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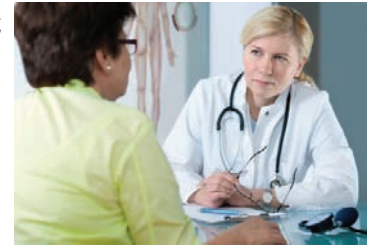
Living Well with Chronic Kidney Disease



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Living Well with Chronic Kidney Disease



Your doctor told you that your **kidneys** are not working as well as they should. Your condition is called **chronic kidney disease** or CKD.

You may be wondering what you can do now to keep your kidneys as healthy as possible. With early treatment, you may be able to help keep your CKD from getting worse.

You probably have a lot of questions. This guide can help. You will learn:

- What is kidney disease
- Tests you may need
- Kidney-friendly diet changes
- What you can do to manage your kidney disease
- Where to learn more
- What to ask your doctor

While reading this guide, you will see words in **bold**. These words and their meanings can be found in the glossary starting on page 22.

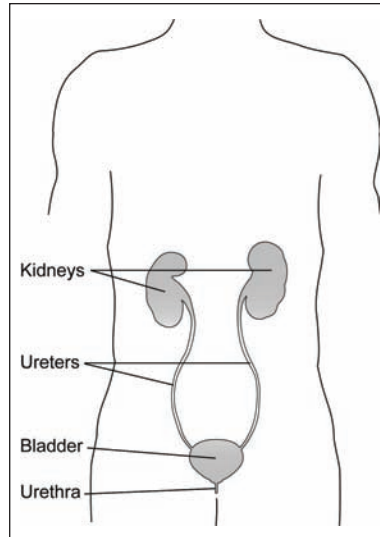
After reading this guide, you may still have questions. Write down any questions that you have on page 31 and take this guide with you to your next doctor visit.

What do my kidneys do?

Your kidneys clean waste and extra fluid from your blood. This makes up your urine (pee). They also do many other jobs that you need in order to live.

Your kidneys help:

- Balance chemicals and fluid in your body
- Control your blood pressure
- Keep your bones healthy
- Make red blood cells



The Urinary Tract

What is chronic kidney disease?

The term “chronic kidney disease” (CKD) means permanent damage to your kidneys. If CKD is treated, your kidneys may stay the same, but without treatment, the damage can get worse over time. If the damage is very bad, your kidneys may stop working. This is called **kidney failure**. If your kidneys fail, you will need **dialysis** or a **kidney transplant** in order to live.

Diagram courtesy of the National Institute of Diabetes and Digestive and Kidney Diseases, www.niddk.nih.gov.

Who is at risk for CKD?

CKD can be caused by many different diseases. The most common causes of CKD are **diabetes** and high **blood pressure**. Some infections, inherited diseases, and injuries can also cause CKD.

Anyone can develop CKD, but you are at more risk if you:

- Have diabetes
- Have high blood pressure
- Have heart disease
- Have a family member with CKD or kidney failure
- Are African American, Hispanic, Native American or Asian American
- Are over 60 years old

A healthy lifestyle and some medicines can help prevent or manage diabetes and high blood pressure, but some people may still develop CKD, even with good medical care.

What are the tests for CKD?

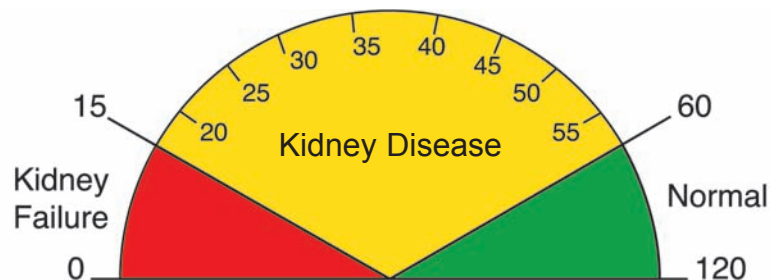
CKD often has no symptoms until it is very far along. The only way to be sure how well your kidneys are working is to get tested. Being tested for CKD is simple. Ask your doctor about these tests:

eGFR - The **estimated Glomerular Filtration Rate (eGFR)** is a number based on your blood test for **creatinine**. It tells how well your kidneys are working.

Your doctor will test your blood for creatinine. Creatinine is a waste that comes from your muscles. Your doctor will use the result from your creatinine test, your age, your sex and your race to calculate your eGFR.

