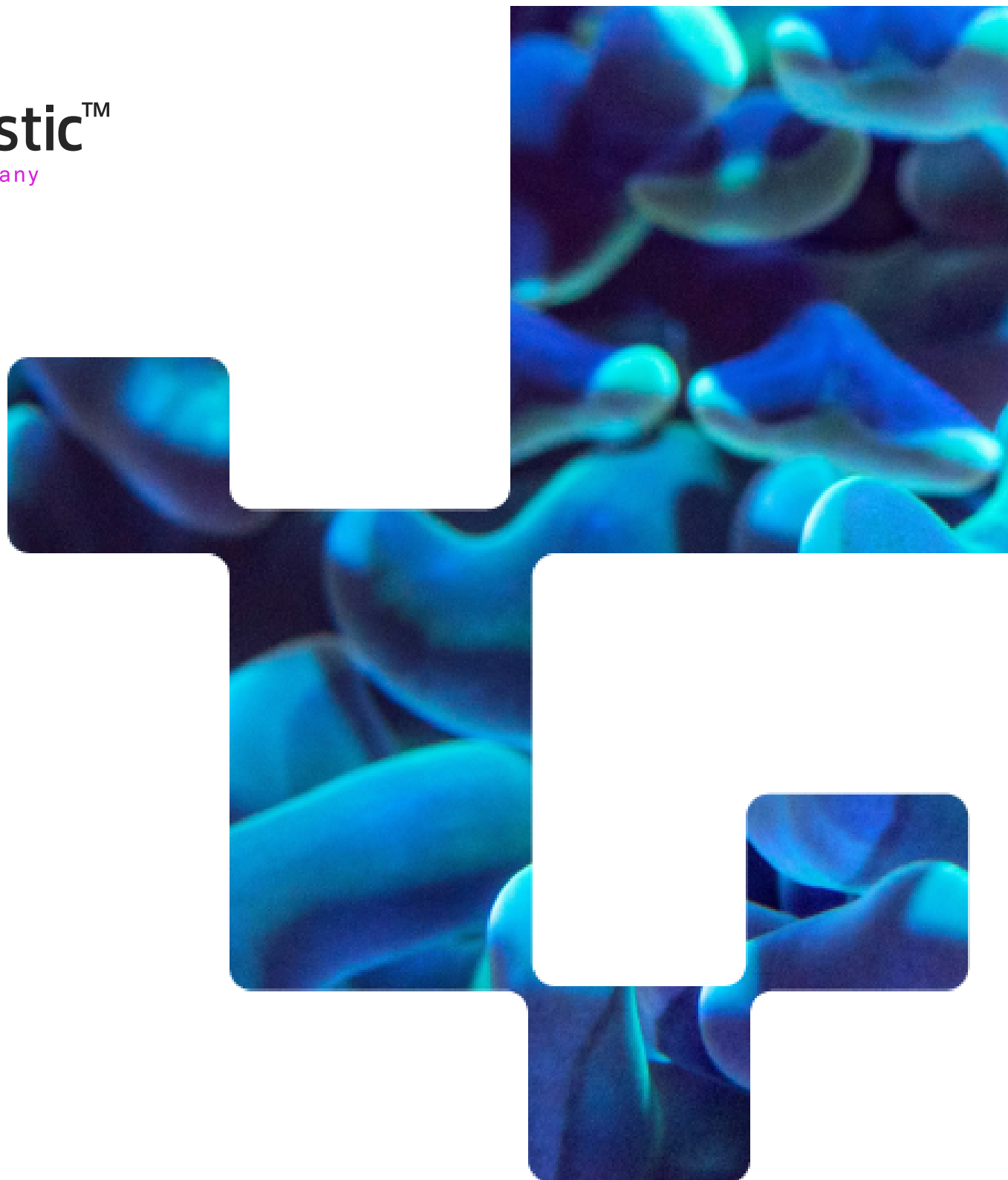




Advanced TruAge Report

Jane Doe

Age: 29 | Sex: Female

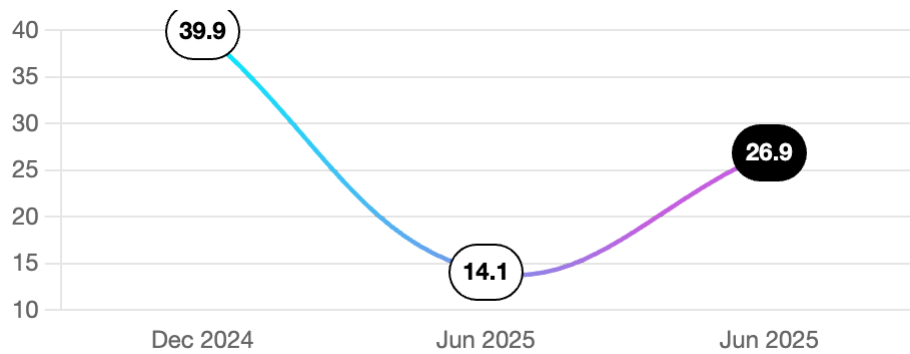
ID#: VBC43XM

Collected: 06/06/2025 | Reported: 06/11/2025

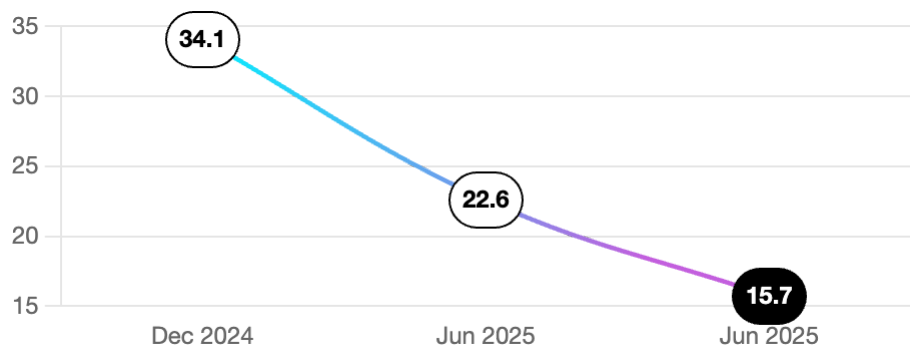
Aging Summary

 Chronological Age: 29.4

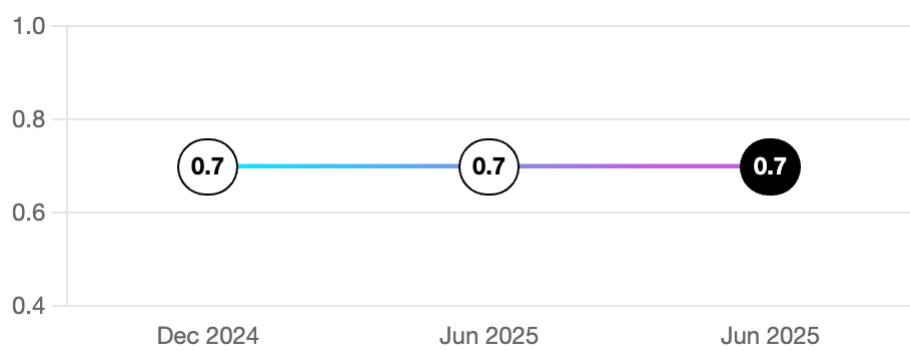
 OMICm Age



 Symphony Age



 Pace of Aging



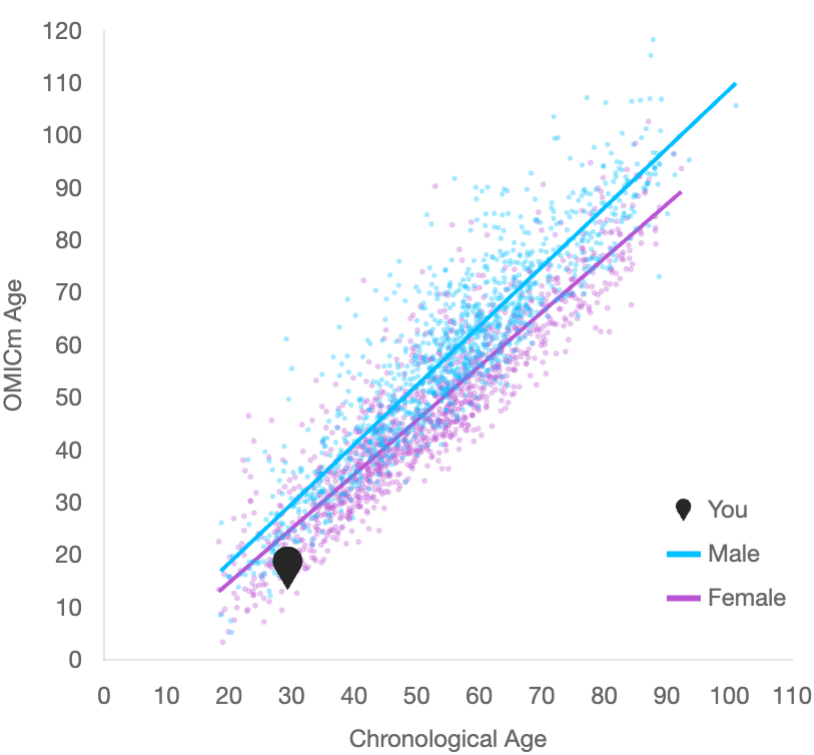
OMICm Age

