

Blood Chemistry Analysis Functional Health Report



Patient Report

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



Requested by Olivia Munroe
Optimal DX

**Collected
Date** Dec 07, 2022

Lab Quest

What's Inside?

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

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- 4 FBCA Introduction

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

Introduction

- 1 What's Inside?
- 3 Practitioner's Notes
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Olivia Munroe's Report

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

REPORT

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 is the process by which blood biomarkers are organized, analyzed, and interpreted. It provides a comprehensive assessment of the state of health in the body's main physiological systems. It also gives a window into the body's nutrient status and whether you are trending toward or away from optimal health.

Olivia Munroe
Optimal DX

WHY BLOOD TESTING?

Blood has a lot to say about your state of health. The Blood Chemistry and CBC / hematology test is the world's most commonly ordered medical lab test. Blood testing is an integral part of Western clinical medicine and is used to aid in the diagnostic decision-making process. Patients understand and are educated that blood testing is the norm for health assessment.

However, many people start to feel unwell long before a traditional blood test result becomes diagnostic, and more often than not, patients like you are told by their physician that "everything on your blood test looks normal."

NORMAL IS NOT OPTIMAL

Most people who feel "unwell" will come out "normal" on a blood test. Clinical experience suggests that these people are by no means "normal" and are a far cry from being functionally optimal. They may not yet have progressed to a known disease state but they are what we call dys-functional, i.e. their physiological systems are no longer functioning properly and they are starting to feel un-well.

The issue is not that the blood test is a poor diagnostic tool, far from it. The issue is that the reference ranges used on a traditional lab test are based on statistics, not on whether a certain value represents good health or optimal physiological function. The problem is that "normal" ranges represent "average" populations rather than the optimal level required to maintain good health. Most "normal" reference ranges are too broad to adequately detect health problems before they become pathology and are not useful for detecting the emergence of dysfunction.

THE FUNCTIONAL APPROACH

The functional approach to blood test analysis is oriented around functional changes in your body and not pathology. We use ranges that are based on optimal physiology and not the "normal" population. This results in a tighter "Functional Physiological Range", which allows us to evaluate the area within the "Normal" reference range that indicates that something is not quite right in the physiological systems associated with this biomarker. This gives us the ability to detect changes in your physiological "function". We can identify the factors that obstruct you from achieving optimal physiological, biochemical, and metabolic functioning in your body.

Another thing that separates Functional Blood Chemistry Analysis from the Traditional approach is we are not simply looking at one individual biomarker at a time in a linear report of the data. Rather, we use trend analysis between the individual biomarkers to establish hidden risk trends towards or away from optimal health.

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report results from a detailed algorithmic analysis of your blood test results. Our analytical and interpretive software analyzes the blood test data for its hidden meaning and reveals the subtle, web-like patterns hidden within the numbers that signal the first stages of functional change in your body.

SUMMARY

In closing, Blood testing is no longer simply a part of disease or injury management. It's a vital component of a comprehensive Functional Medicine work up and plays a vital role in uncovering hidden health trends, comprehensive health promotion and disease prevention.



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

Analytics

- 6 Blood Test Results
- 17 Blood Test Comparative
- 22 Blood Test History
- 28 Out of Optimal Range

Blood Test Results

Blood Test Comparative

Blood Test History

Out of Optimal Range

Blood Glucose
Enzymes
Lipids
Hormones

Kidney
Proteins
Cardiometabolic
CBC

Prostate
Minerals
Thyroid
WBCs

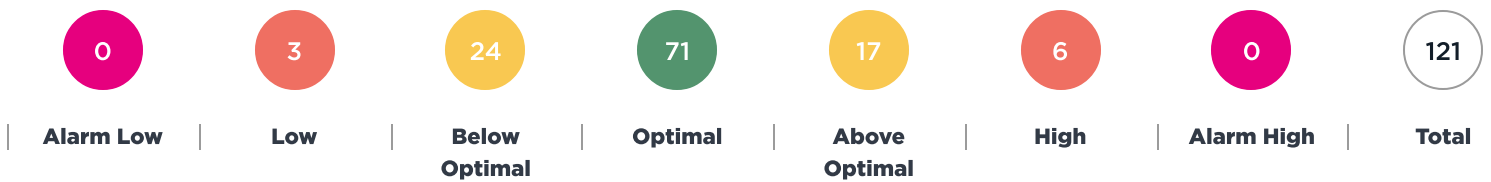
Electrolytes
Liver and GB
Inflammation

Metabolic
Iron Markers
Vitamins

Blood Test Results

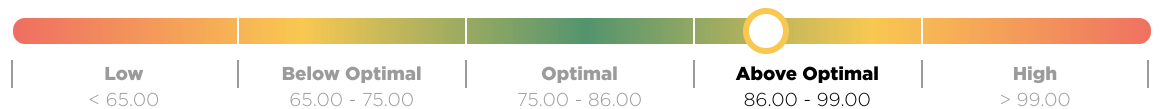
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range. The biomarkers are grouped into their most common categories.

