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# All about chronic kidney disease

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Learn more about dialysis and  
chronic kidney disease

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# All about chronic kidney disease

Kidney disease occurs when kidneys can no longer perform their functions to full capacity. These functions include removing extra water and wastes, helping control blood pressure, keeping body chemicals in balance, maintaining strong bones and telling your body to make red blood cells. Kidney disease can happen all of a sudden, or over time.

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## 1

### Definition, causes and symptoms

#### **What is chronic kidney disease (CKD)?**

Healthy kidneys function to remove extra water and wastes, help control blood pressure, keep body chemicals in balance, keep bones strong, tell your body to make red blood cells and help children grow normally. Chronic kidney disease occurs when kidneys are no longer able to clean toxins and waste product from the blood and perform their functions to full capacity. This can happen all of a sudden, or over time.

#### **What is acute renal failure?**

“Renal” means related to the kidneys. “Acute” means sudden. So acute renal failure means the kidneys have failed suddenly, often due to a toxin (a drug allergy or poison) or severe blood loss or trauma. Dialysis is used to clean the blood and give the kidneys a rest. If the cause is treated, the kidneys may be able to recover some or all of their function.

#### **What are the main causes of kidney disease?**

Diabetes is the number one cause of kidney disease, responsible for about 40% of all kidney failure. High blood

pressure is the second cause, responsible for about 25%. Another form of kidney disease is glomerulonephritis, a general term for many types of kidney inflammation. Genetic diseases, autoimmune diseases, birth defects and other problems can also cause kidney disease.

#### **I have diabetes. Will my kidneys fail?**

Diabetes is a risk factor for kidney disease, but this does not mean your kidneys will fail. You can care for your kidneys by controlling your blood sugar and getting regular microalbumin urine tests to see if you are spilling even tiny amounts of protein. Even if you develop diabetic kidney disease, you can work with your doctor to keep your kidneys working as long as possible.

#### **Can I catch kidney disease from someone who has it?**

No. Kidney disease is not contagious; you cannot catch it from someone. Most kidney disease is caused by diabetes and high blood pressure, conditions that can run in families. If you are a family member of someone who has diabetes, high blood pressure, or kidney disease, it is a good idea to ask your doctor to check your blood pressure and kidney

function at your next checkup.

## **What are kidney stones?**

A kidney stone occurs when substances in the urine form crystals. Kidney stones can be large or small. Large ones can damage the kidneys; small ones may be able to pass in the urine. Because crystals have sharp edges, passing even small stones can be very painful. Treatment depends on what the stones are made of.

## **What is PTH?**

Parathyroid hormone (PTH) is produced by several small, bean-like parathyroid glands in your neck. Its “job” is to tell your bones to release calcium into your bloodstream. Too much PTH can become a problem in people with kidney disease.

Healthy kidneys convert a hormone called calcitriol to its active form of vitamin D. Calcitriol lets your body absorb calcium from food you eat. When your kidneys are not working well, they start to make less calcitriol—so even if you eat calcium, your body can’t absorb it. PTH kicks in to make sure you always have enough calcium in your blood. Over time, this can weaken your bones.

A blood test can show if your PTH levels are above normal. If they are, your doctor may prescribe a form of active vitamin D.

## **I have a family member with polycystic kidney disease (PKD). Should I be tested?**

Since 60% to 70% of people with PKD have a family member with PKD, asking your doctor about being tested seems like a good idea. The first test used for PKD is an ultrasound to look at the kidneys and see if there are cysts. No contrast dye is needed, so this is a non-invasive test. Learning more about PKD may help you take better care of your kidney health. The PKD Foundation has free information that can help you. You can reach them by calling 1-800-PKD-CURE, or visit their website at [www.pkdcure.org](http://www.pkdcure.org).

## **What are the symptoms of chronic kidney disease?**

Knowing the symptoms of kidney disease can help people detect it early enough to get treatment. Symptoms can include:

- Changes in urination—making more or less urine than usual, feeling pressure when urinating, changes in the color of urine, foamy or bubbly

urine, or having to get up at night to urinate.

