

Stress Fractures vs. Shin Splints

Prevention

- Proper 5-10 minute Warm – up including calf and hamstring stretching prior to strenuous exercise
- Footwear that is appropriate for your foot type Regularly replace your running shoes every 300-500 miles
- Wear prescribed orthotics or over the counter arch supports if recommended by running specialist, physical therapist, physician, or certified athletic trainer.
- Avoid running on hard surfaces
- Avoid overtraining (i.e. gradual increases in exercise intensity by no more than 10% per week)
- Strengthen anterior and posterior leg musculature (see exercises included at the end)

Stress Fractures

Stress fractures are also known as march fractures, fatigue fractures, or spontaneous fractures. The lower extremity is the most common site for stress fractures, although in some sports such as baseball and gymnastics they may occur in the upper extremity. Stress fractures that are left untreated can lead to a complete fracture of the bone. If you think that you might have a stress fracture you should stop the aggravating activity, and seek medical attention.

Signs & Symptoms:

- Point tenderness over a bony prominence
- Swelling
- Pain with weight bearing activities (particularly walking)
- Occasional throbbing pain while sitting

Contributing Factors:

- A rapid change in the frequency, duration, or intensity of an activity
- Altered stress distribution to bone as a consequence of muscle fatigue
- Change in environment (running surfaces, shoes)
- Returning to sport too rapidly after injury
- Anatomic considerations i.e. postural or foot conditions (flat feet)
- Low bone density
- Presence of the Female Athlete Triad (Eating Disorder, Amenorrhea, and osteopenia)
- Poor calcium or Vitamin D intake

Treatment:

Treatment varies with each individual based on activity, site of injury and severity. The following is basic treatment and may be altered for individual rehabilitation programs.

- Rest or modification of activity
- Correction of predisposing anatomic abnormalities (i.e. orthotics)

- Ice Therapy
- Improve flexibility and strengthening the surrounding musculature.
- Pain management. Ibuprofen or other anti-inflammatories are often avoided because of a theoretical risk of delayed bone healing. Tylenol is the medication of choice.
- Development of a graduated return to play program when cleared to do so by your physician or certified athletic trainer
- Casting or immobilization is not normally required but may be used for some fractures (i.e. 5th metatarsal fracture)
- Proper dietary intake of elemental calcium (1000-1300 mg/day) and Vitamin D (200-400 IU/day)

Cross training options:

- Riding a stationary bike
- Upper body ergometer
- Pool: swimming, running, water aerobics
- Strength training

Shin Splints

Medial tibial stress syndrome, “shin splints”, is characterized by pain along the lower leg (posterior medial tibia). This pain is caused by inflammation of the soft tissue surrounding and attaching to the shin. This pain may occur only after activity, before and after activity, or before, during and after activity. Shin Splints will commonly occur early in the season due to improper preparation for athletic activity. This condition should not be ignored. Shin splints usually will resolve with proper treatment. Treatment is necessary to alleviate progression to the more severe problems such as stress fractures. If you think you have shin splints you should stop running and follow these treatments and cross training guidelines.

Signs & Symptoms:

- Pain in the front and inside of the lower leg
- Limp
- Pain with dorsiflexion of the ankle
- Absence of pain at rest or with walking (except immediately after activity)

Causes:

- Overuse
- An anatomic abnormality such as flat feet or over pronation
- Training errors
- Poor training surfaces
- Improper footwear
- Improper stretching to prepare for activity
- Rapid change in body habitus (large increase in weight)

Treatment:

- Rest: this may be modification of activity or complete rest for a period of time
- Heat and stretching the Achilles prior to activity
- Ice therapy and stretching following activity (ice massage)
- Stretching should be done several times per day with primary focus on the calf musculature (calf stretch, toe raises, heel walking)

Stress Fractures vs. Shin Splints

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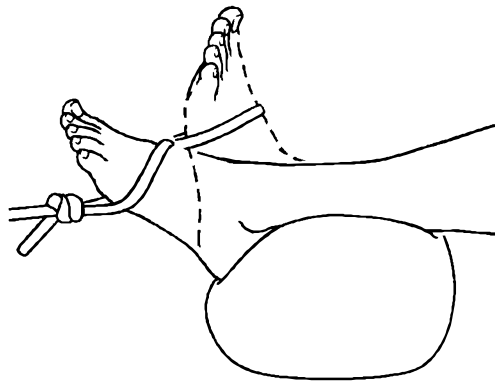
- Temporary use of anti-inflammatory medication as directed by physician
- A proper fitting shoe which provides good shock absorption and a firm heel counter
- Compression sleeve that is used to provide compression for support and continued warmth to the area.

Cross training options:

- Same as above

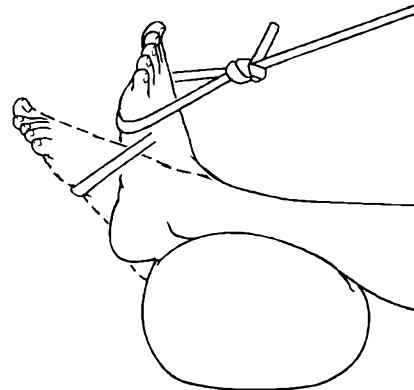
Strength Exercises

ANKLE / FOOT - 5 Dorsiflexion: Resisted



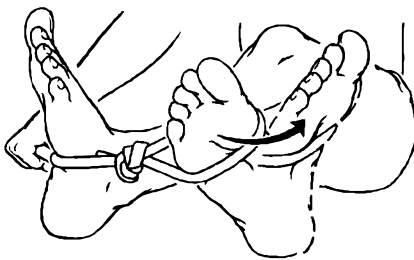
Facing anchor, tubing around left foot, pull toward face.
Repeat 10 times per set. Do 3 sets per session.
Do 1 sessions per day.

ANKLE / FOOT - 6 Plantar Flexion: Resisted



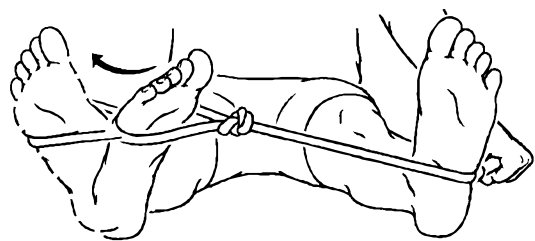
Anchor behind, tubing around left foot, press down.
Repeat 10 times per set. Do 3 sets per session.
Do 1 sessions per day.

ANKLE / FOOT - 7 Inversion: Resisted



Cross legs with left leg underneath, foot in tubing loop.
Hold tubing around other foot to resist and turn foot in.
Repeat 10 times per set. Do 3 sets per session.
Do 1 sessions per day.

ANKLE / FOOT - 8 Eversion: Resisted



With left foot in tubing loop, hold tubing around other foot
to resist and turn foot out.
Repeat 10 times per set. Do 3 sets per session.
Do 1 sessions per day.