

Title

Unveiling the impact of ageing on the body structural representations across different skin surfaces

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Abstract (200 words)

The body structural representation (BSR) refers to a map of the body in which the spatial configuration of different body parts is defined¹. Recent evidence from our lab demonstrates that multiple BSRs are defined depending on the stimulated skin surface (glabrous vs. hairy skin)². In healthy ageing, body representation follows an inverted U-shaped trajectory, declining after the age of sixty³. However, it remains unclear to what extent the ageing process impacts BSRs across different skin surfaces. To investigate this, we employed an adapted version of the "in-between" test⁴, in which healthy younger adults (N = 22) and older adults (N = 22) received tactile stimulation on their fingertips and were asked to estimate the number of unstimulated fingers between two touched ones. We observed a significant difference in numerosity estimation between skin surfaces: greater numerosity was reported for glabrous skin, but only when non-adjacent fingers were stimulated. This pattern was consistent across age groups; however, in older adults the distinction between glabrous and hairy skin was significantly more pronounced. Our findings indicate that, although body-part recognition remains stable across the lifespan, ageing selectively affects the BSR, with the representation of hairy skin being more impaired than that of glabrous skin.

Reference

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