BioAge Diagnostics

FACT SHEET

Advanced Proteomics

Explore protein-associated ageing signatures, biological pathways and personalised health insights.

Non-invasive cheek-swab proteomic profiling for molecular ageing research-informed wellness insights and preventive health discussions.

SAMPLE Non-invasive cheek swab, collected at home or in a clinic.



Buccal swab
Non-invasive collection

7,496
Protein groups in the curated library

508 proteins
Used in the ProteoAge model

OVERVIEW

Key report outputs

ProteoAge: model-derived age estimate and difference versus chronological age. Index of Aging: separate estimated ageing indicator; its scale should not be interpreted as a directly observed physiological ageing rate. Hallmark contributions: model-attributed age-equivalent effects across ageing-related pathways, including residual/unexplained factors.

Nutrition: questionnaire-versus-molecular profile comparison, estimated dietary category patterns, personalised macronutrient targets and suggested foods. Sport and recovery: protein-pattern-informed lifestyle insights. Biomarkers: exploratory functional protein signatures.

WHAT IS MEASURED

At a glance

SAMPLE Buccal / cheek swab	**ANALYTICAL METHOD** Orbitrap high-resolution LC–MS; data-independent acquisition
PROTEOME COVERAGE Curated library of 7,496 protein groups; actual quantification varies	**PROTEOAGE MODEL** 508-protein chronological-age estimation model
REPORT DOMAINS Ageing; Hallmarks-associated scores; Nutrition; Sport; Biomarkers; Supplements / recommendations	

WHAT YOU GET

From protein data to a plan you can act on

For the patient

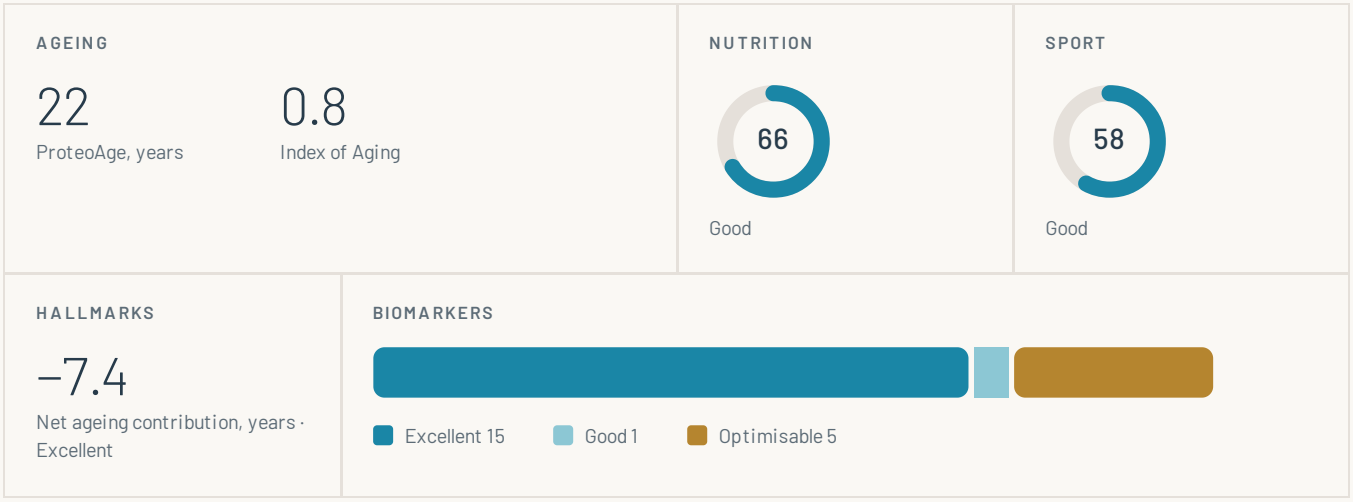
- ProteoAge, a model-derived protein age compared with your calendar age
- Your Index of Aging and Hallmarks of Aging profile
- Nutrition and sport profiles
- Functional protein profiles with clear status categories
- Food, activity and supplement suggestions to review with a professional

