

Lower Limb Asymmetry Characteristics of Female Amateur High School Soccer Players



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Introduction

Identifying bilateral asymmetries greater than 10% in athletes is important as it is an indicator of increased injury risk and requires action to reduce the deficit (1). Female amateur high school soccer players may be a group at risk of an increased predisposition to injury (2,3). Thus, the current study identified the bilateral asymmetry characteristics of female amateur high-school soccer players and compared the results externally to relevant literature to contextualise findings.

Method

Participants: Nine female high-school soccer players of 3rd XI and social level (mean \pm SD; age 17yrs \pm 1yrs; height 161cm \pm 1cm; weight 61kg \pm 12kg) volunteered to partake in this study.

Data Collection: After warming up, three single leg vertical jumps (Figure 1), horizontal jumps (Figure 2), and 505 change of direction tests (Figure 3), were performed on both the preferred and non-preferred kicking leg, with a 2minute rest period between trials. These results were used to assess lower limb asymmetry.

Results and Findings

Table 1: Differences in lower body asymmetry characteristics between the preferred and non-preferred kicking leg in female amateur soccer players (Preferred – Non-preferred).

	Preferred			Non-preferred			p-value	% Diff	$\pm 90\%$ CL	Effect size	Inference
	Mean	\pm	SD	Mean	\pm	SD					
VJ (cm)	28.1	\pm	4.2	24.4	\pm	4.2	0.017*	15.4	\pm 9.3	0.79	Moderate
HJ (cm)	126.4	\pm	15.5	119.4	\pm	16.2	0.005*	6.0	\pm 2.8	0.40	Small
505 time (s)	2.98	\pm	0.15	2.97	\pm	0.17	0.860	0.2	\pm 2.0	0.03	Trivial

