VITALS VAULT

BLOOD CHEMISTRY ANALYSIS

Functional Health Report

A comprehensive analysis of your test results.

PATIENT REPORT

Patient Details

NAME

[redacted]

AGE

[redacted]

SAMPLE COLLECTION DATE

Nov 27, 2025

LAB

Quest

01

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

INTRODUCTION

INTRODUCTION

What's Inside?

SECTION 1: INTRODUCTION

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

SECTION 2: ANALYSIS

An in-depth analysis of your biomarker results.

SECTION 3: ASSESSMENT

An in-depth functional system and nutrient evaluation.

SECTION 4: HEALTH CONCERNS

The health concerns that need the most support.

SECTION 5: DISCLAIMER

Additional information pertinent to this report.

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 helps make sense of the many biomarkers in your blood and paints a clearer picture of how your body's systems are functioning. Think of it as a comprehensive health checkup that looks not only at how your body is working today, but also whether you're getting the nutrients you need. It can also help you see whether you're moving toward better health or where you may need additional support.

Why blood testing?

Your blood tells a comprehensive story about your health. Among all medical lab tests, the Blood Chemistry and CBC/hematology test is one of the most frequently ordered. It's a cornerstone of Western clinical medicine and helps 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 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" can be quite different from being functionally optimal. You might not have a diagnosed disease, but it's possible to be experiencing functional imbalances—meaning your body's systems aren't operating as well as they could, and you may be starting to feel the effects.

The issue isn't with the blood tests themselves—they're powerful diagnostic tools. The issue is often the reference ranges used, which are based on average populations rather than indicators of optimal health or function. "Normal" ranges can be too broad to detect early signs of change or to identify when you're moving away from your best health.

The functional approach

The functional approach to blood testing focuses on changes in your body's function rather than looking only for disease. We use optimal physiological ranges instead of "normal" population averages. This creates a more precise "Functional Physiological Range" and can help spot issues that may still fall within the conventional "normal" range.

Unlike traditional methods that examine each biomarker in isolation, Functional Blood Chemistry Analysis looks at 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 summary

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

The Functional Health Report

Your blood test results have been analyzed for their hidden meaning and the subtle, web-like patterns concealed within the numbers that may signal the earliest stages of functional change in your body. The Functional Health Report (FHR) organizes this analysis and provides a comprehensive interpretation of your results in both written and graphical formats.

The report gives you a window into the health of your main physiological systems, supporting accessory systems, and nutrient status. It is broken down into three main sections:

Analysis

The analysis section shows your blood test results.

The blood test results report lists your biomarkers and shows whether each biomarker is optimal, outside the optimal range, or outside the standard range.

The blood test comparative report compares your latest and previous blood test results and helps you see whether a biomarker has improved over time.

The blood test history report helps you track trends across multiple tests and monitor progress toward your health goals.

The out of optimal range report highlights biomarkers that are outside the optimal range and provides context for why a biomarker may be elevated or decreased. Each biomarker in the out of optimal range report links back to the blood test results report for a more detailed view.

Assessment

The assessment section is at the heart of the Functional Health Report. It presents the findings of the risk analysis.

The functional body systems and accessory systems reports show the risk of dysfunction across physiological systems and supporting accessory systems.

The nutrient status report summarizes your general nutritional status, and the nutrient deficiencies report highlights the risk of deficiency for individual nutrients.

Each assessment report is accompanied by detailed descriptions and explanations to help you understand the results.

Health Concerns

The health concerns section summarizes key findings from the assessment and analysis sections and highlights the top areas that may need the most support.

02

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

ANALYTICS

- Blood Test Results
- Out of Optimal Range
- Blood Test Comparative

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The blood test results report lists the results from your chemistry screen and CBC and shows you whether an individual biomarker is optimal, outside the optimal range, or outside the standard range. Biomarkers are grouped into their most common categories.

Some biomarkers that are above or below the optimal range (or marked low or high) may be linked to the out of optimal range report, where you can read background information on those biomarkers and why they may be high or low.

Total Biomarkers 127 :

All 127 | Low 16 | Optimal 73 | Above Optimal 17 | High 3

KIDNEY

Your kidneys act as filters, clearing waste and helping maintain the right balance of fluids and minerals in your blood. These biomarkers measure how well your kidneys are doing their job and can help catch early changes. A functional approach looks at the whole picture—from diet and hydration to everyday habits that support kidney health.

Creatinine, Random Urine

174.00 mg/dL

No range data available

Albumin/Creatinine Ratio, Random Urine

2.00 mg/g creat

No range data available

BUN/Creatinine Ratio

12.10 mg/mg{creat}

Low	Below Optimal	Optimal	Above Optimal	High
< 6.00	6.00 - 10.0	**10.0 - 16.0**	16.0 - 22.0	> 22.0

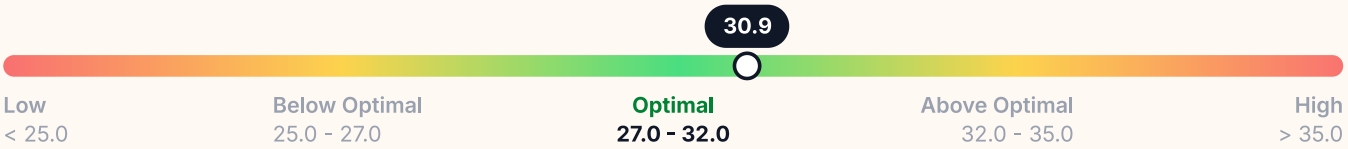
Anion Gap

12.50 mmol/L

Low	Below Optimal	Optimal	Above Optimal	High
< 5.00	5.00 - 7.00	**7.00 - 14.0**	14.0 - 17.0	> 17.0

Sodium:Potassium Ratio

30.89 ratio



PROTEINS

Protein biomarkers offer a clear view of proteins in your blood, which play vital roles throughout the body—from immune function to overall nutrition. With these insights, we can better understand your status and identify ways to support healthy protein balance.

Albumin, Urine

0.40 mg/dL

No range data available

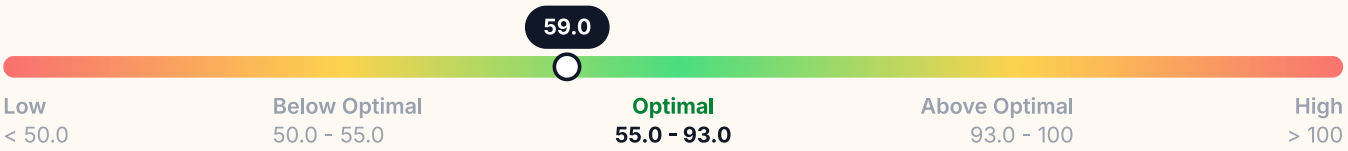
Heart Health

Cholesterol, Total

145.00 mg/dL

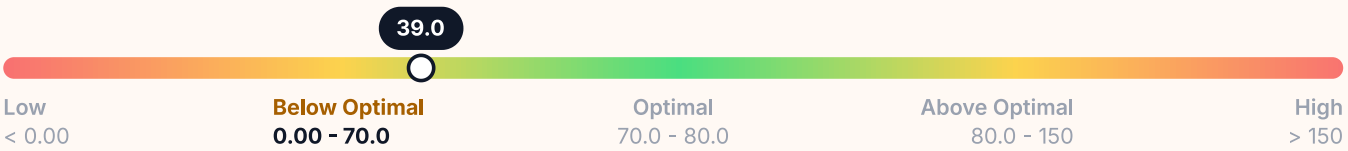
HDL Cholesterol

59.00 mg/dL



Triglycerides

39.00 mg/dL



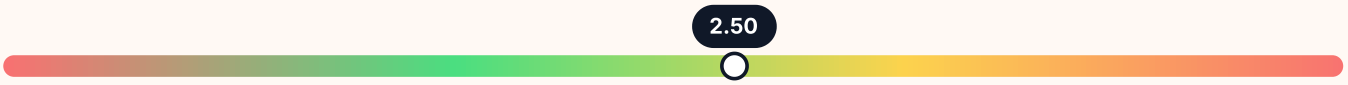
LDL-Cholesterol

75.00 mg/dL (calc)

Low	Below Optimal	Optimal	High
< 0.00	**0.00 - 80.0**	80.0 - 100.0	> 100.0

Chol/Hdlc Ratio

2.50 calc



Low	Optimal	Above Optimal	High
< 0.00	0.00 - 2.28	**2.28 - 3.50**	> 3.50

Non HDL Cholesterol

86.00 mg/dL (calc)

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 70.0	**70.0 - 99.0**	99.0 - 130	> 130

Lipoprotein (A)

26.00 nmol/L

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 18.0	**18.0 - 75.0**	> 75.0

Apolipoprotein B

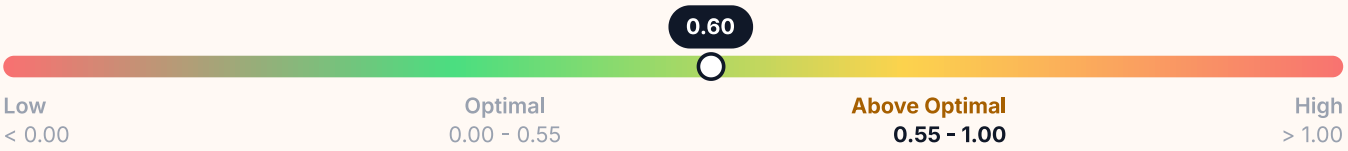
62.00 mg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 52.0	**52.0 - 80.0**	80.0 - 90.0	> 90.0

Inflammation & Immunity

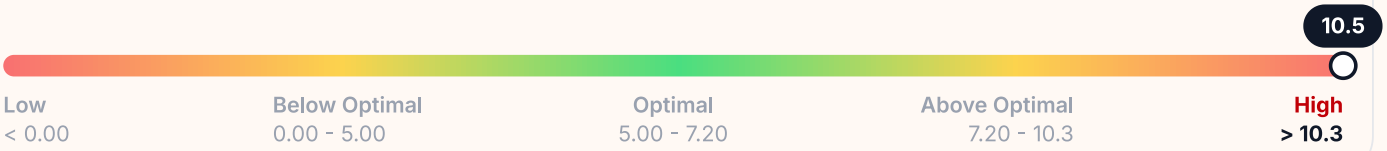
hs-CRP

0.60 mg/L



Homocysteine

10.50 umol/L



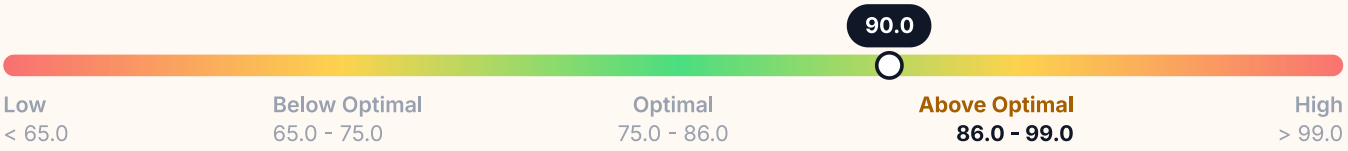
Sed Rate by Modified Westergren

2.00 mm/h

Kidney Health

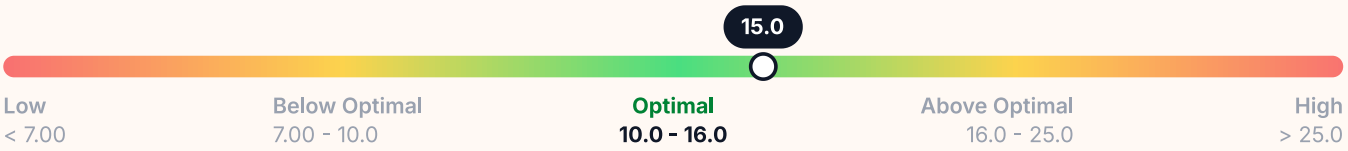
Glucose

90.00 mg/dL



Urea Nitrogen (BUN)

15.00 mg/dL



Creatinine

1.24 mg/dL

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

eGFR

85.00 mL/min/1.73m2

Low	**Below Optimal**	Optimal	Above Optimal	High
< 60.0	**60.0 - 90.0**	90.0 - 120	120 - 160	> 160

Sodium

139.00 mmol/L

Low	Below Optimal	**Optimal**	Above Optimal	High
< 135	135 - 137	**137 - 142**	142 - 146	> 146

Potassium

4.50 mmol/L

Low	Below Optimal	**Optimal**	Above Optimal	High
< 3.50	3.50 - 4.00	**4.00 - 5.00**	5.00 - 5.30	> 5.30

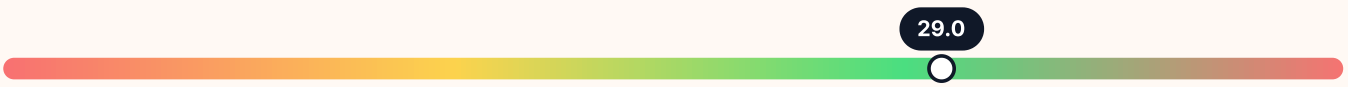
Chloride

102.00 mmol/L

Low	Below Optimal	**Optimal**	Above Optimal	High
< 98.0	98.0 - 100	**100 - 106**	106 - 110	> 110

Carbon Dioxide

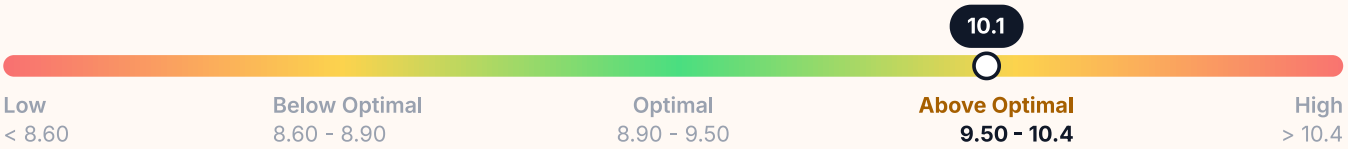
29.00 mmol/L



Low	Below Optimal	**Optimal**	High
< 19.0	19.0 - 25.0	**25.0 - 30.0**	> 30.0

Calcium

10.10 mg/dL



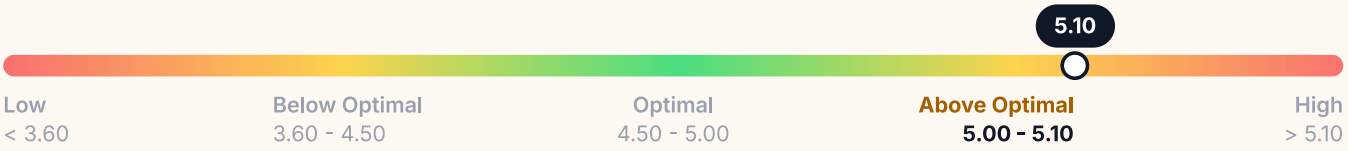
Protein, Total

7.80 g/dL

Liver Health

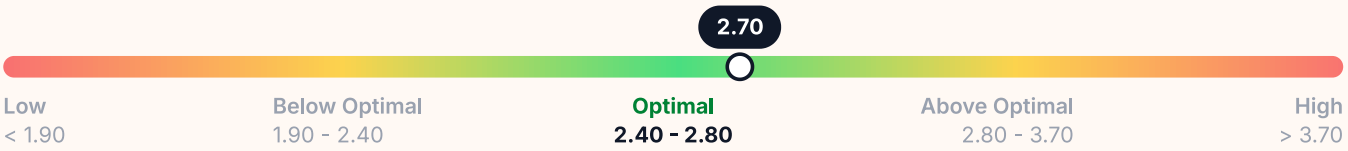
Albumin

5.10 g/dL



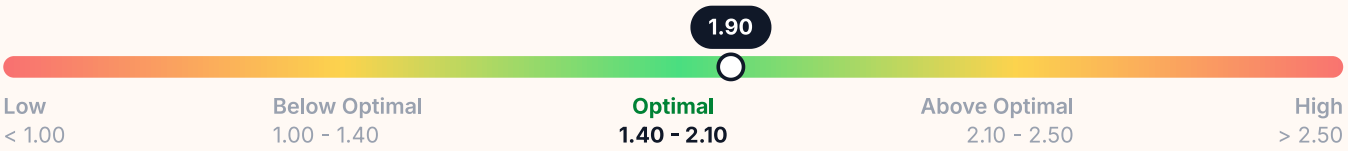
Globulin

2.70 g/dL (calc)



