TruDiagnostic™
The Epigenetic Company

TruAge Report

XXXXXXXXXXXXXXX

EPXXX-XXX-XXX

Age: 49.17 | Sex: Female

Collected: XX/XX/2025 | Reported: XX/XX/2025

Fasted: Unknown

CLIA Lab Director: Melissa Keinath, PhD FACMG
TruDiagnostic
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DEVELOPED WITH HARVARD

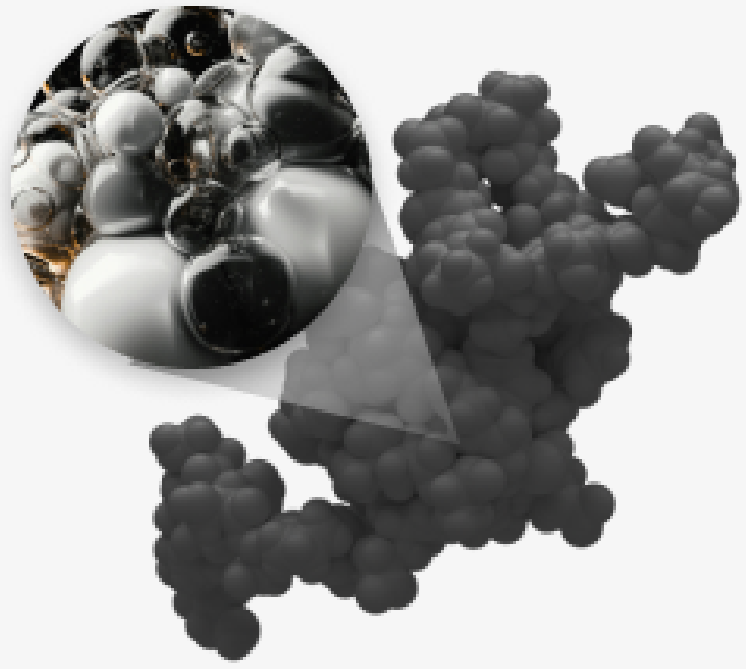
OMICmAge

OMICm Age

43.7

Chronological Age

49.2



Your OMICm age is a deeper reflection of your biological age, considering the effects of lifestyle, environment, and genetics on your DNA and the aging process.

In contrast your chronological age is the number of years you have lived, a straightforward measure of time since birth. The difference between OMICm Age from chronological age highlights underlying health insights, guiding tailored wellness strategies.

-5.5

Your OMICm Age is **lower** than your calendar age by 5.5 years.

50.7%

Your OMICm Age is **lower than** 49.3% of other 49.2 year old females.

RESULTS OVER TIME

PAST RESULTS

Since you have only completed one test, this graph is a bit empty! In 3 months, take another test to see how your score has changed and monitor your progress.

DISCLAIMER: The percentile for OMICm Age is based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

DEVELOPED WITH YALE

SYMPHONY Age

This advanced approach dives into the age of **11 distinct organ systems** providing a detailed aging map.

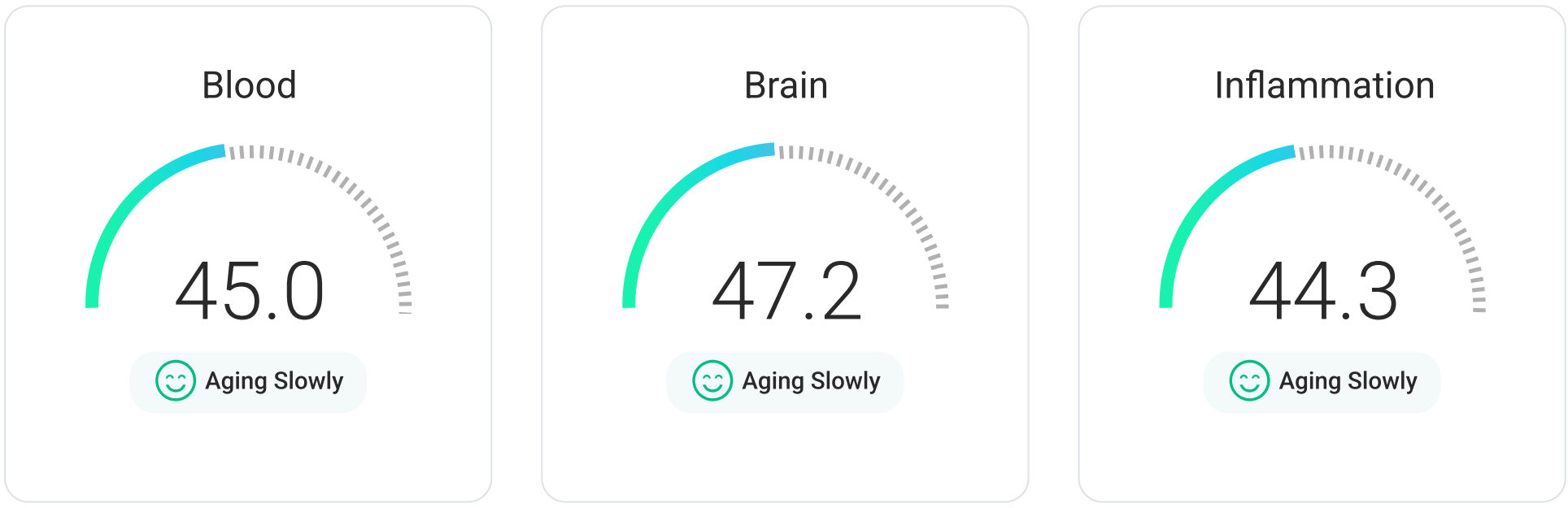
Everyone ages differently

Epigenetic clocks have revolutionized how we understand aging, offering insights beyond what the calendar tells us. These innovative tools reveal your body's true age and the pace at which it's aging, acknowledging that everyone's journey through time is unique.

Developed by researchers at Yale, SYMPHONYAge enriches our understanding of aging by showing how each part of your body ages on its own path, offering a comprehensive snapshot of your health. SYMPHONYAge was developed by analyzing biomarkers from 5,000 individuals, enabling a precise study of aging across 11 organ systems.

This method integrates data from various sources, including whole exome sequencing and plasma metabolomics, to pinpoint epigenetic markers linked to specific organ aging. This detailed approach segments 130 biomarkers, offering insights into individual organ system aging.

Distinct from traditional epigenetic clocks, SYMPHONYAge provides a detailed view of biological age by organ system, facilitating targeted medical interventions and advancing personalized medicine. This tool significantly enhances our ability to manage and understand aging, emphasizing its heterogeneity and supporting tailored healthcare strategies for aging populations.



Heart

Aging Faster

Hormone

Aging Faster

Immune

Aging Slowly

Kidney

Aging Slowly

Liver

Aging Slowly

Metabolic

Aging Slowly

Lung

Aging Faster

MusculoSkeletal

Aging Slowly

PAST RESULTS

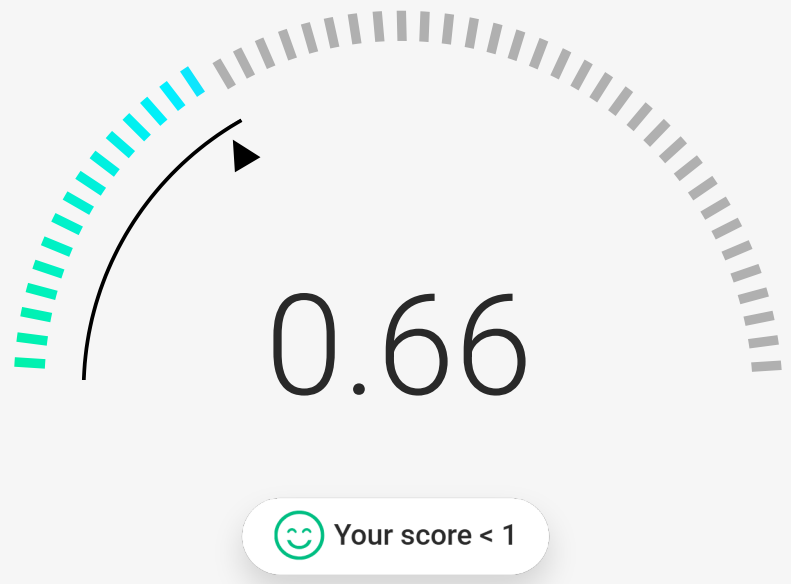
ORGAN SYSTEM	08.17.2025
Blood	45.0
Brain	47.2
Inflammation	44.3
Heart	49.3
Hormone	53.1
Immune	42.7
Kidney	43.1
Liver	46.7
Metabolic	45.7
Lung	49.5
MusculoSkeletal	43.9

DunedinPace of Aging

YOUR PACE SCORE

You're aging **slowly.**

Each year that passes, your body will biologically age 0.66 years.



The DunedinPace algorithm is a revolutionary approach to quantifying aging that shifts the focus from merely knowing your biological age to understanding the pace, or rate at which you're aging.

It's not just about how old your body is biologically; it's equally crucial to grasp how quickly you are moving towards aging. This knowledge is vital because slowing down the pace of aging can significantly impact your health, vitality, and the prevention of chronic diseases. By providing a clearer picture of how fast you're aging, DunedinPace empowers you to make informed lifestyle choices that can help decelerate the aging process, aiming for a healthier, more vibrant life. Your pace of aging changes quickly and has been shown to be affected by lifestyle choices, making it a perfect tool to understand the success of interventions.

A pace **greater than 1** has been associated with a **56% increased risk of death** and a **54% increased risk of chronic disease** in the next 7 years.

(Belsky et al, 2020)

RESULTS OVER TIME

PAST RESULTS

Since you have only completed one test, this graph is a bit empty! In 3 months, take another test to see how your score has changed and monitor your progress.

NOW WHAT?

Top Aging Interventions

Changing your Biological age and reducing risk of disease requires a systematic approach to interventions and testing.

SUPPLEMENTS

- **Spermidine**: Supports autophagy, cellular repair, and longevity pathways.
- **Nicotinamide Mononucleotide (NMN) or Nicotinamide Riboside (NR)**Boosts NAD+ levels, essential for mitochondrial and DNA repair.
- **Quercetin + Dasatinib (D+Q Senolytics)**: Helps clear senescent cells, reducing systemic inflammation and improving biological age markers.
- **Vitamin D3 + K2**: Supports immune function, bone health, and may influence gene expression related to aging.

