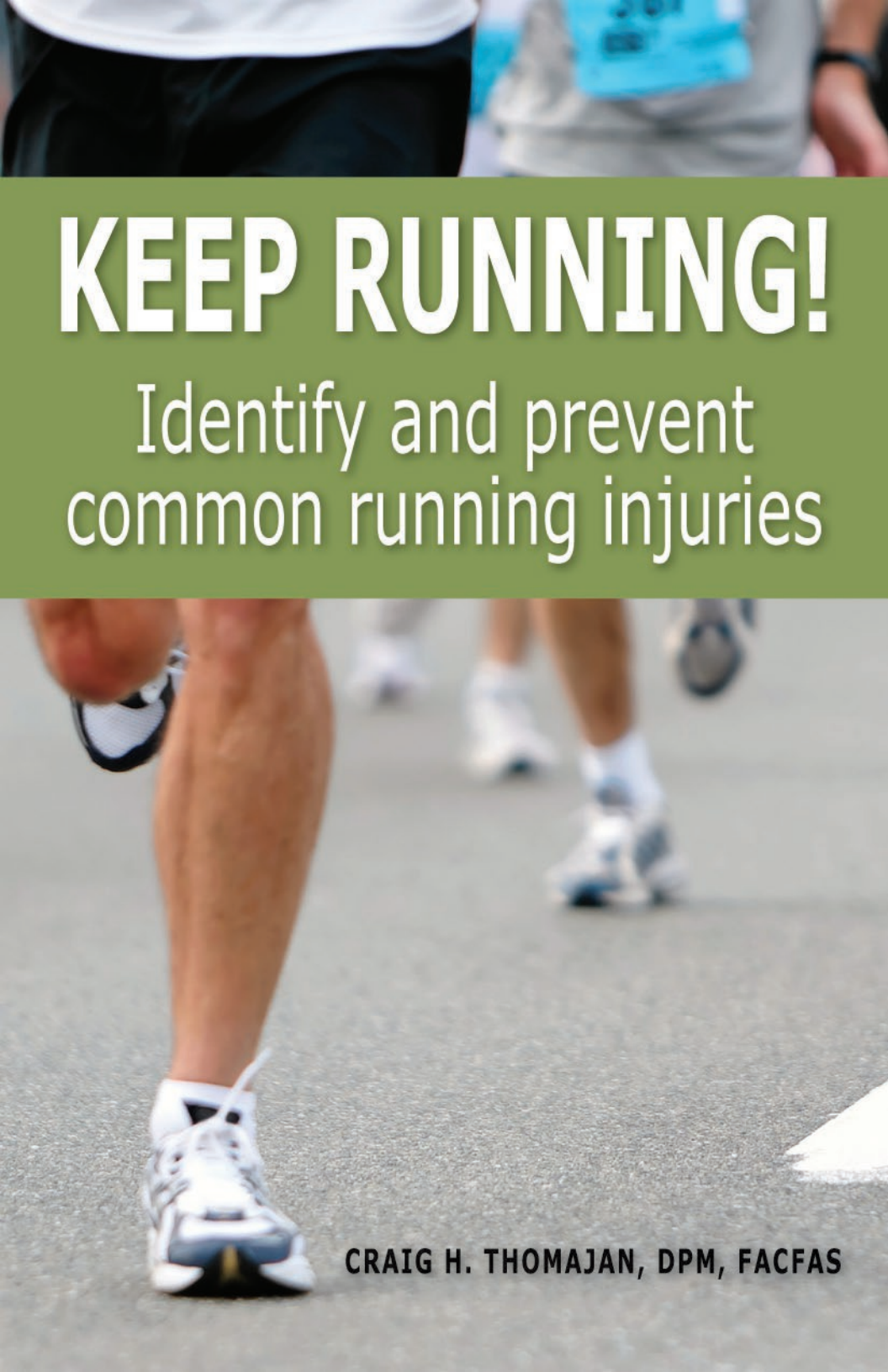

KEEP RUNNING!

Identify and prevent common running injuries

CRAIG H. THOMAJAN, DPM, FACFAS

Keep Running!

Identify and Prevent Common Running Injuries

Written By
Austin Foot and Ankle Specialists

Craig H. Thomajan, DPM, FACFAS

5000 Bee Cave Road Suite 202
Austin, Texas 78746
P- (512) 328-8900 F- (512) 328-8903

www.AustinFootAndAnkle.com

Table of Contents

Part 1: Introduction

Who Am I and Why Should You Listen to Me?

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. 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. Foot and ankle surgeons are the experts in lower extremity biomechanics and provide comprehensive medical and surgical care for a wide variety of foot and ankle conditions including common to complex disorders and injuries that affect athletes of all ages.

Bottom line: Podiatrists are the foot health experts and should be the first doctor consulted in lower extremity running injuries!

Why I Wrote This Book

The purpose of this book is to provide the running community with practical advice and resources to keep you running healthy and strong. As a sports medicine podiatrist, it appalls me the amount of misinformation available all over the media. This book only provides time-tested, medically sound advice for runners, no hocus pocus.

Bottom line: Dr. Craig H. Thomajan lives, breathes, works, and runs in the Austin, Texas running community, so let him help you run fitter, faster and most important, injury free! My friends and patients clamored for this running specific book, so here it is….Enjoy!

How to Use This Book

This book is meant for every type of runner, from slow walk/run jogger to competitive athlete; but it is focused on more of a beginner to intermediate level. There are lots of tips that you can incorporate into your training program, so have a read. Send us some feedback. We will be posting frequently asked questions on Dr. Thomajan's website, www.AustinFootAndAnkle.com. Read the whole book, then go back and highlight those portions that are more applicable to your personal issues. I promise you won't be sorry.

