

Fig. 1 Ten year risk of fatal CVD in high risk regions of Europe by gender, age, systolic blood pressure, total cholesterol and smoking status.

Definition of high total risk for developing a fatal cardiovascular event

- 1 Patients with established cardiovascular disease
- 2 Asymptomatic subjects who have:
  - 2.1 Multiple risk factors resulting in a 10 year risk  $\geq$  5% now or if extrapolated to age 60 (see also box with qualifiers)
  - 2.2 Markedly raised levels of single risk factors: total cholesterol  $\geq$  8 mmol/l (320 mg/dl), LDL cholesterol  $\geq$  6 mmol/l (240 mg/dl), blood pressure  $\geq$  180/110 mmHg
  - 2.3 Diabetes type 2 and diabetes type 1 with microalbuminuria

Instructions on how to use the chart

- The low risk chart should be used in Belgium, France, Greece, Italy, Luxembourg, Spain, Switzerland and Portugal; the high risk chart should be used in all other countries of Europe.
- To estimate a person's total ten year risk of CVD death, find the table for their gender, smoking

- status and age. Within the table find the cell nearest to the person's systolic blood pressure (mmHg) and total cholesterol (mmol/l or mg/dl).
- The effect of lifetime exposure to risk factors can be seen by following the table upwards. This can be used when advising younger people.
- Low risk individuals should be offered advice to maintain their low risk status. Those who are at 5% risk or higher or will reach this level in middle age should be given maximal attention.
- To define a person's relative risk, compare their risk category with that of a non-smoking person of the same age and gender, blood pressure < 140/90 mmHg and total cholesterol < 5mmol/l (190mg/dl).
- The chart can be used to give some indications of the effect of changes from one risk category to another, for example when the subject stops smoking or reduces other risk factors.

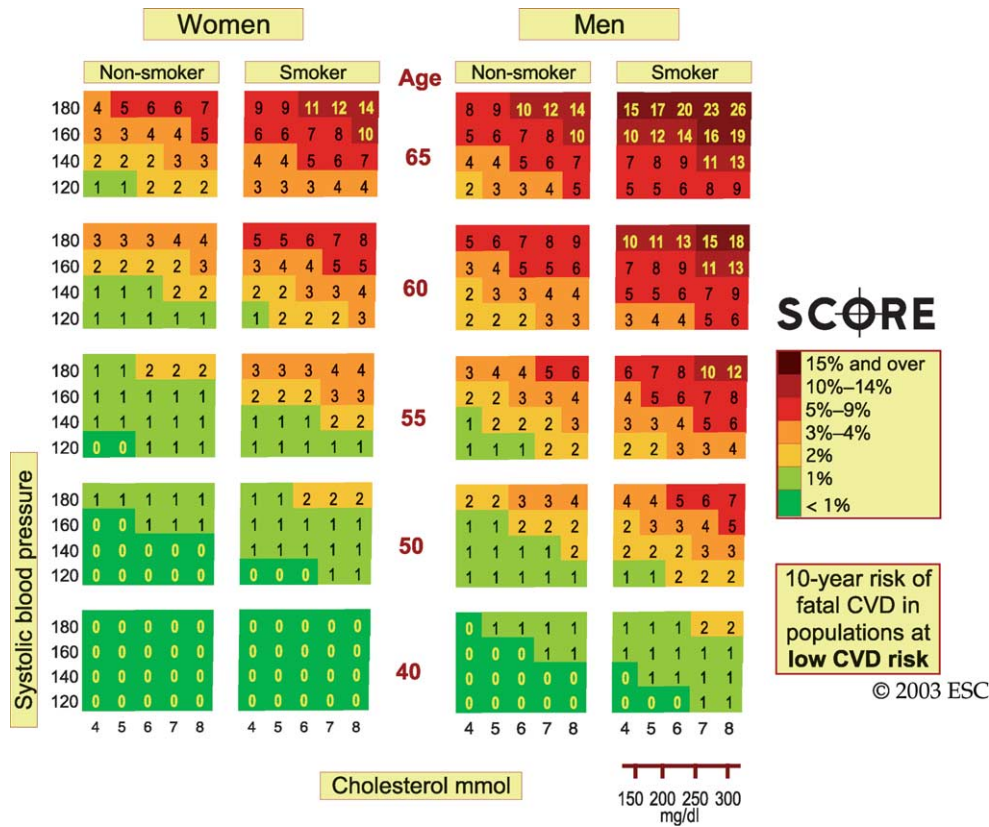


Fig. 2 Ten year risk of fatal CVD in low risk regions of Europe by gender, age, systolic blood pressure, total cholesterol and smoking status.

**Qualifiers:**

Note that total CVD risk may be higher than indicated in the chart:

- as the person approaches the next age category.
- in asymptomatic subjects with pre-clinical evidence of atherosclerosis (e.g. CT scan, ultrasonography)
- in subjects with a strong family history of premature CVD
- in subjects with low HDL cholesterol levels, with raised triglyceride levels, with impaired glucose tolerance, and with raised levels of C-reactive protein, fibrinogen, homocysteine, apolipoprotein B or Lp(a)
- in obese and sedentary subjects

**New imaging methods to detect asymptomatic individuals at high risk for cardiovascular events**

Magnetic Resonance Imaging (MRI) allows in vivo imaging of the arterial wall and differentiation of plaque components. Coronary calcifications can be detected and quantified by computed tomography (EB-CT or MS-CT). The resulting calcium score is an important parameter to detect asymptomatic individuals at high risk for future CVD events, independent of the traditional risk factors.

Furthermore, carotid intima-media thickness, measured by ultrasound, is a risk factor for cardiac events and stroke. Left ventricular hypertrophy, either detected by ECG or by echocardiography has also been shown to be an independent risk factor for CVD mortality and morbidity in hypertensive subjects. Each of these measurements has its limitations, yet they may be included in sophisticated models for risk assessment, which may be more precise than current models based on classical risk factors.

**Management of CVD risk in clinical practice**

**Behavioural risk factors**

Changes in many patterns of individual behaviour are necessary in a large majority of patients with established CVD or at high risk of CVD, but recent surveys suggest a serious gap between recommendations for behavioural change and the advice actually provided by physicians in routine clinical practice. The management of behavioural risk factors is similar for patients with CVD and high-risk people, but changing risk behaviours (unhealthy diet, smoking, sedentary lifestyle), which have lasted for many years, needs a professional approach.

For many people it can be difficult to change lifestyle according to a physician’s advice. This difficulty pertains