

The 2012 European Guidelines on Cardiovascular Disease Prevention in Clinical Practice

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www.escardio.org/guidelines

European Heart Journal 2012;33:1635–1701

European Journal of Preventive Cardiology 2012;19: 4:585-667



On behalf of :

The 5th Joint European Societies' Task Force on Cardiovascular Disease Prevention in Clinical Practice



European Society of
Cardiology (ESC)



European Society of General Practice/
Family Medicine (ESGP/FM/Wonca)



European Association for
Cardiovascular Prevention &
Rehabilitation (EACPR)



European Artherosclerosis Society
(EAS)



European
Society of
Hypertension

European Society of
Hypertension (ESH)



European Association for the Study
of Diabetes (EASD)



International Society of
Behavioural Medicine (ISBM)



International
Diabetes
Federation

International Diabetes Federation
Europe (IDF-Europe)



European Heart Network (EHN)



European Stroke Organization (ESO)

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Five chapters

1. What is CVD prevention
2. Why is CVD prevention needed
3. Who needs CVD prevention
4. How is CVD prevention applied
5. Where should CVD prevention be offered

Shorter, more adapted to clinical needs, practical

What is CVD prevention?

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

The bases of prevention are rooted in cardiovascular epidemiology and evidence-based medicine”

A Dictionary of Epidemiology. 4th ed New York: Oxford University Press; 2001.

