type 2 diabetes or type 1 diabetes with microalbuminuria,

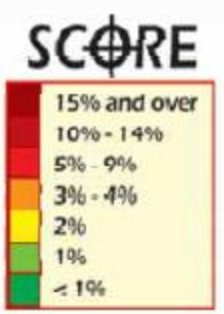
  ~ very high levels of individual risk factors

are already at INCREASED CVD RISK and need management of all risk factors

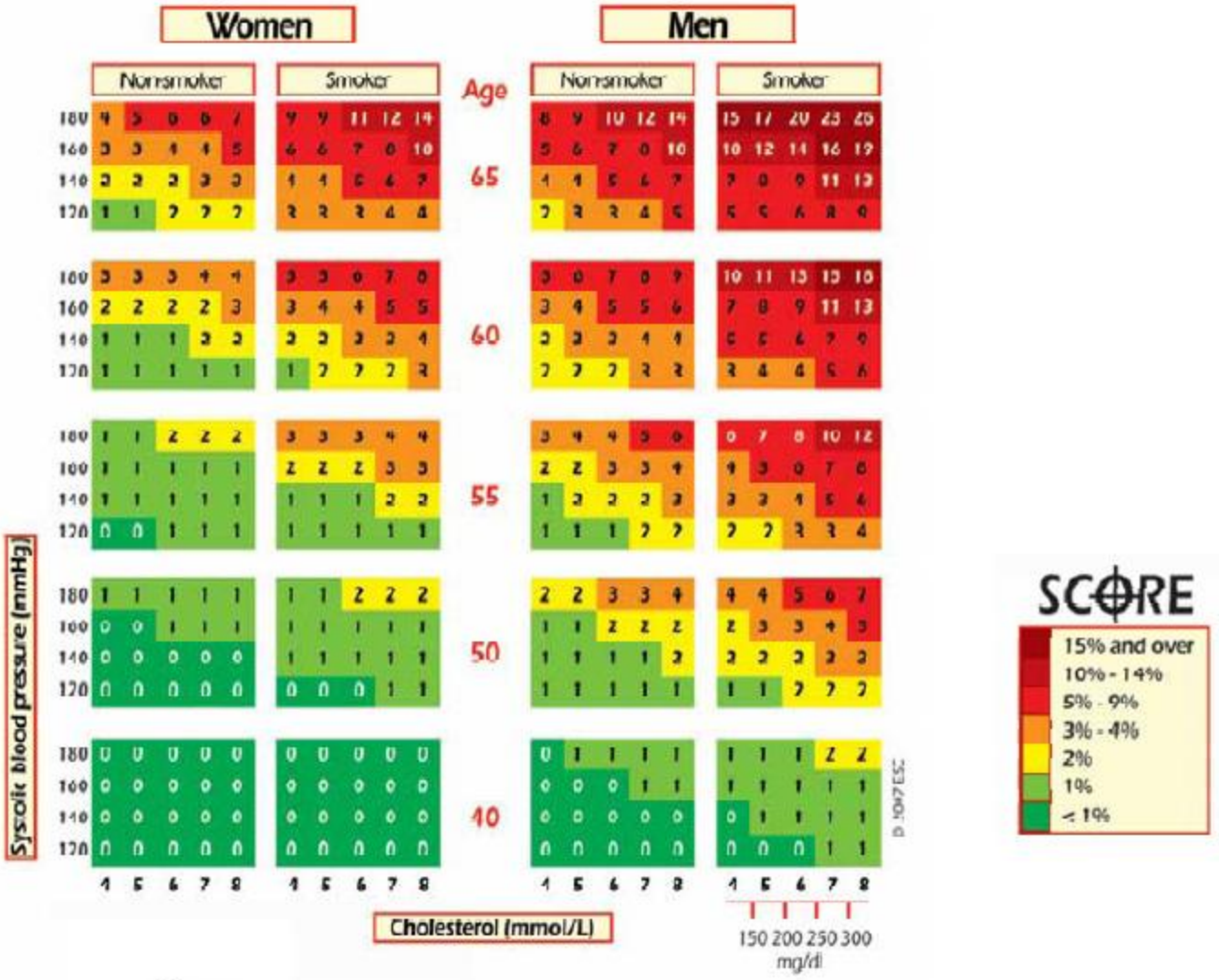
For all other people, the SCORE risk charts can be used to estimate total risk—this is critically important because many people have mildly raised levels of several risk factors that, in combination, can result in unexpectedly high levels of total CVD risk

