

RECLAIMING FREEDOM

Fungal Infections

Treatment & Prevention





RECLAIMING FREEDOM

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The Basics

This guide will cover the most common fungi we come into contact with in our environments, and how they affect our skin and gut. You will learn how to banish those pesky skin issues like athlete's foot, jock itch, and ringworm for good by getting to the root cause, and how to live in balance with nature both on the inside and out.

Did you know that yeasts, molds, and mushrooms are classified as fungi?

Most people don't really know what a fungus is or how to identify it. In fact, it's quite common to mistake a fungal infection for a rash or allergy.

Scientists have identified over 120,000 fungi species in the world, but they estimate that there could be 12 million species on Earth¹

Finding The Balance

Much like your unique microbiome, which has beneficial species and "bad" species; fungi can also be very beneficial or can be harmful and annoying depending on the species and type of relationship.

Did you know that over one billion people on this planet have dealt with annoying fungal infections on the skin, such as athlete's foot, jock itch, and thrush?²

...But not all fungi are "bad."

The Importance Of **Healthy Relationships**

Fungi are found all over this amazing planet and are critical to the environment in many ways by helping the ecosystem to provide medicine.

Some examples of "good" fungi include mushrooms, foods made from yeast, and even molds used to make cheeses. Fungi can also help to decompose organic material, which can be beneficial to your garden.³

Healthy Relationship Example: Saccharomyces species which is often used in brewing and bread making.

Opportunistic Unhealthy Relationships

Otherwise known as Parasitic Or Opportunistic. Opportunistic means that the fungal infection is looking for the perfect opportunity to come in when your guard is down.

Unhealthy Relationship Example: Dermatophytes, more specifically, Trichophyton species that causes athlete's foot, jock itch, and ringworm.

How does this happen? If your immune system is low from stress, if your diet is heavy on sugar and processed foods, if you have a pre-existing condition like diabetes, and so many other causative factors that let down your guard. FUNGAL INFECTIONS; TREATMENT & PREVENTION

The Beauty of Nature

Otherwise known as Symbiotic or Beneficial Relationships.

The most beautiful example of this mutually beneficial relationship exists in forests, between mushrooms and trees.⁴

Mushrooms in the forest form something called mycorrhiza, which is derived from the Greek words mukês for mushroom and rhiza for root meaning exactly that- mushroom root.⁵

This relationship provides...

Nutrient Exchange
 Protection From Pollutants
 Supports Stressful Situations
 Encourages Growth

At this point, you might be thinking... "What does the forest have to do with me and my skin issues?" Actually, it has a lot to do with it.

Your body has its own unique ecosystem with symbiotic relationships much like that in nature, and also when something becomes imbalanced an overgrowth can occur.

On the Outside

Did you know that your skin is home to many different microorganisms? ... and that's exactly what nature intended.

The number is huge and the diversity vast including bacteria, viruses, fungi and mites taking up residence on healthy skin.

In fact, many of these microorganisms are beneficial and even vital to protect you against an invasion of harmful organisms.⁶



Your Skin Microbiome

Your unique skin microbiome starts to form the second you enter this world. Studies have shown that a baby's skin starts to colonize with the surrounding environment immediately after birth.⁷ As you grow, develop, and change so does your microbiota, and it's affected by many factors.



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In the same way that some people prefer to live in mountainous regions and others prefer to live in more tropical areas; the residents on your skin have their preferences too.

Research has discovered that certain microbiota can be found on specific body locations or environments, including dry areas, moist areas, and sebaceous microenvironments.^{8 9 10}



When the microbiome of the skin becomes disrupted, fungal infections can occur causing an overgrowth of fungus and leading to conditions like athlete's foot, jock itch, ringworm, candida and tanning rash.

Athlete's Foot

Athlete's foot is the common name for tinea pedis. Athlete's foot is very contagious and can be easily spread from person to person or spread from one site of the body to other sites. Dermatophytes especially like to live in moist, warm areas of the body or the scalp. Symptoms include itching, burning, blisters, skin cracking, peeling, and thick, discolored crumbly toenails.



The Main Culprit:

Dermatophytes, more specifically, Trichophyton species

What Makes It Worse: Sweat, wearing closed-toe shoes for long periods of time, going barefoot in public places,

Why It's Annoying: It's very contagious, especially in locker rooms, yoga studios, and areas where people go barefoot.

Jock Itch

Jock itch is the common name for tinea cruris. It's actually caused by the same fungi as athlete's foot and ringworm, Trichophyton species. It typically causes roundish, flat patches on the skin that have a raised, scaly border and tend to be intensely itchy.



On light-colored skin, the patches tend to be red or pink. On skin of color, the patches are usually brown or gray. The center of a patch tends to be clear at first.

