

Functional Health Report

A comprehensive analysis of your test results.

BLOOD CHEMISTRY ANALYSIS



Patient Report

Prepared for Male Sample
57 year old male born Nov 01, 1966
57 years old at the time this lab test was taken
Fasting

Requested by Ms Jessica Pierce
The Longevity Architects

Collected Date Mar 07, 2024

Lab Quest

Powered by

OptimalDX



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

Introduction

- 1 What's Inside?
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- 5 Patient Report



Ms Jessica Pierce's Notes Report

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

REPORT NOTES

Health Goals:

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

Signs and Symptoms

The following signs and symptoms were reported:

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



Functional Blood Chemistry Analysis (FBCA)

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



Ms Jessica Pierce
The Longevity Architects

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.



Ms Jessica Pierce
The Longevity Architects

THE FUNCTIONAL HEALTH REPORT

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

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

ASSESSMENT

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

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

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

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

ANALYSIS

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

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

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

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

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

HEALTH CONCERNS

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



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

Analytics

- 7 Blood Test Results
- 18 Blood Test Comparative
- 23 Blood Test History
- 29 Out of Optimal Range

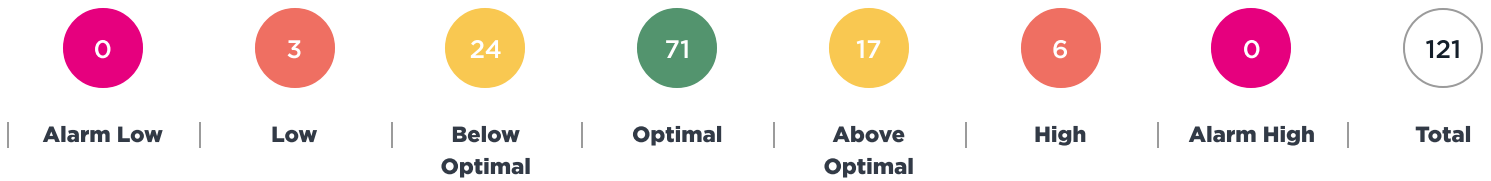
Blood Test Results

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

Blood Test Results

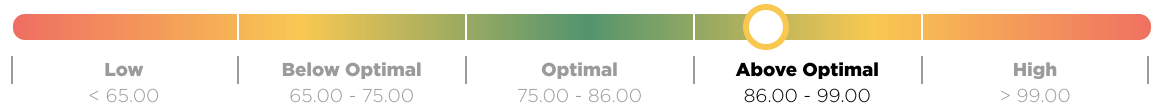
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range. The biomarkers are grouped into their most common categories.

