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# Erysipelas and cellulitis: Overview

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## Introduction

Erysipelas or cellulitis can develop if bacteria enter the skin through cuts or sores. Both infections make your skin swell and become red, warm and tender. Provided the right treatment is started early enough, these bacterial skin infections usually clear up without any lasting effects. Left untreated, they can sometimes have serious complications.

Antibiotics are effective at treating most infections. It is important to keep your skin protected while it heals. Anti-inflammatory painkillers can help relieve pain and fever symptoms.

## Symptoms

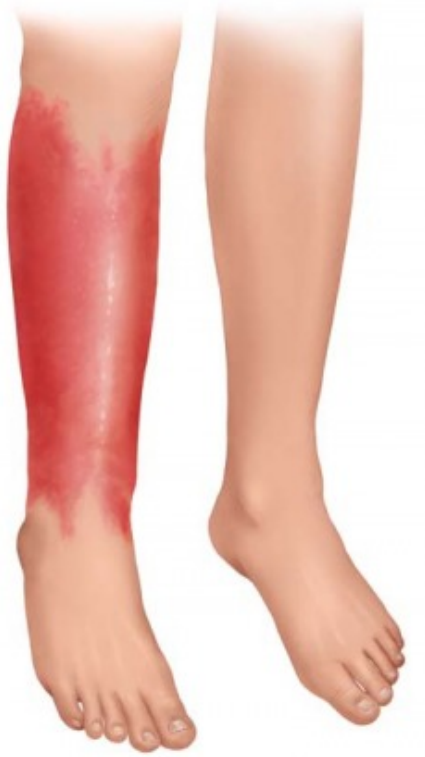
Bacterial skin infections can affect any part of the body, but are most often found on the feet and lower legs. They are also commonly found on cheek skin, the skin around your eyelids or on your belly.

There are two main types of bacterial skin infections:

- Erysipelas (also known as St. Anthony's fire)
- Cellulitis

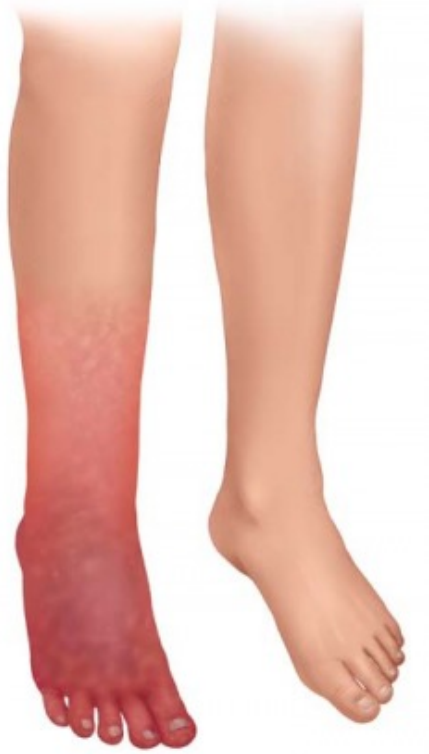
There are a great number of different germs that can cause bacterial skin infections. Most cases involve Streptococcus or Staphylococcus bacteria.

Erysipelas affects the upper layers of skin and is usually caused by Streptococcus bacteria. The typical sign of infection is a painful and shiny red swelling of a clearly defined area of skin. Red streaks may be a sign that the infection has spread to the lymph vessels too. Blisters may form in more severe cases. Neighboring lymph nodes sometimes swell up and become more sensitive to pressure. People usually have a fever and generally feel unwell right from the start of the infection, when the skin starts turning red.



Erysipelas: Infection in the upper layers of skin

Cellulitis, on the other hand, is most commonly caused by Staphylococcus bacteria. It often arises in wounds or sores. Cellulitis affects the deeper layers of skin, down to the lowest layer, called the subcutis or hypodermis. "Localized" cellulitis is the most common form and can be treated effectively with antibiotics and good wound care. Severe cellulitis is a deeper pus-producing infection. Dead tissue resulting from the infection must be surgically removed.



Cellulitis: Infection spreads to the subcutis, the deepest layer

Unlike erysipelas, cellulitis appears more gradually and does not immediately cause a fever or make people feel generally unwell. Areas of reddened skin due to cellulitis are also less sharply defined, and usually darker and not as shiny as an erysipelas infection. Despite having a similar name, cellulitis has nothing to do with the more widely known but harmless "cellulite."