Part 2: Getting Started

CHAPTER 1: GOAL SETTING

A very smart person once said that a goal not written down is just a mere wish. I passionately believe this is true and have proven the power behind written goals in many aspects of my personal and professional life. Goals are a powerful thing. Running goals can take on a life of their own and guide our training.

I challenge all of you to do a goal writing exercise to determine where running fits in your life. Think about lifetime goals; perhaps qualifying for Boston, just to finish an entire marathon or even just to lose a few pounds; then break down your goals into smaller segments. Try to ascertain how you will reach that lifetime goal by achieving smaller goals; write down your 5 year goals, your 3 year goals, your 1 year goals, and finally your immediate goals. It is hard to run a marathon without starting a running program, perhaps training for your first 5K can be your quarterly goal, then a 10 or 15K for 1 year goal, then build up to the marathon or a faster marathon from there. Again, looking at lifetime goals by themselves are often overwhelming; but broken down into smaller increments become very doable!

Look at your goals then start a reasonable plan to meet them! Not only are you more likely to meet your goals if you write them down, but you are also less likely to get injured if you follow a plan.

CHAPTER 2: IF THE SHOE FITS

Running shoes are continually evolving and there are plenty of folks willing to share their expertise! What we hope to offer you are shoe basics to help you step in the right direction.

First, you need to know your foot biomechanics or in English, how your foot works. I recommend you work with your podiatrist. Knowing the biomechanics of your feet will help you better understand what type of running shoe is right for you. Running shoe styles are more than just fancy aesthetics, each model of shoe within each brand is built for specific foot types. A Podiatrist is a great start for a complete foot evaluation.

During your appointment, advise your doctor of your running plans. Are you looking to complete a marathon or maintain a weekly running base? Offer as much information as you can about your running. This will truly help you obtain the right pair of shoes to meet your goal!

When you have your feet evaluated, your goal is to leave with the following knowledge:

1. Is the arch for each foot flat, normal or high?
2. Are there additional biomechanical concerns based on my foot type?
3. If so, what are they and the effect toward running?
4. Is there a need to wear orthotics with my shoes?
5. What type of shoe will best suit your foot type – neutral, stability, motion control?
6. What is the correct size of my feet (this includes length and width)?

Write down all of the details of your foot type. There is a lot to remember and it is helpful having this information handy with you when you shop for running shoes.

So what are the types of running shoes? Below is a listing of shoe types and basic foot types:

- **Neutral:** High arch, biomechanically efficient
- **Stability:** Mild to moderate pronation
- **Motion Control:** Heavy, moderate to severe overpronators
- **Light Weight Racing Flats:** Efficient runner, race day shoe

With an understanding of your foot biomechanics, it's time to shop! I recommend you purchase your shoes at a local running store where you are professionally fitted for shoes. Shop later in the day when typically your foot is most swollen. Picking a shoe off the wall in a large sporting good store is not recommended unless you understand running shoes and know your foot type. If you consider the amount of pressure created with each foot strike, how could you not have your feet fitted by a specialist who knows the running shoes available on the market? Remember, you only have two feet – for your life!

Try on all of the brands in the store in the model that is appropriate for your foot type. Walk around the store, run on the store treadmill, heck, go ahead and take the shoes for a test run outside of the store! The main thing is you need to -Take Your Time – . A good running store will let you take as much time as you like in making your decision. If at any point you feel rushed, shop elsewhere. Finding the right shoes are paramount to your running success.

Expect to spend around $90 to $150 on up based on the shoe. If your budget allows, consider purchasing two pair of shoes to alternate. Running shoes typically last from 300 to 500 miles or approximately six months. If you are not sure how much life is left in your running shoes, have the shoes evaluated by a Pedorthist or at the running store by an experienced shoe associate. If you begin to develop foot pain or pain in the shin area, it could very well be a simple action of replacing your shoes. Of course, if the pain continues more than five to seven days, it's time to see the Podiatrist so listen to your feet!

Once you have purchased your shoes, to keep track of the life of the shoe, discreetly write the date on the outside heel area. Do not write the date on the inside of the shoe as the marking will wear off as you run in the shoes. The date helps you keep track of the length of time for the shoes.

While lacing techniques are helpful, ensure you are fitted by a shoe professional for the optimum fit based on your fitness level. Once you have the right shoes and lacing, get out and go for your walk or run!

CHAPTER 3: WHAT'S IN YOUR SOCK DRAWER?

I get asked everyday about the types of running shoes people should buy, but what about socks? Why do we ignore a very basic part of our running gear? New technology has invaded our home, offices and gym bag. It's changed the way we correspond, drive our cars, listen to music, cushion our running shoes and yes….even our socks have taken a technology based transformation.

New technology has made fabrics lighter, healthier, more comfortable, moisture-wicking, and more durable. Using a variety of new-age fabrics and even old-fashioned cotton blends can help keep feet dry, leaving them more comfortable and blister-free. My favorite socks are double layer Coolmaxx which keeps my feet dry and blister free. Since your feet spend much of their time covered in some kind of footwear, it is essential to choose the right socks for your needs. From fabric to fit, making sure your socks are the right ones for the job are essential. (Yes, socks come in sizes just like shoes!)

Here are some sock buying tips from the trenches:

A sock with a poly/cotton blend is the best for everyday wear. Sweat wicking blends like Coolmaxx or Dry-weave are best for running. If you have a chronic fungal infection or itchy feet, you may like socks impregnated with silver or copper to decrease the fungus and bacteria collecting in between your toes.

