



## *Impetigo*

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**I**mpetigo is a very contagious bacterial infection of the superficial layer of the skin. The bacteria usually infect skin that has been damaged by scratching an insect bite or picking a scab. The lesions may cause mild soreness and itching, but are typically painless. Fever or other symptoms of systemic illness are not seen with impetigo.

The two types of bacteria that cause impetigo are group A, beta-hemolytic streptococci and *Staphylococcus aureus*. Impetigo is classified as bullous, or non-bullous based on the presence or lack of large blisters, called bullae.

### **Bullous Impetigo**

Bullous impetigo is characterized by bullae, large thin-walled blisters that contain clear or cloudy yellow fluid and measure up to 5 cm in diameter. Bullae are caused by staphylococcal infections, not by streptococci. A certain type of staphylococcal bacteria produces a toxin that causes the large blisters to form. These blisters easily rupture and leave behind a moist area of eroded skin surrounded by a thin ring of the remaining blistered skin. This lesion dries and crusts over, creating a light brown appearance that resembles “varnish”. The lesions are discrete, with little redness or inflammation surrounding them. These large blisters typically occur on the face but may quickly spread to different areas of the skin. A mix of bullous and non-bullous skin lesions may occur.

### **Non-Bullous Impetigo**

This is the more common type of impetigo and is characterized by reddened sores with honey-yellow crusting on them. The sores may initially appear as small blisters that rupture, ooze, and lead to the layer of crusting. The crust typically appears to be “stuck on”. The infection does not disappear easily with topical cleaning. The lesions are painless, often occur around the mouth and nose or on the arms and legs, and resolve without scarring.

These non-bullous lesions are caused by either *Streptococcus* or *Staphylococcus*, and in some cases both types of bacteria may be present.

### **Prevalence and Distribution**

Impetigo can affect people of any age. However, the disease most commonly affects children ages 2 to 5 years. Children in crowded settings, such as in day care centers and shelters, have higher rates of infection with impetigo. Warm humid weather and poor hygiene promote the development and spread of impetigo.

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*Impetigo. Yellow-gold crusts that glisten and have a “stuck-on” appearance. Note the oozing from many areas. Photo by Irwin Freedberg MD*

(top)  
Impetigo.  
Dried and crusted lesions around the mouth with several satellite lesions on the face of a child with herpes simplex and impetigo.



(bottom)  
Impetigo.  
Round blisters and erosions with clear borders, many of which are crusted. These are scattered on the face, and some are confluent.  
Photos by  
Howard Koh MD



### Transmission

Impetigo spreads easily and most commonly by direct contact to infected skin. Infection may also spread through contaminated clothing. People who begin treatment with topical or oral antibiotics are no longer infectious after 24 to 48 hours.

Breakdowns in skin integrity, such as cuts, scratched insect bites, burns, and other chronic skin conditions (most commonly eczema), provide sites of entrance for bacteria.

### Diagnosis

The diagnosis of impetigo is usually based on the clinical appearance, as described above. A culture from the infected area may sometimes be necessary to differentiate between Streptococci and Staphylococci, although both bacteria are often present. Most infections can be treated without obtaining cultures. A culture is necessary when the infection has not responded to antibiotics, which may suggest an infection with methicillin-resistant *Staphylococcus aureus*.

### Treatment

Children infected with impetigo should be encouraged not to touch the lesion or pick the scabs. Trimming children's fingernails and encouraging frequent washing with antibacterial soap may help.

Impetigo can be treated with either oral or

topical antibiotics. Topical treatment may be selected if the area of impetigo is localized. Treatment is with mupirocin (Bactroban™), which is effective against both Staphylococcus and Streptococcus. An allergy or sensitivity to mupirocin is the only contraindication. Stinging and burning of the skin can rarely occur. While costly, mupirocin is as effective as oral antibiotic agents and is less apt to cause resistance to develop in the organisms. Mupirocin (Bactroban™) ointment should be placed on the lesions three times each day, for a total of five days. At the initiation of treatment the crusty scabs should be removed after softening with wet compresses. The lesions should be washed with an antibacterial soap twice daily.

Oral, or systemic, antibiotics are usually used when lesions are bullous or when non-bullous lesions appear to be spreading over a person's body or from one person to another. The use of oral antibiotics accelerates healing and diminishes the period of infectivity. Because the risk of transmission of impetigo is high in shelters, we recommend the use of oral rather than topical antibiotics whenever possible.

The appearance of a typical non-bullous impetigo lesion is similar for infections caused by either Streptococcus or Staphylococcus. Initial cultures are usually not necessary, since health care professionals commonly prescribe dicloxacillin (Dynapen™), oxacillin (Bactocill™), azithromycin (Zithromax™), or cephalexin (Keflex™), all of which are effective treatments for the common types of Streptococci and Staphylococci that cause impetigo.

A culture should be obtained if there is no resolution of the lesion after one week of conventional therapy. If an organism grows from this culture, a laboratory can then measure sensitivity patterns to determine the best antibiotic treatment for the bacteria. If there are signs of increased redness, warmth, fullness, or pain in the skin surrounding the lesions, then patients should seek medical attention to be sure that the infection has not worsened and developed into a skin infection, called cellulitis.

The risk of transmission of impetigo is high in shelters, and we recommend the use of systemic or oral antibiotics rather than topical antibiotics whenever possible.

### Prevention and Control

Caregivers should encourage all guests and staff to seek medical care for new rashes or draining wounds.

When impetigo arises in a shelter, staff should

watch for similar eruptions on other guests, especially those in close contact with the infected person(s). Mupirocin (Bactroban™) or other antibiotic ointments can be applied to open cuts and insect bites in an attempt to prevent infection.

Residents of the shelter should be reminded of the importance of contact precautions in preventing the spread of this contagious infection.

The towels and clothes used by an infected person should not be shared with others.

Infected people should keep their lesions covered with bandages or clothing during the first 48 hours of antibiotic therapy. Children should not go to daycare or be in crowded shelter areas until 24 hours after starting antibiotic therapy.

If an infected person is taking oral antibiotics, all of the recommended therapy should be completed even though the rash will usually clear within 2 to 3 days.

### Summary

Impetigo is a very contagious bacterial infection of the skin, often seen around the mouth and nose or the arms and legs. Impetigo is common in young children.

Impetigo spreads very easily during hot weather and in crowded settings. Spread can occur when a person has direct contact to the infected skin of another person. Infection is more likely when there is damage to skin, such as burns, abrasions, and scratched insect bites.

There are two types of impetigo, bullous and non-bullous. Bullous lesions are large, thin, fluid-filled blisters. Both types have reddened sores that will ooze, causing either a yellow or varnish-colored crust to form.

Antibiotics are needed to eliminate impetigo. Left untreated, this infection can spread very quickly in a shelter. If impetigo is suspected, consult a health provider. ■

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Generic	Brand Name	Cost
azithromycin	Zithromax	\$\$
cephalexin	Keflex	\$
dicloxacillin	Dynapen	\$
mupirocin	Bactroban	\$\$
oxacillin	Bactocill	\$

### References

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