

Risk categories: priorities

Individuals at highest risk gain most from preventive efforts, and this guides the priorities.

Very high-risk	Subjects with any of the following: <ul style="list-style-type: none"> Documented CVD, clinical or unequivocal on imaging. Documented clinical CVD includes previous AMI, ACS, coronary revascularization and other arterial revascularization procedures, stroke and TIA, aortic aneurysm and PAD. Unequivocally documented CVD on imaging includes significant plaque on coronary angiography or carotid ultrasound. It does NOT include some increase in continuous imaging parameters such as intima-media thickness of the carotid artery. DM with target organ damage such as proteinuria or with a major risk factor such as smoking or marked hypercholesterolaemia or marked hypertension. Severe CKD (GFR <30 mL/min/1.73 m²). A calculated SCORE ≥10%.
High-risk	Subjects with: <ul style="list-style-type: none"> Markedly elevated single risk factors, in particular cholesterol >8 mmol/L (>310 mg/dL) (e.g. in familial hypercholesterolaemia) or BP ≥180/110 mmHg. Most other people with DM (with the exception of young people with type 1 DM and without major risk factors that may be at low or moderate risk). Moderate CKD (GFR 30–59 mL/min/1.73 m²). A calculated SCORE ≥5% and <10%.
Moderate-risk	SCORE is ≥1% and <5% at 10 years. Many middle-aged subjects belong to this category.
Low-risk	SCORE <1%.

ACS = acute coronary syndrome; AMI = acute myocardial infarction; BP = blood pressure; CKD = chronic kidney disease; CVD = cardiovascular disease; DM = diabetes mellitus; GFR = glomerular filtration rate; PAD = peripheral artery disease; SCORE = systematic coronary risk estimation; TIA = transient ischaemic attack.

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The main targets and goals	
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/m ² . Waist circumference <94 cm (men) or <80 cm (women).
Blood pressure	<140/90 mmHg ^a
Lipids^b	LDL^c is the primary target Very high-risk: <1.8 mmol/L (<70 mg/dL), or a reduction of at least 50% if the baseline is between 1.8 and 3.5 mmol/L (70 and 135 mg/dL) ^d High-risk: <2.6 mmol/L (<100 mg/dL), or a reduction of at least 50% if the baseline is between 2.6 and 5.2 mmol/L (100 and 200 mg/dL) Low to moderate risk: <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.
Diabetes	HbA1c <7%. (<53 mmol/mol)

BMI = body mass index; HbA1c = glycated haemoglobin; HDL-C = high-density lipoprotein cholesterol; LDL-C = low density lipoprotein cholesterol; PA = physical activity.

^aBlood pressure <140/90 mmHg is the general target. The target can be higher in frail elderly, or lower in most patients with diabetes and in some (very) high-risk patients without diabetes who can tolerate multiple blood pressure lowering drugs.

^bNon-HDL-C is a reasonable and practical alternative target because it does not require fasting. Non HDL-C secondary targets of <2.6, <3.4 and <3.8 mmol/L (<100, <130 and <145 mg/dL) are recommended for very high, high and low to moderate risk subjects, respectively.

^cA view was expressed that primary care physicians might prefer a single general LDL-C goal of 2.6 mmol/L (100 mg/dL). While accepting the simplicity of this approach and that it could be useful in some settings, there is better scientific support for the three targets matched to level of risk.

^dThis is the general recommendation for those at very high-risk. It should be noted that the evidence for patients with chronic kidney disease is less strong.

Adapted from: 2016 European Guidelines on Cardiovascular Disease Prevention in Clinical Practice: European Heart Journal (2016)37(29):2315-81. doi: 10.1093/eurheartj/ehw106 and European Journal of Preventive Cardiology (2016) 23(11): NPI-NP96. doi: 10.1177/2047487316653709 or visit www.escardio.org/guidelines



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SUMMARY CARD FOR GENERAL PRACTICE

Committee for Practice Guidelines
To improve the quality of clinical practice and patient care in Europe

CVD PREVENTION

JOINT EUROPEAN GUIDELINES ON CARDIOVASCULAR DISEASE PREVENTION IN CLINICAL PRACTICE



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

Definition of cardiovascular disease (CVD) prevention

A coordinated set of actions, at the population and individual level, aimed at eradicating, eliminating or minimizing the impact of cardiovascular diseases and their related disability.

Relevance of CVD prevention in clinical practice

- Atherosclerotic CVD is the leading cause of premature death worldwide. It affects both men and women; of all deaths before the age of 75 years in Europe, 42% are due to CVD in women and 38% in men.
- Healthcare professionals play an important role in achieving this lifetime approach in their clinical practice and in the society at large. Most patients are followed up in primary care and screening the population for CVD risk factors is preferably done there.

