

Diabetes and Your Feet



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Introduction

Hi! Welcome to my practice! I am a board-certified podiatric foot and ankle surgeon in beautiful Austin, Texas and I believe, if you have diabetes, I can help you take steps to keep your feet happy and healthy. Diabetes can affect many parts of the body, especially the feet. People with diabetes must give their feet and ankles special care and attention.

It's easy to forget about your feet. There they are – hanging out at the end of your body. Each of them has a lot of working parts including 26 bones, 33 joints, and more than 100 tendons, ligaments and muscles. Most of us don't think too much about them unless we need to put shoes on them or take them off again. At least, we don't think about them until they start hurting or lose feeling.

Some of us are born with foot problems, and some of us develop foot problems because we don't take care of our feet properly, or we suffer accidents. From one cause or another, 75% of Americans experience some kind of foot problem at some time in their lives. This percentage increases among diabetics. Unfortunately, many people never get the medical attention their feet need, and they just learn to live with their pain. That's really a shame, because a doctor of podiatric medicine can make all the difference in treating the source of the problem and setting a patient's feet on the road to health.

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Who Am I and Why Should You Listen to Me?

Well, to begin with, I am a podiatric foot and ankle surgeon, physician, and specialist in the care and treatment of feet and ankles.

I am also an active member of our community who is astounded at the amount of untreated and lingering foot and ankle problems I see outside our office every day. Because of my unique training in feet and ankles, I see people every day who suffer from foot pain. So often my patients tell me that they've been experiencing symptoms, including pain, for months and even years before they finally come in to the office to see me. Often, I am out running, at the gym, or in the grocery store when people stop me and say "Hi Doc. You know I've been meaning to come in and see you for my heel pain, an ingrown toenail or a pain in my ankle." Then months will go by, I'll see them again, and they will repeat the same thing.

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When they finally do come in, in almost every case I am able to alleviate their pain, treat their condition and drastically improve their quality of life.

The biggest question I ask myself is “Why?” Why do people suffer needlessly for years when a quick trip to my office almost always relieves their problems? It used to really bother me, but over the years we have come to realize that fear of the unknown is sometimes stronger than the pain or inconveniences our patients face.

What I’ve also learned is that in case after case – even though my patients could have saved themselves time, trouble and expense by just coming in to the office to see me – people didn’t have enough information to help them clearly understand their foot pain and the incredible options that state-of-the-art podiatric medicine offers today. We are no longer your grandmother’s foot doctor!

So I collaborated and created this publication. I wrote it for you and your family. Pass it on to your friends and neighbors. I wrote it to help you clearly understand what is happening to your feet and to help you get a sense of the hope that is awaiting you at a podiatric foot and ankle surgeon’s office. I hope that it is helpful and that it answers your questions. More in depth and specific information is available on our website at www.AustinFootAndAnkle.com. If you’re not sure whether you need to see a podiatrist, the following information might help. I’ve listed the most common problems and explained a little about how they can be treated. Remember, though, that self-treatment can often turn a little problem into a big one, so if you find yourself with a persistent foot and ankle problem, I hope that you will consider Austin Foot and Ankle Specialists. My team and I will do everything we can to treat your condition, reduce or eliminate your pain, and make you feel at home.

At Austin Foot and Ankle Specialists our mission is to provide **Comprehensive, Conscientious, Compassionate Care** for your family’s foot and ankle needs.

Dedicated to your health,

Craig H. Thomajan, DPM, FACFAS

What is a Podiatrist?

Podiatry is a field of medicine that strives to improve the overall health and well-being of patients by focusing on preventing, diagnosis, and treating conditions associated with the foot and ankle. Foot and ankle surgeons are the surgical specialists of the podiatric profession. Doctors of Podiatric Medicine (DPMs) are physicians and surgeons who practice on the lower extremities, primarily feet and ankles as well as their associated structures.

Following their undergraduate education, foot and ankle surgeons graduate from accredited U.S. podiatric medical schools and complete surgical residency programs of up to four years. Fellows of ACFAS are certified by the American Board of Podiatric Surgery, the board for foot and ankle surgery recognized by the Joint Committee on the Recognition of Specialty Boards. Foot and ankle surgeons provide comprehensive medical and surgical care for a wide variety of foot and ankle conditions including common to complex disorders and injuries that affect people of all ages.

Podiatric foot and ankle surgeons are uniquely qualified to detect the early stages of diseases that exhibit warning signs in the lower extremities, such as diabetes, arthritis and cardiovascular disease, and manage foot conditions which may pose an ongoing threat to a patient's overall health.

