GoToGuide: Chronic Kidney Disease and Cardiovascular Disease
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Whether you’ve just been diagnosed with kidney disease or have been living with it for a while, you may not know that it increases your risk for cardiovascular disease (CVD), especially heart disease. The reverse is also true — having heart disease increases your risk of developing kidney disease. This is because the heart and kidneys work together, and what happens to one organ system affects the other.

The purpose of this GoToGuide is to help you understand both kidney disease and cardiovascular disease and how the two diseases are related.

This will help you to become an empowered patient so you can work together with your health care providers to reduce your risks, improve your health and find the best treatments for you.

The seven steps to becoming an empowered patient are:

- **Step 1**: Take control
- **Step 2**: Educate yourself
- **Step 3**: Know your rights
- **Step 4**: Be part of the team
- **Step 5**: Get information
- **Step 6**: Voice your opinion
- **Step 7**: Make informed decisions that are right for you
7 STEPS TO BECOMING AN EMPOWERED PATIENT

1. **Take control**
   By using this Guide, you are taking control of your health care and taking the first step to becoming an empowered patient. In this Guide, you will receive valuable information along with tools and resources to help you reduce your risk of heart and kidney disease.

2. **Educate yourself**
   For you to be truly empowered, it is important to understand what your heart and kidney disease diagnosis means. Ask your doctor to explain your condition and where you can learn more about it from reliable sources.

3. **Know your rights**
   Many patients feel they are at the mercy of the system and just need to do “what the doctor says.” While it is very important to follow your treatment plan, you also need to know your rights as a patient.

4. **Be part of the team**
   You know yourself better than anyone. Talk to your health care team about any questions, issues or concerns you may have, and keep your appointments.

5. **Get information**
   If you need medication, surgery or a device, you can never ask too many questions about it. Your doctor’s job is to help you feel confident about your treatment plan, so don’t be afraid to ask questions until you feel like you understand.

6. **Voice your opinion**
   Your voice matters. Speak up if you feel confused or uncomfortable with any course of action.

7. **Make informed decisions that are right for you**
   You might hear people talk about shared decision making. Shared decision making means that there is ongoing communication between the patient and the person providing care. What you want matters. Make sure you’re part of the conversation about your heart and kidney conditions and actively involved in treatment option decisions.

Download the worksheet.
STEP 1: Take control

You may not be able to change the fact that you have one or more chronic diseases, but you can choose not to allow them to define you. You are not your disease. It’s up to you to decide how you are going to live your life despite the challenges.

Taking control means taking charge of your own health. It means working with your health care providers and not simply following “doctor’s orders.” In fact, most health care providers today want their patients to have a say in their treatment plans.

By using this Guide, you are taking the first step toward becoming an empowered patient. You will receive valuable information about kidney disease and cardiovascular disease and how they can affect each other. You will also learn things you can do to stay as healthy as possible, both physically and emotionally.
Step 2 of becoming an empowered patient is educating yourself. This can feel overwhelming because there is so much information out there. It can be hard to know what is accurate and how much you really need to know. This GoToGuide will provide you with important information about kidney disease and cardiovascular disease. At the end of the guide, you will find a list of reliable and trustworthy resources you can go to for more information.

Before learning about kidney disease and heart disease together, it’s important to understand each disease individually.
What Is Kidney Disease?

Your kidneys are important organs that filter waste products and extra water out of your blood. When the kidneys are damaged, they can’t filter these waste products and get rid of the extra water. This causes the waste products to build up in the body.

Kidney disease can affect your blood pressure, your bones and your red blood cell production. Your red blood cells are very important because they carry oxygen to your body. Kidney disease can also affect the balance of important minerals like phosphorus, sodium and potassium in your blood.

It is important to get treatment for kidney disease as early as possible. The sooner you start treatment, the better your chances of avoiding chronic kidney disease or kidney failure. Chronic kidney disease (CKD) is when the kidneys gradually stop working over years. Kidney failure is when the kidneys can no longer filter waste products from the blood on their own. In this case, a procedure called dialysis is necessary to remove the waste. In severe cases, a person with kidney failure may need a kidney transplant.
Kidney disease increases your risk of getting cardiovascular disease (CVD), which affects the heart and blood vessels. CKD can cause CVD, and CVD can cause CKD. In fact, heart disease is the most common cause of death among people with kidney failure.

Chronic Kidney Disease by the Numbers

About **37 million** U.S. adults have CKD and most are undiagnosed.

Every **24 hours**, 360 people begin dialysis treatment for kidney failure.

In the United States, **diabetes and uncontrolled high blood pressure are the leading causes of kidney failure**, accounting for 3 out of 4 new cases.

Around **40%** of people with severely reduced kidney function (and who are not on dialysis) are not aware of having CKD.

Download the CKD infographic here.
Causes of Kidney Disease

Leading causes of CKD are diabetes and high blood pressure. Heart disease also can cause kidney disease.

- **Diabetes.** Diabetes is caused by having too much sugar, called glucose or “blood sugar,” in your blood. If you have untreated diabetes over a long period of time, it can damage your kidneys and your heart.

