The talonavicular and calcaneocuboid joints: anatomy, biomechanics, and clinical management of the transverse tarsal joint

References:


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Abstract: The transverse tarsal plays a critical role in allowing the foot to transition from a flexible structure that dissipates impact as the foot strikes the ground and accepts the body's weight to the rigid structure that is required for efficient propulsion during toe off. Similarly, the medial longitudinal arch of the foot is controlled by the supportive structures of the talonavicular joint. A fine balance exists between muscular control and static support structures of the talonavicular joint. Failure of one support structure is often followed by fatigue of the remaining support and loss of function of the entire joint complex. This article describes the osseous and ligamentous anatomy of the talonavicular and calcaneocuboid joints and describes the biomechanical role of the transverse tarsal joint in standing and gait. Biomechanical principles are used to illustrate orthotic management of diseases that affect the transverse tarsal joint.