DIET

- **Green Mediterranean Diet**: A more polyphenol-rich version of the Mediterranean Diet, shown to have superior anti-aging effects.
- **Polyphenol-Rich Foods**: Berries, Dark Chocolate, Green Tea, Olive Oil, Red Wine in Moderation, reduce oxidative stress and inflammation.
- **Cruciferous Vegetables**: Broccoli, Brussels Sprouts, Kale, Cauliflower contain sulforaphane and other bioactive compounds that enhance detoxification and DNA repair.
- **Adequate Protein Intake**: Pea/Hemp Protein, Grass-Fed Meat, Fatty Fish supports muscle maintenance and metabolic function, critical for longevity.
- **Prebiotic & Fermented Foods**: Kimchi, Sauerkraut, Yogurt, Garlic, Onions, enhance gut microbiome diversity, which is linked to immune function and longevity.

LIFESTYLE

- **Caloric Restriction (CR)**: One of the most well-documented longevity interventions, shown to slow biological aging and improve metabolic flexibility.
- **Strength & Resistance Training**: Builds muscle mass, enhances mitochondrial function, and improves metabolic flexibility.
- **High-Intensity Interval Training (HIIT)**: Increases cardiovascular efficiency, stimulates mitochondrial biogenesis, and enhances insulin sensitivity.
- **Hyperbaric Oxygen Therapy (HBOT)**: High & mild pressure increases oxygen availability, promotes telomere lengthening, reduces inflammation, and enhances stem cell activity.
- **Prioritizing High-Quality Sleep**: 7-9 hours per night is crucial for epigenetic stability, immune function, and cognitive longevity.

NOW WHAT?

Lifestyle Recommendations

GOAL SETTING

Based on the test results, set realistic and specific goals for lifestyle changes, focusing on areas that could significantly impact your biological age, such as diet, exercise, stress management, and sleep.

JOURNALING

Keep a journal to track your progress on lifestyle changes, noting any improvements in how you feel physically and mentally. This record can help identify what's working and areas that need adjustment.

DIETARY MODIFICATIONS

Incorporate a balanced diet rich in fruits, vegetables, whole grains, and lean proteins. Consider reducing processed foods, sugar, and saturated fats.

REGULAR EXERCISE

Design a regular exercise routine that includes a mix of cardiovascular exercises, strength training, and flexibility exercises. Aim for at least 150 minutes of moderate aerobic activity or 75 minutes of vigorous activity each week.

IMPROVING SLEEP HYGIENE

Ensure 7-9 hours of quality sleep per night by establishing a regular sleep schedule, creating a restful environment, and avoiding screens before bedtime.

AVOID HARMFUL HABITS

Limit alcohol consumption and avoid smoking and drug use, as these habits can significantly accelerate biological aging.

STRESS MANAGEMENT

Adopt stress reduction techniques such as mindfulness, meditation, yoga, or deep breathing exercises. Consistently managing stress can have a profound impact on your biological age.

NOW WHAT?

Retest in 2 to 3 Months

Tracking your biological age is an ongoing journey. Retesting helps measure the impact of your changes and keeps you moving toward healthier aging.

FOLLOW-UP TESTING

Retest with the TruAge test after three months to assess the impact of your lifestyle changes on your biological age. The three-month mark is a reasonable period to see initial changes without expecting dramatic reversals in aging.

REVIEW AND ADJUST

Review the results of the follow-up test with your healthcare professional. Celebrate improvements and discuss any areas that did not change as expected. Adjust your lifestyle plan accordingly to address these areas.

LIFELONG COMMITMENT

Understand that maintaining or reducing your biological age is a lifelong commitment. Continue with the lifestyle changes, retesting periodically (e.g., every 6 to 12 months), and adjusting your plan as necessary to continue improving your health and longevity.

OUR APPROACH

Multi OMICs & Biological Aging

It turns out, our health and aging aren't determined by genetics alone... we applied cutting-edge techniques to measure the full spectrum of biomarkers—proteins, metabolites, and DNA methylation patterns—creating a detailed portrait of the body's aging process.

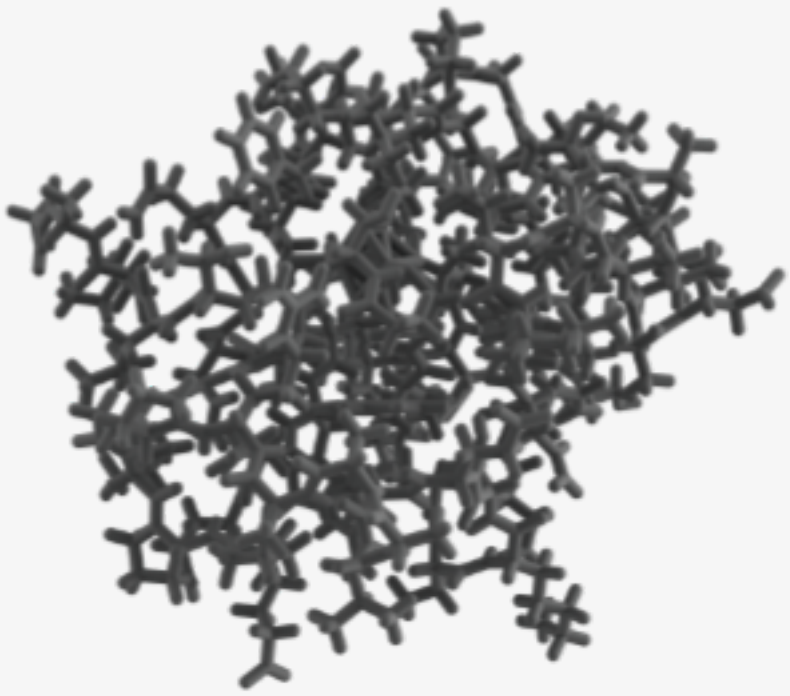
The launch of the Human Genome Project sparked hopes of unlocking all the secrets of human biology. However, while groundbreaking, the project didn't deliver the comprehensive health insights many had hoped for. It turns out, our health and aging aren't determined by genetics alone. Instead, they're influenced by a complex network that includes our epigenetics, the variety of proteins and peptides in our bodies (the proteome), and the metabolites produced through bodily processes and environmental interactions. This intricate web of factors is known as the multiome, representing the vast array of measurements we can analyze in the body.

To develop the most accurate biological age clock, we aimed to capture this entire multiome, not just a slice of it. By studying 5,000 individuals, we applied cutting-edge techniques to measure the full spectrum of biomarkers—proteins, metabolites, clinical lab measures, and DNA methylation patterns—creating a detailed portrait of the body's aging process.

Our research, which included Whole Exome Sequencing, Plasma Proteomics, Metabolomics, and thorough clinical data analysis, has led to the OMICm Age algorithm. This groundbreaking tool offers unprecedented insight into how we age across the multiome, providing a clearer, more comprehensive view of aging based on DNA methylation.

Our initial research and findings, which laid the foundation for the OMICm Age algorithm, demonstrate its superior ability to predict health outcomes compared to any other methylation-based aging clock available. This represents a significant leap forward in understanding and measuring the aging process, offering exciting possibilities for personalized health strategies.

MULTI OMICS & BIOLOGICAL AGING



Biomarkers—proteins, metabolites, and DNA methylation patterns—creating a detailed portrait of the body's aging process.

GENOMICS

The study of the genes housed in our DNA. Our DNA, located in the nucleus of our cells, contains sections of instructions (genes) that tell a cell how to behave. Your genetics stay the same from conception to death.

TRANSCRIPTOMICS

The study of how our genes turn into actionable RNA. During transcription, molecules called RNA copy the instructions of our DNA; skipping over or boosting sections based on the epigenetic patterns at that location.

METABOLOMICS

The study of the chemical processes produced by protein interactions. Metabolites are a by-product of proteins hard at work, and are used to help break down food, drugs, chemicals, or the body's own tissue.

EPIGENOMICS

The study of how our genes are modified. Epigenetic molecules interact with our DNA, either amplifying or silencing certain instructions. These interactions change throughout your lifetime.

PROTEOMICS

The study of how proteins function. Proteins are created by RNA, and perform most of the work within a cell. Antibodies, enzymes, and hormones are all types of protein functions.

PHENOMICS

The study of observable traits such as eye, skin, and hair color. Epigenetics can curate those instructions, and the resulting proteins and metabolites impact your biology to result in physical expression.

OUR APPROACH

About DunedinPace

DunedinPace acts as a dynamic health monitoring tool, offering a**personalized roadmap to aging gracefully and healthily.**

The DunedinPace algorithm is a significant advancement in understanding the aging process by analyzing epigenetic markers to determine the rate of biological aging.

This approach enhances our ability to gauge an individual's health and longevity, providing insights on whether they are aging faster or slower than their chronological age. Clinically, this tool is transformative for preventive medicine and personalized health strategies, enabling early interventions for those aging rapidly, which can mitigate age-related health risks and potentially extend lifespan. Regular use of the DunedinPace algorithm allows for the fine-tuning of health strategies by monitoring the effectiveness of lifestyle changes or treatments, offering a personalized guide to healthier aging through quantifiable evidence.

How Dunedin Pace was developed

The DunedinPace algorithm was developed through a partnership between Duke University and the University of Otago, utilizing extensive data from the Dunedin Longitudinal Study. This study followed over a thousand individuals from birth in 1972-1973 in Dunedin, New Zealand, tracking their health and lifestyle over decades. This rich dataset allowed the team to identify precise DNA methylation changes correlating with the rate of aging. The development focused on analyzing these methylation patterns and their links to aging at different time points for the same individuals, using statistical models and machine learning to find biomarkers of aging pace.

Validation of the DunedinPace algorithm expanded beyond the original cohort, incorporating external datasets to confirm its effectiveness across various demographics and prove its broad applicability. Unlike earlier epigenetic clocks that estimate biological age from static DNA snapshots, DunedinPace analyzes dynamic changes, providing a deeper, more accurate view of aging. This makes it a valuable tool for predicting health outcomes and customizing interventions, thanks to its rigorous scientific foundation and focus on the aging process's pace.