Bottom line: Podiatrists are the foot health experts and should be the first doctor consulted in diabetic foot complications!

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Why I Wrote This Book

Diabetes is one of the fastest growing diseases in the United States! Many factors contribute to this epidemic that currently affects over 15 million Americans. Almost 6 percent of our population has diabetes.

Diabetes can affect many parts of the body, especially the feet. It is very important that people with diabetes give the feet and ankles very special care. A small problem in a healthy person could become a severe problem to a diabetic. A podiatrist is the first doctor to see about how to care for you feet and ankles as a diabetic.

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With the proper care and vigilance your feet can carry you everywhere you want to go throughout your life. This book will help educate you and your family and friends about diabetic foot complications and their prevention. Your feet are really meant to last a lifetime!

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How to Use This Book

If you are a diabetic or have a friend or family member that is a diabetic, read this book once through to get a general understanding of diabetes and how it affects your feet. Then go back through the book with a highlighter and highlight what specific symptoms and questions you have. Bring the book and your questions to the office for your yearly checkup or sooner if you notice problems that should be addressed.

This book is a general guide to diabetes and your feet. Pass it on to your friends or have them visit our website for more information. Remember that reading this book and following the tips and guidelines DOES NOT take the place of a foot screening by a podiatrist. Do not let diabetes sideline you or your friends and family!

Save a limb, save a life, by passing on the information in this book!

Diabetic Education

CHAPTER 1 – WHY IS FOOT CARE IMPORTANT IN DIABETICS?

Diabetes is nasty to your feet! People with diabetes are prone to foot problems due to peripheral neuropathy and peripheral vascular disease. In English, diabetes can cause you to have poor circulation and to be unable to feel your feet. These problems together spell disaster.

Peripheral neuropathy causes a loss of feeling in your feet. This takes away your ability to feel pain and discomfort, so you may not detect an injury or irritation. Poor circulation in your feet reduces your ability to heal, making it hard for even a tiny cut to resist infection.

When you have diabetes, you need to be aware of how foot problems can arise from disturbances in the skin, nails, nerves, bones, muscles, and blood vessels. It is well known that, in diabetes, small foot problems can turn into serious complications. Two simple steps can go a long way towards preventing an amputation: follow the following preventative guideline and see your podiatrist regularly.

Diabetes puts me at risk for what kind of foot problems?

There are a wide variety of foot problems linked to diabetes. Here are just a few that we will discuss in more detail in the book:

- 1. Infections and wounds that don't heal.** Chronic infections and ulcers are common in diabetics. A small cut, blister or nick in the skin can lead to a chronic wound that doesn't heal. That wound can lead to hospitalization and an amputation, and even death.
- 2. Corns and calluses.** When you can barely feel your feet, you can't tell if your shoes fit. This can lead to shoe pressure which causes corns and calluses. Left untreated, these can lead to chronic wounds.
- 3. Dry, cracked skin.** A hallmark of neuropathy is dry skin. Couple this with poor circulation, and you have extremely dry skin. This may seem harmless, but can lead to cracks that don't heal and become chronic wounds.
- 4. Nail disorders.** Ingrown toenails (toenails that curl into the skin) and fungal infections in the nails can go unnoticed until an infection sets in. These can be quite dangerous and lead to gangrene or chronic wounds.

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5. **Bunions and hammertoes.** Neuropathy can change the shape of your foot due to weakness of the muscles and tendons. This can lead to bunions and hammertoes. Untreated, these can lead to chronic wounds from shoe gear.
6. **Brittle bones.** Neuropathy and poor circulation make your bones more brittle leading to osteoporosis. This makes you more susceptible to fracture.
7. **Charcot foot.** This is a complex foot deformity that starts with brittle bones that break unnoticed due to neuropathy. It can lead to a severe deformity that can even necessitate amputation.
8. **Blocked artery in the calf.** In diabetes, the blood vessels become calcified and thinner, especially below the knee. This is a true “hardening of the arteries.” This can lead to blockage of the arteries and severe decrease in blood flow. This needs immediate attention of a vascular surgeon or amputation may be necessary.

How can I prevent these complications that can lead to an amputation?

Your podiatrist is part of a multi-disciplinary medical team that can help you in amputation prevention. Getting regular foot checkups and seeking immediate attention when you notice small problems can keep them from getting worse. There are many new surgical techniques and wound healing advancements that can help you in your quest.

