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Athlete's Foot (Tinea Pedis)

Athlete's foot is a common skin infection caused by a fungus. Treatment with an antifungal cream usually works well. The tips given below may help to prevent athlete's foot coming back after it has been treated.

Who gets athlete's foot and how do you get it?

Athlete's foot is a fungal infection of the skin on the feet. It is very common - up to one in four people have athlete's foot at some point in their lives. Fungal germs (fungi) often occur in small numbers on human skin where they usually do no harm. However, if conditions are right they can invade the skin, multiply and cause infection. The conditions fungi like best are warm, moist and airless areas of skin, such as between the toes.

Anyone can get athlete's foot. It is more common in people who sweat more, or who wear shoes and socks which make their feet more sweaty. Athlete's foot can also be passed on from person to person. For example, this may occur in communal showers used by athletes or swimmers. A tiny flake of infected skin from a person with athlete's foot can fall off whilst showering. It may then be trodden on by others who may then develop the infection. Once a small patch of infection develops, it typically spreads along the skin.

What are the symptoms of athlete's foot?





The skin between the little toes tends to be affected at first. A rash develops that becomes itchy and scaly. The skin may become cracked and sore. Large splits (fissures) in the skin between the toes can develop, which can be very painful. Tiny flakes of infected skin may fall off. The rash may spread gradually along the toes if left untreated. In some cases it spreads to the soles. Occasionally, the infection causes a scaling rash on the entire sole and side of the foot. In other cases it causes more of a blistering rash on part of the sole of the foot.

Is athlete's foot serious?

Usually not. Most people treat their itchy toes before it spreads. Sometimes the infection spreads to the skin on other parts of the body. These are usually the moist and airless parts of the skin such as the groin. Fungi do not usually spread deeper than the skin. However, other germs (bacteria) may enter through the cracked skin of untreated athlete's foot. This can occasionally cause more serious infections of the foot or leg.

The infection sometimes spreads to a nail. This can be treated. However, it takes several weeks of antifungal tablets to clear the infection from a nail. Therefore, it is best to treat athlete's foot as soon as symptoms start. See the separate leaflet called Fungal Nail Infections (Tinea Unguium).

What is the treatment for athlete's foot?

You can buy a topical antifungal treatment from pharmacies, or get one on prescription. Topical means it is applied directly to the area affected, ie the skin of the feet. There are various types and brands - for example, terbinafine, clotrimazole, econazole, ketoconazole and miconazole. They are usually creams but can also be sprays, liquids or powders. These treatments are all good at clearing fungal skin infections. There is no evidence that one is better than another. For children clotrimazole, econazole or miconazole should be used. Other options are undecenoic acid or tolnaftate, which are available over the counter.

Apply for as long as advised. This varies between the different treatments, so read the instructions carefully. Although the rash may seem to go quite quickly, you may need to apply the treatment for 1-2 weeks after the rash has gone. This is to clear the fungi completely from the skin, which will prevent the rash from returning.

- Clotrimazole: apply 2-3 times a day for at least four weeks.
- Miconazole: apply twice a day and continue for 10 days after the skin is back to normal.
- Econazole: apply twice a day until the skin is back to normal.
- Ketoconazole. apply twice a day for seven days. Continue for a further few days if more severe. Not suitable for children.
- Terbinafine: apply once or twice a day for seven days. Not suitable for children.
- Undecenoic acid: apply twice a day and continue for a week after the skin is back to normal.

You should avoid creams that have steroids in them, like hydrocortisone. Although the hydrocortisone can help with the itching, it can lead to the fungi spreading which makes the athlete's foot worse. It is better to stick with creams that only contain the antifungal ingredient and nothing else.

An antifungal tablet is sometimes prescribed for adults if the infection does not clear with a cream, or if the infection is severe. Tablets are also sometimes needed if the infection is in many places on the skin in addition to the toes. Tablets used include terbinafine, griseofulvin, or itraconazole. They are generally taken once a day but a course of eight weeks might be necessary.

See the separate leaflet called Antifungal Medicines.

Not all treatments are suitable for everyone. Women who are pregnant or breastfeeding and people with liver disease may not be able to use antifungal tablets. Some people may be on other medication which interacts with antifungal tablets. Children are not usually prescribed antifungal tablets.

You do not need to stay away from work, school or sports if you have athlete's foot. However, in communal changing areas, try to keep your feet covered until the rash is gone. Also, try not to scratch the affected skin, as this may spread infection to other sites.

How do I avoid athletes foot?

- Keep your feet dry. The athlete's foot fungus loves warm and moist conditions.
- · Avoid sharing towels and communal bathing.
- · Wash socks and shoes regularly.
- · Use antifungal sprays to beat stubborn cases.

If persistent or if you feel unwell, see a doctor.

The following tips may prevent athlete's foot recurring:

- Wash your feet daily, and dry the skin between your toes thoroughly after washing. This is perhaps the most important point. It is tempting to put socks on when your feet are not quite dry. The soggy skin between the toes is then ideal for fungi to grow.
- Do not share towels in communal changing rooms. Wash towels frequently.
- Change your socks daily. Fungi may multiply in flakes of skin in unwashed socks. Cotton socks and leather footwear are probably better than nylon socks and plastic footwear, which increase sweating.
- Ideally, alternate between different shoes every 2-3 days to allow each pair to dry out fully after being worn.
- Ideally, wear flip-flops or plastic sandals in communal changing rooms and showers. This prevents the soles of your feet coming into contact with the ground, which may contain flakes of skin from other people.
- Ideally, when at home, leave your shoes and socks off as much as possible to let the air get to your feet. However, this may not be practical for some people.
- If athlete's foot keeps coming back, you may be able to prevent this by using one of the antifungal sprays or creams regularly as a precaution.
- Some people advocate 'toe socks' which have individual toe pockets to try to prevent the toes getting humid. So far there have been no studies to confirm they are any better than ordinary socks.

Further reading & references

- Fungal skin infection foot; NICE CKS, September 2014 (UK access only)
- Athletes foot; DermNet NZ

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