CONDITION

Nail fungus

Nail fungus is an infection that can make a fingernail or toenail thick, discoloured, brittle, or misshapen.

WHAT IT IS
Fungal infection that thickens or discolours nails

BODY SYSTEM
Skin, hair and nails

MAIN SYMPTOMS
Thickening, discolouration, crumbling, nail lifting

WHAT CAUSES IT
Infection by fungi, usually dermatophytes

HOW IT IS DIAGNOSED
Nail scrapings or clippings examined for fungus

MAIN TREATMENT
Topical or oral antifungal medicines

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

IS IT AN EMERGENCY?
Sometimes - rapidly spreading redness with fever

LONG-TERM OUTLOOK
Usually manageable, with slow clearing and possible recurrence

Overview

Nail fungus is a fungal infection of a fingernail or toenail. Its medical name is onychomycosis . It most often affects toenails, especially the big toenail.

The infection may begin at the edge or side of a nail. Over time, the nail can become yellow, white, brown, thick, brittle, or crumbly. It may also lift away from the skin underneath.

Nail fungus is usually not dangerous, but it rarely clears without treatment. Thick or misshapen nails can become uncomfortable in shoes and difficult to trim. The infection may spread to other nails or return after successful treatment.

Several conditions can look like nail fungus, including nail injury, psoriasis and, less often, changes caused by skin cancer. A nail sample can help confirm whether fungus is present

before treatment begins.

Symptoms

Nail fungus often develops slowly. Early changes may be easy to overlook, particularly if only one corner of a toenail is affected.

Possible signs include:

Some fungal infections cause shallow white patches on the nail surface rather than thickening underneath it.

Nail fungus does not always hurt. Pain is more likely when a thick nail presses against a shoe, cuts into nearby skin, or becomes damaged. Redness, warmth, swelling or pus around the nail may suggest an additional bacterial infection rather than uncomplicated nail fungus.

- White, yellow, brown or cloudy discolouration
- Thickening or a change in nail shape
- A brittle, crumbly or rough nail surface
- Debris building up beneath the nail
- The nail lifting away from the nail bed
- An unpleasant smell
- Tenderness or pressure when wearing shoes

Causes and risk factors

Nail fungus is caused by microscopic fungi. The most common are dermatophytes , which also cause athlete's foot and ringworm. Yeasts and other types of mould can sometimes infect nails as well.

Fungi grow well in warm, damp places. They can enter through tiny cracks in a nail or the surrounding skin. Athlete's foot may spread from the skin between your toes into a toenail.

Your chance of developing nail fungus may be higher if you:

Nail fungus can spread between people, but it is not usually highly contagious through brief everyday contact. Shared footwear, towels, nail tools and damp communal floors provide more opportunity for spread.

- Are older, because nails grow more slowly and are exposed to damage longer

- Have athlete's foot
- Sweat heavily or often have damp feet
- Wear closed shoes for long periods
- Walk barefoot in shared wet areas
- Have repeated nail injuries
- Have poor circulation in your feet
- Have diabetes
- Have psoriasis or another nail disorder
- Have a weakened immune system
- Share nail clippers or use tools that were not properly cleaned

Diagnosis

A healthcare professional will examine the affected nail and the surrounding skin. They may ask how long the changes have been present, whether the nail is painful, and whether you have athlete's foot, diabetes or circulation problems.

Appearance alone may not confirm nail fungus. Injury, eczema, psoriasis and other nail conditions can cause similar changes.

To test for fungus, a sample may be taken by scraping beneath the nail or clipping part of it. The sample can be examined under a microscope, grown in a laboratory culture, stained and examined in tissue, or tested using a method that detects fungal genetic material.

Tests are especially useful before oral treatment. They can prevent unnecessary exposure to medicine when the nail change has another cause. A negative result does not always rule out fungus, so testing may occasionally need to be repeated.

A new dark stripe, bleeding, a lump beneath the nail, or dark pigment spreading onto nearby skin needs a separate assessment. These changes should not be assumed to be fungal.

Treatment and management

Treatment is not always essential. A mildly affected nail that is not painful may be monitored, particularly when medicine would offer limited benefit or create additional risk. Treatment may be more worthwhile if the infection is spreading, causing discomfort, affecting walking or

creating problems alongside diabetes or poor circulation.

Antifungal treatment can clear the infection, but it cannot immediately repair the damaged nail. The treated nail must grow out and be replaced by healthy nail. Toenails grow much more slowly than fingernails.

Antifungal tablets

Oral antifungal medicines are generally more effective than topical treatments for extensive or thick nail infections. Treatment usually lasts for several weeks or months, depending on the medicine and which nails are affected.

These medicines are not suitable for everyone. They can interact with other medicines and may rarely affect the liver or cause other significant side effects. Before prescribing one, a healthcare professional may review your medical history, check your other medicines and arrange blood tests.

Contact the prescriber promptly if you develop concerning symptoms while taking an oral antifungal, such as yellow skin or eyes, dark urine, persistent nausea, marked tiredness, or a widespread rash.

