

# The Complete Guide to Foot and Ankle Injuries in Runners

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Thanks for taking an interest in my eBook, "The Complete Guide to Foot and Ankle Injuries in Runners." In this book you'll find valuable information about the causes, symptoms, treatment, and prevention of foot and ankle injuries in runners.

I have over 40 years of experience treating runners and others with foot and ankle injuries at the Foot and Ankle Center of Lake City.

I wrote this book to provide you with prevention and treatments you can begin at home before making an appointment. Call us today at 206-368-7000!

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For you running is more than just a sport. It's your passion, a way to relieve stress and stay healthy. It may also be your primary social activity.

That's why it can be tough and sometimes devastating when sidelined from a foot or ankle injury.

This eBook is designed to help you understand these common foot and ankle injuries, why they happen, and—most importantly—how to prevent them, so you can keep doing what you love without hesitation.

One of the most common injuries is plantar fasciitis. You can download my eBook, "[The Complete Guide to Stopping Heel Pain in Runners](#)", to learn more about overcoming that condition.

This book will add to the information presented in that book and discuss the other foot and ankle injuries you may encounter as a runner.

## **Risk Factors for Foot and Ankle Running Injuries**

Many risk factors contribute to the likelihood of sustaining a foot and ankle injury when running.

### **High Impact Exercise**

Running is a high-impact exercise that adds a lot of stress to your lower extremities. That's one of the reasons it's implicated in so many foot and ankle injuries. If you could lower the impact of running, you'd be lowering your risk for injuries. One factor you can control is your weight. The higher your weight the more stress you'll put on your feet when you walk and run.



There's also some evidence that shows if you change your stride and land softer on your feet you can reduce your risk for plantar fasciitis, one of the most common foot injuries in runners.

### **Older Runners**

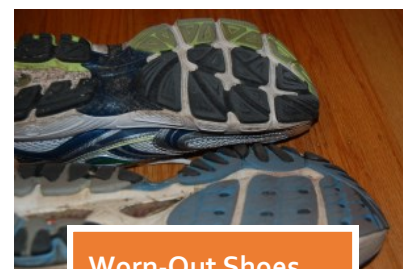
As we age our bodies become less resilient to stress and that includes foot and ankle stress. Older runners are more at risk for foot and ankle injuries.

### **Poor Foot Mechanics**

Runners with flat feet, high arches, overpronation (rolling your feet excessively in), and supination (rolling your feet excessively out) are at greater risk for foot injury. That's why it's so important to get properly fit for custom orthotics. While many stores and other outlets may provide a type of insert or orthotic, only a podiatrist can provide orthotics designed to keep your feet aligned while you run. More about this later.

### **Wearing the Wrong Shoes**

Improper footwear is often a contributing factor to many foot and ankle injuries in runners. Even if you wear running shoes if they aren't the right type for your feet, are worn out, or aren't the right size they won't provide proper support. Keep reading!



### **Tight Calf Muscles**

If you have tight calf muscles, they will limit your ability to run without injury. We'll talk more about how to deal with this problem later.

### **Overtraining**

Overtraining or increasing your running time and distance too quickly can also contribute to foot and ankle injuries.

### **Poor Running Form**

I've already mentioned how poor foot mechanics and overpronation can cause foot injuries. But you may also be consciously running a certain way because you heard it may be better for your performance. Unfortunately, techniques such as overstriding or trying to land with a heel can also contribute to foot and ankle injuries.

## Poor Running Surfaces

The surface you run on can also affect how much impact your feet, ankles, and body receive. Running on concrete or other hard surfaces, running on uneven ground, hill running, and running on treadmills all have their issues.

Foot and Ankle Conditions Caused by Running

## Plantar Fasciitis (A brief review)

As I mentioned above, you can download another eBook I wrote about plantar fasciitis and running.

But I'll do a quick review here as well.

Plantar fasciitis is the most common foot condition in seen in runners. When the plantar fascia—the connective tissue that runs along the bottom of the foot—becomes inflamed you'll feel pain in your heel and sometimes in the arch of your foot. It's most noticeable when you first get out of bed in the morning and gets better as the day goes with movement and loosening of the calf muscles.