- **Heart Disease.** There are many different types of heart disease, including coronary artery disease (CAD), heart failure and arrhythmias (problems with your heart’s rhythm or heartbeat). Your heart’s main function is to pump blood with oxygen and other nutrients throughout the body, including to the internal organs like the kidneys. When your heart isn’t working well, the kidneys may not get the oxygen and nutrient-rich blood they need to filter waste and excess water in the body effectively. This can lead to kidney disease.

- **High Blood Pressure.** If you have high blood pressure, this means that the force of blood against the blood vessel walls is too high. High blood pressure can damage the blood vessels in the kidneys and keep them from filtering waste properly.

Your risk for kidney disease is also higher if you have a family member with kidney failure or if you have an autoimmune disease called lupus. Less common autoimmune diseases that are linked with kidney disease include glomerulonephritis, IgA nephropathy, and Goodpasture syndrome.

CDC FACT SHEET

Download the fact sheet.
Signs and Symptoms of Kidney Disease

Sometimes people will not have symptoms of kidney disease until the damage is severe. This is why it is so important to get tested if you have a family history of kidney disease and/or if you have heart disease. In severe cases of kidney disease, you may have some or all of the symptoms listed below. Also, since kidney disease can lead to heart disease, some of the symptoms of kidney disease are the same as symptoms for heart disease.

**SYMPTOMS OF KIDNEY DISEASE INCLUDE:**
- Loss of appetite
- Sleep problems
- Dry, itchy skin
- Urinating more or less than usual
- Decreased mental sharpness
- Muscle cramps

**SYMPTOMS OF HEART DISEASE AND/OR KIDNEY DISEASE INCLUDE:**
- Fatigue and weakness
- Nausea and vomiting
- Swelling of feet and ankles
- High blood pressure
- Chest pain or discomfort
- Shortness of breath with activity or with lying down
Diagnosing Kidney Disease

There are different tests your doctor can do to find out if you have kidney disease and if so, how severe it is. Doctors measure the severity of kidney disease in stages.

**TESTS USED TO DIAGNOSE KIDNEY DISEASE INCLUDE:**

- **Blood tests.** People with kidney disease often have higher levels of waste products, like creatine and urea, in their blood. A blood test measures those levels and can show how well your kidneys are filtering waste. This is called your glomerular filtration rate (GFR). The GFR measures the amount of blood that is cleaned by your kidneys in one minute. This is expressed in level of kidney function on a scale from G1 to G5. G1 means you have 90% or higher kidney function; G5 means you have less than 15% kidney function, or kidney failure.
# 5 Stages of Kidney Disease

<table>
<thead>
<tr>
<th>STAGE 1</th>
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<td>GFR ≥ 90</td>
<td>89 ≥ GFR ≥ 60</td>
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<td>29 ≥ GFR ≥ 15</td>
<td>GFR &lt; 15</td>
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<tr>
<td>Normal or high function</td>
<td>Mildly decreased function</td>
<td>Mild to moderately decreased function</td>
<td>Severely decreased function</td>
<td>Kidney failure</td>
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Click at the right to watch a video on the 5 stages of Chronic Kidney Disease.
**Urine tests.** A urine test can show if there are substances like albumin (a protein) in your urine that should not be there. This can help your doctor see if your kidneys are damaged.

**Ultrasound.** Your doctor might want to look at your kidneys using a painless test called an ultrasound. This is an imaging test that allows them to see the shape, size and structure of your kidneys.

**Kidney biopsy.** In some cases, your doctor might want you to have a kidney biopsy. This is done using local anesthesia. A biopsy involves taking a small sample of your kidney tissue with a long, thin needle. The sample will be sent to a lab, where a pathologist (a type of doctor that analyzes tissue samples using a microscope) can examine it closely to help see what is causing the problem with your kidneys.

If your doctor thinks you might have heart disease as well as kidney disease, they may send you to a cardiologist (a doctor who specializes in the heart) for additional tests.

**Tests for heart conditions include:**

- **A blood pressure check** monitoring for hypertension.
- **Using a stethoscope** to listen to your heart’s rhythm.
- **A blood test** to measure cholesterol and triglyceride levels in your blood.
- **An electrocardiogram (EKG or ECG).** This painless test is done by attaching sensors, usually on sticky pads, to your skin. These record the electrical signals to see if your heart is beating properly.
- **A stress test.** This measures how well your heart works during physical activity. Most often, you will be asked to run on a treadmill or a stationary bike. This test is done in a health care facility where you will be monitored by a health care professional.
The Link Between Kidney Disease and Cardiovascular Disease

As previously stated, the kidneys and the heart work together. When the kidneys can’t remove waste and extra water from the blood, the heart has to work very hard. This can lead to a heart attack, heart failure, coronary artery disease, arrhythmias and stroke.

There are some specific complications from kidney disease that can lead to cardiovascular disease. You will want to talk to your doctor about checking for these complications so you can treat them quickly and hopefully prevent heart disease.

**HERE ARE SOME COMPLICATIONS PEOPLE WHO HAVE KIDNEY DISEASE MAY HAVE:**

- **Anemia.** When someone has anemia, their body does not make enough red blood cells, so less oxygen goes to the body’s organs and tissues. This increases the risk of heart attack.

