



# Your First vivaBALANCE Insights Report

## Your Details

Report ID: 6DcVVnSwXjbmV5iuPwMx

Report Date: 04/04/2025

Date of birth: 06/03/1959

Sex at birth: Female

## Your Results



Overall Health  
Rating



Nutrition



Lifestyle



Microbiome



Metabolism

## Your Recommended Supplements

### Probiotics

- **vivaOSTEO:** Contains lactobacillus paracasei, lactobacillus plantarum, lactobacillus plantarum and colecalciferol (Vitamin D3).

### Essential Nutrients

- **Multi-B complex:** contains 7 B-group vitamins including: Vitamin B1, Vitamin B2, Vitamin B3, Vitamin B5, Vitamin B6, Folate and Biotin.
- **Vitamin C:** Vitamin C, also known as ascorbic acid, is a water-soluble nutrient found in some foods.
- **Omega 3:** Provide calories to give your body energy and have many functions in your heart, blood vessels, lungs, immune and endocrine systems.
- **Co-Q-10:** provides antioxidant support, helping reduce free radicals formed in the body. It supports cardiovascular system health, heart health and energy production.
- **Magnesium:** An essential mineral responsible for more than 300 chemical reactions in the human body.
- **Vitamin D + Calcium + k2:** Calcium with Vitamin D to improve absorbability, and Vitamin K2 to target the calcium to your bones.

### Daily Estimated Energy Requirement

**7,527 kJ**

### Energy Requirements For A Healthy Weight

**7,600 kJ**

### Your Microbiome Enterotype

**Enterotype 1  
(Bacteroides-dominant)  
associated with diets  
high in animal protein  
and animal fats**

### Schedule for supplement use

#### Take with breakfast:

- vivaOSTEO
- Multi-B
- Vitamin D3 + K2 + Calcium

#### Take with Lunch:

- Co-Q-10: have with a fat containing meal such as lunch where you are having olive oil or avocado

#### Evening:

- Omega -3: preferably have with a meal
- Magnesium

## About Your Report How To Interpret Your Scores Above

Each Health Score correlates the multiple functional activities measured from your lifestyle assessment and biological tests. Each factor may contribute to your score based on the scientific knowledge on how it may impact your health, wellness and longevity. Furthermore, each score benchmarks you against everyday healthy people who do not have any significant health issues. The benchmark group includes a range of age groups, genders cultural backgrounds, genetics and diets.

### Less than 25%

We know what you are thinking, "Wow, I didn't think it would be this low!" See this as a starting point and an opportunity for significant improvement. Your score suggests there are several areas in your health and lifestyle that you can work on to feel better and boost your overall well-being. Remember, every journey begins with a single step, and you've already taken that by engaging with your health score. Most importantly, don't feel overwhelmed. Change takes time, and small, consistent steps can lead to big results. We're here to guide you with specific recommendations and support. Let's embark on this journey together towards a healthier you!

### Between 25% and 75%

You're on the right track but there is plenty of potential to boost your score even higher. Consider this an exciting opportunity to dive deeper into your

health journey. It's all about small, sustainable changes. And we're here to support you! Based on your gut, metabolic and lifestyle results, that we can help personalize and tailor some important recommendations for your specific needs and goals. Let's aim for that higher score, one day at a time! Each Health Score correlates the multiple functional activities measured from your lifestyle assessment and biological tests. Each factor may contribute to your score based on the scientific knowledge on how it may impact your health, wellness and longevity. Furthermore, each score benchmarks you against everyday healthy people who do not have any significant health issues. The benchmark group includes a range of age groups, genders cultural backgrounds, genetics and diets.

### Greater than 75%

Great job on a great score on your health report! This awesome score shows you're taking care of yourself. Your gut is in good shape doing wonders for your immune and digestive health. It's clear you're listening to your body and tweaking things as needed. Just a heads up, though, there's always a bit of room to to kick it up a notch. Based on your gut, metabolic and lifestyle results, we've made some recommendations on how to hit those peak health goals. Check them out!



# Report Summary

## Overall Observations

Your overall nutritional profile is generally positive, featuring a balanced intake of vegetables, fruits, and protein. However, the high consumption of saturated fats, likely from nuts and fatty fish, poses a potential risk to your cardiovascular health, despite maintaining a healthy weight. This dietary pattern, while providing essential fats, may contribute to long-term health issues if not moderated.

Additionally, while your sleep patterns are adequate, the reported fatigue and energy slumps suggest that underlying microbiome imbalances, potentially exacerbated by insufficient exercise, are impacting your energy levels. Increasing exercise frequency and intensity, particularly incorporating strength training, could significantly improve your vitality and address these issues.

Your gut microbiome exhibits a healthy and stable environment, with beneficial bacteria supporting vital functions. However, the presence of *Ascaris lumbricoides*, a parasitic roundworm, requires medical attention and potential treatment to prevent further health complications. The elevated levels of certain bacteria, while generally positive, may indicate a dietary imbalance that could lead to gastrointestinal discomfort.

Metabolically, your body demonstrates efficient energy production, but elevated levels of cis-Aconitic Acid, a-Ketoisocaproic Acid, and a-OH-Butyric Acid point to potential inefficiencies in the citric acid cycle, amino acid metabolism, and detoxification processes, respectively. These imbalances, along with the unusual elevation of N-Acetylcysteine (NAC), may contribute to your reported brain fog, fatigue, and stress. Addressing these metabolic disruptions through targeted nutritional support and lifestyle modifications is crucial for improving your overall well-being.

## How Your Medical Conditions and Medications Affect These Findings

No interaction with medications

## Specific Findings

### 1. High Saturated Fat Intake:

- A significantly high percentage of your fat intake is from saturated sources, posing potential risks to cardiovascular health and overall metabolic balance.

### 2. Gut Microbiome Imbalance and Parasitic Infection:

- Elevated *Ascaris lumbricoides*, a parasitic roundworm, indicates an active infection that requires medical intervention.
- While beneficial bacteria like *Roseburia intestinalis*, *Phocaeicola vulgatus*, and *Oxalobacter formigenes* are also elevated, the parasitic infection disrupts overall gut health.

### 3. Mitochondrial and Amino Acid Metabolism Disruption:

- Elevated cis-Aconitic Acid and a-Ketoisocaproic Acid suggest imbalances in the Krebs cycle and branched-chain amino acid metabolism, potentially contributing to fatigue and other metabolic issues.

### 4. Oxidative Stress and Detoxification Demands:

- High a-OH-Butyric Acid indicates increased hepatic glutathione demand, reflecting oxidative stress or toxin exposure.
- Unusually high levels of NAC in urine.

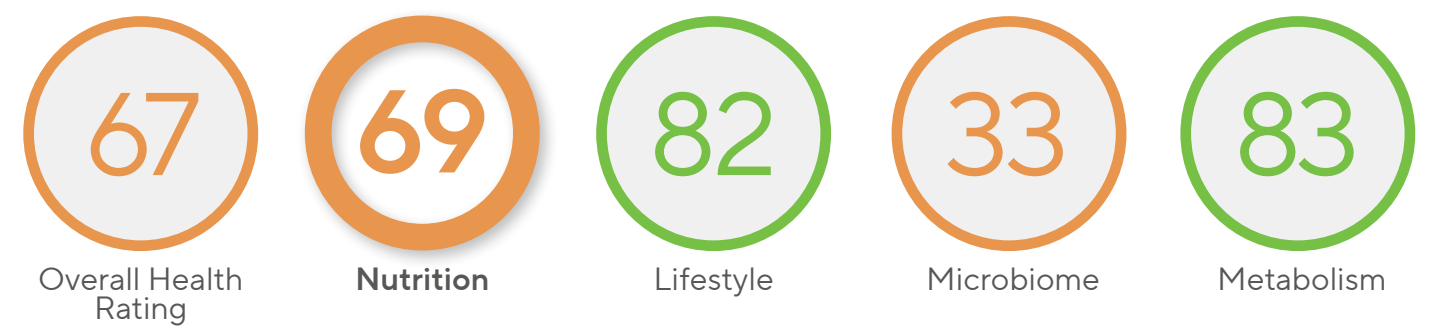
### 5. Lifestyle Factors:

- Low levels of energy consumption through exercise, requiring increased intensity and frequency.
- Poor sleep quality due to microbiome imbalances.





## Your Results



### Significant Findings

**Fat intake**  
The percentage of fat intake relative to a healthy dietary plan is very high, and this appears to be in saturated styles of fat.

### How This May Impact You

Overall, you nutrition is well balanced, with a great mix of vegetables, fruits and sources of protein. Whilst your average energy intake is consistent with a desired weight goal, and BMI to waist circumference is within the healthy range, you are consuming too much saturated fats relative to a general healthy diet.

This may be skewed by this 7-day food diary but should be considered when making food choices. Consider how often you are consuming butter and some nuts. Whilst have a balanced source of fat is health, the number of portions of walnuts, almonds and peanuts, coupled with some fatty fish such as salmon may be pushing saturated fats higher.

This is somewhat offset by the lack of red meat consumption, so the need to consume iron in these other plant sources.

## Micronutrient Analysis

### Fat soluble micronutrients

**Vitamin A**  
Vitamin A is crucial for vision, immunity, and growth.

Metric	Value	Unit
Vitamin A	1,739.74	µg

Ideal range: 665 - 700

**How May This Impact You**  
Deficiency leads to night blindness, xerophthalmia (eye damage), increased infections, and growth retardation. Overuse may result in nausea, headaches, dizziness, blurred vision, muscle/joint pain, fatigue, and potentially liver damage or birth defects.

**Best Food Sources For This Nutrient**  
Vitamin A comes in two forms: preformed (retinol) from animal sources and provitamin A carotenoids from plants. Rich animal sources include liver (very high, consume moderately), cod liver oil, dairy, eggs, and fatty fish. Plant sources rich in carotenoids include orange/yellow vegetables (carrots, sweet potatoes, pumpkin), green leafy vegetables (spinach, kale), and orange/yellow fruits (mangoes, cantaloupe). A varied diet with colorful fruits and vegetables ensures adequate provitamin A intake. Some foods like milk and cereals are fortified.

**Vitamin D**  
Vitamin D is vital for calcium absorption, bone health, muscle function, and immunity.

Metric	Value	Unit
Vitamin D	0.92	ng/ml

Ideal range: 14.25 - 15

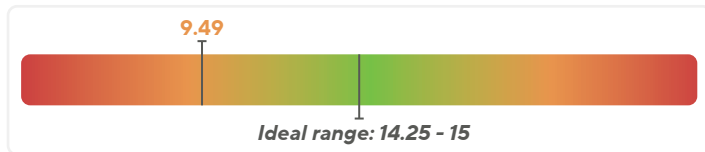
**How May This Impact You**  
Deficiency causes rickets (in children), osteomalacia/osteoporosis (in adults), increasing fracture risk, muscle weakness, fatigue, and weakened immunity. Overuse may lead to hypercalcemia (high blood calcium), causing nausea, vomiting, weakness, frequent urination, kidney problems, and potentially heart issues.