Albumin/Globulin Ratio

1.90 (calc)



Bilirubin, Total

0.90 mg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 0.20	0.20 - 0.50	**0.50 - 0.90**	0.90 - 1.20	> 1.20

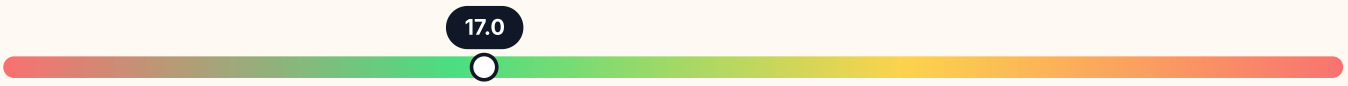
Alkaline Phosphatase

91.00 U/L

Low	Below Optimal	Optimal	Above Optimal	High
< 31.0	31.0 - 45.0	**45.0 - 100**	100 - 125	> 125

AST

17.00 U/L



Low	Optimal	Above Optimal	High
< 10.0	**10.0 - 26.0**	26.0 - 35.0	> 35.0

ALT

22.00 U/L

Low	Below Optimal	Optimal	Above Optimal	High
< 9.00	9.00 - 10.0	**10.0 - 26.0**	26.0 - 46.0	> 46.0

GGT

14.00 U/L

Low	Below Optimal	Optimal	Above Optimal	High
< 3.00	3.00 - 10.0	**10.0 - 17.0**	17.0 - 50.0	> 50.0

Energy & Metabolism

Hemoglobin A1c

5.40 %

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 4.60	4.60 - 5.30	**5.30 - 5.70**	> 5.70

Eag (Mg/Dl)

108.00 mg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 82.0	82.0 - 85.0	85.0 - 105	**105 - 154**	> 154

Eag (Mmol/L)

6.00 mmol/L

No range data available

Uric Acid

5.50 mg/dL

Low	Optimal	Above Optimal	High
< 4.00	4.00 - 5.00	**5.00 - 8.00**	> 8.00

Insulin

8.80 uIU/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 2.00	2.00 - 5.00	**5.00 - 18.4**	> 18.4

Nutrients, Vitamins & Minerals

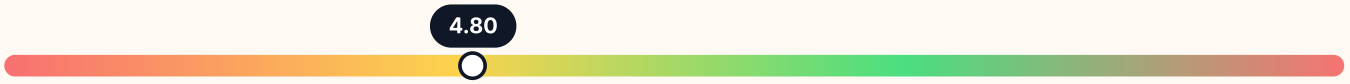
Vitamin D, 25-OH, Total

9.00 ng/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 30.0	30.0 - 50.0	50.0 - 90.0	90.0 - 100	> 100

Magnesium, RBC

4.80 mg/dL



Low	Below Optimal	Optimal	High
< 4.00	**4.00 - 6.00**	6.00 - 6.80	> 6.80

Iron, Total

80.00 mcg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 40.0	**40.0 - 85.0**	85.0 - 130	130 - 190	> 190

Iron Binding Capacity

378.00 mcg/dL (calc)

Low	Below Optimal	Optimal	Above Optimal	High
< 40.0	40.0 - 85.0	85.0 - 130	130 - 190	**> 190**

% Saturation

21.00 % (calc)

Low	Below Optimal	Optimal	Above Optimal	High
< 20.0	**20.0 - 24.0**	24.0 - 35.0	35.0 - 48.0	> 48.0

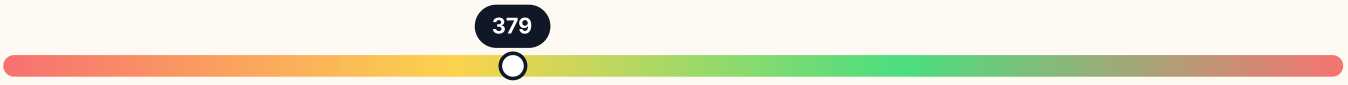
Ferritin

55.00 ng/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 16.0	16.0 - 45.0	**45.0 - 79.0**	79.0 - 232	> 232

Vitamin B12

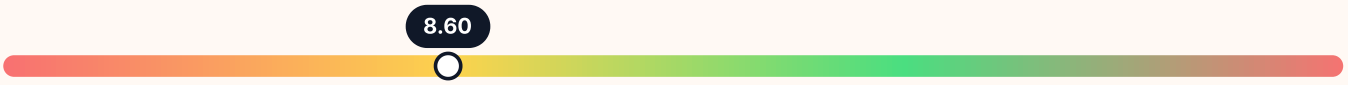
379.00 pg/mL



Low	Below Optimal	Optimal	High
< 200	**200 - 545**	545 - 1100	> 1100

Folate, Serum

8.60 ng/mL



Low	Below Optimal	Optimal	High
< 5.50	**5.50 - 15.0**	15.0 - 27.0	> 27.0

VITAMINS

Vitamin D, 25-OH, D3

9.00 ng/mL

No range data available

Vitamin D, 25-OH, D2

<4.0

Thyroid Health

TSH

1.11 mIU/L

Low	Below Optimal	Optimal	Above Optimal	High
< 0.40	0.40 - 1.00	**1.00 - 2.00**	2.00 - 4.50	> 4.50

Free T3 (Triiodothyronine)

3.70 pg/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 2.00	2.00 - 3.00	**3.00 - 4.00**	4.00 - 4.40	> 4.40

THYROID

T4, Free

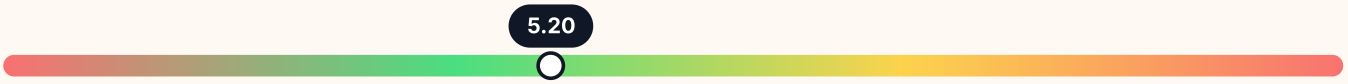
1.30 ng/dL

No range data available

Blood Health

White Blood Cell Count

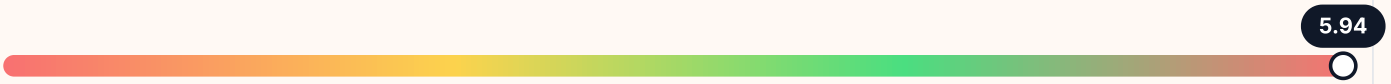
5.20 Thousand/uL



Low	Optimal	Above Optimal	High
< 3.80	**3.80 - 6.00**	6.00 - 10.8	> 10.8

Red Blood Cell Count

5.94 Million/uL



Low	Below Optimal	Optimal	High
< 3.80	3.80 - 4.80	4.80 - 5.10	**> 5.10**

Hemoglobin

16.00 g/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 13.2	13.2 - 14.0	14.0 - 15.0	**15.0 - 17.1**	> 17.1

Hematocrit

48.50 %

Low	Below Optimal	Optimal	Above Optimal	High
< 38.0	38.0 - 40.0	40.0 - 48.0	**48.0 - 50.0**	> 50.0

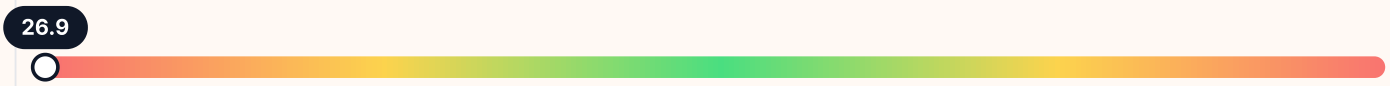
MCV

81.60 fL

Low	Below Optimal	Optimal	Above Optimal	High
< 80.0	**80.0 - 82.0**	82.0 - 89.9	89.9 - 100	> 100

MCH

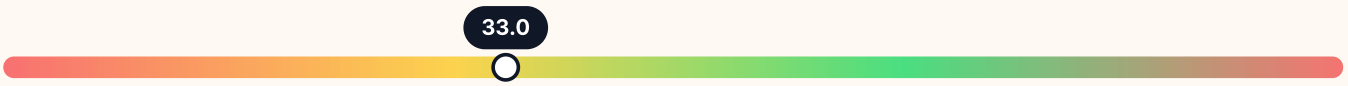
26.90 pg



Low	Below Optimal	Optimal	Above Optimal	High
< 27.0	27.0 - 28.0	28.0 - 31.9	31.9 - 33.0	> 33.0

MCHC

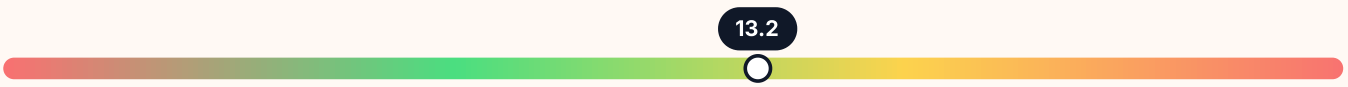
33.00 g/dL



Low	Below Optimal	Optimal	High
< 32.0	**32.0 - 34.0**	34.0 - 36.0	> 36.0

RDW

13.20 %



Low	Optimal	Above Optimal	High
< 11.0	11.0 - 12.6	**12.6 - 15.0**	> 15.0

Platelet Count

272.00 Thousand/uL

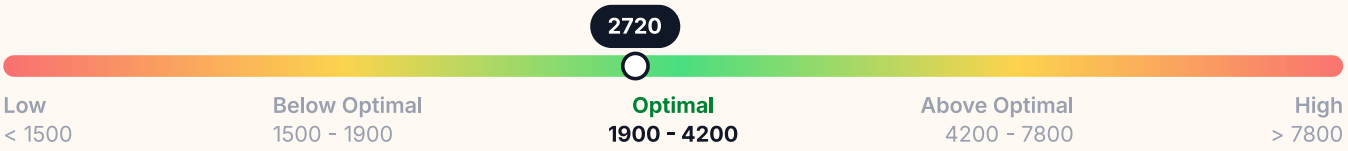
Low	Below Optimal	Optimal	Above Optimal	High
< 140	140 - 190	**190 - 300**	300 - 400	> 400

MPV

11.10 fL

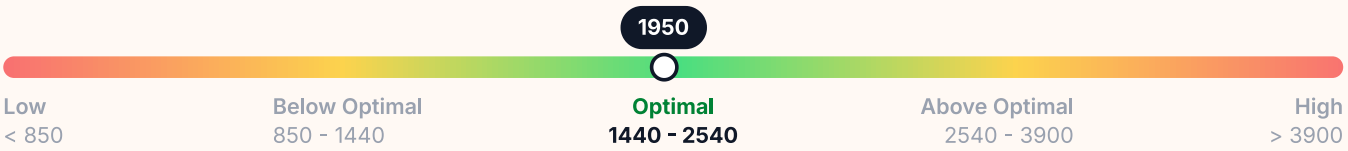
Absolute Neutrophils

2720.00 cells/uL



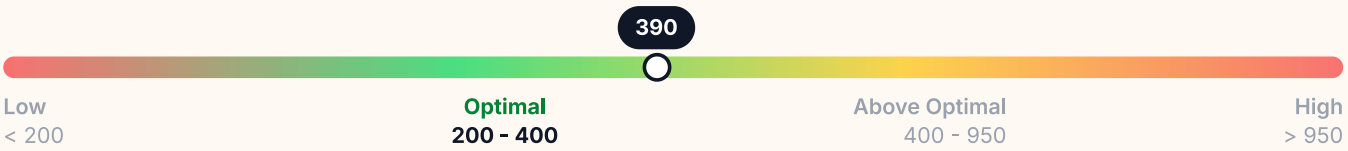
Absolute Lymphocytes

1950.00 cells/uL



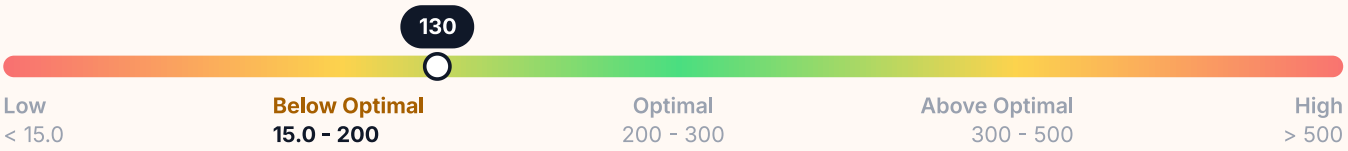
Absolute Monocytes

390.00 cells/uL



Absolute Eosinophils

130.00 cells/uL



Absolute Basophils

10.00 cells/uL

Neutrophils

52.30 %

Low	Below Optimal	Optimal	Above Optimal	High
< 38.0	38.0 - 50.0	**50.0 - 60.0**	60.0 - 74.0	> 74.0

Lymphocytes

37.50 %

Low	Below Optimal	Optimal	Above Optimal	High
< 14.0	14.0 - 30.0	30.0 - 35.0	**35.0 - 46.0**	> 46.0

