

Q3 2026

In partnership with:



Introducing the Most Advanced Health Check for Chronic Diseases

Nightingale Health Plc.

One Blood Test. Nightingale Does The Rest.



10-year risk assessment

Heart Attack
Ischemic Stroke
Type 2 Diabetes
Chronic Kidney Disease
Fatty Liver Disease

Metabolic Age

Metabolic Resilience Score

+30 blood values

Lipids
Apolipoproteins
Sugar metabolism
Creatinine
Fatty Acids
Amino Acids
Low grade inflammation

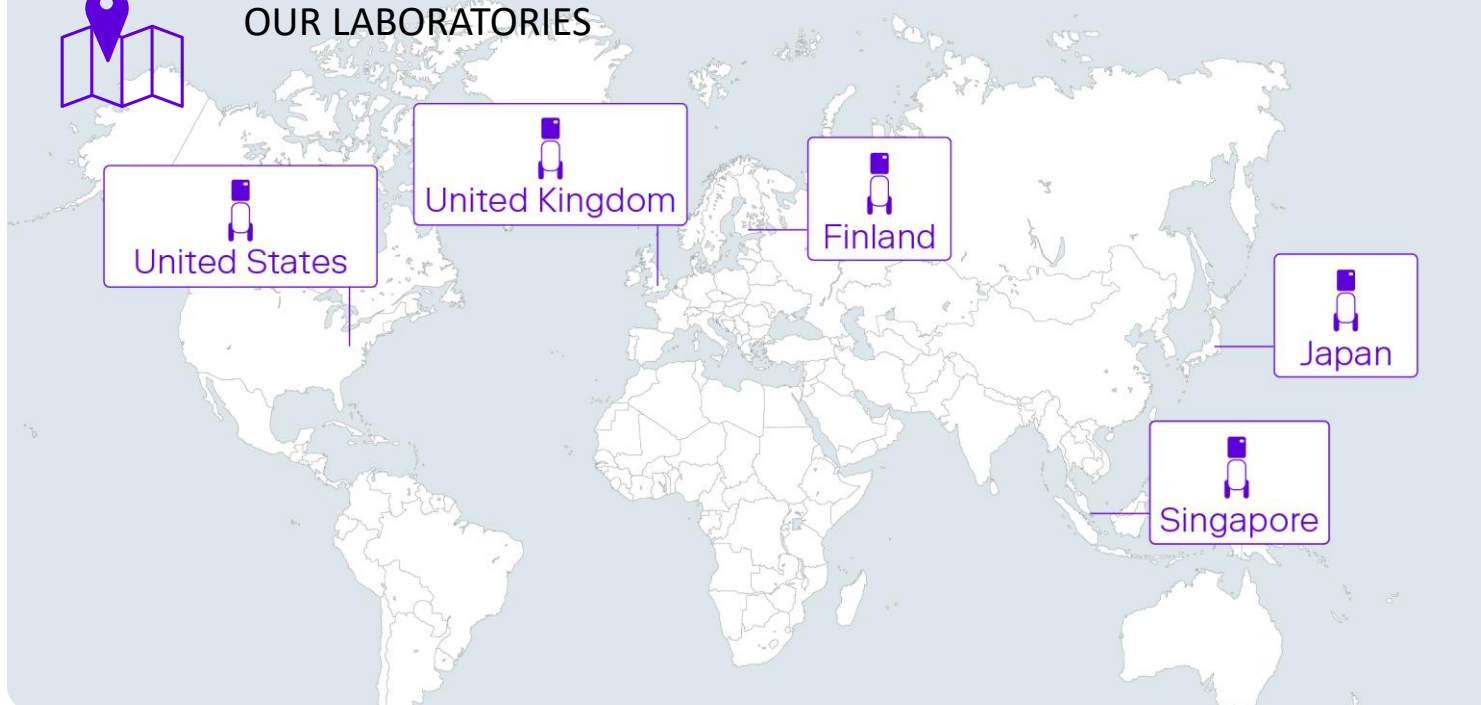
About Nightingale Health



Building better healthcare for everyone through multi-disease risk detection based on a single blood sample



OUR LABORATORIES



COMPANY FACTS

Founded in 2013

HQ in Helsinki, Finland

Publicly listed on the Main Market of Nasdaq Helsinki and OTC QX

Global operations:

US, UK, Japan, Singapore, Estonia, Germany, Sweden

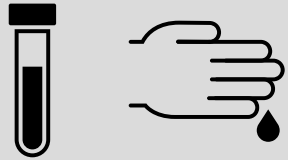


BUSINESS AREAS

B2B/B2G customers in preventive healthcare applications and medical research

Solution

Globally standardized molecular platform to objectively quantify and track chronic disease risk and intervention impact.



One blood sample

Venous or finger prick
(using Nightingale's proprietary
collection device)



One test

Based on proprietary NMR
metabolomics platform



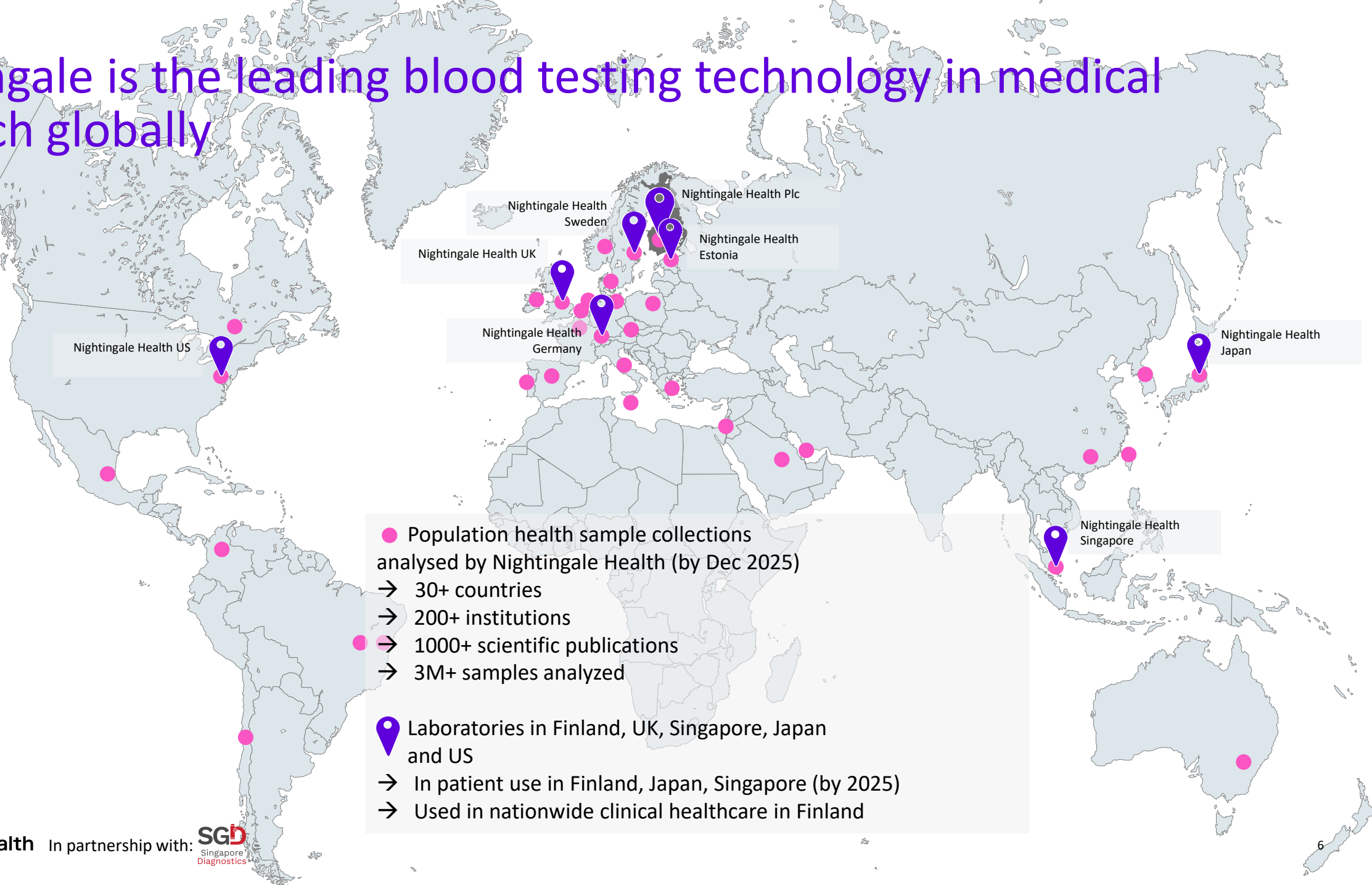
Risk detection

For heart attack, stroke, T2D, CKD
and liver disease in one go (and 30+
clinical biomarkers)

