



METBALANCE TEST

RESULTS REPORT

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Date: 03/10/2024

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In this report you will find a detailed explanation of the MetBalance test and the information it contains. Your detailed results are organized in the following sections to facilitate their understanding:

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INTRODUCTION

The MetBalance test is a blood test that uses advanced technology to evaluate your metabolic health. Combining Nuclear Magnetic Resonance (NMR) and artificial intelligence, this test offers a detailed profile of your metabolism. It provides accurate and personalised information on various aspects of your health, helping you better understand your metabolic balance and make informed decisions to improve your overall well-being.

What will you find in this report?

In this report you will find a complete analysis of your metabolic profile:

- We will start with a summary of your metabolic health, including your metabolic age and a brief breakdown of the categories evaluated.
- We will then provide you with detailed results by sections, as illustrated below.

These are the areas that will offer you a comprehensive view of your well-being:

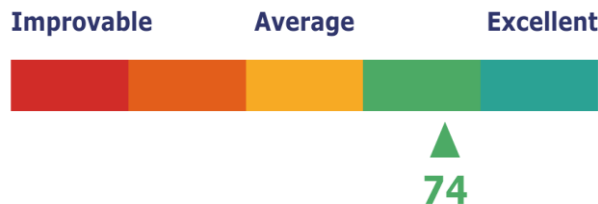
- Cardiovascular Health
- Inflammation
- Energy Metabolism
- Muscular Mass
- Kidney Function



SUMMARY OF YOUR RESULTS

Below, we present your percentage of metabolic health based on your age and sex, as well as your metabolic age. In addition, we include a summary of the results obtained in the different sections analysed, thus creating your metabolic portrait.

Metabolic Health



This result places you in the **74th percentile** for your age and sex

A percentile close to 100 indicates better metabolic health

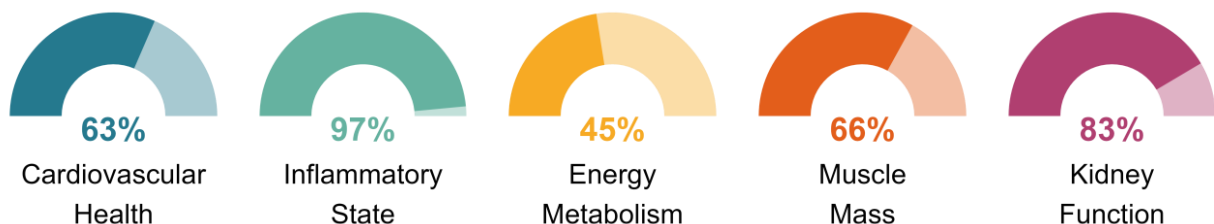
Metabolic Age

46 years

Your metabolic age is **5 years younger** than your chronological age

A metabolic age equal to or younger than the chronological age indicates a healthy metabolism

Summary by parameters




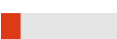



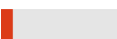



Metabolic health values below 50% or a metabolic age that is much higher than your actual age require action to optimize your metabolic health. Below you can analyze your metabolic status in detail for each of the sections included.



CARDIOVASCULAR HEALTH

In this section, the lipid profile is analysed, measuring cholesterol and triglycerides transported by lipoproteins. Additionally, the percentage of small particles susceptible to oxidation and the ability of HDL lipoproteins to eliminate cholesterol are evaluated¹. These factors are crucial, since they can increase the risk of atheroma plaque formation and cardiovascular risk².

Parameter	Result	Reference	Score	Aim
Lipid profile				
Total cholesterol (mg/dL)	200	<200 mg/dL	75% 	✓
Total triglycerides (mg/dL)	76	<150 mg/dL	96% 	✓
Atherogenic risk				
Remnant cholesterol (mg/dL)	18	<30 mg/dL	89% 	✓
LDL cholesterol (mg/dL)	129	<100 mg/dL	21% 	↓
Triglycerides/HDL cholesterol	1.4	<2	100% 	✓
Lipoprotein oxidation				
Small VLDL (%)	87	<90%	86% 	✓
Small LDL (%)	49	<60%	96% 	✓
HDL efficiency in cholesterol removal				
HDL cholesterol (mg/dL)	53	60-90 mg/dL	15% 	↑
HDL efficiency index	0.19	<0.25	94% 	✓





Remember that most cardiovascular diseases can be prevented by actively taking action on your lifestyle: changing dietary habits, increasing physical activity, and reducing alcohol and tobacco consumption.