**Best Food Sources For This Nutrient**  
Vitamin D is primarily obtained through sunlight, but some foods contribute. Fatty fish like salmon, mackerel, tuna, and sardines are excellent sources. Cod liver oil is a concentrated supplement. Egg yolks, red meat, and liver offer smaller amounts. Many foods are fortified with vitamin D, including milk (dairy and plant-based), breakfast cereals, orange juice, yogurt, and some bread. Food sources alone may not suffice, especially with limited sun exposure. Check food labels for vitamin D content.

# Micronutrient Analysis

## Vitamin E

Vitamin E, a potent antioxidant, is crucial for cell protection, immunity, and blood vessel health.



### How Does This Impact You

Deficiency is rare, mainly affecting those with fat malabsorption issues, premature infants, or rare genetic conditions. Symptoms include muscle weakness, coordination problems, neuropathy, and hemolytic anemia. Overuse may increase bleeding risk, potentially leading to hemorrhagic stroke, and may cause gastrointestinal issues and fatigue. Most people obtain sufficient vitamin E from a balanced diet.

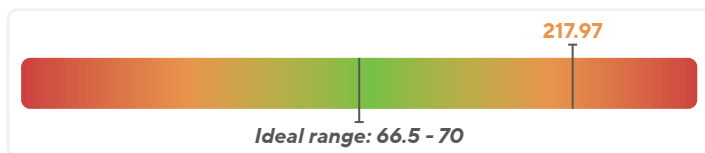
### Best Food Sources For This Nutrient

Vitamin E is readily available in various foods. Excellent sources include wheat germ oil, sunflower oil, safflower oil, and soybean oil. Nuts and seeds like almonds, sunflower seeds, hazelnuts, and peanuts are also rich in vitamin E. Vegetables such as spinach, beet greens, collard greens, and red bell peppers contribute to intake, as do fruits like avocados, mangoes, and kiwi. Some fortified cereals also contain added vitamin E. Using vitamin E-rich oils in cooking, snacking on nuts and seeds, and incorporating leafy greens and fruits into meals are effective ways to boost vitamin E consumption.

## Water soluble micronutrients

### Vitamin C (Ascorbic acid)

Vitamin C protects cells from free radical damage, supports healthy immune function, aids wound healing and collagen formation, and assists in healthy bone development. May also reduce the duration and severity of common cold symptoms.



### How May This Impact You

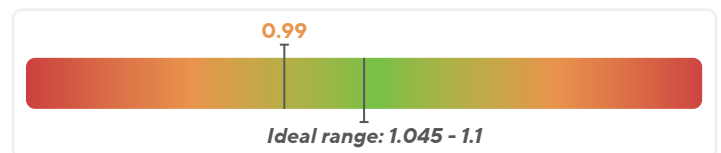
Vitamin C deficiency can have serious consequences for health. The most severe outcome is scurvy, a potentially fatal condition causing fatigue, weakness, bleeding gums, easy bruising, poor wound healing, and tooth loss. Beyond scurvy, a deficiency weakens the immune system, increasing susceptibility to infections. Impaired collagen production, crucial for skin, tendons, ligaments, and blood vessels, leads to weakened connective tissues, slow wound healing, and easy bruising. Reduced antioxidant protection from free radicals may increase the risk of chronic diseases. Vitamin C deficiency may also be linked to increased risk of heart disease, certain cancers, and eye problems like cataracts and macular degeneration.

### Best Food Sources For This Nutrient

Fruits and vegetables are the best sources of vitamin C. Excellent sources include citrus fruits like oranges and grapefruit, along with their juices, as well as red and green peppers and kiwifruit. Other fruits and vegetables, such as broccoli, strawberries, cantaloupe, baked potatoes, and tomatoes, also contribute to vitamin C intake. It's important to note that prolonged storage and cooking can reduce vitamin C content, with steaming or microwaving potentially minimizing losses. Fortunately, many vitamin C-rich foods, especially fruits and vegetables, are often consumed raw, preserving their nutrient content.

### Thiamin (Vitamin B1)

Vitamin B1 is essential for carbohydrate metabolism, converting food into energy the body can use. It supports nerve function, aiding in the transmission of nerve impulses, and contributes to muscle function, including the heart muscle. It's also involved in the production of certain neurotransmitters, which are vital for brain function and mood regulation.



### How May This Impact You

Vitamin B1 deficiency can have consequences for human health, primarily due to its central role in energy metabolism and nerve function. The most prominent is beriberi, a multifaceted condition that can severely impact several key systems in the body. Digestively, a lack of thiamin can impair the function of the gastrointestinal tract, causing issues like loss of appetite, nausea, vomiting, and constipation. Deficiencies can contribute to fatigue, irritability, and impaired cognitive function. Because thiamin is involved in energy production, a deficiency may leave the body struggling to function properly, impacting everything from muscle strength to mental clarity.

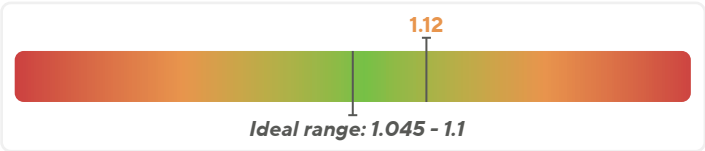
### Best Food Sources For This Nutrient

Thiamin (vitamin B1) is found in a variety of foods, with particularly rich sources including pork, beef liver, and certain fish. Legumes, such as lentils and peas, are also good sources, as are whole grains like brown rice and fortified cereals. Nuts and seeds, including sunflower seeds, contribute to thiamin intake. While not as concentrated in these foods, smaller amounts of thiamin can be found in other vegetables and fruits, making a varied diet important for ensuring adequate intake of this essential vitamin.

# Micronutrient Analysis

## Riboflavin (Vitamin B2)

Vitamin B2 plays a key role in energy production, facilitating the conversion of food into usable energy. It contributes to cell growth and development, and is involved in the metabolism of fats, carbohydrates, and proteins. It also supports healthy skin, vision, and the maintenance of mucous membranes.



### How May This Impact You

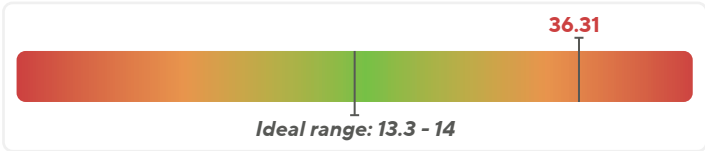
Riboflavin (vitamin B2) deficiency may lead to a range of uncomfortable health issues. Common and noticeable symptoms involve the mouth and skin such as cracked and sore corners of the mouth or inflammation of the tongue interfering with eating and speaking. Seborrheic dermatitis, a skin condition causing redness, scaling, and itching, particularly around the scalp, face, and chest, can also occur. A lack of riboflavin may impact vision, contributing to light sensitivity, eye fatigue, and blurred vision. Riboflavin plays a role in energy production and cellular processes, so a deficiency can also contribute to fatigue and general weakness.

### Best Food Sources For This Nutrient

Riboflavin (vitamin B2) is found in a variety of foods, with dairy products like milk, yogurt, and cheese being good sources. Meat, particularly organ meats like liver and kidneys, is rich in riboflavin. Eggs, especially the yolks, also contribute to riboflavin intake. Certain vegetables, such as leafy greens like spinach and collard greens, as well as broccoli, contain riboflavin. Fortified cereals and grains can also be a source, and smaller amounts are present in nuts and legumes.

## Niacin (Vitamin B3)

Vitamin B3 plays a critical role in energy metabolism, helping convert food into usable energy. It supports healthy skin, contributes to the proper functioning of the nervous system, and assists in the production of various hormones and DNA. May help improve cholesterol levels by lowering LDL ("bad") cholesterol and triglycerides while raising HDL ("good") cholesterol.



### How May This Impact You

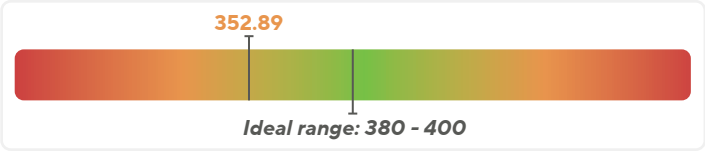
Niacin (vitamin B3) deficiency at the extreme may lead to digestive issues including nausea, vomiting, diarrhea, and loss of appetite, which can further exacerbate nutritional deficiencies. Milder niacin deficiencies can contribute to fatigue, irritability, and insomnia. Because niacin is involved in energy metabolism and DNA repair, its deficiency may have widespread effects on the body.

### Best Food Sources For This Nutrient

Niacin (vitamin B3) is found in a variety of foods, with particularly rich sources including meat like poultry and fish such as tuna. Legumes, such as peanuts and lentils, also contribute to niacin intake. Whole grains, including brown rice and fortified cereals, contain niacin. Mushrooms and certain vegetables, like potatoes, provide smaller amounts of this vitamin.

## Folacin (Folic Acid or Folate)

Folic acid or Vitamin B9 is essential for cell growth and division, making it particularly important during periods of rapid growth like pregnancy and childhood. Folic acid plays a vital role in the formation of DNA and RNA, the building blocks of genetic material. It also works with vitamin B12 to produce red blood cells.



### How May This Impact You

Folate deficiency most critically during pregnancy significantly increases the risk of neural tube defects in developing fetuses, such as spina bifida and anencephaly. Folate is essential for cell division and DNA synthesis, so deficiency may lead to megaloblastic anemia, characterized by large, immature red blood cells that are unable to carry sufficient oxygen, resulting in fatigue, weakness, and shortness of breath. Folate deficiency may contribute to impaired cognitive function, depression, and an increased risk of certain cancers. It can also affect the health of the digestive system, causing issues like mouth sores and diarrhea.

### Best Food Sources For This Nutrient

Excellent food sources of folate include leafy green vegetables like spinach, kale, and romaine lettuce, which are packed with this essential B vitamin. Legumes, such as lentils, chickpeas, and black beans, are also rich in folate. Fortified foods, including many breakfast cereals, breads, and rice, contribute significantly to folate intake. Other good sources include asparagus, broccoli, avocados, and citrus fruits.

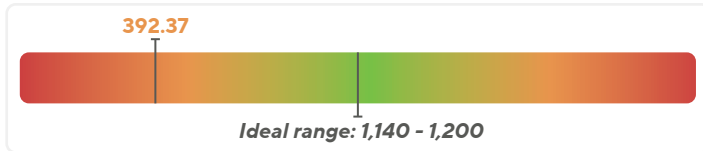


# Micronutrient Analysis

## Essential Minerals

### Calcium

Calcium is crucial for strong bones and teeth, keeps tissues strong, and flexible, mediates blood vessel contraction and dilation, muscle function, blood clotting, nerve transmission, and hormonal secretion.