10 year risk of fatal CVD in high risk regions





10 year risk of fatal CVD in low risk regions



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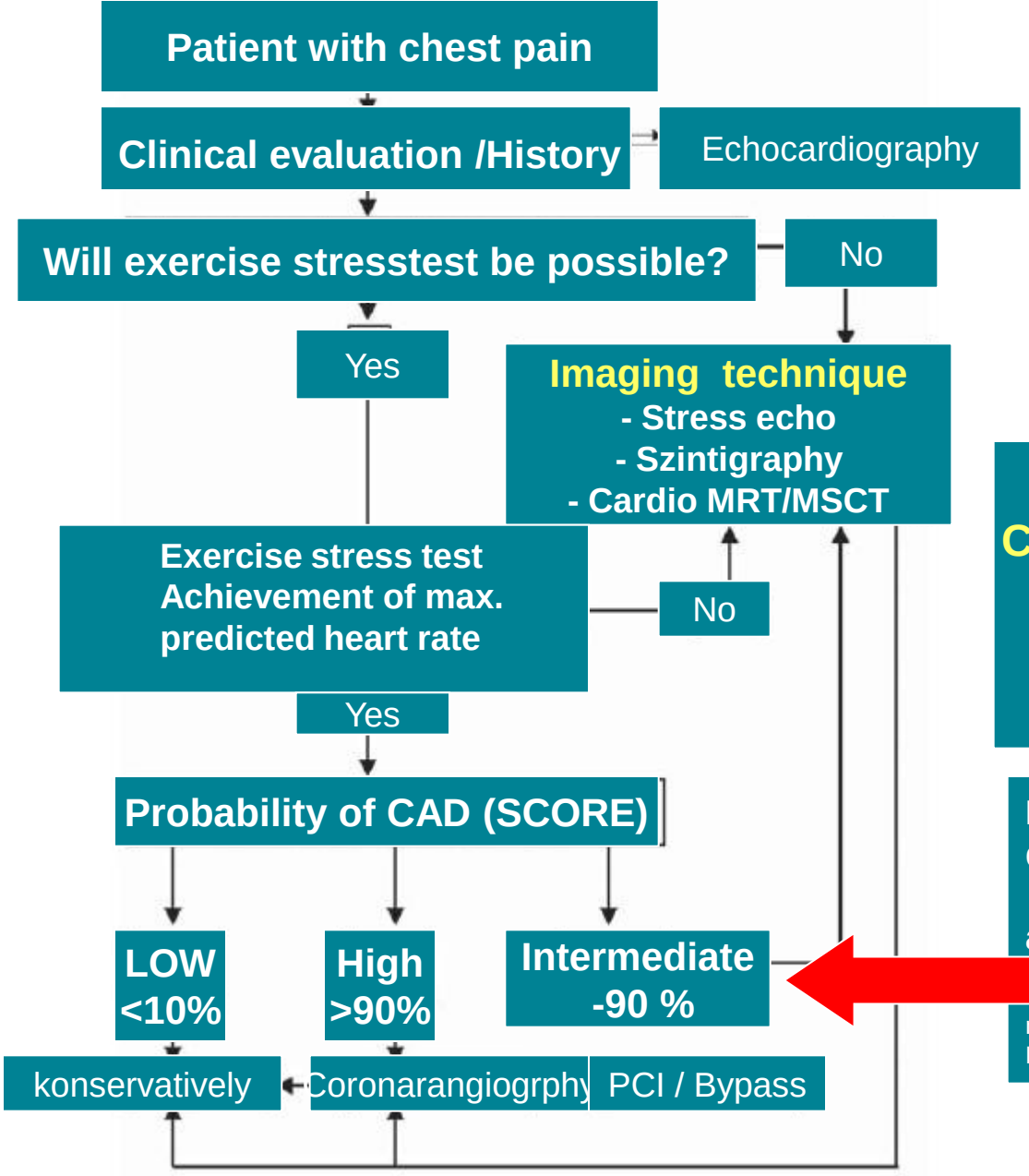
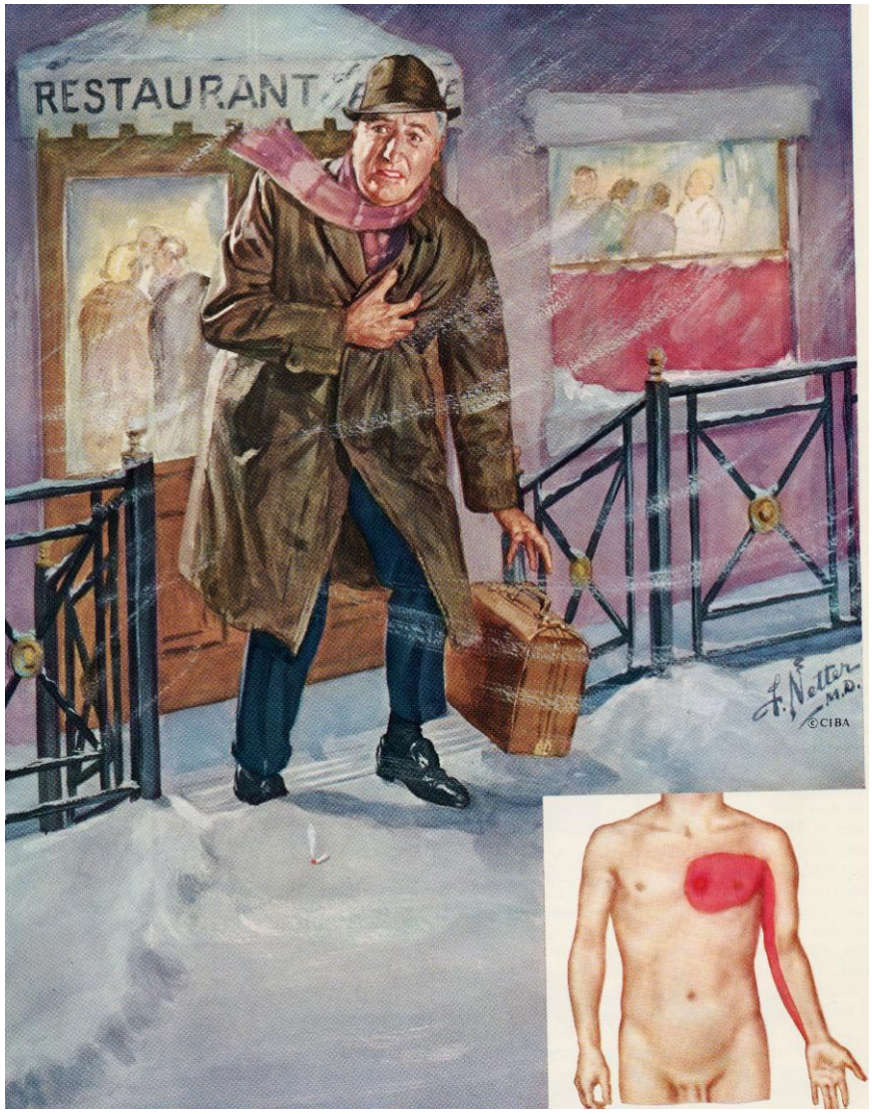


