

2016 EUROPEAN GUIDELINES ON CVD PREVENTION IN CLINICAL PRACTICE

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on behalf of the 6th Joint Task Force





EUROPEAN SOCIETY OF CARDIOLOGY®

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JOINT ESC



EASD European Association for the Study of Diabetes



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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 (constituted by representatives of 10 societies and by invited experts)

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

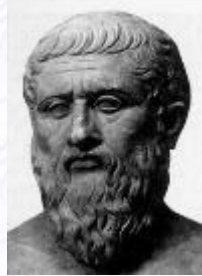
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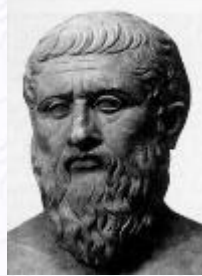
Guidelines still based upon the principles of teaching



Plato, 424-347 b.C.

- 1. What is CVD prevention**
- 2. Who needs CVD prevention**
- 3. How is CVD prevention applied**
- 4. Where should CVD prevention be offered**

Guidelines based upon the principles of teaching



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CVD Prevention: Definition and Rationale

- **Definition**

- A coordinated set of actions, at the population level or targeted at an individual, that are aimed at eliminating or minimizing the impact of CVDs and their related disabilities

- **CVD is a leading cause of morbidity and death worldwide, despite improvements in outcomes**

- Rates are now less than half what they were in the early 1980s in many countries in Europe, due to preventive measure including the success of smoking legislation

- **Inequalities exists between and within countries**

- Many risk factors, particularly obesity and diabetes mellitus, have been increasing

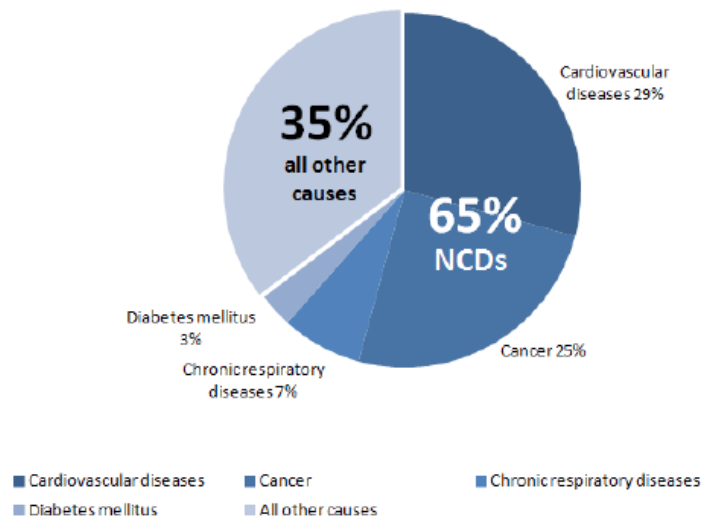
- **Prevention is effective**

- The elimination of health risk behaviours would make it possible to prevent at least 80% of CVDs and even 40% of cancers.

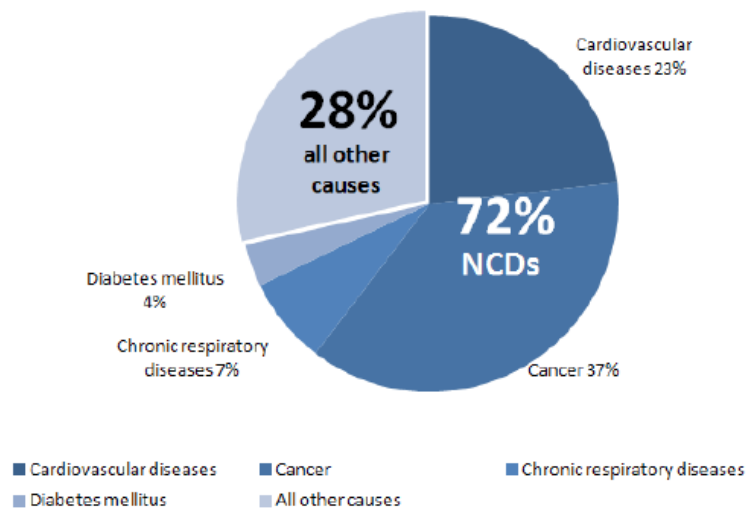
CVD in Argentina

ALL CAUSE PREMATURE DEATHS (2011)

