BLESSED BEAUTY BOUTIQUE

Functional Health Report

A comprehensive analysis of your test results.

BLOOD CHEMISTRY ANALYSIS

Patient Report

Prepared for	Female Sample 59 year old female born Nov 01, 1966 58 years old at the time this lab test was taken Fasting

Requested by	Isabella Leviyev, PA-C Blessed Beauty Boutique

Collected Date	Dec 26, 2024
Lab	Quest
Powered by	OptimalDX

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

Isabella Leviyev's Notes Report

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

REPORT NOTES

Health Goals:

1. Reduce sugar cravings
2. Improve digestion
3. Improve immune system and decrease number of coughs and colds
4. Improve sleep

Signs and Symptoms

The following signs and symptoms were reported:

1. Heartburn or acid reflux
2. Bloating one hour after meal
3. stomach pains or cramps
4. Catch colds at beginning of winter
5. Frequent colds or flu
6. Easily fatigued
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.

Isabella Leviyev, PA-C
Blessed Beauty Boutique

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.

Patient Report

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

Isabella Leviyev, PA-C
Blessed Beauty Boutique

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.

2

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

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.

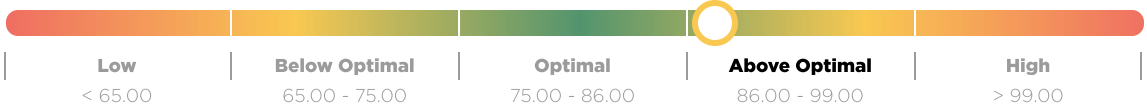
Some biomarkers in the Blood Test Results Report that are above or below the Optimal or marked Low or High may be hyperlinked into the "Out of Optimal Range Report", so you can read some background information on those biomarkers and why they may be high or low.

0	7	26	62	14	5	0	118
Alarm Low	**Low**	**Below Optimal**	**Optimal**	**Above Optimal**	**High**	**Alarm High**	**Total**

BLOOD GLUCOSE

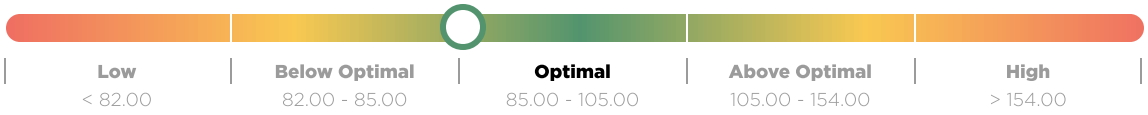
Keeping your blood sugar balanced is one of the best ways to maintain steady energy and overall wellness. The tests in this category show how well your body handles sugar both day-to-day and over longer periods, helping to catch early signs of trouble before they turn into bigger issues. By taking a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

Glucose Fasting
87.50 mg/dL



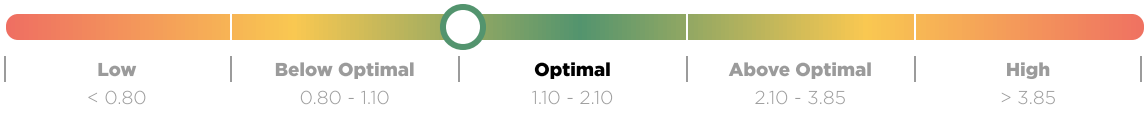
Hemoglobin A1C
4.60 %

eAG
85.00 mg/dL



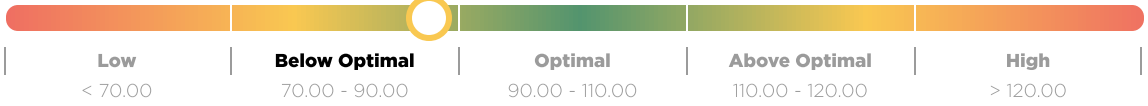
Insulin
3.70 µIU/mL

C-Peptide
1.11 ng/mL

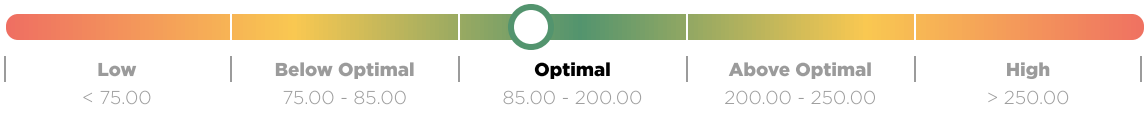


Fructosamine
201.00 µmol/L

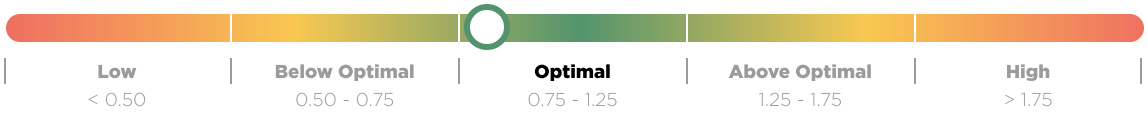
HOMA2-%B
87.50 %



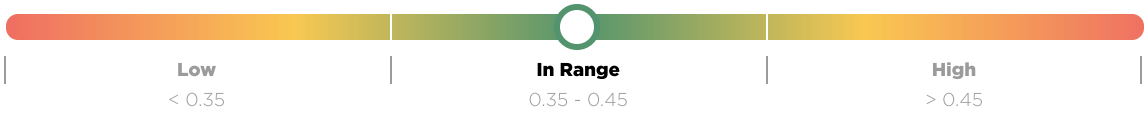
HOMA2-%S
124.00 %



HOMA2-IR
0.80 Index



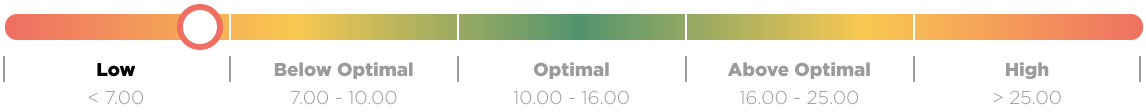
QUICKI
0.40 Index



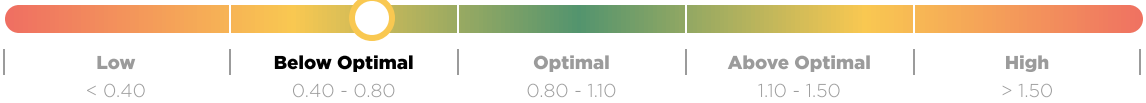
KIDNEY

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.

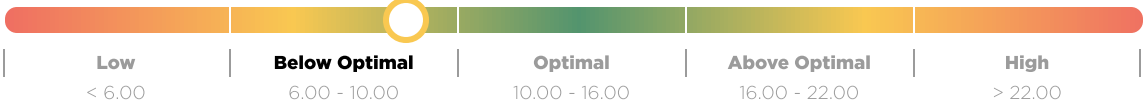
BUN
6.00 mg/dL



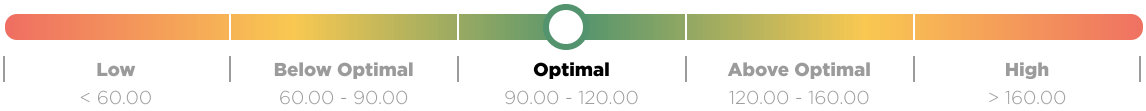
Creatinine
0.65 mg/dL



BUN/Creatinine
9.00 Ratio



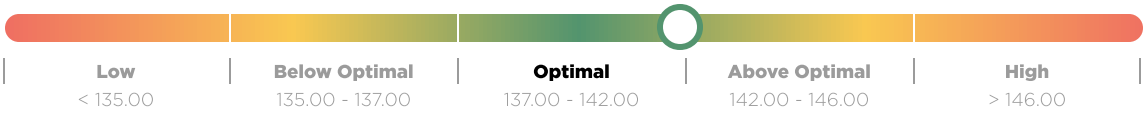
eGFR
104.00 mL/min



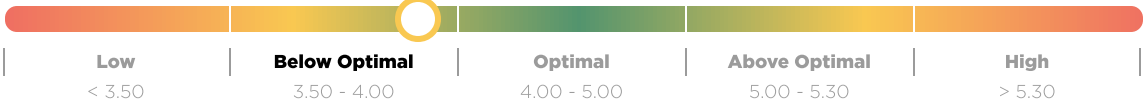
ELECTROLYTES

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.

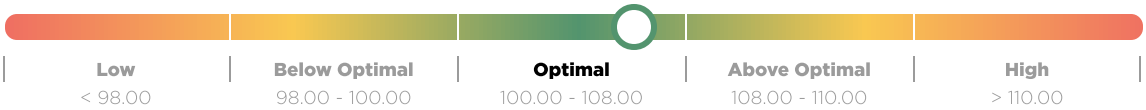
Sodium
141.90 mEq/L



Potassium
3.90 mEq/L

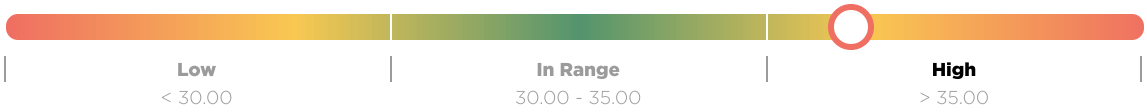


Chloride
106.00 mEq/L



CO2, bicarbonate
26.00 mEq/L

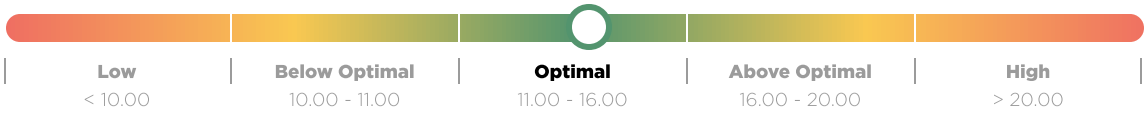
Sodium : Potassium
36.38 ratio



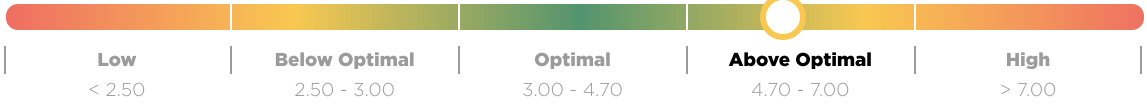
METABOLIC

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.

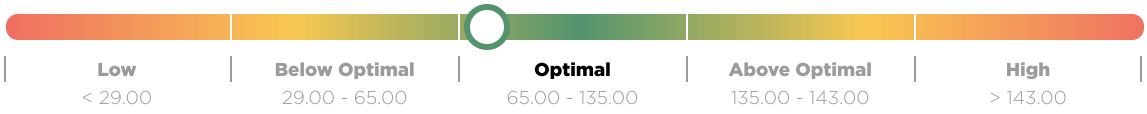
Anion Gap
13.80 mEq/L



Uric Acid
5.65 mg/dL



Creatine Kinase (CK)
72.00 U/L

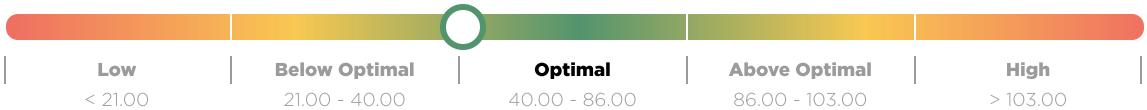


Leptin
12.20 ng/mL

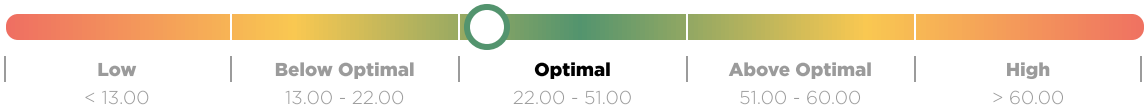
ENZYMES

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.

Amylase
42.00 U/L



Lipase
25.00 U/L

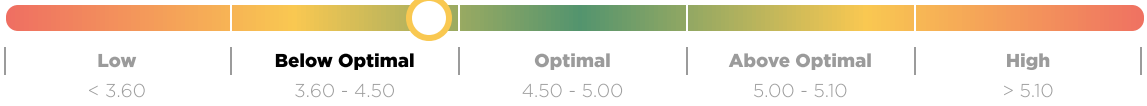


PROTEINS

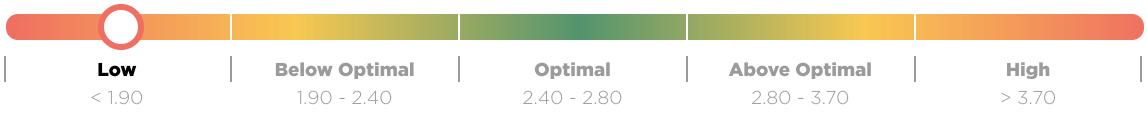
Protein analysis gives us a clear look at the proteins in your blood, which play a vital role in keeping you healthy by supporting everything from your immune system to your overall nutrition. With these insights, we can help you maintain a balanced level of these important proteins and boost your well-being.

Protein - Total
6.10 g/dL

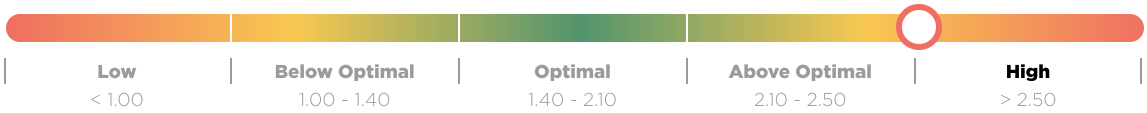
Albumin
4.40 g/dL



Globulin - Total
1.70 g/dL



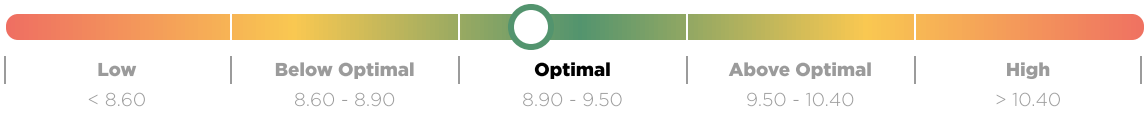
Albumin/Globulin Ratio
2.60 ratio



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.

