

Shin Splints



Solving the Problem

Get rid of Shin Splints and other persistent problems that cause athletes to lose enjoyment, performance and longevity in sports.

Understanding this process allows you to also eliminate other common problems like:

Plantar Fasciitis
Metatarsalgia
Ankle Pain
Prevent Ankle Sprains
Knee Pain
Runners Knee

Tight IT Bands
Hip Pain
Sciatic Pain
Low Back Pain
Shoulder and Neck Pain
Headaches and TMJ Pain

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The root cause of common shin splints is muscle overuse. Most of the time, shin splints occur in response to over pronation, more specifically by conscious or subconscious compensation for over pronation. When you try to help someone who has shin splints or shin splint like-pain, it is important to understand that this pain may also originate from other issues, some of which require medical help.

Seek Medical Help

- Acute onset
- Hurts all the time
- Throbbing
- Compartment Syndrome
- Fracture/Sprain
- Tear

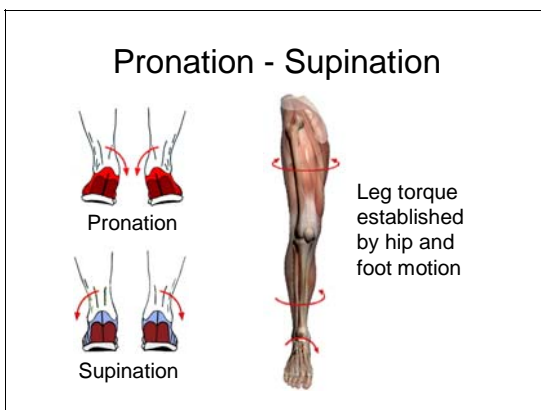
If there are any doubts about the origin of the athlete's pain consult a doctor, and, if common shin splints are diagnosed, the suggestions in this presentation will usually resolve the problem. Particular concern should be paid to lower extremity pain with acute onset, constant and throbbing pain as you may be dealing with an injury or compartment syndrome that does require emergency medical attention.

Gradual Onset

- Gradual over days and weeks
- Gradual with amount of exercise
- Gradual with intensity of exertion

Muscle pain usually comes on gradually and typically varies with amount and intensity of exercise. Many runners tend to know the mile marker when shin splints start.

If you are dealing with an athlete who typically experiences shin pain after running a certain distance, after certain exercises, or intensity of exercise, and the pain eases off relatively quickly with rest, you can be fairly certain that you are dealing with a case of common shin splints. When in doubt, be on the safe side and obtain a medical opinion.




Pronation means the ankle moves forward, inward and down.

Supination is the opposite meaning the ankle moves backward, outward and up.

The ankle joint is shaped such that if the foot pronates, the leg will rotate internally, and conversely, if the foot supinates, the leg will rotate externally. This also lengthens and shortens the leg. Since the hips also control internal and external rotation of the leg, the feet and the hips, as is the case with over pronation can establish significant torque in the leg.


Medial Shin Splints



- Can be medial or anterior
- Account for 50% of all tibial stress fractures
- Onset feels like shin splints
- Can lead to stress fracture

Not all gradual onset shin splint pain is muscle pain. Medial shin splints, also called Tibial Stress Syndrome is pain from the Tibia being stressed and possibly developing stress fractures. Since this problem is often related to torque in the tibia that is generated or amplified by over pronation, it is appropriately mentioned along with common shin splints because the solution is frequently the same—removing the root cause of over pronation.

Anterior Shin Splints

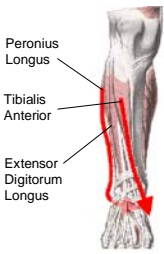


- Extensor Digitorum-Longus
- The traditional downhill shin splints muscles
- Prevents slapping of the foot

In the group appropriately named the “Shin Splint Muscles” you will find three muscles located in the front, outside portion of the calf.

The Extensor Digitorum Longus muscle controls the lift (dorsiflexion) of the forefoot, and conversely how fast the forefoot meets the ground following the heel strike. In other words it controls the speed at which the forefoot slaps the ground when walking and running. This is the muscle that will get sore and often cramp when running downhill.