MALE (30-69 yrs)



FEMALE (30-69 yrs)



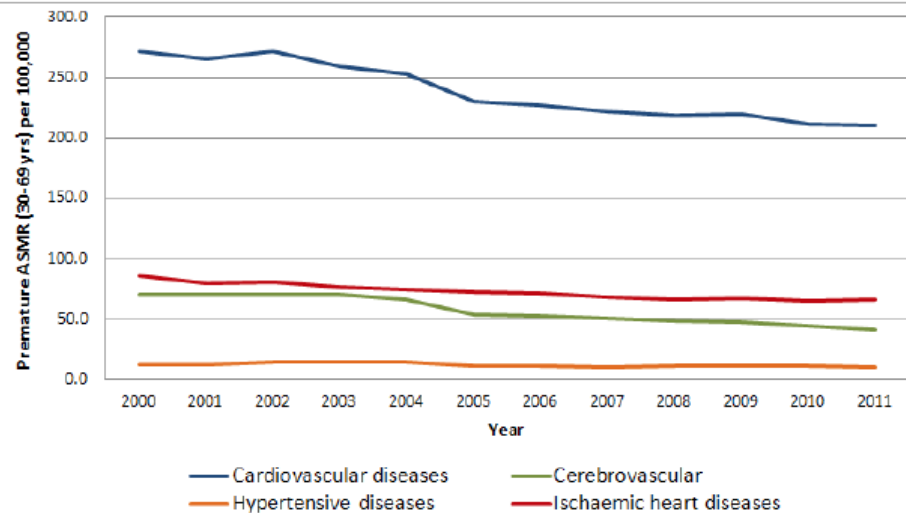
Total premature deaths: 63,820
4 NCDs premature deaths: 41,292

Total premature deaths: 34,212
4 NCDs premature deaths: 24,468

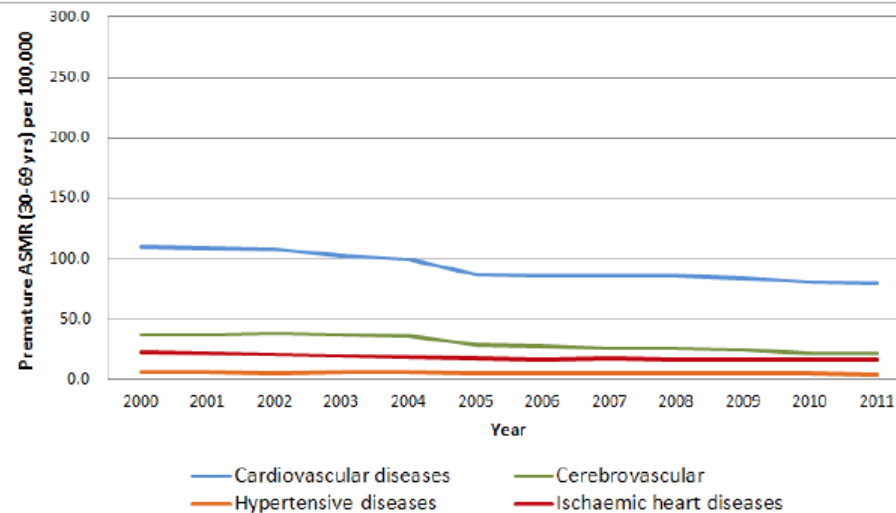
CVD in Argentina

CARDIOVASCULAR DISEASES AGE-STANDARDIZED PREMATURE MORTALITY RATES AND TRENDS (2000-2011)

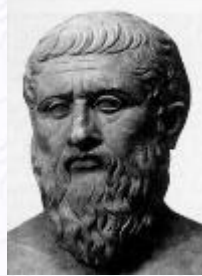
MALE (30-69 yrs)



FEMALE (30-69 yrs)