14.1

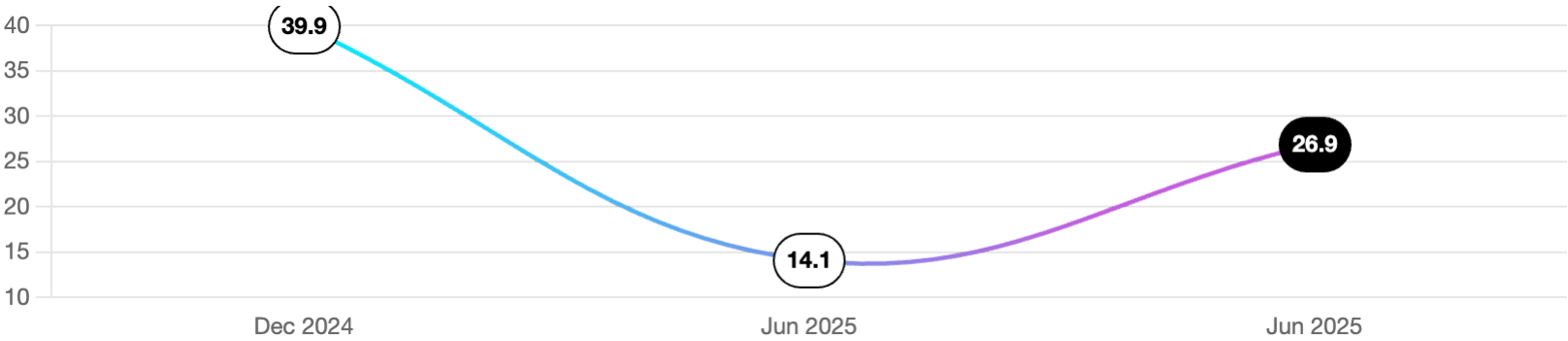
Younger ↘

10.2%

Your OMICm Age is **lower** than 89.8% 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

Cystine High 0 80 ▼ 87.9%	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 High 0 80 ▼ 87.6%	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
1-Stearoyl-2-adrenoyl-GPC (18:0/22:4)* Low 20 100 ▼ 14.3%	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