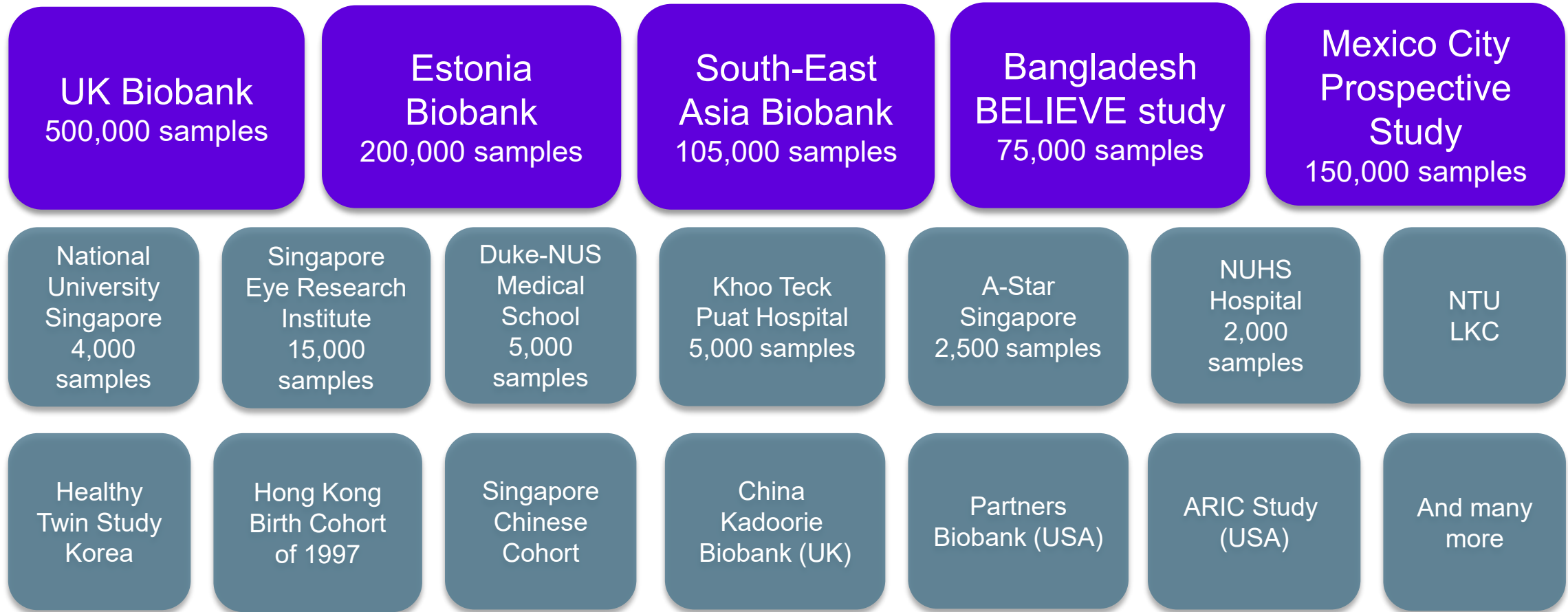
Nightingale Health is not a traditional diagnostics company focused only on single biomarkers.

We quantify disease risk – because preventive healthcare depends on
identifying risk early and reducing future disease.

Nightingale is the leading blood testing technology in medical research globally



Nightingale Health's blood test is the gold standard in large-scale health studies, also in SEA



Regulatory & Quality Framework

Clinical-grade operations, validated outputs, and clear regulatory status across key regions

Quality, Information security & Operations

- ISO 15189:2022 accredited laboratory operations
- ISO/IEC 27001:2013 certified information security
- ISO 13485:2016 QMS
- External QA (UK NEQAS, WEQAS)
- External vendor qualifications

Platform scope (clinical outputs)

- Validated biomarker platform + disease risk assessments
- 40 validated biomarkers
- Risks: MI, stroke, T2D, CKD, fatty liver disease (MASLD)
- Additional scores: metabolic age & metabolic resilience

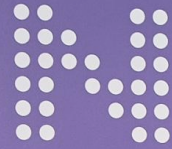
Regulatory status (by region)

- **EU/UK:** IVDD 98/79/EC; MDR 2017/745; UKCA (SI 2002 No 618) for biomarkers and disease risk assessments, IVDR, 2017/746 for Blood Collection Device and Kit
- **Finland:** license to provide healthcare services, certified patient data system
- **Singapore:** HSA approvals for biomarkers (Class B devices); NGH CVD, NGH T2D, NGH Liver Disease and NGH Kidney Disease Risk Assessments Class A devices; ISO 13485 for Singapore operations; HSA dealer's licence for import & distribution
- **Japan:** clinical lab certified by Tokyo governor under Clinical Laboratory Technicians Act
- **New York:** Clinical Laboratory Permit by the the NY state DOH

Clinical deployment

- In clinical use by Finland's largest health provider (~30% of Finnish workforce) also used by public health system
- In clinical use in Japan as a part of the occupational healthcare system
- In clinical use in Singapore as a part of health screening





Nightingale Health

Singapore

Finland Japan United Kingdom United States



Nightingale Health lab-in-lab installed at Innoquest Diagnostics
CAP and SAC-SINGCLAS ISO 15189:2022 accredited laboratory

Why Nightingale Health?

VALIDATED

1000+ publications,
10-year track record

GLOBAL

Laboratories in FIN, JPN, SG,
UK and US

SCALABLE

Built for population scale
with affordable price point

PROPRIETARY

Technology only available
from Nightingale

PUBLICLY LISTED

Transparent operations,
professional governance

MASSIVE DATABASE

World's largest metabolomics
database

REGULATORY APPROVED

EU/UK/JPN/SG healthcare
approvals

WORLD-CLASS TEAM

Team that brought the first omics
technology into healthcare

HEALTHCARE ADOPTED

Nationwide use in Finland's healthcare
system

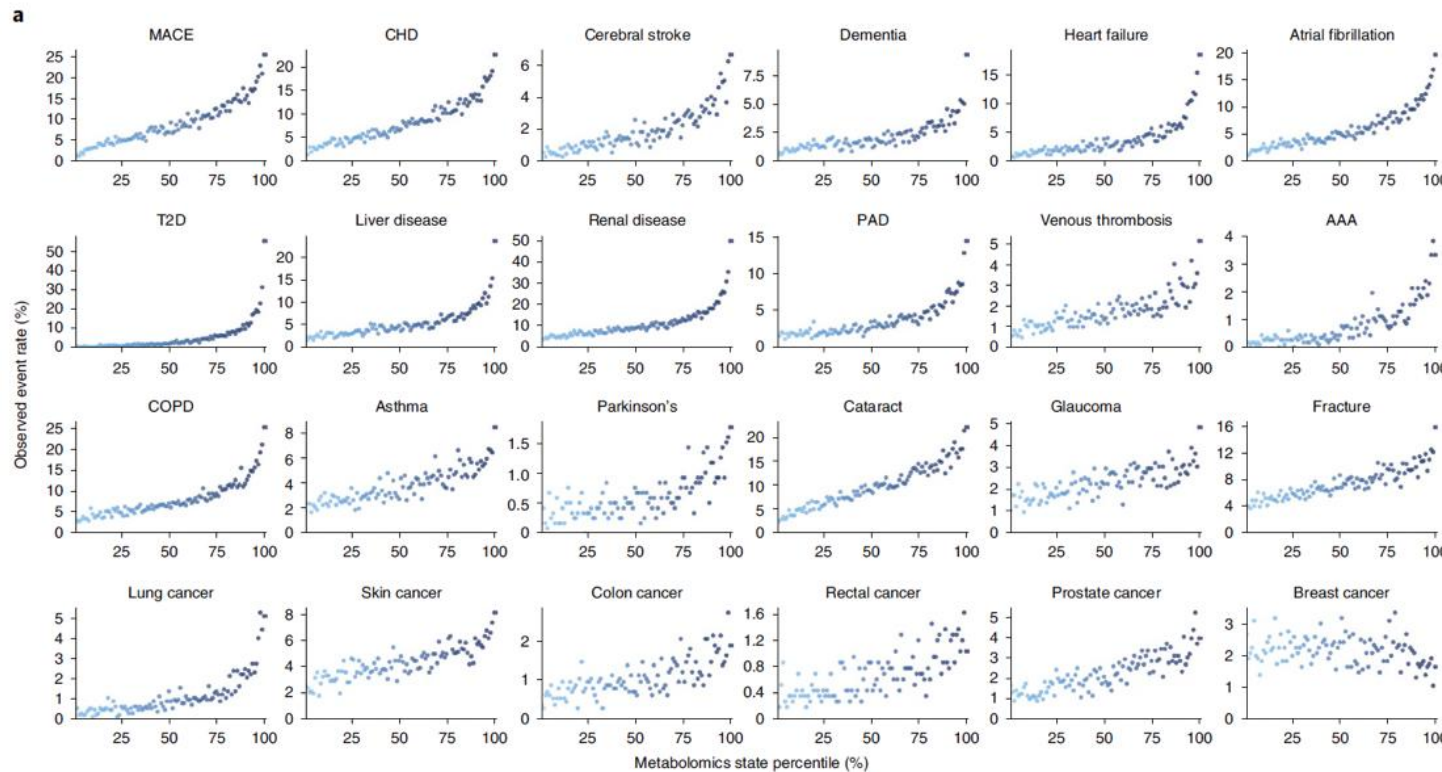


Scientific validation and clinical use-case

Landmark study in Nature Medicine: Simultaneous risk prediction for multiple chronic diseases using Nightingale's blood test

NATURE MEDICINE

ARTICLES



“An ambitious, large-scale study involving more than 100,000 people from the UK Biobank shows that profiling of metabolites can provide an integrated view of disease risk that has predictive value beyond established clinical risk predictors.”

Nature Medicine, research briefing:
Simultaneous prediction of risk for multiple common diseases using metabolomics. Nat. Med.
<https://doi.org/10.1038/s41591-022-01992-z>

Nature Medicine, publication:
Buerger, T. et al. Metabolomic profiles predict individual multidisease outcomes. Nat. Med.
<https://doi.org/10.1038/s41591-022-01980-3> (2022)

All publications using Nightingale Health platform <https://research.nightingalehealth.com/success-stories/publications>

Landmark study in European Heart Journal: Nightingale Health's blood test can improve prevention of heart attacks and strokes by 44% compared to current clinical practice

Study in the flagship European Heart Journal:



Data from nearly 300,000 middle-aged individuals from Great Britain



The study measured the impact of adding Nightingale Health's blood test to the standard cardiovascular risk-screening tool, SCORE2

Benefits of Nightingale Health's blood analysis identified in the study:



Identifies high-risk individuals missed by current screening tools



By targeting statins to these individuals, 44% more CVD cases can be prevented compared to using only the SCORE2 risk-screening tool

*SCORE2 is a standard calculator for assessing the risk of heart attack and stroke and is widely used across Europe.

