TruDiagnostic™
The Epigenetic Company

Summary
Report

Sample Report

Age: 67.04 | Sex: Male

ID#: XXXXXXX

Collected: 01/17/2025 | Reported: 01/29/2025

Fasted: Unknown

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OMICm Age

*Developed with Harvard**

DISCLAIMER: The population graph and percentile for OMICmAge are based on observed and validated data patterns from thousands of research participants involved in our Harvard University study.

OMICm Age

58.07

YEARS OLD

Your OMICm Age is

LOWER THAN

your calendar age by 8.97 years.

Biological Age

58.07

67.04

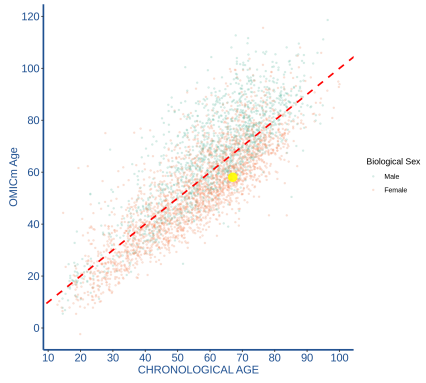
Calendar Age

POPULATION COMPARISON

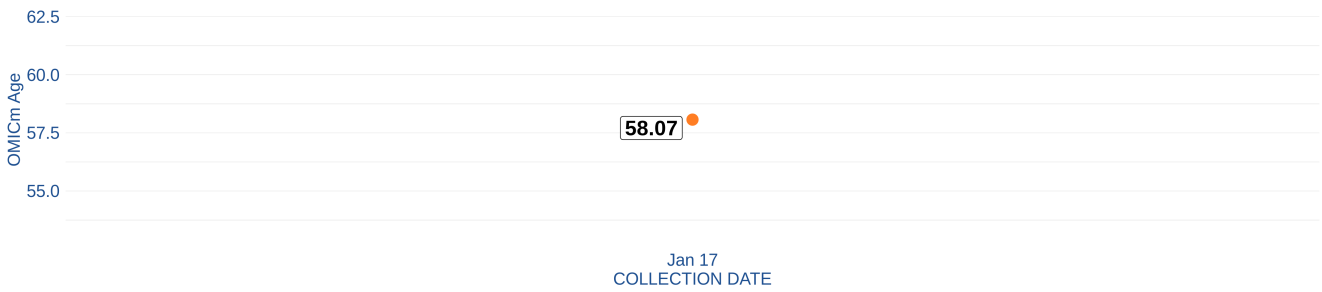
Your OMICm Age is in the 25th percentile.

0% 25% 100%

Your biological age places you in the top 25% of the population, meaning you are aging better than 75% of your peers for your chronological age.



RESULTS OVER TIME



Your Risk of Disease

Aging has been scientifically proven to be the number one risk factor for major chronic diseases worldwide. Accelerated aging (having an older biological age than your calendar age) increases your risk of disease with each year, and having a younger biological age decreases these risks.

Your OMICm Biological Age can represent an increase or decrease risk of death, cancer, heart disease, stroke, type 2 diabetes, COPD, and depression.

DISCLAIMER: The following, personalized risk scores are calculated based on observed and validated data patterns from thousands of research participants in our Harvard University study.

DEATH

24.67% Disease Risk

At your OMICm Age of **58**, you have a **24.67% lower** risk of death compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **7.34%.**

COPD

10.19% Disease Risk

At your OMICm Age of **58**, you have a **10.19% lower** risk of COPD compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **3.43%.**

CANCER

12.80% Disease Risk

At your OMICm Age of **58**, you have a **12.80% lower** risk of cancer compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **4.22%.**

DEPRESSION

6.18% Disease Risk

At your OMICm Age of **58**, you have a **6.18% lower** risk of depression compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **2.14%.**

STROKE

12.48% Disease Risk

At your OMICm Age of **58**, you have a **12.48% lower** risk of stroke compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **4.12%.**

HEART DISEASE

12.43% Disease Risk

At your OMICm Age of **58**, you have a **12.43% lower** risk of heart disease compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **4.11%.**

TYPE 2 DIABETES

12.39% Disease Risk

At your OMICm Age of **58**, you have a **12.39% lower** risk of type 2 diabetes compared to people of your same chronological age.