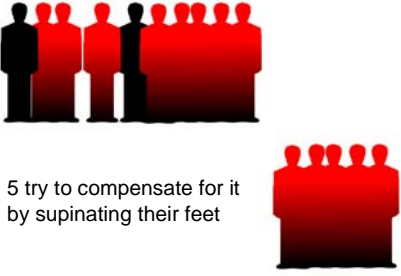
Anterior Shin Splints



- Tibialis Anterior
- Peronius Longus
- Helps maintain the arch and supinate the foot

Both the Peronius Longus and the Tibialis Anterior muscles help supinate the foot. The Tibialis Anterior directly helps lift the arch. The Peronius Longus tendon wraps under the foot and both lifts and packs the midfoot to supinate the foot and to make it more rigid.

8 in 10 structurally over pronate

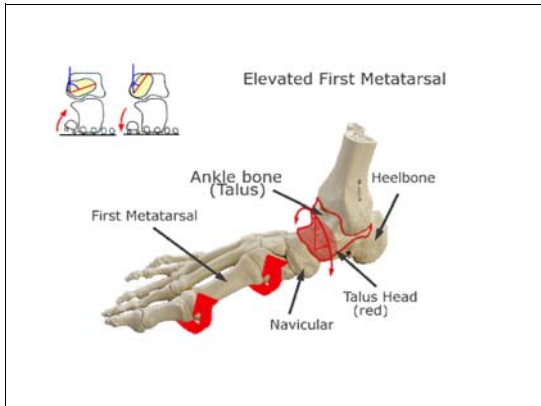


5 try to compensate for it by supinating their feet

8 in 10 people structurally over pronate.

5 of the 8 people will try to correct for their structural over pronation by consciously or subconsciously supinating their feet.

This causes their feet to be off balance which in turn makes the whole body unstable, causes shin splints and other muscle overuse pain.



The reason for structural pronation is a congenital variation in the angle of the head of the Talus (ankle bone). The head of the Talus controls the geometry of the medial column, and in most people causes the first metatarsal and big toe to be elevated and rotated.

Stand with feet comfortably, close to shoulder width apart. The feet should be pointing straight forward and parallel.

The following exercise simulates what happens when you walk and run, and demonstrates the elevated first metatarsal.

This exercise should be done on a hard surface.

Follow the steps.

Lean slightly forward
Do a ¼ knee bend

When performing the knee bend, maintain the upper body upright. Do not squat. Make sure the heels stay on the ground.

Deliberately align the middle of your knees over the middle of your feet

Align the middle of the knees over the the middle of the feet (third toe). This means that your knees will move straight forward when you bend your knees, not in or out. When the knees are moving straight forward, the knees are properly aligned for optimal mechanics.

Move your knees slowly toward each other until weight bearing on the balls of your feet behind your big toes



By weight bearing on the first metatarsal, we mean that you move your knees inward until you feel positive weight bearing contact with the ground. A significant portion of your weight bearing will still be on the lesser metatarsals, particularly the second.

This exercise demonstrates that most people have to bring their knees out of alignment in order for the first metatarsal and the big toe to become weight bearing. The same thing happens when your heels come off the ground when you walk and run.

Moving the knees back in alignment feels like the weight shifts to the outside of the feet



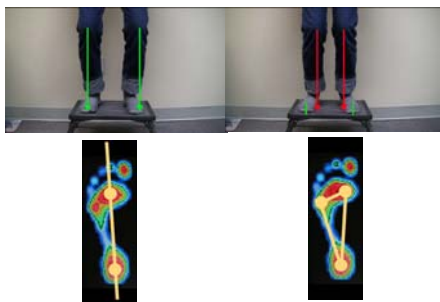
Look at the motion of the first metatarsal and the big toe when you move back and forth between proper alignment (knee over the middle of the foot) and out of alignment (weight bearing first metatarsal).