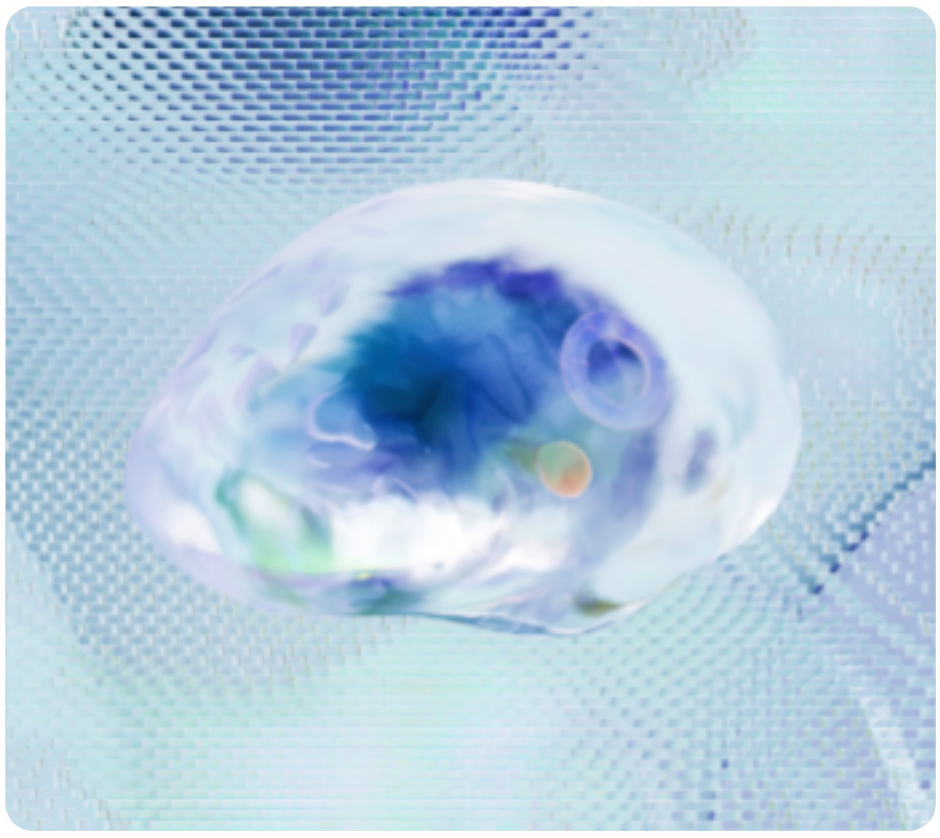
OUR APPROACH

About SYMPHONYAge

SYMPHONYAge is an innovative approach to understanding the aging process across different organ systems within the body.

SYMPHONYAge, developed at Yale, uses epigenetic data from a single blood draw to analyze aging across 11 major organ systems, recognizing that aging varies among different parts of the body. This innovative method provides a detailed view of which organ systems are aging faster or slower, offering a nuanced perspective on the aging process.

Clinically, SYMPHONYAge offers substantial potential for personalized medical interventions. For instance, if SYMPHONYAge reveals accelerated aging in the metabolic system, targeted interventions can be applied to mitigate risks like metabolic syndrome. Additionally, by monitoring the aging rates of organ systems over time, SYMPHONYAge serves as a dynamic tool for assessing the effectiveness of treatments and lifestyle adjustments, aiding clinicians and patients in pursuing healthy aging.



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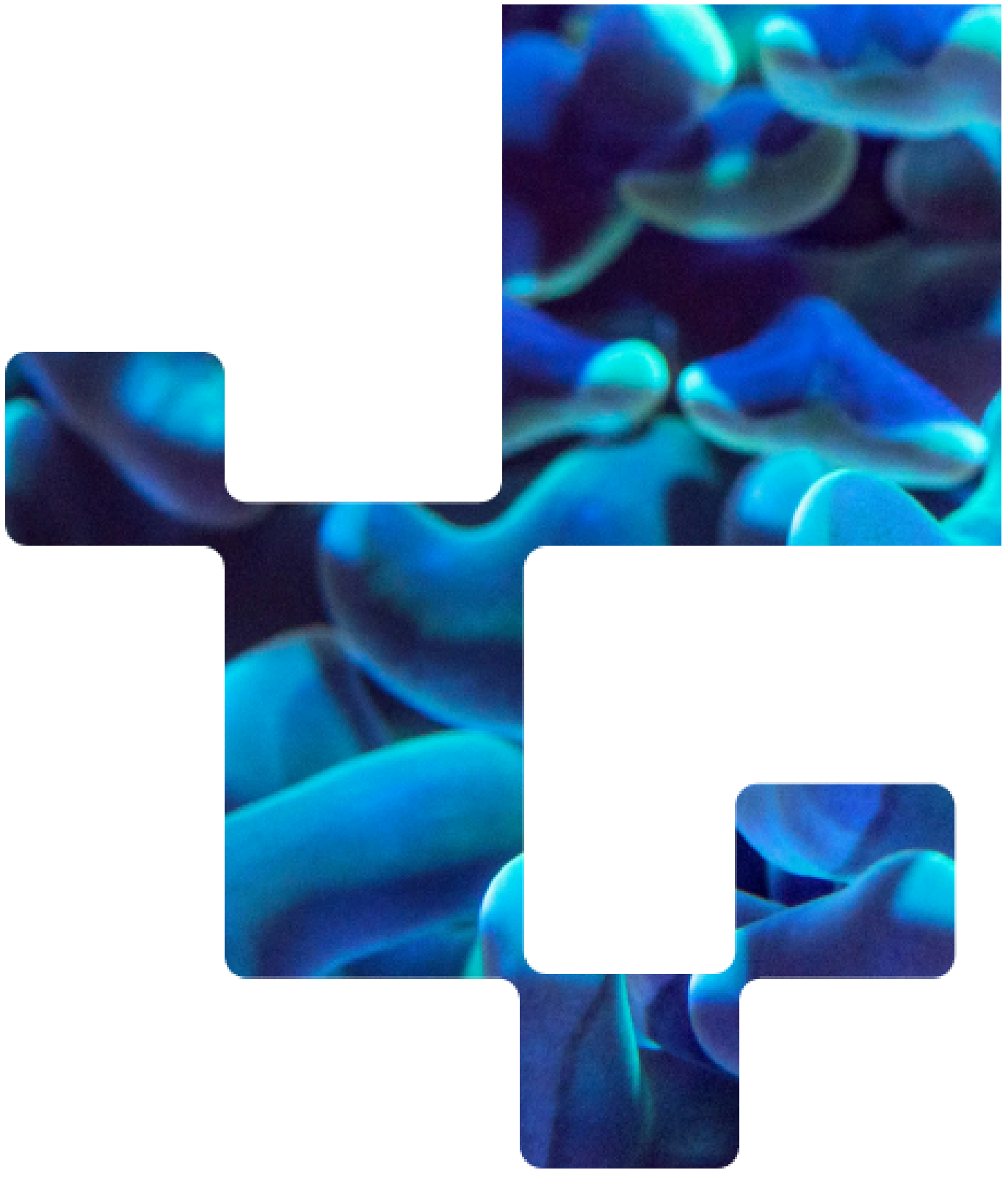
Distinct from traditional epigenetic clocks, SYMPHONYAge provides a detailed view of biological age by organ system, facilitating targeted medical interventions and advancing personalized medicine. This tool significantly enhances our ability to manage and understand aging, emphasizing its heterogeneity and supporting tailored healthcare strategies for aging populations.

TruDiagnostic™
The Epigenetic Company



Advanced TruAge Report

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

Age: 49 | Sex: Female

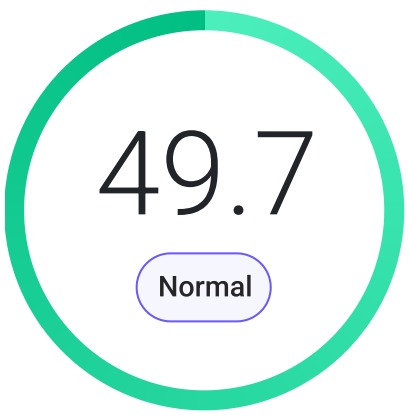
Collected: XX/XX/2025 | Reported: XX/XX/2025

Aging Summary

Chronological Age: 49.2

OMICm Age

Symphony Age



Pace of Aging

DEVELOPED WITH HARVARD

OMICm Age

Chronological Age: 49.2

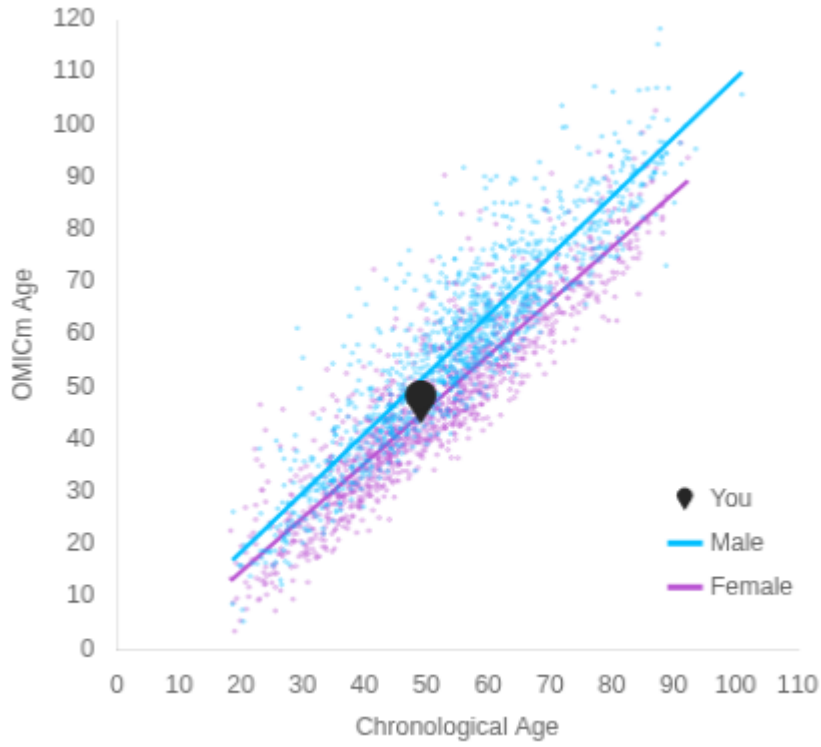
OMICm Age

43.7

Younger

50.7%

Your OMICm Age is **lower** than 49.3% of people of the same age and sex.



Results Over Time

DISCLAIMER: The population graph and percentile for OMICm Age are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

Most Actionable Epigenetic Biomarkers

Epigenetic Biomarker (EBs) are compared against a balanced reference dataset composed of individuals from both the Harvard and TruDiagnostic cohorts. We identify individuals of the same sex and a similar age (within ±5 years) to create a personalized comparison group. Above the 80th percentile: Indicates your outcome is higher than 80% of individuals in the cohort. Below the 20th percentile: Indicates your outcome is lower than 80% of individuals in the cohort.

*** Listed in order of impact on OMICm age. Find the rest of your Epigenetic Biomarkers at the end of the report**

Hematocrit

Low

Function

Hematocrit: Percentage of red blood cells in blood; used to assess anemia and hydration.

Recommendations

- Correct nutrient deficiencies, especially folate, iron, B12, and vitamin C
- Treat illness
- Stay active and hydrated

Vitamin B12 · Folate · Iron · Vitamin C · Eggs · Leafy green vegetables · Citrus fruits · Legumes

Serum Paraoxonase/arylesterase 1

Low

Function

Serum Paraoxonase/Arylesterase 1 (PON1): An enzyme with antioxidant properties; linked to cardiovascular health.

