The Subtalar joint primarily exhibits the tri-planar motions of Pronation and Supination. During weight bearing, pronation is commonly associated with internal tibial rotation and lowering of the arch structures, whilst supination is commonly associated with external tibial rotation and raising of the arch structures.

Excess pronation is represented by eversion of the calcaneus, adduction and plantarflexion of the talus whilst supination is represented by calcaneal inversion, talus abduction and dorsiflexion. Therefore, a patient suffering from unilateral excess pronation may experience excess medial loading and functional shortening of the effected leg.

Conversely, excessively supinated feet commonly represent as pes cavus (high arch) foot types with reduced shock absorption qualities and lateral instability problems.

Excess supination with closed chain kinetic motion externally rotates the tibia, increasing the vertical distance (v.d.) and inverting the calcaneus. The combination of raising the arch structure, locking the midfoot and inverting the calcaneus subsequently reduces the shock absorbing qualities of the foot and leg, while increasing lateral instability of the lower limb structures.

This foot type is commonly attributed to chronic inversion sprain syndrome, iliotibial band syndrome & shock reduction symptoms. #