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

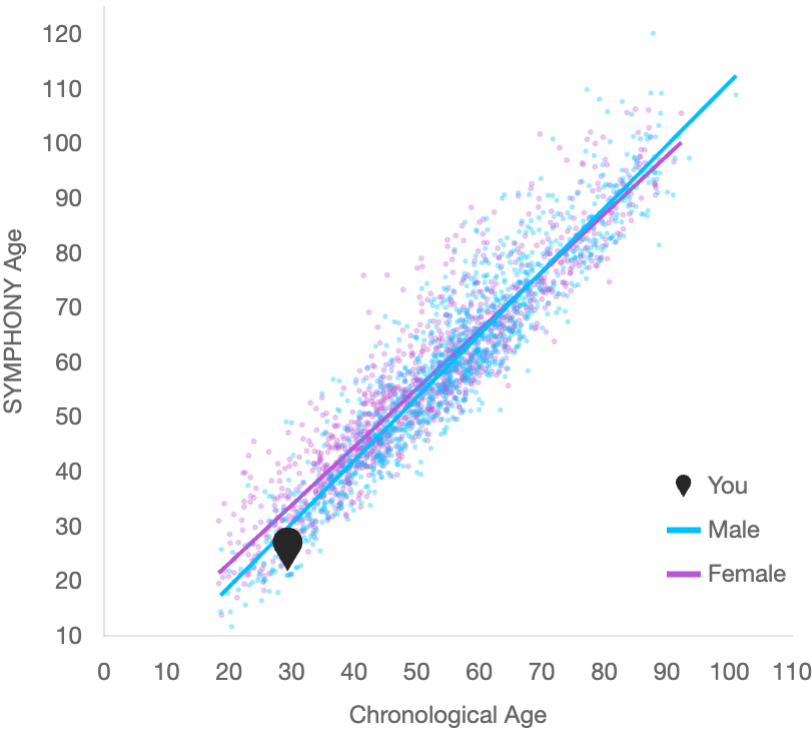
SYMPHONY Age

22.6

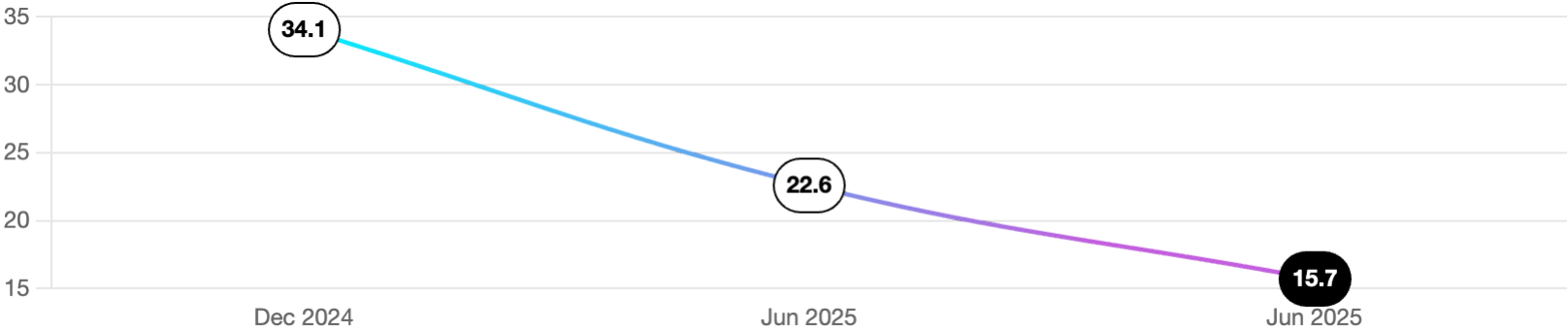
Younger ↘

6.8%

Your SYMPHONY Age is **lower** than 93.2% 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

Below Chronological Age Chronological Age Above Chronological Age



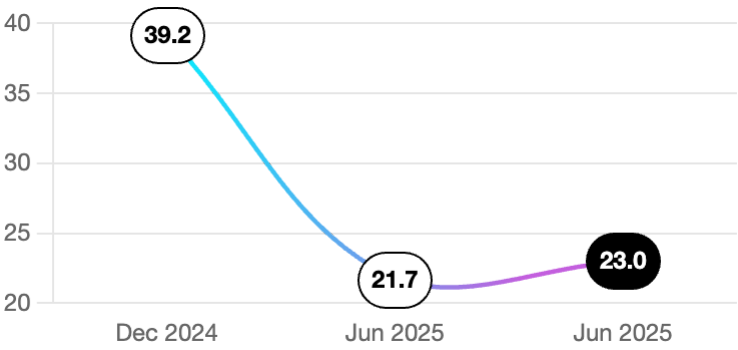
How was this clock created and designed?