Recommendations

- Increase selenium intake with foods like Brazil nuts, seafood, and whole foods
- Consider chokeberry extract and pomegranate
- Minimize intake of trans fat

Chokeberry extract · Brazil nuts · Seafood · Pomegranate

Ribitol

High

Function

Ribitol: A sugar alcohol; involved in pentose phosphate and metabolic pathways.

Recommendations

- Limit sugar and high glycemic food intake
- Consider monitoring blood sugar

Lean protein · Low fat dairy

Phenylacetylglutamine High

Function

Phenylacetylglutamine: A gut microbiome-derived metabolite of phenylalanine; linked to kidney function.

Recommendations

- Balance protein intake
- Limit foods high in phenylalanine (e.g, processed foods, dairy, meat, and some grains)
- Stay hydrated
- Monitor liver and kidney function
- Consider prebiotics or probiotics for gut health

Prebiotics Probiotics

1-Stearoyl-2-adrenoyl-GPC (18:0/22:4)* Low

Function

A glycerophosphocholine (GPC) lipid, this compound supports membrane integrity, brain function, and lipid metabolism, essential for longevity. Low levels may impair neuroprotection, increase oxidative stress, and accelerate age-related decline.

Recommendations

- If applicable, correct omega-3 deficiency
- Increase antioxidants
- Limit alcohol

Omega-3 Fatty Acid Flaxseeds Walnuts Fatty fish

DEVELOPED WITH YALE

SYMPHONY Age

Chronological Age: 49.2

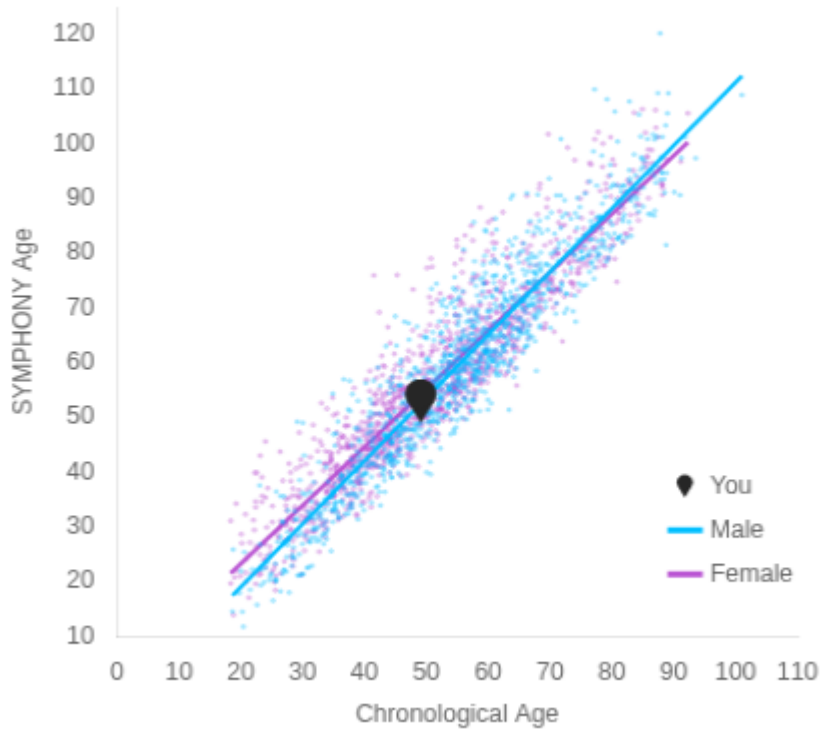
This advanced approach dives into the age of **11 distinct organ systems.**

SYMPHONY Age

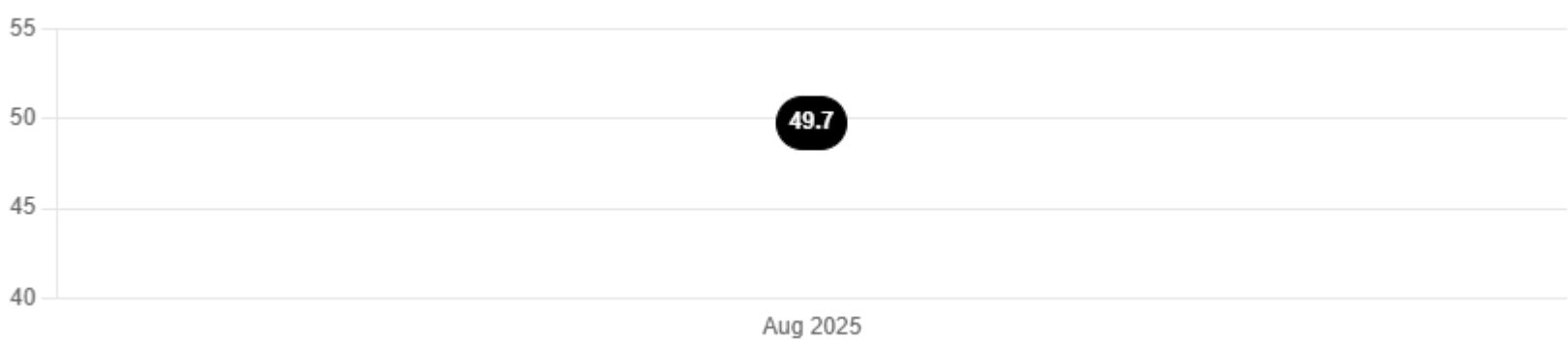
49.7

23.9%

Your SYMPHONY Age is **lower** than 76.1% of people of the same age and sex.

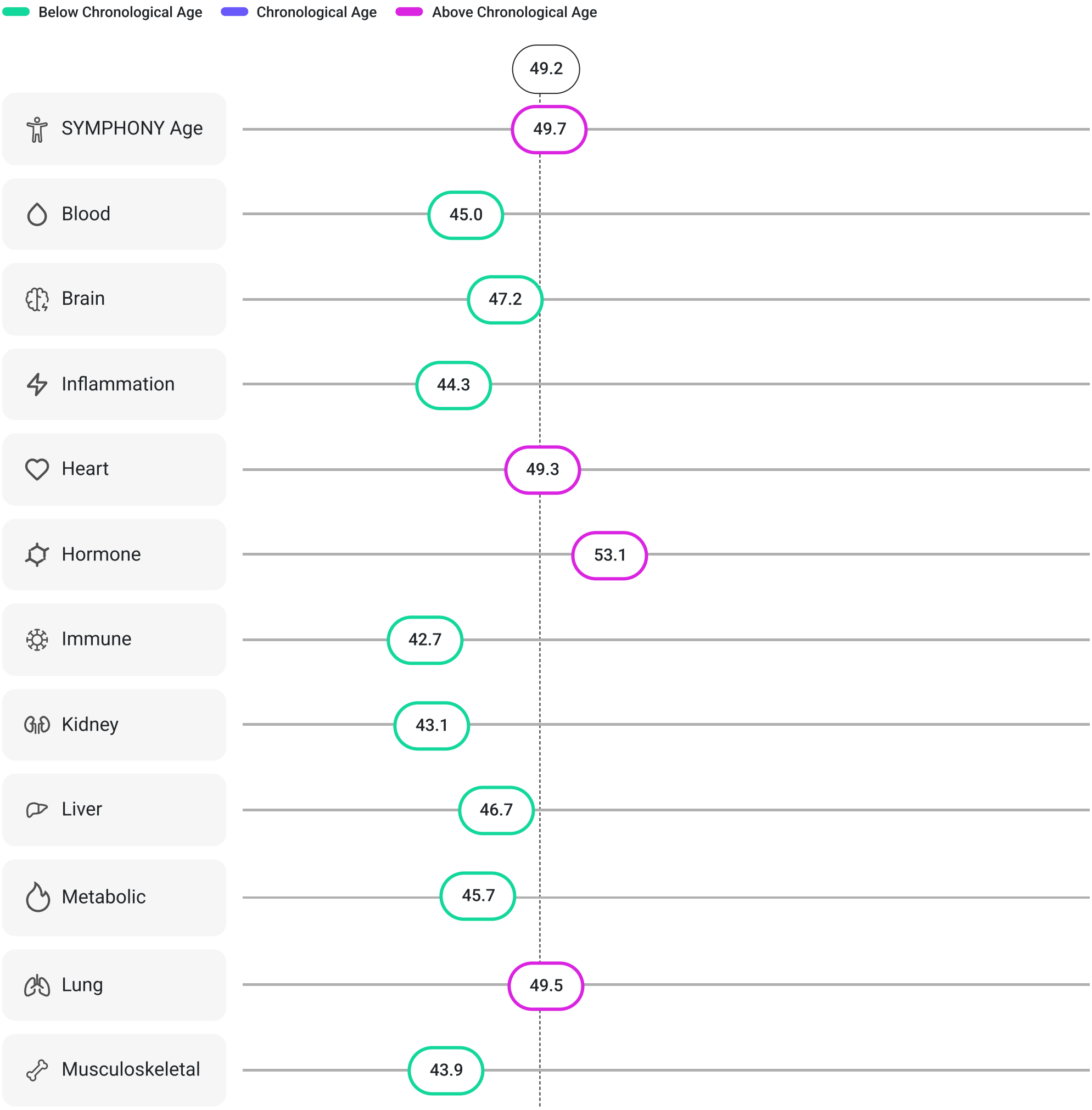


Results Over Time



DISCLAIMER: The population graph and percentile for SYMPHONY Age are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

Compare the age of**11 distinct organ systems** versus your chronological age



How was this clock created and designed?

Many clocks have used blood based biomarkers and their changes as we get older to predict OMICm age. For SYMPHONY Age, the researchers did this with biomarkers which were specific for each organ system. While previous clocks (like PhenoAge) did this with 9 blood markers, SYMPHONY Age incorporates 133 biomarkers for training to develop this clock. In addition to having a large and detailed number of clinical datapoints, this study is also one of the largest for clock development with approximately 8,000 participants. Together, this gives us an incredibly robust clock associated with organ specific clinical biomarkers which is highly predictive of aging outcomes.