Reducing your OMICm Age by 1 year would result in reducing your relative risk by **4.09%.**

Your Most Actionable EBPs

*Listed in order of impact on biological age**

These are the Epigenetic Biomarker Proxies (EBPs) in which your DNAm predicted you were in the top 20% of the population for an EBP we would want to be low for ideal aging or in the bottom 20% of the population for an EBP we would want to be high for ideal aging. As each of these are included as features in OMICm Age, if you were to improve these features, we would expect you would improve your age.

DISCLAIMER: Related diseases associated with an EBP are **NOT** a diagnosis. These are diseases that are correlated to that EBP. The percentiles are based on observed and validated data patterns from thousands of research participants involved in our TruDiagnostic cohort.

DNAm Ribitol

Ribitol is a pentose alcohol formed by the reduction of ribose and is an integral part of riboflavin (vitamin B2) and flavin mononucleotide. It has been a blood-based biomarker of diabetic retinopathy and is associated with insulin secretion and diabetes pathways with high concentrations linked to CKD.

0.05

Your DNAm Ribitol is higher than **89%** of the population at your same calendar age and sex

Recommendations for Improvement:

- Balanced diet
- Reducing sugar intake
- Manage and monitor blood sugar levels

Related Diseases:

- Stroke

DNAm 4-Methoxyphenol Sulfate

Methoxyphenols are potential biomarkers of inhalation of woodsmoke and are present in dark aged beers. 4-methoxyphenol is a polymerization inhibitor. 4-methoxyphenol has demonstrated anti-tumor properties.

0.24

Your DNAm 4-Methoxyphenol Sulfate is higher than **97%** of the population at your same calendar age and sex

Recommendations for Improvement:

- Avoid woodsmoke exposure
- Avoid dark, aged beers

Related Diseases:

- No data

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

1-stearoyl-2-adrenoyl-GPC is a choline ether phospholipid (ePC) found in serum or plasma.

-0.17

Your DNAm 1-Stearoyl-2-adrenoyl-GPC (18:0/22:4)* is higher than **16%** of the population at your same calendar age and sex

Recommendations for Improvement:

- Increasing consumption of foods rich in plasmalogens (organ meats like liver or heart, mussels, oysters)
- Omega-3 fatty acids
- Antioxidants
- Reducing alcohol consumption
- Plasmalogen supplementation

Related Diseases:

- Cancer
- COPD
- Depression
- Stroke
- Type 2 Diabetes

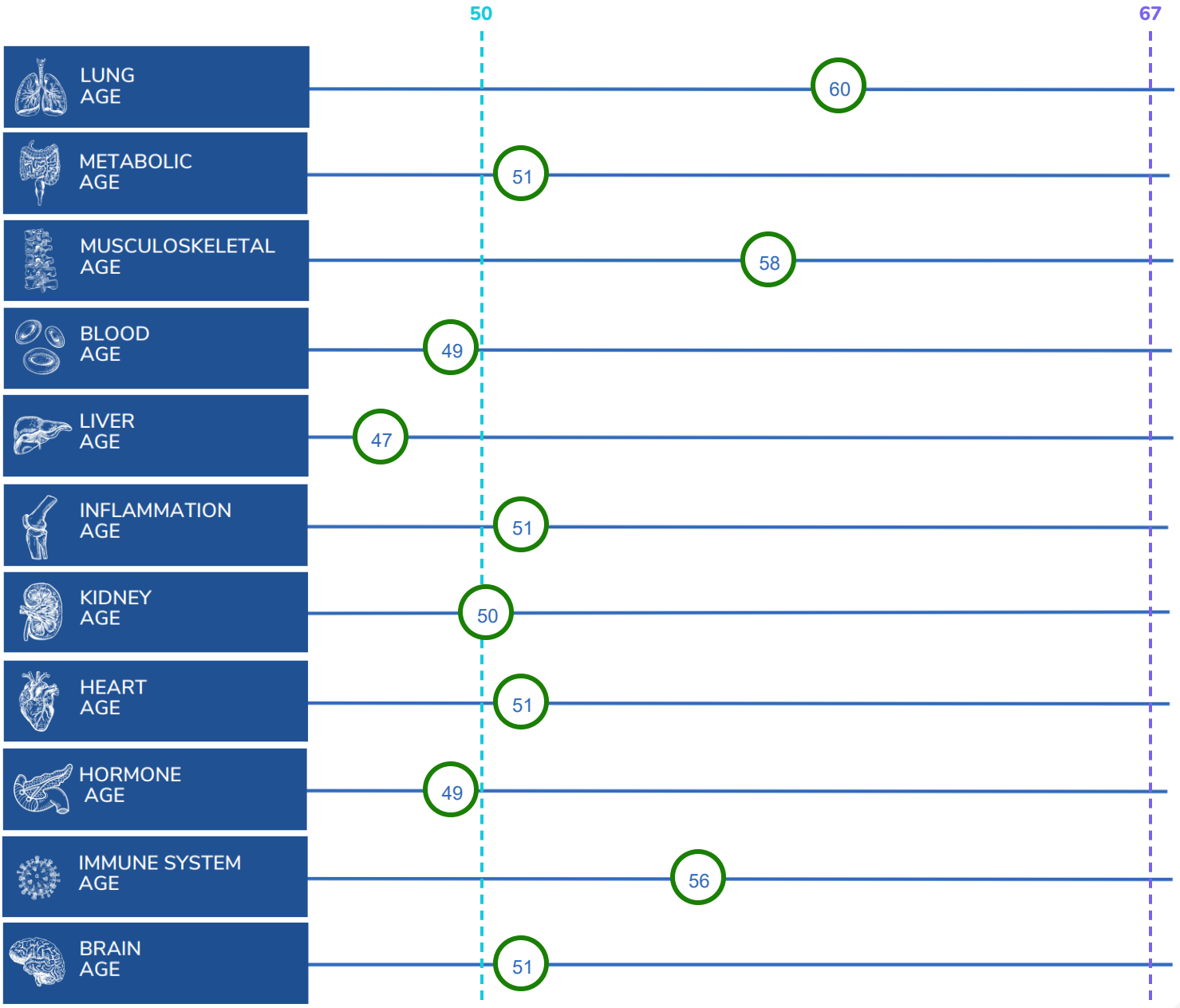
SYMPHONYAge

*Developed with Yale**

The center bar serves as a baseline marker for your chronological age. Here you can see the difference between your organ ages versus your chronological age.

Green is less than your chronological age, **red** is more than your chronological age, and **purple** is equal to your chronological age. The **blue** line is your overall SYMPHONYAge.

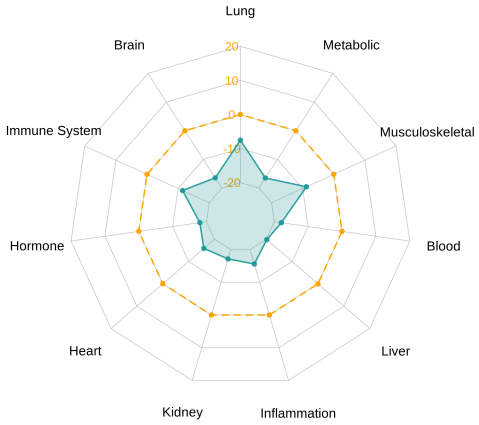
CURRENT AGE	OVERALL SYMPHONYAge
67	50



SYSTEMS IMPACT

This is a radar graph containing all of the organ system scores together. Impact graphs are designed to illustrate the effects or consequences of various factors or actions within a system. In this case, the 11 organs. Here you can see the relationship between each organ and how they work and affect each other.

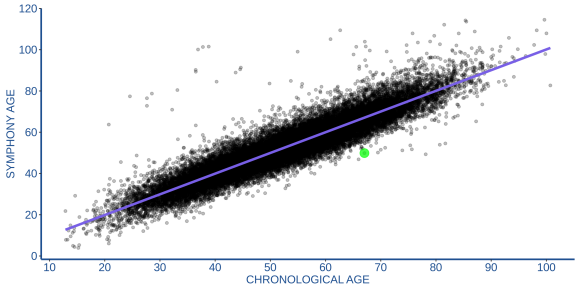
Taking into account all of your individual organ scores, this is what creates your overall SYMPHONYAge score.