Flowchart of Conventional clarification of chest pain

mod .n .Silber S ,Richartz B,
HERZ 2007;32:,139-582007 Nr 2.

Probability of stenosing CAD dependent on age, sex, type of chest pain and the result of the stress ECG

mod .n .Silber S ,Richartz B,
HERZ 2007;32:,139-582007 Nr 2.



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1. INTRODUCTION

2. How should a patient with chronic stable angina best be investigated outside hospital ?

3.Reimbursement

REIMBURSEMENT IN PRIVATE PRACTICE I

(Belgium, France, Germany, Italy Norway ,Portugal, Spain,Switzerland, Czech Republic)

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Clinical evaluation/History	From 12 – 80 Euro
Exercise stresstest	From 27 – 100 Euro
Echocardiography	< 50 – 150 Euro
Stress Echocardiography - Physical stress - Pharmacological stress	235 Euro
Calcium Scoring	Usually in cooperation with radiologist
Coronarangiography by - Non invasive MSCT	about 400 Euro

REIMBURSEMENT IN PRIVATE PRACTICE II

(Belgium, France, Germany, Italy Norway ,Portugal, Spain,Switzerland, Czech Republic)

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Special forms

France:

Consultation: 42 – 58 Euro
-Stresstest : 77 Euro
-Echo . 96 Euro
-Stressecho: 150 Euro

Germany

Consultation +Examination+ ECG+ Stresstest + Echo
45 -75 Euro
(„Regelleistungsvolumen“)
Privat : 6 -10 fold higher

REIMBURSEMENT IN PRIVATE PRACTICE III

(Belgium, France, Germany, Italy Norway ,Portugal, Spain,Switzerland, Czech Republic)