Combined clinical, metabolomic, and polygenic scores for cardiovascular risk prediction, European Heart Journal, 2025. <https://doi.org/10.1093/eurheartj/ehaf947>

Risk detection performance of Nightingale risk scores is equal or better than current routinely used clinical risk assessment tools

AUC (Area Under the Curve) is the metric used routinely in medicine to capture in a single number a test’s ability to effectively identify individuals at high risk of a disease across a whole population.

The closer the AUC is to 1, the better the risk detection performance

<https://ngh.site/latest-generation-disease-risk>

Disease	Nightingale Health's risk assessment AUC	Current clinical tool AUC	Current clinical tool
Cardiovascular diseases	0.72	0.72	Framingham Risk Score
Myocardial infarction	0.76	0.76	Framingham Risk Score
Stroke	0.74	0.71	Framingham Risk Score
Type 2 diabetes	0.80	0.77	QDiabetes
Chronic kidney disease	0.87	0.84	eGFR
Fatty liver disease (MASLD)	0.75	0.72	Liver enzyme test
Liver fibrosis and cirrhosis	0.80	0.74	FIB4

Risk assessment - Current tools vs. Nightingale tool

Case: Framingham score for CVD

CURRENT RISK SCORE TOOL
Required data to calculate

Singapore-modified Framingham Risk Score 2023

SG-FRS-2023

https://www.ace-hta.gov.sg/docs/default-source/acgs/additional-resource-for-cv-risk-assessment-using-sg-frs-2023.pdf?sfvrsn=965de984_9

Sex

Age

Smoking status

Race

Disease & family history

Medication history

HDL cholesterol

Total cholesterol

Systolic blood pressure

→ Data used to calculate patient's risk in a separate/ manual calculation tool

HEALTH IQ RISK SCORE TOOL
Required data to calculate

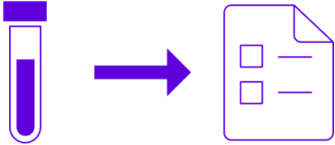
Nightingale risk score for CVD

Age

Sex

Race

NGH blood test



→ Calculated and reported automatically

Laboratory test

Medical interview

Clinical measurements

Population cohort behind Framingham score vs. Nightingale scores

FRAMINGHAM RISK SCORE

One of the most known and widely applied population study



NIGHTINGALE CVD SCORE

State of the art risk score with metabolomic blood markers

Framingham Heart Study is a population-based, observational cohort study initiated in 1948 to investigate the epidemiology and risk factors for cardiovascular disease over time.	Background	Risk score derived from UK biobank study using latest Nightingale's blood marker technology and machine learning
Number of participants: 5,345 	Participants	Number of participants: 502,150 
Years of collecting samples:  1971–1974 Age range of participants:  30–74 Ethnic background of participants:  American white		Years of collecting samples:  2006–2010 Age range of participants:  40–70 Ethnic background of participants:  Mainly UK white, but also ~10,000 with Asian descent
Age • Sex • Anti-hypertensive medication • Diabetes status • Total cholesterol • HDL cholesterol • Blood pressure •	Data parameters used in model	Age • Sex • Nightingale metabolomic blood values*
Provides absolute 10-year risk of heart attack in patients 30–79 years without prior CHD. There are distinct Framingham risk models for other forms of heart disease. The risk estimates have been tailored to other countries, to account for local disease prevalence.	Use-case	Provides absolute and relative 10-year risks of heart attack and stroke in patients aged 40–70 years without prior heart disease. Same Nightingale metabolomic blood markers enable also other disease risk estimates, such as T2D, MAFLD and CKD. The risk estimates have been tailored to other countries and ethnicities to account for local disease prevalence.
Medical interview • Laboratory test • Clinical measurement •		*Such as cholesterol test, sugar metabolism, apolipoproteins, fatty acids, amino acids, systemic inflammation

Terveystalo adopts Nightingale Health's blood analysis technology in routine health checks in occupational health

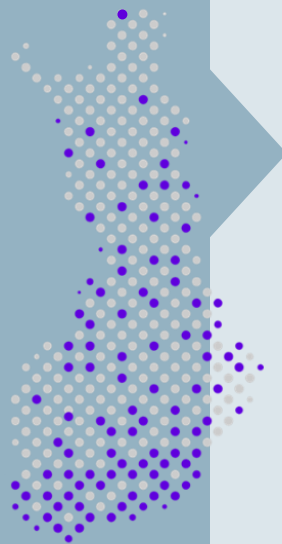
Commercially launched in January 2024

Over 200,000 samples analysed and reports returned by December 2025



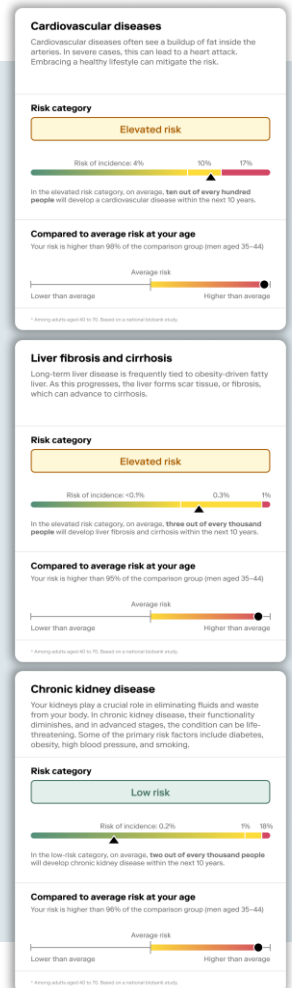
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Terveystalo



Nightingale Health's risk detection test adopted in occupational health checks offered by Terveystalo Plc to its customers covering 30 % of Finland's workforce.

Nightingale Health's technology is integrated into the daily work of Terveystalo's occupational health doctors, nurses, and laboratories.



Article

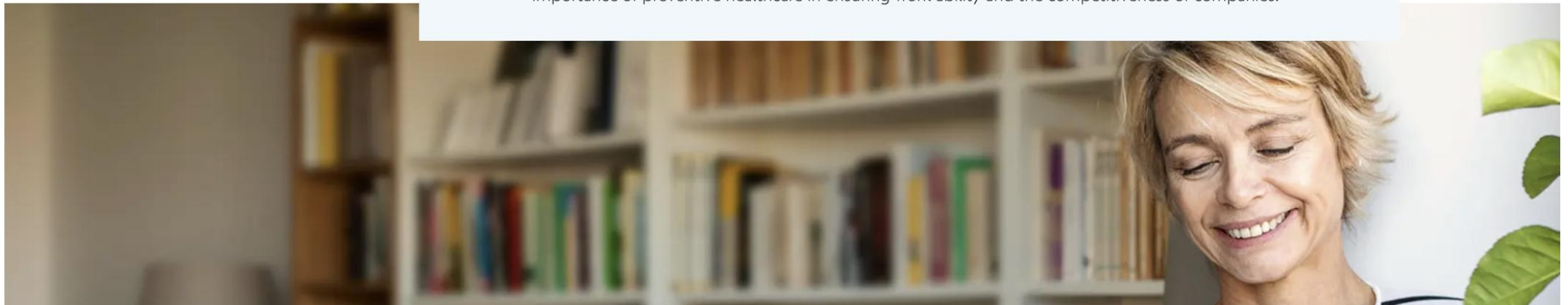
Työterveys

Extensive data set of 200,000 samples: Nightingale study reveals link between illness risks and sick leave

1/15/2026



Data from the Finnish Nightingale study, which is used in Terveystalo's occupational health services, reveals a clear link between lifestyle-related health risks and sick leave. The exceptionally extensive data set of over 200,000 customers shows that people with a low risk of illness had significantly fewer absences, while those in high-risk groups had more absences. The results highlight the importance of preventive healthcare in ensuring work ability and the competitiveness of companies.



From blood values to disease risks

Blood values in the test panel

	Used routinely in clinical practice	Established association with disease risk	Modifiable with lifestyle changes	Included in Nightingale's test panel (single sample)
Cholesterol	X	X	X	X
Triglycerides	X	X	X	X
Apolipoproteins	X	X	X	X
Fatty acids		X	X	X
Amino acids		X	X	X
Ketone bodies		X	X	X
Fluid balance	X	X	X	X
Inflammation		X	X	X
Blood sugar	X	X	X	X

Nightingale Health Checks are based on comprehensive metabolic profiling and age and sex

Routine blood tests

- Total cholesterol
- HDL cholesterol
- LDL cholesterol
- Total triglycerides
- Creatinine
- Albumin
- Glycolysis (Glucose, Pyruvate, Lactate)

Fatty Acids

- Total FA
- Omega-3
- Omega-6
- Monounsaturated FA
- Polyunsaturated FA
- Saturated FA
- MUFA/TotFA
- Omega-3/TotFA
- Omega-6/TotFA
- Omega-6/Omega-3
- PUFA/TotFA
- SFA/TotFA

Amino Acids

- Alanine
- Glycine
- Histidine
- Isoleucine
- Leucine
- Tyrosine
- Phenylalanine
- Valine
- Total branched-chain amino acids

Special Lipids

- Apolipoprotein A1
- Apolipoprotein B
- ApoB/ApoA1

Systemic inflammation

- Glycoprotein acetylation (GlycA)

Associated blood values varies between different disease risks

Disease risk	Cholesterol	Glycolysis related	Creatinine	Apolipo proteins	Fatty acids	Amino acids	Systemic inflammation
 Heart attack	✓			✓	✓		✓
 Stroke	✓			✓	✓		✓
 Type 2 diabetes	✓			✓	✓		✓
 Chronic kidney disease		✓			✓	✓	✓
 Fatty liver disease			✓			✓	✓

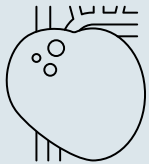
Associated blood values: Apolipoproteins B and A1



Apolipoprotein B (apoB) is a causal risk factor for cardiovascular disease. It is highly correlated with LDL-cholesterol, but large studies have shown that ApoB is a better predictor of cardiovascular risk. ApoB may be elevated in patients even though their LDL cholesterol levels are normal and eligible for treatment.^{1,2}



Apolipoprotein A1 is a marker for the risk of heart disease and stroke similar to HDL cholesterol. Lower concentrations of apolipoprotein A1 are related to increased risk of CVD.³



The ratio ApoB /ApoA1 is the single strongest predictor of cardiovascular risk compared to other lipid measures such as LDL and HDL cholesterol.^{4,5}



Higher blood levels of apolipoprotein B is linked causally with shortened lifespan.⁶

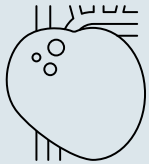
(1) European Heart Journal 2024;45:2410; (2) Canadian Medical Association Journal. 2023;195:E1124 (3) JAMA 2009;302:1993; (4) Lancet 2003;361:777.

