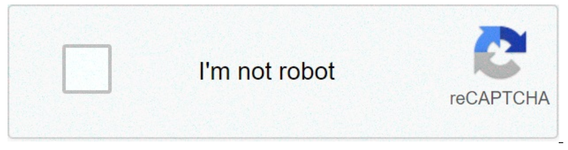

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How long does athlete's foot fungus survive on surfaces

Dear Doctors: My husband and two sons all have athlete’s foot and my daughter and I don’t want to catch it. Now that it’s on the house, can we get rid of it? Dr. Elizabeth Ko and Dr. Eve Glazier Athlete’s foot, also known as tinea pedis, is a common fungal infection. Anyone who has suffered through the maddening itch of athlete’s foot, often in the delicate skin between the toes, is primed to be vigilant about preventing future infections. Symptoms include that relentless itch, which can occur anywhere on the foot that the fungus is active, redness, and cracked, flaking or scaly skin. In some cases, tiny blisters may be present. Treatment with over-the-counter antifungal medications is usually successful. But be sure to follow the entire prescribed course of treatment. Even when it looks as though the infection has cleared up, the fungus can still be present and therefor re-infection is possible. A variety of different fungi can cause athlete’s foot, but they all have one thing in common – they thrive on moisture. That’s the key to understanding how and where one contracts athlete’s foot. It’s also the answer to how to combat it. Athlete’s foot spreads either through contact with fungi or by contact with infected skin. Perpetually damp areas like locker rooms, bathroom floors, showers, and swimming pools are prime breeding grounds for the fungi. They can also live in socks, shoes, and towels, all of which have a tendency to remain moist. Someone with athlete’s foot should never share shoes or socks as the infection can spread easily. With the men in your family now assiduously applying anti-fungal products and keeping their footwear to themselves, let’s talk about strategies to stop the spread of the infection. Wash all socks, towels, bath mats, sheets and any other items that may have come into contact with the infection in the hottest water possible. If the fabrics can tolerate it, a cap of Lysol disinfectant in the wash is helpful. Dry thoroughly, and at the highest heat setting possible. Keep separate from regular laundry. Always wear sandals when walking in moist areas, such as the bathroom, public showers, pools and locker rooms. (And since the fungus can remain alive for a time even in dry areas, it’s best to never walk barefoot in hotel rooms.) Keep feet clean and dry. Wash carefully and dry thoroughly, especially between toes. Use talcum powder or an antifungal powder as extra insurance. Make sure that toenails, which can house the fungus, are clipped short and kept clean. Change socks daily. While the athlete’s foot infection is active, put socks on first, and then underwear. The same fungi that cause athlete’s foot are responsible for jock itch. Air out shoes between wearings. Sunlight is good. Fumigating with a blast of Lysol (be sure let dry completely before next use) is better. Finally, if non-prescription antifungals don’t work, if the infection keeps coming back, and for anyone who has diabetes, it is important to see your doctor. Eve Glazier, MD., MBA, and Elizabeth Ko, MD., are internists at UCLA Health. Dr. Glazier is an associate professor of medicine; Dr. Ko is an assistant professor of medicine. Ask the Doctors is a syndicated column first published by UExpress syndicate. Fungal spores are tenacious and long-lived, as anyone who’s done battle with them will tell you. Spores persist on clothing and shoes, bedding, rugs, and furniture wherever dead skin cells are present. Toenail fungus, called onychomycosis, lurks in shoes and boots where moisture is easily trapped, and fungal spores can remain alive and active from 12 to 20 months. Superficial fungal infections, particularly fungal nail infections, take anywhere from a few days to a few months to heal, and deep tissue infection may require treatment for up to two years. Cellulitis may develop when a toenail fungus infection spreads beyond the nail, causes cracks in the skin, and allows bacteria can get in. If the cellulitis is severe, the infection may enter the bloodstream – with dangerous, even deadly, results. Dermatophytes, a pathenogenic fungus, can also arise on toenails and fingernails, mucous membranes, hair, and skin and it requires thorough and aggressive treatment. Athlete’s foot and toenail fungus live in your shoes Another common fungus fond of the same environment is athlete’s foot, or tinea pedis. Unlike onychomycosis, this fungal infection thrives also in a dry environment, so is common in summer months among sandal and flip-flop wearers. Athlete’s