

# HEEL CONDITIONS

Heel pain is one the most common problems seen by Canadian Certified Pedorthists. Plantar fasciitis, calcaneal stress fractures, retrocalcaneal bursitis and Achilles tendonitis are some of the most commonly seen heel ailments. Poor foot mechanics, body weight, activity, footwear, surface and aging are all factors which can contribute to these conditions:

## PLANTAR FASCIITIS

### Symptoms

- Pain at the central/medial heel, through the medial longitudinal arch and/or proximal to the metatarsal heads
- Pain is often worse in the morning and upon rising after periods of rest and usually gets better after a few steps
- Pain can also be worse at the end of an active day

### What is it?

Plantar fasciitis is the inflammation and irritation of the plantar fascia. Excessive pronation or supination can strain the plantar fascia resulting in micro tears and increased tension where the fascia attaches to the calcaneus. This is often complicated by a decrease in the person's ability to dorsiflex their ankle due to the calf muscle being too tight. Heel spurs may also be seen in conjunction with plantar fasciitis but the two are independent conditions, as heel spurs are not the cause of plantar fasciitis. Conversely, many people may have heel spurs with no symptoms at all.

### Pedorthic Treatment

With a prescribing physician's recommendation, Canadian Certified Pedorthists may use over-the-counter devices or may create custom-made orthoses to support, unload, and reduce strain on the plantar fascia caused by poor biomechanics. Orthoses may feature a deep heel cup, to help prevent splaying of the heel's fat pad when bearing weight and protect the painful heel region. Stretching of the calf muscle and plantar foot tissue (especially after rest periods) can help reduce strain put on the plantar fascia by surrounding soft tissues. In persistent conditions, a Canadian Certified Pedorthist can provide a dorsiflexion night splint to help keep the ankle and toes in a dorsiflexed position for an extend period time, allowing the fascia to heal in this extended position.

## **CALCANEAL STRESS FRACTURE**

### **Symptoms**

- Marked antalgic gait and usually total avoidance of weight-bearing will be seen in an individual with a stress fracture of the calcaneus
- A positive test for this type of fracture is the "heel squeeze" test - if there is pain upon squeezing the heel that is a positive sign for a calcaneal stress fracture (the heel squeeze will not be positive with plantar fasciitis)
- Unlike other types of heel pain it does not get better with a few steps

### **What is it?**

Calcaneal stress fracture of the heel is usually a result of some sort of trauma but can also result from increased activity done improperly. Often the calcaneus is fractured as it is driven into the body of the talus, often seen in falling injuries. This condition frequently results in permanent leg length differences, as well as excessive heel valgus and pes planus arch deformities.

### **Pedorthic Treatment**

Patients with these symptoms should first be seen by their physician and, once diagnosed with calcaneal stress fracture, will usually require a cast or a removable walking cast. Once healing is complete, a Canadian Certified Pedorthist will create a custom made foot orthosis to be used to cushion heel impact, distribute force evenly beneath the foot, control flexible mechanical abnormalities, and address leg length discrepancies.

## **RETROCALCANEAL BURSITIS (Achilles bursitis)**

### **Symptoms**

- Tenderness is found in the Achilles tendon just proximal to its insertion in the calcaneus
- Swelling of the bursa produces symmetric widening of the heel around the distal aspect of the Achilles tendon

- Pain increases with passive dorsiflexion of the ankle or with standing on toes

### **(Retrocalcaneal Bursitis) What is it?**

Retrocalcaneal bursitis is the inflammation of the bursa that lies between the Achilles tendon and the posterior calcaneal tuberosity. This type of bursitis is caused when the bursa is pinched or sheared between the calcaneus and the Achilles tendon, often the result of the calcaneus being rubbed against the shoe's heel counter. Retrocalcaneal bursitis can be aggravated by overuse or insufficient conditioning.

### **Pedorthic Treatment**

With a prescribing physician's recommendation, a Canadian Certified Pedorthist can help treat this condition by adding foam or gel padding, or cutting out a portion of the shoe's heel counter, to help protect the inflamed area. Custom-made foot orthoses will help reduce shearing of the Achilles tendon over the bursa. Orthoses may include a slight temporary heel lift to unload the Achilles tendon until the bursa has healed and/or a heel bumper to keep the inflamed area away from the back of the shoe.

## **ACHILLES TENDONITIS**

### **Symptoms**

- Pain, swelling, and possible nodule formation along the Achilles tendon or where it is attached to the back of the calcaneus
- Pain usually develops gradually but sudden onset or more severe pain may indicate partial or complete tearing of the Achilles tendon
- It is most painful when patient goes up on his toes or during activity
- Stiffness may be present after sitting or resting
- Most often seen in athletes particularly distance runners or in activity requiring sudden stops and starts and jumping (i.e. basketball, baseball, tennis)

## **(Achilles Tendonitis) What is it?**

Achilles tendonitis is an inflammation of the Achilles tendon just above the heel on the back of the leg. This condition may be due to abnormal or excessive strain on the tendon from poor shock absorption or excessive foot pronation. Causes may include running on very hard surfaces, sports that require frequent stopping, starting and jumping, and patients who have increased their activity significantly over a short period of time. Women who go from wearing high heels to lower heeled athletic shoes may develop Achilles tendon pain if proper stretching is not performed.

## **Pedorthic Treatment**

With a prescribing physician's recommendation, Canadian Certified Pedorthists may use over-the-counter devices or may create custom-made orthoses to support, unload, and reduce strain on the Achilles tendon caused by poor biomechanics. Orthoses may feature a slight heel raise, to help reduce the tension on the Achilles tendon insertion on the heel. Flexibility training helps reduce strain put on the Achilles tendon. In persistent conditions, a dorsiflexion night splint helps to keep the ankle and toes in a dorsiflexed position for an extended period of time, allowing the tendon to heal in this extended position.

## **PEDORTHIC POINTERS FOR PATIENTS**

Heel pain is often a result of poor lower limb mechanics (how the foot moves) combined with changes in activity or trauma. To prevent and alleviate heel pain, Canadian Certified Pedorthists recommend:

- Carefully and slowly increasing activity while allowing the tissues of the lower limb the time to properly adapt
- When injury does occur, consulting a Canadian Certified Pedorthist to recommend the use of over-the-counter or custom-made orthoses and appropriate footwear to help the healing process and stop the recurrence of problems
- Selecting stable shoes with sturdy heel counters (the back of a shoe) that control motion or provide shock absorption as needed
- Avoid going barefoot or just wearing socks at all times
- Consulting a Physiotherapist or other referring healthcare provider can also provide relief from heel conditions