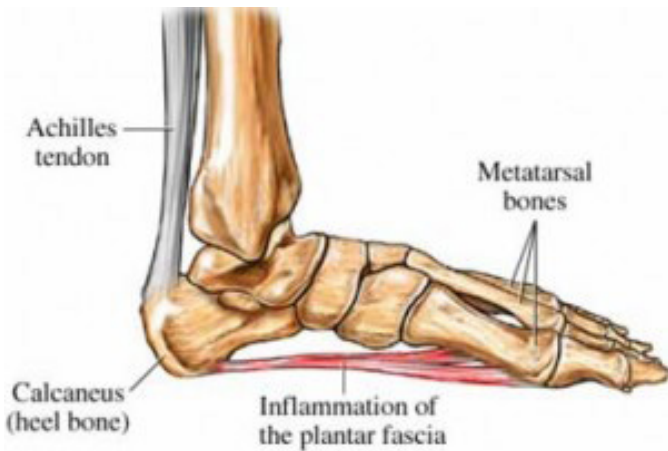




# McFarland Clinic

## HEEL PAIN & PLANTAR FASCIITIS



### WHAT IS IT

- The plantar fascia prevents the arch from collapsing, disperses shock, provides stability to the joints and restores the foot to its natural shape.
- Plantar fasciitis is an inflammation of the connective tissue (fascia) on the bottom of the foot. Usually caused by excessive stress or trauma.

### WHAT YOU MAY EXPERIENCE

- Pain is typically most intense in the morning or after sitting for long periods of time.
- Pain is caused by re-injury to the plantar fascia. The body begins to heal the injury during rest. Without proper support and/or preparation, those first few steps can reverse any healing that has occurred, and this causes pain. If not properly treated it can lead to a heel spur.

### POSSIBLE SOURCES

**TIGHT ACHILLES TENDON AND CALF MUSCLES:** The achilles tendon attached to the back of the calcaneus (heel bone). When the calf muscles are tight, they pull on the calcaneus which causes its position change. This change causes the plantar fascia to become over-stretched and micro tears may occur.

**BEING ON YOUR FEET:** Foot fatigue occurs when individuals are on their feet for extended periods of time, especially if it's on a hard surface. This in turn puts more of a load on their plantar fascia.

**EXCESSIVE PHYSICAL LOAD:** Extra weight that is added by: pregnancy, too heavy a back pack, or weight gain places extra strain on the plantar fascia. A dramatic increase in activity can cause this as well. Improper footwear and conditioning could exacerbate this.

### EXCESSIVE PRONATION

- Pronation is a normal movement of the foot allowing 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.
- 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, overuse injuries.

### 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 FOOT EXERCISES at back of this sheet and 4-DIRECION ANKLE STABILIZATION 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.

### FOLLOW-UP

If these quick fixes do not help resolve your problem, this would be the point where you would consult your medical practitioner. You could start with your Primary Care or Sports Medicine Physician. They may test your lower leg, take x-rays, and do an MRI or other tests to narrow down your diagnosis. Follow up from there could be with your Physical Therapist where a combination of manual therapy & specific exercises may help resolve your problem. If damage is significant, you may be referred to an Orthopedic Surgeon.



515-239-3410  
515-817-1237 fax



**Sports Medicine**  
1215 Duff Avenue  
Ames, Iowa 50010



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MyChart.McFarlandClinic.com

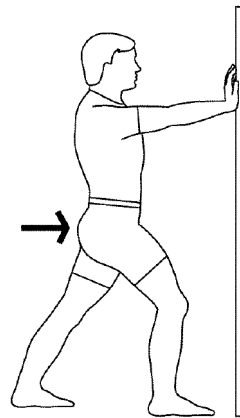
**Extraordinary Care, Every Day**

**LOWER LEG STRETCHES AND FOOT EXERCISES**

**USE A FROZEN WATER BOTTLE TO ROLL FOOT OVER FOR 10 MINUTES OR UNTIL NUMBNESS IS FELT.**

**MAY USE TENNIS BALL TO HELP MASSAGE CALF MUSCLES.**

**GASTROC & SOLEUS STRETCH**



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.

Hold 30 seconds.

Then bend both knees until a stretch is felt lower in calf.

Hold 30 seconds.

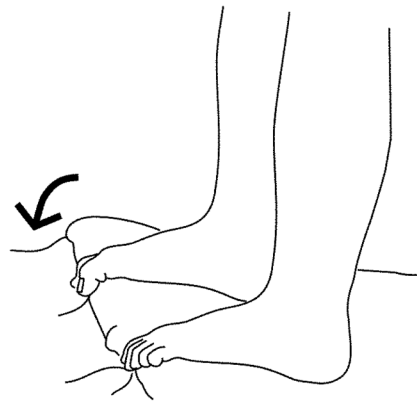
Repeat 3 times each on both sides.

**ANKLE ALPHABET**



Using ankle and foot only, trace the letters of the alphabet. Perform A to Z with foot elevated.

**SINGLE LEG TOE CURLING**



With foot resting on towel, slowly bunch up towel by curling toes.



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