Functional Health Report

A comprehensive analysis of your test results.

BLOOD CHEMISTRY ANALYSIS

Patient Report

Prepared for	Female Sample 57 year old female born Nov 01, 1966 56 years old at the time this lab test was taken Fasting
Requested by	Dr. Kirsten Ferguson Fern Creeek Chiropractic Center
Collected Date	Mar 21, 2023
Lab	Quest
Powered by	ODX | OptimalDX

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

Introduction

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Dr. Kirsten Ferguson's Notes Report

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

REPORT

Health Goals:

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

Signs and Symptoms

The following signs and symptoms were reported:

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

Functional Blood Chemistry Analysis (FBCA)

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

Dr. Kirsten Ferguson
Fern Creeek Chiropractic Center

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.

Dr. Kirsten Ferguson
Fern Creeek Chiropractic Center

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.

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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

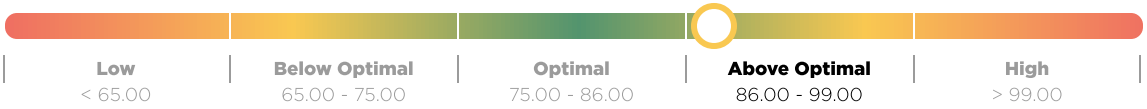
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range. The biomarkers are grouped into their most common categories.

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.

