

MORE FACTS ABOUT HIGH BLOOD PRESSURE, KIDNEY DISEASE, AND DIABETES

- High blood pressure is defined as pressure over **140/90** mmHg. However, people with diabetes should keep their blood pressure below **130/80** mmHg to prevent kidney damage.
- People with diabetes are twice as likely to develop high blood pressure as those without diabetes.
- High blood pressure is one of the leading causes of kidney failure. Every year, high blood pressure causes 15,000 new cases of kidney failure in the United States.
- All racial groups can develop kidney failure from high blood pressure, but African-Americans, American Indians, and Alaskan natives are more likely than whites to have high blood pressure and to develop kidney problems from it—even when their blood pressure is only mildly elevated.

six ways to lower blood pressure:

- 1 Quit smoking
- 2 Get 30 or more minutes of physical activity on most days
- 3 Achieve and maintain an appropriate weight
- 4 Take medications your doctor prescribes
- 5 Cut down on salt and sodium in your diet
- 6 Limit alcohol intake

SOURCES

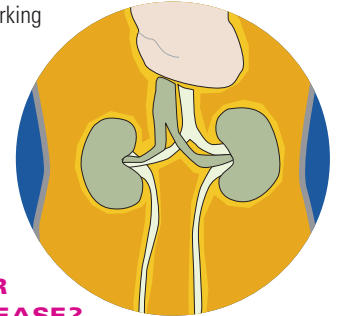
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For more information: Talk to your physician or visit controlhypertension.org.

High Blood Pressure, Kidney Disease, and Diabetes

High blood pressure (hypertension) is called the “silent killer” because it damages your health without making you feel sick. And kidney disease is similar; in fact, even when your kidneys are working at only half their normal ability, you may not feel any symptoms. The kidneys, which filter the blood and remove waste and extra fluids, can almost stop working before there are signs of kidney disease. Like high blood pressure, kidney disease can be found only with medical tests given by a doctor.

The connection between high blood pressure and kidney disease doesn't end there. High blood pressure is not only a major *cause* of kidney disease and kidney failure, but also can be a *result* of kidney disease. In a dangerous cycle, as kidney disease worsens, blood pressure gets higher.



HOW HYPERTENSION CAN LEAD TO KIDNEY FAILURE

High blood pressure means that the force of blood against the walls of your blood vessels is too high. Your heart has to work harder to pump blood through the arteries and to the rest of your body. High blood pressure also damages blood vessels throughout the body, narrowing them and making their walls thicker, less elastic, and “harder” (as in hardening of the arteries, or *atherosclerosis*).

High blood pressure can injure the blood vessels in your kidneys so that they aren't able to properly filter your blood and remove waste and extra fluids from your body. When the waste and fluids are not removed, they build up in your blood and harm your body.

Kidney disease can take many years to develop. At first, small amounts of blood proteins (albumin) begin to leak into the urine. At this point, the kidneys are still filtering body waste and fluids. But as kidney disease worsens, more albumin leaks into the urine, and the kidneys' filtering function begins to decrease. When kidney damage grows severe enough, the kidneys stop working. This is called *kidney failure*. People with kidney failure need a transplant or must undergo dialysis (a substitute for some filtering normally done by healthy kidneys).

You can take steps to prevent the development of kidney disease, starting with being tested for high blood pressure.

THE DANGEROUS TRIANGLE

About 60% to 65% of people with diabetes also have high blood pressure. High blood pressure is a major factor in the development of kidney problems in people with diabetes. The effects of both diabetes and high blood pressure on the kidneys are a dangerous combination.

Diabetes is the most common cause of kidney failure, responsible for more than 40% of new cases. More than 100,000 Americans are living with kidney failure as a result of diabetes. If you have diabetes, it is doubly important to have your blood pressure checked frequently. Then, if high blood pressure develops, it will be detected and treated early, regardless of how mild it is.

WHO IS AT RISK FOR KIDNEY DISEASE?

You are at risk for kidney disease or kidney failure if you have

- diabetes,
- high blood pressure, and/or
- a family history of kidney disease or kidney failure

African-Americans are six times more likely than whites to develop high blood pressure-related kidney failure.

Ask your doctor about being tested for kidney disease if you're at risk. Blood tests can show how well your kidneys are functioning. You can also be tested to determine the level of protein in your urine (proteinuria). People with diabetes should have yearly urine tests.

PREVENTING AND TREATING KIDNEY DISEASE

If you have diabetes, talk with your doctor about diet choices and physical activities that will help keep your blood sugar as close to normal as possible *and* keep your blood pressure low. It is especially important to limit dietary sodium (salt) if you have kidney disease. Losing excess weight, getting 30 or more minutes of physical activity on most days, quitting smoking, and limiting alcohol intake are other important lifestyle changes that will help lower blood pressure and keep your kidneys healthy, whether you have diabetes or not.

There are also blood pressure medications that can treat high blood pressure *and* slow the progression of kidney disease. Doctors usually prescribe angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs), as well as diuretics (“water pills”). Many people take two or more drugs, including beta blockers and calcium channel blockers, to control blood pressure and protect the kidneys.

Protect your kidneys by controlling blood pressure and diabetes and by talking with your doctor about getting tested. If you do have kidney disease, you can take steps to keep your kidneys working and enjoy a healthier, longer life.