

Functional Health Report

A comprehensive analysis of your test results.

BLOOD CHEMISTRY ANALYSIS



Client Report

Prepared for Male Sample

58 year old male born Nov 01, 1966

57 years old at the time this lab test was taken

Fasting

Requested by Mrs. Ashley Woosley

11:1 Holistic Health + Fitness



Collected Date Aug 02, 2024

Lab Quest

Powered by

Optimal **D**X



INTRODUCTION What's Inside? Practitioner's FBCA Client Report

Notes Introduction



What's Inside?

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An introduction to Functional Blood Chemistry Analysis and your Functional Health Report.

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An introduction to Functional Blood Chemistry Analysis and your Functional Health Report (FHR).

Introduction

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What's Inside?

Practitioner's Notes

FBCA Introduction Client Report





Mrs. Ashley Woosley's Notes Report

This report highlights the notes made about the results of this blood test.

REPORT NOTES

Health Goals:

- 1. Lose weight, especially around the abdomen
- 2. Improve sleep
- 3. Improve Improve energy
- 4. Improve joint and muscle pain, and decrease inflammation

Signs and Symptoms

The following signs and symptoms were reported:

- 1. Irritable before meals
- 2. Crave coffee or sugar in afternoon
- 3. sleepy in afternoon
- 4. arthritic tendencies
- 5. Difficulty falling asleep
- 6. Decreased libido
- 7. Difficulty losing weight





Functional Blood Chemistry Analysis (FBCA)

Functional Blood Chemistry Analysis, or FBCA, takes a deep dive into what your blood can tell us about your health. It's a way of sorting through all the different markers in your blood to get a clear picture of how your body's systems are doing. Think of it as a comprehensive health check-up that looks not just at how your body is working right now, but also checks if you're getting all the nutrients you need. Plus, it helps us see if you're moving towards better health or if there are areas we need to work on to get you feeling your best.



WHY BLOOD TESTING?

Your blood tells a comprehensive story about your health. Among all medical lab tests, the Blood Chemistry and CBC/hematology test stands out as the most frequently ordered. It's a cornerstone of Western clinical medicine, helping doctors make informed diagnostic decisions. You've likely been told that blood testing is a standard procedure for assessing health.

Yet, many people start feeling unwell long before traditional blood tests show anything amiss. Often, you might hear from your doctor that "everything on your blood test looks normal," even when you don't feel right.

NORMAL IS NOT OPTIMAL

If you're feeling "unwell" but your blood test comes back "normal," it doesn't necessarily mean everything is fine. Clinical experience shows that being "normal" is quite different from being functionally optimal. You might not have a diagnosed disease, but it's possible to be dysfunctional, meaning your body's systems aren't operating as well as they should, and you're starting to feel the effects.

The problem isn't with the blood tests themselves—they're powerful diagnostic tools. The issue lies in the reference ranges used, which are based on average populations, not indicators of optimal health or function. "Normal" ranges are often too broad to detect early signs of health issues or to identify when you're moving away from optimal health.

THE FUNCTIONAL APPROACH

The functional approach to blood testing focuses on changes in your body's function rather than looking for disease. We use optimal physiological ranges instead of "normal" population averages. This results in a more precise "Functional Physiological Range." It helps us spot issues within the "normal" range that could indicate your body's systems are starting to struggle. This approach enables us to detect shifts in your physiological function and identify what might be preventing you from reaching your best physiological, biochemical and metabolic health.

Unlike traditional methods, which examine each biomarker in isolation, Functional Blood Chemistry Analysis uses trends and relationships between biomarkers to uncover hidden risks and opportunities for improving your health.

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report is generated from an in-depth algorithmic analysis of your blood test results. Our software digs into the data, uncovering the intricate patterns and subtle indicators of functional changes in your body, often before you're aware anything's amiss.

SUMMARY

Blood testing has evolved beyond its role in diagnosing disease or managing injury. It's now an essential element of Functional Medicine, offering a critical window into your health. It helps reveal hidden health trends and is a key tool in promoting overall wellness and preventing disease.





Client Report

Your report is the result of a detailed and proprietary algorithmic analysis of your complex and comprehensive blood biomarkers.



THE FUNCTIONAL HEALTH REPORT

Your blood test results have been analyzed for their hidden meaning and the subtle, web-like patterns concealed within the numbers that signal the first stages of functional change in your body. The Functional Health Report (FHR) takes all of this analytical information and provides a comprehensive interpretation of the results in a written and graphical format.

The report gives you a window into the state of health in the main functional physiological systems of the body, its supporting accessory systems, and the degree of deficiency in individual nutrients. The report is broken down into 3 main sections:

ASSESSMENT

The Assessment section is at the very heart of the Functional Health Report. It is here that the findings of the risk analysis are presented.

The Functional Body Systems and Accessory reports show the risk of dysfunction in the various physiological and supporting accessory systems in your body.

The Nutrient Status report gives you an indication of your general nutritional status and the Nutrient Deficiencies report shows the risk of deficiency for individual nutrients.

Each of the assessment reports is accompanied by a section that contains detailed descriptions and explanations of the results presented in each of the reports in this section.

ANALYSIS

The Analysis section shows you the actual results of your blood test itself

The Blood Test Results Report lists your blood test results and shows if an individual biomarker is optimal, outside the optimal range or outside of the standard range.

The Blood Test Results Comparative Report compares results of the latest and previous blood test and gives you a sense of whether or not there has been an improvement in the individual biomarker results.

The Blood Test History report allows you to compare results over time and see where improvement has been made and allows you to track progress in the individual biomarkers.

The Out of Optimal Range report shows all of the biomarkers that are out of the optimal range and gives you some important information as to why each biomarker might be elevated or decreased. Each biomarker in the Out of Optimal Range report hyperlinks back into the Blood Test Results report so you can see a more detailed view of the blood test results.

HEALTH CONCERNS

All the information on the Assessment and Analysis sections of the report are summarized in the Health Concerns section, which focuses on the top areas of need as presented in this report.







A full breakdown of all the individual biomarker results, showing if a particular biomarker is outside the optimal range or the standard range, plus a comparative and historical view.

Analytics

- Blood Test Results
- 23 Out of Optimal Range

ANALYTICS	Blood Test Results	Out of Optimal Range		
	Blood Glucose	Kidney	Prostate	Electrolytes
	Metabolic	Enzymes	Proteins	Minerals
	Liver and GB	Iron Markers	Lipids	Cardiometabolic
	Thyroid	Inflammation	Vitamins	Hormones
	CBC	WBCs		

Blood Test Results

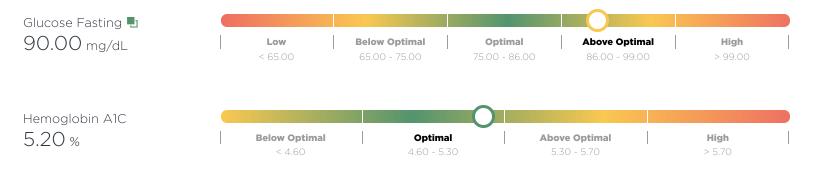
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range. The biomarkers are grouped into their most common categories.

Some biomarkers in the Blood Test Results Report that are above or below the Optimal or marked Low or High may be hyperlinked into the "Out of Optimal Range Report", so you can read some background information on those biomarkers and why they may be high or low.



BLOOD GLUCOSE

Keeping your blood sugar balanced is one of the best ways to maintain steady energy and overall wellness. The tests in this category show how well your body handles sugar both day-to-day and over longer periods, helping to catch early signs of trouble before they turn into bigger issues. By taking a functional approach, we can use these results to make simple yet powerful changes to support healthier blood sugar levels.





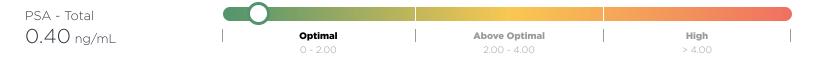
KIDNEY

Your kidneys act as filters, clearing out waste and keeping the right balance of fluids and minerals in your blood. These biomarkers measure how well your kidneys are doing their job, often catching early changes so we can address them before they become bigger problems. A functional approach means looking at the whole picture—from diet and hydration to everyday habits that support kidney health.