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	8	27	62	14	7	0	118

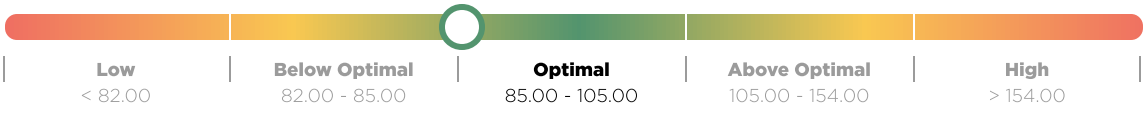
BLOOD GLUCOSE

Glucose Fasting
87.50 mg/dL



Hemoglobin A1C
4.60 %

eAG
85.00 mg/dL

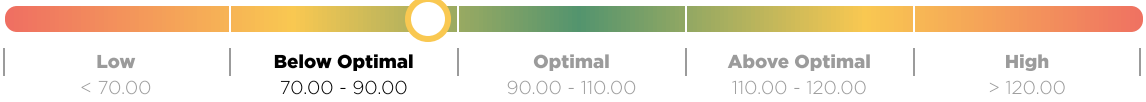


Insulin - Fasting
3.70 µIU/mL

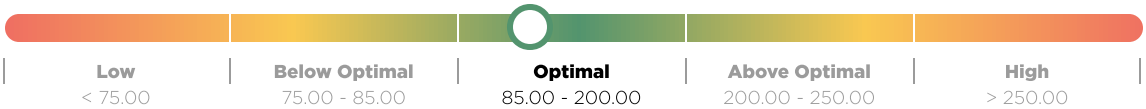
C-Peptide
1.11 ng/mL

Fructosamine
201.00 µmol/L

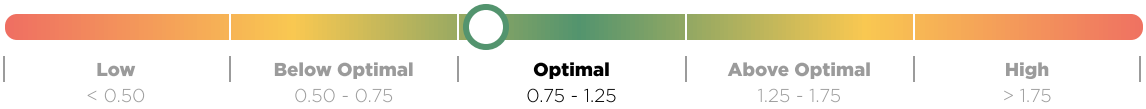
HOMA2-%B
87.50 %



HOMA2-%S
124.00 %



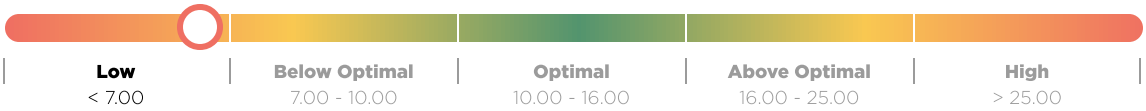
HOMA2-IR
0.80 Index



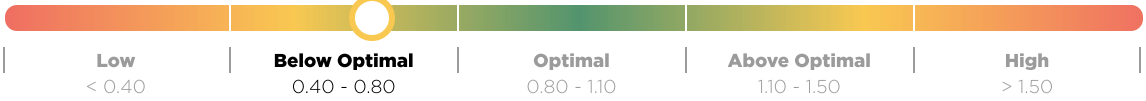
QUICKI
0.40 Index

KIDNEY

BUN
6.00 mg/dL

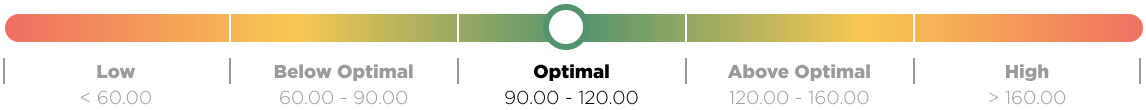


Creatinine
0.65 mg/dL



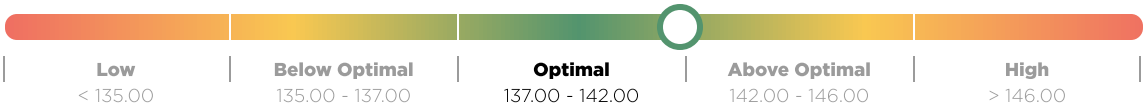
BUN : Creatinine
9.00 Ratio

eGFR
104.00 mL/min/1.73m2

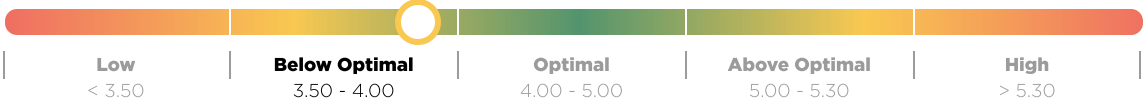


ELECTROLYTES

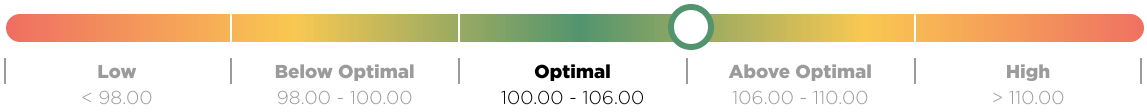
Sodium
141.90 mEq/L



Potassium
3.90 mEq/L

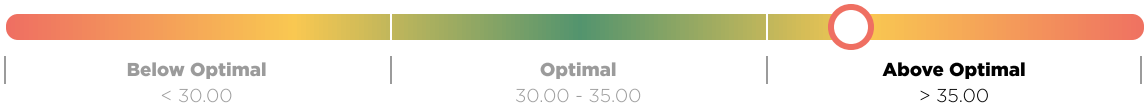


Chloride
106.00 mEq/L



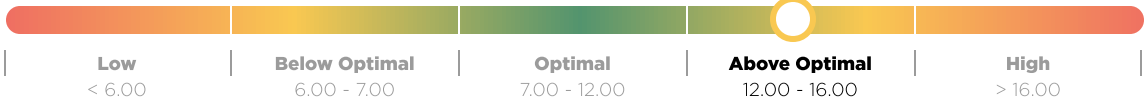
CO2
26.00 mEq/L

Sodium : Potassium
36.38 ratio

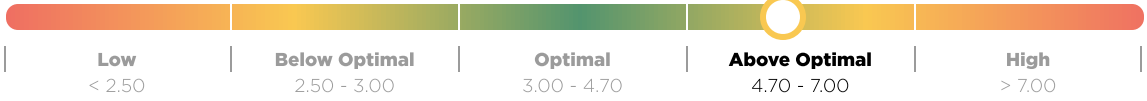


METABOLIC

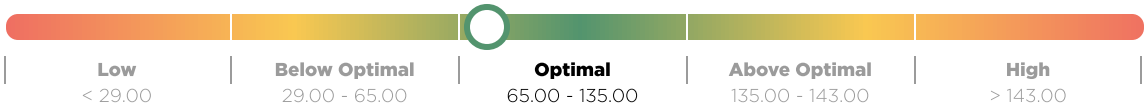
Anion Gap
