

**Intercontinental Journal of Pharmaceutical Investigations and Research (ICJPIR)**

**ISSN:2349-5448**

 ***ICJPIR |Volume 9, Issue 4 | Oct - Dec 2022***

***www.icjpir.com***

 ***Review article Medical research***

**Fungal infections of skin: symptoms, types, causes and treatments**

**CH. Madhava Reddy\*, P. Sravan kumar, M. Uday Kumar, A. Priyanka, K.Teja Sri, P.Tharangini**

*Scient Institute of pharmacy, Ibrahimpatnam, Hyd-501506, Telangana, India.*

 **\*Corresponding Author: CH. Madhava Reddy**

**ABSTRACT**

Mold and yeast are currently among the top 10 pathogens that are often isolated from feverish individuals with compromised immune systems. Fungi are primarily opportunistic infections that can only enter the body if its natural defences are drastically depleted. The majority of risk factors for an invasive fungal infection cannot be avoided since they are entwined with the underlying illnesses and the therapies used to treat them. Modern, aggressive treatment methods compromise the body's defences to the point where even low-virulence fungi can enter.The majority of the time, humans and the microbes that surround them coexist peacefully; infections only occur when the immune system is compromised or when the pathogen population reaches very high densities. The majority of infections go unnoticed, but occasionally the infecting organisms do cause the body to react, which results in clinically evident signs and symptoms, a condition known as an infectious disease.The infectious diseases like Athlete's foot, Jock itch, Ringworm, Yeast Infections.

**Keywords:** Athlete's foot, Jock itch, Ringworm, Yeast Infections

**INTRODUCTION**

The majority of the time, humans and the microbes that surround them coexist peacefully; infections only occur when the immune system is compromised or when the pathogen population reaches very high densities. The majority of infections go unnoticed, but occasionally the infecting organisms do cause the body to react, which results in clinically evident signs and symptoms, a condition known as an infectious disease. Infectious disorders have been linked to bacteria, viruses, parasites, fungus, prions, worms, and helminthes, though those brought on by common viruses are the most prevalent and, up until a few decades ago, the most feared. As methods for treating bacterial infections in humans advanced, fungus rose to the top of the list of dangerous pathogens.Currently, among patients in intensive care units, yeasts and moulds are among the top 10 most often isolated infections. It is certain that invasive fungal infections cause about 7% of all febrile episodes that happen with neutropenia. Candida has surpassed a number of historically infamous bacterial diseases to become the fourth most common bloodstream isolate in hospitals in the United States. Since the 1980s, there has been a rise in invasive fungal infections in patients who are not at the terminal stage of their underlying illness.The prevalence of low autopsy rates also means that many invasive fungal infections go undetected while the patient is still alive. As a result, the incidence of these infections is likely underestimated. Why did fungus develop to become such potent foes of critically ill patients? In spite of their power to make bread rise, provide us beer and wine, and impart flavour to cheese and other foods, it is obvious that fungi primarily belong to the end of biological life.

**FUNGAL INFECTION SYMPTOMS**

A fungal skin infection might cause:

Irritation

Scaly skin

Redness

Itching

Swelling

Blisters

**TYPES OF FUNGAL INFECTIONS**

Fungal skin infections can happen anywhere on your body. Some of the most common are

1. Athlete's foot

2. Jock itch

3. Ringworm

4. Yeast infections

**Athlete's foot**

Athlete's foot, also called tinea pedis, is a fungal infection of your foot. The fungi grow best in warm, moist places such as shoes, socks, swimming pools, locker rooms, and public showers. They’re often found in the summer and in hot, humid climates. It happens more often in people who wear tight shoes, who don’t change their sweaty socks, and who use public baths and pools.

**CAUSES**

The fungus that cause athlete's foot thrive on the dead skin cells on your toenails, hair, and upper layers of your skin. The infection can be brought on by at least four different fungi. Trichophyton rubrum is the most widespread.