PROSTATE

Your prostate gland's health can be monitored through specific proteins it produces, helping us understand how it's functioning over time. By tracking these markers, we can detect changes early and guide you toward choices that support optimal prostate health as you age.



ELECTROLYTES

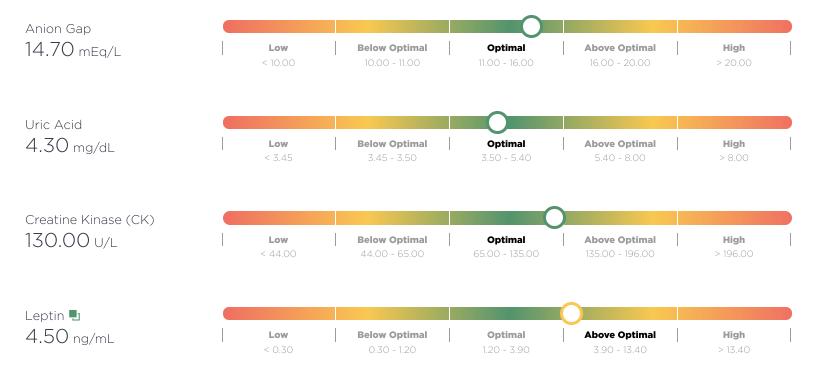
Electrolytes help your body stay hydrated, regulate blood pressure, and keep your muscles and nerves working properly. When these levels are out of balance, you may feel fatigued, dizzy, or have muscle cramps. By monitoring these important minerals in your blood, we can understand how well your body maintains its internal balance and guide you toward the right choices to help you feel energized and well.





METABOLIC

Metabolic biomarker analysis provides key insights into how your body manages energy, muscle function, and electrolyte balance. By spotting early changes in these biomarkers, we can develop appropriate support strategies to keep your metabolism running smoothly.



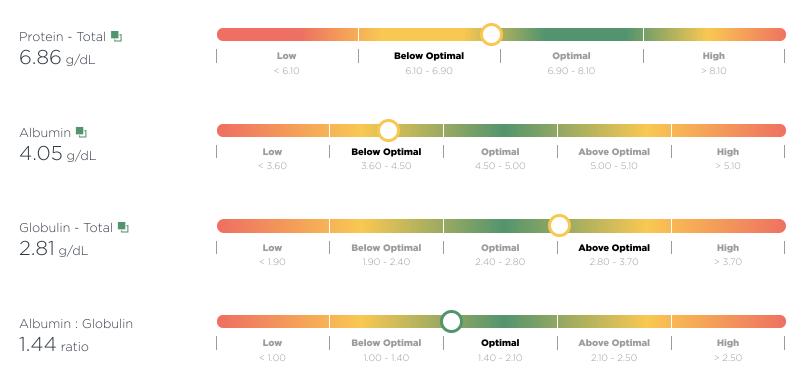
ENZYMES

Your body's enzymes help break down food and convert nutrients into energy. By looking at your enzyme levels, we can identify why you might be experiencing digestive issues or other symptoms and guide you toward choices that support your body's natural enzyme function.



PROTEINS

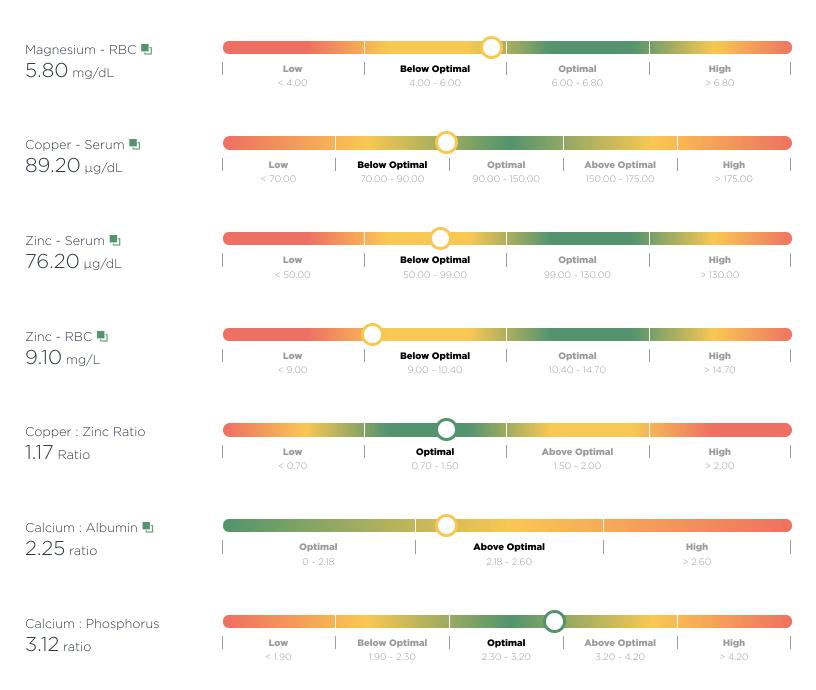
Protein analysis gives us a clear look at the proteins in your blood, which play a vital role in keeping you healthy by supporting everything from your immune system to your overall nutrition. With these insights, we can help you maintain a balanced level of these important proteins and boost your well-being.



MINERALS

Minerals are essential for everything from bone health to energy production and immune function. By measuring both the minerals in your blood and inside your cells, we can understand if you're getting and properly using these vital nutrients, helping us guide you toward choices that maintain optimal mineral balance for your health.





LIVER AND GB

Liver and gallbladder biomarkers give us an indication of how well your liver and gallbladder are working to support your overall health. By spotting early signs of stress or imbalance, we can make appropriate support strategies to help keep these vital organs functioning smoothly and support their optimal function.

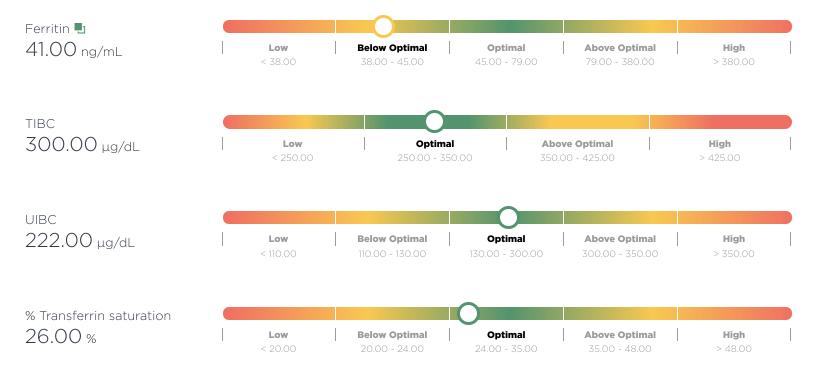




IRON MARKERS

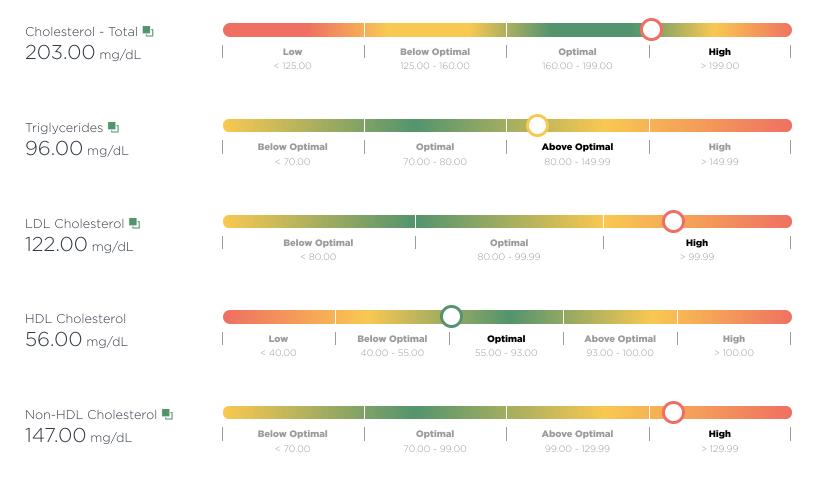
Iron is a key mineral your body relies on to keep you feeling energized and healthy. Around 70% of your total iron is found in red blood cells, where it carries oxygen from your lungs to all the parts of your body that need it. By measuring different aspects of how your body handles iron, we can understand if you're getting and using the right amount – not too little or too much – and guide you toward choices that help maintain healthy iron levels for optimal energy and wellness.