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Special forms NORWAY

Consultation+pyhs.exam+ECG+ Exercise ECG : 110€. Spirometrie+Echo+ultrasound of the aorta/carotides: 138 €

No Reimbursement

Stressecho(N)
Szintigraphy (N)
Troponin Test(N)

Difference NHS -Private:

400 – 5000 €
full examination
„All inclusive“)(private negotiation)

REIMBURSEMENT IN PRIVATE PRACTICE IV

(Belgium, France, Germany, Italy Norway ,Portugal, Spain,Switzerland, Czech Republic)

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Special forms
Czech Republic

Consultation+pyhs.exam :24 €
ECG : 5€
Exercise ECG : 21 €.
Spirometrie+Echo+ultrasound
of the aorta/carotides: 138 €

No Reimbursement/
Only in hospitals
available

Stressecho
Szintigraphy
MSCT

Difference NHS -Private:

„ It is not clear!“

REIMBURSEMENT IN PRIVATE PRACTICE V

(Belgium, France, Germany, Italy Norway ,Portugal, Spain,Switzerland, Czech Republic)

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Special forms Switzerland

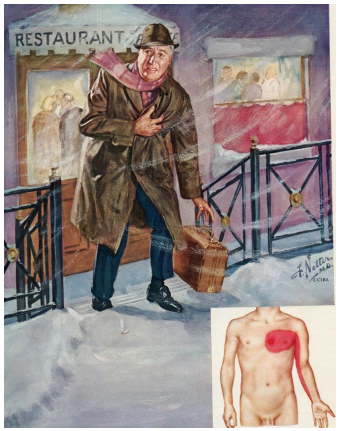
Consultation+pyhs.exam:

60.25 €
ECG : 21 €
Exercise ECG : 83.4 €.
Stress Echo :255.15 €
Szintigraphy : 977.50 €
Troponin Test: 33 €

Difference NHS -Private:

No difference
90 % of the amount are paid

SUMMARY I

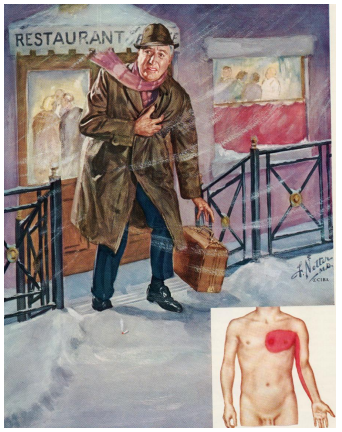


- Coronary artery disease is widespread in European countries

- Cardiologists in private practice should investigate patients with chronic stable angina early and outside hospital .
Many „modern“ examination are not available in many practices

- There are great differences in European countries concerning the equipment of private practices.

SUMMARY II



• Reimbursement of often done procedures differs to a high extent in European countries

•These differences cannot be explainded through medical reasons but most likely through political and socioeconomic ones.

•Harmonization of these differences are not likely to occur within the next 5 to 10 years (if at all!!)

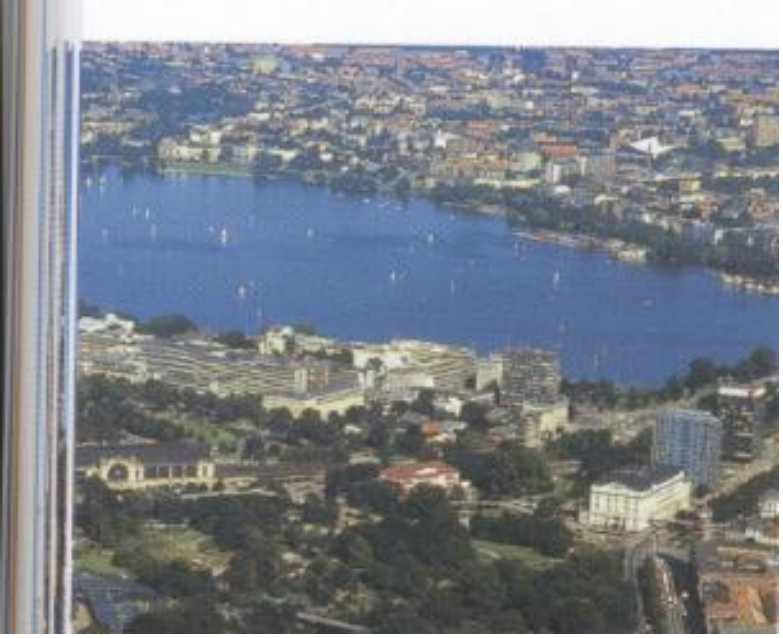
Reyn Dirksen (*1924), „Europe – All our Colours to the Mast", Marshallplan-Plakat 16 des „European Recovery Program", um 1950