For the clinician

- A functional layer next to genetics, epigenetics, metabolomics and routine biomarkers
- Hallmark-level contributions to help prioritise follow-up
- A proteomic baseline for exploring change over time
- Non-invasive collection, at home or in clinic
- Reported test-retest repeatability for relative biological age

INSIDE THE REPORT

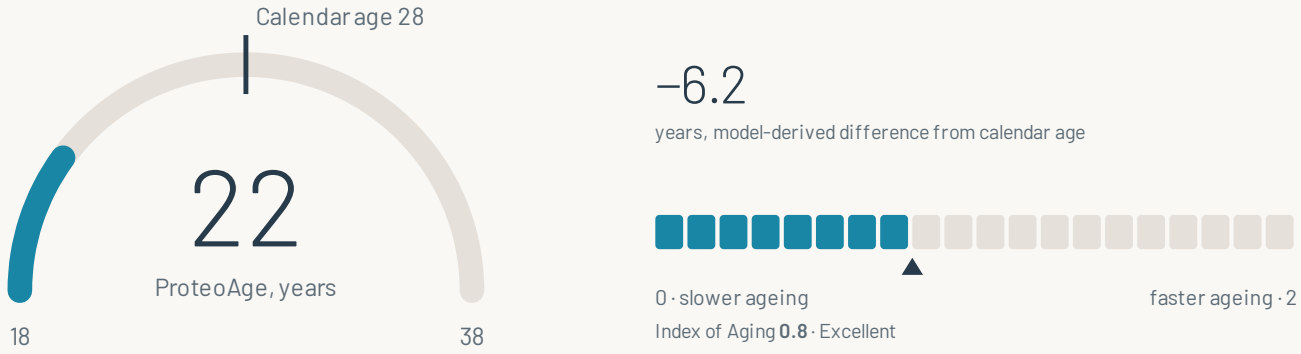
Five connected views



Illustrative dashboard. The values are example data from a sample report, not expected results for an individual.

INSIDE THE REPORT

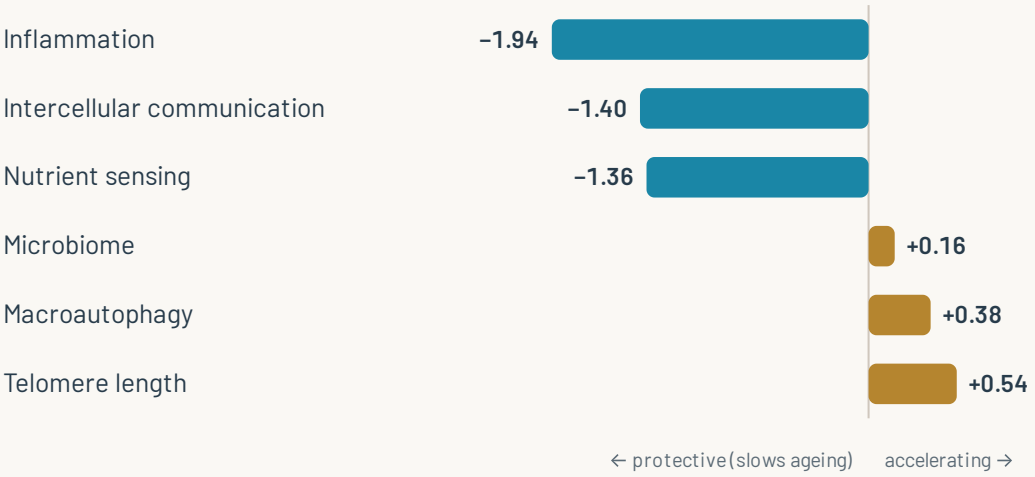
ProteoAge and the Index of Aging



ProteoAge is trained on chronological age using 508 proteins. The report compares its estimate with calendar age and shows the model-derived difference. Example values.

INSIDE THE REPORT

Hallmarks of Aging: top 3 and bottom 3



The Index of Aging and the Hallmarks of Aging give complementary views. Contributions labelled in years are model outputs and should not be read as years of life gained or lost. Example values.

