TruDiagnostic™
The Epigenetic Company

TruAge

Report

test male

Age: 24 Sex: Male
ID# : PFNXP3Z
Collected : 04/03/2024 | Reported : 04/16/2024

DEVELOPED WITH HARVARD

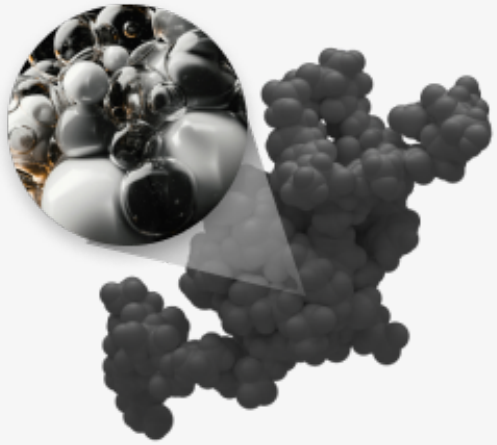
OMICm Age

OMICm Age

41.83

Chronological Age

24.16



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.

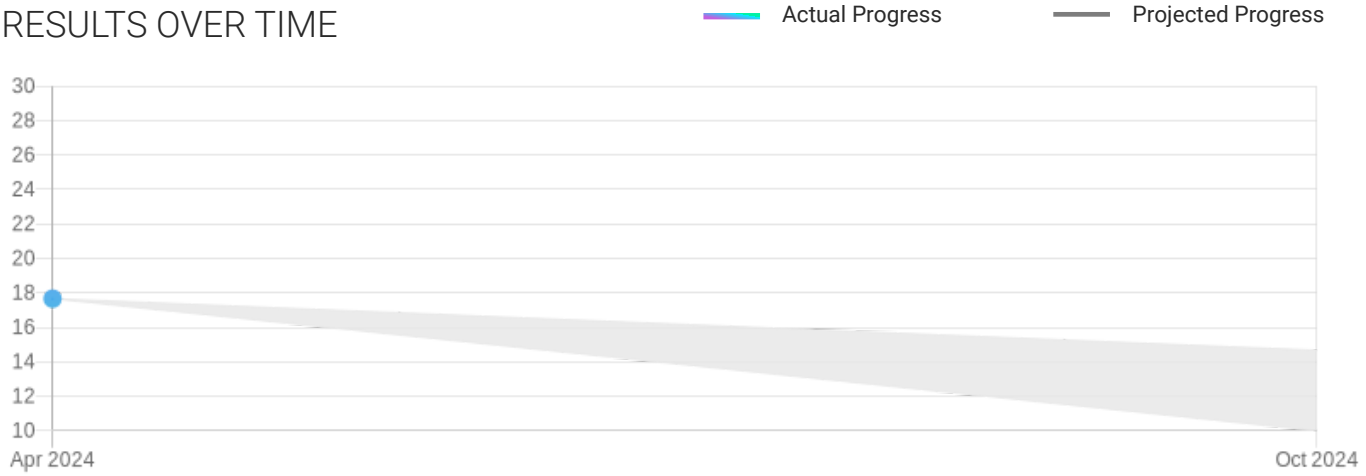
17.67

Your OMICm Age is higher than your calendar age by 17.67 years

70.95%

Your OMICm Age is higher than 70.95% of other 24.16 year old Males

RESULTS OVER TIME



PAST RESULTS

DATE	OMICM AGE	DIFFERENCE	STATUS
04.03.2024	41.83	17.67	☹

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.

But there's more to the story than a single age number. Your lifestyle choices—from how much you move, to what you eat, and whether you smoke or drink—can influence the aging process of different organs in varied ways. Recognizing the diversity of aging experiences led to the creation of SYMPHONYAge.

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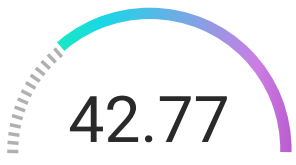
This method integrates data from various sources, including whole exome sequencing and plasma metabolomics, to pinpoint epigenetic markers linked to specific organ aging. This detailed approach segments 130 biomarkers, offering insights into individual organ system aging.

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.