- **High blood pressure.** When there is damage to the kidneys, there is an increase in an enzyme called renin. This can increase blood pressure. High blood pressure can lead to a heart attack, congestive heart failure and stroke.

- **High homocysteine levels.** When people have kidney disease, a protein called homocysteine can’t be removed from the blood. High levels of homocysteine can lead to coronary artery disease (CAD), heart attack and stroke.

- **Unbalanced calcium and phosphorus levels.** Calcium and phosphorus are minerals that play a large role in keeping your bones healthy. When there is too much calcium or too much phosphorus in your blood, this may increase your risk of CAD.

Click at the right to watch a CKD/CVD webinar video.
Treating Kidney Disease and Cardiovascular Disease

If you have kidney disease but you don’t have heart disease, you will want to talk to your doctor about ways to prevent heart disease. Similarly, if you have heart disease and don’t have kidney disease, you’ll want to make decisions about treating your heart disease so you can avoid developing kidney disease.

If you have both kidney disease and heart disease, you’ll need to take both your heart and kidneys into consideration. It is important to know that some medications and therapies used to treat one disease can make the other disease worse. The good news is there are some newer medications that are good for both your heart and kidneys.

Medications

There are no medications that treat kidney disease exclusively. Instead, various medicines are used to help prevent and manage the health problems associated with CKD, such as diabetes and high blood pressure. These medications help your heart to function better and therefore pump oxygen and nutrient-rich blood to the kidneys more effectively. To learn more about medications for treating specific types of cardiovascular disease, The Mended Hearts, Inc. has many Discussion Guides, GoToGuides and a HeartGuide® with more information.

**SOME OF THE MEDICATIONS YOU MAY BE PRESCRIBED INCLUDE:**

- **Diabetes medications.** If your kidney disease was caused by diabetes, your diabetes treatment will help control your kidney disease and can help prevent heart disease too. There are many different types of diabetes treatments, including oral medications and injectable insulin.
- **Beta-blockers.** Medicines that lower blood pressure block the hormone adrenaline. This helps your heart beat more slowly and with less force and help prevent heart disease.

- **Angiotensin-converting enzyme (ACE) inhibitors.** ACE inhibitors lower blood pressure by widening blood vessels and helping the kidneys get rid of excess water.

- **Angiotensin receptor blockers (ARBs).** ARBs are another type of medicine that lowers blood pressure by widening your blood vessels.

- **Diuretics.** Diuretics help your body get rid of excess water and reduce swelling of your feet and ankles. They are also often helpful in lowering blood pressure and reducing symptoms of heart failure.

- **Statins.** Often people with kidney disease have high cholesterol, especially “bad” cholesterol, known as LDL cholesterol. High LDL cholesterol increases your risk of cardiovascular disease. Drugs called statins help to lower LDL levels.

- **Medications for anemia.** When a person’s red blood cells are lowered by kidney disease, they may be given a hormone called erythropoietin to help stimulate red blood cell production. Iron supplements are often prescribed as well.

- **Potassium binders.** When your kidneys are not working well, they do not filter enough potassium out of your blood. Too much potassium can cause problems with your heart and other muscles. Medicines called potassium binders remove excess potassium from the blood.

- **Vitamins and supplements.** Kidney disease can also impact your bone health, so your doctor might recommend calcium and Vitamin D supplements. Other supplements you may be prescribed include Vitamin C and B complex.

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**TOP 10 TIPS FROM PATIENTS TAKING MEDICATION**

Download [this fact sheet.](#)
Taking your medicine as prescribed by your doctor is important to your health. Here are some tips to help you stay on time and on track with your medications:

- **Fill your prescriptions on time.** Many pharmacies have automatic refill options to ensure you never run out.

- **Take advantage of mail order prescriptions** when you can to save trips to the pharmacy.

- **Take medications according to the label instructions** and make sure you understand when the medication should be taken.

- **Keep your doctor informed** about how you feel while taking the medication. If you experience side effects, call your doctor. Never stop taking medication without your doctor’s permission.

- **If you’re traveling, pack all the medications you’ll need** for the trip and take a few extra doses in case you’re delayed getting home. Keep your medication with you, and never place it in a checked bag.

You will find a form to **track your medications** above. Print the form and mark or color in the box each time you take your medicine on time.

**Keep an up-to-date list of your medications** to reference in case of an emergency and tell a loved one where you keep the list.
Other Treatments and Therapies

In you are in kidney failure or end-stage kidney disease, you will need dialysis. Dialysis is a procedure where waste products and extra fluids are removed from your body. **There are two types of dialysis:**

- **Hemodialysis.** Hemodialysis is a procedure in which your blood is filtered through a machine called a hemodialyzer. A hemodialyzer removes waste and extra fluid from your blood since your kidneys are not able to do this naturally. Your doctor will perform a minor surgical procedure on your arm and leg to gain access to a blood vessel. Hemodialysis can be done at a hospital, a freestanding facility or at home. Hemodialysis is typically done 3 times per week for around 4 hours each time, but this can vary depending on your specific needs.