Mr. Big

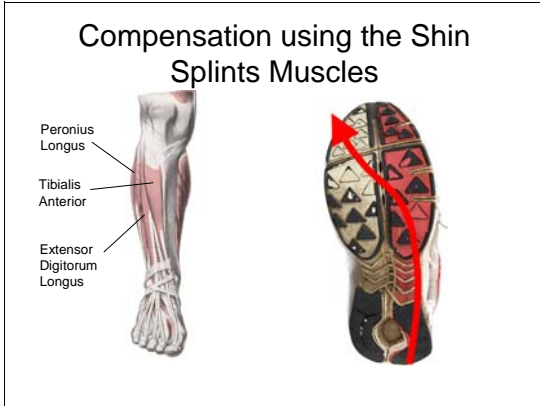


The first metatarsal is the strongest metatarsal in the foot, and for most people, it is not participating in the weight bearing gait cycle. For most people the collapse of the arch, the internal rotation and tension in the leg causes discomfort which is why the majority of people who structurally over pronate try subconsciously to correct it by shifting weight to the outside of their feet. (Supinate to rotate the leg externally)

Ice skate vs. Tri-pod

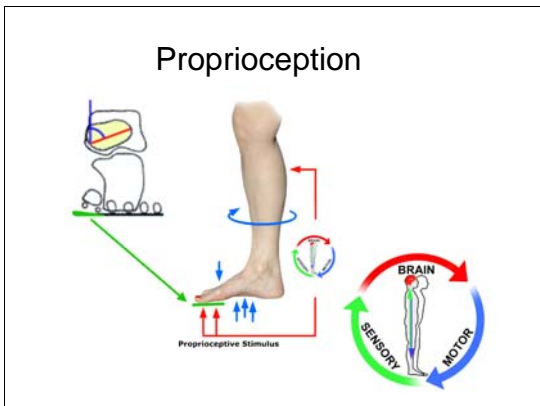


The result is that the major weight bearing for your feet will be the heel and the second metatarsal head. Dr. Janet Travell who authored the leading text on muscle pain likened this condition to walking on ice skates instead of the foot acting more like a stable tripod. Fact is; all the metatarsals from the first to the fifth should participate in the gait cycle and the strongest forces should apply to the first and second metatarsal heads, also called low gear push off (Boysen Moeller).

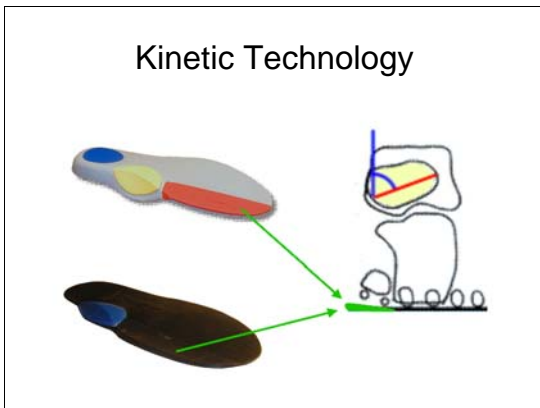


Compensating by shifting weight to the outside of the feet turns all the “Shin Splint Muscles” on permanently whenever you are on your feet.

A muscle permanently turned on will weaken and spasm.



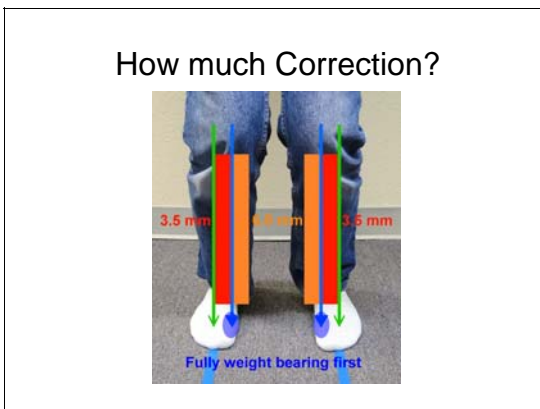
Anything you place inside a shoe, a pebble, an arch support or a cushion will cause a proprioceptive response. We take advantage of that by placing a deliberate shape underneath the first metatarsal and big toe. It allows the brain to sense the ground slightly earlier in the gait cycle. The brain does what it always does which is instructing the muscles to counteract the ground forces—i.e. pushing back against the ground. When the first metatarsal is pressing against the ground, the integrity of the arch is restored, and the foot is prevented from over pronating and the brain senses no need to compensate. The Shin Splints Go Away! Balance and harmony is restored.