A normal eGFR is 60 or more. A low eGFR number may suggest CKD.¹

Use the scale below to see what your eGFR may mean:



Use the chart on page 29 to track your eGFR result.

Diagram courtesy of the National Kidney Disease Education Program, www.nkdep.nih.gov.

The eGFR is a good test, but it's not for everyone. For example, this test may not be accurate if you are younger than 18, pregnant, very overweight or very muscular. Talk to your doctor to find out if this test is right for you.

Urine Test - When your kidneys are damaged, they may let protein leak into your urine. This can be one of the earliest signs of kidney disease. To check for protein in your urine (called **proteinuria**), your doctor may suggest a urine test. There are two types of urine tests your doctor may use:

- A **dipstick urine test** tells your doctor if there is protein in your urine.
 - Your doctor may test your urine in the office or ask you to bring a sample from home.
 - If your first dipstick urine test shows protein in your urine, ask your doctor when you should be tested again. Also ask if a **Urine Albumin-to-Creatinine Ratio (UACR)** test is right for you.
- A **UACR** test tells your doctor how much **albumin** is in your urine.
 - Your doctor will test your urine for albumin (a type of protein) and creatinine (a kind of waste).
 - Your doctor will compare these results to figure out your UACR.
 - A normal UACR is less than 30 mg/g.¹ If your UACR is more than 30 mg/g, ask your doctor when you should be tested again.

Use the chart on page 29 to track your urine test results.

What can I do to treat my CKD?

The goal of treating CKD is to slow the disease as much as possible. If you can slow CKD enough, you may be able to prevent kidney failure and other problems like heart disease, bone disease and **anemia** (not enough healthy red blood cells).

To help slow down your CKD:

- A. Manage your blood sugar if you have diabetes
- B. Keep your blood pressure in a healthy range
- C. Control your **cholesterol**
- D. Follow a kidney-friendly diet
- E. Avoid certain medicines
- F. Limit tests that use contrast dye
- G. Avoid tobacco and other drugs
- H. Limit alcohol
- I. Keep a healthy weight
- J. Be physically active

Keep reading to learn more about how you can slow your CKD!



A. Manage your blood sugar if you have diabetes

Diabetes is the #1 cause of kidney failure. Now that you have CKD, it is even more important to keep your blood sugar in a healthy range. This can help you slow down kidney damage and help prevent other problems like heart disease, stroke, **amputation** and blindness. Good control of your blood sugar can also help you feel better.

To help protect your kidneys, work with your doctor to learn how to manage your diabetes. Ask about a diabetic diet and other ways to control your blood sugar level.

Also, ask your doctor about whether an **ACE (angiotensin converting enzyme) inhibitor** or **ARB (angiotensin receptor blocker)** is right for you.

These are special types of blood pressure medicine that may help protect your kidneys.

Important! A diabetic diet is different from a kidney-friendly diet. It is important to talk to your dietitian to work out a diet plan that is right for you.

Learn More- To find a diabetes educator in your area, contact the American Association of Diabetes Educators at **1.800.338.3633** or **www.diabeteseducator.org**. To find a dietitian in your area, contact the American Dietetic Association at **1.800.877.1600** or **www.eatright.org**.

B. Keep your blood pressure in a healthy range

High blood pressure can also harm your kidneys. In fact, high blood pressure is the #2 cause of kidney failure. High blood pressure puts you more at risk for heart disease and can make your CKD get worse faster.

Ask your doctor how often you should get your blood pressure checked.

| Normal blood pressure ² | |
|------------------------------------|--------|
| Most People | 120/80 |
| People with Diabetes | 130/80 |
| People with CKD | 130/80 |

If your blood pressure is high, ask your doctor what you can do to lower it.

You may be able to control your blood pressure through diet and exercise. If a healthy lifestyle is not enough, ask your doctor if blood pressure medicine is right for you. ACE inhibitors and ARBs are two types of blood pressure medicines that can help protect your kidneys.

The most important thing is getting your blood pressure into a healthy range. Living healthy and taking blood pressure medications can help.

C. Control your cholesterol

Cholesterol is a waxy, fat-like substance in your blood. If you have too much cholesterol, it can build up in your arteries and put you at risk for high blood pressure, kidney disease, heart disease and stroke. If you already have kidney disease, high cholesterol can cause it to get worse faster.