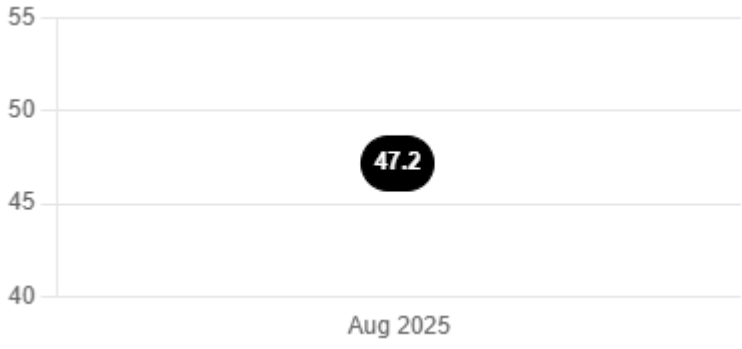
Systems Related Biomarkers

Blood

Biomarkers: Ferritin, Hematocrit, Hemoglobin, Mean Corpuscular Hemoglobin, Mean Corpuscular Hemoglobin Conc, Mean Corpuscular Volume, Mean Platelet Volume, Platelet Distribution width, Platelet Count, Red Blood Cell Count, Red Cell Distribution Width

Brain

Biomarkers: Homocysteine, BDNF (serum), Clusterin, Stroke, Total mental status summary score, Total cognition summary score, Immediate word recall, Delayed word recall, Total word recall summary score, Serial 7s

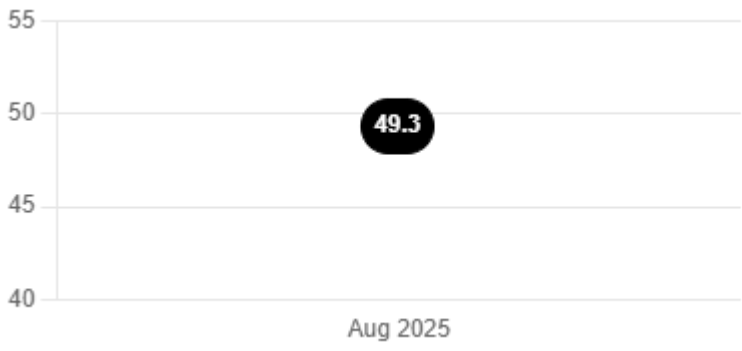


Inflammation

Biomarkers: Ferritin, C-Reactive Protein, Transforming Growth Factor Beta, Interleukin 10, Interleukin 1 Receptor Antagonist, Interleukin 6, Tumor Necrosis Factor Receptor 1

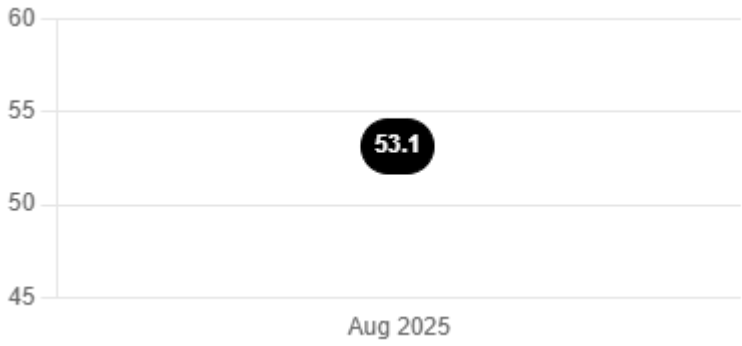
Heart

Biomarkers: Shortness of breath while awake, PCcomponents of Grimage, Previous High Blood Pressure, Previous Heart Attack, Previous Stroke, Homocysteine, BMI



Hormone

Biomarkers: IGF-1, DHEAS

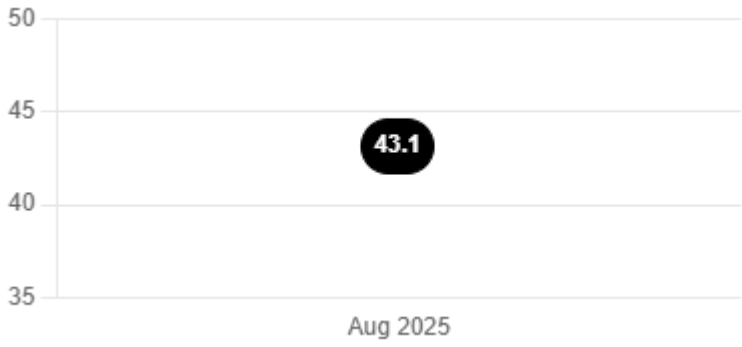


Immune

Biomarkers: Eosinophil Count, Lymphocyte Count, Monocyte Count, Neutrophil Count, Percent Basophils, Percent Eosinophils, Percent Lymphocytes, Percent Monocytes, White Blood Cell Count, Myeloid Dendritic cells (DC-M) Percentage, Plasmacytoid, Dendritic Cells (DC-P) Percentage, NK Cells: CD56HI Percentage, NK Cells: CD56LO Percentage, CD16- Monocytes Percentage, CD16+ Monocytes Percentage, B Cells Percentage, CD8+ T Cells: Central Memory (CM) Percentage, CD4+ T Cells: Central Memory (CM) Percentage, CD8+ T Cells Percentage, CD8+ T Cells: (TemRA) Percentage, CD4+ T Cells: (TemRA) Percentage, CD4+ T Cells Percentage, IgD+ Memory B Cells Percentage, IgD- Memory B Cells Percentage, CD8+ T Cells: Naïve Percentage, CD4+ T Cells: Naïve Percentage, T Cells Percentage, Naive B Cells Percentage, CD8+T Cells: Effector Memory (Tem) Percentage, CD4+ T Cells: Effector Memory (Tem) Percentage, Natural Killer (NK) Cells Percentage, Monocytes Percentage, Dendritic Cells Percentage

Kidney

Biomarkers: Albumin, Urea Nitrogen, Chloride, Bicarbonate, Creatinine, Cystatin C, Potassium, Sodium



Liver

Biomarkers: Albumin, Alkaline Phosphatase, ALT, AST, Bilirubin, Total Protein

Metabolic

Biomarkers: PCSmoking-packyears, Previous Diabetes, C-Reactive Protein, Glucose-Fasting, HDL-Cholesterol, LDL-Cholesterol, Triglycerides, Interleukin-6, BMI, Waist circumference

Lung

Biomarkers: Peak expiratory flow, bicarbonate, chronic lung disease, shortness of breath while awake, persistent wheezing, cough, or bringing up phlegm, PCSmoking-packyears

MusculoSkeletal

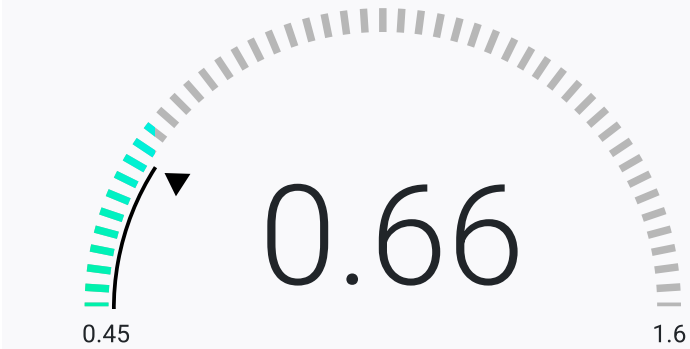
Biomarkers: Vitamin D3, Dehydroepiandrosterone sulphate, IGF-1, Arthritis, Height, Weight, BMI, some diff-mobility, hand grip strength maximum measurement, semi tandem balance test time, timed walk test time, hand grip strength-left hand hand grip strength-right hand, had back problems, some diff-stoop/kneel/crouch, diff-stoop/kneel/crouch, diff-walk one block, diff-walk sev blocks, some diff-walk one block, some diff-walk sev blocks, diff-climb sev flt stair, diff-climb one flt stair, some diff-clmb sev flt str, some diff-clmb 1 flt stair, diff-get up fr chair, some diff-get up fr chair, diff-reach/extnd arms up, some diff-rch/xtnd arms up, diff-lift/carry 10lbs, some diff-lift/carry 10lbs, side-by-side balance test time, full tandem balance test time, Sum of 7 different functional tests, Combination of all balance scores

DEVELOPED WITH DUKE

DunedinPACE of Aging

Chronological Age: 49.2

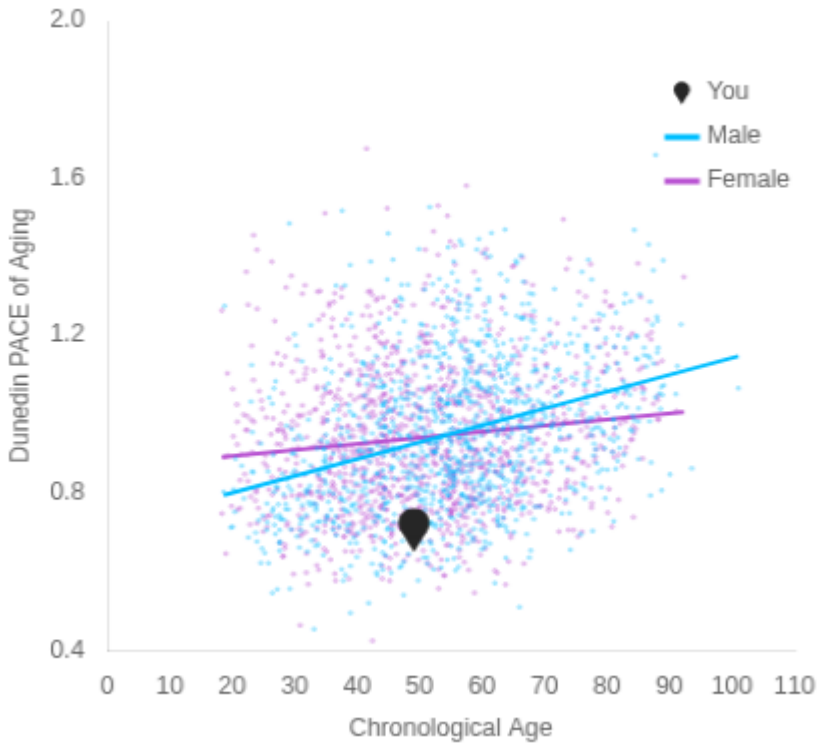
Your Rate of Aging will change based on your lifestyle interventions. Be sure to retest every 3 months to track your progress.



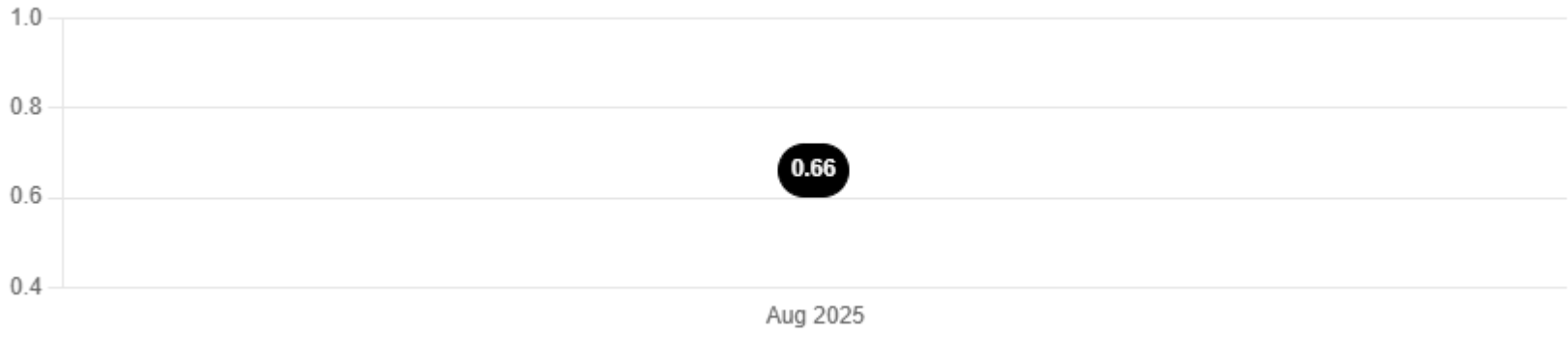
Your score < 1

Each year that passes, your body will biologically age **0.66 years**.