LIPIDS

The lipid panel assesses the distribution and ratios of various lipid fractions. By examining these different markers, we can better understand the role lipids play in your cardiovascular health





CARDIOMETABOLIC

Your heart and blood vessel health depends on many complex factors, and these specialized tests help us understand how your cardiovascular system is working at a deeper level than standard heart tests. By looking at these biomarkers, we can spot potential concerns early and guide you toward specific strategies that best support your long-term heart health and overall wellness.



THYROID

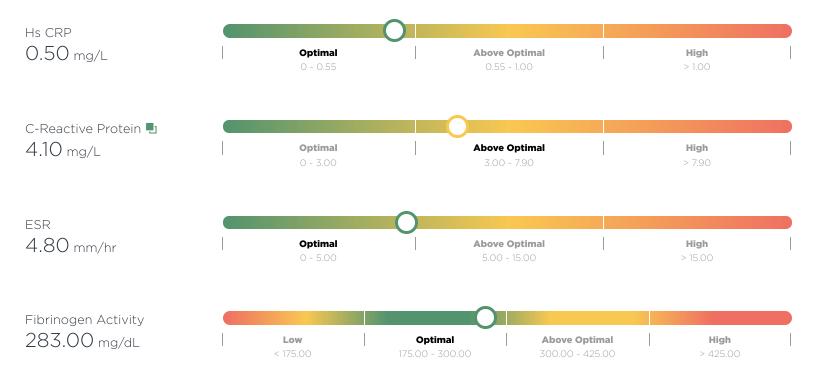
Your thyroid is like your body's metabolic thermostat, controlling energy production, temperature regulation, and countless other functions throughout your body. By looking at thyroid biomarkers, we can understand how well your thyroid is working at every stage, helping us guide you toward strategies that support optimal thyroid function.





INFLAMMATION

Inflammatory biomarkers enable us to evaluate both acute and chronic systemic inflammation. While some inflammation is normal and helpful, too much can affect your energy, mood, and overall health, which is why we measure these markers to guide personalized recommendations that can help your body maintain a healthy balance.



VITAMINS

Vitamin biomarker analysis helps us see if your body is getting the right vitamins to produce energy, support your immune system, and maintain overall health. By measuring both the amounts and active forms of these vital nutrients, we can understand if you're getting and properly using the vitamins you need, helping us guide you toward choices that optimize your nutritional status.



HORMONES

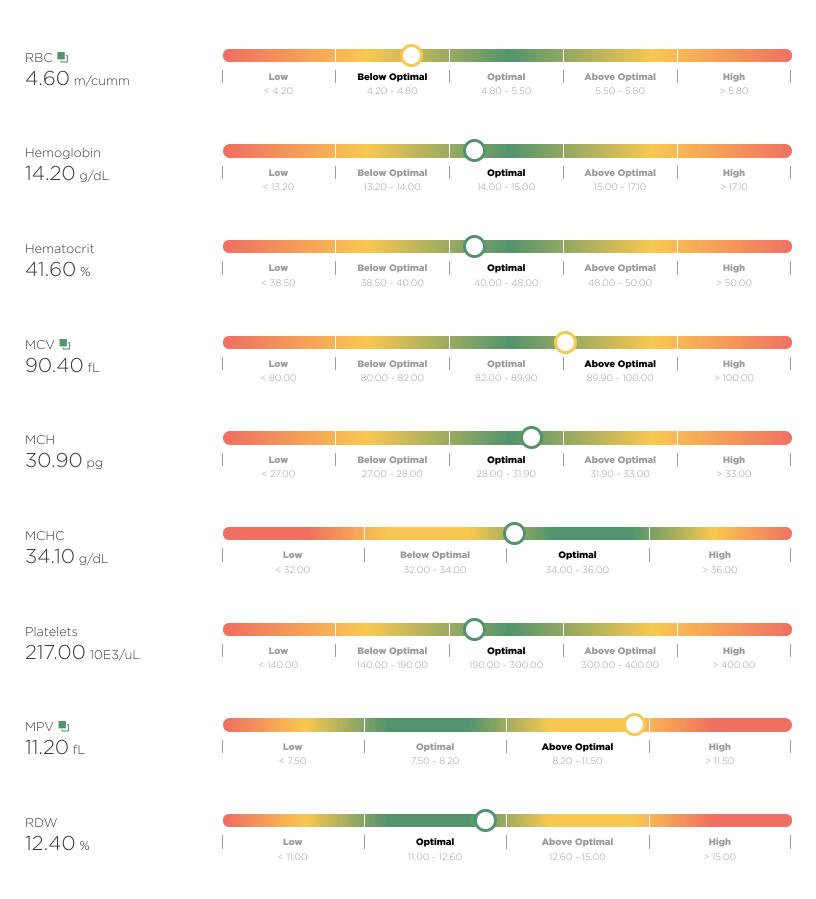
Hormones act as your body's messengers, controlling energy, mood, sleep, and overall well-being. When they are out of balance, you may feel tired, stressed, or have trouble with weight, focus, or sleep. By measuring various hormone levels, we can understand how well your endocrine system is performing as a whole and guide you toward strategies that help maintain optimal hormonal balance.





CBC

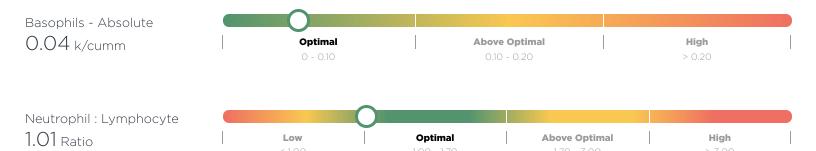
Your blood is responsible for carrying oxygen and supporting your immune system. The biomarkers on the Complete Blood Count (CBC) help us understand how well they're doing their job. By looking at the number, size, and characteristics of the different blood cells in the CBC, we can spot early signs of imbalances that might affect your energy, immune function, or overall health. We can then guide you toward choices that support healthy blood cell production.



WBCS

White blood cell analysis checks the different types of cells that help fight off infections and keep your body balanced. With this information, we can spot any early signs of immune-related issues and put together strategies to support your immune health and overall well-being.





☆ ① ⊙

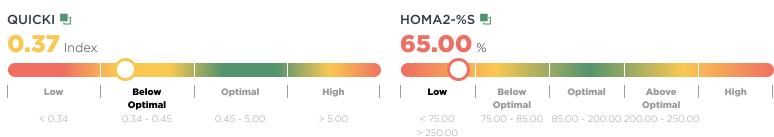
Blood Test Results Out of Optimal Range

Out of Optimal Range

The following report shows all of the biomarkers that are out of the optimal range and gives you some important information as to why each biomarker might be elevated or decreased.



BLOOD GLUCOSE



QUICKI is a calculation that uses your fasting blood sugar and insulin levels to estimate how sensitive your body is to insulin. If your QUICKI score is low, it means your body may be becoming resistant to insulin, which could raise your risk of problems like Type 2 Diabetes or heart disease over time.

HOMA2-%S is a calculation that estimates how well your body's cells respond to insulin. If your HOMA2-%S is low, it means your cells aren't taking in sugar from your bloodstream as effectively, which can lead to higher blood sugar levels over time. This reduced sensitivity can be an early warning sign of prediabetes or Type 2 Diabetes.



Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 0.50	0.50 - 0.75	0.75 - 1.25	1.25 - 1.75	> 1.75	

HOMA2-IR is a way to estimate how much your body resists insulin, a hormone that helps control your blood sugar. A score above 1 suggests your body is becoming less responsive to insulin, a condition called insulin resistance. Over time, this can lead to higher blood sugar levels and raise your risk for conditions like metabolic syndrome or Type 2 Diabetes.

