

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

**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)<sup>†</sup>**

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Councils: Basic Cardiovascular Science, Cardiology Practice, Cardiovascular Imaging, Cardiovascular Nursing and Allied Professions, Cardiovascular Primary Care

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### Keywords

Cardiovascular disease • Prevention • Risk assessment • Risk management • Smoking • Nutrition  
• Physical activity • Psychosocial factors

## SCORE charts with integrated HDL-cholesterol values

Tables taken from the ESC Guidelines for the Management of Dyslipidaemias (*European Heart Journal* 2011; **32**: 1769–1818- doi:10.1093/eurheartj/ehr158 - European Atherosclerosis Society (EAS). *Atherosclerosis* 2011; doi:10.1016/j.atherosclerosis.2011.06.012)

<http://www.escardio.org/guidelines-surveys/esc-guidelines/Pages/Dyslipidemias.aspx>

The use is the same as for the general SCORE charts:

### How to use the risk estimation charts

- The **low risk** charts should be considered for use in Belgium, France, Greece, Italy, Luxembourg, Spain, Switzerland and Portugal and also in countries which have recently experienced a substantial lowering of the CV mortality rates (see [www.ehnheart.org](http://www.ehnheart.org) (CVD statistics) for recent mortality data). The **high risk** charts should be considered in all other countries of Europe. NOTE that several countries have undertaken national recalibrations to allow for time trends in mortality and risk factor distributions. Such charts are likely to represent current risk levels better.
- To estimate a person's 10 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 blood pressure and TC. Risk estimates will need to be adjusted upwards as the person approaches the next age category.
- Low risk persons should be offered advice to maintain their low risk status. While no threshold is universally applicable, the intensity of advice should increase with increasing risk.
- Relative risks may be unexpectedly high in young persons, even if absolute risk levels are low. The relative risk chart (Figure 11) may be helpful in identifying and counselling such persons.
- The charts may be used to give some indication of the effects of reducing risk factors, given that there will be a time lag before risk reduces and that the results of randomized controlled trials in general give better estimates of benefits. Those who stop smoking in general halve their risk.
- The presence of additional risk factors increases the risk (such as low HDL-C, high TG).

### Qualifiers

- The charts can assist in risk assessment and management but must be interpreted in the light of the clinician's knowledge and experience and of the patient's pre-test likelihood of CVD.
- Risk will be overestimated in countries with a falling CVD mortality, and underestimated in countries in which mortality is increasing.
- At any given age, risk estimates are lower for women than for men. This may be misleading since, eventually, at least as many women as men die of CVD. Inspection of the charts indicates that risk is merely deferred in women, with a 60-year-old woman resembling a 50-year-old man in terms of risk.

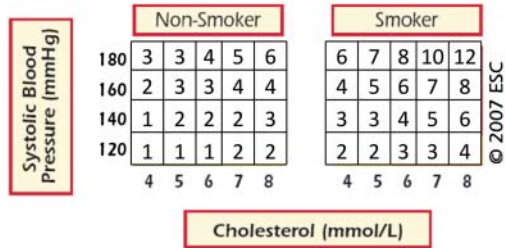
### Risk will also be higher than indicated in the charts in:

- Socially deprived individuals; deprivation drives many other risk factors.
- Sedentary subjects and those with central obesity; these characteristics determine many of the other aspects of risk listed below.
- Individuals with diabetes: re-analysis of the SCORE database indicates that those with known diabetes are at greatly increased risk; five times higher in women and three times higher in men.
- Individuals with low HDL-C or apolipoprotein A1 (apo A1), increased TG, fibrinogen, homocysteine, apolipoprotein B (apo B) and lipoprotein(a) (Lp(a)) levels, familial hypercholesterolaemia (FH), or increased hs-CRP; these factors indicate a higher level of risk in both genders, all age groups and at all levels of risk.
- Asymptomatic individuals with preclinical evidence of atherosclerosis, for example, the presence of plaques or increased carotid intima-media thickness on carotid ultrasonography.
- Those with impaired renal function.
- Those with a family history of premature CVD, which is considered to increase the risk by 1.7-fold in women and by 2.0-fold in men.
- Conversely, risk may be lower than indicated in those with very high HDL-C levels or a family history of longevity.

