

Minor skin infections in the pharmacy – Treatment with **topical antibiotics** and **topical antivirals**

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Introduction

An important function of the skin is to protect the body from infection. The main causes of a skin infection include bacteria and viruses.¹ Although many bacteria come in contact with or reside on the skin, they normally do not cause an infection. When bacterial skin infections do occur, they can range in size from a tiny spot to the entire body surface. They can range in seriousness as well, from harmless to life-threatening. Bacterial skin infections are commonly caused by the bacteria *Staphylococcus* and *Streptococcus*.² There are several types of bacterial skin infections, for example, impetigo.¹ Viral skin infections are commonly caused by the herpes simplex virus.¹ Viral infections that affect only the skin may result in cold sores or other lesions.³

Risk factors for developing a skin infection

Several factors can increase a person's risk of developing a skin infection.¹ Predisposing factors include minor trauma, pre-existing skin disease, poor hygiene, and, rarely, impaired

“The main causes of a skin infection include bacteria and viruses.”¹

immunity.⁴ A break or cut in the skin may allow bacteria to get into the deeper layers of the skin.¹

Symptoms of a skin infection

The following symptoms may develop, depending on the type of skin infection^{1,5}:

- Redness
- A rash
- Swelling
- Sores
- Blisters
- Lesions
- Tenderness
- Itching

Treatment with topical antibiotics

Bacterial skin infections are often treated with topical antibiotics. Treatment depends on the cause of the infection and its severity.¹ The most common application of topical antibiotics for active infection is probably for use in the therapy of impetigo, provided the condition is not extensive or involving the mouth area.⁸ Impetigo is a highly contagious bacterial skin infection commonly caused by *Staphylococcus aureus*.^{5,7} It can appear anywhere on the body but usually attacks exposed areas.⁷ Although this infection may occur in adults, it is most often seen in children aged 2 to 5 years and is usually spread through direct contact with another person who has the infection.⁵ The infected areas appear in plaques, starting as tiny blisters that break and expose moist, red skin. After a few days, the infected area is covered with a grainy, golden crust that gradually spreads at the edges.⁷ It can affect different parts of the body such as the face, arms, or legs. It also can affect moist parts of the body, such as the armpits, neck folds, and nappy areas.⁵

With antibiotic treatment, signs and symptoms of skin infections generally begin to improve after approximately 2 to 3 days. If the skin infection does not improve or gets worse, especially if a fever develops or the infection spreads, then the patient should be referred to a doctor. When the infection is moderate to severe, oral antibiotics or possibly intravenous medication may be needed.¹

Treatment with topical antivirals

Topical antiviral agents may help to promote healing and reduce pain experienced from a viral skin infection such as a cold sore. Cold sores are caused by a common virus called *Herpes simplex*. It is a contagious disease and can be spread from person to person through close contact, such as kissing.^{8,9} The sores are contagious even when they aren't visible.⁹ Following the primary attack, the virus is not completely eradicated and virus particles lie dormant in nerve roots until they are reactivated at a later stage.^{8,10} Some people with the virus report more frequent outbreaks when their immune systems are weak, such as during illness or times of stress.⁹ The cold sore starts with the development of small blisters on the lip and around the mouth.^{8,10} The skin around the blisters is often red, swollen, and sore. The blisters may break open, leak a clear fluid, and then scab over after a few days. They usually heal in several days to 2 weeks.¹⁰

Any lesions that have persisted longer need medical referral. The symptoms of discomfort, tingling or irritation (prodromal phase) may occur in the skin for 6–24 hours before the appearance of the cold sore. Treatment should be started as soon as symptoms are felt and before the lesion appears. Once the lesion has appeared, evidence of effectiveness is less convincing.⁸

Conclusion

Infection of the skin can cause visible lesions which may be painful, itchy and irritating. While there is no cure for *Herpes simplex* virus infections, there are various treatment options available in order to speed healing or even prevent an outbreak

from fully occurring and to reduce discomfort. Antibiotics are not effective against viral infections. However, if a person has a bacterial infection in addition to a viral infection, an antibiotic is often necessary.

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Table 1: Antibiotics and antivirals for topical use^{11,12}

Antibiotics for topical use				
Agent	Uses	Directions for use	Side effects	Comments
Mupirocin ^{11,12} e.g. Bactroban [®] , ^{11,12} Nuban [®] , ^{11,12} Supiroban [®] ^{11,12}	Topical management of Staphylococcal infections ¹¹	Apply 2-3 times daily for up to 10 days depending on response ^{11,12}	<ul style="list-style-type: none"> Stinging or itching at the site of application^{11,12} Mild burning^{11,12} 	• Available over-the-counter ^{11,12}
Retapamuline e.g. Altargo [®] ¹²	Uncomplicated superficial bacterial skin infections caused <i>S. pyogenes</i> and <i>S. aureus</i> , including primary impetigo ¹²	Adults, children and infants ≥ 9 months: Apply 2 times daily for up to 5 days. ¹²	<ul style="list-style-type: none"> Burning¹² Pain¹² Erythema¹² Dermatitis¹² 	• Available over-the-counter ¹²
Fusidic acid e.g. Fucidin [®] ¹¹	Staphylococcal infection ¹¹	Apply 3-4 times daily ^{11,12} Maximum 5 days treatment ¹¹ Not for prolonged use ¹¹	• Local hypersensitivity reactions ^{11,12}	• Available on prescription only ^{11,12}
Antivirals for topical use				
Acyclovir ¹¹ e.g. Acitop [®] , ^{11,12} Activir [®] , ¹¹ Adco-acyclovir [®] ¹¹ , Lovire [®] ^{11,12} , Zovirax [®] ¹¹	Topical application for herpes labialis (cold sores) ⁸ may be effective provided treatment is commenced at the earliest signs of lesion formation ¹¹	Apply every 4 hours (5 times daily) for not longer than 10 days ^{11,12}	<ul style="list-style-type: none"> Mild pain, burning or stinging when applied to ulcerated lesions¹¹ Skin hypersensitivity reactions – rare¹¹ Itching^{11,12} Erythema^{11,12} The affected skin may become flaky¹¹ Mild dryness¹¹ 	• Available over-the-counter only when intended for application to the lips ¹¹
Penciclovir e.g. Fenivir [®] ¹²	Treatment of cold sores ¹²	Adults over 18 years: Begin treatment as soon as possible ¹² Apply at 2 hourly intervals during waking hours for 4 days ¹²	<ul style="list-style-type: none"> Transient burning Numbness Stinging¹² 	<ul style="list-style-type: none"> Apply only to cold sores of lips and face¹² Available over-the-counter¹²