13.80 mEq/L



Uric Acid - Female
5.65 mg/dL



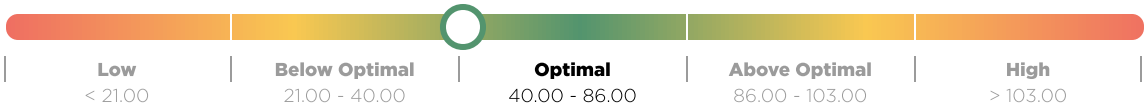
Creatine Kinase
72.00 U/L



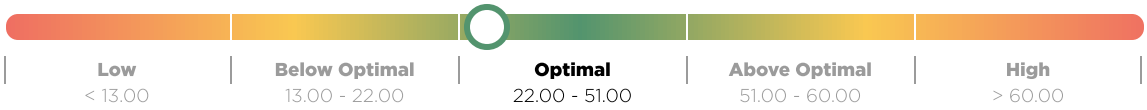
Leptin - Female
12.20 ng/mL

ENZYMES

Amylase
42.00 U/L



Lipase
25.00 U/L



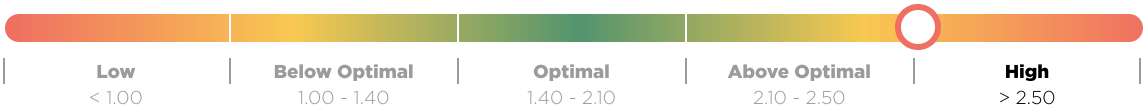
PROTEINS

Protein - Total
6.10 g/dL

Albumin
4.40 g/dL

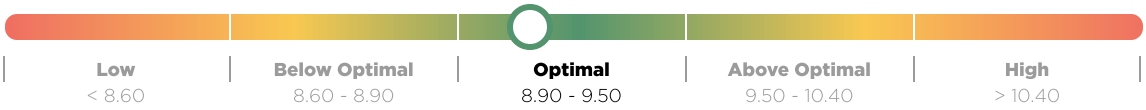
Globulin - Total
1.70 g/dL

Albumin : Globulin
2.60 ratio

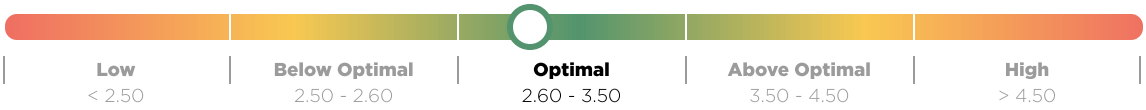


MINERALS

Calcium
9.10 mg/dL



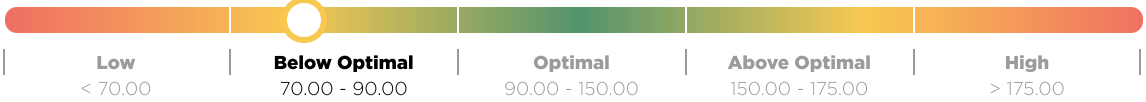
Phosphorus
2.90 mg/dL



Magnesium - Serum
2.30 mg/dL

Magnesium - RBC
6.20 mg/dL

Copper - Serum
76.00 µg/dL



Zinc - Serum
65.70 µg/dL

Zinc - RBC
9.20 mg/L

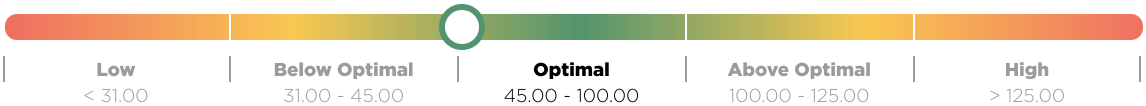
Copper : Zinc Ratio
1.16 Ratio

Calcium : Albumin
2.07 ratio

Calcium : Phosphorus
3.14 ratio

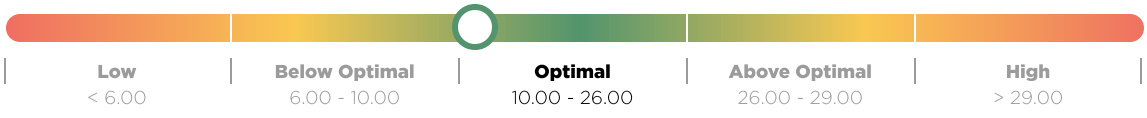
LIVER AND GB

Alk Phos
46.00 IU/L



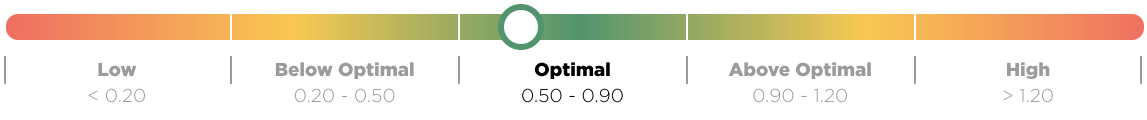
AST
14.00 IU/L

ALT
11.00 IU/L



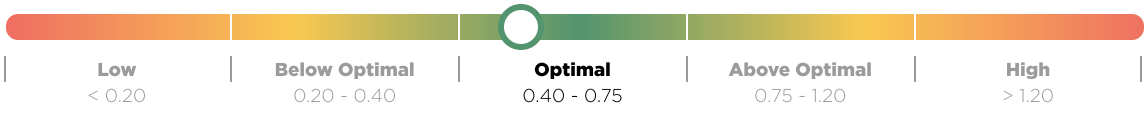
LDH
131.00 IU/L

Bilirubin - Total
0.60 mg/dL

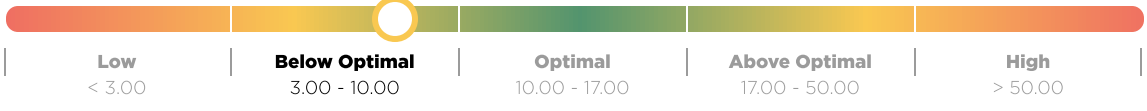


Bilirubin - Direct
0.10 mg/dL