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



BLOOD GLUCOSE

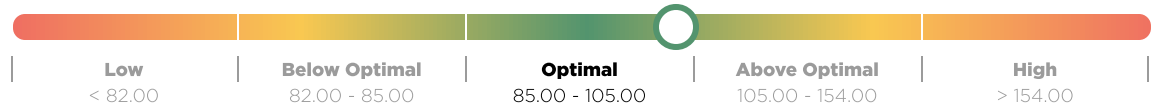
Glucose Fasting 90.00 mg/dL



Hemoglobin A1C 5.20 %



eAG 103.00 mg/dL



Insulin - Fasting 5.20 µIU/mL



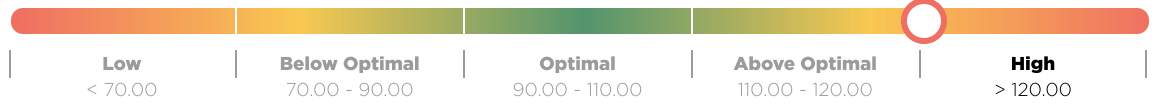
C-Peptide
2.10 ng/mL



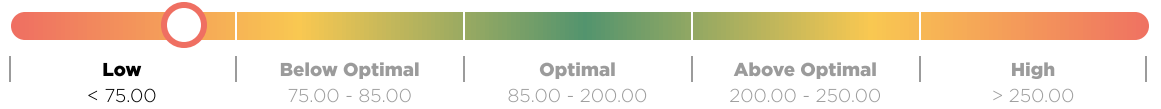
Fructosamine
193.70 μmol/L



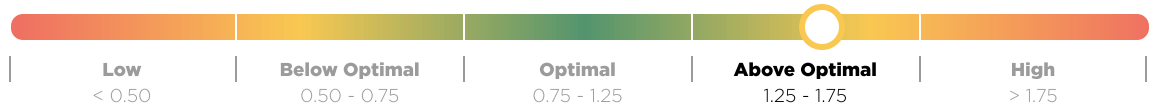
HOMA2-%B
128.20 %



HOMA2-%S
65.00 %



HOMA2-IR
1.53 Index



QUICKI
0.37 Index

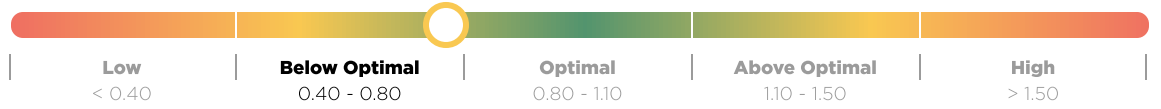


KIDNEY

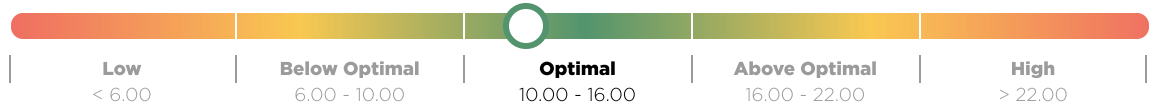
BUN
9.00 mg/dL



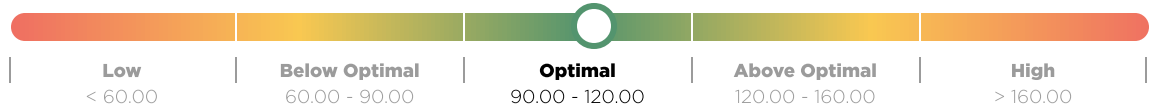
Creatinine
0.77 mg/dL



BUN : Creatinine
11.69 Ratio



eGFR
107.00 mL/min/1.73m2



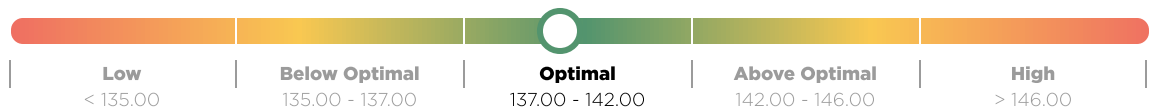
PROSTATE

PSA - Total
0.40 ng/mL



ELECTROLYTES

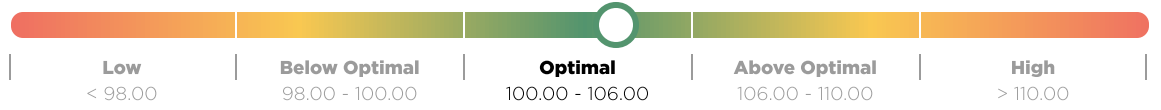
Sodium
139.00 mEq/L



Potassium
4.70 mEq/L



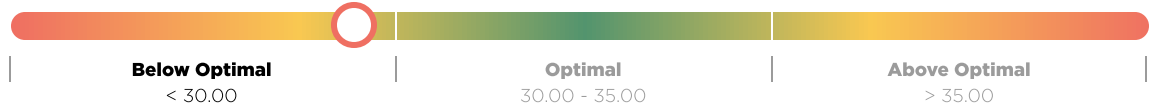
Chloride
104.00 mEq/L



CO2
25.00 mEq/L

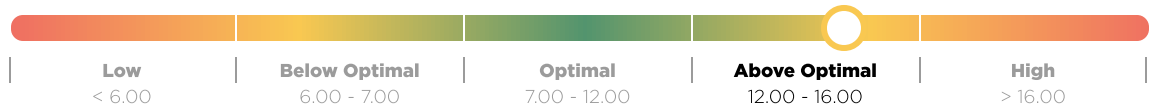


Sodium : Potassium
29.57 ratio

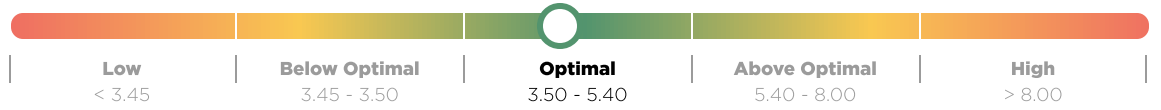


METABOLIC

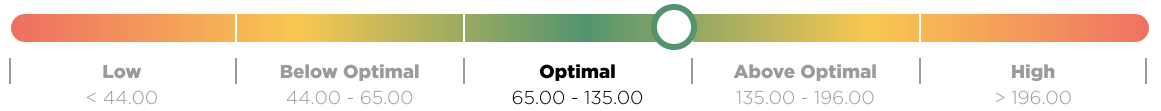
Anion Gap
14.70 mEq/L



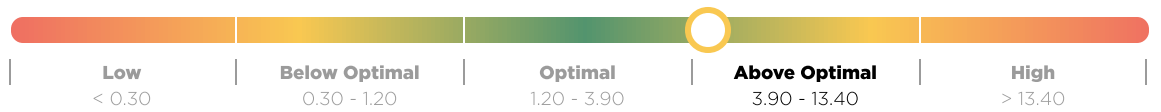
Uric Acid - Male
4.30 mg/dL



Creatine Kinase
130.00 U/L

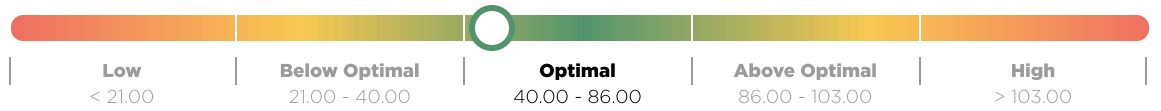


Leptin - Male
4.50 ng/mL



ENZYMES

Amylase
45.00 U/L



Lipase
43.00 U/L

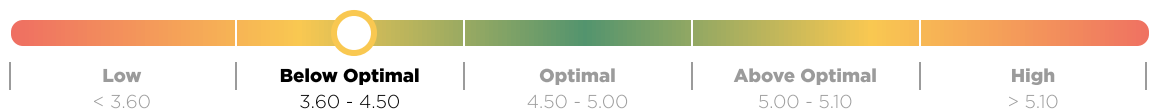


PROTEINS

Protein - Total
6.86 g/dL

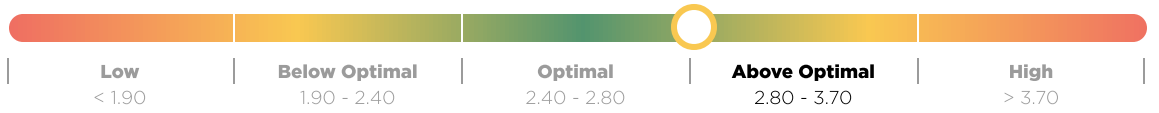


Albumin
4.05 g/dL



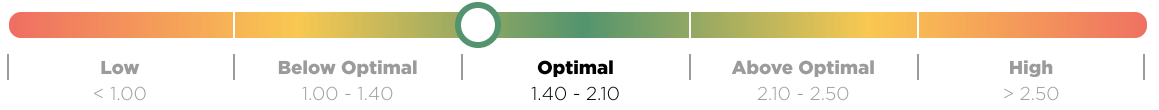
Globulin - Total 

2.81 g/dL



Albumin : Globulin

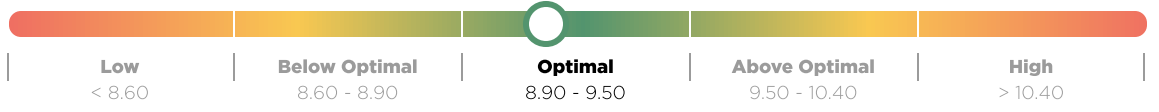
1.44 ratio



MINERALS

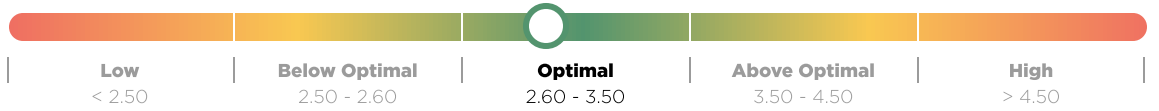
Calcium

9.12 mg/dL



Phosphorus

2.92 mg/dL



Magnesium - Serum 

2.10 mg/dL



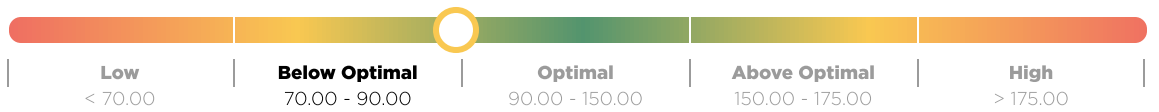
Magnesium - RBC 

5.80 mg/dL



Copper - Serum 

89.20 µg/dL



Zinc - Serum 

76.20 µg/dL



Zinc - RBC 

9.10 mg/L



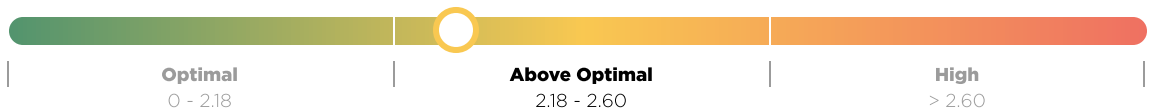
Copper : Zinc Ratio

1.17 Ratio



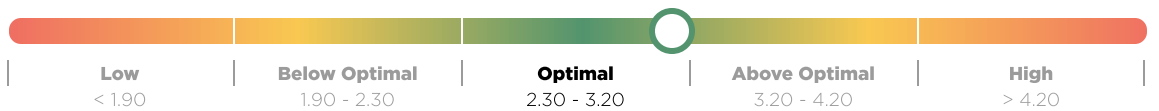