Glucose Fasting •

90.00 mg/dL

Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 65.00	65.00 - 75.00	75.00 - 86.00	86.00 - 99.00	> 99.00	

Fasting blood glucose (FBG) measures how much sugar is in your blood after you've gone without eating for several hours. Insulin and glucagon are two key hormones that help keep blood sugar in balance: insulin lowers your blood sugar by helping it move into your cells, and glucagon raises your blood sugar by telling your liver to release stored sugar. When FBG levels are high, it often means your body isn't making enough insulin or isn't using it effectively. This happens in type 1 diabetes, where the pancreas doesn't produce enough insulin, and type 2 diabetes, where the body becomes resistant to insulin over time. High FBG can also be a sign of other conditions, like prediabetes or metabolic syndrome, which both indicate possible trouble with how your body handles sugar and other nutrients.

Insulin - Fasting 🖶

5.20 µIU/mL

Below	Optimal	Above	High	
Optimal		Optimal		Ċ
< 200	200 - 500	5 00 - 19 40	> 19 /10	

Fasting insulin is the amount of insulin in your blood after you haven't eaten for several hours—usually overnight. If your fasting insulin level is high, it can be a sign that your cells aren't responding as well to insulin (often called "insulin resistance"). Over time, this can raise your risk for health problems like Type 2 Diabetes or heart disease.

HOMA2-%B ■

128.20 %

Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 70.00	70.00 - 90.00	90.00 - 110.00	110 00 - 120 00	> 120 00	

HOMA2-%B is a calculation that helps estimate how well the insulin-producing cells (beta cells) in your pancreas are working. If your HOMA2-%B is high, it can mean your pancreas is working overtime to produce extra insulin—often because your body's cells aren't responding to insulin as effectively as they should. This is sometimes an early indication of blood sugar dysregulation.

KIDNEY

BUN 🖶

9.00 mg/dL



Blood Urea Nitrogen (BUN) is a test that measures a waste product called urea in your blood, which can give clues about how your body is breaking down protein and how well your kidneys and liver are working. If your BUN level is low, it usually isn't a big concern. It can sometimes happen if you're drinking a lot of fluids (diluting the urea), you're low in protein, or your liver isn't producing as much urea as usual.

Creatinine 🖶

0.77 mg/dL

Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 0.40	0.40 - 0.80	0.80 - 1.10	1.10 - 1.50	> 1.50	

Serum creatinine is a waste product that comes from muscle activity and is normally filtered out by the kidneys. If your serum creatinine is low, it often simply means you have less muscle mass, or you've been losing muscle for some reason (like inactivity or certain health conditions).

ELECTROLYTES

Sodium: Potassium

29.57 ratio



The sodium:potassium ratio compares two important minerals in your blood, both controlled by hormones from your adrenal glands. If your ratio is low, it may mean you've been under long-term stress that has caused diminished adrenal function. When your adrenal glands aren't as active, they don't make enough of the hormone (aldosterone) that helps keep sodium and potassium in balance. This can lead to lower sodium and higher potassium levels.

METABOLIC

Leptin 🖳

4.50 ng/mL



Leptin is a hormone made by your body's fat cells. It helps control your appetite and plays a role in your overall energy levels. If your leptin level is high, it often means you have more body fat, or your body isn't responding to leptin correctly—a condition sometimes called leptin resistance. This situation is often linked to weight gain, insulin resistance, and other health issues.

PROTEINS

Albumin 🖳

4.05 g/dL

Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 3.60	3.60 - 4.50	4.50 - 5.00	5.00 - 5.10	> 5.10	

Albumin is the main protein in your blood that helps keep fluid inside your blood vessels and carries nutrients around your body. When your albumin level is low, it can suggest you're not getting enough protein in your diet, your liver isn't working well, or your body is dealing with long-term inflammation.

Protein - Total 🖶

6.86 g/dL

Low	Below Optimal	Optimal	High	
< 6.10	6.10 - 6.90	6.90 - 8.10	> 8.10	

Your blood's total protein is mainly made up of two kinds of proteins: albumin and globulins. If your total protein is low, it may be because you're not getting enough nutrients or you aren't digesting your food as well as you should. It can also happen if your liver isn't making enough protein.

Globulin - Total 🖶

2.81 g/dL



Total globulin is a measure of proteins in your blood that help with fighting infections and carrying other substances through your body. If your total globulin is high, it can mean your body is dealing with inflammation or stress, or you might have a condition affecting your liver or digestive system.

MINERALS

Zinc - Serum

76.20 µg/dL



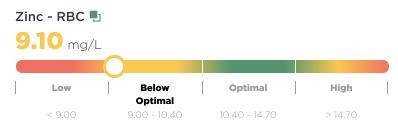
Zinc is a trace mineral that participates in a significant number of metabolic functions and is found throughout the body's tissues and fluids. Low levels of serum zinc are associated with zinc deficiency.

Magnesium - Serum 🖣

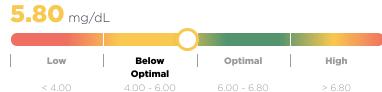
2.10 mg/dL



Serum magnesium is a measure of the magnesium found in your blood, which is important for your muscles, nerves, and bones. If your magnesium level is low, it might be because you're not getting enough from your diet, your body isn't absorbing it well (for example, if your stomach acid is low), or your kidneys are losing too much. Low magnesium can cause muscle cramps, twitching, or irregular heartbeats.



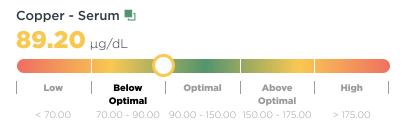
Zinc is a trace mineral that participates in a significant number of metabolic functions and is found throughout the body's tissues and fluids. Low levels of serum zinc are associated with zinc deficiency. Measuring RBC zinc provides a better assessment of intracellular and long-term zinc status than serum zinc alone.



Magnesium - RBC 🖣

Calcium: Albumin 🖶

RBC Magnesium measures how much magnesium is stored inside your red blood cells, which is important because most of your body's magnesium is found there. If your RBC magnesium is low, you might experience muscle cramps, weakness, or other symptoms since your cells aren't getting enough of this essential mineral.



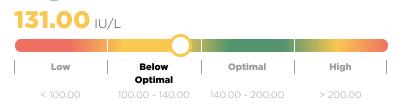
Serum copper is a measure of the copper in your blood, a mineral important for energy, brain function, blood cell production, and building strong bones. Low copper levels can affect your brain, liver, and other tissues, leading to problems with movement, poor blood health, or skin and hair changes. This may happen due to poor diet or problems with absorbing nutrients.



The Calcium:Albumin ratio looks at how much calcium you have in your blood compared to a protein called albumin. A high ratio can be a sign that you have too much calcium for the amount of albumin in your blood. Sometimes, this can be related to low albumin levels or conditions that raise your blood calcium.

LIVER AND GB

LDH [□]1



LDH represents a group of enzymes that are involved in carbohydrate metabolism. Decreased levels of LDH often correspond to hypoglycemia (especially reactive hypoglycemia), pancreatic function, and glucose metabolism.

IRON MARKERS



78.00 μg/dL



Serum iron reflects iron that is bound to serum proteins such as transferrin. Serum iron levels will begin to fall somewhere between the depletion of the iron stores and the development of anemia. Decreased iron levels are associated with iron deficiency anemia, hypochlorhydria and internal bleeding. The degree of iron deficiency is best appreciated with ferritin, TIBC and % transferrin saturation levels.

Ferritin 🖶

41.00 ng/mL

Low	Below	Optimal	Above	High	
< 38.00	Optimal 38.00 - 45.00	45.00 - 79.00	Optimal 79.00 - 380.00	> 380.00	

Ferritin is the main storage form of iron in the body. Decreased levels are strongly associated with iron deficiency where it is the most sensitive test to detect iron deficiency.

LIPIDS

Trialvcerides

96.00 mg/dl

Below	Optimal	Above	High	
Optimal		Optimal		
< 70.00	70.00 - 80.00	80.00 - 149.99	> 149.99	

Serum triglycerides are composed of fatty acid molecules that enter the bloodstream either from the liver or from the diet. Levels will be elevated in metabolic syndrome, fatty liver, in people with an increased risk of cardiovascular disease, hypothyroidism, and adrenal dysfunction

Cholesterol: HDL

3.62 Ratio



The ratio of total cholesterol to HDL is a far better predictor of cardiovascular disease than cholesterol by itself. A lower ratio is ideal because you want to lower cholesterol (but not too low) and raise HDL. A level below 3.0 would be ideal. Every increase of 1.0. i.e. 3.0 to 4.0 increases the risk of heart attack by 60%.