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

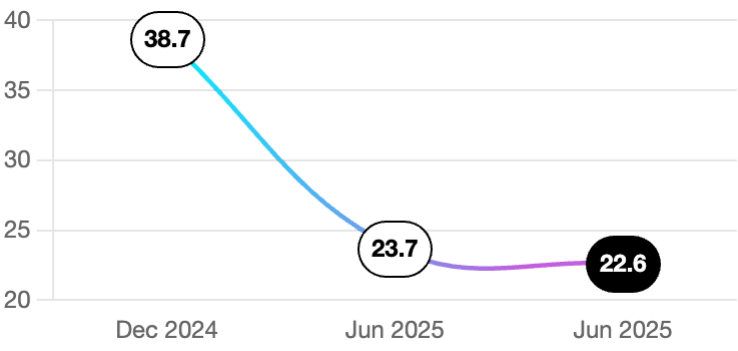
 Blood

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



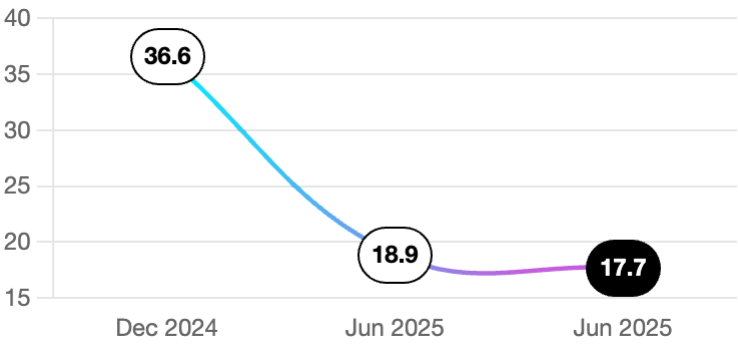
 Brain

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



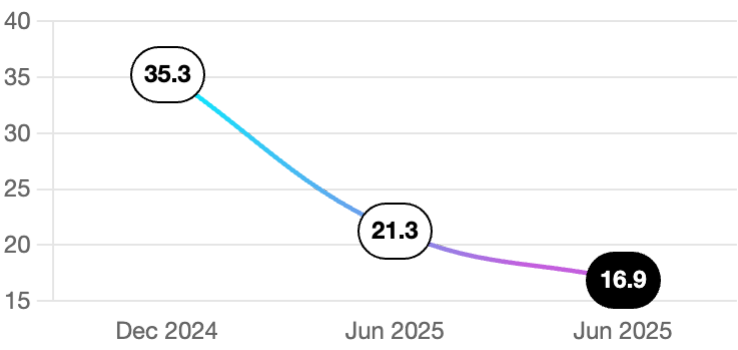
 Inflammation

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



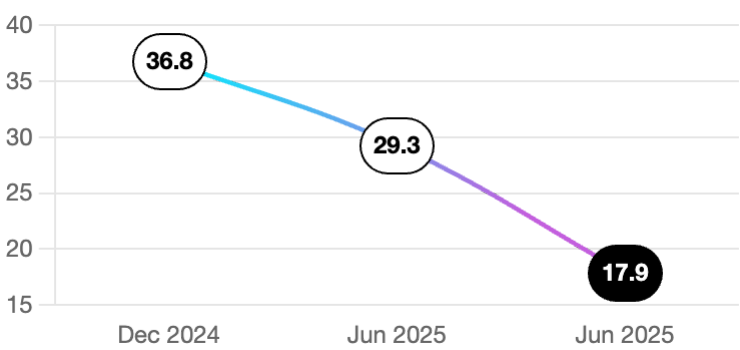
 Heart

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



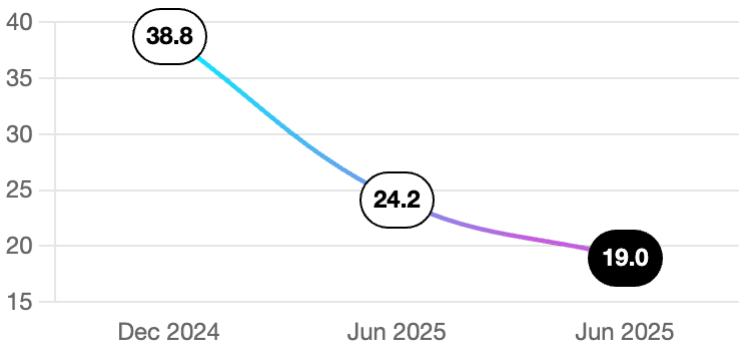
 Hormone

Biomarkers: IGF-1, DHEAS



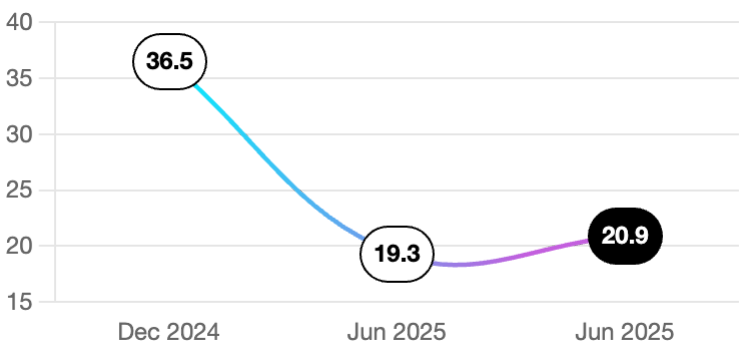
 Immune

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



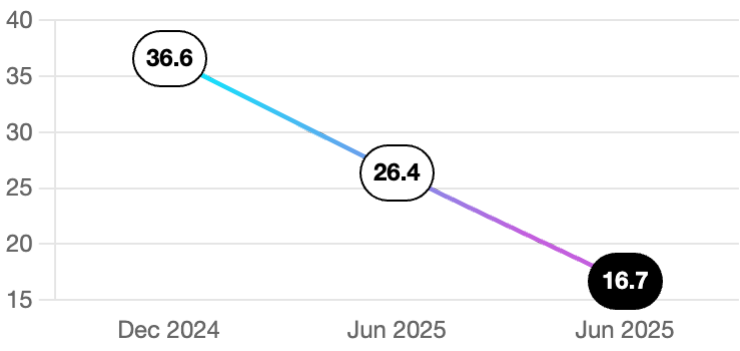
 Kidney

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



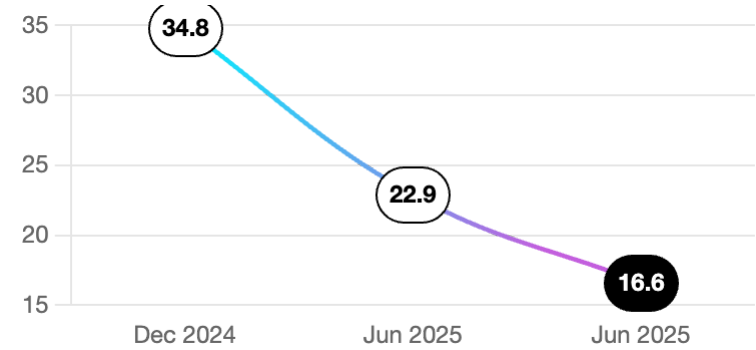
 Liver

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



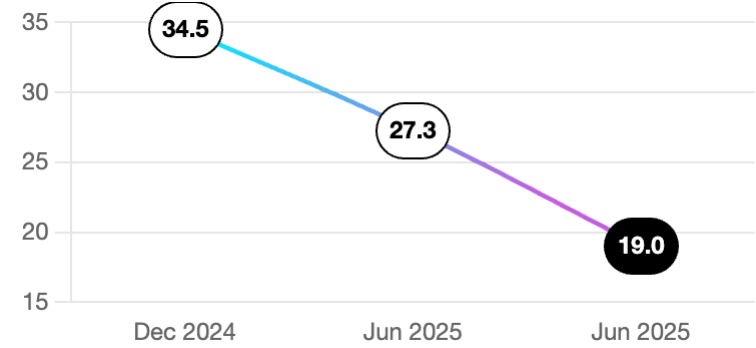
 Metabolic

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



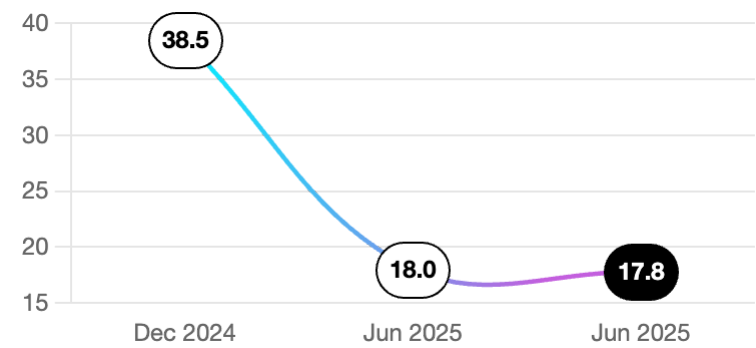
 Lung

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



 MusculoSkeletal

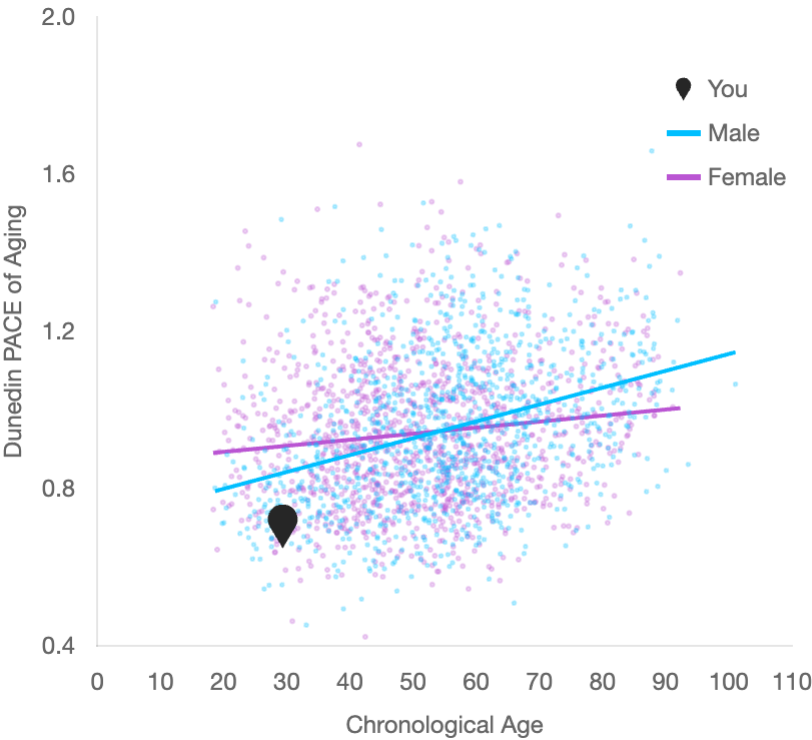
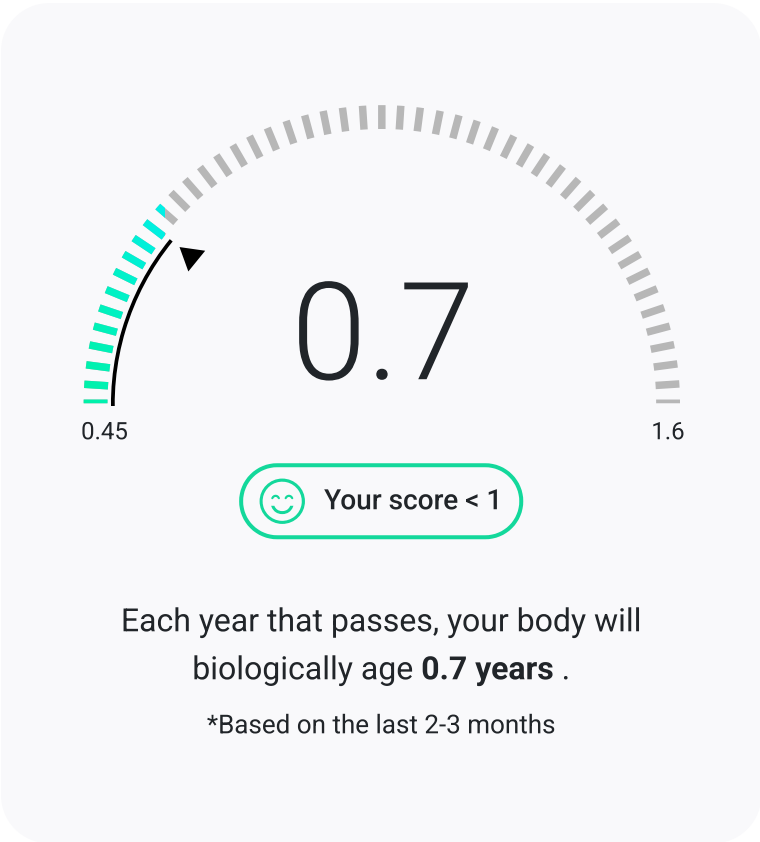