INSIDE THE REPORT

Functional protein profiles

NUTRIENT PROFILES

Vitamin A turnover
The cycle of vitamin A — Excellent

Vitamin E turnover
Vitamin E usage in the body — Excellent

Vitamin D turnover
Utilisation for bone, immune function and metabolism — Excellent

Zinc turnover
Zinc handling for immune function and healing — ▲ Optimisable

STRUCTURAL & ORGAN HEALTH

Renal efficiency
Removing waste products — Excellent

Connective tissue health
Tissue resilience — Excellent

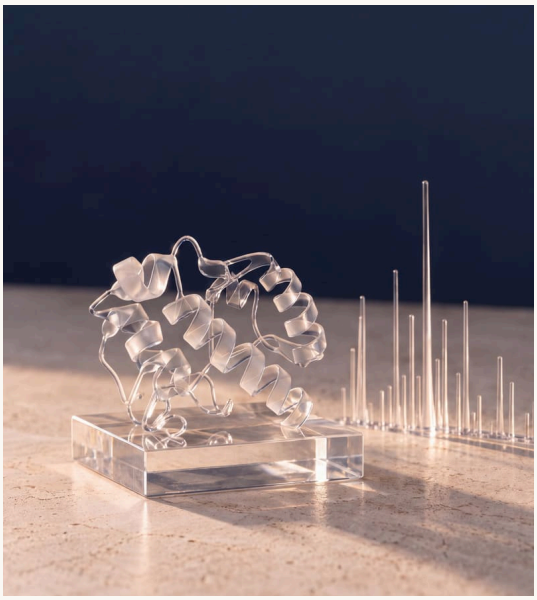
INFLAMMATORY RESPONSE

Inflammatory response (CRP-related)
Acute inflammatory activity — Excellent

Vitamin A, E and D turnover and zinc-related profiles are protein-based interpretations, not measurements of serum vitamin or zinc concentrations. Renal efficiency, connective tissue and CRP-related profiles do not replace renal function tests, clinical assessment or serum CRP testing. Example values.

HOW IT WORKS

Simple collection, sophisticated analysis



1. COLLECT

Collect a buccal swab at home or in clinic.

2. RETURN

The sample is returned according to the kit instructions.

3. ANALYSE

High-resolution Orbitrap mass spectrometry with data-independent acquisition supports protein profiling. The supplier reports a curated spectral library of 7,496 protein groups; coverage does not imply every group is quantified in every sample.

4. REPORT

A personalised proteomic report with explanations and recommendations.

CLINICAL VALUE

Clinical application

A complementary modality for multi-omics baseline assessment, clinician–patient education, hypothesis generation and carefully contextualised longitudinal monitoring. Results are not a substitute for blood testing, validated nutritional assessment, clinical diagnosis or patient-relevant endpoints.

01	**BASELINE**	Establish the proteomic profile before anything changes.
02	**COMBINE**	Read it with clinical history, routine testing and other omics.
03	**RE-MEASURE**	Interpret change against sampling conditions, analytical variation and biological variability.

MEASURE → INTERVENE → RE-MEASURE → VERIFY

LIMITATIONS

A model-derived view, not a diagnosis

Pathway scores are computational inferences, not direct measurements of the named processes. A microbiome-associated proteomic score is not a stool microbiome analysis; a telomere-associated score is not a telomere-length assay. Similarly, inflammatory or nutritional signatures do not diagnose inflammation or nutrient deficiencies. Personalised macro targets and supplement suggestions require clinical and dietary suitability review.

For informational and wellness use; not a standalone diagnostic test. All recommendations require qualified professional review. Availability and regulatory status vary by market.

METHOD AND EVIDENCE

Evidence and responsible interpretation

Analytical evidence supplied by manufacturer

Baseline sample Pearson correlation 0.84 (>500 participants); test–retest ICC 0.905 (95% CI 0.776–0.961; 20 stable controls, approximately one month apart). Clinical outcome validation and thresholds for meaningful individual change have not been established by these figures.