(5) PLOS Medicine 2021;18:e1003853. (6) Lancet Healthy Longevity 2021;2:e317

Associated blood values: Fatty Acids



Higher blood levels of omega-3 and omega-6 are predictive of decreased risk for cardiovascular disease, type 2 diabetes, liver disease and chronic kidney disease.^{1,2}



Higher blood levels of monounsaturated and saturated fatty acids are predictive of increased risk the same cardiometabolic diseases. The fatty acid measures are often better predictors of disease risk than cholesterol measures³



Individuals with low blood levels of omega-3 may benefit the most from dietary fatty acid supplements, for instance during pregnancy.⁴



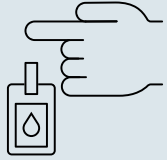
Lower levels of omega-3 and omega-6 are associated with increased mortality risk.^{3,5}

(1) Lancet Diabetes Endocrinol. 2020;8:915 (2) Lancet Diabetes Endocrinol. 2017;5:965 (3) Nature Communications 2023;14:60

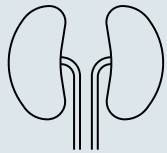
(4) Clinical Practice Guideline on behalf of Asia Pacific Health Association & International Society for Developmental Origins of Health.

(5) Elife. 2024 Apr 5;12:RP90132

Associated blood values: Amino Acids



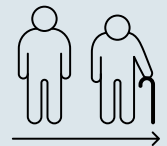
Amino acid levels in the blood are strong markers for the risk of type 2 diabetes and liver disease.^{1,2}



Some amino acids are also predictive of the risk for cardiovascular disease and chronic kidney disease.³



Amino acid levels in blood reflect insulin sensitivity as well as muscle health. High levels of branched-chain amino acids (BCAAs) are linked to increased inflammation and fat accumulation in adipose tissue.⁴



Branched-chain amino acids are inversely associated with risk of mortality in old age, likely because low levels may indicate frailty and loss of muscle mass.^{5,6}

Associated blood values: Systemic Inflammation



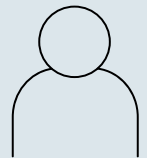
Systemic inflammation (also known as low grade inflammation or chronic inflammation) can be measured by the blood biomarker glycoprotein acetyls. This biomarker summarises the level and activity of several acute phase proteins.¹



Systemic inflammation is one of the strongest biomarkers for overall disease and mortality risk.²



Increased levels of systemic inflammation is associated with elevated risk for cardiovascular disease, type 2 diabetes, chronic kidney disease as well as liver disease.^{2,3}



Systemic inflammation is a strong predictor of disease risk both for apparently healthy individuals as well as for patients with existing disease.²



Systemic inflammation measured by glycoprotein acetyls is more stable over time than other biomarkers of inflammation, such as C-reactive protein.⁴

Nightingale Health Check

Patient reports

Nightingale Health Check

Sabine SamplePatient IDFemale, 48EthnicityLab No. 0000SAMPLE

HealthIQ

Ordering clinician: DR FIRST LAST NAME
Ordering clinic: CLINIC NAME
12 UBI AVE 2
#07-10
SIN 123456

Sample collected: 17 September 2025, 10:45
Test conducted: 17 September 2025
Test reported: 18 September 2025
Lab ref: QG102 [Z]

Health Check

powered by Nightingale Health

Routine risk assessment for
common chronic diseases

Clinical Report

Innoquest Diagnostics Pte Ltd
StarHub Green
67 Ubi Avenue 1
North Wing #07-01 to 07, 09 & 10
Singapore 408942

innoquest

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CAP
ACCREDITED

COLLEGE of AMERICAN PATHOLOGISTS

ACCREDITED
LABORATORY
SAC-SINGLAS

Sabine SamplePatient IDFemale, 48EthnicityLab No. 0000SAMPLE

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Health Check

powered by Nightingale Health

Longevity Report
with Metabolic Age

Innoquest Diagnostics Pte Ltd
StarHub Green
67 Ubi Avenue 1
North Wing #07-01 to 07, 09 & 10
Singapore 408942

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ACCREDITED

COLLEGE of AMERICAN PATHOLOGISTS

ACCREDITED
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Health Check

powered by Nightingale Health

Longevity Report
with Metabolic Resilience Score

Innoquest Diagnostics Pte Ltd
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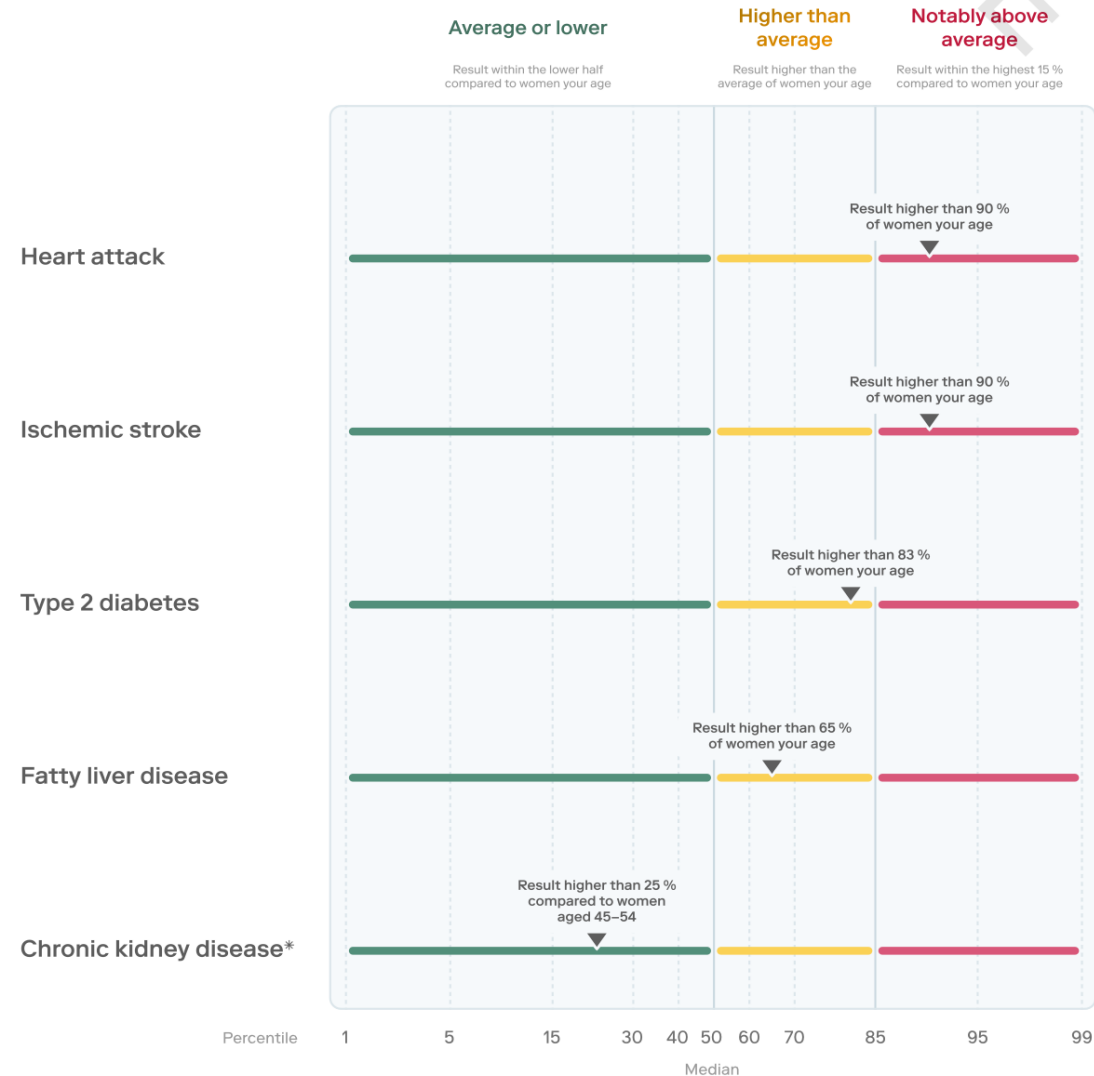
COLLEGE of AMERICAN PATHOLOGISTS

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LABORATORY
SAC-SINGLAS

Clinical summary

Your risk profile for common chronic diseases in comparison to other women your age

The result categories indicate how your 10-year risks compare to other women of your age. For evaluating the disease-specific risks, see the risk page of each disease.



Heart attack

Your current result category

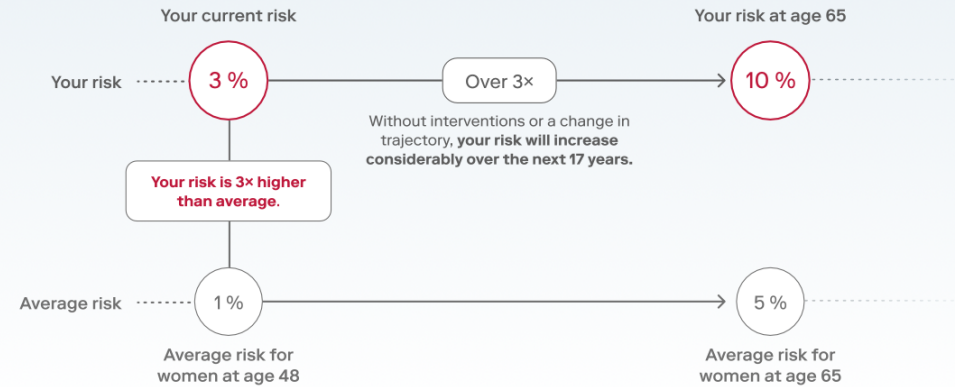
Notably above average

In comparison to women your age

Heart attack is one of the most common causes of death. It occurs when an artery supplying blood and oxygen to the heart muscle is occluded.