Calcium
9.10 mg/dL

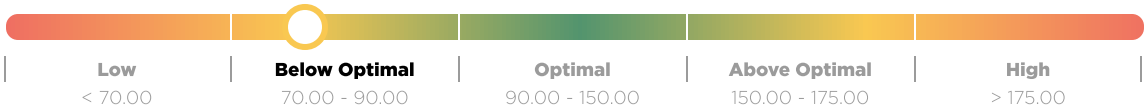


Phosphorus
2.90 mg/dL

Magnesium - Serum
2.30 mg/dL

Magnesium - RBC
6.20 mg/dL

Copper - Serum
76.00 µg/dL

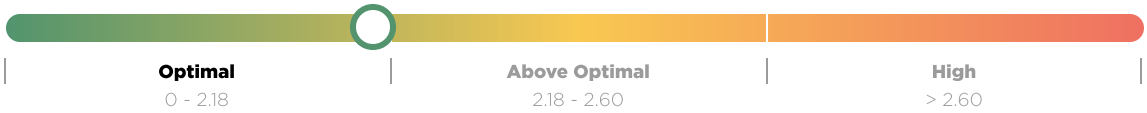


Zinc - Serum
65.70 µg/dL

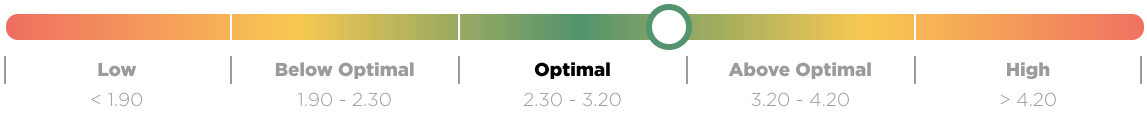
Zinc - RBC
9.20 mg/L

Copper : Zinc Ratio
1.16 Ratio

Calcium : Albumin
2.07 ratio



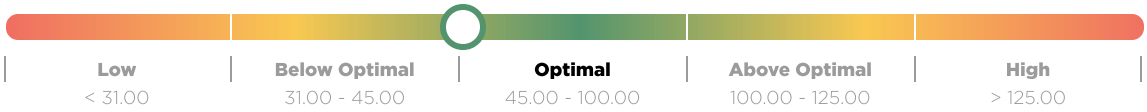
Calcium : Phosphorus
3.14 ratio



LIVER AND GB

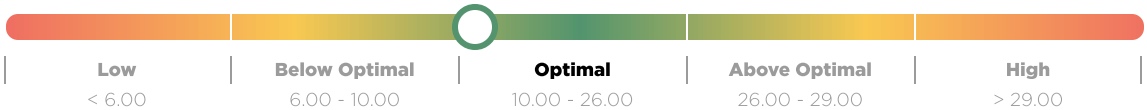
Liver and gallbladder biomarkers give us an indication of how well your liver and gallbladder are working to support your overall health. By spotting early signs of stress or imbalance, we can make appropriate support strategies to help keep these vital organs functioning smoothly and support their optimal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

Alkaline Phosphatase
46.00 IU/L



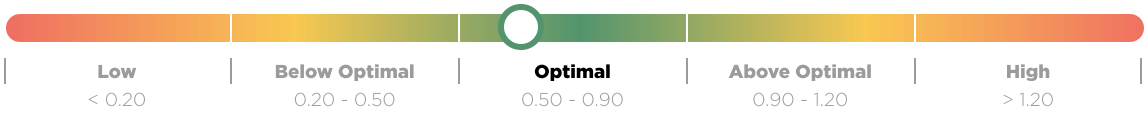
AST
14.00 IU/L

ALT
11.00 IU/L



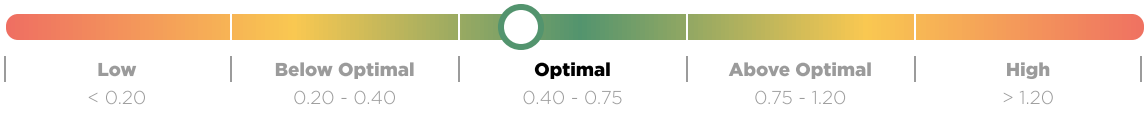
LDH
131.00 IU/L

Bilirubin - Total
0.60 mg/dL

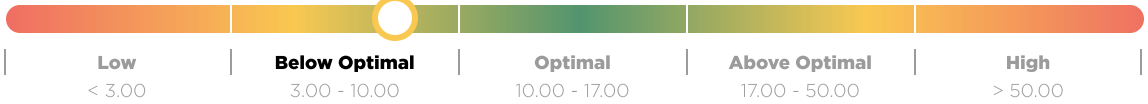


Bilirubin - Direct
0.10 mg/dL

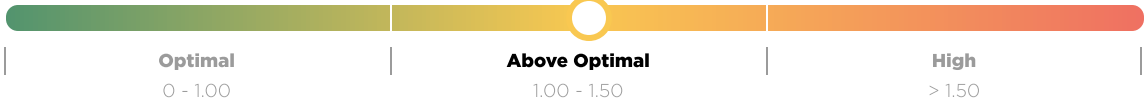
Bilirubin - Indirect
0.50 mg/dL



GGT
8.00 IU/L



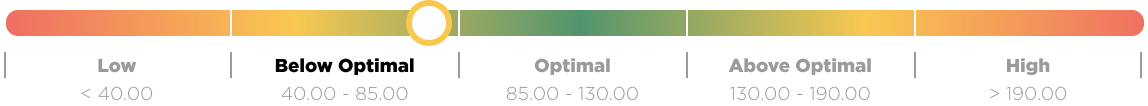
AST : ALT
1.27 Ratio



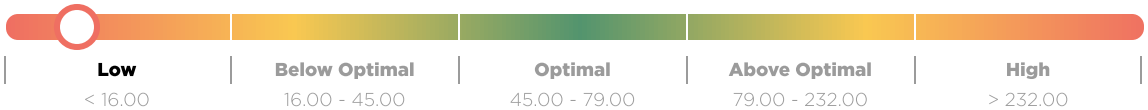
IRON MARKERS

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.

Iron - Serum
79.00 µg/dL

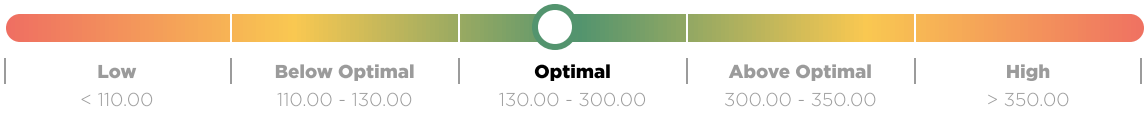


Ferritin
12.00 ng/mL

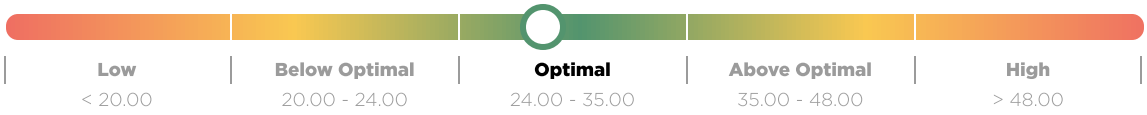


TIBC
284.00 µg/dL

UIBC
205.00 µg/dL



% Transferrin saturation
28.00 %



Transferrin
255.00 mg/dL

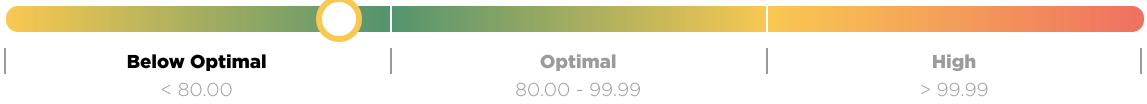
LIPIDS

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

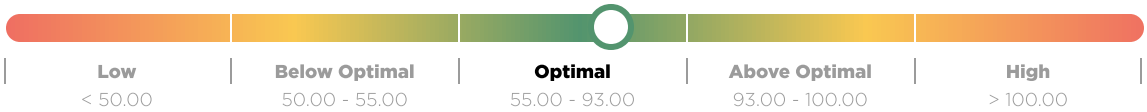
Cholesterol - Total
165.00 mg/dL

Triglycerides
65.00 mg/dL

LDL Cholesterol
70.00 mg/dL

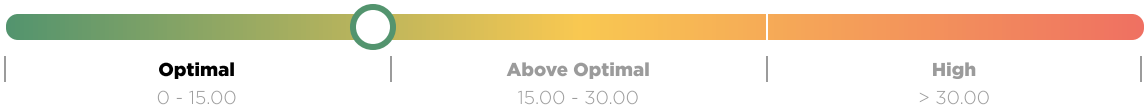


HDL Cholesterol
81.00 mg/dL



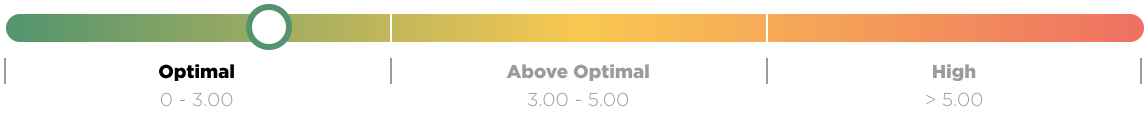
Non-HDL Cholesterol
84.00 mg/dL

VLDL Cholesterol
14.20 mg/dL



Total Cholesterol/HDL-C Ratio

2.04 Ratio

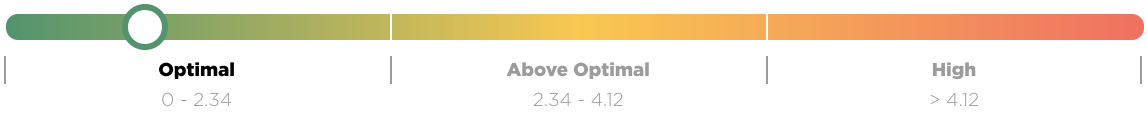


Triglyceride:HDL

0.80 ratio

LDL : HDL

0.86 Ratio



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.

Homocysteine

7.50 µmol/L

THYROID

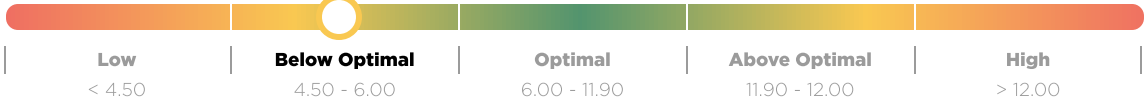
Your thyroid is like your body's metabolic thermostat, controlling energy production, temperature regulation, and countless other functions throughout your body. By looking at thyroid biomarkers, we can understand how well your thyroid is working at every stage, helping us guide you toward strategies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

TSH

2.95 mIU/L

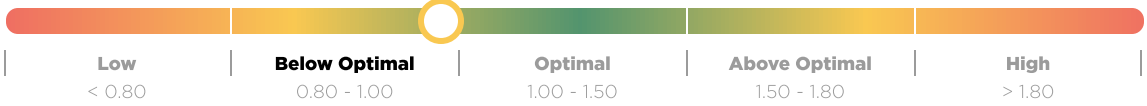
T4 - Total

5.20 µg/dL

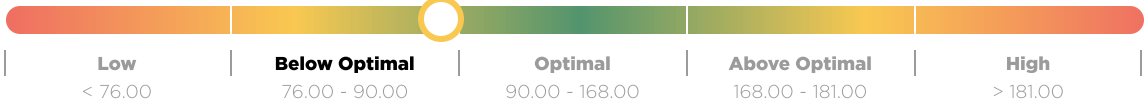


T4 - Free

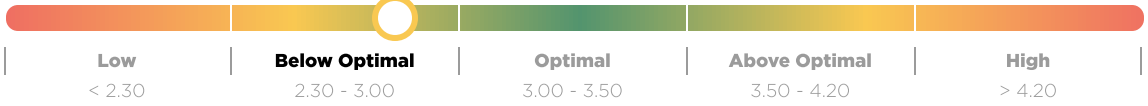
0.98 ng/dL



T3 - Total
89.20 ng/dL



T3 - Free
2.80 pg/mL

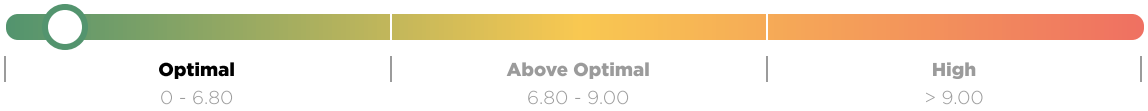


Reverse T3
28.00 ng/dL

T3 Uptake
26.20 %

Free Thyroxine Index (T7)
1.36 Index

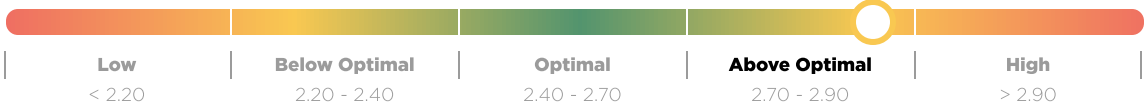
Thyroid Peroxidase (TPO) Abs
1.10 IU/mL



Thyroglobulin Abs
<1.00 IU/mL

Free T3 : Reverse T3
10.00 Ratio

Free T3 : Free T4
2.86 Ratio

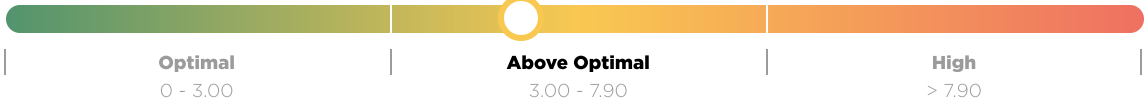


INFLAMMATION

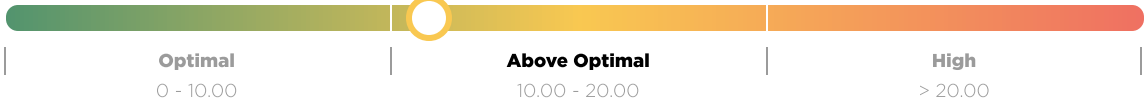
Inflammatory biomarkers enable us to evaluate both acute and chronic systemic inflammation. While some inflammation is normal and helpful, too much can affect your energy, mood, and overall health, which is why we measure these markers to guide personalized recommendations that can help your body maintain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

Hs CRP
1.15 mg/L

C-Reactive Protein
4.65 mg/L



ESR
11.20 mm/hr



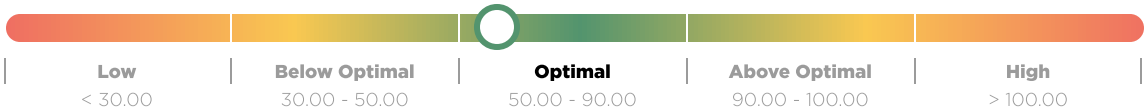
Fibrinogen Activity
221.00 mg/dL

Neutrophil : Lymphocyte (NLR)
1.25 Ratio

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.