INFLAMMATION

Chronic or low-grade inflammation is a dysfunction of the immune system closely related to metabolic imbalances. Specifically, measuring Glyc-A and Glyc-B concentrations allows for the early detection of systemic inflammation, even before symptoms manifest or can be detected by other conventional methods.

Glyc-A and Glyc-B refer to the blood concentration of glycoproteins associated with low-grade inflammatory processes. Precisely, we quantify the concentration of acetyl groups in N-acetylglucosamine and N-acetylgalactosamine (Glyc-A), as well as the acetyl groups of N-acetylneuraminic acid (Glyc-B) present in plasma proteins.



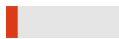









Parameter	Result	Reference	Score	Aim
Metabolic inflammation				
Glyc-A (μM)	584	< 650 μM	94% 	
Glyc-B (μM)	303	< 340 μM	100% 	

High levels of inflammation are associated with an increased risk of metabolic diseases, such as cardiovascular diseases³, type 2 diabetes⁴, as well as various non-metabolic conditions⁵. To counteract metabolic inflammation, it is recommended to adopt a balanced diet rich in anti-inflammatory foods such as fruits, vegetables, omega-3 rich fish, and whole grains. Additionally, engaging in regular exercise, maintaining a healthy weight, avoiding tobacco, and reducing alcohol consumption can significantly contribute to lowering inflammation levels.

ENERGY METABOLISM



In this section, you will discover how your body generates and utilizes energy with the key biomarkers of energy metabolism. Glucose, a simple sugar, is the body's primary source of energy. Lactate, produced in the absence of oxygen, indicates high energy demand. Ketone bodies such as 3-hydroxybutyrate and acetone reveal a state of ketosis, where fat is converted into an alternative energy source. Finally, the amino acids tyrosine and alanine, beyond their role in protein synthesis, are involved in enhancing energy, physical performance, and cognitive ability. Tyrosine aids in the production of neurotransmitters that regulate metabolism and energy, while alanine participates in glucose production, helping to reduce muscle fatigue.







Parameter	Result	Reference	Score	Aim
Glucose metabolism				
Glucose (mg/dL)	105	70-100 mg/dL	42%	 
Lactate (μM)	673	< 450 μM	15%	 
Ketosis				
3-Hydroxybutyrate (μM)	47	20-65 μM	89%	 
Acetone (μM)	60	20-40M μM	15%	 
Amino acids				
Tyrosine (μM)	38	35-55 μM	84%	 
Alanine (μM)	252	265-400 μM	58%	 

Alterations in energy metabolism may indicate metabolic imbalances⁶ unless they result from controlled diets or high-intensity exercise supervised by healthcare professionals. Maintain a healthy energy metabolism with a balanced diet, regular exercise, adequate hydration, and good rest.

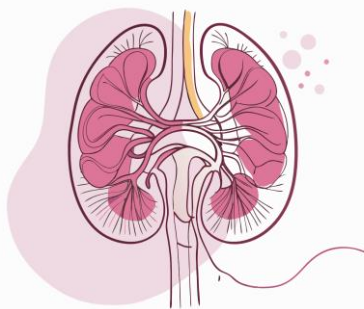


MUSCLE MASS

This section analyses key amino acids involved in the regulation of protein synthesis and degradation, and consequently, muscle mass⁷. Glutamine plays a role in biological functions such as DNA synthesis, cell proliferation, and energy production. Glutamate, the brain's primary neurotransmitter, regulates motor, sensory, and cognitive systems. Creatine, found in muscles and the brain, has both energy and structural functions and is also linked to athletic performance. BCAAs⁸ (branched-chain amino acids) are involved in muscle synthesis and energy metabolism: valine aids in tissue repair and combats fatigue; leucine promotes muscle protein synthesis; and isoleucine is crucial for glucose absorption and the prevention of catabolism and muscle loss.