Who will benefit from prevention? When and how to assess risk and prioritize

- Atherosclerosis is usually the product of a number of risk factors: prevention of CVD in individuals should be adapted to their total CV risk: the higher the risk, the more intense the actions.
- A systematic approach to CV risk assessment is recommended targeting populations likely at higher 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 conditions affecting CV risk (kidney, inflammatory or autoimmune diseases, obesity, sedentary habit, cancer therapy, obstructive sleep apnoea syndrome).
- It is recommended to repeat CV risk assessment every 5 years, and more often for individuals with risks close to thresholds mandating treatment.

How to estimate total cardiovascular risk?

- It is essential for clinicians to be able to assess CV risk rapidly and with sufficient accuracy. This led to the development of the risk chart used in the 1994 Guidelines: Systemic Coronary Risk Estimation (**SCORE**) chart [The electronic version of SCORE, HeartScore (<http://www.HeartScore.org>), modified to take HDL-C into account, is therefore more accurate].

- SCORE, which estimates the 10-year risk of a first fatal CVD, is recommended for risk assessment and can assist in making logical management decisions, and may help to avoid both under- and over-treatment. Other validated risk estimation systems are useful alternatives.

- Risk score systems should be used in apparently healthy people and not in individuals automatically at high to very high CV risk, e.g. because of established CV disease (**see table Risk categories**). The latter require intensive attention to risk factors anyway.

- The total risk approach allows flexibility; if perfection cannot be achieved with one risk factor, **trying harder with others** can still reduce risk.

How to use the risk estimation charts

- Use of the **low-risk chart** is recommended for the low-risk countries, and the **high-risk chart** for all other European and Mediterranean countries,

- To estimate a person's 10-year risk of CV death, find the table for his/her gender, smoking status and (nearest) age. Within the table find the cell nearest to the person's systolic blood pressure and total cholesterol. Risk estimates will need to be adjusted upwards as the person approaches the next category.

- While no threshold is universally applicable, the intensity of advice should increase with increasing risk. The effect of interventions on the absolute probability of developing a CV event increases with an increasing baseline risk.

- Low to moderate risk persons (calculated SCORE <5%)** should be offered lifestyle advice to maintain their low- to moderate-risk status.
- High-risk persons (calculated SCORE ≥5% and <10%)** qualify for intensive lifestyle advice, and may be candidates for drug treatment.
- Very high-risk persons (calculated SCORE ≥10%)**: drug treatment is more frequently required.

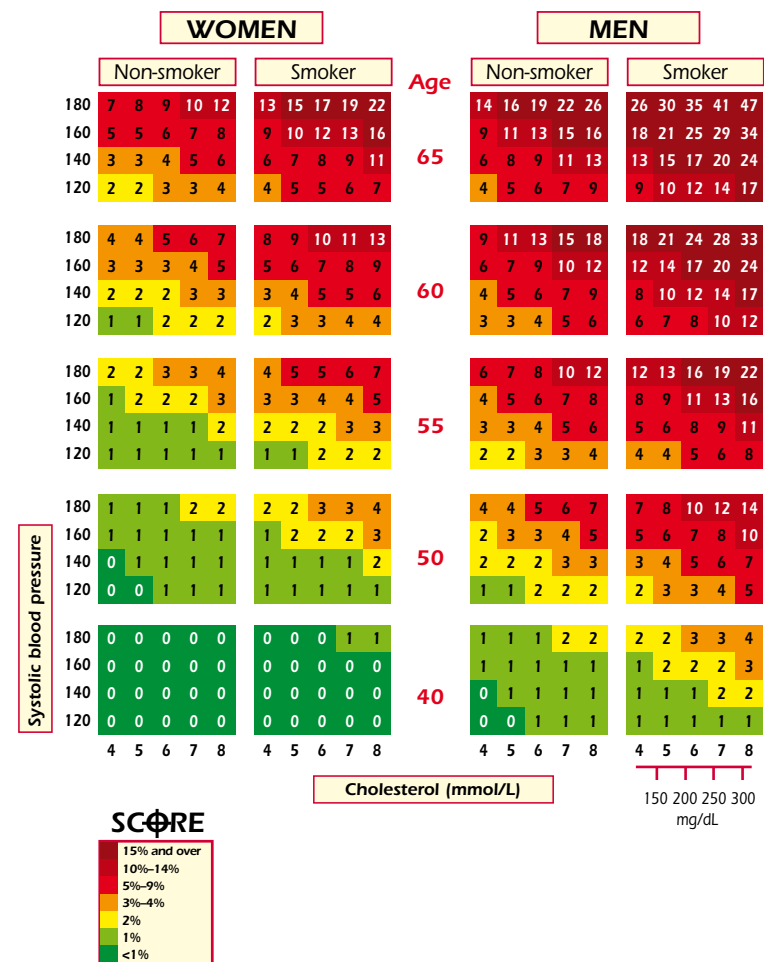
- The charts assist in risk estimation but must be interpreted in the light of the clinician's knowledge and experience and in view of the factors that may modify the calculated risk (such as low socio-economic status, social isolation, or lack of social support, family history of premature CVD, BMI and central obesity)).