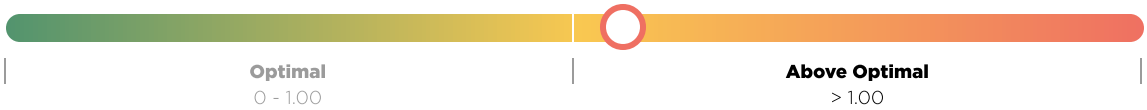
Bilirubin - Indirect
0.50 mg/dL



GGT
8.00 IU/L

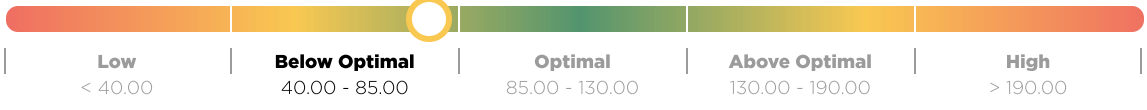


AST : ALT
1.27 Ratio

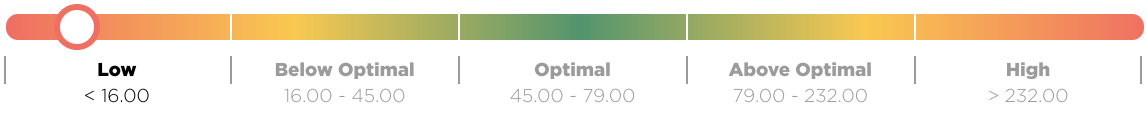


IRON MARKERS

Iron - Serum
79.00 µg/dL

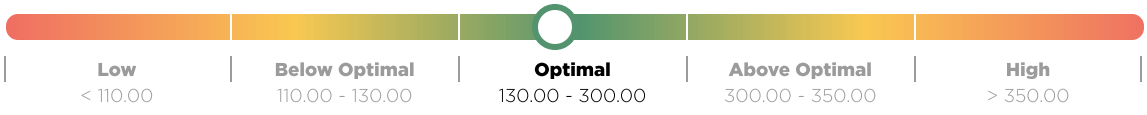


Ferritin
12.00 ng/mL

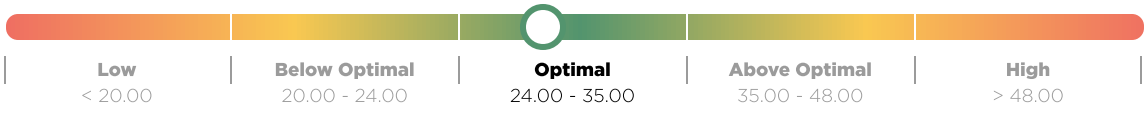


TIBC
284.00 µg/dL

UIBC
205.00 µg/dL



% Transferrin saturation
28.00 %



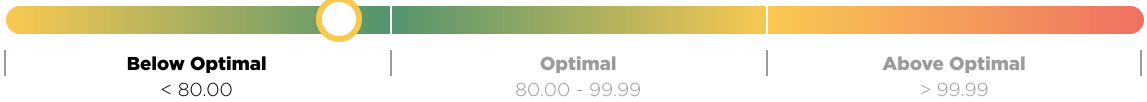
Transferrin
255.00 mg/dL

LIPIDS

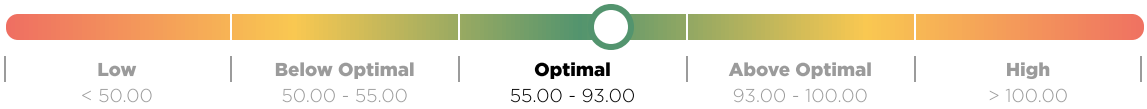
Cholesterol - Total
165.00 mg/dL

Triglycerides
65.00 mg/dL

LDL Cholesterol
70.00 mg/dL

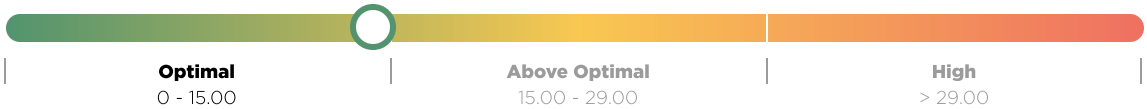


HDL Cholesterol
81.00 mg/dL

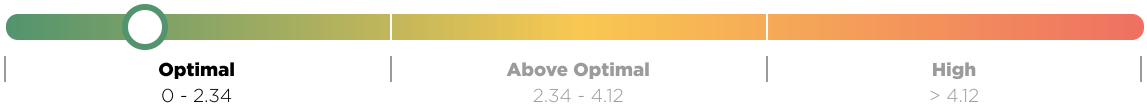


Non-HDL Cholesterol
84.00 mg/dL

VLDL Cholesterol
14.20 mg/dL



LDL : HDL - Female
0.86 Ratio



Triglyceride:HDL
0.80 ratio

Cholesterol : HDL
2.04 Ratio

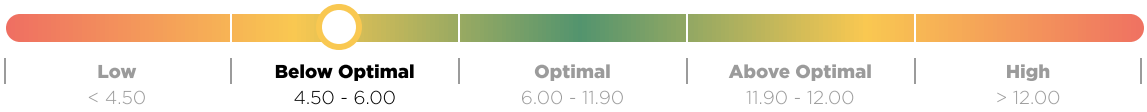
CARDIOMETABOLIC

Homocysteine
7.50 µmol/L

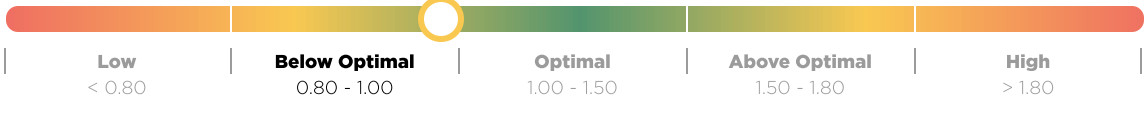
THYROID

TSH
2.95 µU/mL

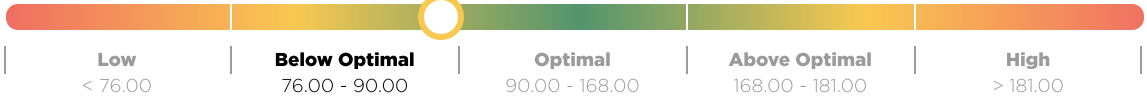
T4 - Total
5.20 µg/dL



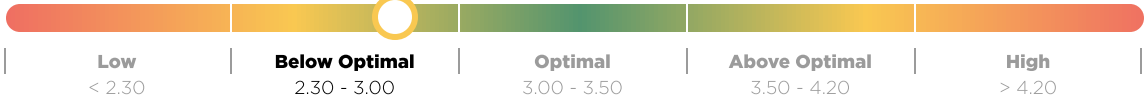
T4 - Free
0.98 ng/dL



T3 - Total