The Main Culprit:

Dermatophytes, more specifically, Trichophyton species

What Makes It Worse: Sweat, wearing tight pants or shorts, polyester underwear instead of breathable fabric like cotton.

Why It's Annoying: because just like the name implies, it can be intensely itchy in the groin area.

Ringworm

Ringworm is the common name for tinea corporis and again, it's caused by the same culprit as athlete's foot and jock itch—the Trichophyton species. People often get confused when they hear the name ringworm, but it is a fungal infection, there is no worm involved. Ringworm can appear anywhere on the body, although the chest, abdomen, back, buttocks, arms, and legs are the most typical. It characteristically appears as a scaly-ringedshaped area with sharply defined edges that are sometimes darker. These raised patches can be scaly, crusted, and even blister and ooze.

The Main Culprit:

Dermatophytes, more specifically, Trichophyton species

What Makes It Worse: Sweat, wearing tight clothing, living in a warm climate, and stress.

Why It's Annoying: It can be very itchy and spread to other areas of your body.

Skin Decoloration (Hypopigmentation)

Tanning rash is the common name for pityriasis versicolor or tinea versicolor. It's hypopigmentation of the skin from an overgrowth of a fungus from the Malassezia species. Studies have shown that the most prevalent fungus on your skin is actually the species Malassezia, found mainly on the scalp, on the back, and pelvis.^{11 12} Tanning rash is typically found on the arms, chest, neck, or back. It can cause dry, itchy, and scaly skin with areas of hypopigmentation.



The Main Culprit:

Malassezia

Think You Might Have It?

What Makes It Worse: Sweating, oily skin, hormone imbalances, warm and moist conditions.

Why It's Annoying: It's hard to hide it and going out in the sun makes it more visible.

Candidiasis

Tanning rash is the common name for pityriasis versicolor or tinea versicolor. It's a hypopigmentation of the skin from an overgrowth of a fungus from the Melassezia species. Studies have shown that the most prevalent fungus on your



skin is actually the species Malassezia, found mainly on the scalp, on the back, and pelvis.^{11 12}

Tanning rash is typically found on the arms, chest, neck, or back. It can cause dry, itchy, and scaly skin with areas of hypopigmentation.

The Main Culprit:

Candida albicans

What Makes It Worse: Sweating, stress, hot and humid environments, not showering after working out and a diet high in sugar.

Why It's Annoying: it can be intensely itchy and even lead to blisters or pustules.

Self Check

Did you know that if you go under a black light, it can help in the diagnosis of certain fungal infections?

Dermatologists often use something called a Wood's lamp, which is basically a handheld black light to help them diagnose certain fungal infections, including tanning rash and dandruff.¹³

If you do have an overgrowth of certain fungi, the light will glow and reveal any spots where there's an infection.

In normal conditions, the black light will look purple or violet on your skin but will not fluoresce.



Infectious organisms glowing under Wood's lamp illumination

On the Inside

J ust like how your skin has its own community of microorganisms, you also have your own personal gut microbiota. Your gut microbiome is just as unique as you are and consists of bacteria, fungi, and more that live with you in a beautiful and synergistic way, just like on your skin. It's estimated that over 1014 microorganisms are living inside your gastrointestinal tract right now! That's roughly 10 times more bacterial cells than the number of your own cells inside your body.¹⁴

This powerful relationship affects many aspects of our lives, including our mood, metabolism, and immune system.¹⁵ In fact, Scientists have discovered that this relationship has developed over thousands of years to form an intricate and mutually beneficial relationship.¹⁶

When your gut microbiome becomes out of balance, it puts you at risk for many ailments from gas and bloating to inflammatory bowel disease and many other conditions.

Science is linking gut dysbiosis with new conditions every day as research on this topic expands.¹⁷

Things that affect your gut microbiome:



The Skin-Gut Connection

Over 70 years ago, two dermatologists (Stokes and Pillsbury) had a theory that the gut and skin were connected and now science has finally caught up to their innovative discovery.¹⁸

Everything is connected, and recent studies have shown us that gastrointestinal disorders and gut dysbiosis are often accompanied with skin manifestations.¹⁹



Low Sugar Diet

Eating foods high in sugar can negatively affect you on the inside and outside. A diet that's high in sugar increases the abundance of certain bacteria species in the gut causing dysbiosis and leading to negative effects on the whole body.²⁰ One study revealed that a change in the gut microbiome composition can be detected in as little as 24 hours after changing foods.²¹

Did you know that the average American eats 17 teaspoons of sugar a day.¹²²

This equal to 57 pounds of sugar in one year. Yet, the American Heart Association (AHA) advises no more than 6 teaspoons of added sugar per day for women and 9 teaspoons for men.²³ The World Health Organization (WHO) recommends similar guidelines stating that ideally 5% of or less of an adult's total calories should come from added sugars.²⁴

Excessive sugar consumption has been linked to a variety of conditions including weight gain, gut dysbiosis, and diabetes, and emerging research is focused on how sugar consumption affects aging, cancer, and cognition.^{25 26 27}

Sneaky Ways To Hide the Sugar

The Sugar Science Institute at the University of California, San Francisco states that ...