*Based on the last 2-3 months

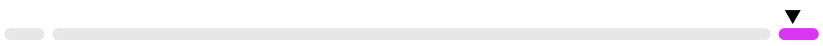
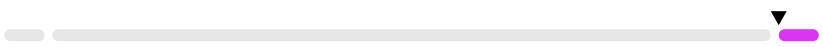


Results Over Time



DISCLAIMER: The population graph for DunedinPACE of Aging is based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

Immune Health

Naïve CD4T	Normal		91.7%
Memory CD4T	High		96.9%
Memory CD8T	Normal		85.4%
Naïve CD8T	Normal		71.9%
Basophils	High		95.2%
B Memory	Normal		92.0%
Naïve B	Normal		58.0%
Regulatory T	Normal		76.8%
Eosinophils	Normal		82.9%
Natural Killer	Normal		73.3%
Neutrophils	Low		2.4%
Monocyte	Normal		71.1%
CD4T / CD8T Ratio	Normal		58.2%

CD4/CD8T cell ratio is incredibly informative on disease. A low or inverted CD4/CD8 ratio is an immune risk phenotype and is associated with altered immune function, immune senescence, and chronic inflammation.

Neutrophil To Lymphocyte	Low		3.1%

The Neutrophil-to-Lymphocyte Ratio (NLR) is obtained by dividing the number of neutrophils by the number of lymphocytes. During physiological stress, neutrophil count increases while lymphocyte count decreases. Physiological stress, driven by illness, inflammation, or psychological stress, can elevate NLR. Therefore, NLR elevation is not exclusive to infection or inflammation but can result from any form of physiological stress, including everyday stress and poor recovery or stress management.

Telomere Length

Chronological Age: 49.2

Shorter telomere length and low telomerase activity are correlated with several chronic preventable diseases.

Telomere Biological Age

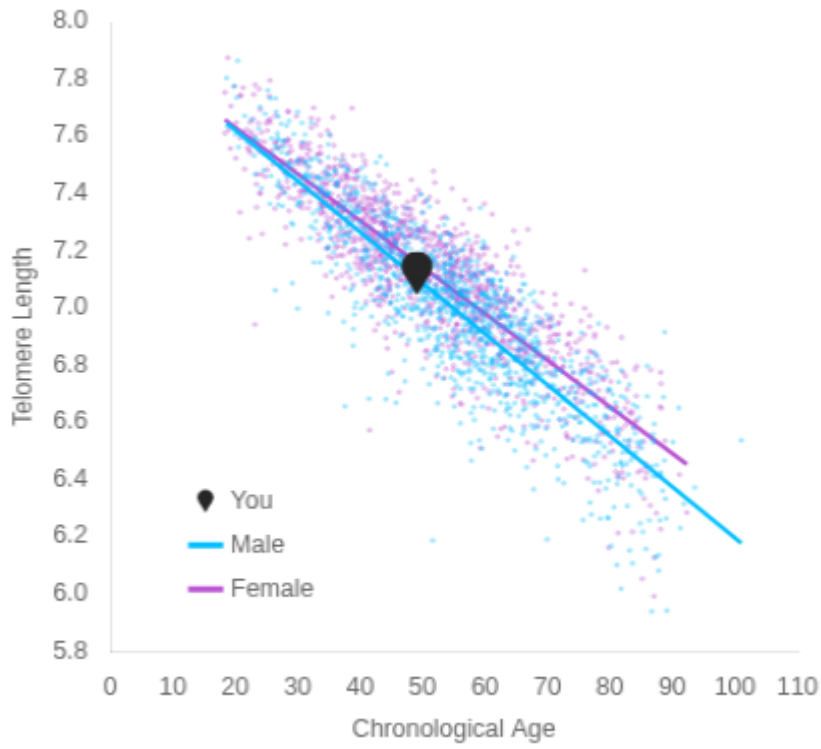
51.6

Older

Telomere Length

7.1

5.5 8.5



Results Over Time

DISCLAIMER: Telomere length is mostly determined based on predetermined genetic function. The population graph is based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

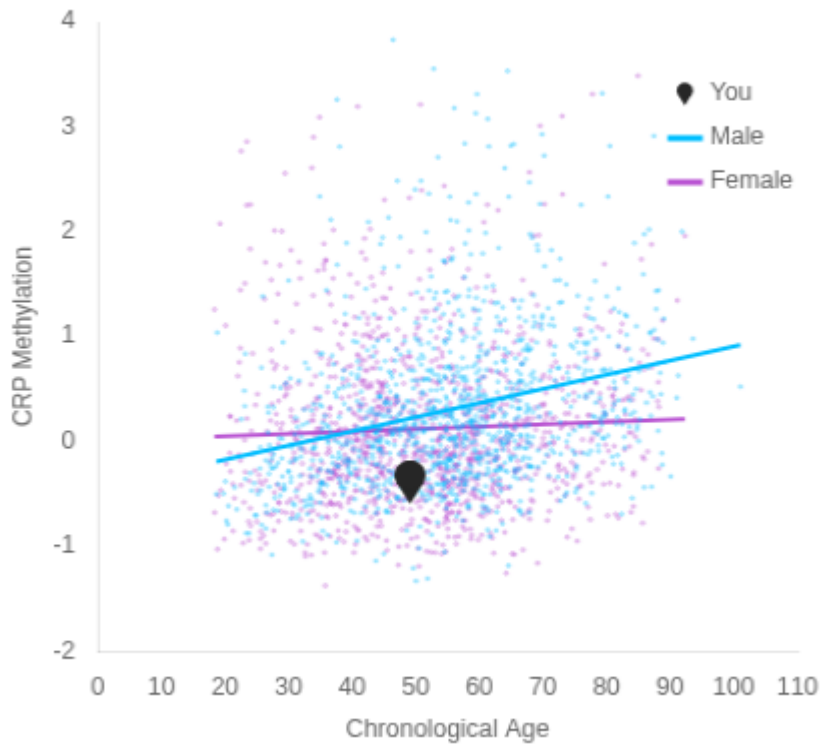
Inflammation

CRP

13.3%

Your CRP methylation level is lower than 86.7% of the population at your same age and sex.

CRP is produced by the liver in response to acute inflammation. DNAm CRP has an inverse relationship with cognitive functions such as memory, speed, and visuospatial functions.

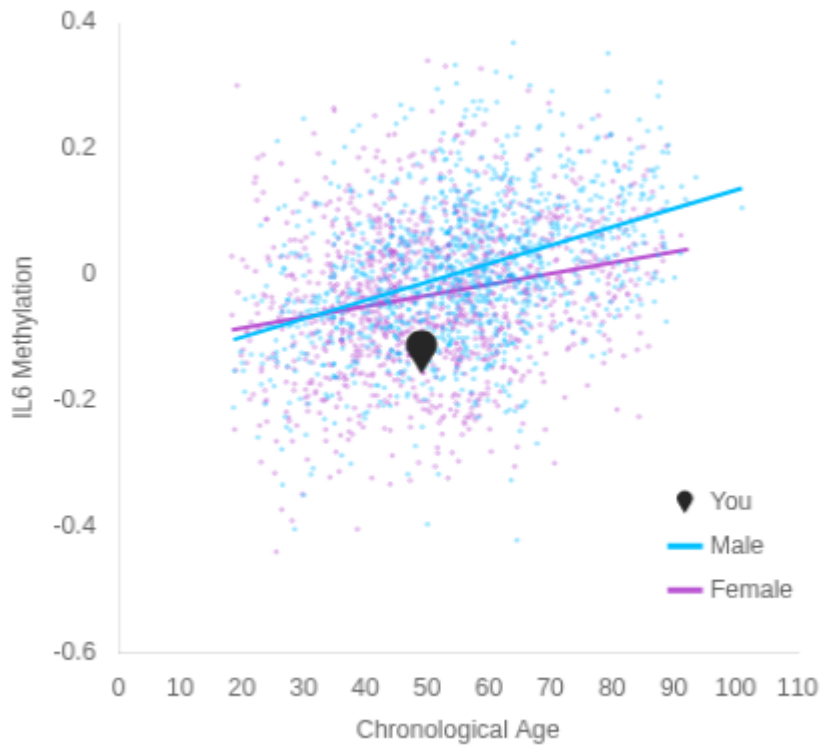


IL-6

14.3%

Your IL-6 methylation level is lower than 85.7% of the population at your same age and sex.

IL-6 is a widely used marker of inflammation and circulating levels of the cytokine typically rise in older age. DNAm IL-6 is positively associated with BMI, self-reported smoking status, and alcohol intake.



DISCLAIMER: The population graph and percentile are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

DEVELOPED WITH HARVARD

OMICm Fit Age

Chronological Age: 49.2

Tells you how old you are according to your physical fitness and functionality.

For every one year older OMICm FitAge is, there is an average 0.29 decrease in relative grip strength and 0.32 increase in BMI. OMICm FitAge has estimated that **high-fit individuals** (classified through VO2max) have a **1.5 to 2.0 younger** OMICm age compared to low/medium-fit individuals in females and males, respectively.

Younger OMICm FitAge was associated with better memory test performance, emphasizing the beneficial role of physical exercise on cognitive health.