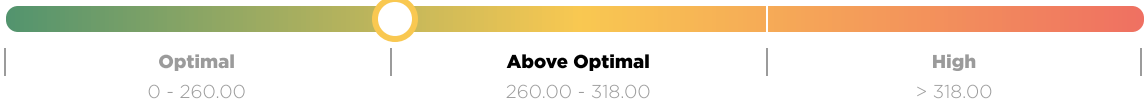
Vitamin D (25-OH)
56.20 ng/mL



Vitamin B12
462.00 pg/mL

Folate - Serum
15.20 ng/mL

Methylmalonic Acid
261.00 nmol/L



Folate - RBC
376.00 ng/mL

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.

DHEA-S
285.00 µg/dL

FSH
Unknown
16.30 mIU/mL

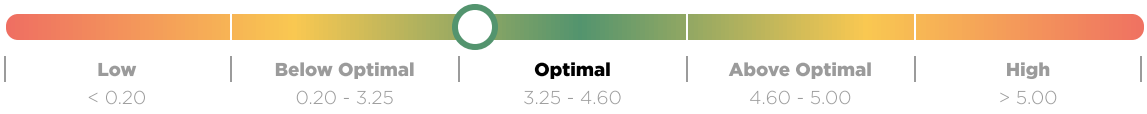
Follicular	2.50-10.20	Luteal	1.50-9.10
Ovulation	3.10-17.70	Post Menopausal	23.00-116.30

LH
Unknown
9.80 mIU/mL

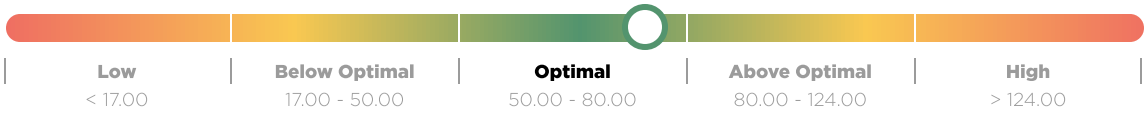
Follicular	1.90-12.50	Luteal	0.50-16.90
Ovulation	8.70-76.30	Post Menopausal	10.00-54.70

Testosterone Total
33.20 ng/dL

Testosterone Free
3.38 pg/mL



Sex Hormone Binding Globulin
75.00 nmol/L



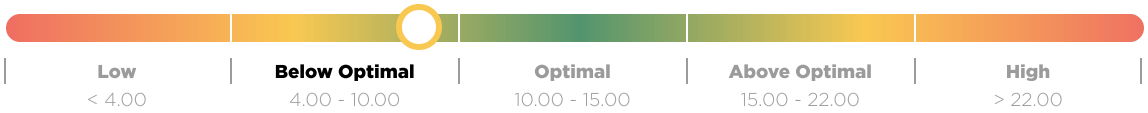
Estradiol
Unknown
55.00 pg/mL

Follicular	19.00-144.00	Luteal	56.00-214.00
Ovulation	64.00-357.00	Post Menopausal	0.00-31.00

Progesterone
Unknown
8.00 ng/mL

Follicular	0.00-1.00	Luteal	2.60-21.50
Ovulation	0.10-12.00	Post Menopausal	0.00-0.50

Cortisol - Total/AM
9.00 µg/dL



Cortisol : DHEA-S
0.03 ratio

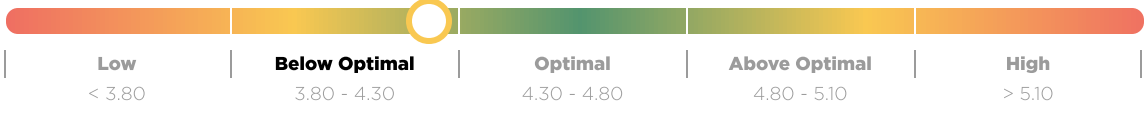
Gastrin
46.00 pg/mL

Testosterone Bioavailable
8.10 ng/dL

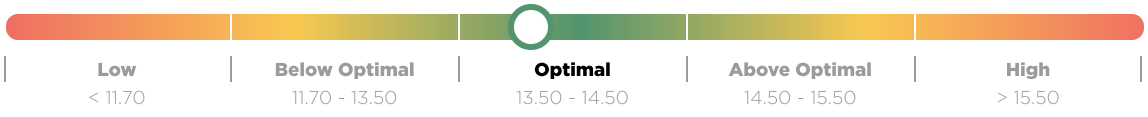
CBC

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.

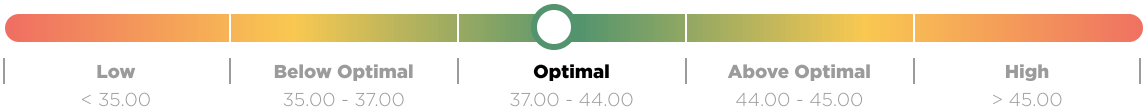
RBC
4.23 m/cumm



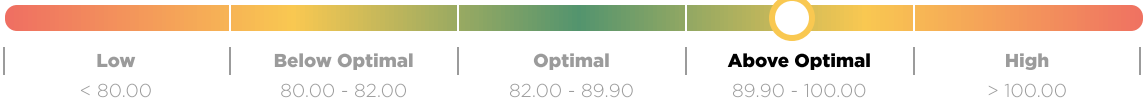
Hemoglobin
13.80 g/dL



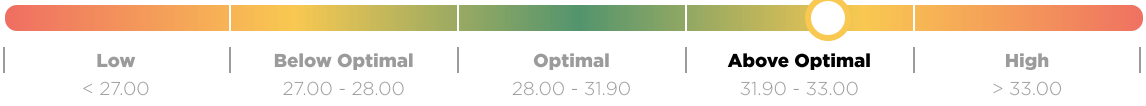
Hematocrit
40.00 %



MCV
94.60 fL

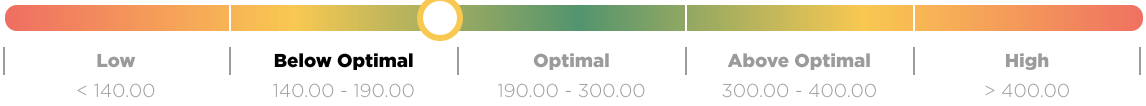


MCH
32.60 pg



MCHC
34.50 g/dL

Platelets
187.00 10E3/uL



MPV
8.80 fL

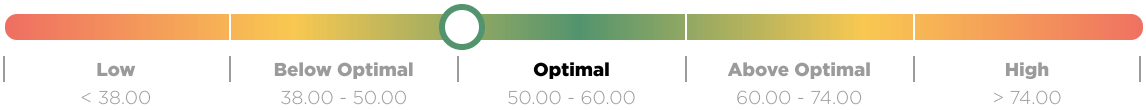
RDW
12.40 %

WBCS

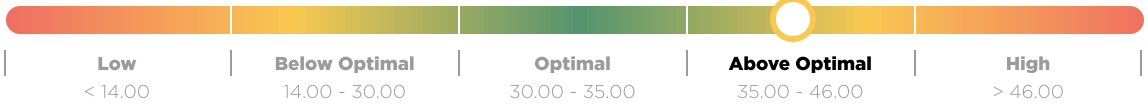
White blood cell analysis checks the different types of cells that help fight off infections and keep your body balanced. With this information, we can spot any early signs of immune-related issues and put together strategies to support your immune health and overall well-being.

Total WBCs
2.60 k/cumm

Neutrophils - %
50.40 %



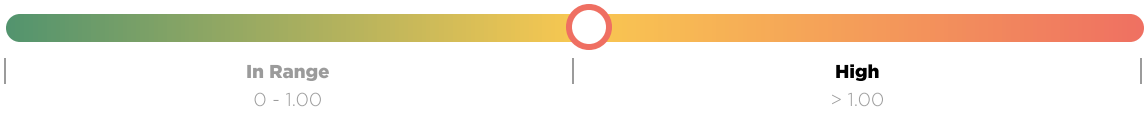
Lymphocytes - %
40.20 %



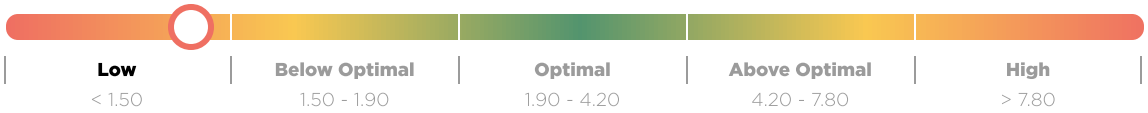
Monocytes - %
6.80 %

Eosinophils - %
1.50 %

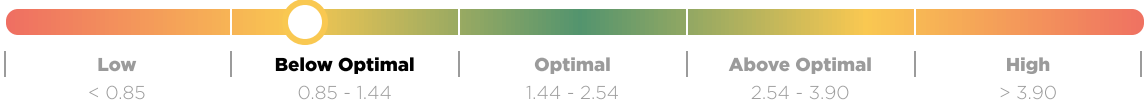
Basophils - %
1.10 %



Neutrophils - Absolute
1.31 k/cumm



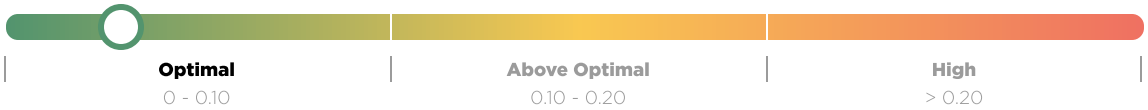
Lymphocytes - Absolute
1.05 k/cumm



Monocytes - Absolute
0.18 k/cumm

Eosinophils - Absolute
0.04 k/cumm

Basophils - Absolute
0.03 k/cumm



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.

0	7	26	14	5	0
Alarm Low	**Low**	**Below Optimal**	**Above Optimal**	**High**	**Alarm High**

BLOOD GLUCOSE

HOMA2-%B

87.50 %

Low	Below Optimal	Optimal	Above Optimal	High
< 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 low, it means your pancreas may not be making as much insulin as it should. This could be an early warning sign that your blood sugar might become harder to control over time.

Glucose Fasting

87.50 mg/dL

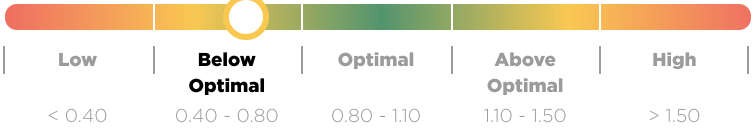
Low	Below Optimal	Optimal	Above Optimal	High
< 65.00	65.00 - 75.00	75.00 - 86.00	86.00 - 99.00	> 99.00

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.

KIDNEY

Creatinine

0.65 mg/dL



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).

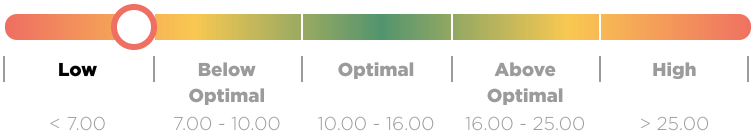
BUN/Creatinine

9.00 Ratio

The BUN:Creatinine ratio shows how your body's protein waste (BUN) compares to another waste product (creatinine), both of which are normally cleared by your kidneys. If your ratio is low, it often means you're eating less protein or that your body isn't making as much urea as usual.

BUN

6.00 mg/dL

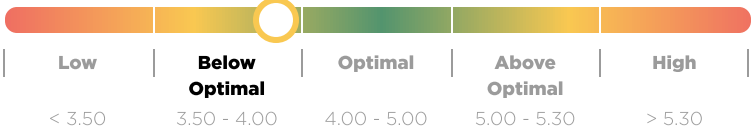


Blood Urea Nitrogen (BUN) is a test that measures a waste product called urea in your blood, which can give clues about how your body is breaking down protein and how well your kidneys and liver are working. If your BUN level is low, it usually isn't a big concern. It can sometimes happen if you're drinking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

ELECTROLYTES

Potassium

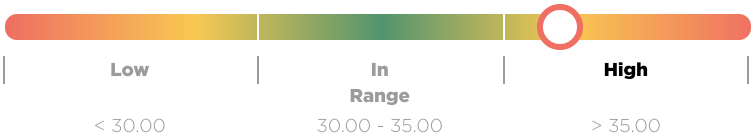
3.90 mEq/L



Potassium is an essential mineral that helps keep your muscles, nerves, and heart working properly. If your potassium level is low, it might be a sign that your body is losing too much of it (through certain medicines or digestive issues) or not getting enough from your diet. Low potassium can sometimes cause muscle cramps or weakness. Low levels are also associated with elevated blood pressure.

Sodium : Potassium

36.38 ratio

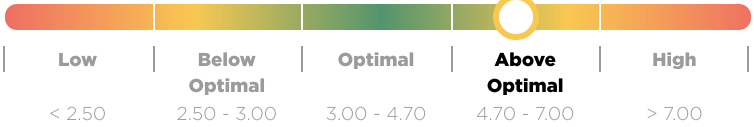


The sodium:potassium ratio compares two important minerals in your blood, both controlled by hormones from your adrenal glands. If your ratio is high, it often means you're under sudden or "acute" stress that boosts a hormone called aldosterone. This hormone helps your body hold on to sodium and release potassium, raising the ratio. High aldosterone can also contribute to inflammation, pain, and discomfort.

METABOLIC

Uric Acid

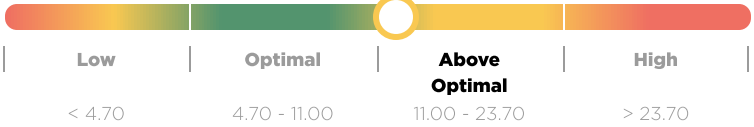
5.65 mg/dL



Uric acid is a waste product your body makes when it breaks down certain substances (purines) found in foods and cells. If your uric acid level is high, it can be linked to conditions like gout—a painful buildup of crystals in the joints—or might indicate that your kidneys aren't excreting uric acid as well as they should. High levels can also go along with inflammation and raise your risk for heart or blood vessel problems.