SYSTEMS



Aging Faster

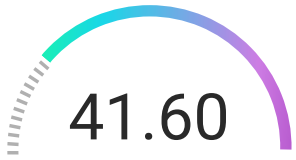
MUSCULOSKELETAL

Aging Faster

INFLAMMATION

Aging Faster

HEART



Aging Faster

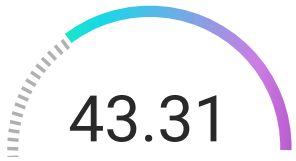
KIDNEYS

Aging Faster

LUNGS

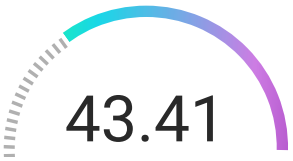
Aging Faster

METABOLIC



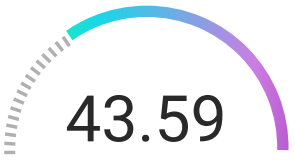
Aging Faster

BLOOD



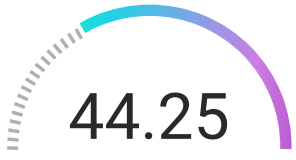
Aging Faster

BRAIN



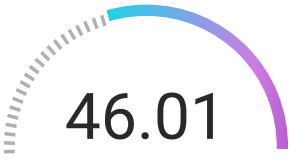
Aging Faster

IMMUNE



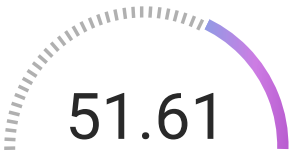
Aging Faster

LIVER



Aging Faster

HORMONES



Aging Faster

PAST RESULTS

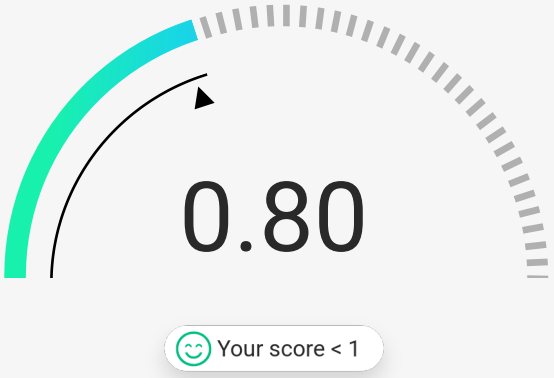
ORGAN SYSTEM	04.03.2024
CHRONOLOGICAL	24.16
LUNGS	42.56
METABOLIC	43.31
MUSCULOSKELETAL	39.80
BLOOD	43.41
LIVER	46.01
INFLAMMATION	40.86
HEART	41.60
KIDNEYS	41.91
HORMONES	51.61
IMMUNE	44.25
BRAIN	43.59

DunedinPace of Aging

Your Pace Score

You're aging **Slowly.**

Each year that passes, your body will biologically age 0.80 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

{#DunedinPaceOvertime#}

MONTH	RATE	STATUS
04.03.2024	0.80	☺

Lifestyle Modifications

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

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.

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.

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.

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.

NOW WHAT?

Retest in 2 to 3 Months

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.

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.

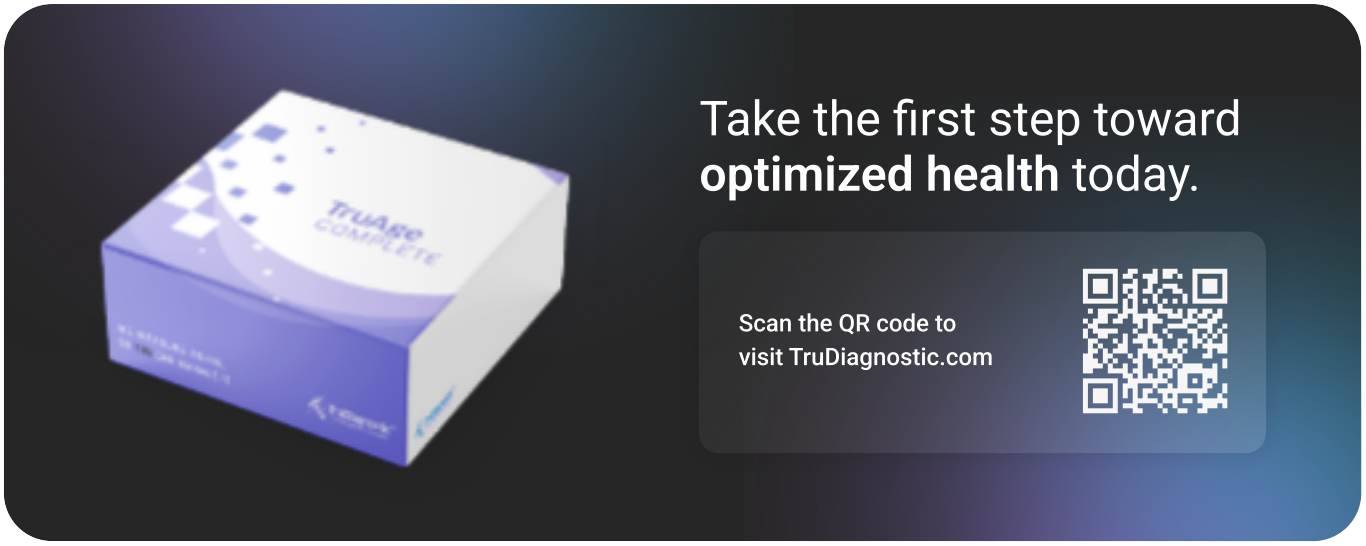
NOW WHAT?