For most people, normal cholesterol levels are:³

| | Normal for most |
|--------------------------|-----------------|
| Total Cholesterol | Less than 200 |
| HDL ("good" cholesterol) | More than 40 |
| LDL ("bad" cholesterol) | Less than 100 |

Use the chart on page 29 to track your cholesterol results.

Your **triglycerides**, a type of fat in your blood, are also important. Like with cholesterol, high triglycerides put you more at risk for kidney disease, heart disease and stroke. For most people, a healthy triglyceride level is less than 150.³

If your total cholesterol, LDL or triglycerides are high, or if your HDL is low, talk to your doctor. Your doctor may suggest exercise, diet changes or medicines to help you stay healthy.

D. Follow a kidney-friendly diet

When your kidneys are not working as well as they should, nutrients from what you eat and drink can build up in your blood. This can cause other problems like heart disease and bone disease. A special “kidney-friendly” diet can help you prevent these problems.

Now that you have CKD, you may need to limit protein, sodium, potassium, phosphorus and fluid in your diet. A dietitian who specializes in kidney disease, called a **renal dietitian**, can help you find a meal plan that works for you.

Learn More- Ask your doctor to refer you to a renal dietitian. Work with your renal dietitian to figure out the right diet plan for you.

◦ Protein

Protein is one of the building blocks of your body. Your body needs protein to grow, heal and stay healthy. The amount of protein you should have depends on your size, activity level and health concerns. Some doctors recommend that people with CKD limit protein. This is because diets very high in protein can make the kidneys work harder and may cause more damage.

To stay healthy and help you feel your best, you may need to adjust how much protein is in your diet. Ask your dietitian how much protein you should have.

◦ Sodium

Sodium (salt) is a mineral found in almost all foods. Healthy kidneys balance sodium and fluid in your body. When your kidneys are not working well, sodium may build up in your body. Too much sodium can cause swelling, make you thirsty and raise your blood pressure. This can damage your kidneys more and make your heart work harder.

To help protect your kidneys, limit how much sodium you eat. Ask your dietitian how much sodium you should have each day.

◦ Potassium

Potassium is a mineral found in almost all foods. Your body needs some potassium to make your muscles work, but many people with CKD will need to limit potassium. When your kidneys are not working well, your potassium level may be too high or too low. Having too much or too little potassium can cause muscle cramps, irregular heartbeat and muscle weakness.

Ask your dietitian if you need to limit your potassium.



◦ Phosphorus

Phosphorus is a mineral found in many foods. It works with calcium and vitamin D to keep your bones healthy. When your kidneys are not working well, phosphorus can build up in your blood. Too much phosphorus in your blood can lead to weak bones that break easily.

Many people with CKD need to limit phosphorus. Ask your dietitian if you need to limit your phosphorus.

◦ Fluids

You need water to live, but when you have kidney disease, you may not need as much. This is because damaged kidneys do not get rid of extra fluid as well as they should. Too much fluid in the body can cause high blood pressure, swelling and heart failure.

Depending on your stage of CKD and your treatment, your dietitian may tell you to limit your fluid. If your dietitian tells you this, you will need to cut back on how much you drink and limit certain foods that contain a lot of water.

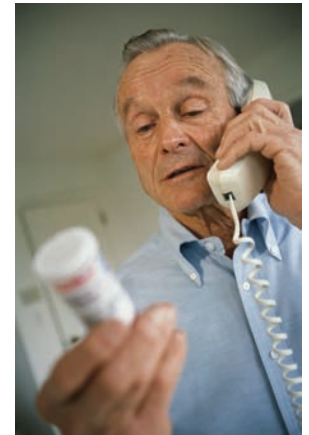
Ask your dietitian if you need to limit your fluids.

E. Avoid certain medicines

There are some medicines that you should not take when you have CKD. For example, many over-the-counter pain medicines (called Non-Steroidal Anti-Inflammatory Drugs or NSAIDs) can cause more damage to your kidneys.

Other medicines may be okay, but you might need a lower dose. Tell your nephrologist (kidney doctor) about any medicines you take, including over-the-counter medicines and vitamins. Also check with your doctor before you start any new medicine.

Be sure to tell your other doctors and your pharmacist that you have CKD. Record all your medicines in the chart on page 28 and share this with them at your next visit.



