

**Functional anatomy**

The calcaneus, or heel bone, is the largest bone of the foot, and along with the talus, makes up the “hindfoot” – the area under the ankle (Fig 1). It has four points of articulation – one in front with the cuboid (the calcaneocuboid joint) and three with the talus above (the posterior, middle and anterior facets) forming the subtalar joint.

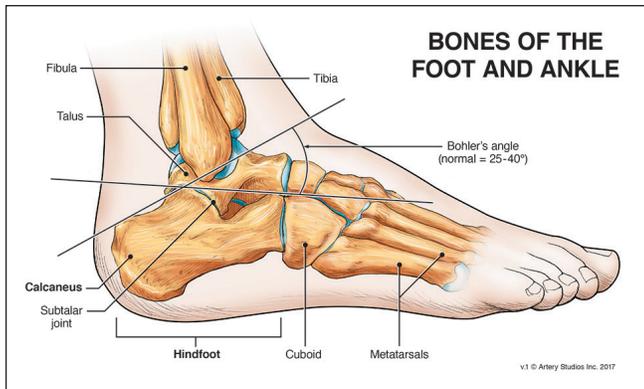


Figure 1: Normal anatomy of the hindfoot.

The calcaneus (as well as the talus) transmits the weight of the body to the ground. It is essential for many activities, including when the heel strikes the ground during walking or running. Along with the subtalar joint, it facilitates mobility of the foot, allowing it to ‘accommodate’ to uneven ground. Injury to this bone can occur by unusual means – keep reading...

**Relevance of calcaneal fractures**

A fracture of the calcaneus is an injury frequently presented by PI claimants. Head-on collisions (Fig 2), falls, or even significant twisting of the ankle on uneven surfaces, can cause shearing, compressive or rotatory forces to the hindfoot. Impact can drive the talus and calcaneus into each other, damaging the subtalar joints.

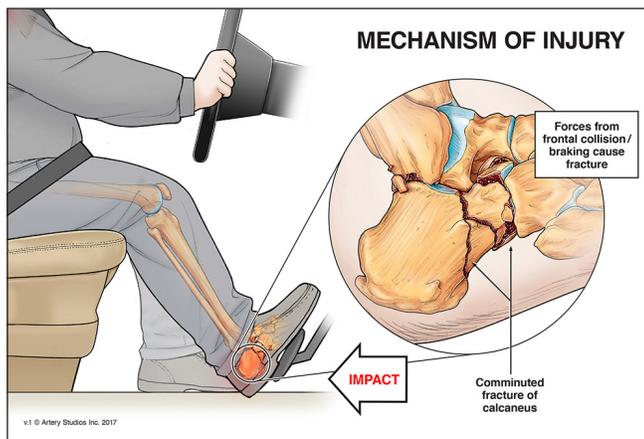


Figure 2: A common mechanism of injury.

*“Surgery is often required... for there to be any hope of return to normal activity for the injured client.”*

Traumatic axial loading is the primary mechanism of injury to the calcaneus, frequently resulting in it becoming flattened, shortened, widened and otherwise deformed (Fig 3). In general, the greater the force applied, the greater the severity of injury with higher levels of comminution (bone shattering).

Surgery is often required to restore bony architecture and alignment of the associated joints, and for there to be any hope of return to normal activity for the injured client. If injury extends into the joints (intra-articular) as it commonly does, the normal biomechanics of the hindfoot joints may be compromised, and can lead to the development of osteoarthritis in future (see Illustrated Medicine 14.1 and 16.1 for more information).

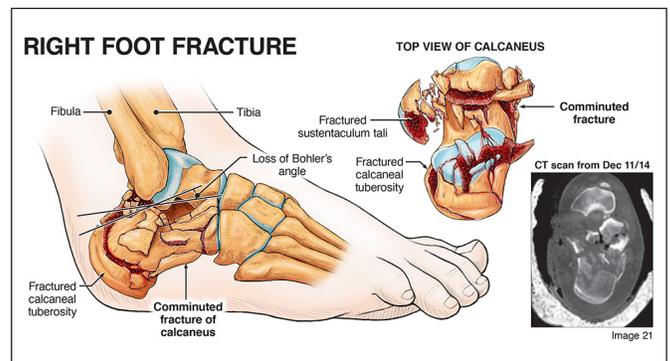


Figure 3: A lover's fracture with significant comminution.

**Lover's fracture**

This injury was coined a “lover's fracture” or “Don Juan” fracture, originating from the idea that a lover may jump out a bedroom window from great heights while attempting to flee from an enraged spouse. With such a painful injury, the lover would've had to crawl away into the night!

**Implications**

Computed tomography (CT) scanning of the foot offers a clear assessment of the severity of this injury. Along with initial measurements of Bohler's angle (Fig 1 & 3), long-term outcomes of degeneration may be predicted from the jump from that window – or however a client is injured. Trauma to the calcaneus and its associated joints may be significantly debilitating, taking the spring out of an otherwise quick step.

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