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HUMAN BIOLOGY OF MOVEMENT BEHAVIOURS

**Current knowledge and future
directions on the 24-hour
movement behaviours**

**BOOK OF
ABSTRACTS**



11th - 13th SEPTEMBER, 2024



FACULTY OF SPORT, UNIVERSITY OF PORTO

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OP3.1: Innovative aquatic approaches to improve physical and cognitive function in elderly populations

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Introduction: The global population of adults aged 60+ has increased rapidly over the past decades. This calls for more research concerning non-pharmacological and therapeutic interventions designed to forestall cognitive and functional declines, as well as enhance rehabilitation strategies. As individuals age, changes occur in the brain and body, impacting motor coordination, memory, and planning; often linked to functional impairments, and decline in independence and quality of life. **Aims:** We piloted two aquatic programs Aquafast and Aquamentia©— tailored for the elderly population with the overarching goal of enhancing functional, physical, and cognitive capabilities. Additionally, both programs strive to increase levels of participants' satisfaction. **Methods:** Programs' implementation took place in an indoor-heated swimming pool. Participants were from the Évora region, led by researchers from the University of Évora and ethical approval was granted (Aquafast - GD/40835/2021; Aquamentia© - GD50000/2022). Aquafast employs high-intensity interval training (HIIT) methods alternating 30-second bursts of activity and 30-seconds of rest in 40-minute sessions. Aquamentia© comprises 12-weekly sessions of 45 minutes each (10-minute general activation, 20 minutes of aquatic cognitive and physical challenges, and 15-minute relaxation). Participants in Aquafast were 32 females and 7 males (70.1 ± 5.6 years), while Aquamentia© involved 8 females (70.6 ± 4.6 years) from the community and 3 institutionalized participants (2 females, 1 male) with an average age of 84.0 ± 6.6 years. **Results:** Preliminary findings indicate lower levels of satisfaction among Aquafast participants. Aquamentia© participants exhibited modest improvements in functional independence and aquatic competence. However, the sample sizes are too small to draw statistically significant inferences. **Conclusions:** Both programs demonstrate promising potential in preventing functional and cognitive motor decline among participants.