Biomarkers: Vitamin D3, Dehydroepiandrosterone sulphate, IGF-1, Arthritis, Height, Weight, BMI, some diff-mobility, hand grip strength maximum measurement, semi tandem balance test time, timed walk test time, hand grip strength-left hand hand grip strength-right hand, had back problems, some diff-stoop/kneel/crouch, 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



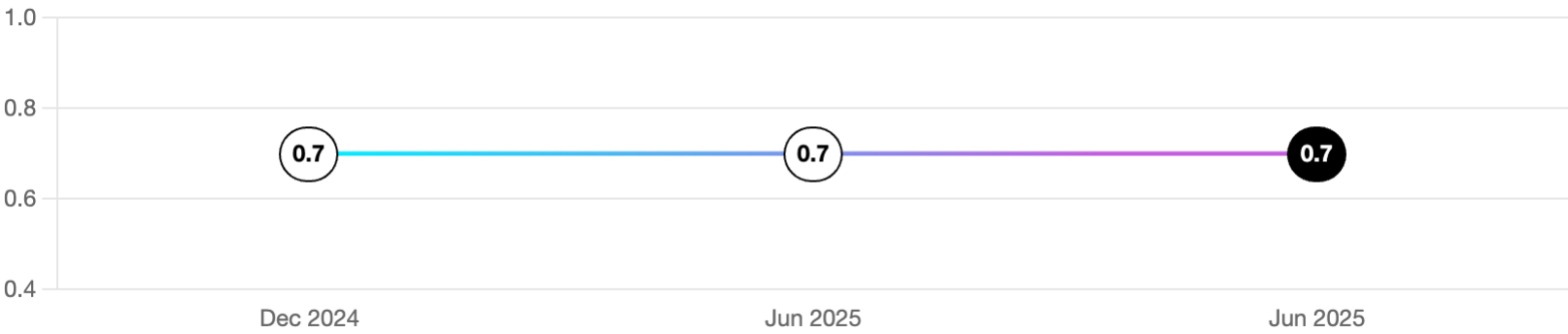
DunedinPACE of Aging

 Chronological Age: 29.4

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

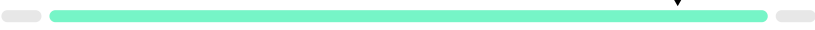
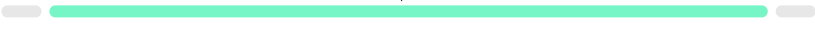


Results Over Time



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		68.6%
Memory CD4T	Normal		69.2%
Memory CD8T	Normal		44.1%
Naïve CD8T	Normal		83.1%
Basophils	Normal		83.1%
B Memory	Normal		61.9%
Naïve B	Normal		68.6%
Regulatory T	Normal		78.0%
Eosinophils	Normal		41.5%
Natural Killer	Normal		88.0%
Neutrophils	Normal		25.4%
Monocyte	Normal		83.9%
CD4T / CD8T Ratio	Normal		49.1%

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

A horizontal bar chart for the Neutrophil To Lymphocyte ratio. The bar is green and extends to the right. A black downward arrow is positioned above the bar. The word 'Normal' is written inside a green rounded rectangle at the start of the bar. The value '22.9%' is written inside a white rounded rectangle at the end of the bar.

Normal 22.9%

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.

