**Sports Medicine & Movement Laboratory**

School of Kinesiology, Auburn University

October 2018

**Associations between the Single Leg Squat Functional Assessment, Hip Rotation Isometric Strength, & Stride Leg Mechanics in Youth Baseball Pitchers**

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**ABSTRACT**

Background: In the baseball pitching motion, the stride leg is thought to initiate the transfer of linear momentum generated during the stride phase into angular momentum which then travels up the kinetic chain during the throwing phase. Given its importance in maximizing momentum transfer, investigation into youth pitchers’ ability to control the stride leg is warranted.

Purpose: The purpose of this paper was to assess the association between kinematics during a single leg squat (SLS) functional assessment, isometric hip rotation strength, and stride leg kinematics and kinetics during the pitching motion.

Study Design: Descriptive Laboratory.

Methods: Fifty-four right handed and nine left handed youth male baseball pitchers (12.6 ± 2.1 yrs.; 164.1 ± 15.8 cm; 57.9 ± 14.5 kg) threw three fastballs to a catcher while kinematic data were collected using an electromagnetic tracking system (trakSTAR™, Ascension Technologies, Inc., Burlington, VT, USA) synced with The MotionMonitor® (Innovative Sports Training, Chicago, IL., USA). Prior to pitching, participants also performed a single leg squat functional assessment on the leg contralateral to the throwing arm.

***This abstract is a brief overview of a manuscript in preparation for publication.***

Further information can be found at [www.sportsmedicineandmovement.com](http://www.sportsmedicineandmovement.com) as well as <https://scholar.google.com/citations?user=ae6HxHgAAAAJ&hl=en>. Specific inquires can be send to goliver@auburn.edu . Thank you again for your participation in our research and we look forward to your further participation. Thank you!