Leptin

12.20 ng/mL

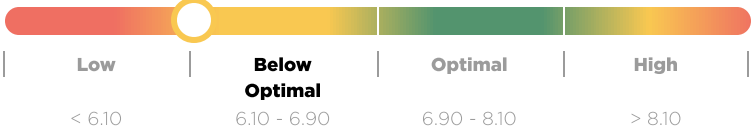


Leptin is a hormone made by your body's fat cells. It helps control your appetite and plays a role in your overall energy levels. If your leptin level is high, it often means you have more body fat, or your body isn't responding to leptin correctly—a condition sometimes called leptin resistance. This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

PROTEINS

Protein - Total

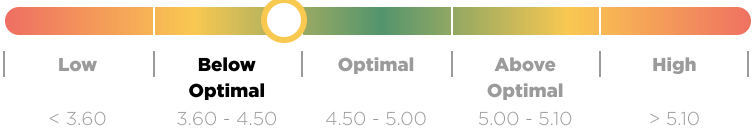
6.10 g/dL



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.

Albumin

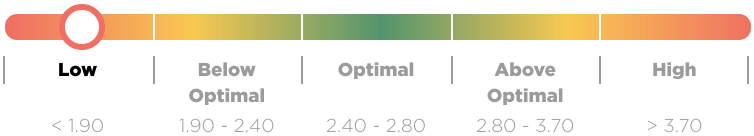
4.40 g/dL



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.

Globulin - Total

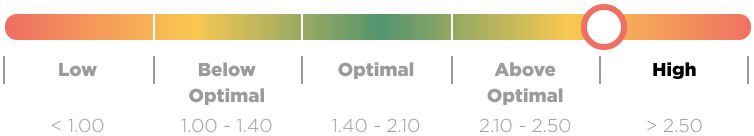
1.70 g/dL



Total globulin is a measure of proteins in your blood that help with fighting infections and carry other substances through your body. If your total globulin is low, it can mean your body isn't making enough of these proteins, sometimes due to problems with your immune system or not getting enough nutrients.

Albumin/Globulin Ratio

2.60 ratio

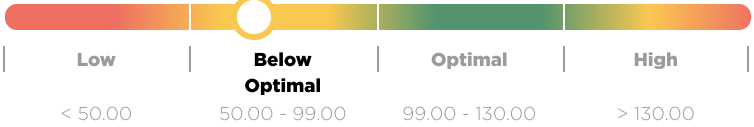


The albumin:globulin ratio compares two main types of proteins in your blood: albumin (made by your liver) and globulins (which include antibodies and other important proteins). A high ratio might occur if your body isn't making enough globulins or if your albumin level is relatively high, sometimes due to dehydration or other factors affecting protein balance.

MINERALS

Zinc - Serum

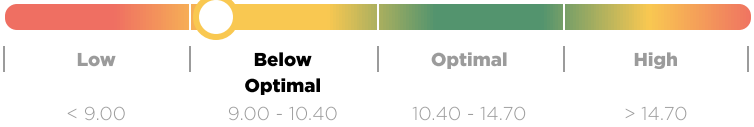
65.70 µg/dL



Zinc is a vital mineral that plays a crucial role in numerous bodily processes, including immune support and wound healing. When blood zinc is low, it indicates a deficiency that can impair immune function, slow tissue repair, and disrupt metabolism.

Zinc - RBC

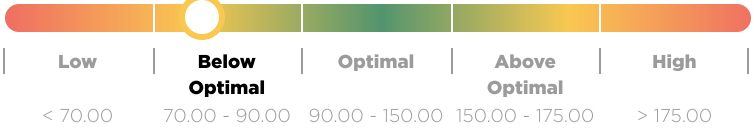
9.20 mg/L



Zinc is a key mineral involved in numerous bodily processes, including immune defense and wound healing. When zinc levels inside red blood cells are low, it indicates a true zinc deficiency, which can weaken the immune system, slow healing, and disrupt metabolism.

Copper - Serum

76.00 µg/dL

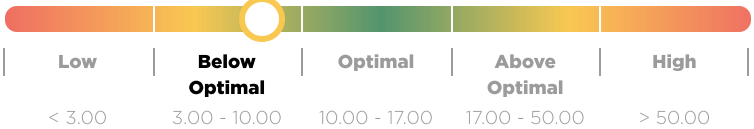


Serum copper is a measure of the copper in your blood, a mineral important for energy, brain function, blood cell production, and building strong bones. Low copper levels can affect your brain, liver, and other tissues, leading to issues with movement, poor blood health, or changes in your skin and hair. This may occur due to a poor diet or difficulties with nutrient absorption. Insufficient copper intake or excessive zinc intake can lead to copper deficiency as well.

LIVER AND GB

GGT

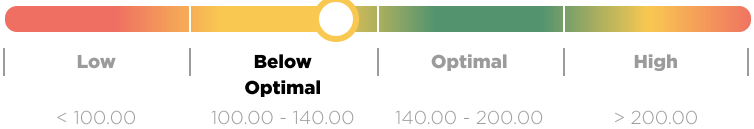
8.00 IU/L



Gamma Glutamyl Transferase, or GGT, is a protein mainly found in the liver but also in smaller amounts in the kidneys, prostate, and pancreas. While low levels of GGT are often seen as ideal, decreased levels are associated with vitamin B6 and magnesium deficiency.

LDH

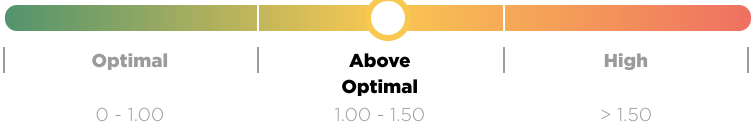
131.00 IU/L



LDH represents a group of enzymes that help your body turn sugar into energy. When LDH levels are unusually low, it often points to problems with blood sugar control, such as reactive hypoglycemia, or issues with how the pancreas and other tissues process glucose.

AST : ALT

1.27 Ratio

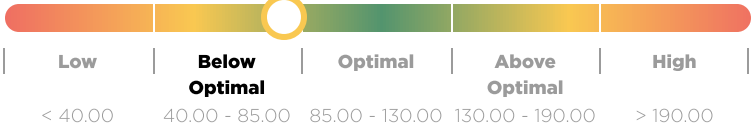


A high AST:ALT ratio (greater than 1) signals possible worsening liver function. It can also rise with muscle injury or gallbladder problems.

IRON MARKERS

Iron - Serum

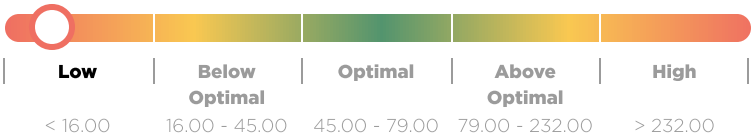
79.00 µg/dL



Iron is an essential mineral vital for carrying oxygen in hemoglobin, generating energy, and supporting cognitive functions. Serum iron measures the iron bound to proteins, such as transferrin, in your blood. When levels drop, it signals that your body's iron stores are winding down, often seen before anemia sets in, and can be due to iron deficiency, low stomach acid, or internal bleeding.

Ferritin

12.00 ng/mL

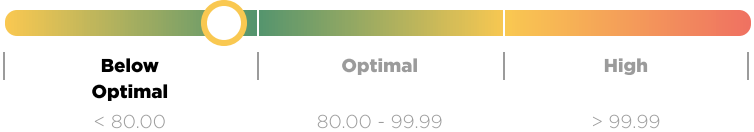


Ferritin is the primary way your body stores iron. When ferritin levels are low, it's the most sensitive sign of iron deficiency, indicating that your iron reserves are depleted.

LIPIDS

LDL Cholesterol

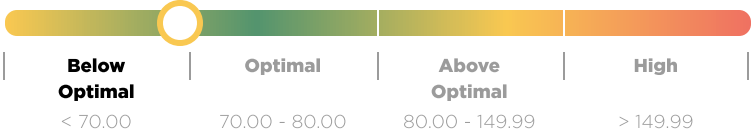
70.00 mg/dL



LDL carries cholesterol and fatty acids from the liver to tissues around the body for use or storage. When LDL cholesterol (LDL-C) levels are low, there's no known clinical concern—reduced LDL-C alone does not signify dysfunction but may indicate malnutrition.

Triglycerides

65.00 mg/dL

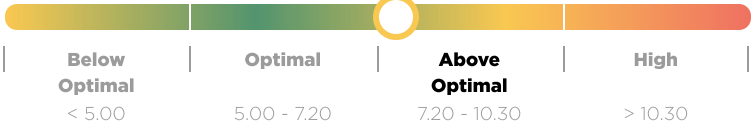


Serum triglycerides are fatty molecules in the blood derived from the liver or from excess fat or carbohydrate in the diet. When levels are low, it can reflect liver dysfunction, a diet too low in fats, or active inflammatory processes.

CARDIOMETABOLIC

Homocysteine

7.50 µmol/L

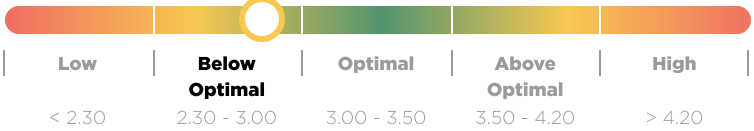


Homocysteine is a substance that naturally forms in your body, but it needs to be broken down properly to stay at healthy levels. When your body can't break it down well, homocysteine builds up in your blood. High levels of homocysteine can increase your risk of heart and blood vessel issues. High homocysteine can also be a sign that you're not getting enough of certain B vitamins - specifically B6, B12, or folate. Your body needs these vitamins to maintain optimal homocysteine levels.

THYROID

T3 - Free

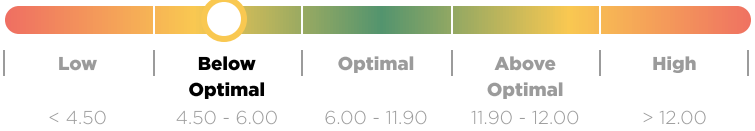
2.80 pg/mL



Free T3 is the active thyroid hormone that helps control your metabolism. When Free T3 levels are low, it means your body isn't producing enough of the active hormone, which is often associated with an underactive thyroid or low selenium levels.

T4 - Total

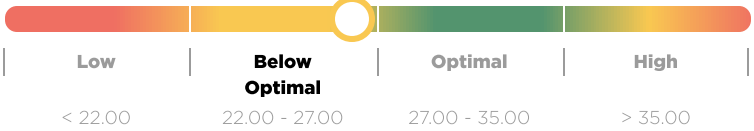
5.20 µg/dL



T4 is the main hormone your thyroid gland releases under stimulation by TSH. Total T4 measures both the protein-bound and free forms of the hormone in your blood. When Total T4 is low, it indicates hypothyroidism and can also reflect a selenium deficiency.

T3 Uptake

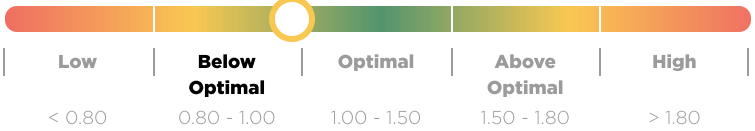
26.20 %



Despite its name, the T3 uptake test doesn't measure T3 hormone directly. When uptake values are low, it typically reflects an underactive thyroid or inadequate iodine or selenium levels, both of which can impair thyroid function.

T4 - Free

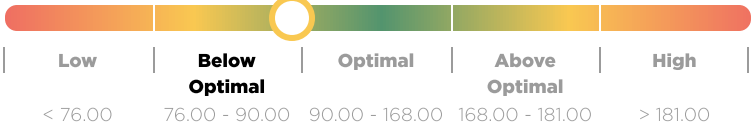
0.98 ng/dL



T4 is the major hormone secreted by the thyroid gland, with its production stimulated by thyroid-stimulating hormone (TSH). Free T4 is the unbound form, comprising about 0.03–0.05% of circulating T4. Deficiencies of zinc, copper, and vitamins A, B_2, B_3, B_6, and C can reduce T4 production by thyroid follicles. Free T4 levels decrease in hypothyroidism and are associated with iodine deficiency.

T3 - Total

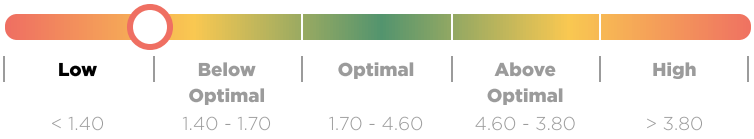
89.20 ng/dL



Total T3 measures all of the active thyroid hormone (T3) in your blood, both bound and unbound. When total T3 levels are low, it indicates that your thyroid isn't producing enough active hormone, which is often seen in underactive thyroid states and may be linked to low selenium levels.

Free Thyroxine Index (T7)

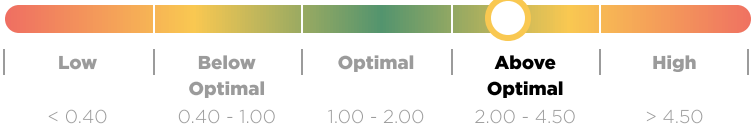
1.36 Index



The Free Thyroxine Index estimates how much unbound thyroid hormone (Free T4) is available in your blood. When this index is low, it means there is not enough thyroid hormone available to do its job, which can slow down your metabolism and lead to symptoms such as fatigue, weight gain, and feeling cold.

TSH

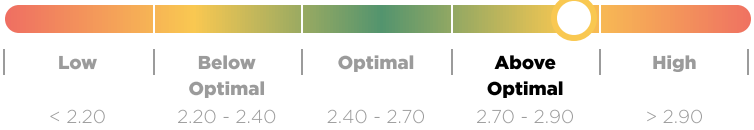
2.95 mIU/L



TSH (thyroid-stimulating hormone) is made by the pituitary to tell your thyroid how much T4 to release. When TSH is high, it means your body needs more thyroid hormone—this is the hallmark of primary hypothyroidism.

