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**Reliability of lower limb biomechanical outcome measures among healthy subjects using a 3D motion analysis during five specific sports tasks: Single-leg squats, single-leg landings, running, cutting 135 and cutting 90****Abdullah Alyami, Jones R and Herrington L**

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**Aim:** The aim of this study was to determine between-day reliability of lower limb biomechanical variables among healthy individuals during five functional tasks; running, cutting 90, cutting 135, single leg squat (SLS) and single leg landing (SLL) tasks. In addition, to examine the reliability of coefficient of variation (CV) as an outcome measure of variability in these variables.

**Methods:** 12 recreational athletes (male: Aged 27.8 ± 4.4 years; mass 66 ± 7.2 kg; height-1.7 ± 0.1 m) completed two separate sessions one week apart. Kinematic and kinetic data was obtained using 3D motion analysis and a force platform (AMTI) embedded into the floor.

**Results:** Generally, in all tasks, all of the variables' ICC values ranged between 0.49 and 0.99, reporting fair to excellent reliability. Running and SLS reported the highest combined averages of ICC values (0.86 and 0.84) respectively. However, SLL and cutting reported the lowest combined averages of ICC values (0.82 and 0.80) respectively. Standard error of measurement (SEM) values for all kinematic variables (angles) ranged between 1.52° and 5°. The between-day ICC values of CV for all kinematic and kinetic variables ranged between 0.40 and 0.96, reporting fair to excellent reliability.

**Conclusion:** This study demonstrates that all kinematic and kinetic variables obtained during all five functional tasks showed fair to excellent consistency with relatively low standard error of measurement values. In addition, it demonstrates that CV is a reliable measure of the variability in these variables. These findings would assist clinicians who are utilising such measures for screening and prospective studies of rehabilitation programs.

**Biography**

Abdullah Alyami is a currently a PhD student at The University of Salford, completed his MSc in Advancing Physiotherapy from The University of Salford, UK.

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