It really is all about fit. Socks should fit like a glove. No loose fabric or bunching up around the toes and especially no contracting or curling your toes because they are too small! Thin or thick, just make sure they fit and don't make your shoes too tight.

All socks should be tried on with the appropriate shoes. Don't try on your running socks with dress shoes…that's a recipe for buying the wrong socks!

Part 3: Basics Tips of the Trade from the Trenches

CHAPTER 4: TO STRETCH OR NOT TO STRETCH

The majority of runners and coaches believe stretching improves performance and reduces the risk of injury. In the meantime, experts disagree on the benefits and dangers of stretching. While many experts credit stretching with numerous benefits, improper stretching remains the second leading cause of running injuries! So, if we believe in stretching; what is the most effective method?

The Do's and Don'ts of Stretching:

DO

- **Warm up prior to stretching.** Walk or slowly jog at least 10-15 minutes prior to stretching.
- **Slowly add stretching to your workout.** Gently stretch a little more each day. Your muscles can actually stretch almost 1.5 times their length, but if you try to achieve this all at once you will hurt yourself!
- **Relax.** Tension makes it almost impossible to stretch effectively.
- **Breathe.** That may sound easy but try to breathe from your diaphragm or stomach.
- **Make it a routine, try to stretch every day, even if you don't run.** Follow the same order of stretches every time for consistency. Listen to your body. **Some days, less is more!**

DON'T

- **Don't bounce!!** Bouncing risks pulling or tearing the muscle you're trying to stretch and relax.
- **Muscles must be stretched gradually.**
- **Don't hold your breath.**
- **Don't stretch if it hurts.**
- **Don't forcibly stretch an injured muscle, gentle and less is more.**
- **Don't hurry through your routine.**
- **Don't listen to your friends opinions about the best technique for stretching.** Try them all and decide what works for you.

Bottom line: Most experts agree that stretching reduces muscle soreness after running and results in better athletic performance. Gentle stretching after a race or intense workout can also promote healing and lactic acid removal from the muscles. Stretching is most effective when

performed several times each week; a minimum of one stretching session per week is sufficient to maintain flexibility. Most coaches and runners believe in stretching before and after every workout. The experts never agree on much, but the majority seems to feel that stretching is beneficial to runners if done properly. So follow the precautions outlines and always warm up prior to stretching. Your body will thank you and who knows, you may even get a little faster!

CHAPTER 5: RUNNING INJURIES ARE NOT INEVITABLE!

Runners and injuries seem to go together like kids and dirt; you rarely have one without the other. In a recent survey, over 90% of runners reported missing a workout due to an injury within the last year. While injuries can result from traumatic events like tripping and falling, most running injuries are due to overuse. Bottom line, runners get hurt because they do too much, too soon, and often too fast. Luckily, by following a few easy tips, there are ways to avoid significant injuries or treat a minor injury before it becomes a nagging chronic problem. The following are my top ten tricks of the trade to avoid prolonged down time and make your running more injury free.

Tip #1: Do not increase your mileage by more than 10% per week. The body grows stronger if it is stressed in small increments, but starts to break down if it is stressed too much. Studies show that increasing your mileage by no more than 10% per week will help you grow stronger without breaking you down. Avoid increasing duration and pace at the same time.

Tip #2: Always follow a hard workout with an easy one. The body's like a cell phone. If you continue to use it without recharging, it will eventually wear down. By incorporating easy workouts or cross training into your program, you'll allow your body a chance to rest and repair itself.

Tip #3: Add strength training to your workouts. Strength training is usually absent from most training programs, but cross training with weights is the only component that has been proven to reduce running injuries. Proper strength training can help you overcome muscle imbalances that lead to injury, as well as strengthen connective tissues that help support your joints.

Tip #4: Do regular self-checks. Tune into what your body is telling you. How do your muscles and joints feel? How does your breathing and heart rate feel? Are you straining to keep up your pace? Anything that doesn't feel the same may be an early sign of overuse. Keep a training log of not only your mileage, but how you feel during and after each workout. Fatigue over a period of a few days is a huge red flag that your body is trying to tell you something.

Tip #5: Respond to pain immediately. If you experience pain during or after a workout, follow the rule of R-I-C-E (rest-ice-compression-elevation). Use an ice massage or cold

pack for 10-15 minutes every 4-6 hours to relieve inflammation and swelling. Elevation is also quite helpful in the first 48 hours. Apply a compressive wrap and hang out on the couch for a few hours and rest. After 48-72 hours, if the inflammation has subsided, apply heat to help promote healing.

Tip #6: Do not take pain-relief medication to finish a workout! Non-prescription anti-inflammatory medications can reduce inflammation and pain, but they do not speed healing. Taking anti-inflammatories prior to a workout may decrease your discomfort and allow you to finish a workout, but they also allow you to overstress already damaged tissue. This can prolong the healing process. Pain is a sign you should not ignore!

Tip #7: Choose relative rest over inactivity. Active rest, or easy exercise, is better than inactivity because it stimulates blood flow and promotes healing. If slow running is pain-less, but picking up the pace is painful, then stick to slow running until you feel better. Or do other activities, like swimming, cycling, or aqua running until you can run pain-free.

Tip #8: Don't wait too long to seek professional help. If your pain does not respond to a week of R-I-C-E and cutting mileage by at least 50%, see a sports medicine specialist. Not only can a professional help you diagnose and treat the condition, but they may also help you determine any biomechanical abnormalities that can lead to recurring injuries.