You and your family play a vital role in the prevention of diabetic amputations. There is an extensive list of diabetic foot care guidelines in this book. Follow them! Diabetic amputations can be prevented at least 85% of the time. Your feet were meant to last a lifetime. Don't let diabetes shorten your stride!

CHAPTER 2 – SIMPLE TIPS TO PRESERVE DIABETIC FOOT HEALTH

The most common reason diabetics are hospitalized in the United States are foot infections. I know that's hard to believe, but true. Diabetes can be dangerous and devastating to your feet. The most common causes of these foot infections are improperly cut toenails and poorly fitting shoes. Yes, something as simple as a visit to the podiatrist to have your toenails cut and shoes custom fitted can avoid many amputations. Sadly, the amputation rate is trending upwards not down in the United States. Add common complications of diabetes like poor circulation and lack of feeling known as peripheral neuropathy, and you have the prescription for disaster for diabetic feet.

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What is a diabetic to do to protect their feet from a sore that can lead to infection and amputation?

- 1. Inspect your feet daily.** If you can't see your feet, have someone else look at them every day for redness, cuts, swelling, blisters, bruising, or nail problems.
- 2. Wash your feet daily.** Sounds simple, but many people do not bathe their feet daily. Make sure to clean in between your toes and dry them thoroughly.
- 3. Moisturize your feet daily.** Again, a simple habit to get in to, yet most people fail to upkeep their skin every day. Diabetes can cause very dry, flaky skin, so extra moisture is needed.
- 4. Cut nails very carefully, and straight across.** If you can see and reach your toes, be careful to cut your toenails carefully, taking time not to nick yourself or cut them too short. When in doubt, visit the podiatrist at least every 8 to 10 weeks. The podiatrist would rather cut your toenails for you than treat an infection caused by your own handiwork!
- 5. Never trim corns and calluses.** And absolutely no corn or callus remover! The package says, "Do not use if you are diabetic" for a reason. Have the podiatrist trim them when they are thickened or red.
- 6. Wear clean, dry socks.** And change them daily. Sounds simple, but you would not believe how many people don't do that.
- 7. Avoid tight or bulky socks.** Tight socks can reduce circulation to your feet and bulky socks can bunch up and cause a blister or sore. Check your socks before you put them on and remember that they do shrink with age. Replace them periodically.
- 8. Wear socks to bed.** If your feet are cold, wear clean socks to bed. Never use a heating pad or hot water bottle—you can burn yourself before you realize it! You can warm the bed with a heating blanket, but turn it off before you go to sleep!
- 9. Shake out your shoes and inspect them before you put them on.** I have taken everything from a pebble, a piece of basket, and a doll house chair out of the bottom of diabetic feet after they walked on them all day. Easy thing to avoid!

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- 10. Keep your feet clean and dry.** No puddle splashing or snow drifts for your feet!
- 11. Never, never go barefoot.** Not even at home on carpet. You can step on something easily and get an infected puncture wound. Think tacks, sewing needles, even wiry dog hair can be a problem!
- 12. Take care of your diabetes!** Multiple studies have shown the complications of diabetes can be diminished by keeping your sugars under control. Keep that HgA1c under 6 if you can. This is hard to do by yourself. Work with your doctor and nutritionist for optimal care. Communicate often with your medical team.
- 13. Don't Smoke!** Stop smoking if you do. Every cigarette decreases the circulation to your feet and increases your chance of a non-healing wound.
- 14. Get periodic foot exams.** The recommendations are to have a foot exam at least once a year by your doctor even if you do not have any symptoms. A trip to the podiatrist is recommended at least quarterly if you have neuropathy, a foot deformity, poor circulation, or have had a history of a foot ulcer.

Diabetes can be life's annoyance or it can kill you. It is your choice!

Take care of your feet so they will last a lifetime.

CHAPTER 3 – WHEN TO SEE A DOCTOR

The American Diabetes Association recommends that a diabetic has a foot screening at least once a year. This should be done by a podiatrist at least quarterly if you have any increased risks factors like peripheral neuropathy, peripheral arterial disease, foot deformities and a history of an ulceration or amputation.

When should you call the podiatrist immediately?

It is time to call the doctor when:

1. You have any signs or symptoms of infection including redness, swelling, increased warmth, fever (>100 without any other reason), chills, red streaking around the foot and ankle or extending up your leg, or any purulent discharge.

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2. You have persistent foot and ankle pain.
3. You have noticeable skin and toenail changes.
4. You have severe dryness, itching, cracking or peeling of your skin.
5. You have pain, redness and thickening of your toenails or around your toenails.
6. You have fallen and can't get up or have twisted your foot or ankle and experience bruising, swelling and loss of function or inability to walk.
7. You have blisters with clear or purulent drainage on your feet.

