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American
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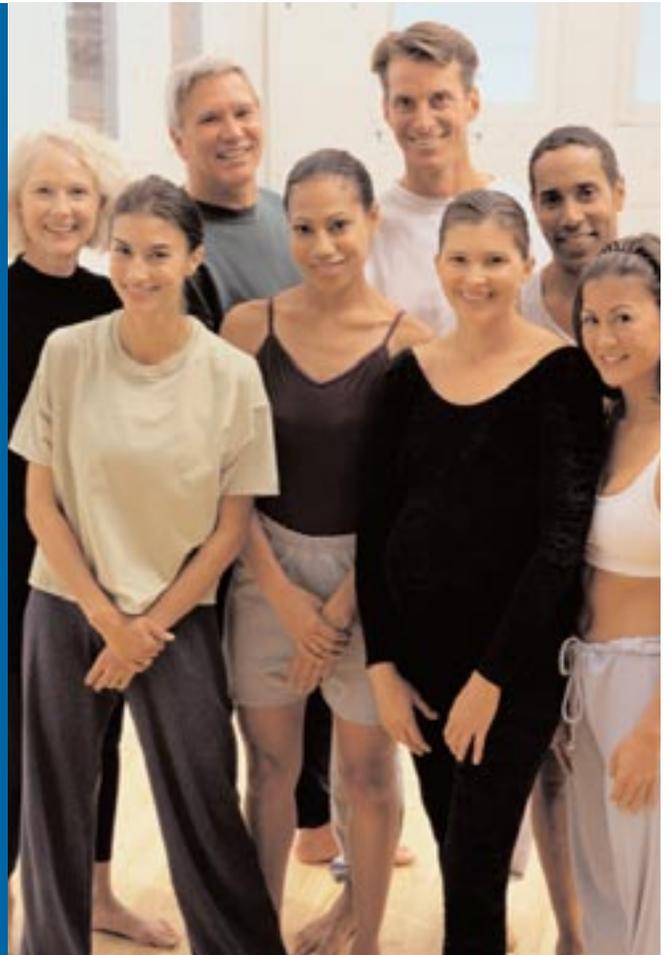
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High Blood Pressure and Your Kidneys



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High Blood Pressure: The #2 Cause of Kidney Failure

High blood pressure affects about 50 million – or 1 in 4 – adult Americans. High blood pressure is also called **hypertension**. Only diabetes causes more kidney failure than high blood pressure.

You will learn:

- What high blood pressure is
- How high blood pressure hurts your kidneys
- How high blood pressure is prevented
- How to test for high blood pressure
- How high blood pressure is treated
- Where to find more information

While reading this guide, you may see a word in **bold** that is new to you. If so, turn to page 16 and look for the word in the glossary. We know we can't answer all of your questions. Write down any questions in the back of this brochure, and discuss them with your doctor.



What is Blood Pressure?

Blood pressure is the force of the blood against the **arteries** as it flows through the body. Your blood pressure changes during the day. Exercise, stress and other factors can change your blood pressure. A blood pressure of less than 120/80 (120 over 80) is normal.

What is high blood pressure?

- If your arteries become too narrow, your heart begins to pump harder. When your heart pumps harder to move the blood through the narrow arteries, it makes your blood pressure higher.
- Blood pressure that stays above 140/90 (140 over 90), over time, is called high blood pressure or hypertension.
- High blood pressure does not mean that a person is tense or uptight. A very relaxed person can have high blood pressure.
- A single reading is not always enough to tell if you have high blood pressure.