Your current 10-year risk and future projection

What is your current risk, how it compares to other women your age, and what happens when you get older.



What factors increase your risk?

- **Lifestyle** can account for up to 80 % of your risk. Poor diet, sedentary lifestyle, smoking, excessive use of alcohol, high stress, and lack of sleep may influence the **clinical risk factors** and your risk.

How to improve?

- See the **Lifestyle guidance page** for information on lowering risks through healthy habits.
- Consult your healthcare provider to assess and manage the **clinical risk factors**.

Your progress over time

Your result category has changed since your last blood test.

Notably above average	☐	☒
Higher than average	☒	☐
Average or lower	☐	☐

1 December 2024

18 September 2025

Your current result category



Type 2 diabetes

Your current result category

Higher than average
In comparison to women your age

Type 2 diabetes is a common condition that causes high blood sugar and can damage the eyes, kidneys, nerves, and the heart. It can often be prevented and even reversed through lifestyle choices.

Your current 10-year risk and future projection

What is your current risk, how it compares to other women your age, and what happens when you get older.



What factors define my risk?

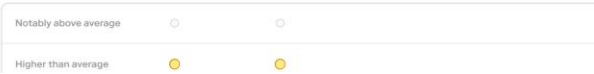
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How to improve?

- See the **Lifestyle guidance page** for info on lowering risks through healthy habits.
- Consult your healthcare provider to assess and manage the **clinical risk factors**.

Your progress over time

Your result category has stayed the same since your last blood test.



Chronic kidney disease

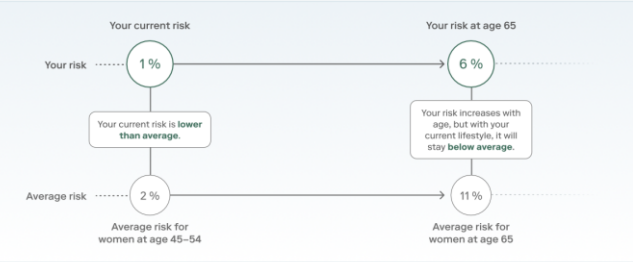
Your current result category

Average or lower
In comparison to women your age

Chronic kidney disease is a long-term condition in which the kidneys slowly lose function. It is very common in older people. Diabetes and high blood pressure are major risk factors, both strongly linked to lifestyle.

Your current 10-year risk and future projection

What is your current risk, how it compares to other women your age, and what happens when you get older.



What factors increase your risk?

- Lifestyle** can account for up to 80 % of your risk. Poor diet, sedentary lifestyle, smoking, excessive use of alcohol, high stress, and lack of sleep may influence the **clinical risk factors** and your risk.

How to improve?

- See the **Lifestyle guidance page** for information on lowering risks through healthy habits.
- Consult your healthcare provider to assess and manage the **clinical risk factors**.

Your progress over time

Your result category has stayed the same since your last blood test.



Nightingale Health

Health Check / version IQ-4.2 / variant CLIN-HIGPRA Page 8/10

Ischemic stroke

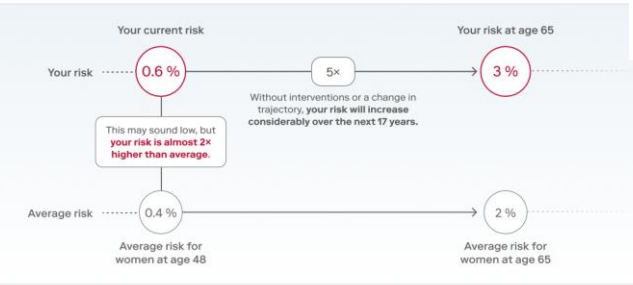
Your current result category

Notably above average
In comparison to women your age

An ischemic stroke can cause brain damage or even death. It happens when a blood blockage blocks a blood vessel in the brain. Smoking, an unhealthy diet, high blood pressure, and lack of exercise increase the risk.

Your current 10-year risk and future projection

What is your current risk, how it compares to other women your age, and what happens when you get older.



What factors increase your risk?

- Lifestyle** can account for up to 80 % of your risk. Poor diet, sedentary lifestyle, smoking, excessive use of alcohol, high stress, and lack of sleep may influence the **clinical risk factors** and your risk.

How to improve?

- See the **Lifestyle guidance page** for information on lowering risks through healthy habits.
- Consult your healthcare provider to assess and manage the **clinical risk factors**.

Your progress over time

Your result category has changed since your last blood test.



Fatty liver disease

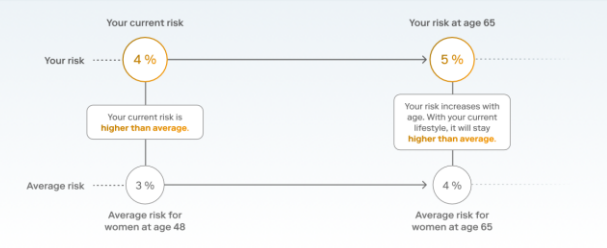
Your current result category

Higher than average
In comparison to women your age

In fatty liver disease, excess fat builds up in the liver. It is a common condition often linked to diabetes and being overweight. It can cause severe liver damage, but can be prevented with a healthy lifestyle.

Your current 10-year risk and future projection

What is your current risk, how it compares to other women your age, and what happens when you get older.



What factors increase your risk?

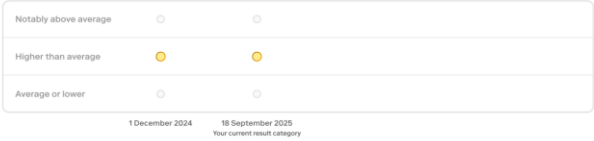
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How to improve?

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- Consult your healthcare provider to assess and manage the **clinical risk factors**.

Your progress over time

Your result category has stayed the same since your last blood test.





Lifestyle guidance

Diet

Recommendation:

- Eat plenty of vegetables, fruits, and whole grains.
- Choose lean proteins (like beans, fish, chicken).
- Use small amounts of healthy oils.
- Cut down on foods high in sugar, salt, and saturated fat.

Why this helps?

This helps to keep your weight, cholesterol, and blood pressure in check and prevents blood sugar spikes.

Alcohol and smoking

Recommendation:

- Don't smoke.
- Keep your alcohol consumption as low as possible.

Why this helps?

Quitting smoking lowers strain on your heart and also broadly improves other aspects of your health.

Weight

Recommendation:

- Aim to maintain a healthy body weight by following a healthy diet and having a sufficient amount of exercise.
- As a rule of thumb, a body mass index between 20 and 25 is considered healthy.

Why this helps?

Being overweight is a risk factor for many common chronic diseases. Achieving a healthy body weight lowers the risks and increases wellbeing.

Exercise

Recommendation:

- Aim for at least 150 minutes of brisk activity each week.
- Do muscle-strengthening exercises twice a week.

Why this helps?

Exercise strengthens your heart, lowers blood pressure, improves cholesterol, helps control weight, and keeps blood sugar stable.

Recovery

Recommendation:

- Sleep 7–9 hours each night.
- Manage stress with healthy habits (e.g. relaxation, hobbies, socializing, exercise).

Why this helps?

Good sleep and stress control help keep blood pressure, weight, and blood sugar balanced.

How do lifestyle changes lower the risk?

Heart attack

A heart attack happens when blood flow to the heart is blocked. Smoking, high cholesterol, high blood pressure, and extra weight all make this more likely. By keeping your arteries healthy with better diet, activity, and avoiding smoking, you greatly lower your risk of a heart attack.

Type 2 diabetes

Being active, eating balanced meals, and keeping a healthy weight improve how your body handles sugar. Healthy habits can prevent diabetes from developing or even reverse it.

Fatty liver disease

Too much fat in the liver can lead to damage over time. Eating well, moving regularly, keeping weight healthy, and limiting alcohol all reduce liver fat. This prevents liver scarring and keeps your liver working properly.

Ischemic stroke

Ischemic stroke is caused by blocked blood vessels in the brain. High blood pressure and smoking are major triggers. Controlling blood pressure, improving cholesterol, and staying active protect your brain and lower the risk of stroke.

Chronic kidney disease

Kidneys are damaged over time by high blood pressure and high blood sugar. Healthy habits keep both under control and reduce strain on the kidneys. Protecting your kidneys this way lowers the risk of long-term kidney problems.



Frequently Asked Questions

Is this a diagnosis?

The risk assessment is not a diagnosis. The test identifies your risk of developing a disease in the future and gives you a chance to act now to improve your risk profile and prevent diseases.

What if I already have a diagnosis?

The risk assessment is designed to identify the future risk of developing any of the diseases in the report. If you have a well-controlled diagnosed condition, the test may show favorable risk profile.

What is the Nightingale Health risk assessment based on?

The Nightingale Health risk assessment is based on a wide range of metabolic blood values (including lipids, fatty acids, amino acids, and systemic inflammation), measured from a single blood sample, along with age, sex, and ethnicity.

Numerous independent scientific studies have demonstrated that risks of common chronic lifestyle diseases can be reliably identified based on these blood values.^{1,2,3,4} The same blood test has been used in over 950 peer-reviewed scientific studies on metabolism and lifestyle-related diseases.⁵

The risk assessment is based on data from blood samples from hundreds of thousands of volunteers and subsequent data on health development over a period of more than 10 years. The risk assessment is matching or exceeding the performance of current clinical tools for detecting disease risks.

The risk assessment has been calibrated to different ethnic groups.

What does an “average” result mean?

