

Introduction

Acute kidney failure is also called acute renal failure, acute kidney injury or AKI. It happens when your kidneys suddenly become unable to filter waste products from your blood. When kidney failure happens, harmful wastes can build up in your body. The condition can happen rapidly and lead to death if untreated.

This reference summary explains acute kidney failure. It covers the anatomy of the kidneys, symptoms and causes of the condition and treatment options.

Anatomy of the Kidneys

The kidneys are organs that are located in the middle to lower back on both sides of the spine. Each kidney weighs about 1 pound. The kidneys are each about the size of an adult fist. The left kidney is usually a little larger than the right one.

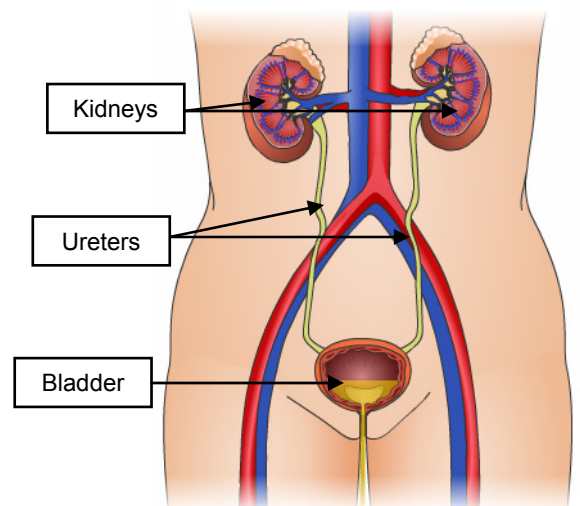
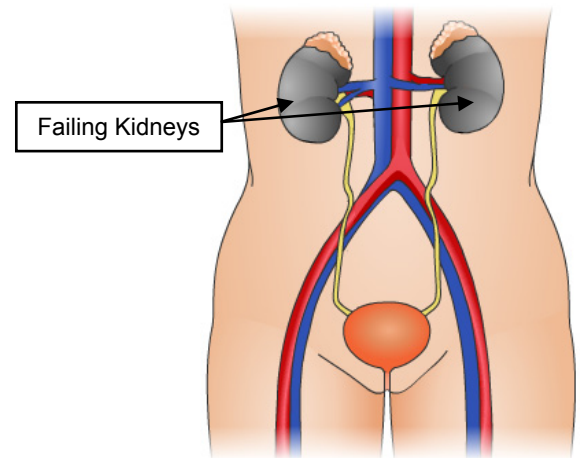
The kidneys continuously filter our blood.

The purpose of the kidneys is to:

- Filter wastes and excess fluid.
- Make a hormone called erythropoietin that helps the body make red blood cells.

The kidneys also regulate:

- Bone metabolism.
- Blood pressure.
- Acid-base and electrolyte balance.



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Your kidneys filter wastes and fluids from your blood. The waste leaves your body through your urine. The urine that is made in the kidneys flows through tubes, called ureters, to be stored in the bladder. When the bladder is full, a person feels the urge to urinate. Urine is passed through the urethra.

Symptoms

Acute kidney failure happens quickly, usually within a few hours or days. It most often happens to people who are already in a health care facility, particularly people who are in intensive care and are critically ill.

Symptoms of acute kidney failure include:

- Shortness of breath.
- Changes in urination.
- Feeling confused, anxious, restless or fatigued.
- Fluid retention that causes leg, ankle or foot swelling.
- Nausea or vomiting.
- Metallic taste in the mouth or breath that smells like ammonia.
- Leg, back or side pain.
- Decreased sensations, especially in the hands or feet.
- High blood pressure.



Causes

Acute kidney failure is usually hard to predict or prevent. There are many different medical conditions that could cause the kidneys to stop working.

Acute kidney failure can happen when:

- You have a condition that slows blood flow to your kidneys.
- You experience direct damage to your kidneys.
- Your kidneys' urine drainage tubes become blocked and waste can't leave your body through your urine.

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Certain conditions that can increase your risk of acute kidney failure include:

- Cancer.
- Diabetes.
- High blood pressure.
- Heart failure or heart disease.
- Kidney or liver diseases.