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

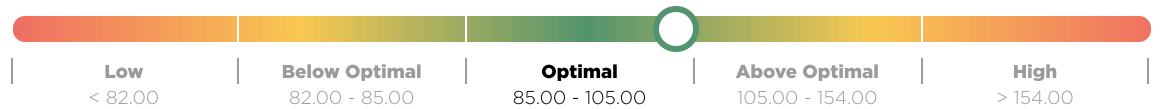
Glucose - Fasting
 90.00 mg/dL



Hemoglobin A1C
 5.20 %



eAG
 103.00 mg/dl



Insulin - Fasting
 5.20 µIU/ml



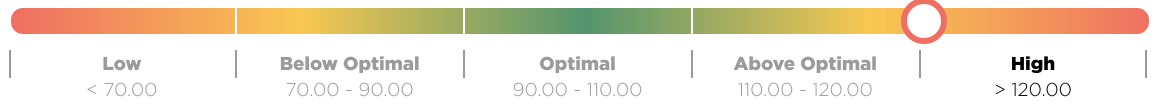
C-Peptide
2.10 ng/ml




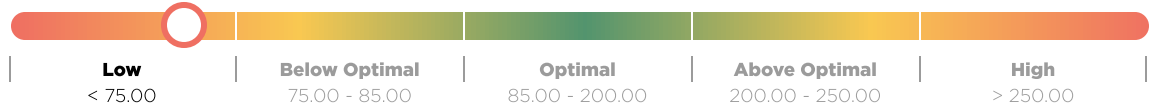
Fructosamine
193.70 μ mol/L



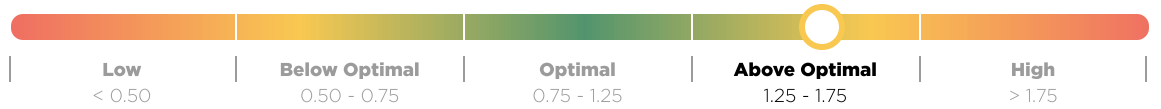
HOMA2-%B 
128.20 %



HOMA2-%S 
65.00 %



HOMA2-IR 
1.53 Index




QUICKI 
0.37 Index

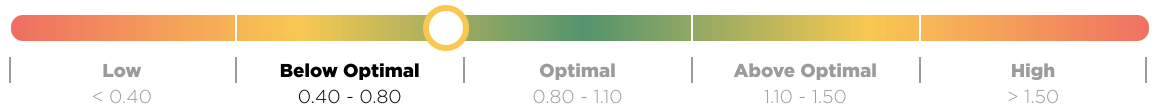


KIDNEY

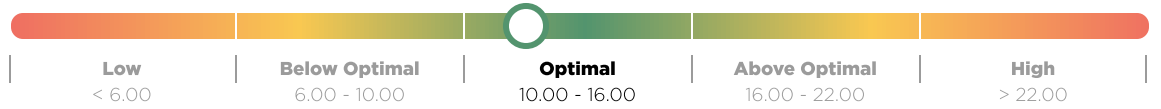
BUN 
9.00 mg/dL



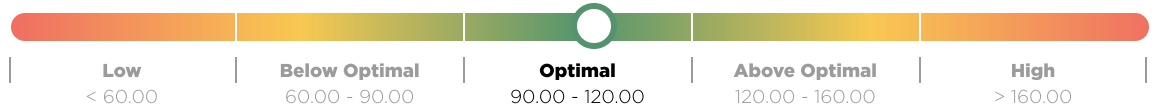
Creatinine 
0.77 mg/dL



BUN : Creatinine
11.69 Ratio



eGFR
107.00 mL/min/1.73m²



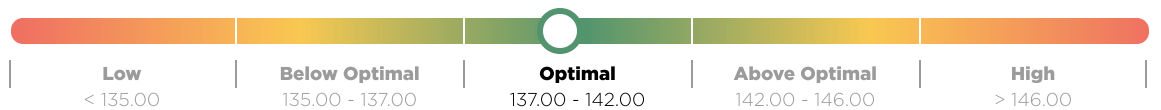
PROSTATE

PSA - Total
0.40 ng/ml

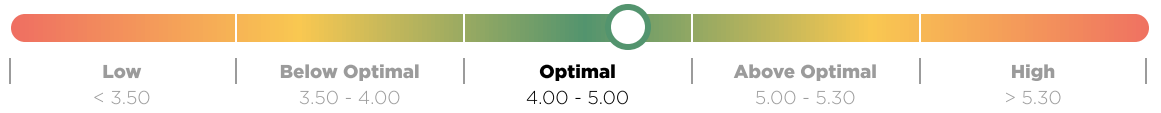


ELECTROLYTES

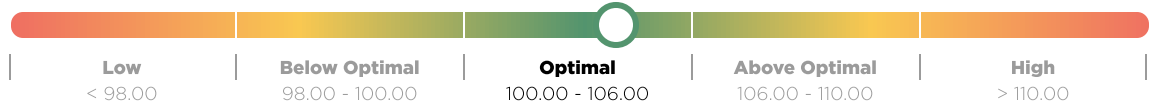
Sodium
139.00 mEq/L



Potassium
4.70 mEq/L



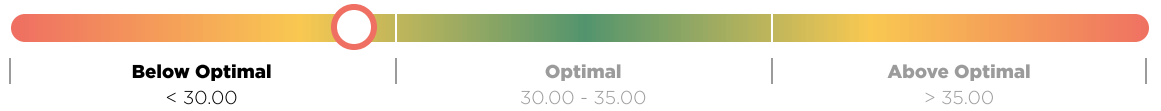
Chloride
104.00 mEq/L



CO2
25.00 mEq/L

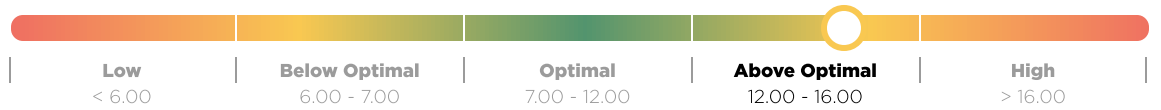


Sodium : Potassium
29.57 ratio

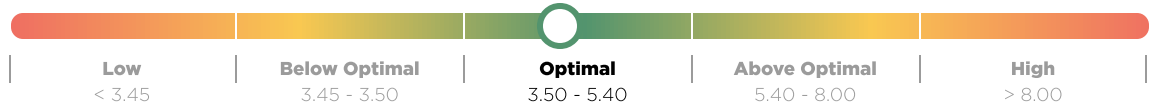


METABOLIC

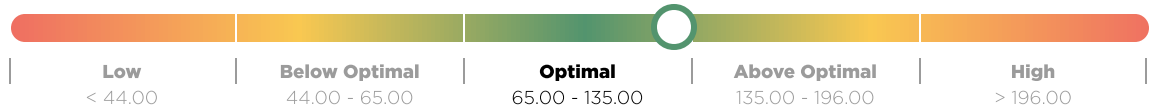
Anion Gap
14.70 mEq/L



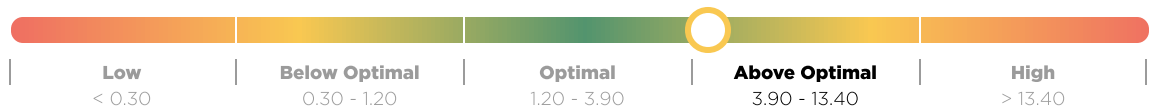
Uric Acid - Male
4.30 mg/dL



Creatine Kinase
130.00 u/l

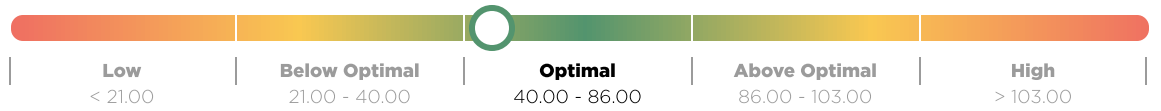


Leptin - Male
4.50 ng/ml