### Causes:

While runners of all types are more at risk for developing this condition due to the extra force placed on the plantar fascia, other factors also increase the chance of developing it.

- Poor foot mechanics like flat feet and overpronation
- Tight calf muscles
- Overweight
- Wearing poor, worn-out, or the wrong footwear.

### Treatments include:

- Resting and reducing activities: curtailing your running and other sports activities are necessary to heal this condition.
- Stretching to relieve tight calf muscles
- Taping to reduce pressure on the plantar fascia
- Wearing supportive running shoes designed for your foot type and style of running.
- Icing after running to reduce inflammation and pain
- Wearing custom orthotics - patients will need to wear custom orthotics consistently to relieve moderate to severe heel pain.
- Receiving other treatments to heal the condition such as MLS laser therapy or PRP (Platelet-Rich Plasma) treatments.
- Surgery is rarely needed

## Achilles Tendonitis

Another common foot condition in runners is Achilles tendonitis. I call it a cousin to plantar fasciitis because it is caused by many of the same factors and is treated in the same fashion as heel pain. Instead of feeling pain in the heel, the pain is prevalent on the back of the heel, where the Achilles tendon is located. However, an additional risk factor for Achilles tendonitis is uphill running or cranking up the grade on a treadmill.



Stretching the calf muscles and wearing custom orthotics are key to recovery from this condition. A walking boot may be necessary if pain is severe.

It's critical to get early and complete treatment for Achilles tendonitis to prevent it from progressing to Achilles tendinosis, a degenerative form of the condition.

## Achilles Tendon Rupture

Athletes who play high-impact sports, weekend warriors, and those with pre-existing Achilles tendonitis or tendinosis are at higher risk for an Achilles tendon rupture. In addition, steroid injections and antibiotics known as fluoroquinolones can weaken the Achilles and lead to this problem.

### Symptoms

- Sudden pain (which feels like a kick or a stab) in the back of the ankle or calf – often subsiding into a dull ache
- A popping or snapping sensation
- Swelling on the back of the leg between the heel and the calf
- Difficulty walking (especially upstairs or uphill) and difficulty rising up on the toes

### Treatment

Non-surgical treatments include applying ice, compression, elevation, and rest immediately afterwards. Your podiatrist may also provide a cast, walking boot, or brace to limit any motion. Surgery is often needed to repair the Achilles tendon.

## Morton's Neuroma

Pain felt between your 3rd and 4th toes on the ball of your foot is likely Morton's neuroma. It's caused by an enlargement of the nerves that run through that area of the foot.

### Risk Factors

While running and improper foot mechanics can be a risk factor, tight shoes, narrow shoes, and high heels can all aggravate this condition.

### Symptoms

In addition to pain in the ball of the foot, you can feel tingling, burning, numbness, or the sense that you're walking or running with a pebble in your shoe.

### Treatment

- Apply ice to the area
- Wear running shoes and street shoes that have a wider toe box.
- Use a metatarsal pad to offload pressure on the forefoot.
- Wear custom orthotics consistently to correct your foot alignment and relieve pressure on the nerves.
- Our office also provides alcohol injections to shrink the neuroma and MLS laser therapy to reduce pain and inflammation.



## Stress Fractures

Stress fractures are small cracks in bones that develop due to repetitive impact and over-use, making them common in runners. Stress fractures result from the inability of the bone to repair micro-damage caused by continuous stress, especially during high-impact activities like running.

### Symptoms

- Pain that develops gradually and worsens with activity but improves with rest most often felt on top of the affected bone.
- Tenderness or swelling at the site of the fracture.
- A localized "aching" sensation or discomfort that becomes sharper during running.
- Persistent pain that may eventually occur even with routine activities or at rest if left untreated.



### Additional Risk Factors

In addition to the risk factors described above for runners, women, in particular, can be at higher risk of a stress fracture if they suffer from low calcium or Vitamin D levels, low weight, and low bone density due to menopause or lack of a period.

### Treatment

- Rest and immobilization in a walking boot
- Custom orthotics for runners with faulty foot mechanics
- Change how you run---stop overstriding
- Get proper nourishment and vitamins to maintain weight and keep up calcium and Vitamin D levels.