An “average” result means your result category is similar compared to others of the same age, i.e. your result is neither unusually high nor unusually low.

Why did I receive a poor result?

Receiving a result that is either “higher than average” or “notably above average” means that approximately 50 % of your age group has a better result than you. It's an indication that you have more risk factors compared to people of the same age as you. This information explains your health trajectory and indicates when preventative actions are needed.

Does poor results mean I get a disease?

Receiving a poor result does not mean that you have a disease or that you will definitely develop one. Conversely, even a good result does not mean that you will definitely avoid the disease. It's about probability. The better your risk profile, the more likely you will live a healthy life.

What can I do to improve my result?

Improving your lifestyle is key in improving your risk profile. A balanced diet, adequate exercise, sufficient rest, minimal alcohol consumption, and not smoking can help you maintain your health and avoid diseases. Lifestyle improvements are also reflected in your blood values and consequently in your risk profile.

Can I use this test to track my progress?

Yes. Your risk profile can change over time, and future tests will show how your results evolve. By comparing new results with previous ones, you can see whether lifestyle changes are improving your risk profile.

Scientific references

1. Nightingale Health Biobank Collaborative Group, Nature Communications 2024 (<https://doi.org/10.1038/s41467-024-54357-0>)
2. Buergele et al., Nature Medicine 2022 (<https://doi.org/10.1038/s41591-022-01980-3>)
3. Ahola-Olli et al., Diabetologia 2019 (<https://doi.org/10.1007/s00125-019-05001-w>)
4. Würtz et al., Circulation 2015 (<https://doi.org/10.1161/circgenetics.114.000216>)
5. Nightingale Health Publications: <https://research.nightingalehealth.com/publications>

Metabolic Age

Sabine SamplePatient IDFemale, 48EthnicityLab No. 0000SAMPLE

HealthIQ

Metabolic Age

Your result

5 years older

Your Metabolic Age reveals your risks for common chronic diseases compared to the average in your age group. Having a higher Metabolic Age than your calendar age means your risks are higher compared to others in your age group — and vice versa. Metabolic health shapes your longevity.

Your Metabolic Age

Calendar age

48 years

Metabolic Age

53 years

Your Metabolic Age is **5 years older** than your calendar age.

This indicates that your risk for common chronic diseases is **higher than average** when compared to other women your age.

Your Metabolic Age can be up to 15 years lower or higher than your calendar age.

What factors define my Metabolic Age?

Lifestyle can account for up to 80 % of your risk for common chronic diseases as it strongly influences many of their risk factors. As a result, lifestyle is also the key factor defining your Metabolic Age.

How to improve?

Metabolic Age improves when key metabolic blood values improve. Optimizing sugar and fat metabolism, inflammatory balance, and other metabolic blood values can meaningfully lower your Metabolic Age over time. Practical recommendations are outlined in the **blood marker interpretation guide**.

Your progress over time

Your Metabolic Age has decreased in relation to your calendar age since your last examination.

Higher than calendar age	61	53
Lower than calendar age		

1 December, 2024

18 September 2025

Your current Metabolic Age

Nightingale Health

Health Check / version IQ-4.2 / variant LONG-MA

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Sabine SamplePatient IDFemale, 48EthnicityLab No. 0000SAMPLE

Blood markers for your Metabolic Age

Each blood marker in your results is linked to your Metabolic Age. Results in the blue zone are within an optimal range and support your body's ability to stay balanced and strong. Results in the orange zone are in a less favorable range and hold you back. A result in the gray zone is neutral. The further a result reaches into the blue or orange zone, the more it counts toward your Metabolic Age. This view helps you see where to focus your habits so you can improve your Metabolic Age and strengthen your ability to return to balance. Improvement starts with healthy everyday habits: moving regularly, eating nourishing meals, getting enough good-quality sleep, and finding ways to manage stress.

Weakest association with your Metabolic Age

Strongest association with your Metabolic Age

Result within optimal range

Result within neutral range

Result within suboptimal range

The length of the line indicates the distance from the cut-off point between optimal and suboptimal ranges.

53 years

LDL cholesterol (Direct)

112 mg/dL

Omega-3

0.89 mmol/L

Omega-6

4.6 mmol/L

PUFAs

5.5 mmol/L

5:4 ratio

0.283 mmol/L

Alanine

112 mg/dL

Total cholesterol

190 mg/dL

Isoleucine

0.035 mmol/L

Apolipoprotein B

1 g/L

Total BCAAs

0.267 mmol/L

Valine

0.154 mmol/L

Tyrosine

0.052 mmol/L

Glucose (fast)

4.8 mmol/L

Total fatty acids

14.6 mmol/L

Omega-3 %

5.8 %

ApoB/ApoA4

0.78 ratio

Apolipoprotein A1

1.3 g/L

SFA %

37.8 %

SFAs

5.5 mmol/L

1.5 ratio

24.7 %

MUFA %

37.5 %

PUFA %

1 mmol/L

Glycoprotein acetyls

31.7 %

Omega-6 %

54 mg/dL

HDL cholesterol

159 mg/dL

Total triglycerides (TG)

0.62 mmol/L

MUFAs

3.6 mmol/L

Creatinine

0.62 mg/dL

Nightingale Health

Confidential

36

Nightingale Health

Health Check / version IQ-4.2 / variant LONG-MA

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Metabolic Resilience Score

Sabine Sample Patient ID Female, 48 Ethnicity Lab No. 0000SAMPLE



Metabolic Resilience Score

Metabolic Resilience Score shows how well your body can stay balanced and strong day to day. A higher score means your system can adapt to change — switching between energy sources, managing stress, and returning to balance after everyday challenges like a late night or an indulgent meal. Think of it as having a flexible, well-tuned engine that runs cleanly and efficiently, even when life speeds up.

Your Metabolic Resilience Score

33 / 100

Below average

Your Metabolic Resilience Score is below average.

Your Metabolic Resilience Score suggests reduced adaptive capacity in one or more metabolic systems.

Targeted improvements with medical professional help in balanced nutrition, consistent movement, non-smoking, moderate alcohol consumption, restorative sleep, and stress regulation can help enhance resilience and healthspan over time.

Your Metabolic Resilience Score compared to other women your age



You

33 %

of women your age have a lower score than you.

67 %

of women your age have a higher score than you.

Sabine Sample Patient ID Female, 48 Ethnicity Lab No. 0000SAMPLE



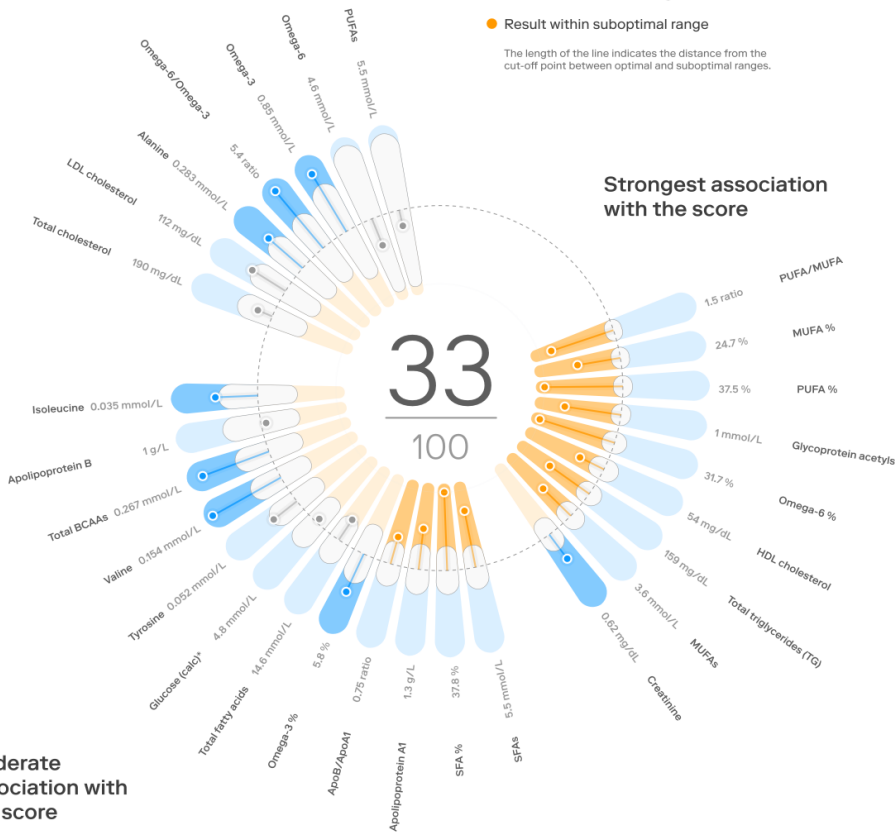
Blood markers for your Metabolic Resilience Score

Each blood marker in your results is linked to your Metabolic Resilience Score. Results in the blue zone are within an optimal range and support your body's ability to stay balanced and strong. Results in the orange zone are in a less favorable range and hold you back. A result in the gray zone is neutral. The further a result reaches into the blue or orange zone, the more it counts toward your score. This view helps you see where to focus your habits so you can improve your Metabolic Resilience Score and strengthen your ability to return to balance. Improvement starts with healthy everyday habits: moving regularly, eating nourishing meals, getting enough good-quality sleep, and finding ways to manage stress.

Weakest association with the score

- Result within optimal range
- Result within neutral range
- Result within suboptimal range

The length of the line indicates the distance from the cut-off point between optimal and suboptimal ranges.