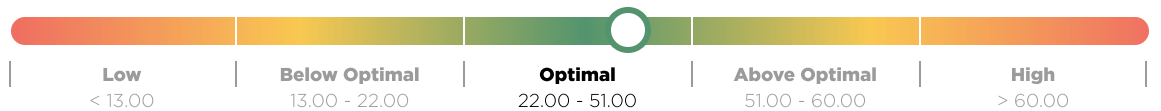


ENZYMES

Amylase
45.00 U/L



Lipase
43.00 U/L

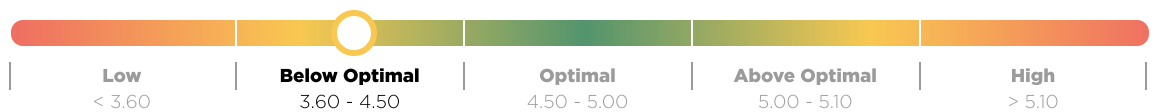


PROTEINS

Protein - Total
6.86 g/dL

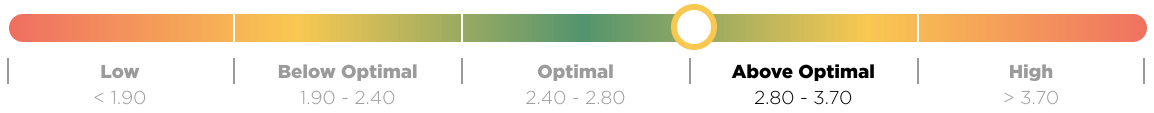


Albumin
4.05 g/dL



Globulin - Total 

2.81 g/dL



Albumin : Globulin

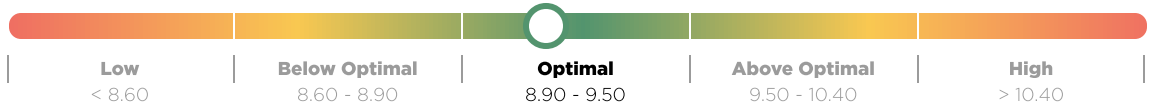
1.44 ratio



MINERALS

Calcium

9.12 mg/dL



Phosphorus

2.92 mg/dL



Magnesium - Serum 

2.10 mg/dl



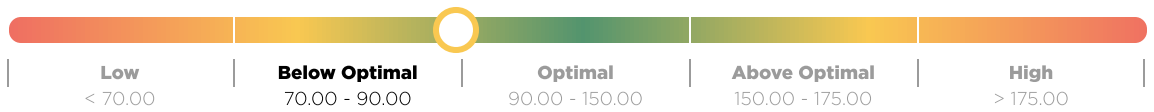
Magnesium - RBC 

5.80 mg/dl



Copper - Serum 

89.20 µg/dL



Zinc - Serum 

76.20 µg/dL



Zinc - RBC 

9.10 mg/L



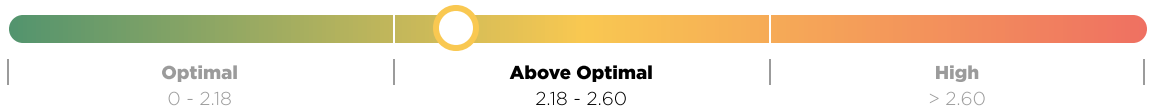
Copper : Zinc Ratio

1.17 Ratio



Calcium : Albumin 

2.25 ratio

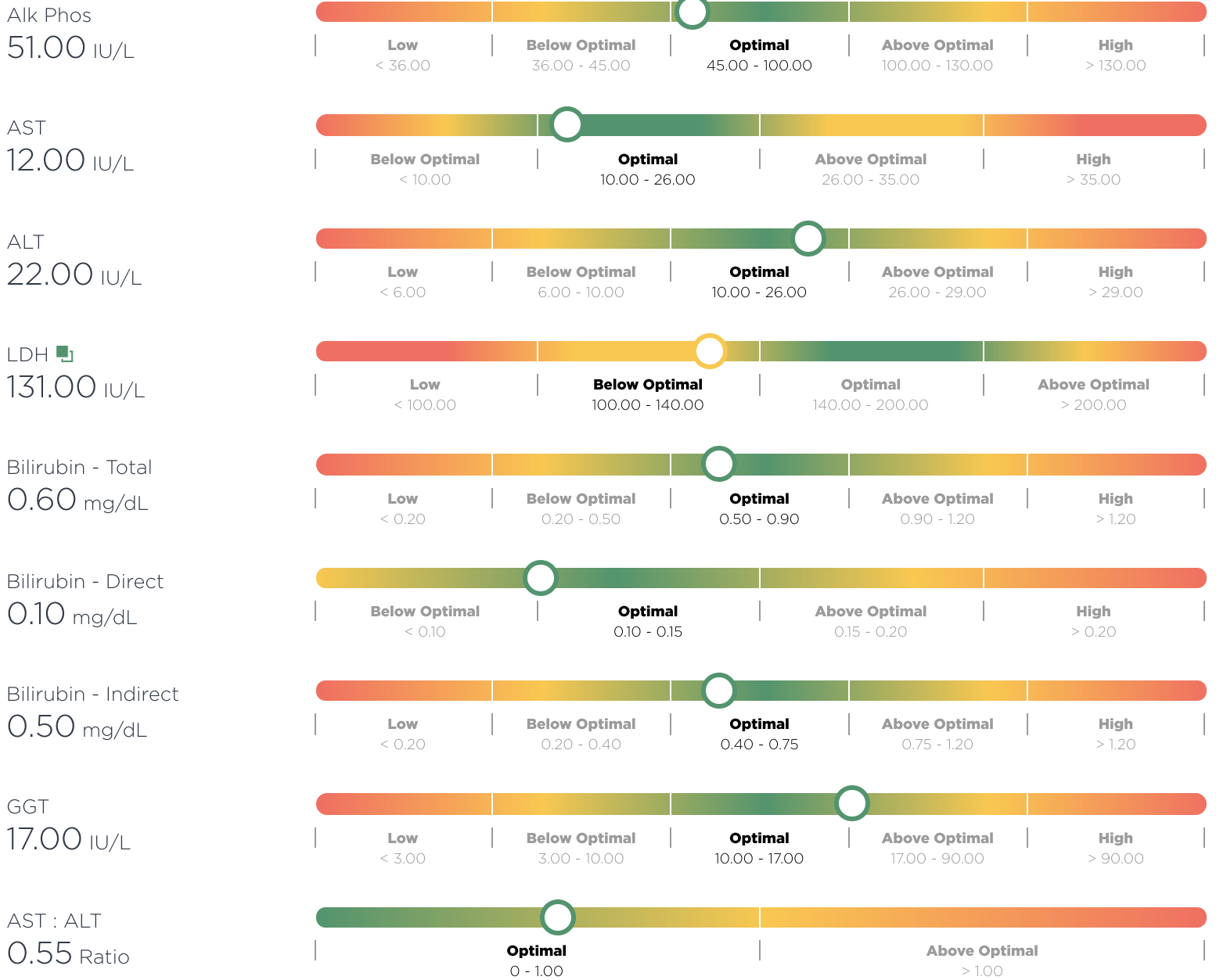


Calcium : Phosphorus

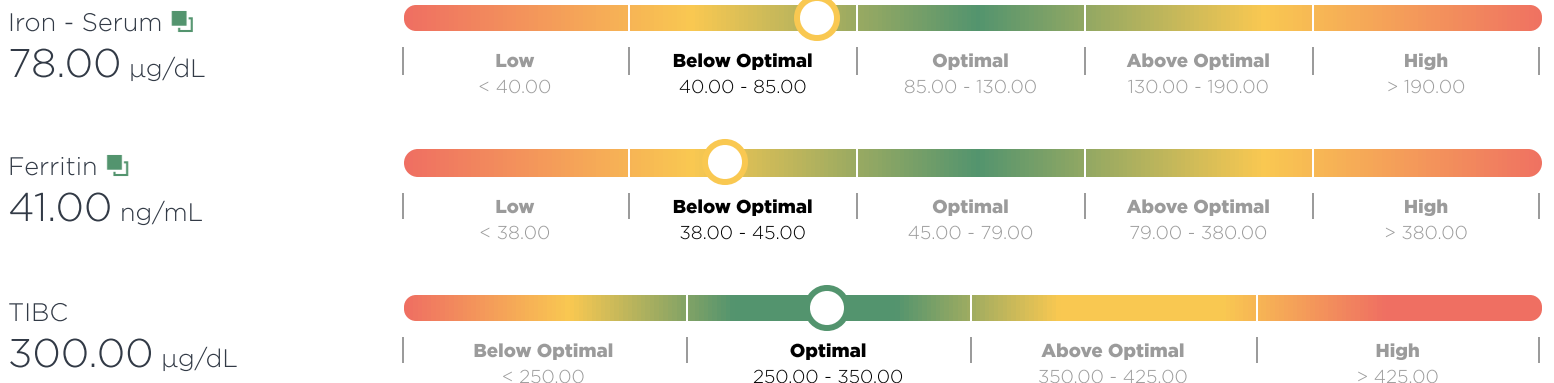
3.12 ratio



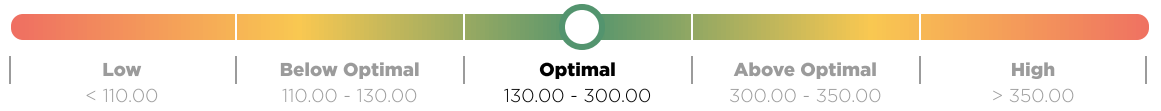
LIVER AND GB



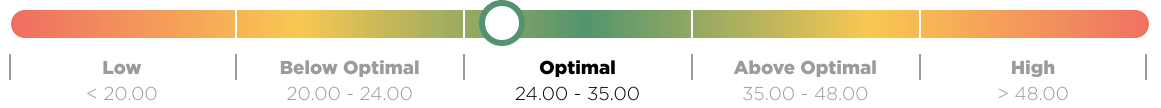
IRON MARKERS



UIBC
222.00 µg/dL



% Transferrin saturation
26.00 %



LIPIDS

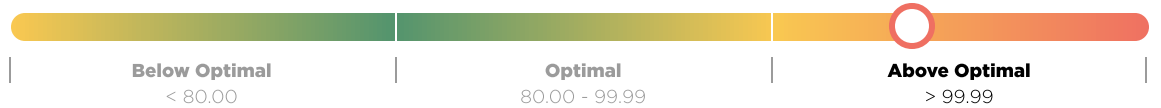
Cholesterol - Total
203.00 mg/dL



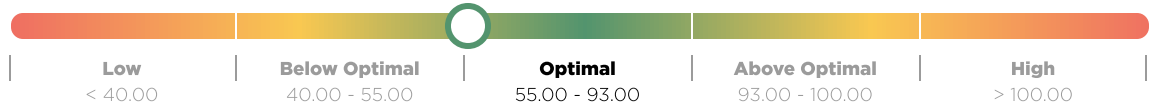
Triglycerides
96.00 mg/dL



LDL Cholesterol
122.00 mg/dL



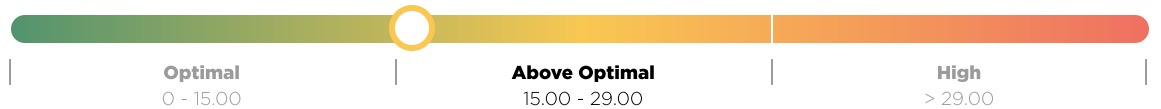
HDL Cholesterol
56.00 mg/dL



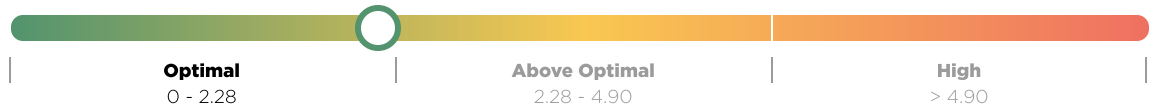
Non-HDL Cholesterol
147.00 mg/dl



VLDL Cholesterol
15.60 mg/dl



LDL : HDL - Male
