

Relationships between Countermovement Jump and Change of Direction Performance in Badminton Players



Mikołaj Nowak¹, Artur Terbalyan¹

¹Wydział Wychowania Fizycznego, Akademia Wychowania Fizycznego im. Jerzego Kukuczki w Katowicach
Nutrition and Sports Performance Research Group



Introduction

Change of direction (COD) illustrates the athlete's ability to rapidly accelerate, decelerate and reaccelerate in different directions. COD occurs frequently throughout a badminton match and includes jumps, lunges and rapid COD.

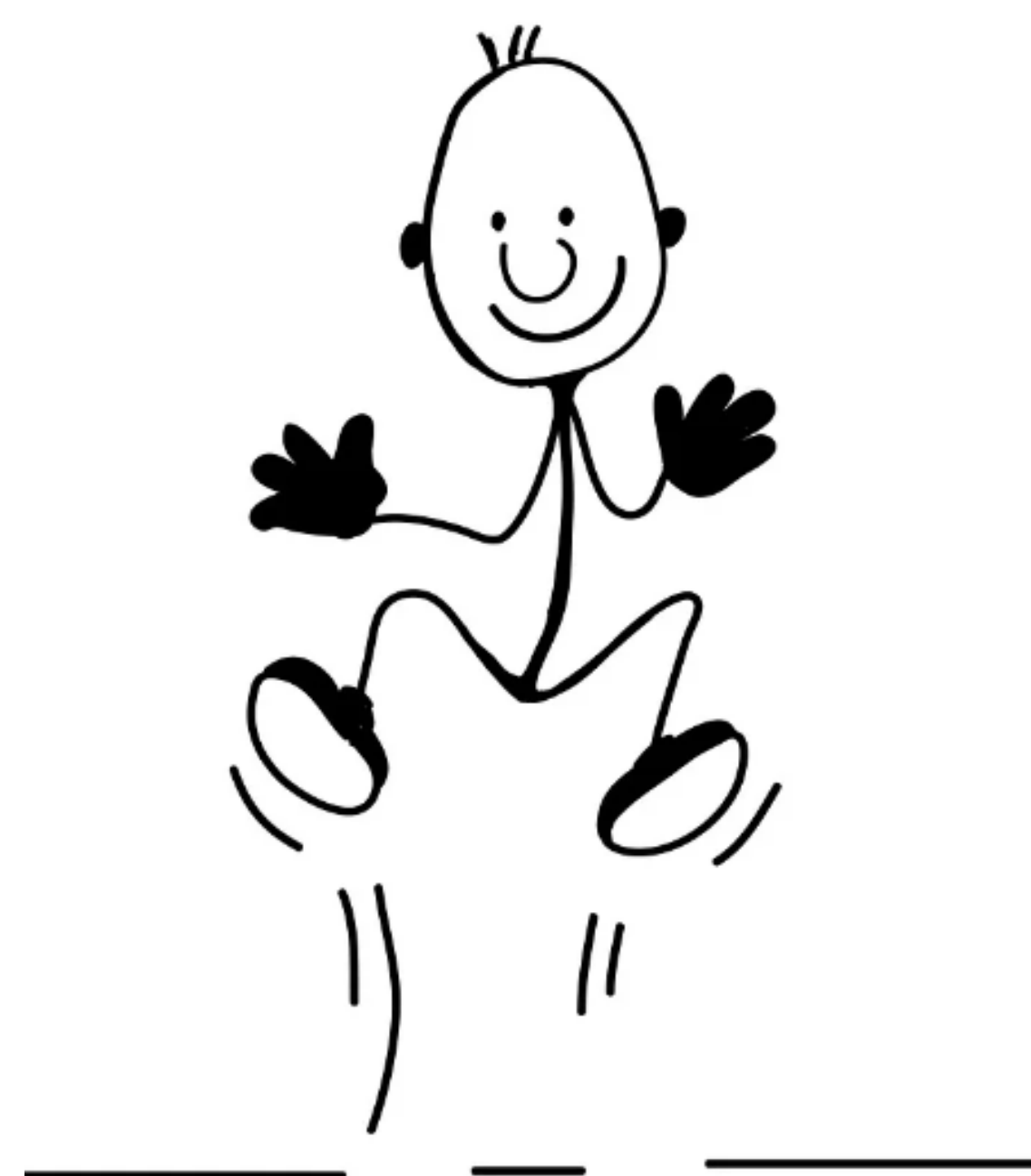


Materials and methods

Eleven young badminton players took part in the study, including seven men and four women. They perform CMJ and 10 m COD tests with turns on the dominant limb at different COD angles (COD-45°, COD-90°, COD-135°, COD-180°).