- **Peritoneal dialysis.** With peritoneal dialysis, a thin tube called a catheter is inserted into your abdomen surgically. A dialysis solution goes into your belly through the tube. When the solution has absorbed the waste products and extra fluid from your blood, it drains back out of your body. This process is usually done 3 to 5 times a day in a 24-hour period while you are awake doing your normal activities. Each exchange takes about 30 to 40 minutes.
Kidney Transplant. Sometimes the kidneys stop working entirely. When this happens, a kidney will need to be replaced surgically with a healthy kidney from a donor. The donor might be living or deceased.

People who have both CKD and CVD may need one of the devices that are designed specifically to treat heart problems. The hope is that treating the heart condition will also benefit the kidneys.

Devices to Treat Heart Problems

- **A pacemaker.** A pacemaker is a small device that is implanted under the skin in the chest to help the heart beat normally. Pacemakers are commonly used to treat arrhythmias (irregular heartbeats) to prevent a heart attack. Implanting a pacemaker involves a minor surgical procedure that can often be done on an outpatient basis.

[Click at the right to watch how a pacemaker works.](#)
- **An implantable cardiac defibrillator (ICD).**
  An ICD is similar to a pacemaker, but it works a little differently and is used for people with life-threatening arrhythmias. When it senses dangerous heart rhythms, it delivers a shock to the heart. This is called defibrillation. Many of the newer ICDs can act as both a pacemaker and a defibrillator. Implanting an ICD is similar to implanting a pacemaker.

Click at the right to watch how an ICD works.
A left ventricular assist device (LVAD). An LVAD is a device that helps pump blood from the left chamber (ventricle) of your heart to the rest of your body. LVADs are reserved for people with severe heart failure or for those awaiting a heart transplant. Open-heart surgery is often required to implant an LVAD.

In severe cases of co-existing heart disease and kidney disease, a heart and kidney transplant may be needed. Talk to your doctor or health care provider about what this means for you.

Again, if you have both chronic kidney disease and cardiovascular disease, you will want to talk to your health care provider about treatment that will help both your kidneys and your heart. Some medications may be beneficial for one disease but harmful for the other. CKD and CVD both need to be considered with any treatment option.
**STEP 3:**

Know your rights

Step 3 of becoming an empowered patient is to know your rights. Many patients see their doctor or others on their health care team as the ultimate authority and are afraid to question their decisions and speak up when something doesn’t feel right for them. Even empowered patients may struggle with this sometimes. However, it is important to know your rights as a patient so you can be in control. It’s your life, after all.

**YOU HAVE THE RIGHT TO:**

- Be treated as part of the team
- Ask questions and get answers
- Have your concerns heard
- Have easy access to notes and medical records
- Get a second opinion (and third and fourth, if needed) to help you feel confident in your decisions
- Suggest alternatives
- Feel confident in your health care team
- Change your mind
- Appeal decisions if you don’t agree
- Know your rights and insist that they are respected.
Step 4 in becoming an empowered patient is to be part of the team. Many patients struggle to understand what it means to be “part of the team” when they don’t have a medical degree and may feel like they don’t know enough about their disease and treatment options available to them.
If you don’t fully understand your disease and treatment options, being part of the team means asking questions until you do. You don’t have to have medical knowledge to be part of the team — that’s what your health care providers are for.

**WHY IT’S IMPORTANT TO BE PART OF THE TEAM**

Being part of the team means playing an active role in your health care. Gone are the days of the passive patient who blindly follows their doctor’s orders. Please do follow your treatment plans, but be sure you have some input when coming up with a treatment plan. Don’t be afraid to speak up, make suggestions, ask questions, give your opinions and communicate your needs. If you have preferences, say so. Also, your health care goals may be different from the ones your doctor has for you, so make sure they are known.

When patients are part of the team and play an active role in their care, they are more likely to follow their treatment plan, take their medication as prescribed, make any needed changes to their lifestyle and feel better about managing their disease. Also, when patients have educated themselves about their disease, they are able to make suggestions that their health care providers may not have considered.

Today, health care providers want you to be part of the team. They want to hear from you and to help you make the best decisions possible.
STEP 5: Get information

Step 5 to becoming an empowered patient is to get information. You have already gotten some information from educating yourself in Step 2, but there is often additional information you need from your health care team and from trustworthy and reliable resources.
When you are living with a chronic disease, **you need helpful information about living with and managing that disease.** When you are living with more than one chronic disease, it can be even more complicated, and the need for information and support is greater. Here are some suggestions for questions you may want to ask your doctor or health care provider — but be sure to ask questions about any concerns you have. Writing them down in advance will help you remember them.

**QUESTIONS TO ASK YOUR DOCTOR:**

- What caused my kidney disease?
- What stage of kidney disease do I have?
- What medications might help manage my kidney disease, and what are their risks and benefits?
- How can I avoid getting heart disease or cardiovascular disease? (for those with CKD)
- How can I avoid getting kidney disease? (for those with CVD or heart disease)
- Are there medications that are safe for patients like me with both kidney disease and heart disease?
- What changes to my diet or exercise routine should I make?
- Where can I find more resources and trustworthy information on kidney disease and CVD or heart disease?
- What signs and symptoms should I look for that would let me know I need to call the doctor or 911?
- How can I get connected to other patients like me for peer support and information on living with kidney disease and heart disease?
**Step 6 in becoming an empowered patient** is to voice your opinion.

