Ben Davis Shin Splint Prevention

Shin Splints is a term used that refers to a variety of injuries to the lower leg. Any pain that is located on or around the tibia bone usually gets referred to as shin splints. The types of injuries vary from strains to tendonitis to stress fractures.

With gradually intensifying a conditioning program, most athletes can avoid the problem of shin splints and the more serious problem of stress fractures. Athletes and coaches must focus on a few factors such as proper shoe selection, lower extremity strength, calf and Achilles tendon flexibility, and matching the athlete's conditioning program to the level of his/her current level of physical condition.

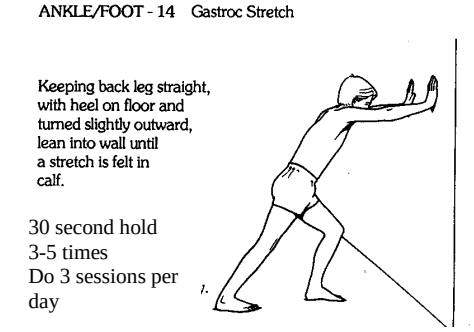
1. **Proper Shoe Selections**
   - Select a shoe specifically designed for running. Cross Training shoes do not have the proper cushioning for intense running.
   - Match the type of shoe sole to the athlete's foot type. Athletes with flat feet should use a stiffer Motion Control shoe. Athletes with high arches should use a more flexible "curve lasted" shoe that has less sole under the arch of the foot. See the handout "How to Choose" the right shoe for the best information.

Normal Arch

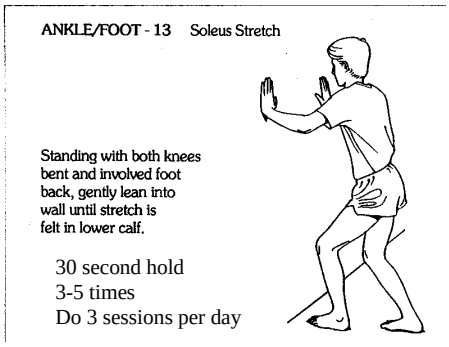
Flat Arch needs a Motion Control shoe

High Arch needs a curve lasted shoe

   - Dependable running shoes cost between $65 and $110. These shoes should be used only for training until they wear out. Most shoes will last between 200 and 500 miles of training before they wear out.
2. **Insoles**
   - Most insoles that come in shoes are very thin and do little to control the foot and absorb the shock of running.
   - The Spenco "Cross Training" insole is a combination of shock absorbing material and a firm arch support. Other workable insoles included the First Step by Wrymark. This insole must be special ordered. It has a firmer heal and arch support.
3. **Running Surfaces**
   - Avoid surfaces that are overly hard (concrete or frozen asphalt) or overly soft (wet, soggy ground)
   - Hard surfaces are unforgiving to the tibia
   - Soft surfaces do not support the body properly particularly when there are lower extremity weaknesses.
   - Running track surfaces are balanced surfaces that are good for early conditioning.
   - Be ware of short inside tracks. The tight turns can be debilitating. It may be wise to reverse the direction of the running to balance out the stressors on each leg.
4. **Workouts**
   - Athletes should gradually increase the workout length or intensity. Too much too soon can be a bad combination for early season conditioning.
   - Avoid two heavy workouts on consecutive days.
   - The general rule of gradually increasing a workout is no more than 10% increase in length or intensity each week.
   - Athletes who begin training with a well developed training base are best suited for increasing intensity.
5. **Flexibility of the lower extremity**
   - The two areas of muscular flexibility that are most important are the calf and Achilles tendon.
   - Tight calves or Achilles tendons have been associated with biomechanical foot problems.
   - When stretching the calf and Achilles tendon, turn the back foot in slightly to hold up the arch of the foot and focus on the calf muscle.



Turn Rear Foot in toward heel of front foot. Push hips forward.

