

CVD Prevention Guidelines

Joint European Societies Guidelines on Prevention of Cardiovascular Disease in Clinical Practice 2012

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European Heart Journal
doi:10.1093/eurheartj/ehs092

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)[†]

On behalf of:

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



European Society of Cardiology (ESC)

European Association for Cardiovascular Prevention & Rehabilitation (EACPR)



European Society of Hypertension (ESH)

International Society of Behavioural Medicine (ISBM)



European Heart Network (EHN)

European Association for the Study of Diabetes (EASD)



European Atherosclerosis Society (EAS)

International Diabetes Federation Europe (IDF-Europe)



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

www.escardio.org/guidelines

European Stroke Initiative (EUSI)



Major new key messages since the 2007 prevention guidelines

**Four levels of CVD risk: Very high risk;
High risk; Moderate risk and Low risk
Risk stratification of European countries:
Very high; High and Low
Concept of risk-age
Limited role of novel risk biomarkers**

**No exposure to passive smoking
The role of specific dietary patterns
Underweight as a possible risk factor
Multimodal behavioural intervention effective
in daily clinical practice**

Major new key messages continued

Blood pressure

All major antihypertensives equal for clinical use

Target blood pressure < 140/90 mmHg

Threshold values for ambulatory and home measurement

Diabetes mellitus

Target HbA1c for CVD prevention: < 7.0% (<53 mmol/mol)

Target blood pressure < 140/80 mmHg

Blood lipids

Target LDL-cholesterol:

<1.8 mmol/L for very high risk patients

<2.5 mmol/L for high risk patients

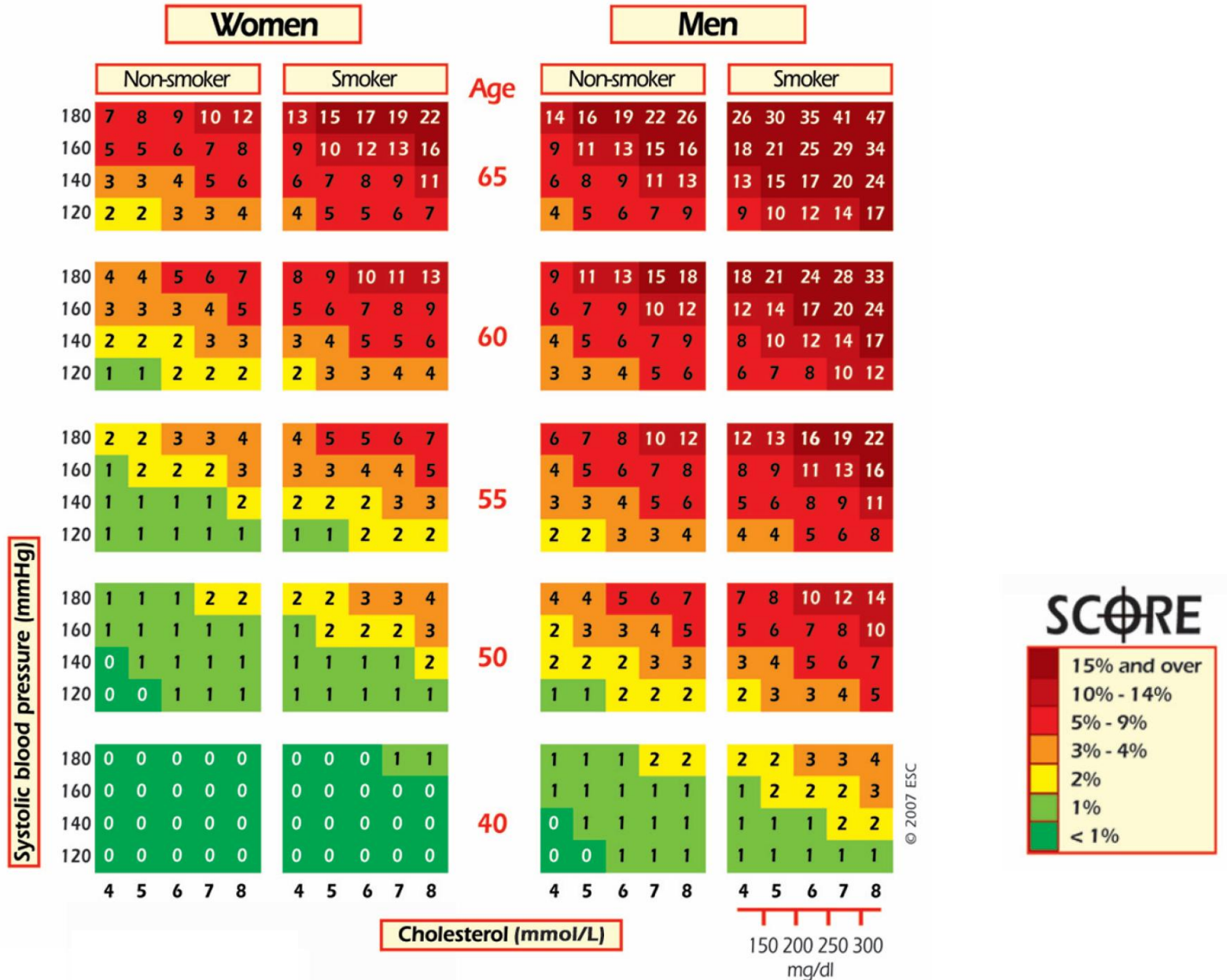
<3.0 mmol/L for all others

Priorities in CVD Prevention

Very high risk

- Documented CVD
- Diabetes mellitus (type 1 or 2) with one or more CV risk factors and/or target organ damage
- Severe chronic kidney disease
- SCORE > 10% over 10 years

Systematic coronary risk evaluation



Priorities in CVD Prevention

High risk

- Markedly elevated single risk factors such as familial dyslipidaemia or severe hypertension
- Diabetes mellitus (type 1 or 2) but without other risk factors or target organ damage
 - Moderate CKD
- SCORE > 5% but < 10% over 10 years

Priorities in CVD Prevention

Moderate risk

- SCORE > 1% but < 5% at 10 years

Priorities in CVD Prevention

Low risk

- SCORE < 1% at 10 years

SCORE: the European Risk Prediction System

Data from:

- 12 European cohort studies
- wide geographic spread of countries at different levels of cardiovascular risks
- 3-million person-years of observation
- 7,934 fatal cardiovascular events

Score enabled **HeartScore**,
an interactive tool



2003
3rd Joint European
Societies
Task Force



2004
European Society
of Cardiology



HeartScore[®]



HeartScore

The electronic, interactive version of SCORE

File Options Help

HeartScore



Examination data

Risk model:

Examination date:

Patient name:

Date of birth: (Month/Year)

Sex:

Examination	Treatment goals*
Systolic blood pressure: <input type="text" value="140"/>	<input type="text" value="140"/> mmHg
Cholesterol: <input type="text" value="5.0"/>	<input type="text" value="5.0"/> mmol/L
Smoker: <input type="text" value="No"/>	<input type="text" value="No"/>

Doctor's comments (Included in patient print out):

Calculate Risk

Notes

- Those with a) known CVD, b) type 2 diabetes or type 1 diabetes with microalbuminuria, or c) very high levels of individual risk factors are automatically at INCREASED CARDIOVASCULAR RISK and need management to all risk factors.
- For all other people, HeartScore can be used to estimate total risk: this is critically important because many people have midly raised levels of several risk factors that, in combination, can result in unexpectedly high levels of total cardiovascular risk.
- *The treatment goals given are those included in the ESC CVD prevention

Qualifiers

Click [here](#) to read the qualifiers on risk calculation using SCORE.

Patient Advice CVD Prevention Guidelines

HeartScore



Patient Advice

[Actual Total CVD Risk Level](#) | [Personalized health advice](#)

Examination data

Examination date 02 October 2008
 Patient name AN Other
 Age 66 (1/1942)
 Sex Male

Risk factors	Examination	Treatment goals
Systolic blood pressure	140 mmHg	140 mmHg
Cholesterol	5 mmol/L	5 mmol/L
Smoker	No	No
Your total CVD risk*	8%	8%

* Total CVD risk refers to the 10-year risk mortality

Alerts

HeartScore is calculated for patients up to age 65. Please be aware that patients older than this may be at a higher risk level than stated.