2.18 Ratio



Triglyceride:HDL
1.71 ratio



Cholesterol : HDL
3.62 Ratio

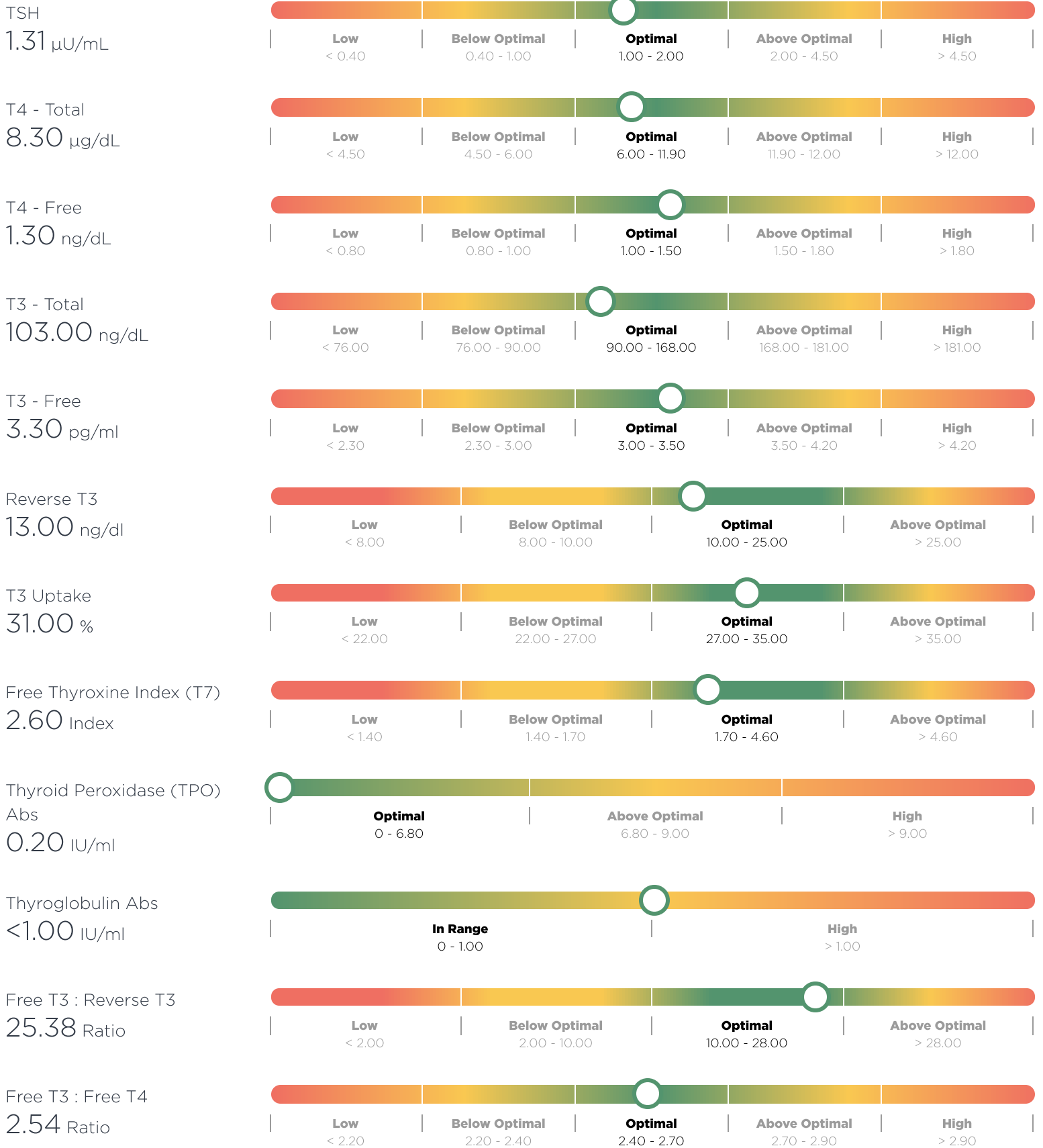


CARDIOMETABOLIC

Homocysteine
7.30 µmol/L



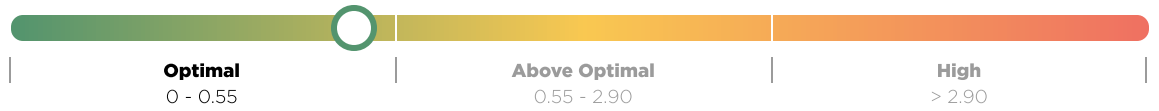
THYROID



INFLAMMATION

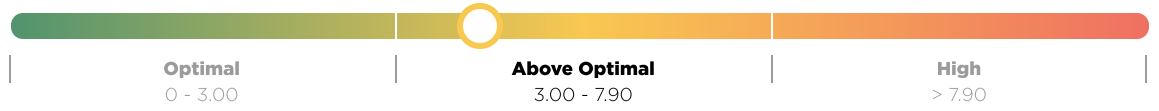
Hs CRP - Male

0.50 mg/L



C-Reactive Protein

4.10 mg/L



ESR - Male

4.80 mm/hr



Fibrinogen

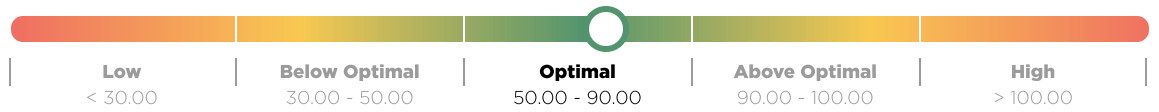
283.00 mg/dl



VITAMINS

Vitamin D (25-OH)

74.00 ng/ml



Vitamin B12

427.00 pg/ml



Folate - Serum

14.20 ng/ml



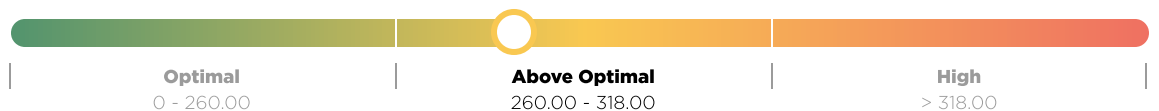
Folate - RBC

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



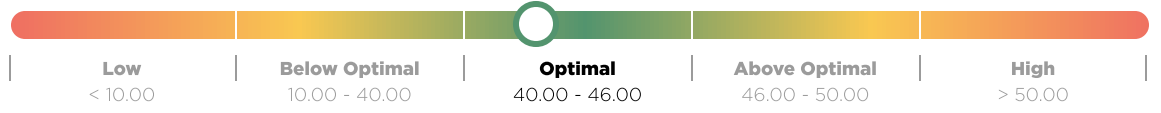
Testosterone Total - Male 
650.00 ng/dl



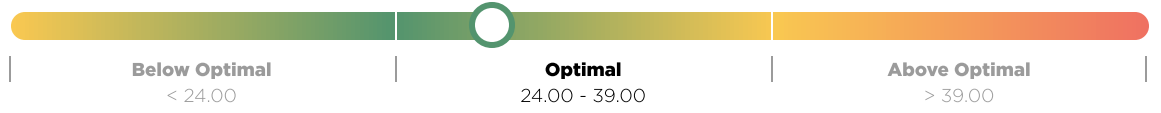
Testosterone Free - Male 
127.44 pg/ml



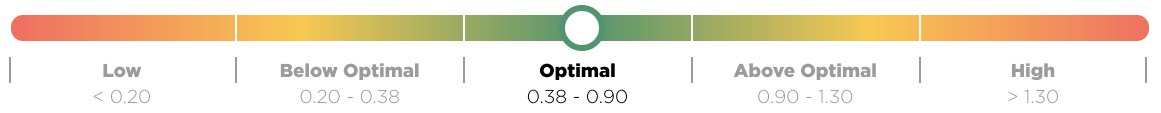
Sex Hormone Binding
Globulin - Male
42.00 nmol/L



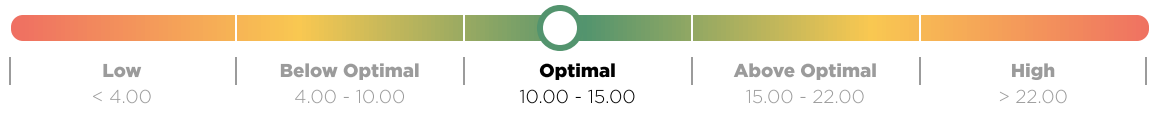
Estradiol - Male
28.00 pg/ml



Progesterone - Male
0.65 ng/ml



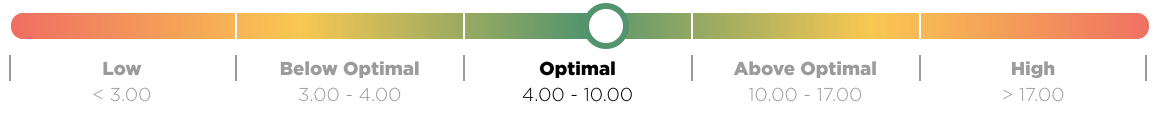
Cortisol - Total/AM
12.20 µg/dL



Cortisol : DHEA-S 
0.16 ratio




Cortisol - PM
7.80 µg/dL



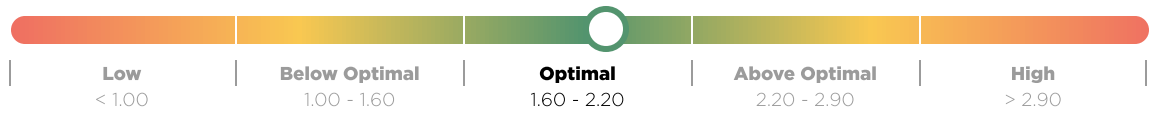
Gastrin 
42.50 pg/ml




% Testosterone Bioavailable -
Male 
43.27 %



% Testosterone Free - Male
1.96 %



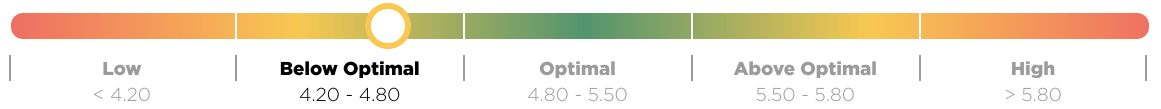
Testosterone Bioavailable -
Male 
281.23 ng/dl