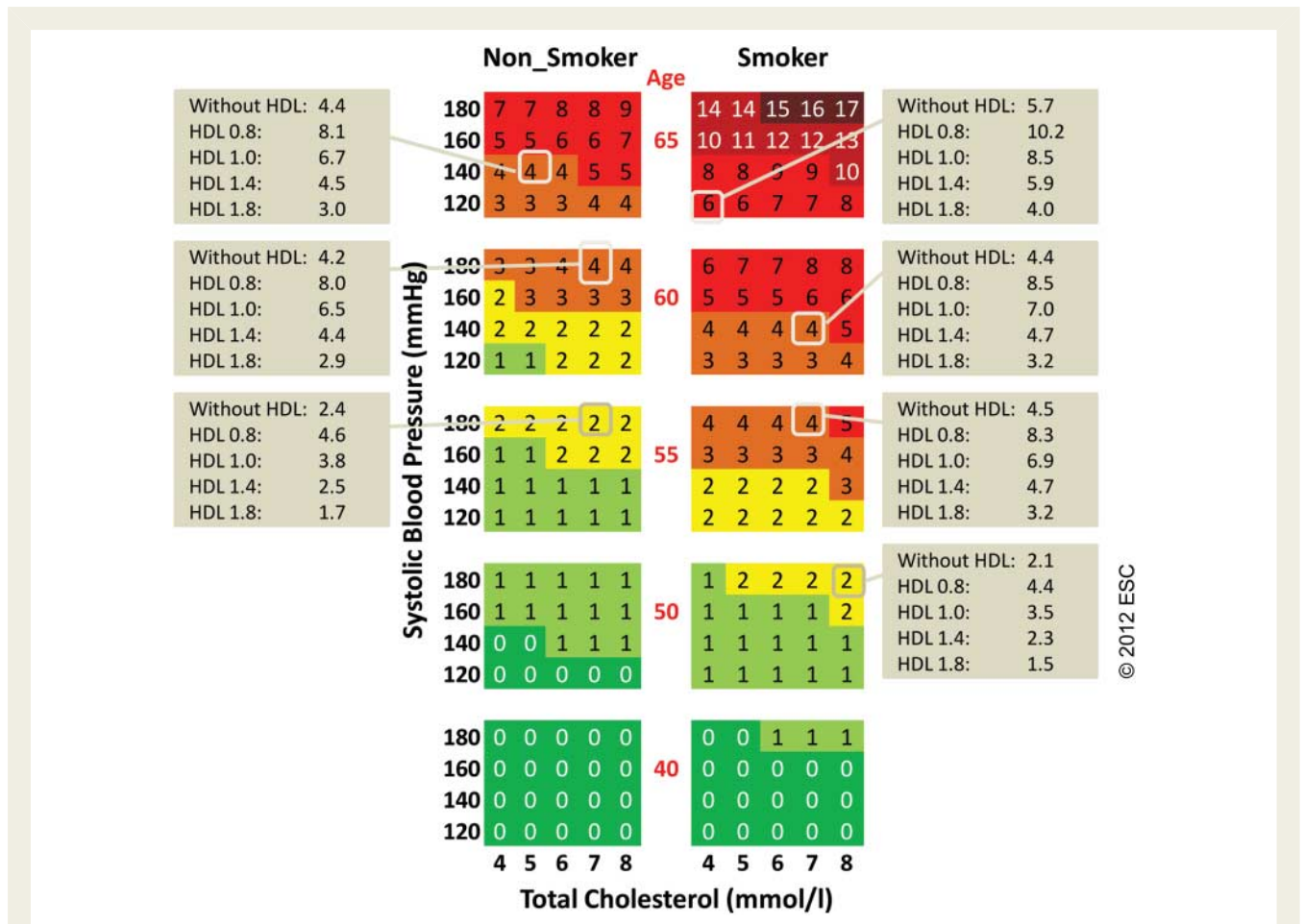
The chart below shows relative and not absolute risk. Thus a person in the top right-hand box has a risk that is 12 times higher than a person in the bottom left. This may be helpful when advising a young person with a low absolute but high relative risk of the need for lifestyle change.