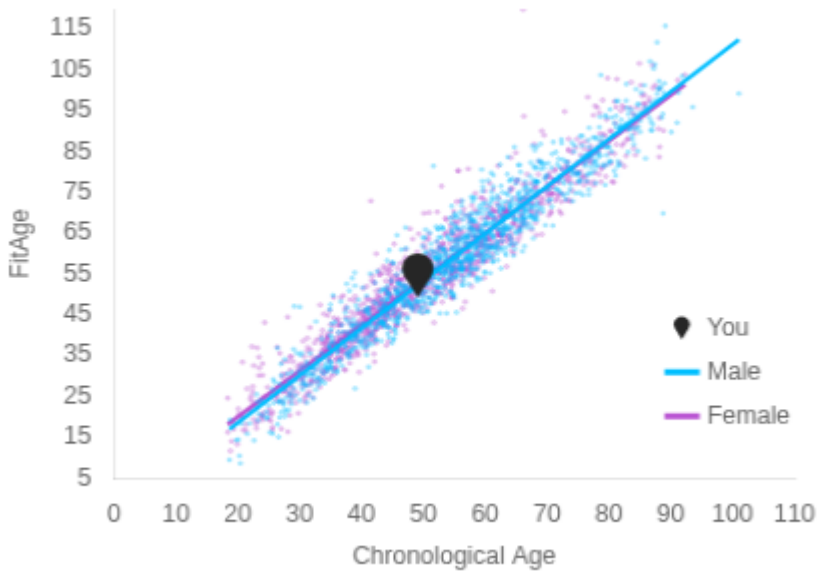
Fit Age

50.2

Older

+ 1.1 yr

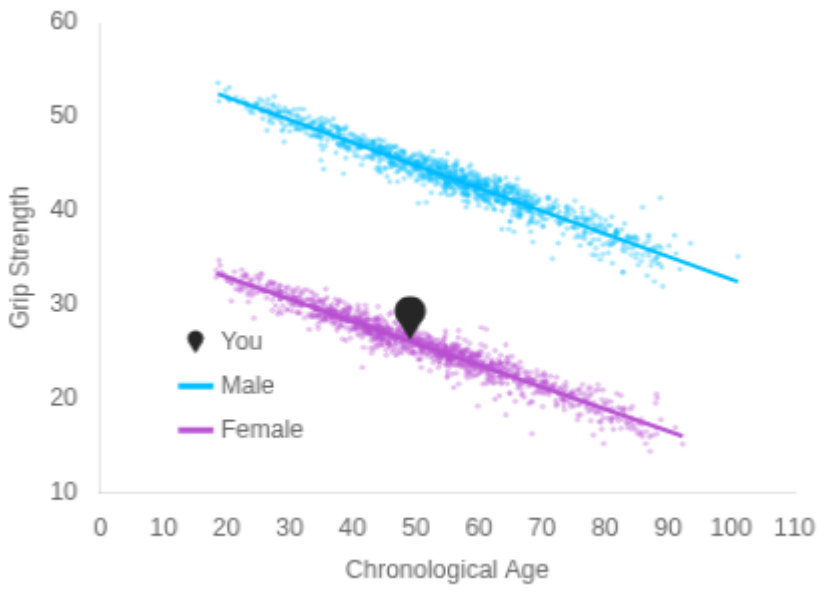
Your FitAge is higher by **1.1 years** compared to people your same age and sex.



Grip Strength Percentile

70.1%

Your Grip Strength is higher than **70.1%** of people of the same age and sex.



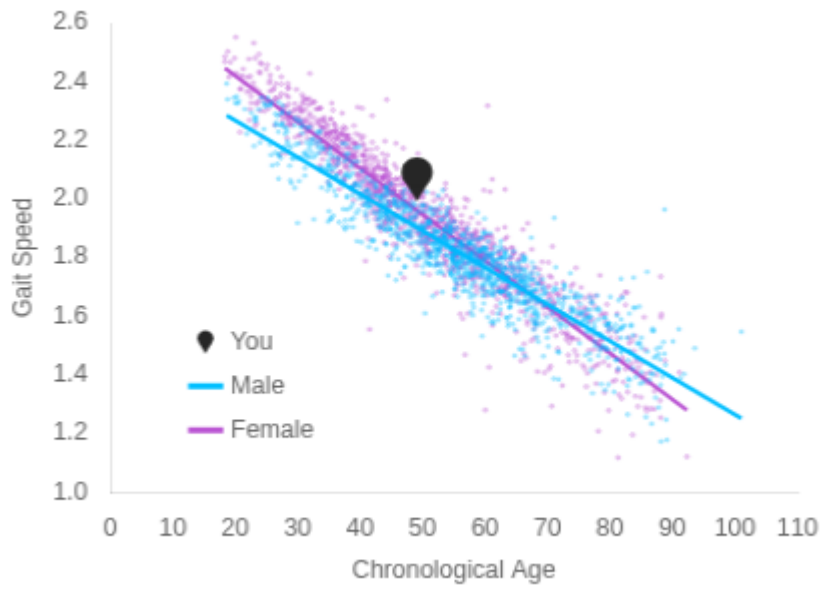
DISCLAIMER: The population graph and percentile are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health. These are our least correlated clocks but can be used for most to gamify fitness.

Gait Speed Percentile

72.0%

Your Gait Speed is higher than **72.0%** of people of the same age and sex.

Gait speed, also known as walking speed, is measured in meters per second.

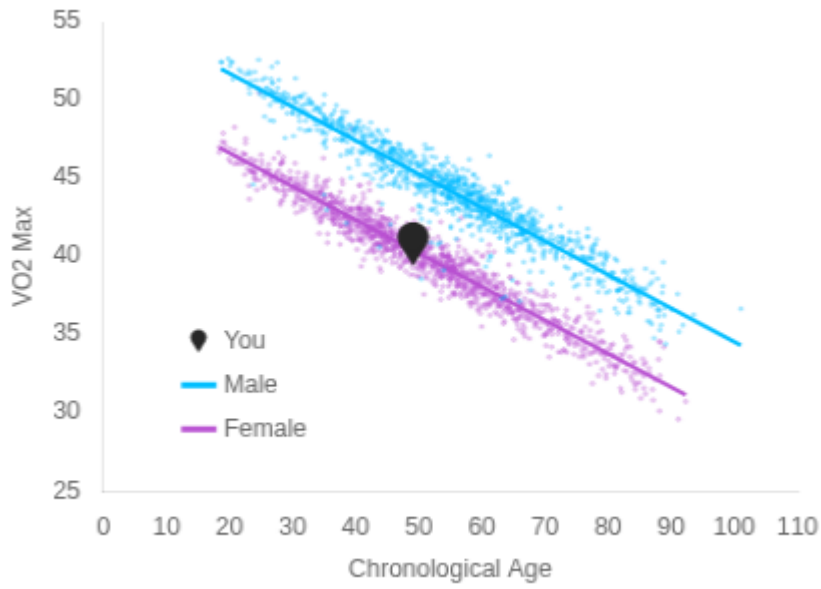


VO2 Max Percentile

25%

Your VO2 Max is higher than **25%** of people of the same age and sex.

Maximal oxygen uptake, or VO2max, is a measure of cardiovascular health and aerobic endurance.

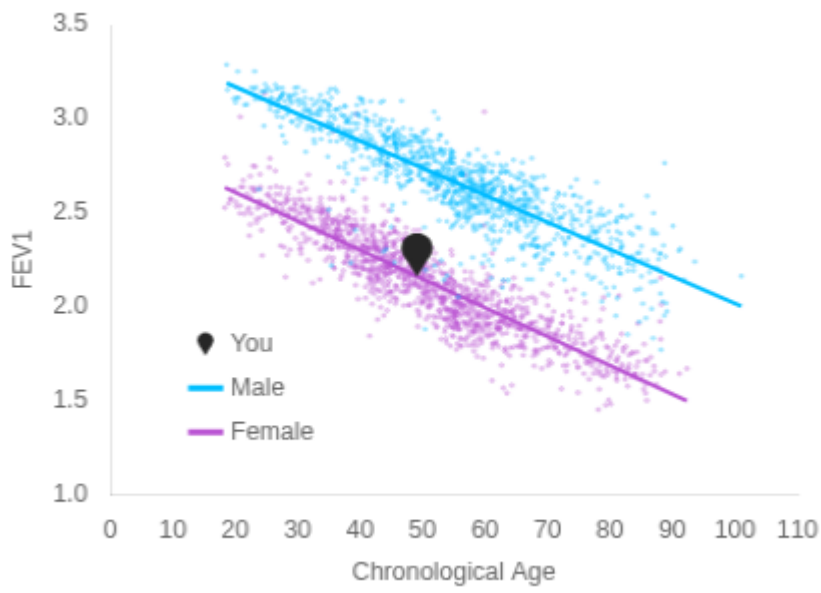


FEV1 Percentile

55.9%

Your FEV1 is higher than **55.9%** of people of the same age and sex.

Forced expiratory volume, also known as FEV1, measures lung function by determining the amount of air forced from the lungs in one second.



DISCLAIMER: The population graph and percentile are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

Relative **Smoking Risk**

Tobacco Smoking Epigenetic Predictor **Low Risk** **26.2%**

High Risk	80+
Intermediate Risk	70 - 80
Low Risk	0 - 70

Relative **Alcohol Risk**

Alcohol Epigenetic Biomarker **Low Risk** **17.8%**

High Risk	80+
Intermediate Risk	70 - 80
Low Risk	0 - 70

Additional Epigenetic Biomarkers

Red Blood Cell Distribution Width

Normal

71.9%

Function

Red Blood Cell Width (RDW): Measures the variation in red blood cell size.

Recommendations

- Correct nutrient deficiencies, especially B12, folate, iron, and vitamin C
- Manage chronic illness and inflammation
- Consider omega-3s
- Avoid alcohol and smoking

Vitamin B12 · Folate · Iron · Vitamin C · Omega-3 Fatty Acids · Red meat · Beans · Fortified cereals · Dairy · Meat · Peppers · Leafy green vegetables · Citrus fruits · Tomatoes

Albumin

Normal

24.2%

Function

Albumin: A protein in the blood that helps maintain oncotic pressure and transport substances.

Recommendations

- If applicable, consume high-proten foods
- Diversify protein sources
- Consider vitamin D and omega-3-rich foods or supplements.
- Manage liver and kidney health
- Limit nephrotoxic medications

Vitamin D · Omega-3 Fatty Acids · Lean meats · Fish · Poultry · Eggs · Dairy · Legumes · Nuts

Fasting Glucose

Normal

13.8%

Function

Glucose: Blood sugar level; essential for assessing metabolic health and diagnosing diabetes.

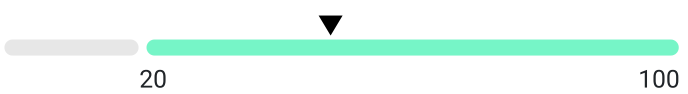
Recommendations

- Control carbohydrated intake when applicable
- Stay active
- Manage weight
- Avoid sugar
- Manage stress
- Consider medications if advised by your physician
- Consider supplements like ALA, berberine, or dihydroberberine

Alpha Lipoic Acid · Berberine · Dihydroberberine · Lean proteins · Healthy fats · Fiber-rich foods

Hemoglobin

Normal



48.5%

Function

Hemoglobin: A protein in red blood cells that carries oxygen; critical for evaluating oxygen transport and anemia.

Recommendations

- Correct nutrient deficiencies, especially folate, iron, B12, and vitamin C.
- Consider EPO in the setting of CKD
- Manage chronic conditions
- Stay active and hydrated

Vitamin B12 · Folate · Iron · Vitamin C · Eggs

Additional Epigenetic Biomarkers

HbA1c

Normal

60.1%

Function

HbA1c: Glycated hemoglobin; indicates average blood sugar levels over the past 2–3 months.

