

Body perception in healthy aging –insights from a Psychophysical and Computational Approach

Friday, September 12, 2025 12:00 PM (20 minutes)

Introduction: The way we perceive our body and its dimensions depends on how our brain combines information from different senses (Blanke et al. 2015). As the human sensory system declines with age, affecting all sensory modalities (Cavazzana et al. 2018), we hypothesize that body perception may differ between older and younger adults.

Methods: We investigate this hypothesis by comparing the experiences of young and older individuals (>65 years) of owning a body (body ownership, BO) and its perceived dimensions (metric body representation, mBR). We applied computational and psychophysical methods to assess alterations in mBR and BO quantitatively. We then modeled the relationship between observed body misperceptions and potential underlying sensorimotor and cognitive factors.

Results: The results identified changes in body perception among healthy older adults. They have a distorted sense of their arm dimensions, confirming previous results (Sorrentino et al. 2021, Garbarini et al. 2015). Older adults also tend to feel ownership of an incongruent virtual hand, incorporating it into their motor plans. Impaired proprioception was identified as a common factor affecting different aspects of body experience.

Conclusions: Our approach offers new insights into altered body perception during aging, with implications for basic and applied neuroscience, and a broader understanding of neurocognitive aging. In this talk, I will discuss these results and follow-up studies further exploring the relationship between body ownership and proprioceptive abilities in a new sample with a wider age range and extending the investigation of mBR bias in older adults to include the perception of lower limbs.

If you're submitting a symposium talk, what's the symposium title?

The Body Across the Lifespan: How Body Representation Is Shaped from Infancy to Old Age

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No

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