CBC

RBC - Male ■

4.60 m/cumm



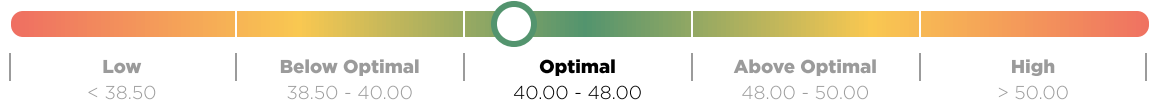
Hemoglobin - Male

14.20 g/dl



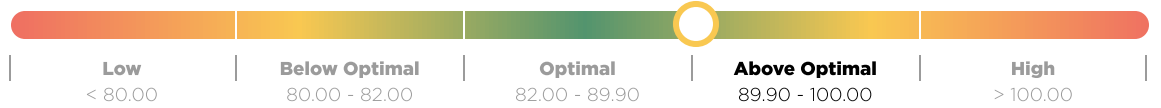
Hematocrit - Male

41.60 %



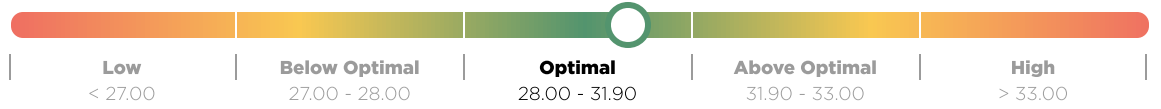
MCV ■

90.40 fL



MCH

30.90 pg



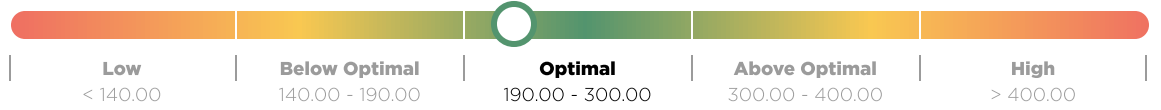
MCHC

34.10 g/dL



Platelets

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



MPV ■

11.20 fL



RDW

12.40 %



WBCS

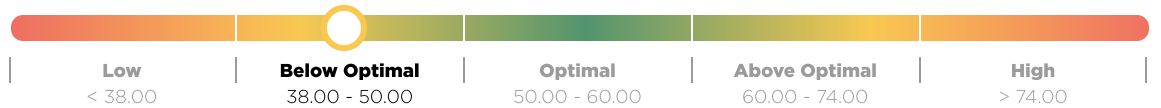
Total WBCs

4.30 k/cumm



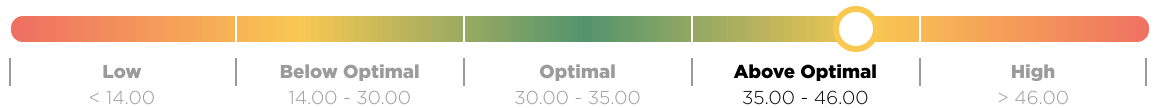
Neutrophils - % ■

43.40 %



Lymphocytes - % ■

43.00 %



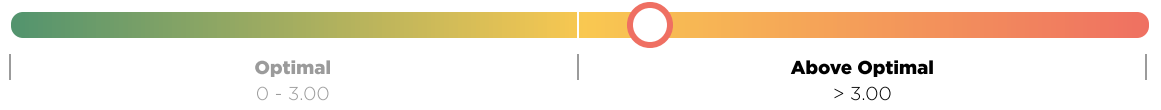
Monocytes - % 

8.20 %



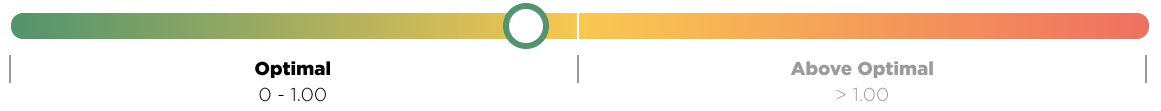
Eosinophils - % 

4.50 %



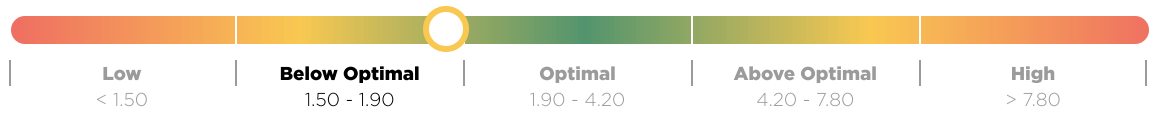
Basophils - %

0.90 %



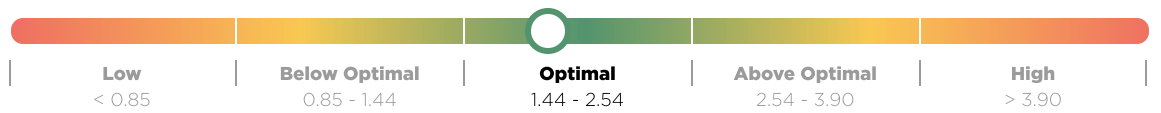
Neutrophils - Absolute 

1.87 k/cumm



Lymphocytes - Absolute

1.85 k/cumm



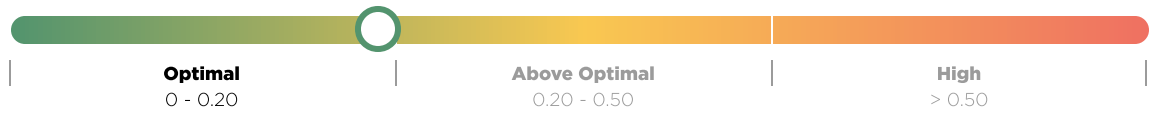
Monocytes - Absolute

0.35 k/cumm



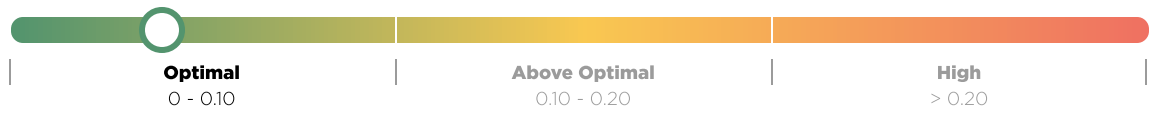
Eosinophils - Absolute

0.19 k/cumm



Basophils - Absolute

0.04 k/cumm



Neutrophil : Lymphocyte

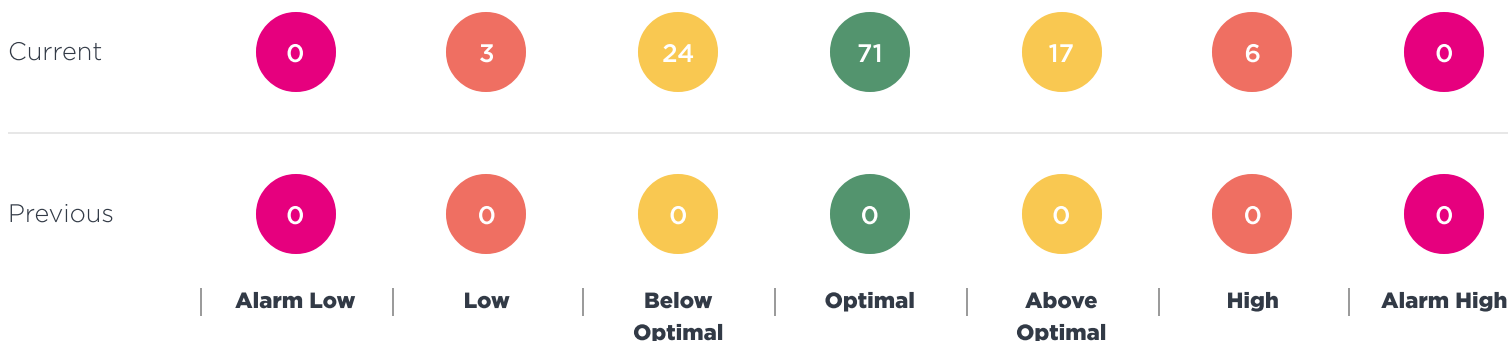
1.01 Ratio



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			Units
	Current Dec 07 2022	Optimal range	Standard range	

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 Dec 07 2022	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

Biomarker	Quest			
	Current Dec 07 2022	Optimal range	Standard range	Units
LDH	131.00 ↓	140.00 - 200.00	100.00 - 200.00	IU/L
Bilirubin - Total	0.60	0.50 - 0.90	0.20 - 1.20	mg/dL
Bilirubin - Direct	0.10	0.10 - 0.15	0 - 0.20	mg/dL
Bilirubin - Indirect	0.50	0.40 - 0.75	0.20 - 1.20	mg/dL
GGT	17.00	10.00 - 17.00	3.00 - 90.00	IU/L
AST : ALT	0.55	0 - 1.00		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	µU/mL
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 - 2.90	mg/L
C-Reactive Protein	4.10 ↑	0 - 3.00	0 - 7.90	mg/L

Biomarker	Quest			
	Current Dec 07 2022	Optimal range	Standard range	Units
ESR - Male	4.80	0 - 5.00	0 - 15.00	mm/hr
Fibrinogen	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		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/µL
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		%

Biomarker	Quest			
	Current Dec 07 2022	Optimal range	Standard range	Units
Basophils - % 	0.90	0 - 1.00		%
Neutrophils - Absolute 	1.87 ↓	1.90 - 4.20	1.50 - 7.80	k/cumm
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 - 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
- Above / Below Standard
- Alarm High / Alarm Low

Biomarker	Latest Test Result Quest Dec 07 2022
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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
	Dec 07 2022
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
	Dec 07 2022
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
	Dec 07 2022
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 	283.00

VITAMINS

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




Biomarker	Latest Test Result
	Quest
	Dec 07 2022
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
	Dec 07 2022
Platelets 	217.00
MPV 	11.20 ↑
RDW 	12.40