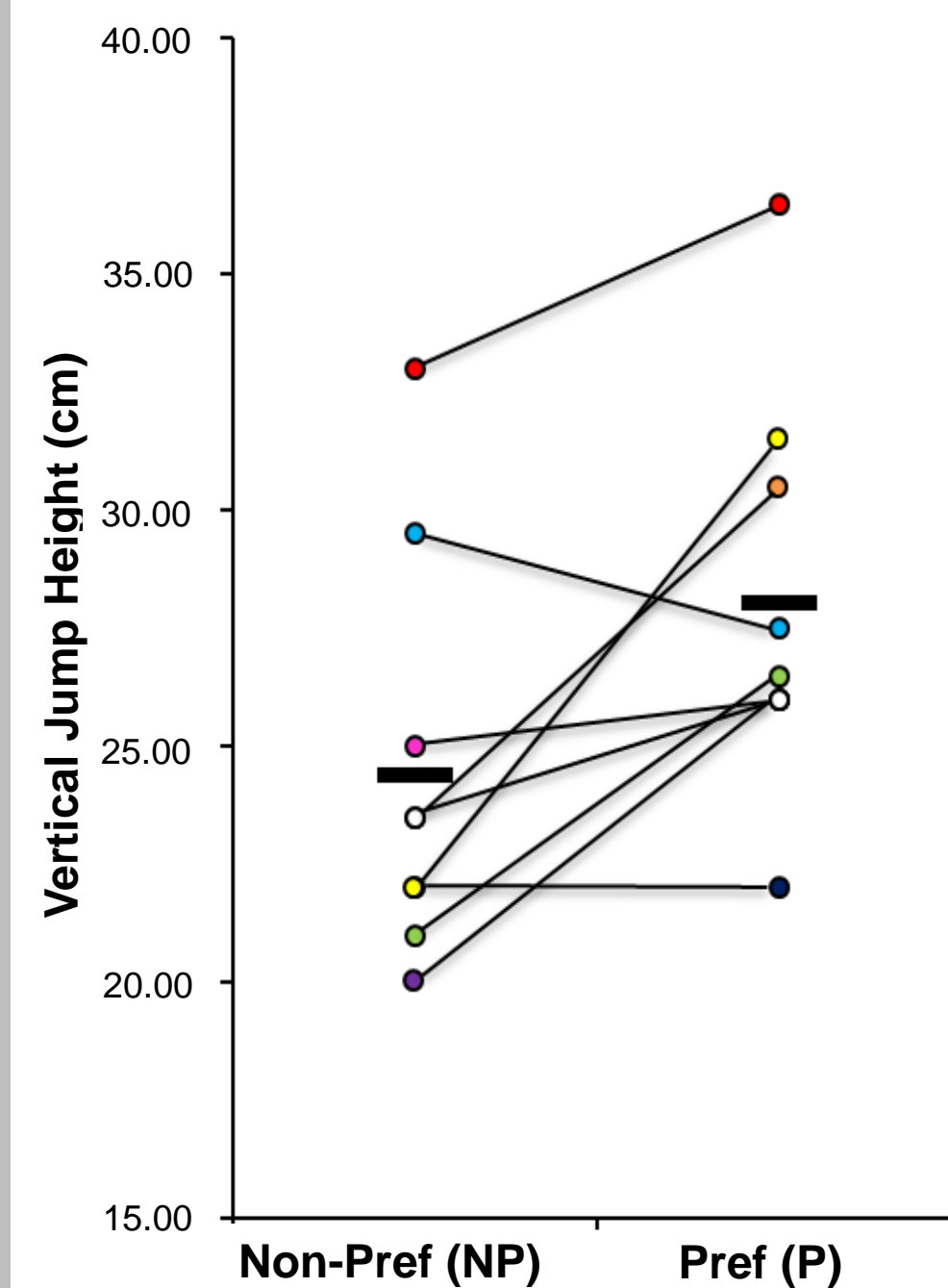


Figure 1: Individual and group means in NP and P single leg vertical jump height.

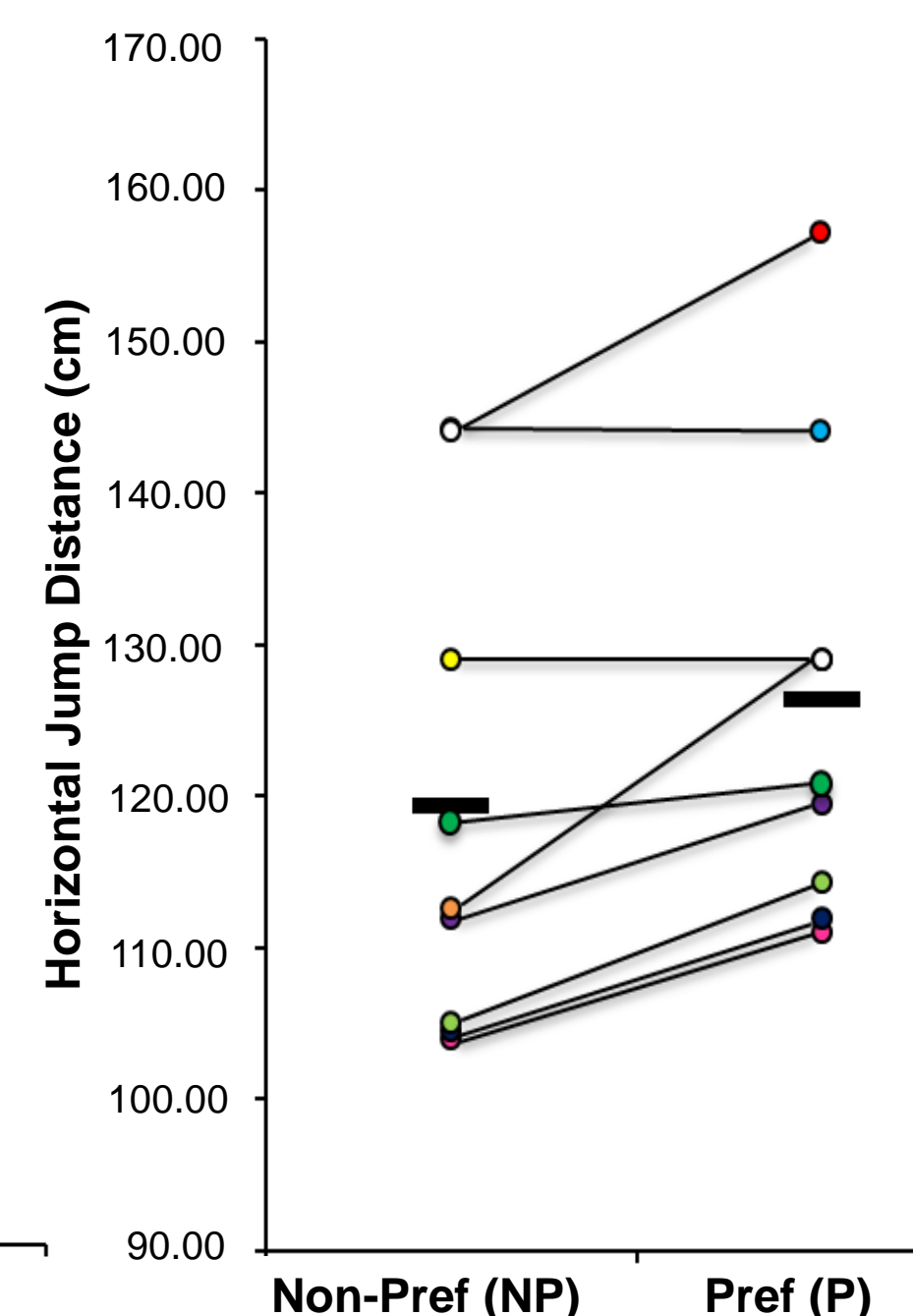


Figure 2: Individual and group means in NP and P single leg horizontal jump distance.