- Swelling of the feet, ankles, hands or face—fluid the kidneys can't remove may stay in the tissues.
- Fatigue or weakness—a buildup of wastes or a shortage of red blood cells (anemia) can cause these problems when the kidneys begin to fail.
- Shortness of breath—kidney failure is sometimes confused with asthma or heart failure, because fluid can buildup in the lungs.
- Ammonia breath or an ammonia or metal taste in the mouth—waste build-up in the body can cause bad breath, changes in taste or an aversion to protein foods such as meat.
- Back or flank pain—the kidneys are located on either side of the spine in the back.
- Itching—waste buildup in the body can cause severe itching, especially of the legs.
- Loss of appetite
- Nausea and vomiting
- More hypoglycemic episodes, if diabetic

If you believe you have any of these symptoms, talk to your doctor about your concerns. This is especially important if you have a close family

member who has kidney disease, or if you have diabetes or high blood pressure, which are the main causes of kidney failure.

### **How can I find out if I have kidney disease?**

Kidney disease can be detected through lab tests or by symptoms. High blood levels of creatinine and urea nitrogen (BUN) or high levels of protein in your urine suggest kidney disease. Diabetics should have a yearly urine test for microalbumin, small amounts of protein that don't show up on a standard urine protein test.

### **If I have signs of kidney disease, what should I do?**

After you have basic screening tests done, if you have signs of kidney disease you should ask for a referral to a nephrologist, a doctor specializing in treating kidney disease. A nephrologist will perform an evaluation and then suggest medications or lifestyle changes to help slow the progression of kidney disease.

## 2

### Stages

**I just found out I have kidney failure. Does this mean I am going**

**to die?**

No. Dialysis or a kidney transplant can keep you alive when your kidneys fail. The more you learn and take part in your treatment, the better you can feel. Some people live for decades with kidney failure.

#### **What are the stages of chronic kidney disease (CKD)?**

In chronic kidney disease, the kidneys don't usually fail all at once. Instead, kidney disease often progresses slowly, over a period of years. This is good news, because if CKD is caught early, medications and lifestyle changes may help slow its progress and keep you feeling your best for as long as possible. With early diagnosis, it may be possible to slow, stop or even reverse CKD, depending on the cause. The National Kidney Foundation (NKF) recently published information on the stages of chronic kidney disease. In the table below, the "GFR level," or glomerular filtration rate, is a measure of how well your kidneys are cleaning your blood. Your doctor can calculate your GFR,

based on a formula.

#### **Stages of chronic kidney disease**

Stage	Description	GFR Level
Normal kidney function	Healthy kidneys	90 mL/min or more
Stage 1	Kidney damage with normal or high GFR	90 mL/min or more
Stage 2	Kidney damage and mild decrease in GFR	60 to 89 mL/min
Stage 3	Moderate decrease in GFR	30 to 59 mL/min
Stage 4	Severe decrease in GFR	15 to 29 mL/min
Stage 5	Kidney failure	Less than 15 mL/min or on dialysis

In Stage 1 and Stage 2 CKD, there are often few symptoms. Early CKD is usually diagnosed when there is:

- High blood pressure
- Higher than normal levels of creatinine or urea in the blood
- Blood or protein in the urine
- Evidence of kidney damage in an MRI, CT scan, ultrasound or contrast

- X-ray
- A family history of polycystic kidney disease

In Stage 3 CKD, anemia (a shortage of red blood cells) and/or early bone disease may appear and should be treated to help you feel your best and reduce problems down the road.

When CKD has progressed to Stage 4, it's time to begin preparing for dialysis and/or a kidney transplant.

