

Biological Age Testing: Evidence-Based Guide and Resource Library

What is Biological Age?

Biological age is an estimate of how well the body is functioning compared to the average for your chronological age. While chronological age counts years, biological age reflects the cumulative effects of your lifestyle, genetic makeup, environment, and medical history.

Two people born on the same day can have vastly different biological ages. One may have the resilience and cell health of someone younger, while another may show signs of accelerated aging due to stress, poor nutrition, or illness.

Why Measure Biological Age?

Understanding your biological age can:

- Help track the effectiveness of lifestyle interventions.
 - Highlight early risk factors for age-related decline.
 - Motivate changes in habits related to diet, exercise, and sleep.
 - Provide a more personal health baseline than standard medical check-ups.
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Common Methods Used in Testing

Epigenetic Analysis

- Measures chemical modifications to DNA, especially methylation patterns.
- Models like Horvath, Hannum, GrimAge, and DunedinPACE are widely cited in peer-reviewed studies for predicting health outcomes and mortality risk.

Glycan Analysis

- Assesses immune system aging by studying sugar molecules bound to antibodies.
- Responsive to short-term lifestyle changes such as stress reduction and improved sleep.

Whole Genome or Exome Sequencing

- Maps large sections of genetic code.
- Can be combined with methylation testing for more comprehensive insight.

Telomere Length

- Examines the repetitive DNA at chromosome ends.
 - Once a popular biomarker, now best used alongside other measures due to variability.
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Factors to Consider When Choosing a Test Kit

- **Sample Type:** Blood generally offers the most reliable methylation results; saliva and cheek swabs are easier but may be less comprehensive.
 - **Validation:** Look for methods published in recognized scientific journals.
 - **Data Privacy:** Ensure your genetic and health data is securely stored and managed.
 - **Depth of Reporting:** Reports should explain the science behind the results in clear language.
 - **Support Services:** Some companies offer coaching or digital tools to interpret and track results.
 - **Cost and Accessibility:** Consider whether the test is HSA/FSA eligible in your region.
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Using the Results

Biological age testing should be seen as part of a **long-term tracking approach**. One measurement offers a snapshot, but repeated tests over time show trends that can inform lifestyle adjustments.

These tests are not substitutes for medical diagnostics. Always discuss significant results with a qualified healthcare provider.

References

1. Lu AT, et al. DNA methylation GrimAge strongly predicts lifespan and healthspan. *Aging (Albany NY)*. 2019.
 2. Krištić J, et al. Glycans as biomarkers of biological age. *Journals of Gerontology: Series A*. 2014.
 3. Belsky DW, et al. Quantification of the pace of biological aging in humans through a blood test. *eLife*. 2020.
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Resources

- **Biological Age Test Kit Comparison – Simply Anti-Aging**
<https://simplyantiaging.com/biological-age-test-kit-comparison/>
- **Simply Anti-Aging – Official Website**
<https://simplyantiaging.com/>
- **Google Docs – Biological Age Test Kits Review**
<https://docs.google.com/document/d/1jNN1tiE6RqlwZJkH0q1ZjNnjGrO1LqzTuVHYhAAK72s/>
- **Google Sheets – Test Kit Comparison Table**
<https://docs.google.com/spreadsheets/d/1dT-Q5afzMaUN8fZw-VXH92KVww5xpZRI2iKJiWtYKE4/>
- **Google Slides – Biological Age Testing Overview**
<https://docs.google.com/presentation/d/1HWUJaoPZxkZEHvtUrap85qSUpr8X6aHpn1sR9cKHLi4/>
- **Google Site – Biological Age Test Kits Independent Review**
<https://sites.google.com/view/biologicalagetestresources/biological-age-test-kits-independent-review-and-comparison>
- **Notion – Biological Age Test Kits Review & Comparison**
<https://aipassion.notion.site/Biological-Age-Test-Kits-Independent-Review-and-Comparison-24c36402a22480ddafffe7ad3be276a8>
- **GitHub Gist – Biological Age Testing Summary**
<https://gist.github.com/biohackdaily/fc10458c98ea0411b0957553a1f40486>

- **OneNote – Biological Age Test Kits Resource Page**
https://1drv.ms/o/c/42aa89874fb5dfc9/EohWFTFguxRNoZjsv404OCAB_ITMCvV0_IO5MMAw9Oq4EA?e=Vaq9rm
- **OneDrive Document – Biological Age Test Kits**
https://1drv.ms/b/c/42aa89874fb5dfc9/EZZNeklVkOpEiv-4APPTSFMBwiOPsOC-0V5b_oVSe9CA_w?e=nFfMhq