

# *Beautiful Nails Again*

## **Information Booklet**

**myFootDr<sup>®</sup>**  
podiatry centres

Call 1800 FOOTDR or visit [www.myfootdr.com.au](http://www.myfootdr.com.au)

### About this book

This information booklet has been developed to assist the community to understand and better manage fungal toenails. It bridges the gap of information supplied by manufacturers of pharmaceuticals and the academic research in this area, helping to demystify the condition and the variety of treatment options available. Furthermore, the advice within is the combined wisdom of decades of experience within the podiatry industry. It is written in easy to understand language and backed with research facts and figures where possible.

### Need more information?

If you are concerned with the health of your feet or nails, book an appointment with one of our Podiatrists today.

Call 1800 FOOTDR or book online from [www.myfootdr.com.au](http://www.myfootdr.com.au).



**“Thanks to the my FootDr  
Clinical Advisory Board with  
assistance in developing the  
content of Beautiful Nails Again!”**

**—Darren Stewart, CEO**

# Welcome to *beautiful nails again*

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Our nails serve as an important extension and protective layer for our fingers and toes.

Nails serve many functions despite their evolutionary purpose as protection from climbing, digging and gripping becoming less relevant. Nails are also considered an element of beauty, worthy of regular pampering with filing, preparing and painting.

Nails protect the end of each toe and finger by providing a resilient and flexible armour to trauma, whether that be kicking a hard surface, repetitive rubbing from footwear or from the blunt impact of a falling object.

Although not bullet proof, they do protect us from injury more than skin alone can. Interestingly, toenails also act as a counterforce against the pulp of the toe, so when the toe touches the ground or object, it enhances the sensitivity of touch and aids us in reacting to movement and assists with balance.

## **Common Nail Problems**

Statistically, most of us will develop an issue with our toenails over our lifetime. They are kicked, squeezed, stood on, picked at, painted, and then repainted – and all this often in the same week! Our toenails can also tell us a lot about our general health, with some diseases altering the appearance

such as changes in colour, shape or development of ridges. Some conditions such as psoriasis and dermatitis are commonly seen in the nail plate. As we age, blood supply to our nails reduces and their growth rate slows, increasing the exposure to infections and taking injuries a lot longer to heal.

Most problems are treatable, so the sooner they are assessed and diagnosed the better. If you have concerns about the shape, colour or any other change in your nails, please see your Podiatrist as soon as possible.

**We look forward to helping you have beautiful, healthy nails again!  
The team at my FootDr.**

# What are fungal nails?

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**Fungal Nails (or in medical terminology, Onychomycosis) is a common condition that can affect both the fingernails and toenails, but is more often seen in toenails.**

There are a few good reasons for this. Firstly, fungus thrives in the warm, dark environment created by closed in footwear. Plus, our toenails grow much slower and are exposed to repetitive micro-trauma from gripping and rubbing on footwear.

Fungal infections come from the same germs that cause tinea of the skin. The fungi (or dermatophytes) are parasites that feed off the nail (made up of the protein keratin). The process isn't dissimilar to the way termites can invade timber in a home. The infestation of fungi in the nail eventually weakens the nail and causes it to split and become brittle.

Fungal nails can appear white, yellowish or various shades of brown and can have a slight odour.

A fungal nail will not typically cause great harm, but cosmetically it does look unsightly and, the infection can spread quickly to other nails and your skin. It can lead to other nail pathologies including ingrowing nails and secondary bacterial infections. Many ladies will try to cover their fungal nails with polish, which is one of the worst things to do, as it creates an even better environment for the fungus to continue to grow.

## **Occurrence**

You are not alone. Many Australians have fungal toenails with up to 10% of us suffering with it. However, the chances of acquiring a fungal nail rises sharply with age, with 50% of people 50 years and older have one or more nails infected. As we age, our nails become more porous and this leaves them less resistant to infection.

## **Causes**

Fungus is present grow on everyone's skin and feet. Fungal spores also build up in everyone's shoes, even open sandals. If a person's nails are weakened they can be at increased risk of infection. Trauma to the nail, even the repeat use of nail polish remover or rubbing from footwear can result in an infection. For an infection to flourish, fungus loves an environment that has moisture, warmth, darkness and a ready supply of food. Under a toenail is the perfect home for fungus to thrive!

People can get infections due to their occupational footwear, activities or excessive perspiration (sweating). Thickened, damaged or very curved nails can also contribute. Sometimes there is no obvious cause, which demonstrates that fungus can survive and flourish even in an otherwise healthy and clean toenail.





