

Infection and eczema

Education and Information Manager Sue Ward's regular information article.

Eczema is not infectious, but damaged skin is vulnerable to infection. Broken skin provides an environment where micro-organisms can flourish. As a result, skin infections are not uncommon. Infections may be bacterial, viral or fungal.

Bacterial infection

Atopic eczema is most often infected by a bacterium called *Staphylococcus aureus*, which makes the eczema worse and slower to heal. *Staph. aureus* is found on the skin in less than 10% of healthy individuals.¹ However, it is known that almost all people with atopic eczema will have *Staph. aureus* on their skin somewhere, even though their skin may not show signs of infection. It is not clear whether the bacteria migrate from eczema lesions to areas of skin without lesions or whether people with atopic eczema are more susceptible to *Staph. aureus* colonisation than those without eczema.² Colonisation is not normally a problem unless the skin is broken. Infection occurs only when the bacteria penetrate the skin's epidermis.

It is likely that people with atopic eczema have an impaired ability to deal with infection.³ In addition, the natural response to itch is to scratch, causing the skin to get cracked and split, red and inflamed, warm and moist – a perfect home for bacteria. This is made worse by the itch-scratch-itch cycle and the vicious cycle that follows. It is also possible that the dry skin of atopic eczema is deficient in certain fatty acids, which may encourage the growth of bacteria.⁴

Viral infection

The major virus that causes problems in people with eczema is the herpes simplex or cold sore virus. Many people who do not have eczema

catch herpes simplex in childhood. It is usually very mild, causing a few mouth or gum ulcers that may not even be noticed.

Our bodies become immune after a first infection by herpes simplex, so you tend not to catch it from anyone a second time. However, your own initial virus can become active again causing small, itchy blisters that quickly form a cold sore. This is how herpes simplex usually affects people who do not have eczema.⁵

Herpes simplex is highly contagious and can appear as cold sores, genital inflammation or conjunctivitis.

For people with eczema, the herpes simplex virus can be much more serious, probably because they have a lowered resistance to viruses. People with eczema should avoid skin-to-skin contact with anyone who has herpes simplex. This virus can infect eczema giving rise to a condition called **eczema herpeticum** (see below), which can cause serious illness.

Many children get molluscum contagiosum, but it may be slightly more common in atopic eczema sufferers. Molluscum contagiosum appears as small, smooth, red or flesh-coloured bumps, each with a tiny dimple in the centre. They often develop on eczema-prone areas such as the skin folds behind the knees. The condition often becomes red and crusted when the body's immune system is starting to fight against it. This can look alarming, especially if surrounded by eczema, but is in fact a good sign and means that the molluscum contagiosum will clear up soon.⁶

Fungal infection

Candida or 'thrush' is a yeast or fungal infection that may develop on skin with eczema, but can also appear on the skin of people without eczema. *Candida* likes warm, moist folds of skin such as the groin, under the arms and breasts, or around the nappy area in babies.

Pityrosporum ovale is a fungal infection from the yeast *Pityrosporum* and can be found on the skin of people with seborrhoeic eczema. It likes to live where a lot of sebum (the body's natural grease) is produced – for example, scalp, chest, ear folds and groin. *P. ovale* may well be responsible for seborrhoeic eczema developing in many people.

What does infected eczema look like?

Infected atopic eczema looks red and angry, and is usually weepy with a yellowish crust. Yellow pus-filled spots may also be present, as well as small red spots around the body hairs (folliculitis). The skin feels hot, itchy and sore, which leads to more scratching. Scratching damages the outer layers of the skin and creates cracks, allowing more bacteria to grow.

Occasionally, the glands may swell and there may be an enlargement of lymph nodes in the neck, groin or armpits. Lymph nodes filter out bacteria and stop them from entering the bloodstream. Swollen lymph nodes can be tender to the touch. Infection should always be suspected if the eczema suddenly worsens or does not respond to emollient or topical steroid treatment.

Candida infection appears red, itchy and sore and there may be evidence of tiny yellow pustules.



Eczema herpeticum produces small blisters containing clear fluid or yellow pus, which break open and ulcerate the skin. Mild attacks are fairly common but in more serious cases, the virus spreads quickly on first infection. A high temperature and a general feeling of being unwell usually accompany it. This form of *eczema herpeticum* is very dangerous and it is essential to contact a doctor immediately and to ask him or her if the symptoms could be *eczema herpeticum*.

Diagnosing infection

Consultant dermatologists, and GPs and nurses with a special interest in dermatology, may be able to tell if *eczema* is infected just by looking at it. Patients who have already experienced infection are also likely to recognise the signs and symptoms. However, it is not always clear if *eczema* is infected, which can make diagnosis difficult.

Your doctor may take a swab from the skin to be sent to the microbiology laboratory. This is a quick, painless procedure that can help to confirm what is causing the infection and can also show which antibiotics should be effective as treatment. Skin swabs frequently show the presence of *Staph. aureus* on the skin, but may also reveal additional bacteria called streptococci.

Treating infected eczema

Treatment depends upon the type of infection. *Staph. aureus* can be treated in several ways. For mild infections, emollients and topical steroids – together with a bath oil containing an antiseptic – may be sufficient. Sometimes a combination cream or ointment may be

prescribed. Combination creams and ointments contain both a topical steroid to help combat inflammation and an antibiotic to fight the infection. If the *eczema* is heavily infected, oral antibiotics may be prescribed that help to bring the infection under control quickly, but it is important to continue to use emollients to help restore the skin barrier.

Antiviral drugs such as acyclovir are used to treat *eczema herpeticum* orally, by injection or in the form of a cream or ointment. If the *eczema herpeticum* is severe, a few days in hospital may be needed to get the infection under control.

Candida is usually treated with an antifungal cream obtainable from your doctor, nurse or pharmacist.

Using a medicated shampoo or an anti-yeast shampoo can treat *P. ovale* on the scalp, but will depend on the severity of the *eczema*. These shampoos are available from pharmacies. Several antifungal creams, with or without a mild steroid, are available to treat seborrhoeic *eczema* on other parts of the body.

There is no specific medicine to clear molluscum contagiosum. It is up to the body's own immune system to get rid of the infection and this can take months.

A word of caution

Eczema patients who are using the topical immunomodulators Protopic™ and Elidel™ should not continue to use them if their *eczema* becomes infected. Speak to your doctor if you are using these products and suspect that your *eczema* may be infected.

Never use wet wrap bandages with infected *eczema*, as the moist, warm environment created by wet wraps is

a perfect breeding ground for bacteria.

Prevention of infection in eczema

Restoring the skin's barrier to infection, by reducing dryness and cracking, will help to reduce the entry points for bacteria. Intensive emollient therapy, with moisturising creams and ointments, soap substitutes and emollient bath oils are essential. Daily baths and showers can help to prevent infection.

If someone in the family has a cold sore, it is important to refrain from sharing towels and face cloths. Ensure that you also change bed linen regularly and wash it in a hot wash.

Even if you take preventative measures, it is not always possible to stop *eczema* becoming infected. However, by treating with the most appropriate medication, the infection can be cleared and the *eczema* can be kept under control.

References

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