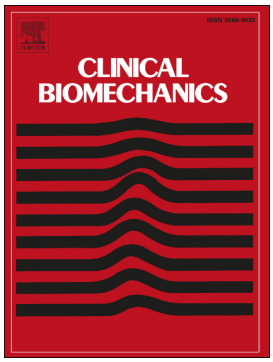

Does a not-so-recent ankle sprain influence interjoint coordination during walking?

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Abstract

Background: Ankle sprains are common joint injuries in daily and sports activities, whose underlying mechanisms have been amply studied. If joint structures are directly damaged, neuromuscular activity can be affected, particularly in the time domain.

This study aims to establish whether previous ankle injury correlates with changes in the inter-joint synergy of the entire lower limb and in the muscle activity pattern during walking.

Methods: Three-dimensional walking-gait analysis was conducted on twenty-four adults. Ten of them had never suffered from ankle sprain; fourteen had suffered from ankle sprain at least once during the three preceding years.

Continuous Relative Phase (CRP) between the moving limbs assessed inter-joint coordination, and muscular activity was recorded by EMG.