Other causes of acute kidney failure include:

- A crushing injury or a traumatic injury such as an automobile accident.
- Allergic reaction.
- Burns.
- Certain medications.

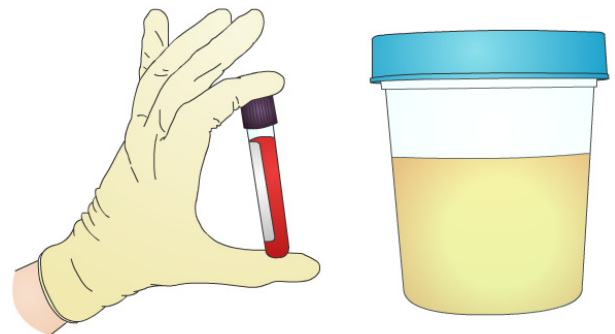
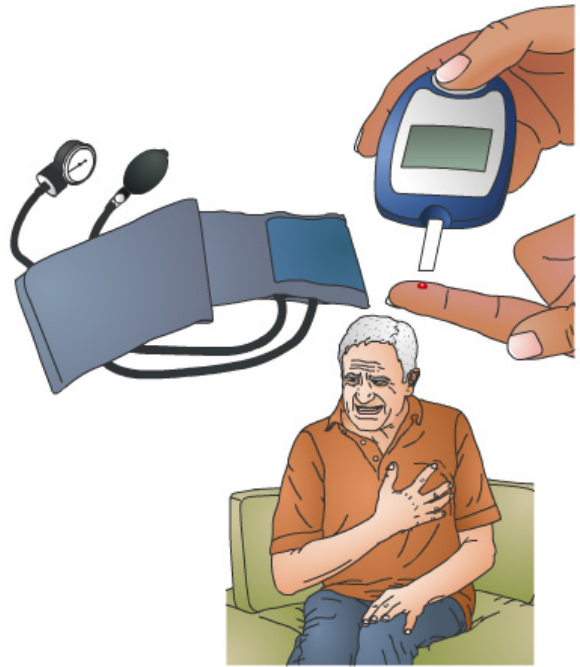
Follow instructions on over-the-counter medications, such as aspirin and ibuprofen.

Taking doses that are too high may increase your risk of acute kidney failure, especially if you have:

- Diabetes.
- High blood pressure.
- Pre-existing kidney disease.
- Dehydration.
- Drug or alcohol overdose.
- Infections.
- Major surgery or serious illness.

Diagnosis

To diagnose acute kidney failure, your health care provider will perform a physical exam. He or she will ask you questions about your personal and family medical history. Acute renal failure is most often diagnosed during a stay in a health care facility for another cause. Tests done for other problems may find your kidney failure. Blood and urine tests will be done. These tests can check how well your kidneys are working.



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A chemistry screen can show if you have normal levels of sodium, potassium and calcium.

You may also have an ultrasound. This imaging test lets your health care provider see a picture of your kidneys. Other imaging tests that may be done include:

- CT scan.
- MRI.
- X-rays.



CT, or CAT, scans create cross-sectional images of the body using X-rays and a computer. An MRI uses a large magnet and radio waves to look at organs and structures inside your body.

A kidney biopsy may be done if your health care provider thinks your kidney may be inflamed. A kidney biopsy is usually done using a long thin needle put through the back into the kidney. A tissue sample is taken and then sent to a lab for examination.

Treatment

Acute kidney failure requires immediate medical treatment. It is important to identify and treat the cause of acute kidney failure. The treatment plan is to treat any complications that may happen until your kidneys recover.

Treatment can vary widely, depending on the cause. For example, your health care provider may need to:

- Remove a blockage in the urinary tract.
- Restore blood flow to the kidneys.
- Stop any medicines that may be causing the problem.

