EUROPEAN SCORE MEMOCARD

(Systematic COronary Risk Evaluation)

Think total cardiovascular risk & act for better CVD prevention

EACPR European Association for Cardiovascular Prevention and Rehabilitation — A Registered Branch of the ESC

EUROPEAN SOCIETY OF CARDIOLOGY®

www.escardio.org/EACPR

WHY IS CVD PREVENTION NEEDED?

- Atherosclerotic CVD, especially CHD, remains the leading cause of premature death worldwide.
- CVD affects both men and women; of all deaths that occur before the age of 75 years in Europe, 43% are due to CVD in women and 36% in men.
- CVD mortality is changing, with declining age-standardized rates in most European countries, but it remains high in Eastern Europe
- Prevention works: over 50% of the reductions seen in CHD mortality relate to changes in risk factors, and 40% to improved treatments.
- Preventive efforts should be life-long, from birth (if not before) to old age.
- Population and high-risk preventive strategies should be complementary; an approach limited to high-risk persons will be less effective; population education programmes are still needed.
- Despite gaps in our understanding, there is ample evidence to justify intensive public health and individual preventive efforts.
- There is still substantial room for improvement in risk factor control, even in individuals at very high risk.

WHAT ARE THE PRIORITIES?

Very high Risk:	Subjects with any of the following: ▪ CVD ▪ Type 2 diabetes, or type 1 diabetes & target organ damage ▪ Patients with moderate to severe CKD (GFR <60mL/min/1.73m^2) ▪ SCORE ≥10%
High Risk:	Subjects with: ▪ Markedly elevated single risk factors such as: - Familial dyslipidaemias - Severe hypertension. ▪ SCORE ≥ 5% and <10%
Moderate Risk:	SCORE is ≥1 and <5% at 10 years, further modulated by: ▪ family history of premature CAD ▪ abdominal obesity ▪ physical activity pattern ▪ HDL-C ▪ TG ▪ hsCRP ▪ social class
Low Risk:	SCORE less than 1% and free of qualifiers

WHAT ARE THE TARGETS?

Smoking	No exposure to tobacco in any form
Diet	Healthy diet- low in saturated fat with a focus on wholegrain products, vegetables, fruit and fish*
Physical Activity	2.5 to 5 hours moderately vigorous physical activity per week or 30-60 minutes most days
Body weight	BMI 20-25. Waist circumference <94 cm (men) or <80 cm (women)
Blood pressure	BP <140/90
Lipids	**Very high risk:** LDL <1.8 mmol/L or >50% reduction **High risk:** LDL <2.5 mmol/L **Low to moderate risk:** LDL <3 mmol/L **HDL cholesterol:** No target but >1.0 mmol/L in men and >1.2 mmol/L in women indicates lower risk **Triglycerides:** No target but <1.7 mmol/L indicates lower risk and higher levels indicate a need to look for other risk factors
Diabetes	HbA1C <7%, BP <140/80

*** A healthy diet has the following characteristics:**

- Saturated fatty acids to account for <10% of total energy intake, through replacement by polyunsaturated fatty acids.
- Trans unsaturated fatty acids: as little as possible, preferably no intake from processed food, and <1% of total energy intake from natural origin
- <5 g of salt per day.
- 30–45 g of fibre per day, from wholegrain products, fruits and vegetables.
- 200 g of fruit per day (2-3 servings).
- 200 g of vegetables per day (2-3 servings).
- Fish at least twice a week, one of which to be oily fish.
- Consumption of alcoholic beverages should be limited to 2 glasses per day (20 g/d of alcohol) for men and 1 glass per day (10 g/d of alcohol) for women.

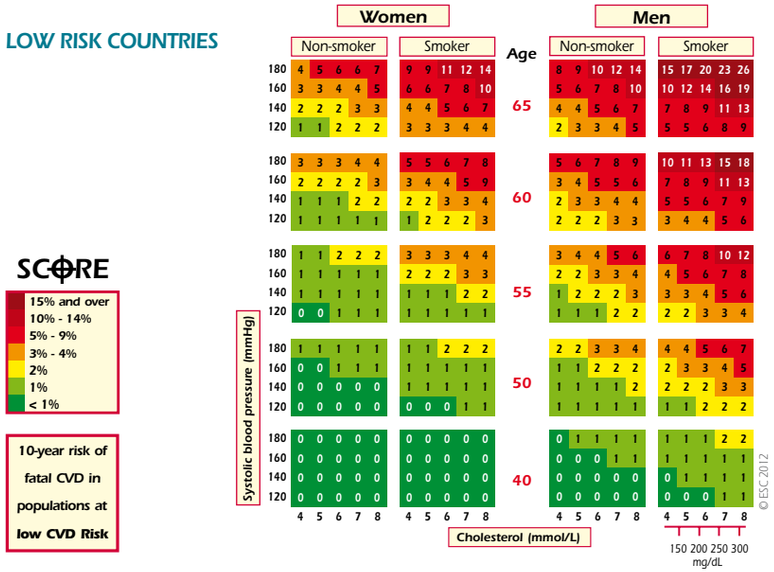
Source: European Guidelines on CVD Prevention in Clinical Practice (Version 2012)