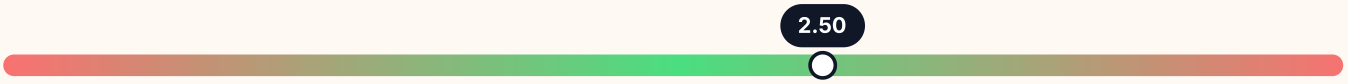
Monocytes

7.50 %

Low	Optimal	Above Optimal	High
< 4.00	4.00 - 7.00	**7.00 - 13.0**	> 13.0

Eosinophils

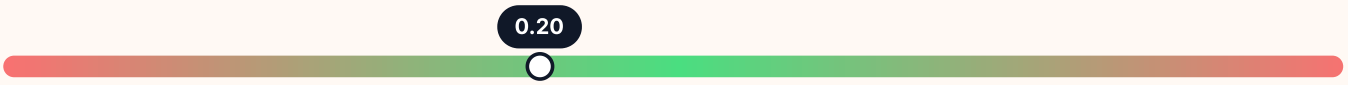
2.50 %



Low	Optimal	High
< 0.00	**0.00 - 3.00**	> 3.00

Basophils

0.20 %

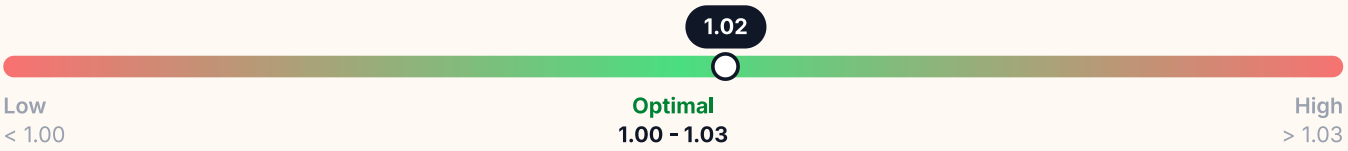


Low	Optimal	High
< 0.00	**0.00 - 1.00**	> 1.00

Urine

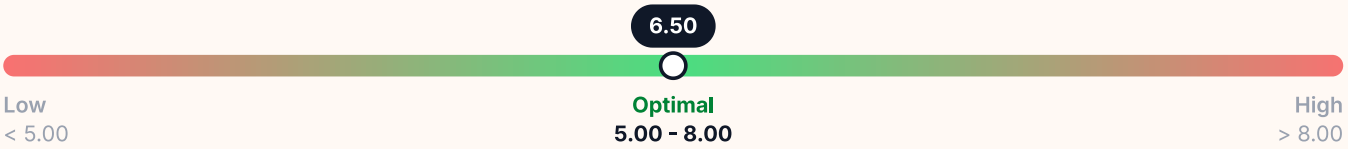
Specific Gravity

1.02



pH

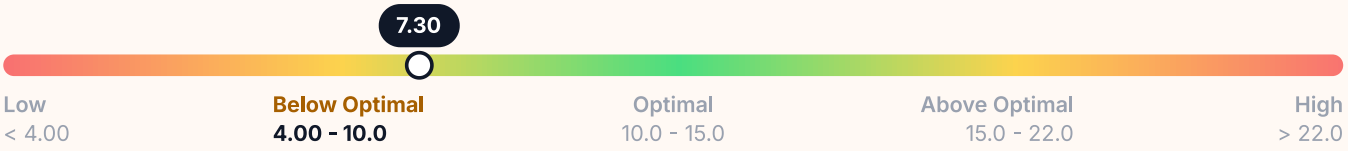
6.50



Hormonal Health

Cortisol, Total

7.30 mcg/dL



DHEA Sulfate

241.00 mcg/dL

Estradiol

35.00 pg/mL

Sex Hormone Binding Globulin

39.00 nmol/L

Low	Below Optimal	Optimal	Above Optimal	High
< 22.0	**22.0 - 40.0**	40.0 - 46.0	46.0 - 77.0	> 77.0

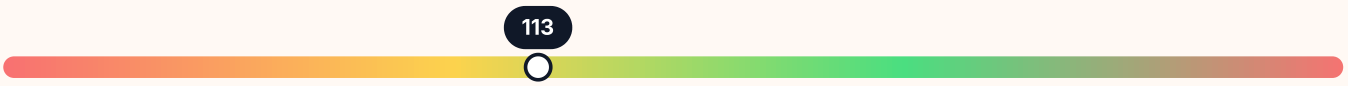
Testosterone, Total, MS

689.00 ng/dL

Low	Below Optimal	Optimal	High
< 250	**250 - 700**	700 - 1100	> 1100

Testosterone, Free

113.40 pg/mL



Low	Below Optimal	Optimal	High
< 30.0	**30.0 - 135**	170 - 135	> 135

HORMONES

FSH

2.90 mIU/mL

No range data available

LH

6.30 mIU/mL

No range data available

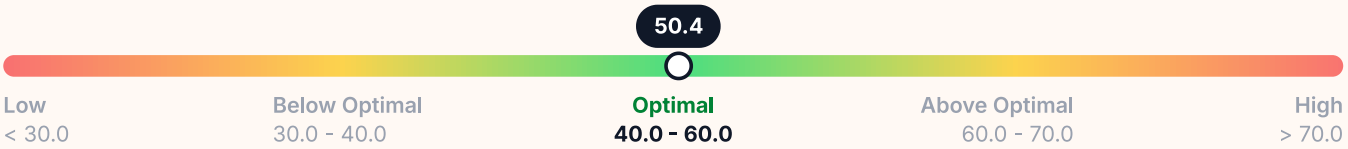
Prolactin

8.90 ng/mL

No range data available

% Testosterone Bioavailable

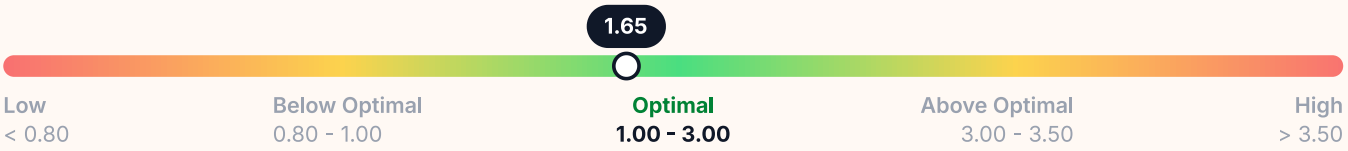
50.42 %



Low	Below Optimal	Optimal	Above Optimal	High
< 30.0	30.0 - 40.0	**40.0 - 60.0**	60.0 - 70.0	> 70.0

% Testosterone Free

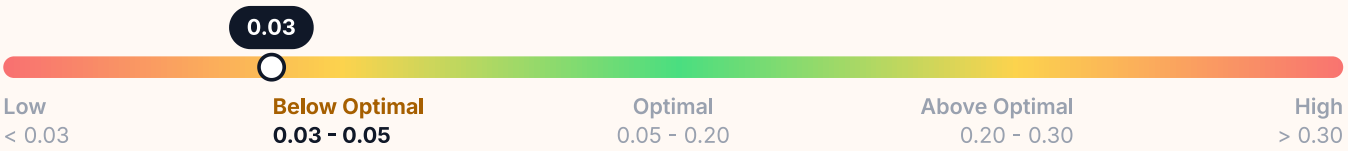
1.65 %



Low	Below Optimal	Optimal	Above Optimal	High
< 0.80	0.80 - 1.00	**1.00 - 3.00**	3.00 - 3.50	> 3.50

Cortisol:DHEA-S Ratio

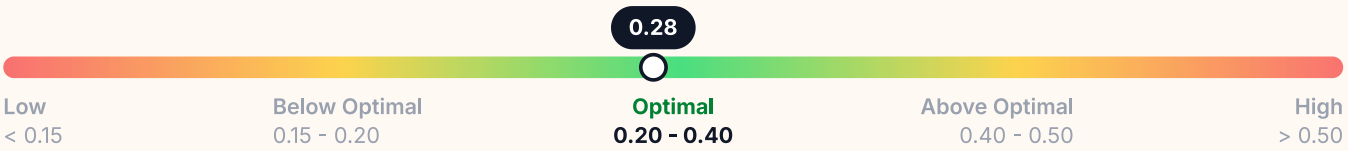
0.03 ratio



Low	Below Optimal	Optimal	Above Optimal	High
< 0.03	**0.03 - 0.05**	0.05 - 0.20	0.20 - 0.30	> 0.30

Free T3:Free T4 Ratio

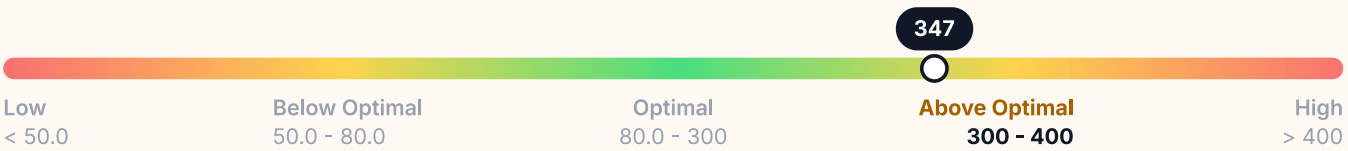
0.28 ratio



Low	Below Optimal	Optimal	Above Optimal	High
< 0.15	0.15 - 0.20	**0.20 - 0.40**	0.40 - 0.50	> 0.50

Testosterone Bioavailable

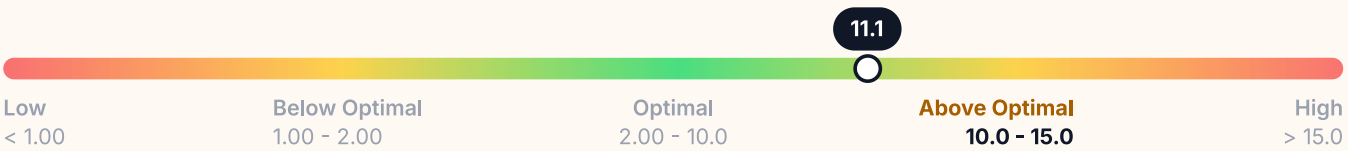
347.41 ng/dL



Low	Below Optimal	Optimal	Above Optimal	High
< 50.0	50.0 - 80.0	80.0 - 300	**300 - 400**	> 400

Testosterone/APOB Ratio

11.11 ratio



Low	Below Optimal	Optimal	Above Optimal	High
< 1.00	1.00 - 2.00	2.00 - 10.0	**10.0 - 15.0**	> 15.0

Testosterone/CRP Ratio

1148.33 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 50.0	50.0 - 100	100 - 500	500 - 1000	**> 1000**

Testosterone/Estradiol (T:E2)

19.69 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 5.00	5.00 - 10.0	**10.0 - 40.0**	40.0 - 50.0	> 50.0

Cancer Screening

PSA, Total

0.50 ng/mL

Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 2.00**	2.00 - 4.00	> 4.00

MINERALS

Minerals are essential for everything from bone health to energy production and immune function. By measuring minerals in your blood (and, in some cases, inside your cells), we can better understand whether you're getting and using these vital nutrients and support choices that maintain optimal mineral balance.

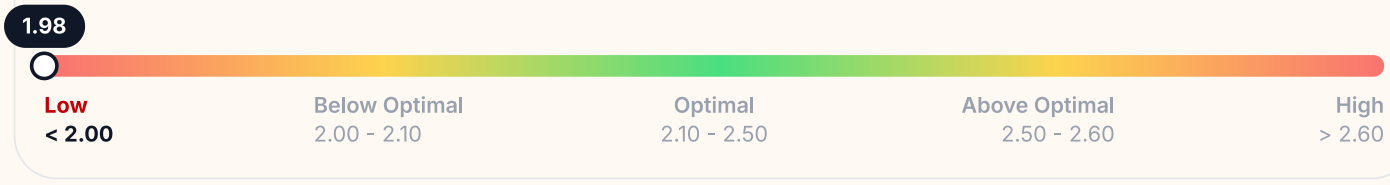
% Saturation

21.16 %

Low	Below Optimal	Optimal	Above Optimal	High
< 15.0	15.0 - 20.0	**20.0 - 45.0**	45.0 - 50.0	> 50.0

Calcium:Albumin Ratio

1.98 ratio



Ferritin-to-Albumin Ratio (Far)

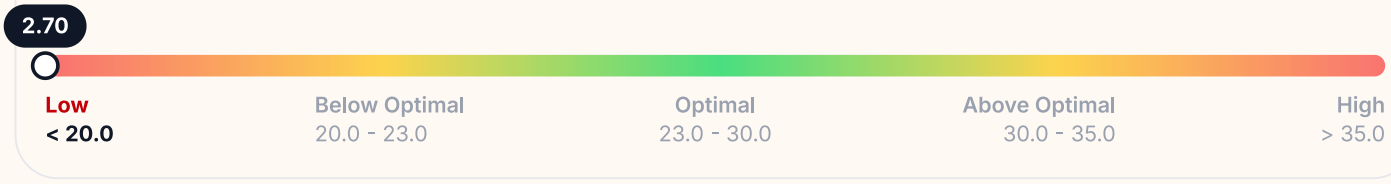
10.78 ratio

LIVER AND GB

Liver and gallbladder biomarkers indicate how well these organs are supporting your overall health. By spotting early signs of stress or imbalance, we can identify support strategies to help maintain healthy function.

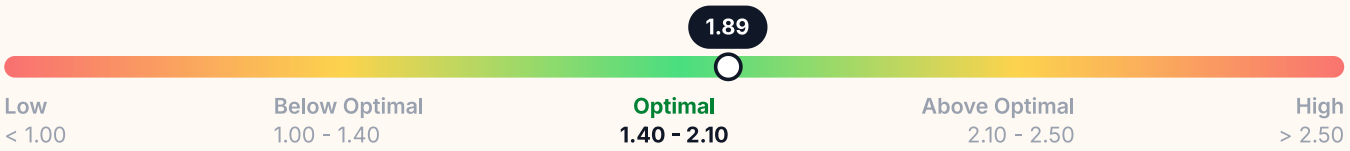
Globulin

2.70 g/L



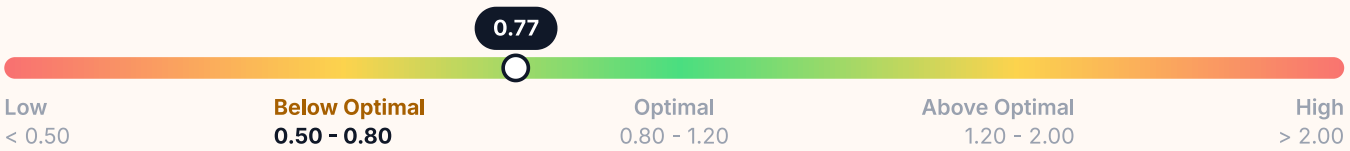
Albumin/Globulin Ratio

1.89 ratio



AST:ALT Ratio

0.77 ratio



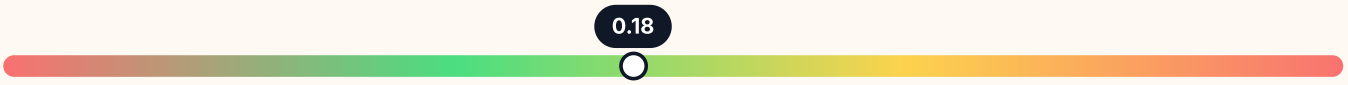
De Ritis Ratio

0.77 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 0.50	**0.50 - 0.80**	0.80 - 1.20	1.20 - 2.00	> 2.00

Bilirubin-to-Albumin Ratio (Bar)

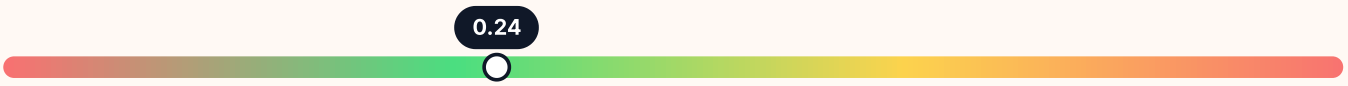
0.18 ratio



Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 0.20**	0.20 - 0.30	> 0.30

GGT/HDL Ratio

0.24 ratio



Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 0.50**	0.50 - 1.00	> 1.00

IMMUNE SYSTEM

CRP/Albumin Ratio (Car)

0.12 ratio

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 0.10	**0.10 - 0.30**	> 0.30

Ferritin/CRP Ratio

91.67 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 10.0	10.0 - 30.0	**30.0 - 200**	200 - 300	> 300

Lymphocyte-to-Monocyte Ratio (Lmr)

5.00 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 2.00	2.00 - 3.00	**3.00 - 7.00**	7.00 - 10.0	> 10.0

Monocyte-to-Lymphocyte Ratio (Mlr)

