***ATHLETE'S FOOT: WHAT YOU SHOULD KNOW*.**

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***Athlete's foot****, known medically as****tinea pedis****, is a common*[*skin infection*](https://en.wikipedia.org/wiki/Skin_infection)*of the feet caused by fungus.*

Many individuals with athlete's foot have no symptoms at all and do not even know they have an infection. Many may think they simply have [dry skin](https://www.medicinenet.com/dry_skin/article.htm) on the soles of their feet. Common symptoms of athlete's foot typically include various degrees of [itching](https://www.medicinenet.com/itch/symptoms.htm), stinging, scaling, redness and burning. The skin may frequently peel, and in particularly severe cases, there may be some cracking, fissuring and [pain](https://www.medicinenet.com/pain_management/article.htm) in the toe webs. Occasionally, athlete's foot can [blister](https://www.medicinenet.com/blisters/symptoms.htm).  In rare cases the skin may [blister](https://en.wikipedia.org/wiki/Blister). Athlete's foot fungus may infect any part of the foot, but most often grows between the toes. The next most common area is the bottom of the foot. The same fungus may also affect the [nails](https://en.wikipedia.org/wiki/Fungal_infection_of_the_nails) or the [hands](https://en.wikipedia.org/wiki/Tinea_manuum). It is a member of the group of diseases known as [tinea](https://en.wikipedia.org/wiki/Tinea).

Athlete's foot is caused by a number of different [fungi](https://en.wikipedia.org/wiki/Fungi), including species of [*Trichophyton*](https://en.wikipedia.org/wiki/Trichophyton), [*Epidermophyton*](https://en.wikipedia.org/wiki/Epidermophyton), and [*Microsporum*](https://en.wikipedia.org/wiki/Microsporum). The condition is typically acquired by coming into contact with infected skin, or fungus in the environment. Common places where the fungi can survive are around swimming pools and in locker rooms. They may also be spread from other animals. Usually diagnosis is made based on signs and symptoms; however, it can be confirmed either by [culture](https://en.wikipedia.org/wiki/Microbial_culture) or seeing [hyphae](https://en.wikipedia.org/wiki/Hyphae) using a [microscope](https://en.wikipedia.org/wiki/Microscope).

Globally, fungal infections affect about 15% of the population and 20% of adults.   Countries and regions where going [barefoot](https://en.wikipedia.org/wiki/Barefoot) is more common experience much lower rates of athlete's foot than do populations which habitually wear shoes; as a result, the disease has been called "a penalty of civilization". Studies have demonstrated that men are infected 2–4 times more often than women.

Athlete's foot was first medically described in 1908.  It occurs most frequently in older children or younger adults. Historically it is believed to have been a rare condition, that became more frequent in the 1900s due to the greater use of shoes, [health clubs](https://en.wikipedia.org/wiki/Health_clubs), war, and travel. ***Athlete’s foot is very contagious and can be spread through direct and indirect contact***. The disease may spread to others directly when they touch the infection. People can contract the disease indirectly by coming into contact with contaminated items (clothes, towels, etc.) or surfaces (such as bathroom, shower, or locker room floors). The fungi that cause athlete's foot can easily spread to one's environment. Fungi rub off of fingers and bare feet, but also travel on the dead skin cells that continually fall off the body. Athlete's foot fungi and infested skin particles and flakes may spread to socks, shoes, clothes, to other people, pets (via petting), bed sheets, bathtubs, showers, sinks, counters, towels, rugs, floors, and carpets.

When the fungus has spread to pets, it can subsequently spread to the hands and fingers of people who pet them. If a pet frequently gnaws upon itself, it might not be fleas it is reacting to, it may be the insatiable itch of tinea.



Athlete's foot

***Athlete's foot is divided into four categories or presentations: chronic interdigital athlete's foot, plantar (chronic scaly) athlete's foot (aka "moccasin foot"), acute ulcerative tinea pedis, and vesiculobullous athlete's foot. "Interdigital" means between the toes. "Plantar" here refers to the sole of the foot***. The ulcerative condition includes macerated lesions with scaly borders. Maceration is the softening and breaking down of skin due to extensive exposure to moisture Athlete's foot occurs most often between the toes (interdigital), with the space between the fourth and fifth digits most commonly afflicted.

**Complications**

As the disease progresses, the skin may crack, leading to [***bacterial skin infection***](https://en.wikipedia.org/wiki/Cellulitis)***and***[***inflammation of the lymphatic vessels***](https://en.wikipedia.org/wiki/Lymphangitis). If allowed to grow for too long, athlete's foot fungus may spread to infect the toenails, feeding on the keratin in them, a condition called [***onychomycosis***](https://en.wikipedia.org/wiki/Onychomycosis)***.***

Because athlete's foot may [itch](https://en.wikipedia.org/wiki/Itch), it may also elicit the [scratch reflex](https://en.wikipedia.org/wiki/Scratch_reflex), causing the host to scratch the infected area before they realize it. Scratching can further damage the skin and worsen the condition by allowing the fungus to more easily spread and thrive. The itching sensation associated with athlete's foot can be so severe that it may cause hosts to scratch vigorously enough to inflict [excoriations](https://en.wikipedia.org/wiki/Excoriation) (open wounds), which are susceptible to bacterial infection. Further scratching may remove scabs, inhibiting the healing process.

