

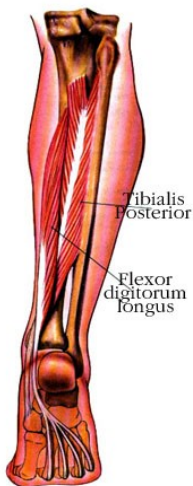
SOLUTIONS FOR SHIN SPLINTS TO GET YOU BACK RUNNING PAIN FREE

'Shin splints' is a common term for 'medial tibial stress syndrome' (MTSS), or simply put; tissue injury and inflammation to the connective tissue and muscles attached to the tibia bone that control inversion and pronation of the foot. It is very common in runners, but the good news is that it is relatively easy to diagnose and treat, and I have put together some great rehab solutions to the pain problem that plagues a lot of fitness fanatics.

With Shin Splints, **pain usually develops down the length of the inside of the tibia (shin bone)**; either during a reasonably long run or sport and then eases once the person stops the activity. Hence the person tends to continue running each week as the pain is mild and always ceases after a run.



However, as the injury progresses, the pain can intensify and can come on earlier during a run, and more severe, to the point where the runner cannot continue. They feel like they are becoming less and less able to run the same distance. Does sound familiar? If the problem is not addressed early and becomes worse, pain continues after the activity (does not go away for a few hours) and can develop into aching at night. In some rare cases the inflammation and damage becomes so severe it causes stress fractures in the shin bone which require months of rest.



Most commonly, the muscle involved is the 'tibialis posterior' muscle and the attachment to the tibia - the connective aponeurosis tissue. In some cases, other muscles are also involved including the 'flexor digitorum longus' (toe flexor) - next to the tibialis posterior and tibialis anterior, which is on the outside of the tibia and is a foot inverter and dorsiflexor. 'Overpronation' or 'flat feet' is the most common cause. If the person runs by landing on their heel first ('rear-foot strike') and the heel excessively rolls inwards ('overpronation of the rear-foot') this creates eccentric fatigue and overloading of the muscles which control the movement.

If the front part of the foot also drops down and the arch collapses (usually because they have a significant degree of 'forefoot varus') then the body is unable to hold the foot in a dynamically neutral position during landing and pushing off into the next step.

Running technique is a big factor, not just overpronation. If the person lands heavily on the heel (with too much vertical movement of the body during running), has tight calf muscles, is overweight, has poor hip stability and weak glutes, then this adds to the inability to control the heel and foot during strike as well as increasing (the loading of the leg muscles).

TRAINING FACTORS AND SHOES

Other factors which lead to the cause of Shin Splints include 'over-training', where the person is doing too much running without enough rest, combined with the fact that they (and therefore their muscles) are under-conditioned to the level of exercise they are trying to perform. This is very common with runners who increase their training capacity and distance due to entering a running event, or clients starting a running program for the first time or from a period of time off running and 'trying to get back into it', or simply starting pre-season sport training (on hard ground), or an intensive fitness program to lose weight.

Having the right shoes is also very important, not just type of support but the shape and structure for the amount and type of exercise, as well as making sure that the person is replacing their shoes often if they are training a lot.



Shoes can wear out quickly and lose their support with regular use, which reduces the impact ability and supportive motion control of the shoe and thus increases the loading to the legs. Serious runners who do a lot of kilometres per week should be replacing their shoes every 6 months!

PHYSIO, TREATMENT AND REHABILITATION

The Physio will diagnose the problem and identify the causes, as well as providing treatment for the injury which is crucial to settle the symptoms quickly and get you back on track and into a rehab program early, as well as assessing if you need custom orthotics to control the foot. Treatments that help the symptoms of shin splints including a calf muscle stretching program, deep tissue massage, dry needling with acupuncture needles, using kinesio-taping to support the muscle tissues as well as eccentric calf strengthening of the injured lower leg muscles and training program advice including education on the right things to do in the short and long term.