89.20 ng/dL



T3 - Free
2.80 pg/mL

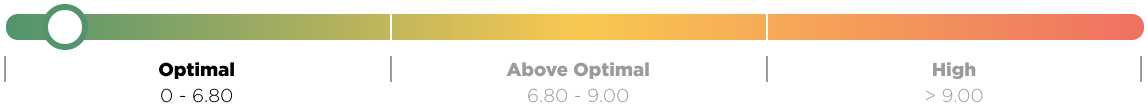


Reverse T3
28.00 ng/dL

T3 Uptake
26.20 %

Free Thyroxine Index (T7)
1.36 Index

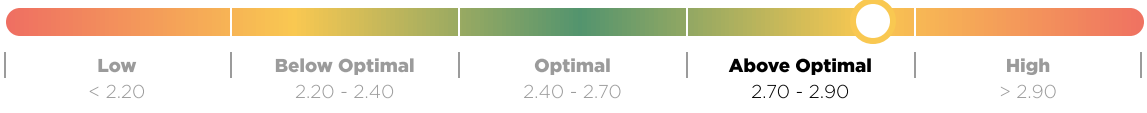
Thyroid Peroxidase (TPO) Abs
1.10 IU/mL



Thyroglobulin Abs
<1.00 IU/mL

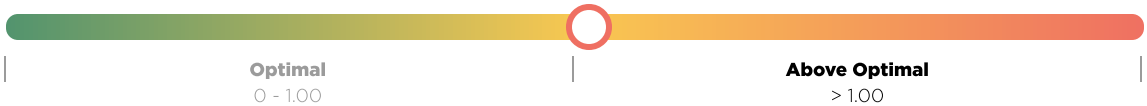
Free T3 : Reverse T3
10.00 Ratio

Free T3 : Free T4
2.86 Ratio



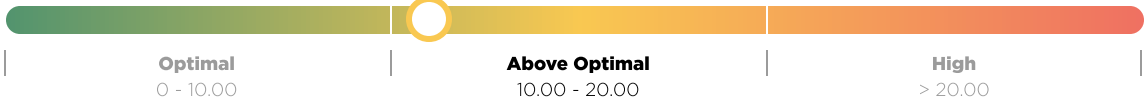
INFLAMMATION

Hs CRP - Female
1.15 mg/L



C-Reactive Protein
4.65 mg/L

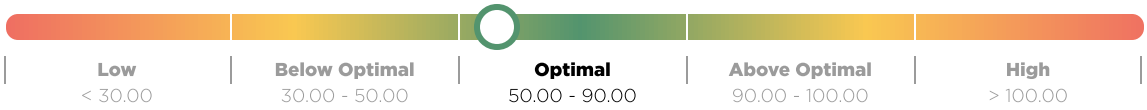
ESR - Female
11.20 mm/hr



Fibrinogen Activity
221.00 mg/dL

VITAMINS

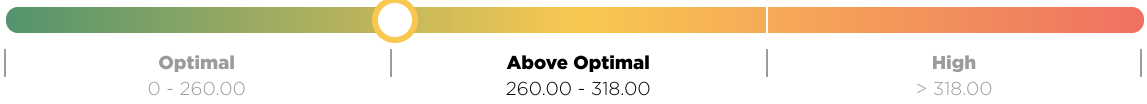
Vitamin D (25-OH)
56.20 ng/mL



Vitamin B12
462.00 pg/mL

Folate - Serum
15.20 ng/mL

Methylmalonic Acid
261.00 nmol/L



Folate - RBC
376.00 ng/mL

HORMONES

DHEA-S - Female
285.00 µg/dL

FSH - Female
Unknown
16.30 mIU/mL

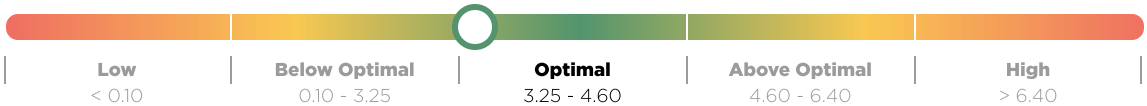
Follicular	2.50-10.20	Luteal	1.50-9.10
Ovulation	3.10-17.70	Post Menopausal	23.00-116.30

LH - Female
Unknown
9.80 mIU/mL

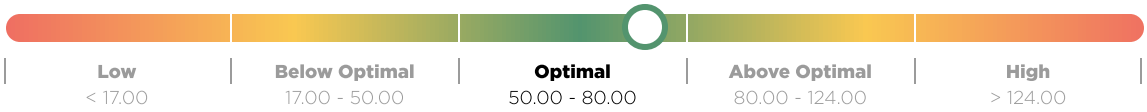
Follicular	1.90-12.50	Luteal	0.50-16.90
Ovulation	8.70-76.30	Post Menopausal	10.00-54.70

