TOENAIL FUNGUS

What is Toenail Fungus?
Onychomycosis (toenail fungus) is an infection of the nail and sometimes surrounding tissue. It is extremely common with 20% of the general population and 75% of individuals over 60 years old affected. Frequently the problem causes cosmetic concerns, but many patients also experience pain, and infrequently toenail fungus can allow more serious infections to occur.

Symptoms and Clinical Presentation
Most patients note yellowing and thickening of the nail. With time the nail may become brittle with jagged edges, deformed, or detach from the nail bed.

Cause (including risk factors)
Multiple fungi species can infect the nail. Fungus grows well in warm, moist environments such as showers. Prevalence among the general population is high, but risk factors for developing toenail fungus include increasing age, being male, or having certain medical conditions such as diabetes or vascular insufficiency and malnutrition.

Anatomy
N/A

Diagnosis
Diagnosis is made based on clinical exam, and can be confirmed by viewing scrapings of the nail under a microscope, or growing the fungus in a culture medium.

Treatment Options
Local and systemic treatment options are available, and should be sought from your healthcare provider. Individuals should recognize that continued exposure to an environment conducive to growth of fungus (a warm, moist environment such as in a shoe) is likely to lead to recurrence of the infection.

- Debridement of the nail can be performed to relieve pain without directly treating the fungus.
- Home remedies such as vinegar or Vicks® Vapo®Rub have not been well studied.
- Local treatment with a brush on solution of cyclopiox (Penlac) has limited effectiveness when used alone, but may be used in combination with oral medications or subsequent to removal of the nail as a new nail is growing.
- Removal of the nail can reduce symptoms rapidly, but regrowth of the nail can take one year during which time local treatment for fungus can be performed.
- Oral medications include terbinafine (Lamisil), itraconazole (Sporanox), and griseofulvin (Fulvicin). Treatment regimens vary and can last between six weeks and one year. Side effects of systemic treatment include gastrointestinal disorders, liver toxicity, skin rash and other hypersensitivities. These medications should not be taken during pregnancy or if there is a chance you will become pregnant because of effects on the fetus.

Prevention
Good foot hygiene with frequent changing of stockings, and rotating pairs of shoes to allow shoes to completely dry between uses is suggested.
Complications
More significant infection is uncommon, but in patients with a compromised immune system the thickened nail can be an entry site for bacterial infection that may become limb threatening.

Additional Resources
Mayo clinic: www.mayoclinic.com/health-information