WBCS

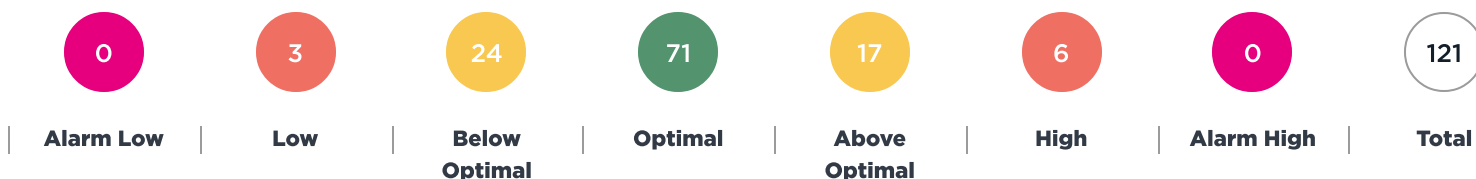
Total WBCs 	4.30
Neutrophils - % 	43.40 ↓
Lymphocytes - % 	43.00 ↑
Monocytes - % 	8.20 ↑
Eosinophils - % 	4.50 ↑ ↑
Basophils - % 	0.90
Neutrophils - Absolute 	1.87 ↓
Lymphocytes - Absolute 	1.85
Monocytes - Absolute 	0.35
Eosinophils - Absolute 	0.19
Basophils - Absolute 	0.04
Neutrophil : Lymphocyte 	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 steroid found in every cell of the body and in the plasma. It is an essential component in the structure of the cell membrane where it controls membrane fluidity. It provides the structural backbone for every steroid hormone in the body, which includes adrenal and sex hormones and vitamin D. The myelin sheaths of nerve fibers are derived from cholesterol and the bile salts that emulsify fats are composed of cholesterol. Cholesterol is made in the body by the liver and other organs and from dietary sources. The liver, the intestines, and the skin produce between 60-80% of the body's cholesterol. The remainder comes from the diet. Increased cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, hypothyroidism, biliary stasis, and fatty 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 $\mu\text{mol/L}$

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 $\mu\text{IU/ml}$

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

Blood glucose levels are regulated by several important hormones including insulin and glucagon. Glucose is also directly formed in the body from carbohydrate digestion and from the conversion in the liver of other sugars, such as fructose, and fat into glucose. Increased blood glucose is associated with type 1 & 2 diabetes, metabolic syndrome, and insulin resistance.

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.

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.

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.

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.

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.

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

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.

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

BUN or Blood Urea Nitrogen reflects the ratio between the production and clearance of urea in the body. Urea is formed almost entirely by the liver from both protein metabolism and protein digestion. The amount of urea excreted as BUN varies with the amount of dietary protein intake. A low BUN is associated with malabsorption, a decrease in digestive enzymes called pancreatic insufficiency, and a diet low in protein.

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 µg/dL

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

% 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

Albumin is one of the major blood proteins. Produced primarily in the liver, Albumin plays a major role in water distribution and serves as a transport protein for hormones and various drugs. Albumin levels are affected by digestive dysfunction and a decreased albumin can be an indication of malnutrition, digestive dysfunction due to HCl need (hypochlorhydria), or liver dysfunction. Malnutrition leads to a decreased albumin level in the serum primarily from lack of available essential amino acids. Decreased albumin can also be a strong indicator of oxidative stress and excess free radical activity.

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

- 37 Functional Body Systems
- 40 Accessory Systems
- 42 Nutrient Status
- 45 Nutrient Deficiencies

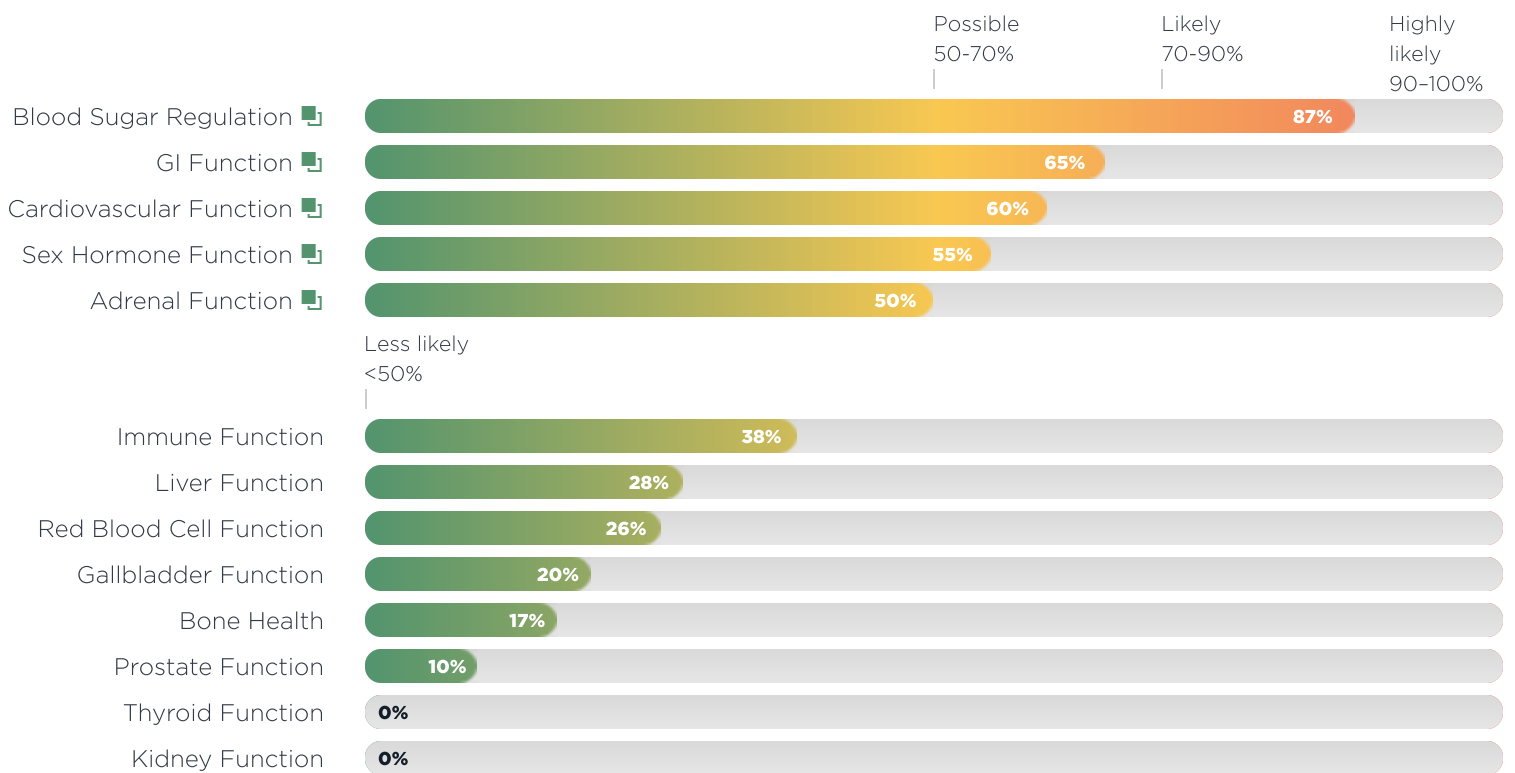
Functional Body Systems

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.

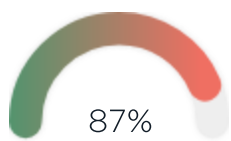
Each Body System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

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.











87%

Dysfunction Likely
Improvement required.

BLOOD SUGAR REGULATION

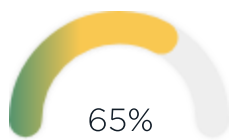
The Blood Sugar Regulation score tells us how well your body is regulating blood glucose. Blood sugar dysregulation is very common. It doesn't suddenly emerge but rather develops slowly, so we can look for clues in your blood test that can help us determine if there's dysregulation and if so what it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

Rationale

Glucose - Fasting , 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, Leptin - Male, C-Peptide, Fructosamine












65%

Dysfunction Possible
There may be
improvement needed in
certain areas.

GI FUNCTION

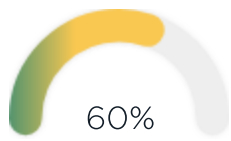
The GI Function score reflects the degree of function in your gastrointestinal (GI) system. The gastrointestinal system is responsible for the digestion and breakdown of macronutrients (proteins, fats, and carbohydrates) into small particles so they can be easily absorbed and utilized. The GI system is also responsible for the excretion and elimination of waste from the body. Your body's nutritional status is directly affected by your ability to digest macronutrients and also to absorb key vitamins, minerals, amino acids, essential fatty acids, and accessory nutrients such as bioflavonoids, CoQ10, etc. Factors affecting the GI function include inadequate chewing, eating when stressed or in a hurry, lack of appropriate stomach acid (a condition called hypochlorhydria), inflammation in the stomach lining (a condition called gastritis), a decrease in digestive enzymes (a condition called pancreatic insufficiency), an overgrowth of non-beneficial bacteria in your digestive system (a condition called dysbiosis) and/or a condition called Leaky Gut Syndrome.

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 in the early stages of increased cardiovascular risk. While this may not require immediate attention, we will want to keep an eye on this on future blood tests.

Rationale

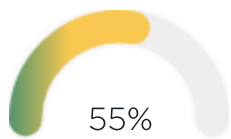
Glucose - Fasting ,
Cholesterol - Total ,
Triglycerides , LDL
Cholesterol , Homocysteine
, Testosterone Total - Male 
, Insulin - Fasting ,
Testosterone Free - Male 

Biomarkers considered

Triglyceride:HDL, Glucose - Fasting, LDH, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, Ferritin, Fibrinogen, 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)



55%

Dysfunction Possible
There may be improvement needed in certain areas.