#### How Does This Impact You

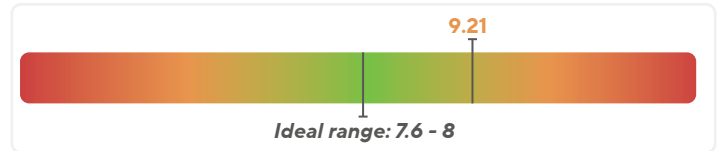
Calcium deficiency can lead to a range of health problems. In the short term, it may cause muscle cramps, spasms, and numbness or tingling in the fingers. Long-term deficiency can result in weakened bones, increasing the risk of osteoporosis and fractures, particularly in later life. Children with inadequate calcium intake may experience impaired growth and development. Severe calcium deficiency can even lead to more serious complications like tetany (muscle contractions) and heart rhythm abnormalities. Therefore, maintaining sufficient calcium levels is crucial for overall health and well-being at all ages.

#### Best Food Sources For This Nutrient

Key sources of calcium include dairy products like milk, yogurt, and cheese, which are rich natural sources. Non-dairy options include canned sardines and salmon (consumed with bones), and certain vegetables such as kale, broccoli, and bok choy. While most grains are not inherently high in calcium, unless fortified, their frequent consumption means they still contribute to overall intake, despite containing only small amounts. Finally, many foods are fortified with calcium, including fruit juices and drinks, tofu, and ready-to-eat cereals.

### Iron

Iron plays a vital role supporting growth and development whilst improving energy levels. The body uses iron to produce haemoglobin (red blood cells) responsible for transporting oxygen from the lungs throughout the body. It's also essential for creating myoglobin, which provides oxygen to muscles, and necessary for the production of certain hormones.



#### How Does This Impact You

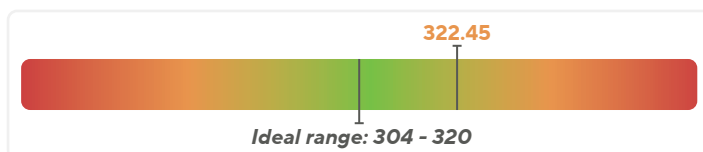
Iron deficiency occurs when the body has depleted iron stores. This may lead to anemia, smaller red blood cells with less hemoglobin reducing the blood's oxygen-carrying capacity. Other symptoms may include gastrointestinal upset, weakness, fatigue, impaired concentration and memory, reduced immunity, decreased work and exercise capacity, and difficulty regulating body temperature. Conversely, excessive iron intake, particularly high-dose supplements, can cause gastrointestinal distress, ranging from upset stomach and constipation to nausea, abdominal pain, vomiting, and diarrhea. Severely high doses can lead to more serious consequences like stomach lining inflammation, ulcers, reduced zinc absorption.

#### Best Food Sources For This Nutrient

Iron-rich foods include lean meats and seafood, which contain heme iron that boasts higher bioavailability, meaning it's more readily absorbed by the body and less affected by other dietary factors. Non-heme iron sources, while still valuable, include nuts, beans, vegetables, and fortified grain products like bread, cereal, and other grain products. Other factors, like Vitamin C, when consumed in combination can enhance iron absorption.

### Magnesium

Magnesium is an essential mineral vital for over 300 chemical reactions within the human body, playing a crucial role in maintaining overall health and well-being. This versatile micronutrient contributes significantly to several key bodily functions. It promotes restful sleep, supports normal muscle contraction and relaxation, and is essential for healthy nerve function. Magnesium also plays a vital role in cardiovascular health, helping to maintain normal and healthy blood pressure and blood sugar levels. Furthermore, it supports strong bones and has a demonstrated impact on both sleep quality and mood regulation.



#### How May This Impact You

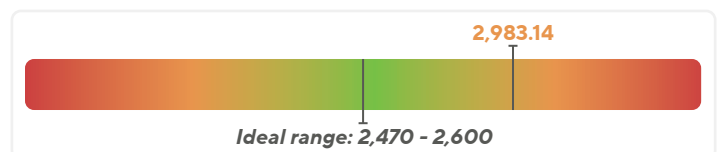
While short-term magnesium deficiency may not present immediate, noticeable symptoms due to the kidneys' ability to conserve magnesium, prolonged low intake or certain medical conditions and medications that hinder absorption or increase excretion can lead to significant health problems. Initially, magnesium deficiency can manifest as loss of appetite, nausea, vomiting, fatigue, and weakness. In more severe cases, deficiency can progress to numbness, tingling, muscle cramps, and even seizures. Personality changes and abnormal heart rhythms can also occur with extreme magnesium deficiency, highlighting the importance of maintaining adequate magnesium levels for overall health and well-being.

#### Best Food Sources For This Nutrient

Magnesium-rich foods include green leafy vegetables, such as spinach, Swiss chard, beet greens, and turnip greens, are excellent sources. Nuts and seeds, including pumpkin seeds, sesame seeds, cashews, and sunflower seeds, also provide significant amounts of magnesium. Legumes like soybeans, black beans, navy beans, and pinto beans are another valuable source. Whole grains, such as quinoa, buckwheat, brown rice, and barley, contribute to magnesium intake as well. Dairy products like milk and yogurt contain some magnesium, and fortified foods, such as certain breakfast cereals, can further supplement dietary intake of this essential mineral.

### Potassium

Potassium plays a vital role in numerous bodily functions, contributing significantly to overall health and well-being. As an electrolyte, it's crucial for maintaining proper fluid balance within cells, regulating muscle contractions, including the heart, and supporting nerve impulse transmission. Potassium also helps regulate blood pressure, counteracting the effects of sodium, and plays a role in bone health. Furthermore, it's involved in the metabolism of carbohydrates and proteins.



#### How May This Impact You

Potassium is essential for numerous bodily functions, and maintaining the right balance is crucial. Too little potassium can lead to muscle weakness, fatigue, cramping, and potentially serious heart rhythm problems. On the other hand, too much potassium can also be dangerous for the heart and may cause nausea, numbness, or weakness. A diet rich in fruits and vegetables often helps maintain healthy potassium levels, but kidney issues or certain medications can interfere with the body's ability to regulate this important mineral.

#### Best Food Sources For This Nutrient

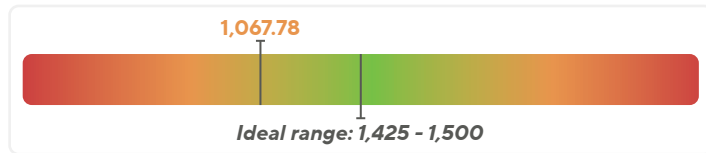
Excellent food sources of potassium abound in a variety of fruits and vegetables, including bananas, avocados, potatoes (especially with the skin), sweet potatoes, spinach, tomatoes, dried fruits (raisins, prunes, apricots), citrus fruits (oranges, grapefruits), and melons (cantaloupe, watermelon). Beyond produce, beans and lentils, yogurt, milk, nuts and seeds (almonds, cashews, sunflower seeds), and fish (salmon, tuna) also provide significant amounts of potassium. To maximize intake, it's recommended to eat a diverse range of fruits and vegetables daily, choose whole grains over refined, regularly include legumes in meals, and limit processed foods, which are often high in sodium and low in potassium.



# Micronutrient Analysis

## Sodium

Sodium, an essential electrolyte, plays a critical role in maintaining fluid balance, nerve impulse transmission, and muscle function. It helps regulate blood volume and pressure, ensuring proper hydration and cellular function. While vital, excessive sodium intake can lead to health issues like high blood pressure, increasing the risk of cardiovascular disease. Therefore, maintaining a balanced sodium intake is crucial for overall health.



### How May This Impact You

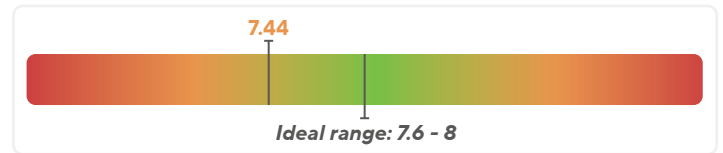
Sodium, while essential for bodily functions, can cause significant health problems when levels are outside the optimal range. Sodium deficiency, or hyponatremia, can lead to muscle cramps, nausea, dizziness, and in severe cases, seizures or coma. Conversely, excessive sodium intake, or hypernatremia, can result in high blood pressure, increasing the risk of heart disease, stroke, and kidney problems. Maintaining a proper balance of sodium is crucial, as both deficiency and excess can disrupt fluid balance, nerve function, and overall cardiovascular health.

### Best Food Sources For This Nutrient

While table salt is the most obvious source of sodium, it's also found naturally in many foods. Processed foods, such as canned goods, packaged snacks, and fast food, are significant contributors to sodium intake. Naturally occurring sodium is present in small amounts in foods like seafood, dairy products, and certain vegetables. However, the majority of sodium in the typical diet comes from added salt during food processing or at the table. Therefore, focusing on whole, unprocessed foods and limiting added salt is key to managing sodium intake.

## Zinc

Zinc plays a multifaceted role in maintaining health. It's critical for immune system function, enabling the body to combat invading pathogens, and is essential for DNA and protein synthesis. Furthermore, zinc facilitates wound healing and is vital for a proper sense of taste. Beyond these core functions, zinc supports skin health and collagen formation, assists in connective tissue production, and promotes male reproductive health by maintaining healthy sperm and prostate function. As an antioxidant, zinc helps reduce free radicals, contributing to overall health and wellbeing.



### How May This Impact You

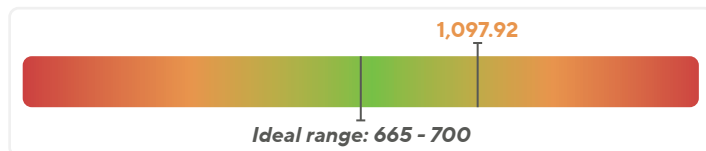
Zinc, a vital micronutrient, plays a crucial role in various bodily functions, and both deficiency and excess can have detrimental effects. Zinc deficiency can impair immune function, leading to increased susceptibility to infections, delayed wound healing, and loss of taste or smell. It can also affect growth and development, particularly in children and pregnant women. Conversely, excessive zinc intake can cause nausea, vomiting, abdominal cramps, and diarrhea. Long-term high doses can interfere with copper absorption, potentially leading to copper deficiency and related health problems.

### Best Food Sources For This Nutrient

Many foods contain zinc, making it readily available through a balanced diet. Oysters stand out with exceptionally high zinc content, while meat, fish, poultry, and seafood like crab and lobster are also excellent sources. Fortified breakfast cereals provide a convenient way to supplement zinc intake. Additionally, beans, nuts, whole grains, eggs, and dairy products contribute some zinc, ensuring a variety of dietary options to meet recommended levels.

## Phosphorous

Phosphorus is a vital mineral crucial for numerous bodily functions. It's a major component of bones and teeth, providing strength and structure. Phosphorus is also essential for energy production and storage, as a key part of ATP, and plays a role in cell function, repair, and nutrient utilization, including carbohydrate, fat, and protein metabolism. Additionally, it contributes to kidney function, muscle contractions, heartbeat regulation, and nerve signaling.



### How May This Impact You

Phosphorus deficiency, often due to poor intake, medical conditions, or medications, can cause loss of appetite, fatigue, muscle weakness, bone pain, and even neurological issues. Excess phosphorus, usually caused by kidney problems, can be asymptomatic initially but can lead to calcium deposits in tissues, damaging organs and contributing to bone and heart problems. Maintaining a proper phosphorus balance is crucial, and while most people get enough through diet, and those with kidney disease or other health conditions may impact also calcium balance.

