

# Joint British Societies' Guidelines on the Prevention of Cardiovascular Disease in Clinical Practice: Risk Assessment



## Summary

- The latest Joint British Societies' (JBS2) guidelines consider the risk of developing atherosclerotic cardiovascular disease (CVD) rather than coronary heart disease (CHD) alone.
- CVD prevention in clinical practice should focus on all those people who are at high risk
- All patients with established CVD or diabetes are considered to be at high risk
- All adults >40 years without established CVD or diabetes should have a CVD risk assessment
- A risk of  $\geq 20\%$  of developing CVD over the next 10 years is the appropriate threshold for prescribing antihypertensive and lipid lowering medication in asymptomatic people
- For apparently healthy individuals with a 10 year total CVD risk <20%, appropriate lifestyle advice should still be given
- A CD-Rom-based CVD risk calculator is available

## Introduction

New scientific evidence, available since 1998 when the first guidelines were published, provides overwhelming justification for measures aimed at prevention of atherosclerotic disease. The scope of the new Joint British Societies' (JBS 2) Guidelines<sup>1</sup> (British Cardiac Society, British Hypertension Society, Diabetes UK, HEART UK, Primary Care Cardiovascular Society, the Stroke Association) now encompasses the whole of atherosclerotic cardiovascular disease (CVD) - including acute coronary syndromes, stable angina, cerebrovascular disease (non-haemorrhagic atherosclerotic stroke and haemorrhagic stroke, transient cerebral ischaemia), and any other arterial atherosclerosis, rather than highlighting coronary heart disease (CHD) alone.

### Purpose of the JBS2 guidelines

The aim of the new guidelines is to promote a consistent, multidisciplinary approach to risk factor management in patients with, and those at high risk of developing, CVD, by managing overall risk, rather than single risk factors.

CVD prevention in clinical practice should focus equally on:

- Patients with any form of established atherosclerotic CVD
- Patients with diabetes (type 1 or 2)
- Asymptomatic individuals without established CVD who have >20% estimated risk of developing atherosclerotic CVD over 10 years.

These three groups all require professional lifestyle and risk factor management to achieve defined targets which include:

- Smoking cessation
- Body-weight distribution - waist circumference (<102cm in men and < 88cm in women, < 92cm in Asian men and < 78 cm in Asian women)
- BMI <25kg/m<sup>2</sup>
- Blood pressure <130/80mmHg
- Total cholesterol <4mmol/l or a 25% reduction whichever is lower
- LDL cholesterol <2mmol/l or a 30% reduction whichever is lower
- Fasting plasma glucose <6mmol/l
- HbA<sub>1c</sub> <6.5% (diabetics only)
- Use of cardiovascular protective drug therapies where appropriate. These have specific clinical indications and include anti-thrombotic drugs and drugs that lower blood pressure, lipids and glucose.

Some individuals with particularly elevated single risk factors will also require CVD prevention measures, including medication, regardless of their estimated risk score, because of the high risk conferred by that risk factor.

These include:

- Blood pressure >160mmHg systolic or >100mmHg diastolic, or lesser degrees of blood pressure elevation with target organ damage, including left ventricular

hypertrophy, grade 3 or 4 hypertensive retinopathy, raised creatinine, micro/macro albuminuria or proteinuria

- Ratio of total to HDL cholesterol >6
- Familial dyslipidaemias, such as familial hypercholesterolaemia or familial combined hyperlipidaemia.

The risk factors in this group should be treated to the targets indicated above.

## Risk Estimation

CVD risk is a composite of several risk factors (age, sex, smoking habits, systolic blood pressure and the ratio of total to HDL cholesterol) and is expressed as a probability (% chance) of developing CVD over the next 10 years e.g. a risk of 23% means that over the next 10 years 23 out of 100 people of similar age and gender with similar risk factors will experience a CVD event. The question being asked is 'What is this person's CVD risk?' rather than 'Does this person have hypertension or hypercholesterolaemia?' Total CVD risk for a non-diabetic individual without evidence of vascular disease should be estimated in all individuals over 40 years old. The threshold of total CVD risk at which drug treatments should be given is 20% risk over the next 10 years, which is based on a combination of scientific evidence and practical considerations in relation to the delivery of care. For statins it is the level of risk recommended by NICE<sup>2</sup> and for antihypertensive therapy that is recommended by the British Hypertension Society.<sup>3</sup>