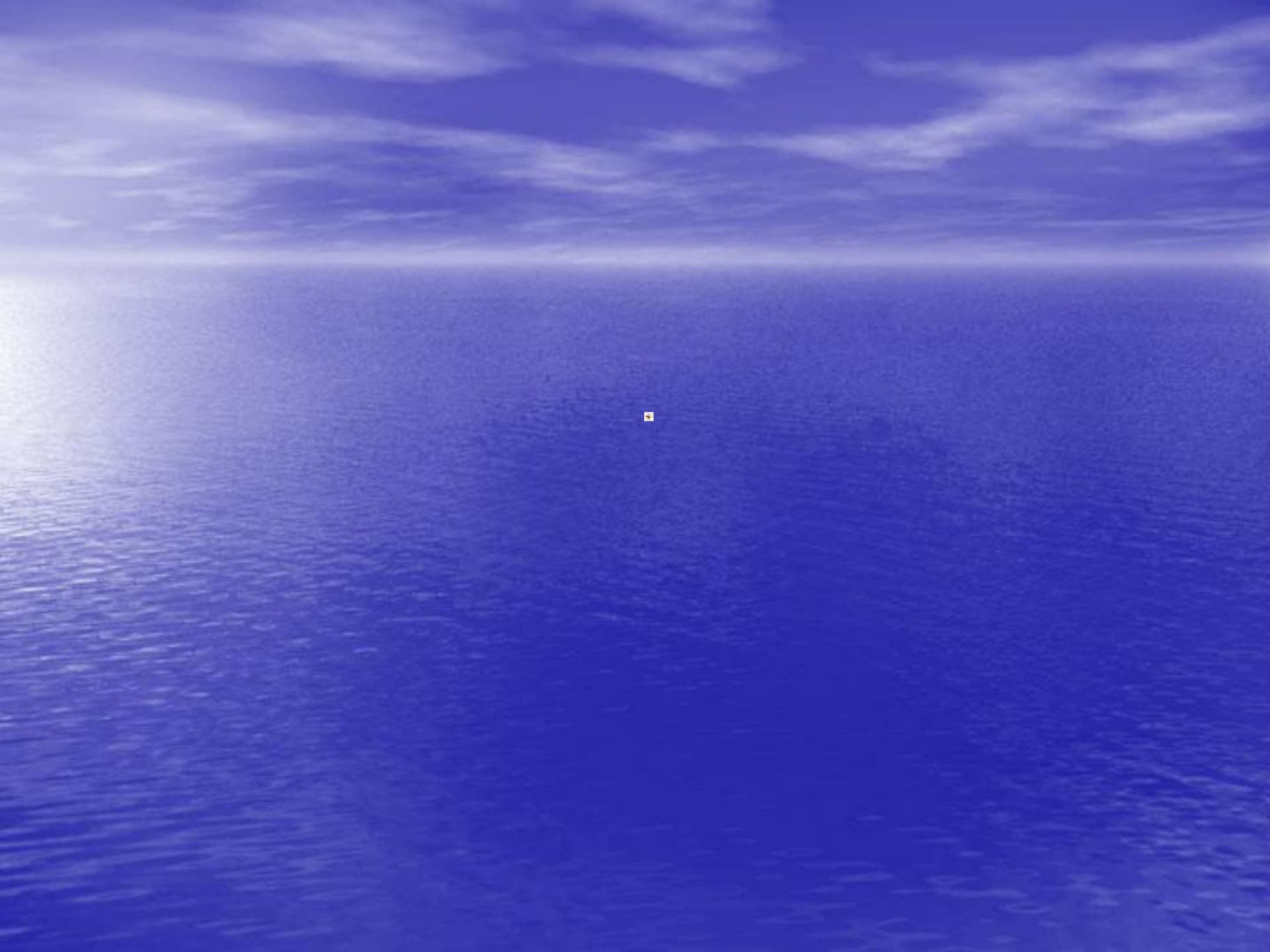
And yet:

Quality of medical care must be promoted with „full speed" in all European countries.

Hopefully reimbursment will follow!

