

Diabetes and your heart and blood vessels

Key Points

- The heart and blood vessels together are called the cardiovascular system
- Currently both men and women with diabetes have a high rate of damage to their cardiovascular system but these rates are decreasing
- There are ways to treat cardiovascular problems, but preventing them happening by living a healthy lifestyle is by far your best defense
- Chest pain (angina) occurring with exercise is the usual sign of heart disease
- However, people with diabetes may develop significant heart disease without having chest pain. It may cause shortness of breath or sudden nausea, or you may get swelling in the ankles
- If you have been diagnosed with heart disease learn how to recognise the signs of heart attack
- If you think you may be having a heart attack call an ambulance to take you to hospital as quickly as possible

You can greatly reduce your chance of developing heart or blood vessel disease by:

- Stopping smoking.
- Getting regular amounts of exercise (20-30 minutes on most days of week).
- Achieving a healthy body weight.
- Achieving healthy blood cholesterol, blood pressure and blood glucose levels (through exercise, healthy eating, and medication if needed).

If you have diabetes you are more likely to develop heart or blood vessel problems (cardiovascular disease). However, at present there is a decrease in the level of cardiovascular disease in those with diabetes.

This decrease is because:

- Self blood glucose testing gives people the tools to keep their blood glucose levels in a more healthy range
- People are making healthier food choices
- There is more awareness amongst health professionals and the rest of the population of the need to manage blood pressure as well as blood glucose levels
- There are better medications to help reduce the levels of fat in the blood (lipids)

Your heart

Our heart beats 115,200 times in just one day! It is the most active of our muscles and beats continuously 24 hours a day. Normally, it doesn't stop beating until the day we die.

We can keep our heart healthy by:

- Making sure it gets good nutrition
- Using regular exercise to strengthen and maintain heart muscle (regular exercise gives the heart regular increases in its pumping action)
- Keeping a close eye on other aspects of our health (so we don't develop other medical conditions that could cause a strain on our heart)

What is heart and blood vessel disease?

Our blood vessels are tubes of muscle through which our blood flows. They need to be able to stretch and contract at times when we are pumping our blood faster (for example, when we are exercising). If they clog up or get hardened two things happen:

- the amount of blood flowing through them reduces
- they find it hard to stretch properly in order to pump more blood quickly when we need it

If your vessels can't pump enough blood when they need to (typically when you are

exercising) the muscle that they are supplying starts to run out of the nutrients it needs (mainly oxygen and glucose) to keep up its increased activity. The muscle may signal this to you by developing pain or cramps.

If a blood vessel blocks off altogether it can cause death of a piece of the part of the body it supplies. For example, a blocked vessel supplying a part of the brain could destroy that part of the brain. This is a stroke.

Blocked blood vessels in the legs can cause poor circulation. This can cause pain when you walk (as your muscles run out of oxygen and glucose). In the worst case, blocked blood vessels can lead to the leg developing gangrene and having to be amputated.

If one of the blood vessels supplying the heart becomes blocked, a piece of the muscle of the heart could die. This is a heart attack.

If this happens nurses and doctors who specialise in heart disease can sometimes inject a drug into the blocked vessel to dissolve the clot (thrombolytic therapy). But this will only work if it is done very soon after the clot forms (within hours).

Therefore it's vital that if you think you may be having a heart attack you get to the nearest big hospital as soon as possible. You should travel there by ambulance in order to get the best care on the way.

If you have narrowing in the blood vessels in your heart they can sometimes be bypassed by putting in other vessels that are in better shape. This is called 'bypass' surgery.

Those of us with diabetes are at higher risk of developing thickening and narrowing, or complete blocking off of the blood vessels. This is for a number of reasons. One is that high blood glucose levels cause the inside wall of the blood vessels to become thicker.

Another is high blood pressure. Many people with diabetes have this problem. High blood pressure puts a continual strain on the heart (it is pumping into a high pressure system) and also causes the thickening process within the vessels to happen faster.

People with diabetes are also more likely to have unhealthy cholesterol levels. If the balance of cholesterol in our blood is unhealthy then layers of fatty tissue can be laid down inside our blood vessels (fatty plaque). This makes the narrowing even worse.

Diabetes also seems to make our blood more prone to clot easily. For blood to flow well through our blood vessels and not clot up, our blood needs to be 'slippery' or 'thin'.

Some people who are highly at risk for developing heart or blood vessel problems are prescribed aspirin therapy. This is where they take a specially coated aspirin tablet once a day. This acts to 'thin' their blood. Ask your doctor about this therapy.

Heart disease usually results from clogged blood vessels within the heart, or from the results of a heart attack - damage caused to the functioning of the heart. It can also be from enlargement and weakening of the heart due to strain caused by pumping into vessels with high pressure (high blood pressure) over a number of years.

Sometimes people with diabetes develop damage to their nerves (neuropathy). If the nerves supplying your heart are damaged you may not feel the usual pain if your heart muscle is becoming short of oxygen or glucose. If you have this problem you must rely on other signs. These are:

- Shortness of breath
- Unexpected nausea
- Consistently high blood glucose levels that don't seem to have an explainable reason
- Swelling of the ankles

What increases my risk of developing heart or blood vessel disease?

- High blood glucose levels (best measured by HBA1c)
- High blood pressure (aim less than 140/80)
- Family history of heart disease (if your blood relatives have had heart disease you are at more risk)
- Inactive or sedentary lifestyle

- Smoking
- High cholesterol levels
- Being overweight - especially if your body fat is mainly located around your waist
- How long you have had your diabetes. You are more at risk if you have had diabetes for more than 10 years

[Read more about managing diabetes . . .](#)

Of these eight risk factors only two cannot be changed. We can't change how many people in our family have already developed heart disease - although we can have a positive influence on those who haven't! We can't change how long we have had diabetes. But we do have lots of control over the other six risk factors.

In fact, many people find that diabetes acts as a wakeup call and motivates them to live a healthier lifestyle. All the actions we take to manage our diabetes will also improve the health of our heart and blood vessels.

Practical tips for a healthy heart and blood vessels

- STOP SMOKING. This is one of the best things you can do to improve your heart and blood vessel health
- Eat foods and snacks low in fat and salt
- Make meals with little added fats and salt
- Change from using saturated fats (animal fats) to using monounsaturated fats (olive oil, canola oil, avocado oil, most nut or seed oils)
- Eat five plus servings of fresh fruit and vegetables every day
- Drink plenty of water
- Get regular physical activity. Daily is ideal (20-30 minutes a time). Walking is a great form of exercise. It is cheap and at your front door
- Keep your blood glucose, blood pressure and cholesterol levels in a healthy range
- Have regular medical checks and take prescribed medications regularly
- If you drink alcohol, do so in moderation only - up to two standard drinks a day for women and up to three standard drinks per day for men
- Remember that if you have diabetes your children and grandchildren are at greater risk of developing diabetes. By eating in a healthy way and getting lots of regular exercise you will be teaching them important habits that will help to keep them healthy too

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