Actual Total CVD Risk Level



CVD Risk Regions in Europe

based on age, sex, smoking, SBP and TC

Low CVD risk countries:

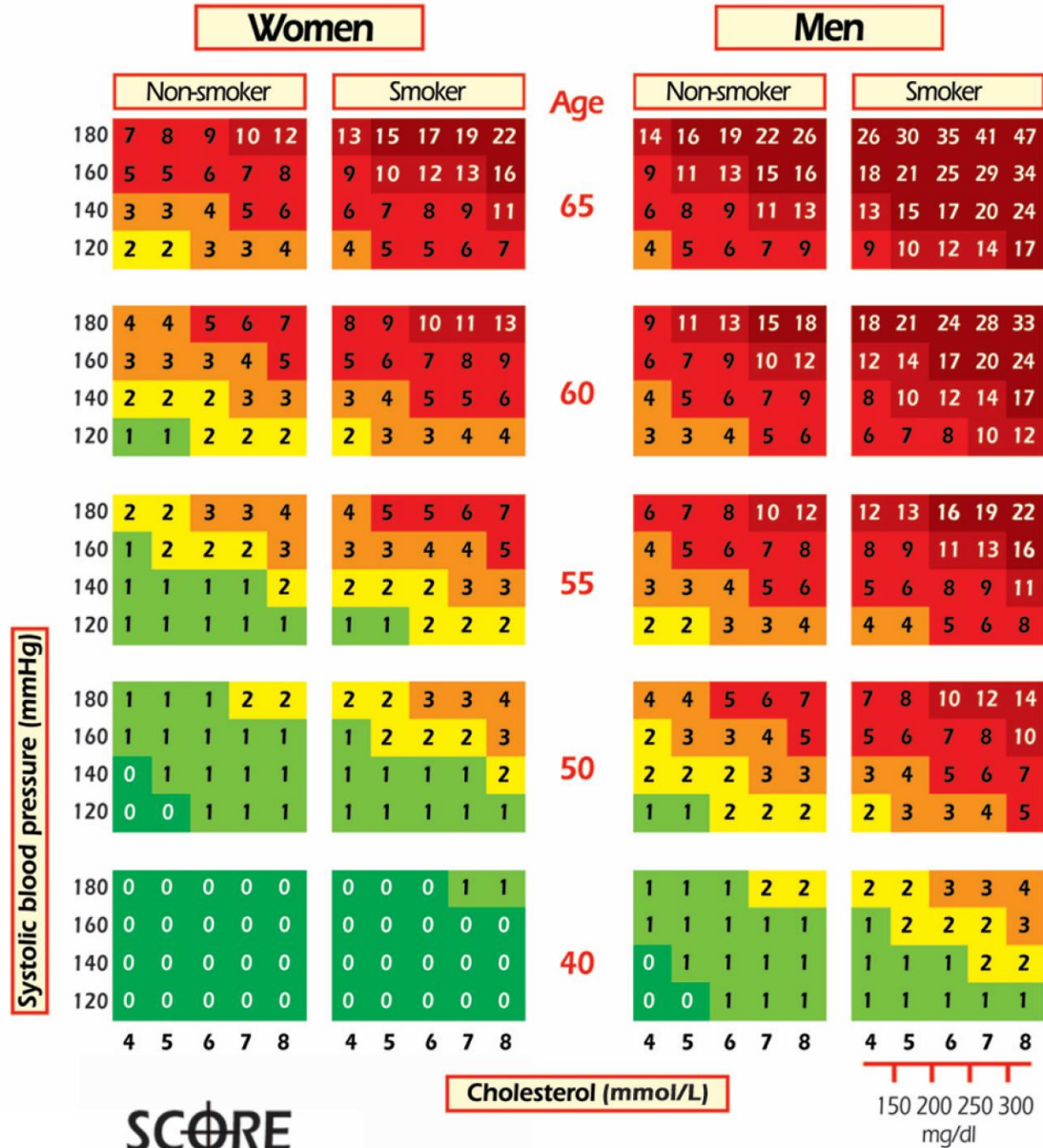
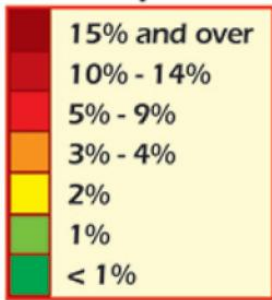
Andorra, Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, The Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom.

High CVD risk countries: All others apart from:

Very high risk countries: Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia FYR, Moldova, Russia, Ukraine and Uzbekistan.