## **How many people in the U.S. have chronic kidney disease?**

The National Kidney Foundation estimates that about 20 million adults in the U.S. have some degree of chronic kidney disease (CKD). Of these, about 400,000 have Stage 5 CKD, or kidney failure—they have a glomerular filtration rate (GFR) of less than 15 mL/min and are on dialysis. Another 400,000 have Stage 4 CKD (severe), and about 7.5 million are at Stage 3 (moderate). The rest have some kidney damage, but have normal or only mildly reduced kidney function (CKD stages 1 and 2). Trends in the data show that the numbers of people with CKD are rising. Many people with CKD do not know they have it. Symptoms are normally

subtle until late in the course of the disease. With early detection, CKD can usually be slowed.

## **What is the difference between creatinine clearance, glomerular filtration rate (GFR) and percent kidney function?**

All three of these tests measure how well your kidneys are working. Even though they are different, the terms are often used interchangeably.

Creatinine is a waste product that healthy kidneys can remove from the body. Creatinine clearance is tested by taking a 24-hour urine sample and a blood sample, and calculating how quickly your kidneys “clear” your blood of creatinine. Another way to determine creatinine clearance is by using an equation that gives an approximate value based on blood creatinine level, height, weight and age. Creatinine clearance is reported in milliliters per minute (mL/min). For healthy men, a normal creatinine clearance is 97 to 137 mL/min. For healthy women, a normal creatinine clearance is 88 to 128 mL/min.

Glomerular filtration rate (GFR) tells how quickly your kidneys are cleaning

your blood. GFR is also reported in milliliters per minute. A normal GFR is greater than 90 mL/min.

Percent kidney function is an estimate of how much function the kidneys have left. Because a GFR of 100 milliliters per minute (mL/min) is in the normal range, it is convenient to assume that 100 mL/min is about equal to 100% kidney function. So a creatinine clearance or GFR of 30 mL/min would be called “30% kidney function.”

If you’re interested in the technical aspects of estimating GFR, see “Estimation of GFR,” Guideline 4 of the K/DOQI Clinical Practice Guidelines for CKD at [www.kidney.org/professionals/doqi/kdoqi/toc.htm](http://www.kidney.org/professionals/doqi/kdoqi/toc.htm).

## Laboratory values showing you have kidney failure

Test Names	Diabetes	No Diabetes
Creatinine	6.0 mg/dl or higher	8.0 mg/dl or higher
Creatinine clearance	15 mL/min or lower	10 mL/min or lower
Glomerular Filtration Rate (GFR) calculated from creatinine, age, sex, race	15 mL/min/1.73m <sup>2</sup> or lower	10 mL/min/1.73m <sup>2</sup> or lower

## When should I be referred to a nephrologist?

You should be under the care of a nephrologist if your creatinine clearance, a measure of your kidney function, is 30 mL/min or lower. This translates to stage 4 chronic kidney disease (CKD).

When you first find out you have CKD (even if it is stage 2 or 3), seeing a nephrologist at least once can help you develop a plan of care. A nephrologist can help you and your primary care doctor:

- Slow the rate of decline of your kidney function
- Decide if a kidney biopsy might be useful
- Diagnose the type of kidney disease and whether it might be reversible with treatment
- Manage complications of kidney

disease, such as anemia, high blood pressure, metabolic acidosis and changes in mineral balance

## Where can I learn more about kidney disease?

It's great that you want to learn more about kidney disease and dialysis so you can make more informed decisions. DaVita offers a class for people who have kidney disease as well as their families. Depending on where you live in the U.S., there may be a class near you.

Call DaVita Guest Services toll free at 1-800-244-0680 between 5 a.m. to 6:30 p.m. (PT) / 8 a.m. to 9:30 p.m. (ET). Learn more about DaVita's kidney health education program and free classes at [www.keyconnections.com](http://www.keyconnections.com).



## Slowing progression

### How can I slow the progression of chronic kidney disease (CKD)?

There are many ways to help delay or prevent kidney failure, especially when CKD is diagnosed in the mild to moderate stages.

#### Blood pressure control

- Keep your blood pressure at 125/75 or lower if you have diabetes and/or protein in your urine.
- Keep your blood pressure at 130/85 or lower if you have kidney problems but not diabetes.