Tip #9: Try to maintain a positive attitude. Your immune system fights injuries with a complex army of nutrients and special cells. But, your immune system doesn't work alone. Your mind also has a voice in what goes on. Attitudes and feelings are organized in your brain to communicate with your immune system with chemical messengers. A positive attitude can go a long way to help speed healing.

Tip #10: Ease back into your regular training program. Remember, too much, too soon, too fast is what hurt you in the first place. It's tempting to jump right back in where you left off, but your injured tissue may not be fully recovered. It's during the first few weeks back that most runners get re-injured. Use the 10% rule to ease back into mileage.

Part 4: Injury Guide

CHAPTER 6: ACUTE INFLAMMATION

My feet and ankles hurt! And they are swollen and red after I run (or fell down, went boom). What do I do? Inflammation is the normal response to irritation, injury, or surgery.

Acute inflammation is an immediate response to trauma. Chronic inflammation is a long-term response to a medical condition like arthritis. Infection is inflammation caused by a virus, bacteria or fungus. Same symptoms, different treatment. A medical examination is prudent to rule out the inflammation that comes with infection!

What are the symptoms of acute inflammation? They are pain, swelling, redness and increased warmth of the skin. Bruising can also occur.

Treatment for acute inflammation follows the R-I-C-E principal. Rest. Ice. Compression. Elevation. The earlier after an injury you start treatment, the faster your inflammation will subside.

Rest: Stay off your foot. Sounds simple, but this is the part most of my patients fail at. Sit down, the world will not stop revolving if you take a little down time!

Ice: Ice your foot about 20 minutes every hour with an ice pack, frozen vegetables or a bag of ice wrapped in a towel. If you have poor circulation, ask your doctor if you can ice safely. If your skin turns blue, stop! Never put the ice pack directly on the skin. There is nothing more embarrassing than self-induced frost-bite!

Compression: Compress the area with an elastic bandage or stocking. This will decrease the swelling in the area. Loosen the bandage if your toes turn blue, goes numb or if your foot is throbbing more with compression than it was before. Again, if you have poor circulation, ask your doctor before compressing your foot.

Elevation: The proper level of elevation is always a debate in our house. Your foot should be elevated to level or just higher than your heart. This allows the fluid to drain to your heart. Make sure your hips and knees are slightly bent for comfort.

Anti-inflammatories: Over-the-counter non-steroidal anti-inflammatories like Naproxen or Ibuprofen can be quite helpful. Ask your doctor or pharmacist if these are safe for you to take with any of your other medications.

What do I do if my pain increases? Call the office or contact your doctor immediately if your symptoms persist more than 3 days or are getting progressively worse. Sounds like common sense, but you would not believe the number of people who wait weeks to seek medical attention and find out they have a broken bone or a severe infection. Do not hesitate! One of our doctors is always on call, 24 hours a day, 7 days a week for your foot and ankle emergencies.

CHAPTER 7: OVERUSE INJURIES

The majority of running injuries are from overuse. There is not room in this publication to go into depth on each injury, but these are the 10 most common foot and ankle related problems seen in runners:

Back Pain
Did you know that low back pain at some point in time will affect over 80% of the population? Proper footwear can potentially prevent, reduce and treat biomechanical factors associated with low back pain in runners. Back pain can be a mysterious thing. Every time your feet hit the ground, the reacting shock is transferred up your legs to your hips and spine, and any biomechanical imbalance can ultimately cause lower back pain.

Ilio-tibial Band Syndrome
Iliotibial Band Friction Syndrome is the second most common overuse injury among endurance athletes. Also known as Iliotibial Band Syndrome, IT Band Syndrome, and ITBS, it is a common cause of knee pain in runners and cyclists. In fact, ITBS has been reported in up to 12% of distance runners.

The most frequent complaint of ITBS sufferers is pain at the outside of the knee. They will typically report that the pain will come on at a predictable distance and then worsen throughout the remainder of the run. This pain usually goes away at rest. In its later stages, the same pain may begin with other, less stressful activities, such as stair climbing or even walking.

If you do develop IT band syndrome, icing, physical therapy, orthotics and anti-inflamatories are the usual treatments.

Patellofemoral Syndrome
Patellofemoral pain a.k.a. chondramalacia patella is the most common running-related knee problem. If you have this condition, you feel pain under and around your kneecap and often swelling of the area under the knee cap may occur. The pain can get worse when you are running or when you sit for a long time. Pain can also be associated with a “crunching” sensation when the knee is put through range of motion. You can have pain in only one knee, or you can have pain in both knees. It usually starts as a minor knee pain after running that progresses to pain when you get up in the morning, pain during or after exercise then pain all the time. Prompt intervention can decrease the period of disability form this injury.

Physical therapy and orthotics are the mainstays of treatment. It is imperative to work on the muscle imbalances that led to injury as well as stretching your hamstrings and strengthening your quadriceps. Strengthening is very important because your quad muscles control the movement of your kneecap and this is the most recognized cause of this syndrome.

Shin Splints

"My shins are killing me after running," is a common complaint of new runners or runners increasing their mileage or intensity. It has been estimated that "shin splints" account for approximately 15% of all running injuries and may account for up to 60% of leg pain in runners. Many terms have been used to describe exercise-induced leg pain, including shin splints, medial stress syndrome, tibial stress syndrome, recurrent exercise-induced ischemia, and chronic exertional compartment syndrome. "Shin splints" has been commonly used as an all-encompassing term for many disorders causing lower-leg pain so that's how I'll refer to it during this discussion.