If you are diabetic, small foot infections can be life and limb threatening so do not delay. Remember the most common reason diabetics are hospitalized are foot infections. The most common reason for these infections is improperly cut toenails and ill-fitting shoes.

If you experience any of the above symptoms, call the podiatrist office for a same-day appointment or go to the local ER immediately!

CHAPTER 4 – WHY CAN'T I FEEL MY FEET? DIABETIC PERIPHERAL NEUROPATHY

Burning, tingling, numbness to your feet. Does this sound familiar? If you are diabetic, and are experiencing some or all of the symptoms, you are experiencing classic signs of diabetic peripheral neuropathy. If there is a history of diabetes in your family or you are not sure, then the information below could save your life.

Diabetic peripheral neuropathy is actual nerve damage that results from diabetes. Anyone who is a diabetic or knows a diabetic understands the havoc it can wreak on the body. The nerves are included in this path of destruction and this includes the nerves to your lower extremity and your feet. The damage to the nerves in your feet makes you unable to really feel your feet and can lead to open wounds (ulcerations). Ulcerations can lead to amputations. How does this happen?

Diabetes can affect the motor nerves which controls the muscles in your body. Damage to these types of nerves produces weakness in the muscles. This weakness can affect your balance. Loss of motor nerve function also causes loss of the tone of the muscle (atrophy of the muscle). This causes your foot to lose its original shape and produce areas of increased

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pressure. This increased pressure can cause breakdown of the foot which can lead to skin openings called ulcerations.

Diabetes can also affect the autonomic nerves which affects your skin's ability to maintain moisture. This loss of moisture makes your skin dry. Dry skin can lead to cracking, and this cracking in your skin can lead to ulceration.

The most devastating effect diabetes has is on the sensory nerves. This numbness, burning and/or tingling is the loss of sensation you may be experiencing. This can affect part of your foot, your whole foot, or even your entire lower extremity. This loss of sensation means a loss of your body's ability to perceive increased pressure areas or changes in temperature. This loss of natural protection puts you at risk for ulcerations.

When you hear of a diabetic losing part of his or her foot, or one or both legs, you can now understand why this at any time could become your battle. The damage produced by diabetes does not occur rapidly. On the contrary, it usually occurs so slowly and subtly that it is not enough for you to notice. The longer you have diabetes, or the longer you are undiagnosed, or the longer you have diabetes that you are unable to control or choose not to control, the more danger you place on your limbs and your life.

Why is controlling this important? The amputation of part of the foot dramatically increases the likelihood of further amputation of your foot or your limb within the next few years. The loss of one limb puts increased pressure on the other limb and this increased pressure inevitably results in breakdown of this foot and loss of this limb. The lifetime expectancy for a single amputee is five years. The lifetime expectancy for a double amputee is less than five years.

You do not think this could happen to you? We can give you countless examples of diabetic patients we treat who come in because they noticed drainage on their socks and never felt the wound to begin with; those who tell us stories of a small blister that would not heal to find they now have a large wound that neither their body nor the miracles of medicine can heal. This could be you.

We ask you again, are you experiencing numbness and/or burning and/or tingling in your feet? Whether you have a history of diabetes in your family or not, we urge you to come in to have this evaluated. There is many times where these symptoms have resulted in a diagnosis of diabetes. At the very least, this discovery alone can save your limbs. At the very most, this discovery can save your life.

CHAPTER 5 – HOW DO I KNOW IF I HAVE POOR CIRCULATION? PERIPHERAL ARTERIAL DISEASE IN DIABETICS

There is an increased incidence of peripheral arterial disease in diabetics. Peripheral arterial disease (PAD) is narrowing or blockage of arteries that results in poor blood flow to your legs. When you walk or exercise, your leg muscles do not get enough blood and you can get painful cramps. Peripheral arterial disease is also called peripheral vascular disease or simply poor circulation. Just like clogged arteries in the heart, clogged arteries in the legs mean you are at risk for having a heart attack or stroke. Plaque buildup in the legs does not always cause symptoms; so many people can have PAD and not know it. People who do experience symptoms, such as pain or cramping in the legs, often do not report them, believing they are a natural part of aging or due to another cause.

One in every 20 Americans over the age of 50 had PAD and it is estimated that over 8 million are undiagnosed. Early detection of PAD has been shown to save limbs and lives, so if you have any of the risk factors you should undergo PAD screening by your podiatrist yearly or more often if symptoms occur.

