

Shin Splints: Dealing with it and preventing it



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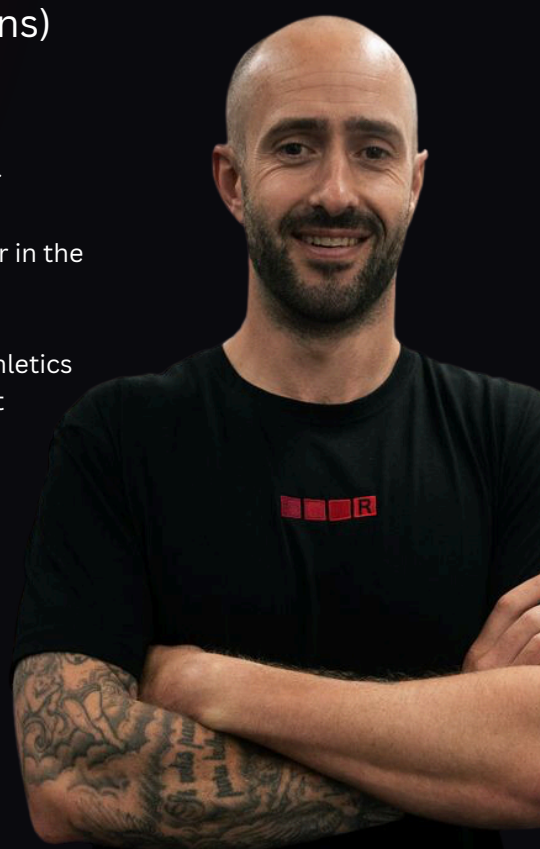
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What Are Shin Splints?

‘Shin Splints’ or Medial Tibial Stress Syndrome (MTSS) is a common overuse injury of the lower limb.

It typically occurs in runners and other athletes that are exposed to intensive weight-bearing activities such as the military population. It presents as exercise-induced pain over the anterior tibia and is an early stress injury in the continuum of tibial stress fractures.



Who is at risk?

- The incidence of MTSS ranges between 13.6% to 20% in runners and **up to 35% in military recruits**.
- Large increase in load, volume and high impact exercise can put at risk individuals to MTSS.
- Risk factors include being a female, previous history of MTSS, high BMI, navicular drop, reduced hip external rotation range of motion, muscle imbalance and inflexibility.
- Running on uneven ground in poor running trainers or in rigid boots for long periods of time.

The Lower Limb -Key Muscles of Note

Soleus

The soleus muscles function to plantar flex your foot. Plantar flexion is the direction of motion that occurs as your foot and toes point down.

Takes between 1.5 and 6 times your bodyweight when running.



Gastrocnemius

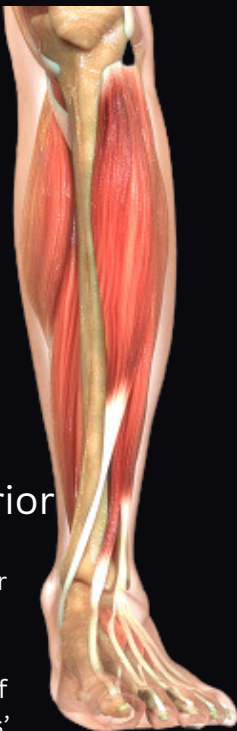
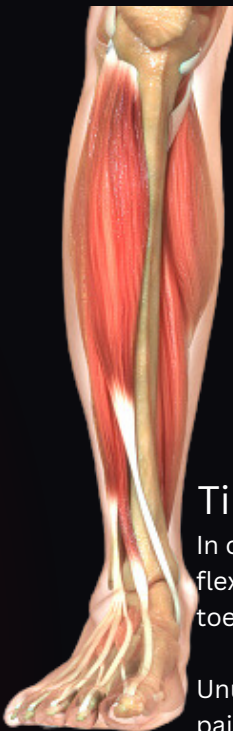
Forms most of the bulge of soft tissue on the posterior leg, referred to as the calf.