Testosterone Total - Female
33.20 ng/dL

Testosterone Free - Female
3.38 pg/mL



Sex Hormone Binding Globulin - Female
75.00 nmol/L



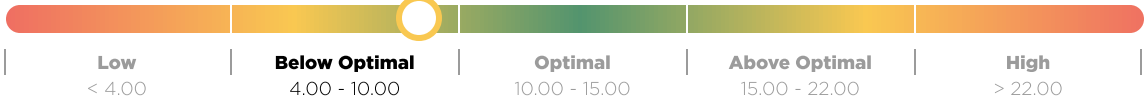
Estradiol - Female
Unknown
55.00 pg/mL

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

Progesterone - Female
Unknown
8.00 ng/mL

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

Cortisol - Total/AM
9.00 µg/dL



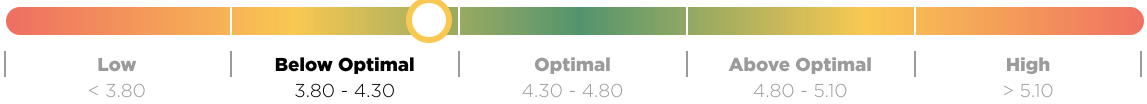
Cortisol : DHEA-S
0.03 ratio

Gastrin
46.00 pg/mL

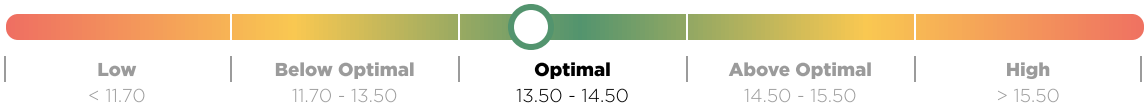
Testosterone Bioavailable - Female
8.10 ng/dL

