

Core stability and its relationship to lower extremity function and injury.
Willson JD, Dougherty CP, Ireland ML, Davis IM.
Journal of the American Academy of Orthopaedic Surgeons 2005;13:316-325.

Summary

The article states that core stability is necessary to maintain the integrity of the spinal column, provide resistance to perturbations and furnish a stable base for movement of the extremities. Current literature suggest that lower extremity injuries may diminish core stability measures. A pre-existing core deficiency may increase the risk of lower extremity injury.



Current evidence suggests that decreased core stability may predispose to injury and that appropriate training may reduce injury.

Abstract

Core stability may provide several benefits to the musculoskeletal system, from maintaining low back health to preventing knee ligament injury. As a result, the acquisition and maintenance of core stability is of great interest to physical therapists, athletic trainers, and musculoskeletal researchers. Core stability is the ability of the lumbopelvic hip complex to prevent buckling and to return to equilibrium after perturbation. Although static elements (bone and soft tissue) contribute to some degree, core stability is predominantly maintained by the dynamic function of muscular elements. There is a clear relationship between trunk muscle activity and lower extremity movement. Current evidence suggests that decreased core stability may predispose to injury and that appropriate training may reduce injury. Core stability can be tested using isometric, isokinetic, and isoinertial methods. Appropriate intervention may result in decreased rates of back and lower extremity injury.