VLDL Cholesterol

5.60 mg/dL



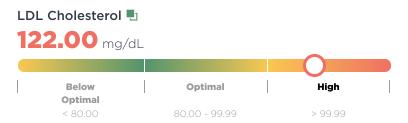
VLDL is a lipoprotein formed in the liver to transport endogenous triglycerides, phospholipids, protein, and cholesterol. It serves, from a functional perspective, as an internal lipid transport molecule, moving triglyceride and other lipids from one area of the body to another.

Non-HDL Cholesterol

147.00 mg/dL



Non-HDL cholesterol represents the circulating cholesterol not carried by HDL (the protective carrier that collects cholesterol from tissues and blood vessels and transports it back to the liver). Elevated Non-HDL Cholesterol is associated with an increased risk of cardiovascular disease and related events.



LDL functions to transport cholesterol and other fatty acids from the liver to the peripheral tissues for uptake and metabolism by the cells. It is known as "bad cholesterol" because it is thought that this process of bringing cholesterol from the liver to the peripheral tissue increases the risk for atherosclerosis. An increased LDL cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, oxidative stress, and fatty liver.

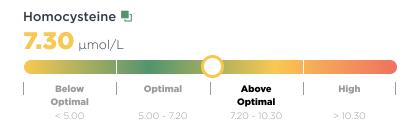
Cholesterol - Total 12 203.00 mg/dL Low Below Optimal

Optimal

Cholesterol is a type of fat in your blood that your body needs to make cells and hormones. It's important to keep cholesterol at a healthy level. When there's too much cholesterol in your blood, it can be a problem. High cholesterol is one of several factors that can increase your risk of heart and blood vessel issues. It can also be linked to other health concerns, including blood sugar dysregulation, thyroid problems, issues with the bile flow in your liver, and a condition where there's too much fat in the liver.

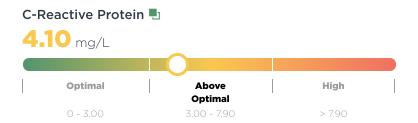
High

CARDIOMETABOLIC



Homocysteine is a molecule formed from the incomplete metabolism of the amino acid methionine. Increased levels of homocysteine are associated with an increased risk of cardiovascular disease and stroke.

INFLAMMATION



C-Reactive Protein is a blood marker that can help indicate the level of inflammation in the body.

VITAMINS

Vitamin B12 📳

427.00 pg/mL



Vitamin B12 is an essential nutrient for DNA synthesis and red blood cell maturation and is also necessary for myelin sheath formation and the maintenance of nerves in the body. Decreased serum B12 levels are associated with a deficiency of B12, insufficient B12 intake in the diet, or malabsorption.

Folate - RBC 🖳

398.10 ng/mL

Low	Below	Optimal	High	
	Optimal			
< 280.00	280.00 - 500.00	500.00 - 1504.00	> 1504.00	

Folate functions as a coenzyme in the process of methylation. Along with vitamin B12, folate is essential for DNA synthesis. Low folate intake can result in folate deficiency, which can impair methylation, DNA synthesis, and red blood cell production.

Folate - Serum 🖣

14.20 ng/mL

)
Low	Below	Optimal	High	
	Optimal			
< 5.50	5 50 - 15 00	15.00 - 27.00	> 27.00	

Folate functions as a coenzyme in the process of methylation. Along with vitamin B12, folate is essential for DNA synthesis. Low folate intake can result in folate deficiency, which can impair methylation, DNA synthesis, and red blood cell production.

Methylmalonic Acid 🖳

278.20 nmol/L

Optimal	Above	High	
	Optimal	9	- 1
0 - 260.00	260.00 - 318.00	> 318.00	

Methylmalonic acid (MMA) is a byproduct of the metabolism of certain fatty acids and amino acids, a process that requires vitamin B12. Testing for MMA can help detect an early B12 deficiency and help differentiate between folate and B12 deficiency. Elevated levels reflect a B12 deficiency.

HORMONES

% Testosterone Bioavailable 🖳

43.27%



This test measures the % of bioavailable testosterone found in the blood. Bioavailable testosterone is the amount of testosterone in the blood that is readily available for biological activity. Decreased levels of % bioavailable testosterone are associated with an increased risk of a number of dysfunctions including blood sugar dysregulation, cardiovascular dysfunction, an increase in abdominal obesity, decreased libido, and erectile dysfunction.

Testosterone Bioavailable

281.23 ng/dL



Bioavailable testosterone is the amount of testosterone in the blood is readily available for biological activity. Decreased bioavailable testosterone levels are associated with a number of dysfunctions including metabolic syndrome, an increased risk of cardiovascular disease, increase in abdominal obesity, decreased libido and erectile dysfunction.





Testosterone is the primary sex hormone for men. The free testosterone test measures the testosterone that is unbound to serum proteins such as Sex Hormone Binding Globulin (SHBG) and albumin. Decreased free testosterone levels are associated with a number of dysfunctions including metabolic syndrome, an increased risk of cardiovascular disease, increase in abdominal obesity, decreased libido and erectile dysfunction.

Gastrin 🖳

42.50 pg/mL

Below	Optimal	Above	High	
Optimal	•	Optimal		
< 45.00	45.00 - 90.00	90.00 - 100.00	> 100 00	

Gastrin is a hormone that stimulates the release of Hydrochloric Acid (HCL) from the parietal cells of the stomach. Decreased levels of gastrin are associated with hypochlorhydria or decreased secretion of HCL, pancreatic insufficiency and biliary insufficiency.

Testosterone Total ■1

650.00 ng/dL

Low	Below	Optimal	High	
< 250.00	Optimal 250.00 - 700.00	700.00 - 1100.00	> 1100.00	

Testosterone is the primary sex hormone for men. The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). Decreased total testosterone levels are associated with a number of dysfunctions including metabolic syndrome, an increased risk of cardiovascular disease, increase in abdominal obesity, decreased libido and erectile dysfunction.

DHEA-S 🖳

75.00 µg/dL

Low	Below	Optimal	High	
	Optimal			
< 85.00	85.00 - 350.00	350.00 - 690.00	> 690.00	

DHEA is produced primarily from the adrenals and is the most abundant circulating steroid in the human body and influences more than 150 known anabolic (repair) functions throughout the body and brain. It is the precursor for the sex hormones: testosterone, progesterone, and estrogen. Decreased levels are associated with adrenal insufficiency and many common age-related conditions, including diseases of the nervous, cardiovascular, and immune systems such as metabolic syndrome, coronary artery disease, osteoporosis, mood disorders, and sexual dysfunction. Ideally, DHEA levels should be maintained at the level of a healthy 30-year-old to maximize the antiaging effects

Cortisol: DHEA-S

0.16 ratio



Cortisol and DHEA are both hormones produced by the adrenal glands. Evaluating the ratio between cortisol and DHEA-S (the most abundant form of DHEA) can provide information about metabolic health. A higher ratio of cortisol to DHEA-S is associated with stress, metabolic syndrome, and immune dysfunction.

CBC

RBC 🖳

4.60 m/cumm

Low	Below	Optimal	Above	High
	Optimal		Optimal	
< 4.20	4.20 - 4.80	4.80 - 5.50	5.50 - 5.80	> 5.80

The RBC Count determines the total number of red blood cells or erythrocytes found in a cubic millimeter of blood. The red blood cell functions to carry oxygen from the lungs to the body tissues and to transfer carbon dioxide from the tissues to the lungs where it is expelled. Decreased levels are primarily associated with anemia.

MP	V 🖺	
11	.20	fL

Low	Optimal	Above Optimal	High	
< 7.50	7.50 - 8.20	8.20 - 11.50	> 11.50	

MPV or Mean Platelet Volume is a calculated measurement of the relative size of platelets in the blood. Elevated levels of MPV are seen with platelet destruction.

MCV 🖶

90.40 fl



The MCV is a measurement of the volume in cubic microns of an average single red blood cell. MCV indicates whether the red blood cell size appears normal (normocytic), small (microcytic), or large (macrocytic). An increase or decrease in MCV can help determine the type of anemia present. An increased MCV is associated with B12, folate, or vitamin C deficiency.