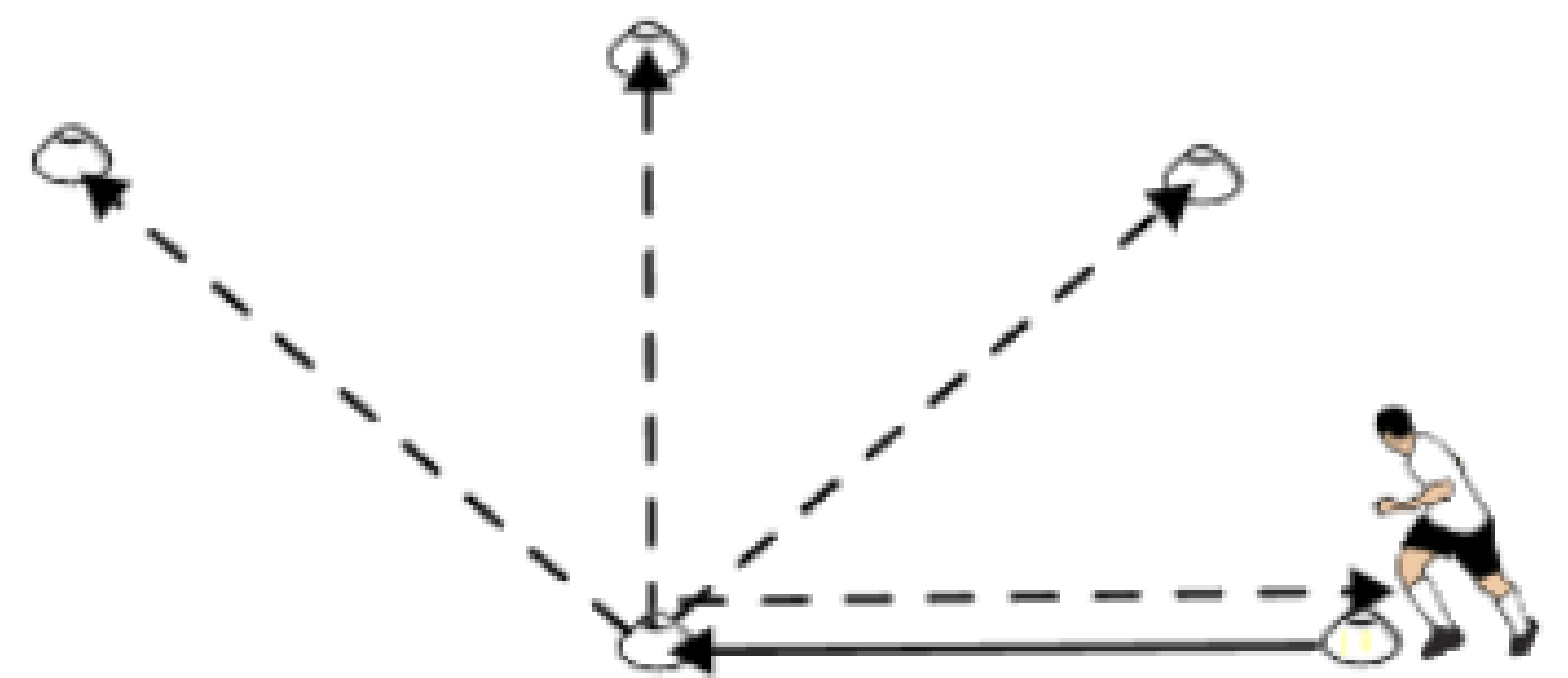
Aim

To investigate the relationship between CMJ height and peak velocity and COD performance.



Results

Spearman rank order revealed a significant negative large to very large relationship between CMJ peak velocity and each COD angle ($p < 0.05$ for all). In addition, only between CMJ height and COD-45° a significant negative large correlation was found.



Conclusion

Findings from this study revealed that examined CMJ variables are associated with COD performance, while peak velocity seems to be more related than jump height to across various COD change angles.

References

- [Phomsoupha, Michael, i Guillaume Laffaye. 2015. „The Science of Badminton: Game Characteristics, Anthropometry, Physiology, Visual Fitness and Biomechanics”. Sports Medicine 45 (4): 473–95. <https://doi.org/10.1007/s40279-014-0287-2>.
- Nimphius, Sophia, Samuel J. Callaghan, Tania Spiteri, i Robert G. Lockie. 2016. „Change of Direction Deficit: A More Isolated Measure of Change of Direction Performance Than Total 505 Time”. The Journal of Strength & Conditioning Research 30 (11): 3024. <https://doi.org/10.1519/JSC.0000000000001421>.
- Faude, Oliver, Tim Meyer, Friederike Rosenberger, Markus Fries, Günther Huber, i Wilfried Kindermann. 2007. „Physiological Characteristics of Badminton Match Play”. European Journal of Applied Physiology 100 (4): 479–85. <https://doi.org/10.1007/s00421-007-0441-8>.
- Change of Direction and Agility Tests: Challenging Our Curre... : Strength & Conditioning Journal”. b.d. Dostęp 2 marzec 2024. https://journals.lww.com/nsca-scj/fulltext/2018/02000/change_of_direction_and_agility_tests_challenging.4.aspx.