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The golden rule that prevention is better than a cure is especially true for fungal infections.

# How to prevent infection

**Good foot health habits should start in childhood. Here's a few basics that you can do everyday.**

Regular and careful nail trimming helps to promote strong and resilient nails. Clean, absorbent socks or hosiery should always be worn, and shoes that are smelly and dirty should be cleaned often or disposed of. If your feet sweat a lot, get advice from your podiatrists on ways to manage this.

It is important to limit the use of nail polish and other solvents on the nails. In the same way that solvents damage your hair, they weaken your nails as well. Regularly applying cuticle creams is a good way to promote good nail health.

Minimising the fungal burden on your feet is helpful. You can apply topical antifungals, maintain good foot hygiene and dry feet well after bathing.

Treat fungal skin infections as soon as they occur and regularly clean and sanitise the inside of your shoes.

See your podiatrist about nails that are curved, hollow underneath or thickened.



# What do fungal nails look like?

## Stage 1: White Superficial Onychomycosis (WSO)



Mild fungal infection of the nail plate. Delineated 'white islands' or streaks on the surface of the nail. Nail becomes rough, friable and brittle with cross infection of the skin and adjacent nails.

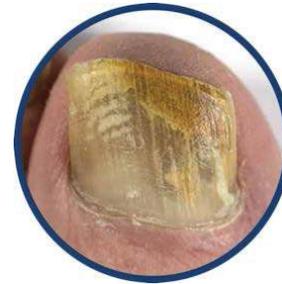
It is best to treat the infection at this stage before it takes hold.

## Stage 2: Distal Subungual Onychomycosis (DSO)



Dermatophytes invade and penetrate the nail plate and infect under the surface of the nail and the nail bed itself. The nail appears lifted and opaque with yellow to brown colour changes. Thickening and pain may be experienced.