### Relative Risk Chart

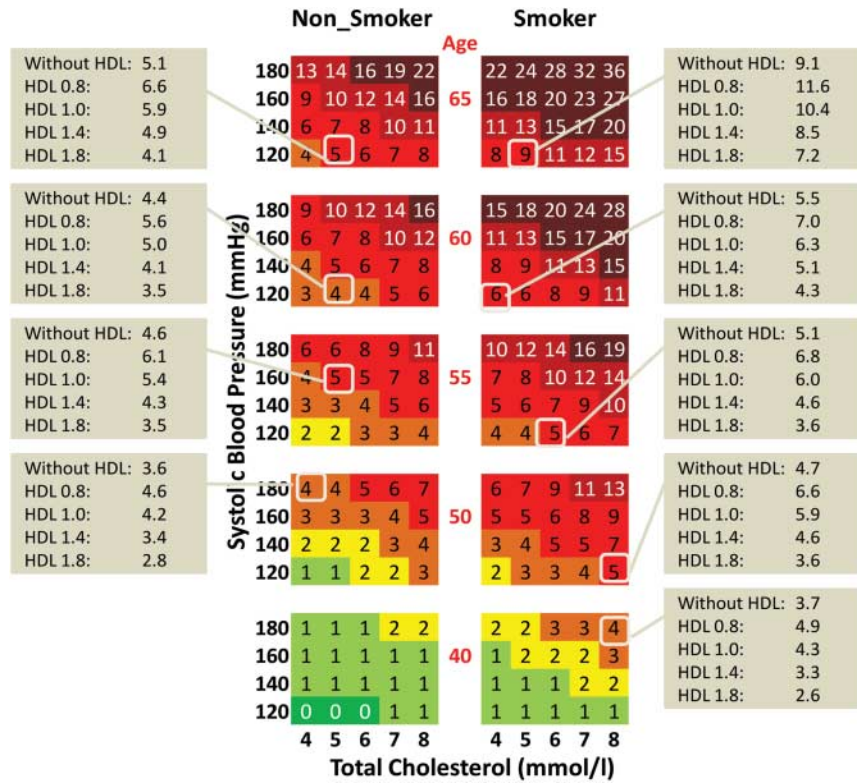
This chart may be used to show younger people at low absolute risk that, relative to others in their age group, their risk may be many times higher than necessary. This may help to motivate decisions about avoidance of smoking, healthy nutrition and exercise, as well as flagging those who may become candidates for medication



Please note that this chart shows RELATIVE not absolute risk. The risks are RELATIVE to 1 in the bottom left. Thus a person in the top right hand box has a risk that is 12 times higher than a person in the bottom left

