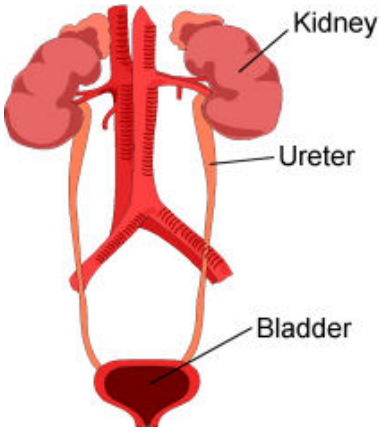
Diabetes and Your Kidney

The function of normal kidneys is to filter and clean blood. Kidneys also rid the body's waste products and extra fluid. When the kidneys are healthy, blood is brought into the kidney and filtered, keeping proteins and needed chemicals in the blood stream. Waste and extra fluid is removed, and the cleaned blood is returned to the blood stream.



HOW DOES KIDNEY DISEASE (*NEPHROPATHY*) DEVELOP

Kidney disease (*nephropathy*) develops slowly and may be caused by years of high blood glucose (*sugar*) and high blood pressure that damage the kidney's filters. When the kidneys are damaged, protein leaks into the urine. Damaged kidneys are not able to clean out waste and extra fluid. Waste and fluid build up in your blood instead of leaving the body in the urine. As damage progresses, more and more protein leaks from the kidneys and waste products build up in the blood. The damage progresses until the kidneys fail.

CAUSES

- High blood pressure.
- High blood glucose (*sugar*).
- Family history.
- Aging.
- Obstruction problems.
- Some drugs or medications.

SYMPTOMS

Symptoms will not be seen or felt for many years. You will not feel sick when your kidneys do only half the job of healthy kidneys. You might not notice any signs of kidney failure until your kidneys have lost much of their ability to function. An early sign of damage is when small amounts of protein (*albumin*) leak into the urine. However, the only way to know about the leakage is to have your urine tested, but without physical symptoms, a urine test is often not performed.

SCREENING

- Annual urine tests should be done to screen for trace amounts of protein in the urine (*microalbuminuria*).
- A periodic, 24 hour collection of urine to measure creatinine and protein should be done as an estimate of kidney function.
- Having a blood test called, serum creatinine, performed once a year to estimate how your kidneys are filtering.

Some of these tests would include:

- An ultrasound of your kidney.
- Obtaining a small piece of the kidney to look at under a microscope (*kidney biopsy*).

PREVENTION

Controlling high blood pressure (*hypertension*) and high blood glucose (*hyperglycemia*) is critical. A blood pressure goal to maintain is below 130/80. Get early treatment for urinary tract infections and follow up regularly with your caregiver.

If your disease progresses to end stage kidney failure, you will need dialysis or a transplant. Dialysis can be done in two ways:

- Hemodialysis - your blood flows from a tube in your arm through a machine. The machine filters waste and

extra fluid. The cleaned blood flows back into your arm.

- Peritoneal dialysis - your belly is filled with a special fluid. The fluid collects waste products and extra fluid from your blood. The fluid is then drained from your belly and discarded.

SEEK MEDICAL CARE IF:

- You are having problems keeping your blood glucose in the goal range.
- You have swelling of hands or feet.
- You develop weakness.
- You have muscles spasms.

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