

Quantifying Intrinsic Capacity: Does It Work for Healthy Older Adults? – Preliminary Results

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Background: Intrinsic capacity (IC) is a novel concept for healthy ageing, introduced by the WHO less than 10 years ago. Although the theoretical framework of the IC consists of five fundamental domains: vitality, locomotion, cognition, sensory, and psychological, there is variance in the tests that are used to assess them.

Purpose: To quantitatively assess the IC of older healthy adults, based on the WHO ICOPE recommendation, see: <https://apps.who.int/iris/bitstream/handle/10665/326843/WHOFWC-ALC-19.1-eng.pdf?sequence=17&isAllowed=y>.

We aimed to establish a composite score that could identify the points of functional decline among the healthy older population and identify possible correlations between the five subdomains.

Method: *Participants:* 50 community-dwelling, aged 65+, fluent in the Lithuanian language, with no symptomatic diseases, metabolic disorders, or orthopaedic issues.

Tests: Vitality – Mini Nutritional Assessment, handgrip strength, Multidimensional Fatigue Inventory, body mass index, blood tests for haemoglobin, albumin, white blood cells, C-RP.

Cognitive – Montreal Cognitive Assessment (MoCA).

Locomotion – Short Physical Performance Battery (SPPB) – balance, gait speed, and chair rise tests.

Psychological – Geriatric Depression Scale (GDS-15).

Sensory – hearing and vision subjective reports.

Scoring: The score for each domain was calculated as the points obtained were divided by the maximum possible scores. The global IC score is the sum of all sub-domains and is expected to range between 0 (declining capacity in all sub-domains) and 5 (no impairments in any of the sub-domains).

Results: Thirty-nine participants completed all measures (23 women, mean age 72.08 ± 4.54 years). Mean composite score of IC is 3.964 ± 0.408 (range 2.695–4.617) with a proportional distribution.

Subdomains Scores: Vitality = 0.795 ± 0.122 (0.455–1.00), Cognitive = 0.692 ± 0.121 (0.250–0.750), Locomotion = 0.902 ± 0.103 (0.667–1.00), Psychological = 0.936 ± 0.159 (0.250–1.00), Sensory = 0.639 ± 0.142 (0.333–1.00).

Significant correlations were detected between Vitality and Locomotion ($r = 0.590$, $p < 0.001$), Vitality and Cognitive ($r = 0.492$, $p < 0.001$), and Locomotion and Cognitive ($r = 0.325$, $p < 0.05$).

The balance test and the nutrition questionnaire had a ceiling effect, and all participants received the maximal score.

Conclusion: A lower composite IC score may reflect declining reserves even among healthy older adults. A more sensitive balance test and comprehensive nutritional assessment would enhance diagnostic accuracy and evaluation capabilities. This method should also be tested with less healthy cohorts.