Treatments applied to the nail

Antifungal like fluconazole or terbinafine solutions or lacquers may be considered when the infection is limited and has not reached deeply into the nail. They usually need regular application for many months.

Topical medicines have difficulty passing through a thick nail, so results can be modest. Following the product instructions carefully matters. Ordinary athlete's foot creams treat infected skin but do not usually penetrate the nail well enough to cure a nail infection.

Nail care and procedures

Keeping the nail short and gently filing thick areas can reduce pressure and may help a topical medicine reach the nail. Do not cut into painful skin or forcefully remove a nail.

A podiatrist or other trained professional can thin a very thick nail. Part or all of a nail is removed only in selected cases, such as severe pain or infection that has not responded to other care. Removal does not prevent fungus from returning as the nail grows back.

Laser and light treatments are offered by some clinics, but evidence that they produce lasting clearance is limited.

Complications

The most common problems are discomfort, difficulty cutting the nail and pressure from

footwear. A distorted nail may injure nearby skin or contribute to an ingrown toenail.

Fungus can spread to other nails or to the surrounding skin, causing athlete's foot. Even after treatment succeeds, the infection can return.

Cracked skin around an infected nail may allow bacteria to enter. This matters particularly if you have diabetes, poor circulation, reduced feeling in your feet or a weakened immune system. A bacterial skin infection can cause increasing pain, warmth, swelling, pus or spreading redness.

Do not try to cut away deeply infected nail tissue yourself if you have reduced foot sensation or poor circulation. A small injury may be difficult to notice and slow to heal.

Prevention

Nail fungus cannot always be prevented. Fungal organisms are common, and previous infection can make recurrence more likely.

You can reduce exposure and keep your feet less damp by:

Keep nails comfortably short, but do not cut into the corners or surrounding skin. If a nail is thick, soak it briefly and trim only what can be removed without pain.

- Washing your feet and drying carefully between the toes
- Changing damp socks and allowing shoes to dry
- Wearing sandals in communal showers, pools and changing rooms
- Avoiding shared shoes, socks, towels and nail tools
- Cleaning nail clippers and files after use
- Treating athlete's foot so it is less likely to reach a nail
- Choosing a nail salon that sterilises reusable instruments

Living with it and what to expect

Nail fungus tends to change slowly over months or years. Without treatment, it may remain limited to one nail, but it can also gradually involve more of the nail or spread to other nails.

Improvement is slow even when treatment kills the fungus. A healthy fingernail may take several months to replace damaged nail. A toenail commonly takes a year or longer to grow out fully. The old discoloured area does not become normal again; instead, clearer nail should gradually appear from the base.

Treatment does not work for everyone. Thick, extensively damaged nails, slow nail growth and poor circulation can make complete clearance harder. Recurrence is common because fungal spores may remain on the feet, in footwear or in the environment.

You can usually continue normal work, exercise and social activities. Comfortable, roomy shoes may reduce pressure. If appearance is a concern, cosmetic nail polish may cover the nail, but it may need to be removed when using a topical medicine or checking progress.

When to get medical help

Arrange routine medical advice if:

Seek prompt medical care for increasing redness, warmth, swelling, pus or pain around the nail. These can be signs of a bacterial infection.

Seek urgent or emergency help if redness is spreading quickly, especially with fever, chills, confusion or feeling very unwell. Nail fungus itself is not normally an emergency, but a rapidly spreading skin infection can require urgent treatment.

- You are unsure whether the nail change is fungal
- Several nails are affected
- The nail is painful, very thick or difficult to cut
- The condition is spreading or has not improved with self-care
- You are considering antifungal tablets
- You have diabetes, poor circulation, reduced foot sensation or weakened immunity
- A dark stripe, bleeding or lump has appeared without a clear injury

Common questions

Will nail fungus go away on its own?

It usually does not. A small affected area may remain stable for a time, but the infection can spread deeper into the nail or to other nails. The damaged part will not look normal until healthy nail grows in its place.

Is nail fungus contagious?

It can spread, although brief contact does not usually cause infection. Risk is greater through shared nail tools, shoes or towels, and through bare feet on damp communal floors. It can also spread between the skin and nails on the same foot.

Can an over-the-counter cream cure it?

Creams made for athlete's foot work well on infected skin but usually cannot pass through the nail plate. Nail solutions or lacquers designed for nail fungus may help limited infections, although treatment is long and results are less reliable than with oral medicine.

How long does nail fungus take to clear?

The fungus may be controlled before the nail looks better. Healthy nail has to grow from the base. Fingernails grow out faster, while a toenail may take a year or longer to look clear after successful treatment.

Do I need to have the nail removed?

Usually not. Medicines and regular nail care are more common approaches. Removal may be considered if a nail is severely painful, very thick, or has not responded to other treatment. A new nail can still become infected.

Can I wear nail polish?

Cosmetic polish can hide discolouration, but it may interfere with some medicated nail products and make changes harder to monitor. Follow the instructions for any topical treatment. Avoid sharing polish or nail tools, and stop using cosmetic products if the skin becomes irritated.

Sources

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