## Stage 3: Complete Subungual Onychomycosis (CSO)

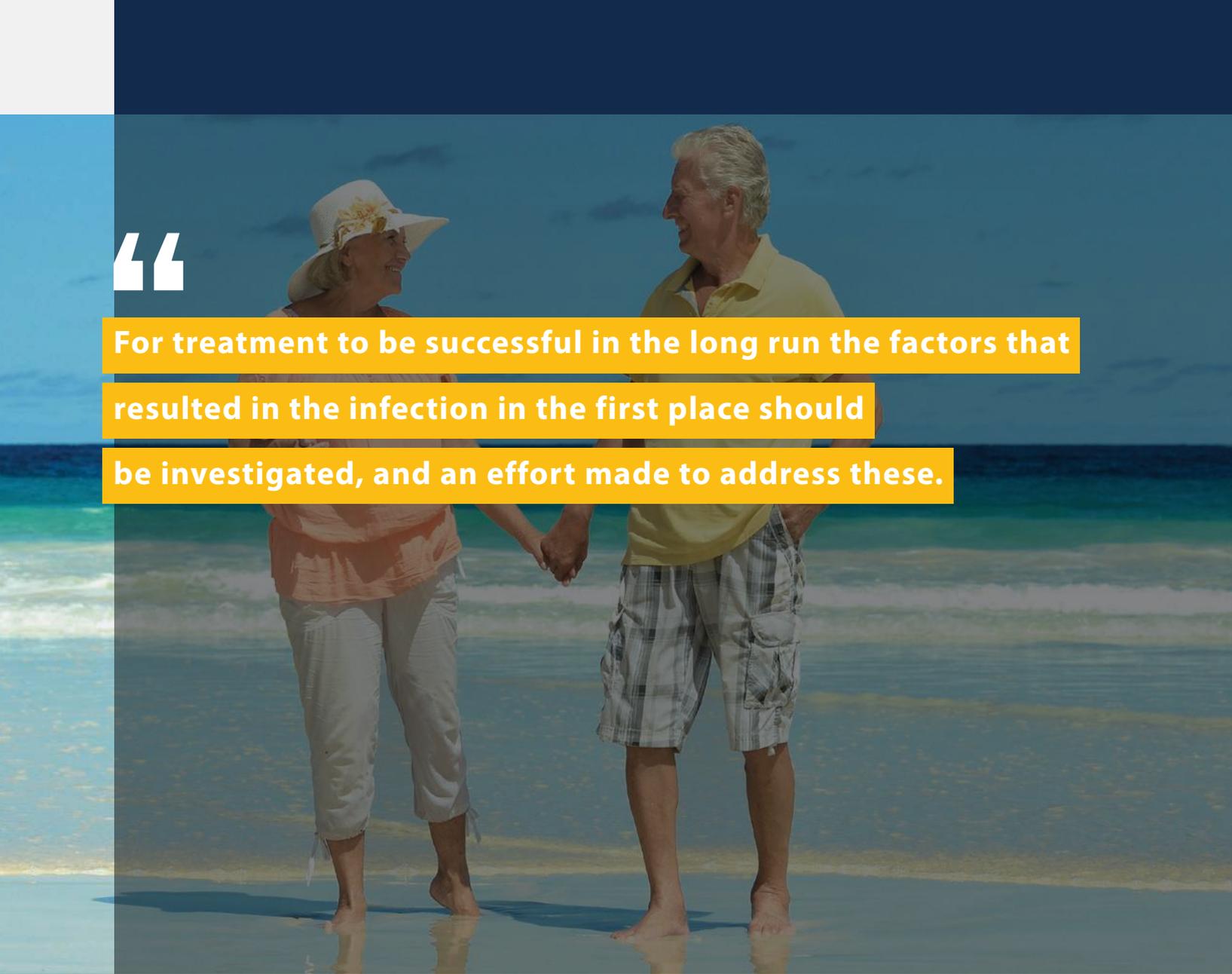


Complete invasion and penetration of the nail plate, under surface of the nail and the nail bed itself. Nail appears lifted and detached with yellow, green to brown colour changes. Localised thickening is often present and pain can be experienced. Infection of adjacent nails is likely.

## Stage 4: Total Dystrophic Onychomycosis (TDO)



Infection results in damage to the nail, causing a distinctly fibrous, crumbling and thickened nail. Nail appears thickened and friable with yellow, green to brown colour changes. Nail appears to grow very slowly or not at all. Infection often present in several nails.

A photograph of an elderly couple walking on a beach, holding hands and smiling. The woman is wearing a white hat and a light-colored top, and the man is wearing a light-colored polo shirt and shorts. The background shows the ocean and a clear sky.

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**For treatment to be successful in the long run the factors that resulted in the infection in the first place should be investigated, and an effort made to address these.**

### **What can you do?**

All treatments have their strengths and weaknesses, and in over 25 years of treating people with fungal nails, we have realised that not one solution works every time.

Killing the fungus can sometimes be the easy part, preventing it coming straight back is the challenge!

In more stubborn cases, patients will use a combination of treatments at once to provide them with the best chance of beating their infection.

# What's the best course of treatment?

**Fungal nail effects 20% of people over 30. Don't waste time with paint-on treatments. Treat fungal nails once and for all with our revolutionary laser treatment.**