 Chronological Age: 29.4

Telomere Biological Age

20.2

Younger ↘

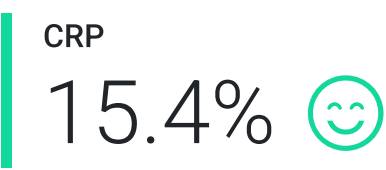
Telomere Length

7.6

5.5 7.5 8.5

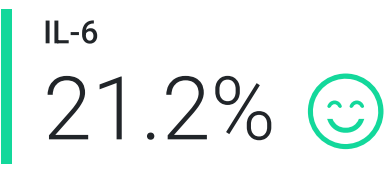
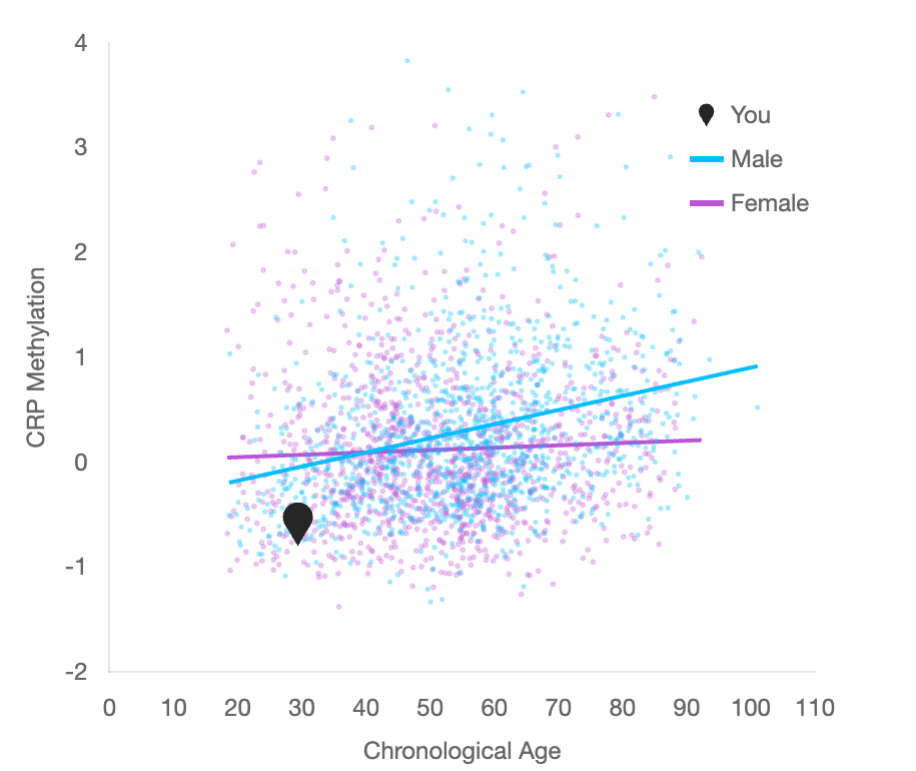
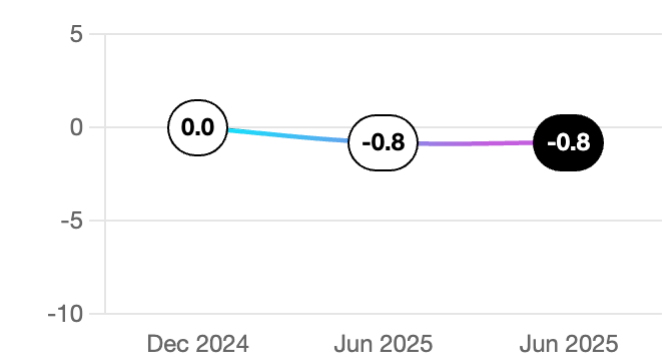


Inflammation



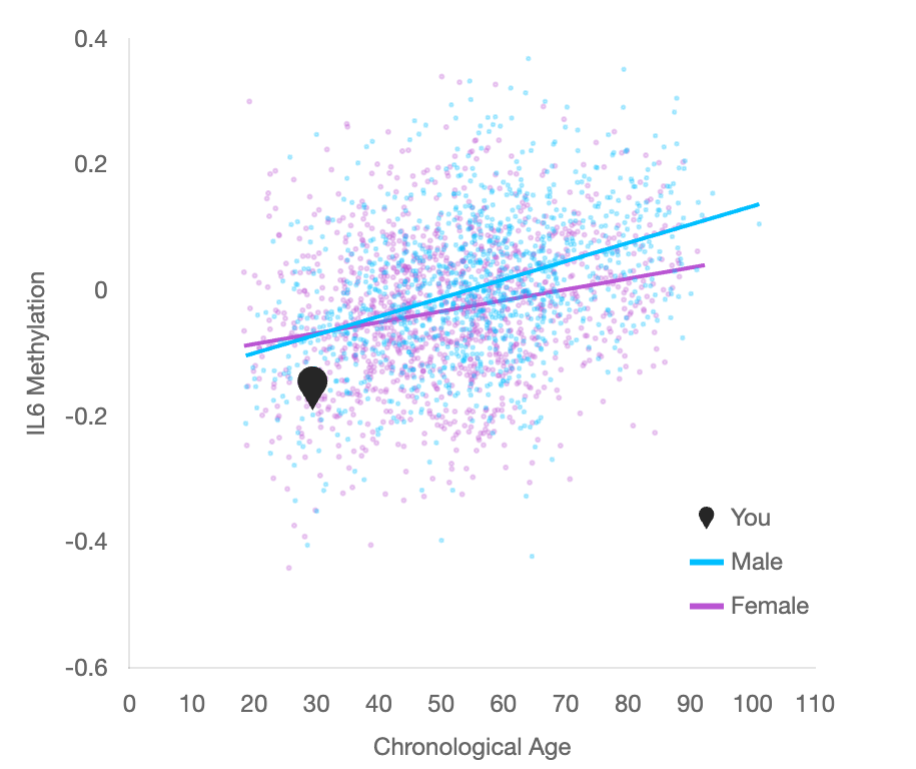
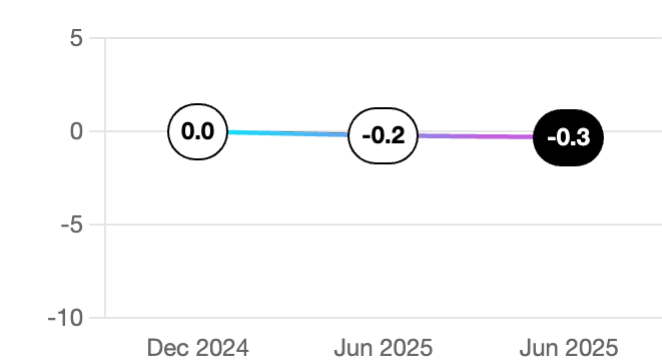
Your CRP methylation level is lower than 84.6% of the population at your same age and sex.

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.



Your IL-6 methylation level is lower than 78.8% 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.

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.