Calcium : Albumin 

2.25 ratio



Calcium : Phosphorus

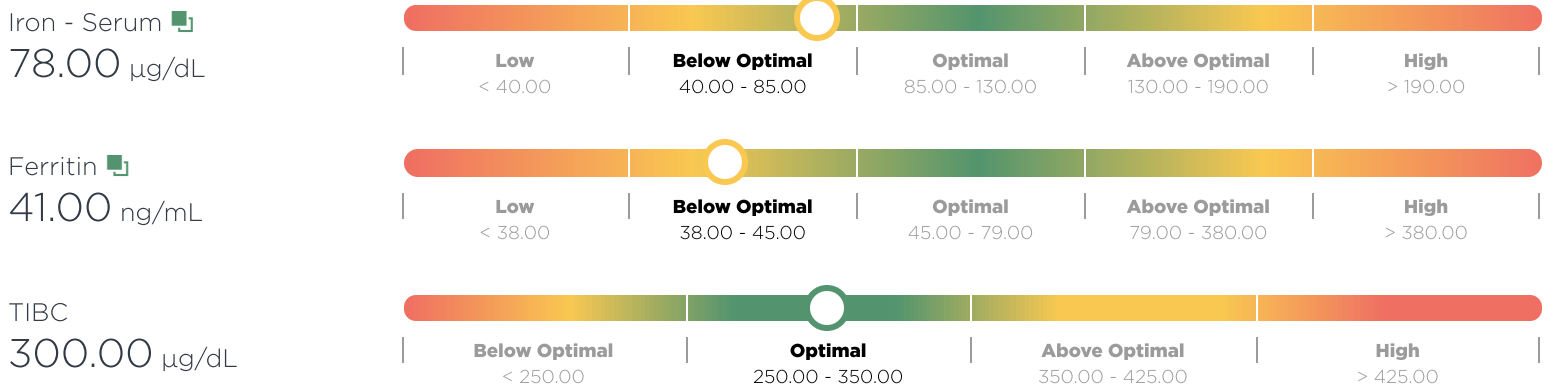
3.12 ratio



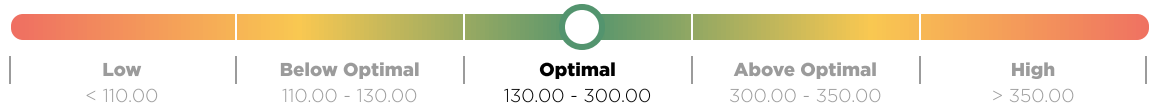
LIVER AND GB



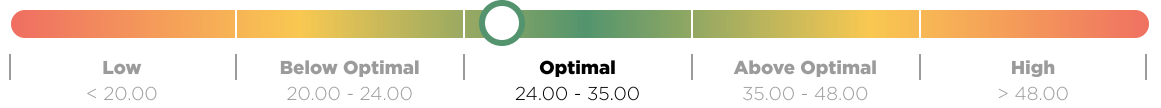
IRON MARKERS



UIBC
222.00 µg/dL



% Transferrin saturation
26.00 %



LIPIDS

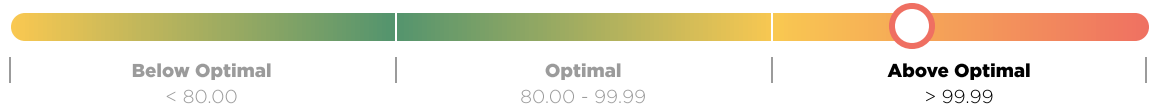
Cholesterol - Total
203.00 mg/dL



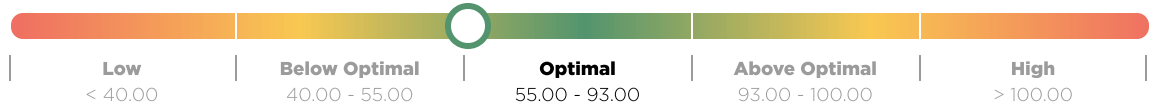
Triglycerides
96.00 mg/dL



LDL Cholesterol
122.00 mg/dL



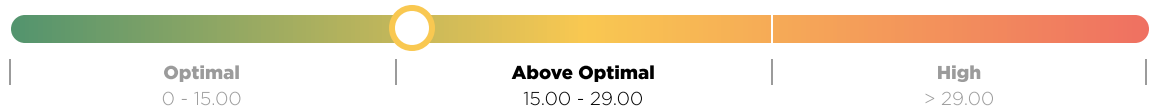
HDL Cholesterol
56.00 mg/dL



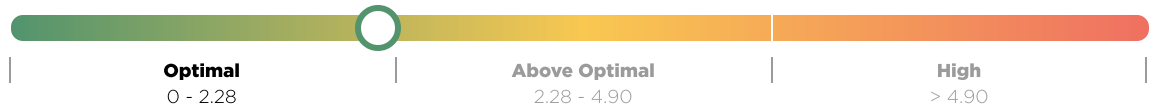
Non-HDL Cholesterol
147.00 mg/dL



VLDL Cholesterol
15.60 mg/dL



LDL : HDL - Male
2.18 Ratio



Triglyceride:HDL
1.71 ratio



Cholesterol : HDL
3.62 Ratio

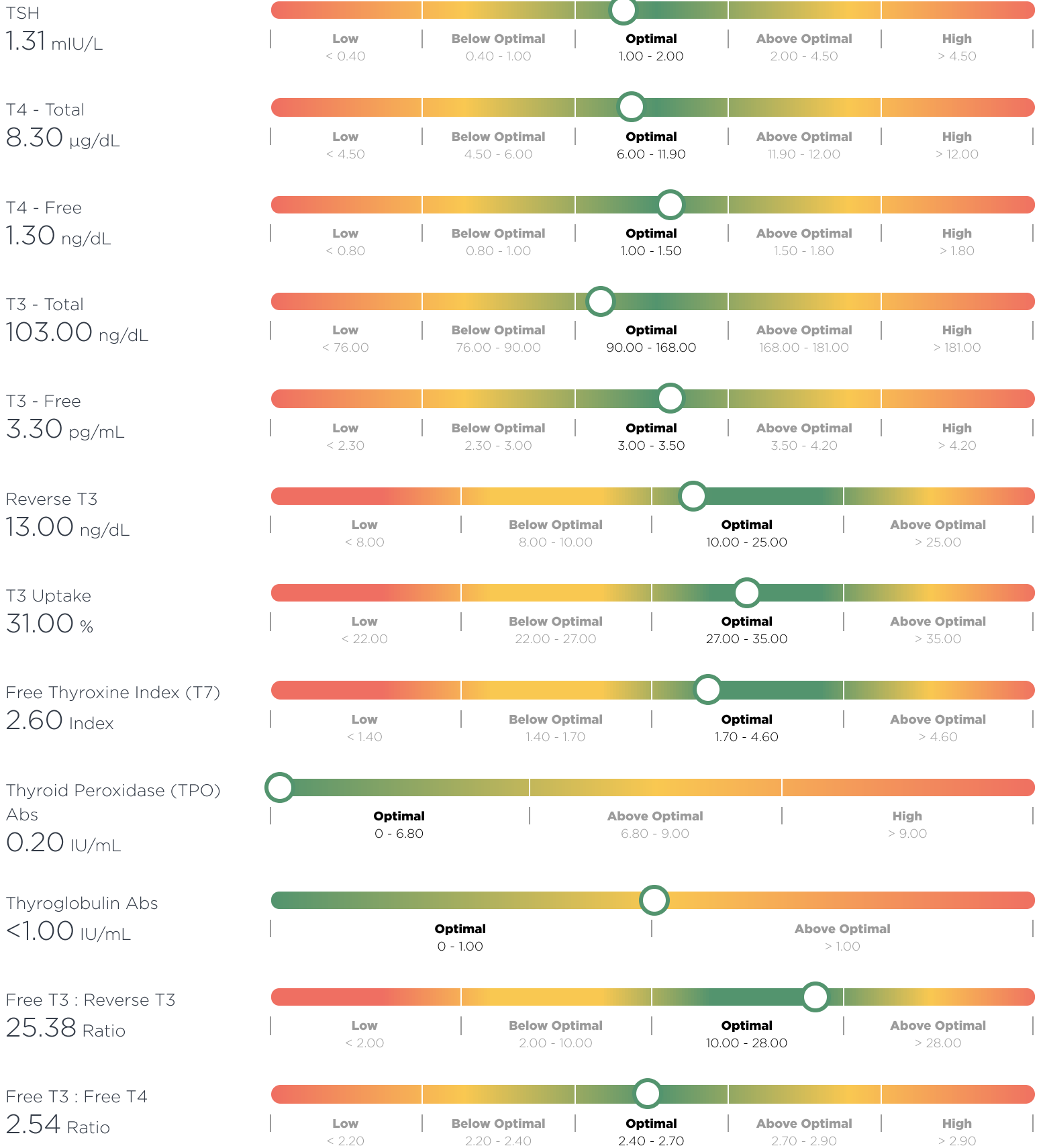


CARDIOMETABOLIC

Homocysteine
7.30 µmol/L



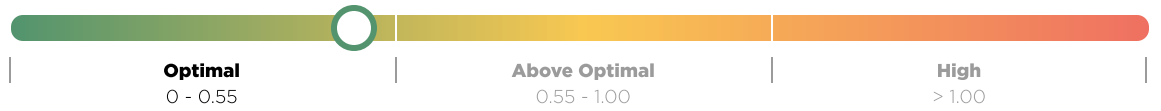
THYROID



INFLAMMATION

Hs CRP - Male

0.50 mg/L



C-Reactive Protein

4.10 mg/L



ESR - Male

4.80 mm/hr



Fibrinogen Activity

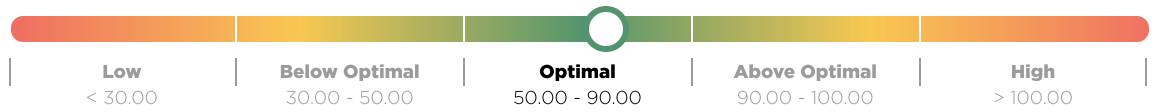
283.00 mg/dL



VITAMINS

Vitamin D (25-OH)

74.00 ng/mL



Vitamin B12

427.00 pg/mL



Folate - Serum

14.20 ng/mL



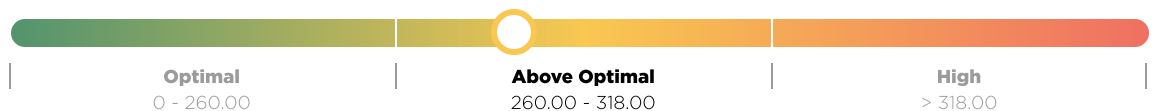
Folate - RBC

398.10 ng/mL



Methylmalonic Acid

278.20 nmol/L



HORMONES

DHEA-S - Male

75.00 µg/dL



FSH - Male


5.90 mIU/mL




LH - Male

4.30 mIU/mL



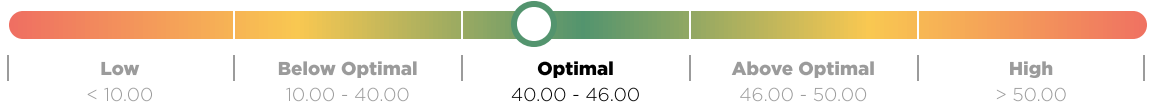
Testosterone Total - Male 
650.00 ng/dL



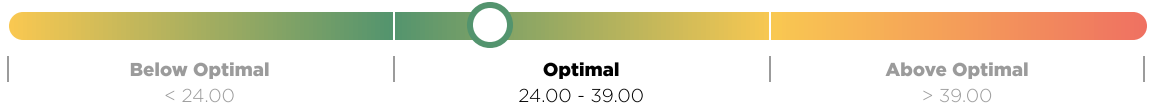
Testosterone Free - Male 
127.44 pg/mL



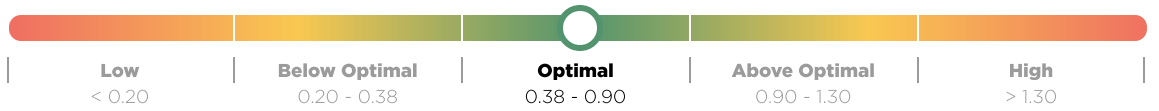
Sex Hormone Binding
Globulin - Male
42.00 nmol/L



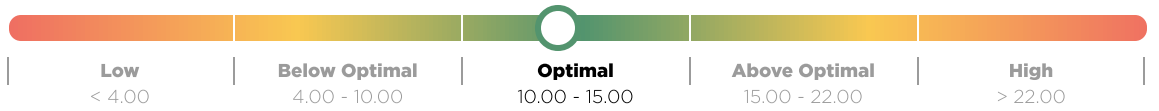
Estradiol - Male
28.00 pg/mL




Progesterone - Male
0.65 ng/mL



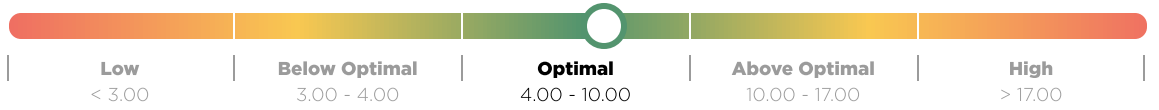
Cortisol - Total/AM
12.20 µg/dL




Cortisol : DHEA-S 
0.16 ratio




Cortisol - PM
7.80 µg/dL



Gastrin 
42.50 pg/mL




% Testosterone Bioavailable -
Male 
43.27 %



% Testosterone Free - Male
1.96 %



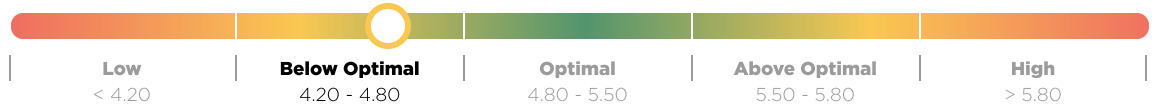
Testosterone Bioavailable -
Male 
281.23 ng/dL