Hidden sugars are types of sugar added to processed foods that most people do not recognize as sugar. They are "hidden" by packaging that markets products as healthy and wholesome.

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61 Different Ways To Say Sugar

We are all familiar with trigger words like high fructose corn syrup and cane sugar, but could you recognize these other words for sugar?

It has become a fine art in the food and beverage industry to market sugar in ways that the average consumer might not be aware of in order to trick them into thinking their product is a "healthier" alternative. In 2016 the U.S Food & Drug Administration began to require added sugar in addition to total sugar on all labels.^{28 29}

1. Agave nectar	21. Dextran	41. Maltose
2. Barbados sugar	22. Dextrose	42. Malt syrup
3. Barley malt syrup	23. Evaporated cane juice	43. Mannose
4. Beet sugar	24. Free-flowing brown sugars	44. Maple syrup
5. Brown sugar	25. Fructose	45. Molasses
6. Buttered syrup	26. Fruit juice	46. Muscovado sugar
7. Cane juice crystals	27. Fruit juice concentrate	47. Palm sugar
8. Cane juice/sugar	28. Galactose	48. Panocha
9. Caramel	29. Glucose	49. Powdered sugar
10. Carob syrup	30. Glucose solids	50. Raw sugar
11. Coconut sugar	31. Golden sugar	51. Refiner's syrup
12. Coconut palm sugar	32. Golden syrup	52. Rice syrup
13. Corn syrup/sweetener	33. Grape sugar	53. Sorbitol
14. Corn syrup solids	34. High-fructose corn syrup	54. Sorghum syrup
15. Confectioner's sugar	35. Honey	55. Sucrose
16. Carob syrup	36. Icing sugar	56. Sugar (granulated)
17. Castor sugar	37. Invert sugar	57. Sweet sorghum
18. Date sugar	38. Lactose	58. Syrup
19. Dehydrated cane juice	39. Maltodextrin	59. Treacle
20. Demerara sugar	40. Maltol	60. Turbinado sugar
		61. Yellow sugar

FUNGAL INFECTIONS; TREATMENT & PREVENTION

Gymnema

Banish Sugar Cravings

A little known yet powerful botanical called Gymnema (Gymnema sylvestre) can stop sugar cravings in its tracks. This potent medicinal shrub grows in India, Africa, and Australia and has been used in Ayurvedic medicine for thousands of years. Studies have shown that if consumed prior to eating sugary foods, it actually reduces the sweetness of foods and makes them less appealing.^{30 31 32} Specifically, the constituent called gymnemic acid has been shown to block sugar receptors on taste buds.

An interesting study revealed that the group of people who took Gynmnema extract before eating had a smaller appetite for sweet foods and limited their food intake compared to those who did not take the extract before eating.

Try a drop of the extract on your tongue, wait a couple of minutes and take a bite of something with sugar. You will quickly notice that it wasn't what you expected!

Healing Botanicals Spices & Mushrooms

The healing power of nature can be found everywhere, from simple walks in the forest, to listening to the sounds of water, and of course within the many healing properties of plants. The following plants have been shown to support immune health, balance the gut, and improve general wellness.

Mushrooms and Botanicals:

Turkey tail mushrooms have a lot of impressive medicinal qualities relating to immune health, but they also contain prebiotics that support gut health. A study revealed beneficial changes in the gut flora of healthy volunteers taking turkey tail extract over eight weeks.³³

Spices:

Culinary spices like rosemary, oregano, and thyme possess antimicrobial properties as well as antioxidants and other phytonutrients that support immune health. Add a hint of flavor to your next dish.

Essential oils:

We believe that the most powerful medicine comes from nature. We also believe that essential oils provide potent topical remedies for skin ailments. In fact, a little goes a long way. It takes roughly 116 plants to make one pound of lavender essential oil. Essential oils like tea tree oil and lavender can be used as a natural cleaning aid, in a bath, or infused into the air for aromatherapy.

Self Care Breathable Clothing

Loose-fitting breathable clothing made from natural fibers like cotton, bamboo, or hemp is critical for keeping the area dry and preventing reoccurrences. This includes your socks and underwear which cover the areas that are prone to fungal infections like jock itch and athlete's foot.

Foot Baths

This sacred practice dates back to ancient times and has been widely thought of as a therapeutic method to relax both the mind and body... it's also great for athlete's foot. You don't even need a bath to do it-just a large bowl and a few basic ingredients. Try this simple practice to unwind after a long day.