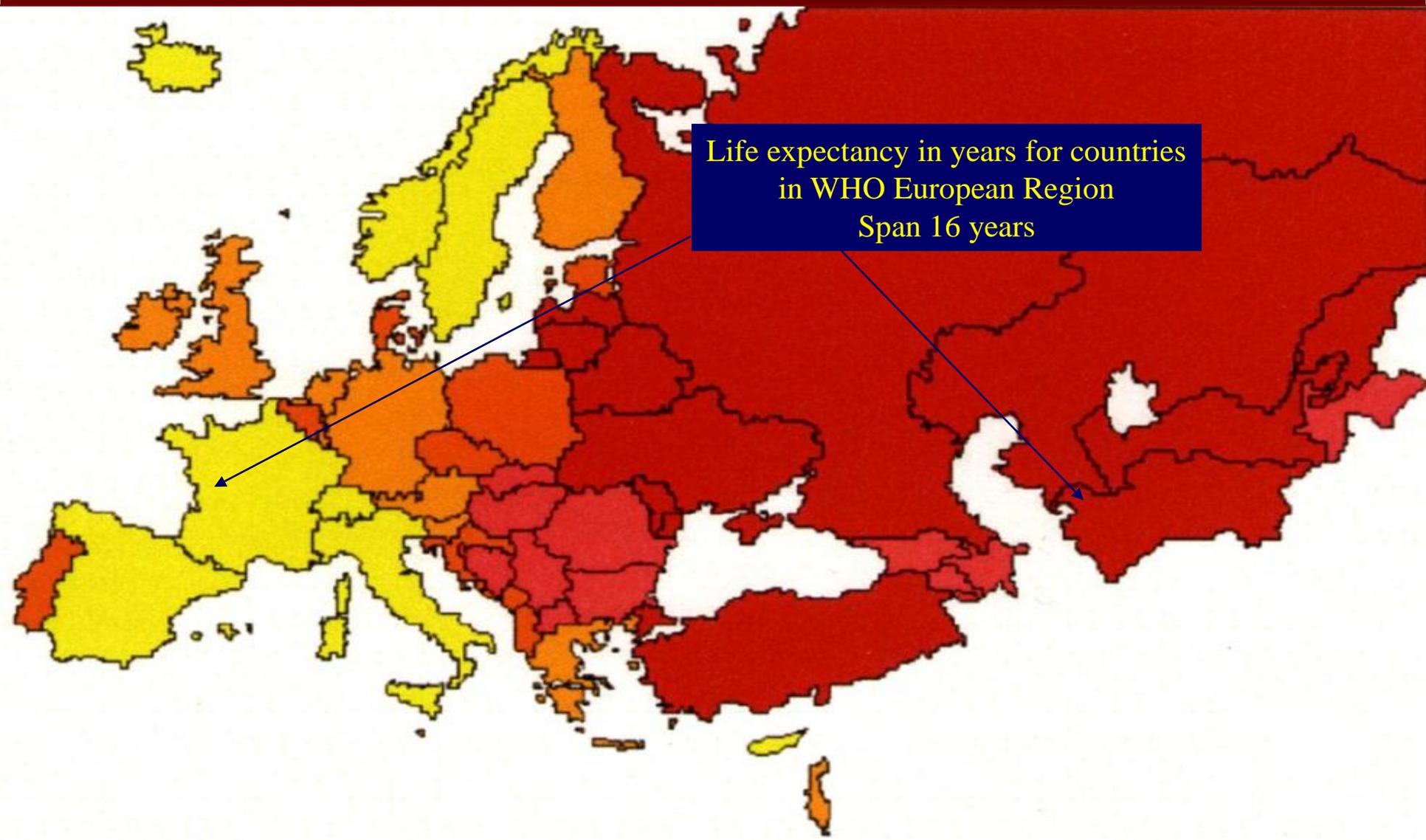
Why is CVD prevention needed

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, 42% are due to CVD in women and 38% in men.

Prevention works: over 50% of the reductions seen in CHD mortality relate to changes in risk factors, and 40% to improved treatments.