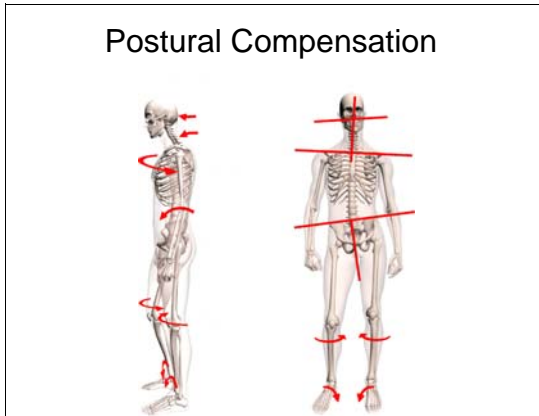
Kinetic Technology insoles offered under the ProKinetics brand are made in two standard levels of compensation. The amount of compensation is measured by the height of the wedge at the inner edge of the insole.

The red wedge on the ProKinetics replacement insoles (takes the place of the insoles that came with your shoes) is 3 mm correction, and an additional orange wedge can be added to increase to 6 mm correction.

The Ultra-Thin insoles (can also be used in shoes without removable insoles) are either 3.5 or 6 mm correction so the amount of correction needs to be specified.



If all the metatarsals are on the ground when the knees are aligned, no correction is needed. If the knees move inward past the second toe to the big toe, 3.5 mm compensation is usually sufficient. If the knees move over or past the big toe, 6.0 mm correction is recommended. The higher wedge amounts to a bigger change in the timing of the muscles. The wedges do not significantly support the big toe as these amounts correspond to only approximately 30% of the actual elevation of the first metatarsal.



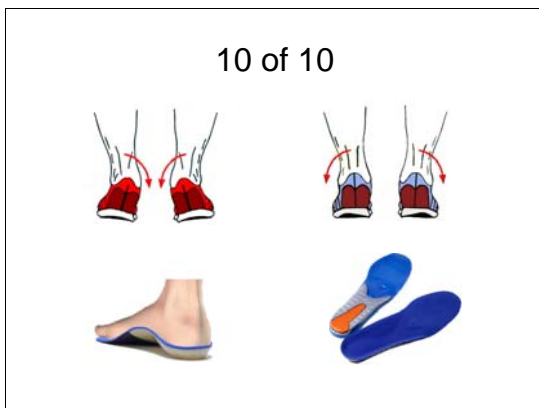
Imbalanced feet cause postural distortions, and people respond in different ways to it. Some people will simply collapse, so their feet pronate, their legs rotate internally, hips rotate forward and their upper bodies implode. Most people respond by fighting the postural collapse. They brace against the imbalance in the feet and to better support their posture, they, to varying degrees, try to walk on the outside of their feet. People who do this are more sensitive to change and need to change slowly so their tense bodies can adapt and relax.



The Knee bend determines how much correction to use.

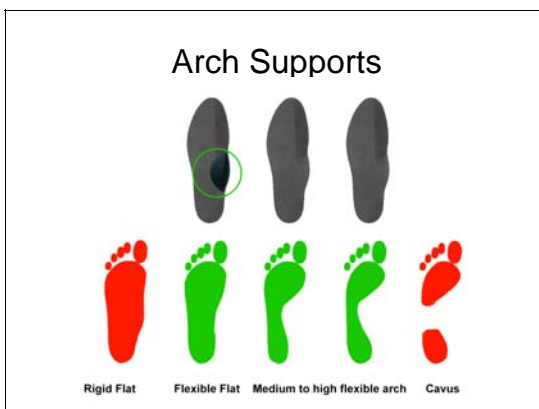
The wear pattern on the shoes identifies who is muscularly bracing and how much. How to get started is determined by the wear pattern of the shoes. If you over pronate and you wear hardest from the middle to the outside (lateral side) of your shoes, start in 3.5 mm insoles and graduate to 6.0 mm after 1-2 weeks if necessary based on the knee bend test.

