Diabetes and Cardiovascular Disease:

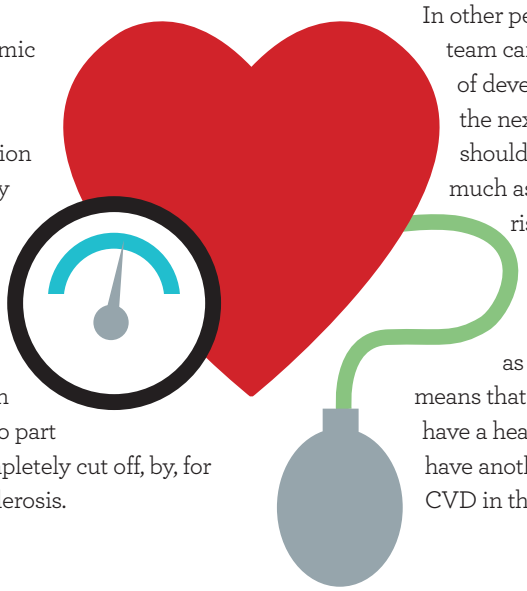
What You Should Know

What is cardiovascular disease?

Cardiovascular disease (CVD) describes conditions affecting the heart and blood vessels. CVD is usually associated with a build up of fatty deposits inside the arteries – the vessels that deliver blood throughout the body. This build up is called 'atherosclerosis'. Over time, atherosclerosis causes a narrowing of the artery that can restrict and eventually block the flow of blood.

Atherosclerosis in the coronary arteries (which supply the heart) can cause angina or even a heart attack. The damage to the heart can eventually lead to heart failure (where the heart is unable to pump blood properly).

A transient ischaemic attack or "mini stroke" follows a temporary disruption in the blood supply to part of the brain. A stroke can be a serious life-threatening condition. Most strokes occur when the blood supply to part of the brain is completely cut off, by, for example, atherosclerosis.



Peripheral arterial disease occurs when there is a blockage in the arteries to the limbs, usually the legs. Often people with peripheral arterial disease do not experience symptoms. Some people with peripheral arterial disease develop a painful ache in their legs when they walk. The pain usually disappears if they rest for a few minutes. Doctors and nurses call this condition 'intermittent claudication'

How can I know my risk of developing CVD?

Healthcare teams should assess CVD risk in everyone with diabetes. If you have already had a heart attack or stroke, or have peripheral arterial disease, your healthcare team already knows that you're at high risk. In other people, the healthcare team can calculate your risk of developing CVD over the next 10 years. Everyone should reduce their risk as much as possible. But if your risk is 10% or greater, it is really important to try to reduce as many of your risk factors as possible. A 10% risk means that 1 person in 10 will have a heart attack, stroke, die or have another problem caused by CVD in the next decade.

How common is CVD?

About seven million people in the United Kingdom (UK) have CVD, which is one of the leading causes of death and disability. Indeed, CVD causes a quarter of all deaths in the UK.

Having diabetes means that you are 2 to 4 times more likely to develop CVD than someone without diabetes. So, you are more likely to suffer a heart attack, stroke or heart failure. Adults with diabetes are almost twice as likely to die from heart disease or a stroke compared with those without diabetes.

However, you may delay or even prevent these cardiovascular complications by tackling several of the factors that increase CVD risk.

How can I reduce the risk?

Certain factors increase the likelihood of developing CVD, but cannot be changed, such as:

- Age: CVD is more common in people older than 50 years of age. The risk increases further with advancing age.
- Men tend to develop CVD at an earlier age than women.
- Having a family history of CVD: a father or brother diagnosed with CVD before age 55 years of age, or a mother or sister diagnosed before 65 years of age.
- South Asian, African or Caribbean ethnic background.

However, there are many more that you can change!

- High blood pressure (hypertension)
- Smoking
- High levels of 'unhealthy' cholesterol in the blood
- Being overweight or obese
- Sedentary lifestyle: not taking regular exercise and prolonged sitting
- Eating an unhealthy diet.

Diabetes is an important risk factor for CVD. People with diabetes are more likely to have conditions that increase the risk of developing heart disease or having a stroke, such as high blood pressure or high levels of unhealthy cholesterol.

Diabetes also causes blood glucose levels to rise, which, over time, damages blood vessels. Damage to small blood vessels may also lead to loss of sensation in the legs and feet, which may damage the skin. Damage to large blood vessels can lead to a heart attack, stroke, ulcers and other foot problems and even amputations. If you notice any changes, see your GP or diabetes nurse as soon as possible.

How can I lower my chances of a heart attack or stroke?