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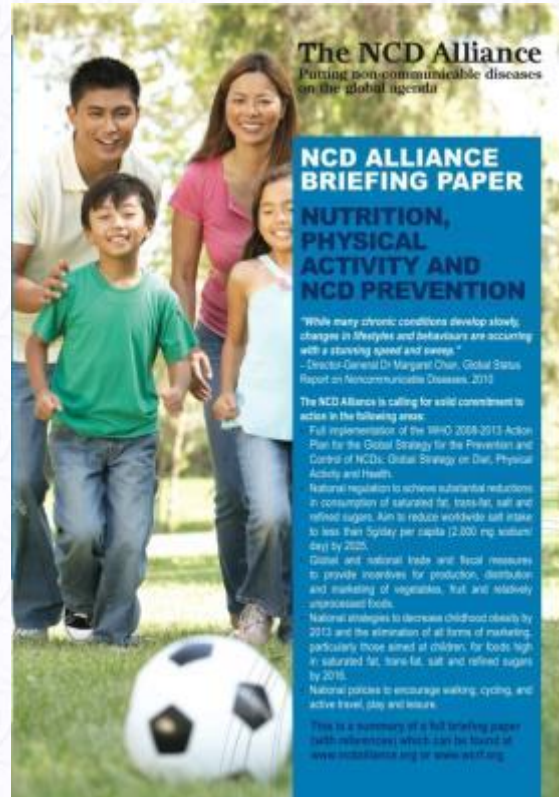


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Promotion of healthy lifestyle and environment in NCD prevention

- Call for commitments at the global and national level to address CV risk factors



Major new key messages since 2012. WHO?

- **Prevention at individual level**
- **Prevention at population level**
 - Smoking cessation, healthy diet, physical activity, alcohol abuse, healthy environment
- **Disease-specific prevention**
 - Atrial fibrillation, coronary artery disease, chronic heart failure, cerebrovascular disease, peripheral artery disease

Major new key messages since 2012. WHO?

- **Relevant groups (1)**
 - **In younger patients,** low absolute risk may implicate a very high relative risk
 -



Major new key messages since 2012. WHO?

- **Relevant groups (1)**
 - **In younger patients**, low absolute risk may implicate a very high relative risk
 - **In persons > 60 years** of age the risk thresholds should be interpreted more leniently and uncritical initiation of drug treatments is discouraged.



Major new key messages since 2012. WHO?

- **Relevant group (2)**
 - **In women** risk is not lower but deferred by approximately 10 years
 - **Women** with a history of pre-eclampsia or pregnancy-induced hypertension, polycystic ovary syndrome or gestational DM



Major new key messages since 2012. WHO?

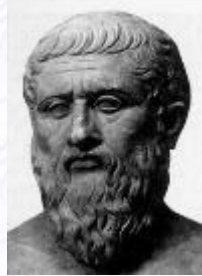
- **Relevant groups (3)**
 - In **ethnic minorities**, current risk estimation equations do not provide adequate estimations of CVD risk
 - **conditions at increased risk** for CVD, e.g. rheumatoid arthritis, erectile dysfunction, cancer treated patients



Patients treated for cancer

Recommendations	Class	Level
Cardio-protection in high-risk patients receiving type I chemotherapy should be considered for LV dysfunction prevention.	IIa	B
Optimization of the CV risk profile should be considered in cancer treated patients.	IIa	C

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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 an individual should be adapted to his/her total CV risk
- ✓ the higher the risk, the more intense the action should be.

When to assess total cardiovascular risk?

- ✓ Screening is the identification of an unknown increased CV risk in individuals without symptoms and can be done
 - ✓ opportunistically
 - ✓ systematically

Cardiovascular risk assessment

Recommendations	Class	Level
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