Any value that sits inside the **orange circle** is decelerating or decreasing your overall SYMPHONNYAge. Any value that sits outside the **orange circle** is accelerating or increasing your overall SYMPHONYAge.

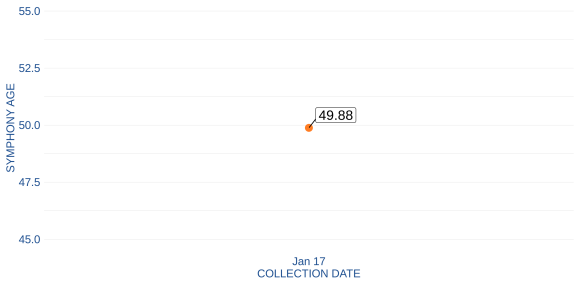
POPULATION

0th Percentile



Your SYMPHONYage is higher than **0.05%** of the population at your same calendar age.

OVER TIME

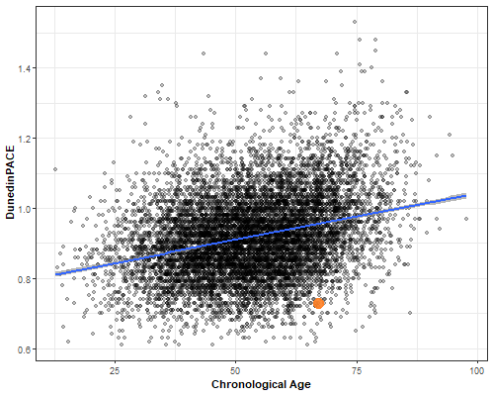


DunedinPACE of Aging

DunedinPACE Value

0.73

Population



Your DunedinPACE is higher than **2.11%** of the population at your same calendar age.

Changes Over Time

ALGORITHM	PATIENT DATA	MORBIDITY AND MORTALITY ASSOCIATIONS	RISK STATEMENT
DunedinPACE	**0.73** Biological years per year	**All-Cause Mortality** (Belsky et al., 2020)	If you are aging above a rate of 1.00, you would increase risk of death by 56% over the next 7 years.
		Chronic Disease (Belsky et al., 2020)	If you are aging above a rate of 1.00, you would increase risk of chronic disease diagnosis by 54% over the next 7 years.

Immune Health

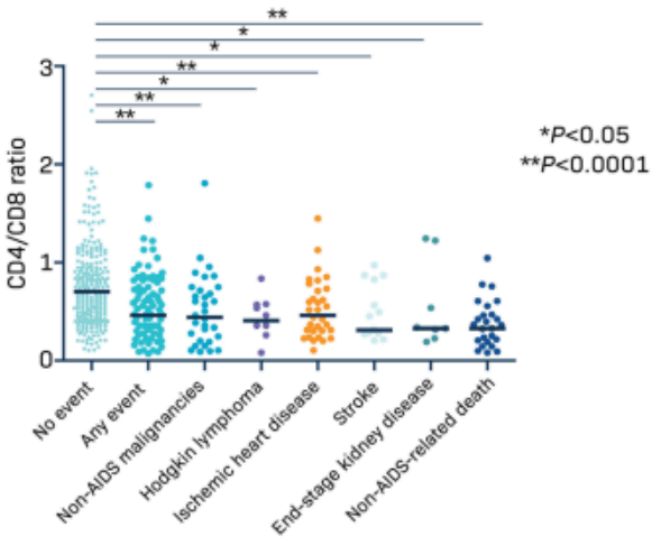
IMMUNE CELL TYPE	REFERENCE MEAN	95% CONFIDENCE INTERVAL RANGE	YOUR PERCENTAGE
Naïve CD4T	7.273%	7.196%-7.35%	**10.97%**
Memory CD4T	5.212%	5.14%-5.284%	**6.40%**
Memory CD8T	6.605%	6.519%-6.691%	**9.66%**
Naïve CD8T	1.125%	1.09%-1.16%	**0.00%**
Basophils	1.041%	1.026%-1.056%	**1.27%**
B Memory	1.737%	1.689%-1.785%	**2.81%**
Naïve B	2.259%	2.207%-2.311%	**1.72%**
Regulatory T	3.506%	0.604%-6.408%	**3.80%**
Eosinophils	0.400%	0.376%-0.424%	**0.00%**
Natural Killer	3.406%	3.353%-3.459%	**3.39%**
Neutrophils	62.93%	62.899%-62.953%	**58.17%**
Monocyte	4.510%	4.453%-4.567%	**1.80%**

