What is nail fungus/onychomycosis?
Nail fungus, or onychomycosis (on′i-kō-mi-kō′sis), is a fungal infection that can occur in fingernails or toenails. Although onychomycosis is hard to treat and can spread to other nails, typically it causes just nail discoloration and/or a change in the shape of the affected nail.

Do I need a prescription medication to cure nail fungus?
Most cases of onychomycosis are mild and can be treated with over-the-counter (nonprescription) antifungal nail creams or ointments, combined with regular home-care. Because nail fungus typically does not cause health problems, many people decide against using any medication.

Severe onychomycosis, although rare, can be painful and cause serious issues without proper treatment—especially for people with diabetes or suppressed immune systems. Your doctor can determine if you have a severe nail infection, and may suggest a prescription medication as the best option for your condition.

What are my prescription options for nail fungus?
There are oral and topical prescription antifungals available to treat onychomycosis (see Table 1). Oral medications are prescribed more often because they can work faster, are easier to use, and are much less costly. Topical prescription antifungals have to be applied daily for almost a full year, and treatment can cost as much as 3,000% more than generic oral antifungals.

Which prescription antifungals work best?
Based on studies submitted to the US Food and Drug Administration (FDA), effectiveness of prescription antifungals varies greatly. All percentages show effectiveness compared to placebos (eg, sugar pills or a nonmedicated solution), and not to other antifungal products:

- Terbinafine (Lamisil) is shown to eliminate nail fungus for 50 of 100 patients—about 50%
- Itraconazole (Sporanox) and fluconazole (Diflucan) cure around 40 out of 100 patients—or 40%
- Efinaconazole (Jublia) cures nail fungus for approximately 12 out of 100 patients—or 12%
- Ciclopirox (Penlac) is shown to be effective for seven out of every 100 patients—about 7%
- Tavaborole (Kerydin) cures nail fungus for approximately seven out of 100 patients—or 7%

It is important to know that nail fungus remains or returns in at least half of all patients who receive treatment with any medication.

### Table 1. Prescription Medications for Onychomycosis

<table>
<thead>
<tr>
<th>Product</th>
<th>Formulation</th>
<th>Course of Therapy</th>
<th>Price/Course</th>
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<tbody>
<tr>
<td>Preferred Medications</td>
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<tr>
<td>ciclopirox (generic Penlac®)</td>
<td>Topical nail lacquer</td>
<td>Once daily x 48 weeks</td>
<td>$75</td>
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<tr>
<td>fluconazole (generic Diflucan®)</td>
<td>Oral tablet</td>
<td>Once weekly x 6 months</td>
<td>$70</td>
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<tr>
<td>itraconazole (generic Sporanox®)</td>
<td>Oral capsule</td>
<td>Once daily x 12 weeks</td>
<td>$650</td>
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<tr>
<td></td>
<td></td>
<td>Twice daily x 1 week/ month x 3 months</td>
<td>$325</td>
</tr>
<tr>
<td>terbinafine (generic Lamisil®)</td>
<td>Oral tablet</td>
<td>Once daily x 12 weeks</td>
<td>$70</td>
</tr>
<tr>
<td>Nonpreferred Medications</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>efinaconazole (Jublia®)</td>
<td>Topical solution</td>
<td>Once daily x 48 weeks</td>
<td>$3,230</td>
</tr>
<tr>
<td>tavaborole (Kerydin®)</td>
<td>Topical solution</td>
<td>Once daily x 48 weeks</td>
<td>$3,230</td>
</tr>
</tbody>
</table>

*Average cost per course of therapy based on AWP in Medi Span as of 10/15/2014. *Conservative estimation per course of treatment for one large toe, based on individual medication prescribing information: 13.2 ml (2 bottles) of ciclopirox; 24 ml (6 bottles) of efinaconazole (Jublia); and 24 ml (6 bottles) of tavaborole (Kerydin).
How long do treatments take to work?
Length of treatment depends on the type of medication. Oral antifungals can work in as little as three months, while topical medications can take nearly a year to fully cure onychomycosis. Most people do not see a real difference until a new, uninfected nail fully replaces the old nail, which can take several months.

Are there side effects with these medications?
The most common side effects from antifungal medications are skin irritation, such as redness or a rash. Oral antifungals may cause liver problems for a small number of people, and are not recommended for patients with liver disease or those using certain medications.

Can nail fungus come back?
Even if medication is successful, infections can return in people whose nails are exposed to warm, damp environments for long periods. Table 2 lists nail care steps that can help prevent infection or re-infection.

Table 2. Steps to Help Prevent or Cure Nail Fungus Infections

- Limit nail exposure to warm, damp environments
- Use waterproof gloves or footwear when working in and around water
- Allow insides of gloves and footwear to dry thoroughly between uses
- Wear breathable footwear and clean, moisture-wicking socks in warm weather
- Change shoes or boots daily; replace old, worn footwear
- Wear pool or shower sandals in public facilities
- Keep nails trimmed, clean, and dry
- Take care of skin or nail injuries

The Bottom Line
- Preventive care can help you avoid getting a fungal nail infection (onychomycosis).
- Mild nail infections are often treatable using over-the-counter medications and at-home care.
- Antifungals must be used daily. Treatment periods range from 12 weeks for oral medications, to 48 weeks for topical medications.
- If prescription medication is needed, oral antifungals such as terbinafine (Lamisil) offer the most effective cure at the lowest cost.