foot manifests in intense itching; cracked, blistered or peeling skin; and redness and scaling in dry, flaky areas. If you don’t wear socks, dead skin cells may rub off your feet onto your shoes, creating a surprisingly efficient breeding ground for fungi. Tinea pedis and onychomycosis fungi will remain active on dead skin cells and wait inside your shoes until the next time you slip them on. A dry environment may be less friendly to fungi than a moist environment, but wherever fungi cells are allowed to thrive, the scene is set for infection by toenail fungus spores and athlete’s foot. See your doctor If your feet tend to be very sweaty and if you detect a foul odor from your shoes, it’s probably a good time to seek professional attention. See your family doctor to begin treatment. In some cases, your doctor may immediately refer you to a dermatology specialist or to a DPM – a podiatrist – to correctly test and diagnose the fungal infection, determine its severity, and recommend the most effective treatment regimen to defeat it. What to do with your toenail fungus Effective options exist and your medical professional will know which anti-fungal tablet, cream, spray, or liquid will work best on your infection. Lamasil, Jublia, and Sporanox are among the most widely prescribed, depending on a person’s age and the type and severity of the fungal infection. All these treatment regimens work by encouraging new nail growth free of infection. Because the infected nail can be replaced only by the slow nail growth process, you must take these medications for six to 12 weeks, or longer. Adopt good foot hygiene habits There are sensible precautions you can take to head off toenail fungal infection, foot fungus and athlete’s foot in the first place — or to prevent reinfection after successful treatment. * Don’t wear anyone else’s socks or put on their shoes. Keep in mind that if they have a toenail fungal infection, it will then likely become yours. * Wash and thoroughly dry your feet daily, especially between the toes where moisture collects and where fungal spores may find a home. * And those little boxes of disposable socks at the shoe store? Always put them on before you try on any pair of shoes. * Wear flip-flops or shower shoes in locker rooms, around swimming pools, and in gym showers. * Regularly use shoe sanitizer and anti-fungal spray, as directed, to help guard against athlete’s foot and toenail fungus infection or reinfection. * Sprinkle antifungal powder daily on your feet and in your socks and shoes, especially if you have sweaty feet. * After your toenail fungus has been defeated use an antifungal cream or antifungal foot powder daily to help maintain good foot health. Continue for at least one or two weeks after treatment. * About those pedicures: If you already have toenail fungus, a pedicure won’t cause you any harm or make a fungal infection any worse, but be sure to alert the salon staff ahead of time so they’ll know to sterilize tools and equipment used for your pedicure. They may ask you to bring your own nail grooming kit, including nail clippers, trimmer, and file. Giving up nail polish is a wise idea, since lacquers will seal any fungal nail infection into the nail bed and impede good treatment results. Over-the-counter preventives and remedies While over-the-counter preventives and treatment options cannot replace medical intervention to address an active fungal spore infection, there are some common household products, such as vinegar, that have antifungal properties and may be useful in maintaining general foot hygiene and surface toenail health. Other home remedies include alcohol rub hand sanitizers kill most surface bacteria and fungi; baking soda (sodium bicarbonate) is an antifungal agent and can be added to a foot soak; hydrogen peroxide kills fungus and bacteria that could cause an infection and may be applied to the surface of the foot; soaking your feel in a tablespoon of bleach in half a gallon of water will help kill fungus; and tea tree oil is a very popular antifungal agent you may mix with herbs and a carrier oil and apply with a swab to infected areas several times a day. Keep in mind that these remedies are not fully proven and may be insufficient when dealing with a toenail fungus infection. Rubbing alcohol and disinfectants, such as Lysol, will kill fungus on surfaces and in the laundry. If your shoes can be laundered in very hot water, that will kill fungal spores (but alas, maybe your shoes, too). And foot powder containing cornstarch and zinc oxide sprinkled into socks and shoes will keep feet dry and help control athlete’s foot. Overall, Clear + Restore