CD4/CD8 T Cell Ratio

CD4/CD8T cell ratio is incredibly informative on disease. A value between 1 and 4 is ideal. A value between 0 and 1 marks “inverted ratio”. A low or inverted CD4/CD8 ratio is an immune risk phenotype and is **associated with altered immune function, immune senescence, and chronic inflammation.**

The prevalence of an inverted CD4/CD8 ratio increases with age. An inverted ratio is seen in 8% of 20-59 year olds and in 16% of 60-94 year olds. Women across all age groups are less likely to have an inverted ratio than their male counterparts.

Age, and hormone-related atrophy of the thymus is theorized to explain the differences between populations. Hormonal influence on the ratio is supported by a correlation between low Plasma Estradiol levels, high circulating CD8, and low CD4/CD8 ratios in women with premature ovarian failure.



We have been able to refer patients for additional testing to diagnose HIV, Chronic Lymphocytic Leukemia, and even individuals taking their Rapamycin at too high of a dose. **If you see a low CD4/CD8 ratio, it is not an immediate cause for concern but we might recommend testing via traditional labs just in case.** A value of 4+ marks hyperactivity or possible infection, autoimmunity or additional immune risk phenotypes.

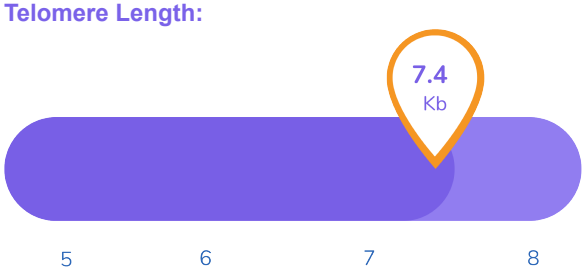
CELL TYPE	MEAN	REFERENCE RANGE	YOUR RATIO
CD4/CD8T	2.59	1.00-4.00	**1.80**

Other Immunosenescence Ratios

RATIO	ABOUT THIS RATIO	NORMATIVE RATIO	YOUR VALUE
Neutrophil to Lymphocyte	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.	NLR reflects physiological stress. The mean NLR is 1.70 ± 0.70.	**1.64**
Lymphocyte to Monocyte	Elevated LMR levels can indicate increased inflammation associated with atherosclerosis and coronary artery disease, as well as poor prognosis in cancer patients. Conversely, a decreased LMR may be observed in immunocompromised states such as HIV AIDS or following chemotherapy.	The mean lymphocyte-tomonocyte ratio is 11.15 ± 3.14	**19.70**

Telomere Length

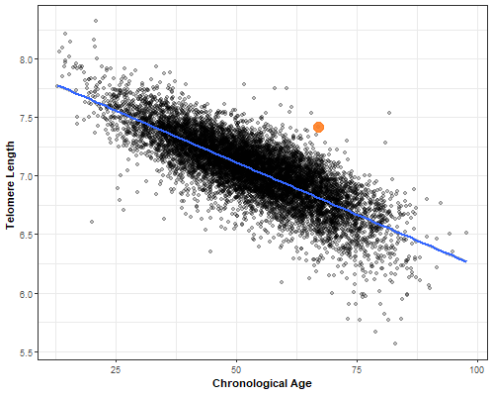
Telomere Length:



If we were to estimate your biological age **strictly from your telomere measurement,** we would anticipate your age to be:

33.37
YEARS OLD

Telomere Length Based on Biological Age Prediction:



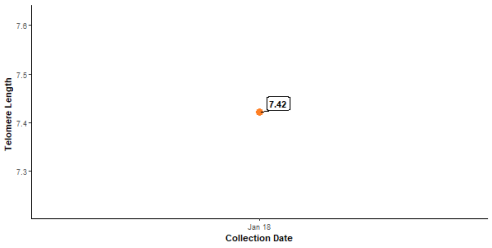
Your Average telomere prediction length:

7.4 kb

This puts you in the:

100th Percentile

Changes Over Time



ALGORITHM	PATIENT DATA	MORBIDITY AND MORTALITY ASSOCIATIONS	RISK STATEMENT
Telomere	7.4 Kilobase Unit	At your chronological age of 67.04, your telomeres are longer than 100th% of people. who share the same chronological age as you.	Shorter telomeres are not only associated with age but with disease too. Shorter telomere length and low telomerase activity are correlated with several chronic preventable diseases.

Fitness Age

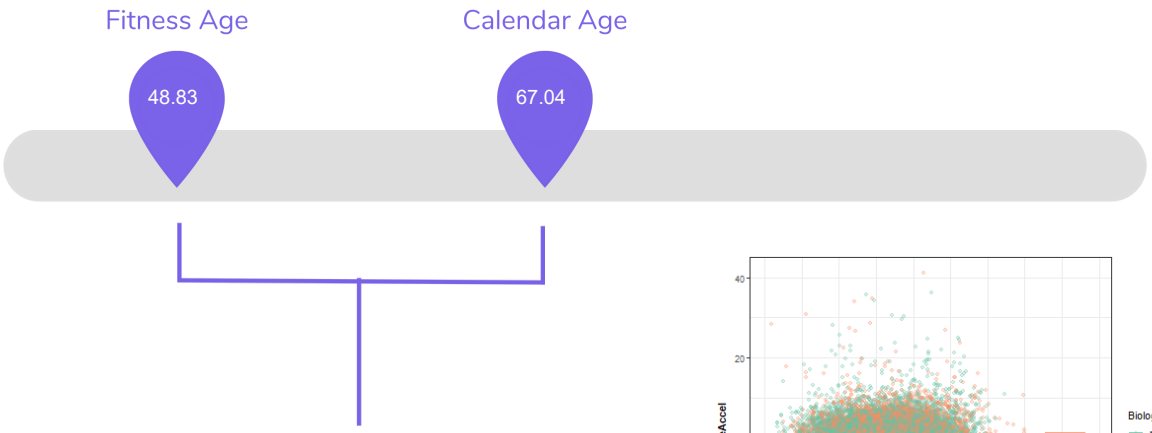
OMICm FitAge

The incorporation of physical fitness measurements into epigenetic clocks **increases the measurable effects of lifestyle, medical, and environmental interventional changes** on the aging process. The DNAmFitAgeAccel algorithm, also simply known as FitAgeAcceleration, was developed by researchers at UCLA, and is an estimate of epigenetic age acceleration. We have created a version of this, however, we incorporated our **OMICm Age** algorithm (developed with Harvard) instead. We call this **OMICm FitAge,** which tells you how old you are according to your physical fitness and functionality.

48.83

YEARS OLD

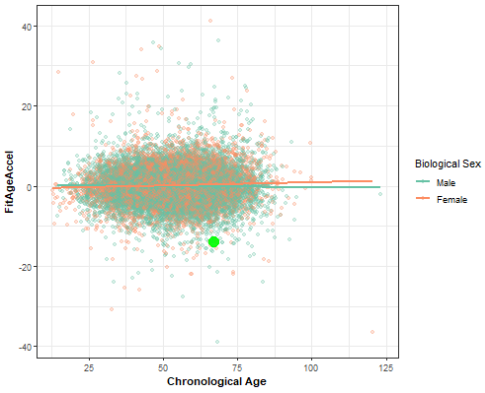
OMIC$_m$ FitAge



Your OMICm FitAge is

LOWER THAN

your calendar age by **18.21** years.



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 biological 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.

