EUROPEAN GUIDELINES ON CVD PREVENTION IN CLINICAL PRACTICE 2016– WHAT IS NEW?

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JOINT ESC GUIDELINES

2016 European Guidelines on cardiovascular disease prevention in clinical practice

The Sixth Joint Task Force of the European Society of Cardiology and Other Societies on Cardiovascular Disease Prevention in Clinical Practice (constituted by representatives of 10 societies and by invited experts)

Developed with the special contribution of the European Association for Cardiovascular Prevention & Rehabilitation (EACPR)

CVD Prevention: Rationale

- CVD is a leading cause of global mortality, accounting for 17.5 million deaths every year globally and 4.3 million deaths every year in Europe
- CVD affects both men and women; of all deaths that occur before the age of 75 years in Europe, 49% are due to CVD in women and 40% in men
- Inequalities exists: many risk factors, particularly obesity and diabetes mellitus, have been increasing
- Prevention works: over 50% of the reductions seen in CHD mortality relate to changes in risk factors, and 40% to improved treatments

What are the priorities for CVD prevention?

Speaker

Priorities in CVD prevention

Very high risk

- Documented CVD by invasive or non-invasive testing, previous MI, ACS, coronary (PCI, CABG) and other revascularization arterial procedures, ischaemic stroke, peripheral artery disease
- Diabetes mellitus (type 1 or 2) with one or more CV risk factors and/or target organ damage (such as microalbuminuria: 30–300 mg/24 h)
- Severe CKD (GFR <30 mL/min/1.73 m^2).
- A calculated SCORE ≥10% for 10-year risk of fatal CVD

Priorities in CVD Prevention

High risk

- Markedly elevated single risk factors, in particular cholesterol > 8 mmol/L (e.g. in familial hypercholesterolaemia) or BP≥ 180/110 mmHg
- Most other people with diabetes mellitus without CV RFs or TOD
- Moderate CKD (GFR 30-59 mL/min/1.73 m^2).
- SCORE of ≥5% and <10% for 10-year risk of fatal CVD