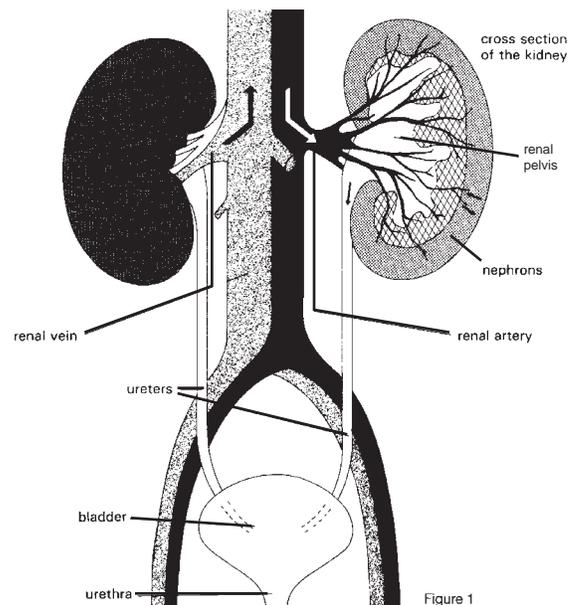
Does high blood pressure have any symptoms?

No. High blood pressure is often called the “silent killer”. This is because there are usually no symptoms. Only a blood pressure test can tell you if you have high blood pressure.

What Do My Kidneys Do?

Your kidneys:

- Make urine.
- Remove wastes and extra fluid from your blood.
- Control your body’s chemical balance.
- Help control your blood pressure.
- Help you keep healthy bones.
- Help you make red blood cells.



Your Urinary System

High Blood Pressure and Your Kidneys

Chronic Kidney Disease (CKD) is the permanent loss of some kidney function. CKD can be caused by many different diseases (diabetes, high blood pressure, some infections, etc.). CKD can turn into **kidney failure**.

How does high blood pressure hurt my kidneys?

- High blood pressure is the second leading cause of CKD after diabetes. It causes more than 1 out of 4 cases of kidney failure.
- High blood pressure, over time, can hurt blood vessels in your kidneys.
- The damage to your kidneys makes them not remove wastes and extra fluids as well as before.
- People with diabetes who also have high blood pressure are even more at risk for CKD.

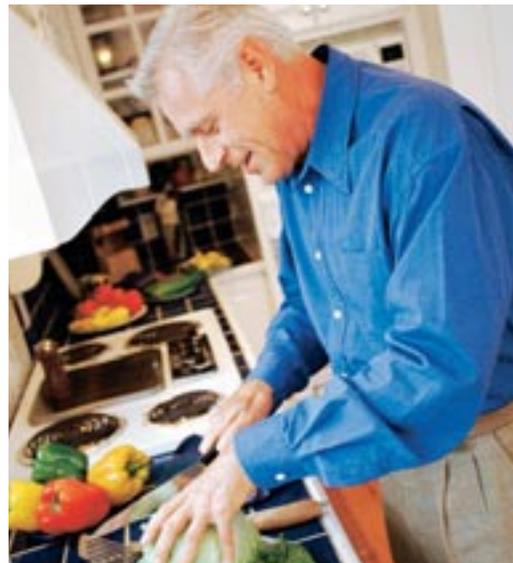
Can CKD also *cause* high blood pressure?

Yes. One of the jobs of healthy kidneys is to control blood pressure. When kidneys and their blood vessels are damaged; blood pressure rises. The higher blood pressure can cause even more damage to the kidneys.

For more information on CKD, order the American Kidney Fund's booklet *Living Well with Chronic Kidney Disease*. Call (866) 300-2900 or visit <http://www.kidneyfund.org>

Does high blood pressure put me at risk for other problems?

Yes. High blood pressure not only affects your kidneys but other organs too. Your heart will have to pump harder and may grow too large. There is also a higher risk of stroke, eye and brain problems.



Know Your Risk

Who is at risk for getting high blood pressure?

- African Americans develop high blood pressure more often than other groups. African Americans are also six times more likely than whites to develop kidney failure from their high blood pressure.
- People over age 55.
- People who have close family members with high blood pressure.
- Smokers and tobacco users.
- Obese people.



How can I reduce my risk for high blood pressure?

- Reduce the **saturated fat** and salt in your diet.
- Try not to add salt to your foods.
- Don't eat fast food.
- Choose fruits, vegetables, grains and low-fat dairy foods (like low-fat yogurt and non-fat milk).
- Exercise 30 minutes on most days of the week.
- Keep a healthy weight. People with a **BMI (Body Mass Index)** of 30.0 or higher are more likely to develop high blood pressure.
- If you smoke, quit.
- Limit how much alcohol you drink.

