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Hip Rotational Velocities During the Full Golf Swing

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ABSTRACT

Since labral pathology in professional golfers has been reported, and such pathology has been associated with internal/external hip rotation, quantifying the rotational velocity of the hips during the golf swing may be helpful in understanding the mechanism involved in labral injury. Thus, the purpose of this study was to determine the peak internal/external rotational velocities of the thigh relative to the pelvis during the golf swing. Fifteen female, collegiate golfers participated in the study. Data were acquired through high-speed three dimensional (3-D) videography using a multi-segment bilateral marker set to define the segments, while the subjects completed multiple repetitions of a drive. The results indicated that the lead hip peak internal rotational velocity was significantly greater than that of the trail hip external rotational velocity ($p = 0.003$). It appears that the lead hip of a golfer experiences much higher rotational velocities during the downswing than that of the trail hip. In other structures, such as the shoulder, an increased risk of soft tissue injury has been associated with high levels of rotational velocity. This may indicate that, in golfers, the lead hip may be more susceptible to injury such as labral tears than that of the trailing hip.

Key words: Golf, hip, injury.

Key Points

- Lead hip of golfer experiences significantly higher rotational velocities than the trail hip.

- Golfers may be more susceptible to injuries on the lead hip.
- Clubhead velocities were consistent with elite female golfers.

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