**Your voice matters!**

Sometimes, patients worry about speaking up too much and voicing their opinions. They don’t want to be a “problem patient,” or feel like a bother to their health care providers.

Speaking up is not always easy, especially when you disagree with someone “in authority,” but you are the one who must live with kidney disease and/or heart disease — not your doctor, nurse or other health care provider.
Your story matters. Your preferences, wants and needs matter. Don’t be afraid to speak up and share your feelings, concerns, suggestions and needs with your health care team — kindly and respectfully, of course. If you don’t feel comfortable with something, say so.

Most health care professionals — doctors, nurses and others — value your opinion. You are not a “problem patient,” you are an empowered patient.

Top 10 Tips from Patients about Communicating with Your Doctor or Health Care Provider

1. Be clear about your health goals and specific about what you want to know
2. Don’t be afraid to keep asking questions until you understand
3. Learn about your condition so you are better prepared
4. Find the right health care professional for you and be willing to get a second opinion
5. Ask about the best way to communicate with your health care professional
6. Keep a list of questions and take it with you to appointments
7. Ask your health care professional for resources and educational materials so you can learn more
8. You are the expert on you. Don’t be afraid to share your thoughts and opinions
9. Take someone with you to appointments so you have an extra set of ears
10. If you have questions or concerns, don’t wait for an appointment to communicate
STEP 7:
Make informed decisions that are right for you
The last step, Step 7, in becoming an empowered patient is to make informed decisions that are right for you. When you have the information you need; you understand it; and your wants, needs, opinions and suggestions have been expressed and heard, you are much more likely to make the decisions that are right for you. As a result, you are more likely to make the changes you need to make to improve your health.

Today, we often hear about “shared decision making” in health care, and this is what we are talking about in this section. In shared decision making, health care professionals are not making decisions for you, they are making them with you.

Again, when you have kidney disease or cardiovascular disease, there are a lot of decisions you need to make about living with that disease. When you have both kidney disease and cardiovascular disease, you have to manage not one, but two chronic conditions at the same time. In this next section, you will find information about living with kidney disease and heart disease so you can find solutions and ideas that will work in your life to help you make better decisions and improve your health and well-being.
worsen the other. It is very understandable that it can be uniquely challenging and confusing to manage two conditions at the same time, so here are some steps you can take to improve your health, feel better emotionally and physically, and reduce your risks:

1. **Ask yourself the right questions**
2. **Stick to your treatment plan**
3. **Make any needed changes in your diet**
4. **Make any needed changes to your physical activity level**
5. **Make other lifestyle changes to improve your heart and kidney health**
6. **Get connected**

1. **Ask yourself the right questions**

   The first step in making good decisions that are right for you is to ask yourself the right questions. Knowing things like your cholesterol level, blood pressure and other measures of your heart and kidney health will help you figure out what you need to do to improve your health.

Understanding your current health status means being aware of the following:

- **Your Risk Factors.** You have learned more about kidney disease and heart disease by educating yourself, but now you want to consider your risk factors (things that increase your risk) for heart disease and kidney disease. Some of these will have to do with your lifestyle — what you eat, how much exercise you get, your stress level, how much sleep you get and whether you smoke or not. Others may be related to your genetics and family history. If you haven’t already, ask your family members about any heart disease and kidney disease in your family. Then you can ask your doctor about whether genetic testing might be right for you.

- **Your Numbers.** You’ll want to know your cholesterol numbers, your blood pressure, your blood glucose level and any kidney-related numbers from bloodwork, such as your GFR. It is very important to keep these numbers in a healthy range when you have CKD, CVD or both.
**Your Symptoms.** If you have any symptoms at all, even if they don’t seem to be related to your heart or kidneys, write them down using the form provided on the next page. Ask yourself regularly whether they seem better or worse and record it. Also, write down any new symptoms you have and whether any symptoms go away. Share this information with your doctor at appointments (or right away if they are urgent). Monitoring your symptoms can keep you out of the hospital and can help you make better decisions too.

2. **Stick to your treatment plan**

It is essential that you follow the treatment plan your doctor or health care provider gave you (hopefully created with you as part of shared decision making). Don’t make any changes without speaking to someone on your health care team. It is also important that you understand your treatment plan. Your plan may include medications, medical devices and equipment or apps for monitoring your health, recording information and sending it to your doctor, as requested. It also may include changes to your diet, physical activities, sleep and stress management.

You may start following your plan and find that some things aren’t working, you are having side effects from a medication, or you cannot do certain things. **Don’t feel bad about this.** Often changes need to be made to treatment plans. Contact your doctor or health care provider (keep that contact information handy) so they can help you make changes that will allow you to follow the plan.

3. **Make any needed changes in your diet**

What you eat — and what you don’t — goes a long way toward improving and maintaining good kidney and heart health. Here are some general guidelines for healthy eating, though these will not apply to everyone with kidney disease and heart disease. It is essential to talk to your healthcare provider before making any changes to your diet.

- **Choose low-sodium foods.** Most people with CVD and/or CKD need to limit their sodium (salt)
intake. Too much sodium can lead to high blood pressure, fluid retention, and swelling. The 2020–2025 Dietary Guidelines for Americans recommend that Americans get less than 2,300 milligrams (mg) of sodium each day in what they eat or drink (note: some medications also contain sodium) as part of a healthy diet. This amount may not be appropriate for you, however, especially if your heart or kidney disease is severe.