F. Limit tests that use contrast dye

Some imaging tests, like CT scans and MRIs, use contrast dyes to get clearer pictures. These contrast dyes can cause more damage to your kidneys when you already have CKD. If your doctor orders a test that uses a contrast dye, ask about other test options.

G. Avoid tobacco and other drugs

Using tobacco and other drugs puts you more at risk for high blood pressure and can make your CKD worse.

If you use tobacco or other drugs, quitting can help you slow your CKD.

H. Limit alcohol

Drinking alcohol in large amounts can cause your blood pressure to rise. High blood pressure can make your CKD worse.

Have no more than two drinks per day if you're a man and no more than one drink per day if you're a woman.

I. Keep a healthy weight

Keeping a healthy weight can help you manage your diabetes, control your blood pressure and protect your kidneys. Talk to your doctor about how much you should weigh. If you are overweight, losing just a few pounds can make a big difference.

J. Be physically active

Exercise can help you control your diabetes and blood pressure. It can also help slow your CKD. To get the most benefit, exercise for at least 30 minutes, 5 days of the week. If that seems like too much, start out slow and work your way up to that amount.

Look for fun activities that you enjoy. Try walking with a friend, dancing, swimming or playing a sport. Adding just a little more activity to your routine can help.

Important! Talk to your doctor before starting any kind or amount of exercise.



What else do I need to know?

Your kidneys play an important role in your overall health. When your kidneys are not working as well as they should, they may cause other health problems. Talk to your health care team about possible health problems you may face because of your CKD. We will cover a few of them here.

Anemia

Anemia is when your body does not have enough healthy red blood cells. Anemia can be caused by many things including:

- Not having enough iron
- Not having enough of some vitamins
- Some medications
- Some immune system or blood diseases
- Blood loss

In people with CKD, the most common cause of anemia is not having enough of a **hormone** called **erythropoietin** (EPO).

Your doctor can test your blood's hemoglobin to see if you have anemia. **Hemoglobin** is a protein in red blood cells. It might be listed in your lab results as Hb.

| Normal Hemoglobin (Hb) Results ⁴ | |
|---|-------------------|
| Men | More than 13 g/dL |
| Women | More than 12g/dL |

Use the chart on page 29 to keep track of your results.

Anemia can make you feel weak and tired. It can also cause other health problems.

To help you stay healthy, your doctor may prescribe diet changes or a medicine to treat your anemia. If you have anemia, ask your doctor what your hemoglobin should be and what kind of treatment is right for you.

Bone Disease

Healthy kidneys help keep your bones healthy. When you have CKD, you are at more risk for bone disease. This can cause bone and joint pain, broken bones, infections and skin problems. The things that cause weak bones may also put you at risk for heart attacks.

Talk to your doctor about how to prevent or treat your bone disease. Simple steps like changing your diet can help. Your doctor may also prescribe a phosphate binder, which is a medicine that limits how much phosphorus your body absorbs from your meals.

Important! Do not take your phosphate binders with iron pills. If you take iron pills, take them on an empty stomach. Take your phosphate binders with food.

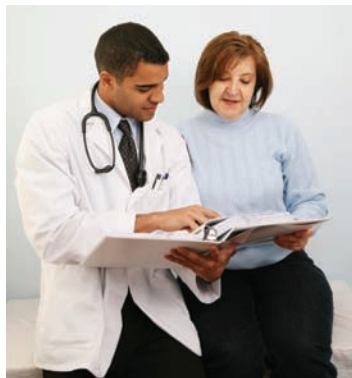
Kidney Failure

This guide has given you some tips that may help you slow your CKD. Still, even some people who are careful with their health may develop kidney failure.

If your kidneys fail, you will need either dialysis or a kidney transplant in order to live.

- Dialysis is a way to help clean waste and remove extra fluid from your blood. Dialysis helps replace the job of your kidneys when they stop working
- A kidney transplant is when a healthy kidney from someone else is put into your body. It can come from a living donor or someone who has just died.

Talk to your doctor to learn more about your treatment options.



Summary

We hope that this booklet has helped to answer some of your questions. Please talk about what you have read with your healthcare team. The more you learn about your CKD, the more likely you are to help slow the disease and prevent more problems.