**SYMPTOMS**

Athlete's foot symptoms differ from person to person. Possibly, you've:

-Rough,

-Peeling,

-Cracking feet

-Blisters

-Red, softer, or deteriorated skin

-Itching

-Burning

**TYPES**

1. Interdigital: Toe web infection is another another name for this. This type of athlete's foot is prevalent. Your two tiniest toes are where it typically happens. The bottom of your foot may become infected.

2. Moccasin: This kind may start off as skin that is irritated, dry, itchy, or scaly. Your skin might thicken and crack with time. This infection may spread to the sides of your foot as well as the entire sole.

3. Vesicular: The rarest variety of athlete's foot is this one. The typical first sign is a sudden onset of fluid-filled blisters, frequently on the bottom of your foot. They can also show up on the top of your foot, on your heel, or in the space between your toes.

**DIAGNOSIS**

Not all people with itching, scaly feet have fungal infections. In order to seek for a different condition, your doctor might scrape a small portion of skin and examine it under a microscope.

**TREATMENT**

In severe circumstances, your doctor may prescribe an oral antifungal medication in addition to any topical antifungal medications. Keep your feet dry and clean at all times.

**PREVENTION**

Wear shower sandals in public shower rooms, wear shoes that allow your feet to breathe, and wash your feet with soap and water every day to prevent athlete's foot. Utilize a high-quality foot powder after fully drying them. Wear shower sandals in public shower rooms, wear shoes that allow your feet to breathe, and wash your feet with soap and water every day to prevent athlete's foot. Utilize a high-quality foot powder after fully drying them.

**Jock itch**

Jock itch is caused by a form of fungus called tinea. Tinea cruris is another name for the infection. The inner thighs, buttocks, and genitalia are among Tinea's favourite warm, moist regions. Infections tend to occur more frequently in the summer or in hot, humid settings.

Jock itch is a rash that is typically ring-shaped, red, and itchy.

 Is jock itch spreadable?

It is barely contagious. Direct contact or indirect contact with fungus-covered materials can both result in the transfer of the disease from one person to another.

**CAUSES**

You might get jock itch if you:

**-**Wear tight clothes that irritate your skin

**-**Have moisture in your groin area from sweating

**-**Wear a wet bathing suit for a long time

**-**Share damp towels or sweaty clothing with other people

**-**Have close contact with someone who has jock itch

**-**Are overweight

**-**Have a weakened immune system or diabetes

**SYMPTOMS**

Jockey itch symptoms include:

Your thigh or groyne may be itchy, chafing, or burning.

a raised, circular rash that is red and has

Your thigh or groyne is red.

Skin that is flaking, peeling, or cracking

**DIAGNOSIS**

Usually, a doctor can identify it based on how it appears and where it is located on your body. To be certain, they might examine a piece of skin under a microscope.

**TREATMENT**

Dry off and keep the afflicted area clean. Antifungal over-the-counter medications can handle the majority of jock itch symptoms. In extreme circumstances, your doctor may have to prescribe a cream. Regardless of your treatment, remember to:

With a fresh towel, wash and dry the area.

Follow the medication's directions exactly.

Every day, change your clothes, especially your undergarments.

**PREVENTIONS**

Reduce your risk of jock itch by taking these steps:

**-Stay dry:** Keep your groin area dry. Dry your genital area and inner thighs thoroughly with a clean towel after showering or exercising. Dry your feet last to avoid spreading athlete's foot fungus to the groin area.

**-Wear clean clothes**: Change your underwear at least once a day or more often if you sweat a lot. It helps to wear underwear made of cotton or other fabric that breathes and keeps the skin drier. Wash workout clothes after each use.

**-Find the correct fit:** Make sure your clothes fit correctly, especially underwear, athletic supporters and sports uniforms. Avoid tight-fitting clothes, which can rub and chafe your skin and put you at increased risk of jock itch. Try wearing boxer shorts rather than briefs.

**-Don't share personal items:** Don't let others use your clothing, towels or other personal items. Don't borrow such items from others.

**-Treat or prevent athlete's foot:** Control any athlete's foot infection to prevent its spread to the groin. If you spend time in moist public areas, such as a gym shower, wearing sandals will help prevent athlete's foot.

