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Controversies in Chronic Ankle Instability

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ARTICLE SUMMARY

This brief article references the literature and provides a summary of the evidence on chronic ankle instability (CAI). Traditional theories suggest CAI is influenced by decreased proprioception, weak musculature surrounding the ankle and foot, and/or delayed neuromuscular reflex response. More contemporary theories emphasize the role of anticipatory muscle contraction associated with a “feedforward” mechanism in injury prevention and rehabilitation. This anticipatory muscle contraction appears to increase active muscle stiffness and joint stiffness while increasing the sensitivity of the muscle spindle to stretch. These mechanisms appear to work together to enhance joint stability. The authors suggest that interventions that are capable of producing this response appear desirable. They hypothesize that the use of various types of perturbation training may be useful since it exposes the joint to destabilizing forces. It may activate the desired involuntary coordinated co-activation of muscles around the joint to increase stability. Several methods for providing perturbations are discussed, as well as the need for additional research in this area to determine the effectiveness of perturbation training on enhancing stability in CAI.

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