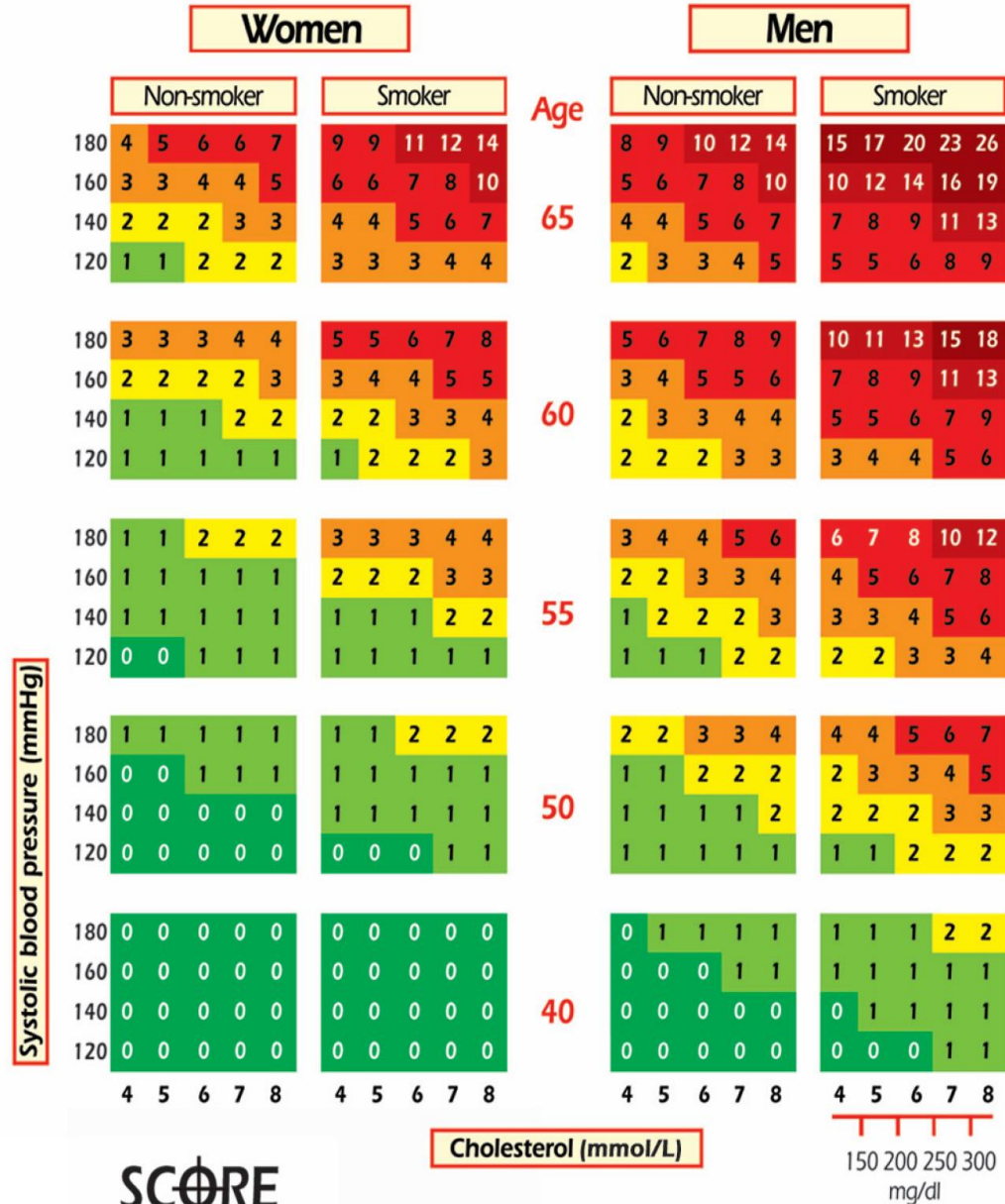
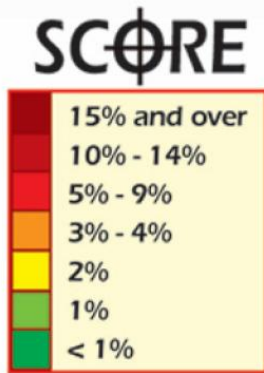
10 year risk of fatal CVD in high risk regions of Europe