CBC

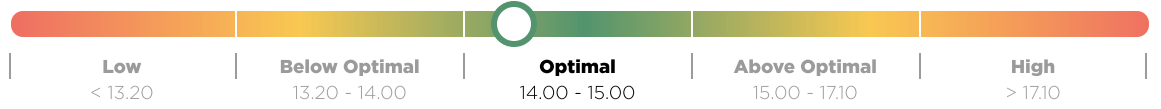
RBC - Male 

4.60 m/cumm



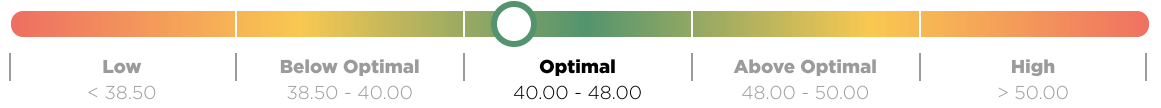
Hemoglobin - Male

14.20 g/dL



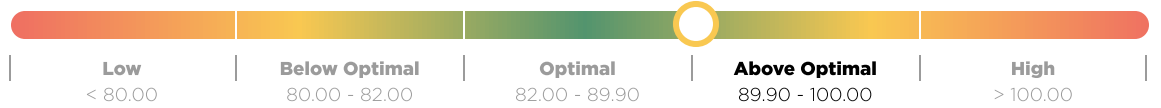
Hematocrit - Male

41.60 %



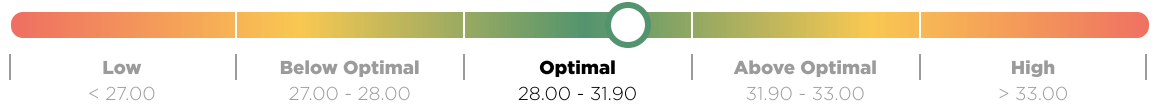
MCV 

90.40 fL



MCH

30.90 pg



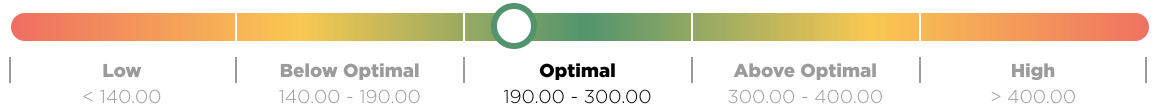
MCHC

34.10 g/dL



Platelets

217.00 $10^3/\mu\text{L}$



MPV 

11.20 fL



RDW

12.40 %



WBCS

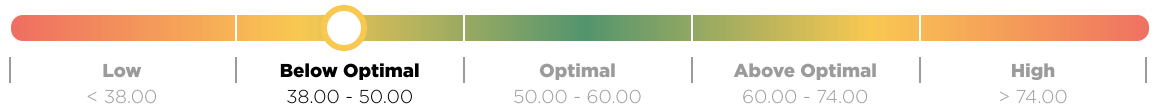
Total WBCs

4.30 k/cumm



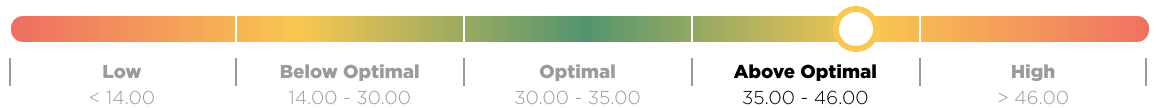
Neutrophils - % 

43.40 %



Lymphocytes - % 

43.00 %



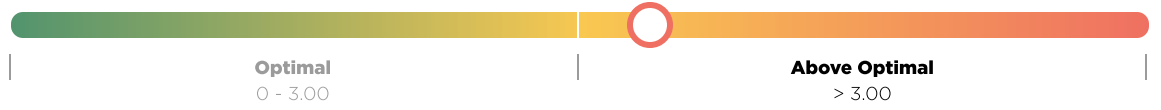
Monocytes - % 

8.20 %



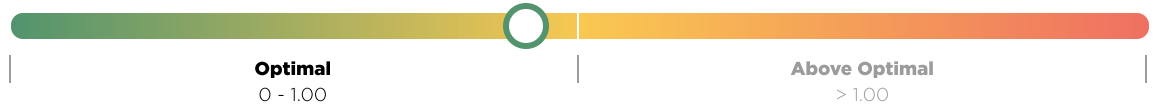
Eosinophils - % 

4.50 %



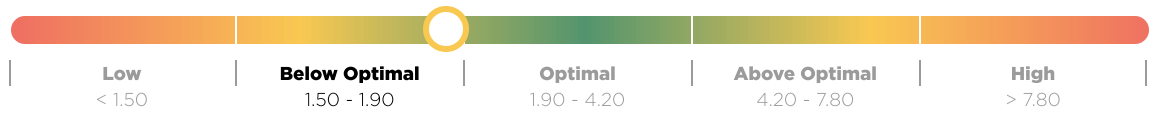
Basophils - %

0.90 %



Neutrophils - Absolute 

1.87 k/cumm



Lymphocytes - Absolute

1.85 k/cumm



Monocytes - Absolute

0.35 k/cumm



Eosinophils - Absolute

0.19 k/cumm



Basophils - Absolute

0.04 k/cumm



Neutrophil : Lymphocyte

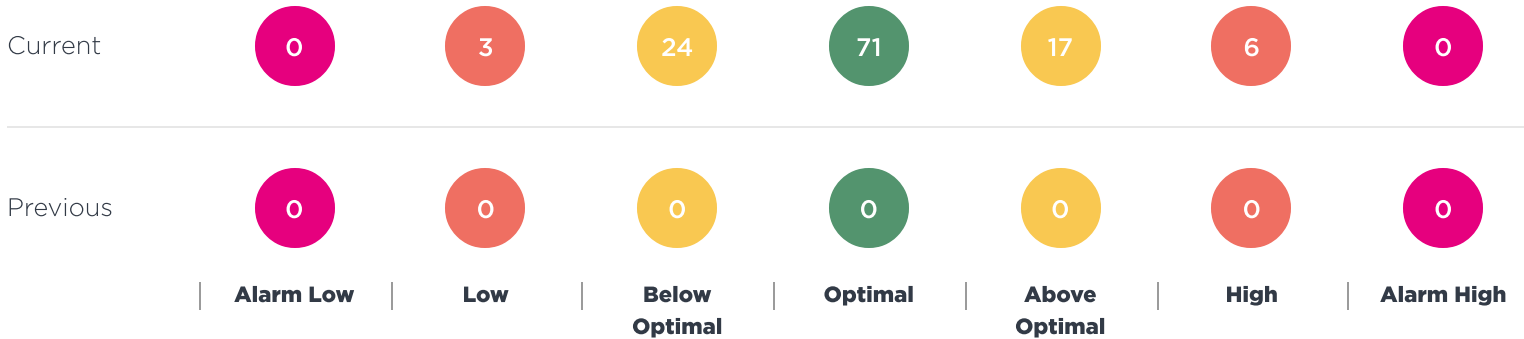
1.01 Ratio



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



Biomarker	Quest			
	Current Mar 07 2024	Optimal Range	Standard Range	Units

BLOOD GLUCOSE

Glucose Fasting 📄	90.00 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Hemoglobin A1C 📄	5.20	4.60 - 5.30	0 - 5.70	%
eAG 📄	103.00	85.00 - 105.00	82.00 - 154.00	mg/dL
Insulin - Fasting 📄	5.20 ↑	2.00 - 5.00	0 - 18.40	μIU/mL
C-Peptide 📄	2.10	1.10 - 2.10	0.80 - 3.85	ng/mL
Fructosamine 📄	193.70	190.00 - 228.00	190.00 - 270.00	μmol/L
HOMA2-%B 📄	128.20 ↑↑	90.00 - 110.00	70.00 - 120.00	%
HOMA2-%S 📄	65.00 ↓↓	85.00 - 200.00	75.00 - 250.00	%
HOMA2-IR 📄	1.53 ↑	0.75 - 1.25	0.50 - 1.75	Index
QUICKI 📄	0.37 ↓	0.45 - 5.00	0.34 - 5.00	Index

KIDNEY

BUN 📄	9.00 ↓	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine 📄	0.77 ↓	0.80 - 1.10	0.40 - 1.50	mg/dL

Biomarker	Quest			
	Current Mar 07 2024	Optimal Range	Standard Range	Units
BUN : Creatinine	11.69	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	107.00	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
PROSTATE				
PSA - Total	0.40	0 - 2.00	0 - 4.00	ng/mL
ELECTROLYTES				
Sodium	139.00	137.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	4.70	4.00 - 5.00	3.50 - 5.30	mEq/L
Chloride	104.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2	25.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Sodium : Potassium	29.57 ↓ ↓	30.00 - 35.00		ratio
METABOLIC				
Anion Gap	14.70 ↑	7.00 - 12.00	6.00 - 16.00	mEq/L
Uric Acid - Male	4.30	3.50 - 5.40	3.45 - 8.00	mg/dL
Creatine Kinase	130.00	65.00 - 135.00	44.00 - 196.00	U/L
Leptin - Male	4.50 ↑	1.20 - 3.90	0.30 - 13.40	ng/mL
ENZYMES				
Amylase	45.00	40.00 - 86.00	21.00 - 103.00	U/L
Lipase	43.00	22.00 - 51.00	13.00 - 60.00	U/L
PROTEINS				
Protein - Total	6.86 ↓	6.90 - 8.10	6.10 - 8.10	g/dL
Albumin	4.05 ↓	4.50 - 5.00	3.60 - 5.10	g/dL
Globulin - Total	2.81 ↑	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin : Globulin	1.44	1.40 - 2.10	1.00 - 2.50	ratio
MINERALS				
Calcium	9.12	8.90 - 9.50	8.60 - 10.40	mg/dL
Phosphorus	2.92	2.60 - 3.50	2.50 - 4.50	mg/dL
Magnesium - Serum	2.10 ↓	2.20 - 2.50	1.50 - 2.50	mg/dL
Magnesium - RBC	5.80 ↓	6.00 - 6.80	4.00 - 6.80	mg/dL
Copper - Serum	89.20 ↓	90.00 - 150.00	70.00 - 175.00	µg/dL
Zinc - Serum	76.20 ↓	99.00 - 130.00	50.00 - 130.00	µg/dL
Zinc - RBC	9.10 ↓	10.40 - 14.70	9.00 - 14.70	mg/L
Copper : Zinc Ratio	1.17	0.70 - 1.50	0.80 - 2.00	Ratio
Calcium : Albumin	2.25 ↑	0 - 2.18	0 - 2.60	ratio
Calcium : Phosphorus	3.12	2.30 - 3.20	1.90 - 4.20	ratio
LIVER AND GB				
Alk Phos	51.00	45.00 - 100.00	36.00 - 130.00	IU/L
AST	12.00	10.00 - 26.00	10.00 - 35.00	IU/L
ALT	22.00	10.00 - 26.00	6.00 - 29.00	IU/L
LDH	131.00 ↓	140.00 - 200.00	100.00 - 200.00	IU/L

Biomarker	Quest			
	Current Mar 07 2024	Optimal Range	Standard Range	Units
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	17.00	10.00 - 17.00	3.00 - 90.00	IU/L
AST : ALT	0.55	0 - 1.00	0 - 1.50	Ratio

IRON MARKERS

Iron - Serum	78.00 ↓	85.00 - 130.00	40.00 - 190.00	µg/dL
Ferritin	41.00 ↓	45.00 - 79.00	38.00 - 380.00	ng/mL
TIBC	300.00	250.00 - 350.00	250.00 - 425.00	µg/dL
UIBC	222.00	130.00 - 300.00	110.00 - 350.00	µg/dL
% Transferrin saturation	26.00	24.00 - 35.00	20.00 - 48.00	%

LIPIDS

Cholesterol - Total	203.00 ↑ ↑	160.00 - 199.00	125.00 - 199.00	mg/dL
Triglycerides	96.00 ↑	70.00 - 80.00	0 - 149.99	mg/dL
LDL Cholesterol	122.00 ↑ ↑	80.00 - 99.99	0 - 99.99	mg/dL
HDL Cholesterol	56.00	55.00 - 93.00	40.00 - 100.00	mg/dL
Non-HDL Cholesterol	147.00 ↑ ↑	70.00 - 99.00	0 - 129.99	mg/dL
VLDL Cholesterol	15.60 ↑	0 - 15.00	0 - 29.00	mg/dL
LDL : HDL - Male	2.18	0 - 2.28	0 - 4.90	Ratio
Triglyceride:HDL	1.71	0.50 - 1.90	0 - 2.00	ratio
Cholesterol : HDL	3.62 ↑	0 - 3.00	0 - 5.00	Ratio

CARDIOMETABOLIC

Homocysteine	7.30 ↑	5.00 - 7.20	0 - 10.30	µmol/L
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THYROID

TSH	1.31	1.00 - 2.00	0.40 - 4.50	mIU/L
T4 - Total	8.30	6.00 - 11.90	4.50 - 12.00	µg/dL
T4 - Free	1.30	1.00 - 1.50	0.80 - 1.80	ng/dL
T3 - Total	103.00	90.00 - 168.00	76.00 - 181.00	ng/dL
T3 - Free	3.30	3.00 - 3.50	2.30 - 4.20	pg/mL
Reverse T3	13.00	10.00 - 25.00	8.00 - 25.00	ng/dL
T3 Uptake	31.00	27.00 - 35.00	22.00 - 35.00	%
Free Thyroxine Index (T7)	2.60	1.70 - 4.60	1.40 - 3.80	Index
Thyroid Peroxidase (TPO) Abs	0.20	0 - 6.80	0 - 9.00	IU/mL
Thyroglobulin Abs	<1.00	0 - 1.00		IU/mL
Free T3 : Reverse T3	25.38	10.00 - 28.00	2.00 - 28.00	Ratio
Free T3 : Free T4	2.54	2.40 - 2.70	2.20 - 2.90	Ratio

INFLAMMATION

Hs CRP - Male	0.50	0 - 0.55	0 - 1.00	mg/L
C-Reactive Protein	4.10 ↑	0 - 3.00	0 - 7.90	mg/L
ESR - Male	4.80	0 - 5.00	0 - 15.00	mm/hr

Biomarker	Quest			
	Current Mar 07 2024	Optimal Range	Standard Range	Units
Fibrinogen Activity	283.00	175.00 - 300.00	175.00 - 425.00	mg/dL

VITAMINS

Vitamin D (25-OH)	74.00	50.00 - 90.00	30.00 - 100.00	ng/mL
Vitamin B12	427.00 ↓	545.00 - 1100.00	200.00 - 1100.00	pg/mL
Folate - Serum	14.20 ↓	15.00 - 27.00	5.50 - 27.00	ng/mL
Folate - RBC	398.10 ↓	500.00 - 1504.00	280.00 - 1504.00	ng/mL
Methylmalonic Acid	278.20 ↑	0 - 260.00	0 - 318.00	nmol/L

HORMONES






DHEA-S - Male	75.00 ↓ ↓	350.00 - 690.00	85.00 - 690.00	µg/dL
FSH - Male	5.90	1.60 - 8.00	1.40 - 12.80	mIU/mL
LH - Male	4.30	1.50 - 6.15	1.50 - 9.30	mIU/mL
Testosterone Total - Male	650.00 ↓	700.00 - 1100.00	250.00 - 1100.00	ng/dL
Testosterone Free - Male	127.44 ↓	150.00 - 224.00	46.00 - 224.00	pg/mL
Sex Hormone Binding Globulin - Male	42.00	40.00 - 46.00	10.00 - 50.00	nmol/L
Estradiol - Male	28.00	24.00 - 39.00	0 - 39.00	pg/mL
Progesterone - Male	0.65	0.38 - 0.90	0.20 - 1.30	ng/mL
Cortisol - Total/AM	12.20	10.00 - 15.00	4.00 - 22.00	µg/dL
Cortisol : DHEA-S	0.16 ↑ ↑	0 - 0.09		ratio
Cortisol - PM	7.80	4.00 - 10.00	3.00 - 17.00	µg/dL
Gastrin	42.50 ↓	45.00 - 90.00	0 - 100.00	pg/mL
% Testosterone Bioavailable - Male	43.27 ↓	53.00 - 65.00	35.00 - 65.00	%
% Testosterone Free - Male	1.96	1.60 - 2.20	1.00 - 2.90	%
Testosterone Bioavailable - Male	281.23 ↓	375.00 - 575.00	110.00 - 575.00	ng/dL