So what is a "shin splint"? Shin splints are pain in the lower leg usually caused by a variety of overuse or chronic stress related fatigue syndromes. The root cause of most shin splints is chronic biomechanical imbalances of the lower leg and feet. What does that mean? Bad feet, muscle imbalance, bad shoes, or improper training.

Shin splints are common in today's active population. It is important to keep in mind that shin splints, like most running injuries, are basically an overuse injury. Listen to your body and back off when you begin to feel pain. See your podiatrist if shin splints last more than 5–7 days.

Posterior Tibial Tendonitis/Tendonosis

When you run, your foot hits the ground, you pronate to absorb impact and then you supinate to push off again. All of this is possible because of a muscle in your leg called the tibialis posterior. This muscle deep in the back of your leg forms a tendon called the posterior tibial tendon that attaches to your foot. It attaches to the navicular bone in the instep of your foot right at the top of your arch.

In the very simplest of terms, this tendon helps to hold up the arch. All you really need to know about this is that when you get posterior tibial tendonitis it can quickly progress and become a surgical problem.

So how do I know if have posterior tibial tendonitis? One clue that you might be getting this problem is pain from the ankle bone to the arch on the inside of your leg. If it is inflamed and you stand up on your toes on that foot, it will likely hurt much worse. If you stand only on one leg and do this, it will be even more painful. You might even have some swelling around the ankle or arch. If you have flat feet, you are more at risk for posterior tibial tendonitis.

If you notice these symptoms you need to get it checked out by your podiatrist. This is not one of the ice-it-and-it-will-go-away kind of problems. Neglecting it can (and often does) lead to surgery. It is preventable as well as easily treatable in its early stages. Orthotics can limit the force of pronation and help to decrease the risk of injury to the tendon, especially if you over-pronate or have flat feet. And as always, make sure you are wearing the right

type of running shoes for your foot type.

Peroneal Tendon Injuries

Peroneal tendon injuries often occur with ankle sprains and are commonly overlooked until your ankle pain becomes chronic. The peroneal tendons stabilize the outside of your foot and ankle and allow you to turn your foot outward. There are two tendons which run side by side, behind your outer ankle bone, then split in the foot; one to the outside while the larger one dives under your foot and inserts in the arch just behind your big toe joint. People with high-arched feet are more likely to experience peroneal tendon injuries.

Peroneal tendon injuries fall into three categories: tendonitis, tears, and subluxation. They are more common in active, athletic patients and can be acute (sudden) or chronic (lingering) in nature. Tendonitis is inflammation, acute tears are caused by an injury, and tendonosis (chronic tears) are usually caused by overuse and repetitive stress or chronic tendonitis. Subluxation usually occurs in an acute injury, like an ankle sprain, where the tendons actually dislocate onto the outer ankle bone and snap back and forth with activity.

The symptoms of a peroneal tendon injury can include swelling, pain, warmth, weakness and instability of the foot and ankle. Subluxation can also include a snapping feeling and sporadic pain with activity.

Treatment includes rest, casting, functional orthotics, anti-inflammatory medication or injection therapy, physical therapy, bracing, and in some cases surgery.

Your disability from a peroneal tendon injury can be significantly reduced by early intervention, so if you are experiencing any of these symptoms, call or contact the office and be evaluated. The sooner you have a proper diagnosis, the faster you will return to normal activity levels pain-free.

Achilles Tendonitis/Tendonosis

Let's talk about Achilles tendon injuries. They are very common especially in runners with high arched feet or very flat feet. Both of these foot types put way too much torque on the tendon and will cause a wear and tear tendonitis that eventually becomes tendonosis without proper treatment.

Tendonitis results from overuse. Long-standing tendonitis becomes tendonosis (degeneration of the tendon) which is much harder to treat. This overuse can happen over a period of time or can happen over a weekend. Those of you who exercise regularly or are in training for an athletic event, as strong as the Achilles tendon is, this work horse could use a break every once in a while! With chronic, long term, sustained use this tendon becomes strained. It also can become just as strained with whom we fondly refer to as the "weekend warriors". You know who you are! You are the ones who think it perfectly o.k. to hike the Appalachian Trail or take the steep way down the Grand Canyon over a three day weekend

because “it was there”! Marathon runners who decide they can run the Western States 100 without the proper training….you can’t hide for long....I will find you....

The simplest form of treatment can involve rest, heel lifts, icing, inserts, night splints, custom orthotics, anti-inflammatories. More complex forms of treatment for Achilles tendonitis can include immobilization through a boot or cast, physical therapy, and in the most resistant cases, surgery. Active release myofascial release is very helpful. Most of my long-standing Achilles tendon injuries are successfully treated with aggressive PT and manipulation on top of orthotic control. The longer you have it, the worse it gets. Do not let it get that far. Tendonosis is a chronic degeneration that can lead to splitting of the tendon and long term disability!

Thinking of waiting to see if it works itself out or are trying to work through the pain? Let us help reconsider. Chronic Achilles tendonitis (tendonosis) results in degeneration and breakdown within the tendon and this, in turn, can lead to a partial tear or full rupture. Now that will put you out for more than a couple months! If you are experiencing a nagging pain or swelling to the Achilles tendon or the back of the heel, have it evaluated. It is that simple!

Plantar Fasciitis (Heel Pain)

Heel pain is the most common complaint we see in our office. The pain is greatest usually when you get up in the morning, but continues to worsen over time – until it hurts with every step you take and can even ache at night when resting.