0.20 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 0.05	0.05 - 0.10	**0.10 - 0.30**	0.30 - 0.50	> 0.50

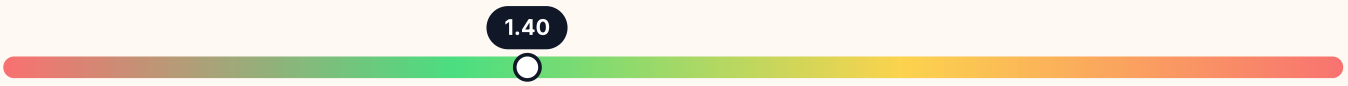
Neutrophil-to-Lymphocyte & Platelet Ratio (Nlpr)

3.79 ratio

Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 4.50**	4.50 - 6.00	> 6.00

Nlr (Neutrophil:Lymphocyte)

1.40 ratio



Low	Optimal	Above Optimal	High
< 1.00	**1.00 - 1.70**	1.70 - 3.00	> 3.00

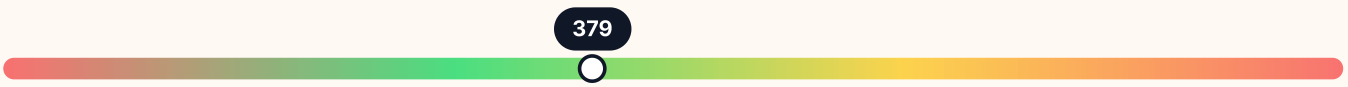
Plr (Platelet:Lymphocyte)

139.49 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 50.0	50.0 - 90.0	**90.0 - 150**	150 - 200	> 200

Systemic Immune-Inflammation Index (Sii)

379.40 ratio



Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 500**	500 - 900	> 900

Systemic Inflammation Response Index (Siri)

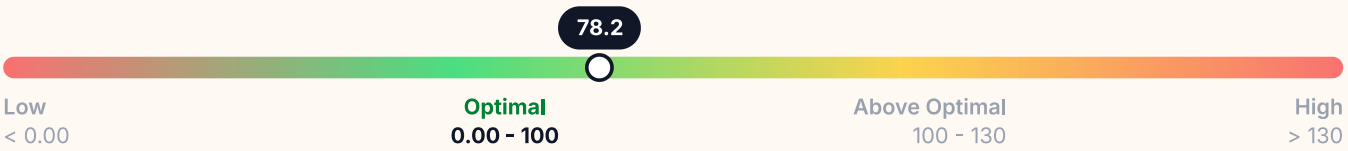
0.54 ratio

LIPIDS

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

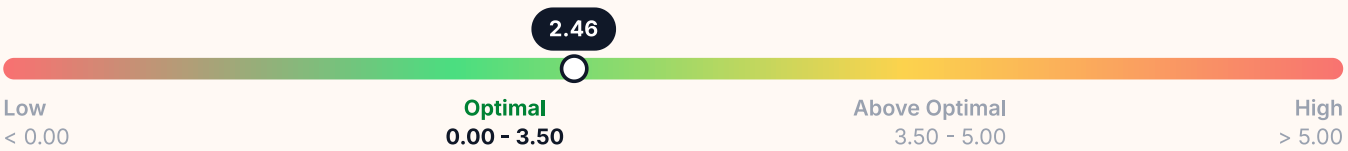
LDL Cholesterol

78.20 mg/dL



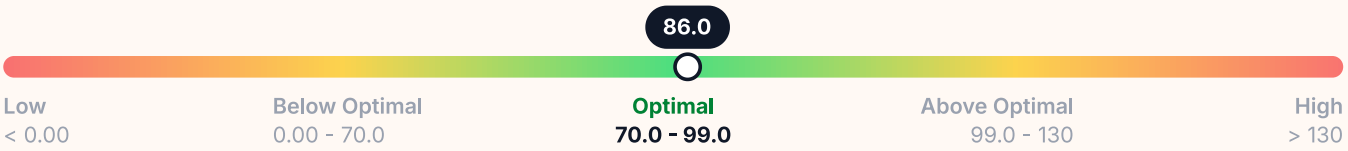
Chol/HDL-C Ratio

2.46 ratio



Non-HDL Cholesterol

86.00 mg/dL

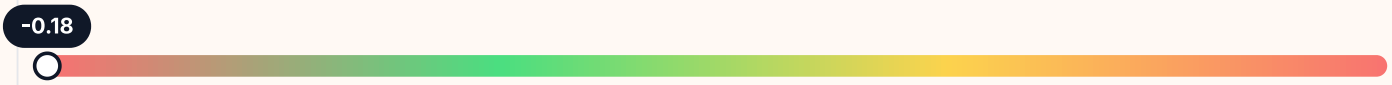


Cholesterol VLDL

7.80 mg/dL

Atherogenic Index (Aip)

-0.18 ratio



Low	Optimal	Above Optimal	High
< 0.00	0.00 - 0.10	0.10 - 0.30	> 0.30

LDL:HDL Ratio

1.27 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 1.50	1.50 - 3.00	3.00 - 3.50	> 3.50

LDL-C/APOB Ratio

1.21 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 1.00	1.00 - 1.20	1.20 - 1.60	1.60 - 1.80	> 1.80

Non-HDL/Total Cholesterol Ratio

0.59 ratio

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 0.70	0.70 - 0.80	> 0.80

Total Cholesterol/HDL Ratio

2.46 ratio

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 3.50	3.50 - 5.00	> 5.00

Triglyceride:HDL Ratio

0.66 ratio

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 2.00	2.00 - 3.50	> 3.50

METABOLIC

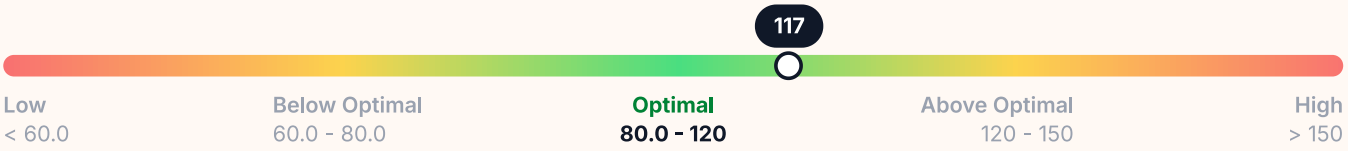
Metabolic biomarkers provide key insights into how your body manages energy, muscle function, and electrolyte balance. By spotting early changes in these biomarkers, we can develop support strategies to help keep your metabolism running smoothly.

A1c–glucose Discordance

0.40 %

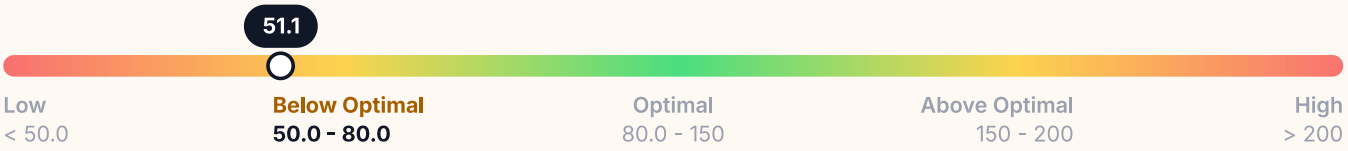
HOMA2-%b

117.33 %



HOMA2-%s

51.14 %

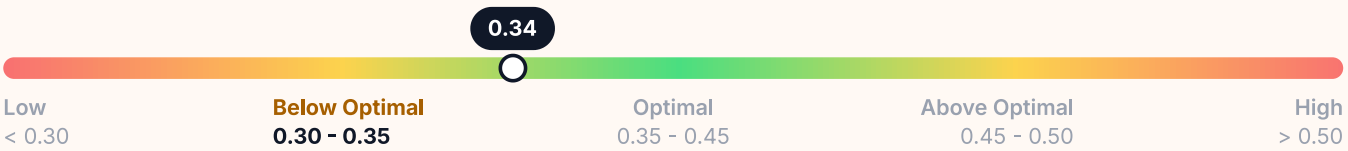


HOMA2-Ir

1.96 ratio

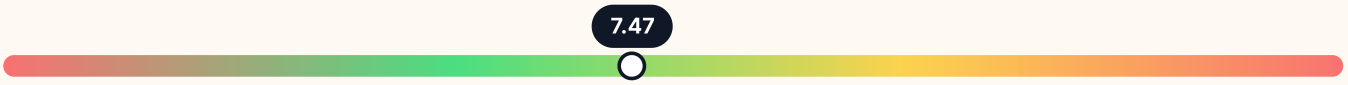
Quicki

0.34 ratio



Tyg Index

7.47 ratio



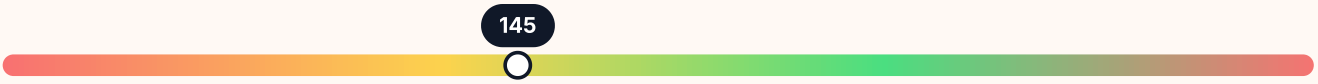
Low	Optimal	Above Optimal	High
< 0.00	**0.00 - 8.50**	8.50 - 9.00	> 9.00

The out of optimal range report shows biomarkers that are outside the optimal range and provides context for why a biomarker might be elevated or decreased.

Heart Health

Cholesterol, Total

145.00 mg/dL



Low	Below Optimal	Optimal	High
< 125	**125 - 160**	160 - 199	> 199

Total cholesterol measures the combined amount of low-density lipoprotein (LDL), high-density lipoprotein (HDL), and triglycerides in the blood. When total cholesterol is below optimal levels, it may indicate a deficiency in essential lipids necessary for various bodily functions, including hormone production and cell membrane integrity.

Triglycerides

39.00 mg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	**0.00 - 70.0**	70.0 - 80.0	80.0 - 150	> 150

Triglycerides are a type of fat found in your blood, and they serve as an important energy source for the body. When triglyceride levels are below optimal, it may indicate that the body's energy reserves are lower than usual, which can be due to various physiological factors.

LDL-Cholesterol

75.00 mg/dL (calc)

Low	Below Optimal	Optimal	High
< 0.00	**0.00 - 80.0**	80.0 - 100.0	> 100.0

Low-density lipoprotein (LDL) cholesterol is often referred to as 'bad' cholesterol because high levels can lead to plaque buildup in arteries and result in heart disease. When LDL cholesterol is at a below optimal level, it means that the concentration of LDL particles in the blood is lower than typically recommended for cardiovascular health.

Chol/Hdlc Ratio

2.50 calc

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 2.28	**2.28 - 3.50**	> 3.50

The Chol/HDL-C Ratio is a measure of the balance between total cholesterol and high-density lipoprotein cholesterol (HDL-C) in the blood. An 'above_optimal' level indicates a higher proportion of total cholesterol relative to HDL-C, which may suggest an imbalance in lipid metabolism.

Lipoprotein (A)

26.00 nmol/L

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 18.0	**18.0 - 75.0**	> 75.0

Lipoprotein (A), or Lp(a), is a type of lipoprotein that carries cholesterol in the blood. When Lp(a) levels are above optimal, it suggests an increased concentration of this lipoprotein, which may contribute to the buildup of cholesterol in the arteries.

Inflammation & Immunity

hs-CRP

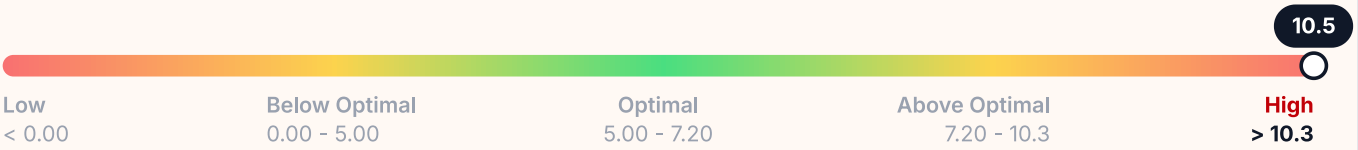
0.60 mg/L

Low	Optimal	Above Optimal	High
< 0.00	0.00 - 0.55	**0.55 - 1.00**	> 1.00

High-sensitivity C-reactive protein (Hs CRP) is a biomarker that measures low levels of inflammation in the body. When Hs CRP is at an 'above optimal' level, it suggests a heightened state of inflammation, which may not be immediately symptomatic but indicates that the body is responding to some form of stress or injury. This level is higher than normal but not yet at a high-risk threshold.

Homocysteine

10.50 umol/L

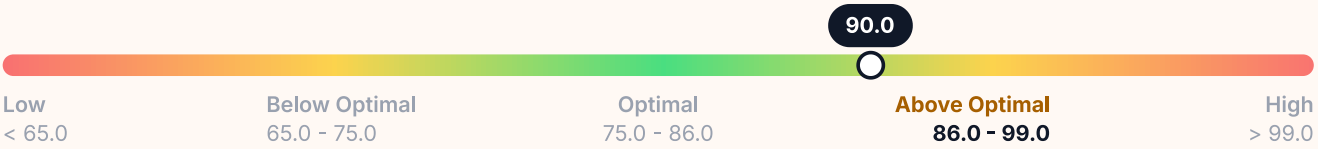


Homocysteine is an amino acid in the blood that is typically broken down by vitamins B6, B12, and folate. When homocysteine levels are high, it may indicate that the body is not processing this amino acid efficiently, which can be due to nutritional deficiencies or other metabolic issues.

Kidney Health

Glucose

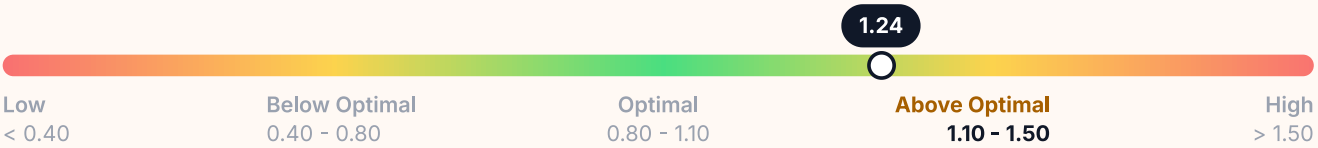
90.00 mg/dL



Glucose is a simple sugar that serves as a primary energy source for the body's cells. When glucose levels are above optimal, it indicates that there is more glucose in the bloodstream than is typically considered healthy, which may suggest an imbalance in how the body is processing sugar.

Creatinine

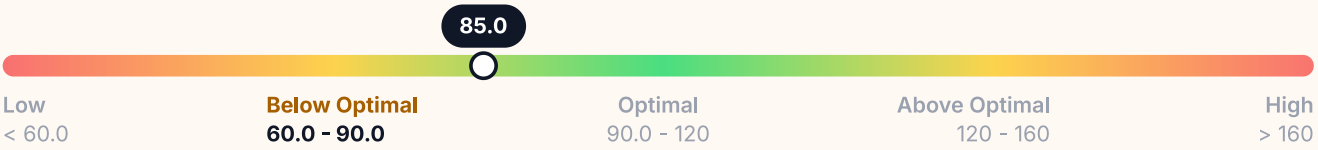
1.24 mg/dL



Creatinine is a waste product generated from muscle metabolism and is filtered out of the blood by the kidneys. When creatinine levels are above optimal, it may indicate that the kidneys are not functioning efficiently, leading to an accumulation of creatinine in the blood.

eGFR

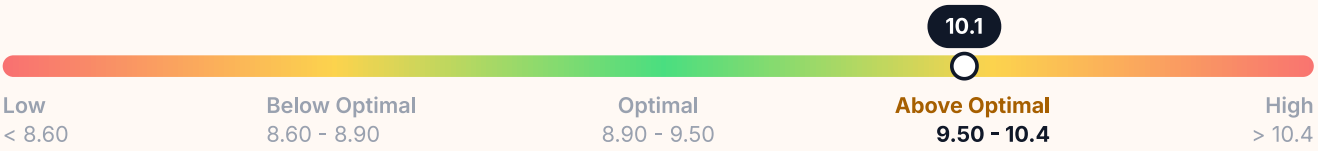
85.00 mL/min/1.73m2



The estimated glomerular filtration rate (eGFR) is a measure of how well your kidneys are filtering blood. A below_optimal level of eGFR indicates that the kidneys are not functioning at their full capacity, which may suggest decreased kidney function.