Get your HbA_{1c}, blood pressure and levels of unhealthy cholesterol in your blood measured at least once a year as part of your annual diabetes review. Make sure you get support and advice from your healthcare team to keep your HbA_{1c}, blood pressure and levels of unhealthy cholesterol within your target ranges.

Reduce your blood pressure

Your heart pumps blood around your body, delivering oxygen and nutrients to your organs. Your blood pressure is made up of two numbers. The pressure in the arteries is highest when the heart contracts. This is the first number (systolic blood pressure). The second number is the pressure in the arteries when the heart relaxes between beats (diastolic blood pressure). So, a blood pressure of 120/80 means the systolic blood pressure is 120 and the diastolic is 80.

Hypertension, the medical term for high blood pressure, indicates that the heart is having to work harder to pump blood around your body. This may be due to a narrowing of the arteries. Blurred vision, nose bleeds, shortness of breath and headaches may be signs of hypertension. **However, most people with hypertension do not get any symptoms.** So, it is really important that you have your blood pressure checked regularly.

The recommended blood pressure target for most people with diabetes is 140/80 or less. If you have damage to your eyes or kidneys, your healthcare team may recommend a target below 130/80. Talk to your healthcare team about your ideal target.

Sometimes high blood pressure runs in families. Blood pressure also rises as you get older. The following factors can also increase your risk of getting high blood pressure:

- **Drinking too much alcohol**
- **Smoking**
- **Being overweight, especially having too much body fat around your middle**
- **Not being physically active**
- **Eating too much salt**

Being more active, eating a heathy diet and losing weight if you are overweight can all help control your blood pressure. But most people with hypertension still need medicines (called antihypertensives). There are many different blood pressure medicines and your healthcare team may suggest combining drugs that work in different ways. Talk to your healthcare team about your options.

Reduce levels of unhealthy cholesterol

Cholesterol is a type of fat (also called a lipid) that is vital for your health and well-being. For example, the body uses cholesterol to make vitamin D and some hormones: chemical messengers that send

signals around your body. Excess cholesterol can deposit in blood vessels, for instance, and contributes to atherosclerosis.

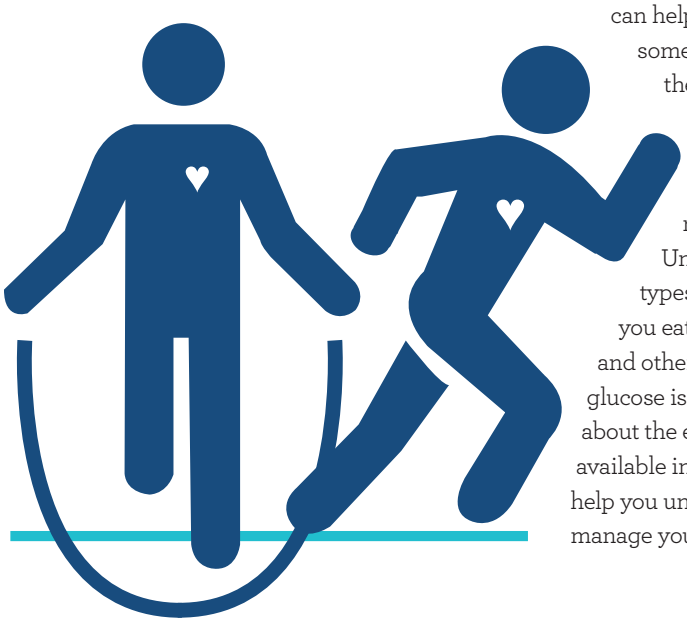
Some foods - including eggs, some seafood and offal - contain cholesterol. But eating these will not markedly raise your blood cholesterol. Your liver makes most of the cholesterol in your body. High levels of certain types of cholesterol - triglycerides and LDL (low density lipoprotein) - increase the risk of CVD. On the other hand, HDL (high density lipoprotein) helps protect against CVD by taking cholesterol from the rest of the body to the liver to be broken down. Blood tests show how much of the 'unhealthy' cholesterol (the healthcare team calls this 'non-HDL cholesterol') you have. Talk to your healthcare team about your ideal cholesterol level.

Maintaining a healthy weight by reducing portion sizes, cutting back on processed high-fat foods and being more physically active can help to improve the levels of unhealthy cholesterol. However, most people with raised levels of unhealthy cholesterol also need medicines to reduce their risk of CVD. Statins, for instance, help lower cholesterol levels and reduce the risk of having a heart attack or stroke. Talk with your healthcare team to find out whether taking a statin is right for you.