## Ankle Sprains

Ankle sprain injuries are caused by an unnatural twisting or force on the ankle bones of the foot, which may result in excessive stretching or tearing of one or more ligaments on the outside of the ankle.

### Symptoms

- pain
- swelling
- bruising
- tender to the touch
- poor range of motion
- difficulty bearing weight and poor ankle stability
- a popping sound at the time of the injury

### Causes

- Running on uneven surfaces
- Weak or imbalanced muscles
- Poor, worn out, or inappropriate footwear for the type of running surface (i.e. shoes for running on trails vs. road or track running)
- Previous ankle sprains and sprains that haven't fully healed.

## Treatment

- RICE protocol- Rest, ice, compression, and elevation right after injury.
- Physical therapy to build strength and improve balance.
- MLS laser therapy to treat ligaments at the cellular level.

## Sesamoiditis

Pain in the ball of the foot resulting from inflamed sesamoid bones the size of a kidney bean is called sesamoiditis. When you run you can overstress these bones due to frequent weight transfer to this area. These bones are about the size of a kidney bean.



## Symptoms

- Pain under the big toe or on the ball of the foot is intense
- Swelling and bruising.
- Difficulty and pain in bending and straightening the big toe.

## Treatment

- Discontinue the activity causing the pain and inflammation.
- Ice Padding, strapping, or taping. A weight relieving Dancer's pad may be placed in the shoe to cushion the inflamed sesamoid area, or the toe may be taped or strapped to relieve that area of tension.
- Injection of a steroidal medication to reduce swelling.
- Custom orthotics may be needed for long-term treatment of this condition.
- Wear shoes with cushioning that are soft-soled and low-heeled to relieve stress on the foot.

## Plantar Plate Tear

When the plantar plate of the foot is overloaded or strained, it can tear—usually at the 2nd toe joint.

## Symptoms

- Persistent pain and swelling in the ball of the foot including the affected toe joint.
- Increased pain with weight bearing activities
- Increased pain with high-heel wear, flexible footwear, and walking barefoot
- Reduced pain with rest
- Swelling and redness on top of the foot
- Clawed toes— the toe is clawed down but the whole toe is positioned above the other toes.
- Separation of the toes with the 2nd toe moving toward the big toe called the Churchill sign
- A feeling of walking on the bones of the foot



## **Causes**

In addition to running, the following risk factors also play a role in plantar plate tears.

- Over pronation (people with flat feet and low arches)
- Bunions and hammertoes
- A longer 2nd metatarsal bone or Morton's toe (it's more exposed to the forces that cause the injury)
- Hypermobility joints
- Tight calf muscles
- Improper shoes (on and off the field; for example, high heels place a lot of pressure on the ball of the foot)

## **Treatment**

- Stop activities that bring on pain
- Use the RICE protocol – this protocol is an important treatment for any acute injury. It includes rest, icing (20 minutes on and 20 minutes off) several times a day, compression, and elevation.
- Plantar flexion taping for the affected toes.
- Walking boot
- A metatarsal pad to offload the affected joint and relieve pain
- Stretching the calf muscle.

## **Runner's Toe**

Runner's toe (a bruised and blackened toenail) is caused by blood collecting under the nail.

### **Symptoms**

- Black, red, or purple toenail
- Sharp pain and pressure on the nail
- Swelling or tenderness on top of the toe
- Trouble walking or running



### **Causes**

- Failure to trim toenails – when your toenails are too long, they can hit the top of your running shoe; that pressure can cause a hematoma to develop.
- Wearing running shoes that are too short or too long-both can cause your nail to hit the inside of the top of your shoe.
- Arches that flatten – if you're arches flatten out when you run, in effect your shoes become too short for you. Again, this can cause your toes to jam into the top of your shoe.



## Treatment

- Let the nail grow out
- Have the toenail drained if painful
- Don't ever rip off a nail that is coming off, instead tape it in place until you see a podiatrist.

## How to Prevent Running Injuries of the Foot and Ankle

While foot and ankle injuries are common in runners, they aren't inevitable. If you're prone to foot and ankle injuries or you've had them in the past here's what you can do to reduce your risk.