The exact cause of plaque buildup in the limbs is unknown in most cases. However, there are some conditions and habits that raise your chance of developing poor circulation.

Your risk increases if you:

1. Are over the age of 50.
2. Smoke or used to smoke. Those who smoke or have a history of smoking have up to four times greater risk of PAD.
3. Have diabetes. One in every three people over the age of 50 with diabetes is likely to have PAD.
4. Have high blood pressure. Also called hypertension, high blood pressure raises the risk of developing plaque in the arteries.
5. Have high blood cholesterol. Excess cholesterol and fat in your blood contribute to the formation of plaque in the arteries, reducing or blocking blood flow to your heart, brain, or limbs.
6. Have a personal history of vascular disease, heart attack, or stroke. If you have heart disease, you have a one in three chance of also having PAD.
7. Are African-American. African-Americans are more than twice as likely to have PAD as Caucasians.

What are the symptoms of PAD?

Most patients with PAD have little or no symptoms until the disease is advanced; that's why screening exams are so important. Those who do experience symptoms have reported these typical signs and symptoms:

- Claudication: fatigue, heaviness, tiredness, cramping in the leg muscles (buttocks, thigh, or calf) that occurs during activity such as walking or climbing stairs. This pain or discomfort goes away once the activity is stopped and during rest.
- Rest Pain: pain in their legs at night that often disturbs their sleep
- Wounds or sores that heal very slowly or not at all
- Color changes to the skin of their feet and lower legs
- Cold, pale feet and legs
- Decreased hair and nail growth on their feet

How is PAD Diagnosed?

Your podiatrist will start with checking the pulses in your foot and ankle, examining the skin for changes and wounds that are poorly healing. Often an ABI (ankle-brachial index) is evaluated which compares the blood pressure in your arms to your ankles. A Doppler exam may be ordered. This test uses sound waves to measure the blood flow in the veins and arteries in your arms and legs. If any of these exams are abnormal, your podiatrist may refer you to a vascular surgeon to discuss options for treatment.

How is PAD Treated?

The overall goals for treating PAD are to reduce any symptoms, improve quality of life and mobility, and prevent heart attack, stroke, and amputation. There are three main approaches to treating PAD: making lifestyle changes, taking medication, and in some cases, having a special procedure or surgery. Your physicians will determine the best treatment options for you, based on your medical history and the severity of your condition.

How Can I Prevent PAD If I am Diabetic?

The cornerstone of prevention is lifestyle changes.

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- Exercise is very important and you should aim for 30-45 minutes of moderate intensity exercise each and every day.
- Stop smoking immediately and ask your doctor for help if you find you cannot.
- Keep your cholesterol and blood glucose levels down. Aim for a HgA1C of 6!
- Keep your blood pressure in the normal range.
- Decrease stress.
- If you are overweight or obese, aim for a normal weight and again, ask your doctor for help! A diet low in saturated fats, trans fats and cholesterol is also helpful.
- More than anything talk to your doctor about a comprehensive treatment plan for your diabetes that also decreases your PAD risks.

One in every 20 Americans over the age of 50 have PAD and the incidence is higher in diabetics. Most patients have little or no symptoms until it is too late! Early detection of PAD has been shown to save limbs and lives, so if you have any of the risk factors you should undergo PAD screening by your podiatrist yearly or more often if symptoms occur.

CHAPTER 6 – WHY IS MY FOOT CHANGING SHAPE? CHARCOT NEUROARTHROPATHY

Funny name, but it is a serious limb threatening condition. Charcot (pronounced shar-ko) foot is a complete collapse of the bones in the foot or ankle that occurs from neuropathy. Neuropathy is severe nerve damage that can be caused from numerous conditions, most commonly diabetes. With neuropathy, there is a complete loss of sensation in the foot and ankle which allows the bones to become soft. Once this process starts, the foot will begin to change in shape, often giving it a rocker-bottom appearance, where the arch is actually the lowest part of the foot. This becomes difficult to walk on and is an area of high pressure. This then can lead to skin breakdown known as an ulcer.

If you have neuropathy, you should be on the lookout for these signs and symptoms: redness, swelling, the affected foot feels warmer than the other, sometimes pain or soreness. Sounds like an infection, doesn't it? Charcot changes occur and may often be mistaken for an infection. That is why careful evaluation by your podiatrist is necessary to be sure you receive

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the correct treatment. Most commonly, x-rays are taken to see the breakdown of bones in the foot or ankle. With Charcot in the beginning stages, it may be difficult to see on x-ray, so an MRI or CT may be ordered. For advanced changes, the x-rays are unmistakable.