SCORE

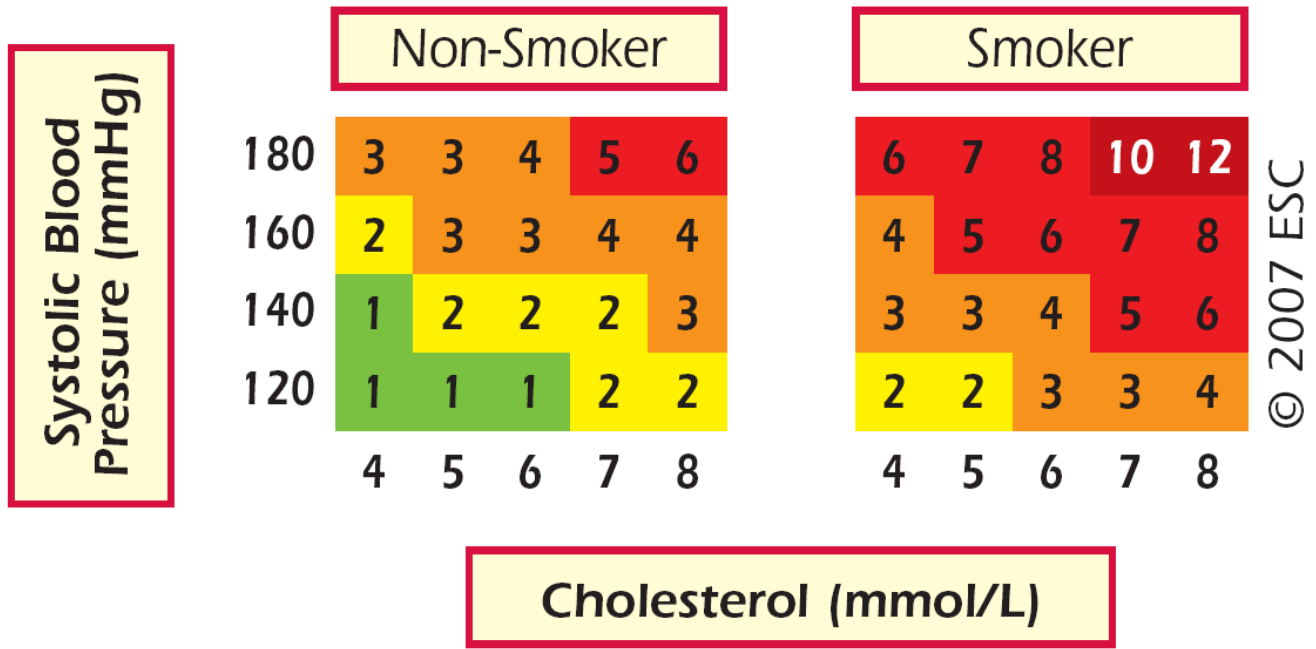


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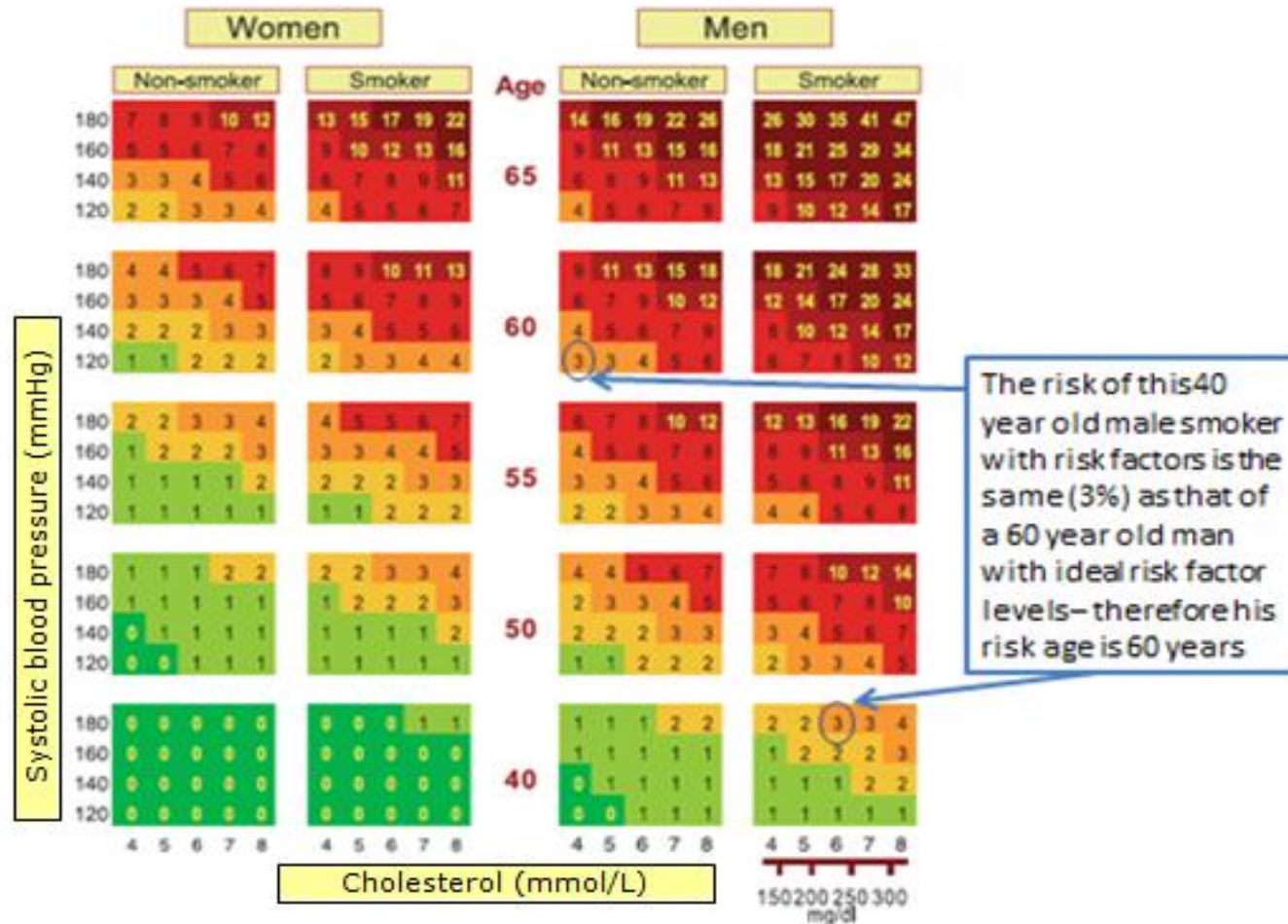
10 year risk of fatal CVD in low risk regions of Europe



Relative Risk Chart



Heart age – a new concept



Lifestyle and risk factor targets

Lifestyle: No smoking; healthy food choices and physically active

- BMI 20–25 kg/m²
- Waist circumference <94cm for men and <80cm for women
 - Blood pressure 130/80 - 139/85 mmHg
 - LDL cholesterol < 2.5 mmol/l (100 mg/dl) and < 1.8 mmol/l (70 mg/dl) in those at very high CVD risk or ≥ 50% LDL lowering
- Good glycaemic control in all persons with diabetes (HbA1c <7%)

Lifestyle and risk factor targets

Lifestyle:

- No smoking
- Make healthy food choices and limit energy intake to the amount needed to maintain a healthy weight
- Be physically active

Lifestyle and risk factor targets

Lifestyle:

- BMI 20–25 kg/m²
- Waist circumference <94cm for men and <80cm for women

Lifestyle and risk factor targets

Other risk factors:

- Blood pressure < 140/90 mmHg
and in diabetes mellitus
< 140/80 mmHg

Blood Pressure

SCORE CVD risk	Normal <130/85	High Normal 130—139/ 85—89	Grade 1 140—159/ 90—99	Grade 2 160—179/ 100—109	Grade 3 ≥180/110
Low Low risk <1%	Lifestyle advice	Lifestyle advice	Lifestyle advice	Drug Rx if persists	Drug Rx
Moderate risk 1—4%	Lifestyle advice	Lifestyle advice	+consider drug Rx	Drug Rx if persists	Drug Rx
High risk 5-9%	Lifestyle advice	+consider drug Rx	Drug Rx	Drug Rx	Drug Rx
Very high risk ≥10%	Lifestyle advice	+consider drug Rx	Drug Rx	Drug Rx	Drug Rx