Calcium

10.10 mg/dL

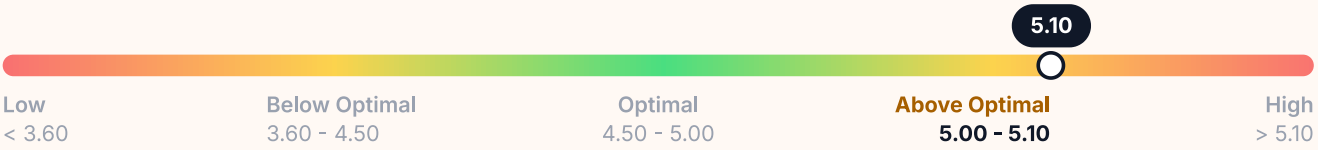


Calcium is a vital mineral in the body, primarily stored in bones and teeth, and plays a crucial role in muscle function, nerve signaling, and blood clotting. When calcium levels are above optimal, it may indicate an imbalance in calcium regulation, potentially affecting various physiological processes.

Liver Health

Albumin

5.10 g/dL

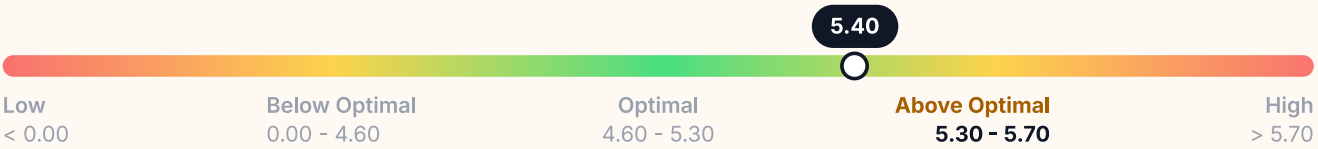


Albumin is a protein produced by the liver, playing a crucial role in maintaining oncotic pressure and transporting hormones, vitamins, and drugs throughout the body. When albumin levels are above optimal, it may indicate dehydration or an excessive protein intake, as the concentration of albumin in the blood increases when fluid levels decrease or protein consumption is high.

Energy & Metabolism

Hemoglobin A1c

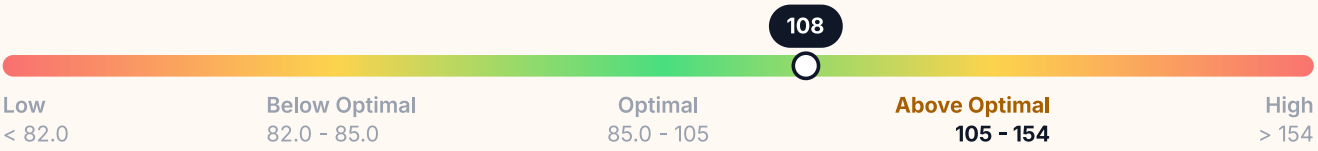
5.40 %



Hemoglobin A1C is a biomarker that reflects the average blood glucose levels over the past two to three months by measuring the percentage of glycated hemoglobin in the blood. An 'above_optimal' level suggests that blood glucose levels have been consistently higher than normal, indicating potential issues with glucose metabolism.

Eag (Mg/Dl)

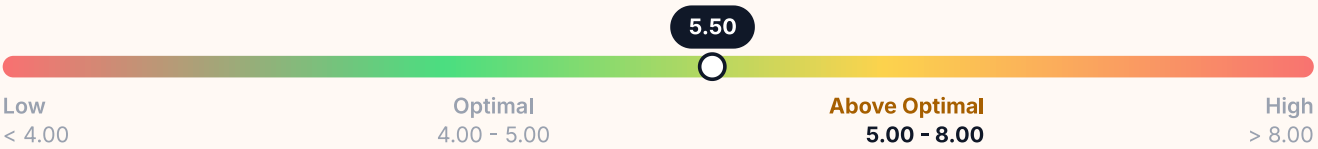
108.00 mg/dL



Estimated Average Glucose (eAG) is a biomarker that provides an average level of blood glucose over a period of time, typically reflecting the same time frame as the HbA1c test. When eAG is at an 'above_optimal' level, it suggests that blood glucose levels have been consistently higher than the recommended range, indicating potential issues with glucose metabolism.

Uric Acid

5.50 mg/dL



Uric acid is a waste product formed from the breakdown of purines, which are found in certain foods and drinks. When uric acid levels are above optimal, it indicates that the body may be producing too much uric acid or not excreting enough through the kidneys. This imbalance can lead to the accumulation of uric acid in the blood.

Insulin

8.80 uIU/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 0.00	0.00 - 2.00	2.00 - 5.00	**5.00 - 18.4**	> 18.4

Insulin is a hormone produced by the pancreas that helps regulate blood glucose levels by facilitating the uptake of glucose into cells. When insulin levels are above optimal, it may indicate that the body is producing more insulin than necessary to maintain normal blood sugar levels, often as a compensatory response to insulin resistance.

Nutrients, Vitamins & Minerals

Vitamin D, 25-OH, Total

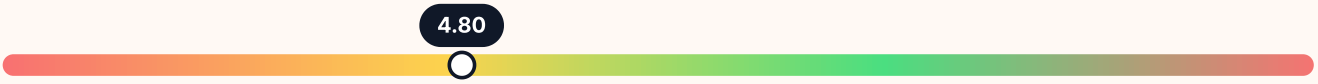
9.00 ng/mL

Low	Below Optimal	Optimal	Above Optimal	High
< 30.0	30.0 - 50.0	50.0 - 90.0	90.0 - 100	> 100

Vitamin D, 25-Oh, Total is a measure of the total concentration of vitamin D in the blood, reflecting both dietary intake and skin synthesis. A low level of this biomarker indicates insufficient vitamin D, which is crucial for maintaining bone health and supporting immune function.

Magnesium, RBC

4.80 mg/dL



Low	Below Optimal	Optimal	High
< 4.00	**4.00 - 6.00**	6.00 - 6.80	> 6.80

The 'Magnesium, Rbc' test measures the level of magnesium within red blood cells, providing insight into the body's intracellular magnesium status. When this level is below optimal, it suggests that there may be insufficient magnesium available within cells for critical physiological functions, despite normal serum magnesium levels.

Iron, Total

80.00 mcg/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 40.0	**40.0 - 85.0**	85.0 - 130	130 - 190	> 190

Total iron measures the amount of iron circulating in the blood, which is crucial for producing hemoglobin and supporting oxygen transport throughout the body. When total iron levels are below optimal, it may indicate insufficient iron availability for these critical physiological processes.

Iron Binding Capacity

378.00 mcg/dL (calc)

Low	Below Optimal	Optimal	Above Optimal	High
< 40.0	40.0 - 85.0	85.0 - 130	130 - 190	**> 190**

Iron Binding Capacity (IBC) measures the blood's capacity to bind iron with transferrin, a protein that transports iron. An 'alarm_high' level indicates that there is a higher than normal capacity for iron binding, often suggesting that there is insufficient iron available in the bloodstream to saturate transferrin. This condition is typically reflective of the body's response to low iron stores.

% Saturation

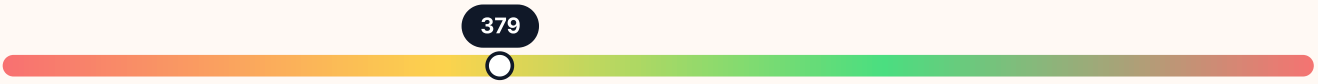
21.00 % (calc)

Low	Below Optimal	Optimal	Above Optimal	High
< 20.0	**20.0 - 24.0**	24.0 - 35.0	35.0 - 48.0	> 48.0

% Saturation is a biomarker that measures the proportion of transferrin, a blood protein, that is bound with iron. When % Saturation is below optimal levels, it may indicate that there is insufficient iron available for critical bodily functions, such as oxygen transport and DNA synthesis.

Vitamin B12

379.00 pg/mL

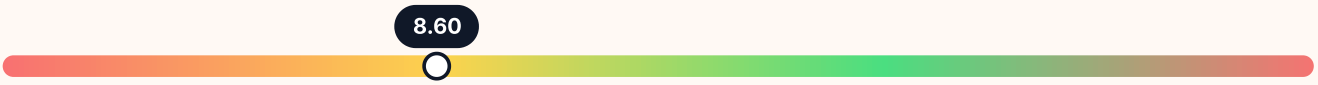


Low	Below Optimal	Optimal	High
< 200	**200 - 545**	545 - 1100	> 1100

Vitamin B12 is a crucial water-soluble vitamin that plays a vital role in red blood cell formation, neurological function, and DNA synthesis. When levels are below optimal, it may indicate insufficient availability for these critical physiological processes, potentially leading to suboptimal cellular and neurological health.

Folate, Serum

8.60 ng/mL



Low	Below Optimal	Optimal	High
< 5.50	**5.50 - 15.0**	15.0 - 27.0	> 27.0

Folate, also known as vitamin B9, is a water-soluble vitamin crucial for DNA synthesis, repair, and methylation, as well as red blood cell production. When serum folate levels are below optimal, it indicates a potential deficiency in the body's ability to perform these critical functions efficiently, which may affect overall cellular health.

Blood Health

Red Blood Cell Count

5.94 Million/uL

Low	Below Optimal	Optimal	High
< 3.80	3.80 - 4.80	4.80 - 5.10	**> 5.10**

Red Blood Cell Count (RBC) measures the number of red blood cells in a given volume of blood. When RBC is at an 'alarm_high' level, it indicates an abnormally high concentration of red blood cells, a condition known as erythrocytosis or polycythemia. This can affect the blood's viscosity and its ability to transport oxygen efficiently.

Hemoglobin

16.00 g/dL

Low	Below Optimal	Optimal	Above Optimal	High
< 13.2	13.2 - 14.0	14.0 - 15.0	**15.0 - 17.1**	> 17.1

Hemoglobin is a protein in red blood cells responsible for carrying oxygen throughout the body. When hemoglobin levels are above optimal, it may indicate an increased capacity for oxygen transport, which can be due to various physiological or pathological conditions.

Hematocrit

48.50 %

Low	Below Optimal	Optimal	Above Optimal	High
< 38.0	38.0 - 40.0	40.0 - 48.0	**48.0 - 50.0**	> 50.0

Hematocrit measures the proportion of red blood cells in your blood, which is crucial for oxygen transport throughout the body. When hematocrit levels are above optimal, it indicates a higher concentration of red blood cells, which can thicken the blood and affect circulation.

MCV

81.60 fL

Low	Below Optimal	Optimal	Above Optimal	High
< 80.0	**80.0 - 82.0**	82.0 - 89.9	89.9 - 100	> 100

Mean Corpuscular Volume (MCV) is a measure of the average size of red blood cells. When MCV is at a below optimal level, it typically indicates that the red blood cells are smaller than normal, a condition known as microcytosis. This can affect the cells' ability to carry oxygen efficiently throughout the body.

MCH

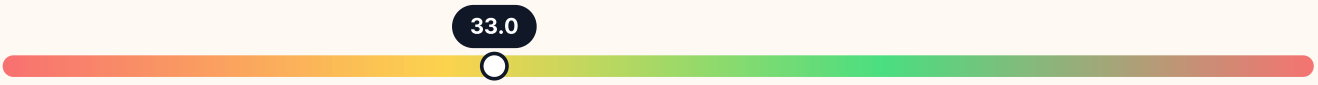
26.90 pg

Low	Below Optimal	Optimal	Above Optimal	High
< 27.0	27.0 - 28.0	28.0 - 31.9	31.9 - 33.0	> 33.0

Mean corpuscular hemoglobin (MCH) measures the average amount of hemoglobin within a single red blood cell. When MCH levels are low, it indicates that red blood cells have less hemoglobin than normal, which can affect their ability to transport oxygen efficiently throughout the body.

MCHC

33.00 g/dL

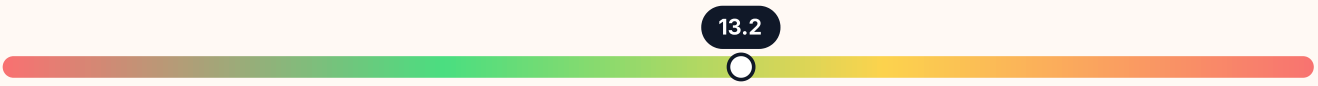


Low	Below Optimal	Optimal	High
< 32.0	**32.0 - 34.0**	34.0 - 36.0	> 36.0

Mean Corpuscular Hemoglobin Concentration (MCHC) measures the average concentration of hemoglobin in a given volume of red blood cells. When MCHC is below optimal levels, it indicates that the red blood cells have a lower than normal concentration of hemoglobin, which can affect their ability to transport oxygen efficiently throughout the body.

RDW

13.20 %

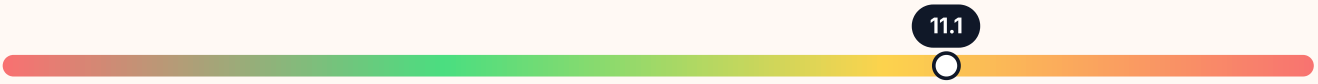


Low	Optimal	Above Optimal	High
< 11.0	11.0 - 12.6	**12.6 - 15.0**	> 15.0

Red cell distribution width (RDW) is a measure of the variation in size of your red blood cells. An 'above optimal' RDW level indicates a higher degree of variability in red blood cell size, which can reflect underlying issues with red blood cell production or lifespan. This variability may suggest that the body is responding to a condition affecting red blood cell turnover or production.

MPV

11.10 fL



Low	Optimal	Above Optimal	High
< 7.50	7.50 - 8.20	**8.20 - 11.5**	> 11.5

Mean Platelet Volume (MPV) measures the average size of platelets in the blood. An 'above optimal' MPV level indicates that the platelets are larger than average, which may reflect increased platelet production or activation in the body.

Absolute Eosinophils

130.00 cells/uL

Low	Below Optimal	Optimal	Above Optimal	High
< 15.0	**15.0 - 200**	200 - 300	300 - 500	> 500

Absolute eosinophils measure the number of eosinophil cells in the blood, which are a type of white blood cell involved in the body's immune response, particularly in combating parasitic infections and in allergic reactions. When absolute eosinophil levels are below optimal, it may indicate a reduced capacity to respond to certain types of infections or allergic stimuli.

