

## Change of Direction is Associated with Non-Contact Injuries in Women's Collegiate Soccer Players

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### ABSTRACT

Injury rates have been reported between men and women soccer athletes. **PURPOSE:** The purpose of this investigation was to assess relationships which may exist between performance in a change of direction (COD) test and injury rates throughout a women's NCAA Division II Collegiate Soccer season.

**METHODS:** Twenty-eight women (age  $19.9 \pm 1.6$  yrs, height  $1.6 \pm 0.5$  m, mass  $63.4 \pm 7.9$  kg) were assessed using the Soccer Specific Agility 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. Statistical significance was set *a priori* at  $p \leq 0.05$ .

**RESULTS:** Soccer Specific Agility times were  $7.04 \pm 0.36$  sec. A moderate correlation was seen between agility performance and non-contact injuries ( $r=0.47$ ,  $p \leq 0.05$ ). **DISCUSSION:** The main finding of this investigation is that performance on the soccer specific agility test showed association with non-contact injury rates throughout a women's collegiate soccer season, with lower time being associated with smaller injury rates. Future investigations should attempt to explore whether improvements in COD, which may be assessed using the SSA, can lead to meaningful reductions in injury rates. Sports medicine professionals and coaches may wish to adopt strategies to improve COD in an effort to reduce rates of non-contact injuries in their athletes.