

## **The Relationship Between Landing Mechanics and Injury Risk in Women's Collegiate Soccer Players.**

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### **ABSTRACT**

Mechanical performance in landing related tasks has been suggested to be related to injury in athletic populations. **PURPOSE:** The purpose of this investigations was to assess relationships which may exist between performance in landing mechanics and injury rates throughout a women's NCAA Division II Collegiate Soccer season. **METHODS:** Twenty-eight women (age  $19.7 \pm 1.6$  yrs, height  $1.6 \pm 0.5$  m, mass  $63.4 \pm 7.9$  kg) were assessed using the Landing Error Scoring System (LESS) test prior to a competitive season. Injury rates, types, and time lost from participation were tracked throughout the season. Injury information was coded and categorized each week in the following: acute vs. chronic; soft vs. hard tissue; upper vs. lower body; specific anatomical location; contact vs. non-contact; week of injury occurrence; practice days missed from injury; and games missed from injury. Association was measured via a Spearman's rank correlation coefficient and a stepwise linear regression was performed for any variables which showed significant correlation to determine predictive relationships which may exist. The LESS test was evaluated independently by multiple raters and inter-rater reliability was high (ICC=0.824, 95% CI upper and lower = 0.917-0.657,  $p=0.001$ ). Statistical significance was set *a priori* at  $p \leq 0.05$ . **RESULTS:** No significant correlations were determined between LESS test performance and injury and the LESS score did not add strength of association to any predictive variables. **DISCUSSION:** The main finding of this investigation is that performance on the LESS test did not show significant association with injury rates in women's collegiate soccer players. LESS test performance has previously been suggested to be a valid and reliable clinical assessment tool, and claims have been made regarding its utility as a screening tool for identification of persons who may be at risk for subsequent injury. Landing mechanics may still be a valid predictor of injury risk. However, the results of our investigation do not support the use of the LESS test as a screening tool for injury risk in women's collegiate soccer athletes.