Moderate risk

- SCORE is ≥1 and <5% for 10-year risk of fatal CVD

Low risk

- SCORE <1% for 10-year risk of fatal CVD

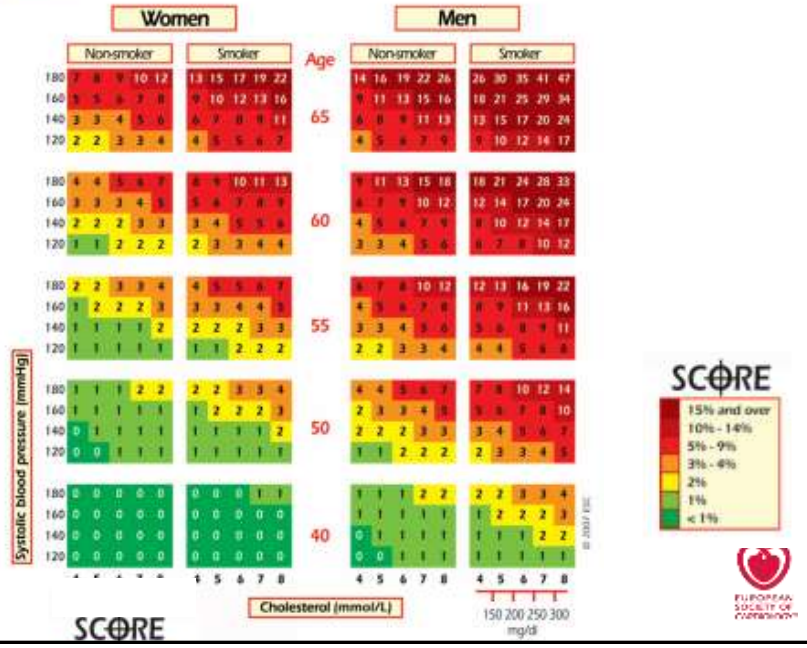
Recommendations for CV risk assessment

Recommendations	Class[a]	Level[b]
Systematic CV risk assessment is recommended in individuals at increased CV risk, i.e. with family history of premature CVD, familial hyperlipidaemia, major CV risk factors (such as smoking, high BP, DM or raised lipid levels) or comorbidities increasing CV risk.	I	C
It is recommended to repeat CV risk assessment every 5 years, and more often for individuals with risks close to thresholds mandating treatment.	I	C
Systematic CV risk assessment may be considered in men >40 years of age and in women >50 years of age or post-menopausal with no known CV risk factors.	IIb	C
Systematic CV risk assessment in men <40 of age and women <50 years of age with no known CV risk factors is not recommended.	III	C

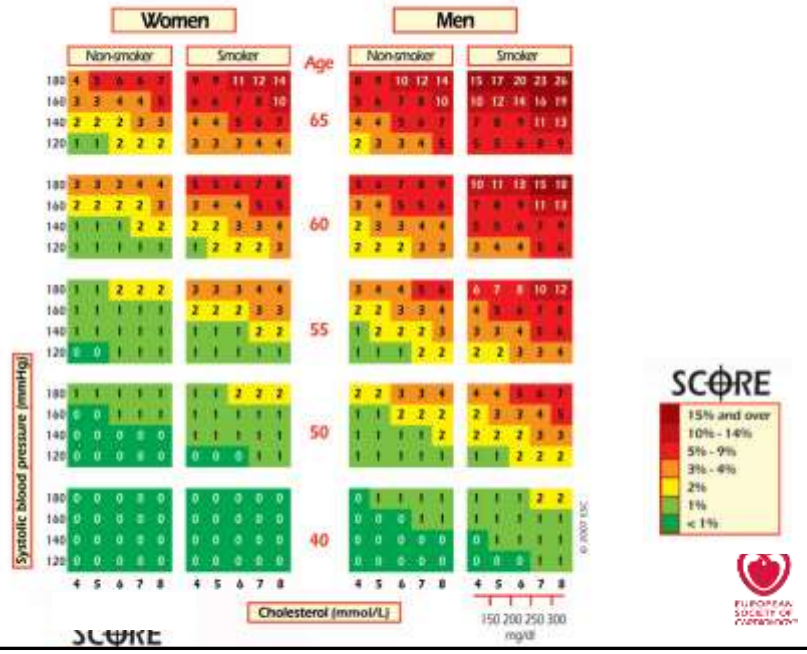
Recommendations for how to calculate CV risk

Recommendation	Class[a]	Level[b]
Total CV risk estimation, using a risk estimation system such as SCORE, is recommended for adults >40 years of age, unless they are automatically categorised as being at *high-risk* or *very high-risk* based on documented CVD, DM (>40 years of age), kidney disease or highly elevated single risk factor (Table 5).	I	C

10 year risk of fatal CVD in high risk regions



10 year risk of fatal CVD in low risk regions



Risk regions in Europe

Low CVD risk countries

Andorra, Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, The Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom

High CVD risk countries: all others

Very high risk

Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia FYR, Moldova, Russia, Ukraine and Uzbekistan

