

What are Stress Fractures?

A stress fracture is a break in a bone caused by repetitive stress. It may occur in any bone, but it is quite common in the metatarsal bones of the foot. There is often no recollection of injury. The patient may simply develop a painful forefoot after some activity, such as walking, sports, or stooping down onto the ball of the foot. A small crack develops in the cortex (outer shell) of the bone. Without proper treatment, this may progress to a through and through (complete) fracture of the bone. The second and third metatarsals are the most commonly affected. Metatarsal stress fracture may not become apparent on x-rays until a few weeks after the injury.

Symptoms

- Sharp pain in the forefoot, aggravated by walking.
- Tenderness to pressure on the top surface of the metatarsal bone.
- Diffuse swelling of the skin over the forefoot.

Causes

- Decreased density of bone (eg. Osteoporosis), can cause insufficiency fractures.
- Unusual stress on a metatarsal due to malposition or another forefoot deformity (eg. Bunion), can cause fatigue fractures.
- Abnormal foot structure or mechanics (eg. Flatfoot).
- Increased levels of activity, especially without proper conditioning.

What should you do?

- Seek professional help as soon as possible.
- Keep weight off the foot.
- Ice the top of the forefoot for about 20 minutes each hour.

- To reduce swelling, wrap the foot in an Ace bandage with moderate compression.
- Wear a shoe with a very stiff sole.

Diagnosis and Treatment

- X-ray to attempt to identify fracture.
- Bone scans (a special diagnostic test) may be ordered to establish a questionable diagnosis.
- Apply padding to relieve stress from the metatarsals.
- Dispense a surgical/trauma shoe to splint the foot.
- Prescribe medication for pain and inflammation.
- Physical therapy in the later stages of healing may be used to regain full strength and mobility.
- Occasionally a cast is necessary for treatment.

Other Causes of Forefoot Pain

- Morton's neuroma: A benign tumor of a nerve running between the metatarsals.
- Metatarsalgia: Pain and inflammation of the metatarsal bones and their soft-tissue sheath.
- Capsulitis: Pain and inflammation of the joints between the metatarsal bones and toes.
- Tendonitis: Inflammation of the tendons which course along the top of the foot.
- Dislocation: of a joint between the metatarsal and the toe (metatarsal-phalangeal joint).
- Plantar callus: Severe, painful callus on the bottom of the foot.
- Bursitis: Inflamed fluid-filled sac, often between a bone and an area of pressure.