WBCS

Neutrophils - % 🖣

43.40%

Low	Below	Optimal	Above	High	
	Optimal		Optimal		
< 70.00	70.00 50.00	F0.00 C0.00	60.00 74.00	> 74.00	

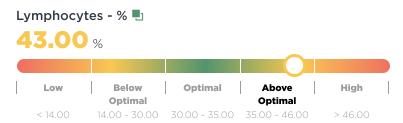
Neutrophils are the white blood cells used by the body to combat bacterial infections and are the most numerous and important white cell in the body's reaction to inflammation. Neutrophils - % tells us the % distribution of neutrophils in the total white blood cell count. Decreased levels are often seen in chronic viral infections.

Neutrophils - Absolute 🖣

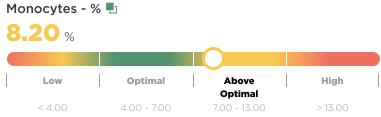
1.87 k/cumm

Low	Below	Optimal	Above	High
	Optimal		Optimal	
< 1.50	1.50 - 1.90	1.90 - 4.20	4.20 - 7.80	> 7.80

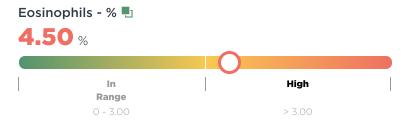
Neutrophils are the white blood cells used by the body to combat bacterial infections and are the most numerous and important white cell in the body's reaction to inflammation. **Neutrophils - Absolute** is an actual count of the number of neutrophils in a known volume of blood. Decreased levels are often seen in chronic viral infections.



Lymphocytes are a type of white blood cell. An increase in *Lymphocytes - %* is usually a sign of a viral infection but can also be a sign of increased toxicity in the body or inflammation.



Monocytes are white blood cells that are the body's second line of defense against infection. They are phagocytic cells that are capable of movement and remove dead cells, microorganisms, and particulate matter from circulating blood. Levels tend to rise at the recovery phase of an infection or with chronic infection.



Eosinophils are a type of White Blood Cell, which are often increased in people that are suffering from intestinal parasites or food or environmental sensitivities/allergies.







A comprehensive assessment of Functional Body Systems plus a detailed evaluation of your Nutrient Status, ensuring a holistic understanding of your health and well-being.

Assessment

- 35 Functional Body Systems
- 38 Accessory Systems
- 40 Nutrient Status
- 43 Nutrient Deficiencies



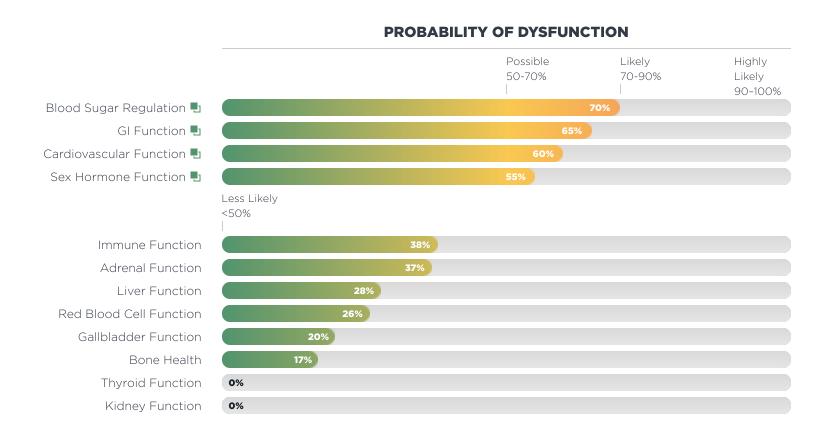


Functional Body Systems

The Functional Body System results represent an algorithmic analysis of this blood test. These results have been converted into your individual Functional Body Systems Report based on our latest research.

This report gives you an indication of the level of dysfunction that exists in the various physiological systems in your body.

Each Body System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.



Functional Body Systems Details

This section contains detailed descriptions and explanations of the results presented in the Functional Body Systems Report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.



Dysfunction Likely Improvement required.

BLOOD SUGAR REGULATION

The Blood Sugar Regulation score tells us how well your body is regulating blood glucose. Blood sugar dysregulation is very common. It doesn't suddenly emerge but rather develops slowly, so we can look for clues in your blood test that can help us determine if there's dysregulation and if so what it is. Some conditions associated with blood sugar dysregulation include hypoglycemia (periods of low blood sugar), metabolic syndrome, hyperinsulinemia and diabetes.

Rationale

Glucose Fasting \uparrow , HOMA2-IR \uparrow , LDH \downarrow , Cholesterol - Total \uparrow , Insulin - Fasting \uparrow , LDL Cholesterol \uparrow , DHEA-S \downarrow

Biomarkers considered

Glucose Fasting, HOMA2-IR, LDH, Cholesterol - Total, Triglycerides, HDL Cholesterol, Hemoglobin A1C, Insulin - Fasting, C-Peptide, LDL Cholesterol, DHEA-S, Fructosamine



Dysfunction Possible
There may be
improvement needed in
certain areas.

GI FUNCTION **!**

It is possible that you may be at risk of an emerging dysfunction in your gastrointestinal (GI) system. While this may not require immediate attention, we will want to watch this on future blood tests and consider support.

Rationale

BUN \downarrow , Protein - Total \downarrow , Globulin - Total \uparrow , Albumin \downarrow , MCV \uparrow , Eosinophils - % \uparrow , Iron - Serum \downarrow , Creatinine \downarrow , Gastrin \downarrow

Biomarkers considered

BUN, Protein - Total, Globulin - Total, Albumin, Phosphorus, Alk Phos, MCV, Eosinophils - %, Basophils - %, Iron - Serum, Creatinine, Chloride, Calcium, Total WBCs, Gastrin



Dysfunction Possible
There may be
improvement needed in
certain areas.

CARDIOVASCULAR FUNCTION

It is possible that you may be at risk of an emerging cardiometabolic dysfunction. While this may not require immediate attention, we will want to watch this on future blood tests.

Rationale

Glucose Fasting \uparrow , Cholesterol - Total \uparrow , Triglycerides \uparrow , LDL Cholesterol \uparrow , Homocysteine \uparrow , Testosterone Total \downarrow , Insulin - Fasting \uparrow , Testosterone Free \downarrow

Biomarkers considered

Triglyceride: HDL, Glucose Fasting, LDH, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, Ferritin, Fibrinogen Activity, Hs CRP, Homocysteine, Hemoglobin A1C, Estradiol, Testosterone Total, Insulin - Fasting, Vitamin D (25-OH), Testosterone Free

Biomarkers not available in this test - consider having run in future tests:

Lipoprotein (a), Omega 3 Index



Dysfunction Possible
There may be
improvement needed in
certain areas.

SEX HORMONE FUNCTION

It is possible that you may be at risk of an emerging hormonal dysfunction. While this may not require immediate attention, we will want to watch this on future blood tests.

Rationale

Testosterone Free \downarrow , Testosterone Total \downarrow , DHEA-S \downarrow

Biomarkers considered

Estradiol, Testosterone Free, Testosterone Total, Progesterone, Sex Hormone Binding Globulin, DHEA-S

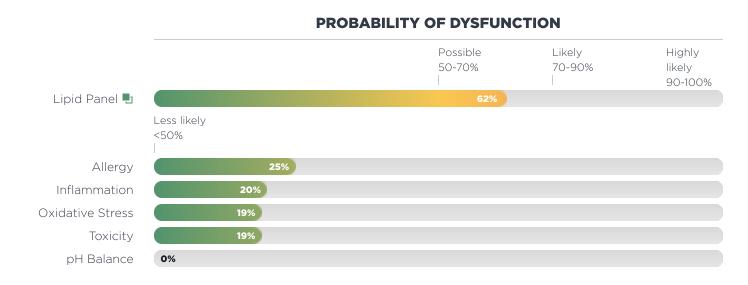


Accessory Systems

The Accessory Systems are additional physiological systems that are not related to individual organs or body systems.

The Accessory Systems Report represents an algorithmic analysis of this blood test. These results have been converted into an individualized risk evaluation based on the latest research.