is often recommended by doctors to be used by patients along with their prescription anti-fungal medication. This will ensure efficacious results will be seen quicker. Try Clear + Restore to help restore fingernails and fix toenail fungus symptoms today! Find out more about Toenail Fungus Treatment & Fungus prevention tips here Skin infection caused by fungus This article is about the fungal disease. For the athletic footwear company, see The Athlete's Foot. Medical conditionAthlete's footOther namesTinea pedis, ringworm of the foot,[1] moccasin foot[2]A severe case of athlete's foot.SpecialtyInfectious diseaseSymptomsItching, scaling, redness of the foot[3]CausesFungi (Trichophyton, Epidermophyton, Microsporum)[4]Diagnostic methodBased on symptoms, confirmed by culture or microscopy[4]PreventionAvoiding walking barefoot in public showers, keeping toenails short, wearing big enough shoes, changing socks daily[4][5]TreatmentAntifungal medication applied to the skin or taken by mouth[2][4]Frequency15% of the population[2] Athlete's foot, known medically as tinea pedis, is a common skin infection of the feet caused by fungus.[2] Signs and symptoms often include itching, scaling, cracking and redness.[3] In rare cases the skin may blister.[6] Athlete's foot fungus may infect any part of the foot, but most often grows between the toes.[3] The next most common area is the bottom of the foot.[6] The same fungus may also affect the nails or the hands.[4] It is a member of the group of diseases known as tinea.[7] Athlete's foot is caused by a number of different fungi,[3] including species of Trichophyton, Epidermophyton, and Microsporum.[4] The condition is typically acquired by coming into contact with infected skin, or fungus in the environment.[3] Common places where the fungi can survive are around swimming pools and in locker rooms.[8] They may also be spread from other animals.[5] Usually diagnosis is made based on signs and symptoms; however, it can be confirmed either by culture or seeing hyphae using a microscope.[4] Regardless of the name, athlete's foot can affect anyone. Some methods of prevention include: not going barefoot in public showers, keeping the toenails short, wearing big enough shoes, and changing socks daily.[4][5] When infected, the feet should be kept dry and clean and wearing sandals may help.[3] Treatment can be either with antifungal medication applied to the skin such as clotrimazole or, for persistent infections, antifungal medications that are taken by mouth such as terbinafine.[2][4] The use of the cream is typically recommended for four weeks.[4] Athlete's foot was first medically described in 1908.[9] Globally, athlete's foot affects about 15% of the population.[2] Males are more often affected than females.[4] It occurs most frequently in older children or younger adults.[4] 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, war, and travel.[10] Signs and symptoms Athlete's foot Athlete's foot is divided into four categories or presentations: chronic interdigital, plantar (chronic scaly; aka "moccasin foot"), acute ulcerative,[11] and vesiculobullous.[2][12][13] "Interdigital" means between the toes. "Plantar" here refers to the sole of the foot. The ulcerative condition includes macerated lesions with scaly borders.[11] Maceration is the softening and breaking down of skin due to extensive exposure to moisture. A vesiculobullous disease is a type of mucocutaneous disease characterized by vesicles and bullae (blisters). Both vesicles and bullae are fluid-filled lesions, and they are distinguished by size (vesicles being less than 5–10 mm and bulla being larger than 5–10 mm, depending upon what definition is used).[citation needed] Athlete's foot occurs most often between the toes (interdigital), with the space between the fourth and fifth digits (the little toe and the fore toe) most commonly afflicted.[14][15][16] Cases of interdigital athlete's foot caused by Trichophyton rubrum may be symptomless, it may itch, or the skin between the toes may appear red or ulcerative (scaly, flaky, with soft and white if skin has been kept wet),[7][17] with or without itching. An acute ulcerative variant of interdigital athlete's foot caused by T. mentagrophytes is characterized by pain, maceration of the skin, erosions and fissuring of the skin, crusting, and an odor due to secondary bacterial infection.[13] Plantar athlete's foot (moccasin foot) is also caused by T. rubrum which typically causes asymptomatic, slightly erythematous plaques (areas of redness of the skin) to form on the plantar surface (sole) of the foot that are often covered by fine, powdery hyperkeratotic scales.