Two types of blood pressure medication slow the action of angiotensin, a substance that may contribute to kidney disease progression. Studies have shown that angiotensin-converting enzyme (ACE) inhibitors and angiotensin-receptor blockers (ARBs) can help slow progression of kidney disease in people with diabetes, even if they do not have high blood pressure. The generic names of some common ACE inhibitors are captopril, enalapril, and lisinopril. Some common ARBs are losartan, candesartan, and valsartan.

## **Blood glucose control**

If you have diabetes, strict controls of your blood glucose levels can help slow the progression of kidney disease.

- Keep your hemoglobin A1c, which measures blood glucose control over the last two to three months, to less than 6.5%.
- To reach this level of strict glycemic control, you will need to monitor your blood glucose closely to avoid hypoglycemia.

You may need to use frequent insulin injections or an insulin pump. Talk to your doctor about your diabetes treatment options.

## **Repairing the damage**

In some cases, the kidney disease itself can be treated. If you have an obstruction that blocks your urine flow, surgery may help. If you have an infection, antibiotics may clear it up.

If damage is due to the effects of prescription or non-prescription medications, your doctor may be able to suggest a different medication that is less harmful to your kidneys. If you have CKD and are prescribed antibiotics, talk to your doctor about the effect it may have on your kidneys. Painkillers (even

over-the-counter medicines) can cause damage to your kidneys. Talk to your doctor about all medication you take. Sometimes diagnostic studies using contrast dye are ordered. It may be necessary for you to have the study, but first find out if there are alternative methods.

Some diseases, such as IgA nephropathy, glomerulonephritis and lupus can cause kidney damage when your immune system overreacts and inflammation occurs. It is sometimes possible to slow the disease process by controlling the immune system with steroids and/or other medications.

Smoking is a risk factor for faster progression of kidney disease, so stopping smoking can also help slow progression. Avoiding too much protein and phosphorus in the diet may help, as well.

Check with your doctor to find out whether any of these things might help slow the progress of your kidney disease.

## **Diet and drugs**

Ongoing research continues on dietary changes and drugs that may help slow the progression of CKD. Examples

include:

- Fish oil for IgA nephropathy
- Pirfenidone (an anti-fibrotic drug) in the treatment of focal segmental glomerulosclerosis (FSGS)
- Dietary intake of antioxidant or anti-inflammatory vitamins and foods

## **Blood pressure control**

Study after study has confirmed that good blood pressure control can help slow the rate of CKD. This is especially true in people who have diabetes and protein in the urine (proteinuria). Keeping blood pressure under control also helps prevent heart disease and stroke.

According to National Kidney Foundation (NKF) guidelines, you should strive to keep your blood pressure at or below 130/85 if you have CKD. If you have diabetes and/or proteinuria too, the suggested target blood pressure is 125/75.

Lifestyle changes such as losing weight, exercising, meditating, eating less salt and drinking less alcohol can help lower your blood pressure.

For most people with CKD, blood-pressure drugs are also needed. The first

blood-pressure drug is likely to be an angiotensin-converting enzyme inhibitor (ACE inhibitor) or an angiotensin-receptor blocker (ARB), because these drugs have been proved to slow the rate of some types of kidney disease. Other types of blood-pressure drugs such as a diuretic (water pill) or a calcium-channel blocker may be added, as needed. Ask your doctor what you can do to keep your blood pressure at a healthy level.

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### Lifestyle choices

#### **What is my role with my chronic kidney disease?**

In most chronic diseases, including chronic kidney disease (CKD), people who learn a lot about their disease and how to take care of themselves stay healthier. The more you know, the more you can help yourself.

There is a lot that can be done early in CKD to keep you feeling well and to maintain your kidney function for as long as possible. You also may be able to help prevent some long-term complications of kidney disease, such as bone disease or heart problems, by acting early. Your role is to learn all you can and work with your care team to get the best possible care.

Diet and exercise are two areas where you have a lot of control. Talk with your care team to determine individualized dietary guidelines based on lab tests and your stage and type of CKD. Stay active and get plenty of exercise.