CBC

RBC - Male	4.60 ↓	4.80 - 5.50	4.20 - 5.80	m/cumm
Hemoglobin - Male	14.20	14.00 - 15.00	13.20 - 17.10	g/dL
Hematocrit - Male	41.60	40.00 - 48.00	38.50 - 50.00	%
MCV	90.40 ↑	82.00 - 89.90	80.00 - 100.00	fL
MCH	30.90	28.00 - 31.90	27.00 - 33.00	pg
MCHC	34.10	34.00 - 36.00	32.00 - 36.00	g/dL
Platelets	217.00	190.00 - 300.00	140.00 - 400.00	10E3/uL
MPV	11.20 ↑	7.50 - 8.20	7.50 - 11.50	fL
RDW	12.40	11.00 - 12.60	11.00 - 15.00	%

WBCS

Total WBCs	4.30	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	43.40 ↓	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	43.00 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes - %	8.20 ↑	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	4.50 ↑ ↑	0 - 3.00		%
Basophils - %	0.90	0 - 1.00		%
Neutrophils - Absolute	1.87 ↓	1.90 - 4.20	1.50 - 7.80	k/cumm

Biomarker	Quest			
	Current Mar 07 2024	Optimal Range	Standard Range	Units
Lymphocytes - Absolute 	1.85	1.44 - 2.54	0.85 - 3.90	k/cumm
Monocytes - Absolute 	0.35	0.20 - 0.40	0.20 - 0.95	k/cumm
Eosinophils - Absolute 	0.19	0.03 - 0.20	0 - 0.50	k/cumm
Basophils - Absolute 	0.04	0 - 0.10	0 - 0.20	k/cumm
Neutrophil : Lymphocyte 	1.01	1.00 - 1.70	1.00 - 3.00	Ratio

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

Mar 07 2024

BLOOD GLUCOSE

Glucose Fasting	90.00 ↑
Hemoglobin A1C	5.20
eAG	103.00
Insulin - Fasting	5.20 ↑
C-Peptide	2.10
Fructosamine	193.70
HOMA2-%B	128.20 ↑ ↑
HOMA2-%S	65.00 ↓ ↓
HOMA2-IR	1.53 ↑
QUICKI	0.37 ↓






KIDNEY

BUN	9.00 ↓
Creatinine	0.77 ↓
BUN : Creatinine	11.69
eGFR	107.00

PROSTATE

PSA - Total	0.40
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ELECTROLYTES

Biomarker	Latest Test Result
	Quest
	Mar 07 2024
Sodium 	139.00
Potassium 	4.70
Chloride 	104.00
CO2 	25.00
Sodium : Potassium 	29.57 ↓ ↓

METABOLIC

Anion Gap 	14.70 ↑
Uric Acid - Male 	4.30
Creatine Kinase 	130.00
Leptin - Male 	4.50 ↑








ENZYMES

Amylase 	45.00
Lipase 	43.00

PROTEINS

Protein - Total 	6.86 ↓
Albumin 	4.05 ↓
Globulin - Total 	2.81 ↑
Albumin : Globulin 	1.44

MINERALS

Calcium 	9.12
Phosphorus 	2.92
Magnesium - Serum 	2.10 ↓
Magnesium - RBC 	5.80 ↓
Copper - Serum 	89.20 ↓
Zinc - Serum 	76.20 ↓
Zinc - RBC 	9.10 ↓

Biomarker	Latest Test Result
	Quest
	Mar 07 2024
Copper : Zinc Ratio	1.17
Calcium : Albumin	2.25 ↑
Calcium : Phosphorus	3.12

LIVER AND GB

Alk Phos	51.00
AST	12.00
ALT	22.00
LDH	131.00 ↓
Bilirubin - Total	0.60
Bilirubin - Direct	0.10
Bilirubin - Indirect	0.50
GGT	17.00
AST : ALT	0.55

IRON MARKERS

Iron - Serum	78.00 ↓
Ferritin	41.00 ↓
TIBC	300.00
UIBC	222.00
% Transferrin saturation	26.00

LIPIDS

Cholesterol - Total	203.00 ↑ ↑
Triglycerides	96.00 ↑
LDL Cholesterol	122.00 ↑ ↑
HDL Cholesterol	56.00
Non-HDL Cholesterol	147.00 ↑ ↑
VLDL Cholesterol	15.60 ↑

Biomarker	Latest Test Result
	Quest
	Mar 07 2024
LDL : HDL - Male	2.18
Triglyceride:HDL	1.71
Cholesterol : HDL	3.62 ↑

CARDIOMETABOLIC

Homocysteine	7.30 ↑
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THYROID

TSH	1.31
T4 - Total	8.30
T4 - Free	1.30
T3 - Total	103.00
T3 - Free	3.30
Reverse T3	13.00
T3 Uptake	31.00
Free Thyroxine Index (T7)	2.60
Thyroid Peroxidase (TPO) Abs	0.20
Thyroglobulin Abs	<1.00
Free T3 : Reverse T3	25.38
Free T3 : Free T4	2.54

INFLAMMATION

Hs CRP - Male	0.50
C-Reactive Protein	4.10 ↑
ESR - Male	4.80
Fibrinogen Activity	283.00

VITAMINS

Vitamin D (25-OH)	74.00
Vitamin B12	427.00 ↓




Biomarker	Latest Test Result
	Quest
	Mar 07 2024
Folate - Serum	14.20 ↓
Folate - RBC	398.10 ↓
Methylmalonic Acid	278.20 ↑

HORMONES













DHEA-S - Male	75.00 ↓ ↓
FSH - Male	5.90
LH - Male	4.30
Testosterone Total - Male	650.00 ↓
Testosterone Free - Male	127.44 ↓
Sex Hormone Binding Globulin - Male	42.00
Estradiol - Male	28.00
Progesterone - Male	0.65
Cortisol - Total/AM	12.20
Cortisol : DHEA-S	0.16 ↑ ↑
Cortisol - PM	7.80
Gastrin	42.50 ↓
% Testosterone Bioavailable - Male	43.27 ↓
% Testosterone Free - Male	1.96
Testosterone Bioavailable - Male	281.23 ↓

CBC

RBC - Male	4.60 ↓
Hemoglobin - Male	14.20
Hematocrit - Male	41.60
MCV	90.40 ↑
MCH	30.90
MCHC	34.10

Biomarker	Latest Test Result
	Quest
	Mar 07 2024
Platelets 	217.00
MPV 	11.20 ↑
RDW 	12.40

WBCS

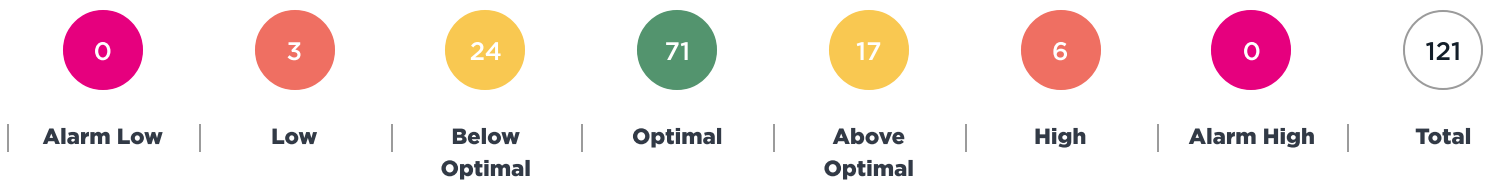
Total WBCs 	4.30
Neutrophils - % 	43.40 ↓
Lymphocytes - % 	43.00 ↑
Monocytes - % 	8.20 ↑
Eosinophils - % 	4.50 ↑ ↑
Basophils - % 	0.90
Neutrophils - Absolute 	1.87 ↓
Lymphocytes - Absolute 	1.85
Monocytes - Absolute 	0.35
Eosinophils - Absolute 	0.19
Basophils - Absolute 	0.04
Neutrophil : Lymphocyte 	1.01

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.

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 result itself.

Total number of biomarkers by range



Above Optimal

Cholesterol - Total

203.00 mg/dL

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

Eosinophils - %

4.50 %

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

Cortisol : DHEA-S

0.16 ratio

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

HOMA2-%B**128.20** %

The HOMA2 (Homeostasis Model Assessment) calculator is a tool used to express the degree of insulin sensitivity and insulin resistance. HOMA2-%B helps estimate the beta-cell function of the pancreas. Beta-cells produce insulin. Elevated HOMA2-%B levels indicate an increased beta-cell activity and an increase in insulin production. This points to an increasing trend towards pre-diabetes and insulin resistance.

Globulin - Total**2.81** g/dL

Globulins constitute the body's antibody system and Total globulin is a measurement of all the individual globulin fractions in the blood. An elevated total globulin level is associated with hypochlorhydria, liver dysfunction, immune activation, oxidative stress, and inflammation.

Homocysteine**7.30** μmol/L

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

LDL Cholesterol**122.00** mg/dL

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

Calcium : Albumin**2.25** ratio

The Calcium:Albumin ratio is determined from serum calcium and albumin levels. Elevated levels can be a sign of protein deficiency or protein loss.

MCV**90.40** fL

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

Non-HDL Cholesterol**147.00** mg/dL

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

VLDL Cholesterol**15.60** mg/dL

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

Insulin - Fasting**5.20** μIU/mL

Insulin is the hormone released by the pancreas in response to rising blood glucose levels and decreases blood glucose by transporting glucose into the cells. Often people lose their ability to utilize insulin to effectively drive blood glucose into energy-producing cells. This is commonly known as "insulin resistance" and is associated with increasing levels of insulin in the blood. Excess insulin is associated with greater risks of heart attack, stroke, metabolic syndrome, and diabetes.

Methylmalonic Acid**278.20** nmol/L

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

Glucose Fasting**90.00** mg/dL

Fasting blood glucose (FBG) is a critical indicator of metabolic status and reflects the intricate balance of glucose homeostasis, primarily mediated by the hormones insulin and glucagon. Insulin facilitates cellular glucose uptake and inhibits hepatic glucose production, while glucagon promotes glycogenolysis and gluconeogenesis in the liver. Elevated FBG levels are typically indicative of disrupted insulin activity or insufficient insulin secretion, commonly seen in conditions such as type 1 diabetes mellitus, where pancreatic beta-cell destruction leads to severe insulin deficiency, and type 2 diabetes mellitus, characterized by insulin resistance and eventual pancreatic beta-cell exhaustion. Additionally, increased FBG can signal underlying metabolic syndrome or prediabetic states, suggesting a broader spectrum of insulin resistance encompassing impaired glucose tolerance and altered lipid metabolism.

Cholesterol : HDL**3.62** Ratio

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

C-Reactive Protein**4.10** mg/L

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

Leptin - Male**4.50** ng/mL

Leptin is a hormone produced by adipose (fat) tissue. Ongoing research indicates that leptin plays a role in many physiological processes in the body including immunity, bone formation, blood cell formation, and blood sugar regulation. Increasing leptin levels are associated with increased body fat levels.

Monocytes - %**8.20** %

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.

Anion Gap **14.70** mEq/L

The anion gap is the measurement of the difference between the sum of the sodium and potassium levels and the sum of the serum CO₂/bicarbonate and chloride levels. Increased levels are associated with thiamine deficiency and metabolic acidosis.