Prevention of cardiovascular disease



Life expectancy in years for countries
in WHO European Region
Span 16 years

Lowest life expectancy

Quintile 1



Quintile 2

Legend
Life expectancy quintiles



Quintile 3



Quintile 4

Highest life expectancy



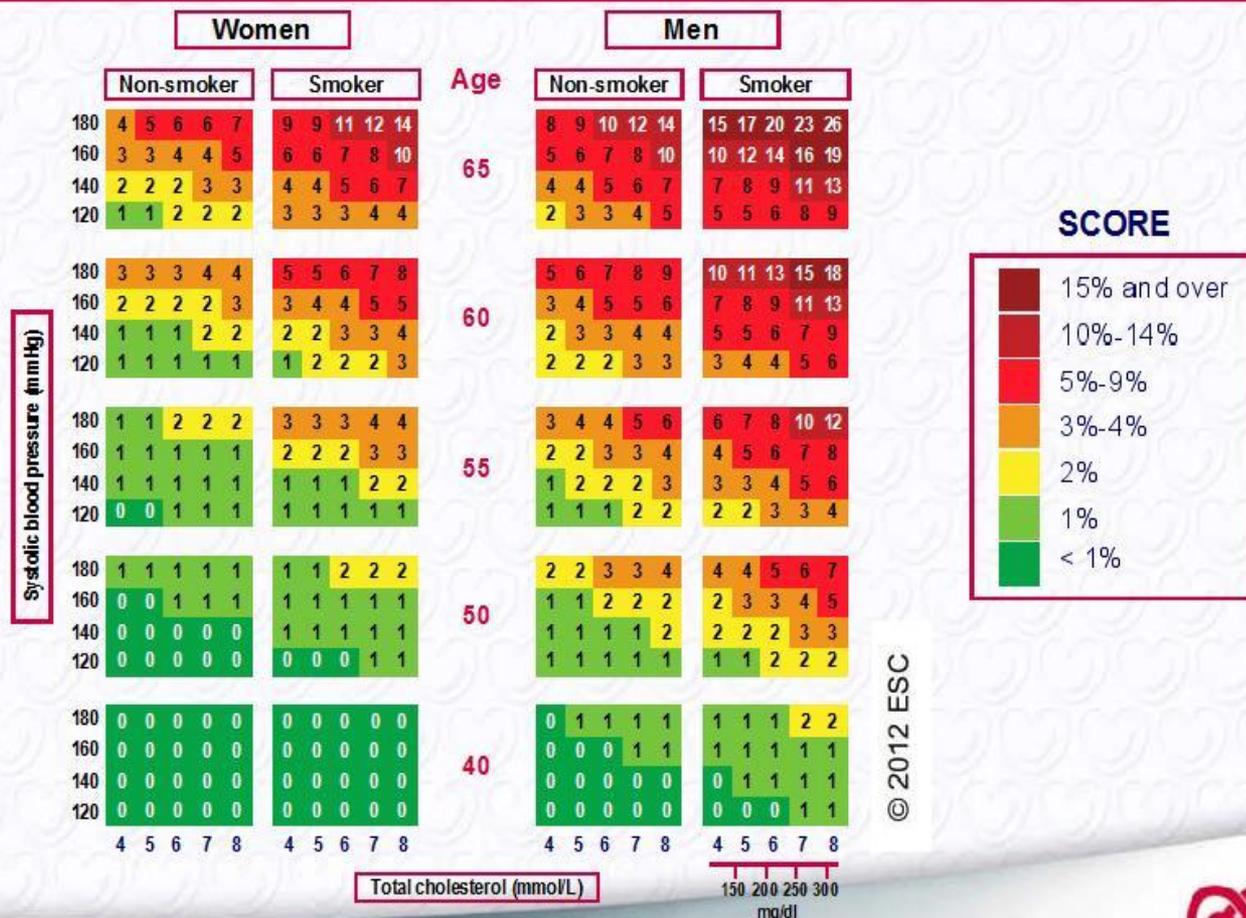
Quintile 5

For whom is CVD prevention needed

Recommendations regarding risk estimation	Class	Level	GRADE
Total risk estimation using multiple risk factors (such as SCORE) is recommended for asymptomatic adults without evidence of CVD	I	C	Strong
High-risk individuals can be detected on the basis of established CVD, diabetes type 2 or type 1 