



Fungal Nail Infection

(Onychomycosis)

Patient Instruction Sheet

To prevent further infections with tinea pedis (athlete's foot), which may cause your nail infection to recur, we suggest you follow these instructions:

- Avoid going barefoot in public places such as gymnasiums, locker rooms, and other athletic facilities.
- Never wear someone else's shoes.
- When staying in hotels, never go without footwear, as fungal particles may be present in the carpeting and on bathroom floors.
- Use an antifungal powder or spray in your shoes at least once week.
- Old tennis shoes and well-worn shoes should be thrown away, as they may be heavily contaminated with fungal particles.
- Wear shoes that fit properly and are made of material such as leather that allow one's foot to "breathe".
- Wear socks made to wick away moisture from skin, such as running or hiking socks.
- If you see any signs of athlete's foot recurring, restart the cream we recommended as soon as possible. You might also consider an over-the-counter anti-fungal cream.
- Be sure other family members who may be infected are adequately treated.
- Keep your nails well trimmed and filed.
- Lysol spray to insole of shoe, let air dry 24 - 48 hours.

Vinegar Soaks - No dilution - soak 15 minutes daily - brush with tooth brush in one direction. Towel dry, no rinsing.

Bleach Soaks - 1 oz to 1 gallon of water. Soak for 15 minutes.

Mellalluca Oil - Brush top of nail with applicator once daily.

Tea Tree Oil - Brush top of nail with applicator once daily.

Vicks Vapor Rub - Apply to affected toenails daily.



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Onychomycosis

Overview

Onychomycosis is a fungal infection that causes fingernails or toenails to thicken, discolored, disfigure, and split. If the problem is caused by a bacterium, the condition is called paronychia.

The nails of people with onychomycosis are initially a cosmetic concern. Without treatment, however, the nails can become so thick that they press against the inside of the shoes, causing pressure, irritation, and pain.

Causes

The primary fungi that cause onychomycosis are *trichophyton rubrum* and *trichophyton mentagrophytes*. They are dermatophytes (fungi that infect hair, skin, and nails) and feed on keratinized nail tissue. The infections they cause are normally confined to the nails, but occasionally spread to the surrounding skin.

Another type of onychomycosis is caused by yeast (*candida albicans* or *candida parapsilosis*). The infections are less common and produce similar symptoms.

Paronychia infections are caused by bacteria such as *staphylococcus*, *streptococcus*, and *pseudomonas*. In most cases, paronychia infections can be differentiated from onychomycosis by the inflammation they cause to the skin adjacent to the nail.

Treatment

Onychomycosis is difficult to treat because nails grow slowly and receive very little blood supply. However, there have been recent advances in treatment options, including oral and topical medications. Oral antifungal medications usually are administered over a 3 month period and the two major brands available are Lamisil® and Sporanox®. These medications are fairly safe, with few contraindications, but they should not be taken by patients with liver disease. Before prescribing one of these medications, physicians often order a blood test to make sure the liver is functioning properly.

Topical treatment consists of a nail lacquer that is applied daily to affected nails. Penlac® is the only name brand, topical antifungal medication available. This medication does not have any contraindications, but it may irritate surrounding skin in rare cases.

Because nails grow very slowly, it typically takes 6 months to a year for the nail to regain a healthy, clear, thin appearance. However, onychomycosis is an ongoing fungal infection and patients with the condition should seek treatment.

Diabetic Complications

Patients with diabetes commonly develop onychomycosis because blood circulation is poor in the extremities, and the body's ability to fight infections is compromised. Small cuts, infections, and foot injuries can have serious consequences for diabetics. Recent studies have shown a higher rate of amputation in diabetics with onychomycosis compared to those without the infection. It is important to inspect the feet closely each day and work with a physician on a program of thorough foot care.