

may need to be used for at least four weeks to prevent the rash from coming back.

Anyone buying over-the-counter treatments needs to be sure that it is a fungal infection that they have. They may recognise a rash that has been previously diagnosed as fungal. If there is any doubt about the diagnosis, or if over-the-counter treatments do not work, then you should seek advice from your GP.

Helping prevent fungal infections

Taking these steps may help to reduce the risk of getting a fungal infection:

- dry the skin carefully after bathing

- wear loose fitting clothes and underwear
- avoid sharing towels, hair brushes, and combs, which could contain skin fragments that harbour fungal colonies
- change socks or tights daily
- choose fabrics that allow the skin to "breathe" - natural fibres such as cotton are better than nylon or polyester for underwear
- for sportspeople, synthetic fibres that 'wick' the sweat away from the body, helping to keep the skin dry, may be preferable
- people with diabetes need to keep good control of their blood sugar

This factsheet is based on reputable sources of medical evidence and has been reviewed by BUPA doctors. For more details of references and sources, please see our website. The content is intended for general information only and does not replace the need for personal advice from a qualified health professional.

Fungal skin infections

Various germs such as fungi and bacteria live harmlessly on the skin and inside the body. However certain types of fungus, or overgrowths of normally harmless types can cause the symptoms of a fungal infection of the skin.

Most fungal skin conditions are not serious and are usually not easily spread from person to person. Infections deeper in the body can be more serious.

Symptoms of fungal infections

The symptoms and appearances of a fungal skin infection depend on the type of fungus causing it and the part of the body affected.

The rash may have a variety of appearances. Some are red, scaly and itchy, whereas others can produce a fine scale similar to dry skin. The site of infection may be just one area of the body, or there may be several infected areas.

Fungal infections of the scalp or beard can lead to hair loss. Fungal rashes can sometimes be confused with other skin conditions, such as psoriasis and eczema.

Types of fungal skin infections

Fungal infections usually affect the skin

because they live off keratin, a protein that makes up skin, hair and nails.

Fungal skin infections are divided into groups depending on what type of organism is involved. The full name depends on the location of the infection on the body.

The most common fungal infections are listed below.

Athlete's foot (tinea pedis)

This is a common infection and is often caused by a combination of fungi and bacteria. It causes scaling and sogginess of the skin, commonly of the web spaces between the toes. Sometimes the skin becomes pale and can be itchy. Infection is often picked up from contaminated skin fragments in public

places, such as swimming pools and shower facilities.

Nail infections (onychomycosis)

Onychomycosis is the name for any fungal nail infection. Tinea unguium (ringworm of the nails) is a common one. The nails become malformed, thickened and crumbly. Not all nails affected like this are caused by fungal infections, but it is a common cause. Toenail infections are commonly linked with athlete's foot. Fingernails can be affected too.

Jock itch (tinea cruris)

This is called "jock itch" because it occurs in sportspeople. It causes an itchy, red rash in the groin and surrounding area and is commonly seen in men who have been sweating a lot. Often the man also has athlete's foot, and scratching the feet followed by the groin may spread the infection.

Ringworm on the body (tinea corporis)

This affects the body, often in exposed areas and causes red patches, which are scaly at the edge with clear skin at the centre. The patches spread out from the centre. It can be caught from domestic animals.

Ringworm of the scalp (tinea capitis)

This tends to affect young children and can cause hair loss with inflammation in the affected area.

Pityriasis versicolor

This condition causes increased dark patches on pale or untanned skin and

light patches on tanned or darker skin. Another name for this condition is tinea versicolor (versicolor means "of various colours"). People with oily skin are most likely to be affected.

Thrush (Candida albicans)

The fungus *Candida* is present within most people. It usually lives in harmony with us and rarely causes problems. However, in certain situations, such as during illness or when using antibiotics, the *Candida* fungi multiply and cause thrush.

Thrush can affect the mouth and tongue, and areas lined with a mucus membrane such as the vagina.

Thrush infection often looks like small white patches, which leave a red mark when rubbed off. In adults, vaginal thrush can cause itchiness and a thick, white discharge. For more information on this, please see the BUPA factsheet titled *Common vaginal infections*.

Thrush can also affect the penis, causing a red rash.

It can occur at any age, but is most common in newborn babies and infants, and older people. In infants the rash may be mistaken for breast or formula milk. It is not usually serious, but babies with thrush in their throats may stop eating, leading to them having an inadequate diet.

Causes of fungal infections

A number of situations make it more likely that a fungal infection

will develop. People are more at risk of fungal infections if they have:

- recently taken a course of antibiotics
- an immune system weakened by cancer or HIV infection
- been taking oral steroids
- diabetes

Moist skin encourages fungal infections. This means fungal infections are more likely when skin is not dried properly after sweating heavily or bathing, or when it is covered with a material that does not allow sweat to evaporate. Damage to the skin surface, such as a cut or graze, can also encourage fungi to grow.

Fungal infections inside the body can cause more serious health problems than those on the skin. These infections only affect people whose immune systems are not working properly as a result of another illness or treatments for cancer.

Animal fungi

Humans are not usually affected by fungi that live on animals, although it is possible for some types to be caught from farmyard and domestic animals.

Diagnosis

Sometimes fungal infections are easy for doctors to diagnose from the appearance and location of the rash, eg athlete's foot. If the doctor wants to make sure what is causing the symptoms, he or she may take a

scraping of skin or a fragment of nail or hair and send it to the laboratory for analysis before choosing the treatment.

Treatment

Since most skin fungal infections are surface infections, they are usually anti-fungal treatments applied directly to the infected area (topical treatments).

There are a variety of treatments available in the form of creams, lotions and medicated powders. If the rash covers quite a large area of skin, or affects nails or hair, then tablets may be required.

Some treatments are available over the counter from a pharmacist, without a prescription. Examples include clotrimazole (eg Canesten), miconazole (eg Daktarin) and terbinafine (eg Lamisil). Pharmacy own-brands are also available for some of these products. Ask your pharmacist for advice.

Stronger forms of topical treatments and antifungals in tablet form are only available on prescription. For example, ketoconazole shampoo (eg Nizoral) may be prescribed for fungal scalp infections, and terbinafine tablets may be prescribed for fungal nail infections.

These treatments are usually effective and only occasionally cause side-effects. These may include skin irritation and allergic reactions. It is not unusual for the rash to return, even when it seems to have been treated. The treatment