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Strong correlation of maximal squat strength with sprint performance and vertical jump height in elite soccer players.

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BACKGROUND: A high level of strength is inherent in elite soccer play, but the relation between maximal strength and sprint and jumping performance has not been studied thoroughly.

OBJECTIVE: To determine whether maximal strength correlates with sprint and vertical jump height in elite male soccer players.

METHODS: Seventeen international male soccer players (mean (SD) age 25.8 (2.9) years, height 177.3 (4.1) cm, weight 76.5 (7.6) kg, and maximal oxygen uptake 65.7 (4.3) ml/kg/min) were tested for maximal strength in half squats and sprinting ability (0-30 m and 10 m shuttle run sprint) and vertical jumping height.

RESULT: There was a strong correlation between maximal strength in half squats and sprint performance and jumping height.

CONCLUSIONS: Maximal strength in half squats determines sprint performance and jumping height in high level soccer players. High squat

strength did not imply reduced maximal oxygen consumption. Elite soccer players should focus on maximal strength training, with emphasis on maximal mobilisation of concentric movements, which may improve their sprinting and jumping performance.

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MeSH terms: Adult, Biomechanics, Body Weight, Exercise Test, Exertion, Humans, Male, Muscle, Skeletal, Oxygen Consumption, Running, Soccer