It is important to talk to your health care provider for guidance on how much sodium is safe for you to eat and drink. In general, focusing on fresh foods, avoiding packaged foods, and choosing low-sodium or sodium-free varieties are good ways to keep sodium levels under control.

- **Avoid getting too much (or too little) protein.** Protein is found in meat, chicken, fish, beans, nuts and dairy products such as cheese and yogurt. The amount of protein you should eat or drink depends on whether or not you are on dialysis. For people with CKD who are not on dialysis, too much protein can cause the kidneys to work harder, which can cause your kidney disease to get worse. People on dialysis, on the other hand, require higher levels of protein. This is because, along with filtering waste products from your blood, dialysis also removes proteins (especially with peritoneal dialysis). A dietician, along with your health care team, can advise you on the amount of protein you should be getting.

- **Limit fats.** Fats are a necessary part of everyone’s diet, but too much of the wrong kinds of fat can lead to unhealthy cholesterol levels. Healthy fats include monounsaturated and polyunsaturated fats. These are found in vegetable oils (such as olive, canola, sunflower, soy and corn), nuts, seeds, avocados and fish. Lean cuts of meat, poultry and low- or fat-free dairy products are also good choices (but be sure to look at the sodium levels).
Saturated fats are found in red meat, butter, cheese and ice cream, and you want to limit the amount of these you eat. Coconut oil and palm oil are also high in saturated fat.

Trans fats should be avoided entirely. These are often found in packaged foods. Fortunately, awareness about the negative health impact of trans fats has led many manufacturers to eliminate trans fats from these foods.

- **Focus on foods with less potassium.** When your kidneys aren’t functioning well, potassium builds up in your blood, which can cause heart problems. White rice and pasta, for example, have less potassium than whole-wheat varieties. Apples and peaches have less potassium than oranges and bananas. Certain vegetables have more potassium than others.

- **Be aware of foods that contain phosphorus.** When you have CKD, phosphorus can build up in your blood. Getting too much phosphorus can pull calcium from your bones, making them weak and more likely to break. It can also lead to itchy skin and joint pain. Your health care provider or nutritionist can tell you which foods to avoid.

**TOP 10 TIPS FOR HEALTHY EATING**

1. Cook your own meals whenever possible. Restaurant and take-out portions tend to be large and are often high in sodium. When you do go out, let the server know your dietary preferences.

2. Broil, bake, steam, poach or grill your food instead of frying or sautéing — methods that use extra fat.

3. Use onions, garlic, spices and herbs to flavor food instead of salt.

**More tips for healthy eating**

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1. Cook your own meals whenever possible. Restaurant and take-out portions tend to be large and are often high in sodium. When you do go out, let the server know your dietary preferences.

2. Broil, bake, steam, poach or grill your food instead of frying or sautéing — methods that use extra fat.

3. Use onions, garlic, spices and herbs to flavor food instead of salt.

**More tips for healthy eating**

- Focus on foods with less potassium. When your kidneys aren’t functioning well, potassium builds up in your blood, which can cause heart problems. White rice and pasta, for example, have less potassium than whole-wheat varieties. Apples and peaches have less potassium than oranges and bananas. Certain vegetables have more potassium than others.

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**More tips for healthy eating**
Try to eat a “rainbow” of different fruits and vegetables to get the nutritional benefits of each.

Use ketchup, mayonnaise, soy sauce and other condiments sparingly, and buy low-salt varieties.

Avoid foods that are pickled, brined, cured or barbecued. These tend to be high in sodium.

You don’t have to change all of your diet at once (most of the time, drastic changes like this are a recipe for failure). Make changes gradually. Your doctor may suggest you work with a registered dietician or nutritionist to help you stay on track. Eating well will help you have more energy and feel better too.
How to Read a Food Label

**Serving Size:** This tells you the amount of food in one serving. If you increase the serving size, all the other values on the label will increase as well.

**Fat:** This tells you how many grams of fat are in a serving. Limiting the amount of saturated fat and trans-fat in your diet is important for good heart health.

**Sodium:** In general, people should not consume more than 2,300mg of sodium a day. People with heart and kidney problems should consume less — ideally under 1,500mg per day. Your doctor can tell you the amount that is safe for you.

**Total carbohydrate:** This tells you the amount of carbohydrates (starches) in one serving.

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**Plan Your Plate**

The USDA’s MyPlate Plan shows you how much of each food group should make up a typical meal, based on your height, weight and overall health. Always make changes to your diet slowly. A nutritionist or dietician can help you design the perfect plate for you.
4. Make any needed changes to your physical activity level

Physical activity is good for everyone, including people with kidney disease. It can boost your energy, help you sleep, improve your mood and reduce your risk of heart disease. Getting exercise can also help you control your blood pressure and cholesterol.

Before starting any exercise program, however, it is essential that you consult with your healthcare provider. Each person with CKD will have different abilities and limitations.

The Centers for Disease Control and Prevention (CDC) recommends that most adults try to get at least 30 minutes of moderate-intensity physical activity most days of the week.