HeartScore
The electronic, interactive version of SCORE

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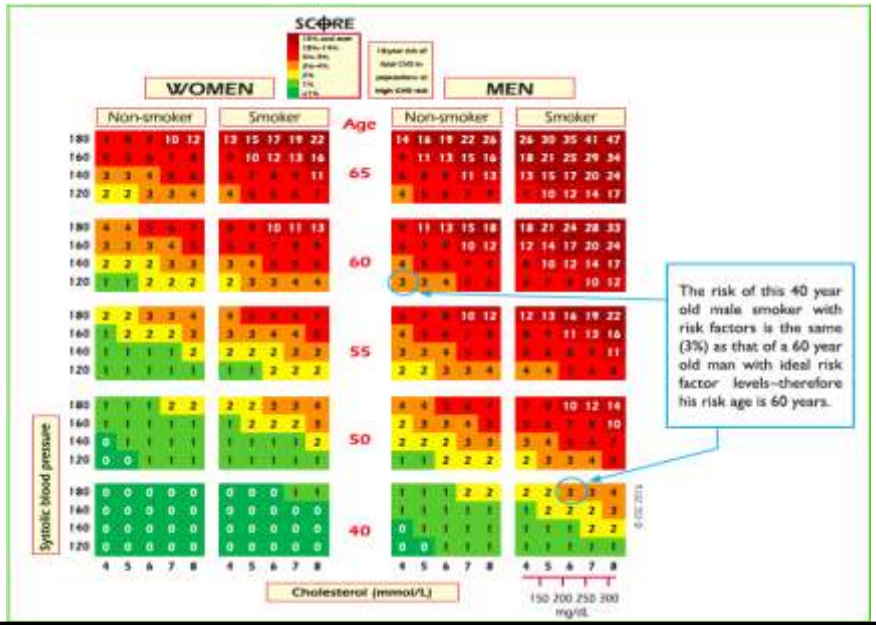
Risk age



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Relative risk chart

This chart may be used to show younger people at low absolute risk that, relative to others in their age group, their risk may be many times higher than necessary. This may help to motivate decisions about avoidance of smoking, healthy nutrition and exercise, as well as flagging those who may become candidates for medication

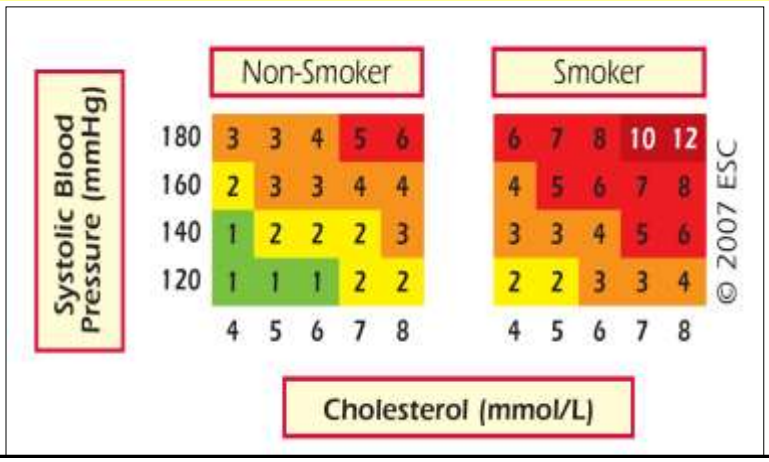

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Table 3 Advantages and limitations in using the SCORE risk charts

Advantages

- Intuitive, easy to use tool.
- Establishes a common language of risk for healthcare professionals.
- Allows a more objective assessment of risk.
- Takes account of the multifactorial nature of CVD.
- Allows flexibility in management; if an ideal risk factor level cannot be achieved, total risk can still be reduced by reducing other risk factors.
- Deals with the problem of a low absolute risk in young people with multiple risk factors: the relative risk chart helps to illustrate how a young person with a low absolute risk may be at a substantially high and reducible relative risk; calculation of an individual's "risk age" may also be of use in this situation.

Limitations

- Estimates risk of fatal but not total (fatal + non-fatal) CV risk for reasons outlined in text.
- Adapted to suit different European populations, but not different ethnic groups within these populations.
- Limited to the major determinants of risk.
- Other systems have more functionality, although applicability to multiple countries is uncertain.
- Limited age range (40–65 years).

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Risk Factor Targets

* **Smoking**: No exposure to tobacco in any form.
- **Diet :** Low in saturated fat with a focus on wholegrain products, vegetables, fruit and fish.
- **Physical activity:** At least 150 minutes a week of moderate aerobic PA (30 minutes for 5 days/week) or 75 minutes a week of vigorous aerobic PA (15 minutes for 5 days/week) or a combination thereof.
- **Body weight:** BMI 20–25 kg/m2.
- **Waist circumference:**
  <94 cm (men) or <80 cm (women).