Thank you for your attention





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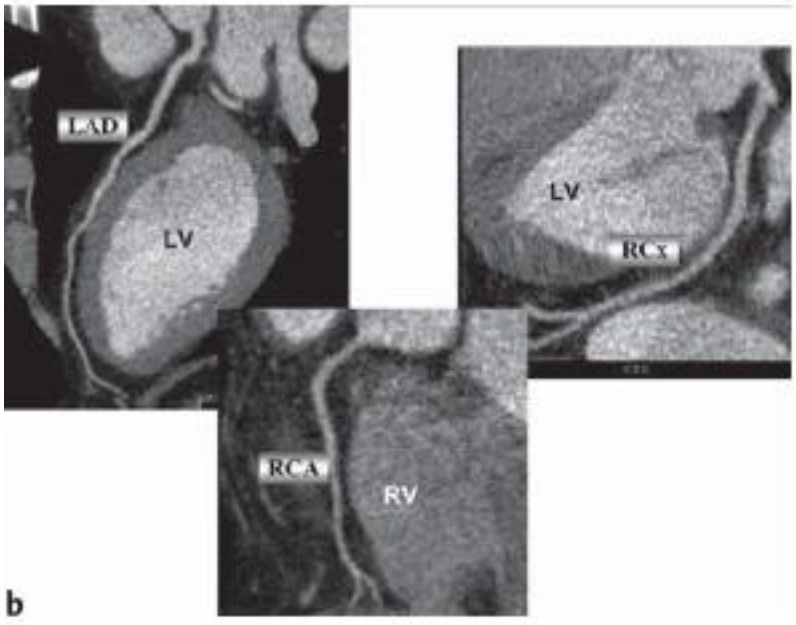

