



Heart disease

Heart disease is the leading cause of death in Australia, claiming a life every 10 minutes.

Death from heart disease is 1.7 times more common than cancer and 26 times more common than death from traffic accidents.

Understanding heart disease, its causes and how to prevent it, is important for everyone.

The heart is a muscle which keeps the blood flowing to all parts of the body through the blood vessels. The heart needs its own blood supply and gets this through the coronary arteries which run over the heart's surface, then enter the muscle to distribute the blood. These arteries need to be in good shape for supply to be guaranteed.

'Heart disease' is the term commonly used for diseases of the heart and blood vessels. The medical term is 'cardio-vascular disease'. Heart attack, angina and stroke are all forms of cardio-vascular disease.

The main cause of heart disease is atherosclerosis - a build up of deposits containing cholesterol in the inner lining of the heart's arteries. These deposits begin in childhood and, by middle age onwards, can narrow the inside of the artery. This condition can clog the arteries and reduce blood flow to the heart muscle. Ultimately, it can result in a heart attack or angina.

Other conditions

This HCF Special Report deals with the main heart and blood vessel diseases. For information about other heart conditions, please contact the National Heart Foundation.

Detecting heart disease

Heart disease is often referred to as 'the hidden killer' because it is difficult to detect. There are often no symptoms of the disease until it exhibits a clinical manifestation - either sudden death, heart attack or angina.

Professor Phil Harris, Head of Cardiology at Sydney's Royal Prince Alfred Hospital, says that in about 20 per cent of people who get heart disease, the first evidence of the disease is a fatal heart attack. "So without any symptoms at all, they just die," he says. "Almost everyone knows someone this has happened to." Prof Harris says in a further 30 per cent of people who get heart disease, the first sign is a heart attack which permanently damages the heart. "So, it's not just the mortality rate that we're worried about, it's also the disability rate," he says. In the remaining 50 per cent of people, the first indication of the disease is an episode of angina.

“The disturbing thing about heart disease is that at any one time there is a large pool of people walking around who have the disease,” he says. “They don’t know they have it and we have no adequate way of detecting it. “This is why prevention measures are so important.”

Heart Attack

A heart attack occurs when a narrowed coronary artery is suddenly completely blocked by a blood clot. Blood supplied to the heart by this artery is cut off and the affected part of the muscle starts to die. The onset of a heart attack is accompanied by:

- squeezing sensation or pain
- the centre of the chest or behind the breastbone lasting more than 10-15 minutes
- pain spreading to the shoulders, neck or arms
- sweating, shortness of breath
- a sick feeling in the stomach
- sudden collapse

If you experience these symptoms, you should:

- act quickly and decisively
- get to the nearest hospital by ambulance if immediately available. If not, get someone to drive you
- dial 000, ask for ambulance service and report a possible heart attack. If the person suffering the attack is unconscious, call for help from an ambulance or doctor and start heart/lung resuscitation if you know how.

Angina

Angina is a temporary chest pain or discomfort caused by reduced blood supply to the heart muscle. The blood supply to the heart is reduced when the coronary arteries become clogged. When this happens, the heart simply cannot meet demands to pump harder during times of exercise or stress.

The resulting pain usually feels tight, gripping or squeezing and can vary from mild to very severe. It is often associated with pain in the left arm. Many people, however, don’t feel pain - just an unpleasant sensation or discomfort in the chest.

Stroke

A stroke is like a heart attack of the brain.

A stroke occurs when the blood supply to part of the brain is cut off - usually by a blood clot, but sometimes when a brain artery bursts. This can paralyse parts of the body and also affect speech and other brain functions.

The good news about heart disease is that many of the major causes of the disease can be avoided, according to Dr Paul Magnus, Medical Director of the National Heart Foundation.

“Cigarette smoking, high blood cholesterol and high blood pressure are the three main factors that increase the risk of heart disease. All three can be avoided,” says Dr Magnus. “Other significant risk factors include physical inactivity and being overweight. These, too, can be avoided.”

Smoking

Each year, cigarette smoking is responsible for 5,000 of the 30,000 heart attack deaths in Australia.

Research indicates that smoking doubles the risk of heart attack and stroke. For women using the contraceptive pill, smoking increases the risk of heart attack 10 times.

Smoking contributes to the development of heart disease by: · adding to the artery-blocking process that can lead to heart attack and stroke · overworking the heart and reducing its oxygen supply · making the cells in the blood more likely to form clots in the blood vessel · increasing the risk of potentially fatal changes in the heart beat.

High blood cholesterol

While the correlation between high blood cholesterol and heart disease was questioned a few years back, research now conclusively proves a link between the two.

Cholesterol is a fatty substance produced naturally by the body and appears in blood in different forms. Too much cholesterol contributes to the artery blocking process behind heart disease. It causes fatty deposits to build up in the blood vessel which makes it harder for blood to flow through.

The main causes of high blood cholesterol in Australia are: · eating too much saturated fat. Fat on meat, full-fat dairy products and many take away foods and processed foods such as pastries and many commercial biscuits are full of saturated fats · being overweight

Family history also plays a part. If a person's close family members have high blood cholesterol, their chances of having the condition are higher too.

High blood pressure

High blood pressure (also known as hypertension) is another major preventable cause of heart disease. High blood pressure literally means that the pressure of the blood in the arteries is too high. This puts a strain on the heart because it has to work harder to pump blood around the body. It also contributes to the artery-blocking process.

High blood pressure usually has no symptoms until it has caused serious disease. Because it rarely gives warning signs, it is important for people to have a doctor check their blood pressure regularly.