* **HbA1c in patients with DM** : <7.0% (<53 mmol/mol)

Lipids

Very high risk: LDL-C < 1.8 mmol/L (< 70 mg/dL) OR a reduction of at least 50% if the baseline LDL-C is between 1.8 and 3.5 mmol/L (70 and 135 mg/dL)

High risk : LDL-C < 2.6 mmol/L (< 100 mg/dL) OR a reduction of at least 50% if the baseline LDL-C is between 2.6 and 5.2 mmol/L (100 and 200 mg/dL).

Low to Moderate risk : LDL-C < 3.0 mmol/L (<115 mg/dL)

HDL-C	No target but > 1.0 mmol/L (> 40 mg/dL) in men and > 1.2 mmol/L (> 45 mg/dL) in women indicate lower risk.
Triglycerides	No target but < 1.7 mmol/L (< 150 mg/dL) indicates lower risk and higher levels indicate a need to look for other risk factors.

Intervention strategies as a function of total CV risk and LDL-C level

Total CV risk (SCORE) %	LDL-C levels				
	<70 mg/dL <1.8 mmol/L	70 to <100 mg/dL 1.8 to <2.6 mmol/L	100 to <155 mg/dL 2.6 to <4.0 mmol/L	155 to <190 mg/dL 4.0 to <4.9 mmol/L	≥190 mg/dL ≥4.9 mmol/L
<1	Lifestyle advice	Lifestyle advice	Lifestyle advice	Lifestyle advice	Lifestyle advice, consider drug if uncontrolled
Class[a]/Level[b]	I/C	I/C	I/C	I/C	IIa/A
≥1 to <5	Lifestyle advice	Lifestyle advice	Lifestyle advice, consider drug if uncontrolled	Lifestyle advice, consider drug if uncontrolled	Lifestyle advice, consider drug if uncontrolled
Class[a]/Level[b]	I/C	I/C	IIa/A	IIa/A	I/A
≥5 to <10, or high-risk	Lifestyle advice	Lifestyle advice, consider drug if uncontrolled	Lifestyle advice and drug treatment for most	Lifestyle advice and drug treatment	Lifestyle advice and drug treatment
Class[a]/Level[b]	IIa/A	IIa/A	IIa/A	I/A	I/A
≥10 or very high-risk	Lifestyle advice, consider drug	Lifestyle advice and concomitant drug treatment	Lifestyle advice and concomitant drug treatment	Lifestyle advice and concomitant drug treatment	Lifestyle advice and concomitant drug treatment
Class[a]/Level[b]	IIa/A	IIa/A	I/A	I/A	I/A

Blood pressure

- BP < 140/90 mmHg in all treated hypertensive patients < 60 years old (I,B)
- BP < 140/85 mmHg in type 2 diabetes is generally recommended (I,B)
- In patients > 60 years old with SBP ≥ 160 mmHg, the treatment goal is to reduce SBP to between 150 and 140 mmHg (I,B)

And what about the other 100+ CV risk factors?

- hs-CRP ?
- Lp(a) ?
- stress ?
- body mass index? waist-hip ratio ?
- intima-media thickness?
- coronary calcium score?
- …

Examples of risk modifiers that have risk reclassification potential and are feasible

Socio-economic status, social isolation, or lack of social support.
Family history of premature CVD.
BMI and central obesity.
CT coronary calcium score.
Atherosclerotic plaques determined by carotid artery scanning.
ABI.

