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INTRODUCTION

Recently, some authors suggested that many unilateral actions (e.g. jumping and changes of direction) a team sport player is required to perform in practice or match occur not only in the vertical direction but also in horizontal and lateral direction (Hewit et al., 2012; Meylan, et al., 2010). Therefore, when assessing unilateral tasks it's important to consider different directions to create an accurate profile player.

OBJECTIVES

The aim of this study was to explore the relationship between tests pertaining to unilateral jumps in the vertical, lateral and horizontal direction and change of direction performance.

METHODS

Twenty-nine young elite female basketball players were included in this study: age (15.66 ± 1.34 y), body mass (69.69 ± 10.18 kg), height (1.82 ± 0.07 m), sport experience (6.31 ± 1.73 y). Single Leg Countermovement Jump in vertical (SLCJ-V), horizontal (SLCJ-H) and lateral (SLCJ-L) direction were tested in both legs, as well as a sprint test with a 180° change of direction (COD). The relationship between jumps and COD was analyzed using Pearson coefficient correlation with respect the more skillful or the less skillful leg. The more skillful leg was determined to be the leg with higher performance averages on each respective task.

RESULTS

Comparing the skillful leg, and also the less skillful leg, COD and jumping values correlated significantly between all their subvariables (Table 1 and Table 2).

Table 1. Pearson correlations of the skillful leg between the different performed tasks

	SLCJ-V (cm)	SLCJ-H (cm)	SLCJ-L (cm)	COD (seg)
SLCJ-V (cm)	1	0.670**	0.537**	-.0613**
SLCJ-H (cm)		1	0.703**	-0.576**
SLCJ-L (cm)			1	-0.554**
COD (sec)				1

SLVJ-V = Vertical countermovement jump; SLVJ-H = Horizontal countermovement jump; SLVJ-L = Lateral countermovement jump; COD = Sprint with change of direction; *($p < 0.05$); **($p < 0.05$)

Table 2. Pearson correlations of the less skillful leg between the different performed tasks

	SLVJ-V (m)	SLVJ-H (m)	SLVJ-L (m)	COD (sec)
SLVJ-V (m)	1	0.572**	0.428**	-.0606**
SLVJ-H (m)		1	0.674**	-0.604**
SLVJ-L (m)			1	-0.486**
COD (sec)				1

SLVJ-V = Vertical countermovement jump; SLVJ-H = Horizontal countermovement jump; SLVJ-L = Lateral countermovement jump; COD = Sprint with change of direction *($p < 0.05$); **($p < 0.05$)



Figure 1. Single leg countermovement jump in the vertical (A), horizontal and lateral direction (B) with the left leg.

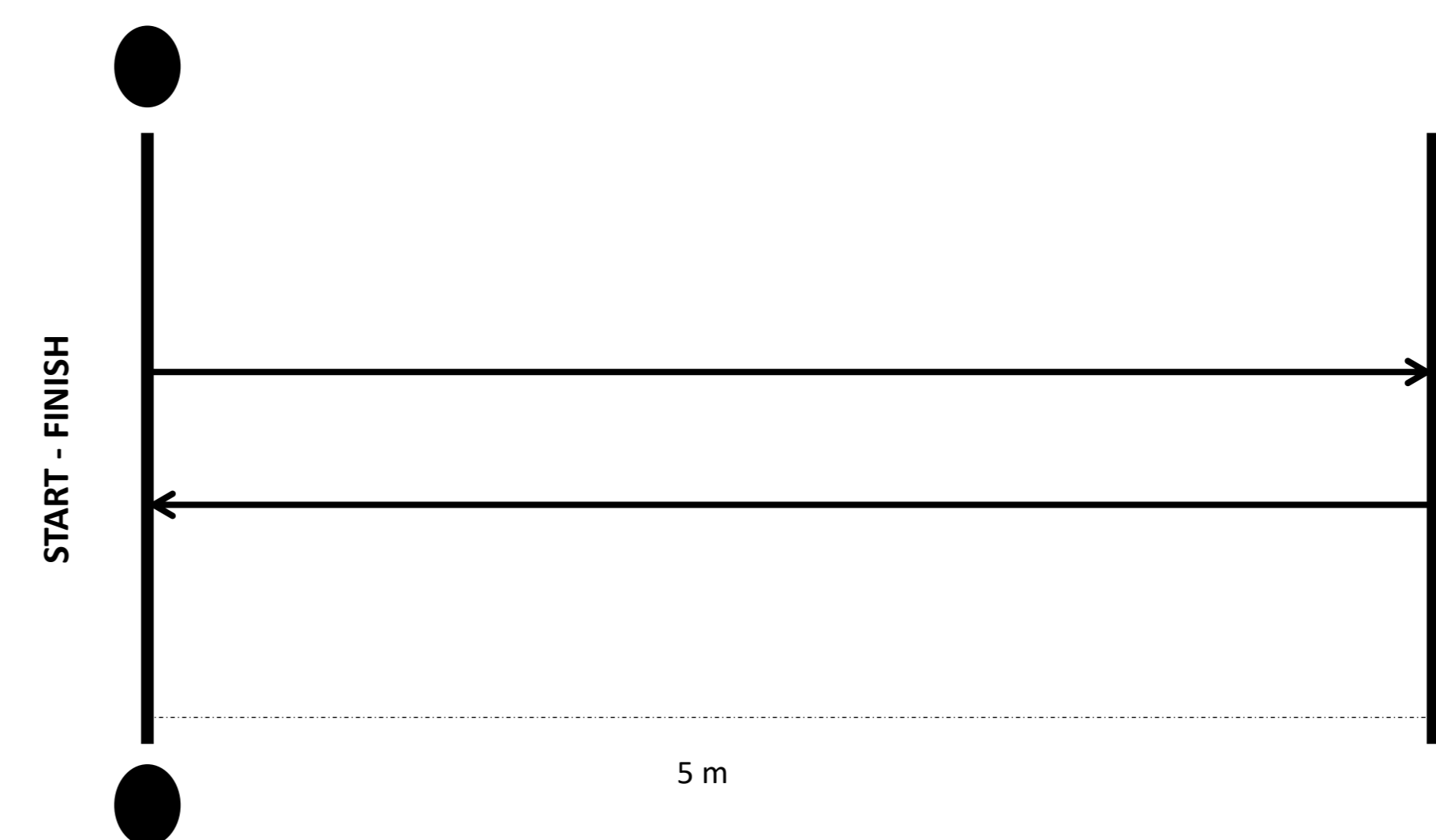


Figure 2. Schematic representation of the sprint change direction test with the right or the left leg.

CONCLUSIONS

The main finding of this study was the significant relationships between unilateral jumping in the anterior, lateral and vertical direction and COD performance. However, Meylan et al (2009) obtained a limited correlation between jumping and COD with the dominant leg in women physical education students. The different level of training of the samples could explain this fact. The results of our study suggest that elastic and reactive strength components, assessed by jumping in all three axes correlated to a 180° COD. Many of the findings in this study have interesting assessment and training implications for the strength and conditioning coaches of young female basketball players.

REFERENCES

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