**RINGWORM**

Ringworm, commonly known as tinea corporis, is a fungal skin infection rather than a worm. Its ring-shaped rash with a looping, worm-like edge gave rise to its name.

Is ringworm spreadable?

Direct contact with infected individuals or animals can transmit ringworm. It can also be retrieved from items of clothes or furnishings. Heat and humidity might facilitate the infection's spread.

**CAUSES**

You're at higher risk of ringworm of the body if you:

**-**Live in a warm climate

**-**Have close contact with an infected person or animal

-Share clothing, bedding or towels with someone who has a fungal infection

**-**Participate in sports that feature skin-to-skin contact, such as wrestling

**-**Wear tight or restrictive clothing

**-**Have a weak immune system

**SYMPTOMS**

A ringworm sore is a red, flat, circular sore that might also include scaly skin. The skin around the sore may be elevated, yet the skin inside the sore can be normal. Red rings or patches may cross each other.

**Types**

 Ringworm is a common skin disorder otherwise known as tinea. While there are multiple forms of ringworm, the most common affect the skin on the body (tinea corporis), the scalp (tinea capitis), the feet (tinea pedis, or 'athlete's foot'), or the groin (tinea cruris, or 'jock itch').

**DIAGNOSIS**

Based on your symptoms, your doctor can determine if you have ringworm. If you've interacted with diseased humans or animals, they might inquire. To be certain, they might also collect samples from the area and examine them under a microscope.

**TREATMENT**

Antifungal skin creams are typically used as a form of treatment. You could employ an over-the-counter cream like:

-Clotrimazole (Lotrimin, Mycelex) (Lotrimin, Mycelex)

-Miconazole (Micatin, Monistat-Derm) (Micatin, Monistat-Derm)

-Terbinafine (Lamisil) (Lamisil)

In more serious circumstances, you might require oral or topical prescription treatment.

**PREVENTION**

-Keep your skin clean and dry.

-Wear shoes that allow air to circulate freely around your feet.

-Don’t walk barefoot in areas like locker rooms or public showers.

-Clip your fingernails and toenails short and keep them clean.

-Change your socks and underwear at least once a day.

-Don’t share clothing, towels, sheets, or other personal items with someone who has ringworm.

-Wash your hands with soap and running water after playing with pets. If you suspect that your pet has ringworm, take it to see a veterinarian. If your pet has ringworm, follow the steps below to prevent spreading the infection.

-If you’re an athlete involved in close contact sports, shower immediately after your practice session or match, and keep all of your sports gear and uniform clean. Don’t share sports gear (helmet, etc.) with other players.

**YEAST INFECTIONS**

Skinny yeast infections are referred to as cutaneous candidiasis. When it multiplies excessively, a form of fungus known as candida causes severe diseases. There is no spread of yeast infections. The armpits and groyne are two warm, wet, wrinkled areas of your body where the diseases are most prevalent. People with diabetes or obesity are more likely to experience them. Antibiotic users are also more vulnerable. Babies who have can dida can get diaper rash. Additionally, it may result in infections of the lips, nails, or vagina (oral thrush).

**CAUSES**

The main cause of a yeast infection is the overgrowth of yeast on an area of the body.

The yeast species Candida albicans causes common yeast infections, but other species of Candida can also cause an infection. They may need different treatment.

Balanced levels of yeast and bacteria are typically present in the vagina, but disturbances in this delicate balance can lead to the development of an infection.

Usually, the bacteria Lactobacillus createsTrusted Source an environment that does not encourage yeast overgrowth, but if yeast becomes dominant, symptoms of a yeast infection may emerge.

Yeast infections of the vagina are not sexually transmitted infections (STIs), but they can spread through oral-genital contact or during intercourse.

Factors that increase the risk of a vaginal yeast infection includeTrusted Source:

\*use of antibiotics, corticosteroids, or both

\*pregnancy

\*use of hormonal contraceptives or contraceptive devices

\*unmanaged diabetes

\*being immunocompromised

Any activity that can cause changes in typical vaginal flora, including douching, can contribute to a yeast infection. Improper diet and lack of sleep may also increase the risk.