It's possible to have a full and active life with CKD or with kidney failure. For more information on your role, see the

article on DaVita.com titled "20 Tips for a Good Life with CKD."

#### **I was diagnosed with kidney disease. Should I stop exercising and rest more?**

While we all need rest, we need exercise, too. It's been shown that exercise is good for people with kidney disease. So you should try to stay active. If you've been sedentary in the past, talk to your doctor about starting a mild exercise program. The key is to start slowly and build up gradually. Getting plenty of exercise is one key to helping yourself feel great, even with kidney disease.

#### **How can smoking affect my CKD?**

Smoking is an important risk factor that can make kidney disease worse. Heavy smoking, in particular, will work against you if you are trying to keep your kidney function for as long as possible.

The effects of smoking in diabetic kidney disease are well-documented. Diabetics who smoke tend to develop kidney disease earlier and lose kidney function more quickly than diabetics who do not smoke, or who quit smoking. Smoking has also been shown to hasten the progression of other types

of kidney disease. In addition, smoking increases high blood pressure and cardiovascular risks, two health problems that often occur along with kidney disease.

You'll be taking better care of yourself if you can reduce the amount you smoke—or better yet—quit altogether. If you are willing to quit smoking, talk to your doctor about sustained-release bupropion (Zyban®) and nicotine replacement therapy, as well as counseling or support to help you quit.

## **I have Stage 3 kidney disease.**

### **Why am I so tired?**

Fatigue is common in people with kidney disease. Most often, it is caused by anemia, a shortage of red blood cells. When you have anemia, you feel tired, weak, cold or even confused. Anemia occurs with kidney disease because failing kidneys make less of a hormone called erythropoietin, or EPO. EPO tells your body to make red blood cells. Treating anemia will give you more energy and help prevent damage to your heart. Synthetic EPO, called Aranesp®, Procrit® or Epogen®, plus iron supplements, are used to treat anemia brought on by kidney disease.

### **How do I know if I have anemia?**

Your doctor can tell if you have anemia through a blood test for hemoglobin or hematocrit. Hemoglobin (Hgb) is the oxygen-carrying pigment that gives red blood cells their color. A normal Hgb level is 12–16 g/dL in women or 14–18 g/dL in men. Hematocrit (Hct) is the percentage of total blood that is made up of red blood cells. A normal Hct is 37% to 47% in women or 42% to 52% in men. Aranesp®, Procrit® or Epogen®, plus iron supplements, are used to treat anemia from kidney disease.

### **What can I do about muscle cramps?**

Cramps—especially leg cramps—are common for those with kidney disease. Cramps are thought to be caused by imbalances in fluid and electrolytes, but may also be caused by nerve damage or blood-flow problems. If you experience cramps, here are suggestions that may help:

- Stretch the muscle
- Massage the area
- Take a hot shower or bath
- Drink plenty of water (if not on a fluid restriction)
- Wear comfortable shoes

A number of nephrologists prescribe quinine for their patients who are bothered by frequent cramps. Quinine does have potential risks, so be sure it really helps you before taking it for a lengthy period of time.

## **What can I do about itching?**

While problems with itching are common for those with kidney disease, it can be difficult to determine the cause. Below are some reasons you may be itching and what may be done to help.

- Blood levels of phosphorus or parathyroid hormone (PTH) that rise as kidney function drops can lead to itchy skin (and other problems). If you have high phosphorus or PTH levels, your doctor can prescribe a phosphate- binder drug for you to take with meals and snacks to get your blood levels into the target range.
- Itching can be caused by dry skin. Try a good moisturizing cream or lotion.
- Allergies can cause itching and can happen at any time, even from products you have used for a long time. Think about what you could be sensitive to in your environment, such as soaps, lotions, detergents, perfumes, etc.
- Many people find that getting out in

the sun a bit helps with itching, though the reason for this are unclear.

Ask your nephrologist and/or dermatologist for tips on how you can deal with stubborn itching.