Each Accessory System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.



Accessory Systems Details

This section contains detailed descriptions and explanations of the results presented in the Accessory Systems report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.



Dysfunction Possible.

There may be improvement needed in certain areas.

LIPID PANEL

It is possible that you are starting to show signs of an imbalance in your blood fats (cholesterol, Triglycerides, etc.), causing an increase in your Lipid Panel score. While this may not require immediate attention, we will want to keep an eye on this in future blood tests.

Rationale

Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑

Biomarkers considered

Cholesterol - Total, Triglycerides, LDL Cholesterol, Cholesterol : HDL, Triglyceride: HDL, HDL Cholesterol

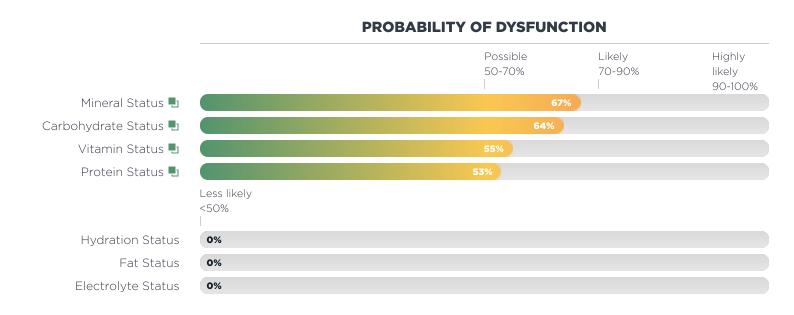


Nutrient Status

The Nutrient Status results represent an algorithmic analysis of this blood test. These results have been converted into your individual Nutrient Status Report based on our latest research.

This report gives you an indication of your general nutritional status. The Nutrient Status is influenced by actual dietary intake, digestion, absorption, assimilation, and cellular uptake of the nutrients themselves.

Each Nutrient category that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.



Nutrient Status Details

This section contains detailed descriptions and explanations of the results presented in the Nutrient Status report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.



Dysfunction Possible.

There may be improvement needed in certain areas.

MINERAL STATUS

You may be in the early stages of mineral deficiency or need, causing an increase in your Mineral Status score. While this may not require immediate attention, we will want to keep an eye on your mineral levels and monitor this in future blood tests.

Rationale

Iron - Serum ψ , Ferritin ψ , Magnesium - Serum ψ , Copper - Serum ψ , Zinc - Serum ψ , Zinc - RBC ψ , Magnesium - RBC ψ

Biomarkers considered

Potassium, Uric Acid, Calcium, Phosphorus, Alk Phos, Iron - Serum, Ferritin, Magnesium - Serum, Copper - Serum, Zinc - Serum, Zinc - RBC, Magnesium - RBC

Biomarkers not available in this test - consider having run in future tests:

Selenium - Serum, Selenium - RBC, Chromium, Copper - RBC



Dysfunction Possible.

There may be improvement needed in certain areas

CARBOHYDRATE STATUS

You may be in the early stages of having difficulties handling your dietary intake of carbohydrates, especially refined carbohydrates and sugars. This may begin to cause shifts in your ability to regulate blood sugar. While this may not require immediate attention, we will want to monitor this on future blood tests.

Rationale

Glucose Fasting ↑, LDH ↓, Cholesterol - Total ↑, LDL Cholesterol ↑

Biomarkers considered

Glucose Fasting, Phosphorus, LDH, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, Total WBCs



Dysfunction Possible.

There may be improvement needed in certain areas.

VITAMIN STATUS 🖳

You may be in the early stages of vitamin deficiency or need, which may cause an increase in your Vitamin Status score. While this may not require immediate attention, we will want to monitor your vitamin levels on future blood tests.

Rationale

Homocysteine \uparrow , MCV \uparrow , Folate - Serum \downarrow , Vitamin B12 \downarrow , Methylmalonic Acid \uparrow , Folate - RBC \downarrow

Biomarkers considered

Albumin, AST, ALT, GGT, Homocysteine, Vitamin D (25-OH), MCV, Folate - Serum, Vitamin B12, Methylmalonic Acid, Folate - RBC



Dysfunction Possible.

There may be improvement needed in certain areas.

PROTEIN STATUS

You may be in the early stages of protein deficiency or need, causing an increase in your Protein Status score. While this may not require immediate attention, we will want to monitor your protein levels on future blood tests.

Rationale

Protein - Total $oldsymbol{\psi}$, BUN $oldsymbol{\psi}$, Albumin $oldsymbol{\psi}$, Calcium : Albumin $oldsymbol{\uparrow}$, Creatinine $oldsymbol{\psi}$, C-Reactive Protein $oldsymbol{\uparrow}$

Biomarkers considered

Protein - Total, BUN, Albumin, Calcium : Albumin, Creatinine, BUN : Creatinine, C-Reactive Protein, Hs CRP, ALT, AST, CO2, GGT, Total WBCs, TIBC

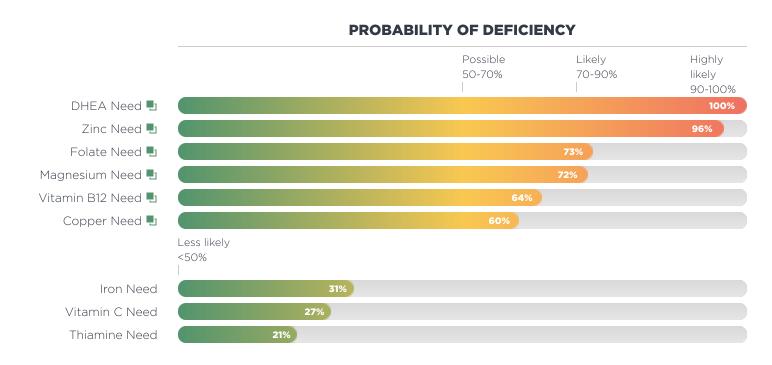




Individual Nutrient Deficiencies

The scores represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors will be taken into consideration before determining whether or not you actually need an individual nutrient.

Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.



Individual Nutrient Deficiency Details

This section contains detailed descriptions and explanations of the results presented in the Nutrient Deficiencies report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.



Deficiency Highly Likely.

Much improvement required.

DHEA NEED 🕙

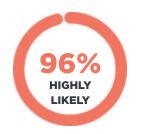
Your blood test results show a high need for DHEA, indicating that you are very likely not getting enough of this important hormone. Low DHEA levels can lead to problems like low energy, mood changes, and a weakened immune system. To help improve your DHEA levels, focus on a healthy lifestyle that includes regular exercise, a balanced diet, and stress management techniques. If you have conditions that affect your hormone levels, such as chronic stress or aging, it might be harder for your body to maintain adequate DHEA levels.

Rationale

DHEA-S ↓

Biomarkers considered

DHEA-S



Deficiency Highly Likely.

Much improvement

required.

ZINC NEED

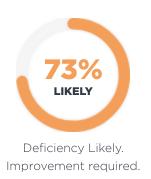
Your blood test results show a high need for zinc, which means you are very likely not getting enough zinc. Low zinc levels can cause problems like getting sick often, hair loss, skin issues, slow healing of cuts, and changes in taste. To help improve your zinc levels, try to eat more zinc-rich foods like meat, shellfish, legumes, seeds, and nuts. If you have conditions like digestive problems, liver, or kidney issues, or if you eat a lot of foods high in phytates (like whole grains and legumes), it might be harder for your body to absorb zinc.

Rationale

Zinc - Serum ↓, Zinc - RBC ↓

Biomarkers considered

Zinc - Serum, Zinc - RBC



FOLATE NEED

Your blood test results suggest that you are likely not getting enough folate, which can affect your energy levels and overall health. To help prevent further decline in folate levels, try to include more folate-rich foods in your diet, such as broccoli, avocados, and fortified cereals. Some conditions or dietary choices can make it harder for your body to maintain adequate folate levels. Discuss with your healthcare provider how to best manage and improve your folate levels, including whether you need to make specific dietary changes or consider supplements.

Rationale

Folate - RBC ↓, Folate - Serum ↓, Homocysteine ↑, MCV ↑

Biomarkers considered

Folate - RBC, Folate - Serum, Homocysteine, MCV, RDW



Deficiency Likely.
Improvement required.