This syndrome is most commonly caused by several factors, including, but not limited to:

- Tight calf muscles
- Increase in body weight
- Sudden change in the amount or intensity of exercise
- Improper or worn out shoes
- Abnormal foot biomechanics (excessive pronation or supination)

Due to any of the above factors, the plantar fascia (the ligament that holds up your arch) is pulled or strained so that a portion of this very strong ligament starts to tear or fray like a rope at its weakest point (where it attaches to the heel bone). This tearing causes microscopic internal bleeding in this area. Your body reacts by causing inflammation, which in turn causes irritation to the nerves, bursae and muscles in this area. As the inflammation occurs, the body tries to heal itself by depositing calcium in the area of the tear. This creates the “spur”. Not everyone will have a visible spur on x-ray, especially in the early stages. The spur is not the cause of the pain! It is just a tangible sign that extensive tearing has occurred. The tearing and straining is the cause of the pain and then the nerve becomes inflamed which makes the pain more sharp and long-lasting. The straining must be stopped, along with the inflammation, in order to resolve this problem.

Treatment initially includes all of the items listed below. If any of these treatments increases your pain, please call or contact the office. It has been estimated that 85% of heel pain can be eliminated by non-surgical treatments; but these take time and effort on the part of the patient and doctor. BE PATIENT! Your heel pain did not appear overnight, and it will take awhile to totally eliminate the pain.

Conservative therapy can include:

1. Ice (at least 15 minutes twice a day).
2. Stretching (your doctor will give you calf and arch stretches).
3. Anti-inflammatories (either orally or in an injection).
4. Arch supports/Taping/or orthotics.

Remember that treating the biomechanics of your feet treats the underlying cause where the other treatments are only treating the symptoms! Some people need physical therapy, night splints, and casting for relief. Conservative treatment often takes 4–6 months to eliminate plantar fasciitis.

Remember, the earlier you seek medical help for heel pain, the faster it will go away! If you have pain more than 5–7 days in a row in the same spot, call or contact our office for an appointment.

Morton's Neuroma

I'm not even sure who Morton was, but he must have a heck of a pain in the ball of his foot! Morton's neuroma is actually "perineural fibrosis." In English, this is chronic scarring around a nerve. This scarring is almost an onion skin formation of scar tissue layered with fluid around a small interdigital nerve. The more fluid, the more scar, the more pain you experience. This is a compression problem. The nerve is compressed with scar and the ligament that connects the metatarsal (the long bones connected to your toes). Permanent nerve damage can occur in neuromas.

Symptoms of neuromas usually start with an annoying "bunched up sock" feeling in the ball of your foot. Taking off your shoes can alleviate these early symptoms, but somewhere along the way; the pain stays. It progresses to numbness, burning and pain in the ball of the foot which radiates to your toes. Electric shock treatment probably feels a lot like an interdigital neuroma. This can occur between the 3rd and 4th toes, most commonly; but also occurs between the 2nd and 3rd toes especially in those patients with other deformities like bunions.

Treatments include changes in shoe gear, injections of anti-inflammatories, padding, functional orthotics to decrease the abnormal biomechanical stress, and surgery. Advances have been made in cryosurgery and alcohol sclerosis injections. These can be discussed with your podiatrist.

If conservative treatment fails, surgery can successfully remove the neuroma allowing you to go back to your normal shoe gear and activities.

Call or contact your podiatrist for an appointment today to get your questions answered. Regardless of your treatment, long-term orthotic devices and shoe gear modifications will be needed to decrease the chance of recurrence. Be smart – seek medical attention early in your neuroma symptoms to avoid long-term complications.

Stress Fractures: What Every Runner Should Know

Broken bones or traumatic fractures are actually quite rare in runners. Stress fractures however may occur in runners when their training changes or intensifies. These are part of the all too often "too much, too soon, too fast" injury phenomenon seen in new marathoners or just those working on their 5K times a little too hard!

Stress fractures are truly an overuse injury like tendonitis, fasciitis, and shin splints. Bone normally breaks down and builds up in response to the stress of running. A fracture occurs when that stress accelerates faster than the body can respond with an increased ability to remodel and build up bone. This is why the 10% increase in mileage or intensity rule is so important.

Symptoms: Localized bone tenderness not associated with distinct trauma. Pain that does not decrease with rest and doesn't "warm up" when running. You may notice localized swelling, redness and distinct pain when pressing on the bone. I tell my patient's I have X-ray vision in my thumb, because when you hit the spot…the patient jumps off the table. Remember, the X-rays may be negative for 10 days to 2 weeks after the onset of injury. Bone scans or an MRI can diagnose these fractures earlier, but usually are not necessary.

Treatment: Most will heal with time and yes….that rest no one wants to ever take… Ice and anti-inflammatories help with the symptoms, but some studies have shown anti-inflammatories like Motrin or Aleve actually can slow bone healing. You may need immobilization in a stiff shoe or walking cast. In very severe cases, crutches and a fiberglass cast are needed! (Usually because you didn't listen to your doctor.) Surgery is only necessary when the fracture transitions from a stress crack to a true fracture and become misaligned.

Recovery requires no running, jumping or playing with the other kids! Cycling, deep-water running, and swimming are allowed, but no repetitive weight-bearing stress to the area. These usually take 6-8 weeks to heal.

CHAPTER 8: RUNNING ANNOYANCES

Blisters: Painful Blisters Are No Fun on the Run!
Painful blisters often plague distance runners. Blisters, as we all know, are caused by friction. Repeated rubbing of damp skin creates more friction than dry skin. Reduce dampness as well as the rubbing, and you'll reduce blistering.