SEX HORMONE FUNCTION

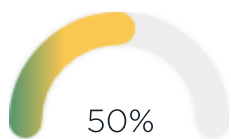
The Sex Hormone Function score helps us assess levels of essential hormones in your body: testosterone, DHEA, progesterone, Sex Hormone Binding Globulin (SHBG), and estradiol. Blood levels of these crucial hormones diminish with age, contributing to age-related dysfunctions such as low libido, blood sugar problems, excess weight, heart disease, etc. 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 ,
Testosterone Total - Male ,
DHEA-S - Male 

Biomarkers considered

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



50%

Dysfunction Possible
There may be improvement needed in certain areas.

ADRENAL FUNCTION

The Adrenal Function score reflects the degree of function in your adrenal glands. 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. Adrenal dysfunction can be caused by an increased output of stress hormones (adrenal stress) or more commonly a decreased output of adrenal hormones (adrenal insufficiency).

Rationale

Sodium : Potassium , DHEA-S - Male 

Biomarkers considered

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

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

Aldosterone

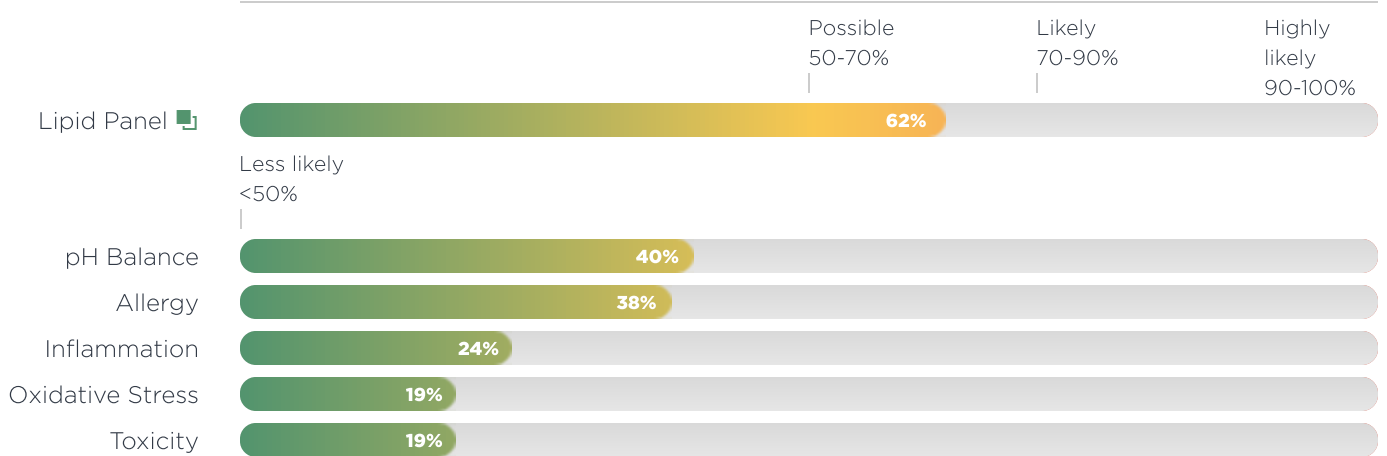
Accessory Systems

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.

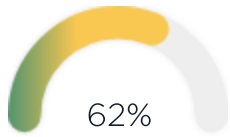
Each Accessory System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

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 trending towards the early stages of hyperlipidemia, which is 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

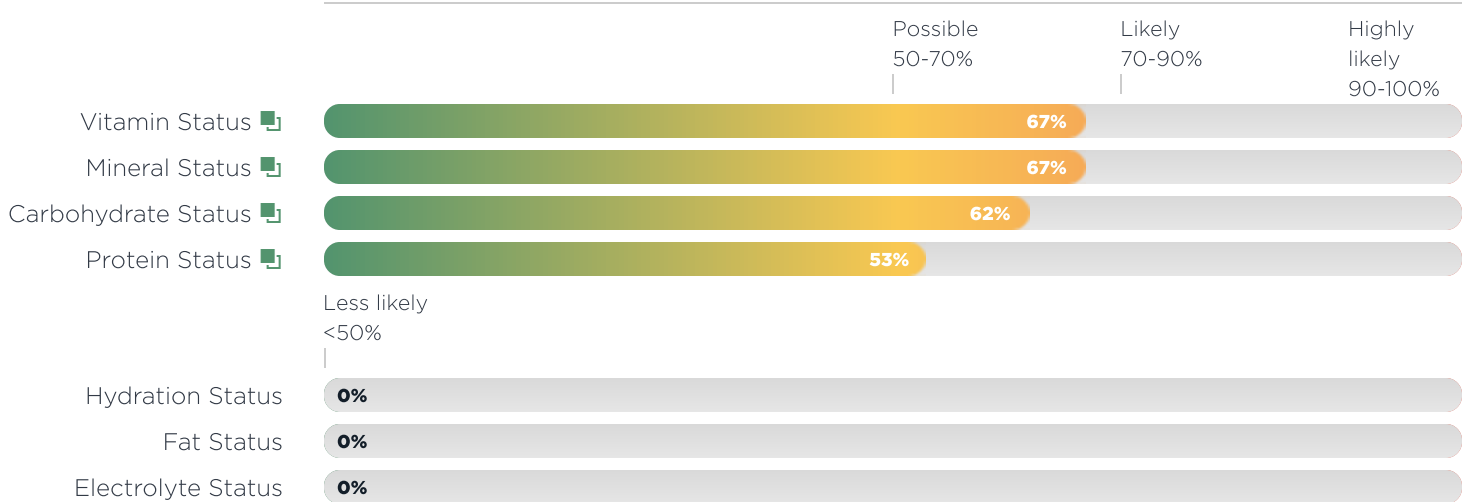
Nutrient Status

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.

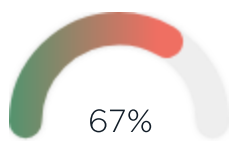
Each Nutrient category that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

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

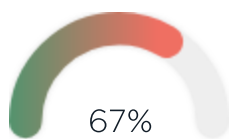
You may be in the early stages of vitamin deficiency or need, causing an increase in your Vitamin Status score. While this may not require immediate attention, we will want to keep an eye on your vitamin levels and keep monitoring this on future blood tests.

Rationale

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

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 keep monitoring this on future blood tests.

Rationale

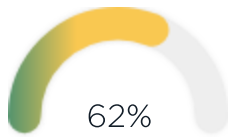
Magnesium - Serum , Copper - Serum , Zinc - Serum , Zinc - RBC , Magnesium - RBC , Iron - Serum , Ferritin 

Biomarkers considered

Magnesium - Serum, Copper - Serum, Zinc - Serum, Zinc - RBC, Magnesium - RBC, 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



62%

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

CARBOHYDRATE STATUS

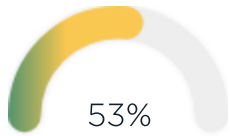
You may be in the early stages of having difficulties handling your dietary intake of carbohydrates, especially refined carbohydrates and sugars. This may begin to cause shifts in your ability to regulate blood sugar. While this may not require immediate attention, we will want to keep an eye on this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

Rationale

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

Biomarkers considered

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









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 keep an eye on your mineral levels and keep monitoring this on future blood tests.

Rationale

Protein - Total , BUN ,
Albumin , Calcium : Albumin
, Creatinine , C-Reactive
Protein 