Recommendation for imaging methods

Recommendations	Class[a]	Level[b]
Coronary artery calcium scoring may be considered as a risk modifier in CV risk assessment.	IIb	B
Atherosclerotic plaque detection by carotid artery scanning may be considered as a risk modifier in CV risk assessment.	IIb	B
ABI may be considered as a risk modifier in CV risk assessment.	IIb	B
Carotid ultrasound IMT screening for CV risk assessment is not recommended.	III	A

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New key messages since 2012

Population-level

- Smoking cessation, healthy diet, physical activity, alcohol abuse, healthy environment

Disease-specific

- Atrial fibrillation, coronary artery disease, chronic heart failure, cerebrovascular disease, peripheral artery disease

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Population approach to prevent CVD

- **Prevention Paradox**

A large number of people exposed to a small risk may generate many more cases of CVD than a small number exposed to a high risk"

- **Population approach is cost saving and efficient**

A 10% population-wide reduction in blood cholesterol, blood pressure and smoking would save approximately three times more lives than treating 40% of high-risk individuals with a statin, three half-dose anti-hypertensives and aspirin.

Recommendation for cost-effective prevention of cardiovascular disease NEW

Recommendation	Class[a]	Level[b]
Measures aimed at promoting healthy lifestyles at the population level should be considered.	IIa	B

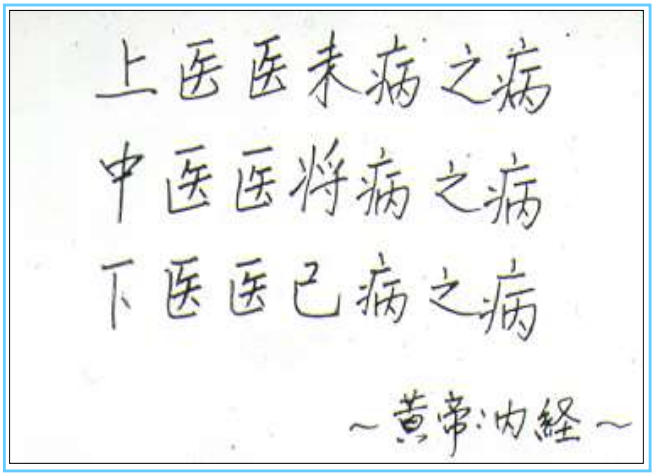
Population-approach to prevent CVD NEW

➢ **Topics:**

- Diet
- Physical activity
- Tobacco use
- Alcohol abuse

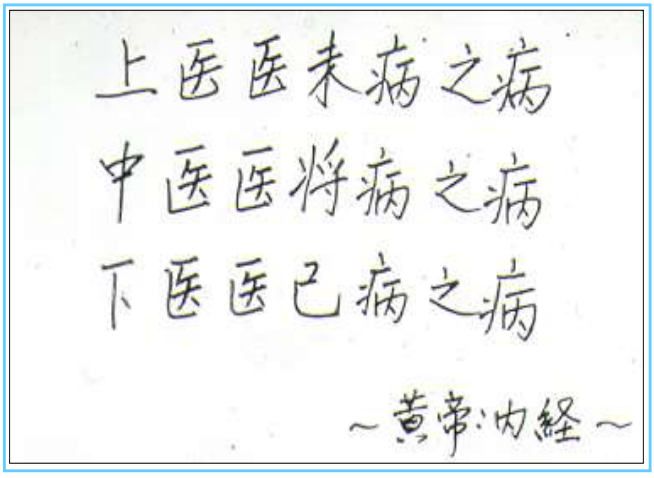
➢ **Levels:**

- Governmental restrictions and mandate
- Media and education
- Labelling and information
- Economic incentives
- Schools
- Workplaces
- Community Setting



Mediocre doctors treat the disease before evident.
Inferior doctors treat the full blown disease."

(Huang Dee: Nai - Ching 2600 B.C. 1st Chinese Medical Text)



Superior doctors prevent the disease.
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‘Being healthy is better than being sick or dead. This is the sole argument for prevention. It is sufficient.’

Professor Geoffrey Rose

Thank You for Your Attention