MAGNESIUM NEED

Your blood test results suggest that you are likely not getting enough magnesium, which can affect your muscle and nerve function. To help prevent further decline in magnesium levels, try to include more magnesium-rich foods in your diet, such as spinach, almonds, and black beans. Some conditions, like digestive issues or high levels of stress, can make it harder for your body to maintain adequate magnesium levels.

Rationale

Magnesium - Serum ↓, Magnesium - RBC ↓

Biomarkers considered

Magnesium - Serum, Magnesium - RBC, GGT



Deficiency Possible.

There may be improvement needed in certain areas.

VITAMIN B12 NEED 🗐

Your blood test results show that you may be starting to have a vitamin B12 deficiency. Although it may not be a major concern yet, it is important to monitor your vitamin B12 levels and include more vitamin B12-rich foods in your diet. Keep an eye on your energy levels and cognitive function, and talk to us about any conditions or lifestyle factors that might affect your vitamin B12 absorption. With regular monitoring, we can likely prevent further deficiency.

Rationale

Vitamin B12 ↓, Methylmalonic Acid ↑, Homocysteine ↑, MCV ↑

Biomarkers considered

Vitamin B12, Methylmalonic Acid, Homocysteine, LDH, MCV, RDW

Biomarkers not available in this test - consider having run in future tests:

Active B12



Deficiency Possible.

There may be improvement needed in certain areas

COPPER NEED

Your blood test results show that you may be starting to have a copper deficiency. Although it may not be a major concern yet, it is important to monitor your copper levels and include more copper-rich foods in your diet. Keep an eye on your overall health and talk to us about any conditions or lifestyle factors that might affect your copper absorption. With regular monitoring, we can likely prevent further deficiency.

Rationale

Copper - Serum ↓

Biomarkers considered

Copper - Serum

Biomarkers not available in this test - consider having run in future tests:

Copper - RBC







The Health Concerns report takes all the information on this report and focuses on the top areas that need the most support.

Health Concerns

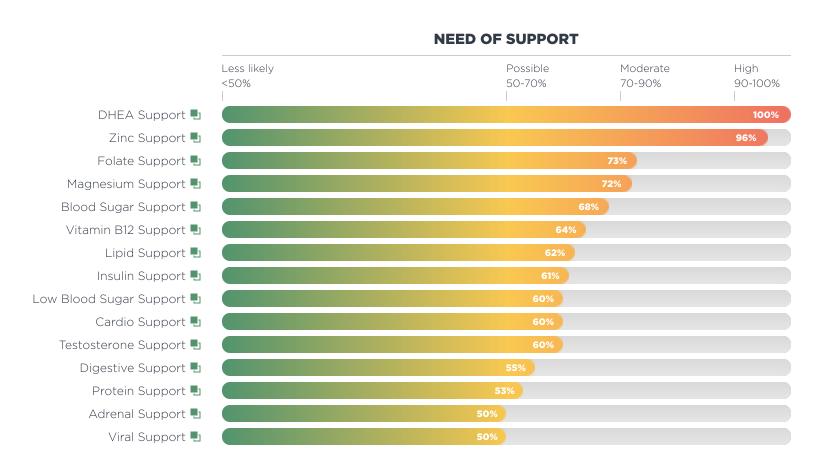
48 Health Concerns



Health Concerns Report

The Health Concerns Report takes all the information in this report and focuses on the top areas that need the most support.

Each health concern is included in the following section so you can read an explanation of the results shown in this report.



Health Concerns Details

This section contains an explanation of the results presented in the Health Concerns Report including all the biomarkers considered in the analysis and the rationale behind the interpretation.

DHEA SUPPORT

The results of your blood test indicate that your DHEA levels might be lower than optimal and shows a need for DHEA supplementation.

Rationale

DHEA-S lacksquare



ZINC SUPPORT

The results of your blood test indicate that your zinc levels might be lower than optimal and shows a need for zinc supplementation.

Rationale

Zinc - Serum igsplus, Zinc - RBC igsplus



FOLATE SUPPORT

The blood test results indicate that your folate levels might be lower than optimal and that folate supplementation may be needed.

Rationale

Folate - RBC ↓, Folate - Serum ↓, Homocysteine ↑, MCV ↑



MAGNESIUM SUPPORT

The results of your blood test indicate that your magnesium levels might be lower than optimal and shows a need for magnesium supplementation.

Rationale

Magnesium - Serum ↓, Magnesium - RBC ↓



BLOOD SUGAR SUPPORT

The results of your blood test indicate a tendency towards blood sugar dysregulation and a need for blood sugar support.

Rationale

Glucose Fasting \uparrow , Triglycerides \uparrow , Cholesterol - Total \uparrow , Insulin - Fasting \uparrow , LDL Cholesterol \uparrow , DHEA-S \downarrow



VITAMIN B12 SUPPORT

The blood test results indicate that your vitamin B12 levels might be lower than optimal and that vitamin B12 supplementation may be needed.

Rationale

Vitamin B12 ↓, Methylmalonic Acid ↑, Homocysteine ↑, MCV ↑



LIPID SUPPORT

The results of your blood test indicate that you have higher than optimal levels of cholesterol and fat in your blood (a condition called hyperlipidemia), which is associated with an increased risk of cardiovascular disease. There is a need for cardiovascular support, especially support to help lower excessive blood fats.



Rationale

Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑

INSULIN SUPPORT

The results of this blood test indicate a tendency towards insulin resistance and a need for insulin support.

Rationale

HOMA2-IR \uparrow , Triglycerides \uparrow , Insulin - Fasting \uparrow , Glucose Fasting \uparrow , Cholesterol - Total \uparrow



LOW BLOOD SUGAR SUPPORT

The results of your blood test indicate a tendency towards hypoglycemia or low blood sugar and a need for blood sugar support.

Rationale

LDH lacksquare



CARDIO SUPPORT

The results of your blood test indicate a higher than optimal cardiovascular risk and show a need for cardiovascular support.

Rationale

Glucose Fasting \uparrow , Cholesterol - Total \uparrow , Triglycerides \uparrow , LDL Cholesterol \uparrow , Homocysteine \uparrow , Testosterone Total \downarrow , Insulin - Fasting \uparrow , Testosterone Free \downarrow



TESTOSTERONE SUPPORT

The results of your blood test indicate a trend towards testosterone deficiency and a need for testosterone metabolism support.

Rationale

Testosterone Total ψ , Testosterone Free ψ



DIGESTIVE SUPPORT

The results of your blood test indicate a tendency towards hypochlorhydria, a condition of low stomach acid, and a need for digestive support.

Rationale

Protein - Total igstyle igwedge, Globulin - Total igwedge, Albumin igwedge, MCV igwedge, Iron - Serum igwedge, Gastrin igwedge



PROTEIN SUPPORT

The results of your blood test indicate that your protein levels might be lower than optimal and shows a need for protein supplementation.

Rationale

Protein - Total $oldsymbol{\psi}$, BUN $oldsymbol{\psi}$, Albumin $oldsymbol{\psi}$, Calcium : Albumin $oldsymbol{\uparrow}$, Creatinine $oldsymbol{\psi}$, C-Reactive Protein $oldsymbol{\uparrow}$



ADRENAL SUPPORT

The results of your blood test indicate a tendency towards adrenal insufficiency and a need for adrenal gland support.

Rationale

Sodium : Potassium ψ , DHEA-S ψ



VIRAL SUPPORT

The results of your blood test indicate a tendency towards a viral infection and a need for immune support.

Rationale

Lymphocytes - % $\uplace \hfigs , Monocytes - <math>\%$ $\uplace \hfill \hfil$







Disclaimer

53 Disclaimer

DISCLAIMER

Disclaimer





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Consult your physician or a qualified healthcare practitioner regarding the applicability of any of the information or materials provided in this Report in regards to your symptoms or medical condition. Always consult your physician before beginning a new treatment, diet, exercise, fitness plan, or health plan or program, and before taking any drug, supplement, or any combination thereof; or if you have questions or concerns about your health, a medical condition, or any plan or course of treatment. If you think you have a medical emergency, call for emergency medical assistance or your doctor immediately.