
ORIGINAL RESEARCH

PRESEASON JUMP AND HOP MEASURES IN MALE COLLEGIATE BASKETBALL PLAYERS: AN EPIDEMIOLOGIC REPORT

Jason Brumitt, PT, PhD, ATC, CSCS¹

Amy Engilis, MA, ATC²

Dale Isaak, MEd, MS, ATC¹

Amy Briggs, BS, ATC³

Alma Mattocks, MS, ATC⁴

ABSTRACT

Background: Injuries are inherent in basketball with lower extremity (LE) injury rates reported as high as 11.6 per 1000 athletic exposures (AEs); many of these injuries result in time loss from sport participation. A recent trend in sports medicine research has been the attempt to identify athletes who may be at risk for injury based on measures of pre-season fitness.

Hypothesis/Purpose: The purpose of this prospective cohort study was to determine if the standing long jump (SLJ) and/or the single-leg hop (SLH) for distance functional performance tests (FPT) are associated with non-contact time loss lower quadrant (LQ, defined as lower extremities or low back) injury in collegiate male basketball players. It was hypothesized that basketball players with shorter SLJ or SLH measures would be at an increased risk for LQ injury.

Methods: Seventy-one male collegiate basketball players from five teams completed a demographic questionnaire and performed three SLJ and six SLH (three per lower extremity) tests. Team athletic trainers tracked non-contact LQ time loss injuries during the season.

Study Design: Prospective cohort

Results: Mean SLJ distance (normalized to height) was 0.99 (\pm 0.11) and mean SLH distances for the right and left were 0.85 \pm 0.11 and 0.87 \pm 0.10, respectively. A total of 29 (18 initial, 11 subsequent) non-contact time loss LQ injuries occurred during the study. At risk athletes (e.g., those with shorter SLJ and/or SLH) were no more likely to experience a non-contact time loss injury than their counterparts [OR associated with each FPT below cut scores = 0.9 (95% CI: 0.2, 4.9)]. The results from this study indicate that preseason performance of the SLJ and the SLH were not associated with future risk of LQ injury in this population.

Conclusions: Preseason SLJ and SLH measures were not associated with non-contact time loss injuries in male collegiate basketball players. However, the descriptive data presented in this study can help sports medicine professionals evaluate athletic readiness prior to discharging an athlete back to sport after a LQ injury.

Level of Evidence: 2

Keywords: College, epidemiology, functional test, single-leg hop, standing long jump

CORRESPONDING AUTHOR

Jason Brumitt, PT, PhD, ATC, CSCS
Assistant Professor of Physical Therapy
School of Physical Therapy
George Fox University
Newberg, Oregon
Phone: 503-554-2461
E-mail: jbrumitt@georgefox.edu,
jbrumitt72@gmail.com

¹ George Fox University, Newberg, OR, USA

² Warner Pacific College, Portland, OR, USA

³ Multnomah University, Portland, OR, USA

⁴ Spalding University, Louisville, KY, USA