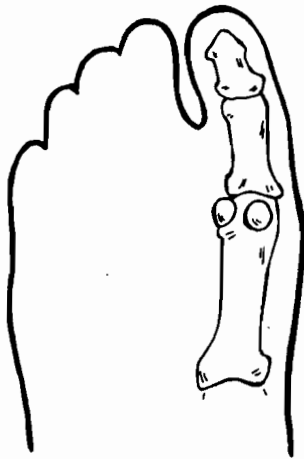


## Sesamoiditis

Some athletes, especially those with high-arched feet, suffer from pain under the ball of the foot. This condition, called sesamoiditis, is an inflammation of the sesamoid bones (shaped like sesame seeds) under the head of the big toe (see Figure 4.5).



**Figure 4.5** The sesamoids are located under the first metatarsal.

Sesamoid bones, found inside tendons, help distribute weight-bearing pressure. The best-known sesamoid bone, the patella, or kneecap, is in the quadriceps tendon. *Sesamoiditis*, however, refers only to the sesamoids of the foot.

The two sesamoid bones located in the foot are the medial and the lateral, located in the tendon of the flexor hallucis brevis muscle. Their function is to increase the mechanical advantage of the muscle by acting as a fulcrum.

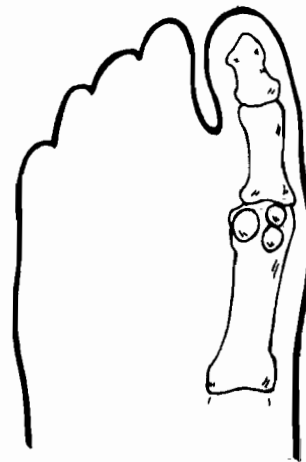
### Causes

Causes of sesamoiditis vary, but it is most commonly found in runners, and other athletes, with high-arched (cavus) feet. The athlete with a cavus foot exerts more weight on the balls of his or her feet. The force is accentuated by sports that involve pounding

or jumping, such as sprinting, basketball, volleyball, or gymnastics. The trauma can lead to an irritation of the sesamoids and the surrounding tissue; if the pounding is great enough, it could lead to a fracture.

A stress or traumatic fracture of the sesamoid bones also causes sesamoiditis. Stress fractures can result from continuous landing on the ball of a foot that does not absorb shock well, such as a foot with a high arch.

Bipartite sesamoids—when more than two sesamoid bones are present or when one of them is split—commonly cause pain under the ball of the foot (see Figure 4.6). Some experts



**Figure 4.6** A sesamoid bone may develop in two or more segments.

theorize that bipartite sesamoids—usually three sesamoid bones, although four have been seen—actually were fractured at a younger age but didn't hurt because there was not enough stress on them at the time of the fracture. Bipartite sesamoids can lead to pain because they may not be properly positioned beneath the toe and could be pushing against a nerve, bone, or other structure.

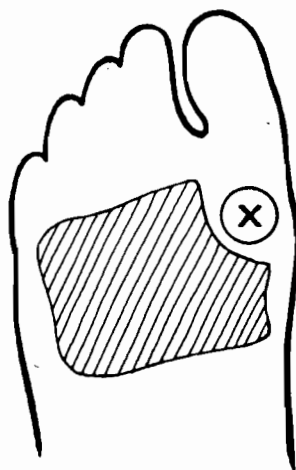
### Symptoms

You can evaluate your condition by pressing on the ball of your foot. There should be a

specific spot that hurts the most. If this same spot hurts when you pull back on your big toe to stretch the tendon of the muscle the sesamoids are in, this may also indicate sesamoiditis. This pain is greater during activity and subsides with prolonged periods of rest.

You can treat sesamoiditis at home by doing the following:

1. Apply an ice cup to the painful area for 10 to 15 minutes after you exercise.
2. Take aspirin (the usual recommended dosage is two aspirin four times a day, as long as there is no stomach upset).
3. Pad around the painful area to relieve pressure (see Figure 4.7). Insoles can increase the cushioning under the sesamoids, decreasing the force on those bones.



**Figure 4.7** Protective padding should be applied around the painful area.

4. Exercise on softer surfaces.
5. Finally, decrease your activity or stop altogether for a time to decrease the pain and inflammation and give the sesamoids a chance to heal.

## **Last Resort**

If this self-treatment doesn't relieve the problem, consult a sportsmedicine podiatrist. Your podiatrist should suggest the above treatments first. However, if these have not already eliminated the pain, x-rays should be taken to determine whether there is a fracture. If no fracture is found, a steroid injection may be given along with padding to relieve the pressure below the big toe. Anti-inflammatory medication may be prescribed to reduce pain and swelling. The podiatrist may also suggest orthotic devices to help relieve the pressure.

If these relatively conservative treatments do not work, or if the pain continues to return after long periods of rest, surgical removal of the painful sesamoid should be considered.

If there is a fracture, a cast may be applied for 4 to 6 weeks. Often, though, even immobilizing the area with a cast does not relieve the pain. If this is the case, surgery may be required to remove the fractured sesamoid. Although not the treatment of choice, surgery sometimes is the only method that eliminates the pain.

## **Conclusion**

Sesamoiditis may be a debilitating condition for runners, jumpers, or other athletes. Initial treatment of ice, padding, and rest may relieve the condition. Changing to a softer running surface and adding insoles to the shoes may also be helpful. If the above self-treatments do not resolve the condition, consult a sportsmedicine podiatrist.

## **Suggested Reading for "Sesamoiditis"**

- Scranton (1981)  
Van-Hal et al. (1982)