### Custom Orthotics

Poor foot mechanics is a major culprit in almost all foot and ankle problems in runners. If you have flat feet or overpronate you're at great risk for developing plantar fasciitis and Achilles tendonitis. While it's essential to wear your orthotics when you run, it's also important to wear them all the time in your other shoes as well.

While there are a great many inserts and so-called orthotics on the market, these can only provide arch support. Only custom orthotics made by a podiatrist can correct the misalignment you experience if you have flat feet or overpronate.

### Traditional Custom Orthotics

Traditional custom orthotics control abnormal motion in the foot and help with postural alignment. Custom orthotics offer the greatest potential for foot pain relief for those with heel pain, flat feet, and other foot pain problems. They last 3-5 years and are tailored specifically to your foot. They can provide dramatic relief from foot pain more quickly than you may have thought possible by:

- Increasing balance
- Increasing endurance
- Increase performance in running and other sports
- If your orthotics require any adjustments, these are the right type of orthotics to get for running.



### 3D Printed Orthotics

Another type of custom orthotic we offer are 3D printed orthotics. Just like traditional orthotics they support your feet and control abnormal foot motion like pronation when you walk or run.

Unlike traditional custom orthotics, 3D printed orthotics have a lattice design allowing for the perfect amount of stiffness and flexibility to support each part of the foot. Thin and lightweight, they are unmatched in the comfort level they provide when running.

To create these orthotics we use an HP software laser scanner to capture a high-resolution, 3D-picture of the bottom of your foot and lower leg. We also use a special plate to obtain a standing and a dynamic view of your gait, so we can analyze your feet in motion.

Perfect for runners who need no adjustments to their orthotics.



## Medical Grade Over-the-Counter Orthotics

Medical grade over-the-counter orthotics are effective for temporary relief of mild arch or heel pain, Achilles tendonitis, and Morton's neuroma. The Medical Grade Orthotics we carry are Redi-thotics. They are moderately supportive and have a shock-absorbing top cover and heel post for stability. Redi-thotics need to be replaced every 6 months; for purchase at our office. Redi-thotics also makes orthotics for kids.



## Stretching

Everyone needs to stretch before and after running to prevent foot and ankle problems. We recommend Dynamic stretching before running and static stretches afterwards. If you have very tight calf muscles you may also need to use an Achilles splint to give you the level of stretching you need to prevent plantar fasciitis and other foot pain.

## Buy Proper Footwear

Buying the right footwear for your foot type, running style, running surface, and running distance is essential to prevent foot pain. It's also important to buy new running shoes to match the mileage you put on them (no more than 500 miles of wear time) and learn lacing techniques that can help improve performance. [Get running shoe tips here!](#)



## Avoid Poor Street Shoes

Some people assume they only need to wear great footwear when they run. That's not true. What you do every day makes a difference in your foot health. Be sure to wear supportive shoes for everyday wear as well. Avoid the following shoes to keep your feet healthy:

- High heels and stilettos – these can cause your calf muscle to shorten and increase risk for heel pain, worsen bunions, and accelerate development of Morton's neuroma.
- Flip flops – while you should wear flip-flops at the pool and locker room avoid wearing them for walking around town. They can increase the chance of developing Morton's neuroma and spraining your ankle.
- Flat shoes – these shoes are bad for anyone prone to developing heel pain.
- Cushy, squooshy shoes – these shoes provide little or no support.
- Shoes that are too short or too long – don't assume you know your foot size. Get your feet measured before you buy. Shoes that are too short or too long can lead to a blackened toenail.

## Choose A Better Running Surface

While the type of shoes you wear can help to some degree with uneven surfaces (think trail shoes), it's best to avoid them if you can. Choose newer sidewalks or streets less likely to have potholes and other irregularities.

If you're prone to developing Achilles tendonitis, avoid running on hills or ramping up the incline on a treadmill as these can cause this condition to flare up.

## Build Up Your Training Time Slowly

Your body needs time to adapt to increases in time in distance when you run. That's true for your feet and ankles as well. Don't increase your training time by more than 10% a week.

*Dr. Berg and the staff were very helpful! I'd injured my foot and I thought active sports were over. But Dr. Berg laid out a clear path that I stuck to and now I'm ready to start running again! Overall a very positive experience. I highly recommend the Foot and Ankle Center of Lake City.*

*-Billy T.*