## **What to eat**

### **Should I be on a low-protein diet?**

Protein, found in meats, fish, poultry, dairy products, nuts and some grains, helps your body form muscle and tissue. But when your kidneys are not working well, the byproducts of protein breakdown can build up in your blood. This can make your kidneys work harder.

Some studies of low-protein diets show that they can slow the progression of kidney failure. But other studies show that the diets do not help. Due to these mixed results, and the need to maintain good nutrition, doctors differ about the need to limit protein for people with chronic kidney disease (CKD). The answer is often moderation.

Many people with CKD find that they don't want to eat as much protein as

they used to, because food doesn't taste the same. You may even need to make a special effort to eat enough protein and calories, because CKD can reduce your appetite.

In all cases, it's crucial to avoid malnutrition. A blood test for albumin, a form of protein, is a good way to tell if you are getting enough good food. Your albumin level should be 4.0 g/dL or higher. If you notice weight loss, loss of appetite, or other signs of poor nutrition, talk to your doctor.

So, how much protein do you need? K/DOQI national guidelines for kidney disease suggest a daily protein intake of 0.75 grams per kilogram of body weight for mild to moderate CKD (stages 1, 2 or 3). Divide your weight in pounds by 2.2 to learn what you would weigh in kilograms. For example, 176 lbs. divided by 2.2 is 80 kg. If this were your weight, you would need 80 x 0.75, or 60 grams of protein per day.

In more severe kidney disease (stages 4 and 5), the guidelines suggest 0.6 grams of protein per kilogram each day. Some doctors may advise even lower levels, which require close monitoring. If your diet includes very little protein, your

doctor may prescribe supplements of nutrients you would normally get from protein, such as ketoacids and/or amino acids.

To figure out how much protein is in the food you're eating, read labels and use nutrition reference tables. After a while, you'll have a good sense of how much protein is in a serving of meat, milk, etc., so you won't have to look everything up. A renal dietitian has special expertise helping people with kidney disease put together healthy meal plans. Ask your doctor about a referral to a renal dietitian. Check with your doctor or dietitian before making any changes to the protein level in your diet.

### **Should I be on a low-phosphorus diet?**

Ask your doctor—the answer will often be yes. Phosphorus is a mineral found mostly in dairy products and meats. Your body uses it to form strong bones and teeth. But starting with moderate CKD, your kidneys begin to lose the ability to remove extra phosphorus from your body. Because too much phosphorus can harm your bones, it makes sense to eat less phosphorus.

Some experts think 800 to 1,200 mg of

phosphorus per day is a good target. Food labels are not required to list phosphorus, so you will need to talk to a renal dietitian or find a nutrition reference guide and look up foods. You'll soon learn the phosphorus values of the foods you eat most often.

If you are also on a lower-protein diet, a low-phosphorus diet is easier—foods high in protein tend to be high in phosphorus, too. Your doctor may want you to limit dairy servings each day and take a calcium supplement. Taken with meals, calcium supplements act as phosphate “binders,” because they lock on to extra phosphorus and keep your body from absorbing it.

## **Should I be on a low-potassium diet?**

Having the right level of potassium in your body helps all your muscles work smoothly—including your heart. So, to stay as healthy as you can, you need to keep just the right level of potassium in your blood (not too much, not too little). Keeping potassium at the right level all the time is one of the jobs that healthy kidneys do for your body. When kidneys start to fail, they lose this ability.

Your potassium level should be checked

regularly with a blood test. If your levels are too high, your doctor will ask you to start a low-potassium diet.

Many foods have potassium, but some—including avocados, dried fruits (such as raisins, apricots and prunes), potatoes, oranges, bananas and salt substitutes—are very high in potassium. If you need to limit potassium, your dietitian will help you learn which foods have more potassium and which foods have less.

