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What is kidney disease? An expert explains

Learn more from kidney doctor Andrew Bentall, M.D.

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Chronic kidney disease, also called chronic kidney failure, involves a gradual loss of kidney function. Your kidneys filter wastes and excess fluids from your blood, which are then removed in your urine. Advanced chronic kidney disease can cause dangerous levels of fluid, electrolytes and wastes to build up in your body.

In the early stages of chronic kidney disease, you might have few signs or symptoms. You might not realize that you have kidney disease until the condition is advanced.

Treatment for chronic kidney disease focuses on slowing the progression of kidney damage, usually by controlling the cause. But, even controlling the cause might not keep kidney damage from progressing. Chronic kidney disease can progress to end-stage kidney failure, which is fatal without artificial filtering (dialysis) or a kidney transplant.

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Symptoms

Signs and symptoms of chronic kidney disease develop over time if kidney damage progresses slowly. Loss of kidney function can cause a buildup of fluid or body waste or electrolyte problems. Depending on how severe it is, loss of kidney function can cause:

- Nausea
- Vomiting
- Loss of appetite

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- Fatigue and weakness
 - Sleep problems
 - Urinating more or less
 - Decreased mental sharpness
 - Muscle cramps
 - Swelling of feet and ankles
 - Dry, itchy skin
 - High blood pressure (hypertension) that's difficult to control
 - Shortness of breath, if fluid builds up in the lungs
 - Chest pain, if fluid builds up around the lining of the heart

Signs and symptoms of kidney disease are often nonspecific. This means they can also be caused by other illnesses. Because your kidneys are able to make up for lost function, you might not develop signs and symptoms until irreversible damage has occurred.

When to see a doctor

Make an appointment with your doctor if you have signs or symptoms of kidney disease. Early detection might help prevent kidney disease from progressing to kidney failure.

If you have a medical condition that increases your risk of kidney disease, your doctor may monitor your blood pressure and kidney function with urine and blood tests during office visits. Ask your doctor whether these tests are necessary for you.

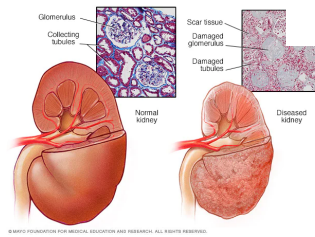
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Causes

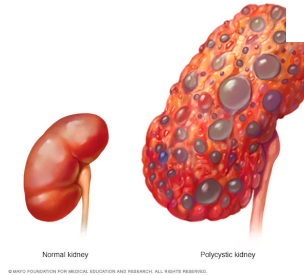
Chronic kidney disease occurs when a disease or condition impairs kidney function, causing kidney damage to worsen over several months or years.

Diseases and conditions that cause chronic kidney disease include:

- Type 1 or type 2 diabetes
- High blood pressure
- Glomerulonephritis (gloe-mer-u-low-nuh-FRY-tis), an inflammation of the kidney's filtering units (glomeruli)
- Interstitial nephritis (in-tur-STISH-ul nuh-FRY-tis), an inflammation of the kidney's tubules and surrounding structures
- Polycystic kidney disease or other inherited kidney diseases
- Prolonged obstruction of the urinary tract, from conditions such as enlarged prostate, kidney stones and some cancers
- Vesicoureteral (ves-ih-koe-yoo-REE-tur-ul) reflux, a condition that causes urine to back up into your kidneys
- Recurrent kidney infection, also called pyelonephritis (pie-uh-low-nuh-FRY-tis)



Healthy kidney vs. diseased kidney



Polycystic kidney

Risk factors

Factors that can increase your risk of chronic kidney disease include:

- Diabetes
- High blood pressure
- Heart (cardiovascular) disease
- Smoking
- Obesity
- Being Black, Native American or Asian American
- Family history of kidney disease
- Abnormal kidney structure
- Older age
- Frequent use of medications that can damage the kidneys

Complications

Chronic kidney disease can affect almost every part of your body. Potential complications include:

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- Fluid retention, which could lead to swelling in your arms and legs, high blood pressure, or fluid in your lungs (pulmonary edema)
 - A sudden rise in potassium levels in your blood (hyperkalemia), which could impair your heart's function and can be life-threatening
 - Anemia
 - Heart disease
 - Weak bones and an increased risk of bone fractures
 - Decreased sex drive, erectile dysfunction or reduced fertility
 - Damage to your central nervous system, which can cause difficulty concentrating, personality changes or seizures
 - Decreased immune response, which makes you more vulnerable to infection
 - Pericarditis, an inflammation of the saclike membrane that envelops your heart (pericardium)
 - Pregnancy complications that carry risks for the mother and the developing fetus
 - Irreversible damage to your kidneys (end-stage kidney disease), eventually requiring either dialysis or a kidney transplant for survival

Prevention

To reduce your risk of developing kidney disease:

- **Follow instructions on over-the-counter medications.** When using nonprescription pain relievers, such as aspirin, ibuprofen (Advil, Motrin IB, others) and acetaminophen (Tylenol, others), follow the instructions on the package. Taking too many pain relievers for a long time could lead to kidney damage.
- **Maintain a healthy weight.** If you're at a healthy weight, maintain it by being physically active most days of the week. If you need to lose weight, talk with your doctor about strategies for healthy weight loss.
- **Don't smoke.** Cigarette smoking can damage your kidneys and make existing kidney damage worse. If you're a smoker, talk to your doctor about strategies for quitting. Support groups, counseling and medications can all help you to stop.
- **Manage your medical conditions with your doctor's help.** If you have diseases or conditions that increase your risk of kidney disease, work with your doctor to control them. Ask your doctor about tests to look for signs of kidney damage.

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