CBC

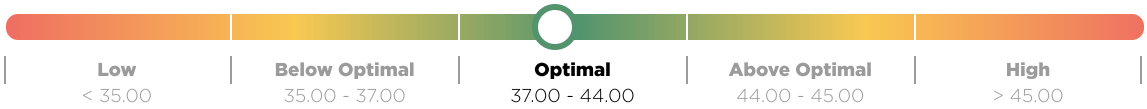
RBC - Female
4.23 m/cumm



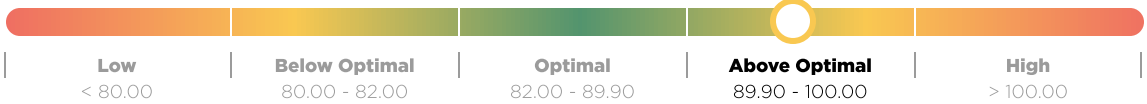
Hemoglobin - Female
13.80 g/dL



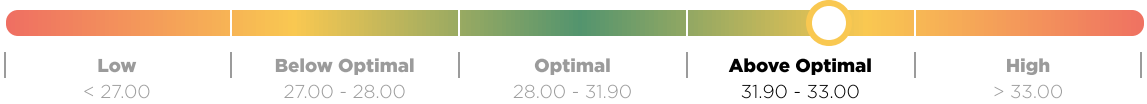
Hematocrit - Female
40.00 %



MCV
94.60 fL

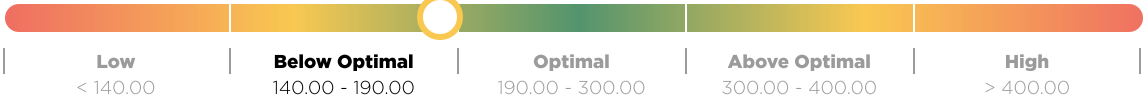


MCH
32.60 pg



MCHC
34.50 g/dL

Platelets
187.00 10E3/uL



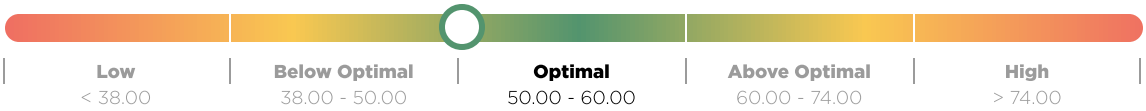
MPV
8.80 fL

RDW
12.40 %

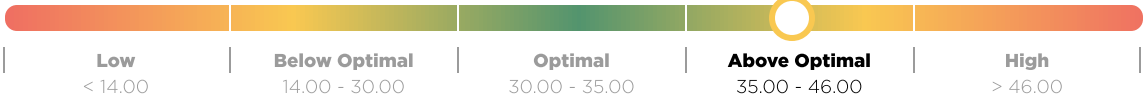
WBCS

Total WBCs
2.60 k/cumm

Neutrophils - %
50.40 %



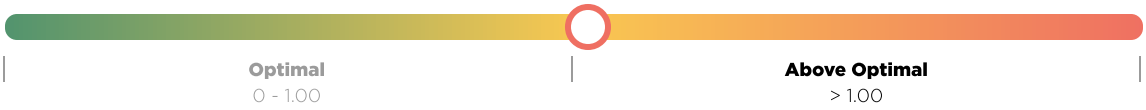
Lymphocytes - %
40.20 %



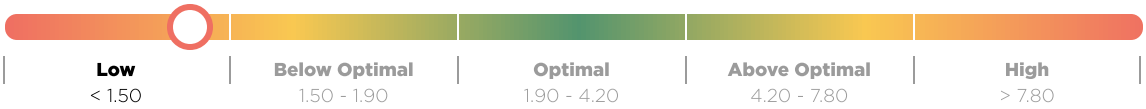
Monocytes - %
6.80 %

Eosinophils - %
1.50 %

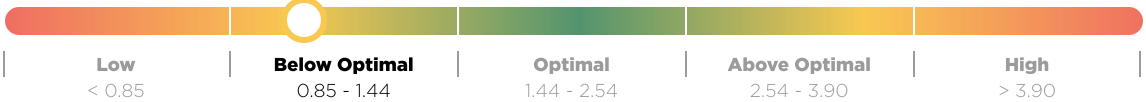
Basophils - %
1.10 %



Neutrophils - Absolute
1.31 k/cumm



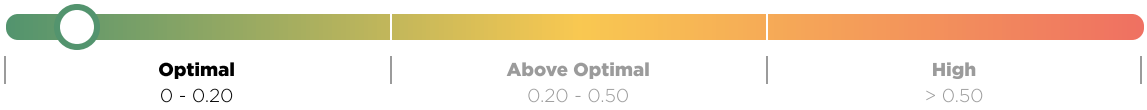
Lymphocytes - Absolute
1.05 k/cumm



Monocytes - Absolute
0.18 k/cumm

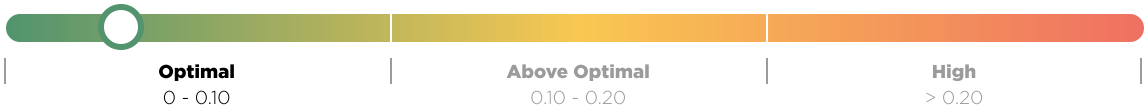
Eosinophils - Absolute

0.04 k/cumm



Basophils - Absolute

0.03 k/cumm



Neutrophil : Lymphocyte

1.25 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

	Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High
Current	0	8	27	62	14	7	0
Previous	0	0	0	0	0	0	0

Biomarker	Quest Current Mar 21 2023	Optimal Range	Standard Range	Units
BLOOD GLUCOSE				
Glucose Fasting	87.50 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Hemoglobin A1C	4.60	4.60 - 5.30	0 - 5.70	%
eAG	85.00	85.00 - 105.00	82.00 - 154.00	mg/dL
Insulin - Fasting	3.70	2.00 - 5.00	0 - 18.40	µIU/mL
C-Peptide	1.11	1.10 - 2.10	0.80 - 3.85	ng/mL
Fructosamine	201.00	190.00 - 228.00	190.00 - 270.00	µmol/L
HOMA2-%B	87.50 ↓	90.00 - 110.00	70.00 - 120.00	%
HOMA2-%S	124.00	85.00 - 200.00	75.00 - 250.00	%
HOMA2-IR	0.80	0.75 - 1.25	0.50 - 1.75	Index
QUICKI	0.40 ↓	0.45 - 5.00	0.34 - 5.00	Index
KIDNEY				
BUN	6.00 ↓↓	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	0.65 ↓	0.80 - 1.10	0.40 - 1.50	mg/dL

Biomarker	Quest Current Mar 21 2023	Optimal Range	Standard Range	Units
BUN : Creatinine	9.00 ↓	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	104.00	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
ELECTROLYTES				
Sodium	141.90	137.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	3.90 ↓	4.00 - 5.00	3.50 - 5.30	mEq/L
Chloride	106.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2	26.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Sodium : Potassium	36.38 ↑ ↑	30.00 - 35.00		ratio
METABOLIC				
Anion Gap	13.80 ↑	7.00 - 12.00	6.00 - 16.00	mEq/L
Uric Acid - Female	5.65 ↑	3.00 - 4.70	2.50 - 7.00	mg/dL
Creatine Kinase	72.00	65.00 - 135.00	29.00 - 143.00	U/L
Leptin - Female	12.20 ↑	4.70 - 11.00	4.70 - 23.70	ng/mL
ENZYMES				
Amylase	42.00	40.00 - 86.00	21.00 - 103.00	U/L
Lipase	25.00	22.00 - 51.00	13.00 - 60.00	U/L
PROTEINS				
Protein - Total	6.10 ↓	6.90 - 8.10	6.10 - 8.10	g/dL
Albumin	4.40 ↓	4.50 - 5.00	3.60 - 5.10	g/dL
Globulin - Total	1.70 ↓ ↓	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin : Globulin	2.60 ↑ ↑	1.40 - 2.10	1.00 - 2.50	ratio
MINERALS				
Calcium	9.10	8.90 - 9.50	8.60 - 10.40	mg/dL
Phosphorus	2.90	2.60 - 3.50	2.50 - 4.50	mg/dL
Magnesium - Serum	2.30	2.20 - 2.50	1.50 - 2.50	mg/dL
Magnesium - RBC	6.20	6.00 - 6.80	4.00 - 6.80	mg/dL
Copper - Serum	76.00 ↓	90.00 - 150.00	70.00 - 175.00	µg/dL
Zinc - Serum	65.70 ↓	99.00 - 130.00	50.00 - 130.00	µg/dL
Zinc - RBC	9.20 ↓	10.40 - 14.70	9.00 - 14.70	mg/L
Copper : Zinc Ratio	1.16	0.70 - 1.50	0.80 - 2.00	Ratio
Calcium : Albumin	2.07	0 - 2.18	0 - 2.60	ratio
Calcium : Phosphorus	3.14	2.30 - 3.20	1.90 - 4.20	ratio
LIVER AND GB				
Alk Phos	46.00	45.00 - 100.00	31.00 - 125.00	IU/L
AST	14.00	10.00 - 26.00	10.00 - 35.00	IU/L
ALT	11.00	10.00 - 26.00	6.00 - 29.00	IU/L
LDH	131.00 ↓	140.00 - 200.00	100.00 - 200.00	IU/L
Bilirubin - Total	0.60	0.50 - 0.90	0.20 - 1.20	mg/dL
Bilirubin - Direct	0.10	0.10 - 0.15	0 - 0.20	mg/dL