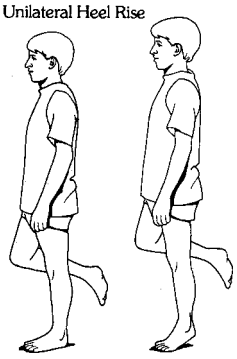


Turn Rear Foot in toward heel of front foot. Push hips forward.

Anterior Lower Leg Stretch – Without shoes, pull foot and toes down to stretch the front of the leg.
Hold for 60 seconds, 2 times
Do 3 sessions per day

6. **Strength of the lower extremity**
   - The areas of the lower extremity that need balanced strength include: the Calf, Anterior Lower Leg, Hamstring, Quadriceps and Gluteal muscles
   - One muscle of the lower leg that is extremely important is the Tibialis Poster muscle that is located along the medial side of the lower tibia bone. This muscle is the shock absorber for the leg when the foot makes contact with the ground.
   - Do all strengthening in a Controlled Manner. Do not rush through the motion. Pay particular attention to the motion that brings the body back to the starting point.

ANKLE/FOOT - 21 Standing Unilateral Heel Rise



Repeat with right and left leg

Keep the weight over the middle toe

Control motion up and down.

Repeat 25 times/set
Do 3 sets/session
Do 1 session/day

ANKLE/FOOT - 22 Standing Toe Raise

Rock Back on heel.

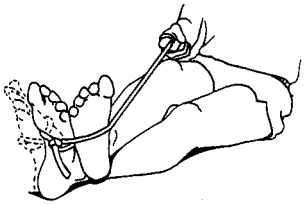
Pick up toes and foot

Repeat 25 times/set
Do 3 sets / session
Do 1 set per day

Heel Walk

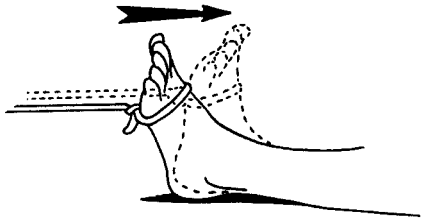
Similar to the picture to the left. Walk for one minute on only the heels. This strengthens the anterior lower leg muscles.

ANKLE/FOOT - 7 Resisted Inversion



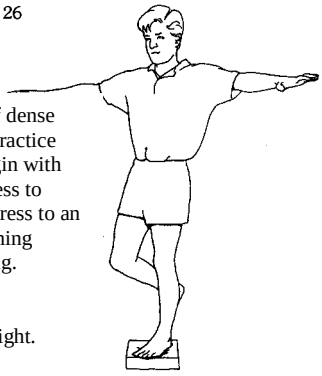
Cross legs with involved leg on the bottom. With knot of tubing around foot on the little toe side, turn foot inward in a "scooping motion" . CONTROL the tube as the foot returns to the starting position.
Repeat 25 times
Do 3 sets - two times per day

ANKLE/FOOT - 5 Resisted Dorsiflexion



With tubing anchored in a doorjamb and calf resting on a book so that the heel is free, pull foot toward face. Return Slowly to starting position. Relax between reps.
Repeat 25 times
Do 3 sets - two times per day

ANKLE / FOOT - 26
Foam Balance



Standing on a piece of dense foam like a cushion, practice one foot balance. Begin with eyes open, then progress to eyes closed, then progress to an opposite arm toe touching motion while balancing.

Hold for 60 seconds
Repeat 5 times each night.

Single Leg Squats

Balance on injured leg.
Keeping weight centered between the heel and ball of foot, lower weight until the knee is over the ball of the foot and hold.
15 Seconds Hold
20 Reps/ Set
3 Sets
2 Times per Day

7. Care of the legs after running
   - Cool Down properly on a forgiving surface.
   - Static flexibility work after running- Calf Stretch, Hamstring Stretch, Quad Stretch, Iliotibial Band Stretch, Gluteal Stretch
   - Ice lower legs or soak in a cold water bath
   - Maintain a level of conditioning during the off season
   - Wear supportive shoes when walking between classes or at the mall. Avoid wearing shoes or sandals that do not support the foot and arch