

BIOMECHANICS OF PUNT STYLE KICKS IN FOOTBALL CODES

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The punt kick involves releasing the ball from the hands and impacting it during its flight towards the ground to propel it towards a targeted area. While football kicking has received considerable attention in the literature, punt-style kicks have lagged behind. Important differences exist between these kicks and those in football including the need to drop the ball before kicking and in the case of all but Gaelic football (GF), the different shape of the ball making orientation at impact influential to performance. This paper examines existing and current work on punt-style kicking.

The aims of the punt kick are associated with distance and accuracy with slightly different constraints placed on players in different codes. In Australian football (AF) and GF, the predominant aim is to propel the ball towards goal or to a team-mate while for punt kicking in the rugby codes and American football the aim is to propel the ball to a certain area to gain distance or for a teammate to 'run onto' it. In addition, the rugby codes employ the drop kick (ball strikes the ground before being kicked) and the 'grubber' (kicking the ball so it runs along the ground).

Key technical components of the punt kick have been identified in the literature. In AF distance kicking, Ball (2008) reported foot speed, shank angular velocity and ball position relative to the base of support at ball contact and last step length were associated with greater kick distances. Ball also identified a continuum of movement styles from a thigh/hip strategy to a knee strategy among players. In AF accuracy kicking, more accurate kickers exhibited greater hip flexion in both legs and greater knee flexion in the support leg during the forward swing of the kick leg.

Preferred and non-preferred leg kicking evaluation has identified technical differences. The preferred leg has been shown to produce greater foot and ball speeds and work on the ball but interestingly no difference existed in the foot to ball speed ratio, similar to football studies. Orchard et al. identified lower support leg gluteal activity during the stance phase in non-preferred leg kicks. In rugby union, ball drop differences were identified between kick legs that affected performance. Different movement strategies also exist with non-preferred kicks using greater hip and thigh range/velocity while preferred kicks tended to make more use of the knee and pelvis.

More work is needed evaluating punt style kicking to identify key performance factors in different aspects of the game and to assist with injury reduction.

References

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