What you need:

A larga bowl filled with water
 Epson salt
 A few drops of essential oils

Keep it Dry

Keeping the area clean and dry is an important measure to take when trying to banish those pesky skin conditions for good. Try a plant-based powder on the sweat-prone area. Powders like arrowroot can help reduce the excess moisture in the area.

At the Gym

Bring a pair of sandals to wear in the locker room
Always have several pairs of breathable cotton socks just in case
Keep a clean towel on hand-don't reuse it
Take a shower directly after your workout
Spray your yoga mat with an essential oil spray after use

In the Home

It's estimated that the average person spends over 90% of their time indoors.³⁴ The home you live in has its own microbial diversity of bacteria, viruses, and fungi.

Studies have shown that factors including water leaks, air conditioning,the presence of pets, and city versus country living all affect the types of microbes found in the home. As with the body, different species of microbes found indoors prefer specific areas.

The Home Microbiome Project conducted by the University of Chicago and the U.S Department of Energy's Argonne National Laboratory performed a study to discover how much people affected the microbial community of their home and how their environment affected their own microbiome. The study found that people significantly affect the microbial communities in a house.³⁵

Another study that evaluated 22 households concluded that these items had the highest number of microorganisms.³⁶



For the maintenance of a healthy indoor environment, it's important to keep it clean, and we always advise you to use toxin-free cleaning products.



Indoor Mold Guide

A home is a sanctuary, a place to rejuvenate and rest, but sometimes mold can infiltrate, and you might not even know it has. Mold is a type of fungus that can be an important element of the outdoor ecosystem, but inside, it can negatively affect your health.³⁷ Mold can be found around areas of moisture like leaky pipes, roofs, and windows. Mold grows especially well on paper products, cardboard, ceiling tiles, and wood products. Mold can also grow in dust, paints, wallpaper, insulation, drywall, carpet, fabric, and upholstery.³⁸

Mold is more prevalent in certain regions within the United States and loves dark and damp areas inside your home.

The effects on health can be subtle to severe depending on many factors, including your age, strength of your immune system, how much of it you've been exposed to and for how long. The Center for Disease Control states: "Exposure to damp and moldy environments may cause a variety of health effects, or none at all. Some people are sensitive to molds. For these people, exposure to molds can lead to symptoms such as stuffy nose, wheezing, and red or itchy eyes, or skin. Some people, such as those with allergies to molds or with asthma, may have more intense reactions. Severe reactions may occur among workers exposed to large amounts of molds in occupational settings, such as farmers working around moldy hay. Severe reactions may include fever and shortness of breath."

Symptoms Can Include





What to look for

Do you smell a scent that's musty and earthy?

Check the areas that are dark and nearby a possible source of moisture

Look for walls and ceilings that could be warping, cracking, or peeling.

The Mold Test

Add a drop of bleach to the area and see what happens.



Does the area lighten?

Is the spot getting larger over time or is it staying the same?

What to Do

Protect Yourself: Bring in a specialist to remove the mold from your living environment or wear protective gear and masks to prevent additional exposure. The EPA recommends wearing a N-95 respirator to avoid breathing in the mold or mold spores.³⁹

Get Rid of Carpet: Avoid carpet in rooms like bathrooms, laundry rooms, and basements; or all together if possible.

Control Humidity: Ventilate areas that can develop a lot of moisture like cooking areas, bathrooms, and showers.

Move Fast: Fix water leaks immediately and have a specialist inspect for the presence of mold.

Remove the Cause

Just like in medicine, the most important element to address is the cause of the mold inside the living space so you can fix it for good rather than to continuously address symptoms.

Seal up cracks, holes, and gaps, use a dehumidifier, and continually check around your home to see if there's a buildup of condensation in certain areas.⁴⁰

Stress & Mind Body Support

The American Psychological Association states that 44% of Americans have reported that their stress levels have increased over the past 5 years.⁴¹ We all know that stress is directly linked to gut dysbiosis, skin flare ups, immune wellness, and mental health. Often, we overlook stress and anxiety and focus solely on physical health, yet stress can be linked to almost every ailment.

Remember to breathe:

Simply focusing on your breath and following the inhale to the exhale will help you to clear your mind and release tension.

Join a group:

Joining a group, even if it's virtual has been shown to reduce stress and anxiety levels.

Go for a walk:

Going for a walk either outside, or even around your home, will put you in a different state of mind and begin to relieve stress.

Sleep:

Getting enough sleep is critical for both mental health and immune health. Start bedtime rituals to improve your quality of sleep.

Practice mindful eating:

How often do you eat a meal in silence and focus on the taste? Turn off the tv, close your laptop, and savor each bite. This practice will refocus your energy on the moment.

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