K . **:** Ligament; Broken ankle; Malleolus; Syndesmosis

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ree bones make up the ankle joint:

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x Fibula - smaller bone of the lower leg

- Talus - a small bone that sits between the heel bone (calcaneus) and the tibia and bula

e tibia and bula have speci c parts that make up the ankle:

- Medial malleolus - inside part of the tibia
- Posterior malleolus - back part of the tibia
- Lateral malleolus - end of the bula

A a .

Doctors classify ankle fractures according to the area of bone that is broken [1]. For example, a fracture at the end of the bula is called a lateral malleolus fracture, or if both the tibia and bula are broken, it is called a bimalleolar fracture [2].

Two joints are involved in ankle fractures:

- Ankle joint - where the tibia, bula, and talus meet
- Syndesmosis joint - the joint between the tibia and bula, which is held together by ligaments

Multiple ligaments help make the ankle joint stable.

Ca .

- Twisting or rotating your ankle
- Rolling your ankle
- Tripping or falling
- Impact during a car accident

S .

Because a severe ankle sprain can feel the same as a broken ankle, every ankle injury should be evaluated by a physician [3].

Common symptoms for a broken ankle include:

- Immediate and severe pain
- Swelling
- Bruising
- Tender to touch
- Cannot put any weight on the injured foot
- Deformity ("out of place"), particularly if the ankle joint is dislocated as well

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M a H . a P . a E a . A er discussing your medical history, symptoms, and how the injury occurred, your doctor will do a careful examination of your ankle, foot, and lower leg [4].

Imaging Tests

If your doctor suspects an ankle fracture, he or she will order additional tests to provide more information about your injury.

X- a

X-rays are the most common and widely available diagnostic imaging technique. X-rays can show if the bone is broken and whether

***Corresponding author:** Jorge Berlanga Acosta, Tissue Repair and Cyto-Protection Research Laboratory, Center for Genetic Engineering and Biotechnology, P.O. Box 6162, Havana, Cuba, E-mail: jorge.berlanga@cigb.edu.cu

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useful when the fracture extends into the ankle joint [7].

Surgical treatment is o en recommended because these fractures make the ankle unstable. Lateral and medial malleolus fractures are treated with the same surgical techniques as written above for each fracture listed. X-ray of bimalleolar ankle fracture. (Right) Surgical repair bimalleolar ankle fracture. "Tri" means three. Trimalleolar fractures means that all three malleoli of the ankle are broken. ese are unstable injuries and they can be associated with a dislocation. ese injuries are considered unstable and surgery is usually recommended. As with bimalleolar ankle fractures, nonsurgical treatment might be considered if you have signi cant health problems, where the risk of surgery may be too great or if you usually do not walk. Nonsurgical treatment is similar to bimalleolar fractures, as described above [19]. Each fracture can be treated with the same surgical techniques as written above for each individual fracture. (Le) X-ray of trimalleolar ankle fracture. (Right) Surgical repair.

T a

e syndesmosis joint is located between the tibia and bula, and is held together by ligaments. A syndesmotic injury may be just to the ligament this is also known as high ankle sprain. Depending on how unstable the ankle is, these injuries can be treated without surgery. However, these sprains take longer to heal than the normal ankle sprain [20].

In many cases, a syndesmotic injury includes both a ligament sprain and one or more fractures. ese are unstable injuries and they do very poorly without surgical treatment. Your physician may do a stress test x-ray to see whether the syndesmosis is injured. (Le) X-ray of syndesmotic injury with lateral malleolus fracture. Note the space between the tibia and bula.

R

Because there is such a wide range of injuries, there is also a wide range of how people heal a er their injury. It takes at least 6 weeks for the broken bones to heal. It may take longer for the involved ligaments and tendons to heal. As mentioned above, your doctor will most likely monitor the bone healing with repeated x-rays. is is typically done more o en during the rst 6 weeks if surgery is not chosen.

Validity

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