Biomarkers considered

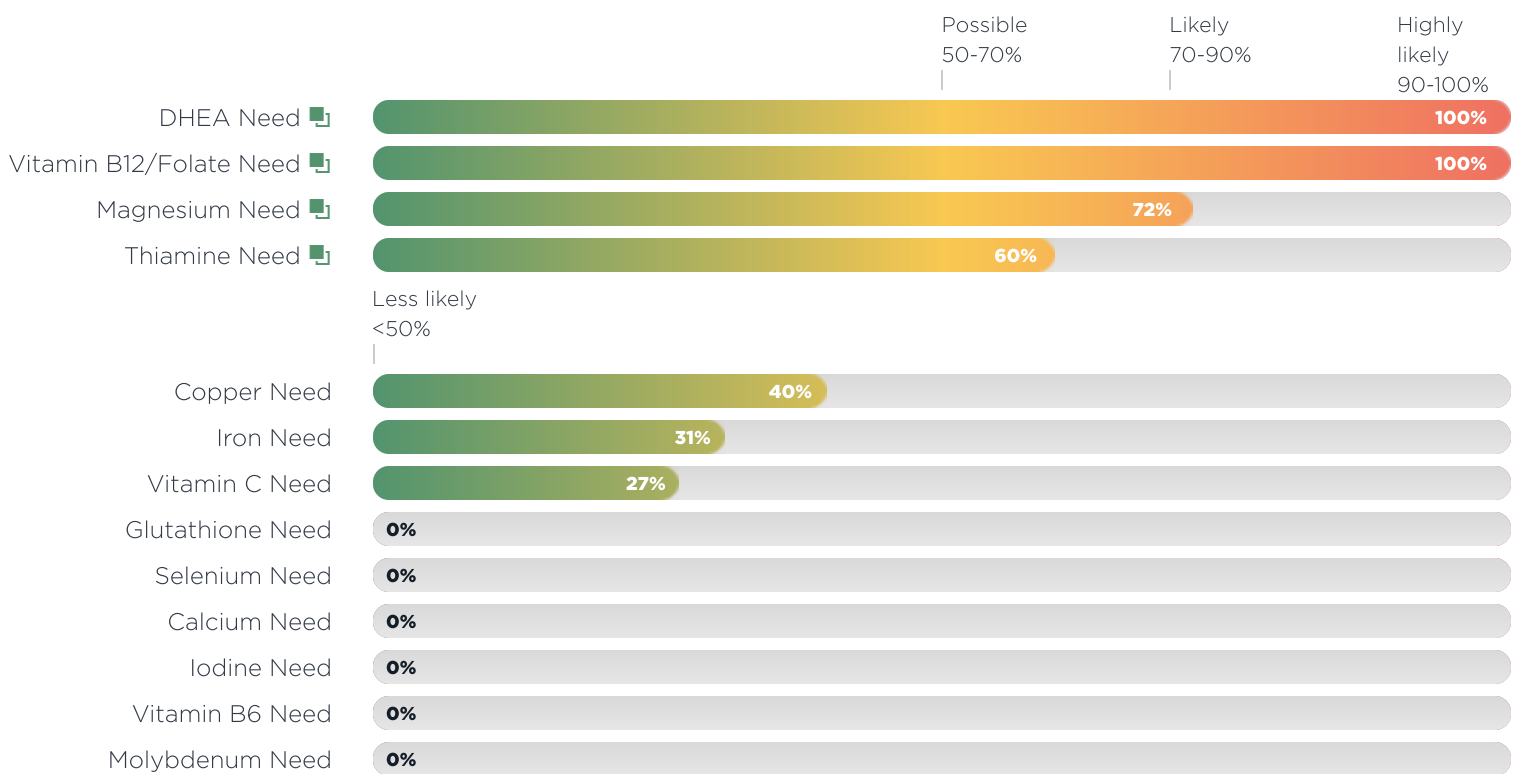
Protein - Total, BUN, Albumin,
Calcium : Albumin, Creatinine,
BUN : Creatinine, C-Reactive
Protein, Hs CRP - Male, ALT,
AST, CO2, GGT, Total WBCs,
TIBC

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.

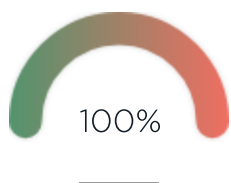
Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

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.



DHEA NEED

Your high DHEA Need score indicates that your DHEA levels might be lower than optimal, and there may be an increased need for DHEA.

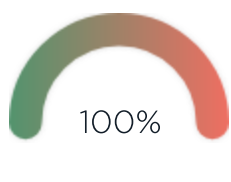
Rationale

DHEA-S - Male 

Biomarkers considered

DHEA-S - Male








Deficiency Highly Likely.
Much improvement
required.



VITAMIN B12/FOLATE NEED

Your high Vitamin B12/Folate Need score indicates that your vitamin B12/folate levels might be lower than optimal, and there may be an increased need for vitamin B12/folate.

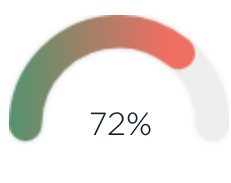
Rationale

Vitamin B12 , Methylmalonic Acid , MCV , Homocysteine , Neutrophils - % , Folate - Serum , Folate - RBC 

Biomarkers considered

Vitamin B12, Methylmalonic Acid, MCV, LDH, Homocysteine, RBC - Male, Hemoglobin - Male, Hematocrit - Male, MCH, MCHC, RDW, Neutrophils - %, Folate - Serum, Folate - RBC

Deficiency Highly Likely.
Much improvement
required.



MAGNESIUM NEED

You may be trending toward a magnesium need, causing an increase in your Magnesium Need score.

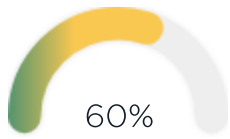
Rationale

Magnesium - Serum , Magnesium - RBC 

Biomarkers considered

Magnesium - Serum, Magnesium - RBC, GGT

Deficiency Likely.
Improvement required.



60%

Deficiency Possible.

There may be improvement needed in certain areas.

THIAMINE NEED

You may be in the early stages of thiamine need, causing your Thiamine Need score to rise. While this may not require immediate attention, you will want to watch this on future blood tests.

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

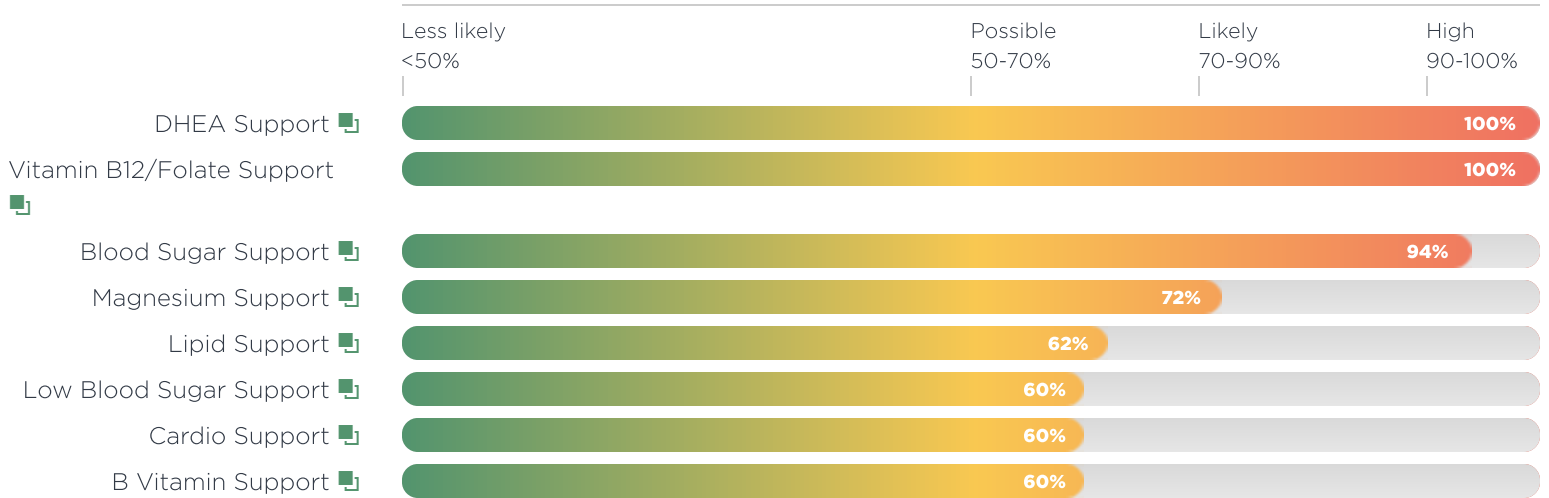
49 Health Concerns

Health Concerns

The Health Concerns report takes all the information on the Functional Health Report and focuses on the health concerns that need the most support.

Each area of health concern that needs support is included in the section that follows so you can read an explanation of the results shown in this report.

NEED OF SUPPORT



Health Concerns Details

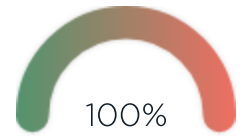
This section contains an explanation of the results presented in the Health Concerns report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.

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 ↓

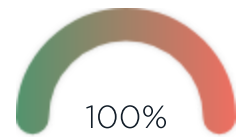


VITAMIN B12/FOLATE SUPPORT

The results of your blood test indicate that your vitamin B12/folate levels might be lower than optimal and shows a need for vitamin B12/folate supplementation.

Rationale

Vitamin B12 ↓, Methylmalonic Acid ↑, MCV ↑, Homocysteine ↑, Neutrophils - % ↓, Folate - Serum ↓, Folate - RBC ↓

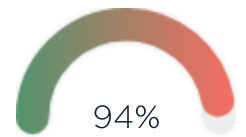


BLOOD SUGAR SUPPORT

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 ↓

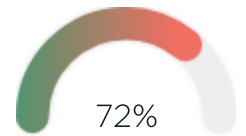


MAGNESIUM SUPPORT

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 ↓

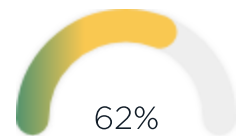


LIPID SUPPORT

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 ↑

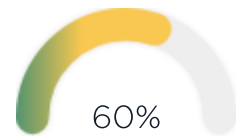


LOW BLOOD SUGAR SUPPORT

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

Rationale

LDH ↓



CARDIO SUPPORT

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

Rationale

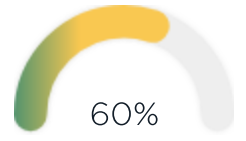
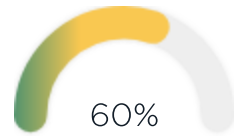
Glucose - Fasting , Cholesterol - Total , Triglycerides , LDL Cholesterol , Homocysteine , Testosterone Total - Male , Insulin - Fasting , Testosterone Free - Male 

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 





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Disclaimer

53 Disclaimer



Disclaimer

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