Position in a multi-omics portfolio

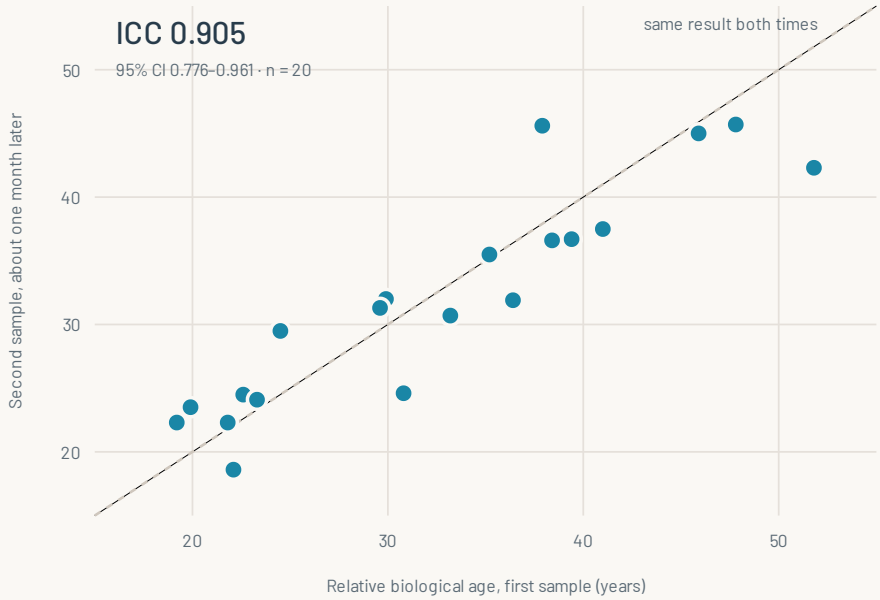
Proteomics assesses protein abundance patterns; epigenetics evaluates methylation-associated patterns; metabolomics characterises small-molecule metabolites; conventional blood testing evaluates clinically established analytes. Combining modalities can provide a broader biological perspective, but no single biomarker change proves a healthier ageing trajectory.

Analytical controls

Reference samples run across plates and batches. On raw, non-normalised data the median protein-level CV is 30.4%, and housekeeping proteins range from 21.4% to 29.2%. Normalisation and batch correction then reduce technical variation. Reprocessing the same raw data gives 99% overlap in the selected fragments.

METHOD AND EVIDENCE

Repeatability of relative biological age



Twenty stable controls, sampled about one month apart. Points redrawn from the technical data. Repeatability supports consistency within this study; it does not establish disease prediction, intervention efficacy or an individual threshold for meaningful change.

METHOD AND EVIDENCE

Collection and analytical controls

0.84 Correlation between two baseline samples, more than 500 participants	30.4% Median protein-level CV across reference samples, raw and uncorrected	21–29% CV of housekeeping proteins across reference samples, raw	99% Overlap in selected fragments when the same raw data is processed twice

From the technical data. These analytical measures do not establish clinical efficacy or an individual threshold for meaningful change.

WHITE-LABEL OPPORTUNITY

Your programme. Your brand. Our infrastructure.

Advanced Proteomics can be integrated into healthcare, longevity and preventive-health programmes as a branded or co-branded testing pathway, without building the laboratory infrastructure behind it.

White-label options can include

- Branded test kits and packaging
- Integration into existing clinic or longevity programmes
- Remote sample collection
- Laboratory analysis
- A patient-facing experience in your name
- Results delivered into your preferred reporting environment
- Repeat testing and longitudinal programmes

Partner value

REMOTE ACCESS

Sample collection at home, outside the clinic.

FUNCTIONAL DEPTH

A protein-based ageing and lifestyle layer, without a blood draw.

LONGITUDINAL USE

Repeat testing to follow change over time.

Advanced Proteomics

Explore protein-associated ageing signatures, biological pathways and personalised health insights.

Where Longevity Becomes Measurable.

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