Free T3 : Free T4

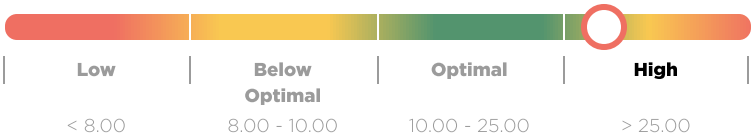
2.86 Ratio



The free T3:free T4 ratio compares the active thyroid hormone (T3) to its storage form (T4). A high free T3:free T4 ratio indicates that your body is converting T4 into T3 more efficiently than usual. This often occurs when the thyroid is overactive, producing excessive T3, which can accelerate metabolism and cause symptoms of an overactive thyroid. In some cases, an elevated ratio may also precede falling T4 levels, signaling an emerging thyroid imbalance.

Reverse T3

28.00 ng/dL

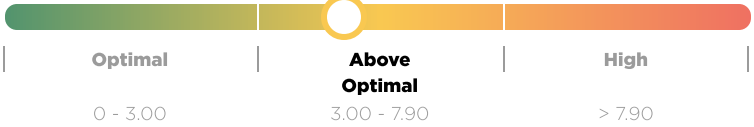


Reverse T-3 is an inactive form of thyroid hormone made from T-4. Elevated reverse T-3 reflects increased conversion of T-4 into its inactive form, acting like a metabolic brake. High levels can result from factors such as stress, illness, inflammation, nutritional deficiencies, fasting, rapid weight changes, lack of exercise, and excessive alcohol intake.

INFLAMMATION

C-Reactive Protein

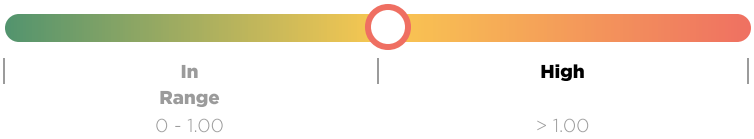
4.65 mg/L



C-Reactive Protein (CRP) is a marker of inflammation made by the liver. When CRP levels rise, it signals that your body is experiencing inflammation. Elevated CRP can occur with infections or chronic inflammatory conditions and is also linked to excess belly fat, gum disease, high blood pressure, and an increased likelihood of cardiovascular dysfunction. It may also be seen in people with diabetes or depression, reflecting how inflammation can play a role in a variety of health issues.

Hs CRP

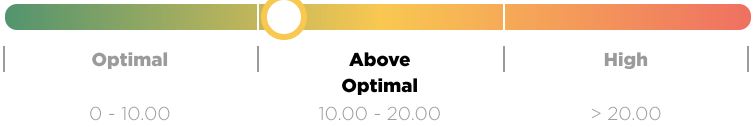
1.15 mg/L



High-sensitivity CRP detects very low levels of C-reactive protein, a substance produced by the liver. When Hs-CRP levels rise, it signals that your body is experiencing persistent inflammation. Elevated hs-CRP is linked to a greater risk of cardiovascular dysfunction, stroke, and diabetes. Factors such as excess belly fat, gum disease, smoking, or high blood pressure can drive CRP production.

ESR

11.20 mm/hr

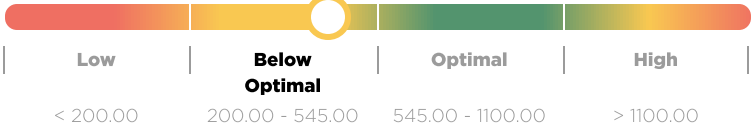


The ESR (erythrocyte sedimentation rate) measures how quickly red blood cells settle in a tube over a period of one hour. In inflammation, certain blood proteins cause red blood cells to stick together and fall faster. A faster sedimentation (higher ESR) therefore indicates the presence of inflammation in the body.

VITAMINS

Vitamin B12

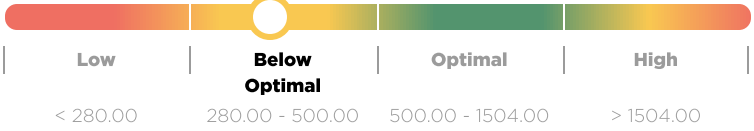
462.00 pg/mL



Vitamin B12 is essential for producing DNA, forming red blood cells, and maintaining nerve health. Low blood B12 levels mean you're not getting or absorbing enough, which can lead to anemia and nerve problems.

Folate - RBC

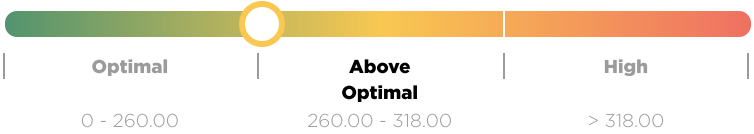
376.00 ng/mL



Folate is a member of the B complex family of vitamins and is also known as vitamin B9. Red blood cell folate reflects your long-term folate stores, which are essential for DNA production, cell growth, and the formation of healthy red blood cells. When RBC folate is low, it often means you haven't had enough folate (or possibly vitamin B12), which can impair DNA synthesis, disrupt methylation processes, and increase risks like neural tube defects or elevated homocysteine.

Methylmalonic Acid

261.00 nmol/L



Methylmalonic acid (MMA) is produced when your body breaks down certain fats and proteins, a process that needs vitamin B12. High MMA levels indicate that B12-dependent metabolism is impaired, commonly reflecting an early vitamin B12 deficiency even before other signs appear.

HORMONES

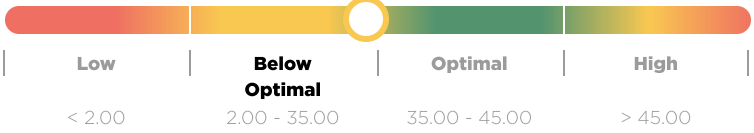
Cortisol - Total/AM

9.00 µg/dL

Cortisol is produced in your adrenal glands from cholesterol. It has profound effects throughout the body, regulating metabolism, immune function, inflammation, and the stress response. Ultimately, it puts the body on high alert. Serum cortisol reflects how much cortisol your adrenal glands are producing. When cortisol levels are low, it means the glands aren't making enough hormone to help regulate stress response, blood pressure, and energy balance, often described as adrenal hypofunction.

Testosterone Total

33.20 ng/dL

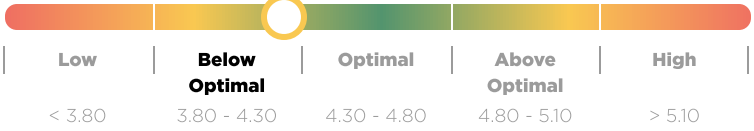


The total testosterone test measures all the testosterone in your blood, including both bound to proteins and free testosterone. In women, low total testosterone is linked to weaker bones, loss of muscle mass, and lower sex drive.

CBC

RBC

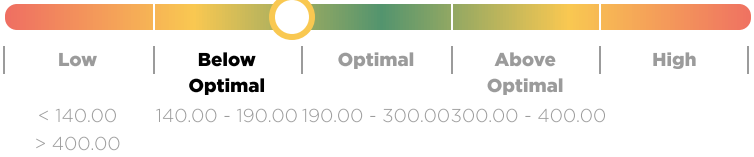
4.23 m/cumm



Your RBC count tells you how many red blood cells are in a tiny drop of blood. When this count is low, it usually indicates anemia, so there aren't enough cells to carry oxygen efficiently to your tissues.

Platelets

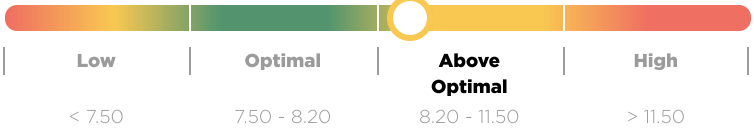
187.00 10E3/uL



Platelets are tiny blood cells that help stop bleeding by forming plugs in damaged vessels or tissues. When platelet levels drop, it can reflect increased oxidative stress, a buildup of heavy metals in the body, or an active infection—situations that can impair your blood's ability to clot normally.

MPV

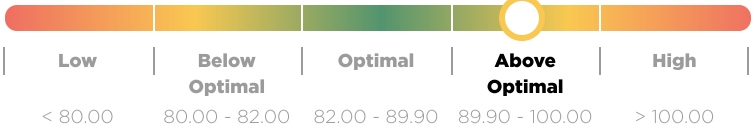
8.80 fL



Mean Platelet Volume (MPV) reflects the average size of platelets in your blood. When MPV is high, it means that platelets are larger than usual, which typically occurs when older platelets are being destroyed. The bone marrow produces bigger, younger platelets to replace them.

MCV

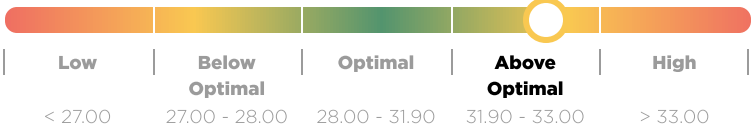
94.60 fL



Mean Corpuscular Volume (MCV) is one of the red blood cell indices used to determine the cause of anemia and which nutrients may be in short supply. The MCV measures the average size of your red blood cells. When MCV is high, it means that your cells are larger than normal (macrocytic), which can occur due to deficiencies in vitamin B12, folate, or vitamin C.

MCH

32.60 pg

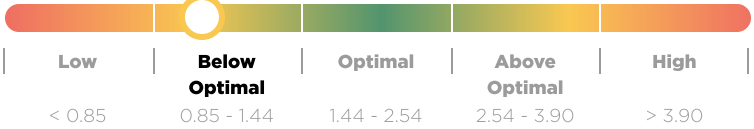


Mean Corpuscular Hemoglobin (MCH) reflects the average amount of hemoglobin in each red blood cell. Elevated MCH commonly occurs in conjunction with vitamin B12 or folate deficiency and can also be observed when stomach acid levels are low, thereby affecting nutrient absorption.

WBCS

Lymphocytes - Absolute

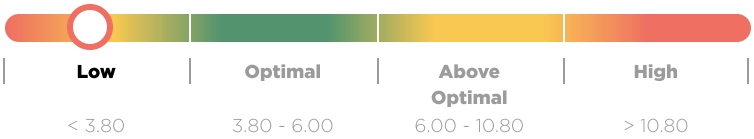
1.05 k/cumm



Lymphocytes are a type of white blood cell that helps defend against infections. When the absolute lymphocyte count is low, it often means your body has used up many of these cells, such as during a prolonged viral infection or high oxidative stress, and can indicate a weakened or "tired" immune response, especially if your total white blood cell count is also low. Malnutrition can also reduce lymphocyte counts.

Total WBCs

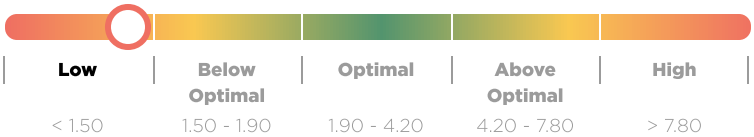
2.60 k/cumm



Your total White Blood Cell (WBC) count measures all the white blood cells in your blood. When this count is low, it often indicates a long-term bacterial or viral infection, a weakened immune system, or dietary patterns such as a largely raw food diet, which can reduce white blood cell levels.

Neutrophils - Absolute

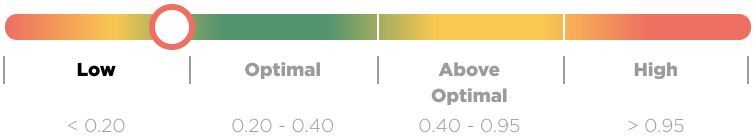
1.31 k/cumm



Neutrophils are your body's frontline white blood cells against bacterial invaders. The absolute neutrophil count tells you exactly how many are in a given volume of blood. When this count is low, it often means you're in a prolonged viral phase or your immune system is weakened, reducing the number of cells available to fight bacteria.

Monocytes - Absolute

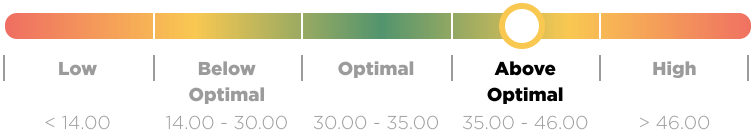
0.18 k/cumm



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.

Lymphocytes - %

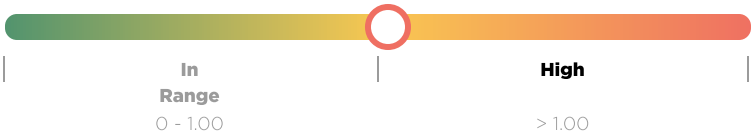
40.20 %



An elevated lymphocyte percentage usually indicates that your immune system is responding to a viral infection. It can also reflect increased toxins in the body or general inflammation, as your lymphocytes ramp up to address these challenges.

Basophils - %

1.10 %



Basophils are a type of white blood cell that plays a key role in your body's immune response. They are part of the larger family of cells that help protect you from infections and respond to allergies. Basophils are particularly important in fighting parasitic infections and are involved in allergic reactions. When you have an allergic reaction, basophils release chemicals like histamine, which cause inflammation and other symptoms typical of allergies, such as itching, swelling, and redness. In general, basophils make up a very small portion of your white blood cells, and their levels can change based on your health condition. Elevated levels of basophils can indicate an allergic reaction, an ongoing infection with parasites, or certain immune system-related health issues.

Blood Test Results Comparative

The Blood Test Results Comparative Report lists the results of this blood test and compares it to a previous blood test thus allowing you to visualize change in your biomarker results. The thumbs-up and down icons help to show change, whether it is moving in the right direction or further away from optimal. Even though a result may be out of the optimal or standard range, a thumbs up indicates that the most recent result is moving toward optimal.

