



Risk Factors for Cardiovascular Disease (CVD)

Cardiovascular Disease (CVD) is the most common cause of death in the UK and includes coronary heart disease (angina/heart attack), stroke (where normal blood supply to part of the brain is cut off, damaging the area affected); mini stroke (known as transient ischaemic attack or TIA) and peripheral arterial disease (narrowing of arteries usually in the legs). Non modifiable and modifiable risk factors can increase the probability of developing CVD.

“Non modifiable” risk factors cannot be changed. These are:

- 1 **your age** – risk increases as you get older,
- 2 **your gender** – before the age of 60 men are at greater risk than women,
- 3 **your family history** – your risk may increase if close blood relatives experienced early heart disease.

But there are other risk factors that you can change:

- Raised or altered levels of blood cholesterol
- Raised triglycerides with low HDL-cholesterol
- High blood pressure
- Diabetes
- Smoking
- Being overweight/obesity
- Being inactive
- Excessive alcohol
- Excessive stress

Having more than one risk factor means the overall risk of CVD is much higher. Your GP can work out what your 10 year risk is of developing CVD using a risk assessment tool known as QRISK2 which takes into account your modifiable and non modifiable risk factors.

Raised or altered levels of blood cholesterol

Cholesterol is vital for healthy cells. It is so important that the body does not rely on a dietary source, it makes its own. If, however, the body accumulates too much, cholesterol can become deposited in the walls of arteries, which become damaged and may become blocked. If this happens, a heart attack could result. Many people make too much cholesterol when their diet is rich in saturated fats.

High blood cholesterol may also be inherited, as in Familial Hypercholesterolaemia (FH) and Familial Combined Hyperlipidaemia (FCH). In these conditions there are genetic alterations that lead to over-production or accumulation of cholesterol in the blood. To combat this, a rigorous cholesterol lowering diet, usually combined with drug treatment, is required to reduce and control blood cholesterol and the risk of CVD.

What is a healthy level of cholesterol?

	Healthy people	People at high risk
Total Cholesterol	5 mmol/L or less	People with existing heart disease, or at high risk of developing it, may be asked to reduce their cholesterol levels further. It is important to discuss and agree what targets you should aim for with your doctor
Non HDL-cholesterol	4 mmol/L or less	
LDL-cholesterol	3 mmol/L or less	
HDL-cholesterol	men above 1.0 mmol/L women above 1.2 mmol/L	
Fasting Triglycerides	2 mmol/L or less	

The latest guidelines from NICE on cardiovascular risk assessment and the modification of blood lipids for the primary and secondary prevention of cardiovascular disease (CG181) can be found at www.nice.org.uk/guidance/CG181

Raised triglycerides with low HDL-cholesterol

Having too much of another fat in the blood, triglyceride, is often coupled with having too little HDL (high density lipoprotein). This combination is often linked with premature coronary heart disease. It can be inherited but also occurs in people who are overweight especially when excess fat is carried around the waist. Weight reduction and regular exercise may help to reduce triglyceride levels and increase HDL levels.

A higher level of HDL is healthy, as this is the component in the blood which brings excess cholesterol from the tissues to the liver for processing and removal. Low levels of HDL appear to be an important predictor for heart disease.

People with raised triglycerides should also limit their intake of refined sugary foods and alcohol.

High Blood Pressure

High blood pressure is harmful to the arteries and increases the risk of heart attack, heart failure and stroke. The condition tends to run in families, but blood pressure is also influenced by lifestyle. To prevent blood pressure from rising, it is important to achieve and maintain a healthy body weight, keep alcohol intake moderate, reduce salt intake, manage and reduce stress and be physically active. If these measures fail, there are drugs that are effective in reducing elevated blood pressure. Excess alcohol intake seems to be an important contributor to high blood pressure in Britain. Blood pressure reading of more than 90/60 and less than 120/80 are considered to be healthy. If readings are persistently above 140/90 then further investigation should be arranged. www.bloodpressureuk.org

Diabetes

People with diabetes are at a much higher risk of CVD. This increased risk is associated with high blood sugar, high blood pressure and raised blood lipids.

Lipid profiles in people with diabetes tend to show:

- elevated very-low-density lipoproteins (VLDL)
- small low-density lipoproteins (LDL)
- low high density lipoprotein (HDL).

This combination is commonly termed diabetic dyslipidaemia and is particularly atherogenic; i.e. the furring up process of arteries is accelerated.

People with diabetes and a raised cholesterol level experience an even greater risk of heart disease than people without diabetes with the same level of cholesterol.

It is possible to have undiagnosed diabetes or impaired glucose tolerance without knowing it, which also increases CHD risk.

www.diabetes.org.uk

Smoking

Cigarette smoking, even a few a day, increases the risk of heart disease. It is also responsible for 90% of lung cancers, can cause cancer anywhere else in the body, bronchitis, emphysema and stroke. There are thus many health benefits from being a non-smoker. Even after having smoked for many years, stopping smoking now will reduce CVD risk. After five years, your risk of having a heart attack falls to about half that of a smoker and overall risk of coronary heart disease cut by half 1 year after quitting (JBS3)

NHS Go Smokefree **0800 169 0 169**

www.nhs.uk/smokefree

QUIT **0800 00 22 00** / www.quit.org.uk

Being overweight /obesity

Being overweight increases the chance of having a heart attack. This is in part because people who are overweight are more likely to have high blood pressure, diabetes and high blood fats.

Modest weight loss can reduce risk but weight loss must be maintained. Reducing fat (especially saturated fat), sugar and alcohol, reducing portion sizes, being more physically active and adequate support to enable behavioural change are recognised ways of losing weight. www.bdaweightwise.co.uk

Being inactive

Physical inactivity is an important contributor to coronary heart disease. Cardiovascular benefits of regular physical activity include reduced blood pressure, weight control, reduced waist circumference all of which help to reduce the risk of developing CVD.

Current recommendations for exercise are at least 2.5hours/150 minutes of moderate activity or 75 minutes of rigorous activity per week for adults. www.nhs.uk/Livewell

Excessive Alcohol

Alcohol in moderation may reduce the risk of heart disease. However, consuming too much alcohol places your health at risk in a number of ways. This is because, when taken in excess, alcohol is harmful to the heart and other organs. It can directly damage the heart muscle and cause irregular beating of the heart. Alcohol also contributes to weight gain, high triglycerides, high blood pressure, strokes and cancer, not to mention accidents and violence. There are many reasons to keep alcohol consumption within reasonable limits.

Recommended safe levels of alcohol: men should not regularly drink more than 3-4 units per day and women should not regularly drink more than 2-3 units per day. It is also recommended to have a few alcohol free days every week and avoid binge drinking.

www.drinkaware.co.uk

www.nhs.uk/Change4Life

Stress

A certain amount of stress may be desirable, in that it keeps people alert and motivated. However, as the stress level builds, especially if prolonged, it can be harmful to health. Stress can exacerbate symptoms in people with pre-existing heart disease, and can contribute to high blood pressure.

For those with high cholesterol it can lead to neglect of a healthy lifestyle, such as poor eating habits or not taking prescribed medication. It is important to find time for relaxation. Simple breathing exercises, sports, music, meditation, reading, engaging in hobbies, taking a walk... there are many ways to reduce stress. Choose activities which appeal and make regular time for them.

*see our fact sheet on stress in our healthy resources section