Early detection and treatment for Charcot is imperative to prevent skin breakdown that leads to open sores, infection and possible loss of the foot or entire leg. If there is no open sore or ulcer, the first line of treatment is immobilization and complete non-weight bearing. This allows the bones to fuse and prevent further collapse.

When the acute swelling and pain have resolved, a protective brace is custom made for the patient that is worn daily to stabilize the foot and attempt further breakdown. Custom shoes may also be necessary if the foot has severely deformed. In some cases, surgery may be needed to realign the bones of the foot and ankle allowing the patient to walk more efficiently and without prominence that can cause skin breakdown.

So how can you prevent this? Regular checkups with your podiatric physician and protective shoe gear are very important. But the most important is checking your feet every day for any changes and avoid injury.

CHAPTER 7 – WHY DO MY TOENAILS LOOK FUNNY? ONYCHOMYCOSIS

My nails are thick, yellow and seem to have something growing underneath them. I'm not a dirty person, how did this happen?

Toe nail fungus strikes across class, ethnic, age and hygiene lines. In fact, one study showed that almost 50% of people over the age of 40 have experienced some type of toenail fungus. Fungal infections are incredibly common, but are more prevalent in diabetic due to a decreased immune response.

The typical athlete's foot fungus, called a dermatophyte, is the same fungus that infects your toenails. Fungus loves a moist, dark environment like in your shoes between your toes. The affected toenails can have a whitish superficial infection or a yellow to brown discoloration under the toenails that seems to destroy the nail as it grows. Long standing fungal toenails look like thick, brownish-yellow mountains growing on the end of your toes. The thickness makes them painful and susceptible to a secondary bacterial infection (paronychia). This infection can be quite dangerous and has been linked to gangrene in diabetics. Remember this is an infection and should be treated to avoid further complications! This is not cosmetic in diabetics!

How is toenail fungus diagnosed?

Diagnosis of onychomycosis can only be made by a toenail biopsy. Your podiatrist can take a small piece of the leading nail and send it for a special stain that shows the fungus. A PAS stain is usually faster and more accurate than a fungal culture, because often the fungus does not grow in the laboratory. Do not assume you have onychomycosis. Psoriasis and other skin disorders as well as chronic trauma can look like fungus. Also, a melanoma under the nails can mimic fungus, but can be deadly if there is a delay in diagnosis. If you suspect you have toenail fungus, don't delay, see your podiatrist today!

How can I prevent toenail fungus?

1. If you get regular pedicures, bring your own instruments or go to a spa that sterilizes their instruments in an autoclave. The safest pedicure is in your podiatrist's office!
2. Clean your toenail clippers with alcohol before you use them if you do your own toenails and make sure to replace Emery boards and orange sticks regularly.
3. We also recommend you regularly clean your shoes with either antibacterial spray like Lysol or even better an antibacterial with an antifungal like Mycomist at least once a month and dry them with a hairdryer.
4. Changing socks regularly (even a few times a day if you have sweaty feet) and keeping your feet clean and dry is also helpful.
5. Keep your athletic shoes dry and also change them regularly. If you exercise regularly, buy your athletic shoes a half size larger than your street shoes so you won't bash your toenails as your feet swell with exercise.

How is toenail fungus treated?

There is a lot of misinformation out there about toenail fungus. I have never told my patients to use white iodine, Vic's Vaporub or organic cornmeal soaks on their toes. There is no evidence that they work.

Topical therapy should have some penetration of the nail plate like over-the-counter Formula 3, organic tea tree oil, Nailstat or prescription (now generic Penlac) ciclopirox nail lacquer. This should be coupled with a nail treatment plan from your podiatrist.

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If this doesn't work after several months, oral medication, like terbinafine (generic Lamisil) or itraconazole (generic Sporonox) may be needed.

Remember, no matter how you treat fungal toenails, it takes at least 6 to 12 months for the toenails to grow out completely. Relapse is also common, so it's important to play offense (treat the fungus) and defense (try to prevent the fungus) at the same time.

Toenail fungus in diabetics is no joke! It has been linked with increased incidence of gangrene and limb loss so stop ignoring your ugly toenails and see the podiatrist!

CHAPTER 8 – WHY IS MY SKIN ITCHY AND DRY? XEROSIS

In diabetics, advancing peripheral neuropathy coupled with decreasing circulation can bring dry, cracked skin that can make you just about crazy. These itchy, sometimes bumpy, patches are your body's way of trying to scream for help. It is the outer layer of skin, made up of dead skin cells, natural oils and fats, which are sending the cry for help.