## Exclusions from Risk Estimations

Patients with established CVD, type 1 and type 2 diabetics >40 years, and patients with particularly elevated single risk factors (see Focus of Clinical Management) should be considered for statin treatment without risk calculation. This also applies to both type 1 and type 2 diabetics aged 18-39 years who have at least one of the following:

- retinopathy
- nephropathy, including persistent microalbuminuria
- persistent poor glycaemic control (HbA<sub>1c</sub> >9%)
- elevated blood pressure requiring antihypertensive therapy
- total serum cholesterol  $\geq$ 6mmol/l
- features of metabolic syndrome (central obesity and fasting triglycerides >1.7mmol/l (non fasting >2.0mmol/l) and/or HDL cholesterol <1.0mmol/l in men or <1.2mmol/l in women
- family history of premature CVD in a first degree relative

People with diabetes and/or established vascular disease should also receive antihypertensive treatment if their BP exceeds 130/80mmHg regardless of estimated CVD risk.

## Differences from previous guidelines

The new Cardiovascular Risk Assessment Charts differ in several important respects from the earlier charts.

### *CVD not CHD risk*

The most important change is that CHD risk is now replaced by CVD risk.

### *Age*

Charts are provided for three age ranges, <50years, 50-59 years and 60 years or more. However, the risks given for these three age ranges are based on the actual ages of 49, 59 and 69 years respectively. Therefore the charts will tend to overestimate risk within the two younger age bands (except in people aged exactly 49 or 59 years) and in the older age band overestimate the risk for those less than 69 years and underestimate the risk for people aged 70 years or more. Projecting risk in people less than 49 years old to their risk at 49 years takes account of the fact that using absolute risk tends to target treatments away from younger people to older ages. In young people (<40 years) it may be appropriate to measure risk factors and to treat familial dyslipidaemias, adverse total to HDL cholesterol ratios and particularly high blood pressure without risk estimations (see below).

### *Threshold for treatment*

In the new charts CVD risks of <10%, 10%–20% and  $\geq$ 20% over 10 years are shown. A risk of  $\geq$ 20%, shown in red, is the appropriate threshold for prescribing antihypertensive and lipid lowering medication in asymptomatic people. In the risk band between 10% and <20% over 10 years (orange) there is clinical evidence that some individuals can benefit from statin treatment, although it is less cost effective. This was part of the rationale for over the counter statin therapy. When the CVD risk is <10% over the next ten years (green) the benefit of treatment is not established and may be too small in absolute terms to justify drug treatment. However, recommendations for a healthy lifestyle are still very important in reducing risk.

### *Adjustments for specific high risk groups*

The charts may underestimate risk in people with an adverse family history (CVD event in a male first degree relative before age 55 or a female one before age 65 years), people of South Asian origin or with elevated triglycerides (>1.7mmol/l). The estimated risk may be multiplied by 1.5 for an adverse family history, 1.5 for South Asian origin and 1.3 for raised triglycerides.