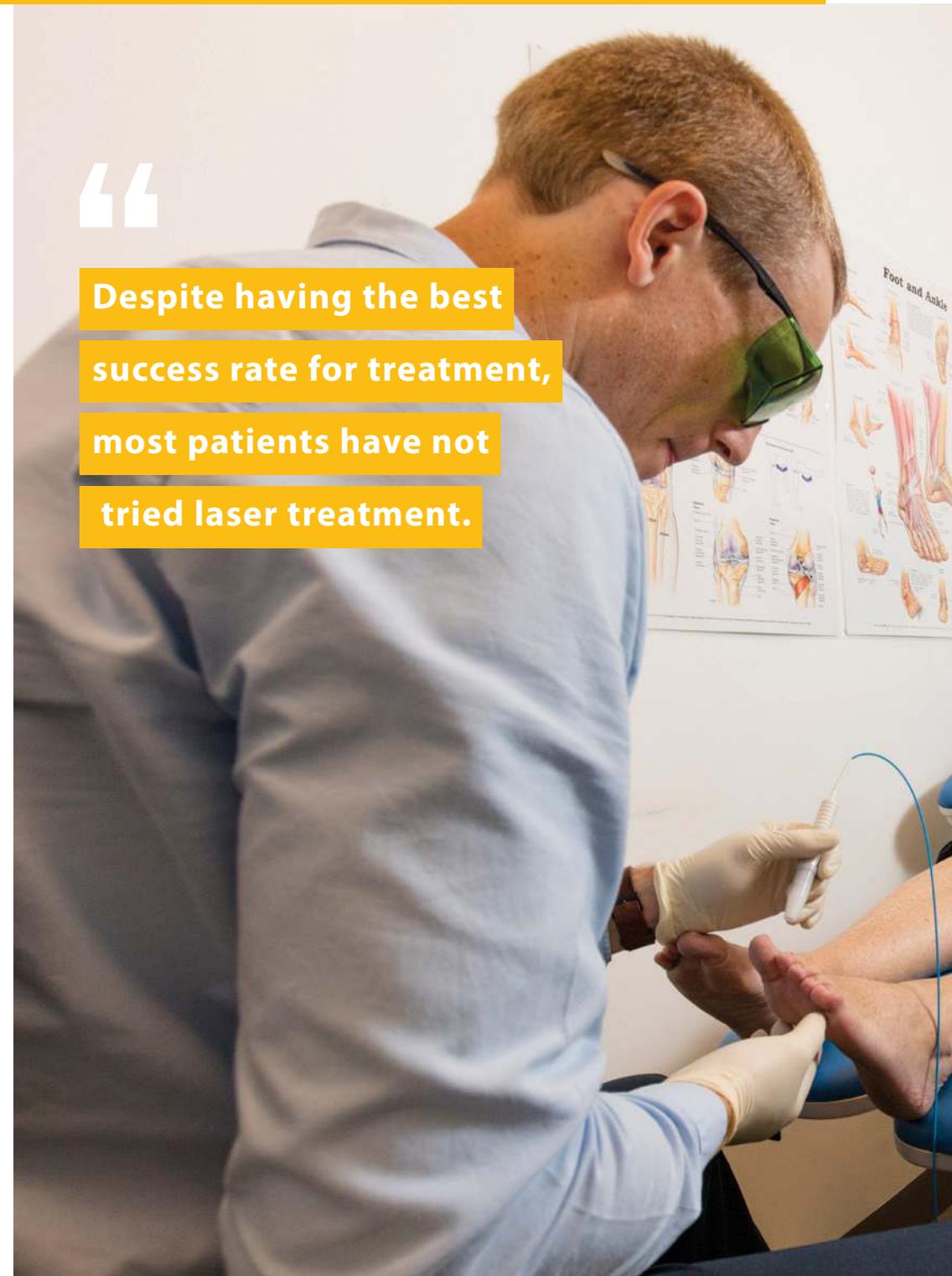
## **Why laser treatment**

Fungal nail laser treatment easily penetrates the nail and generates heat at the site of infection beneath the nail plate.

The fungal cells are destroyed before your healthy cells are damaged meaning laser therapy is pain free. All you will feel is a warm sensation on the nail and nail bed.



**Despite having the best success rate for treatment, most patients have not tried laser treatment.**



# Success Rates



50%

ORAL MEDICATION



10%

PAINT ON TREATMENT



1%

NO TREATMENT



80%

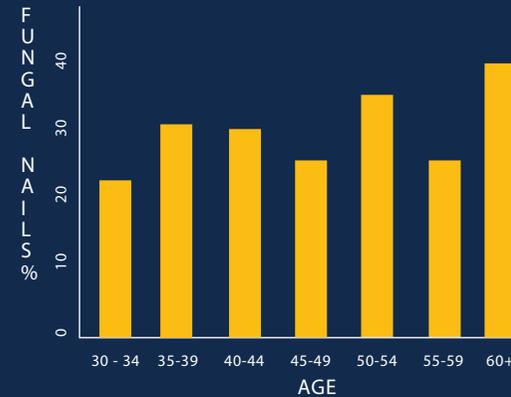
LASER

# Who gets fungal nails?



**1 in 5**

people over the age of 30 experience fungal nail infections in their lifetime. This increases with age.



## Infection Rate

Fungal nail effects people of all ages and genders.

# Treatment options

Fungal nail can be hard to treat, so it's important that you see a professional. There are a number of treatment options available and each treatment varies in price and success rates.



## Topical Preparations

A medicated nail lacquer is applied to the nails daily for a long period. There are no side effects, although you must take care to avoid application to the adjacent skin as this can cause irritation. Application of topical agents is quite a laborious task.

**The success rate is approximately 10%.**



## Oral Medications

A medication is taken orally, generally for 6-12 weeks as live toxicity can occur with prolonged use. To have these medications covered under the pharmaceutical benefits scheme, a study of your nail cuttings is required to confirm that a dermatophyte or yeast infection is present. Some of the side effects include upset stomach, headaches, nausea and muscle pain.

**The success rate is approximately 50%.**



## Alternative Treatments

There are a number of alternative treatments to fungal nails such as vapour rub.

There is no research to support the success of these treatments options.

Alternative treatments are not recommended by podiatrists.