with end-organ damage, moderate to severe renal disease, very high levels of individual risk factors or a high SCORE risk	I	C	Strong

Risk factor screening including the lipid profile should be considered in adult men ≥ 40 years old and in women ≥ 50 years of age or postmenopausal
The physician in **general practice** is the key person to initiate, coordinate and provide long-term follow-up for CVD prevention

10 year risk of fatal CVD in low risk regions of Europe



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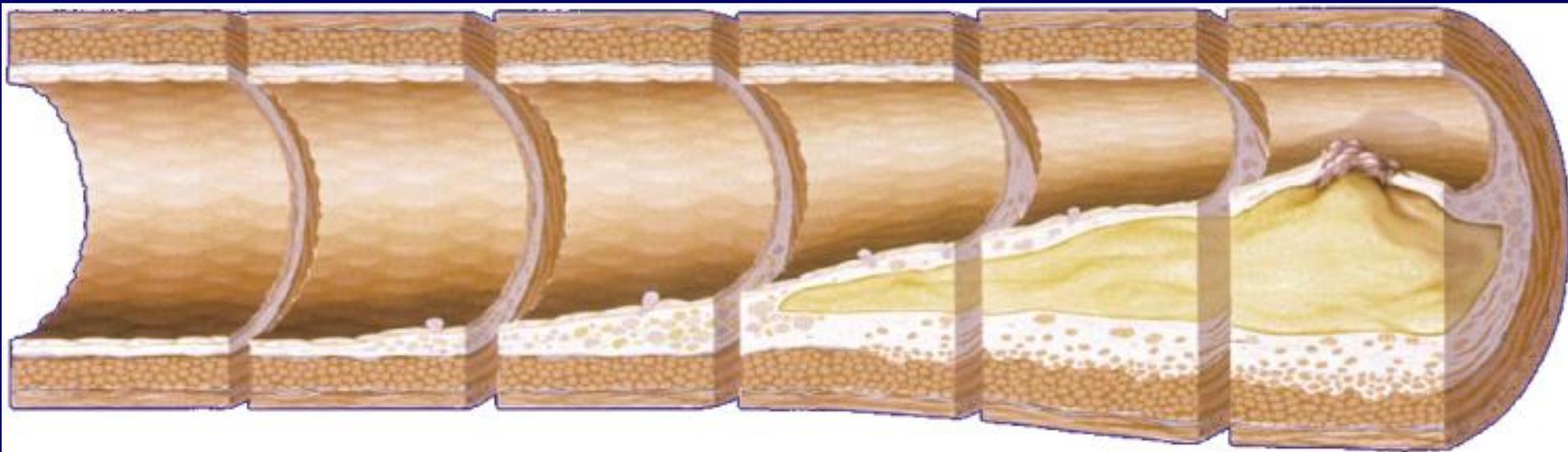
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Timeline atherosclerosis