However, not everyone with CKD is up to this. Your ability to tolerate exercise will vary depending on the seriousness of your condition. People with late-stage CKD or CVD may be very limited in what they can do safely. Again, your doctor is the only one who can determine how much or how little physical activity is safe based on your current health situation.

Even if you can only do 5 or 10 minutes at a time and increase your activity slowly, that will help improve your health. Also, if you choose activities that you enjoy, you are more likely to stick with them. If it’s not feasible to leave the house and go for a walk or to a health club, you may want to try one of the many free exercise videos available online.

It’s also a good idea to avoid sitting for long periods of time. If you have a desk job, try to get up twice every hour and move.
### Getting Exercise:  
Top 10 Tips from Patients for Getting Exercise

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<tr>
<td><strong>1</strong></td>
<td>Start small and increase activity each week.</td>
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<td><strong>2</strong></td>
<td>Do activities you enjoy so you are more likely to keep doing them.</td>
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<tr>
<td><strong>3</strong></td>
<td>Cardiac rehab is a great place for patients to get exercise.</td>
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<tr>
<td><strong>4</strong></td>
<td>Create an exercise routine so you can develop new habits.</td>
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<tr>
<td><strong>5</strong></td>
<td>Walk to improve your mood.</td>
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<td><strong>6</strong></td>
<td>Talk to your doctor about the best types of activities for you.</td>
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<td><strong>7</strong></td>
<td>Find an exercise buddy or join a class to help keep you motivated.</td>
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<tr>
<td><strong>8</strong></td>
<td>Keep track of your activity with a journal, chart or app.</td>
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<tr>
<td><strong>9</strong></td>
<td>Get up, move and stretch if you’ve been sitting for more than an hour.</td>
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<tr>
<td><strong>10</strong></td>
<td>Stretch and listen to your body and rest when you need to.</td>
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5. Make other lifestyle changes to improve heart health

In addition to eating well and getting exercise, making an effort to improve other lifestyle habits can make a big difference. Some things you can do to benefit your heart and your kidneys are to stop smoking if you smoke, reduce or manage your stress level and get enough sleep.

- **Stop Smoking**

  Smoking is bad for your health in general. It can also make kidney disease worse and increases your risk for cardiovascular disease. Smoking doesn’t just raise the risk for the smoker, but it can impact loved ones regularly exposed to secondhand smoke, increasing their risk of coronary heart disease. Smokeless tobacco, vaping and other tobacco products increase these risks as well.

  **Smokers who quit start to improve their heart health and reduce their risk for heart disease immediately.**

  Explore smoking cessation programs with your doctor and look for support from others who have successfully quit. You can do this!

- **Reduce or Manage Stress**

  Stress is a fact of life for many people living with a chronic disease. Stress and emotional health play a key role in your overall health. When you are experiencing a stressful situation, your body releases adrenaline, a hormone that temporarily causes your breathing and heart rate to speed up and your blood pressure to rise — known as the “fight or flight” response.

  Now and then, this is not harmful to your body, and in emergency situations, it may
save your life. But constant stress is hard on your heart and can also lead to risky behaviors such as overeating, drinking too much alcohol or smoking.

This is why finding ways to reduce stress is important to your emotional and physical well-being. In fact, a lot of the things you can do to keep your heart healthy — such as eating right, exercising and not smoking — can help reduce stress as well. Activities like yoga or meditation are effective ways to relax. Practicing mindfulness, journaling and talking to others are also beneficial. If you’re experiencing high levels of stress or anxiety, talk to your health care provider about how to manage it.
Get Enough Sleep

Many people may not be aware of the connection between sleep and kidney disease. In fact, sleep is closely connected to kidney function. Not getting enough sleep can actually cause CKD to progress more quickly.

There are several reasons people with CKD may find it difficult to sleep. Symptoms of the disease can cause discomfort. Some medications can interrupt sleep. Obstructive sleep apnea (in which breathing repeatedly stops and starts while you’re asleep) can interfere with sleep as well. Sleep apnea is more common in people with CKD than in the general population.

When you don’t get enough sleep, your blood pressure goes up, which increases your risk of heart disease. Poor sleep can also make it harder to keep your blood sugar under control.

Getting enough sleep — like reducing stress, eating well and exercising — can reduce your risk of complications from kidney disease and/or heart disease and make you feel better, too.

Aim for 7 to 8 hours of sleep a night. Start a bedtime routine that is relaxing, with electronics turned off an hour beforehand. Get a good mattress and make sure the room temperature is right for sleeping. Avoid eating heavy meals and drinking alcohol close to bedtime. And try to go to bed and get up around the same time every day.

If these measures aren’t helping, talk to your doctor about other approaches to improving your sleep quality.

If you have a sleep disorder such as sleep apnea, insomnia or narcolepsy, it is important to get these conditions under control. Sleep disorders can raise your blood pressure which increases your risk for kidney disease and cardiovascular disease too. Also, some medications for narcolepsy are high in sodium which can impact your kidneys. Your doctor can help you come up with a safe and effective treatment plan so you can get the rest you need and reduce your risks.
6. Get Connected

It may help you and your loved ones if you are able to get support from others who have been through a similar diagnosis. Getting and staying connected to others can help you adopt healthy changes and feel better emotionally and physically. Research shows that getting the support you need can reduce hospital and doctor visits too.

