Neuromotor Performance in Female American Football Players is Different Than Males in a Preseason Balance Test

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Introduction
- There has been a rise in female participation in sports that are defined as collision sports, where athletes intentionally hit each other (e.g., American football), leading to a relatively high rate of concussion incidence (Figure 1).
- Covassin et al. (2006) showed that female athletes have different neuropsychological performance relative to males in preseason concussion testing. The significance of this finding is that it could directly influence return-to-play criteria.

Methods (continued)
- Comparative data: Normative data of male athletes who fell within one standard deviation of the age of our female sample (range = 22–36 yrs) were provided by the manufacturer. statistics: Cohen’s effect size (d) was calculated between our female football players and (1) all male athletes (N = 358) and (2) male athletes who played football (N = 150) to determine the magnitude of difference between the datasets.

Results
- Moderate effect sizes (d=0.61 and 0.63) were observed between our female football players (M=22.65, SD=7.26) and all male athletes (M=24.31, SD=7.68), and between our female football players and male football players (M=24.37, SD=7.45).

Discussion
- The female football players in our sample had less CoP movement, indicating better balance, relative to males.
- Concussions are known to increase CoP movement, indicating worse balance.
- However, given the lower baseline CoP measures in women, our data suggest that post-concussion measures of balance in women may still be considered normative if compared to return-to-play criteria derived for men.
- Thus, our data suggest that sex-specific guidelines for return-to-play criteria may be justified.

References