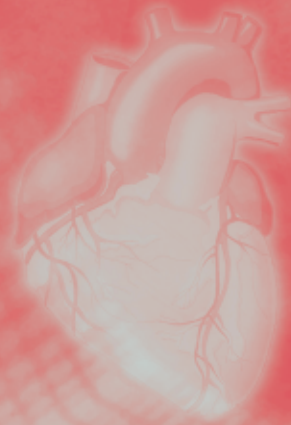


# Heart Health

& KIDNEY DISEASE



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Publications of the Renal Resource Centre are endorsed by  
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## What does kidney failure have to do with my heart?

Kidney failure and heart disease are closely associated. This is because having kidney failure creates certain imbalances in the body, which, if untreated or ignored, can affect the health of blood vessels and the heart. These are additional to the standard risks factors for heart disease, which all members of our community face.

Having an unhealthy heart will ultimately affect your long term health and enjoyment of life. Heart disease remains the leading cause of disability and death for people on dialysis and for people who have been transplanted.

## Can anything be done to prevent heart disease?

Keeping your heart healthy is possible by firstly reducing the standard risk factors for developing heart disease and secondly, by reducing the extra risk factors for heart disease that exist because of kidney failure. This can be achieved by adherence to your prescribed medication, diet, fluid intake and exercise. Such measures should be taken from the earliest stages of kidney failure. This will help to prevent irreversible damage.

## What are the risk factors for heart disease in the general community?

The standard risk factors for cardiovascular disease are:

- Smoking
- Hypertension
- Diabetes mellitus
- Abnormalities in lipid profile - total cholesterol and LDL cholesterol
- Obesity
- Family history of early heart attack e.g. before age 65
- Pre-existing arterial disease
- Sedentary lifestyle

## What are the main risk factors for patients with kidney failure?

- Hypertension
- Enlargement and strain of the left side of the heart (left ventricular hypertrophy)
- Smoking
- Cholesterol and abnormal lipids
- Hyperparathyroidism and abnormal calcium and phosphate metabolism
- Calcification of blood vessels, heart valves and heart
- Elevated levels of homocysteine (an amino acid in the blood)
- Obesity
- Inactivity
- Fluid overload
- Dialysis instability
- Arrhythmias
- Diabetic nephropathy\*\*
- Microalbuminuria\*\* and proteinuria

\*\* Diabetes mellitus, a major risk factor for both cardiovascular disease and renal failure has become the commonest cause of renal failure. Microalbuminuria, with or without diabetes mellitus, indicates increased cardiovascular disease risk even without a decrease in the function of the kidneys. Patients with diabetes and renal failure are therefore at a significantly increased risk of developing cardiovascular disease. It is especially important for people with diabetes to reduce all the other risk factors.

## What risk factors contribute to cardiovascular disease?

The heart can be damaged very early in the course of kidney failure and a number of features of renal disease, particularly high blood pressure, abnormal blood fats (lipids), abnormal levels of calcium and phosphate and the presence of diabetes are associated with an increased cardiovascular mortality rate. This is why early diagnosis of renal impairment and early management of all factors, which contribute to heart disease, is so important.

High blood pressure enlarges the heart and weakens the heart muscle. Anaemia can also cause a similar effect, as can repeated fluid overload. Early treatment of high blood pressure and anaemia can prevent such damage occurring. Careful observance of fluid intake for dialysis patients will limit damage to the heart, as the heart will not have to pump extra volumes of fluid at high pressures around the body.

Imbalances in levels of phosphate and calcium cause not only weakness and pain in your bones but can lead to calcification of blood vessel walls, as well as heart valves. High cholesterol can lead to narrowing of blood vessels. Early intervention with medication and diet can prevent or arrest the damage caused by all these factors. Smoking causes damage to blood vessels, the heart and the lungs and should always be avoided.

In the Australian community, being inactive and overweight increases the chances of developing Type 2 diabetes, having high blood pressure and heart disease. Diabetes is the cause of renal failure in about 25% of patients on dialysis in Australia. As well as damaging the kidneys, diabetes also damages blood vessels and the heart. People with diabetes need early and very careful monitoring because they are particularly prone to cardiovascular disease. Early detection of microalbuminuria and early treatment can help to prevent such damage.

## Why does early treatment help?

A major aspect of avoiding cardiovascular disease, must first and foremost be to slow progression of renal failure and to eliminate risk factors for cardiovascular disease EARLY in the course of renal failure. When renal failure is well advanced and / or irreversible, then it is vital to reduce all known risk factors and to be committed and diligent about your care.

## What do you mean by commitment?

Renal patients can reduce the risk factors for heart disease. Success will depend upon the commitment of each patient to follow ALL the advice they have been given. This will involve taking medications, following dietary and fluid guidelines, exercising and not smoking.

It is often not easy to do all these things but your health really does depend on it. Your health team will work with you to help you maintain a healthy heart. Just follow their advice and ask for all the encouragement you need from them!



## So what exactly should I do to avoid heart disease?

You can avoid serious heart disease by addressing each of the known risk factors:

### MEDICATIONS

- Blood pressure medication to achieve target BP of  $\leq 130/85$
- Phosphate binders and other medications designed to regulate your phosphate and calcium balance
- Folic acid in combination with vitamin B12 and vitamin B6 to reduce homocysteine levels
- Erythropoiein therapy such as Aranesp<sup>®</sup> (darbepoetin alfa) or Eprex<sup>™</sup> (epoetin alpha) to treat anaemia, with a target haemoglobin level of 120g/L
- Diet or cholesterol lowering medication aiming for optimum targets of:  
total cholesterol < 4.0mmol/L  
LDL cholesterol < 2.5mmol/L  
HDL cholesterol > 1.0mmol/L



### DIET AND FLUID CONTROL

- Follow your diet. Talk with your dietitian regularly.
- Low salt diet will make fluid restrictions easier to follow.
- Tight blood glucose control, if diabetic.
- Try very hard not to overload yourself - this increases blood pressure and enlarges and weakens the heart.

### QUIT SMOKING

- Don't smoke - under any circumstances! Talk with your doctor about quit programmes.

### EXERCISE

- Be sure to exercise on a regular basis. Walking, swimming, jogging, tennis, golf, dancing, etc are all suitable. Talk with your doctor about how to start an exercise programme.
- Start gently and gradually increase frequency and duration.