## **What can I do about loss of appetite?**

Poor appetite is a common symptom of advanced kidney disease. Even if you are not hungry, it is important to eat and keep good nutrition. Well-nourished people with kidney disease stay healthier and live longer. As kidney function drops, you may notice that protein foods such as eggs, meat, chicken and fish lose their appeal, or even taste funny. You need calories and quality protein to feel your best. To get good nutrition, try to:

- Eat more bland, starchy foods or whatever appeals to you
- Eat small portions of protein foods, at a cold temperature—such as egg salad or tuna salad, or a cold chicken sandwich
- Avoid cooking smells if they bother

you—cook ahead and freeze meal-sized portions that you can microwave, or look for low-salt convenience foods

- Try a liquid nutritional drink like Boost® or Ensure® once a day. (It is best not to rely on these drinks entirely, as their protein, phosphorus and potassium content are not made for people with kidney disease.)
- Graze all day—have several small meals instead of one large one
- Watch cooking shows on television to tempt your appetite
- Boost the protein content of your meals by adding egg whites, egg white powder or protein powder
- Get help from a renal dietitian if lack of appetite continues. Because nutrition is so important, many private insurance plans and Medicare do cover some nutritional help for people with kidney disease.

Finally, if you are in late-stage CKD and your appetite or nutritional well-being do not improve, this may be a sign that you should start dialysis. Many people find their appetite improves after some time on dialysis.

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### Dialysis If I have kidney disease, will I need dialysis?

In the early stages of chronic kidney disease, you do not need dialysis. These stages can last for many years. But if your kidneys fail, you will need dialysis or a kidney transplant to keep you alive.

### If I have kidney disease, how long will it be before I need to start dialysis?

Depending what stage your kidney disease is and how quickly it progresses, you may never need dialysis—or you may need dialysis right away. Dialysis is usually recommended when your kidney function is about 10% to 15% of normal.

### Can I take a tour of a dialysis center before I start dialysis?

Yes, that's a great idea. To arrange your tour at a DaVita dialysis center, please call DaVita Guest Services at 1-800-244-0680 between 5 a.m. to 6:30 p.m. (PT) / 8 a.m. to 9:30 p.m. (ET).

## **My doctor said I will need to go on dialysis in six months to a year. What does this mean?**

It is time for you to learn about the treatment options for kidney failure: peritoneal dialysis, hemodialysis and kidney transplant. You have some choices to make. If you plan to do peritoneal dialysis, which is a home dialysis option, you will need to have a tube surgically placed in your abdomen. If you plan to do hemodialysis, whether in a center or at home, you will need to have surgery soon to create an access and allow it to heal. If you want a kidney transplant, you will need to talk with your doctor about how to get on the transplant list or ask a friend or family member to donate a kidney.

## **When should I start dialysis?**

National Kidney Foundation guidelines recommend that you start dialysis when your kidney function drops to 15% or less—or if you have severe symptoms caused by your kidney disease, such as shortness of breath, fatigue, muscle cramps, or nausea and vomiting. Your doctor will help you decide when to begin dialysis, based on your symptoms and lab tests that measure how much kidney function you have left.

Private insurance generally covers treatment for kidney failure whenever your doctor says it is needed. If you don't have private insurance, you may be able to get coverage through federal or state-funded health care programs, such as Medicare or Medicaid.

Most people (about 93% of those who apply) qualify for Medicare when they need dialysis or a transplant, even if they are under age 65. Medicare pays for 80% of treatment for kidney disease when kidney function has dropped to 10% to 15%, or when your doctor justifies it.

If you are not having symptoms, you may be able to wait a bit longer. However, some doctors believe that starting dialysis as soon as Medicare or insurance covers it is wise, since it can take a long time to recover if you let yourself get very ill. Since chronic kidney disease often happens slowly, sometimes people do not even know how bad they feel—until they start dialysis and begin to feel much better.

It is important to start getting ready for dialysis or a transplant well in advance—when your kidney disease reaches Stage 4 (severe, with glomerular filtration rate, or GFR, less than 30 mL/min).

Learning about the types of dialysis and transplant options will help you make a choice that is best for you. Any type of dialysis will require surgery—usually outpatient—to allow access for your treatments, and this should be done well in advance to allow time for healing.

