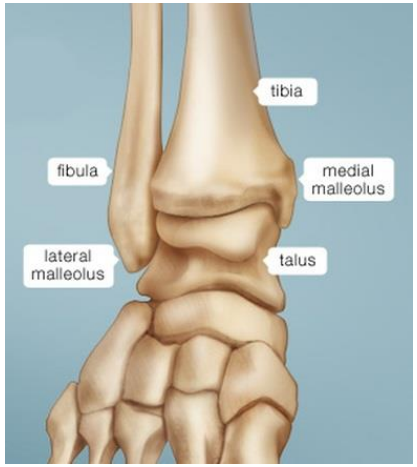
Alexis E. Dixon, MD

13160 Mindanao Way Suite 304 | Marina del Rey, CA 90292
Phone: 310-437-7922 | Fax: 310-574-0423
aedixonmd.com

Ankle Fractures

Ankle fractures are one of the most common type of fractures. Fractures differ in severity based on whether they are displaced (whether the fragments have moved relative to one another) or stable. Significant soft tissue injury may result in the bone being exposed to air, known as an open fracture, which is much less common than a closed fracture, where the skin remains intact.

Many fractures are diagnosed in an emergency room, urgent care center, or primary care office. It is important to note that the role of these facilities is to diagnose the injury and send you to a specialist; they are not intended to treat these long-term and their recommendations may not be consistent with those from the specialist. You will usually get general instructions to stay off the limb, elevate, and you may be told that surgery is a possibility. The ultimate decision should be discussed with the surgeon. In addition, the types of x-rays obtained in the primary offices are often inadequate for a specialist, and a different set of x-rays will have to be obtained.



The three major bones of the ankle are the tibia, which comprises the medial aspect in a structure called the **medial malleolus**, the fibula, which makes the lateral border of the ankle called the **lateral malleolus**, and the **talus**.

Ankle fractures generally occur from rotational injuries. Sometimes it is possible to have a fracture that you can put weight on.

This unlucky patient had a stable fracture on the right and an unstable fracture on the left

When a fracture is stable, it means that there has been little damage to the anatomic structure. It means that the ankle can still bear weight. In general, this means that the pieces have not moved a significant amount. Stable fractures can heal with minimal intervention. They must simply be protected from further injury in a boot or a cast.

Unstable fractures mean that the structural integrity of the ankle is compromised. If there is significant displacement of any fragments, this is an indication that a fracture is unstable. For instance, if the fracture needs to be put back into place, it is likely to be pushed out of place again upon initiation of weight-bearing. In order to restore the ankle to its ideal anatomy, the pieces should be put back together under direct visualization, which is called an open reduction. This is done in **surgery**. Because of the

instability, the pieces must be held together in place with screws and plates or pins. This is called internal fixation.

Many times, instability must be indirectly inferred from x-rays because the ligaments that cannot be seen. Bones are held together by strong, fibrous structures called ligaments. If there is a combination of a fracture and a tear of a ligament, this can also become unstable and sometimes requires surgery. This often requires special x-rays to determine called stress x-rays, which may be required prior to a decision about surgery.

Very rarely, there is significant soft tissue injury such as an open fracture that requires temporary fixation to hold a very unstable fracture in place while the soft tissue can rest. In that first surgery, a minimal number of incisions are made to allow the skin to heal. A temporary fixator is placed to hold the pieces together indirectly as a frame. This is only done for as long as is necessary until the skin is healthy enough to withstand a more involved surgery of open reduction and internal fixation.

Diagnosis

A set of high-quality weight-bearing (standing) x-rays are required for diagnosis to evaluate the fracture and to assess the structure of the foot and ankle, as well as a thorough physical examination. Sometimes, an MRI or CT may be necessary if there is concern for a more severe injury or for operative planning.

Treatment

Immobilization and rest are the first steps for both stable and unstable fractures, except in the case of a more emergent situation. Ace bandages and lace-up braces are NOT adequate. A boot or cast will be recommended based on the fracture. If crutches are necessary, I highly recommend a rolling knee scooter. The CAM boot or cast will be used for a minimum of six weeks and up to twelve. A short boot is not recommended in an ankle fracture.

Ice and Anti-Inflammatories

Ice should be placed with a tea towel protecting the skin for no more than 20 minutes per hour. Ice is NOT advised in patients with neuropathy or any numbness in the feet. Speak to your doctor if there is concern for contraindications to anti-inflammatories such as naproxen or ibuprofen.

Physical Therapy

This will be used to strengthen the muscles that are weak and improve balance after immobilization is complete. This will help to accelerate recovery once the bone has healed.

Maximizing Healing Potential

A healthy diet, abstinence from any nicotine products, and appropriate vitamin supplementation are critical to supply the bone with the nutrients and oxygen it needs to heal. I recommend Calcium (1200mg) and Vitamin D_3 (2000-5000iu) supplementation to maximize results.

Return to Play

To prevent further injury or reinjury, it's best to wait until your balance has been regained and improved. This requires specific balance training as well as core strengthening. Home exercises can be accelerated with a BOSU to gain balance after clearance for bearing weight out of a boot. This should be supervised or approved by your physical therapist or physician.

References

https://www.webmd.com/g00/pain-management/picture-of-the-ankle

https://www.orthobullets.com/trauma/1047/ankle-fractures