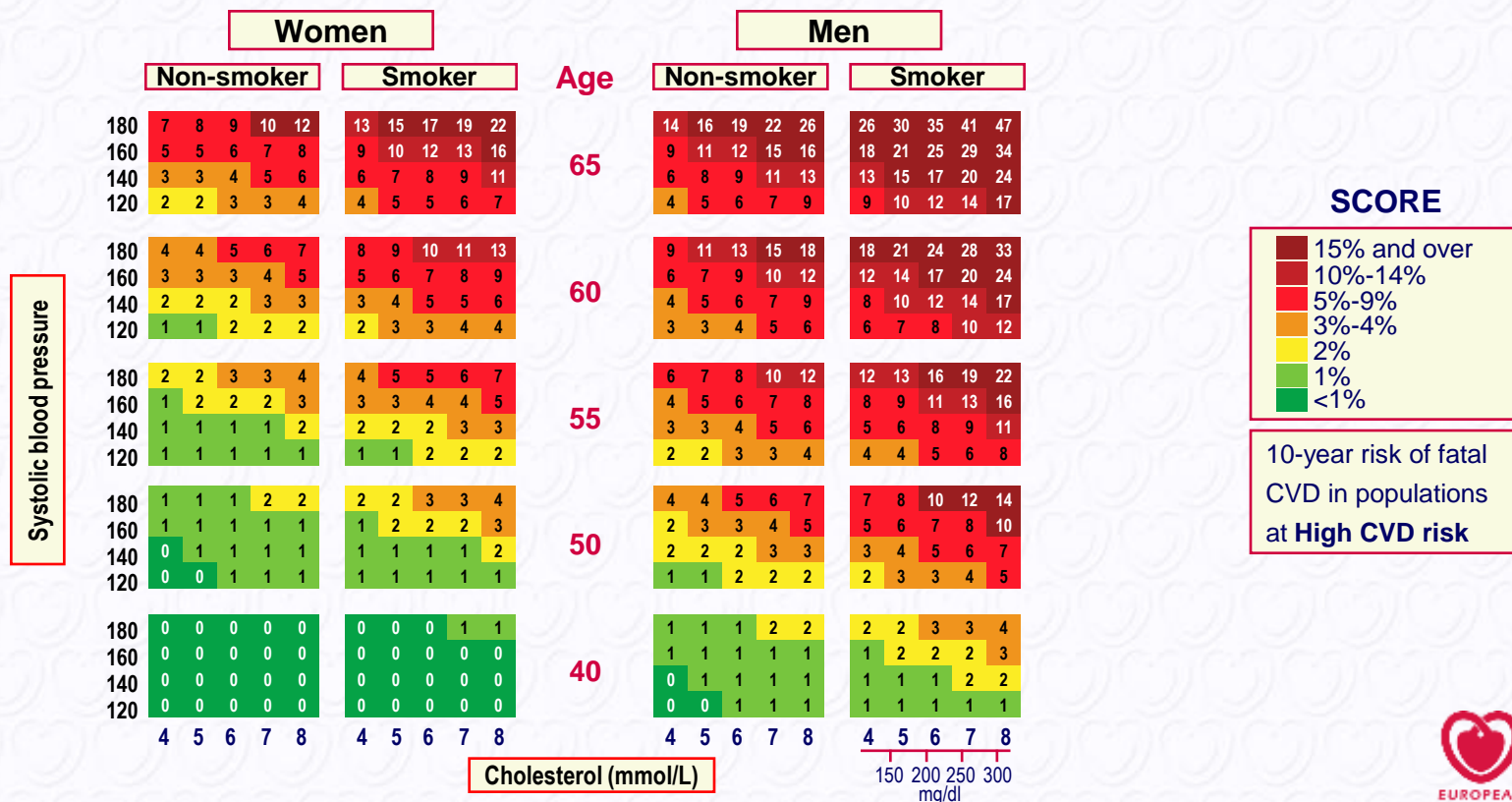
How to estimate cardiovascular risk

Recommendations	Class	Level
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 <i>high-risk</i> or <i>very high-risk</i> based on documented CVD, DM (>40 years of age), kidney disease or highly elevated single risk factor.	I	C

Risk categories

Very high-risk	<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	<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	<p>SCORE is ≥1% and <5% at 10 years. Many middleaged subjects belong to this category.</p>
Low-risk	<p>SCORE <1%.</p>