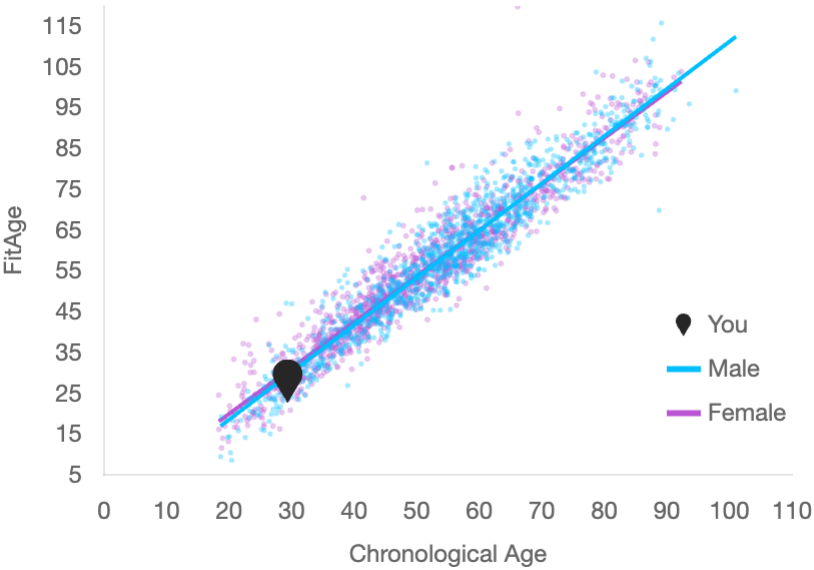
Fit Age

23.6

Younger ↘

-5.8 yr 😊

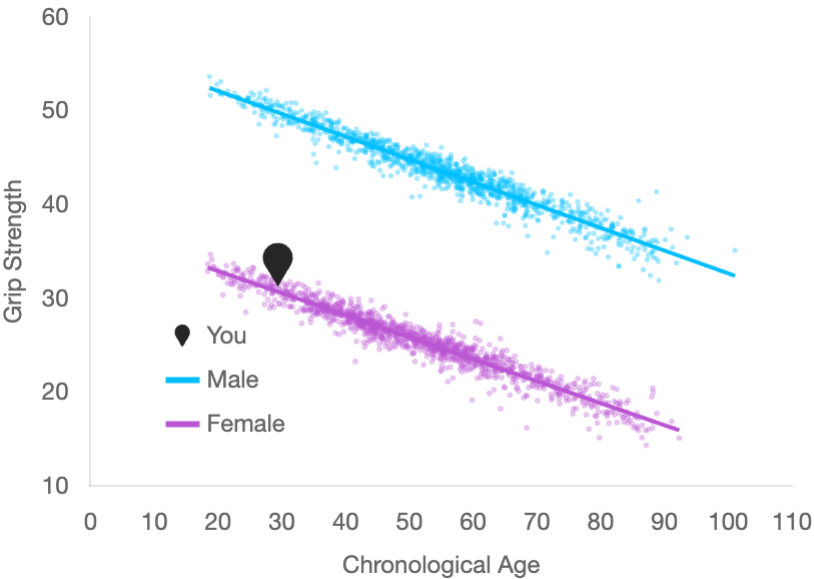
Your FitAge is lower by 5.8 years compared to people your same age and sex.



Grip Strength Percentile

78.0% 😊

Your Grip Strength is higher than 78.0% of people of the same age and sex.



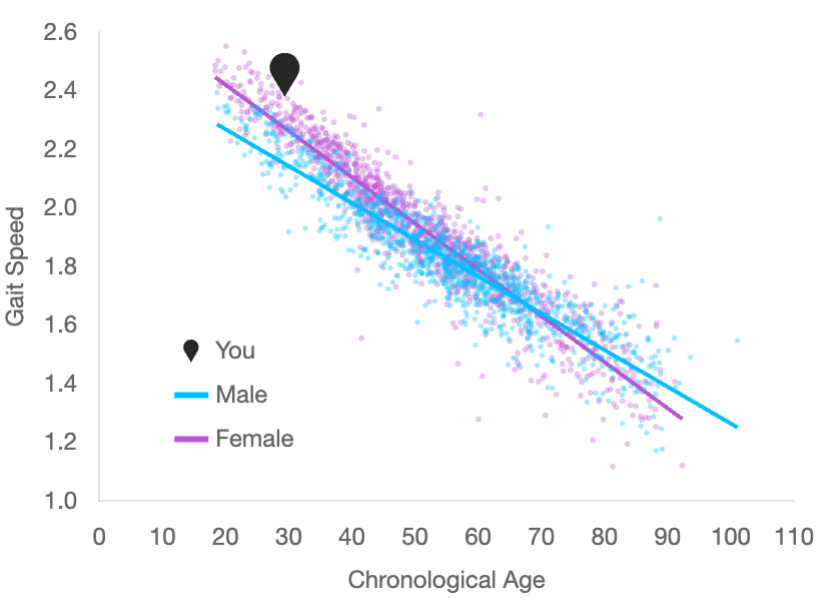
DISCLAIMER: The population graph and percentile are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health. These are our least correlated clocks but can be used for most to gamify fitness.

Gait Speed Percentile

87.3% 😊

Your Gait Speed is higher than 87.3% of people of the same age and sex.

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

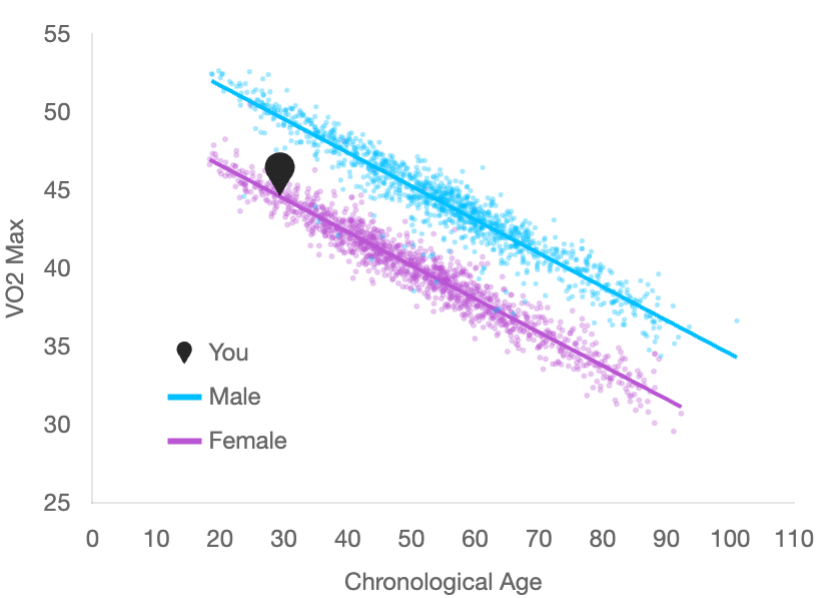


VO2 Max Percentile

55.6% 😊

Your VO2 Max is higher than 55.6% of people of the same age and sex.

