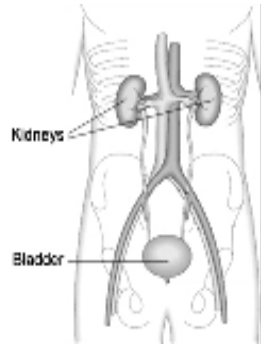


Diabetes, Kidney Disease and You

With Diabetes you have an increased risk of developing kidney disease. This fact sheet will tell about kidney disease and how to reduce your risk of developing it.

What are the Kidneys?

The kidneys are two bean-shaped organs that are connected to the bladder. They sit towards your back, below your rib cage. The kidneys have many different jobs, but one of the most important is filtering waste from your blood. Basically, the kidneys clean the blood.



both force the kidneys to work harder to clean the blood. When the kidneys are forced to work harder than usual, they may get worn out more quickly.

The kidneys are really amazing and are able to keep working - even when they are getting worn out - without giving you any noticeable signs there are problems developing. Over time the kidneys become damaged so that only 10-25% of the kidney is still working. When this happens, it is called “kidney failure.”

Kidney Disease

Under certain conditions (like high blood glucose [sugar] or high blood pressure) the kidneys have to work harder to clean the blood. This extra work can tire the kidneys so they may not be able to clean the blood as well as they did before. This means that some waste (things like creatinine or urea) will stay in your blood and important nutrients (like protein) may be lost in the urine. This is what happens when a person has kidney disease. Kidney disease is also called “nephropathy.”



People with diabetes tend to have a higher risk of kidney disease - especially people with Type 1 diabetes. It is common for people with diabetes to have high blood glucose

[sugar] and high blood pressure. High blood glucose and high blood pressure can increase the risk of kidney disease because

Most damage to the kidneys cannot be repaired - often it is irreversible. When a person has kidney failure, they may be treated by dialysis or they may need a kidney transplant. Dialysis is a procedure that cleans the waste out of the blood and excess fluid.

Testing

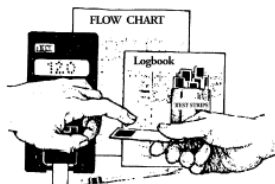
There are no symptoms for early chronic kidney disease, but a **urine test for microalbuminuria** can be done to see if there are small amounts of protein in your urine. The normal kidney does not allow any protein in the urine.

Another important test to determine kidney function is called **GFR (Glomerular Filtration Rate)**, which is the percent of kidney function. A healthy GFR is 90 or higher. A GFR of 15 or less indicates kidney failure, and the need for dialysis or a transplant. GFR tells your doctor whether you have mild, moderate or severe loss of kidney function.

When to get tested for microalbumin

If you have Type 1 diabetes:

- ▶ if you were younger than 15 when you were first diagnosed with diabetes, you should first get tested when you are 15 years old
- ▶ if you were older than 15 when you were diagnosed with diabetes, you should get tested when you are first diagnosed
- ▶ **after the first test, you should get tested once a year by collecting a urine sample**



If you have Type 2 diabetes:

- ▶ you should get tested when you are first diagnosed
- ▶ **after the first test, you should get tested once a year**

It is very important to get tested on a regular basis, because if kidney disease is found early with the microalbuminuria test then actions can be taken too slow and possibly reverse the progress. Remember, kidney disease can go unnoticed for many years and if the damage is not detected early it may not be able to be repaired.

What else can you do?

There are things that you can do to reduce your risk of getting kidney disease. They are:

- Eat Healthy**
- ✓ eat a balanced diet (Canada's Food Guide) and limit the amount of salt and high salt foods you choose. Eating less salt will decrease the workload on your kidneys
- Control blood sugars**
- ✓ **continue regular blood sugar testing**

4- 7 mmol/L before meals
5-10 mmol/L 1-2 hours after meals

- ✓ **have an A1c test every 3-4 months** it should be below 7%

Control Blood Pressure

- ✓ get your **blood pressure checked** at least four times a year.

- ✓ have **B/P treated** until it reaches the recommended level of 130/80 or less. Lowering B/P can reduce the decline in kidney function by 30-70%. You may need more than one B/P medication to do this.

- ✓ medications called **ACE inhibitors & (ARB's) Angiotensin Receptor Blockers** can be very helpful in improving your kidney health & have been shown to reverse early kidney damage (microalbumin) by 35%.

- ✓ **avoid smoking** because it can increase your blood pressure



Control cholesterol levels

Total Cholesterol: less than 4.0

LDL: less than 2.0

Blood fats: less than 1.5

Cholesterol ratio: less than 4.0

- Get kidney or bladder infections treated immediately**

- Get tested for kidney damage (protein in the urine and low GFR) every year.**

- See your doctor and other health care professionals on a regular basis. If kidney disease is beginning, you should be referred to a specialist.**