A comparison of the total number of biomarkers by optimal range

	Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High
Current	0	7	26	62	14	5	0

Biomarker	Quest Current Dec 26 2024	Optimal Range	Standard Range	Units
BLOOD GLUCOSE				
Glucose Fasting	87.50 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Hemoglobin A1C	4.60	4.60 - 5.30	0 - 5.70	%
eAG	85.00	85.00 - 105.00	82.00 - 154.00	mg/dL
Insulin	3.70	2.00 - 5.00	0 - 18.40	µIU/mL
C-Peptide	1.11	1.10 - 2.10	0.80 - 3.85	ng/mL
Fructosamine	201.00	190.00 - 228.00	190.00 - 270.00	µmol/L
HOMA2-%B	87.50 ↓	90.00 - 110.00	70.00 - 120.00	%
HOMA2-%S	124.00	85.00 - 200.00	75.00 - 250.00	%
HOMA2-IR	0.80	0.75 - 1.25	0.50 - 1.75	Index
QUICKI	0.40		0.35 - 0.45	Index
KIDNEY				
BUN	6.00 ↓ ↓	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	0.65 ↓	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN/Creatinine	9.00 ↓	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	104.00	90.00 - 120.00	60.00 - 160.00	mL/min
ELECTROLYTES				
Sodium	141.90	137.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	3.90 ↓	4.00 - 5.00	3.50 - 5.30	mEq/L
Chloride	106.00	100.00 - 108.00	98.00 - 110.00	mEq/L

Biomarker	Quest Current Dec 26 2024	Optimal Range	Standard Range	Units
CO2, bicarbonate	26.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Sodium : Potassium	36.38 ↑ ↑		30.00 - 35.00	ratio
METABOLIC				
Anion Gap	13.80	11.00 - 16.00	10.00 - 20.00	mEq/L
Uric Acid	5.65 ↑	3.00 - 4.70	2.50 - 7.00	mg/dL
Creatine Kinase (CK)	72.00	65.00 - 135.00	29.00 - 143.00	U/L
Leptin	12.20 ↑	4.70 - 11.00	4.70 - 23.70	ng/mL
ENZYMES				
Amylase	42.00	40.00 - 86.00	21.00 - 103.00	U/L
Lipase	25.00	22.00 - 51.00	13.00 - 60.00	U/L
PROTEINS				
Protein - Total	6.10 ↓	6.90 - 8.10	6.10 - 8.10	g/dL
Albumin	4.40 ↓	4.50 - 5.00	3.60 - 5.10	g/dL
Globulin - Total	1.70 ↓ ↓	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin/Globulin Ratio	2.60 ↑ ↑	1.40 - 2.10	1.00 - 2.50	ratio
MINERALS				
Calcium	9.10	8.90 - 9.50	8.60 - 10.40	mg/dL
Phosphorus	2.90	2.60 - 3.50	2.50 - 4.50	mg/dL
Magnesium - Serum	2.30	2.20 - 2.50	1.50 - 2.50	mg/dL
Magnesium - RBC	6.20	6.00 - 6.80	4.00 - 6.80	mg/dL
Copper - Serum	76.00 ↓	90.00 - 150.00	70.00 - 175.00	µg/dL
Zinc - Serum	65.70 ↓	99.00 - 130.00	50.00 - 130.00	µg/dL
Zinc - RBC	9.20 ↓	10.40 - 14.70	9.00 - 14.70	mg/L
Copper : Zinc Ratio	1.16	0.70 - 1.50	0.80 - 2.00	Ratio
Calcium : Albumin	2.07	0 - 2.18	0 - 2.60	ratio
Calcium : Phosphorus	3.14	2.30 - 3.20	1.90 - 4.20	ratio
LIVER AND GB				
Alkaline Phosphatase	46.00	45.00 - 100.00	31.00 - 125.00	IU/L
AST	14.00	10.00 - 26.00	10.00 - 35.00	IU/L
ALT	11.00	10.00 - 26.00	6.00 - 29.00	IU/L
LDH	131.00 ↓	140.00 - 200.00	100.00 - 200.00	IU/L
Bilirubin - Total	0.60	0.50 - 0.90	0.20 - 1.20	mg/dL
Bilirubin - Direct	0.10	0.10 - 0.15	0 - 0.20	mg/dL
Bilirubin - Indirect	0.50	0.40 - 0.75	0.20 - 1.20	mg/dL
GGT	8.00 ↓	10.00 - 17.00	3.00 - 50.00	IU/L
AST : ALT	1.27 ↑	0 - 1.00	0 - 1.50	Ratio
IRON MARKERS				
Iron - Serum	79.00 ↓	85.00 - 130.00	40.00 - 190.00	µg/dL
Ferritin	12.00 ↓ ↓	45.00 - 79.00	16.00 - 232.00	ng/mL

Biomarker	Quest Current Dec 26 2024	Optimal Range	Standard Range	Units
TIBC	284.00	250.00 - 350.00	250.00 - 425.00	µg/dL
UIBC	205.00	130.00 - 300.00	110.00 - 350.00	µg/dL
% Transferrin saturation	28.00	24.00 - 35.00	20.00 - 48.00	%
Transferrin	255.00	200.00 - 360.00	200.00 - 390.00	mg/dL
LIPIDS				
Cholesterol - Total	165.00	160.00 - 199.00	125.00 - 199.00	mg/dL
Triglycerides	65.00 ↓	70.00 - 80.00	0 - 149.99	mg/dL
LDL Cholesterol	70.00 ↓	80.00 - 99.99	0 - 99.99	mg/dL
HDL Cholesterol	81.00	55.00 - 93.00	50.00 - 100.00	mg/dL
Non-HDL Cholesterol	84.00	70.00 - 99.00	0 - 129.99	mg/dL
VLDL Cholesterol	14.20	0 - 15.00	0 - 30.00	mg/dL
Total Cholesterol/HDL-C Ratio	2.04	0 - 3.00	0 - 5.00	Ratio
Triglyceride:HDL	0.80	0.50 - 1.90	0 - 2.00	ratio
LDL : HDL	0.86	0 - 2.34	0 - 4.12	Ratio
CARDIOMETABOLIC				
Homocysteine	7.50 ↑	5.00 - 7.20	0 - 10.30	µmol/L
THYROID				
TSH	2.95 ↑	1.00 - 2.00	0.40 - 4.50	mIU/L
T4 - Total	5.20 ↓	6.00 - 11.90	4.50 - 12.00	µg/dL
T4 - Free	0.98 ↓	1.00 - 1.50	0.80 - 1.80	ng/dL
T3 - Total	89.20 ↓	90.00 - 168.00	76.00 - 181.00	ng/dL
T3 - Free	2.80 ↓	3.00 - 3.50	2.30 - 4.20	pg/mL
Reverse T3	28.00 ↑ ↑	10.00 - 25.00	8.00 - 25.00	ng/dL
T3 Uptake	26.20 ↓	27.00 - 35.00	22.00 - 35.00	%
Free Thyroxine Index (T7)	1.36 ↓ ↓	1.70 - 4.60	1.40 - 3.80	Index
Thyroid Peroxidase (TPO) Abs	1.10	0 - 6.80	0 - 9.00	IU/mL
Thyroglobulin Abs	<1.00		0 - 1.00	IU/mL
Free T3 : Reverse T3	10.00	10.00 - 28.00	2.00 - 28.00	Ratio
Free T3 : Free T4	2.86 ↑	2.40 - 2.70	2.20 - 2.90	Ratio
INFLAMMATION				
Hs CRP	1.15 ↑ ↑		0 - 1.00	mg/L
C-Reactive Protein	4.65 ↑	0 - 3.00	0 - 7.90	mg/L
ESR	11.20 ↑	0 - 10.00	0 - 20.00	mm/hr
Fibrinogen Activity	221.00	175.00 - 300.00	175.00 - 425.00	mg/dL
Neutrophil : Lymphocyte (NLR)	1.25	1.00 - 1.70	1.00 - 3.00	Ratio
VITAMINS				
Vitamin D (25-OH)	56.20	50.00 - 90.00	30.00 - 100.00	ng/mL
Vitamin B12	462.00 ↓	545.00 - 1100.00	200.00 - 1100.00	pg/mL
Folate - Serum	15.20	15.00 - 27.00	5.50 - 27.00	ng/mL

Biomarker	Quest Current Dec 26 2024	Optimal Range	Standard Range	Units
Methylmalonic Acid	261.00 ↑	0 - 260.00	0 - 318.00	nmol/L
Folate - RBC	376.00 ↓	500.00 - 1504.00	280.00 - 1504.00	ng/mL
HORMONES				
DHEA-S	285.00	275.00 - 391.00	18.00 - 391.00	µg/dL
FSH	16.30 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	2.50 - 10.20 1.50 - 9.10 3.10 - 17.70 23.00 - 116.30	mIU/mL
LH	9.80 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	1.90 - 12.50 0.50 - 16.90 8.70 - 76.30 10.00 - 54.70	mIU/mL
Testosterone Total	33.20 ↓	35.00 - 45.00	2.00 - 45.00	ng/dL
Testosterone Free	3.38	3.25 - 4.60	0.20 - 5.00	pg/mL
Sex Hormone Binding Globulin	75.00	50.00 - 80.00	17.00 - 124.00	nmol/L
Estradiol	55.00 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	19.00 - 144.00 56.00 - 214.00 64.00 - 357.00 0.00 - 31.00	pg/mL
Progesterone	8.00 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	0.00 - 1.00 2.60 - 21.50 0.10 - 12.00 0.00 - 0.50	ng/mL
Cortisol - Total/AM	9.00 ↓	10.00 - 15.00	4.00 - 22.00	µg/dL
Cortisol : DHEA-S	0.03		0 - 0.09	ratio
Gastrin	46.00	45.00 - 90.00	0 - 100.00	pg/mL
Testosterone Bioavailable	8.10	5.50 - 8.50	0.50 - 8.50	ng/dL
CBC				
RBC	4.23 ↓	4.30 - 4.80	3.80 - 5.10	m/cumm
Hemoglobin	13.80	13.50 - 14.50	11.70 - 15.50	g/dL
Hematocrit	40.00	37.00 - 44.00	35.00 - 45.00	%
MCV	94.60 ↑	82.00 - 89.90	80.00 - 100.00	fL
MCH	32.60 ↑	28.00 - 31.90	27.00 - 33.00	pg
MCHC	34.50	34.00 - 36.00	32.00 - 36.00	g/dL
Platelets	187.00 ↓	190.00 - 300.00	140.00 - 400.00	10E3/uL
MPV	8.80 ↑	7.50 - 8.20	7.50 - 11.50	fL
RDW	12.40	11.00 - 12.60	11.00 - 15.00	%
WBCS				
Total WBCs	2.60 ↓ ↓	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	50.40	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	40.20 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes - %	6.80	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	1.50		0 - 3.00	%
Basophils - %	1.10 ↑ ↑		0 - 1.00	%

Biomarker	Quest			
	Current Dec 26 2024	Optimal Range	Standard Range	Units
Neutrophils - Absolute	1.31 ↓ ↓	1.90 - 4.20	1.50 - 7.80	k/cumm
Lymphocytes - Absolute	1.05 ↓	1.44 - 2.54	0.85 - 3.90	k/cumm
Monocytes - Absolute	0.18 ↓ ↓	0.20 - 0.40	0.20 - 0.95	k/cumm
Eosinophils - Absolute	0.04	0.03 - 0.20	0 - 0.50	k/cumm
Basophils - Absolute	0.03	0 - 0.10	0 - 0.20	k/cumm

Blood Test History

The Blood Test History Report lists the results of your blood test results side by side with the latest test listed on the right-hand side. This report allows you to compare results over time and see where improvement has been made, allowing you to track your progress towards optimal health.

Key

- Optimal
- Above / Below Optimal
- High/ Low
- Alarm High / Alarm Low

Biomarker	Latest Test Result Quest Dec 26 2024
BLOOD GLUCOSE	
Glucose Fasting	87.50 ↑
Hemoglobin A1C	4.60
eAG	85.00
Insulin	3.70
C-Peptide	1.11
Fructosamine	201.00
HOMA2-%B	87.50 ↓
HOMA2-%S	124.00
HOMA2-IR	0.80
QUICKI	0.40
KIDNEY	
BUN	6.00 ↓ ↓
Creatinine	0.65 ↓
BUN/Creatinine	9.00 ↓
eGFR	104.00
ELECTROLYTES	
Sodium	141.90

Biomarker	Latest Test Result Quest Dec 26 2024
Potassium	3.90 ↓
Chloride	106.00
CO2, bicarbonate	26.00
Sodium : Potassium	36.38 ↑ ↑
METABOLIC	
Anion Gap	13.80
Uric Acid	5.65 ↑
Creatine Kinase (CK)	72.00
Leptin	12.20 ↑
ENZYMES	
Amylase	42.00
Lipase	25.00
PROTEINS	
Protein - Total	6.10 ↓
Albumin	4.40 ↓
Globulin - Total	1.70 ↓ ↓
Albumin/Globulin Ratio	2.60 ↑ ↑
MINERALS	
Calcium	9.10
Phosphorus	2.90
Magnesium - Serum	2.30
Magnesium - RBC	6.20
Copper - Serum	76.00 ↓
Zinc - Serum	65.70 ↓
Zinc - RBC	9.20 ↓

Biomarker	Latest Test Result Quest Dec 26 2024
Copper : Zinc Ratio	1.16
Calcium : Albumin	2.07
Calcium : Phosphorus	3.14
LIVER AND GB	
Alkaline Phosphatase	46.00
AST	14.00
ALT	11.00
LDH	131.00 ↓
Bilirubin - Total	0.60
Bilirubin - Direct	0.10
Bilirubin - Indirect	0.50
GGT	8.00 ↓
AST : ALT	1.27 ↑
IRON MARKERS	
Iron - Serum	79.00 ↓
Ferritin	12.00 ↓ ↓
TIBC	284.00
UIBC	205.00
% Transferrin saturation	28.00
Transferrin	255.00
LIPIDS	
Cholesterol - Total	165.00
Triglycerides	65.00 ↓
LDL Cholesterol	70.00 ↓
HDL Cholesterol	81.00

Biomarker	Latest Test Result Quest Dec 26 2024
Non-HDL Cholesterol	84.00
VLDL Cholesterol	14.20
Total Cholesterol/HDL-C Ratio	2.04
Triglyceride:HDL	0.80
LDL : HDL	0.86
CARDIOMETABOLIC	
Homocysteine	7.50 ↑
THYROID	
TSH	2.95 ↑
T4 - Total	5.20 ↓
T4 - Free	0.98 ↓
T3 - Total	89.20 ↓
T3 - Free	2.80 ↓
Reverse T3	28.00 ↑ ↑
T3 Uptake	26.20 ↓
Free Thyroxine Index (T7)	1.36 ↓ ↓
Thyroid Peroxidase (TPO) Abs	1.10
Thyroglobulin Abs	<1.00
Free T3 : Reverse T3	10.00
Free T3 : Free T4	2.86 ↑
INFLAMMATION	
Hs CRP	1.15 ↑ ↑
C-Reactive Protein	4.65 ↑
ESR	11.20 ↑
Fibrinogen Activity	221.00

Biomarker	Latest Test Result Quest Dec 26 2024
Neutrophil : Lymphocyte (NLR)	1.25
VITAMINS	
Vitamin D (25-OH)	56.20
Vitamin B12	462.00 ↓
Folate - Serum	15.20
Methylmalonic Acid	261.00 ↑
Folate - RBC	376.00 ↓
HORMONES	
DHEA-S	285.00
FSH	16.30 *UNKNOWN*
LH	9.80 *UNKNOWN*
Testosterone Total	33.20 ↓
Testosterone Free	3.38
Sex Hormone Binding Globulin	75.00
Estradiol	55.00 *UNKNOWN*
Progesterone	8.00 *UNKNOWN*
Cortisol - Total/AM	9.00 ↓
Cortisol : DHEA-S	0.03
Gastrin	46.00
Testosterone Bioavailable	8.10
CBC	
RBC	4.23 ↓
Hemoglobin	13.80
Hematocrit	40.00
MCV	94.60 ↑

Biomarker	Latest Test Result Quest Dec 26 2024
MCH	32.60 ↑
MCHC	34.50
Platelets	187.00 ↓
MPV	8.80 ↑
RDW	12.40
WBCS	
Total WBCs	2.60 ↓ ↓
Neutrophils - %	50.40
Lymphocytes - %	40.20 ↑
Monocytes - %	6.80
Eosinophils - %	1.50
Basophils - %	1.10 ↑ ↑
Neutrophils - Absolute	1.31 ↓ ↓
Lymphocytes - Absolute	1.05 ↓
Monocytes - Absolute	0.18 ↓ ↓
Eosinophils - Absolute	0.04
Basophils - Absolute	0.03

3

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.