Lymphocytes

37.50 %

Low	Below Optimal	Optimal	Above Optimal	High
< 14.0	14.0 - 30.0	30.0 - 35.0	**35.0 - 46.0**	> 46.0

Lymphocytes are a type of white blood cell crucial for the immune system, responsible for fighting infections and diseases. An 'above_optimal' level of lymphocytes, known as lymphocytosis, indicates an increased production or reduced clearance of these cells, which can be a response to various physiological or pathological conditions.

Monocytes

7.50 %

Monocytes are a type of white blood cell that play a crucial role in the immune system by helping to fight infections and remove dead or damaged tissue. When monocyte levels are above optimal, it may indicate an ongoing immune response or inflammation in the body. Elevated monocytes can suggest that the body is responding to a chronic inflammatory condition or an infection.

Hormonal Health

Cortisol, Total

7.30 mcg/dL

Cortisol, often referred to as the 'stress hormone,' is produced by the adrenal glands and plays a crucial role in regulating metabolism, immune response, and stress. A below optimal level of total cortisol may indicate insufficient production by the adrenal glands, which can affect the body's ability to respond to stress and maintain homeostasis.

DHEA Sulfate

241.00 mcg/dL

Dehydroepiandrosterone sulfate (DHEA-S) is a hormone produced by the adrenal glands and serves as a precursor to male and female sex hormones. A low level of DHEA-S may indicate reduced adrenal function or a decrease in the body's ability to produce this hormone, which can affect the balance of other hormones in the body.

Sex Hormone Binding Globulin

39.00 nmol/L

Low	Below Optimal	Optimal	Above Optimal	High
< 22.0	**22.0 - 40.0**	40.0 - 46.0	46.0 - 77.0	> 77.0

Sex Hormone Binding Globulin (SHBG) is a protein that binds to sex hormones, such as testosterone and estrogen, regulating their bioavailability in the body. When SHBG levels are below optimal, it may indicate an increased availability of these hormones, which can affect various physiological processes.

Testosterone, Total, MS

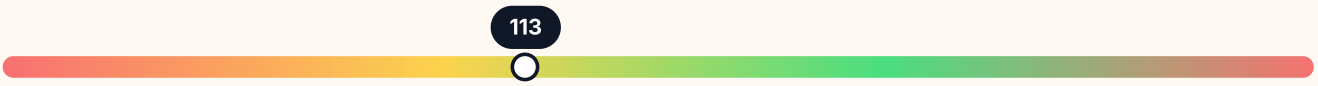
689.00 ng/dL

Low	Below Optimal	Optimal	High
< 250	**250 - 700**	700 - 1100	> 1100

Testosterone, Total, Ms measures the total amount of testosterone in the blood, including both free and protein-bound testosterone. When levels are below optimal, it indicates a deficiency in this key hormone, which plays a crucial role in various bodily functions, including muscle mass maintenance, bone density, and sexual health.

Testosterone, Free

113.40 pg/mL



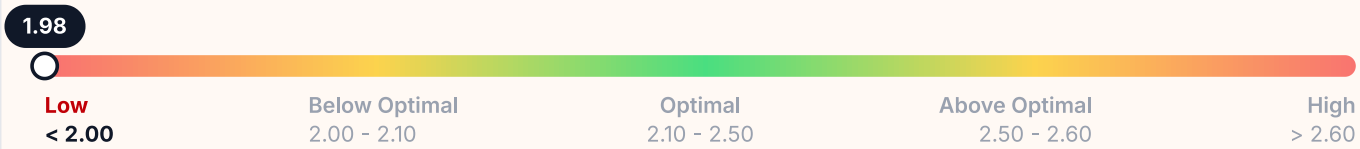
Low	Below Optimal	Optimal	High
< 30.0	**30.0 - 135**	170 - 135	> 135

Testosterone, Free measures the amount of testosterone not bound to proteins in the blood, which is available to tissues. When levels are below optimal, it may indicate reduced androgenic activity, affecting various physiological functions such as muscle mass, bone density, and mood regulation.

MINERALS

Calcium:Albumin Ratio

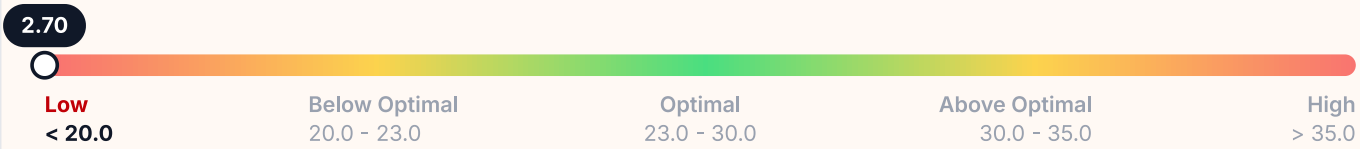
1.98 ratio



LIVER AND GB

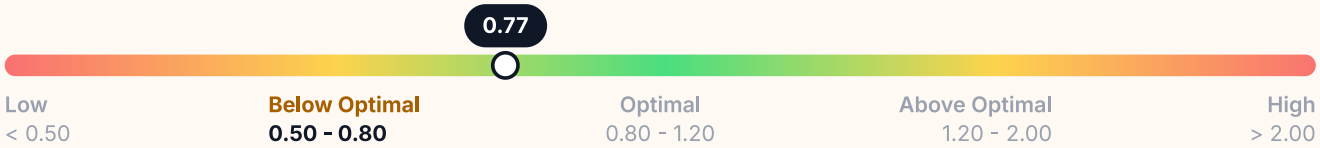
Globulin

2.70 g/L



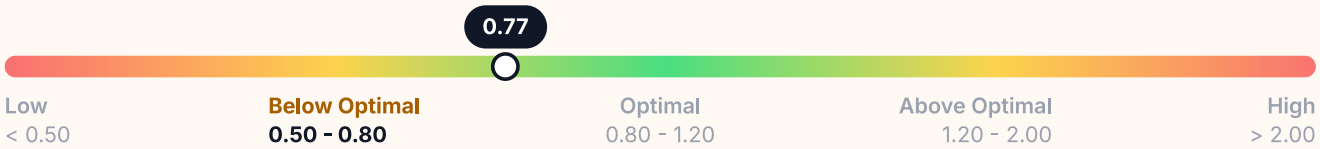
AST:ALT Ratio

0.77 ratio



De Ritis Ratio

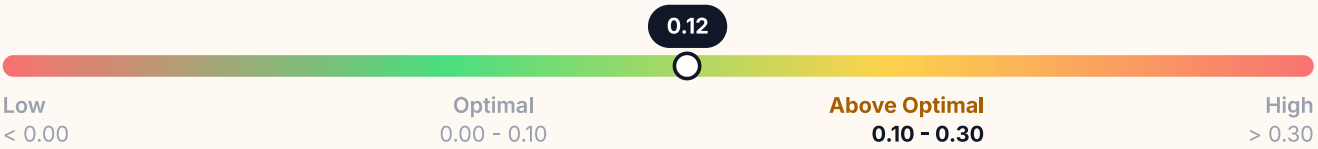
0.77 ratio



IMMUNE SYSTEM

CRP/Albumin Ratio (Car)

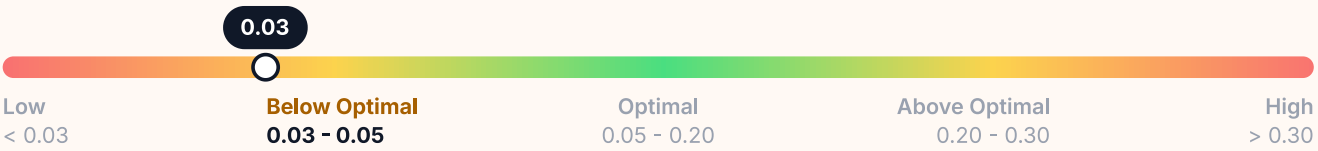
0.12 ratio



HORMONES

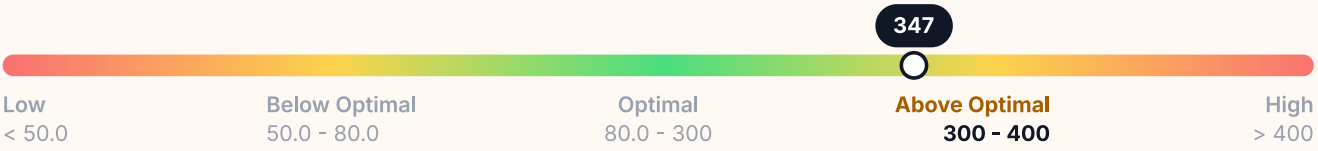
Cortisol:DHEA-S Ratio

0.03 ratio



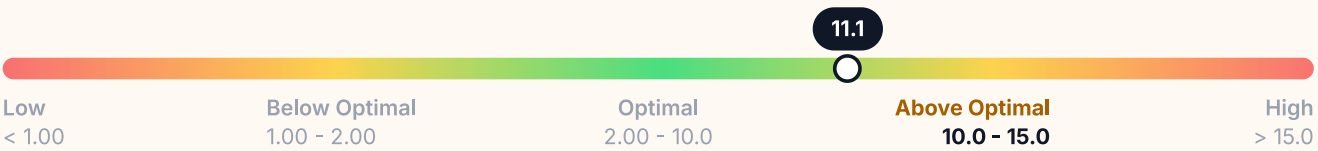
Testosterone Bioavailable

347.41 ng/dL



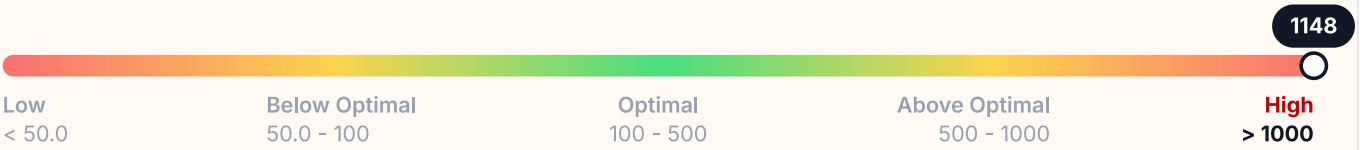
Testosterone/APOB Ratio

11.11 ratio



Testosterone/CRP Ratio

1148.33 ratio



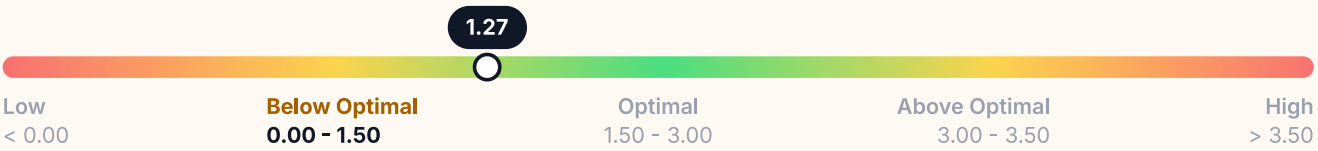
LIPIDS

Atherogenic Index (Aip)

-0.18 ratio

LDL:HDL Ratio

1.27 ratio



METABOLIC

A1c–glucose Discordance

0.40 %

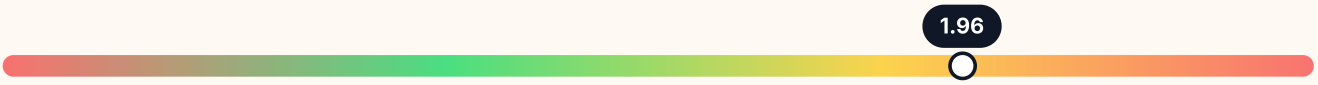
HOMA2-%s

51.14 %

Low	Below Optimal	Optimal	Above Optimal	High
< 50.0	**50.0 - 80.0**	80.0 - 150	150 - 200	> 200

HOMA2-Ir

1.96 ratio



Low	Optimal	Above Optimal	High
< 0.00	0.00 - 1.40	**1.40 - 2.00**	> 2.00

Quicki

0.34 ratio

Low	Below Optimal	Optimal	Above Optimal	High
< 0.30	**0.30 - 0.35**	0.35 - 0.45	0.45 - 0.50	> 0.50

This report helps you visualize change in your biomarker results. Trend icons indicate whether results are moving in the right direction and toward optimal. Even if a result is outside the optimal or standard range, an improvement trend can indicate progress.

A comparison of the total number of biomarkers by optimal range

All 127 | Low 3 | Below Optimal 16 | Optimal 73 | Above Optimal 17 | High 3

KIDNEY

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Creatinine, Random Urine	174.00 —	*No range data available*	*No range data available*	mg/dL
Albumin/Creatinine Ratio, Random Urine	2.00 —	*No range data available*	*No range data available*	mg/g creat
BUN/Creatinine Ratio	12.10 —	10.00 - 16.00	6.00 - 22.00	mg/mg{creat}
Anion Gap	12.50 —	7.00 - 14.00	5.00 - 17.00	mmol/L
Sodium:Potassium Ratio	30.89 —	27.00 - 32.00	25.00 - 35.00	ratio

PROTEINS

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Albumin, Urine	0.40 —	*No range data available*	*No range data available*	mg/dL

Heart Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Cholesterol, Total	145.00 ↓	160.00 - 199.00	125.00 - 199.00	mg/dL

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
HDL Cholesterol	59.00 —	55.00 - 93.00	50.00 - 100.00	mg/dL
Triglycerides	39.00 ↓	70.00 - 80.00	0.00 - 149.99	mg/dL
LDL-Cholesterol	75.00 ↓	80.00 - 99.99	0.00 - 99.99	mg/dL (calc)
Chol/Hdlc Ratio	2.50 ↑	0.00 - 2.28	0.00 - 3.50	calc
Non HDL Cholesterol	86.00 —	70.00 - 99.00	0.00 - 129.99	mg/dL (calc)
Lipoprotein (A)	26.00 ↑	0.00 - 18.00	0.00 - 74.99	nmol/L
Apolipoprotein B	62.00 —	52.00 - 80.00	0.00 - 90.00	mg/dL

Inflammation & Immunity

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
hs-CRP	0.60 ↑	0.00 - 0.55	0.00 - 1.00	mg/L
Homocysteine	10.50 ↑	5.00 - 7.20	0.00 - 10.30	umol/L
Sed Rate by Modified Westergren	2.00 —	0.00 - 5.00	0.00 - 20.00	mm/h

Kidney Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Glucose	90.00 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Urea Nitrogen (BUN)	15.00 —	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	1.24 ↑	0.80 - 1.10	0.40 - 1.50	mg/dL
eGFR	85.00 ↓	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
Sodium	139.00 —	137.00 - 142.00	135.00 - 146.00	mmol/L

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Potassium	4.50 —	4.00 - 5.00	3.50 - 5.30	mmol/L
Chloride	102.00 —	100.00 - 106.00	98.00 - 110.00	mmol/L
Carbon Dioxide	29.00 —	25.00 - 30.00	19.00 - 30.00	mmol/L
Calcium	10.10 ↑	8.90 - 9.50	8.60 - 10.40	mg/dL
Protein, Total	7.80 —	6.90 - 8.10	6.10 - 8.10	g/dL