Tests for High Blood Pressure

Remember: High blood pressure usually has no symptoms. Have your blood pressure checked regularly by your health care provider. The test is quick and easy.

Once you have your test result, use the chart on the opposite page to see where you stand. Keep in mind, you may have to get your blood pressure taken a few times to find out if you have high blood pressure.



Blood Pressure Levels in Adults*

(In mmHg, millimeters of mercury)

Category	Systolic (Top number)	Diastolic (Bottom number)
Normal	Less than 120	Less than 80
Prehypertension**	120-139	80-89
High Blood Pressure		
Stage 1	140-159	90-99
Stage 2	160 or higher	100 or higher

*From the National Heart, Lung, and Blood Institute's Diseases and Conditions Index.

**See Glossary

Can I take my blood pressure myself?

- Yes. You do not have to always get your blood pressure taken at the doctor's office.
- You can test your blood pressure at home. Tests at home can be done with a blood pressure cuff and a **stethoscope**, or with an electronic monitor. Be sure that you or the person who will use the cuff reads the instructions before taking your blood pressure.

- Your health care team can help you check the device and teach you how to use it. You also may ask for their help in choosing the right one for you. Blood pressure cuffs can be bought at many places, such as discount chain stores and drug stores. Some health insurances will even pay for them.
- Many malls, drug stores, and supermarkets also have machines that can take your blood pressure for you. Keep a record to share with your doctor.

What other tests should I have?

GFR (Glomerular Filtration Rate)

High blood pressure is the second leading cause of kidney disease. A **GFR** test can tell you how well your kidneys clean your blood. Knowing your GFR is a good way to tell how well your kidneys are doing.

Your doctor will test your blood for **creatinine**. Then, your doctor or lab can put the result from the test into a math formula. The result is your GFR.

A GFR *below 60* suggests you may have some kidney damage. This means your kidneys may not be working at full strength. If your GFR is less than 60, make an appointment to see your doctor soon.

GFR is an estimate of how well your kidneys are working. The test is not always accurate for GFRs *above 60*. It is important for your doctor to look at other tests to find out if you may have kidney disease.

Stages of CKD

GFR	Stage	Description
90-130, and no protein in the urine	Normal	Normal kidney function
90 or more, and protein in the urine	Stage 1	Slight decrease in kidney function
60 to 89	Stage 2	Mild decrease in kidney function
30 to 59	Stage 3	Moderate decrease in kidney function
15 to 29	Stage 4	Severe decrease in kidney function
Less than 15	Stage 5	Kidney failure (dialysis or transplant will be needed soon)

From the National Kidney Foundation's Kidney Disease Outcomes Quality Initiative.

Treating High Blood Pressure

If you already have high blood pressure, you *can* manage your disease! Talk to your doctor about your diet and medicines.

Are there any diets that reduce high blood pressure?

Yes. The Dietary Approaches to Stop Hypertension (DASH) diet was made by scientists at the National Heart, Lung and Blood Institute (NHLBI). The DASH study proved that blood pressure can be reduced with a special eating plan. This eating plan includes:

- Whole grain foods, fish, poultry, and nuts.
- Reduced red meat, sweets, and sugar-containing drinks.
- It is rich in magnesium, potassium, and calcium as well as protein and fiber.
- Foods low in salt, saturated fat, **cholesterol**, and total fat.
- Lots of fruits, vegetables and low-fat dairy foods.

Download a copy of the DASH diet here: http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf

You'll need Adobe Acrobat Reader to view the diet. To order a copy by phone, call NHLBI at (301) 592-8573.



Can any medicines help?

Many people use medicine to manage high blood pressure. It is very important that you take your medicines as prescribed. Talk to your doctor before making any changes to your medicines, even if you feel fine!

ACE Inhibitors and ARBs

Two groups of medicines called ACE (angiotensin-converting enzyme) inhibitors and ARBs (angiotensin receptor blockers) lower blood pressure. These may also protect the kidneys of people with diabetes. You may need to take two or more kinds of blood pressure medicines to control your disease.