- **Peer Support**
  
  Getting emotional support from another patient with kidney disease and cardiovascular disease can make you feel less scared and alone. Peer support has many benefits not only for emotional health, but for your physical health too. Join an in-person support group or get support by phone or online. The Mended Hearts, Inc. has a Heartline hotline (1-844-HEART87), a toll-free number you can call to talk to another patient like you.

- **Supporting Others**
  
  If possible, join a group or get involved in a community that helps others. Joining a support group like Mended Hearts® and Young Mended Hearts® where you can give and receive support can make a big difference in your sense of well-being. Volunteering can also make you feel better because you are taking a difficult experience and using it for good. We know through research that patients who are trained as Mended Hearts Accredited Visitors and provide peer support to patients in the hospital report a better quality of life than those who don’t. **Connecting with others is an important part of healing.**
Other Resources for Living with Kidney Disease and Cardiovascular Disease

At The Mended Hearts, Inc., our mission is to make sure that you are educated and supported on your journey, whether you are a patient or a caregiver. Our trained volunteers — who are patients, parents and caregivers themselves — make hundreds of thousands of connections each year to those in the hospital and in recovery. They lead support groups, visit patients and caregivers in the hospital, help educate others and provide many valuable services to hospitals and cardiology offices. Our goal is to make sure that no one walks this journey alone; when you need us, we are there.

Here are ways that you can find the support you need:

- **Become a member.** The Mended Hearts, Inc. memberships start at $0.00 — FREE! With your free membership, you can access our member-only content, read our award-winning *Heartbeat* magazine online, receive our national e-newsletter and participate in other educational and support opportunities. If you choose to donate, your membership benefits increase.

BECOME A MEMBER OF MENDED HEARTS
Sign up here.
Local Chapters. We have more than 220 local chapters in communities across the country that host support group meetings, provide educational opportunities and engage patients living with heart disease and their families in community activities.

Telephone, email, text and video chat support through MyHeartVisit®. Anyone can request a visit from a trained volunteer by telephone, email, text or video chat. You can schedule a visit at www.myheartvisit.org or simply call our Heartline hotline at 1-844-HEART87 (1-844-432-7887) to speak to someone Monday through Friday from 10 a.m. to 6 p.m. and Saturday from noon to 3:00 p.m. Eastern Time. This is a great opportunity to share your feelings and ask trained patients and caregivers questions about living with heart disease.

Online Support. Our online discussion communities offer a network where participants can ask questions, share their journey and find support. Heart patients, caregivers and families are all welcome.

Learn More Today
The Mended Hearts, Inc. published a HeartGuide®, a guide to living with heart disease. Use it as your trusted companion along your journey to heart health.

Click here to read HeartGuide and here to access our Discussion Guides.
References

Kidney Disease — the Basics
- Chronic Kidney Disease | Mayo Clinic
- Chronic Kidney Disease Basics | Centers for Disease Control and Prevention
- Stages of Kidney Disease | Kidney Research UK
- 10 Signs You May Have Kidney Disease | National Kidney Foundation
- Kidney Failure Linked to Greater Increase in Death Risk in Women | Diabetes Self Management

The Link Between Heart and Kidney Disease
- Heart disease and chronic kidney disease (CKD) | American Kidney Fund
- Heart Disease & Kidney Disease | NIH National Institute of Diabetes and Digestive and Kidney Diseases
- The Heart and Kidney Connection | National Kidney Foundation

The Importance of Sleep
- How Does Sleep Affect Your Heart Health? | Centers for Disease Control and Prevention
- Insomnia in Patients With Chronic Kidney Disease | National Library of Medicine

Kidney Disease Treatments
Devices
- Pacemaker | American Heart Association
- Implantable Cardioverter Defibrillator (ICD) | American Heart Association
- Ventricular assist device (VAD) | Mayo Clinic
Dialysis and Medications

- Hemodialysis | National Kidney Foundation
- Peritoneal Dialysis | National Kidney Foundation
- Newer Type 2 diabetes drugs could protect against both heart, kidney disease | American Heart Association

Lifestyle Management

- Eating Right for Chronic Kidney Disease | NIH National Institute of Diabetes and Digestive and Kidney Diseases

Podcasts

- Kidney Disease | Centers for Disease Control and Prevention
- High Blood Pressure and Kidney Damage | Centers for Disease Control and Prevention
- Native Americans, Diabetes, and Kidney Failure | Centers for Disease Control and Prevention

Fact Sheets, Infographics, and Info Cards

- Chronic Kidney Disease: Common – Serious – Costly | Centers for Disease Control and Prevention
- Chronic Kidney Disease in the United States, 2021 | Centers for Disease Control and Prevention
  (Spanish version) Enfermedad Crónica de los Riñones en los Estados Unidos, 2021
- Take Care of Your Kidneys and They Will Take Care of You | Centers for Disease Control and Prevention
  (Spanish version) Cuide sus riñones
- Vital Signs: Native Americans with Diabetes | Centers for Disease Control and Prevention
- Info Cards on Kidney Disease | Centers for Disease Control and Prevention
- Healthy Kidneys are Happy Kidneys Infographic | Centers for Disease Control and Prevention
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