Triglycerides **96.00** mg/dL

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

HOMA2-IR **1.53** Index

The HOMA2 (Homeostasis Model Assessment) calculator is a tool used to express the degree of insulin sensitivity and insulin resistance. HOMA2-IR helps estimate the degree of cellular resistance to the hormone insulin. A HOMA2-IR score of 1 is considered optimal. Levels above 1 show an increasing trend towards metabolic syndrome, insulin resistance and type 2 diabetes.

MPV **11.20** fL

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

Lymphocytes - % **43.00** %

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

Below Optimal

Sodium : Potassium

29.57 ratio

The Sodium:Potassium ratio is determined from the serum sodium and serum potassium levels. Both of these elements are under the influence of the adrenal glands. A decreased Sodium:Potassium ratio is associated with chronic stress and adrenal insufficiency.

HOMA2-%S

65.00 %

The HOMA2 (Homeostasis Model Assessment) calculator is a tool used to express the degree of insulin sensitivity and insulin resistance. HOMA2-%S helps estimate the degree of cellular sensitivity to the hormone insulin. A decreasing HOMA2-%S score is an indication of a decrease in insulin sensitivity at the cellular level. This is a sign of a trend towards insulin resistance, pre-diabetes, and eventually type 2 diabetes.

DHEA-S - Male

75.00 µg/dL

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

Neutrophils - Absolute

1.87 k/cumm

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

Copper - Serum

89.20 µg/dL

Copper is an essential trace mineral involved in multiple functions in the body including energy production, iron transport, neurotransmitter synthesis, antioxidant activity, regulation of gene expression, red and white blood cell maturation, bone strength, brain development, and the metabolism of glucose and cholesterol. Low levels of copper are associated with anemia due to its role in red blood cell maturation in the bone marrow.

QUICKI

0.37 Index

QUICKI is a simple calculation that uses fasting glucose and fasting insulin to assess insulin sensitivity. Decreased QUICKI results are associated with a trend towards increasing insulin resistance, cardiovascular risk, metabolic syndrome, and fatty liver.

Protein - Total**6.86** g/dL

Total serum protein is composed of albumin and total globulin. Conditions that affect albumin and total globulin readings will impact the total protein value. A decreased total protein can be an indication of malnutrition, digestive dysfunction due to HCl need, or liver dysfunction. Malnutrition leads to a decreased total protein level in the serum primarily from lack of available essential amino acids.

Creatinine**0.77** mg/dL

Creatinine is produced primarily from the contraction of muscle and is removed by the kidneys. Decreased levels are associated with muscle loss.

Testosterone Total - Male**650.00** ng/dL

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

Gastrin**42.50** pg/mL

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

Folate - RBC**398.10** ng/mL

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

LDH**131.00** IU/L

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

Folate - Serum**14.20** ng/mL

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

Ferritin**41.00** ng/mL

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

Iron - Serum**78.00** µg/dL

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

BUN**9.00** mg/dL

Blood Urea Nitrogen (BUN) is a key biochemical marker reflecting protein metabolism and renal function. Urea, the primary component measured by BUN tests, is formed in the liver as an end product of protein degradation and is subsequently excreted by the kidneys. Decreased BUN levels may be less clinically significant but can occur in scenarios such as severe hepatic damage where urea production is compromised, malnutrition or overhydration, which dilutes the concentration of urea in the blood.

RBC - Male**4.60** m/cumm

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

Magnesium - Serum**2.10** mg/dL

Magnesium is important for many different enzymatic reactions, including carbohydrate metabolism, protein synthesis, nucleic acid synthesis, and muscular contraction. Magnesium is also needed for energy production and is used by the body in the blood clotting mechanism. A decreased magnesium is a common finding with muscle cramps.

Vitamin B12**427.00** pg/mL

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

Zinc - RBC**9.10** mg/L

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

Testosterone Bioavailable - Male**281.23** ng/dL

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

Magnesium - RBC**5.80** mg/dL

Magnesium is important for many different enzymatic reactions, including carbohydrate metabolism, protein synthesis, nucleic acid synthesis, and muscular contraction. Magnesium is also needed for energy production and is used by the body in the blood clotting mechanism. A decreased RBC magnesium is a sign of magnesium deficiency and is a common finding with muscle cramps.

Testosterone Free - Male**127.44** pg/mL

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

Neutrophils - %**43.40** %

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

Zinc - Serum

76.20 $\mu\text{g/dL}$

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

% Testosterone Bioavailable - Male

43.27 %

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

Albumin

4.05 g/dL

Serum albumin is a protein in your blood that plays several important roles, including maintaining the balance of fluids in your body and transporting substances like hormones and vitamins. When we check your serum albumin levels, we look at how well various parts of your body are functioning, especially your liver and kidneys. If your serum albumin levels are low, it might be a sign that your body isn't getting or absorbing enough nutrients, particularly proteins. This condition can occur due to a variety of reasons, such as poor diet, problems with nutrient absorption in your gut, or more serious issues like liver disease. Low albumin levels can also suggest inflammation or infection somewhere in your body.

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

- 38 Functional Body Systems
- 41 Accessory Systems
- 43 Nutrient Status
- 46 Nutrient Deficiencies

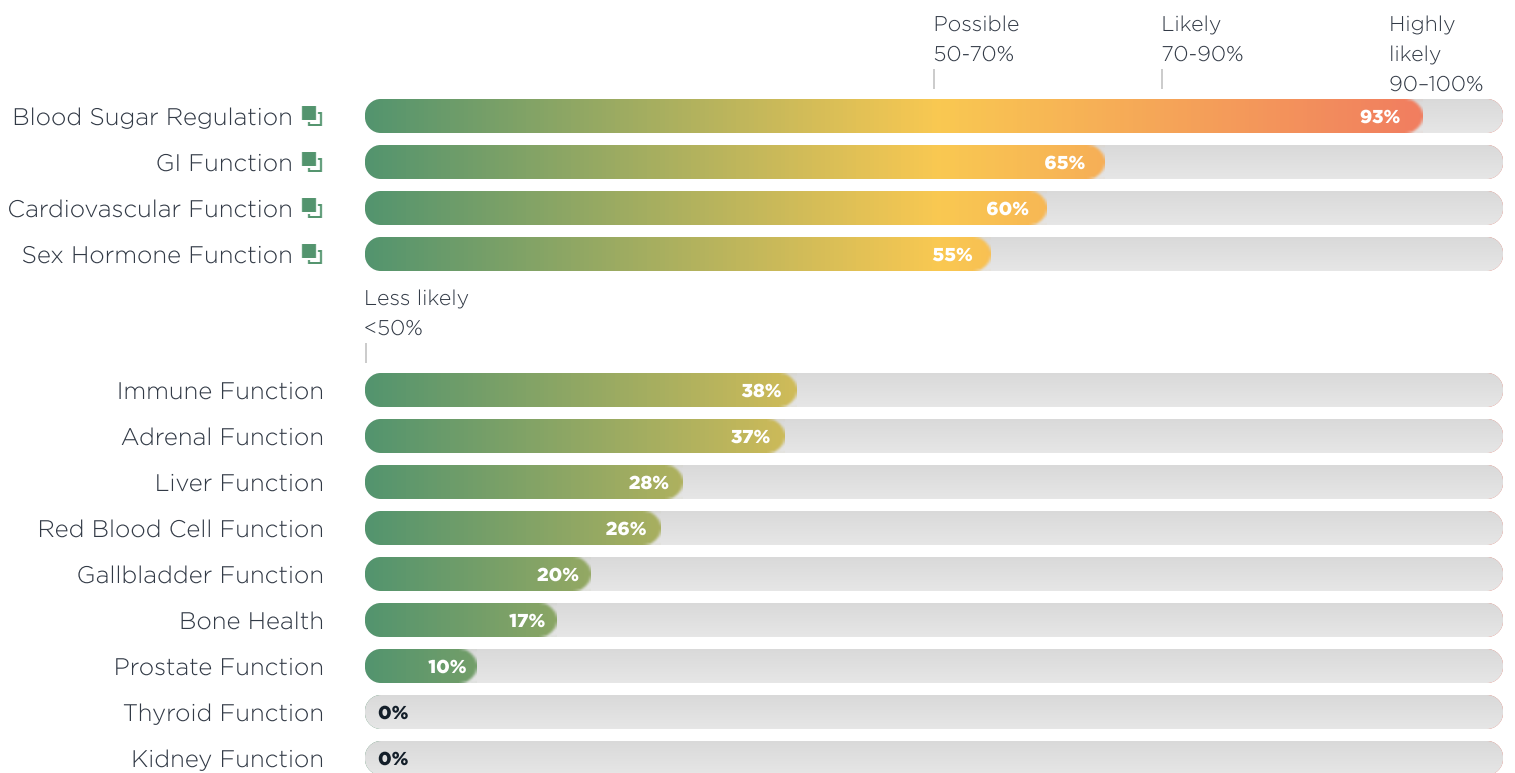
Functional Body Systems

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

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

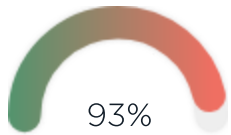
Each Body System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



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.











93%

Dysfunction Highly Likely.
Much improvement
required.

BLOOD SUGAR REGULATION

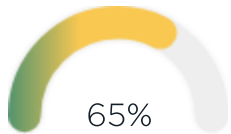
The Blood Sugar Regulation score looks for clues in your blood test that can help determine how well your body regulates the sugar in your blood. Some factors that affect the regulation of your blood glucose include the type and amount of protein, fat, and carbohydrates in your diet, inactivity, stress, tiredness, and hormones such as insulin released in response to elevated blood sugar levels. A high Blood Sugar Regulation score indicates that you may be at an increased risk of Blood Sugar dysregulation, causing a trend in increasing blood glucose levels. Blood sugar dysregulation is very common, but it doesn't suddenly emerge but develops slowly. In summary, your score is high, which indicates that your blood sugar regulation might not function as optimally as it should and may need support moving forward.

Rationale

Glucose Fasting , HOMA2-IR , LDH , Insulin - Fasting , Cholesterol - Total , LDL Cholesterol , DHEA-S - Male , Leptin - Male 

Biomarkers considered

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






65%

Dysfunction Possible
There may be
improvement needed in
certain areas.

GI FUNCTION

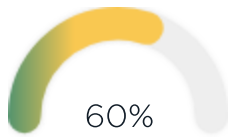
It is possible that you may be at risk of an emerging dysfunction in your gastrointestinal (GI) system. While this may not require immediate attention, we will want to watch this on future blood tests and consider support.

Rationale

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

Biomarkers considered

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



60%

Dysfunction Possible
There may be improvement needed in certain areas.

CARDIOVASCULAR FUNCTION

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

Rationale

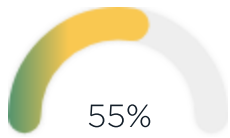
Glucose Fasting \uparrow , Cholesterol - Total \uparrow , Triglycerides \uparrow , LDL Cholesterol \uparrow , Homocysteine \uparrow , Testosterone Total - Male \downarrow , Insulin - Fasting \uparrow , Testosterone Free - Male \downarrow

Biomarkers considered

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

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

Lipoprotein (a), Omega 3 Index



55%

Dysfunction Possible
There may be improvement needed in certain areas.