## Causes and risk factors

Bacterial skin infections are more likely to arise if the surface of your skin is damaged, making it easier for bacteria to enter. Skin conditions like eczema, impetigo, fungal infections or sores can therefore all increase the chance of infection.

Skin infections can also result from injuries, pinpricks, and insect or animal bites. Erysipelas and cellulitis might also develop from germs entering a wound during surgery.

A weakened immune system can make it especially easy for bacteria. People might have a weakened immune system if they take medicine that suppresses their immune system. Medicine that has this effect includes some cancer drugs, corticosteroids and medication commonly used following organ transplants. The risk of infection is also higher in people who have circulation problems – for instance due to diabetes, venous insufficiency or peripheral artery disease (PAD).

If you have a weakened immune system or circulation problems, it is also easier for other bacteria to enter the tissue. The infection may then reach even deeper layers of tissue, causing severe cellulitis to develop.

## Prevalence

It is not known exactly how common bacterial skin infections are. In Germany, about 1 to 2 out of 1,000 people are treated for erysipelas or cellulitis each year.

## Effects

Untreated bacterial skin infections can cause various complications, some of which can be serious. Possible complications include the following:

- **Abscess:** An abscess is a sealed, pus-filled cavity that can develop as a complication of cellulitis. Pus is mostly made up of dead germs, tissue cells, and immune system cells.
- **Lymphedema:** Parts of the lymphatic system may be destroyed following an erysipelas infection. This blocks the flow of lymph, causing it to build up in some parts of the body.
- **Blood poisoning (septicemia):** Bacteria entering the bloodstream may cause life-threatening blood poisoning.
- **Meningitis:** A deeper bacterial skin infection in the face can sometimes develop into meningitis (inflammation of brain and spinal cord membranes).

These kinds of complications are very rare. But if they do occur, getting quick treatment is the only thing that can prevent greater harm.

Signs of a more severe infection include the following:

- Severe pain
- Fever, cold sweats, pale complexion
- Nausea
- Faster breathing rate or a racing heartbeat
- Drowsiness, confusion, or other trouble with consciousness or awareness

If you notice any of these symptoms, it is important to get emergency medical attention.

## Diagnosis

Doctors can usually tell whether an infection is erysipelas or cellulitis based on the typical symptoms and the appearance of the skin. Your medical history or recent injuries often suggest a possible cause.

Further testing is not usually needed. It can sometimes help to test fluid from the wound for germs. This is done when doctors think there may be a specific germ causing the infection, for instance because someone's skin became infected after they were bitten by an animal.

## Prevention

People who have had erysipelas or cellulitis are quite likely to develop a new infection after completing successful treatment. About one third of all people who have cellulitis get it again. There are different ways to stop this from happening. If medical conditions like diabetes, PAD, eczema or athlete's foot contributed to the infection, it can make sense to treat the original cause first. For example, improved foot hygiene and care can help in people with diabetes and circulation problems in their feet.

Taking antibiotics as a preventive therapy may be an option if cellulitis infections keep coming back. For preventive therapy, the antibiotics need to be taken daily over the course of several months.

## Treatment

Erysipelas and cellulitis are both treated with antibiotics. If the infection is severe, the antibiotics can be taken intravenously (directly into a vein using a "drip"). In milder cases, tablets are enough. The exact type of antibiotic you need will depend on several factors, such as whether you have erysipelas or cellulitis, whether the infection is producing pus and what sort of germ doctors believe is causing the infection. Surgery may be needed to remove dead tissue in more severe cases.

If skin on a leg is infected, doctors recommend elevating the affected leg, cooling it for a while, and using it as little as possible. But it is still a good idea to move your legs a little to keep blood clots (thrombosis) from developing. Using lotion can stop the skin from getting too dry and cracking. If the skin on your face is infected, it is better to avoid speaking or chewing too much. Anti-inflammatory painkillers like ibuprofen can be used to relieve pain and fever.

To check the progress of treatment, the infected patch of skin is outlined with a marker. This can help you see whether the antibiotics are working and the infection is clearing up. If you need to go the hospital for treatment, you can expect your stay to last just over a week.

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