

Diabetes and Kidney Disease (Nephropathy)

The kidneys are 2 bean shaped organs, each about the size of a fist. They are great trash collectors with millions of tiny blood vessels that clean the blood of waste products that come from the normal breakdown of muscle activity and food we eat. Poorly controlled diabetes can damage the kidneys so they cannot filter out these waste products. This results in kidney disease or nephropathy.

Blood carries waste products to the kidneys where healthy blood vessels with very tiny holes will filter them out into the urine. Useful substances such as protein and red blood cells will stay in the blood because they are too big to squeeze through the holes. However, over time, high levels of blood sugar make the kidneys work extra hard to filter the blood which causes them to leak and lose useful protein in the urine.

Microalbuminuria occurs when there are small amounts of protein in the urine and, if caught early, may be treated to prevent the disease from getting worse. But, if the disease is caught later and there are large particles of protein (macroalbuminuria), end-stage renal disease (kidney failure) usually follows. When this happens, a kidney transplant or dialysis (blood filtered by a machine) is needed. Symptoms of kidney disease are often not present until almost all kidney function is gone. The symptoms may include fluid retention (buildup of fluid in the body), loss of sleep, poor appetite, upset stomach, weakness and difficulty concentrating.

Diabetes is the most common cause of kidney failure although not everyone with diabetes develops kidney disease. Kidney disease can be prevented or delayed by controlling blood pressure and keeping blood sugar in the target range set by the person with diabetes and the health care provider. Blood pressure can be managed by losing weight, eating less salt, exercising regularly and avoiding alcohol and smoking. If these fail then blood pressure medications may be needed. Other changes in diet and/or medications may also be recommended by the health care provider for both blood sugar and blood pressure control.

Good care makes the difference. It is essential that people with diabetes take an active role in the management of their diabetes and get screened for kidney disease and other complications. The person with diabetes is the most important person on the diabetes management team, not the doctor, nurse or dietitian. Follow this checklist for kidney health:

- Get an A1c at least twice a year (a good target is less than 7% for most people with diabetes)
- Get your blood pressure checked at each visit (keep it below 130/80)
- Discuss blood pressure and blood sugar medications with your health care provider
- Ask your health care provider to check your urine for protein, and your blood for waste products at least once a year

- Monitor blood sugar (American Diabetes Association's target range is 70-130 (fasting) and less than 180 (after meals))
- Attend a diabetes self-management education class or see a dietitian or diabetes educator to learn about managing your diabetes

Jana McElroy, RN, BSN, CDE
Diabetes Educator
St. Elizabeth Medical Center

Reference: www.nkdep.nih.gov
www.diabetes.niddk.nih.gov