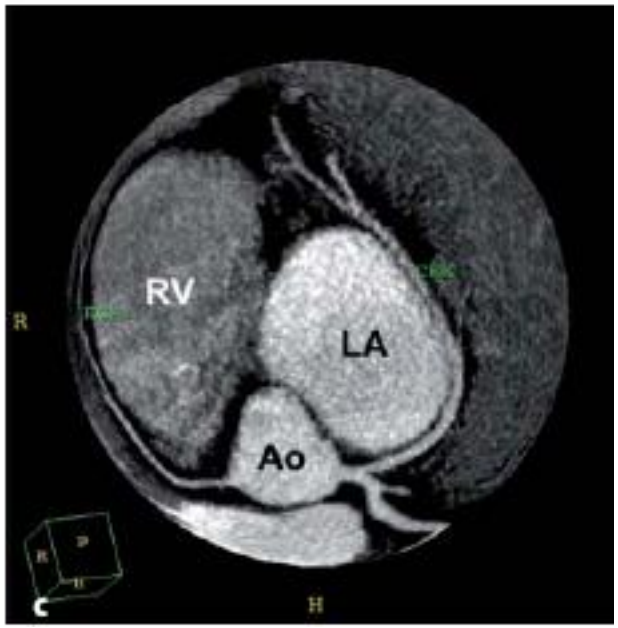

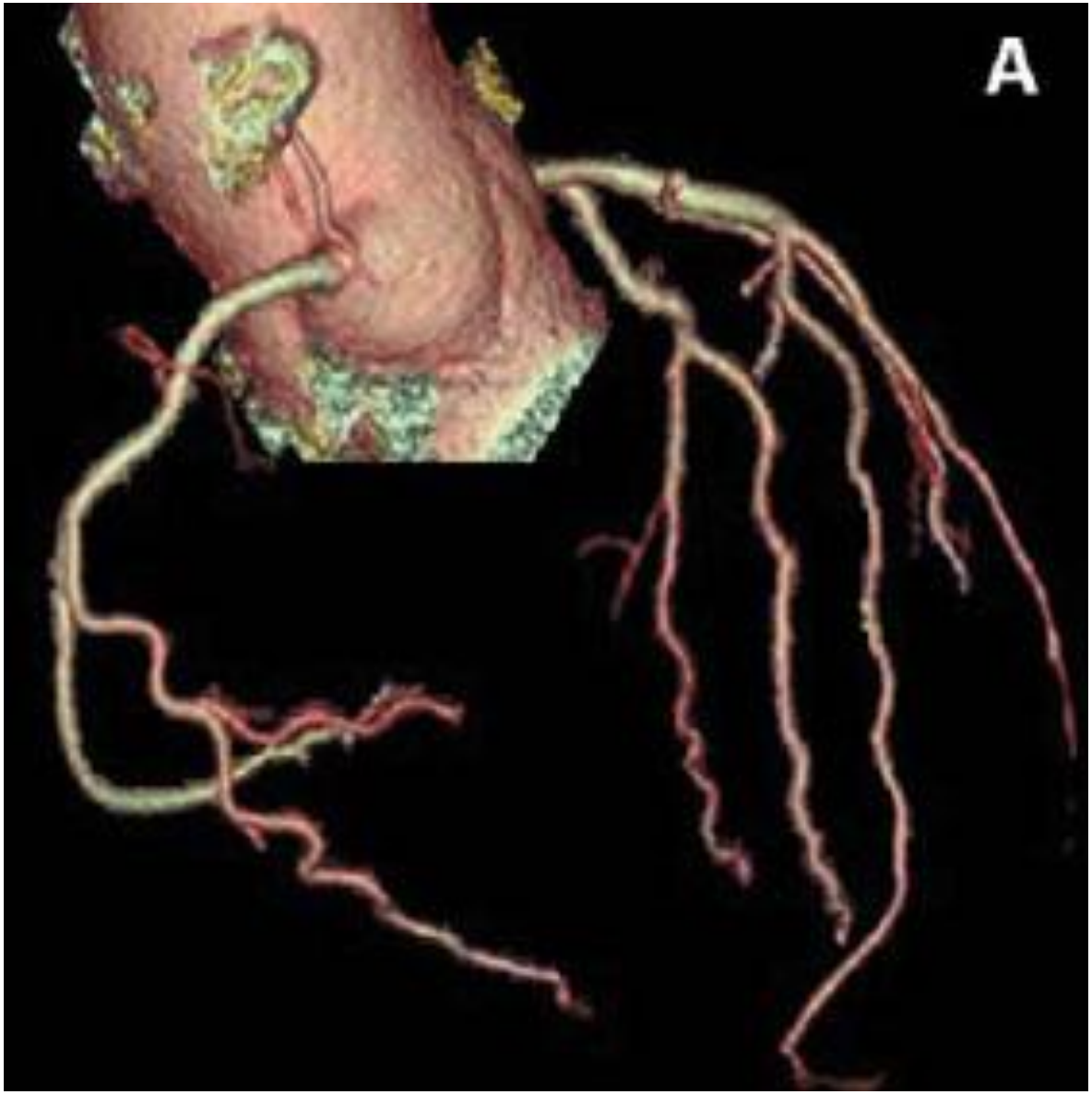

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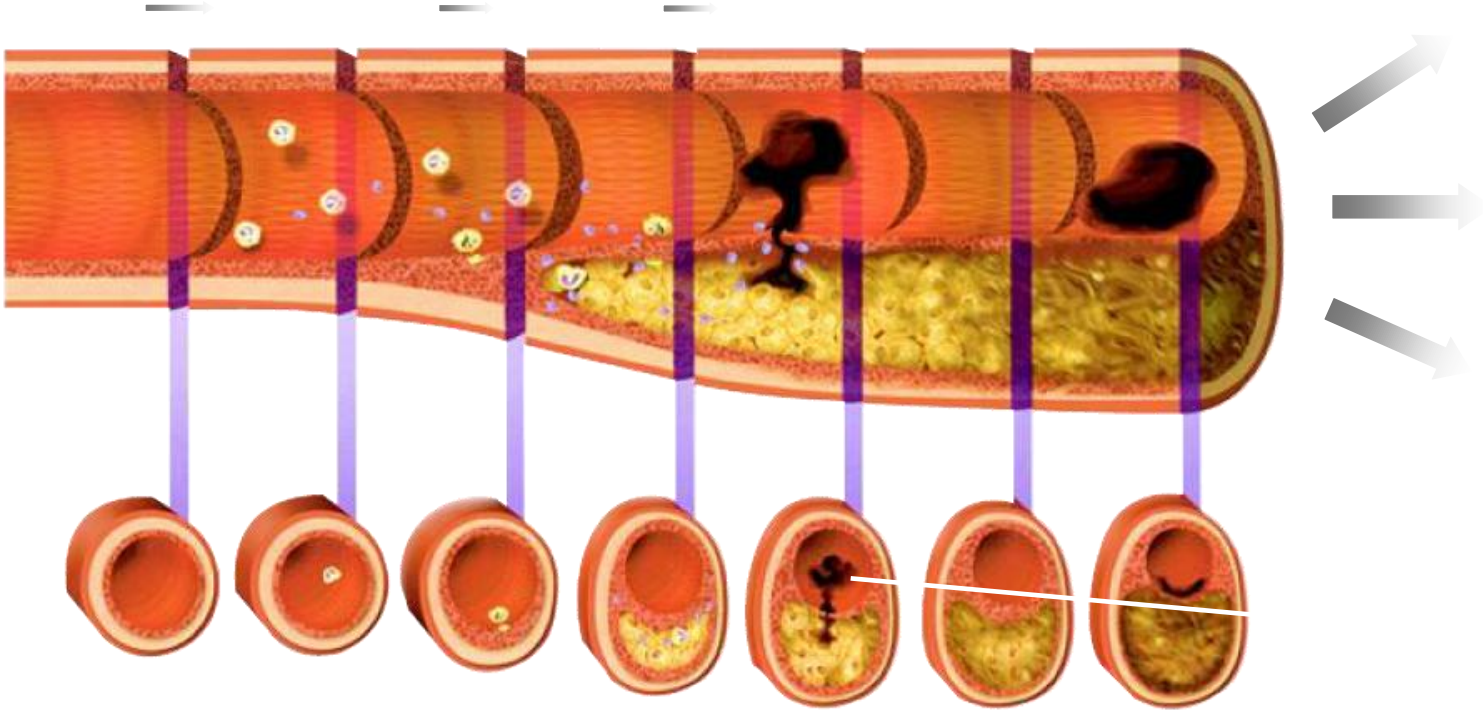
Die Entwicklung eines Atherosklerotischen Plaques



