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Jumping and Landing Techniques in Elite Women's Volleyball

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ABSTRACT

Volleyball has become one of the most widely played participant sports in the world. Participation requires expertise in many physical skills and performance is often dependent on an individual's ability to jump and land. The incidence of injury in volleyball is similar to the rates reported for sports that are considered more physical contact sports. Though the most common source of injury in volleyball is the jump landing sequence, little research exists regarding the prevalence of jumping and landing techniques. The purpose of this study was to quantify the number of jumps performed by female volleyball players in competitive matches and to determine the relative frequency of different jump-landing techniques. Videotape recordings of two matches among four volleyball teams were analyzed for this study. Each activity was categorized by jump type (offensive spike or defensive block) and phase (jump or landing). Phase was subcategorized by foot use patterns (right, left, or both). Each of the players averaged nearly 22 jump-landings per game. Foot use patterns occurred in unequal amounts ($p < 0.001$) with over 50% of defensive landings occurring on one foot. Coaches, physical educators, and recreation providers may utilize the findings of this inquiry to help prevent injuries in volleyball.

Key words: Knee injury, jumping technique, female, leap, frequency

Key Points

- The incidence of injury in volleyball is nearly equivalent to injury rates reported for ice hockey and soccer.
- Most injuries in volleyball occur during the jump landing sequence, but few data exist regarding jump landing techniques for elite female players.
- Our data indicate that the vast majority of jumps utilize two feet, but approximately half of landings occur with only one foot.