Moderate association with the score



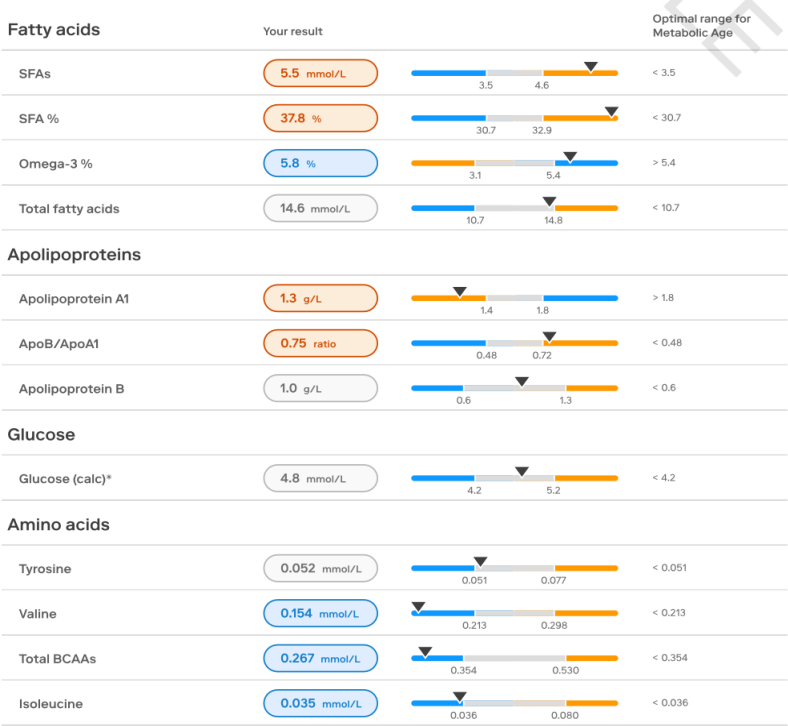
Strongest association

These blood markers are strongly associated with your Metabolic Age. As you make healthy lifestyle choices such as balanced nutrition, regular exercise, and sufficient recovery, these markers typically shift toward their optimal range. The optimal range, shown in blue, reflects values linked to a lower Metabolic Age, while the suboptimal range, shown in orange, reflects values linked to a higher Metabolic Age. Values shown in gray have a neutral association with Metabolic Age. For clarity, the markers are grouped by their biological role or biochemical class.



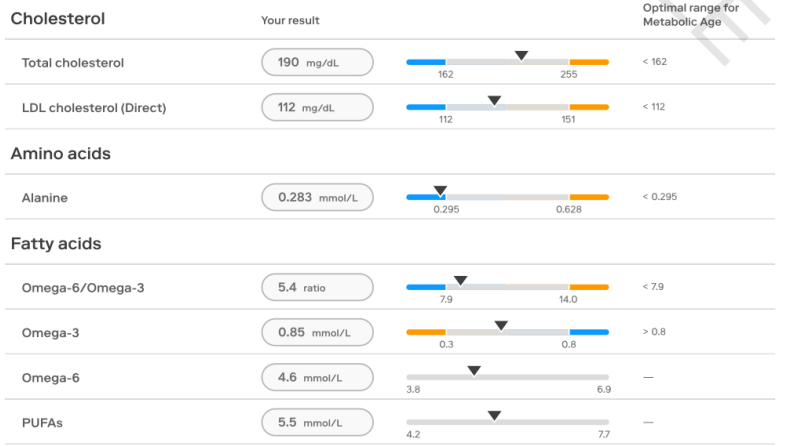
Moderate association

These blood markers offer additional context for understanding your metabolic health, even though they are less strongly linked with your Metabolic Age. As you make healthy lifestyle choices, these markers shift in a positive direction. While they do not define your score, they help you see broader patterns that complement your core results. For clarity, the blood markers are grouped according to their biological role or biochemical class.



Weakest association

These blood markers offer additional context for understanding your metabolic health, even though they are more weakly linked to your Metabolic Age. This weak association is reflected in wider neutral ranges, and for some markers the optimal or suboptimal range does not apply. While these markers do not define your Metabolic Age, they help you see broader patterns that complement your core results. As you make healthy lifestyle choices, these markers also shift in a positive direction. For clarity, the markers are grouped by their biological role or biochemical class.



Blood marker interpretation guide

The blood marker groups behind your Metabolic Age are explained below in more detail. This helps you see what each group means for your score and how your everyday choices can improve it.

Your Metabolic Age is a holistic view of how your body is doing, built from patterns across all your blood marker groups. These markers interact and influence each other, so they are best understood together as an interconnected whole rather than one by one. Use this guide to see where to focus your habits so your body can stay more balanced and strong day to day.

Inflammation

Low-grade inflammation measured by GlycA reflects chronic inflammation and is linked to higher risk for many cardiometabolic diseases.

Low-grade inflammation disrupts metabolic health by promoting insulin resistance and cardiovascular disease. Elevated GlycA indicates a summary of your overall level of inflammation in your body over the long term, rather than due to acute infections.

You can lower your inflammation through lifestyle and diet, such as:

- Maintain regular physical activity, sleep and stress management, and balanced nutrition
- Add anti-inflammatory sources to your diet, such as fatty fish, berries, leafy greens, nuts, and whole grains
- Avoid processed foods, added sugars, and excess saturated fats
- Avoid smoking and moderate alcohol intake

Fatty acids & fatty acids ratios

Fatty acids come to your bloodstream from dietary fat intake. They are essential to many metabolic processes in your body, such as keeping the structure of your cells and supporting vitamin absorption.

Fatty acids strongly influence metabolic health. Saturated fats can raise LDL cholesterol, while mono and polyunsaturated fats improve cholesterol levels and lower heart disease risk. Omega-3 fats further reduce triglycerides and decrease inflammation.

You can improve fatty acid balance through lifestyle and dietary changes, such as:

- Increase unsaturated fats (olive oil, canola oil, nuts, seeds, fatty fish)
- Increase high quality omega-3 sources (salmon, mackerel, sardines, tuna, anchovies)
- Reduce saturated fats (butter, fatty meats, lard, fried foods, high fat dairy)
- Reduce highly processed foods containing refined oils and additives

Triglycerides

Triglycerides are blood fats that store excess energy from your food intake and can later be released as a vital source of fuel for your body.

High triglyceride levels in your blood indicate a raised risk for heart attack and stroke. High triglycerides frequently occur with obesity, insulin resistance, and diabetes, collectively heightening cardiovascular risk.

You can improve triglyceride levels through lifestyle and dietary changes, such as:

- Eat less refined carbohydrates and sugar
- Reduce excess weight and engage in regular physical activity
- Choose healthier fats in your diet — such as olive oil and fish rich in omega-3 (e.g. salmon, sardines, mackerel)
- Limit alcohol intake

Apolipoproteins

Apolipoproteins transport cholesterol and triglycerides in your bloodstream, and play essential roles for lipid metabolism.

Apolipoproteins strongly influence cardiovascular health: higher levels of apolipoprotein B (“bad” apolipoprotein) increases cardiovascular risk, while higher levels apolipoprotein A1 decreases the risk of developing heart disease.

You can improve apolipoprotein levels through lifestyle and dietary changes, such as:

- Regular physical activity
- Limit sugary foods and alcohol intake
- Choose foods rich in healthy fats — such as avocados, olive oil, almonds, and fatty fish
- Weight loss, quitting smoking, and moderating alcohol intake further improve apolipoprotein profiles

Cholesterol

Cholesterol is waxy lipid found in every cell, essential for building membranes, producing hormones, and supporting metabolic functions.

Cholesterol strongly influences metabolic and cardiovascular health. High levels of LDL (“bad” cholesterol) drives buildup of plaque in your arteries, elevating the risk for heart attack and stroke. Low levels of HDL cholesterol is also a marker of heart attack and stroke risk, which often coexists with obesity and elevated blood sugar — intensifying overall cardiometabolic risk.

You can improve cholesterol levels through lifestyle and dietary changes, such as:

- Regular physical activity raises HDL and lowers LDL cholesterol
- Prioritize plant based foods, whole grains, fruits, vegetables, nuts, poultry, and fish
- Reducing food with saturated fat content helps lower LDL
- Weight loss, quitting smoking, and moderating alcohol intake further improve cholesterol profiles

Fluid balance

Fluid balance regulates water and electrolytes in your blood stream and indicates the health state of your kidneys.

When fluid balance becomes disrupted, as in chronic kidney disease, metabolic health declines through high blood pressure and impaired nutrient regulation. Monitoring kidney function with blood tests such as creatinine and eGFR enables early detection of these imbalances and related complications.

You can improve fluid balance through lifestyle and diet, such as:

- Stay appropriately hydrated by drinking water
- Limit salt and excess protein intake
- Avoid smoking
- Include fruits and vegetables (apples, carrots, cabbage) and whole grains to your diet

Amino acids

Amino acids are molecules that serve as the building blocks of proteins. Your body needs 20 amino acids, nine of which are essential and must come from food.

Amino acids are deeply connected to metabolic health because the body breaks down dietary proteins into amino acids, then uses them to build new proteins, enzymes, and hormones involved in energy regulation, muscle maintenance, tissue repair, immunity, and blood sugar control.