So we all know that to prevent blisters, you need to minimize friction. This begins with shoe selection. Then socks. Socks can decrease friction between the feet and shoes. Coolmaxx or synthetic moisture wicking socks or even special double-layered socks can minimize shearing forces. Another preventive measure is to use padded insoles or moleskin to decrease friction in a specific area. Drying agents can also help. Foot powders and spray antiperspirants are inexpensive ways to decrease moisture. For severe sweating, there are prescription antiperspirants you can get from your physician that provide even more effective drying.

A thin layer of petroleum jelly or Body-Glide can also be applied to the feet to decrease friction. Conditioning the skin by gradually increasing activity tends to lead to formation of protective calluses rather than blisters.

Blisters are a fact of life in distance runners. Almost one in three marathon runners experience blisters at some point in their training. If you experience increased redness, swelling, pain, or green or yellow discharge you should take it to your physician immediately to make sure it's not becoming infected.

Tinea Pedis (Athlete's Foot Fungus)
Most commonly known as "athlete's foot fungus", tinea pedis is the term used for a dermatophyte infection of the bottom of the feet and in between the toes.

Commonly, patients describe itchy, scaly soles and, often, painful fissures between the toes. Less often, patients describe pustules or ulcers associated with the rash.

A simple fungal infection such as athlete's foot can become "super-infected" with bacteria. If this should happen, the rash will become increasingly painful and red. Your foot may become swollen, and you may develop blisters and even open sores in the infected area. These are indications that you may need oral antibiotics and will need to call your podiatrist.

If you think you have the symptoms of tinea pedis, try an over-the-counter anti-fungal for 1-2 weeks, as long as you don't also have redness streaking up your foot; but if this does not stop the itching rash, call or contact the office for an appointment. Remember that tinea pedis is often super-infected with bacteria and can lead to cellulitis which requires IV antibiotics in the hospital!

Toenail Issues: Avoid Bathroom Surgery on Ingrown or Black Toenails
Almost everyone, at one time or another in their life, has suffered from an ingrown toenail. Often, this first occurs during adolescence, but can occur at any age. The toenail curves into the skin, causing redness, irritation and pain. Most kids don't complain until their toe is swollen, red, and dripping pus! Don't worry, Mom, they hide it until they can't stand the pain anymore. Some older kids (yes, I mean you!) do the same thing with their spouses. Don't delay ingrown toenail treatment, you don't have to live with the pain. There are answers, and they are simple, when the toenail is first aggravated, and becomes more complex the nastier the infection. In diabetics and those patients with poor circulation, an ingrown toenail can lead to a toe amputation. Seek treatment when it is a minor annoyance!

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 athletes (due to toenail trauma) and the infirmed (due to a decreased immune response).

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 (like our spa, Health Steps).

2. Clean your toenail clippers with alcohol before you use them if you do your own toenails and make sure to replace Emory 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.

Talk to your podiatrist about the treatment of toenail fungus. Remember, the stuff from your nail tech or your mother's advice to use organic cornmeal usually doesn't work, so ask your doctor!

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.

CHAPTER 9: WHY DO I NEED TO REHABILITATE MY INJURY?

Rehab vs. Rest: That is the Question!

If I had a penny for every time a patient asked me, "What is physical therapy going to do for me?" I would have a great start on my retirement fund! So often, people are unaware of the vast benefits of physical therapy and choose to just rest an injury rather than rehabilitate an injury.

Have you or someone you know ever had an injury that hangs on? Why do you think that is? Some of the reasons people choose not to participate in physical therapy are lack of knowledge about what physical therapy is and what the benefits are, lack of insurance/money, as well as lack of time. My goal is to educate you on the benefits of physical therapy; know that you can ask for it and get it, even if money, benefits, and time are lacking.

Why should you rehabilitate an injury rather than just rest an injury? In some cases, not moving an injured body part can actually be more harmful than helpful. Physical therapy can assist in and facilitate the healing process faster than just resting alone. A physical therapist can safely guide you through a treatment program to minimize re-injury and maximize recovery. Inflammation that goes untreated can lead to complications of healing when the inflammatory process begins to stagnate in an unrelenting cycle. Physical therapists are educated on differential diagnosis, gait analysis, anatomy, joint biomechanics and structure, and can assess tissue damage to know how to tailor a rehabilitation program and be patient specific.

For instance, a common injury is an ankle sprain. Most people are familiar with the RICE treatment approach and choose to Rest, Ice, Compress, and Elevate. This is a great start; however, this should be followed up with a visit to your trusted podiatrist with a referral to physical therapy if appropriate. Often times an ankle sprain can nag for months after the injury due to mal-alignment of the joint(s) and can lend the patient to re-injury or further injury if it is not properly rehabilitated. Joint glide plays an important role in healing and when the joint is unable to function appropriately the cycle of inflammation is perpetuated. The physical therapist is able to assess the situation of the ankle and surrounding tissues and plan accordingly.

This plan can consist of modalities that control pain and swelling such as electrical stimulation, ultrasound, cold compression, kinesiotape, and iontophoresis. Manual techniques such as myofascial release, muscle energy techniques, joint mobilization or manipu-

lation can be utilized to reduce edema, increase motion, and restore normal joint glide. Appropriate stretching, strengthening, and active motion in safe ranges are an important part of rehabilitation as well. Not all of these treatments are utilized for every patient and are not appropriate for all phases of healing. A physical therapist is needed to determine which treatments are appropriate on a patient to patient basis. A physical therapist is also able to determine when you are safe to return to your activity.

