

## Tinea

### Overview

Tinea is an itchy skin condition caused by a fungal infection. It usually affects warm and damp areas including the groin (jock itch) and between the toes (athlete's foot). Sometimes the skin cracks and splits or may simply appear dry and flaky.

Another type of tinea infection is ringworm. In this case the fungus spreads out, leaving a clear patch of skin in the middle, giving a ring-like appearance to the rash.

Nails can also be affected by tinea. In this case it causes a yellow or white discolouration and may thicken and appear crumbly. It can also affect the skin under the breasts and the scalp.

The fungi responsible are dermatophytes.

Tinea is contagious and can be spread through skin-to-skin contact or on towels, or even the wet floor of communal changing rooms in the case of athletes' foot. In Australia, most tinea skin infections are caught from animals, or from fungi in the soil, or another person.

Treatment is by antifungal cream, or in stubborn cases antifungal tablets may be prescribed.

Athlete's foot is more common in men than women and in people who wear shoes compared with those who go barefoot. Tinea of the skin (ringworm) is more common in children. Children rarely suffer from fungal infections of the hands, feet or nails. Babies in nappies can suffer from fungal nappy rash caused by *Candida albicans*.

### Cause

Tinea is caused by a group of fungi called dermatophytes (from the Greek word for 'skin plants'). There are about 20 different species of dermatophyte.

Dermatophytes flourish in the skin as they are able to gain nutrients from proteins in the skin. They irritate the skin causing redness and stimulate the production of more skin cells — this causes the flakiness often seen with tinea.

Dermatophytes can be classified depending on their normal habitat — and thus the source of the infection.

Common types include:

- **Anthrophilic dermatophytes** live only on humans and the infection is passed on by direct skin contact with people who have an infection or from contaminated floors, showers, benches and clothing.
- **Zoophilic dermatophytes** are found in animals. Common sources of infections are most often from cats, dogs, cattle, horses and guinea pigs. A veterinarian will give advice on how to treat fungal infections in pets so the chance of cross-infection is minimised.
- **Geophilic dermatophytes** live in the soil but can infect humans and other animals.

### Symptoms

Symptoms of tinea infection vary depending on the location of the infection:

- **Feet and toes (tinea pedis) or athlete's foot.** The skin between the toes becomes red, itchy and macerated (soft and soggy). Severe infections may leave the skin crusty and white and the infection may spread to cover the sole of the foot. In most cases the infection will be very itchy.
- **Groin and/or genitals (tinea cruris) or jock itch.** The area will be very itchy and red, especially in the crural fold (the crease of skin between the top of your leg and genitals) and the rash may spread to the buttocks and cleft between your buttock cheeks. In men, it can spread to the scrotum. The rash is most often reddish and may be dry and scaly, or moist and crusty, and there may be some small, pus-filled blisters.
- **Nails (onychomycosis).** Your nail or nails, especially toenails, become misshapen, thickened and yellow. Often they become crumbly and can separate from the nail bed.
- **Scalp (tinea capitis).** You will be able to see round areas of scaly skin and/or hair. The hair might break off in the skin and leave a ring of black dots (black dot ringworm). The affected area might be swollen and most probably itchy. Some cases of scalp tinea can be associated with significant inflammation (kerion) that can cause scarring and permanent hair loss.
- **Skin of the trunk (chest, abdomen and back) and arms and legs (tinea corporis), hands (tinea manuum) and face (tinea faciei).** You will have areas of infection that vary in size and degree of inflammation. Most frequently you will have a classic itchy round lesion with a scaly definite edge and central area of normal skin (ringworm rash). Sometimes the skin might become red and swollen or brown. Large areas of skin can become involved, and often become less itchy the greater the area they cover.

### Treatment

In the first instance the infected area should be kept clean and dry as dermatophyte fungi prefer to grow in moist, warm conditions.

Tinea responds well to antifungal creams or lotions. Some doctors prefer to prescribe sprays or tinctures as creams tend to keep the affected area moist. If the infection cannot be resolved with a treatment applied directly to the skin, oral antifungal treatments might be required.

In the case of onychomycosis (tinea infection of the nails), antifungal treatment must be taken orally from the start.

Antifungal powders can be sprinkled into the

shoes to help prevent tinea, but these powders do not treat the infection.

### Medicines

Medications for tinea include antifungal creams or tablets depending on the type and severity of the problem. Sometimes antibiotics may be prescribed if a bacterial infection is also present.

### Lifestyle and diet

It is advisable to always practice good hygiene, especially if participating in sports that result in close contact (eg, wrestling) and heavy sweating. If using communal showering areas such as at a swimming pool, wear thongs (flip-flops) to protect your feet.

Avoid closed-toed shoes or tight-layered clothing that provide a moist, dark environment for fungal growth.

Maintain a balanced weight to decrease the potential for infection at sites where skin rubs.

Change socks after playing sport and wear socks that keep moisture away from the body.

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