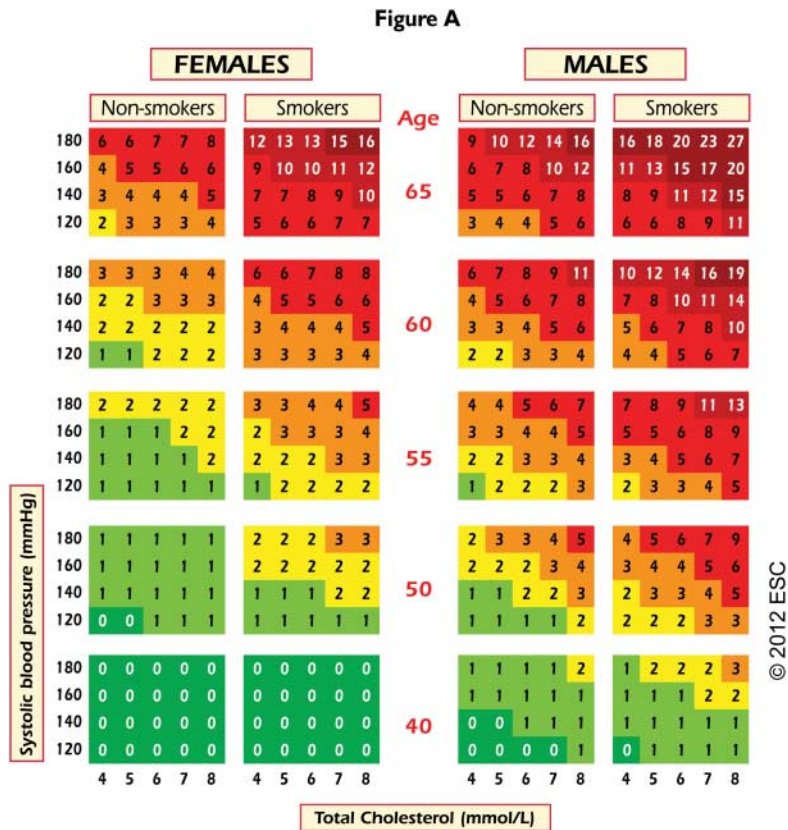


**Figure 4** Risk function without high-density lipoprotein-cholesterol (HDL-C) for women in populations at high cardiovascular disease risk, with examples of the corresponding estimated risk when different levels of HDL-C are included.



**Figure 5** Risk function without high-density lipoprotein-cholesterol (HDL-C) for men in populations at high cardiovascular disease risk, with examples of the corresponding estimated risk when different levels of HDL-C are included.