**The success rate is approximately 1%.**

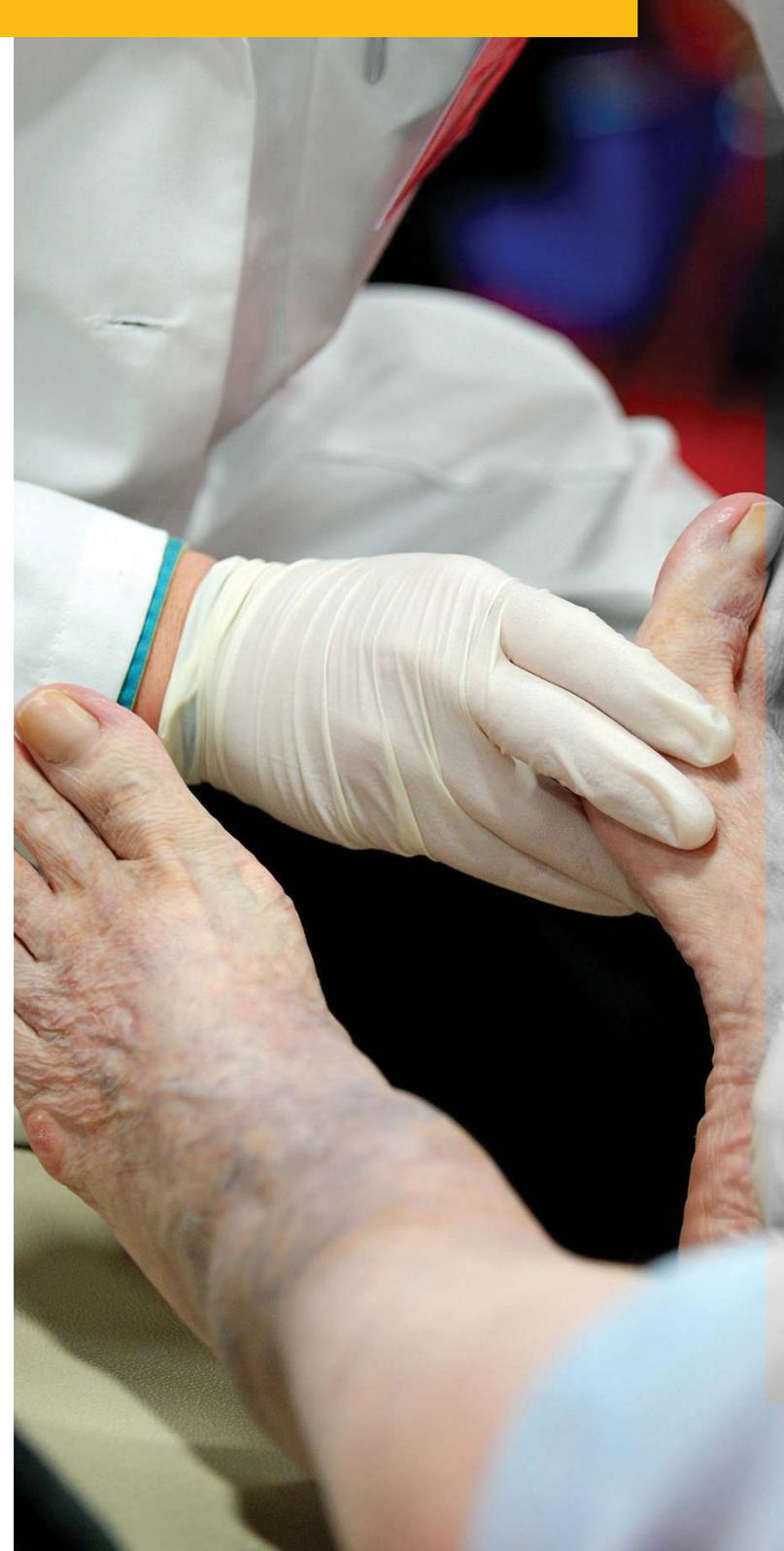


## Laser therapy

This is a major advancement in the treatment of onychomycosis.

The laser light is used to penetrate the skin and nail plate to destroy the fungus without damaging the nail or skin itself. The procedure is generally painfree and there are no side effects.

**The success rate is approximately 80%.**



# Topical Preparations

**Topical preparations are a chemical solution applied directly to the nail, and is often chosen by those suffering from fungal nails as a convenient initial treatment. There are many various products available from both the podiatrist and pharmacists.**

Topical antifungal agents are applied to the surface of the nail to treat fungal infections and are designed to kill or inactivate fungi and yeast. They work by penetrating the nail to get to the site of infection. They attempt to eradicate the fungus and their spores through an active ingredient that has a broad spectrum of activity to kill the fungus. Like any treatment there are benefits and downfalls. As each product uses a different active ingredient what may work for one type of nail fungal infection may very well not work for another.

