# INTERNATIONAL GRADUATE COLLOQUIUM *j*-SPEAK2025

SPORTS AND PHYSICAL EXERCISE ASSEMBLY OF KNOWLEDGE SHARING

COLLOQUIUM PROCEEDINGS

## EXTENDED ABSTRACT

EDITOR ADAM LINOBY

### THE EFFECTS OF RAISE, ACTIVATE, MOBILISE AND POTENTIATE (RAMP) WARM-UP PROTOCOL ON FUTSAL PERFORMANCE

Ahmad Amirul Mukminin Roslan<sup>1</sup>, Muhamad Noor Mohamed<sup>1</sup>, Noor Azila Azreen Md Radzi<sup>1</sup>, Muhamad Safiq Saiful Annur<sup>1</sup>, Mardiana Mazaulan<sup>1</sup>, Mohd Aizzat Adnan<sup>1</sup>, Nurul Ain Abu Kassim<sup>1</sup>, Maisarah Shari<sup>2</sup>, & Raja Nurul Jannat Raja Hussain<sup>1\*</sup>

Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Negeri Sembilan Branch, Seremban Campus, Negeri Sembilan, MALAYSIA

<sup>2</sup>Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Shah Alam Campus, Selangor, MALAYSIA

\*Corresponding author: nuruljannat@uitm.edu.my

Keywords: RAMP Warm Up, Futsal Performance, Speed, Agility, Endurance

#### I. INTRODUCTION

The RAMP warm-up protocol, combining aerobic activity, flexibility, and sport-specific exercises, is underutilized in futsal despite its potential benefits [1,2,3]. This study examines its impact on speed, agility, and endurance in male futsal players, addressing gaps in conventional warm-up practices.

#### II. Methods

Sixteen male futsal players, selected via purposive sampling, performed RAMP and traditional warm-up protocols. Speed was assessed using a 20-meter sprint test, agility with the T-test, and endurance through the Yo-Yo Intermittent Recovery Test. The RAMP protocol included raising (5 minutes), activating and mobilizing (5 minutes), and potentiating (10 minutes) phases to optimize performance metrics.

#### III. RESULTS AND DISCUSSION

The RAMP protocol significantly improved speed (3.97s to 3.35s, p < 0.01) and endurance (Yo-Yo scores: 7.66 to 10.04, p < 0.05) but showed limited improvement in agility (10.58s to 10.36s, p > 0.06). Compared to traditional warm-ups, RAMP achieved greater endurance gains (p=0.003; Figure 1). Challenges included precise timing and individual response variability, with insights suggesting its sport-specific nature as key to efficacy.



Fig. 1 RAMP group of futsal player with their speed, agility and endurance results



Fig. 2 TRWP group of futsal players with their speed, agility and endurance results.

The reduction in sprint time suggests that the activation and potentiation phases of RAMP contribute effectively to neuromuscular readiness, aligning with previous findings that emphasize the role of dynamic warm-ups in sprint performance [4]. Similarly, the Yo-Yo test improvement indicates enhanced endurance capacity, potentially due to improved cardiovascular and muscular activation, which is consistent with studies highlighting the benefits of structured warm-up protocols in aerobic performance [5].

However, the marginal change in agility suggests that while RAMP may enhance linear speed, it may not sufficiently address the multidirectional demands required for agility improvements. This finding aligns with previous research indicating that agility benefits may require sport-specific drills beyond warm-up routines [6]. Additionally, the greater endurance gains compared to traditional warm-ups suggest that RAMP provides a more structured physiological preparation, supporting the notion that tailored warm-up strategies outperform generic approaches [5].

Despite these benefits, challenges such as precise timing and individual response variability highlight the need for customization based on athlete needs and sport demands. Future studies should explore how modifications in the

A.A.M., Roslan, et al., Proceedings of the International Graduate Colloquium: Sports and Physical Exercise Assembly of Knowledge Sharing, i-SPEAK, 2025, 05th–06th February, Malaysia.

RAMP protocol might enhance agility outcomes and address variability in athlete responses.

#### IV. CONCLUSIONS

The RAMP warm-up protocol approach highlights its potential as a superior alternative for optimizing performance, though agility benefits were moderate. Effective implementation requires adherence to its structured phases.

#### ACKNOWLEDGMENT

The authors thank the UiTM Seremban Futsal players for their participation.

#### References

- [1] Jeffreys, I. (2019). The warm-up revisited: The ramp method as a key component of effective preparation for physical activity. Strength & Conditioning Journal, 41(2), 31-39.
- [2] Wentzell, M. et al. Effects of the FIFA11+ warm-up program on speed, agility, and vertical jump performance in adult female amateur soccer players. Int. Phys. Med. Rehabil. J. 2019, 4, 219–224.
- [3] Trajkovic, N. et al. Short-Term FIFA 11+ Improves Agility and Jump Performance in Young Soccer Players. Int. J. Environ. Res. Public Health 2020, 17, 2017.
- [4] McGowan, C. J., Pyne, D. B., Thompson, K. G., & Rattray, B. (2015). Warm-up strategies for sport and exercise: Mechanisms and applications. Sports Medicine, 45(11), 1523–1546.
- [5] Bishop, D. J., Girard, O., & Mendez-Villanueva, A. (2021). Repeated-sprint ability – Part II: Recommendations for training. Sports Medicine, 51(9), 1909–1927.
- [6] Chaabene, H., Negra, Y., Moran, J., Prieske, O., Sammoud, S., & Behm, D. G. (2018). Effects of dynamic stretch training within warming-up on muscle force, balance, and functional performance. Frontiers in Physiology, 9, 1432.

A.A.M., Roslan, et al., Proceedings of the International Graduate Colloquium: Sports and Physical Exercise Assembly of Knowledge Sharing, i-SPEAK, 2025, 05th–06th February, Malaysia.