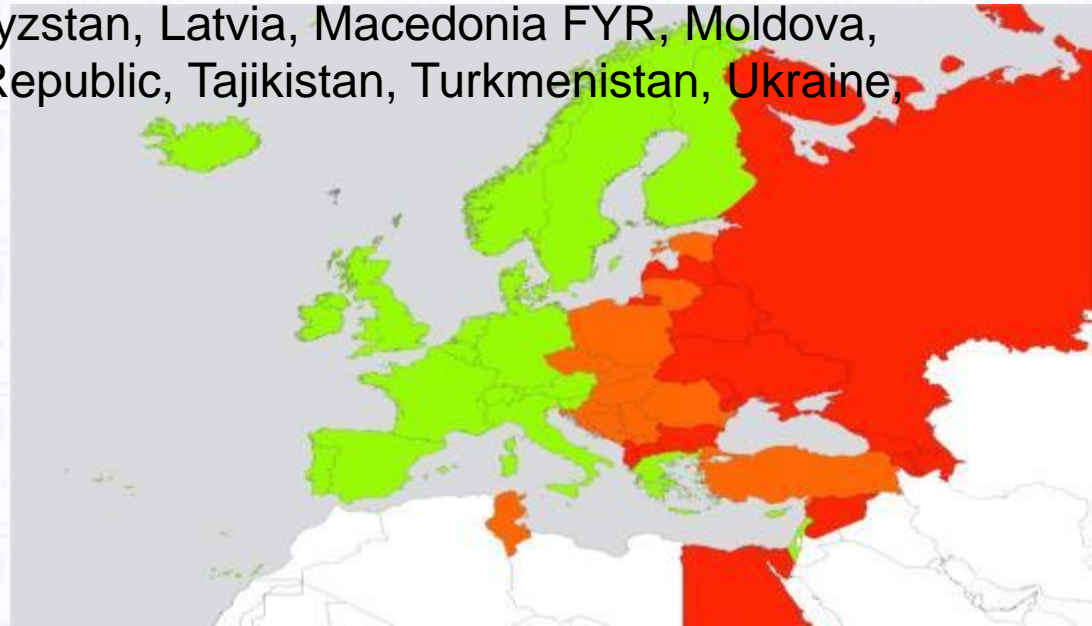
SCORE chart: 10-year risk of fatal cardiovascular disease in populations of countries at high cardiovascular risk