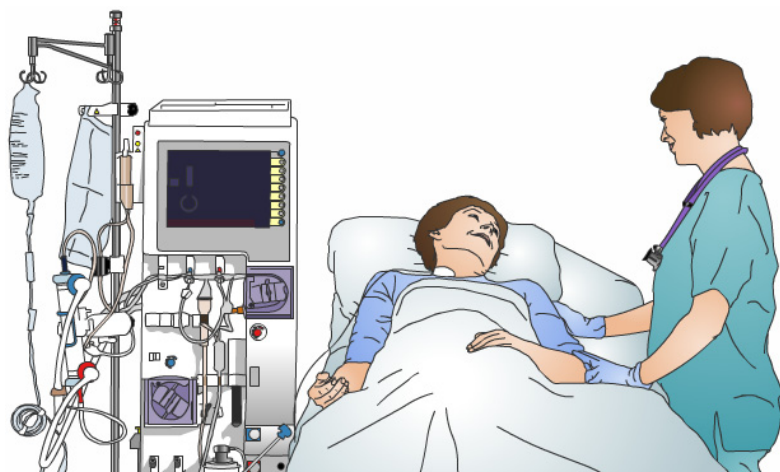


If your body lacks fluids, you could be given IV fluids. In some cases, you may have too much fluid. Medications called diuretics can help your body get rid of it.

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Medications also may be needed to control the levels of potassium in your blood or to increase blood calcium levels. You may take antibiotics to prevent or treat infections.

You may need temporary hemodialysis to remove the toxins from your blood. A temporary hemodialysis catheter may be inserted in your neck, chest or groin so that you can receive hemodialysis treatments.

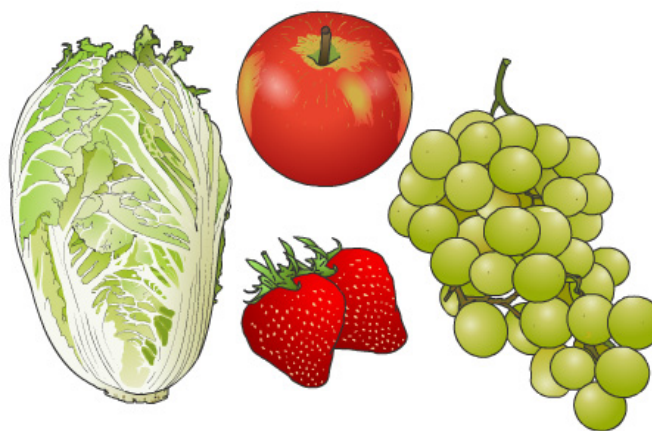


During hemodialysis, a machine pumps blood out of your body through an artificial kidney that filters out the waste. The blood is then returned to the body.

With treatment, acute kidney failure is usually resolved within 2 to 6 weeks. If the kidneys cannot recover from the acute failure, hemodialysis will be needed permanently to live. Without care, it may lead to death. While you are recovering, your health care provider may recommend a special diet to help support your kidneys and limit the work that they must do. You may need to limit the amount and type of fluids that you drink every day. A dietitian can help you with your diet.

You may need to eat foods that are lower in potassium, such as:

- Apples.
- Cabbage.
- Grapes.
- Green beans.
- Strawberries.



You should avoid foods that are high in potassium, including:

- Bananas.
- Oranges.
- Potatoes.
- Spinach.
- Tomatoes.

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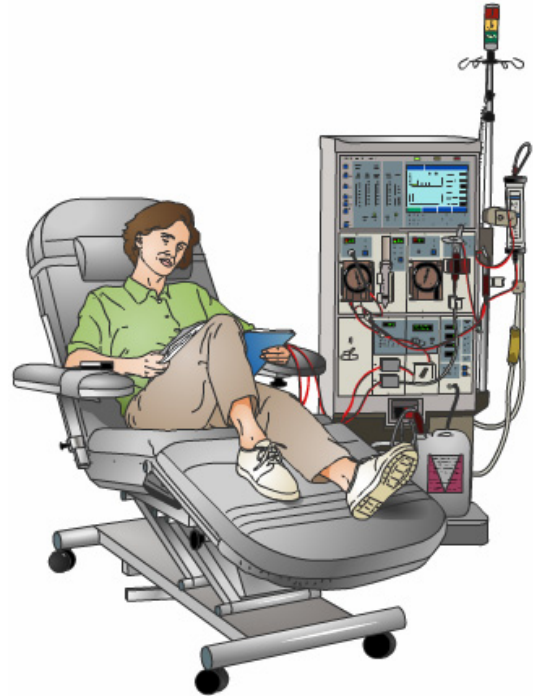
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