INTRODUCTION

The laterality of the body underpins the richness of motor skills in everyday situations as well as in specific contexts such as sports (i.e., Tran & Voracek, 2016). Deeper research on motor laterality profiles could help to enhance motor performance in all types of movements involving basic, specific, and specialized motor skills (Castañer et al., 2009; 2016; Gallahue & Cleland-Donnelly, 2003).

AIMS

The aim of this study was to obtain the laterality profiles of young athletes, taking into account the synergies between the support and precision functions of limbs and body parts in the performance from basic to complex motor skills. We went beyond the traditional left-right towards right, left or mixed laterality profiles which encompasses the whole body.

Participants: 95 young athletes (73 males, 22 females) ranging in age from 17 to 26 years ($M_{age} = 19.7$ years; $SD = 2.01$)

### Instruments:

(a) **Motor Laterality: MOTORLAT inventory**, comprising 30 items of basic, specific and combined motor skills. Fig. 1

(b) **PATHoops task**, in which participants had to perform a path by stepping in each of 14 hoops arranged on the floor, allowing the observation of their feet, left-right preference and spatial orientation.

### Laterality profiles

Laterality profiles were obtained by means of a cluster analysis, correlational analysis and a contingency analysis were applied between the motor skills and spatial orientation actions performed.

### Data analysis and results

**MOTORLAT inventory:**
- show that the combined motor skills criterion (for example, turning while jumping) differentiates athletes’ uses of laterality, showing a clear tendency towards mixed laterality profiles in the performance of complex movements.

**PATHoops task:**
- show that the best spatial orientation strategy was ‘same way’ (same foot and spatial wing) followed by ‘opposite way’ (opposite foot and spatial wing), in keeping with the research assumption that actions unfolding in a horizontal direction in front of an observer’s eyes are common in a variety of sports.

### Conclusion

The fourth MOTORLAT criterion—combined skills—is the best criterion for explaining the use of laterality in complex movements such as turn direction and jumping. Athletes in various sports perform turn direction mainly to the left. On jumping skills usually use their right hand to touch an elevated object, orienting their body to the left side.