

## Vertical Jump Performance as a Discriminator of Playing Ability in Collegiate Female Soccer Players

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### ABSTRACT

Previous studies have assessed the importance of physical characteristics to soccer playing ability by comparing performance-based outcomes between starters and non-starters. Starters are often considered the most skilled players on the team. These players get more playing time than non-starters and have been shown to achieve higher performance outcomes on intermittent fitness tests. However, it remains unclear whether starters can achieve higher performance outcomes on a countermovement vertical jump.

**PURPOSE:** The purpose of this study was to investigate the efficacy of countermovement vertical jump height and peak power to discriminate between starters and non-starters in collegiate female soccer.

**METHODS:** Twenty-seven collegiate female soccer players (age =  $19.56 \pm 1.28$  years; height =  $164.26 \pm 5.74$  cm; body mass =  $66.65 \pm 8.43$  kg) were recruited to participate in the present study. All testing was completed during the 2021 preseason training period. The players were classified as starters ( $n = 12$ ) or non-starters ( $n = 15$ ) according to their average number of minutes played per game during the subsequent exhibition season. Each participant reported to the laboratory for a single visit where they performed three countermovement vertical jump tests on a jump mat. For each jump, participants stood on the mat with feet shoulder width apart and hands positioned on the hips. Participants were not allowed to take any steps prior to performing the vertical jump and a quick descending quarter-squat countermovement was allowed before the ascending takeoff phase. The participants were instructed to jump as explosively as possible with both feet at the same time and land on the jump mat in the starting position. Vertical jump height (cm) was estimated from the flight time recorded by the jump mat. Peak power output was estimated using a previously validated regression equation: peak power (W) =  $51.9 \times$  vertical jump height (cm) +  $48.9 \times$  body mass (kg) - 2007. Independent samples *t*-tests were used to compare vertical jump height and peak power between the starting and non-starting groups. **RESULTS:** Vertical jump height was significantly greater ( $P = 0.039$ ) for the starters ( $38.60 \pm 6.11$  cm) compared to the non-starters ( $34.43 \pm 3.75$  cm). There was no significant difference ( $P = 0.448$ ) between the starters ( $3076.72 \pm 331.98$  W) and non-starters ( $3182.23 \pm 369.67$  W) for peak power. **CONCLUSION:** These findings suggest that vertical jump height is an effective measure for discriminating between starters and non-starters in collegiate female soccer. Vertical jump characteristics are critical to a player's performance on the field. Because the starters in this study were able to jump higher than the non-starters, vertical jump height may be an important parameter for identifying players with a high degree of soccer playing ability.