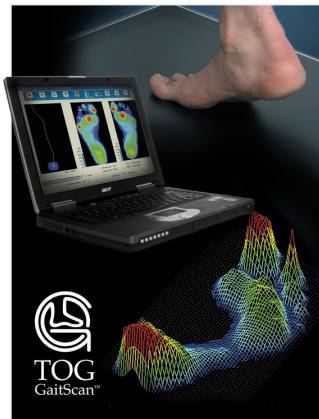
Specific hip stability and gluteal strength is almost always part of the issues in over-pronation (as when the foot pronates, the knee and hip internally rotate and vice versa). Exercises specifically targeting gluteus medius and minimus and the lateral

rotators, such as 'step downs and toe taps' using a BOSU, 'Physio Lunges', 'prone glutes' and quadraped 'glute / hip extension' activation, clams using theraband to name a few, are used (see below to find more about these exercises).

These exercises help to increase the control and strength of the hip, improving the dynamics of the hip, knee and foot during running and can be the difference between someone who is able to recover and return to running, and someone who doesn't. The Physio will be your guide throughout the injury process to make sure you get back to 100% and prevent re-injury.

GAITSCAN, VIDEO AND CUSTOM ORTHOTICS

At our clinics our Physiotherapists use the renowned 'Gaitscan' pressure force plate to assess the dynamics of the foot during heel strike and stance phase of the movement. The information collected via the plate to the computer combined with the Physio's physical assessment of the foot, provide the ideal measurements for the construction for custom orthotics, taking out the guess work and creating more



precise orthotic construction and manufacture tailoring them to the individual and help correct the way their each foot moves as it hits the ground.

The Physio also will look at the running technique and how the foot moves during impact, including the level of pronation by taking a video of the runner on the treadmill in bare feet as well as in their running shoes. Even if the person runs midfoot or even forefoot (on their toes), the orthotics help by proprioceptively correcting the position of the entire foot from strike to push off. Many additions and modifications can be made to the orthotics including 'met domes' rear foot and fore foot 'extrinsic posting', heel cushioning, 'Morton's extensions', full length running or ¾ size and sport options, different top coverings and padding, customising it to the needs of the person as well as the level of biomechanical problem involved.



RUNNING TECHNIQUE TRAINING PROGRAM

Lastly, it is very important the running technique and training program is assessed by the Physio or an experienced and running specific Personal Trainer and changed as needed. There are many different thoughts recently about the way humans should be running, from landing on your heel 'correctly' to landing mid-foot, to landing on your toes, to even barefoot running and using the new 'five fingers' footwear. Many people who have shin splints and land heavily striking at the heel first, may benefit from learning to land in more of a mid-foot stance with the heel and foot all landing on the ground at the same time, reducing the shocking loading to the leg and reducing the vertical movement of the body (and thus increasing the efficiency of the leg during the running movement). At the same time, people who run on their toes (like the during sprinting) for long distances may also need to change this habit in order to prevent re-injury.

The level of training needs to be low initially and the person needs to follow a progressive regime of slowly increasing the distance over time, (i.e. starting as little as 1km, 2 to 3 times per week and adding 500-1000m per week over 10-12 weeks),



to allow sufficient adaptation of the recovering muscle tissue and to build strength and endurance. This sort of program is hard to stick to and many times is the catalyst for recurrence.

So, if you have the symptoms of 'Shin Splints', get it assessed by the Physio, get some good treatment, orthotic advice and new shoes if needed, stick to the rehab exercises and training plan, and most of all have patience and follow the advice of your Physio and Trainer.

~~For more on the Gaitscan technology and custom orthotics go to www.physiofitness.com.au/orthotics.htm. The exercises described in this article can be downloaded from www.physiofitness.com.au/exerciselibrary.htm~~

Email me at: timkeeley@physiofitness.com.au

www.facebook.com/physiofitness



Tim Keeley B.Phty, Cred.MDT, APA

[CLICK HERE](#) to view my Profile

Principal Physiotherapist and Director, Physio Fitness Australia

Tim has over 13 years experience in Physiotherapy and the Fitness Industry. He is also an exercise rehabilitation expert, clinical educator and regular FILEX convention presenter.

As well as the Principal Physiotherapist at his Bondi Junction clinic inside Fitness First Platinum, Tim is also the Director of Physio Fitness Australia operating four clinics across Sydney.

For more information go to www.physiofitness.com.au or to book an appointment call 1300 233 300.