- In persons **>60 years** of age these thresholds should be interpreted more leniently, because their age-specific risk is normally around these levels, even when other CV risk factor levels are "normal". In particular, uncritical initiation of drug treatments of all elderly with risks greater than the 10% threshold should be discouraged.

- The lower risk in **women** is explained by the fact that risk is deferred by 10 years—the risk of a 60-year-old woman is similar to that of a 50-year-old man. Ultimately more women than men die of CVD.

SCORE chart for HIGH-risk countries: 10-year risk of fatal cardiovascular disease in populations of countries at (VERY) HIGH cardiovascular risk

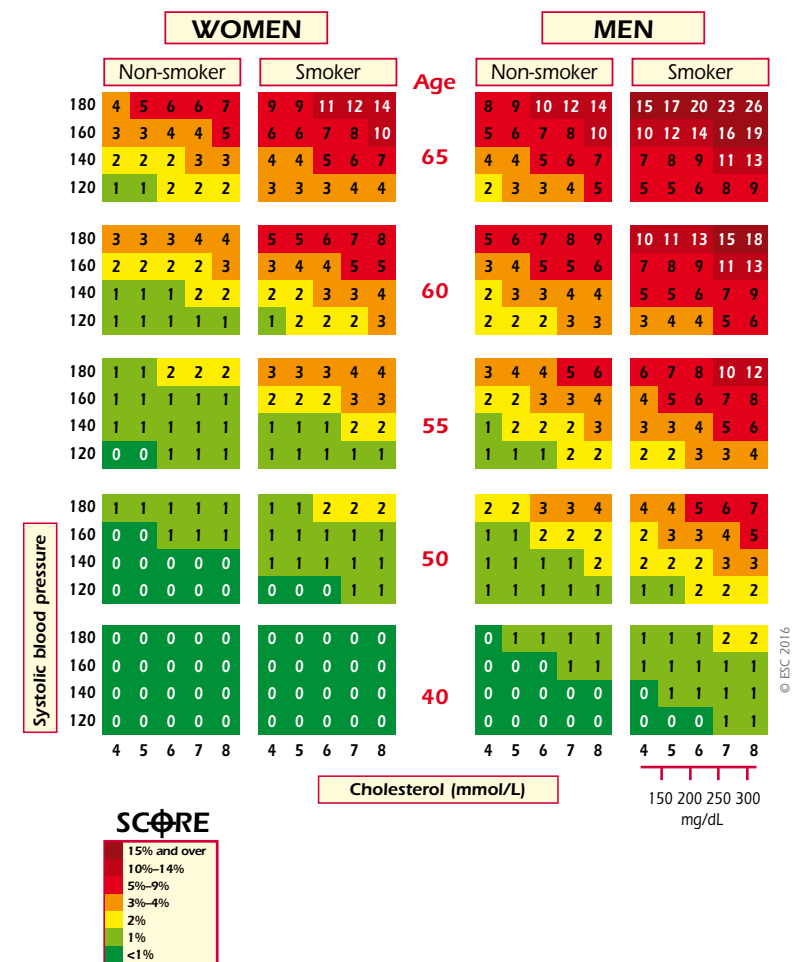
(Albania, Algeria, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Egypt, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia FYR, Moldova, Montenegro, Morocco, Poland, Romania, Russian Federation, Serbia, Slovakia, Syrian Arab Republic, Tajikistan, Tunisia, Turkey, Turkmenistan, Ukraine and Uzbekistan).



10-year risk of fatal CVD based on age, sex, smoking, systolic blood pressure, total cholesterol.

SCORE chart for LOW-risk countries: 10-year risk of fatal cardiovascular disease in populations of countries at LOW CV risk

(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 and United Kingdom).



10-year risk of fatal CVD based on age, sex, smoking, systolic blood pressure, total cholesterol.