Diuretics

Your doctor may also prescribe a diuretic in addition to your other medicines. Diuretics are also called “water pills”. They help you urinate and get rid of extra fluid in your body.

Other Medicines

There are many other kinds of medicines that can help your high blood pressure. Ask your doctor about what other drugs may work for you.

What else can I do?

Ask your doctor about these tips:

- Limit your caffeine (coffee, tea, soda pop, etc.).
- Try to reduce your stress.
- Limit how much alcohol you drink.
- Keep a healthy weight.
- Don't smoke or use tobacco.
- Exercise regularly.

What if I also have CKD?

Talk to your doctor about what a healthy blood pressure is for you. Since you have kidney disease, your healthy blood pressure may be slightly higher. Most doctors recommend a blood pressure of less than 130/90 (130 over 90).

What if I am on dialysis?

Fluid can build up between your dialysis sessions. This causes swelling and weight gain. The extra fluid raises your blood pressure and can make your heart work harder. Talk to your health care team about ways to control your fluids.

For more information, order the American Kidney Fund's brochure *Healthy Eating for Hemodialysis* or *Diet Guide for CAPD Patients*. Call (866) 300-2900 or visit <http://www.kidneyfund.org>



Glossary

Arteries: Blood vessels that carry blood away from the heart to your cells, tissues, and organs.

BMI (Body Mass Index): A way to measure the percent of fat in a person's body. BMI is used to classify a person as underweight, normal weight, overweight, or obese.

Cholesterol: A kind of fat found in food from animals. Many fast food items (french fries, cheeseburgers, etc.), eggs, meats, and whole-milk foods like cheese and ice cream are high in cholesterol. High cholesterol levels in your blood are bad for your heart and blood vessels.

Creatinine: A waste product in the blood. It comes from the normal use of your muscles. A blood test for this can show signs of kidney problems.

Diastolic: The "bottom number" of a blood pressure reading. It shows your blood pressure when your heart is resting.

Glomerular filtration rate (GFR): A test for how well your kidneys are working. It is a calculation your doctor will do based on your lab work, your age, your weight, your sex and race.

Hypertension: Medical term for high blood pressure. Blood pressure that stays above 140/90 (140 over 90) over time is called hypertension.

Kidney failure: The point when your kidneys can't work well enough to clean your blood. There is no cure. In order to live, a person with kidney failure needs either dialysis or a kidney transplant.

Prehypertension: A blood pressure between 120/80 (120 over 80) and 139/89 (139 over 89). This means that you don't have high blood pressure now but are likely to develop it in the future.

Saturated fat: A kind of fat in your foods. It is found in red meat, butter, creams, animal fats, whole-milk cheese and lots of fast food items. Eating a lot of saturated fat can increase your risk of having heart disease, high cholesterol and strokes.

Stethoscope: An instrument used for listening to sounds made in the body, such as the heartbeat.

Systolic: The "top number" of a blood pressure reading. It shows your blood pressure when your heart pumps.



Where Can I Find More Help?

American Kidney Fund

6110 Executive Blvd.
Suite 1010
Rockville, MD 20852
HelpLine: (866) 300-2900
<http://www.kidneyfund.org>
Email: HelpLine@kidneyfund.org

American Heart Association

National Center
7272 Greenville Avenue
Dallas, TX 75231
(800) 242-8721
<http://www.americanheart.org>

National Heart, Lung, and Blood Institute

Health Information Center
P.O. Box 30105
Bethesda, MD 20824-0105
(301) 592-8573
<http://www.nih.nhlbi.gov>
Email: nhlbiinfo@nhlbi.nih.gov

National Institute of Diabetes and Digestive and Kidney Diseases

3 Information Way
Bethesda, MD 20892-3580
(800) 891-5390
<http://kidney.niddk.nih.gov>

National Kidney Foundation

30 East 33rd Street
New York, NY 10016
(800) 622-9010
<http://www.kidney.org>

