CONDITION

Fungal nail infection

A fungal nail infection causes a fingernail or toenail to become thickened, discoloured, brittle, or damaged.

WHAT IT IS
Fungal infection affecting a fingernail or toenail

BODY SYSTEM
Skin, hair and nails

MAIN SYMPTOMS
Thickening, discoloration, crumbling, nail lifting

WHAT CAUSES IT
Dermatophyte fungi, yeasts, or moulds

HOW IT IS DIAGNOSED
Nail clippings or scrapings examined for fungus

MAIN TREATMENT
Antifungal nail medicine or tablets

CAN IT BE CURED?
Sometimes - treatment works, but recurrence is common

IS IT AN EMERGENCY?
Sometimes - if spreading redness or fever develops

LONG-TERM OUTLOOK
Often clears slowly but can return

Overview

A fungal nail infection happens when fungus grows in or beneath a fingernail or toenail. The medical name is onychomycosis . Toenails are affected more often than fingernails, especially the big toenail.

The infection can make a nail thick, yellow, white, brown, brittle, or crumbly. It may also cause the nail to lift away from the skin underneath. The changes usually develop slowly.

Fungal nail infection is not usually dangerous. However, a thick or misshapen nail can become uncomfortable in shoes, catch on clothing, or make walking and nail care difficult. Infection may also spread to nearby nails or skin.

Several other conditions can look similar, including nail injury, psoriasis, eczema, and changes

caused by ageing. For that reason, testing is often useful before starting a long course of treatment, especially antifungal tablets.

Symptoms

The infection may begin at the outer edge or side of a nail and gradually spread toward its base. Some infections first appear as white patches on the nail surface.

Possible changes include:

Fungal nail infection is often painless at first. Pain is more likely when a nail becomes very thick, presses against a shoe, or damages the surrounding skin.

You may also have athlete's foot, which is a fungal skin infection. It can cause peeling, cracking, itching, or soreness between the toes or on the soles.

A single dark streak is not a typical sign of nail fungus. Although a streak may have a harmless cause, a new or changing dark mark should be assessed, particularly if pigment extends onto the nearby skin.

- White, yellow, brown, or cloudy discoloration
- A thickened, rough, brittle, or crumbly nail
- Debris collecting beneath the nail
- Distortion or loss of the nail's normal shape
- Separation of the nail from the skin underneath
- Tenderness or pressure, especially inside shoes
- An unpleasant smell in some cases

Causes and risk factors

Most fungal nail infections are caused by dermatophytes , a group of fungi that feed on keratin, the tough protein in nails and skin. Yeasts and other moulds can also infect nails.

Fungi grow well in warm, damp places. They may reach a nail through a small crack in the nail or surrounding skin. Infection can spread from athlete's foot or through contaminated footwear, towels, nail tools, and damp shared surfaces.

Your risk may be higher if you:

Having one or more risk factors does not mean that a nail change is fungal. Injury and skin

conditions remain common alternatives.

- Have athlete's foot
- Wear footwear that keeps your feet hot and damp
- Regularly use communal showers, pools, or changing rooms
- Have damaged nails or repeated pressure from footwear
- Have difficulty keeping your feet clean and dry
- Are older, because nails grow more slowly and are more often damaged
- Have diabetes, poor circulation, psoriasis, or a weakened immune system
- Frequently have wet hands, which can contribute to some fingernail infections

Diagnosis

A healthcare professional will examine the affected nail and the surrounding skin. They may ask how quickly the change developed, whether it is painful, and whether you have athlete's foot, psoriasis, diabetes, circulation problems, or previous nail injuries.

Appearance alone cannot always confirm fungal infection. A sample may be taken by clipping the nail or scraping material from beneath it. The sample can be examined under a microscope, grown in a laboratory culture, or tested using other laboratory methods. Testing may also identify the type of fungus.

A negative result does not always rule out infection. The sample may not have contained enough fungus, particularly if it was taken from an unaffected part of the nail. Testing can sometimes be repeated when the clinical suspicion remains strong.

Confirming the diagnosis helps avoid months of unnecessary antifungal treatment. It is particularly important before tablets are considered because those medicines can have side effects and interactions.

Treatment and management

Treatment is not always essential. If the change is mild, painless, and not troubling you, monitoring and regular nail care may be reasonable. Treatment is more often considered when the infection is spreading, uncomfortable, affecting walking or daily activities, or creating added risk because of another health condition.

The main treatments are antifungal medicines applied to the nail and antifungal tablets taken

by mouth.

Topical treatments may come as a solution, lacquer, or similar nail medicine. They are generally used for limited infections that have not deeply affected the nail. Treatment has to continue for many months because the medicine must be used while a healthy nail grows. Thick nails can make it difficult for topical medicine to reach the fungus.

Antifungal tablets reach the nail through the bloodstream and are generally more effective for extensive toenail infection. They are not suitable for everyone. A prescriber will consider other medicines you take, your medical history, the likely fungus, and the possible benefits and harms. Blood tests may be needed with some oral treatments.

Do not take someone else's antifungal tablets or use leftover medicine. Antifungals like fluconazole or terbinafine can interact with other medicines, and different nail conditions need different treatment.