Despite being a common treatment option, topical preparation has been found to not be consistently effective. The products don't penetrate the nail well and therefore can't reach the nail bed where the infection can thrive. Frequently, people try multiple topical preparations over the course of 12-24 months before becoming disheartened.

Generally, the process is that a patient applies a solution to the top of the nail every day or every week until the toenail is clear, which can take up to 12 months or longer.

#### **The benefits of topical preparations:**

1. Cost effective
2. Readily accessible
3. Painless
4. Can be performed at home
5. No real side effects

#### **Associated problems:**

1. Insufficient nail plate penetration.
2. Daily application
3. Long duration of treatment (minimum 26 weeks) is required
4. Low patient compliance
5. Success rate of 8-10%
6. Difficulty in application for those who struggle to reach their feet
7. Can't be used during pregnancy/breast feeding
8. Can only be used on cases involving less than half of the nail plate



# Oral Medications

**There are several medications that can be prescribed by your General Practitioner to treat fungal nails. Antifungal agents, also known as antimycotics, kill or inactivate fungi. This treatment is generally considered more effective than topical preparations for treatment of moderate to severe forms of onychomycosis.**

There are some limitations and risks of oral antifungal medications that are well documented. First, treatment of the body's most distant region – the toes – with an oral antifungal medication is often greeted with non-response or high rate of recurrence due to limited drug bioavailability (the active medicine getting to the source) routinely caused by insufficient blood flow.

Another issue is that it can cause side effects. In many cases your GP may not prescribe this medication without first taking bloods to check your liver function. Sometimes monthly liver function tests are advised, particularly in those that are taking statin medications to manage high cholesterol.

Before prescribing oral antifungal medication, your GP will send a nail cutting away for pathology testing. A positive nail culture and microscopy is normally obtained prior to prescription. This can be problematic, as often this test returns false negative results. This means that where clinically there is an obvious fungal infection, sometimes the pathology comes back negative.

There are several oral anti-fungal agents to choose from, each with differing mechanisms of action and effectiveness in treating diverse types of onychomycosis causing fungi. Taken orally, these medications are absorbed into the body and designed to kill the fungi. Terbinafine is widely reported as the oral agent of choice for treatment of onychomycosis caused by dermatophyte infection. The usual dose for oral Terbinafine is 250mg once a day for a period of 12 weeks.

#### **Benefits of oral anti-fungal treatment:**

1. Better efficacy in the treatment of onychomycosis compared to topical preparations
2. Relatively short treatment program of 12 weeks

#### **Associated problems:**

1. Unsuitable treatment during pregnancy and whilst breast feeding
2. Treatment may be inappropriate due to the numerous drug-drug interactions
3. Unsuitable for patients with poor kidney or liver function
4. Blood test required by your GP monthly during

treatment to assess liver function

5. Some common side effects include stomach upset, headache, nausea, taste disturbance and muscle pain.

6. Efficacy of treatment is not guaranteed and reoccurrence of infection is high without appropriate self-care measures.



50%

SUCCESS RATE

# Laser Therapy

**Laser treatment is the most recent and modern approach to managing fungal nails and is a very effective form of treatment. Light is the natural enemy of fungi – where do mushrooms thrive after a downpour, in the shade of a tree or out in the open?**

Multisite clinical trials on laser treatment completed to date indicate success rates of at least 71%, although many practitioners who ensured they reduced other infection risks have reported success rates over 80%, making it the most effective treatment available.

## **Advancements in technology**

Initially high cost was a barrier for those requiring laser treatment, as the laser apparatus and licensing costs are very expensive. However, over time the cost has come down substantially and price is no longer a hurdle for most. It is safe, painless and has no side effects. It doesn't have sensitivity issues like the medications do, so it is the broadest spectrum treatment available. Since its release in 2011 we have successfully treated many thousands of Australians with laser.

## **What is a laser?**

Laser is an acronym that stands for: **L**ight **A**mplification through **S**timulated **E**mission of **R**adiation.

This describes how laser light is formed, although laser is a term that can refer to the device that produces the light, or the light itself. Light produced by a laser is all of the same wavelength (or colour) and is coherent and collimated so it can be directed precisely.

