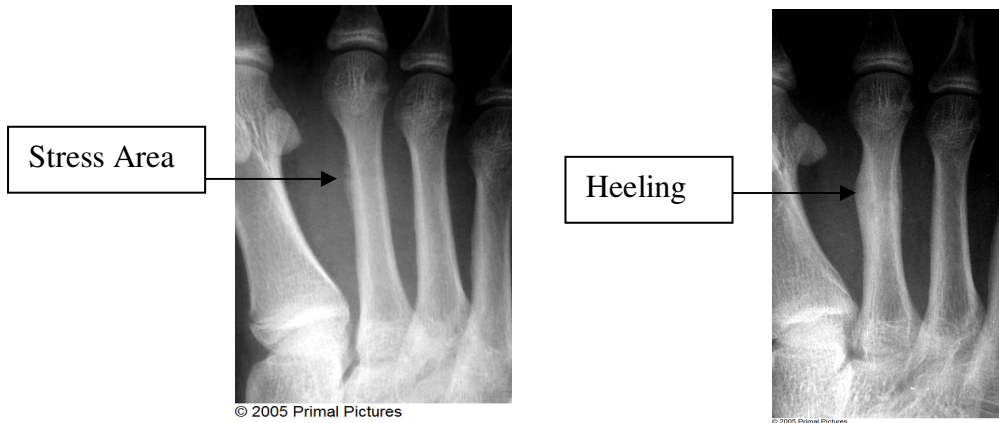


## Stress Fractures

**Definition:** Fracture resulting from repeated loading or stress on a bone, usually without any trauma or injury.

**Common Terms:** March fracture; fatigue fracture; spontaneous fracture.



**Typical Mechanism of Injury:** Stress fractures usually occur as a result of repetitive overload on the bone. This can be from a sudden increase in training (mileage, intensity or frequency of workouts), a change in the running surface (switching from running on grass to running on pavement), improper or worn out footwear, or from poor mechanics (flat feet, bow legs). There is an additional risk for those individuals that may be affected by nutritional or hormonal abnormalities and these can include eating disorders, irregular menstruation, or osteopenia (poor bone density).

**Common Signs and Symptoms:** Pain and discomfort over the bone. There may or may not be swelling. There may be pain before, during and after activity that is relieved by eliminating stress from the bone. X-rays of the affected area may not show the fracture for a few weeks. A bone scan or MRI may be ordered to show evidence of injury earlier than an x-ray. Stress fractures can occur in any bone but they are most commonly seen in the tibia and fibula (lower leg bones), metatarsals (foot bones), calcaneus (heel bone), femur (thigh bone) and the vertebrae (spine).

**Common Treatment:** Initial treatment for stress fractures is to rest the area. This may involve crutches, casts or a brace. RICE (rest, ice, compression and elevation) may be used to help alleviate pain. Return to activity may begin once healing has begun and this may take 6-12 weeks. Once activity is allowed, the time, distance, and/or intensity should increase no more than 10% per week and any return of pain should bring the activity to a stop. Occasionally surgery is recommended for certain types of stress fractures.

**Prevention:** Gradual increase in any activity is the most important step to reduce the risk of developing a stress fracture. Sport specific footwear that fits the patient's foot correctly and proper nutrition can also help reduce the risk. The key is to best identify the original causes that led to the abnormal stress, and try to avoid this in the future.

**Expectations:** The patient may experience symptoms for anywhere from three - four weeks to several months. Proper nutrition is very important to aid in the healing process. For stress fractures to the leg patients can expect to be non-weight bearing (on crutches) or in a protective device (such as a walking boot).

## DEPARTMENT OF ORTHOPAEDICS & SPORTS MEDICINE

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