

BASKETBALL SHOOTING FUNDAMENTALS: AN IN-DEPTH BIOMECHANICAL ANALYSIS

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In the game of basketball, shooting efficiency has a large impact on securing the winning game outcome. However, despite its importance, there is a notable gap in the scientific literature focused on examining the biomechanical characteristics of proficient shooters. Thus, a series of recently published research reports by Cabarkapa et al. have attempted to address this issue and compare the shooting mechanics between non-proficient and proficient basketball shooters.

Proficient free-throw shooters were characterized by:

- lower elbow positioning during the preparatory phase of the shooting motion attained by greater flexion in the hip, knee, and ankle joints;
- less lateral elbow deviation (i.e., an ability to keep the forearm in near-vertical position);
- greater release height at the time point when the ball left the shooter's hand.
- Proficient two-point shooters were characterized by:
 - higher elbow positioning and greater elbow flexion during the preparatory phase of the shooting motion;
 - greater shoulder flexion at the time point of the ball release (i.e., release angle).
- Proficient three-point shooters were characterized by:
 - greater elbow flexion and an ability to keep the torso in near-vertical position during the preparatory phase of the shooting motion;
 - greater vertical jump displacement at the the time point of the ball release. Overall, these findings may help coaches develop clues that can be beneficial when working with basketball players to optimize mid- and long-range shooting efficiency.

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