**SYMPTOMS**

Yeast infections on the skin can show these symptoms:

-Rash

-patches of translucent fluid oozing

-lumps resembling zits

-Itching,Burning

 Yeast infection symptoms in your nail beds include:

-Swelling

-Pain

-Pus

-A yellow or white nail that pops out of the nail bed

Thrush (a yeast infection of the mouth) symptoms include:

-White blotches within your cheeks and on your tongue

-Pain

A vaginal yeast infection can show these symptoms:

-Your vaginal discharge may be white or yellow.

-Itching Redness around your vagina's perimeter Burning

**DIAGNOSIS**

Your doctor will do a physical examination and inquire about your medical history. A sample from the afflicted area may also be taken for microscopic examination.

**TREATMENT**

Treatment is determined by the infection. Most skin yeast infections can be treated with medicated creams. Typically, you can use medication suppositories to treat vaginal infections. Oral thrush may be treated using a medicated mouthwash or lozenges that dissolve in the mouth. You may require oral anti-yeast drugs if you have a serious infection or a compromised immune system.

**PREVENTIONS**

-Wear breathable underwear: Cotton is your best choice. It doesn’t hold onto heat or moisture. It will help keep you dry.

-Keep things loose: Make sure your jeans, skirts, underwear, yoga pants, tights, pantyhose, etc. aren’t too snug. They can boost your body temperature and increase the amount of moisture around your private parts. That raises your chances for a yeast infection.

-Don’t douche: “Feminine hygiene products” like douches can disrupt the balance of bacteria in your vagina by removing some of the good bacteria that’s supposed to be there to fight off infections. And skip the scent in feminine products. This includes bubble baths, soaps, sprays, tampons, and pads.

-Avoid hot tubs and extra hot baths: Hot and damp are never your friends.

-Change out of wet clothes: Don't sit in a wet bathing suit after you go swimming or damp workout gear after the gym. Change into dry clothes right away.

-In the bathroom, always wipe from front to back.

-When on your period, change your tampons, pads, and panty liners often.

-Manage your diabetes: If you have it, be sure to keep an eye on your blood sugar levels and keep them under control.

-Use antibiotics only when you have to:You don’t need them for conditions like a cold, because they don’t do anything against a virus. If you don't have to, don't take them.

-Eat yogurt that contains active cultures to add to the good bacteria that help your body control yeast.

**REFERENCES**

1. Sardana.K. Clinical Approach To Fungal Infections. 2nd ed (HB2019). <https://www.atithibooks.com/product/clinical-approach-to-fungal-infections-2nd-edition-2018-by-sardana-k>

2. A book of Fungal infection Diagnosis and management fourth edition Malcolm D. Richardson David W. Warnock.

3. A book of Kabir Sardana, Khushbu Mahajan and P. Arora mrig.

4. Available from: https://www.webmd.com/skin-problems-and-treatments/guide/fungal-infections-skin#1.

5. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3103258/.

6. Available from: https://www.mayoclinic.org/diseases-conditions/jock-itch/symptoms-causes/syc-20353807#:~:text=Jock%20itch%20is%20caused%20by,hands%20or%20on%20a%20towel.

7. Available from: https://www.webmd.com/men/causes-and-prevent-jock-itch.

8. Available from: https://www.mayoclinic.org/diseases-conditions/ringworm-body/symptoms-causes/syc-20353780.

9. Available from: https://www.cdc.gov/fungal/diseases/ringworm/risk-prevention.html#:~:text=Don't%20walk%20barefoot%20in,with%20someone%20who%20has%20ringworm.

10. Available from: https://www.medicinenet.com/image-collection/types\_of\_ringworm\_picture/picture.htm.

11. Available from: https://www.medicalnewstoday.com/articles/151172#causes.

12. Available from: https://www.webmd.com/women/guide/10-ways-to-prevent-yeast-infections.