As the patient, it is your choice where you go for physical therapy treatment. Do not be afraid to ask for physical therapy from your physician. Medically supervised exercise is important and is only one facet of the entire realm of physical therapy. Modalities to help decrease pain, swelling, inflammation, and improve tissue mobility are available for in clinic, and sometimes, home use. Manual therapy is also an incredibly underutilized tool that aids in improving range of motion, decreasing muscle spasm, increasing joint glide, and decreasing pain. Not all physical therapy clinics are the same. Some may emphasize exercise while others may emphasize modalities. A well balanced treatment program is needed for the best outcome for rehabilitation of any injury.

Time, money and benefit coverage are other factors that may keep someone from attending physical therapy. Most clinics have a cash fee schedule should insurance benefits be lacking, and usually a payment plan can be discussed if money is tight. Time is an investment that is needed but doesn't have to be the enemy in this situation. What you are willing to put into the recovery is exactly what you will get out of the recovery. Fortunately most injuries can be managed with marginal time commitments.

Rehabilitation is a team effort involving the physician, the physical therapist, and the patient. Resting is sometimes an integral part of the rehabilitation process but should not be the only element involved if the goals are to recover fully, return to activity without difficulty, and minimize chance of re-injury.

Part 5: Frequently Asked Questions

CHAPTER 10: HOW DO I KNOW IF I NEED ORTHOTICS?

The foot is a very complex structure which when functioning optimally supports and balances the weight of the entire body. Walking alone puts up to 1.5 times one's body weight on the foot. Running has been seen to put 3 times your body weight through every inch of your foot.

Foot pain is not normal and should not be ignored. It can lead to complex problems that can affect the functioning of other parts of the body, including the hips, knees, and back. Foot-related problems are often treated very successfully with functional orthotic shoe inserts.

Orthotics are prescribed to:

1. Reduce pain
2. Provide support
3. Prevent or slow down the development of a foot deformity
4. Provide better positioning of the foot, knee and hips
5. Improve the overall biomechanical function of the body

Functional orthotics allow the muscles, tendons and bones of the feet and lower legs to function at their highest potential. When appropriately fabricated, orthotics can decrease pain, not only in the foot, but in other parts of the body such as the knee, hip and lower back. By eliminating the need for one's muscles to compensate for imbalances, orthotics can reduce fatigue and promote efficient muscle function to enhance performance. They can also increase stability in an unstable joint and prevent an early foot deformity from developing additional problems.

How do you know if you need orthotics?

Between 70 and 85 percent of all people have biomechanical imperfections, yet not all these people require orthotic control.

Most serious runners who have biomechanical imperfections end up with orthotics out of necessity. The runner who runs fewer than 20 miles per week will not likely need orthotics unless they have a serious biomechanical weakness, but for the serious runner any biomechanical weakness will be magnified ten-fold, with the result being injury.

When a runner gets a series of nagging injuries one after the other, they are probably caused by a biomechanical flaw and can be corrected by orthotics. Runners who suffer from chronic knee pain, arch pain, plantar fasciitis, heel spurs, hip and lower back pain, and certain types of muscular fatigue very often benefit from orthotics.

CHAPTER 11: HOW LONG DO CUSTOM ORTHOTICS LAST?

The million dollar question (or at least a $300 one) is how long do custom foot orthotics last? The answer is that it is variable, but let me give you some criteria for thought.

I have been wearing orthotics while running for almost 10 years. I know when my orthotics have reached their expiration date by how my legs feel after running. The little aches and pains are back and I start to get mild posterior tibial tendonitis or knee pain. This usually occurs about every two years or so for me; but although I run between 15 to 20 miles a week, I weigh around 190 pounds and wear moderate stability shoes.

Things that effect orthotic wear:

- **Type of orthotic:** the softer and more flexible the device, the faster it wears out
- **Weight of the person:** For every pound you put 3 pounds of torque through your orthotics
- **Activity level:** The more you run, the faster they wear out
- **Foot type:** The more flexible the foot type, the more stress is placed on the orthotic
- **Shoe type:** the stiffer the shoe, the longer the orthotic will last
- **Heat:** If you leave them in your trunk in 105 degree heat, they will bend more

These are just a few variables that effect orthotic wear, but a simple answer is somewhere between one and five years. After five years, most people will wear out their orthotics or their foot will have changed so they really need a new prescription!

.....

Part 6: For More Information

Craig H. Thomajan, DPM, FACFAS
Austin Foot and Ankle Specialists

5000 Bee Cave Road, Suite 202, Austin, Texas 78746
P (512) 328-8900 F (512) 328-8903

www.AustinFootAndAnkle.com

Free Copy of Keep Running!

If you have any friends or family members who might benefit from the information provided in this publication, we would be happy to provide them with their own copy free of charge. Just tell them to visit our website at www.AustinFootAndAnkle.com to request it online or call us at (888) 376-2995 OR return this form. **Pass on the knowledge…Knowledge is power!**

There is no need to destroy this publication. Just photocopy this form, give it to your friend and tell them to mail it or fax it to us. Fax – (512) 328-8903, or Mail to: Austin Foot and Ankle Specialists, 5000 Bee Cave Road, Suite 202, Austin, Texas 78746

Please send a free copy of *Keep Running! Identify and Prevent Common Running Injuries*

Name: _____

Address: _____

City: _____ State: _____ Zip:_____

Email: _____

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.

AUSTIN FOOT
AND ANKLE SPECIALISTS

5000 Bee Cave Road, Suite 202
Austin, Texas 78746
(512) 328-8900

www.AustinFootAndAnkle.com