People who relax and freely pronate typically wear harder on the inside of the sole, and are generally better able to accommodate change. This group may start with 6 mm compensation.



In traditional podiatry if you over pronate you get arch supports. If you supinate you get extra cushioning, and you may even get arch supports to support your high arches.

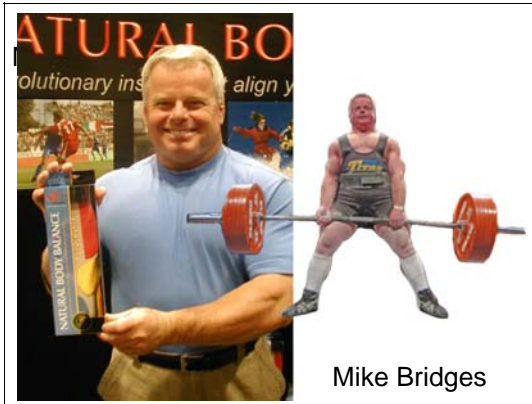
You will, or may already have, encountered many athletes who have custom made orthotics, but still have problems with pain or performance or both. The reason traditional orthotics are not very reliable is that they are most often made of hard material that lock up the arch, and they do not provide any correction for the elevated first metatarsal. High arch supports will generally make this problem worse.



Arch supports are generally designed to limit the motion of the feet—i.e. prevent the arch from dropping and the feet from pronating. They “work” when your feet are flat on the ground, but as soon as your heels lift, they lose their ability to support your arches, and your feet will pronate.

Arch supports are used with Kinetic Technology Insoles for two purposes.

1. To create a small amount of arch in a flexible flat foot during mid stance
2. To limit arch motion for people during healing from Plantar Fasciitis. In this case the arch works like a cast preventing the ligament from straining. It can be removed when the pain has resolved (pain free for 7-10 days with normal activity).



Take it from a guy who carries real weight:

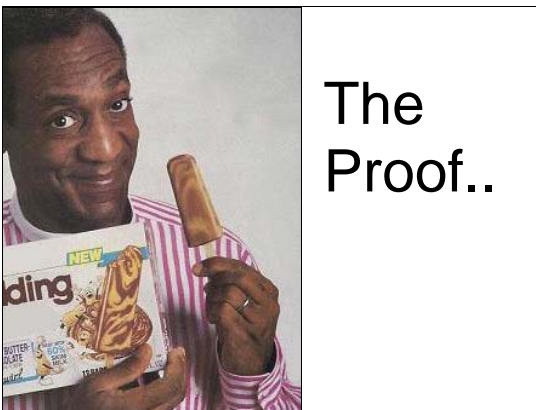
ProKinetics Insoles work as well for athletes as they do for people who suffer from foot and posture related pain.

Alignment matters in all sports but when lifting the weights Mike does, improper alignment can end your career in a split second as a knee tears like a drumstick off a Thanksgiving turkey.

Alignment means power, confidence, agility, endurance and enjoyment. What athlete and coach wouldn't want that?

Kinetic Technology is available in three different versions:

1. Replacement insoles that take the place of the insoles you can remove from your shoes. These insoles include removable arches, 3.0 and 6.0 mm Kinetic Technology, contoured shape and extra heel cushioning.
2. Ultra Thin insoles that can be used in all shoes even if the original shoe insoles are not removable. 1.9 mm thick, and available in either 3.5 or 6.0 mm Kinetic Technology. The Perfect Fit Package contains one pair each, 3.5 and 6.0 mm insoles. (For the bracers.)
3. The medical grade adhesive on the Solemates makes them suitable for attaching directly to the foot or in your shoes, sandals or flip-flops.



The most important question: How will Kinetic Technology work for you?

There is only one way to find out, and that's why we have always offered a 90 day 100% money back performance guarantee. If you have knee pain, it should go away, and so should your hip or foot pain, or back pain. If the ProKinetics insoles do not work to your level of expectation, you simply send them back and receive a 100% refund that includes what you paid for shipping and handling.



If you have any questions about ProKinetics Insoles or are curious if they will work for specific issues, please call us. We happily take the time needed to thoroughly understand your specific situation and give you a recommendation based on our experience, that will make sense to you.

888-790-4100

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