## **How does it work?**

The scientific term is "selective photothermolysis". This means selectively damaging a target with heat from light energy without damaging adjacent tissue. To achieve this "selective photothermolysis", three basic parameters are necessary:

1. A light wavelength that penetrates only to an appropriate depth that is absorbed more by the targeted structure than the surrounding tissue.
2. Fluence (energy per area) that is high enough to cause sufficient heat to destroy the target without damaging the surrounding tissue.

3. Pulse width or exposure time is directly related to the fluence. Quick pulses rather, than continuous exposure, can allow maximum fluence without adjacent tissue damage, while preventing cooling of the target tissue (thermal relaxation).

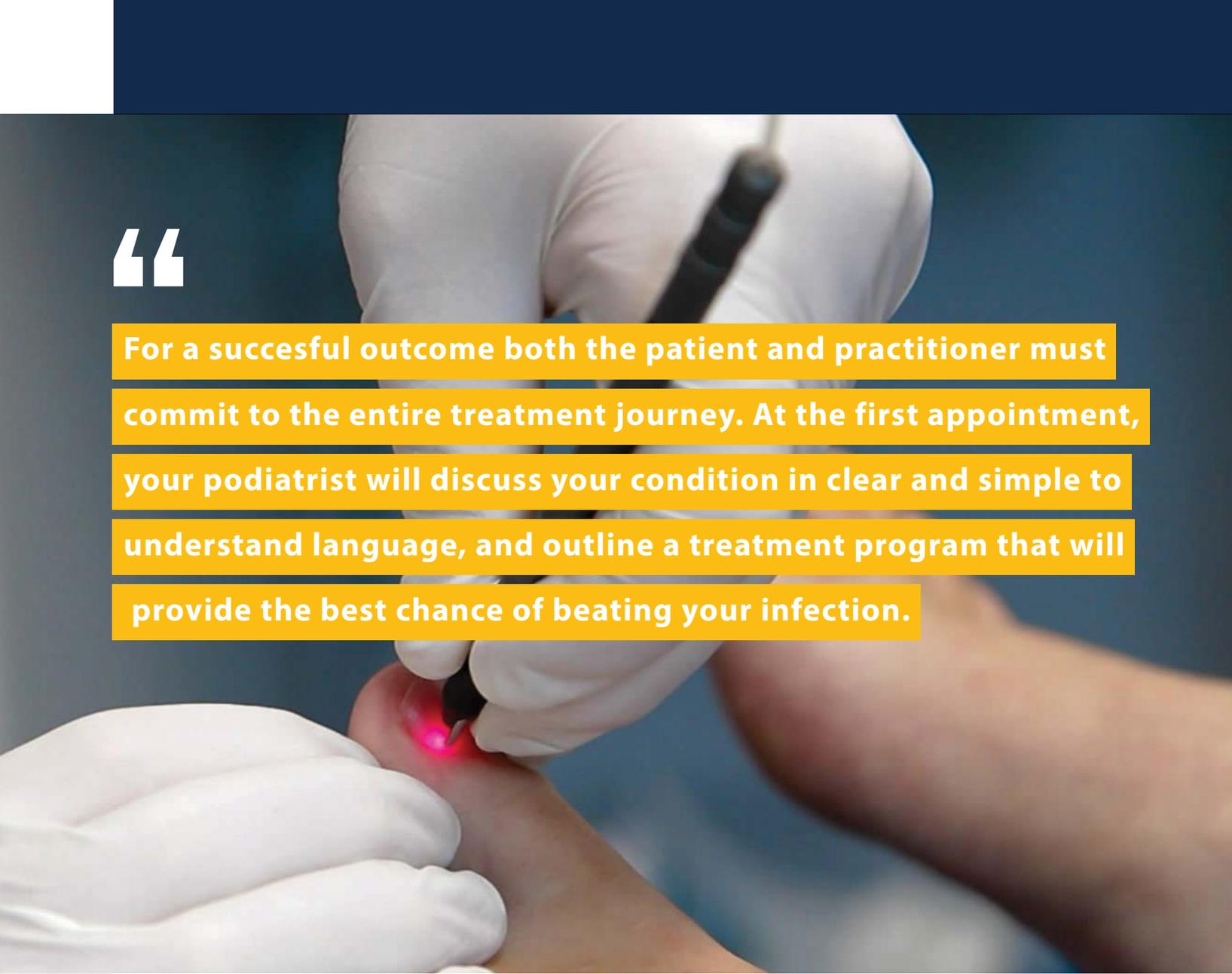
## **Why would you use this treatment?**

This treatment has no significant side effects. It is very safe and effective. It is effective against all fungi where most treatments have resistance issues. It penetrates where many topical treatments are ineffective.