SCORE chart for use in low risk regions - HDL 0.8 mmol/L

Figure A

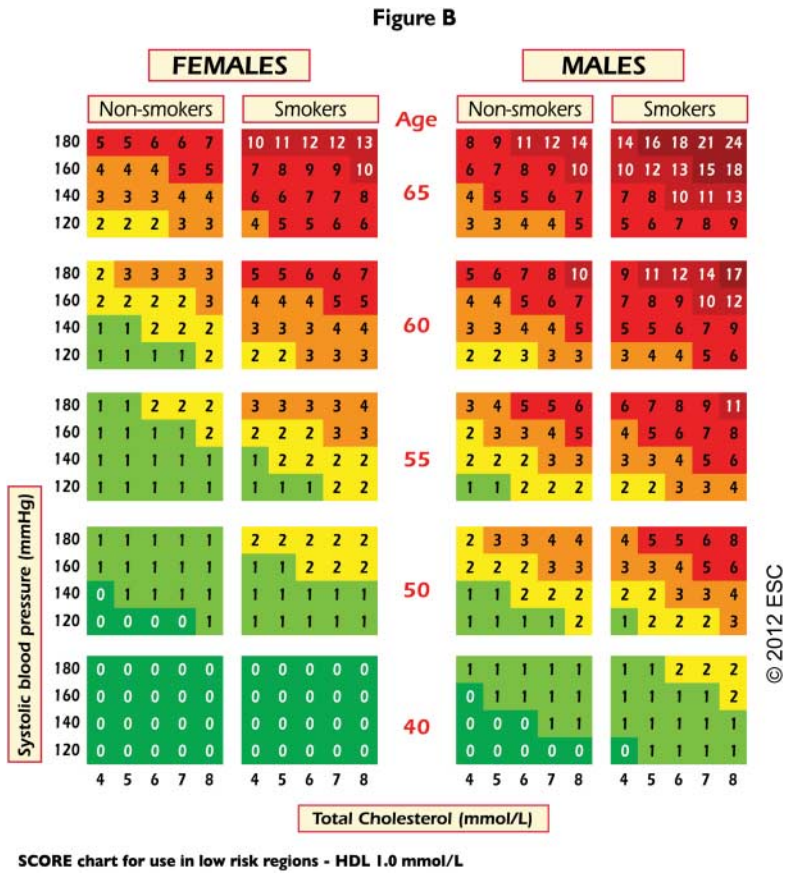


Figure B

