

SESAMOID INJURIES

SEARCH

WHAT ARE SESAMOIDS?

Sesamoids are bones that develop within a tendon. The one most people are familiar with is in the kneecap; however, they most commonly occur in the foot and hand. Two sesamoids, each about the size of a corn kernel, typically are found near the underside of the big toe.

Symptoms

Pain from a sesamoid injury is focused under the big toe on the ball of the foot. With sesamoiditis or a **stress fracture**, the pain may develop gradually. With a fracture, the pain will be immediate after trauma. Swelling and bruising may or may not be present. You may have difficulty and pain when bending and straightening the big toe.

Causes

Sesamoids act like pulleys, increasing the ability of the tendons to transmit muscle forces. The sesamoids in the forefoot (front of the foot) also assist with weight bearing and elevating the bones of the big toe.



An X-ray of a patient with a fractured sesamoid.

Like other bones, sesamoids can break in a traumatic injury. They also can develop a stress fracture from overuse. In addition, the tendons surrounding the sesamoids can become irritated or inflamed. This is called sesamoiditis and is a form of tendinitis or tendinosis. Sesamoiditis is common among ballet dancers, runners, and professional athletes.

Diagnosis

During your examination, your **foot and ankle orthopaedic surgeon** will look for tenderness at the sesamoid bones. They may manipulate the bone slightly or ask you to bend and straighten the toe. They also may bend the big toe up toward the top of the foot to see if the pain gets worse.

Your surgeon will request X-rays of the forefoot (front of the foot) to ensure a proper diagnosis. In many people, the sesamoid bone near the center of the foot (the medial sesamoid) has two parts (bipartite). Because the edges of a bipartite medial sesamoid are generally smooth, and the edges of a fractured sesamoid are generally jagged, an X-ray is useful for making an appropriate diagnosis.

Your surgeon also may request X-rays of the other foot to compare the bone structure. If the X-rays appear normal, they may suggest additional tests such as an MRI or CT scan. Blood tests for gout or inflammatory arthritis also may be considered.

Treatment

Non-surgical Treatment

Treatment for sesamoiditis usually does not require surgery. The treatment is often successful, but can be frustrating in how long it takes for symptoms to resolve. First, your foot and ankle orthopaedic surgeon will recommend the following:

- Stop the activity that causes the pain.
- Take acetaminophen or ibuprofen to relieve the pain.
- Rest and ice the sole of your foot. Do not apply ice directly to the skin; use an ice pack or wrap the ice in a towel.
- Wear soft-soled, low-heeled shoes. Stiff-soled shoes also may be comfortable, but be aware that clogs should be avoided as they elevate the heel and put more pressure under the sesamoids.
- Use a felt cushioning pad around the sesamoid to relieve stress.
- Return to activity gradually and continue to wear a cushioning pad of dense foam rubber under the sesamoids to support them. Avoid activities that put your weight on the balls of the feet (e.g., the elliptical machine).
- Tape the big toe so that it remains bent slightly downward.

In rare occasions, a steroid injection may be appropriate. However, the injection should not be made through the thickened fat pad on the bottom of the foot as this can cause loss of the body's normal fatty cushion in this area.

If symptoms persist, you may need to wear a removable short leg-fracture brace or a cast for 4-6 weeks. Sesamoids tend to heal slowly.

If you have broken your sesamoid bone, your foot and ankle orthopaedic surgeon may recommend non-surgical treatments before resorting to surgery. You will need to wear a stiff-soled shoe, a short leg-fracture brace, or possibly a cast, and your surgeon may tape the joint to limit movement of the big toe. You also may have to wear a J-shaped pad around the area of the sesamoid to relieve pressure as the fracture heals. Other cushioning pads or **orthotic devices** often are helpful as the fracture heals. Pain relievers such as acetaminophen or ibuprofen may be recommended as well, but know that it may take several months for the discomfort to subside.

Surgical Treatment

If non-surgical measures do not work, your foot and ankle orthopaedic surgeon may recommend surgery. In this case, your surgeon may be able to repair the sesamoid, but often they will recommend removal of part or all of the sesamoid.

Recovery

Healing of the sesamoid typically is slow and can take up to six months. The process can be frustrating but is usually successful.

Risks

Failure of healing, avascular necrosis, development of arthritis at the joint between the sesamoid and the first metatarsal, and continued pain are the risks associated with sesamoid injuries. If these should develop, excision of part or all of the sesamoid can usually resolve symptoms.

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