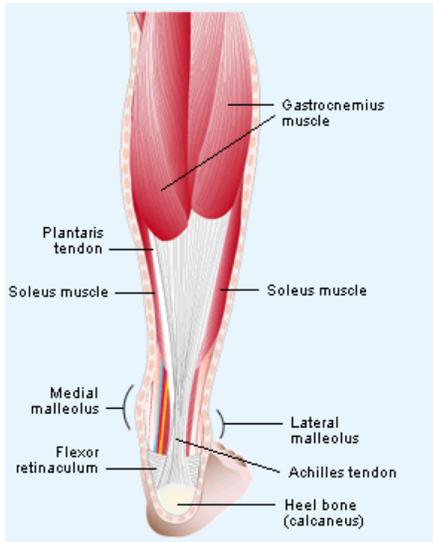


INFORMATION GUIDE

# Achilles Tendon Injuries



- If the foot is weak or tired and/or the footwear is not supportive, then the arch can flatten more than normal, which is excessive pronation.
- Flattening of the arch (excessive pronation) increase stresses on the foot, which can further contribute to ankle, knee, hip and low back problems (a chain reaction).
- This repetitive, excessive pronation is the main contributor to many lower extremities and overuse injuries.

## CONTRIBUTING FACTORS

- Tight calf muscles (the gastroc and/or soleus) and tight Achilles tendon.
- Often with increasing age, there is a decrease in flexibility.
- Increasing the amount or intensity of training-uphill, running or stair climbing.
- Flat pronated feet add stress to the soleus and rigid, high-arched feet add stress to the gastroc.
- Poor support on the inside of a shoe or in the shoe's foundation/upper can add to the stress on the foot-thus increasing calf stress.
- Change in the heel height of one's shoes (from training shoes to racing flats, heels to flats etc.)

## WHAT YOU MAY EXPERIENCE

- Pain along the Achilles tendon during/after activity.
- Swelling over the distal 1-3 inches of the Achilles tendon.
- Tender to touch.
- Pain associated with or when trying to raise up on toes, or with stretching of the calf/Achilles tendon.
- Limited range of motion and stiffness.

## POSSIBLE SOURCES

**ACHILLES TENDONITIS:** An inflammation of the tendon that connects the calf muscles to the heel bone (calcaneus). May be a small tear in the tendon from overuse.

**ACHILLES RUPTURE:** Weakening of the collagen fibers of the tendon leading to partial tearing or rupture (complete tear) of the tendon away from the heel. Rupture noted by inability to raise up on toes or push off with the ball of foot in walking.

**TENOSYNOVITIS:** Inflammation of the vascular sheath that covers the Achilles tendon. May even be caused by the shoe counter rubbing on the heel.

## EXCESSIVE PRONATION

- Pronation is a normal movement of the foot that allows the arch to flatten to a degree, which helps the body to absorb shock and adapt to different ground surfaces.
- In analyzing ones gait, first contact is on the heel and outside of the foot, followed by a shift of body weight forward, toward the arch and toes.

## QUICK FIX

The **3 S's - Stretching, Strengthening and Supporting**, along with ICE and REST, have been found to be the simplest and most effective for these injuries:

1. **Stretching** of the calf (both gastroc and soleus) muscles and Achilles tendon can help eliminate or prevent many problems with the Achilles tendon (*see LOWER LEG STRETCHES at back of this sheet*).
2. **Strengthening** of the calf muscles once the inflammation is gone, can help prevent further injury (*see 4-DIRECTION LEG STABILIZATION at back of this sheet*).
3. **Supporting** the foot with proper shoes and insoles can prevent or help to eliminate the vast majority of lower extremity problems due to faulty biomechanics. You may consult with your Sports Medicine Physician or Sports Medicine Physical Therapist for guidelines about this. They can guide you to an appropriate local running store.

