

Onychomycosis Diagnosis and Long-term Treatment



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Onychomycosis, the most common nail disorder seen in clinical practice, is a fungal infection of the nail caused by dermatophytes, nondermatophytes, and yeasts. Onychomycosis may cause pain, secondary infection, and ulceration and have a negative effect on quality of life by impairing employment and social interactions. Herein, tools for treating onychomycosis and encouraging patient compliance with a long treatment course are provided.

What does your patient need to know at the first visit?

Risk factors for onychomycosis include prior trauma, history of tinea pedis, sports activities, frequenting gyms and pools, hyperhidrosis, advancing age, diabetes mellitus, immunosuppression, smoking, and family history of onychomycosis. Toenails are involved more frequently than fingernails, and typical physical examination findings are distal and lateral nail plate onycholysis with subungual hyperkeratosis. In more severe cases, there may be nail plate thickening, crumbling, yellowing, and involvement of the nail matrix.

Because other nail conditions may resemble onychomycosis, it is imperative to confirm the diagnosis using histopathology, direct microscopy, fungal culture, and/or polymerase chain reaction on nail plate clippings or subungual debris.

What are your go-to treatments? What are the side effects?

After laboratory confirmation, assess the patient for the severity of the infection based on the surface area of nail plate affected, nail plate thickness, involvement of the nail matrix, and number of nails affected. United States Food and Drug Administration–approved oral and topical antifungals are used first line for the treatment of onychomycosis. Devices such as lasers are approved by the US Food and Drug Administration for temporary cosmetic improvement in the appearance of the nail without eradicating the fungus.

Oral antifungals such as terbinafine, itraconazole, and fluconazole (off label) are indicated for patients with severe disease. Patients with mild to moderate disease may benefit from oral or topical antifungals such as efinaconazole, tavaborole, or ciclopirox.

Resources for Patients

Accurate diagnosis should be first step in treating nail fungus
<https://www.aad.org/media/news-releases/nail-fungus>

Nail fungus
<https://www.aad.org/public/diseases/contagious-skin-diseases/nail-fungus>

I recommend terbinafine to many of my patients due to its high complete and mycological cure rates, short list of drug-drug interactions, and low incidence of side effects. Adverse reactions are uncommon, with the most common being gastrointestinal upset. While liver injury has been reported, it is exceedingly rare. Itraconazole has many important drug interactions and is contraindicated in patients with congestive heart failure. With topical antifungals, side effects are uncommon, but dermatitis, ingrown nails, and vesicles may occur.

How do you keep patients compliant with treatment?

Patients on a 3-month course of daily oral terbinafine or itraconazole for toenail onychomycosis are typically highly compliant. Compliance for patients on oral fluconazole (off label) is generally more challenging because it is dosed weekly until the nail grows out (1–1.5 years for toenails). To circumvent missed fluconazole doses, I recommend that the patient schedule quarterly visits with me and also to set a cell phone alarm as a weekly reminder to take the medication.

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Because topical medications are prescribed for the toenails for a year-long course (with avoidance of nail polish during this period), I prescribe topical antifungals only to highly motivated patients. In addition, because topical antifungals are retained in the nail plate for at least several days after a month-long application, I tell my patients that if they have a big event to attend that they can take a vacation from the topical antifungal, get a pedicure, and then resume treatment after the event.

What do you do if they refuse treatment?

In 2018, we have many options to treat onychomycosis effectively, and therapy is individualized based on the patient's severity of disease, infecting organism(s), comorbidities, concomitant medications, and preferences. If the patient's fungal nail infection is asymptomatic and not aesthetically bothersome, he/she may opt for observation rather than treatment. If the decision is observation, I recommend use of a topical antifungal on the feet and web spaces to prevent worsening of onychomycosis.

SUGGESTED READINGS

- Gupta AK, Versteeg SG. A critical review of improvement rates for laser therapy used to treat toenail onychomycosis. *J Eur Acad Dermatol Venereol*. 2017;31:1111-1118.
- Lipner SR, Scher RK. Long-standing onychodystrophy in a young woman. *JAMA*. 2016;316:1915-1916.
- Lipner SR, Scher RK. Onychomycosis—a small step for quality of care. *Curr Med Res Opin*. 2016;32:865-867.
- Lipner SR, Scher RK. Onychomycosis: current and investigational therapies. *Cutis*. 2014;94:E21-E24.