

## Diabetes and your kidneys

### Key Points

- Kidney disease is a real issue for many people with types 1 and 2 diabetes
- Keeping your blood glucose, blood pressure and blood fats (lipids) levels in a healthy range will reduce your risk of developing kidney problems
- If kidney problems are picked up early there are treatments that often delay its progress
- The screening test for early kidney disease is done on your urine and is called microalbuminuria. You should have this test regularly (at least annually)

In the past quite a large number of people with diabetes developed kidney disease (the medical name for this is diabetic nephropathy). Now that people are able to monitor and improve their own blood glucose levels (through self blood glucose testing) it's thought that a lot less people will develop this problem.

Recent advances in the treatment of high blood pressure in those with diabetes should cut these rates even further. Maintaining healthy blood glucose levels and a healthy blood pressure will greatly reduce your chances of developing kidney disease.

### What is diabetic kidney disease?

Having diabetes can damage the small blood vessels in your body. This is particularly so if your blood glucose levels or blood pressure remain high over a long time.

The kidneys are an organ containing many very fine blood vessels. Diabetes can cause these vessels to become thickened and damaged. Eventually they become leaky, and instead of filtering your blood properly to get rid of waste products (into your urine), they start to leak very important things such as protein out into your urine. Our bodies need our protein and it is not a good thing to lose it.

If this damage to the blood vessels in the kidney gets worse, and the body isn't able to properly get rid of its wastes, toxins begin to build up in the body and cause further damage and generally poor health.

### Is this the only way diabetes can damage kidneys?

No. Sometimes other problems can occur in diabetes that can make kidney disease worse. Some people with diabetes are troubled with frequent urine infections. Over time this can worsen kidney damage. Also, some people with diabetes may develop problems emptying their bladder. This can cause a backlog pressure on the kidney and increase kidney damage.

How do I avoid developing kidney disease? There are important steps you can take to greatly reduce your chance of getting kidney problems:

- Keep your blood glucose levels as healthy as possible. You don't have to achieve miracles; every improvement, no matter how small, reduces risk to the kidneys
- Keep your blood pressure in a healthy range (less than 140/80)
- Have your urine checked for protein at least once a year. The test is called microalbuminuria testing and it's done on a urine sample that is sent to a laboratory
- If you smoke try to cut down, or better still, quit
- Keep your blood lipids (cholesterol levels) in a healthy range

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### How often should I have my kidneys checked?

You should have the following checks at least once a year. The checks will need to be done more often if you've had diabetes for many years, or if you are already showing signs of

kidney damage. Your GP, diabetes nurse or diabetes specialist can help you get these checks done.

#### **What checks are done?**

- **A check of your average blood glucose levels.** This is done by a blood test called HBA1c (glycosylated haemoglobin). To run the least possible risk of damaging your kidneys your HBA1c should be less than 7%
- **Blood Pressure.** You should have your blood pressure checked every time you visit your doctor. It is very important that it stays at or below 140/80. In fact some health professionals are now saying it should be at or less than 130/70
- **Urine Protein (or microalbuminuria).** It is important to pick up protein loss from the kidneys very early. So, you'll undergo a laboratory test that can detect microscopic amounts of protein in your urine (microalbuminuria). If kidney damage is caught early enough, medication is available that can act to slow down the rate at which further damage occurs. The medications used are called Ace-Inhibitors. Once damage is advanced these medications are less effective, so the regular checks are very important
- **Blood lipids (or cholesterol).** Research is beginning to suggest that the balance of fats (or lipids) in your blood stream may affect your kidney function.

All these checks may seem like quite a lot to remember. Fortunately, your GP can put you on a regular, annual, diabetes review. Currently, a once yearly diabetes review is free for all people with diabetes. You can arrange for your GP to tell you when it is due. All the above tests will be done as part of this check. An easy way for you to remember when to get it done is to have it in the month of your birthday.

#### **Who are most likely to get kidney problems?**

- People who have had diabetes for a long period of time (more than ten years)
- Maori and Pacific Island people seem to have more chance of getting kidney damage
- People who smoke cigarettes or have high blood pressure

#### **What happens if I do get kidney disease?**

If it is picked up early there is a good chance that going on to ace-inhibitor medication and improving your blood glucose levels will help to stop it getting worse. If your kidney disease does get worse it will slowly progress to what is called end stage kidney failure. This is where your kidneys can't do the job any more of filtering the waste products out of your blood. If you have this condition you may develop nausea, vomiting, weakness and fatigue.

#### **What treatments are available for End Stage Kidney Failure?**

There are a number of treatments available:

- **Haemodialysis.** This is where you are connected to a machine that acts to cleanse your blood of waste products. If you have haemodialysis you need to connect to this machine three to four times a week for about six hours each time. Some people learn how to connect themselves and do it at home overnight while they are sleeping
- **Peritoneal Dialysis.** This is where you have a small tube inserted into your abdomen and you run warmed fluid into your abdomen regularly 3 - 6 times per day. This fluid acts to cleanse your blood of waste products by using a large membrane which is in your abdomen as a filter
- **Kidney or Kidney/Pancreas transplant.** This is where your damaged kidney is removed and replaced with a healthy kidney from either a dead person or a blood relative. Some surgeons are beginning to do combined kidney/pancreas transplants, but this is still very new in New Zealand and only a very small number of people have them done

Remember, taking action early on in your life with diabetes can prevent you developing kidney disease. Make sure you have all your checks and do your best to stay healthy with your diabetes.

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