Scratching infected areas may also spread the fungus to the fingers and under the fingernails. If not washed away soon enough, it can ***infect the fingers and fingernails***, growing in the skin and in the nails (not just underneath). After scratching, it can be spread to wherever the person touches, including other parts of the body and to one's environment. Scratching also causes infected skin scales to fall off into one's environment, leading to further possible spread.

When athlete's foot fungus or infested skin particles spread to one's environment (such as to clothes, shoes, bathroom, etc.) whether through scratching, falling, or rubbing off, not only can they infect other people, they can also re-infect (or further infect) the host they came from. For example, infected feet infest one's socks and shoes which further expose the feet to the fungus and its spores when worn again.

The ease with which the fungus spreads to other areas of the body (on one's fingers) poses another complication. When the fungus is spread to other parts of the body, it can easily be spread back to the feet after the feet have been treated. And because the condition is called something else in each place it takes hold (e.g., [***tinea corporis***](https://en.wikipedia.org/wiki/Tinea_corporis)***(ringworm) or***[***tinea cruris***](https://en.wikipedia.org/wiki/Tinea_cruris)***(jock itch)***, persons infected may not be aware it is the same disease.

Some individuals may experience ***an allergic response to the fungus called an***[***id reaction***](https://en.wikipedia.org/wiki/Id_reaction) in which blisters or vesicles can appear in areas such as the hands, chest, and arms. Treatment of the underlying infection typically results in the disappearance of the id reaction.

**Risk factors**

Besides being exposed to any of the modes of transmission presented above, there are additional risk factors that increase one's chance of contracting athlete's foot. Persons who have had athlete's foot before are more likely to become infected than those who have not. Adults are more likely to catch athlete's foot than children. Men have a higher chance of getting athlete's foot than women. People with diabetes or weakened immune systems are more susceptible to the disease. HIV/AIDS hampers the immune system and increases the risk of acquiring athlete's foot. [Hyperhidrosis](https://en.wikipedia.org/wiki/Hyperhidrosis) (abnormally increased sweating) increases the risk of infection and makes treatment more difficult.

**Treatment**

Athlete's foot resolves without medication (resolves by itself) in 30–40% of cases. Topical antifungal medication consistently produces much higher rates of cure.

Conventional treatment typically involves thoroughly washing the feet daily or twice daily, followed by the application of a [topical medication](https://en.wikipedia.org/wiki/Topical). Because the outer skin layers are damaged and susceptible to reinfection, topical treatment generally continues until all layers of the skin are replaced, about 2–6 weeks after symptoms disappear. Keeping feet dry and practising good hygiene is crucial for killing the fungus and preventing reinfection.

Treating the feet is not always enough. Once socks or shoes are infested with fungi, wearing them again can re-infect (or further infect) the feet. Socks can be effectively cleaned in the wash by adding bleach or by washing in water 60 °C (140 °F). Washing with bleach may help with shoes, but the only way to be absolutely certain that one cannot contract the disease again from a particular pair of shoes is to dispose of those shoes.

To be effective, treatment includes all infected areas (such as toenails, hands, torso, etc.). Otherwise, the infection may continue to spread, including back to treated areas. For example, leaving fungal infection of the nail untreated may allow it to spread back to the rest of the foot, to become athlete's foot once again.

Severe or prolonged fungal skin infections may require treatment with oral antifungal medication.

**Topical treatments**

#### There are many topical antifungal drugs useful in the treatment of athlete's foot including: [Miconazole nitrate](https://en.wikipedia.org/wiki/Miconazole_nitrate), [Clotrimazole](https://en.wikipedia.org/wiki/Clotrimazole) etc. A solution of 1% [potassium permanganate](https://en.wikipedia.org/wiki/Potassium_permanganate) dissolved in hot water is an alternative to antifungal drugs.[]](https://en.wikipedia.org/wiki/Athlete%27s_foot#cite_note-permanganate-34) Potassium permanganate is a [salt](https://en.wikipedia.org/wiki/Salt_%28chemistry%29) and a strong [oxidizing agent](https://en.wikipedia.org/wiki/Oxidizing_agent).

**Oral treatments**

For severe or refractory cases of athlete's foot oral [terbinafine](https://en.wikipedia.org/wiki/Terbinafine) is more effective than [griseofulvin](https://en.wikipedia.org/wiki/Griseofulvin). [Fluconazole](https://en.wikipedia.org/wiki/Fluconazole) or [itraconazole](https://en.wikipedia.org/wiki/Itraconazole) may also be taken orally for severe athlete's foot infections. The most commonly reported adverse effect from these medications is gastrointestinal upset.