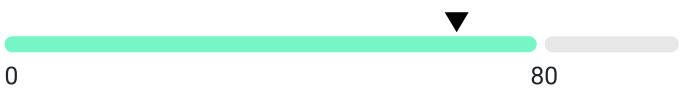
Recommendations

- Consume low-glycemic balanced meals
- Exercise regularly
- Pursue weight loss if applicable
- Reduce sugar intake
- Manage stress
- Consider medications if advised by your physician
- Consider supplements like ALA, berberine, or dihydroberberine

Alpha Lipoic Acid · Berberine · Dihydroberberine · Lean proteins · Healthy fats · Fiber-rich foods

Blood Urea Nitrogen

Normal



67.2%

Function

Blood Urea Nitrogen (BUN): Measures urea levels in the blood, indicating kidney function and protein metabolism.

Recommendations

- Hydrate regularly
- If applicable, moderate protein intake
- Manage any kidney or liver disease
- Avoid nephrotoxic drugs

Alkaline Phosphatase

Normal

28.6%

Function

Alkaline Phosphatase: An enzyme found in the liver, bones, and other tissues; elevated levels indicate liver or bone issues.

Recommendations

- Correct Vitamin D deficiency
- Treat liver or bone disease if applicable
- Eat a diet low in saturated fats
- Exercise regularly
- Avoid alcohol and toxins

Vitamin D

Insulin-like Growth Factor-Binding Protein 2

Normal

61.4%

Function

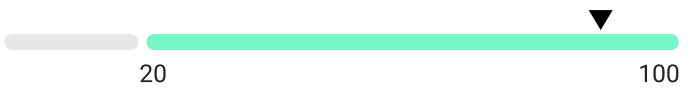
Insulin-Like Growth Factor-Binding Protein 2 (IGFBP2): Regulates insulin-like growth factor activity; linked to metabolism and aging.

Recommendations

- Regularly practice calorie restriction under healthcare provider guidance
- Engage in aerobic and resistance exercise to improve insulin sensitivity
- Consume balanced meals
- Manage stress
- Reduce excessive protein intake
- Improve sleep to support growth hormone function

Additional Epigenetic Biomarkers

Carboxypeptidase B2 Normal



88.7%

Function

Carboxypeptidase B2: An enzyme involved in clot dissolution and complement regulation.

Recommendations

- Consume adequate protein
- Correct any nutrient deficiencies, especially vitamin K and omega-3
- Control inflammation through an anti-inflammatory diet and regular exercise

Omega-3 Fatty Acid | Vitamin K

Ribonuclease pancreatic Normal

39.4%

Function

Ribonuclease Pancreatic: An enzyme that degrades RNA; linked to digestive and cellular processes.

Recommendations

- Consider an anti-inflammatory diet
- Regulate blood sugar levels
- Manage stress
- Maintain an active lifestyle

Omega-3 Fatty Acid | Anti-inflammatory diet

Inter-alpha-trypsin Inhibitor Heavy Chain H3 Normal

50.6%

Function

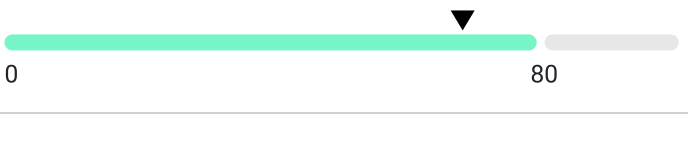
Inter-Alpha-Trypsin Inhibitor Heavy Chain H3: A protein involved in inflammation and tissue repair.

Recommendations

- Identify and control sources of inflammation, especially insulin resistance, gut microbiome imbalances, dietary factors, lipids, toxins, autoimmunity, and environmental exposures
- Maintain an active lifestyle
- Consider an anti-inflammatory diet

Anti-inflammatory diet

Vanillactic Acid Normal



68.3%

Function

Vanillactate: A product of gut microbial metabolism of phenolic compounds; involved in energy pathways.

Recommendations

- Manage blood pressure
- Reduce sodium intake
- Eat a heart-healthy diet
- Reduce stress
- Check heart function

Additional Epigenetic Biomarkers

Creatinine

Normal

70.1%

Function

Creatinine: A byproduct of muscle metabolism; used to evaluate kidney function.

Recommendations

- Hydrate regularly
- If applicable, reduce red meat intake
- Control diabetes and hypertension
- Avoid nephrotoxic drugs
- Note that creatine can affect this level

Uridine

Normal

46.0%

Function

Uridine: A nucleoside involved in RNA synthesis and energy metabolism.

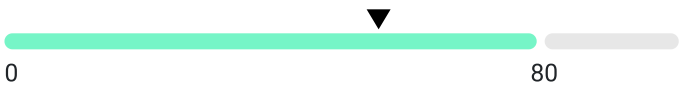
Recommendations

- Incorporate uridine-rich foods like tomatoes, broccoli, and mushrooms, which are synergistic with choline and DHA

Uridine · Choline · DHA · Tomatoes · Broccoli · Mushrooms · Eggs · Fatty fish

1-margaroyl-glycerophospholipid(GPE)(17:0)*

Normal



55.8%

Function

1-Margaroyl-Glycerophospholipid (GPE) (17:0): A glycerophospholipid; essential for cell membrane stability.

Recommendations

- If applicable, reduce saturated fat intake
- Increase omega-3 intake
- Consider anti-inflammatory agents like curcumin or green tea extract

Omega-3 Fatty Acid · Curcumin · Green tea extract · Green tea

4-Methoxyphenol Sulfate

Normal

72.5%

Function

4-Methoxyphenol Sulfate: A sulfated metabolite of phenolic compounds; reflects detoxification processes.

Recommendations

- Avoid woodsmoke exposure and dark-aged beer
- Avoid synthetic fragrances

Additional Epigenetic Biomarkers

N-acetyl-isoputreanine

Normal

56.5%

Function

N-Acetyl-Isoputreanine: A metabolite of polyamine biosynthesis; associated with cellular growth and repair.

Recommendations

- Consider NAC supplementation

NAC

Gluconate

Normal

40.3%

Function

Gluconate: A metabolite of glucose; involved in carbohydrate metabolism and energy production.

Recommendations

- Cut added sugar, added fat, and processed foods
- Exercise regularly
- Consider ALA, berberine, or dihydroberberine
- Limit wine

Alpha Lipoic Acid · Berberine · Dihydroberberine

Carotene Diol

Normal

94.7%

Function

Carotene Diol: A carotenoid metabolite; an antioxidant linked to vitamin A activity. Important for eye and brain health.

Recommendations

- Consume more carotenoid-rich foods like carrots, kale, and spinach

Carrots · Kale · Spinach

4-hydroxyphenylacetylglutamine

Normal

68.3%

Function

4-Hydroxyphenylacetylglutamine: A gut microbial metabolite of tyrosine; linked to gut health and kidney function.

Recommendations

- Manage blood pressure
- If applicable, reduce protein intake
- Increase fiber and fermented foods
- Consider prebiotics or probiotics
- Stay hydrated
- Protect kidney health

Prebiotics · Probiotics · Kefir · Yogurt · Sauerkraut · Fiber-rich foods

Additional Epigenetic Biomarkers

Androsterone Sulfate — Normal

85.9%

Function

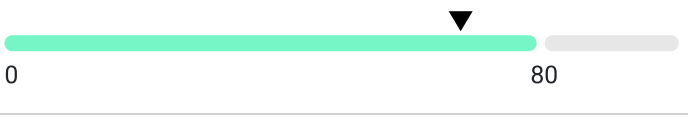
Androsterone Sulfate: A steroid hormone metabolite downstream of testosterone; reflects androgen activity and metabolism.

Recommendations

- Correct any nutrient deficiencies, especially zinc, magnesium, vitamin D, and omega-3
- Optimize sleep
- Manage stress
- Consider hormone therapy if needed
- Maintain an active lifestyle

Zinc · Magnesium · Vitamin D · Omega-3 · DHEA

3-Ureidopropionate — Normal



67.9%

Function

3-Ureidopropionate: A product of pyrimidine metabolism; involved in nitrogen recycling.

Recommendations

- If applicable, reduce excessive protein intake, especially those rich in pyrimidines like organ meats
- Stay hydrated
- Monitor kidney and liver health

Matrix-remodeling-associated protein 5 — Normal

11.3%

Function

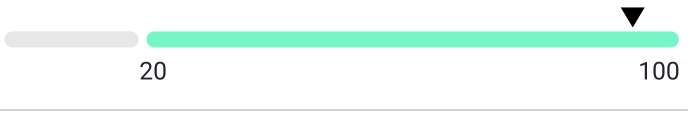
Matrix-Remodeling-Associated Protein 5: A protein involved in extracellular matrix remodeling and tissue repair.

Recommendations

- Reduce general systemic inflammation through an anti-inflammatory diet and an active lifestyle
- Reduce stress

Anti-inflammatory diet

Bone Morphogenetic protein 1 — Normal



93.5%

Function

Bone Morphogenetic Protein 1 (BMP1): A protein involved in bone formation and extracellular matrix remodeling.

Recommendations

- Consume calcium-rich and vitamin D-rich foods
- Consider calcium or vitamin D supplementation
- Increase weight-bearing exercise
- Ensure adequate protein intake

Calcium · Vitamin D · Green leafy vegetables · Nuts · Dairy · Fatty fish

Additional Epigenetic Biomarkers

Versican core protein — Normal

71.3%

Function

Versican Core Protein: A proteoglycan in the extracellular matrix; involved in tissue remodeling and inflammation.

Recommendations

- Avoid being underweight
- Increase moderate-intensity exercise

Cystine — Normal

74.1%

Function

Cystine: A disulfide form of cysteine; indicates oxidative stress and protein turnover.

Recommendations

- Avoid excessive methionine-rich protein sources like eggs, dairy, certain nuts, and seeds
- Stay hydrated
- Increase vitamins B6, B9, and B12 to support homocysteine metabolism

Vitamin B6 · Vitamin B9 · Vitamin B12

Mimecan — Normal

42.3%

Function

Mimecan (Osteoglycin): A small leucine-rich proteoglycan; involved in bone mineralization and cardiovascular health.

Recommendations

- Consider an anti-inflammatory diet
- Manage stress
- Maintain an active lifestyle
- If applicable, manage underlying cardiovascular or fibrotic conditions
- Monitor blood pressure and cholesterol

Omega-3 Fatty Acid

Histone H2B type 1-K — Normal

13.2%

Function

Histone H2B Type 1-K: A histone protein involved in chromatin structure and epigenetic regulation.

Recommendations

- Limit UV exposure
- Increase antioxidant intake
- Avoid smoke exposure
- Manage stress
- Maintain an active lifestyle