Liver Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Albumin	5.10 ↑	4.50 - 5.00	3.60 - 5.10	g/dL
Globulin	2.70 —	2.40 - 2.80	1.90 - 3.70	g/dL (calc)
Albumin/Globulin Ratio	1.90 —	1.40 - 2.10	1.00 - 2.50	(calc)
Bilirubin, Total	0.90 —	0.50 - 0.90	0.20 - 1.20	mg/dL
Alkaline Phosphatase	91.00 —	45.00 - 100.00	31.00 - 125.00	U/L
AST	17.00 —	10.00 - 26.00	10.00 - 35.00	U/L
ALT	22.00 —	10.00 - 26.00	9.00 - 46.00	U/L
GGT	14.00 —	10.00 - 17.00	3.00 - 50.00	U/L

Energy & Metabolism

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Hemoglobin A1c	5.40 ↑	4.60 - 5.30	0.00 - 5.70	%
Eag (Mg/Dl)	108.00 ↑	85.00 - 105.00	82.00 - 154.00	mg/dL

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Eag (Mmol/L)	6.00 —	*No range data available*	*No range data available*	mmol/L
Uric Acid	5.50 ↑	3.50 - 5.00	4.00 - 8.00	mg/dL
Insulin	8.80 ↑	2.00 - 5.00	0.00 - 18.40	uIU/mL

Nutrients, Vitamins & Minerals

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Vitamin D, 25-OH, Total	9.00 ↓	50.00 - 90.00	30.00 - 100.00	ng/mL
Magnesium, RBC	4.80 ↓	6.00 - 6.80	4.00 - 6.80	mg/dL
Iron, Total	80.00 ↓	85.00 - 130.00	40.00 - 190.00	mcg/dL
Iron Binding Capacity	378.00 ↑	85.00 - 130.00	40.00 - 190.00	mcg/dL (calc)
% Saturation	21.00 ↓	24.00 - 35.00	20.00 - 48.00	% (calc)
Ferritin	55.00 —	45.00 - 79.00	16.00 - 232.00	ng/mL
Vitamin B12	379.00 ↓	545.00 - 1100.00	200.00 - 1100.00	pg/mL
Folate, Serum	8.60 ↓	15.00 - 27.00	5.50 - 27.00	ng/mL

VITAMINS

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Vitamin D, 25-OH, D3	9.00 —	*No range data available*	*No range data available*	ng/mL
Vitamin D, 25-OH, D2	<4.0 —	*No range data available*	*No range data available*	ng/mL

Thyroid Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
TSH	1.11 —	1.00 - 2.00	0.40 - 4.50	mIU/L
Free T3 (Triiodothyronine)	3.70 —	3.00 - 4.00	2.00 - 4.40	pg/mL

THYROID

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
T4, Free	1.30 —	*No range data available*	*No range data available*	ng/dL

Blood Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
White Blood Cell Count	5.20 —	3.80 - 6.00	3.80 - 10.80	Thousand/uL
Red Blood Cell Count	5.94 ↑	4.80 - 5.50	3.80 - 5.10	Million/uL
Hemoglobin	16.00 ↑	14.00 - 15.00	13.20 - 17.10	g/dL
Hematocrit	48.50 ↑	40.00 - 48.00	38.00 - 50.00	%
MCV	81.60 ↓	82.00 - 89.90	80.00 - 100.00	fL
MCH	26.90 ↓	28.00 - 31.90	27.00 - 33.00	pg
MCHC	33.00 ↓	34.00 - 36.00	32.00 - 36.00	g/dL
RDW	13.20 ↑	11.00 - 12.60	11.00 - 15.00	%
Platelet Count	272.00 —	190.00 - 300.00	140.00 - 400.00	Thousand/uL
MPV	11.10 ↑	7.50 - 8.20	7.50 - 11.50	fL
Absolute Neutrophils	2720.00 —	1900.00 - 4200.00	1500.00 - 7800.00	cells/uL

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Absolute Lymphocytes	1950.00 —	1440.00 - 2540.00	850.00 - 3900.00	cells/uL
Absolute Monocytes	390.00 —	200.00 - 400.00	200.00 - 950.00	cells/uL
Absolute Eosinophils	130.00 ↓	200.00 - 300.00	15.00 - 500.00	cells/uL
Absolute Basophils	10.00 —	0.00 - 100.00	0.00 - 200.00	cells/uL
Neutrophils	52.30 —	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes	37.50 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes	7.50 ↑	4.00 - 7.00	4.00 - 13.00	%
Eosinophils	2.50 —	0.00 - 3.00	0.00 - 3.00	%
Basophils	0.20 —	0.00 - 1.00	0.00 - 1.00	%

Urine

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Specific Gravity	1.02 —	1.00 - 1.03	1.00 - 1.03	
pH	6.50 —	5.00 - 8.00	5.00 - 8.00	

Hormonal Health

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Cortisol, Total	7.30 ↓	10.00 - 15.00	4.00 - 22.00	mcg/dL
DHEA Sulfate	241.00 ↓	350.00 - 640.00	280.00 - 640.00	mcg/dL
Estradiol	35.00 —	24.00 - 39.00	0.00 - 39.00	pg/mL
Sex Hormone Binding Globulin	39.00 ↓	40.00 - 46.00	22.00 - 77.00	nmol/L

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Testosterone, Total, MS	689.00 ↓	700.00 - 1100.00	250.00 - 1100.00	ng/dL
Testosterone, Free	113.40 ↓	170.00 - 224.00	30.00 - 135.00	pg/mL

HORMONES

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
FSH	2.90 —	*No range data available*	*No range data available*	mIU/mL
LH	6.30 —	*No range data available*	*No range data available*	mIU/mL
Prolactin	8.90 —	*No range data available*	*No range data available*	ng/mL
% Testosterone Bioavailable	50.42 —	40.00 - 60.00	30.00 - 70.00	%
% Testosterone Free	1.65 —	1.00 - 3.00	0.80 - 3.50	%
Cortisol:DHEA-S Ratio	0.03 —	0.05 - 0.20	0.03 - 0.30	ratio
Free T3:Free T4 Ratio	0.28 —	0.20 - 0.40	0.15 - 0.50	ratio
Testosterone Bioavailable	347.41 —	80.00 - 300.00	50.00 - 400.00	ng/dL
Testosterone/APOB Ratio	11.11 —	2.00 - 10.00	1.00 - 15.00	ratio
Testosterone/CRP Ratio	1148.33 —	100.00 - 500.00	50.00 - 1000.00	ratio
Testosterone/Estradiol (T:E2)	19.69 —	10.00 - 40.00	5.00 - 50.00	ratio

Cancer Screening

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
PSA, Total	0.50 —	0.00 - 2.00	0.00 - 4.00	ng/mL

MINERALS

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
% Saturation	21.16 —	20.00 - 45.00	15.00 - 50.00	%
Calcium:Albumin Ratio	1.98 —	2.10 - 2.50	2.00 - 2.60	ratio
Ferritin-to-Albumin Ratio (Far)	10.78 —	10.00 - 30.00	10.00 - 40.00	ratio

LIVER AND GB

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Globulin	2.70 —	23.00 - 30.00	20.00 - 35.00	g/L
Albumin/Globulin Ratio	1.89 —	1.40 - 2.10	1.00 - 2.50	ratio
AST:ALT Ratio	0.77 —	0.80 - 1.20	0.50 - 2.00	ratio
De Ritis Ratio	0.77 —	0.80 - 1.20	0.50 - 2.00	ratio
Bilirubin-to-Albumin Ratio (Bar)	0.18 —	0.00 - 0.20	0.00 - 0.30	ratio
GGT/HDL Ratio	0.24 —	0.00 - 0.50	0.00 - 1.00	ratio

IMMUNE SYSTEM

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
CRP/Albumin Ratio (Car)	0.12 —	0.00 - 0.10	0.00 - 0.30	ratio
Ferritin/CRP Ratio	91.67 —	30.00 - 200.00	10.00 - 300.00	ratio
Lymphocyte-to-Monocyte Ratio (Lmr)	5.00 —	3.00 - 7.00	2.00 - 10.00	ratio
Monocyte-to-Lymphocyte Ratio (Mlr)	0.20 —	0.10 - 0.30	0.05 - 0.50	ratio
Neutrophil-to-Lymphocyte & Platelet Ratio (Nlpr)	3.79 —	0.00 - 4.50	0.00 - 6.00	ratio

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
Nlr (Neutrophil:Lymphocyte)	1.40 —	1.00 - 1.70	1.00 - 3.00	ratio
Plr (Platelet:Lymphocyte)	139.49 —	90.00 - 150.00	50.00 - 200.00	ratio
Systemic Immune-Inflammation Index (Sii)	379.40 —	0.00 - 500.00	0.00 - 900.00	ratio
Systemic Inflammation Response Index (Siri)	0.54 —	0.30 - 1.00	0.30 - 1.50	ratio

LIPIDS

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
LDL Cholesterol	78.20 —	0.00 - 100.00	0.00 - 130.00	mg/dL
Chol/HDL-C Ratio	2.46 —	0.00 - 3.50	0.00 - 5.00	ratio
Non-HDL Cholesterol	86.00 —	70.00 - 99.00	0.00 - 129.99	mg/dL
Cholesterol VLDL	7.80 —	0.00 - 15.00	0.00 - 30.00	mg/dL
Atherogenic Index (Aip)	-0.18 —	0.00 - 0.10	0.00 - 0.30	ratio
LDL:HDL Ratio	1.27 —	1.50 - 3.00	0.00 - 3.50	ratio
LDL-C/APOB Ratio	1.21 —	1.20 - 1.60	1.00 - 1.80	ratio
Non-HDL/Total Cholesterol Ratio	0.59 —	0.00 - 0.70	0.00 - 0.80	ratio
Total Cholesterol/HDL Ratio	2.46 —	0.00 - 3.50	0.00 - 5.00	ratio
Triglyceride:HDL Ratio	0.66 —	0.00 - 2.00	0.00 - 3.50	ratio

METABOLIC

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
A1c–glucose Discordance	0.40 —	0.00 - 0.30	0.00 - 0.50	%
HOMA2-%b	117.33 —	80.00 - 120.00	60.00 - 150.00	%

Biomarker	Quest (Current Nov 27, 2025)	Optimal Range	Standard Range	Units
HOMA2-%s	51.14 —	80.00 - 150.00	50.00 - 200.00	%
HOMA2-Ir	1.96 —	0.00 - 1.40	0.00 - 2.00	ratio
Quicki	0.34 —	0.35 - 0.45	0.30 - 0.50	ratio
Tyg Index	7.47 —	0.00 - 8.50	0.00 - 9.00	ratio

03

A comprehensive assessment of functional body systems and a detailed evaluation of nutrient status to support a holistic understanding of your health and well-being.

Assessment

- Functional Body Systems
- Accessory Systems
- Nutrient Status
- Nutrient Deficiencies

VITALS VAULT

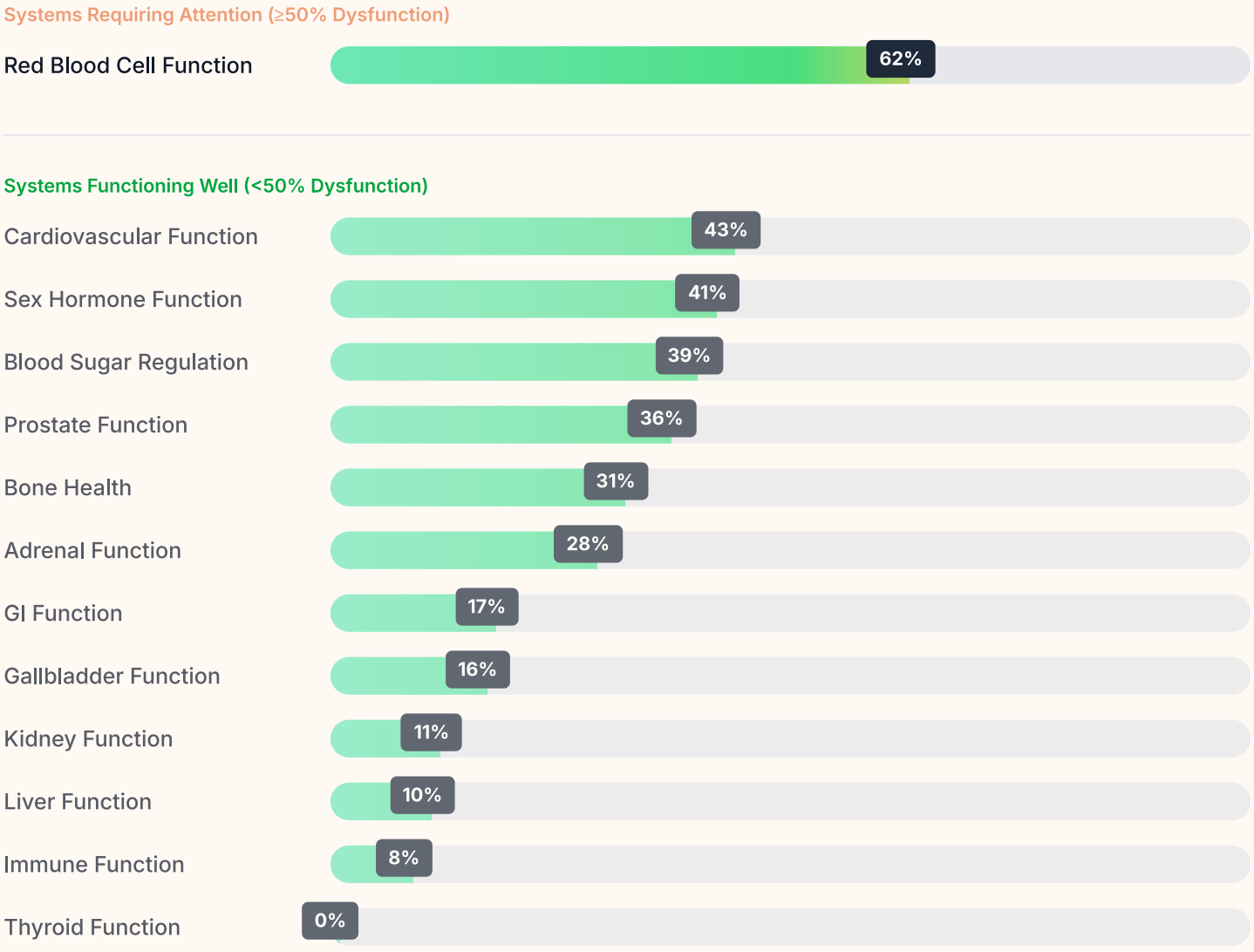
Functional body systems results represent an algorithmic analysis of your blood test results. This report indicates the likelihood of dysfunction across different physiological systems.

This report shows the risk of dysfunction in the main physiological systems of your body based on biomarker patterns and trends.

Each body system with a probability of dysfunction above 50% is included in the following section with a detailed description and an explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION

Less Likely <50% | Possible 50-70% | Likely 70-90% | Highly Likely 90-100%



Functional Body Systems Details

RED BLOOD CELL FUNCTION

What We Assessed

The most important pattern here is the combination of high RED BLOOD CELL COUNT with low MCV, low MCH, below-optimal MCHC, and above-optimal RDW. That cluster often reflects red blood cells that are smaller and less hemoglobin-dense, even when overall HEMOGLOBIN and HEMATOCRIT remain robust or above optimal. Clinically, this matters because oxygen delivery depends not just on the number of cells present, but also on how well each cell is built and loaded with hemoglobin.