In most cases, the cause of high blood pressure is unknown. However, factors such as increased weight, alcohol, diet and lack of exercise play a role and blood pressure can be reduced when they are changed.

Non-preventable causes

Unfortunately, there are some causes of heart disease that cannot be prevented. They include: · juvenile onset diabetes · being male · a family history of heart disease · a personal history of heart disease

Because these factors can't be changed, there's all the more reason to pay attention to the avoidable risks.

Preventing heart disease does not take all the fun out of life, says Dr Paul Mangus, Medical Director of the National Heart Foundation.

“In most respects, a moderate approach to life is all that is needed to keep people in good health,” says Dr Mangus. “The exception to this rule is smoking, which is such a serious problem that it should be avoided altogether. “The measures we recommend to prevent heart disease will undoubtedly enhance people's quality of life.”

Steps to a healthy heart The four steps to a healthy heart are: 1. Be a non-smoker 2. Eat a low-fat diet and watch your weight 3. Keep a check on your blood pressure 4. Exercise regularly.

Be a non-smoker

From the minute a person stops smoking, their extra risk of heart disease begins to decrease. Within a year or two of stopping, former smokers will have lost most of that extra risk. Quitting may be difficult at first but almost everyone can succeed. Most smokers simply stop, but some find it useful to use special techniques, drug treatment such as nicotine replacement or groups or counselling sessions.

For help, call the National Heart Foundation office in your capital city, the Cancer Council or a doctor.

Eat a low-fat diet

A low-fat diet helps keep blood cholesterol and weight down. Overweight people tend to have a higher blood pressure and higher blood cholesterol levels. The National Heart Foundation recommends that all adults know their cholesterol level. Being overweight also tends to make existing problems worse.

For a healthy balanced diet: · use low fat dairy products instead of full cream milk, cheese and cream · choose lean meat or remove the fat · eat fresh or tinned fish two or three times a week · steam or grill food rather than frying or baking in oil · if using fats or oils, stick to polyunsaturated or olive oil · cut down on fatty foods such as cakes and biscuits · have whole grain cereal instead of bacon and eggs · eat a range of fruit, vegetables and salads · choose foods that have the National Heart Foundation tick on the package

Because eating patterns are a learning behaviour, it is very important that parents instil good eating habits in their children.

Keep a check on blood pressure

It is important to keep a regular check on blood pressure. If a person finds that they have high blood pressure, their doctor can explain the methods that can be used to reduce it. In some cases tablets may be prescribed.

Exercise regularly

It is not necessary to exercise vigorously for a healthy heart. Regular moderate exercise, such as walking, brings much the same benefits. It's the amount of energy used that counts most, not how it's used or how quickly it's used.

It's best for people to choose a form of exercise that they enjoy - that way they are more likely to make it part of their daily routine. Walking, gardening, cycling and swimming are all good forms of exercise.

Whatever exercise people choose, they should start at a low level and build up slowly over time.

Those who have been inactive and want to begin vigorous exercise, should see their doctor first.

If a person is diagnosed with heart disease, the type of treatment they will receive will depend on the severity of the disease. Treatments range from medication through to major surgery.

Medication

Medication plays an important preventative role in the treatment of heart disease.

Best known as a mild pain reliever, aspirin has been demonstrated to reduce the risk of clots forming in the blood. It is often prescribed for people with heart disease and those considered to be at a high risk.

For people who have a high cholesterol reading, cholesterol lowering tablets are often recommended.

In many instances, medication can be used as an effective treatment for angina. A range of drugs can reduce angina episodes and make them less severe.

Where medication proves inadequate relief or where the disease is well advanced, it is necessary to treat heart disease with either a coronary angioplasty or heart bypass surgery.

Assessing the damage

The most effective means of determining where coronary arteries are narrowed, and how badly, is to perform a coronary angiogram. The test involves inserting, under a local anaesthetic, a long thin tube into an artery in the groin or the inside of the elbow. The tube is moved up the inside of the artery until it reaches the heart, where a special dye is injected into the coronary

arteries and x-ray pictures are taken. The resulting image gives detailed information about the state of the heart and coronary arteries.

If the disease is limited to a single blockage within a coronary artery, the patient usually will be treated with coronary angioplasty.

Where the test reveals blockages, coronary bypass or coronary artery stents are usually considered necessary.

Coronary angioplasty

Coronary angioplasty involves a similar technique to the coronary angiogram, but it involves trying to open up the narrowed coronary artery using a small balloon on the end of a tube. The tube is passed into the narrowed artery with the balloon through the narrowing. The balloon is inflated and it pushes outward against the narrowing and opens out the blood vessel to improve the blood flow. Balloon and tube are then removed.

In some circumstances, a small metal coil called a 'stent' is placed within the artery to keep it open.

In some people, the narrowing in a coronary artery may return, most often within three to six months of the procedure.

In addition to treating angina, coronary angioplasty is used as an emergency treatment for sufferers of a heart attack.

Bypass surgery

In cases where heart disease is severe and poses a risk to the life of the patient, coronary artery bypass graft surgery is usually performed.

In this operation, veins are often removed from one part of the body, usually the leg, and used to bypass the narrowed or blocked section of the artery on the heart's surface.

Usually, a suitable vein is divided into one or more shorter lengths. One end of the length is then sewn into the main artery leading from the heart at that point close to where it joins the heart. The other end is sewn onto the coronary artery below the narrowing point. This bypasses the narrowing area and gives the heart better flow of blood. In other operations, arteries are used to bypass the blockage.

Unless the known causes of heart disease are addressed after bypass surgery, many people who have the operation will need a repeat within 10 years.

Second operations carry a higher risk, are often more difficult to perform and tend to be less effective than the initial surgery.