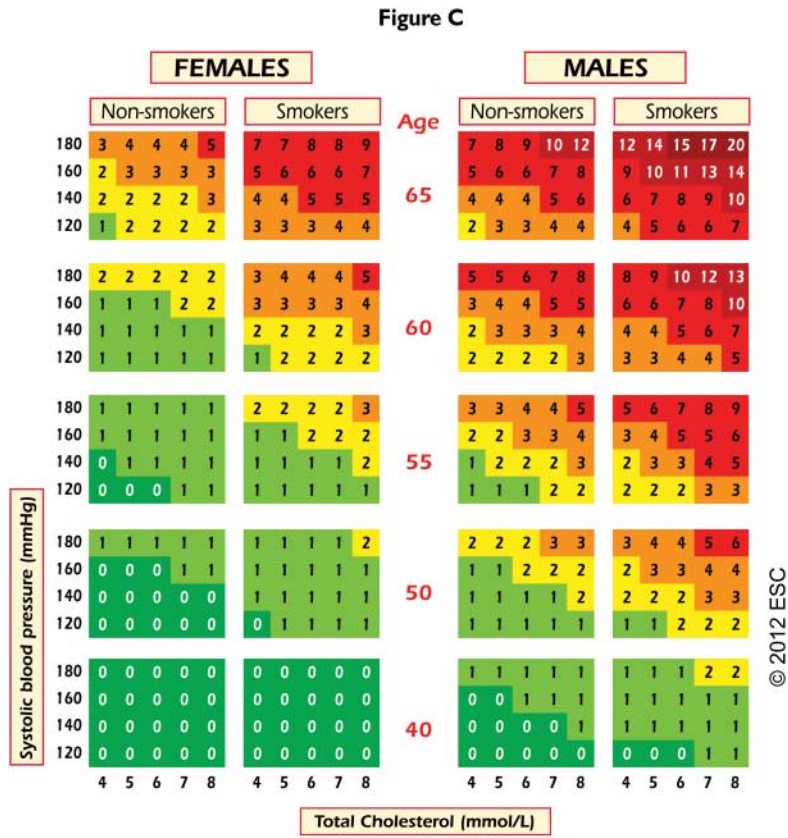


Figure C

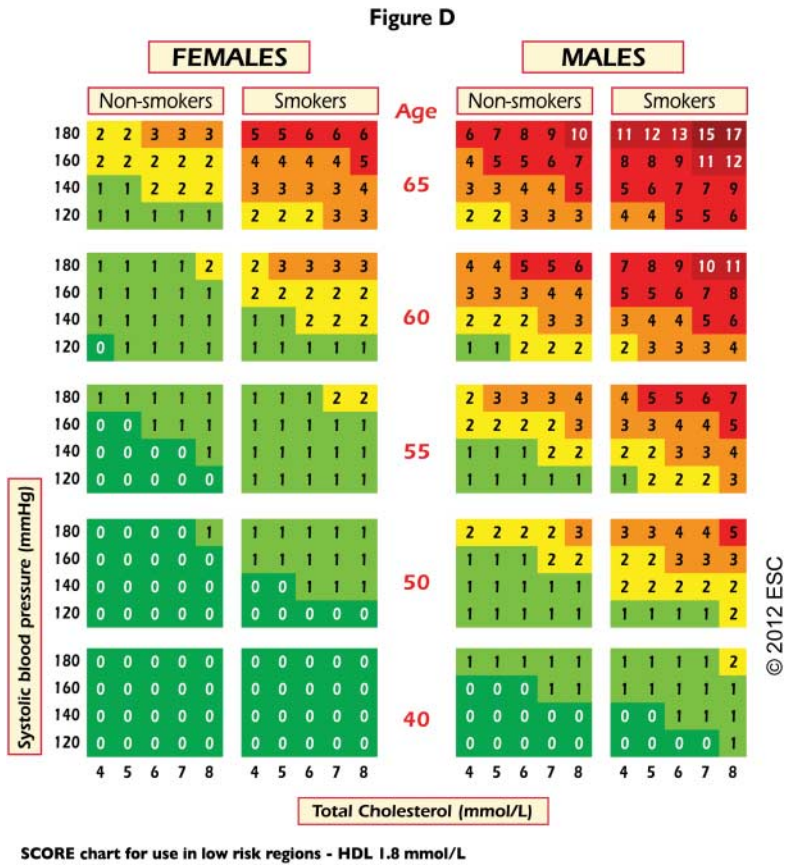
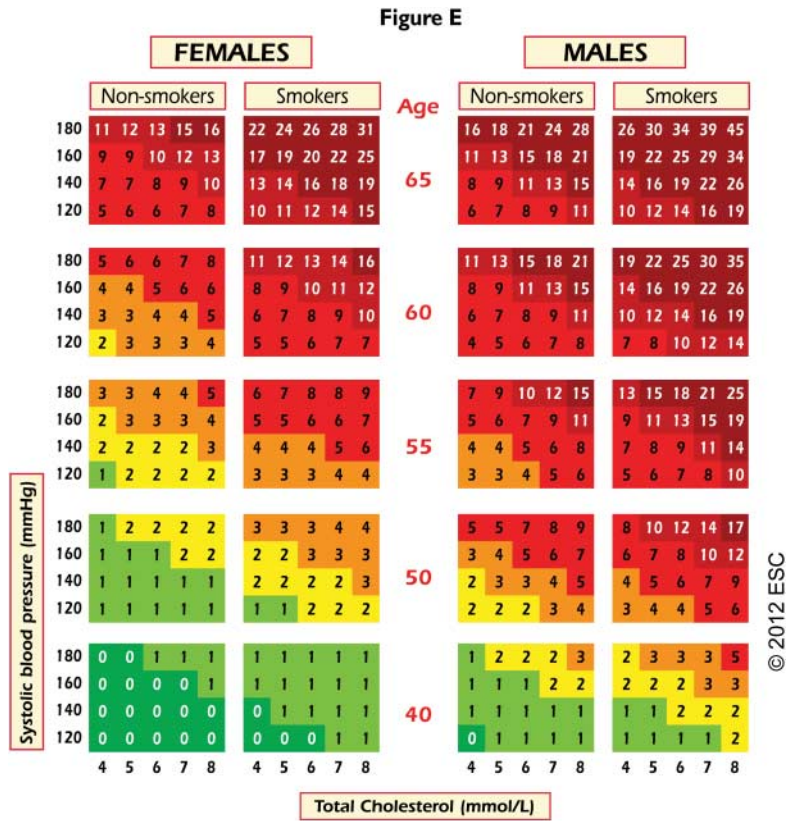