What We Recommend

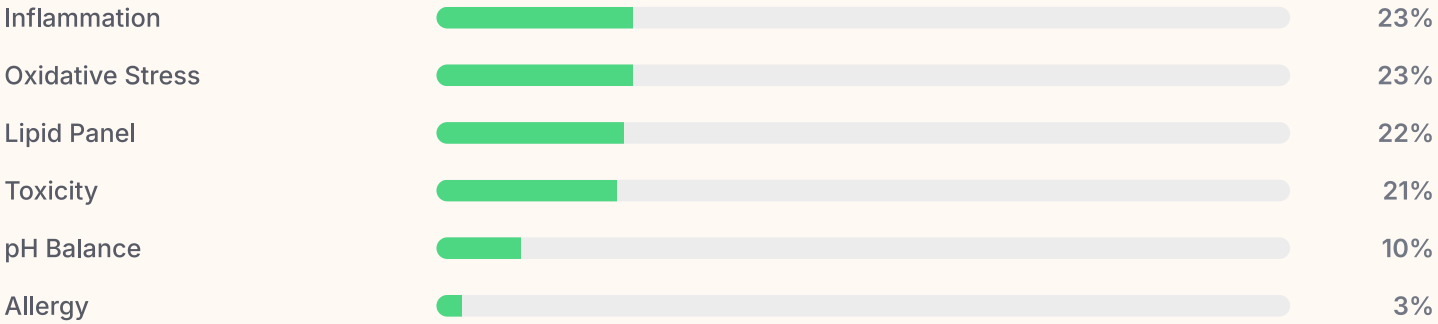
Focus next on the factors that support healthy red blood cell production and iron handling, especially overall mineral status and nutrient-dense intake. It would also be useful to keep an eye on trends in red cell indices over time rather than looking only at hemoglobin and hematocrit. Prioritizing recovery, hydration consistency, and balanced nutrition will help support better red blood cell quality.

Biomarkers considered

RBC, Hemoglobin, Hematocrit, MCV, MCH, MCHC, RDW

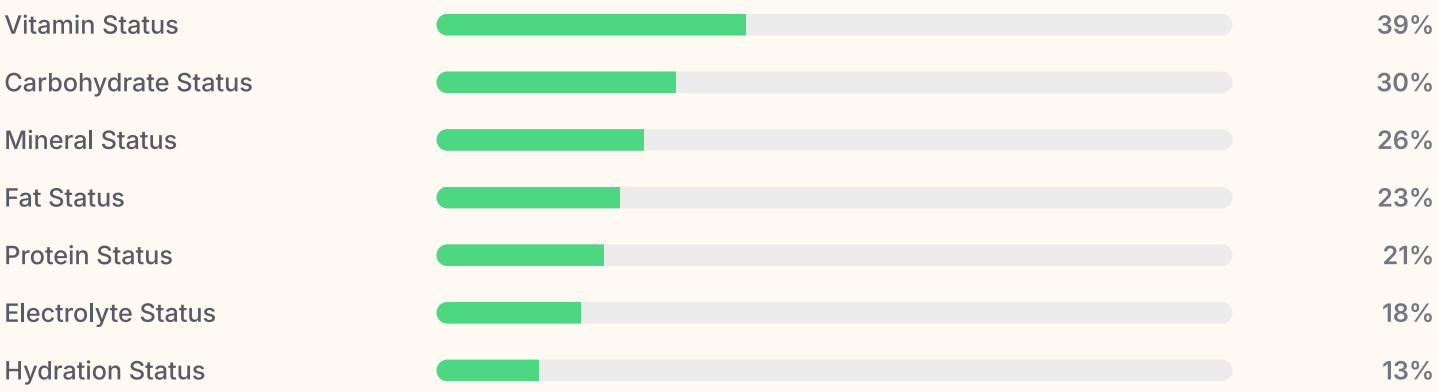
ACCESSORY SYSTEMS OVERVIEW

Systems Functioning Well (<50% Dysfunction)



NUTRIENT STATUS OVERVIEW

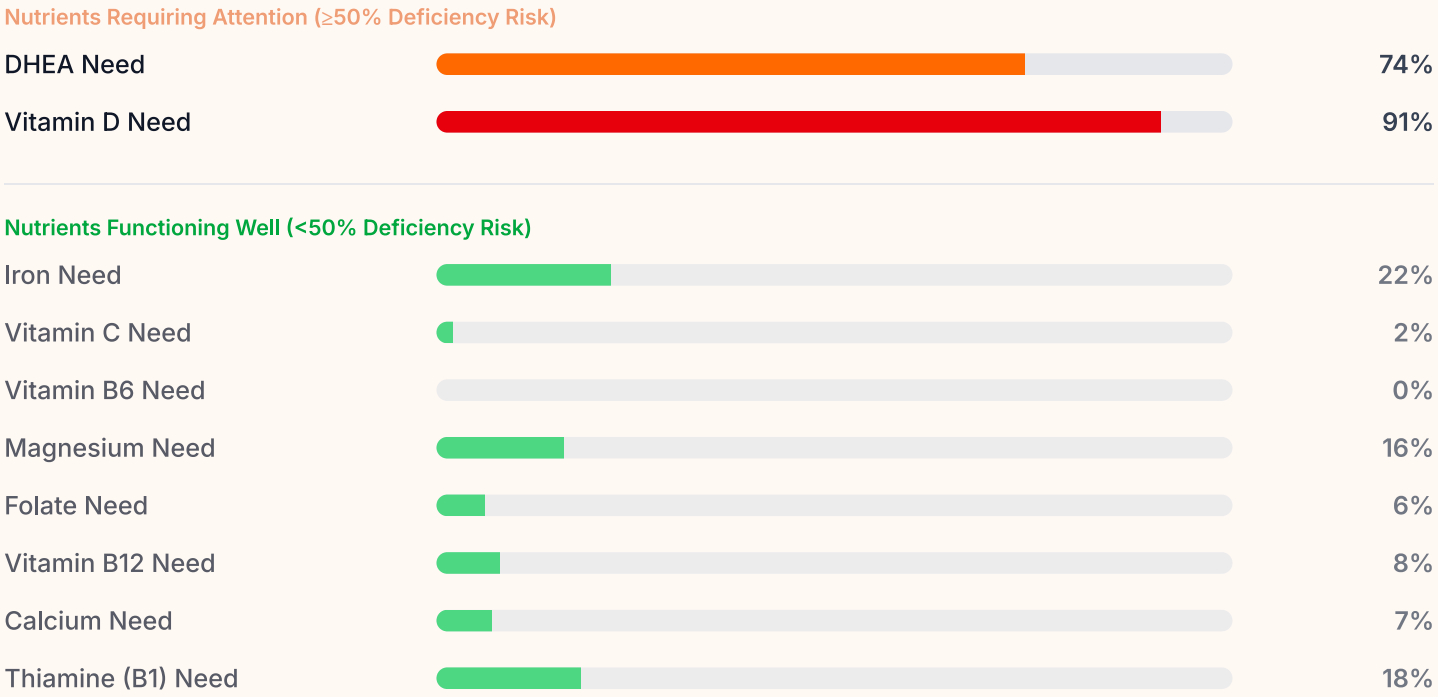
Nutrients Functioning Well (<50% Deficiency Risk)



Individual nutrient deficiency results represent an algorithmic analysis of your blood test results as they relate to nutrient availability and utilization.

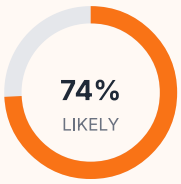
Each nutrient deficiency with a probability of dysfunction above 50% is included with a detailed description and an explanation of the results.

INDIVIDUAL NUTRIENT DEFICIENCIES OVERVIEW



INDIVIDUAL NUTRIENT DEFICIENCY DETAILS

This section contains detailed descriptions and explanations of the results presented in the individual nutrient deficiencies report, including the biomarkers considered in the analysis and the rationale behind the interpretation.



DHEA NEED

Your DHEA need is clearly elevated because DHEA SULFATE is low. This points to lower adrenal-androgen reserve and can affect resilience, recovery, mood, and hormone balance. It also fits with the broader pattern of lower adrenal and sex hormone support seen elsewhere in your labs.

Rationale

This assessment is driven directly by low DHEA SULFATE. DHEA is a foundational adrenal hormone that contributes to stress adaptation, anabolic tone, and downstream hormone balance. When it trends low, it often reflects reduced reserve rather than acute overactivation.

Biomarkers considered

DHEA Sulfate

VITAMIN D NEED

Your vitamin D need is high because VITAMIN D, 25-OH, TOTAL is very low. This is one of the clearest and most important findings in your labs because vitamin D influences immune function, bone health, inflammation balance, and cardiovascular resilience. It is a central priority for optimization.

Rationale

The assessment is straightforward: VITAMIN D, 25-OH, TOTAL is low enough to stand out as a major nutrient gap. This matters clinically because vitamin D affects multiple systems that also show mild strain in your results, including immune balance, inflammation, cardiovascular health, and bone support. The severity here is driven by the magnitude of the deficiency, not by a subtle trend.

Biomarkers considered

Vitamin D, 25-OH, Total

04

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

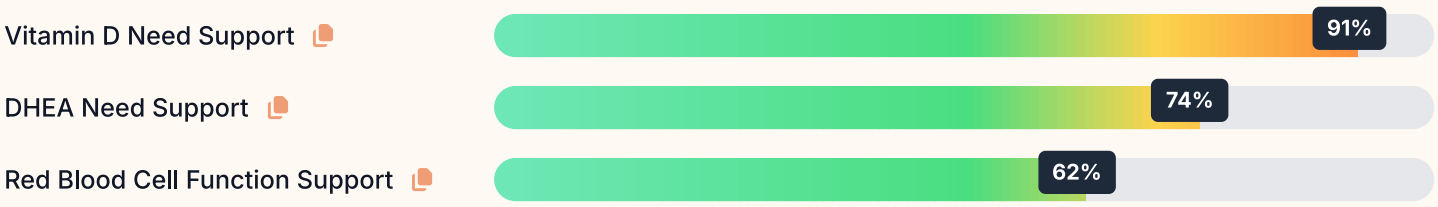
Health Concerns

Health Concerns

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.

NEED OF SUPPORT

Less Likely <50% | Possible 50-70% | Moderate 70-90% | High 90-100%



Health Concerns Details

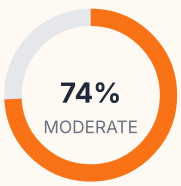
This section contains explanations of the results presented in the health concerns report, including the biomarkers considered in the analysis and the rationale behind the interpretation.

VITAMIN D NEED SUPPORT

Your vitamin D need is high because VITAMIN D, 25-OH, TOTAL is very low. This is one of the clearest and most important findings in your labs because vitamin D influences immune function, bone health, inflammation balance, and cardiovascular resilience. It is a central priority for optimization.

Biomarkers Considered

VITAMIN D, 25-OH, TOTAL



DHEA NEED SUPPORT

Your DHEA need is clearly elevated because DHEA SULFATE is low. This points to lower adrenal-androgen reserve and can affect resilience, recovery, mood, and hormone balance. It also fits with the broader pattern of lower adrenal and sex hormone support seen elsewhere in your labs.

Biomarkers Considered

DHEA SULFATE

RED BLOOD CELL FUNCTION SUPPORT

Your red blood cell pattern suggests you are making plenty of red blood cells, but they are trending smaller and carrying slightly less hemoglobin per cell than ideal. RED BLOOD CELL COUNT is high, while MCV, MCH, and MCHC are low or below optimal, and RDW is above optimal, which points to a microcytic pattern with more size variation between cells. HEMOGLOBIN and HEMATOCRIT are above optimal, so this is not a low-blood-count picture; instead, it looks more like red cell quality and iron-related efficiency need attention.

Biomarkers Considered

RBC, Hemoglobin, Hematocrit, MCV, MCH, MCHC, RDW

VITALS VAULT

Your Action Plan

Generated May 6, 2026

A personalized plan to help you move biomarkers toward optimal ranges. Each recommendation is drawn from your assessment above and tied to the systems it supports.

Supplements (1)

Vitamin D repletion

Adjust your current vitamin D plan so repletion is strong enough to correct a severe deficiency while avoiding duplicate dosing from multiple products.

WHY WE RECOMMEND THIS

25-OH vitamin D is severely low and should be corrected to support bone, immune, cognitive, and mood resilience.

TIPS

- Check labels for vitamin D in multivitamins or fish oil blends so you do not accidentally double up.
- If this weekly supplement was prescribed, keep your clinician in the loop before changing the schedule.

Nutrition (2)

Audit iron absorption and intake pattern

Improve how you absorb iron from meals by pairing iron-rich foods with vitamin C and separating common blockers like tea, coffee, and calcium from those meals.

WHY WE RECOMMEND THIS

Low MCH with borderline microcytosis and high-normal RBC count suggests an iron-utilization or absorption issue that is worth correcting through diet timing first.

TIPS

- If you use a calcium supplement, avoid taking it with your most iron-focused meal.
- Cast-iron cookware can slightly increase iron content in some cooked foods.

Increase folate and B12-rich intake

Build meals around folate-rich greens and legumes if tolerated, plus regular B12-containing proteins, to support methylation and help bring homocysteine into a better range.

WHY WE RECOMMEND THIS

Homocysteine is elevated and folate/B12 are suboptimal, making methylation support a clear nutrition target.

TIPS

- If legumes are not a routine food for you, start with small portions and increase slowly.
- A protein serving at breakfast or lunch can make B12 intake more consistent across the day.

Exercise (1)

Add insulin-sensitizing training

Use a weekly combination of zone 2 cardio and resistance training to improve insulin sensitivity and help bring fasting insulin and A1c into a more optimal range.

WHY WE RECOMMEND THIS

Fasting insulin and A1c suggest early insulin resistance despite normal glucose, and exercise is one of the highest-leverage corrections.

TIPS

- Short walks after meals can add extra glucose control benefits without adding much fatigue.
- Consistency across weeks matters more than occasional very hard sessions.

Sleep (1)

Strengthen evening downshift for low cortisol pattern

Use a consistent evening routine to reduce stimulation, support sleep timing, and help stabilize the stress-response rhythm.

WHY WE RECOMMEND THIS

Morning/total cortisol is below the optimal range, and a consistent sleep-wake routine can help stabilize the stress axis without adding supplements.

TIPS

- Bright outdoor light soon after waking is a simple way to reinforce circadian timing.
- Keep the wind-down routine boring and repeatable rather than perfect.

05

DISCLAIMER

Disclaimer

Disclaimer

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

SUPPLEMENTS AND TREATMENTS

Nothing in this Report should be construed to indicate that the use of any drug, supplement, product, or treatment (or any combination thereof) is safe, appropriate, or effective for you. This Report does not constitute a recommendation or endorsement of any specific tests, physicians, products, procedures, supplements, or other information that may be mentioned in this Report. The mention of any drug, supplement, product, or treatment in this Report does not indicate that the drug, supplement, or any combination thereof is safe, effective, or appropriate for you. Statements made about a supplement, product, or treatment have not been evaluated by the Food and Drug Administration (FDA) U.S. or MHRA U.K. Any mentioned supplement, product, or treatment is not intended to diagnose, treat, cure, or prevent any disease. The FDA or MHRA U.K. has not evaluated the information contained in this Report.

VERIFICATION

You are encouraged to confirm any information obtained from this Report with other sources, and review all information regarding any medical condition or the treatment of such condition with your physician.