*continued on the back*

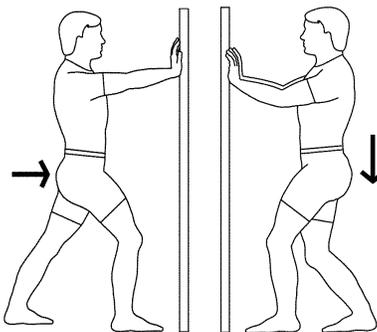
## FOLLOW-UP

If these quick fixes do not help resolve your problem:

1. Consult with your medical practitioner: Primary Care or Sports Medicine Physician.
2. Referral to Physical Therapist where a combination of manual therapy & specific exercises may help resolve your problem.
3. If damage is significant, you may be referred to an Orthopedic Surgeon.

# Lower Leg Stretches & 4-Direction Leg Stabilization

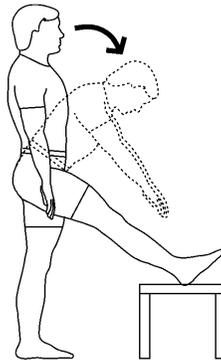
## 1. GASTROC & SOLEUS STRETCH



1. Stand with involved foot back, and leg straight. Keeping heel on floor and turned slightly outward, gently lean into wall until stretch is felt in calf.
2. Then bend both knees until a stretch is felt in lower calf.

Hold for 30 seconds x 3-5 repetitions on both sides

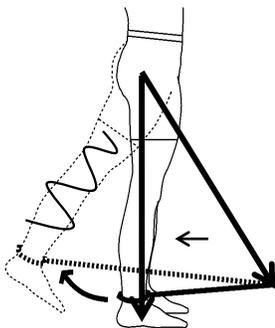
## 2. HAMSTRING STRETCH



Place foot on stool (hold on to the back of a chair if needed). Slowly lean forward keeping back straight, until stretch is felt in back of thigh. Hold 30 seconds.

Repeat 3 times on each side.

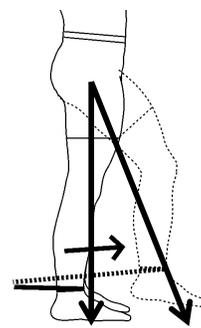
## 3. HIP EXTENSION



With tubing around right/left ankle and other end secured in doorjamb, face door and pull leg straight back. Do not lean forward.

Repeat 10 times per set.  
Do 3 sets per session.  
Do 1-2 sessions per day.

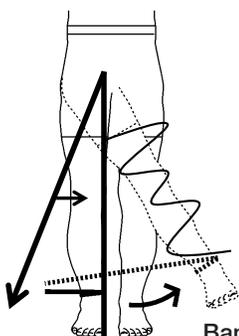
## 4. HIP FLEXION



With tubing around right/left ankle and other end secure in doorjamb, bring leg forward, keeping knee straight.

Repeat 10 times per set.  
Do 3 sets per session.  
Do 1-2 sessions per day.

## 5. HIP ADDUCTION

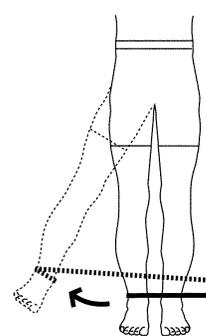


With tubing around right/left ankle and other end secured in doorjamb, bring leg across body, and slowly return to starting position. Do not lean, keep body upright.

Repeat 10 times per set.  
Do 3 sets per session.  
Do 1-2 sessions per day

**Band on RIGHT ankle stabilizes LEFT, and band on LEFT ankle stabilizes RIGHT.**

## 6. HIP ABDUCTION



With tubing around right/left leg and other end secured in doorjamb, stand sideways with Right / Left hip facing door and extend leg out to the side.

Repeat 10 times per set.  
Do 3 sets per session.  
Do 1-2 sessions per day.

Sports Medicine is available for questions. Please call 616.252.7778 to speak with a member of our care team or to schedule an appointment.