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Opinion

Putting Your Best Foot Forward: How Subluxation of the Subtalar Joint Affects Posture Throughout the Rest of the Body

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Opinion

Feet you either love them or hate them. However, whatever your personal feelings towards them, they play an integral role in our posture throughout our bodies. Simply put, the foot is the foundation of standing posture. In their study, found that misalignments of the foot will cause the center of gravity to deviate and the body with compensate with compensatory postural strategies. Which leads to postural alternations, instability of the spine, balance disorders and structural abnormalities.

When looking at the foot the key joint that has the largest impact on posture is the subtalar joint. The calcaneus's superior articulation with the talus forms the subtalar joint. Normally the talus is positioned directly above the calcaneus. However, as this joint is a plane/ gliding joint there is not much ligamentous stability between to 2 bones. This results in the calcaneus shifting medially or laterally under the talus.

Pronation, or eversion, of the calcaneus occurs when the calcaneus shifts laterally as compared to the talus. Pronation of the calcaneus causes the talus to move into flexion and adductions, dropping the medial longitudinal arch. The shifting of the talus also induces internal rotation of the tibia. Internal rotation of the tibia in turn leads to internal rotation of the femur. If this occurs bilaterally the person will appear to have Genu Valgum. Internal rotation of the femur causes the head of the femur to place pressure on the posterior aspect of acetabulum, leading anterior rotation of the Os Coxa [1]. This side of the pelvis will also be lower compared to the other side of the pelvis. Leg length inequality may also be seen, with the affected foot appearing to be shorter than the non-affected leg. Anterior rotation of the pelvis increases the lumbar lordosis [1,2,3]. This exaggerated lordosis, leads to compensatory changes in the remaining levels of the spine. This is seen as increased kyphotic curve and anterior lean of the thoracic spine [1,2] which induces anterior head carriage. This anterior head carriage is an effort done by the body to keep the head over the sacrum to maintain balance [1].

Supination, or inversion, of the calcaneus occurs when the calcaneus shifts medially. This leads the talus to move laterally, inducing external rotation of the tibia and femur. External rotation of the femur leads to posterior rotation of the Os Coxa. Thus, flattening the lumbar lordosis and the curves above it. Posterior and lateral trunk rotation was also seen with supination of the foot [3].

Subluxation of the calcaneus at the subtalar joint, whether in pronation or supination, has affects upon the posture throughout the rest of the body. It is imperative as Chiropractors that we do not overlook subluxation of the calcaneus. Often a single adjustment to subtalar joint can restore proper alignment to the foot, reduce compensatory postural changes, increase holding time between adjustments, and be the missing link to getting your patient well.

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Conflict of Interest

None.

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