You can improve amino acid levels through lifestyle and dietary changes, such as:

- Increase high quality plant proteins (tofu, beans, lentils, chickpeas, almonds, quinoa, broccoli, spinach)
- Choose lean animal proteins (fish, eggs, yogurt, low-fat cheese, chicken, lean meats)
- Combine plant proteins (e.g., beans & grains) to improve your amino acid profile
- Avoid processed meats such as sausages, bacon, and deli meats with lower quality protein

Foods to add to a healthy diet

Carbohydrates

Whole Grains

Oats, brown rice, quinoa, whole wheat bread, barley, millet



Cholesterol	+
Blood Sugar	+
Fatty Acids	o
Amino Acids	o
Inflammation	+

Fruits

Apples, berries, oranges, pears, grapes, kiwi, mango, bananas



Cholesterol	+
Blood Sugar	o
Fatty Acids	o
Amino Acids	o
Inflammation	+

Vegetables

Broccoli, spinach, carrots, bell peppers, kale, squash, zucchini



Cholesterol	+
Blood Sugar	+
Fatty Acids	o
Amino Acids	o
Inflammation	++

Legumes

Lentils, chickpeas, soybeans, edamame, black/kidney/white/mung bean



Cholesterol	+
Blood Sugar	+
Fatty Acids	o
Amino Acids	+
Inflammation	+

Proteins

Fish & seafood

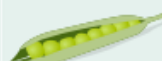
Salmon, sardines, mackerel, trout, herring, cod, shrimp, scallop



Cholesterol	o
Blood Sugar	o
Fatty Acids	++
Amino Acids	++
Inflammation	+

Legumes

Lentils, chickpeas, soybeans, edamame, black/kidney/white/mung bean



Cholesterol	+
Blood Sugar	+
Fatty Acids	o
Amino Acids	+
Inflammation	+

Lean meats

Chicken breast, turkey breast, lean pork loin



Cholesterol	o
Blood Sugar	o
Fatty Acids	+
Amino Acids	++
Inflammation	o

Plant-based proteins

Tofu, tempeh, seitan, pea protein, hemp tofu



Cholesterol	+
Blood Sugar	o
Fatty Acids	+
Amino Acids	+
Inflammation	+

Fats

Healthy oils

Extra virgin olive oil, avocado oil, flaxseed oil, walnut oil



Cholesterol	+
Blood Sugar	o
Fatty Acids	++
Amino Acids	o
Inflammation	+

Fatty Fruits

Avocados, black olives, green olives



Cholesterol	+
Blood Sugar	o
Fatty Acids	++
Amino Acids	o
Inflammation	+

Fatty fish

Salmon, mackerel, anchovies, herring



Cholesterol	+
Blood Sugar	o
Fatty Acids	++
Amino Acids	++
Inflammation	++

Nuts & seeds

Almonds, walnuts, chia seeds, flaxseeds, pumpkin seeds, sunflower seeds



Cholesterol	+
Blood Sugar	o
Fatty Acids	++
Amino Acids	+
Inflammation	+

Foods to avoid on a healthy diet

Carbohydrates

Refined grains

White bread, white pasta, crackers, pizza crust, instant noodles



Cholesterol	-
Blood Sugar	--
Fatty Acids	-
Amino Acids	o
Inflammation	-

Sugary Snacks

Candy, cookies, cakes, donuts, muffins



Cholesterol	-
Blood Sugar	--
Fatty Acids	-
Amino Acids	o
Inflammation	-

Sweetened drinks

Soda, energy drinks, fruit punch, sweet iced tea, flavored coffees



Cholesterol	-
Blood Sugar	--
Fatty Acids	o
Amino Acids	o
Inflammation	--

Proteins

Fried Meats & Seafood

Chicken nuggets, fried pork, breaded deep fried meats and seafood



Cholesterol	--
Blood Sugar	o
Fatty Acids	--
Amino Acids	+
Inflammation	--

Processed meats

Bacon, hot dogs, deli meats, sausages



Cholesterol	--
Blood Sugar	o
Fatty Acids	--
Amino Acids	+
Inflammation	--

Processed vegan products

Soy burgers, vegan nuggets, mock meats with additives



Cholesterol	-
Blood Sugar	-
Fatty Acids	-
Amino Acids	o
Inflammation	-

Fats

Refined Oils

Corn oil, soybean oil, sunflower oil, oils used in fast food



Cholesterol	-
Blood Sugar	o
Fatty Acids	-
Amino Acids	o
Inflammation	-

High-fat dairy

Butter, cream, cheese, cream cheese



Cholesterol	--
Blood Sugar	o
Fatty Acids	-
Amino Acids	+
Inflammation	o

Trans Fats

Fried fast food, margarine sticks, chips, microwave popcorn



Cholesterol	--
Blood Sugar	-
Fatty Acids	--
Amino Acids	o
Inflammation	--

Meanings of symbols

Very positive impact	++
Positive impact	+
Neutral impact	o
Negative impact	-
Very negative impact	--



Cooking methods significantly influence nutritional quality; in general, steaming, baking, and sautéing are preferred methods of cooking, while frying, particularly deep-frying, should be minimized



Consume all foods in moderation to support overall health and weight management



Please use this as general guidance; there are additional options that are not included in this guide

Source

McCullough & Willett, Public Health Nutrition, 2006



Example patient cases

Female, 29

Self-declared healthy lifestyle, elevated BMI, high risk profile



Risk Summary Report

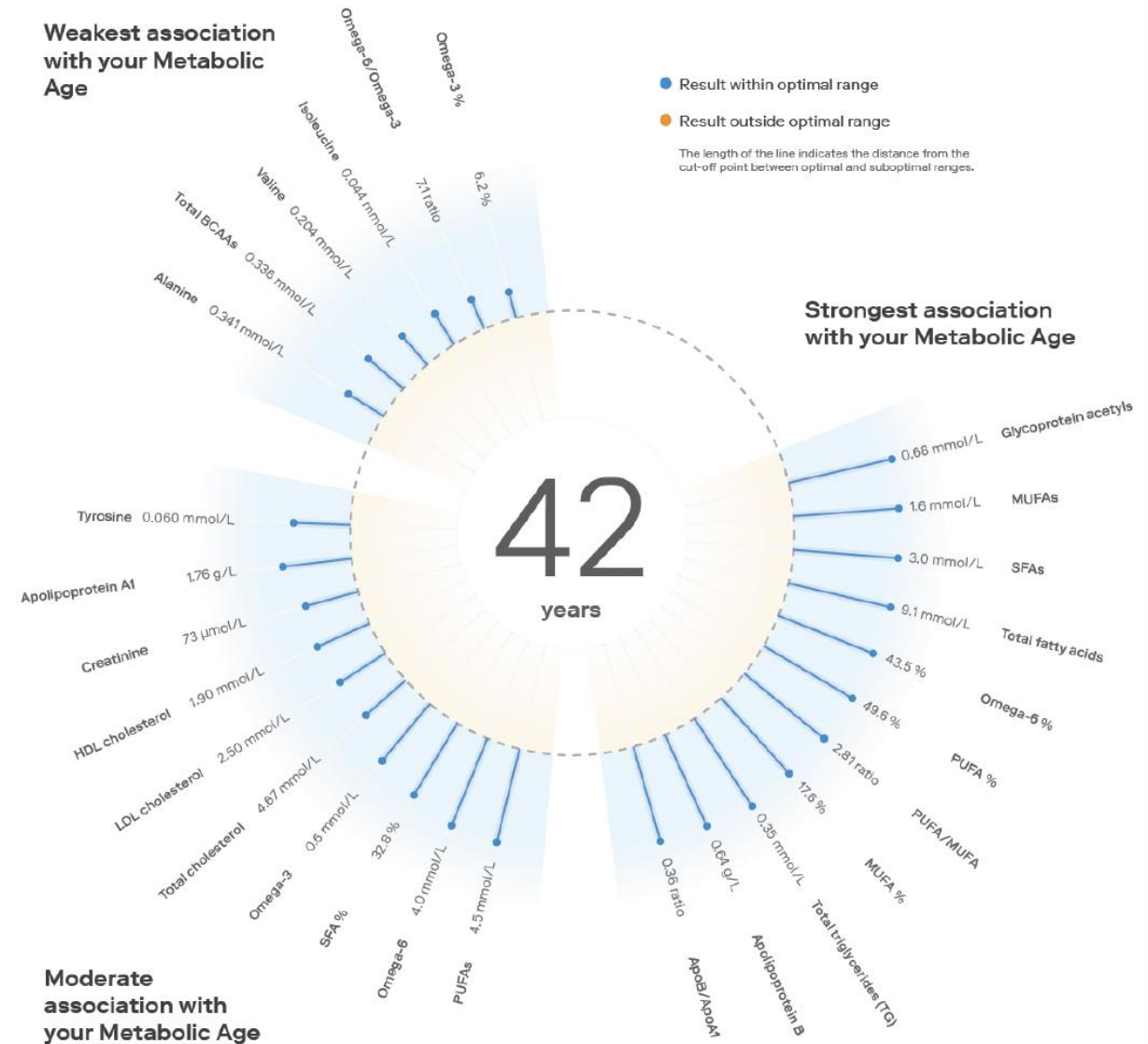
Routine Blood Result

Metabolic Age Report

Female, 29 – Metabolic Age 44



Female, 49 – Metabolic Age 42

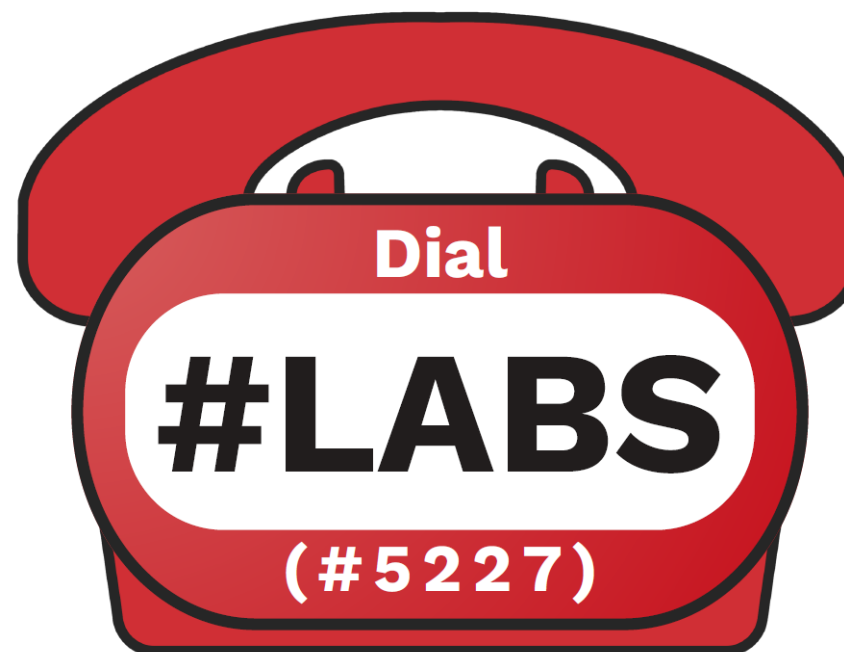


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