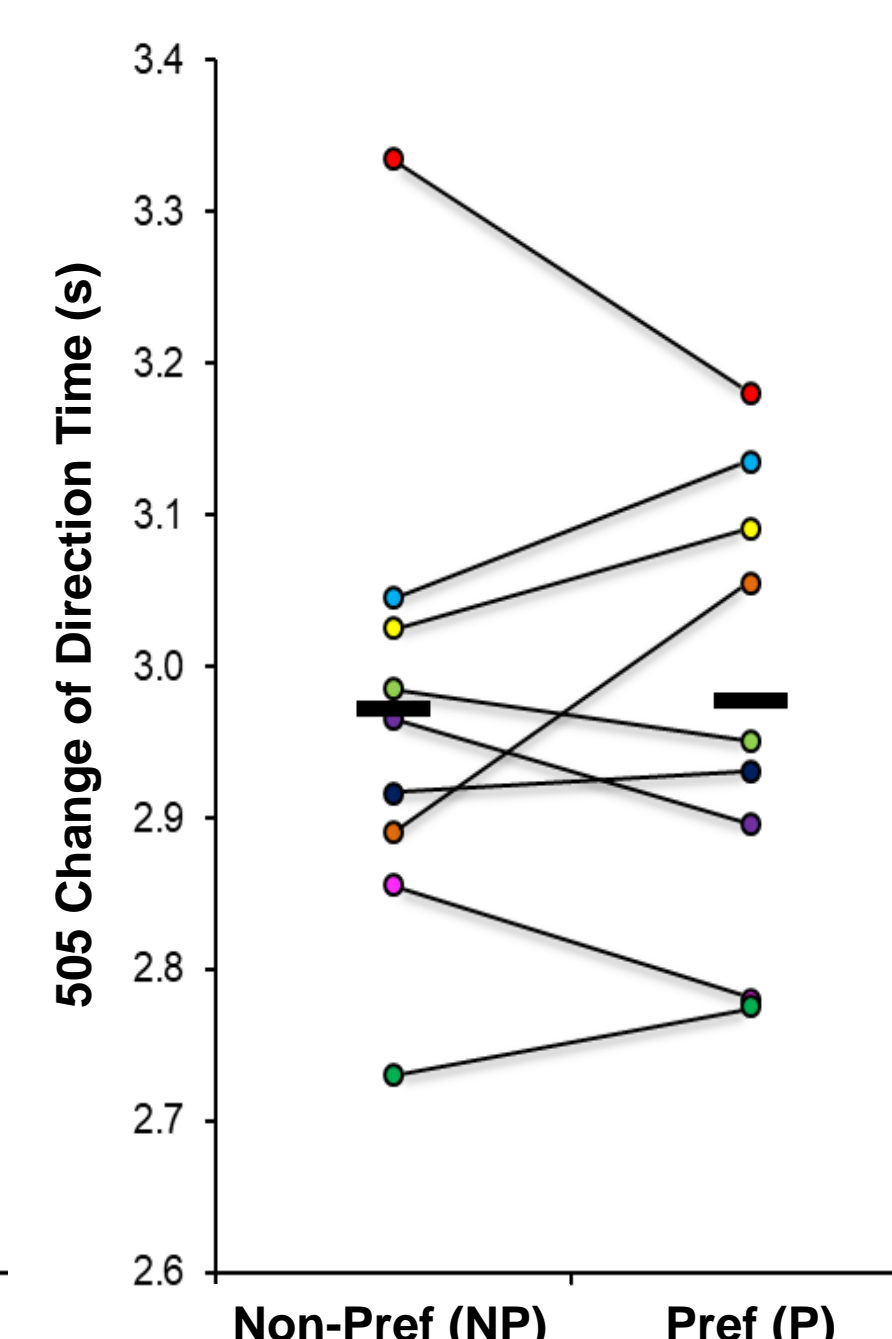


Figure 3: Individual and group means in NP and P 505 agility time.

The comparison of group means suggest the female amateur high school soccer players in this study had a bilateral asymmetry greater than 10% between the preferred and non-preferred leg for the vertical jump. This is indicative of an increased risk of injury (1) and can be associated with impaired performance. (4).



Take Home Message

The incorporation of single leg vertical or horizontal jump assessments should be included in female amateur high-school soccer teams to identify players with an increased injury risk. This information can therefore aim to inform appropriate injury prevention strategies to be employed, prior to asymmetry based injuries occurring.



References

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