Here are a few things to keep in mind:

- Your kidneys filter waste and extra fluid from your blood to make urine. Your life depends on your kidney function.
- Early CKD usually has no symptoms. The only way to know for sure is to get tested.
- If you catch CKD early, you can help to slow it down. You may be able to delay or even prevent the need for dialysis or a kidney transplant.
- Controlling your blood sugar, managing your blood pressure, and keeping to a kidney-friendly diet can help you slow down or stop your CKD.
- You can prevent or manage common problems caused by CKD, like anemia, high blood pressure, and bone disease.
- Your healthcare team is made up of your doctors and other professionals and YOU are the captain. Ask your team questions when you have them. They are there to help.

How can I learn more?

American Kidney Fund

6110 Executive Boulevard, #1010
Rockville, MD 20852
HelpLine: 866.300.2900
HelpLine@kidneyfund.org
www.kidneyfund.org

American Association of Kidney Patients

3505 East Frontage Road, Suite 315
Tampa, FL 33602
Phone: 800.749.2257
www.aakp.org

American Diabetes Association

1701 North Beauregard Street
Alexandria, VA 22311
Phone: 800.342.2383
www.diabetes.org

American Dietetic Association

120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
Phone: 800.877.1600
www.eatright.org

National Kidney Foundation

30 East 33rd Street
New York, NY 10016
Phone: 800.622.9010
www.kidney.org

National Kidney and Urologic

Diseases Information Clearinghouse
3 Information Way
Bethesda, MD 20892-3580
Phone: 800.891.5390
www.kidney.niddk.nih.gov

Renal Support Network

1311 North Maryland Avenue
Glendale, CA 91207
Phone: 800.579.1970
www.rsnhope.org

Glossary

ACE (Angiotensin-Converting Enzyme) Inhibitor: A type of blood pressure medicine. ACE inhibitors can also help prevent or slow your kidney damage.

Albumin: A type of protein.

Amputation: Removing a body part (like a foot, leg, hand or arm) through surgery.

Anemia: When the body does not have enough healthy red blood cells.

ARB (Angiotensin II Receptor Blocker): A type of blood pressure medicine. ARBs can help prevent or slow your kidney damage.

Blood Pressure: Your heart pumps blood through tubes called arteries and veins. The pumped blood makes pressure inside your arteries. This is called blood pressure. When your blood pressure is checked, it tells how hard your heart is working to pump your blood.

Chronic Kidney Disease (CKD): Slow and permanent loss of kidney function. CKD can lead to other problems like anemia, high blood pressure, bone disease, and heart disease.

Cholesterol: A fatty, waxy substance in your blood. Your body makes some cholesterol and gets more cholesterol from the foods you eat. Too much cholesterol can raise the risk for heart disease and kidney disease.

Creatinine: A type of waste in your blood that comes from using your muscles in everyday activities. Healthy kidneys remove creatinine from the blood. When your kidneys are not working, creatinine can build up in your blood.

Diabetes: A disease that keeps your body from making or using a hormone called insulin correctly. Your body needs insulin to get energy from sugar in the foods you eat. If your body can't make or use insulin correctly, sugar can build up in your blood and cause problems.

Dialysis: A way of cleaning waste and extra fluid from your blood once your kidneys have failed. There are two types of dialysis: hemodialysis and peritoneal dialysis (PD).

Dipstick Urine Test: A urine test that checks for protein in your urine. Protein in your urine can be a sign of kidney disease.

Erythropoietin (EPO): A hormone made in your kidneys. EPO helps your body make red blood cells.

Estimated Glomerular Filtration Rate (eGFR): A number based on your blood test for creatinine. It tells how well your kidneys are working. An eGFR less than 60 for 3 months or more may be a sign of kidney disease.¹

Hemodialysis: This is the most common type of dialysis. Your blood flows out of your body and through a special filter in a machine. The filter removes waste and extra fluid from your blood. The "clean" blood is then sent back to your body.

Hemoglobin: The part of red blood cells that carries oxygen.

Hormone: A natural chemical made in your body. Hormones cause or control certain body functions.

Kidneys: Bean-shaped organs that filter waste and extra fluid from your blood. People usually have two kidneys. They are located on either side of your spine, just under your ribcage. The kidneys also help control your blood pressure and make red blood cells.

Kidney Failure: When the kidneys don't work well enough to clean your blood. A person with kidney failure will need dialysis or a kidney transplant to live.

Kidney Transplant: When a healthy kidney from one person is put into another person whose kidneys have failed. The healthy kidney can come from a living donor or someone who has just died.