Other parts of management may include:

Ordinary antifungal skin creams do not usually penetrate the nail well enough to cure a nail infection. They may still be used for fungal infection on the surrounding skin.

Laser treatment is offered by some clinics, but evidence that it produces lasting clearance is limited. Removing part or all of a nail is occasionally considered for a severely damaged or painful nail. Removal alone does not necessarily eliminate the fungus.

- Carefully trimming and thinning a thick nail
- Professional nail care when you cannot safely reach the nail
- Treating athlete's foot at the same time
- Keeping footwear dry and allowing shoes to air
- Reducing repeated pressure on the affected toe

Complications

Most fungal nail infections remain limited to the nail. Possible problems include pain, difficulty wearing shoes, reduced mobility, and difficulty trimming a thick nail.

The surrounding skin can be injured by a sharp or distorted nail. Bacteria may then enter through broken skin and cause a skin infection. Signs include increasing redness, warmth, swelling, tenderness, or pus.

People with diabetes, poor circulation, reduced feeling in their feet, or a weakened immune system have a greater risk of foot wounds and complications. If this applies to you, avoid

cutting deeply into the nail or surrounding skin. Professional foot care may be safer.

Even after the fungus has been cleared, a nail may remain uneven because of earlier injury or permanent damage to the area where the nail grows.

Prevention

Fungal nail infections cannot always be prevented. Fungi are common in the environment, and previous nail damage or certain health conditions can make infection more likely. The infection can also return after successful treatment.

You can reduce exposure and limit the conditions in which fungi grow:

If one nail is infected, use a separate or cleaned tool before trimming unaffected nails.

- Wash your feet and dry carefully between the toes
- Change damp socks and rotate footwear so it can dry
- Wear well-fitting shoes with enough space around the toes
- Use sandals in communal showers and changing areas
- Do not share shoes, socks, towels, nail clippers, or nail files
- Clean nail tools after use and choose salons with safe hygiene practices
- Treat athlete's foot rather than allowing it to persist
- Trim nails straight across without cutting into the skin

Living with it and what to expect

Fungal nail infection usually changes slowly over months or years. It may remain limited to one nail, but it can spread to other nails or nearby skin. It does not usually clear quickly without treatment.

Improvement is also slow. Antifungal treatment stops or reduces fungal growth, but it cannot instantly repair the damaged part of the nail. A clearer nail should begin growing from the base. The old, discoloured section has to grow forward before it can be trimmed away.

Fingernails grow faster than toenails. A fingernail may take several months to replace itself, while a toenail often takes a year or longer. The nail may look unchanged early in treatment even when therapy is working.

Treatment does not work for everyone, and infection can return after apparent clearance.

Reinfection from athlete's foot, footwear, or shared nail equipment is possible. Continuing foot hygiene and treating fungal skin infection may lower this risk.

A persistent infection can still be managed. Keeping the nail shorter and thinner may reduce pressure and improve comfort. If nail care is difficult because of poor eyesight, limited movement, diabetes, poor circulation, or reduced sensation, arrange suitable professional help rather than trying to cut a very thick nail yourself.

When to get medical help

Arrange a routine appointment if:

Seek earlier medical advice for any foot or nail problem if you have diabetes, poor circulation, reduced feeling in your feet, or a weakened immune system.

Seek urgent medical help if the skin around the nail becomes increasingly red, hot, swollen, or painful, especially if there is pus, red streaking, or fever. These signs may indicate a bacterial skin infection rather than uncomplicated nail fungus.

Call emergency services if a rapidly spreading skin infection is accompanied by confusion, fainting, severe weakness, or difficulty breathing. Fungal nail infection by itself is not normally an emergency.

- A nail remains thickened, discoloured, or distorted
- The change is spreading to other nails
- The nail is painful or makes walking difficult
- Pharmacy treatment has not helped
- You are considering antifungal tablets
- You are unsure whether the change is fungal
- You develop a new or changing dark streak in a nail

Common questions

Is fungal nail infection contagious?

It can spread through fungal skin infection, contaminated nail tools, shared footwear, or damp communal surfaces. Direct spread between people is possible but is not inevitable. Avoid sharing personal nail-care items and treat athlete's foot promptly.

How long does fungal nail treatment take?

Treatment commonly lasts for months. Visible recovery takes longer because the damaged nail must grow out. A toenail may take a year or more to look clear, even after the fungus has been successfully treated.

Do I need antifungal tablets?

Not everyone does. A mild, limited infection may be managed with topical nail medicine or observation. Tablets may be considered for deeper, widespread, painful, or troublesome infection. Laboratory confirmation is often sought before oral treatment.

Can vinegar or tea tree oil cure nail fungus?

There is not enough reliable evidence that these home remedies cure fungal nail infection. They may also irritate the surrounding skin. Delaying assessment can allow a different nail condition to go unrecognised.

Can I cover an infected nail with cosmetic polish?

Cosmetic polish may hide discoloration, but it can make the nail harder to monitor. It may also need to be removed before applying an antifungal nail treatment. Follow the instructions supplied with the treatment.

Will the nail fall off or grow back?

A badly damaged nail can loosen or partly separate. A new nail usually grows from the base if the nail-forming tissue is intact, but growth is slow. Injury or another nail condition may affect its final appearance.

Sources

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