

Gangrene



What is gangrene?

Gangrene is a dangerous and potentially deadly health problem. It happens when the blood flow to an area of tissue is cut off. This causes the tissue to break down and die. Gangrene often turns the affected skin a greenish-black color. The word gangrene is not related to the color green but to the condition itself. It comes from Greek and Latin words for a gnawing sore or decayed tissue.

There are different types of gangrene. Some include:

- **Dry gangrene** occurs when the blood flow to tissue is cut off. The area becomes dry, shrinks, and turns black.
- **Wet gangrene** occurs if bacteria invade this tissue. This makes the area swell, drain fluid, and smell bad.
- **Gas gangrene** occurs if bacteria invade the deep muscle tissue. The skin may have bubbles and it may have a crackling sound. This is because gas bubbles have formed in the muscle tissue.
- **Fournier's gangrene** occurs if bacteria invade the genital organs, such as the scrotum, penis, or perineum. An infection in the genital area or urinary tract associated with trauma, operative procedures, or urinary tract disease, can cause this. The area becomes painful and red with quick progression to gangrene and sloughing of the tissue.

What causes gangrene?

Gangrene happens when blood supply to certain tissues is stopped. This can happen due to:

- An infection
- An injury, such as a burn, infected dog bite, or combat wound
- Severe cases of frostbite
- A chronic disease that harms the circulatory system, such as diabetes, peripheral artery disease, or Raynaud disease. These diseases can lead to gangrene if they are severe and not under control.
- Certain medicines

Who is at risk for gangrene?

You may be at higher risk for gangrene if you have:

- A chronic disease, such as diabetes, peripheral artery disease, or Raynaud disease
- Skin infection
- Injury
- Burns
- Dog bite
- Frostbite
- Long-term use of tobacco products
- Need for certain strong medicines to raise the blood pressure while in the hospital

What are the symptoms of gangrene?

Symptoms of gangrene depend on its location and cause. Dry gangrene often starts with a red line around the affected area. This area then turns dry and black.

These are other symptoms of gangrene:

- Coldness and numbness in the affected area
- Pain in or beyond the affected area
- Redness and swelling around a wound. This is often a sign of wet gangrene.
- Sores that keep cropping up in the same place
- Persistent, unexplained fever, with a temperature higher than 100.4°F (38°C)
- A bad-smelling wound
- Striking discoloration of the skin, with shades of greenish-black, blue, red, or bronze
- Pus or discharge from a wound
- Blisters and a crackling feeling under the skin
- Muscle aches, weakness, diarrhea, and loss of appetite (sometimes)
- Confusion, pain, fever, and low blood pressure, especially if the infected gangrene spreads inside your body
- Shock

The earlier gangrene is treated, the more successful the treatment is likely to be. So if you have any of the above symptoms, seek care right away.

How is gangrene diagnosed?

If you have symptoms of gangrene, your healthcare provider will give you a physical exam. They will check for signs of tissue death. They may also ask you about any chronic health problems you have that could be linked to the gangrene.

Your healthcare provider may also want to do lab tests to check for the cause of and complications of gangrene. A higher than normal number of white blood cells can mean you have an infection. Your healthcare provider may take samples of tissue or fluid from the affected area and your blood to look at in the lab. If your healthcare provider thinks you may have internal gangrene, they may order imaging tests or surgery to find out for sure.

How is gangrene treated?

Treatment will depend on your symptoms, age, and general health. It will also depend on how bad the condition is.

Treatment of gangrene will often consist of one or more of these steps:

- **Antibiotics.** These medicines can be used to kill bacteria in the affected area. They are used only to treat wet gangrene.
- **Surgery to remove the dead tissue.** When dead tissue is limited to a specific part of the body, removing the dead tissue and leaving healthy surrounding tissue is called debridement. It can help keep the gangrene from spreading to healthy tissues nearby and from getting infected. In cases where the gangrene is advanced, widespread, and not able to be cured otherwise, a finger, toe, foot, or more may need to be amputated.
- **Vascular surgery.** If your gangrene is caused by poor blood flow, your healthcare provider may recommend surgery to improve your circulation. People whose gangrene is a result of a blocked artery,

for example, may have bypass surgery or an angioplasty to fix the problem.

- **Hyperbaric oxygen therapy.** During this procedure, you are placed in a special pressurized chamber that gives oxygen at high pressures, forcing more oxygen into the affected area. This may speed up healing and help kill bacteria. This treatment works very well in people who develop gangrene from diabetic foot ulcers.
- **Maggot debridement.** This is a nonsurgical alternative to traditional debridement. During this procedure, clean fly larvae are placed on the affected area. They eat away dead tissue and remove bacteria. This is a painless procedure.

What are possible complications of gangrene?

Gangrene can spread quickly over a large area of the body. So the amount of dead tissue can sometimes be quite large. Treating these large areas may result in:

- Large areas of scarring
- The need for reconstructive surgery
- Amputation

Severe cases of gangrene may lead to infection that spreads throughout the body, organ failure, and even death.

What can I do to prevent gangrene?

You can help prevent gangrene by carefully watching any wounds you have and getting care right away if you see signs of infection. If you have certain conditions that can affect blood circulation, such as diabetes, follow your healthcare provider's instructions on managing your condition.

When should I call my healthcare provider?

Wet gangrene is often life-threatening. So get medical care right away. The outlook with wet gangrene depends on the location and size of the affected area, as well as any other health problems you might have.

Dry gangrene often may not get worse or cause complications. But it can progress to wet gangrene. You should see your healthcare provider for either type.

Key points about gangrene

- Gangrene is a dangerous and potentially deadly health problem. It happens when the blood flow to an area of tissue is cut off.
- People with injuries, diabetes, peripheral artery disease, and Raynaud disease are at higher risk for gangrene.
- Symptoms of gangrene include coldness, numbness, pain, redness, or swelling in the affected area.
- Surgery of one type or another is often needed. This may include amputation of the affected part of the body.
- Wet gangrene is a medical emergency because of the bacterial infection.

Next steps

Tips to help you get the most from a visit to your healthcare provider:

- Know the reason for your visit and what you want to happen.
- Before your visit, write down questions you want answered.
- Bring someone with you to help you ask questions and remember what your provider tells you.

- At the visit, write down the name of a new diagnosis and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you.
- Know why a new medicine or treatment is prescribed and how it will help you. Also know what the side effects are.
- Ask if your condition can be treated in other ways.
- Know why a test or procedure is recommended and what the results could mean.
- Know what to expect if you do not take the medicine or have the test or procedure.
- If you have a follow-up appointment, write down the date, time, and purpose for that visit.
- Know how you can contact your healthcare provider if you have questions.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions
This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.