SEX HORMONE FUNCTION

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

Rationale

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

Biomarkers considered

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

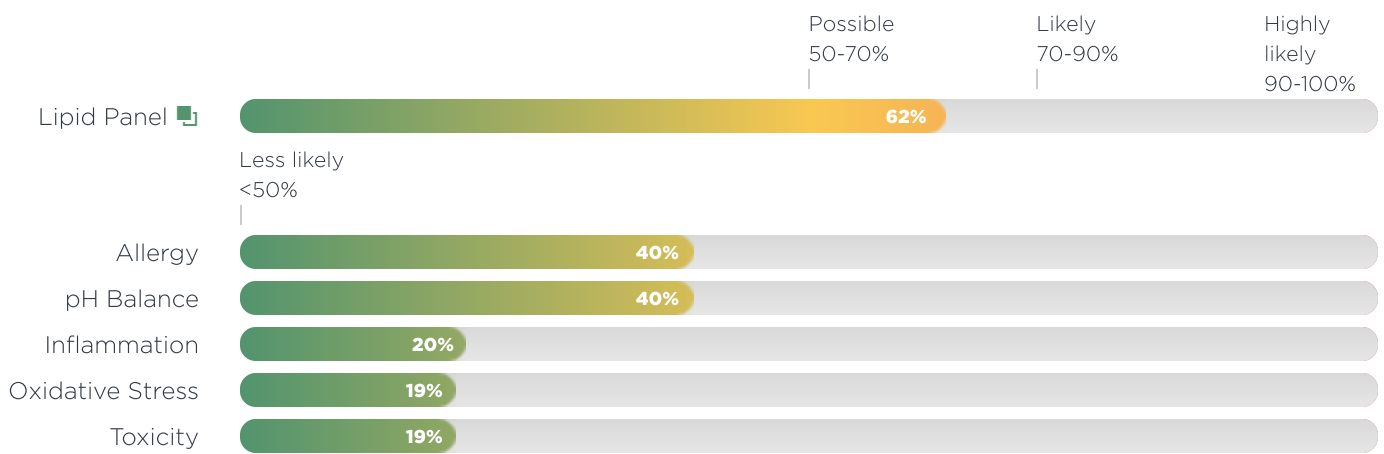
Accessory Systems

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.

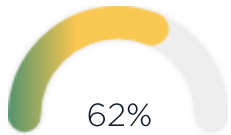
Each Accessory System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Accessory Systems Details

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






62%

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

LIPID PANEL

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

Rationale

Cholesterol - Total ,
Triglycerides , LDL
Cholesterol 

Biomarkers considered

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

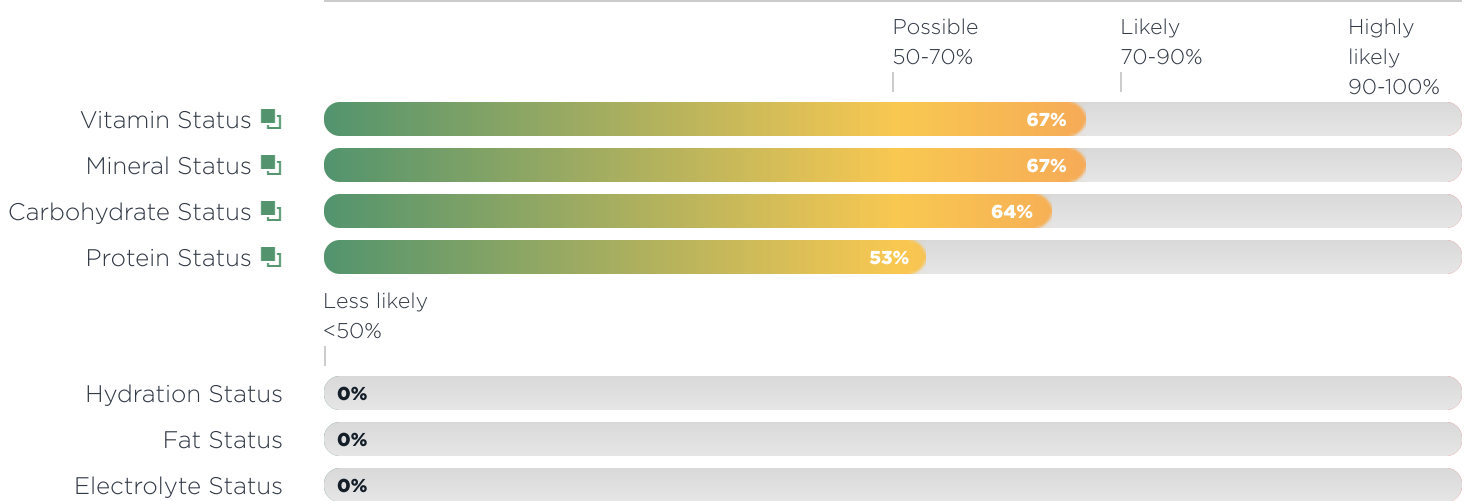
Nutrient Status

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

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

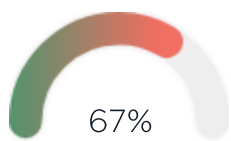
Each Nutrient category that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



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.



67%

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

VITAMIN STATUS

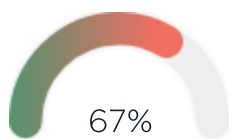
You may be in the early stages of vitamin deficiency or need, which may cause an increase in your Vitamin Status score. While this may not require immediate attention, we will want to monitor your vitamin levels on future blood tests.

Rationale

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

Biomarkers considered

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



67%

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

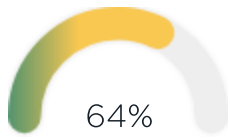
Magnesium - Serum \downarrow , Zinc - RBC \downarrow , Magnesium - RBC \downarrow , Copper - Serum \downarrow , Zinc - Serum \downarrow , Iron - Serum \downarrow , Ferritin \downarrow

Biomarkers considered

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

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

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



64%

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

CARBOHYDRATE STATUS

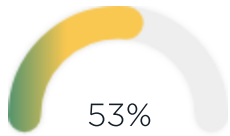
You may be in the early stages of having difficulties handling your dietary intake of carbohydrates, especially refined carbohydrates and sugars. This may begin to cause shifts in your ability to regulate blood sugar. While this may not require immediate attention, we will want to monitor this on future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

Rationale

Glucose Fasting \uparrow , LDH \downarrow ,
Cholesterol - Total \uparrow , LDL
Cholesterol \uparrow

Biomarkers considered

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



53%

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

PROTEIN STATUS

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

Rationale

Protein - Total \downarrow , BUN \downarrow ,
Albumin \downarrow , Calcium : Albumin
 \uparrow , Creatinine \downarrow , C-Reactive
Protein \uparrow

Biomarkers considered

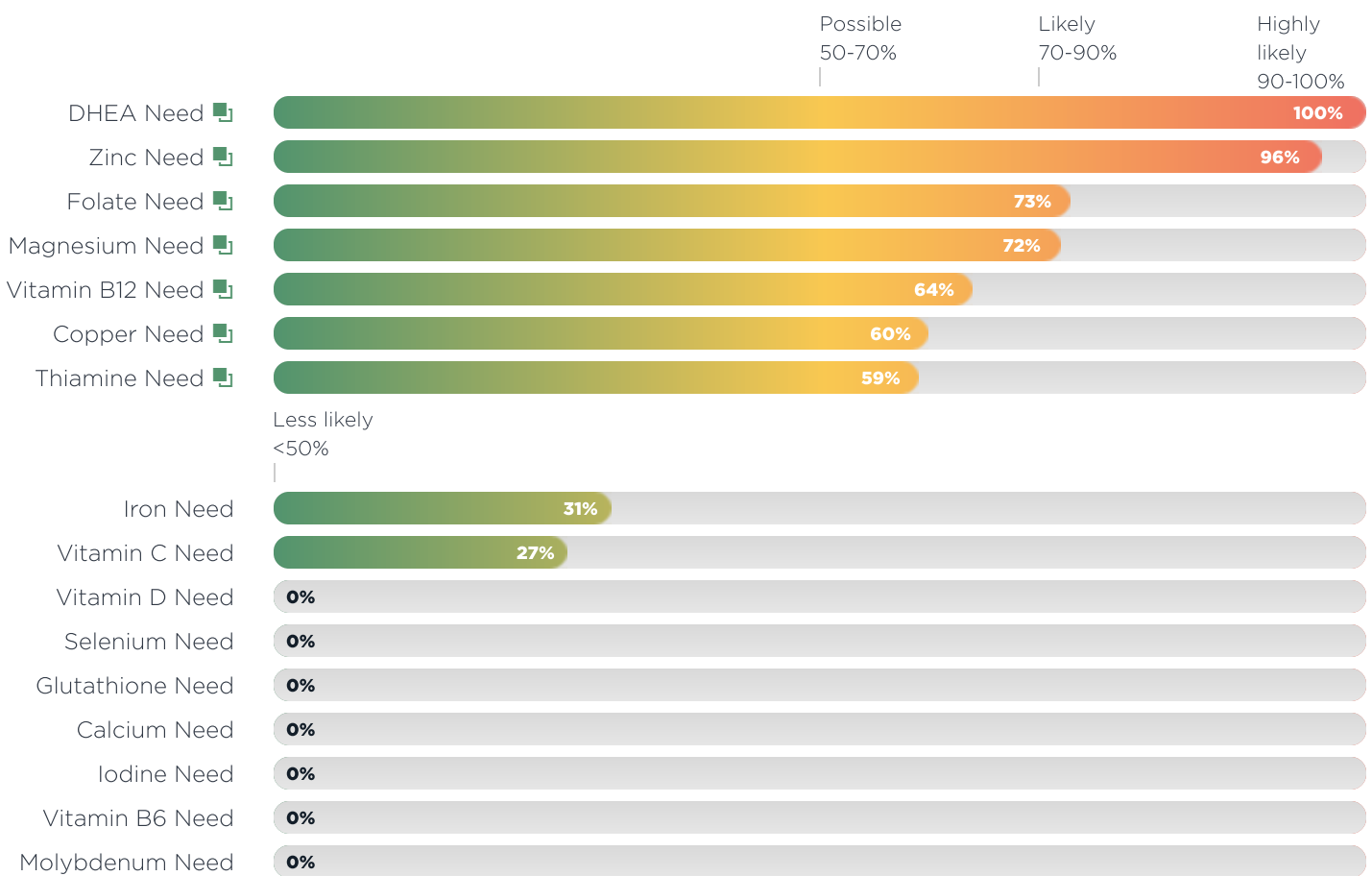
Protein - Total, BUN, Albumin,
Calcium : Albumin, Creatinine,
BUN : Creatinine, C-Reactive
Protein, Hs CRP - Male, ALT,
AST, CO2, GGT, Total WBCs,
TIBC

Individual Nutrient Deficiencies

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

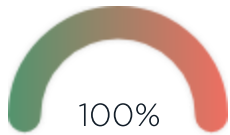
Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DEFICIENCY



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.



100%

Deficiency Highly Likely.
Much improvement
required.