OMICm FitAge is impacted by:

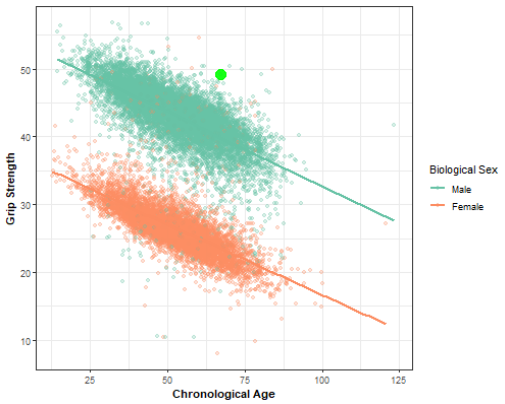
GRIP STRENGTH

Maximum hand grip strength (GripMax) a measurement of force taken in kg and is used to measure the age-associated decline in terms of muscle strength.

GAIT SPEED

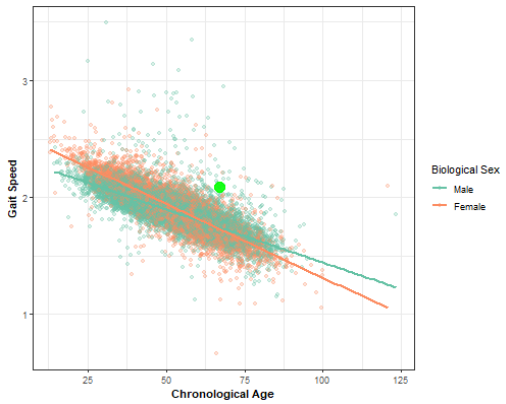
Gait speed, also known as walking speed, is measured in meters per second.

Grip Strength



Your Grip Strength Epigenetic Biomarker Proxy is **49.21.** This puts you scoring higher than **99.95%** of the population with a similar reported age .

Gait Speed



Your Gait Speed Epigenetic Biomarker Proxy is **2.09.** This puts you scoring higher than **98.96%** of the population with a similar reported age .

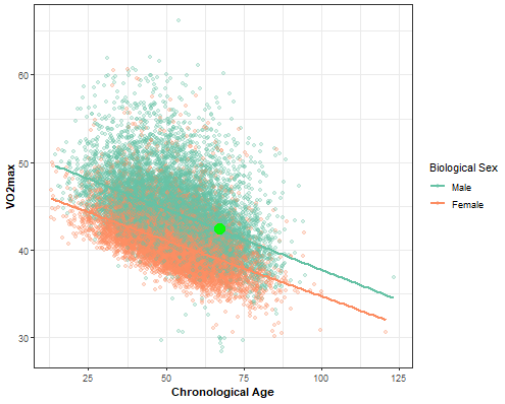
VO2MAX

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

FEV1

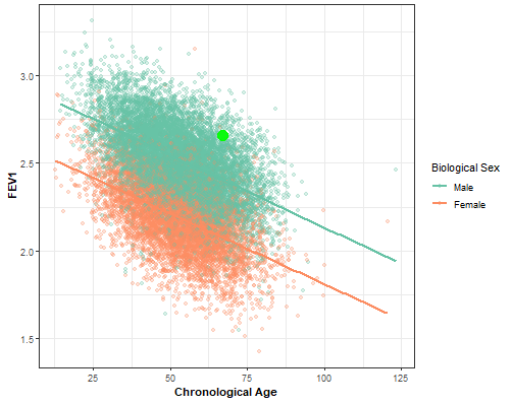
Forced expiratory volume, also known as FEV1, measures lung function by determining the amount of air forced from the lungs in one second.

V02Max



Your V02Max Epigenetic Biomarker Proxy is **42.40.** This puts you scoring higher than **59.75%** of the population with a similar reported age.

FEV1

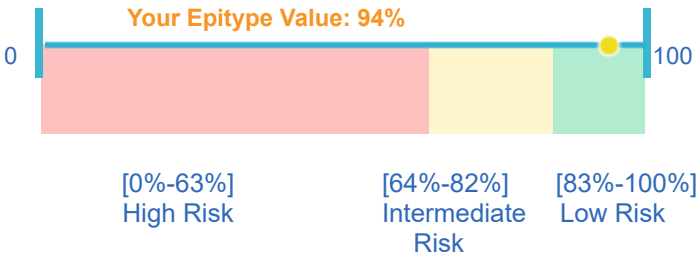


Your FEV1 Epigenetic Biomarker Proxy is **2.66.** This puts you scoring higher than **93.08%** of the population with a similar reported age and height.