80%

SUCCESS RATE



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**For a successful outcome both the patient and practitioner must commit to the entire treatment journey. At the first appointment, your podiatrist will discuss your condition in clear and simple to understand language, and outline a treatment program that will provide the best chance of beating your infection.**

### **Expectation and Toe Commitment**

Fungal toe nails are a real challenge to treat. This is primarily because toe nails grow very slowly, about half the rate at which fingernails grow. The nail is made up of protein similar to hair and isn't able to regenerate, so treatments work by killing or reducing the spread of the fungus and waiting for the nail to grow out. This can take many months or even years in some cases. To ensure that fungus is not permitted back into the treatment site after your treatment, some 'at home' care is required. This is the responsibility of the patient, and should be strictly adhered to. Your podiatrist will advise the home care required. At each visit we will track and log the changes to your nails, and adjust the treatment as necessary to fight your infection.

# Getting you the best outcome

It is important to note that not all infections respond to treatment, and in some cases the nails may be permanently damaged from the infection causing them to remain thickened. However, regular podiatry clinical care will keep your feet looking and feeling great.

## Getting started

An initial appointment is required to assess and diagnose your condition. In some cases we can get started straight away in treating your condition with the selected therapy. Your podiatrist will walk you through everything you need to know and personalise a treatment plan based on your circumstances.

# Do's & Do Not's

| DO                              | DO NOT                                   |
|---------------------------------|--|
| Seek a professional diagnosis   | Avoid self-diagnosis                     |
| Commit to treating it correctly | Put feet into unclean footwear           |
| Follow the post treatment care  | Wear shoes without socks                 |
| Clean feet well and often       | Share nail clippers or files with others |
| Trim nails regularly            | Pick at your nails                       |
| Regularly visit your podiatrist | Wear socks more than once                |
| Keep feet dry where possible    | Push back at your cuticles               |
| Use a clean towel               | Apply occlusive nail polishes            |
| Use anti-fungal washing powder  | Attend a supermarket nail salon          |
| Dispose of old nail polish      | Use the same nail polish                 |

# Fungal Nail Laser Treatment Results

With our revolutionary approach to treating fungal nails, you can have clean, infection free nails again.

Here are some of examples of our work!



# Supporting Products

**KERYflex™**  
NAIL RESTORATION SYSTEM



**KeryFlex is a safe application that restores the appearance of your nails affected by fungus, dystrophies and trauma.**

The patented resin creates a flexible, non-porous nail that allows the real nail to grow in a fungal free environment.

The KeryFlex nail provides a realistic looking nail during anti-fungal therapies. It also provides an immediate cosmetic improvement to complement laser fungal treatment.

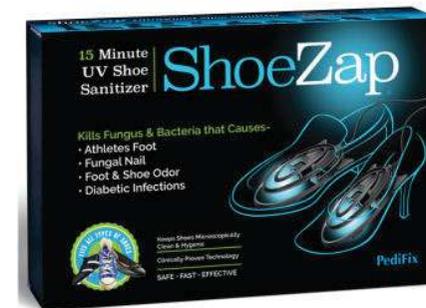
The KeryFlex nail is durable and unaffected by acetone, nail polishes or detergents and is a great way to restore confidence in the appearance of your nails while you are treating fungal nail conditions.

We have a number of products available to keep your nails looking beautiful always.



**Dr's Remedy vegan nail polish is infused with organic tea tree oil, biotin, wheat protein, garlic extract and lavender.**

The nail polish is made with naturally occurring elements and no toxic ingredients for high shine and colour. It is an extremely gentle, highly nourishing cosmetic nail polish that is available in an array of stylish colors.



**ShoeZap is the latest in UV Light technology, specifically designed to kill and eliminate fungus and bacteria that is responsible for smelly shoes and feet, toenail fungus, athlete's foot and diabetic foot infections.**

With regular use, ShoeZap will help keep your shoes clean and more hygienic. ShoeZap easily fits into all types of footwear, from runners to dress shoes and everything in between.

**Contact us for more information on all products.**

## About my FootDr

my FootDr is Australia's largest podiatry group with a team of more than 200 highly skilled and experienced podiatrists and support staff helping patients maintain healthy feet across 28 clinics nationally. Each clinic is equipped with state of the art podiatry equipment, taking a sophisticated, modern and digital approach to delivering world-class podiatry care.



*myFootDr*<sup>®</sup>  
*podiatry centres*

WWW.MYFOOTDR.COM.AU

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