Lifestyle and risk factor targets

Other risk factors:

- Total cholesterol < 5 mmol/L (190 mg/dl)
- LDL cholesterol < 2.5 mmol/l (100 mg/dl) and < 1.8 mmol/l (70 mg/dl) in those at very high CVD risk or \geq 50% LDL lowering

Lipids

Total CV risk (SCORE) %	LDL-C levels				
	<70 mg/dL <1.8 mmol/L	70 to <100 mg/dL 1.8 to <2.5 mmol/L	100 to <155 mg/dL 2.5 to <4.0 mmol/L	155 to <190 mg/dL 4.0 to <4.9 mmol/L	>190 mg/dL >4.9 mmol/L
<1	No lipid intervention	No lipid intervention	Lifestyle intervention	Lifestyle intervention	Lifestyle intervention, consider drug if uncontrolled
Class ^a /Level ^b	I/C	I/C	I/C	I/C	IIa/A
≥1 to <5	Lifestyle intervention	Lifestyle intervention	Lifestyle intervention, consider drug if uncontrolled	Lifestyle intervention, consider drug if uncontrolled	Lifestyle intervention, consider drug if uncontrolled
Class ^a /Level ^b	I/C	I/C	IIa/A	IIa/A	I/A
>5 to <10, or high risk	Lifestyle intervention, consider drug*	Lifestyle intervention, consider drug*	Lifestyle intervention and immediate drug intervention	Lifestyle intervention and immediate drug intervention	Lifestyle intervention and immediate drug intervention
Class ^a /Level ^b	IIa/A	IIa/A	IIa/A	I/A	I/A
≥10 or very high risk	Lifestyle intervention, consider drug*	Lifestyle intervention and immediate drug intervention	Lifestyle intervention and immediate drug intervention	Lifestyle intervention and immediate drug intervention	Lifestyle intervention and immediate drug intervention
Class ^a /Level ^b	IIa/A	IIa/A	I/A	I/A	I/A

Lipid modification drug therapies

LDL cholesterol lowering

HMG – CoA reductase inhibitors (statins)

Bile acid sequestrants

Cholesterol absorption inhibitors

Table Percentage reduction of LDL-C requested to achieve goals as a function of the starting value

STARTING LDL-C		% REDUCTION TO REACH LDL-C		
		<1.8 mmol/L (~70 mg/dL)	<2.5 mmol/L (~100 mg/dL)	<3 mmol/L (~115 mg/dL)
mmol/L	~mg/dL			
>6.2	>240	>70	>60	>55
5.2–6.2	200–240	65–70	50–60	40–55
4.4–5.2	170–200	60–65	40–50	30–45
3.9–4.4	150–170	55–60	35–40	25–30
3.4–3.9	130–150	45–55	25–35	10–25
2.9–3.4	110–130	35–45	10–25	<10
2.3–2.9	90–110	22–35	<10	–
1.8–2.3	70–90	<22	–	–

Lipid modification drug therapies

HDL cholesterol raising

Nicotinic acid

Fibrates

Cholesterol ester transfer
protein (CETP) inhibitors

Lipid modification drug therapies

HDL cholesterol raising

Nicotinic acid
AIM-HIGH, HPS 2-THRIVE

Fibrates
FIELD, ACCORD

Cholesterol ester transfer protein (CETP)
inhibitors
ILLUMINATE, DAL-OUTCOMES

Lifestyle and risk factor targets

Other risk factors:

- Good glycaemic control in all persons with diabetes (HbA1c <7%)

Diabetes

General	<ul style="list-style-type: none">• Metformin should be used as first line hypoglycaemic agent• Excessive weight gain and hypoglycaemia should be avoided• Statins recommended• Antiplatelets not recommended in absence of atherosclerotic disease	
Targets	HbA1c	<ul style="list-style-type: none">◁ 7.0%◁ 6.5% may reduce microvascular complications
	Total cholesterol	◁ 4.5 mmol/L
	LDL-C	<ul style="list-style-type: none">◁ 2.5 mmol/L◁ 1.8 mmol/L for diabetic patients at very high CVD risk
	Blood pressure	<ul style="list-style-type: none">◁ 140/80 mmHg• multiple antihypertensives often required

Cardiovascular Disease Prevention

European Society of Cardiology

www.escardio.org/prevention

www.escardio.org/guidelines