Tibialis Anterior

In charge of dorsiflexion - pulling your toes upwards.

Unusually the site of pain for ‘shin splints’



How Do We Test For It?

KEY POINTS FOR ASSESSMENT MTSS	
HISTORY	<ul style="list-style-type: none">Increasing pain during exercise related to the medial tibial border in the middle and lower thirdPain persists for hours or days after cessation of activityPain decreases with running (early stage)Differentiate from exertional compartment syndrome, for which pain increases with runningEarlier onset of pain with more frequent training (later stages)
PHYSICAL EXAMINATION	<ul style="list-style-type: none">Intensive tenderness of the involved medial tibial border, more than 5 cmPes planusTight Achilles tendonA "one-leg hop test" is a functional test, that can be used to distinguish between medial tibial stress syndrome and a stress fracture: a patient with medial tibial stress syndrome can hop at least 10 times on the affected leg where a patient with a stress fracture cannot hop without severe pain. The sensitivity of the hop test for diagnosing medial tibial stress fracture when pain and tenderness were present was 100%, the specificity 45%, the positive predictive value 74%, and the negative predictive value 100%Provocative test: pain on resisted plantar flexion

How Do We Manage MTSS / Shin Splints?

Management of MTSS is conservative, focusing on rest and activity modification with less repetitive, load-bearing exercise. No specific recommendations on the duration of rest required for resolution of symptoms, and it is likely variable depending on the individual.

Conservative therapy should initially aim to correct functional gait, and biomechanical overload factors.Recently ‘running retraining’ has been advocated as a promising treatment strategy and graded running programme has been suggested as a gradual tissue-loading intervention.

What can we do initially?

- Manage the load - reduce impact and look to build the engine on machines like bike, ski erg and rower
- ‘Lengthen and Strengthen’ the lower limb
- Proprioception and balance training is essential to MTSS rehabilitation
- Gait and trainer analysis
- Ensure key pillars such as sleep, protein intake and collagen are integrated maximally

What Can I Do Today To Help / Prevent This?

1.Single Leg Balance

An easy way to improve balance and proprioception of the lower limb.

When brushing your teeth, use this time twice a day to work on single leg balance, brush the first minute on the right leg and the second on the left.



2.Standing Single Leg Calf Raises (Bent Knee)

This one is as easy as it sounds. Stand with your feet hip-width distance apart in front of a counter, banister, or other stabilising surface and slowly raise yourself onto the balls of your feet whilst keeping the knee bent throughout and back down.

This should be a controlled movement to fully lengthen and contract the muscles of the ankles and calves. Do this when you go and make a brew, easy!




Exercises Prescribed to Prevent or Manage MTSS

FHL Strengthening With Resistance Band

Video

Images



Description

- Wrap a resistance band around the big toe
- Lower the big toe to the floor against the resistance band keeping other toes still
- Slowly release the big toe up

Reps : 20

Sets : 3


Tempo : 3-1-3

Times Per Week : 5

Adductor Plank From Knee

Video

Images



Description

- Using a weights bench and lying on your side place the uppermost knee on the weights bench and lean on the elbow closest to the floor
- Perform a side plank concentrating on contracting the uppermost legs adductor muscles and tighten core muscles
- Raise the bottom leg and hold this posture before returning to the starting position
- Repeat as required

Time : Up To 2 Minute


Sets : 3

Times Per Week : 3

Single Leg Squat On Balance Cushion

Video

Images



Description

- Stand on a balance cushion with one leg and gain your balance
- Lower the hips back into a squat with good posture
- Drive the hips up into standing

Reps : 10


Sets : 3

Times Per Week : 3

Soleus Isometric Heel Raise On Single Leg

Video

Images



Description

- Place the forefoot of one leg on a step keeping the knee bent
- Raise the heel up and hold for as long as possible then stand normally

Time : Up To 2 Minute

Sets : 3

Times Per Week : 3

Key Points:

- Seek advice and guidance
- Ensure you are sensible when managing the pain
- Work within your pain and ability levels