Hit your HbA_{1c} target

High blood glucose levels over a long time can damage blood vessels increasing the risk of CVD, going blind, needing an amputation or developing kidney disease. The HbA_{1c} test tells you your average blood glucose for the previous 2–3 months. So, the HbA_{1c} test helps you understand how well your diabetes is controlled. **Make sure your healthcare team measures your $HbA1_c$ level at least every 6-12 months.** Discuss a realistic personal target for your HbA_{1c} with your healthcare team.

You may need medicines that lower blood glucose to achieve or maintain your target HbA_{1c}. An increasing number of these medicines are available, including some that can help with weight loss and some that seem to reduce the likelihood of problems caused by CVD for those at particularly high risk. But drugs don't replace a healthy lifestyle. Understanding how the types and amounts of food you eat, the exercise you take and other factors affect your blood glucose is really important. So, ask about the educational programmes available in your area that will help you understand how you can manage your diabetes better.



What do I need to discuss about my medicine with my healthcare team?

- **Take your medicine as prescribed.** Remember that medicines do not replace a healthy lifestyle.
- Before you start a new medicine, **ask your doctor or nurse how the medicine works, when to take it and what to do if you miss a dose.**
- You should **know if your medicines are likely to cause any side effects, how to deal with them and when to seek help.**
- You should **know when you should see your healthcare team again** to check that the medicines are working.
- **Check with your doctor whether you should take aspirin regularly to reduce the risk of CVD.** Aspirin, despite the doses being lower than when used as a painkiller, is not safe for everyone and is generally only recommended for those who have had a heart attack or stroke. Your doctor can tell you whether taking aspirin is right for you and how much to take.

How can I develop or maintain healthy lifestyle habits?

As mentioned, a range of factors strongly influence the risk of developing CVD, including diet, physical activity, smoking, excessive alcohol consumption, raised levels of unhealthy cholesterol, high blood pressure and being overweight or obese. To reduce your risk:

- **Eat a healthy, balanced diet** to protect your heart and blood vessels.
- **Eat more wholegrains and at least five portions of fruit and vegetables a day.** Don't eat too much fruit at one time - space it out during the day and avoid fruit smoothies as these will markedly raise your blood sugar.
- **Eat at least two portions of fish per week,** including one portion of oily fish, such as salmon or mackerel.
- **Eat four to five portions of unsalted nuts, seeds and legumes a week.**
- **Replace saturated (eg animal fat) and trans-fats with unsaturated fats (eg olive oil).** Trans-fats are found in many processed foods; look for partially hydrogenated vegetable oils or fats on the label.
- **Eat less red and processed meat, drinks sweetened with sugar and refined grains,** which have been stripped of fibre and most nutrients; white bread, for instance).
- **Decrease salt intake to less than 6g a day.** A teaspoon of salt is about 6g.
- **Drink less than 14 units of alcohol a week.** Use the calculator from Alcohol Change UK to check your units: www.alcoholchange.org.uk/alcohol-facts/unit-calculator.
- **Make physical activity part of your daily routine.** Aim to do 150 minutes of physical activity a week – that's about 20-30 minutes a day. You can do it in bursts of 10 minutes at a time. The activity should make you breathe harder, feel warmer and make your heart beat faster, but you should still be able to hold a conversation. Lots of activities count, such as walking, gardening, housework, swimming and even using the stairs rather than the escalator. People with diabetes and those with other serious conditions (such as CVD, kidney disease, asthma and arthritis) should check with their healthcare team before starting vigorous exercise – such as joining a gym.
- **Aim to achieve and maintain a healthy weight.** If you're overweight, try to get down to a healthy weight as this helps to reduce the strain on your heart. Losing just 5% of your body weight has huge health benefits. Ask your healthcare team for your target weight or use the calculator from the NHS: www.nhs.uk/live-well/healthy-weight/bmi-calculator.
- **Don't smoke.** Smoking makes it harder for blood to flow around your body, especially to your heart. If you need help stopping, ask your healthcare team.
- **Try to get enough sleep;** people who don't sleep sufficiently seem to be at increased risk of CVD and, possibly, diabetes. Sleeping well also helps reduce stress.

Where can I find out more?

BRITISH DIETETIC ASSOCIATION

www.bda.uk.com
Produce leaflets on eating and drinking to help you keep fit and healthy.

BRITISH HEART FOUNDATION

www.bhf.org.uk
Produce a comprehensive range of information booklets.

DIABETES UK

www.diabetes.org.uk
Diabetes UK have developed a series of Information Prescriptions designed to give people with diabetes the information that they need to understand, engage with and improve on their health targets. Ask your healthcare team about the Diabetes UK Information Prescriptions.

HEART UK

www.heartuk.org.uk
Heart UK aims to help adults to know and understand their cholesterol levels and to take action to improve their health.

PCDS
Primary Care Diabetes Society

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