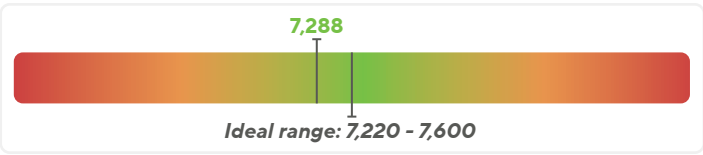
### Best Food Sources For This Nutrient

Excellent food sources of phosphorus include protein-rich options like dairy (milk, yogurt, cheese), meat (beef, poultry, pork), seafood (fish, shrimp, scallops), eggs, and legumes (beans, lentils). Other good sources are nuts and seeds (almonds, cashews, pumpkin seeds) and whole grains (quinoa, brown rice, whole wheat bread). While phosphorus is present in many processed foods as additives, it's generally recommended to focus on whole, unprocessed foods for optimal health. Phosphorus from animal sources is typically absorbed more readily than from plant-based sources, and maintaining a balance with other minerals, such as calcium, is important.

# Energy Analysis

## Average Energy Intake

Kilojoule intake significantly impacts health, primarily through its influence on weight management and overall energy balance.

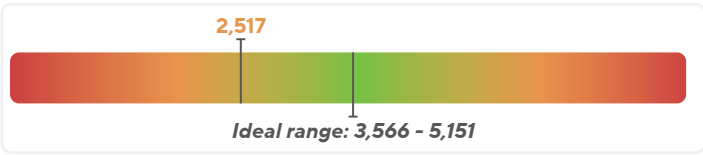


### How Does This Impact You

Consuming more kilojoules than expended leads to weight gain and increased risk of related diseases, while insufficient intake results in weight loss and potential malnutrition. Balancing kilojoules consumed with energy used is crucial for maintaining a healthy weight. Furthermore, the quality of kilojoules matters; nutrient-dense foods provide essential vitamins and minerals alongside energy, while energy-dense, nutrient-poor options can lead to deficiencies. Individual kilojoule needs vary based on factors like age, sex, and activity level, highlighting the importance of personalized dietary guidance.

## Average Carbohydrate Intake

Total carbohydrate intake relative to the RDI is a significant health factor, but the type of carbohydrate, i.e. complex versus refined impacts health quality.

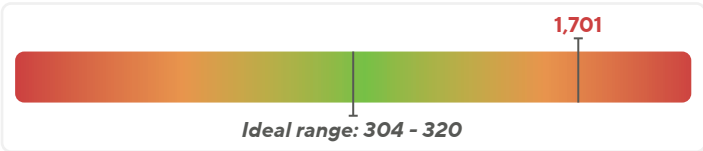


### How Does This Impact You

Meeting the RDI with complex carbohydrates from whole grains, fruits, and vegetables provides sustained energy, fiber for digestion and disease prevention, and essential nutrients. Exceeding the RDI with refined carbohydrates leads to blood sugar imbalances, potential nutrient displacement, and increased risk of chronic diseases. Conversely, insufficient carbohydrate intake can result in energy deficits and nutrient gaps. Therefore, prioritizing complex carbohydrates while limiting refined ones is key for optimal health, ensuring adequate energy, fiber, and nutrients while minimizing disease risk.

## Average Protein Intake

Protein intake relative to the Recommended Daily Intake (RDI) is crucial for human health as it directly impacts numerous bodily functions. Adequate protein intake supports tissue repair and growth, enzyme and hormone production, and immune function.

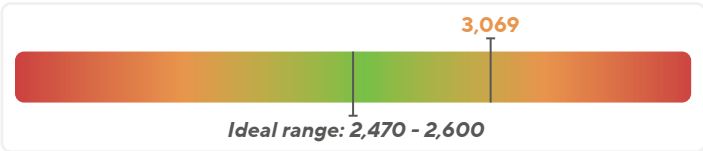


### How May This Impact You

Consuming insufficient protein can lead to muscle loss, weakened immunity, and impaired growth, particularly in children. Conversely, excessively high protein intake, especially from animal sources, may strain the kidneys and potentially increase the risk of certain chronic diseases. Therefore, achieving a balanced protein intake within the RDI, considering individual needs and activity levels, is essential for maintaining optimal health and preventing adverse effects.

## Average Fat Intake

Fat intake relative to the Recommended Daily Intake (RDI) is vital for human health, as fats provide essential energy, support cell growth, and aid in the absorption of fat-soluble vitamins.

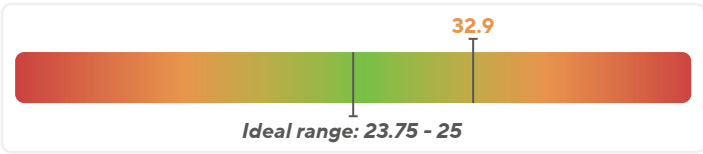


### How May This Impact You

Consuming too little fat can lead to vitamin deficiencies, hormonal imbalances, and impaired brain function. Conversely, excessive fat intake, particularly of saturated and trans fats, can increase the risk of heart disease, obesity, and other chronic conditions. Therefore, prioritizing a balanced intake of healthy fats, such as unsaturated fats from sources like avocados, nuts, and olive oil, while limiting unhealthy fats, is crucial for maintaining optimal health and preventing adverse health outcomes.

## Average Fibre Intake

Fiber intake relative to the Recommended Daily Intake (RDI) is essential for maintaining optimal human health, primarily by supporting digestive regularity and promoting cardiovascular wellness.

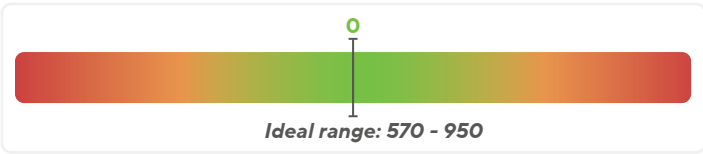


### How May This Impact You

Adequate fiber intake helps regulate bowel movements, preventing constipation and promoting a healthy gut microbiome. It also contributes to satiety, aiding in weight management, and can lower cholesterol levels, reducing the risk of heart disease. Conversely, insufficient fiber intake can lead to digestive discomfort, increased risk of chronic diseases, and difficulty managing weight. Therefore, ensuring sufficient fiber consumption through a diet rich in fruits, vegetables, whole grains, and legumes is crucial for overall health and well-being.

## Calories From Discretionary Foods

Discretionary foods, often referred to as "sometimes" foods, are those that aren't essential for a healthy diet and typically provide minimal nutritional value. They include items like sugary drinks, processed snacks, fast food, and desserts.



### How May This Impact You

While occasional consumption is unlikely to cause harm, frequent intake of discretionary foods can displace nutrient-dense foods, leading to deficiencies and increasing the risk of chronic diseases. These foods are often high in saturated and trans fats, added sugars, and sodium, contributing to weight gain, poor metabolic health, and increased risk of cardiovascular problems. Therefore, limiting discretionary food intake and prioritizing whole, unprocessed foods is crucial for maintaining a balanced and healthy diet.







## Your Results



Overall Health  
Rating



Nutrition



Lifestyle



Microbiome



Metabolism

### Significant Findings

#### 1. Low levels of energy consumption by the body via exercise

- Increasing intensity or number of sessions per week may lead to improved overall fitness, weight loss, and aid the development of greater microbiome diversity

#### 2. Need to improve sleep quality:

- The data from the microbiome testing shows imbalance. Addressing these issues may improve your quality of sleep as you are achieving a minimum sleep amounts to have a healthy lifestyle.

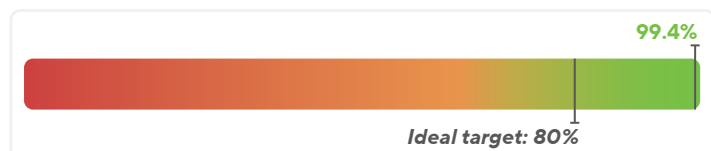
### How This May Impact You

You have positive sleep patterns and adequate sleep improving brain function, boost immunity, and may even increase lifespan. This is offset by microbiome imbalance that may be impacting your sleep quality, indicated by fatigue and energy slumps. These may also be improved by increasing exercise activity each week.

Regular exercise is a great habit to maintain, and working out three (3) to five (5) or more times a week versus once a week will improve overall vitality very within a 2-3 months. With guidance, increasing intensity of the activity will also deliver a positive impact, with a focus on light strength training complemented by the walking you currently undertake.

### Metabolism Score

Metabolic health assesses combination of BMI and waist circumference seeking an indication of weight and associated risks, and abdominal fat, as key predictors of metabolic problems.

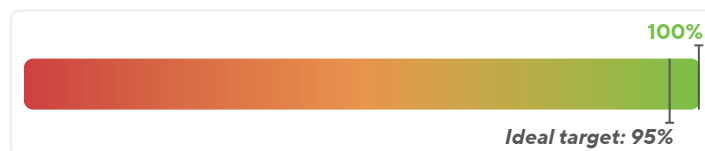


#### How May This Impact You

Being metabolically healthy is key to overall well-being, influencing many body functions and lowering the risk of chronic diseases. Conversely, poor metabolic health can increase the risk of various health issues. Benefits include stable blood sugar levels due to balanced insulin, efficient energy use aiding in weight management, higher energy levels, well-regulated cholesterol, and balanced hormones. This helps reduce heart disease, type 2 diabetes, and other chronic conditions risks.

### Alcohol Intake Score

Alcohol intake is a significant factor to consider for good health, as both excessive and chronic consumption can lead to a range of adverse effects.



#### How May This Impact You

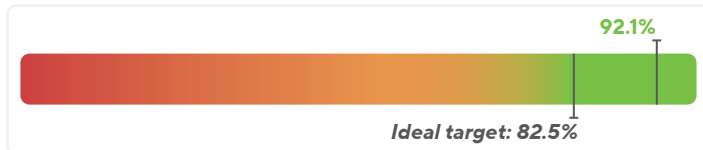
Moderate alcohol consumption, especially antioxidant-rich red wine, may benefit heart health. However, moderate alcohol use may have limited, potentially negligible, benefits for some individuals, excessive intake is linked to increased risk of liver damage, cardiovascular disease, certain cancers, and mental health disorders. It can also impair cognitive function, disrupt sleep patterns, and contribute to weight gain.



# Lifestyle

## Sleep Score

Sleep surveys for health assesses an individual's sleep patterns, habits, and quality, typically covering sleep duration, subjective sleep quality (e.g., how rested they feel), sleep timing and regularity, common sleep disturbances (e.g., insomnia, sleep apnea), daytime functioning (e.g., fatigue, concentration), and factors influencing sleep like caffeine intake, exercise, and sleep environment.