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

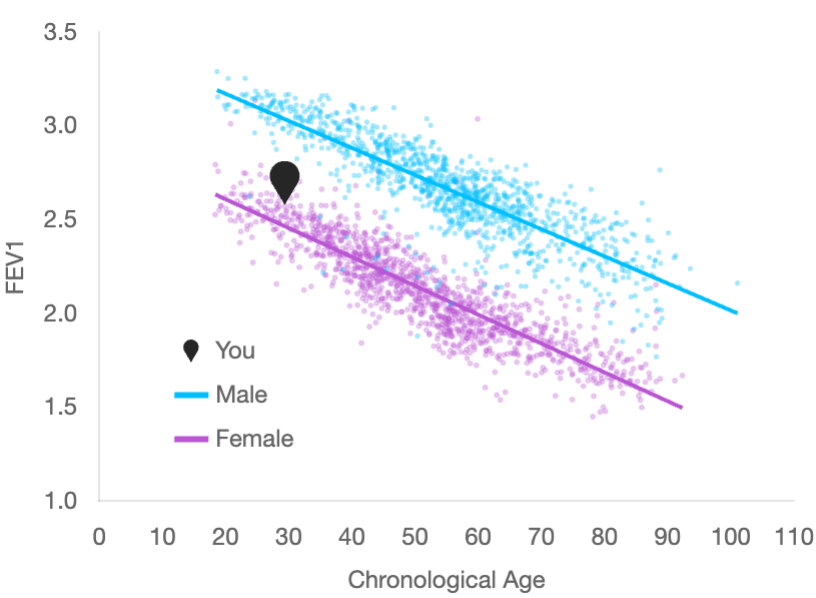


FEV1 Percentile

86.3% 😊

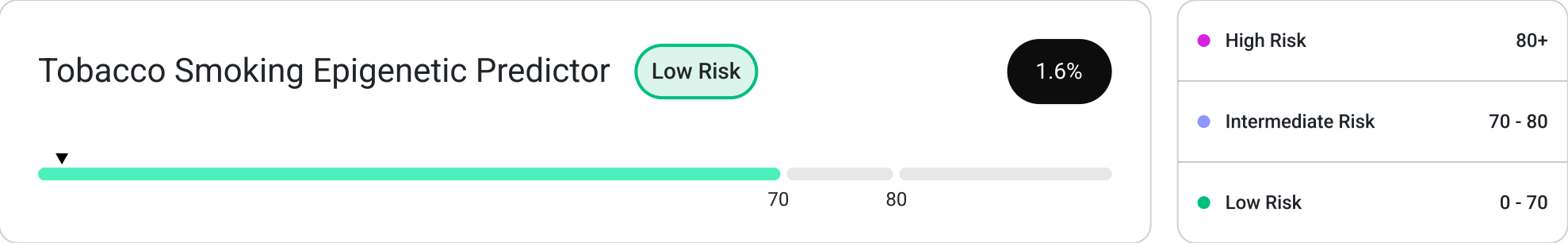
Your FEV1 is higher than 86.3% of people of the same age and sex.

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

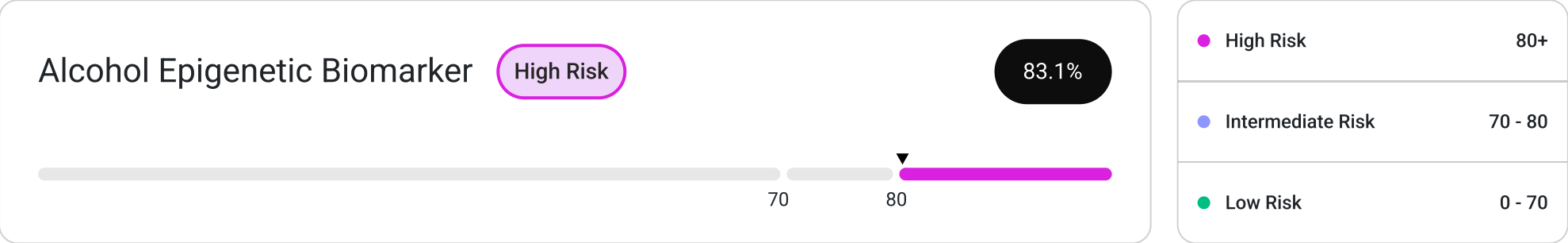


DISCLAIMER: The population graph and percentile are based on observed and validated data patterns from an equal distribution of Harvard research participants and TruDiagnostic clients to emulate a population of average health.

Relative Smoking Risk



Relative Alcohol Risk



Additional Epigenetic Biomarkers

Albumin Normal 20 100 95%	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 Poultry Fish Eggs Dairy Legumes Nuts
Hemoglobin Normal 20 100 94.8%	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 Leafy green vegetables Citrus fruits Legumes Eggs
HbA1c Normal 0 80 6.8%	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
Hematocrit Normal 20 100 85.9%	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 Leafy green vegetables Citrus fruits Legumes Eggs

Additional Epigenetic Biomarkers

Blood Urea Nitrogen

Normal

080

52.0%

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

080

6.7%

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

080

60.8%

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

Carboxypeptidase B2

Normal

20100

22.7%

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

Additional Epigenetic Biomarkers

Serum Paraoxonase/arylesterase 1

Normal

20

100

94.8%

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

Ribonuclease pancreatic

Normal

0

80

62.9%

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

0

80

0%

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

Fasting Glucose

Normal

0

80

9.8%

Function

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

Recommendations

- Control carbohydrates 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

✓

Healthy fats

Berberine

✓

Fiber-rich foods

Dihydroberberine

✓

Lean proteins

Jane Doe

TruDiagnostic.com

18

Additional Epigenetic Biomarkers

Ribitol Normal	080 5.4%
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
Vanillic Acid Normal	080 7.1%
Function Vanillic acid: 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
Creatinine Normal	080 63.3%
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
Phenylacetylglutamine Normal	080 17.6%
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

Additional Epigenetic Biomarkers

Uridine		Normal		59.3%
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		38.8%
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		52%
Function 4-Methoxyphenol Sulfate: A sulfated metabolite of phenolic compounds; reflects detoxification processes.		Recommendations Avoid woodsmoke exposure and dark-aged beer Avoid synthetic fragrances		
N-acetyl-isoputreanine		Normal		51.6%
Function N-Acetyl-Isoputreanine: A metabolite of polyamine biosynthesis; associated with cellular growth and repair.		Recommendations Consider NAC supplementation NAC		

Additional Epigenetic Biomarkers

Gluconate Normal 0 ▼ 80 22.2%	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 20 ▼ 100 78.0%	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 0 ▼ 80 33.5%	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
Androsterone Sulfate Normal 20 ▼ 100 93.5%	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

Additional Epigenetic Biomarkers

3-Ureidopropionate Normal	080 1%
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	080 46.4%
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	20100 77.1%
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
Versican core protein Normal	080 26.8%
Function Versican Core Protein: A proteoglycan in the extracellular matrix; involved in tissue remodeling and inflammation.	Recommendations - Avoid being underweight - Increase moderate-intensity exercise

Additional Epigenetic Biomarkers

Histone H2B type 1-K

Normal

080

29.9%

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

Red Blood Cell Distribution Width

Normal

080

15.3%

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

Leafy green vegetables

Citrus fruits

Tomatoes

Peppers

Jane Doe

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