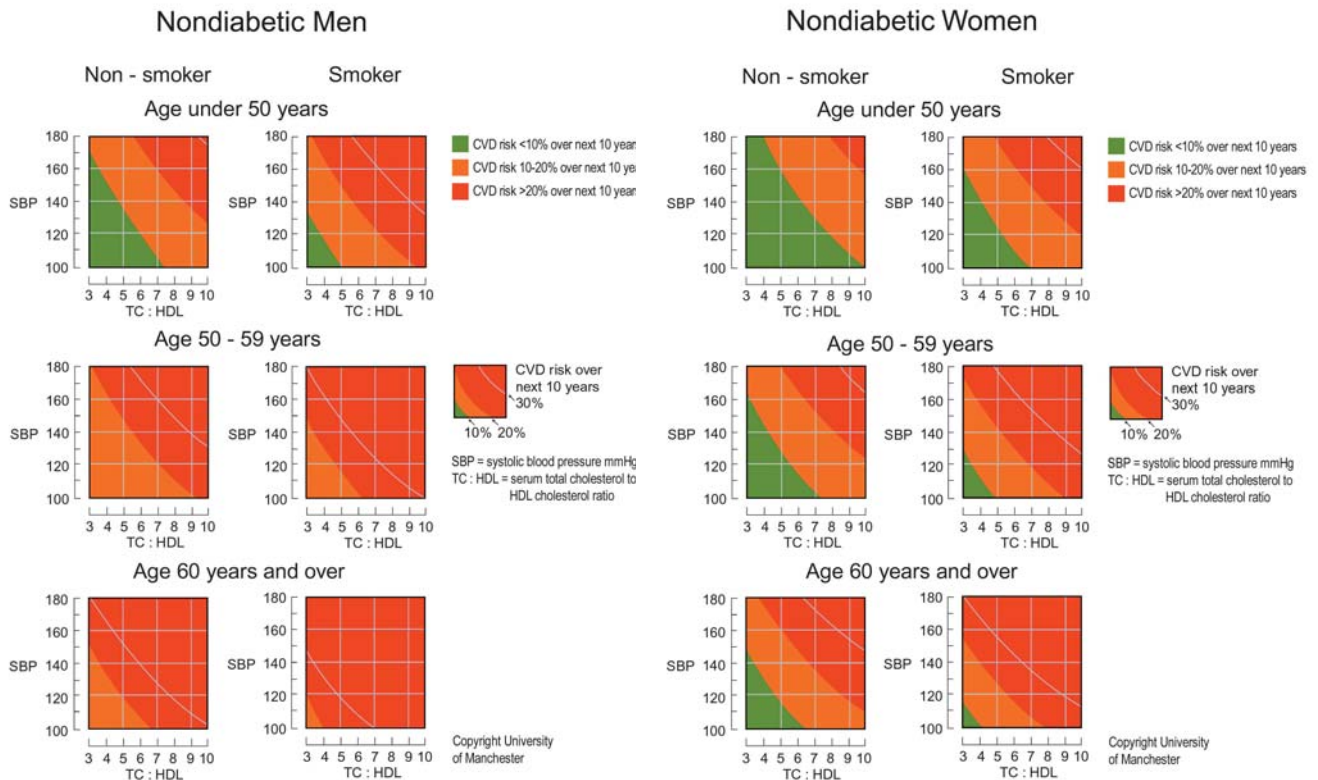
***The charts are intended as an aid to clinical management, but not to replace clinical judgment. They are also available in A2 poster format (M68) and can be ordered from 0870 600 6566.***

## References:

1. Heart 2005; **91**(suppl V):v1-52
2. [www.NICE.org.uk](http://www.NICE.org.uk)
3. [www.bhsoc.org](http://www.bhsoc.org)

**Continued**

Factfile January 2006 **Joint British Societies' Guidelines on the Prevention of Cardiovascular Disease in Clinical Practice: Risk Assessment** (continued)



**Cardiovascular Risk Assessor Tool on CD-ROM**

The new CVRA is available on a CD-ROM (version 01.06) for use with this Factfile.

- It can be used on PCs running most of the Windows® operating systems. It requires a program called .NET Framework to operate.
- The CVRA program requires at least 4MB of free hard disc space and 36MB free hard disc space if you require .NET Framework. Before installation, you should check that there is sufficient free disc space on your computer. This can be determined by clicking on the Disc Cost... button during the installation process.
- When you insert the CD-ROM into the drive, a window will appear. Double click on the dotnetfx.exe icon if you require .NET Framework. Then follow the instructions on screen.
- Read the ReadMe.txt for the latest information. Double click on the Setup.Exe icon to install the CVRA program.
- Should you wish to remove the program, you can do so from within your computer's Control Panel, simply click on the Add/Remove Programs icon.

You will find an on-line version of the program and updates at: [www.access2information.org/health/cvra](http://www.access2information.org/health/cvra)

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The Cardiovascular Risk Assessor Tool is designed as an aid to clinical management, not to replace clinical judgment. If you have any questions, comments or feedback or would like a copy of the CD-ROM, please contact Professor P.N. Durrington via the website: [www.medicine.manchester.ac.uk/ces/](http://www.medicine.manchester.ac.uk/ces/)

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