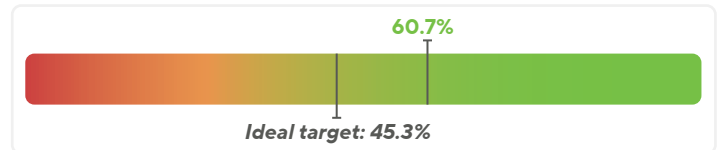


### How May This Impact You

Sleep impacts both physical and mental well-being. Physically, it strengthens the immune system, promotes tissue repair, and regulates crucial hormones related to growth and appetite. Mentally, it enhances mood, sharpens cognitive functions, and improves stress management. Adequate sleep boosts productivity, athletic performance, and creativity, while also aiding in weight management by regulating hunger hormones. Crucially, it consolidates memory and learning, solidifying new information. Consistent, quality sleep significantly reduces the risk of chronic diseases such as heart disease, diabetes, and obesity, thereby positively influencing every facet of a healthy life.

## Energy score

Energy metabolism markers provide insights into how efficiently the body converts food into energy, revealing the impact of lifestyle choices on metabolic health. These markers indicate how well the body processes nutrients, regulates blood sugar, and manages energy expenditure, highlighting potential imbalances that may lead to chronic diseases.

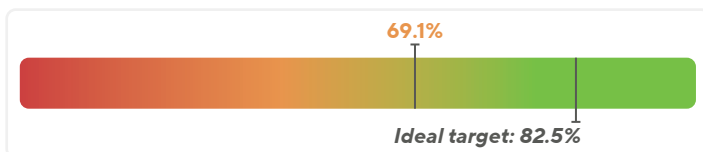


### How May This Impact You

Balancing fats is essential: Monounsaturated fats (olive oil, nuts, avocados) are heart-healthy, lowering LDL and supporting HDL cholesterol, important for heart health. They should make up 15-20% of daily calories. Limit saturated fats (butter, cheese, fatty meats) to under 10% of calories to avoid raising LDL cholesterol and heart disease risk. A balanced diet favors monounsaturated fats for overall health.

## Physical Activity Score

Physical activity assesses an individual's activity levels, patterns, and behaviors, gathering information on the types of activities (e.g., aerobic, muscle-strengthening, general movement), their frequency, duration, and intensity, the context in which they occur (e.g., location, purpose), and often include measures of sedentary behavior.



### How does this impact you

Regular exercise boosts immunity, energy, and sleep quality, playing a key role in preventing chronic diseases and managing weight. As part of a wellness plan with good nutrition, sleep, stress control, and social ties, it lowers disease risk and elevates life quality. Exercise is fundamental for a longer, healthier life.

# How To Interpret Your Lifestyle Scores

## Less Than 25%

Your score indicates that there is a considerable opportunity for lifestyle changes to enhance health and well-being. It suggests that healthy practices may be infrequent or absent, with possible irregularities in diet, insufficient physical activity, and inadequate sleep. Stress management strategies might be underutilized, and there could be a presence of habits that negatively impact health, such as smoking or high alcohol consumption. Engagement in preventive healthcare practices is likely to be low, and social and mental activities may not be adequately prioritized. This score highlights the importance of initiating and consistently applying healthier choices to daily routines, as even small, incremental changes can lead to significant health benefits over time.

## Between 25% And 75%

Your score suggests that while some healthy habits may be in place, there is significant room for improvement. This range indicates a mix of beneficial behaviors possibly alongside others that may not support optimal health. For instance, there might be an effort to maintain a balanced diet and some regular physical activity, but not consistently or to the extent recommended. Sleep patterns may be irregular, and stress might not be managed as effectively as possible. There may be occasional indulgence in habits like smoking or excessive alcohol consumption. Engagement in preventive health measures could be sporadic, and social or mental

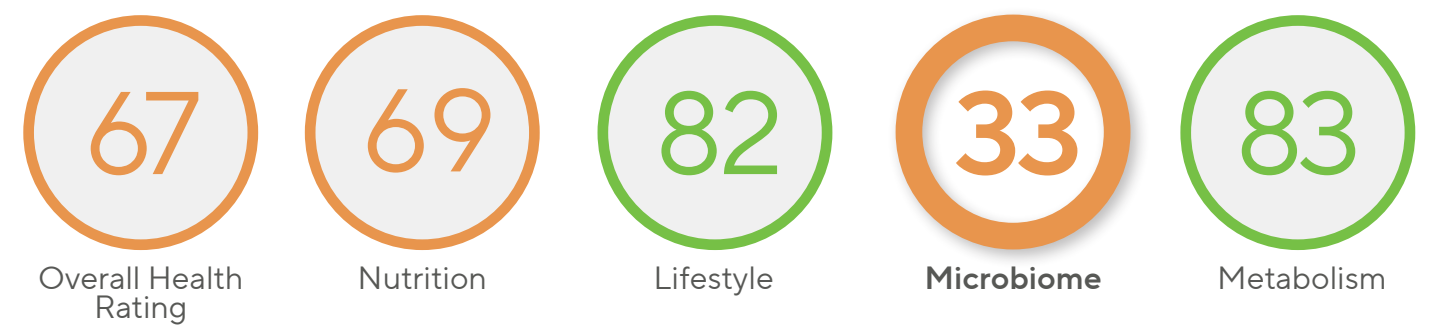
engagement activities may not be fully integrated into the lifestyle. This score serves as encouragement to build on existing health-positive habits and to identify and modify less healthy behaviors for overall well-being improvement.

## Greater Than 75%

Your score typically reflects a commitment to health and well-being. This score often indicates a balanced diet rich in essential nutrients, some or regular participation in physical activity, and sufficient rest. It also points towards effective stress management practices and moderation in consumption habits like alcohol and tobacco. Additionally, such a score might imply engagement in preventive healthcare measures and an active social and mental life, which are important for overall wellness. While this is a strong foundation, continuous effort is essential to maintain and enhance these healthy lifestyle choices.



## Your Results



### Significant Findings

- 1. Roseburia intestinalis is high**  
A butyrate-producing bacterium that supports gut barrier function and reduces inflammation.
- 2. Ascaris lumbricoides is high**  
A parasitic roundworm that resides in the intestines.
- 3. Oxalobacter formigenes is high**  
Degrades dietary oxalates, reducing the risk of kidney stones.
- 4. Phocaeicola vulgatus is high**  
A Bacteroides species involved in carbohydrate fermentation and SCFA production.

### How This May Impact You

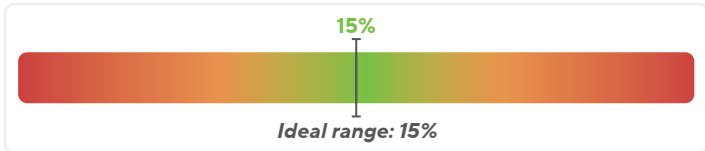
Your biomarkers reveal a predominantly healthy and stable gut ecosystem, with most microbial populations falling within normal ranges and supporting key functions like SCFA production, inflammation control, and gut barrier integrity. The dominance of Bacteroides and Clostridia aligns with Enterotype 1, suggesting efficient energy extraction and a diet likely rich in protein and fiber. Beneficial bacteria such as Faecalibacterium prausnitzii and Eubacterium rectale are present in healthy amounts, reinforcing a protective gut environment, while opportunistic pathogens remain well-controlled.

However, the elevated levels of Roseburia intestinalis, Phocaeicola vulgatus, Oxalobacter formigenes, and the parasitic Ascaris lumbricoides highlight areas for attention. The high butyrate producers (Roseburia and Phocaeicola) and oxalate degrader (Oxalobacter) suggest a diet driving these populations, which is largely positive but could lead to gas or bloating if unbalanced. The presence of Ascaris lumbricoides introduces a mild parasitic concern that may warrant medical follow-up. Overall, this microbiome supports good health with minor adjustments—such as monitoring fiber intake and addressing the parasite—potentially enhancing your well-being.

## Microbiome Diversity

### Proteobacteria

Proteobacteria are a significant phylum of bacteria in the gut microbiome, and their presence and relative abundance can offer valuable insights into gut health. While some Proteobacteria species are beneficial, an increase in their numbers, particularly certain pathogenic varieties, is often associated with gut dysbiosis and inflammation.

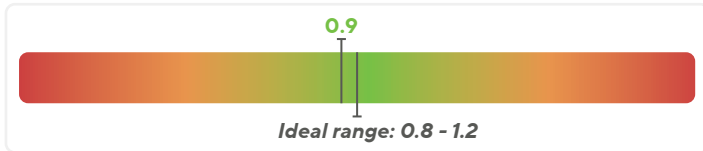


### How May This Impact You

Proteobacteria species possess lipopolysaccharide (LPS), an endotoxin, their increased presence can trigger chronic inflammation, potentially contributing to conditions like inflammatory bowel disease, metabolic disorders, and even certain autoimmune diseases. The disruption of the gut's delicate ecosystem by an overabundance of Proteobacteria can compromise the integrity of the gut barrier, leading to "leaky gut" and further systemic inflammation, ultimately affecting overall well-being.

### Firmicutes-to-Bacteroidetes (F/B) Ratio

Monitoring this ratio provides a broad overview of gut microbiome composition, aiding in the understanding of potential dysbiosis and its implications for metabolic health.



### How May This Impact You

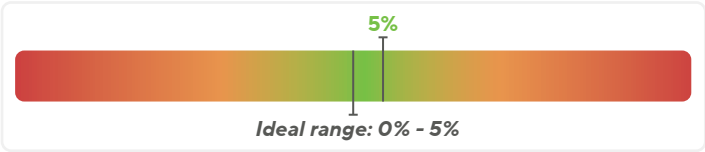
Generally, a higher F/B ratio is often linked to increased energy extraction from food, potentially contributing to obesity and metabolic disorders. Conversely, a lower ratio may be associated with leaner phenotypes.

It is crucial to interpret this ratio in conjunction with other microbiome data, as a healthy gut is characterized by overall diversity of which this is one component.

# Microbiome Diversity

## Lactobacillus/Bifidobacterium Ratio

These two genera are often associated with beneficial effects. Lactobacillus and Bifidobacterium species are known for their roles in producing short-chain fatty acids (SCFAs), maintaining gut barrier integrity, and modulating immune function.



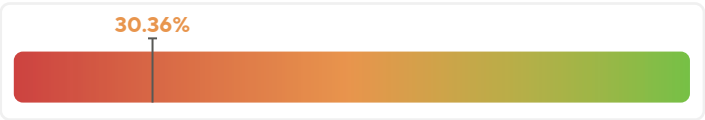
### How Does This Impact You

A balanced ratio typically signifies a healthy gut, while an imbalance may suggest dysbiosis. Specifically, a reduction in these beneficial bacteria can lead to compromised gut barrier function, increased inflammation, and potential digestive issues. Therefore, monitoring this ratio helps assess the overall health of the gut ecosystem and identify potential areas for intervention, such as probiotic supplementation or dietary changes.

## Short Chain Fatty Acid (SCFA) Production

### Acetate Producers

Acetate-producing gut microbiota ferment fiber into acetate, the most abundant short-chain fatty acid in the gut. Acetate contributes to energy production, influences metabolism (especially in the liver), supports gut barrier function, and modulates the immune system.