Figure D





SCORE chart for use in high risk regions - HDL 0.8 mmol/L

Figure E

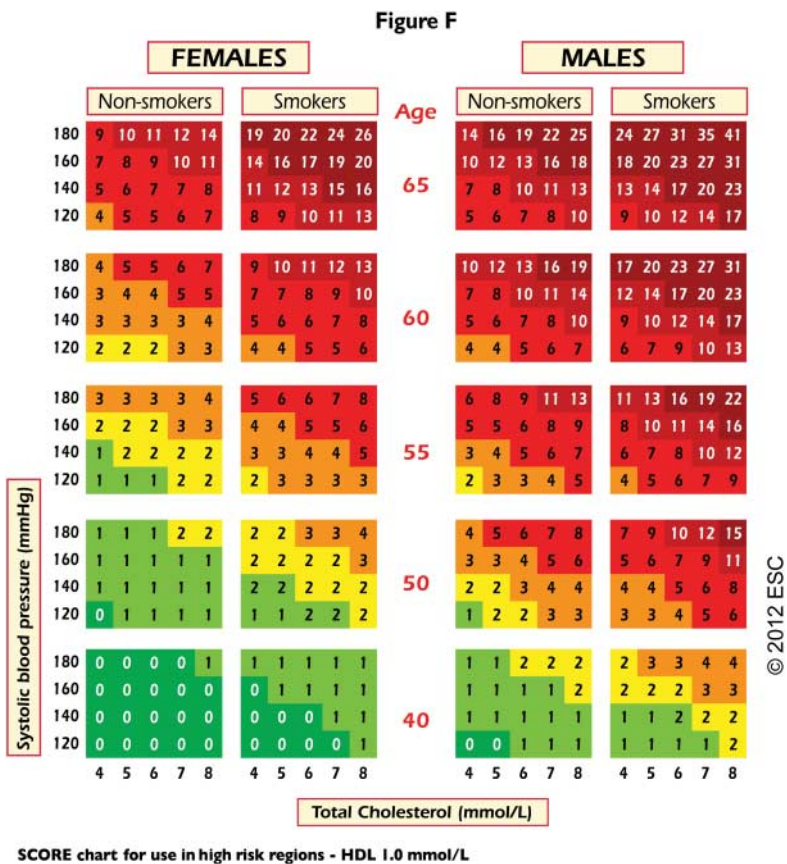
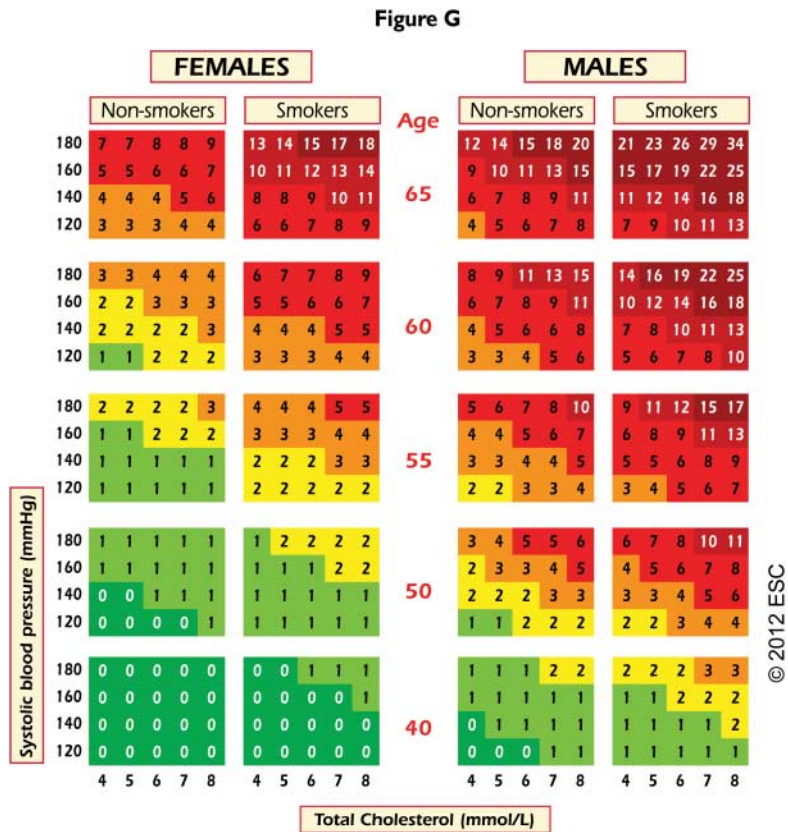
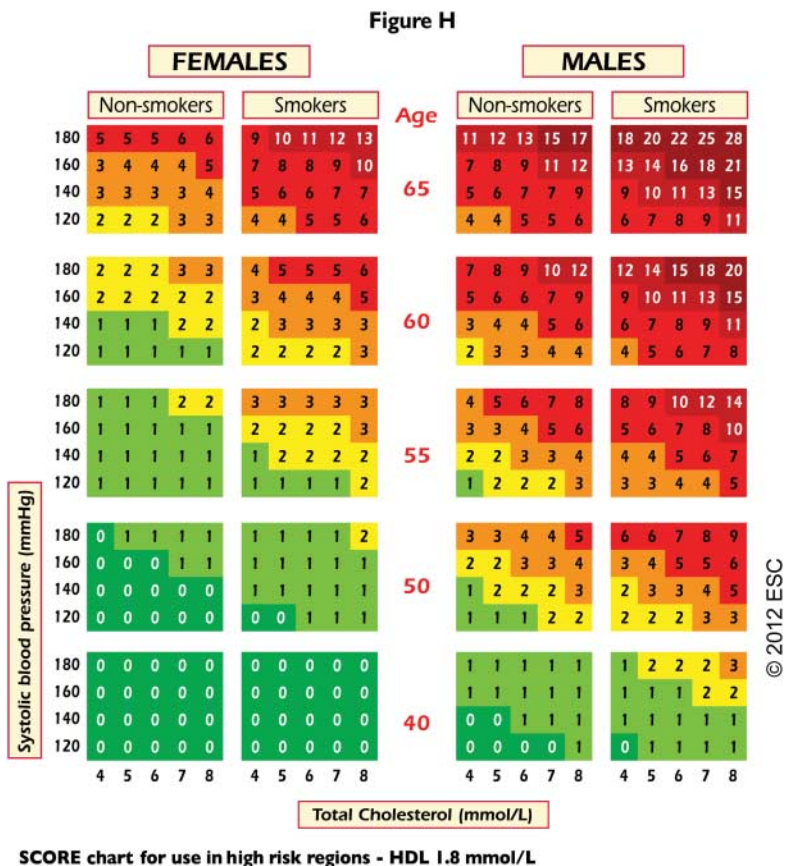


Figure F



SCORE chart for use in high risk regions - HDL 1.4 mmol/L

Figure G



SCORE chart for use in high risk regions - HDL 1.8 mmol/L

Figure H