[2][13] The vesiculobullous type of athlete's foot is less common and is usually caused by T. mentagrophytes and is characterized by a sudden outbreak of itchy blisters and vesicles on an erythematous base,[7] usually appearing on the sole of the foot. This subtype of athlete's foot is often complicated by secondary bacterial infection by Streptococcus pyogenes or Staphylococcus aureus.[13] Complications As the disease progresses, the skin may crack, leading to bacterial skin infection[13] and inflammation of the lymphatic vessels.[11] If allowed to grow for too long, athlete's foot fungus may spread to infect the toenails,[18] feeding on the keratin in them, a condition called onychomycosis.[19] Because athlete's foot may itch, it may also elicit the 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 (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 reinfect (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.[citation needed] 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 (ringworm) or 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 in which blisters or vesicles can appear in areas such as the hands, chest, and arms.[20] Treatment of the underlying infection typically results in the disappearance of the id reaction.[20] Causes Athlete's foot is a form of dermatophytosis (fungal infection of the skin), caused by dermatophytes, fungi (most of which are mold) which inhabit dead layers of skin and digest keratin.[2] Dermatophytes are anthropophilic, meaning these parasitic fungi prefer human hosts. Athlete's foot is most commonly caused by the molds known as Trichophyton rubrum and T. mentagrophytes,[21] but may also be caused by Epidermophyton floccosum.[22][23] Most cases of athlete's foot in the general population are caused by T. rubrum; however, the majority of athlete's foot cases in athletes are caused by T. mentagrophytes.[13] Transmission According to the UK's National Health Service, "Athlete’s foot is very contagious and can be spread through direct and indirect contact."[24] 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. One way to contract athlete's foot is to get a fungal infection somewhere else on the body first. The fungi causing athlete's foot may spread from other areas of the body to the feet, usually by touching or scratching the affected area, thereby getting the fungus on the fingers, and then touching or scratching the feet. While the fungus remains the same, the name of the condition changes based on where on the body the infection is located. For example, the infection is known as tinea corporis ("ringworm") when the torso or limbs are affected or tinea cruris (jock itch or dhobi itch) when the groin is affected. Clothes (or shoes), body heat, and sweat can keep the skin warm and moist, just the environment the fungus needs to thrive. 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.[25] People with diabetes or weakened immune systems[25] are more susceptible to the disease. HIV/AIDS hampers the immune system and increases the risk of acquiring athlete's foot. Hyperhidrosis (abnormally increased sweating) increases the risk of infection and makes treatment more difficult.[26] Diagnosis Microscopic view of cultured athlete's foot fungus When visiting a doctor, the basic diagnosis procedure applies. This includes checking the patient's medical history and medical record for risk factors,[11] a medical interview during which the doctor asks questions (such as about itching and scratching), and a physical examination.[11] Athlete's foot can usually be diagnosed by visual inspection of the skin and by identifying less obvious symptoms such as itching of the affected area. If the diagnosis is uncertain, direct microscopy of a potassium hydroxide preparation of a skin scraping (known as a KOH test) can confirm the diagnosis of athlete's foot and help rule out other possible causes, such as candidiasis, pitted keratolysis, erythrasma, contact dermatitis, eczema, or psoriasis.[13][23][27] Dermatophytes known to cause athlete's foot will demonstrate multiple septate branching hyphae on microscopy.[13] A Wood's lamp (black light), although useful in diagnosing fungal infections of the scalp (tinea capitis), is not usually helpful in diagnosing athlete's foot, since the common dermatophytes that cause this disease do not fluoresce under ultraviolet light.