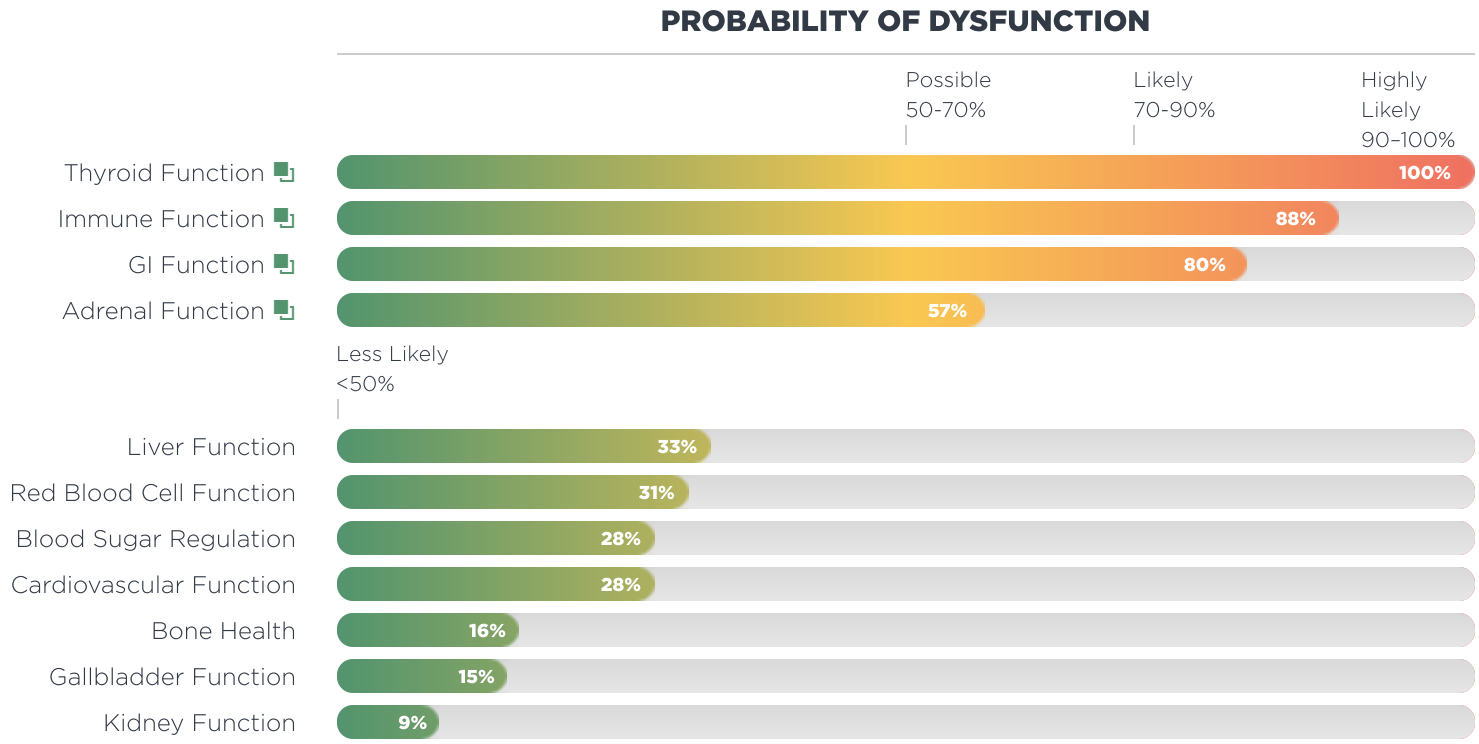
Assessment

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 Highly Likely. Much improvement required.

THYROID FUNCTION

The Thyroid Function score looks at biomarkers on this blood test that reflect the degree of risk in the function of your thyroid. A high Thyroid Function score indicates that you may be at an increased risk of Thyroid dysfunction. The thyroid produces hormones that control how the body uses energy. They are responsible for controlling metabolism in the body, maintaining body temperature, regulating cholesterol, and controlling mood. By examining specific biomarkers on the blood test we can see if your thyroid is in a state of increased activity, in a state of decreased function, or hopefully optimal function! In summary, your score is high, which indicates that your Thyroid might not function as optimally as it should and may need support moving forward.

Rationale

TSH ↑, T4 - Total ↓, T4 - Free ↓, T3 - Total ↓, T3 - Free ↓, Reverse T3 ↑, T3 Uptake ↓, Free Thyroxine Index (T7) ↓

Biomarkers considered

TSH, T4 - Total, T4 - Free, T3 - Total, T3 - Free, Reverse T3, T3 Uptake, Free Thyroxine Index (T7), Free T3 : Reverse T3

Dysfunction Likely Improvement required.

IMMUNE FUNCTION

The Immune Function score reflects the degree of function in your immune system. When the immune system is in a state of balance, we can cope and deal with infections with little or no lasting negative side effects. The Immune Function score looks for clues in your blood test that can help determine if there's immune dysregulation and, if so, what it is. Your score is moderate, which indicates that your immune is not functioning as well as it should and may need support moving forward.

Rationale

Total WBCs ↓, Globulin - Total ↓, Lymphocytes - % ↑, Monocytes - Absolute ↓, Lymphocytes - Absolute ↓, Neutrophils - Absolute ↓

Biomarkers considered

Total WBCs, Globulin - Total, Neutrophils - %, Lymphocytes - %, Monocytes - %, Monocytes - Absolute, Lymphocytes - Absolute, Neutrophils - Absolute, Albumin, Alkaline Phosphatase, Ferritin

Dysfunction Likely
Improvement required.

GI FUNCTION

The GI Function score reflects the degree of function in your gastrointestinal (GI) system. The gastrointestinal system is responsible for the digestion and breakdown of macronutrients (proteins, fats, and carbohydrates) into small particles so they can be easily absorbed and utilized. The GI system is also responsible for the excretion and elimination of waste from the body. The GI Function score looks for clues in your blood test that can help determine if there's dysregulation and, if so, what it is. Your score is moderate, which indicates that your GI is not functioning as well as it should and may need support moving forward.

Rationale

BUN ↓, Protein - Total ↓, Globulin - Total ↓, Albumin ↓, MCV ↑, Basophils - % ↑, Iron - Serum ↓, Creatinine ↓, Total WBCs ↓

Biomarkers considered

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

Dysfunction Possible
There may be improvement needed in certain areas.

ADRENAL FUNCTION

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

Rationale

Potassium ↓, Sodium : Potassium ↑, Cortisol - Total/AM ↓

Biomarkers considered

Sodium, Potassium, Sodium : Potassium, DHEA-S, Cortisol - Total/AM, Chloride

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

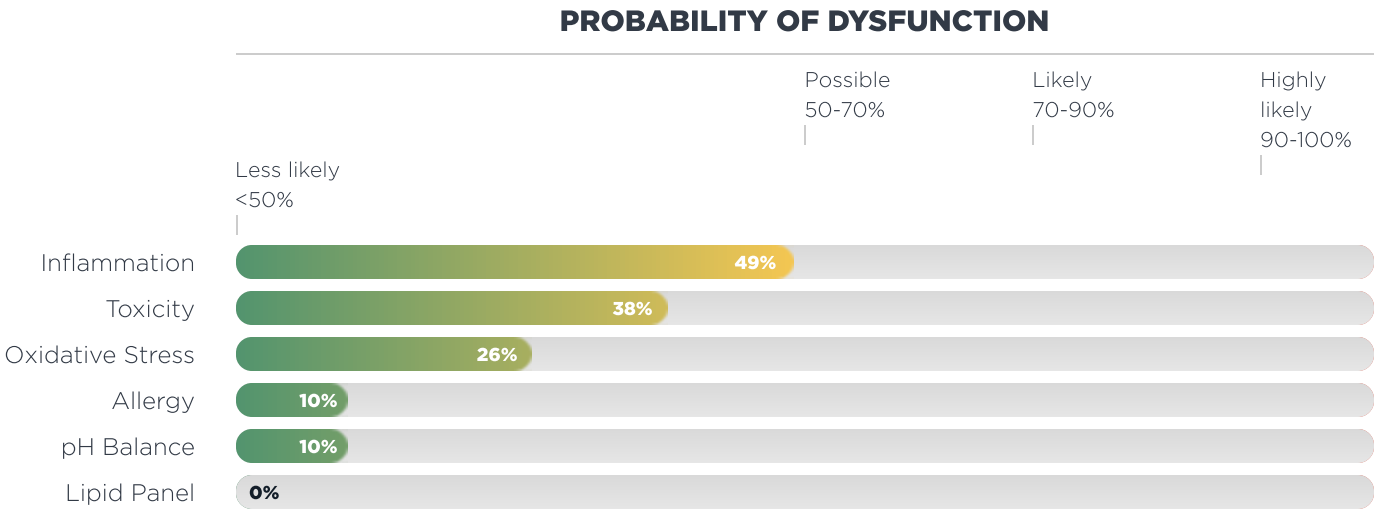
Aldosterone, Cortisol - PM

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.

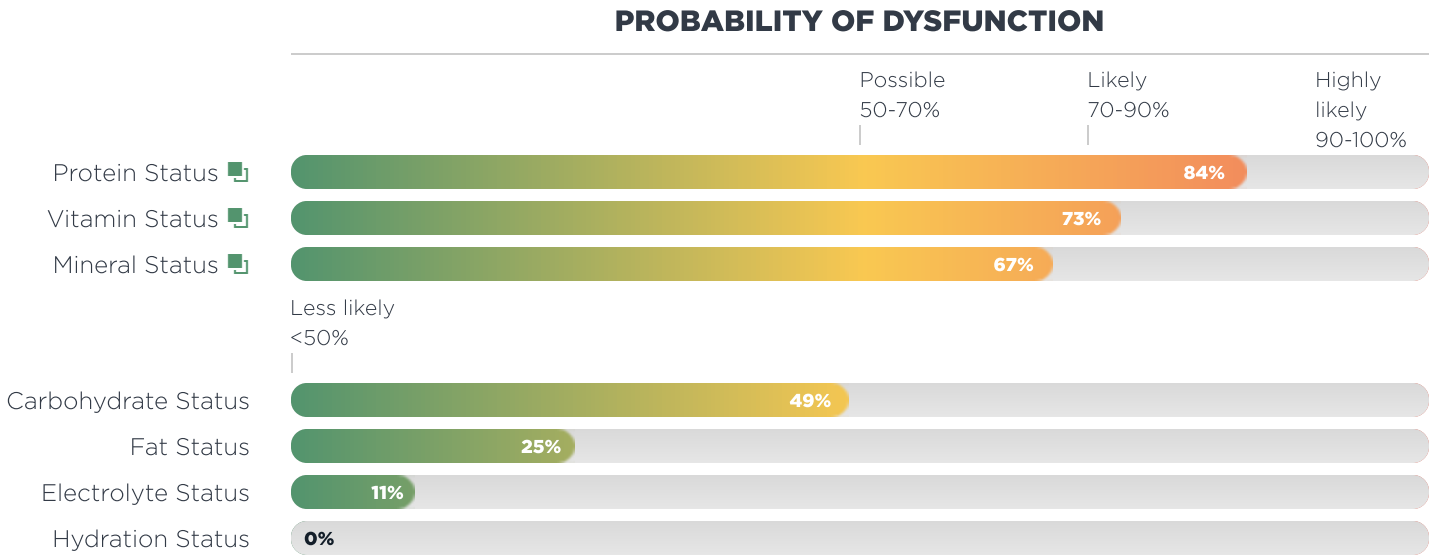


Nutrient Status

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.

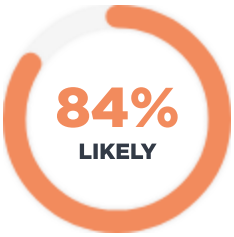
This report gives you an indication of your general nutritional status. The Nutrient Status is influenced by actual dietary intake, digestion, absorption, assimilation, and cellular uptake of the nutrients themselves.

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 Likely.
Improvement required.

PROTEIN STATUS

You may be trending toward a protein deficiency or need, causing an increase in your Protein Status score. Protein is an essential nutrient for the body and a vital part of every tissue, cell, and organ. Your Protein Status score is higher than ideal, indicating that you may need protein support moving forward.

Rationale

Protein - Total ↓, BUN ↓, Albumin ↓, Creatinine ↓, BUN/Creatinine ↓, C-Reactive Protein ↑

Biomarkers considered

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

Dysfunction Likely.
Improvement required.

