

Diabetes and your heart

The heart

Your heart is about the size of a closed fist. It is situated behind the lower part of the breastbone, slightly to the left. The heart is the centre of the cardiovascular system which is made up of the heart and blood vessels including veins and arteries.

The heart is a double pump, circulating blood through two separate closed systems. Oxygen-carrying blood leaves the left side to circulate oxygen to the body, returning, without oxygen, to the right side. The blood is then pumped through the pulmonary artery to the lungs where it exchanges carbon dioxide for oxygen. In addition to oxygen the blood also transports nutrients to the tissues and removes waste products including carbon dioxide

The heart needs its own blood supply to function well. The coronary arteries which run over the surface of the heart supply blood to the heart.

The cardiovascular system is complex with many valves regulating flow and a system of blood vessels which range in size and complexity. As we know from our simple household water system, one problem in the plumbing can affect the whole system.

What is heart or cardiovascular disease?

The main cardiovascular diseases are angina, heart attack and stroke.

Angina

When the heart has to work harder, eg during exercise, it needs more blood. Angina occurs if a coronary artery is partly blocked causing pain or discomfort in the chest which can spread to the shoulders, arms or neck. The pain may be relieved by rest and tablets.

Heart attack

A coronary artery which is already narrowed, eg by deposits of cholesterol, may suddenly be blocked by a blood clot. Because the blood supply is then cut off, the part of the muscle which the artery supplies starts to die. This usually results in severe and continuing chest pain or discomfort. This is a heart attack which is life threatening and must be treated urgently. Other names for heart attack are coronary thrombosis or myocardial infarction.

Stroke

When the blood supply to the brain is stopped either by a clot or burst artery, a stroke occurs. Parts of the body may be paralysed and speech and other brain functions may be affected. Some of these functions may recover gradually after the stroke.

Gangrene of the lower limbs

The two main arteries to the legs can get blocked by deposits of cholesterol or by a blood clot. Parts of the foot or leg no longer get enough blood to survive and they start to die (gangrene). Early warning signs are loss of pulses (picked up by your doctor) and pain in the calves, thighs or buttocks when walking and relieved by rest (picked up by you).



If I do have a heart attack?

Recognise the warning signs:

- > squeezing, pain or discomfort in the centre of the chest lasting more than 10 – 15 minutes
- > pain spreading to the neck and shoulders
- > also a sick feeling in the stomach
- > also sweating, shortness of breath.

Modern treatment for heart attack is very effective but needs to be commenced within 1 – 2 hours of the start of a heart attack. Don't wait and see what happens. If you have symptoms dial 000 for an ambulance and report a possible heart attack or ask someone to drive you to hospital if an ambulance is not available.

How does diabetes affect the cardiovascular system?

A combination of high blood pressure and cholesterol can damage the lining of the blood vessels. The blood vessels become thickened and eventually blocked. Blockage of the blood vessels can lead to chest pain or a heart attack.

Control of blood glucose, blood pressure and cholesterol is very important. There are a number of ways this can be achieved:

- > know your blood glucose, blood pressure and cholesterol levels
- > take medication as prescribed
- > discuss your target range with your doctor
- > have a healthy diet and keep weight under control
- > exercise regularly.

Risk factors for heart disease

The risk factors for heart disease fall into three categories.

1. Lifestyle risk factors which you can change are:

- > smoking
- > carrying excess weight (especially around the waist)
- > lack of exercise
- > stress
- > regularly consuming excess alcohol.

2. Medical risk factors which you can talk to your doctor about are:

- > high blood glucose levels
- > high blood pressure
- > high blood fat levels (cholesterol).

3. Hereditary risk factors which you cannot change:

- > family history of heart disease
- > being male
- > being female with diabetes
- > being over 50 years of age.

What can you do to minimise your risk?

Some risk factors such as inherited genes, your age, your sex and having diabetes you can't change so it becomes doubly important to work on the risk factors you can change. Discuss your risk factors with your health care team who can help you plan a program of goals to help you reduce your risks. Making changes to your lifestyle is not always easy but the benefits are worth the effort. Here are some suggestions to help you reduce your risks.

Lifestyle risk factors

Exercise

Exercise helps insulin to work better, it helps control blood glucose levels, it improves muscle tone and heart function, it reduces body fat and it can reduce blood –glucose, blood pressure and cholesterol. Your diabetes health team will help you set goals for a safe, enjoyable exercise program which will probably start with a check up with your doctor.

You can make up some of your exercise with simple changes like walking to the deli instead of using the car, using the stairs instead of the lift. Half an hour of brisk walking every day can make a big difference. For some people joining a local community exercise group helps to keep them walking. If you have difficulty walking there are some excellent guides to 'chair exercises' available.

Smoking

Diabetes doubles the risk of cardiovascular disease and smoking doubles it yet again so it is really worth making the effort to 'quit'. If you quit smoking your risk is halved after 1 year and after 5 years is almost the same as for someone who hasn't smoked. The 'QUIT' programs from the Anti-Cancer Foundation and the National Heart Foundation offer free help and advice. Your health care team will be able to advise you on nicotine patches and various other aids to stop smoking.

Excess weight

Your health professional can advise you on your healthy weight range and discuss a program to help you lose excess weight.

The days of severe diets and 'Don't eat this and don't eat that' are past. A dietitian can help you find foods and cooking methods that you will enjoy and that will help you to control your weight. Often small changes such as using a non stick frypan instead of adding fat can make a significant difference.

Fibre slows down the absorption of glucose and helps control blood glucose levels so include plenty of high fibre foods in your diet.

Stress

If stress is a problem, make a list of the things that are adding stress to your life. Look at each item and work out a plan to deal with those things that you feel you could change maybe with some extra forward planning or reassessing your priorities.

Some things you may need to get help to deal with, either from someone you know you can confide in and talk to or a psychologist or support group. Other things you may feel you can't do anything about and often admitting that will help you to accept the situation and feel less stressed.

Medical risk factors

High Blood Pressure

Blood pressure can be controlled by reducing your weight, increasing exercise, reducing your salt intake and reducing stress. However, if these measures are not effective in controlling blood pressure your doctor may need to prescribe medication.

Blood Glucose Levels

Controlling blood glucose levels can reduce your chances of diabetes complications. Discuss your target blood glucose levels with your doctor or diabetes nurse. Aim to keep levels in that range.

Healthy eating, exercise and medication (if necessary) work together to control blood glucose levels. See your health team members regularly to assess your control and help you if you are having problems.

Blood Fats/Cholesterol

If you don't know your cholesterol numbers ask your doctor to check them.

Choose foods that are low in fat, especially low in saturated fat, and low in cholesterol to help manage cholesterol. Medication may be prescribed to help control blood cholesterol.

An aspirin a day may keep a doctor at bay

Aspirin actually makes the blood less likely to clot and can reduce the risk of a heart attack or stroke. If you have diabetes an aspirin a day is a good idea. Note that:

- > low dose aspirin doesn't interfere with diabetes medication
- > especially coated aspirin is a bit more expensive but is kinder to your stomach
- > if problems occur talk to your doctor first.

Suggested reading

Diabetes Education Series

- > Diabetes and High Blood Pressure
- > Diabetes and Smoking
- > Exercising and Diabetes

Enjoyable eating, Diabetes Centre

Your Book on Type 2 Diabetes, Diabetes Centre

For more information

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