Nephrologist: A doctor that specializes in the kidneys and kidney disease.

Protein: One of the building blocks of your body. Your body needs protein to grow, heal and stay healthy.

Proteinuria: Protein in your urine. Proteinuria can be an early sign of kidney disease.

Renal: Having to do with the kidneys.

Renal Dietitian: A person who specializes in the kidney-friendly diet. A renal dietitian can help you learn how to eat healthy with kidney disease.

Triglycerides: A kind of fat in your blood. A normal triglyceride level is less than 150.³ High triglycerides can raise your risk of heart disease and kidney disease.

UACR (Urine Albumin-to-Creatinine Ratio): A urine test that compares the amount of albumin (a type of protein) in your urine to the amount of creatinine (a type of waste) in your urine. A normal UACR is less than 30.¹

References

¹National Kidney Disease Education Program. (2008, March). *Quick Reference on UACR and GFR, In Evaluating Patients with Diabetes for Kidney Disease*.

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<http://www.nhlbi.nih.gov/health/public/heart/chol/wyntk.pdf>.

⁴U.S. National Library of Medicine and the National Institutes of Health. (2010, March). *CBC*. Retrieved from <http://www.nlm.nih.gov/medlineplus/ency/article/003642.htm>.

My healthcare team

Managing chronic kidney disease takes teamwork. Know your healthcare team. Tell your healthcare team members about any changes in your health. The following table can help you keep track of your doctors and appointments.

| Primary Doctor or Nurse Practitioner | |
|--------------------------------------|-------------------|
| Name: | |
| Phone: | Next Appointment: |
| Nephrologist (Kidney Doctor) | |
| Name: | |
| Phone: | Next Appointment: |
| Dietitian (Diet Specialist) | |
| Name: | |
| Phone: | |
| Pharmacist | |
| Name: | |
| Phone: | |
| Other Members of My Healthcare Team | |
| Name: | |
| Specialty: | |
| Phone: | Next Appointment: |
| | |
| Name: | |
| Specialty: | |
| Phone: | Next Appointment: |

My medicines

When you visit your doctors, they may ask you what medicines you are taking. Your doctors need to know this, because some medicines should not be taken with others. Some medicines can also harm your kidneys. Use this chart to keep track of your medicines. Include any over-the-counter medicines and supplements you are taking.

| Medication | Dose | When to take it | Prescribing doctor | What it's for |
|-------------------------------|-------------|-----------------------|--------------------------|------------------|
| <i>Example: Vitamin C</i> | <i>50mg</i> | <i>With breakfast</i> | <i>Dr. Kidd Knee</i> | <i>Nutrition</i> |
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Take your medicines the way your doctors prescribe them, even if you feel fine.

My lab results

Knowing your numbers can help you stay healthy. See how your numbers compare to the normal results in the chart below. If your numbers are too high or too low, talk to your doctor about what you can do to control them. Also ask your doctor when you should be tested again.

| | Normal for most | My result | When to test again |
|----------------------------|--|-----------|--------------------|
| Blood tests | | | |
| eGFR (page 4) | More than 60 | | |
| Hemoglobin (Hb) (page 16) | Men: More than 13 g/dL Women: More than 12 g/dL | | |
| Total cholesterol (page 9) | Less than 200 | | |
| HDL (page 9) | More than 40 | | |
| LDL (page 9) | Less than 100 | | |
| Triglycerides (page 9) | Less than 150 | | |
| Urine Tests | | | |
| Dipstick (page 5) | No protein | | |
| UACR (page 5) | Less than 30 | | |
| Other Tests | | | |
| Blood Pressure (page 8) | Less than 120/80 | | |

Please see the pages listed for sources.

Acknowledgements

Our sincere thanks to Myra Kleinpeter, MD, Tamara Isakova, MD and Orlando Gutierrez, MD for their continued support of the American Kidney Fund and for their input on this brochure.

The American Kidney Fund is the leading national voluntary health organization serving people with and at risk for kidney disease through direct financial assistance, comprehensive education, clinical research, and community service programs.

Where to Find More Help

To learn more, visit our website at www.kidneyfund.org. If you still have questions, call the American Kidney Fund's toll-free HelpLine at **1.866.300.2900**, or email us at helpline@kidneyfund.org.



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www.kidneyfund.org

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