Cold weather and low humidity as a result of indoor heating can strip away the natural protective layer of the skin and wreak havoc with the skin's ability to stay moisturized in healthy patients. Couple this with autonomic neuropathy and circulation issues can give dry itchy skin all year long in diabetics. In extreme cases, if you ignore the early itching (which I don't know how you can – it drives me nuts), these patches can deteriorate to bleeding, cracking and painful skin predisposed to get an infection especially in the area of the feet and ankles.

A quick trip to the local drug store reveals a plethora of products for this dry, itchy problem; but which one is right for your skin? If you have dry skin in the early stages, almost any product will do (avoid anything heavily perfumed). If your skin has deteriorated to severe cracks and fissures on your feet or nothing seems to help, there are many excellent specialty products available in our office.

My personal favorite is Gormel Cream by Gordon Labs. It's a 20% ureic acid preparation with almost no scent. This is great for thickened and dry skin on feet and heels, but don't put it on your face! Works great coupled with a Happy Feet Buffing Bar for dry, cracked heels!

Another office favorite is Hydrostat by Tripod labs. This is a little less exfoliating, but penetrates well for those with sensitive skin. And what a wonderful herbal scent! This calms down the itching and decreases dryness in as little as a week used daily.

A third recommendation that is loved by all is Miracle Foot Cream. This again, penetrates well but has almost no scent for those sensitive to perfume.

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And for those with vascular disease and red, blotching skin from venous stasis, Amerigel Blue Lotion from Amerex is the only lotion I have found that decreases the redness and discoloration of the lower legs and feet from chronic swelling at the same time it helps with chronic dryness.

All of these wonderful products can be obtained in a podiatrist's office. Bottom line, ask your podiatrist which product is best for you and treat your dryness before it becomes a much bigger problem than chronic itching.

CHAPTER 9 – WHY DO I HEAL SO POORLY? DIABETIC INFECTIONS AND ULCERATIONS

Studies show that 80% of non-traumatic lower extremity amputations are preceded by a foot ulceration, which provides the opening for infection. It has been estimated that approximately 12% of U.S. adults with diabetes had a history of foot ulcer, a significant risk factor for amputation. Another report identified minor trauma, ulceration, and faulty wound healing as precursors to 73% of amputations, often in combination with gangrene and infection. Other risk factors include the presence of sensory peripheral neuropathy, altered biomechanics, elevated pressure on the sole of the foot, and limited joint mobility.

Why is this still happening? What are we doing wrong? Bottom line: most patients self-treat their ulceration for at least 2 months before they seek medical attention. In fact, the podiatrist often meets a diabetic for the first time in the emergency room with a severe infection that often necessitates amputation. We need to start changing this today!

Who is at risk? People with diabetes who have peripheral neuropathy are 1.7 times more likely to develop foot ulceration. Couple this neuropathy with a foot deformity or Charcot (discussed in Chapter 6), the risk increases to 12 times greater; and in those who also have a history of prior amputation or ulceration, the risk is 36 times greater. Factors that increase risk for lower-extremity ulceration and amputation are just being male, having diabetes for more than 10 years, smoking, a history of poor glucose control, or the presence of heart, eye or kidney complications.

The fact that diabetic healing potential is decreased and the immune response to infection is less should have any diabetic who has a small cut, blister or early ulceration fleeing to the podiatrist's office! If you learn anything from reading this book, do not delay. By the time your small infection looks like a bad infection, you are already walking down the road to amputation.

If you experience a small cut, a blister, or a red spot from shoes:

- wash the area with soap and water

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- apply a topical triple-antibiotic ointment
- cover with a dry gauze or clean bandage
- see your podiatrist for evaluation without delay!

We would much rather see you for a small cut than to meet you in the Emergency Room with a severe infection. You are never wasting our time! What looks to be a small cut can actually lead to a significant problem!

CHAPTER 10 – DIABETIC SHOE FITTING TIPS

Shoes are a vital part of taking care of diabetic feet. We know that improperly fitting shoes is one of the most common causes of ulcerations that can lead to amputation. Have your shoes fitted by a podiatrist or a well trained pedorthist every time. Just because you are not having complications right now does not make you exempt! In fact, given the risk factors we have discussed, every diabetic should be diligent about proper shoe gear. Most will tell the podiatrist or pedorthist that we fit them for shoes that are too big. That is because neuropathy makes their feet less sensitive therefore more likely to want that “tight” feeling! And remember, the majority of the population wear their shoes too small anyway... diabetes or no diabetes! When looking for diabetic shoes, here are a few tips in finding the right diabetic shoe for you:

Shoe Construction:

Diabetic shoes are considered “depth shoes”. The heel counter is deeper than regular shoes and the toe box will be higher than typical shoes on the market. The deeper heel counter and higher toe box will accommodate your custom inserts and your foot thus reducing the possibility of foot irritations.