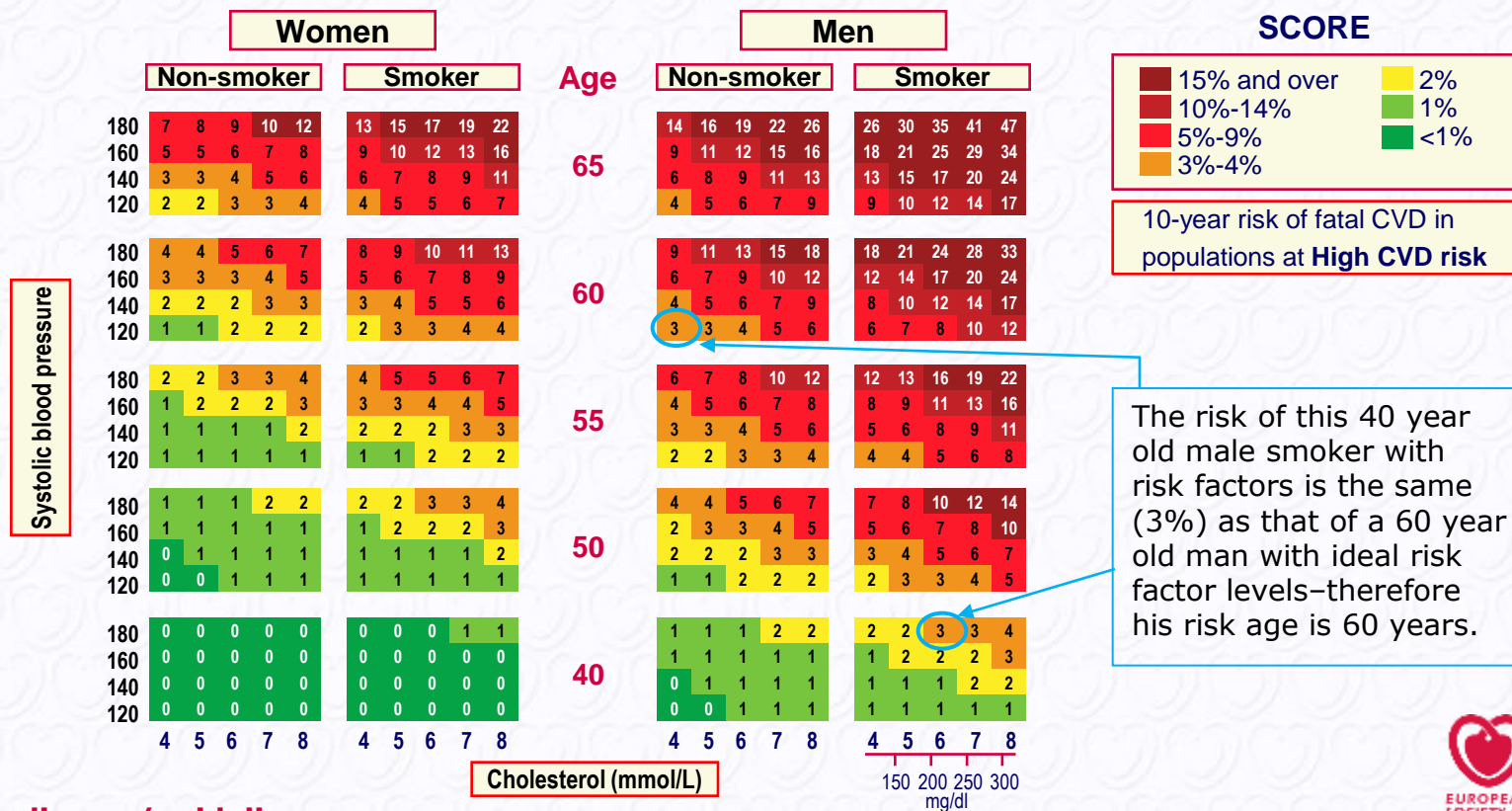
High and Very High Risk Countries

High risk countries : Bosnia and Herzegovina, Croatia, Czech Republic, Estonia, Hungary, Lithuania, Montenegro, Morocco, Poland, Romania, Serbia, Slovakia and Turkey

Very high risk countries: Albania, Algeria, Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Macedonia FYR, Moldova, Russian Federation, Syrian Arab Republic, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.