## **I am in Stage 4 kidney disease and can't have a transplant. Can I do dialysis for the rest of my life?**

The questions “How long can someone live?” and “How well can someone live?” are very common when you need to go on dialysis and you're scared. Yes, dialysis is something you can do for the rest of your life. Some people have been on dialysis for 30 years or more without getting a transplant. How long you can live on dialysis, and how well you do, will depend on a number of things, including:

- How healthy you are, other than kidney disease
- How positive your attitude is (optimists live longer; depression can be treated)
- Whether you receive good-quality medical care and dialysis
- How much you learn about dialysis and take an active role in your care.

Nobody lives for 30 years or more on dialysis by accident—it takes a lot of knowledge and effort. You are doing the right thing by learning all you can. You may also want to check into joining a kidney patient organization, such as a chapter of the National Kidney Foundation ([www.kidney.org](http://www.kidney.org)), or the American Association of Kidney Patients ([www.aakp.org](http://www.aakp.org)). Or learn more about kidney disease by visiting Kidney School at [www.kidneyschool.org](http://www.kidneyschool.org).

## **If I start hemodialysis, how often will I have to get treatments?**

The usual schedule for hemodialysis treatments is three times a week, either Mon./Wed./Fri. or Tues./Thurs./Sat. You will have the same morning or afternoon time for each treatment, if you choose in-center hemodialysis. The length of your treatment depends on what your doctor prescribes for you. Three to five hours is common, plus time to travel to and from the center, and often some waiting time when you arrive. If you don't like the treatment schedule you get, you can ask to be on a waiting list for a different time, or switch to a different center. You could also consider an at-home dialysis option.

## **If I start PD, how often will I have to get treatments?**

Peritoneal dialysis (PD) is most commonly done on a nightly basis using an automated cyclor machine while a person sleeps. A patient will typically be connected to the cyclor for 8 to 10 hours each night and be free of dialysis during the day. Some people will choose to do manual PD, which usually means doing four to five exchanges per day. Each exchange takes 20 to 30 minutes, and they need to be spread out over the whole day to clean the blood well. A common manual PD schedule might be to do one exchange upon waking, one at lunchtime, one at dinner, and one at bedtime. A cyclor can be used together with a manual exchange. The cyclor can be used at night with only one exchange during the day.

## **7**

## **Getting a kidney transplant**

### **When should I start the process to get a kidney transplant?**

If your kidneys are failing, a kidney transplant may be a treatment option for you. The balance of risks and benefits varies, though, depending on your age and other health problems. If you want a kidney transplant, you must contact a transplant center and ask for a transplant evaluation. It is not automatic. Only a transplant team can tell you that you are definitely eligible (or not eligible) for a transplant.

You can contact one or more transplant centers and start to be evaluated when it seems likely that you will need dialysis within two to three years. Most kidney transplants are successful—more than 90% of transplants are still working one year later. Recent studies have found that the odds of good results are somewhat better with a “preemptive” transplant, done before dialysis is needed. Preemptive transplant requires a willing living kidney donor—probably a relative, spouse or friend. In 2001, 42% of kidney transplants came from living

donors.

If you do not have a living donor, you can ask to be placed on a national waiting list to receive a cadaver kidney from someone who has recently died—usually in an accident.

### **Can I get on the kidney transplant waiting list before I start dialysis?**

Yes, you may want to be evaluated for a transplant before you start dialysis. After your evaluation is done and you get on the waiting list, credit for waiting time starts when your kidney function drops to less than about 20%. This is measured by a glomerular filtration rate (GFR) of 20 mL/min or less. Long waiting times—often years—are very common for kidney transplants from cadaver donors.

### **How will my doctor treat transplant rejection?**

If you have acute or chronic transplant rejection, your doctor may change your medication, or even hospitalize you. For example, if your cyclosporine dose is harming your transplanted kidney, your doctor might lower your dosage and change your other medications. All medication changes must be made by your transplant team.