Smoking & Drinking

Smoking Risk

AHRR (cg05575921)
Average Beta Value %:



[0%-63%] High Risk

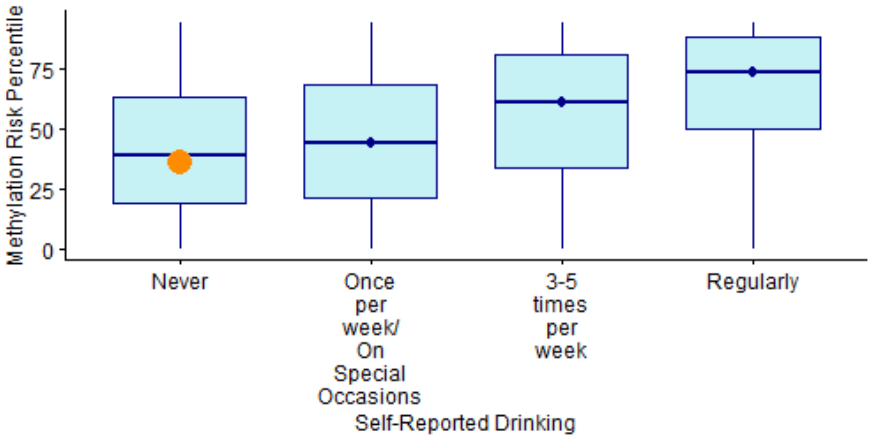
[64%-82%] Intermediate Risk

[83%-100%] Low Risk

The impact that tobacco smoke exposure has on the epigenome is based on the level of methylation at the AHRR gene locus cg05575921.

Your DNA methylation score was **94%** at the AHRR locus, meaning that your methylation score aligns with the status of **low smoker** putting you at **low risk** for developing smoking-related conditions.

Alcohol Consumption and DNA Methylation



On your intake survey, you self-reported your drinking status as **never** With our custom epigenetic biomarker proxy, you are in the **36th** percentile. This means your score is higher than **35.6%** of the population we have tested.

***Those who marked self-reported drinking as "Not Applicable" were assumed to have no drinking status and have been combined with data from "Never" status.**

Weight Loss Response

CPG SITE	GENE	β - VALUE RESPONDERS	YOUR SCORE	RESPONSE STATUS
cg03301582	PON3	0.120	0.05	Hypomethylated
cg04080282	PON3	0.324	0.15	Hypomethylated
cg08461772	PON3	0.418	0.48	Hypermethylated
cg08898155	PON3	0.163	0.04	Hypomethylated
cg10329418	PON3	0.252	0.26	Hypermethylated
cg11435506	PON3	0.165	0.05	Hypomethylated
cg15500865	PON3	0.072	0.10	Hypermethylated
cg24750391	PON3	0.355	0.44	Hypermethylated
cg25161512	PON3	0.115	0.19	Hypermethylated
cg26457160	PON3	0.490	0.53	Hypermethylated
cg27166921	PON3	0.253	0.35	Hypermethylated

RISK REPORT	PATIENT OUTCOMES	SUMMARY	IMPACT	ADDITIONAL NOTE
Weight Loss Response	**Intermediate response**	Your DNA methylation scores at the above loci indicate you are a **Intermediate responder** for weight loss treatment utilizing a hypocaloric diet. This means you **may or may not lose weight** from caloric restriction.	If your DNA methylation score puts you in the category of non-responder or intermediate responder then a hypocaloric diet might not be the best treatment option for you. If you are a responder, that means a hypocaloric diet has a greater chance of positively impacting your weight loss goals.	Studies on these particular CpG loci have concluded that some individuals have a better response to a calorie deficit diet than others. This may indicate why weight loss has been difficult to achieve and can provide insight into finding the best weight loss strategy.