[14] Prevention There are several preventive foot hygiene measures that can prevent athlete's foot and reduce recurrence. Some of these include: keeping the feet dry; clipping toenails short; using a separate nail clipper for infected toenails; using socks made from well-ventilated cotton or synthetic moisture wicking materials (to soak moisture away from the skin to help keep it dry); avoiding tight-fitting footwear; changing socks frequently; and wearing sandals while walking through communal areas such as gym showers and locker rooms.[8][13][28] According to the Centers for Disease Control and Prevention, "Nails should be clipped short and kept clean. Nails can house and spread the infection."[29] Recurrence of athlete's foot can be prevented with the use of antifungal powder on the feet.[13] The fungi (molds) that cause athlete's foot require warmth and moisture to survive and grow. There is an increased risk of infection with exposure to warm, moist environments (e.g., occlusive footwear—shoes or boots that enclose the feet) and in shared humid environments such as communal showers, shared pools, and treatment tubs.[17] Chlorine bleach is a disinfectant and common household cleaner that kills mold. Cleaning surfaces with a chlorine bleach solution prevents the disease from spreading from subsequent contact. Cleaning bathtubs, showers, bathroom floors, sinks, and counters with bleach helps prevent the spread of the disease, including reinfection. Keeping socks and shoes clean (using bleach in the wash) is one way to prevent fungi from taking hold and spreading. Avoiding the sharing of boots and shoes is another way to prevent transmission. Athlete's foot can be transmitted by sharing footwear with an infected person. Hand-me-downs and purchasing used shoes are other forms of shoe-sharing. Not sharing also applies to towels, because, though less common, fungi can be passed along on towels, especially damp ones. Treatment Athlete's foot resolves without medication (resolves by itself) in 30–40% of cases.[30] Topical antifungal medication consistently produces much higher rates of cure.[31] Conventional treatment typically involves thoroughly washing the feet daily or twice daily, followed by the application of a topical medication. 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 practicing good hygiene (as described in the above section on prevention) 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 reinfect (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).[32] 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.[citation needed] 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. Allylamines such as terbinafine are considered more efficacious than azoles for the treatment of athlete's foot.[13][33] 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, clotrimazole, tolnaftate (a synthetic thiocarbamate), terbinafine hydrochloride,[17] butenafine hydrochloride and undecylenic acid. The fungal infection may be treated with topical antifungal agents, which can take the form of a spray, powder, cream, or gel. Topical application of an antifungal cream such as butenafine once daily for one week or terbinafine once daily for two weeks is effective in most cases of athlete's foot and is more effective than application of miconazole or clotrimazole.[23] Plantar-type athlete's foot is more resistant to topical treatments due to the presence of thickened hyperkeratotic skin on the sole of the foot.[13] Keratolytic and humectant medications such as urea, salicyclic acid (Whitfield's ointment), and lactic acid are useful adjunct medications and improve penetration of antifungal agents into the thickened skin.[13] Topical glucocorticoids are sometimes prescribed to alleviate inflammation and itching associated with the infection.[13] A solution of 1% potassium permanganate dissolved in hot water is an alternative to antifungal drugs.[34] Potassium permanganate is a salt and a strong oxidizing agent. Oral treatments For severe or refractory cases of athlete's foot oral terbinafine is more effective than griseofulvin.[2] Fluconazole or itraconazole may also be taken orally for severe athlete's foot infections.[2] The most commonly reported adverse effect from these medications is gastrointestinal upset.[2] Epidemiology Globally, fungal infections affect about 15% of the population and 20% of adults.[2][21] Athlete's foot is common in individuals who wear unventilated (occlusive) footwear, such as rubber boots or vinyl shoes.[21][23] Countries and regions where going 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".[35] Studies have demonstrated that men are infected 2–4 times more often than women.[2] See also Toenail fungus, tinea unguium, an infection affecting the toenails Trench foot, due to moisture and decay References ^ Rapini, Ronald P.; Bolognia, Jean L.; Jorizzo, Joseph L. 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