Keep Exploring

Unlock the secrets of your biological age and beyond with TruDiagnostic.

As we continue to innovate, stay tuned for our upcoming epigenetic lifestyle and nutritional test, which will analyze specific genetic biomarkers to provide tailored recommendations for lifestyle adjustments, dietary changes, and supplement use. Plus, we're excited to introduce a groundbreaking disease risk score that evaluates common diseases based on epigenetic markers. At TruDiagnostic, we're committed to helping you lead a healthier, more informed life. Explore with us, and take the first step toward optimized health today.

Scan the QR code to visit our consumer site. Here, you'll gain exclusive access to pioneering tools like the DunedinPace Algorithm, SYMPHONYAge Algorithm, and OMICm Age Algorithm, all designed to offer you personalized insights into your aging process and overall wellness. Discover more about our collaborative research with esteemed institutions like Harvard, Yale, and Stanford, bringing cutting-edge scientific findings directly to your fingertips.



NOW WHAT?

The Rejuvenation Olympics

Connect with your competitive spirit for healthy aging with an engaging platform and leaderboard that challenges you to achieve the lowest biological age among peers.

This unique project allows users to compete and track their progress in real-time, fostering a sense of camaraderie and motivation to adopt life-extending practices. Discover how you stack up in the pursuit of youthfulness and gain actionable insights to improve your biological age. If you agreed to sharing your data during kit registration you should find your results available. If not, head over to trudiagnostic.com to consent and start competing.

The primary goal is not just to measure your biological age but to inspire a fun and competitive environment that encourages personal health improvements. Participate in regular challenges, share your successes, and learn from a community of like-minded individuals all striving to turn back the biological clock.

Whether you're a fitness enthusiast, a health novice, or someone curious about the science of aging, the Rejuvenation Olympics offers a dynamic platform to connect, compete, and celebrate your journey towards a rejuvenated life. Join us now by following the QR code and begin your competition towards achieving a younger, healthier you. improve your biological age. If you agreed to sharing your data during kit registration you should find your results available. If not, head over to trudiagnostic.com to consent and start competing.

Join a community driven by the desire to live healthier, longer lives.

Scan the QR code to see where you rank!

OMICm Age

A new aging algorithm

This report calculates biological age by examining age-associated methylation patterns at approximately one million locations on your DNA, using the novel OMICm Age algorithm.

Developed By TruDiagnostic's Bioinformatics & Research Department © TruDiagnostic, Updated 2023

Raising the bar on measuring aging.

When TruDiagnostic was founded in 2020, we set out on a mission to create the best scientific algorithm (clock) that analyzes epigenetic patterns to accurately quantify biological age. To do this, we needed an extensive amount of data, which is why we partnered with researchers from Harvard University and Partners Biobank.

This biobank included thousands of samples saved from over the last 50 years. With these samples, we were able to collect the extensive amount of interconnected biodata needed to create the most accurate predictors of biological aging.

2011	The first DNA methylation based age clock is published.
2012	The first immune deconvolution method is published.
2013	The Hannum (first immune deconvolution method incorporated) and Horvath (first Multi-Tissue) clocks are published.
2016	The first, 2nd generation aging clock is published (mitotic cell division clock called 'EpiToC').
2018	The PhenoAge clock is published.
2019	The first, 3rd generation clock is published (DunedinPoAm)
2020	The GrimAge clock is published.
2021	DunedinPoAm is upgraded to DunedinPACE.
2022	Principal component clocks are created to improve precision (ICC values). DNA methylation scores are created to predict circulating proteomic surrogates.
2023	OMICm Age, the first clock trained with proteomic, metabolomic, and clinical measures is created.