VITAMIN STATUS

You may be trending towards a vitamin deficiency or need, causing an increase in your Vitamin Status score. Vitamin levels constantly fluctuate based on several factors, such as the amount in your diet, your ability to digest and break down individual vitamins from the food or supplements you consume, and the ability of those vitamins to be absorbed, transported, and ultimately taken up into the cells themselves. Your Vitamin Status score is higher than ideal, indicating that you may need vitamin support moving forward.

Rationale

GGT ↓, Homocysteine ↑, MCV ↑, Vitamin B12 ↓, Methylmalonic Acid ↑, Folate - RBC ↓

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.

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

Potassium ↓, Iron - Serum ↓, Ferritin ↓, Copper - Serum ↓, Zinc - Serum ↓, Zinc - RBC ↓

Biomarkers considered

Potassium, Uric Acid, Calcium, Phosphorus, Alkaline Phosphatase, Iron - Serum, Ferritin, Magnesium - Serum, Copper - Serum, Zinc - Serum, Zinc - RBC, Magnesium - RBC

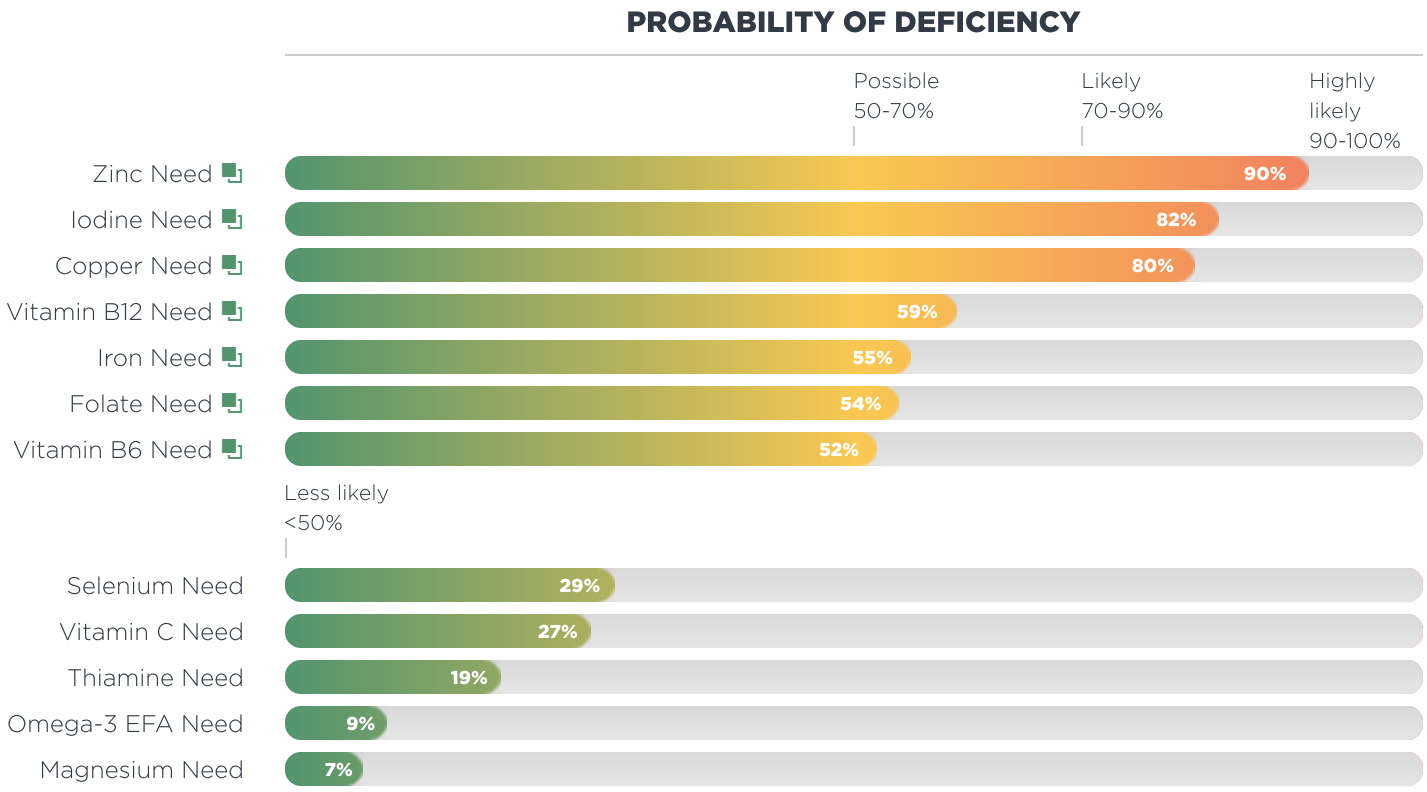
Biomarkers not available in this test - consider having run in future tests:

Selenium - Serum, Selenium - RBC, Copper - RBC

Individual Nutrient Deficiencies

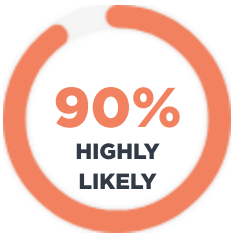
The scores represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors 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.

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, Alkaline Phosphatase

Deficiency Likely. Improvement required.

IODINE NEED

Your blood test results suggest that you are likely not getting enough iodine, which can affect your energy levels, weight, and overall health. To help prevent further decline in iodine levels, try to include more iodine-rich foods in your diet, such as fish, dairy products, eggs, and iodized salt. Some conditions, like thyroid issues or a low dietary intake of iodine, can make it harder for your body to maintain adequate iodine levels.

Rationale

T4 - Total ↓, T4 - Free ↓, T3 Uptake ↓, TSH ↑

Biomarkers considered

T4 - Total, T4 - Free, T3 - Total, T3 - Free, T3 Uptake, TSH

Deficiency Likely. Improvement required.

COPPER NEED

Your blood test results suggest that you are likely not getting enough copper, which can affect your energy levels and immune function. To help prevent further decline in copper levels, try to include more copper-rich foods in your diet, such as shellfish, nuts, seeds, and whole grains. Some conditions, like digestive issues or an imbalance of other minerals, can make it harder for your body to maintain adequate copper levels.

Rationale

Copper - Serum ↓

Biomarkers considered

Copper - Serum

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

Copper - RBC

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.

IRON NEED

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

Rationale

Iron - Serum ↓, Ferritin ↓, RBC ↓

Biomarkers considered

Iron - Serum, Ferritin, RBC, Hemoglobin, Hematocrit, MCV, MCHC, % Transferrin saturation, MCH, TIBC, RDW

Deficiency Possible. There may be improvement needed in certain areas.

FOLATE NEED

Your blood test results show that you may be starting to have a folate deficiency. Although it may not be a major concern yet, it's important to monitor your folate levels and include more folate-rich foods in your diet. Keep an eye on how you're feeling, especially if you notice any changes in your energy levels or mood. Talk to your healthcare provider about any conditions or lifestyle factors that might affect your folate absorption. Regular monitoring and making sure your diet includes plenty of folate-rich foods can help prevent further deficiency.

Rationale

Folate - RBC ↓, Homocysteine ↑, MCV ↑

Biomarkers considered

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

Deficiency Possible. There may be improvement needed in certain areas.

VITAMIN B6 NEED

Your blood test results show that you may be starting to have a vitamin B6 deficiency. Although it may not be a major concern yet, it is important to monitor your vitamin B6 levels and include more vitamin B6-rich foods in your diet. Keep an eye on your mood, energy levels, and overall health, and talk to us about any conditions or lifestyle factors that might affect your vitamin B6 absorption. With regular monitoring, we can likely prevent further deficiency.

Rationale

Homocysteine ↑, GGT ↓

Biomarkers considered

Homocysteine, GGT, AST, ALT

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

Vitamin B6

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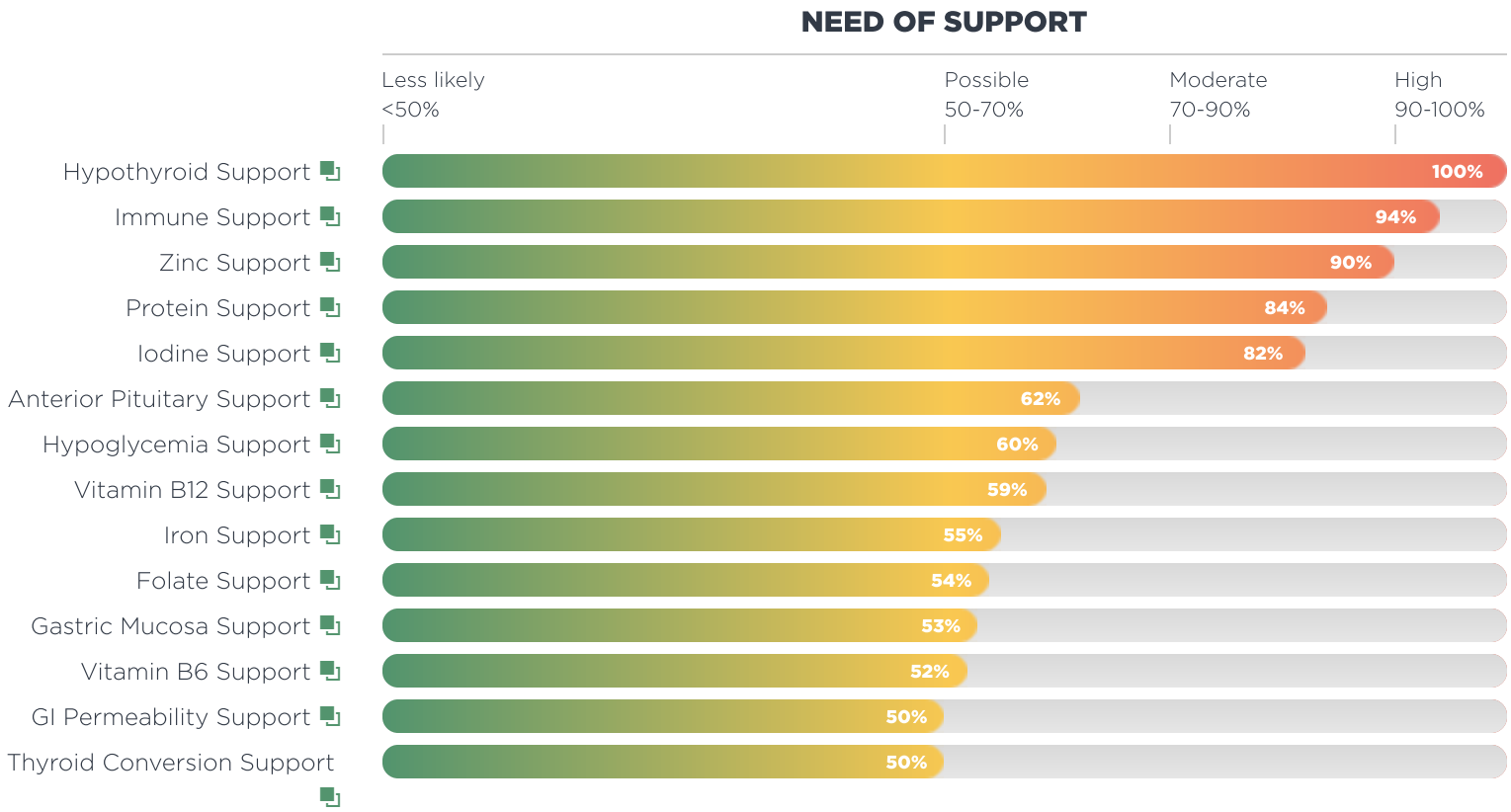
The Health Concerns report takes all the information on this report and focuses on the top areas that need the most support.

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.

HYPOTHYROID SUPPORT

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

Rationale

TSH ↑, T4 - Total ↓, T3 - Total ↓, T3 Uptake ↓, T4 - Free ↓, T3 - Free ↓, Free Thyroxine Index (T7) ↓

IMMUNE SUPPORT

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

Rationale

Total WBCs ↓, Albumin ↓, Globulin - Total ↓

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

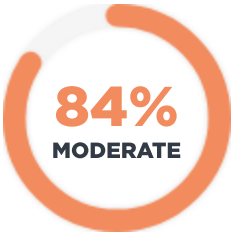
Zinc - Serum ↓, Zinc - RBC ↓

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 ↓, BUN ↓, Albumin ↓, Creatinine ↓, BUN/Creatinine ↓, C-Reactive Protein ↑

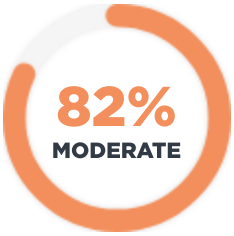


IODINE SUPPORT

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

Rationale

T4 - Total ↓, T4 - Free ↓, T3 Uptake ↓, TSH ↑



ANTERIOR PITUITARY SUPPORT

The results of your blood test indicate a need for thyroid support.

Rationale

T4 - Total ↓, T4 - Free ↓, T3 - Free ↓, Free Thyroxine Index (T7) ↓, T3 - Total ↓

HYPOGLYCEMIA 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 ↓

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 ↑

IRON SUPPORT

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

Rationale

Iron - Serum ↓, Ferritin ↓, RBC ↓

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 ↓, Homocysteine ↑, MCV ↑

GASTRIC MUCOSA SUPPORT

The results of your blood test indicate a tendency towards gastric inflammation and a need for support for the stomach lining.

Rationale

Protein - Total ↓, Creatinine ↓, Albumin ↓, ESR ↑, Basophils - % ↑

VITAMIN B6 SUPPORT

The results of your blood test indicate that your vitamin B6 levels might be lower than optimal and show a need for vitamin B6 supplementation.

Rationale

Homocysteine ↑, GGT ↓

GI PERMEABILITY SUPPORT

The results of your blood test indicate a tendency towards intestinal hyperpermeability, a condition commonly called Leaky Gut Syndrome, and a need for support for the mucosal lining of the gastrointestinal tract.

Rationale

Uric Acid ↑

THYROID CONVERSION SUPPORT

The results of your blood test indicate a tendency towards a difficulty converting thyroxine (T4) into triiodothyronine (T3), which can cause symptoms of hypothyroidism, and a need for thyroid gland support.

Rationale

T3 - Total ↓, T3 - Free ↓, Reverse T3 ↑

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