Diabetic shoes are created with various materials which include leather, neoprene or mesh. The shoes should have non skid soles and either tie or Velcro closures. Your podiatrist and pedorthist will work together to ensure the right shoe type are provided for your foot type.

There should be no seams on the inside of the shoe which could cause skin irritations. Feel the inside of the shoe and inquire on the construction of the shoe.

How do you measure up?

When were you last measured professionally for shoes? Ensure you have your feet measured each time you are fitted for shoes. At a minimum, have your feet measured at least once a year. Feet change in length and width as we age. Also keep in mind, some shoe brands have

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measuring devices custom to their specific shoe sizing. It is also quite common to have different size feet. The shoe fitter should base the length of the shoe on the longest foot.

Who's fitting you?

It is imperative you are properly fitted for the shoe. Just because you are in a therapeutic shoe store does not mean the person assisting is qualified to fit shoes. It is important to ask questions!

Sample questions to ask your shoe fitter:

- “What is your experience with fitting diabetic patients?”
- “Are you certified to fit diabetic shoes?”
- “What is your level of certification?”
- Ask the person questions about the shoes – “Tell me about the construction of the shoe?” “What size did my feet measure?” You should be told the length and width of each foot.

The Right Fit:

The shoes should fit snug however not tight. Leather shoes will soften and tend to form to each foot. Your fitter will be able to guide you to the proper fit.

While wearing the shoes, there should be no rubbing of the feet or slipping in the shoe. For patients with neuropathy, you will naturally want to wear the shoes tighter than normal. You will need to rely on your fitter to ensure the shoe is fitting your feet properly. And don't argue! They are the experts!

After you receive your shoes, break in the shoes slowly. Wear the shoes for an hour the first day and slowly add on time the following day. Continue this slow break in process until you are able to wear the shoes throughout the day. Check your feet often throughout the day for any red spots or blistering. Should this occur, contact your podiatrist immediately. A red spot on your foot can turn into ulceration if left unattended! Many times a shoe may need to be stretched in certain areas to alleviate pressure.

You have only two feet for life. Properly fitting diabetic shoes help you protect and manage your feet. You owe it to yourself to work with a dedicated person who will help you in the shoe fitting process. Be sure you have all of your questions answered and you are comfortable. Your feet will appreciate you!

Summary

National Diabetes Information Clearinghouse (NDIC)*

Estimated Prevalence of Diabetes in the United States (2007)

Total: 23.6 million people—7.8 percent of the population—have diabetes.

Diagnosed: 17.9 million people

Undiagnosed: 5.7 million people

Diabetes can be life's annoyance or can kill you. It is your choice. If you have friends or family with diabetes, bring them to a podiatrist today! The number one reason diabetics are hospitalized in the United States are foot infections. These can lead to amputation and even death. The government had estimated that comprehensive foot care programs can reduce amputation rates by 45 to 85 percent. It is that important!

**Source: <http://diabetes.niddk.nih.gov/dm/pubs/statistics/index.htm>*

Contact Us For More Information

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About the Doctor



Craig H. Thomajan, DPM, FACFAS is the founding member of Austin Foot and Ankle Specialists, in Austin Texas. This specialty foot and ankle practice offers the latest medical and surgical advancements to patients of all ages. Dr. Thomajan is a podiatric physician, surgeon and specialist board certified by the American Board of Podiatric Surgery, the American Board of Podiatric Orthopedics and Primary Podiatric Medicine and is a Fellow of the

American College of Foot and Ankle Surgeons.

At Austin Foot and Ankle Specialists our mission is to offer the highest quality medical and surgical podiatric care to patients of all ages. Patients will be empowered to be active participants in their health care by understanding their specific foot and ankle conditions. Through this understanding patients will be able to make informed decisions that will positively affect their treatment outcomes. To meet this goal, we offer our patients: a friendly, warm and inviting office, a positive and caring staff, accurate diagnosis with review of your treatment options, advanced therapeutic methods and effective quality care.

Our clinic continues to pursue advances in the medical and surgical care of the foot and ankle and will continue educating patients as well as others in the community regarding the appropriate care of foot and ankle problems.



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