Foam cell Fatty streak Intermediary lesion Atheroma Fibrous plaque Complicated lesion/rupture



Endothelial dysfunction

First decennium

From third dcennium

From fourth decennium

Growth mainly through lipid deposition

**Smooth muscle,
collagene**

**Thrombosis
hematoma**

Very high risk

Subjects with any of the following:

Documented CVD by invasive or non-invasive testing (such as coronary angiography, nuclear imaging, stress echocardiography, carotid plaque on ultrasound), previous myocardial infarction, ACS, coronary revascularization (PCI, CABG) and other arterial revascularization procedures, ischaemic stroke, peripheral artery disease

Diabetes mellitus (type 1 or type 2) with one or more CV riskfactors and/or target organ damage (such as microalbuminuria: 30–300 mg/24 h)

Severe chronic kidney disease (CKD) (glomerular filtration rate (GFR) <30 mL/min/1.73 m²).

A calculated SCORE $\geq 10\%$.

Other risk groups

High risk

Markedly elevated single risk factors such as familial dyslipidaemias and severe hypertension.

Diabetes mellitus (type 1 or type 2) but without CV riskfactors or target organ damage.

Moderate chronic kidney disease (CKD) (glomerular filtration rate (GFR) 30-59 mL/min/1.73 m²).

A calculated SCORE of $\geq 5\%$ and $< 10\%$ for 10-year risk of fatal CVD.

Moderate risk

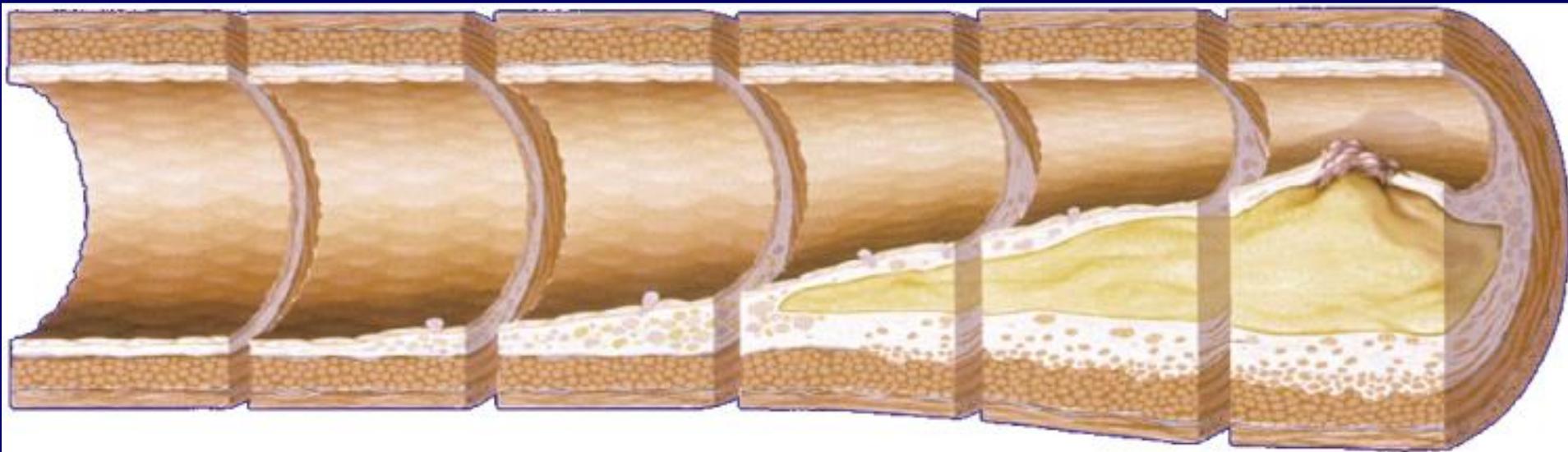
Subjects are considered to be at moderate risk when their SCORE is ≥ 1 and $< 5\%$ at 10 years. Many middle-aged subjects belong to this category.

