Supplement - Cosmeceuticals - Don’t let “it” grow on your feet
12/6/2008

Athlete's foot, medically known as tinea pedis, is a fungal infection of the skin of the feet. Despite its name, athlete's foot can affect anyone and is not restricted to those who play sports or participate in physical exercise. It is estimated that up to 70% of the population will have athlete's foot at some time in their lives.

Athlete's foot is a very common skin infection of the foot caused by fungus. The fungus that commonly causes athlete's foot is called Trichophyton. When the feet or other areas of the body stay moist, warm, and irritated, this fungus can thrive and infect the upper layer of the skin. Fungal infections can occur anywhere on the body, including the scalp, trunk, extremities (arms and legs), hands, feet, nails, groin, and other areas. Athlete's foot is caused by the ringworm fungus ("tinea" in medical jargon). Athlete's foot is also called tinea pedis. The fungus that causes athlete's foot can be found on many locations, including floors in gyms, locker rooms, swimming pools, nail salons, and in socks and clothing. The fungus can also be spread directly from person to person or by contact with these objects. Symptoms of athlete's foot include dry skin, itching, burning, and redness of the feet. The symptoms are often apparent in the skin between the toes, where the infection usually starts. Blistering, peeling, cracking of the skin, and bleeding may occur. Sometimes the affected skin can appear white and wet on the surface.

However, without proper growing conditions (a warm, moist environment), the fungus may not easily infect the skin. Up to 70% of the population may have athlete's foot at some time during their lives.

Athlete's foot may look like red, peeling, dry skin areas on one or both soles of the feet. Sometimes the dry flakes may spread onto the sides and tops of the feet. Most commonly the rash is localized to just the soles of the feet. The space between the fourth and fifth toes also may have some moisture, peeling, and dry flakes.

There are three common types of athlete's foot.

* Soles of the feet, also called "moccasin" type
* Between the toes, also called "interdigital" type
* Inflammatory type or blistering

Unusual cases may look like small or large blisters of the feet (called bullous tinea pedis), thick patches of dry, red skin, or calluses with redness. Sometimes, it may look like just mild dry skin without any redness or inflammation.

Athlete's foot may present as a rash on one or both feet and even involve the hand. This is a very common presentation of athlete's foot. Hand fungal infections are called tinea manuum.

The exact cause of why the infection commonly only affects one hand is not known.

Athlete's foot may also be seen along with ringworm of the groin (especially in men) or hand(s). It is helpful to examine the feet whenever there is a fungal groin rash called tinea cruris. It is important to treat all areas of fungal infection at one time to avoid re-infection.

Athlete's foot may be contagious from person to person, but it is not always contagious. Some people may be more susceptible to the fungus that causes athlete's foot while others are more resistant. There are many households where two people (often husband and wife or siblings) using the same showers and bathroom for years have not transmitted the fungus to each other. The exact cause of this predisposition or susceptibility to fungal infections is unknown. Some people just seem more prone to fungal skin infections than others.

There are many possible causes of foot rashes. Athlete's foot is one of the more common causes. Additional causes include irritant or contact dermatitis, allergic rashes from shoes or other creams, dyshidrotic eczema (skin allergy rash), psoriasis, keratodermia blenorrhagicum, yeast infections, and bacterial infections.

Your physician can perform a simple test called a KOH, or potassium hydroxide for microscopic fungal examination, in the office or laboratory to confirm the presence of a fungal infection. This test is performed using small flakes of skin that are examined under the microscope. Many dermatologists perform this test in their office with results available within minutes. Rarely, a small piece of skin may be removed and sent for biopsy to help confirm the diagnosis.

TREATMENT

The treatment of athlete's foot can be divided into two parts. The first, and most important part, is to make the infected area less suitable for the athlete's foot fungus to grow. This means keeping the area clean and dry.

Buy shoes that are leather or other breathable material. Shoe materials, such as vinyl, that don't breathe cause your feet to remain moist, providing an excellent area for the fungus to breed. Likewise, absorbent socks like cotton that wick water away from your feet may help.

Powders, especially medicated powders (such as with miconazole or tolnaftate), can help keep your feet dry. Finally, your feet can be soaked in a drying solution of aluminum acetate (Burrow's solution or Domeboro's solution). A homemade remedy of dilute white vinegar soaks using one part vinegar and roughly four parts water, once or twice a day as 10-minute foot soaks may aid in treatment. The second part of treatment is the use of antifungal creams and washes. Many medications are available, including miconazole, clotrimazole, terbinafine (Lamisil) sprays and creams, and ketoconazole shampoo and cream, etc. More advanced or resistant cases of athlete's foot may require a two- to three-week course of an oral (pill)

antifungal like terbinafine, itraconazole (Sporanox), or fluconazole (Diflucan). Laboratory blood tests to make sure there is no liver disease may be required before taking these pills. Topical corticosteroid creams can act as a fertilizer for fungus and may actually worsen fungal skin infections. These topical steroid medications have no role in treating athlete's foot.

COMPLICATION

Untreated, athlete's foot can potentially spread to other body parts or other people including family members. Fungus may spread locally to the legs, toenails, hands, fingernails, and essentially any body area.

This type of fungus generally likes to live in the skin, hair, and nails. It does not invade deep, go into body organs, or go into the blood system.

Fungal infections of the nails are called tinea unguium or onychomycosis. Nail fungus may be very difficult to treat. Antifungal pills may be required in cases of more advanced toenail fungal infections.

People with diabetes, HIV/AIDS, cancer, or other immune problems may be more prone to all kinds of infections, including fungus.

When the skin is injured by fungus, the natural protective skin barrier is broken. Bacteria and yeasts can then invade the broken skin. Bacteria can cause a bad smell. Bacterial infection of the skin and resulting inflammation is known as cellulitis. This is especially likely to occur in the elderly, individuals with diabetes, chronic leg swelling, or who have had veins removed (such as for heart bypass surgery). Bacterial skin infections also occur more frequently in patients with impaired immune systems.

How can I prevent future infections?

Since some people are simply more prone to fungal infections, they are also prone to repeated infection. Preventive measures include keeping your feet clean and dry, avoiding prolonged moist environments, removing shoes and allowing the feet skin to "breathe," avoiding walking barefoot, especially in public areas like swimming pools and gyms, avoiding contact with known infected people, and avoiding soaking and contaminated tool usage at nail salons. Disinfecting old shoes and periodic weekly or monthly sprinkling of antifungal foot powder (Pedi-Dry Foot Powder) into shoes can also be helpful. It is imperative to take your own nail instruments, including nail files, to any public nail salon, unless you know the salon practices strict instrument sterilization and/or uses all disposable supplies. Use cotton socks whenever possible. Avoid walking in airports and public areas with bare feet. Make sure any affected family members also treat their athlete's foot at the same time to avoid cross-infections.


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