Parameter	Result	Reference	Score	Aim
Amino acids				
Glutamine (µM)	346	320-385 µM	96%	
Glutamate (µM)	107	75-105 µM	67%	
Creatine (µM)	69	35-60 µM	33%	
BCAAs				
Valine (µM)	197	145-200 µM	77%	
Leucine (µM)	112	80-120 µM	84%	
Isoleucine (µM)	44	25-45 µM	77%	

An alteration in the amino acids involved in maintaining muscle mass may indicate a disruption in metabolism or an improper metabolic adaptation to exercise. The intake of these amino acids as supplements can lead to elevated levels in the blood.



KIDNEY FUNCTION

This section evaluates creatinine levels, a key indicator of kidney function⁹. Creatinine is produced as a result of the breakdown of creatine, a vital compound for energy production in muscles. It is eliminated through the kidneys via urine. Abnormal creatinine levels can indicate kidney dysfunction or metabolic imbalances, as they reflect an alteration in the kidney's ability to filter and clear waste products from the blood.

Parameter	Result	Reference	Score	Aim
Kidney disorders				
Creatinine (μM)	46	30-50 μM	83% 	

If muscle mass levels are stable but an increase in blood creatinine is observed, this may indicate impaired kidney function. It is important to consider that both diet, especially protein intake, and the intensity of physical exercise can affect creatinine levels. High-protein diets or strenuous exercise can temporarily raise these levels, while kidney dysfunction could lead to a persistent elevation.

INTERPRETATION OF RESULTS

In each section you will find an explanation of the included parameters and a table displaying the following values:

- ✓ The result obtained for the indicated parameter.
- ✓ The reference values for the indicated parameter.
- ✓ A score obtained by comparing the result with the corresponding value for the general population (with 100 being the maximum value associated with metabolic health and 0 the minimum score indicating the need for intervention and improvement of the specific parameter).
- ✓ The improvement goal in terms of the need to increase or decrease the value based on the results obtained.



ADDED VALUE OF THE METBALANCE TEST

Unlike other blood tests, the MetBalance test is based on NMR (Nuclear Magnetic Resonance). NMR uses magnetic fields and radio waves to analyze blood levels of lipoproteins, glycoproteins, and metabolites. An imbalance in these compounds may indicate the potential development of metabolic disorders.

The MetBalance test incorporates artificial intelligence algorithms that allow you to compare your metabolic profile with values from a general population of more than 6,000 individuals, including men and women across a wide age range (18 years and older). These algorithms enable you to determine your metabolic age and assess the health status of the parameters included in the MetBalance test, allowing for the identification of susceptibility or potential development of metabolic diseases even before the first symptoms appear.

In summary, the MetBalance test provides a molecular snapshot of your metabolism at a specific moment, allowing you to evaluate your results by comparing them with reference values for the general population, as well as determining your age based on your metabolism.

What advantages does the MetBalance test offer?

- ✓ Estimation of personal metabolic age.
- ✓ Detailed molecular analysis of metabolism in real time.
- ✓ Possibility of periodic monitoring to view progress.
- ✓ Comparison of results with population reference values.
- ✓ Evaluation of the impact of diet and lifestyle on metabolic health.



KEYS TO A GOOD METABOLIC HEALTH

Here are some practical recommendations to maintain and improve your metabolic health through healthy habits.



Diet: For a balanced diet, consume a variety of nutritious foods such as fruits, vegetables, lean proteins, whole grains, and healthy fats. Control portions to avoid overeating, stay well-hydrated by drinking plenty of water, and limit the consumption of added sugars and processed products.

Physical exercise: Regular physical activity is crucial for metabolic health. Aim for 150 minutes of moderate exercise or 75 minutes of vigorous exercise per week, along with strength training twice a week. Incorporate a mix of cardiovascular, strength, and flexibility exercises, and reduce sedentary time by staying active throughout the day.



Lifestyle: Avoid tobacco, limit alcohol consumption, and manage stress with relaxation techniques such as meditation, yoga, or deep breathing. Getting 7 to 9 hours of sleep is essential for recovery and hormonal balance, so establish a regular sleep routine.

Follow-up: Regular health check-ups are important for monitoring your metabolic status and adjusting your lifestyle as needed. Tailor general recommendations to your individual needs in consultation with healthcare professionals.



Take the MetBalance test regularly to significantly improve your health and maintain a healthy life. At MetBalance, we are here to help you optimize your well-being.

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