Low risk

The low-risk category applies to individuals with a SCORE $< 1\%$ and free of qualifiers that would put them at moderate risk.

Timeline atherosclerosis

Foam cell **Fatty streak** **Intermediary lesion** **Atheroma** **Fibrous plaque** **Complicated lesion/rupture**



Low risk

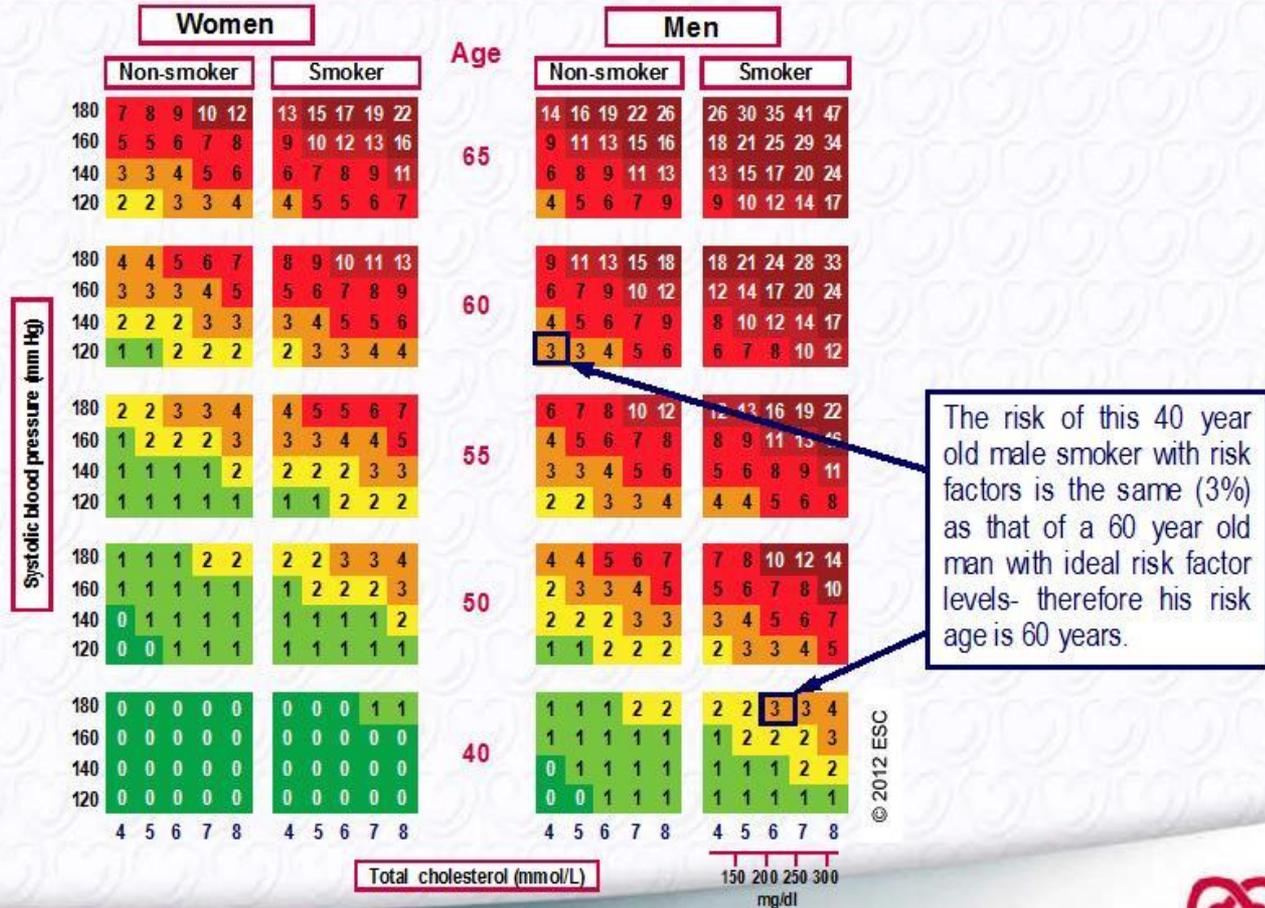
Moderate risk

High risk

Very high risk

Observe: the term primary and secondary prevention has been replaced by four risk groups

Risk age, a new concept



See also: www.heartscore.org: HDL charts now included

www.escardio.org/guidelines

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Five chapters

1. What is CVD prevention
2. Why is CVD prevention needed
3. Who needs CVD prevention
- 4. How is CVD prevention applied**
 - Behavioural factors
 - Risk factors
5. Where should CVD prevention be offered

Anyone for cigarettes ?



Recommendations regarding smoking	Class	Level	GRADE
All smoking is a strong and independent risk factor for CVD and has to be avoided.	I	B	strong
<u>Exposure to passive smoking increases risk of CVD and has to be avoided.</u>	I	B	strong
Young people have to be encouraged not to take up smoking.	I	C	strong
<u>All smokers should be given advice to quit and be offered assistance.</u>	I	A	strong

Recommendations regarding nutrition	Class	Level	GRADE
A healthy diet is recommended as being the cornerstone of CVD prevention	I	B	strong

- 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.

Recommendations regarding physical activity	Class	Level	GRADE
<p>Healthy adults of all ages have to spend 2.5-5 hours a week on physical activity or aerobic exercise training of at least moderate intensity, or 1-2.5 hours a week on vigorous intense exercise.</p> <p>Sedentary subjects should be strongly encouraged to start light-intensity exercise programmes.</p>	I	A	strong

Recommendations on blood pressure	Class	Level	GRADE
<u>Lifestyle measures</u> such as weight control, increased physical activity, alcohol moderation, sodium restriction, and increased consumption of fruits, vegetables, and low-fat dairy products <u>are recommended in all patients</u> with hypertension and in individuals with high normal BP.	I	B	strong
All major antihypertensive drug classes (i.e. diuretics, ACE inhibitors, calcium antagonists, angiotensin receptor antagonists and beta-blockers) do not differ significantly in their BP-lowering efficacy and thus should be recommended for the initiation and maintenance of antihypertensive treatment	I	A	strong
Systolic BP should be lowered to <140 mmHg (and DBP <90 mmHg) in all hypertensive patients.	IIa	A	strong

Definitions and classification of blood pressure levels

Category	Systolic BP (mmHg)		Diastolic BP (mmHg)
Optimal	<120	and	<80
Normal	120 -129	and/or	80 - 84
High normal	130 -139	and/or	85 - 89
Grade 1 hypertension	140 -159	and/or	90 - 99
Grade 2 hypertension	160 -179	and/or	100 -109
Grade 3 hypertension	\geq 180	and/or	\geq 110
Isolated systolic hypertension	\geq 140	and	<90

Lifestyle efforts first

Thresholds for definition of hypertension with different types of measurement

	SBP (mmHg)	DBP (mmHg)
Office or clinic	140	90
24-hour	125–130	80
Day	130–135	85
Night	120	70
Home	130–135	85