EUROPEAN SCORE CHARTS

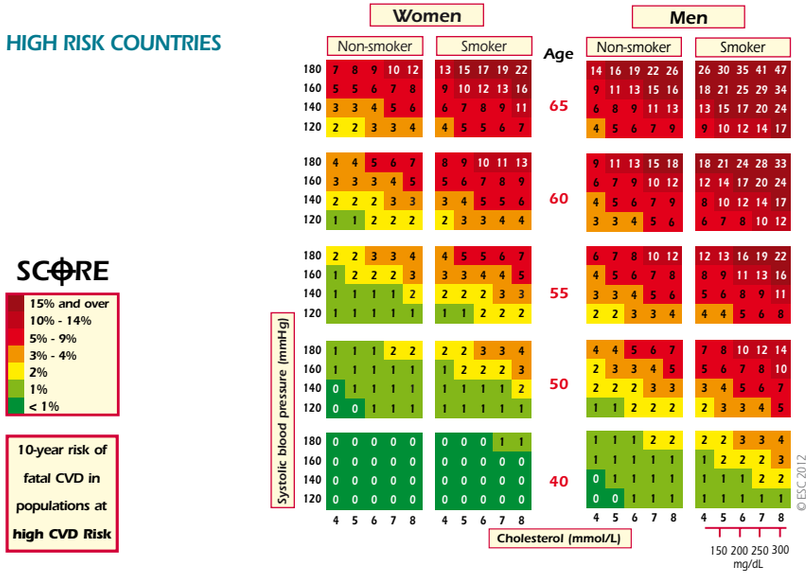
HOW DO I ASSESS RISK?

The «Priorities» section indicates that certain subject declare themselves to be at very high or high risk without requiring the use a chart such as SCORE (Systematic COronary Risk Evaluation), which is designed for use in apparently healthy individuals. These are those with known CVD, type 2 diabetes or type 1 diabetes with target organ damage and those with moderate to severe CKD (all very high risk), and those with markedly elevated single risk factors (high risk). Such individuals require immediate attention to all risk factors. For others, the SCORE charts may be used to assign them to the appropriate risk category.

LOW RISK COUNTRIES



HIGH RISK COUNTRIES



How do I use the SCORE charts to assess CVD risk in asymptomatic persons?

1. Use the **low risk charts** in 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.
Use the **high risk charts** in other European countries. Of these, some are at very high risk and the charts may underestimate risk in these. These include Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia FYR, Moldova, Russia, Ukraine and Uzbekistan.

**Updated, re-calibrated charts are now available for Belgium, Germany, Greece, The Netherlands, Spain, Sweden and Poland.*

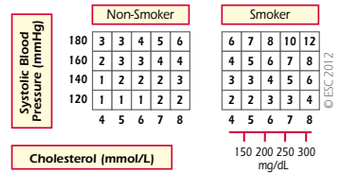
2. Find the cell nearest to the person's age, cholesterol and BP values, bearing in mind that risk will be higher as the person approaches the next age, cholesterol or BP category.
3. Check the qualifiers
4. Establish the total 10 year risk for fatal CVD.

Online CVD Risk Assessment
Visit **www.heartScore.org**

Relative Risk

Note that a low total cardiovascular risk in a young person may conceal a high relative risk; this may be explained to the person by using the relative risk chart. As the person ages, a high relative risk will translate into a high total risk. More intensive lifestyle advice will be needed in such persons.
This chart refers to relative risk, not percentage risk, so that a person in the top right corner is at 12 times higher risk than a person in the bottom left corner.
Another approach to explaining risk to younger persons is to use **cardiovascular risk age**.

For example, in the high risk chart, a **40** year old male hypertensive smoker has a risk of 4%, which is the same as a 65 year old with no risk factors, so that his **risk age is 65**. This can be reduced by reducing his risk factors.



Risk estimation using SCORE: Qualifiers

- The charts should be used in the light of the clinician's knowledge and judgement, especially with regard to local conditions.
- As with all risk estimation systems, risk will be over-estimated in countries with a falling CVD mortality rate, and under estimated if it is rising.
- At any given age, risk appears lower for women than men. However, inspection of the charts shows that their risk is merely deferred by 10 years, with a 60 year old woman resembling a 50 year old man in terms of risk.
- Risk may be higher than indicated in the chart in:
  - Sedentary or obese subjects, especially those with central obesity
  - Those with a strong family history of premature CVD
  - Socially deprived individuals and those from some ethnic minorities
  - Individuals with diabetes- the SCORE charts should only be used in those with type 1 diabetes without target-organ damage; other diabetic subjects are already at very high risk.
  - Those with low HDL cholesterol* or increased triglyceride, fibrinogen, opoB, Lp(a) levels and perhaps increased high-sensitivity CRP.
  - Asymptomatic subjects with evidence of pre-clinical atherosclerosis, for example plaque on ultrasonography.
  - Those with moderate to severe chronic kidney disease (GFR <60 mL/min/1.73 m^2)

**Note that HDL cholesterol impacts on risk in both sexes, at all ages, and at all level of risk. This effect can be estimatedusing the electronic version of SCORE, HeartScore, which has been updated to include HDL cholesterol level.*