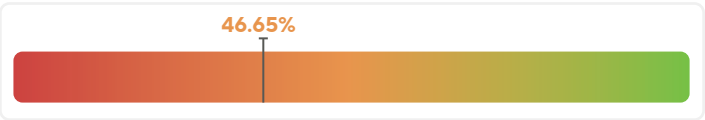


### How Does This Impact You

This score evaluates how much acetate your gut produces compared to a normal health population. Acetate is a type of short-chain fatty acid made by several gut bacteria. It plays a vital role in managing how our body uses glucose and fats. By boosting certain gut hormones, acetate helps balance our appetite and energy. This effect can potentially enhance insulin function, making our body respond better to sugar, and also reduce inflammation. Additionally, acetate helps in shaping our gut's bacterial community, fostering beneficial bacteria and suppressing those that might be harmful. This underscores its importance in maintaining a healthy gut environment.

### Butyrate Producers

Butyrate-producing gut microbiota ferment fiber into butyrate, a crucial energy source for colon cells. Butyrate strengthens the gut barrier, reduces inflammation, and supports a healthy gut microbiome, contributing to overall well-being.



### How Does This Impact You

This score assesses the production of butyrate in the gut, a crucial element for digestive health. Butyrate, a type of short-chain fatty acid, is produced by specific bacteria within our digestive system, and it serves essential functions. It influences our body's management of sugars and fats, suggesting its involvement in metabolic processes. Moreover, butyrate impacts gut hormones that regulate our appetite and energy utilization. It supports the growth of beneficial gut bacteria while inhibiting harmful ones, making it a friend to the former and a foe to the latter. Researchers are closely examining butyrate's potential in addressing various health issues, including gastrointestinal conditions like IBD and IBS, as well as broader metabolic challenges such as obesity and type 2 diabetes. Early findings are promising, indicating that butyrate may strengthen gut defenses, reduce inflammation, and improve sugar processing and insulin response.

### Propionate Producers

Propionate-producing gut microbiota ferment fiber into propionate. Propionate influences liver function, glucose metabolism, and appetite regulation. It also contributes to gut health and may have anti-inflammatory effects.



### How Does This Impact You

Propionate, a short-chain fatty acid produced by gut bacteria, exerts a multifaceted influence on human health. Regarding metabolic health, it can stimulate gut hormones that regulate appetite and reduce food intake, improve insulin sensitivity, reduce liver fat accumulation, and potentially regulate blood sugar. For gut health, propionate strengthens the gut barrier, preventing harmful substances from leaking into the bloodstream, and may have anti-inflammatory effects. Concerning immune health, it modulates immune cell activity, helping balance the immune response and reduce inflammation. Emerging research suggests propionate's potential role in brain health, possibly protecting against neuroinflammation and neurodegenerative diseases.

### Lactate producing

Lactate-producing microbiota play a key role in maintaining a healthy gut environment.



### How Does This Impact You

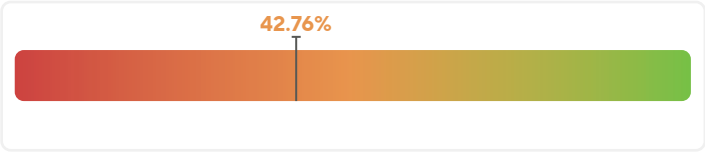
Lactate-producing microbiota in the gut microbiome significantly impact human health by maintaining a balanced gut environment. Their production of lactate contributes to a lower gut pH, which inhibits the growth of harmful pathogens, effectively acting as a natural defense mechanism. Additionally, lactate serves as a substrate for other beneficial bacteria, such as butyrate-producing microbes, which are essential for gut barrier integrity and anti-inflammatory effects. Therefore, an adequate presence of lactate producers supports a robust gut ecosystem, bolstering immune function, improving digestion, and reducing the risk of inflammation-related diseases.



# Short Chain Fatty Acid (SCFA) Production

## H2 Producing (Hydrogenogenic)

These microorganisms play a significant role in fermentation and nutrient utilization.



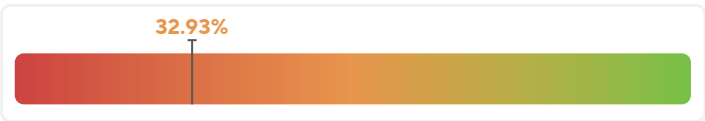
### How Does This Impact You

Hydrogen, is a byproduct of this microbiota’s metabolism, influences the overall gut ecosystem by affecting the growth and activity of other microbial populations. While some hydrogen production is normal, excessive amounts can lead to gastrointestinal discomfort like bloating and gas. Furthermore, the fate of hydrogen in the gut, whether it’s utilized by other bacteria (like methanogens or sulfate-reducing bacteria) or expelled, impacts overall gut health and may contribute to various health conditions. Therefore, understanding the composition and activity of hydrogenogenic microbiota provides valuable insights into gut fermentation processes and potential imbalances.

## Gas Production

### Sulfate Reducing Bacteria

Sulfate-reducing bacteria (SRB) can have both negative and potentially some indirect positive impacts on human health, primarily through their production of hydrogen sulfide (H2S).

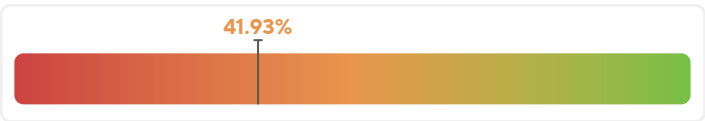


### How does this impact you

SRB primarily impact human health negatively through the production of hydrogen sulfide (H2S), which can damage the gut lining, increase inflammation, and disrupt butyrate metabolism, a crucial process for colon health. High SRB levels are associated with gastrointestinal discomfort and potential systemic inflammation, highlighting the importance of maintaining a balanced gut microbiome to limit their detrimental effects. While trace amounts of H2S may play a role in gut signaling, the overwhelming impact of excessive SRB activity is detrimental to gut integrity and overall health.

### Lactate Degrading Bacteria

These bacteria metabolize lactate, a byproduct of fermentation, preventing its accumulation and potential acidification of the gut environment.

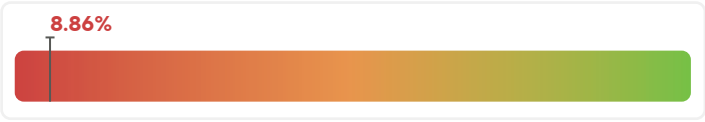


### How does this impact you

This score assesses the abundance of Lactate degrading bacteria (LD) in the gut. LD are a critical group of gastrointestinal microbes proficient in converting lactate into essential compounds like butyrate and propionate. They also play a crucial role in reducing gas production by transforming lactate produced by other intestinal microbes. LD are instrumental in promoting gut health, primarily by boosting the production of anti-inflammatory short-chain fatty acids (SCFAs) within the gastrointestinal tract. It’s important to note that dietary choices, particularly fiber intake, can influence LD activity.

### H2 Using (Hydrogenotrophic)

These bacteria utilize hydrogen gas, a byproduct of fermentation, thereby influencing the fermentation pathways and the production of other metabolites.

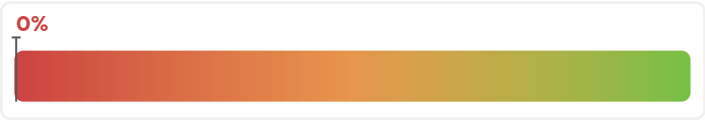


### How Does This Impact You

By consuming hydrogen, these bacteria prevent excessive hydrogen accumulation, which can cause bloating and discomfort. However, the byproducts of their metabolism, such as methane or hydrogen sulfide, have distinct health implications. Methanogens contribute to methane production, which can impact gut motility, while sulfate-reducing bacteria produce hydrogen sulfide, potentially damaging the gut lining and contributing to inflammation. Therefore, the balance of these hydrogenotrophic microbes plays a critical role in maintaining gut equilibrium and influencing various aspects of human health. These bacteria can also make helpful substances, like acetate and butyrate, which are good for our gut health.

### Methane Producing

Methane-producing microbiota or methanogens utilize hydrogen gas and other substrates, such as carbon dioxide and formate, to produce methane, a metabolic by-product of digestion.



### How Does This Impact You

Methanogens influence gut fermentation and gas production, affecting the overall balance of gases within the gut. While some methane production is normal, excessive amounts can lead to gastrointestinal discomfort, such as bloating and flatulence, and may also slow gut motility, potentially contributing to constipation. Furthermore, the presence and activity of methanogens can indirectly impact nutrient absorption and the composition of other microbial populations. By altering the gut’s environment, these microbes can influence various aspects of digestive health and potentially contribute to systemic effects.

# Gas Production

## Cardiac Health

Microbiota can impact factors such as blood pressure, cholesterol levels, and inflammation, all of which are key determinants of heart health.

38.46%

### How Does This Impact You

Microbiota influence cardiac health through various pathways, primarily by producing metabolites that enter the bloodstream and affect cardiovascular function. Certain gut bacteria generate beneficial compounds like short-chain fatty acids, which can lower blood pressure and reduce inflammation, thus protecting the heart. Conversely, some microbes produce harmful metabolites, such as trimethylamine N-oxide (TMAO), which is linked to increased risk of atherosclerosis and heart disease. Additionally, the gut microbiome impacts systemic inflammation, a key factor in cardiovascular disease, by influencing the integrity of the gut barrier.

## Inflammation

Microbiota that influence inflammation play a critical role in maintaining immune homeostasis. A balanced gut microbiome helps regulate inflammatory responses by producing metabolites that promote gut barrier integrity and modulate immune cell activity.

43.35%

### How Does This Impact You

Gut microbiota significantly influence inflammation and overall health through a complex interplay of microbial metabolites and immune modulation. A balanced gut microbiome fosters a robust gut barrier, preventing the translocation of pro-inflammatory molecules into the bloodstream. Beneficial bacteria produce short-chain fatty acids (SCFAs), which exhibit anti-inflammatory properties and reinforce gut lining integrity. Conversely, dysbiosis can compromise gut barrier function, leading to "leaky gut" and the release of lipopolysaccharides (LPS) and other pro-inflammatory substances. This triggers systemic inflammation, which is implicated in numerous chronic diseases, including inflammatory bowel disease, metabolic disorders, and autoimmune conditions.

## Functional

### General Constipation

Microbiota that influence constipation play a vital role in maintaining regular bowel movements and overall digestive health. A balanced gut microbiome contributes to proper gut motility and stool consistency through the production of short-chain fatty acids (SCFAs) and other metabolites.

52.36%

### How Does This Impact You

Gut microbiota significantly influence constipation and impact health through their role in fermentation, motility, and stool consistency. Beneficial bacteria ferment dietary fiber, producing short-chain fatty acids (SCFAs) like butyrate, which stimulate colonic contractions and increase water absorption, thus promoting regular bowel movements. Dysbiosis, or an imbalance of gut bacteria, can disrupt these processes, leading to reduced fermentation, slower gut motility, and harder stools, resulting in constipation. Chronic constipation can cause discomfort, abdominal pain, and increase the risk of complications like hemorrhoids and anal fissures. Furthermore, it can negatively impact overall quality of life and contribute to systemic issues by affecting nutrient absorption and toxin elimination.

