

## Correlation between Sprint Performance and Vertical Jump Height in Elite Female Football Players

**Authors :** Svetlana Missina, Anatoliy Shipilov, Alexandr Vavaev

**Abstract :** The purpose of the present study was to investigate the relationship between sprint and vertical jump performance in elite female football players. Twenty four professional female football players (age,  $18.6 \pm 3.1$  years; height,  $168.3 \pm 6.3$  cm, body mass  $61.6 \pm 7.4$  kg; mean  $\pm$  SD) were tested for 30-m sprint time, 10-m sprint time and vertical countermovement (CMJ) and squat (SJ) jumps height. Participants performed three countermovement jumps and three squat jumps for maximal height on a force platform. Mean values of three trials were used in statistical analysis. The displacement of center of mass (COM) during flight phase (e.g. jump height) was calculated using the vertical velocity of the COM at the moment of take-off. 30-m and 10-m sprint time were measured using OptoGait optical system. The best of three trials were used for analysis. A significant negative correlation was found between 30-m sprint time and CMJ, SJ height ( $r = -0.85$ ,  $r = -0.79$  respectively), between 10-m sprint time and CMJ, SJ height ( $r = -0.73$ ,  $r = -0.8$  respectively), and step frequency was significantly related to CMJ peak power ( $r = -0.57$ ). Our study indicates that there is strong correlation between sprint and jump performance in elite female football players, thus vertical jump test can be considered as a good sprint and agility predictor in female football.

**Keywords :** agility, female football players, sprint performance, vertical jump height

**Conference Title :** ICFSS 2017 : International Conference on Football and Sport Science

**Conference Location :** Barcelona, Spain

**Conference Dates :** May 26-27, 2017