Plaque Rupture

↓

Plättchen Aktivierung und, Aggregation, hrombusformation

Frank Sonntag, Henstedt Ulzburg , Germany

Abstract

Coronary artery disease remains the most common cause of mortality in the developed world. It surpasses all malignancy related deaths with large varying mortality rates across Europe and worldwide. The resulting need for reduction of CAD morbidity can only be achieved by early detection of patients at high coronary risk before occurrence of a coronary event. Family doctors and Cardiologists in private practice should identify these people early. Guidelines for prevention of CVD , for detection and management of chronic CAD , ACS and secondary prevention are available in most European countries. Many of them are adopted to the guidelines of the ESC.

There are great differences in European countries as well in the variety of mortality and morbidity rates with France having the lowest and Ukraine and other eastern countries having the highest rates as in the possibility of early diagnosis in private practices.

Stable angina is a clinical syndrome characterized by discomfort in the chest, jaw, shoulder, back or arms, elicited by excertion or emotional stress, relieved by rest or nitroglycerin.

Typical angina (definite): Meets three of the following characteristics
- **Substernal chest discomfort of characteristic quality and duration**
- **Provoked by excertion or emotional stress**
- **Relieved by rest and / or GTN**

Atypical angina (probable) :Meets two of these characteristics

Non cardiac chest pain: Meets one or none of the characteristics

Cardiologists in private practice are able to investigate patients by exercise stress testing in nearly 100 %.
The value of this test for diagnosis I s affected greatly by the pre-test likelyhood of coronary artery disease.
Different scores have been evaluated to identify patients at high, intermediate or low risk. (FRAMINHAM, PROCAM, EUROSCORE)

Modern imaging ischemia diagnosis techniques like stress echocardiography, myocardial scintigraphy multislice CT and cardiac MRT are not available in most of private practices – again with great differences between European countries.
These techniques are able to rise the sensitivity of the first diagnostic steps.
They may reduce cardiac catheterization and unnecessary therapies f.e. with statins or ASS.
Networks with radiologists and departments of hospitals have been established in order to complete the diagnostic possibilities outside hospitals.

Reimbursement

Reimbursement of often done procedures differs to a high extent in European countries.
Some examples:

Clinical evaluaton / History	**12 – 80 €**
Exercise stresstest	**27 – 100 €**
Echocardiography	**< 50 – 150 €**
Stressechocardiography	**235 €**
MSCT	**up to 500 €**

Difference NHs - Private payment : Some countries no difference
: Some up to 10 fold "ALL INCLUSIVE" (5000-8000€)
These differences cannot be explained
through medical reasons but most likely through political and socioeconomic ones.

Harmonization of these differences are not likely to occur within the next 5 to 10 years (if at all!!)
And yet:
Quality of medical care must be promoted with „full speed" in all European countries.
Hopefully reimbursement will follow!

Despite all modern therapies, the burden of CV disease in Europe, is still unbearable.

CVD causes about 450 thousand deaths annually in Europe

CVD causes nearly half of all deaths in Europe (49%) and in the EU (42%)

Overall CVD is estimated to cost the EU economy €169 billion a year

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Therefore, a tremendous need exists to save more lives, to help patients to maintain a good quality of life, and to find ways to do so without exhausting the financial HC sources

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