### Gut Discomfort/ Bloating

Gut microbiota significantly impact gut bloating and discomfort through their fermentation processes. A balanced microbiome efficiently ferments dietary fibers, producing gases like hydrogen and methane as byproducts which will pass without issue.

6.52%

### How Does This Impact You

Dysbiosis of gas producing microbiota can lead to excessive gas production, altered gut motility, and increased sensitivity, resulting in bloating, abdominal pain, and general discomfort. Certain bacteria, like methanogens, produce higher levels of methane, exacerbating these symptoms. Chronic bloating and discomfort can significantly diminish quality of life, affecting daily activities and mental well-being. Furthermore, persistent gut imbalances can contribute to systemic inflammation and other health issues by compromising gut barrier integrity and affecting nutrient absorption.

### Potential Autoimmune Triggers

Understanding the link between gut health and autoimmune diseases. Certain microbial metabolites, such as lipopolysaccharides (LPS) from Gram-negative bacteria, or specific bacterial proteins that mimic human tissues (molecular mimicry), can trigger immune responses that may lead to autoimmune conditions.

17.75%

### How Does This Impact You

Potential autoimmune trigger biomarkers within the gut microbiome can significantly impact human health by initiating or exacerbating autoimmune diseases. Certain microbial components, like lipopolysaccharides (LPS) or specific bacterial proteins that mimic human tissues, can activate the immune system and trigger chronic inflammation. In susceptible individuals, this can lead to the development or worsening of autoimmune conditions such as rheumatoid arthritis, inflammatory bowel disease, or multiple sclerosis. By compromising gut barrier integrity, these triggers can allow for the translocation of microbial products into the bloodstream, further fueling systemic inflammation and autoimmune responses.

### Weight Management

Biomarkers of weight management in gut microbiome assessment are crucial for understanding the complex interplay between gut health and metabolic regulation. Specific microbial metabolites, such as short-chain fatty acids (SCFAs), influence appetite regulation, energy expenditure, and fat storage.

0.33%

### How Does This Impact You

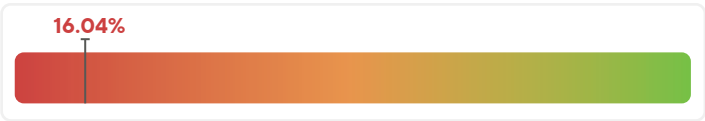
This score assesses the relationship between your gut microbiome and maintaining an optimal weight. Your gut microbiota plays a crucial role in managing energy and metabolism. An imbalanced microbiota, termed dysbiosis, can be linked to weight gain and metabolic complications. These microbes assist in metabolizing our food, especially dietary fibers, resulting in the production of short-chain fatty acids (SCFAs) that influence hunger hormones. Research shows that individuals struggling with obesity often have a distinct gut microbe composition, characterized by reduced diversity and an increase in harmful bacteria. Specific bacteria, such as *Akkermansia muciniphila*, are associated with a healthier weight, while a decreased count of *Bacteroidetes* is common in obese individuals. In essence, by understanding our microbial profile, we can gain insights into our body's mechanisms for regulating weight.



# Other Microbiota

## Worms

The presence of worms are not generally considered a beneficial component of a healthy gut microbiota.

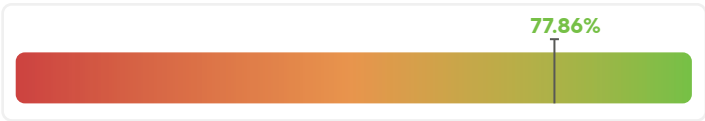


### How does this impact you

While generally considered detrimental, some studies suggest that certain helminth (worm) infections might have complex and context-dependent interactions with the gut microbiota and immune system. Some research indicates that certain helminths can modulate the gut microbiota and immune system, potentially reducing inflammatory responses in some individuals. However, the presence of parasitic worms is largely associated with negative health outcomes, including nutrient deficiencies, intestinal damage, and compromised immune function.

## Parastic Organisms

Parasitic organisms within the human gut microbiome represent a disruption to the delicate microbial balance.

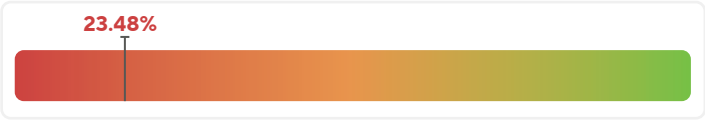


### How Does This Impact You

The overall impact of parasites is largely negative. They can disrupt the delicate balance of the gut ecosystem, leading to inflammation, nutrient malabsorption, and compromised gut barrier function. Parasitic infections can also trigger significant immune responses, potentially contributing to chronic health issues. Therefore, the presence of parasitic organisms in the gut microbiota is typically associated with negative health outcomes, and their eradication is usually a priority for maintaining gut health.

## Archaea

Archaea are important biomarkers due to their influence on fermentation and gas production. These microorganisms, though less abundant than bacteria, play a critical role in utilizing hydrogen gas produced by bacterial fermentation, converting it into methane.

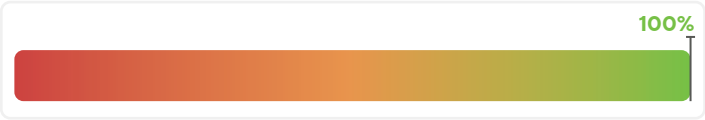


### How does this impact you

Archaea, microorganisms found in diverse environments. Elevated levels of Archaea may contribute to gastrointestinal discomfort, such as bloating and flatulence, and may also impact gut motility. Furthermore, the presence and activity of archaea can influence the overall efficiency of nutrient absorption and the composition of other microbial populations. Monitoring archaeal populations provides valuable insights into gut fermentation processes, potential imbalances, and their effects on digestive health and overall well-being.

## Viruses

Viral biomarkers, in particular, bacteriophages are viruses that infect bacteria. They may play a crucial role in shaping the gut ecosystem by influencing bacterial populations and diversity.

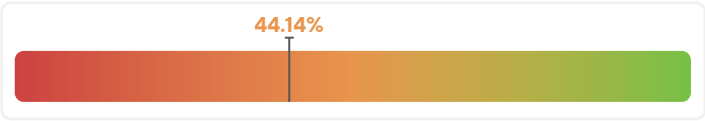


### How does this impact you

Changes in viral communities, or the virome, can disrupt the balance of the gut microbiota, potentially contributing to dysbiosis. Certain viral signatures may also indicate the presence of pathogenic bacteria or reflect changes in immune function. Monitoring viral biomarkers provides insights into the dynamic interactions within the gut microbiome and their potential influence on digestive health, immune responses, and overall well-being. Understanding the virome's role is essential for a comprehensive assessment of gut health and developing targeted interventions.

## Fungi

While bacteria dominate the gut ecosystem, fungi like Candida and Saccharomyces can influence gut barrier function, immune responses, and metabolic processes.



### How does this impact you

Fungi are essential members of the gut community with bacteria and viruses, have an evolving role in gut health. They assist in complex carb digestion and produce beneficial substances like short-chain fatty acids (SCFAs). However, overgrowth can disrupt microbial balance, associated with health issues such as IBD, IBS, diabetes, and obesity. Some fungi may trigger immune reactions, potentially causing conditions like inflammatory bowel disease. Changes in gut fungi can also impact other inflammatory diseases. The complete dynamics between our gut and fungi are under study as we strive for a deeper understanding of their health effects.

# How To Interpret Your Microbiome Scores

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## Less Than 25%

The score implies there's a significant need for improvements in factors that affect gut health. This low score could indicate a diet lacking in diversity or fiber, insufficient consumption of probiotics and prebiotics, and possibly an overuse of antibiotics or other medications that can disrupt the microbial balance. It might also reflect inadequate lifestyle practices such as poor stress management, lack of regular physical activity, or insufficient sleep—all of which can have adverse effects on gut flora. This score serves as a call to action to adopt healthier eating habits, introduce more gut-friendly foods into the diet, and establish lifestyle changes that support a thriving and diverse gut microbiome. Such changes are crucial as they can have far-reaching impacts on overall health and well-being.

## Between 25% And 75%

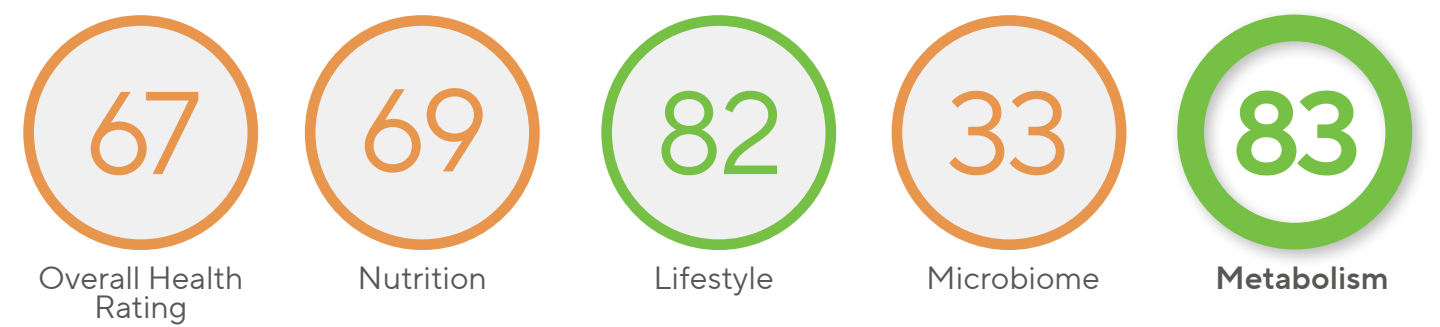
The score indicates a moderate level of gut health, suggesting that while there may be a foundation of good practices in place, there is room for improvement to optimize gut function. This score range might reflect a diet that includes some fiber-rich and fermented foods, but not consistently or variably enough to fully support a diverse microbiome. Lifestyle factors such as occasional exercise, inconsistent sleep patterns, and varying levels of stress may also contribute to this mid-range score. It could also suggest a history of medication use that has affected the gut flora balance. This score is an encouragement to enhance gut-supportive habits, such as increasing the intake of diverse, fiber-rich foods, incorporating regular physical activity, managing stress effectively, and being mindful of medication use that can impact gut health. Adapting these improvements can help shift the balance towards a more optimal gut health status.

## Greater Than 75%

This score likely indicates a robust and diverse gut microbiota, reflective of excellent gut health practices. This score suggests that dietary habits are supportive of gut health, possibly including a high intake of fiber from a variety of fruits, vegetables, and whole grains, as well as fermented foods that provide probiotics. It may also imply that the individual maintains a lifestyle that supports gut health, such as regular exercise, adequate hydration, and stress reduction techniques, all of which can positively influence the microbiome. Furthermore, this score can indicate that the use of antibiotics is judicious, protecting the delicate balance of gut bacteria. Overall, a high microbiome health score is a sign of a strong foundation for overall health and can be associated with a lower risk of various chronic diseases.