SCORE chart illustrating how the approximate risk age can be read off the chart



SCORE chart: relative risk

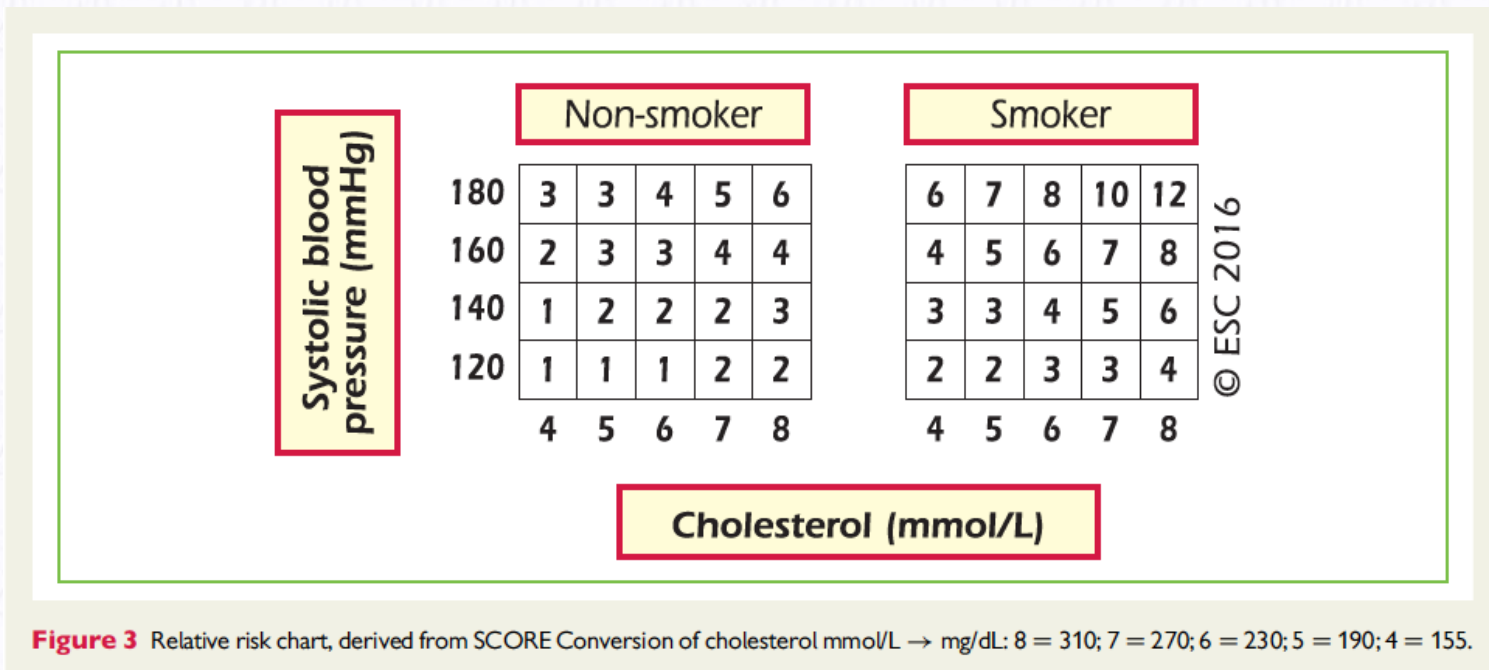


Figure 3 Relative risk chart, derived from SCORE Conversion of cholesterol mmol/L → mg/dL: 8 = 310; 7 = 270; 6 = 230; 5 = 190; 4 = 155.

How to use the risk estimation charts

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



Risk factor goals and target levels

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) and or <80 cm (women).
Blood pressure	<140/90 mmHg.
Lipid LDL is the primary target	<p>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).</p> <p>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).</p> <p>Low to moderate risk: <3.0 mmol/L (115 mg/dL).</p>
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/L).

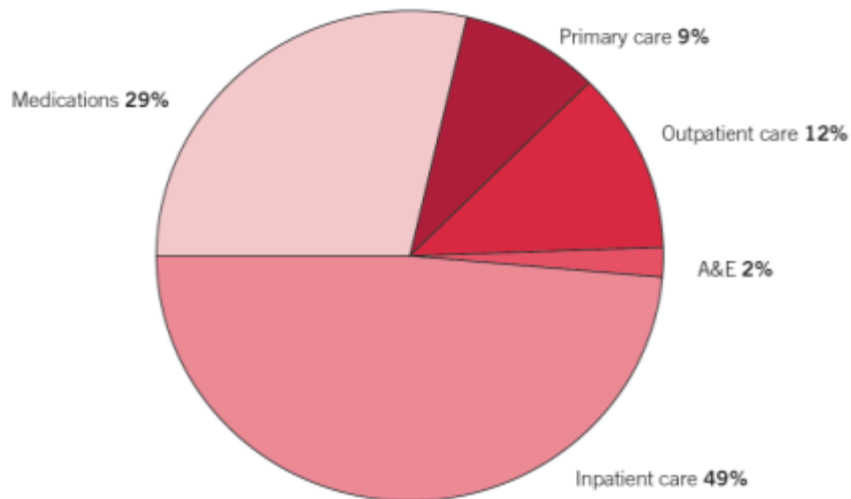
Major new key messages since 2012. **WHERE?**

- **Cardiac rehabilitation** program recommendation in ACS, post revascularisation and in HF
- **New Settings of interventions**
 - Home-based, nursing home, tele-monitoring
- **Monitoring of the intervention**
 - Standard of performance, outcome measure



Total health care expenditure in Europe for CVD in 2009

- **€ 196 billion** a year is the total cost to the EU economy: 54% direct costs, 24% productivity losses, 22% the informal care
- **€ 106 billion** a year is the cost the Health Care Systems (**9%** of the total health care expenditure across the EU)
- **€ 212** per capita (from €37 in Romania to €374 in Germany)



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European CVD Statistics 2012



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