

# SESAMOID INJURIES OF THE FOOT

## What is a sesamoid injury?

A sesamoid bone is a bone found inside a tendon where it passes over a joint. A tendon is a strong band of connective tissue which attaches a muscle to a bone. Your body has several sesamoid bones. The largest sesamoid bone is your patella, or kneecap. The ball of your foot contains two small sesamoid bones, the medial (inner side) and lateral (outer side) sesamoids. These sesamoids act as pulleys for the tendons and help flex or curl your big toe. When you run and jump these sesamoid bones absorb much of your body weight.

An injury to a sesamoid bone is one of three types:

- Sesamoiditis: An irritation or inflammation.
- Sesamoid fracture: A break from an injury.
- Sesamoid stress fracture: A break that develops slowly over time.

## How do sesamoid injuries occur?

Sesamoiditis can occur when a person has repeated stress to the ball of their foot. This is seen in running and jumping sports. It is common in dancers, who are constantly on the balls of their feet. Wearing high-heeled shoes can contribute to sesamoiditis. Sometimes tight calf muscles, high-arched feet, or feet that over-pronate (flatten out when you walk) can cause the inflammation. Some people have a “bipartite” sesamoid. This is a sesamoid bone that is in 2 pieces (without being broken). Although it is not broken the edges of the 2 pieces may rub against each other and cause irritation.

A break, or fracture, usually occurs from an injury such as landing too hard on the foot after a jump or fall. A sesamoid stress fracture occurs from overuse and wear and tear on the foot over time.

## What are the symptoms?

Symptoms can include:

- pain when moving the big toe, especially lifting the big toe up
- tenderness to touch at the ball of the foot
- pain when walking, running, jumping, or standing
- swelling

## How is it diagnosed?

Your provider will examine your foot and find tenderness in the area of the sesamoid bones. You will have pain when moving the big toe.

Your provider may order an X-ray to see if you have a fracture. An X-ray will also show if you have a

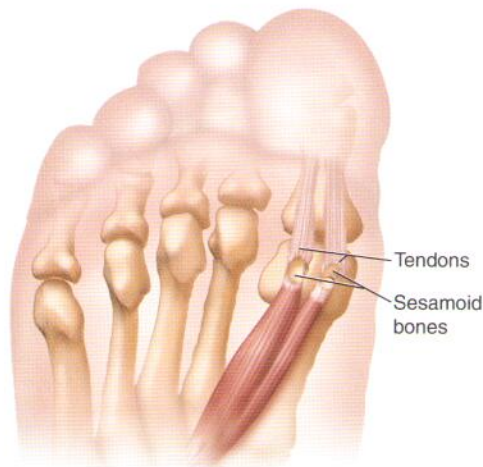
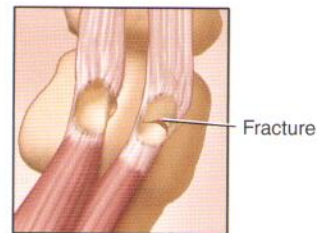
bipartite bone. Your provider may also order a bone scan or an MRI to see if you have a stress fracture.

## How is it treated?

Treating a sesamoid injury means protecting it from overuse. This can be done in several ways:

- You may be given a special pad to wear that supports the bones.
- You may be given a shoe insert that limits the motion of your big toe.
- You may have custom-made shoe inserts made for you (orthotics).
- You may need to tape your big toe to provide support and limit movement.
- You may be given a removable walking cast to wear until the pain is gone.

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- The pain may be treated with an anti-inflammatory medicine or other pain medicine (adults aged 65 years and older should not take non-steroidal anti-inflammatory medicine for more than 7 days without their healthcare provider's approval). While you are having acute pain you may need crutches. You should keep your foot elevated and use ice for 20 to 30 minutes 3 to 4 times a day.
- Your provider may recommend a cortisone shot in the foot to help reduce the inflammation. In some cases the painful sesamoid bone needs to be surgically removed.

### How long do the effects last?

Sesamoid fractures and stress fractures may take 4 to 8 weeks to heal. The pain from sesamoiditis may last weeks to months, depending on the amount of overuse.

### When can I return to my sport or activity?

Ideally you may return to your sport or activity when your sesamoid pain is gone. If you have a fracture, your provider may want to take another X-ray to make sure the fracture is healed or healing before you start participating. However many people return when the pain has improved and they can tolerate their activity. You should talk this over with your provider.

You may safely return to your sport or activity when, starting from the top of the list and progressing to the end, each of the following is true:

- You have full range of motion in the injured big toe compared to the uninjured big toe.
- You have full strength of the injured big toe compared to the uninjured big toe.
- You can jog straight ahead without pain or limping.
- You can spring straight ahead without pain or limping.
- You can do 45-degree cuts, first at half-speed, then at full-speed.
- You can do 20-yard figures-of-eight, first at half-speed, then at full-speed.
- You can do 90-degree cuts, first at half-speed, then at full-speed.
- You can do 10-yard figures-of-eight first at half-speed, then at full-speed.
- You can jump on both feet without pain and you can jump on the injured foot without pain.

### How can I prevent a sesamoid injury?

Sesamoid injuries are usually from overuse. It is important to wear proper fitting footwear. Because these are typically gradually occurring injuries it is important to get early treatment so the injury does not become worse.