

Cardiopulmonary, metabolic, and muscular demands of a whole-body wobble board (ICAROS Cloud) Training

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Training on unstable surfaces requires complex motor control mechanisms.

- Enhance the ability to maintain balance
- Improve the activation of stabilizing muscles
- Protective factor against sports injuries ^{1,2}

What are the cardiopulmonary, metabolic and muscular effects of a new **whole-body inflatable exergaming training system**?

Methods

- Randomized cross-over study design
- 16 recreational athletes
- Comparison of two identical predefined interval trainings (12 minutes)

Comparison

ICAROS Cloud
Training (IC)

randomized

Training
without IC



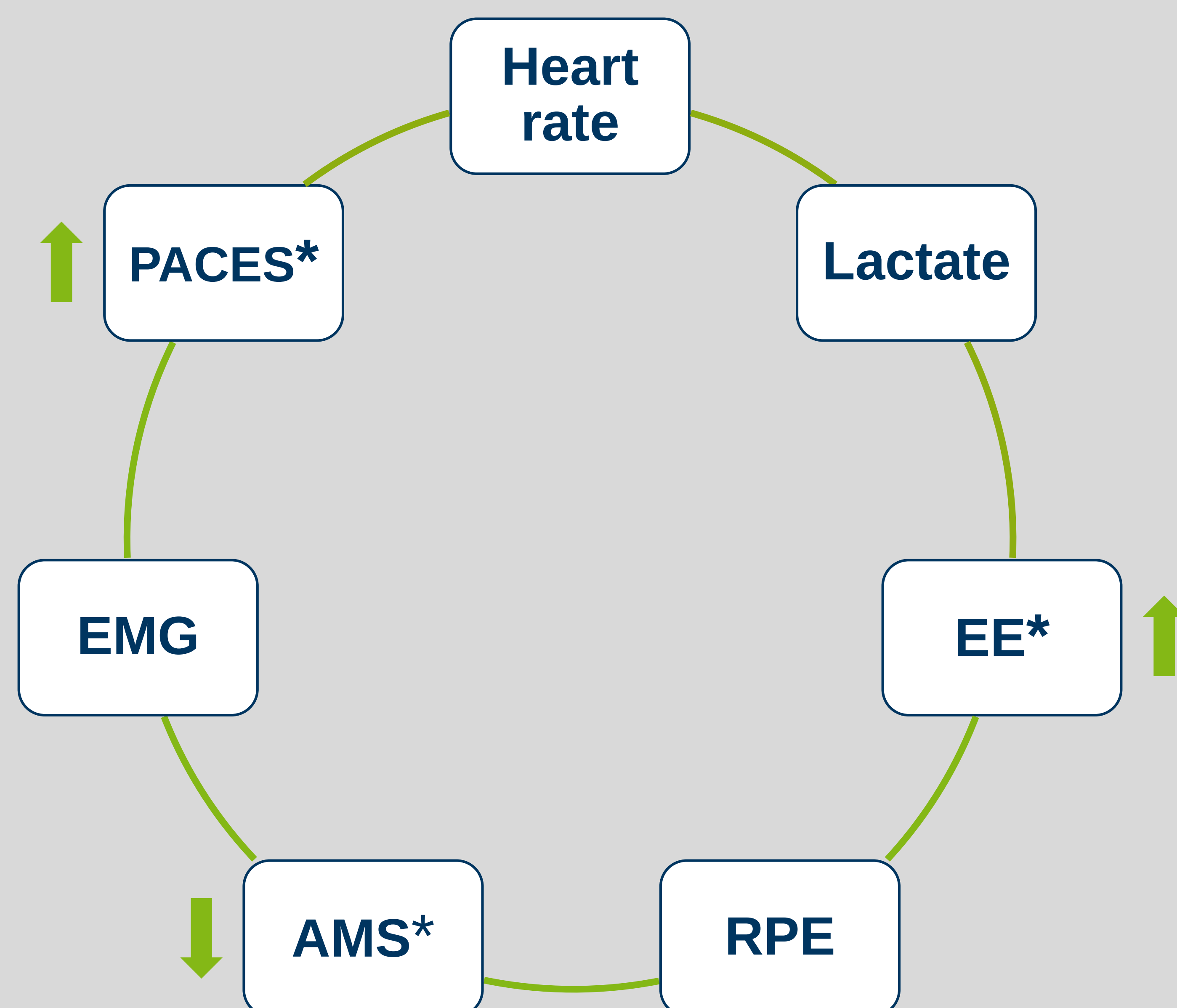
References:

1. Silva, P. B., Mrachacz-Kersting, N., Oliveira, A. S., & Kersting, U. G. (2018). Effect of wobble board training on movement strategies to maintain equilibrium on unstable surfaces. *Human movement science*, 58, 231–238.
2. Zemková, E. (2017). Instability resistance training for health and performance. *Journal of Traditional and Complementary Medicine*, 7(2), 245-250.

Data collections:

- Heart rate
- Lactate concentration
- Energy expenditure (EE)
- Muscle activity by EMG
- Relative perceived exertion (RPE)
- Acute muscle soreness (AMS)
- Physical activity enjoyment scale (PACES)

Results



*significant difference ($p \leq 0.05$)

The take home message is that...

- Training on the newly developed ICAROS Cloud system induces **comparable physical stress** as identical exercises performed without IC.
- IC training might induce **longer lasting training adherence**.
- IC training results in **greater enjoyment**.
- IC training guided with digital devices can be recommended due to **overall preferences** (81%).