DHEA NEED

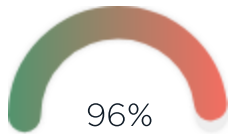
Your blood test results show a high need for DHEA, indicating that you are very likely not getting enough of this important hormone. Low DHEA levels can lead to problems like low energy, mood changes, and a weakened immune system. To help improve your DHEA levels, focus on a healthy lifestyle that includes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

Rationale

DHEA-S - Male ↓

Biomarkers considered

DHEA-S - Male



96%

Deficiency Highly Likely.
Much improvement
required.

ZINC NEED

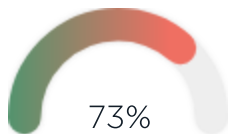
Your blood test results show a high need for zinc, which means you are very likely not getting enough zinc. Low zinc levels can cause problems like getting sick often, hair loss, skin issues, slow healing of cuts, and changes in taste. To help improve your zinc levels, try to eat more zinc-rich foods 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



73%

Deficiency Likely.
Improvement required.

FOLATE NEED

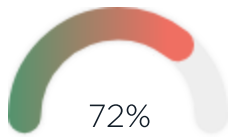
Your blood test results suggest that you are likely not getting enough folate, which can affect your energy levels and overall health. To help prevent further decline in folate levels, try to include more folate-rich foods in your diet, such as broccoli, avocados, and fortified cereals. Some conditions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

Rationale

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

Biomarkers considered

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



72%

Deficiency Likely.
Improvement required.

MAGNESIUM NEED

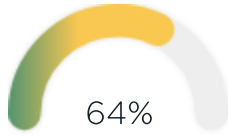
Your blood test results suggest that you are likely not getting enough magnesium, which can affect your muscle and nerve function. To help prevent further decline in magnesium levels, try to include more magnesium-rich foods in your diet, such as spinach, almonds, and black beans. Some conditions, like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

Rationale

Magnesium - Serum ↓,
Magnesium - RBC ↓

Biomarkers considered

Magnesium - Serum, Magnesium - RBC, GGT



64%

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

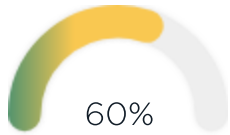
Vitamin B12 ↓, Methylmalonic Acid ↑, Homocysteine ↑, MCV ↑

Biomarkers considered

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

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

Active B12



60%

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

COPPER NEED

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

Rationale

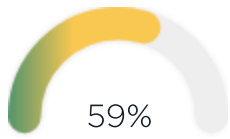
Copper - Serum ↓

Biomarkers considered

Copper - Serum

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

Copper - RBC



59%

Deficiency Possible.

There may be improvement needed in certain areas.

THIAMINE NEED

Your blood test results show that you may be starting to have a thiamine deficiency. Although it may not be a major concern yet, it is important to monitor your thiamine levels and include more thiamine-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 thiamine absorption. With regular monitoring, we can likely prevent further deficiency.

Rationale

Anion Gap , Glucose Fasting , LDH 

Biomarkers considered

Anion Gap, CO2, Glucose Fasting, LDH, Hemoglobin - Male, Hematocrit - Male



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

Health Concerns

51 Health Concerns

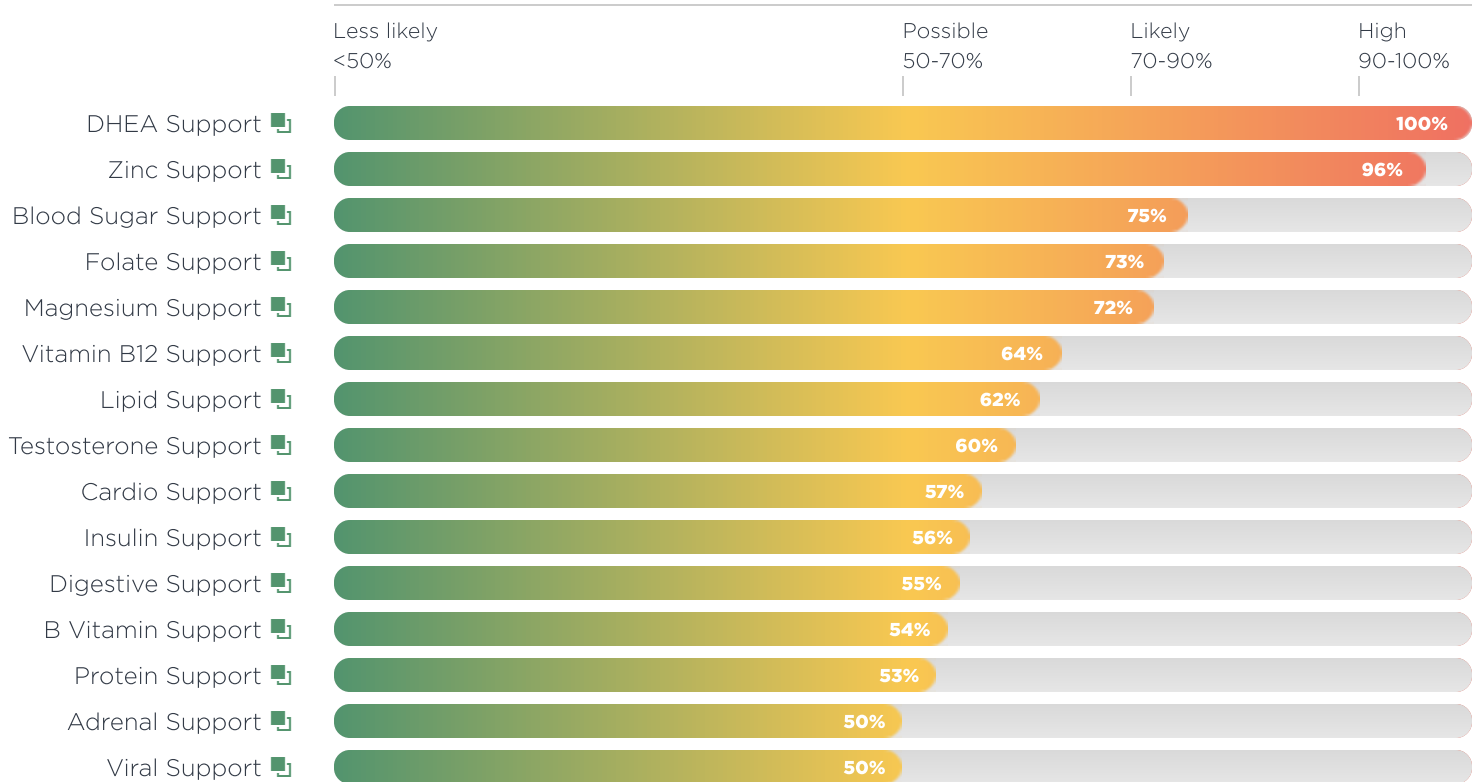


Health Concerns Report

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.

NEED OF SUPPORT



Health Concerns Details

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

DHEA SUPPORT

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

Rationale

DHEA-S - Male ↓

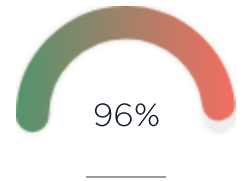


ZINC SUPPORT

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 ↓

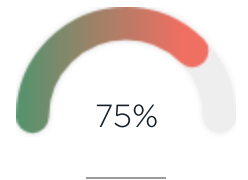


BLOOD SUGAR SUPPORT

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

Rationale

Glucose Fasting ↑, Triglycerides ↑, Insulin - Fasting ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, DHEA-S - Male ↓

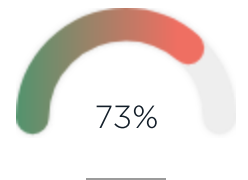


FOLATE SUPPORT

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

Rationale

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

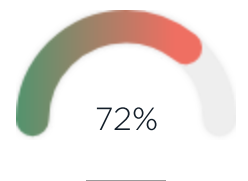


MAGNESIUM SUPPORT

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

Rationale

Magnesium - Serum ↓, Magnesium - RBC ↓

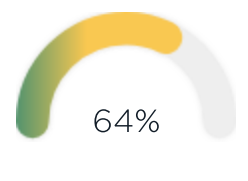


VITAMIN B12 SUPPORT

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

Rationale

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

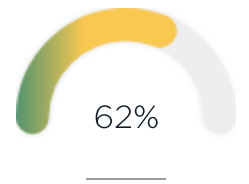


LIPID SUPPORT

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

Rationale

Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑

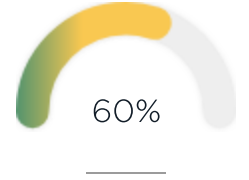


TESTOSTERONE SUPPORT

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

Rationale

Testosterone Total - Male ↓, Testosterone Free - Male ↓

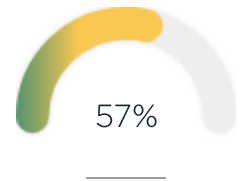


CARDIO SUPPORT

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

Rationale

Glucose Fasting ↑, Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑, Homocysteine ↑, Testosterone Total - Male ↓, Insulin - Fasting ↑, Testosterone Free - Male ↓

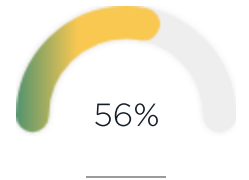


INSULIN SUPPORT

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

Rationale

HOMA2-IR ↑, Triglycerides ↑, Glucose Fasting ↑, Insulin - Fasting ↑, Cholesterol - Total ↑

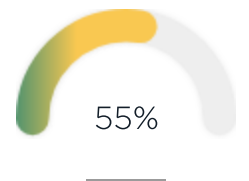


DIGESTIVE SUPPORT

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

Rationale

Protein - Total ↓, Globulin - Total ↑, Albumin ↓, MCV ↑, Iron - Serum ↓, Gastrin ↓

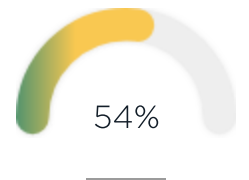


B VITAMIN SUPPORT

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

Rationale

Anion Gap ↑, Glucose Fasting ↑, LDH ↓

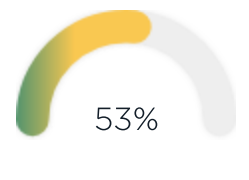


PROTEIN SUPPORT

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 ↓, Calcium : Albumin ↑, Creatinine ↓, C-Reactive Protein ↑

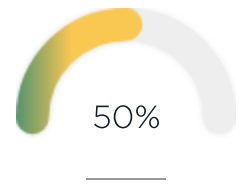


ADRENAL SUPPORT

The results of your blood test indicate a tendency towards adrenal insufficiency and a need for adrenal gland support. The adrenal glands produce certain hormones in response to stress. They are responsible for what is commonly called “the fight or flight response”. Unfortunately, when your body is under constant stress, which is very common, your adrenal glands become less functional and we recommend adrenal gland support.

Rationale

Sodium : Potassium ↓, DHEA-S - Male ↓

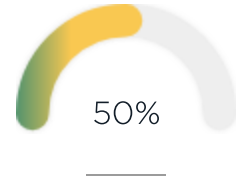


VIRAL SUPPORT

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

Rationale

Lymphocytes - % ↑, Monocytes - % ↑, Neutrophils - % ↓





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56 Disclaimer



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