Abstract

Title: The Relationship Between Maximal and Explosive Lower Limb Strength and Change of Direction Ability in Tennis

Objectives: The aim of this thesis was to determine whether, and to what extent, a relationship exists between maximal and explosive lower limb strength and change of direction (CoD) ability in competitive tennis players. The work seeks to identify key strength-related factors influencing performance in CoD tests and to provide recommendations for training practice.

Methods: The study included 11 male competitive tennis players aged 18–30 years. Maximal strength was assessed using an isokinetic dynamometer, and explosive strength was measured through vertical jumps on force plates. Change of direction ability was evaluated using the CoD 180 test, T-test, Spider test, and 5- and 10-meter sprint tests. Data were analyzed using descriptive statistics, correlation, and regression analyses.

Key words: explosive strength, maximal strength, change of direction, acceleration, deceleration, training performance, tennis, muscle asymmetry, plyometrics, contrast training