## Your Results



### Significant Findings

**cis-Aconitic Acid is high**  
cis-Aconitic acid is an intermediate in the citric acid cycle, a crucial pathway for energy production. Elevated levels may indicate poor amino acid metabolism and can be associated with fatigue

**a-Ketoisocaproic Acid is high**  
a-Ketoisocaproic acid is a branched-chain keto acid derived from the breakdown of leucine, an essential amino acid. Elevated levels can indicate imbalances in amino acid metabolism.

**a-OH-Butyric Acid is high:**  
a-Hydroxybutyric acid is a marker of hepatic glutathione synthesis rate and is also a threonine catabolic product. Elevated levels can indicate increased detoxification activity, often in response to oxidative stress or toxin exposure.

**N-Acetylcysteine (NAC) is High:**  
NAC is an antioxidant and precursor to glutathione. Elevated levels in urine are unusual.

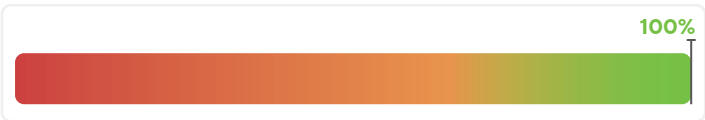
### How This May Impact You

Presents a complex metabolic picture, revealing both functional strengths and areas of imbalance. While many markers fall within normal ranges, suggesting that fundamental processes like fatty acid oxidation and carbohydrate breakdown are proceeding adequately, key elevations in specific organic acids point to significant metabolic challenges. Notably, the elevated cis-Aconitic Acid suggests potential inefficiencies within the citric acid cycle, the central pathway for cellular energy production, which may have implications for the patient's energy levels and overall vitality. The high a-Ketoisocaproic Acid indicates disturbances in amino acid metabolism, specifically the breakdown of leucine, which could impact protein utilization and related metabolic functions. Furthermore, the elevated a-OH-Butyric Acid signals increased detoxification activity, potentially reflecting the body's response to oxidative stress or toxin exposure, which could be linked to the patient's reported stress levels. Finally, the elevated N-Acetylcysteine (NAC) is an unusual finding that requires careful clinical correlation and potentially further investigation to determine its source and significance.

Your reported symptoms, including brain fog, fatigue, and stress, align with these identified metabolic imbalances. Addressing these imbalances through targeted nutritional support aimed at optimizing citric acid cycle function, amino acid metabolism, and detoxification pathways, alongside lifestyle modifications and appropriate follow-up for the elevated NAC, may offer an opportunity to alleviate these symptoms and promote improved overall health. A personalized approach that integrates these findings with the patient's clinical presentation is crucial for developing effective interventions and supporting long-term well-being.

### Fatty Acid Metabolism

Fatty acid metabolism serves as a primary source of energy and playing a vital role in cellular function. The breakdown of fatty acids provides ATP, essential for various bodily processes, while their synthesis is critical for cell membrane formation and hormone production

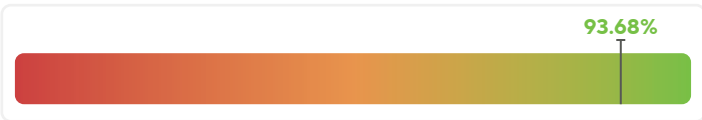


### How May This Impact You

Fatty acids such as adipate and suberate are a major source of energy. Fatty acid metabolism is the processes of either breaking down fatty acids to generate energy or creating fatty acids for storage or use. Besides being a source of energy, fatty acids are important for normal cellular function. They are considered an attractive target to regulate the human diseases of obesity, diabetes, cancer, and cardiovascular complications.

### Carbohydrate Metabolism

Carbohydrate metabolism provides the body's primary source of energy through the breakdown of glucose. Efficient carbohydrate metabolism ensures a steady supply of energy for cellular functions, brain activity, and physical exertion.



### How May This Impact You

Carbohydrates are molecules made of carbon, hydrogen, and oxygen. They come in simple forms like glucose and fructose, or complex ones like starch and cellulose. They are essential for giving energy to our cells. Especially important is glucose, which our body breaks down to create ATP, a primary energy source.

# Metabolism

## Neurotransmitter Metabolism

Neurotransmitters play a critical role in regulating mood, cognition, and various physiological processes. These markers reflect the balance and activity of neurotransmitters which are synthesized and metabolized through complex biochemical pathways.

86.41%

### How Does This Impact You

Neurotransmitters are chemicals that transfer signals between nerve cells. Dysregulation of neurotransmitter metabolism can lead to mood disorders, cognitive impairments, and disruptions in sleep, appetite, and stress response. Monitoring these markers helps identify imbalances that may contribute to mental and physical health issues, allowing for targeted interventions such as dietary adjustments, lifestyle modifications, or supplementation to support optimal neurotransmitter function and overall metabolic well-being.

## Energy Metabolism

Energy metabolism encompasses the complex biochemical processes that convert food into usable energy. Efficient energy metabolism ensures a consistent supply of ATP, powering cellular functions, physical activity, and vital organ systems.

68%

### How Does This Impact You

A key step in how our cells get energy from food is through the citric acid cycle. It's part of the bigger process named cellular respiration. This cycle produces ATP, which is our cells' main energy source. Additionally, it creates important building blocks used in other processes like making sugars, breaking down fats, and forming neurotransmitters.

## B-Complex Vitamin Markers

B-complex vitamins play essential roles in energy production, DNA synthesis, and neurological function. They act as coenzymes in numerous metabolic pathways, facilitating the conversion of food into usable energy and supporting cellular growth and repair.

85.71%

### How Does This Impact You

Gut microbiota significantly influence constipation and impact health through their B-group vitamins, 8 vital water-soluble nutrients, drive metabolism: B1 (thiamine), B2 (riboflavin), B3 (niacin), B5 (pantothenic acid), B6 (pyridoxine), biotin, folic acid, and B12 (cobalamins). While many are in various foods, B12 mainly in meats. As they can't be stored, regular diet inclusion is crucial. They aid cell function, enable nutrient (carbs, fats, proteins) energy utilization, and foster new DNA for growth.

## Oxidative Damage & Antioxidant Markers

Oxidative damage and antioxidant markers reflect the balance between free radical production and antioxidant defense.

63.59%

### How Does This Impact You

Oxidative stress happens when there are too many harmful oxygen molecules (ROS) and the body can't remove them fast enough, causing cell harm. Oxidative stress, caused by an excess of free radicals, can damage cellular components, contributing to chronic diseases like cardiovascular disease, diabetes, and neurodegenerative disorders. Antioxidant markers, such as vitamins C and E, and enzymes like superoxide dismutase, indicate the body's ability to neutralize free radicals and protect against oxidative damage. Monitoring these markers helps assess the level of oxidative stress, identify potential imbalances, and guide interventions to maintain cellular integrity and support overall metabolic health.

## Dysbiosis Markers

Metabolic health markers in urine can reveal dysbiosis by reflecting the altered metabolic outputs of an imbalanced gut microbiome. Dysbiosis can lead to changes in the production and absorption of various metabolites.

64.35%

### How Does This Impact You

Dysbiosis markers (e.g., Benzoate, Hippurate) reveal gut bacteria balance's importance for health. Benzoate and Hippurate often result from food additives or gut bacteria processing. Elevated levels may imply excessive intake or altered flora. Phenylacetate and Phenylpropionate form during amino acid processing, indicating protein malabsorption or bacterial overgrowth if high. ParaHydroxyBenzoate (linked to preservatives) and p-HydroxyPhenylacetate (from polyphenols) signal bacterial shifts. Indoleacetic Acid relates to tryptophan metabolism, suggesting bacterial or dietary issues if disrupted. Lastly, Tricarballic acid inhibits a key enzyme, affecting energy production at high levels.

## Oxalate Markers

Oxalate biomarkers are important in assessing kidney function. More broadly, potentially reflecting issues with gut microbiome balance, as certain bacteria metabolize oxalate. Furthermore, systemic hyperoxalemia (identified via these markers) can contribute to inflammation and oxidative stress, impacting various tissues and organs.

100%

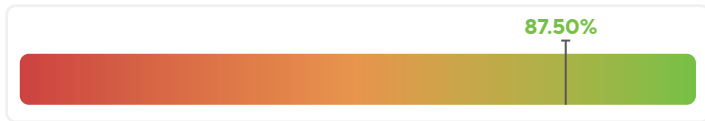
### How Does This Impact You

Oxalate metabolites, including Oxalic Acid, Glyceric Acid, and Glycolic Acid, are vital organic compounds involved in various body metabolic processes. Oxalic Acid, found in foods like spinach and beet greens, is a primary component of kidney stones when combined with calcium. In contrast, Glyceric Acid and Glycolic Acid play roles in carbohydrate metabolism and skincare, respectively. These compounds are essential, but imbalance can bring repercussions. Excess Oxalic Acid may cause kidney stone formation, leading to pain and kidney damage. Abnormal Glyceric Acid levels can disrupt glucose metabolism, and unbalanced Glycolic Acid in skincare may cause skin irritation. Thus, while these oxalate metabolites are crucial, maintaining balance is vital for optimal health and preventing complications.

# Metabolism

## Nutritional Markers

Nutritional biomarkers provide objective measures of nutrient status and their impact on physiological processes. These markers reflect the intake, absorption, and utilization of essential vitamins, minerals, and macronutrients.



### How Does This Impact You

Monitoring urine nutritional markers detect imbalances, supporting personalized dietary and health recommendations. Pyridoxic Acid reflects Vitamin B6, vital for protein metabolism and neurotransmitter production. Pantothenic Acid (Vitamin B5) converts food into energy and makes red blood cells. Glutaric Acid, tied to Vitamin B2, breaks down proteins, fats, and carbs, supporting cellular energy. Ascorbic Acid (Vitamin C) is a skin, vessel, and bone-boosting antioxidant. CoEnzyme-Q10 (CoQ10) powers energy, backing heart and immune health. N-Acetylcysteine (NAC) is a potent antioxidant, precursor to glutathione, a key body antioxidant.

## How To Interpret Your Metabolism Scores

### Less Than 25%

A score below 25% in metabolic health, points to potential metabolic imbalances or deficiencies. It may signal irregularities in energy production, nutrient absorption, or detoxification processes. This could be due to a diet lacking in essential nutrients, poor digestive health, or possible over-exposure to toxins. Such a score suggests a need for significant dietary adjustments, possible supplementation, and lifestyle changes to improve metabolic function and reduce the risk of chronic disease.

### Between 25% And 75%

Your metabolic health score indicates that there are areas of your metabolic process that are functioning adequately, but there is room for improvement. You might be doing some things right, like having a decent diet or engaging in physical activity, but inconsistencies or specific deficiencies may still exist. Fine-tuning your nutrition, enhancing your exercise regimen, and ensuring adequate rest and stress management could help in optimizing your metabolic health and bringing your score closer to the ideal 100%.

### Greater Than 75%

Your metabolic health score suggests that, in general, your body is metabolizing nutrients efficiently. This implies a balanced diet, good nutrient absorption, and a healthy cellular energy production. It reflects well-regulated blood sugar levels, lipid metabolism, and a well-functioning detoxification system. This level of metabolic health is often associated with a reduced risk of chronic metabolic diseases like diabetes and heart disease, indicating that current lifestyle and dietary habits are supporting your metabolic well-being.