

One Body, Eleven Biological Ages

Absurd Health Institute · Conceptual research essay · 440 words

Abstract

Plasma proteomic methods can estimate relative aging patterns across organs, but an organ-age score is not direct proof of tissue aging. This paper proposes that discordance among organ reserves may matter more than a global average. It examines cross-organ constraints, confounding by protein clearance, and the need to validate predictions against directly measured function.

The problem with the average organism

A body ages as connected organs, not as a perfectly synchronized clock. Large-scale plasma proteomics has been used to estimate relative ages of eleven organ systems and associate those scores with later disease risk. Such models do not directly biopsy each organ or establish that an organ has aged a particular number of years. They show, however, that measured patterns can diverge across systems. That makes a single global biological-age headline potentially misleading, especially when a patient's chief vulnerability resides in an organ whose trajectory differs from the average.

Organ discordance as a systems problem

Suppose cardiovascular function is relatively preserved while renal reserve is limited. A treatment tolerated by the heart may nevertheless destabilize fluid balance and indirectly impair cognition. Similarly, a comparatively healthy musculoskeletal system does not prevent frailty caused by neurological decline. We propose *organ discordance* as the mismatch among functional reserves, not simply as different proteomic scores. Its relevance lies in cross-organ consequences: a failing kidney changes circulating solutes; altered gut absorption affects nutrition; immune dysfunction changes the environment in which wounds heal.

Why proteomic age is not destiny

Plasma proteins can be influenced by medications, inflammation, renal clearance, acute disease and technical differences in measurement. Proteins assigned to one organ may be produced elsewhere or change for reasons unrelated to intrinsic organ aging. Statistical association cannot establish causation. An individual with a high predicted brain-age score is not thereby diagnosed with accelerated neurodegeneration. This is a promising risk-research framework, not a validated comprehensive clinical assessment for general public use.

The innovative question

Could clinicians eventually use organ-specific functional trajectories to choose the bottleneck most likely to undermine recovery? That demands comparisons between proteomic age, imaging, direct physiological testing and patient-centered outcomes. If the proteomic measure fails to add useful information, the concept should be revised. If organ discordance predicts cascading illness beyond conventional measures, it could make longevity medicine less obsessed with lowering a universal age score and more concerned with preserving the weakest critical connection in the system.

A clinical thought experiment

Imagine a patient whose blood proteins suggest accelerated kidney aging but average brain aging, while formal kidney-function testing remains stable. One interpretation is subtle biological change that predicts future risk; another is altered protein clearance or a confounded statistical signal. A responsible article must keep both possibilities open. The patient should not be told that the kidneys have literally aged an extra decade.

What would discriminate among explanations

The real value of organ-specific estimation depends on calibration in different populations, repeatability within an individual and superiority to directly measured organ function. When the signal conflicts with clinical evidence, it should motivate scrutiny rather than overturn an established diagnosis. The Institute's emphasis is on causal relationships among organs, not turning every statistical estimate into a disease label.

Selected scientific readings

Oh HSH et al. (2025). Plasma proteomics links brain and immune system aging with healthspan and longevity. *Nature Medicine*.
<https://www.nature.com/articles/s41591-025-03798-1>

López-Otín C et al. (2023). Hallmarks of aging: An expanding universe. *Cell*.
<https://doi.org/10.1016/j.cell.2022.11.001>

Evidence note: a proposed conceptual synthesis. These papers do not establish a novel clinical diagnosis, validated rejuvenation treatment or human lifespan benefit.