Provide home measuring equipment, control product quality

Recommendations on diabetes mellitus	Class	Level	GRADE
The target HbA _{1c} for the prevention of CVD in diabetes of < 7.0% (<53 mmol/mol) is recommended.	I	A	Strong
Statins are recommended to reduce cardiovascular risk in diabetes.	I	A	Strong
BP targets in diabetes are recommend to be <140/80 mmHg	I	A	Strong

Weight control campaigns to fight type II DM
Stimulate early detection of IGT in general practice

Target levels LDL

In patients at very high risk the LDL-C goal is < 1.8 mmol/L and/or $\geq 50\%$ LDL-C reduction when target level cannot be reached.

In patients at HIGH CV risk an LDL-C goal < 2.5 mmol/L should be considered.

In subjects at MODERATE risk an LDL-C goal < 3.0 mmol/L should be considered.

See Euroaspire III, EURIKA: audit needed!

5: Where should CVD prevention programmes be offered?

	Class	Level	GRADE
Actions to prevent CVD should be incorporated into everyone's daily lives, starting in early childhood and continuing throughout adulthood and senescence.	IIa	B	Strong
<u>Nurse-coordinated prevention programmes should be well integrated into healthcare systems.</u>	IIa	B	Strong
All patients with CVD must be discharged from hospital with clear guideline-orientated treatment recommendations to minimize adverse events.	I	B	Strong
All patients requiring hospitalization or invasive intervention after an acute ischaemic event <u>should participate in a cardiac rehabilitation programme</u> to improve prognosis by modifying lifestyle habits and increasing treatment adherence	IIa	B	Strong

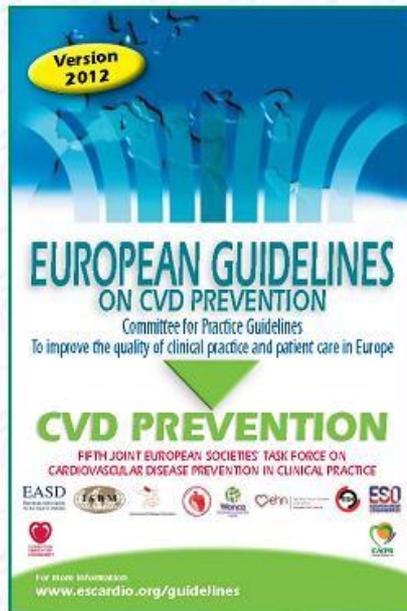
Further key messages

- Patients with cardiac disease may participate in **self-help programmes** to increase or maintain awareness of the need for risk factor management
- **Non-governmental organisations** are important partners to health care workers in promoting preventive cardiology
- The **European Heart Health Charter** marks the start of a new era of political engagement in preventive cardiology

Available at www.escardio.org/guidelines

under practice guidelines:
CME questions, slides set and key messages.

Launched at ESC Congress Munich, August 2012



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JOINT ESC GUIDELINES



European Guidelines on cardiovascular disease prevention in clinical practice (version 2012)

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

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

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In summary: the main messages

- Risk screening recommended, prime role of general practice
- Avoid second-hand smoke, quit smoking services
- Food: salt, transfatty acids, fruits and vegetables
- Physical activity: young generation
- No hypertension treatment without lifestyle counselling
- Home BP equipment: check quality, support purchase for patients
- Weight control campaigns, early detection of impaired glucose tolerance
- Audit achievement of target levels, espec. for lipids and blood pressure
- Promote nurse-coordinated prevention programmes

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- Risk screening recommended, prime role of general practice
- Avoid second-hand smoke, quit smoking services
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- Physical activity: young generation
- No hypertension treatment without lifestyle counselling
- Home BP equipment: check quality, support purchase for patients

WHO target: to reduce cardiovascular mortality with 25 % until 2015:

“25 by 25”

Thank you!