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.

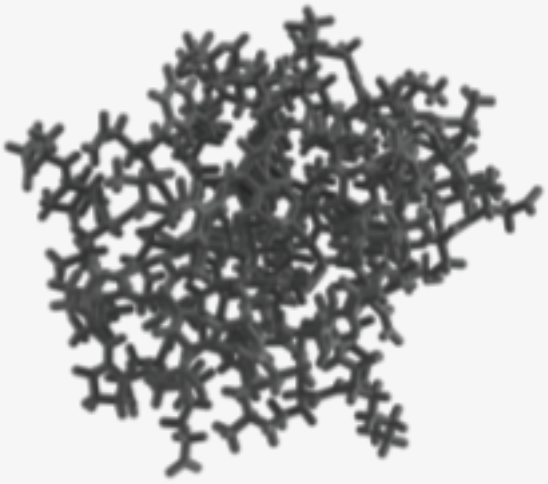
The launch of the Human Genome Project sparked hopes of unlocking all the secrets of human biology. However, while groundbreaking, the project didn't deliver the comprehensive health insights many had hoped for. It turns out, our health and aging aren't determined by genetics alone. Instead, they're 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

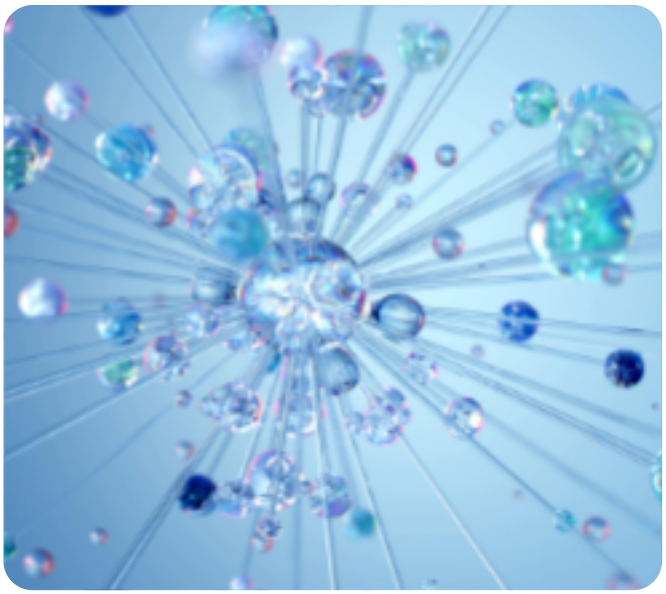
The study of observable traits such as eye, skin, and hair color. Epigenetics can curate those instructions, and the resulting proteins and metabolites impact your biology to result in physical expression.

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.

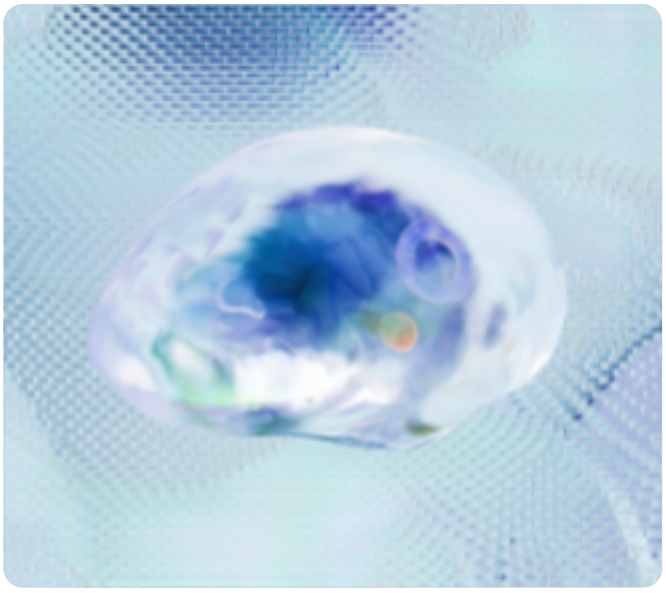
Validation of the DunedinPace algorithm expanded beyond the original cohort, incorporating external datasets to confirm its effectiveness across various demographics and prove its broad applicability. Unlike earlier epigenetic clocks that estimate biological age from static DNA snapshots, DunedinPace 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.

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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