Biomarker	Quest Current Mar 21 2023	Optimal Range	Standard Range	Units
Bilirubin - Indirect	0.50	0.40 - 0.75	0.20 - 1.20	mg/dL
GGT	8.00 ↓	10.00 - 17.00	3.00 - 50.00	IU/L
AST : ALT	1.27 ↑ ↑	0 - 1.00		Ratio
IRON MARKERS				
Iron - Serum	79.00 ↓	85.00 - 130.00	40.00 - 190.00	µg/dL
Ferritin	12.00 ↓ ↓	45.00 - 79.00	16.00 - 232.00	ng/mL
TIBC	284.00	250.00 - 350.00	250.00 - 425.00	µg/dL
UIBC	205.00	130.00 - 300.00	110.00 - 350.00	µg/dL
% Transferrin saturation	28.00	24.00 - 35.00	20.00 - 48.00	%
Transferrin	255.00	200.00 - 360.00	200.00 - 390.00	mg/dL
LIPIDS				
Cholesterol - Total	165.00	160.00 - 199.00	125.00 - 199.00	mg/dL
Triglycerides	65.00 ↓	70.00 - 80.00	0 - 149.99	mg/dL
LDL Cholesterol	70.00 ↓	80.00 - 99.99	0 - 99.99	mg/dL
HDL Cholesterol	81.00	55.00 - 93.00	50.00 - 100.00	mg/dL
Non-HDL Cholesterol	84.00	70.00 - 99.00	0 - 129.99	mg/dL
VLDL Cholesterol	14.20	0 - 15.00	0 - 29.00	mg/dL
LDL : HDL - Female	0.86	0 - 2.34	0 - 4.12	Ratio
Triglyceride:HDL	0.80	0.50 - 1.90	0 - 2.00	ratio
Cholesterol : HDL	2.04	0 - 3.00	0 - 5.00	Ratio
CARDIOMETABOLIC				
Homocysteine	7.50 ↑	5.00 - 7.20	0 - 10.30	µmol/L
THYROID				
TSH	2.95 ↑	1.00 - 2.00	0.40 - 4.50	µU/mL
T4 - Total	5.20 ↓	6.00 - 11.90	4.50 - 12.00	µg/dL
T4 - Free	0.98 ↓	1.00 - 1.50	0.80 - 1.80	ng/dL
T3 - Total	89.20 ↓	90.00 - 168.00	76.00 - 181.00	ng/dL
T3 - Free	2.80 ↓	3.00 - 3.50	2.30 - 4.20	pg/mL
Reverse T3	28.00 ↑ ↑	10.00 - 25.00	8.00 - 25.00	ng/dL
T3 Uptake	26.20 ↓	27.00 - 35.00	22.00 - 35.00	%
Free Thyroxine Index (T7)	1.36 ↓ ↓	1.70 - 4.60	1.40 - 3.80	Index
Thyroid Peroxidase (TPO) Abs	1.10	0 - 6.80	0 - 9.00	IU/mL
Thyroglobulin Abs	<1.00	0 - 1.00		IU/mL
Free T3 : Reverse T3	10.00	10.00 - 28.00	2.00 - 28.00	Ratio
Free T3 : Free T4	2.86 ↑	2.40 - 2.70	2.20 - 2.90	Ratio
INFLAMMATION				
Hs CRP - Female	1.15 ↑ ↑	0 - 1.00		mg/L
C-Reactive Protein	4.65 ↑	0 - 3.00	0 - 7.90	mg/L
ESR - Female	11.20 ↑	0 - 10.00	0 - 20.00	mm/hr
Fibrinogen Activity	221.00	175.00 - 300.00	175.00 - 425.00	mg/dL

Biomarker	Quest Current Mar 21 2023	Optimal Range	Standard Range	Units
VITAMINS				
Vitamin D (25-OH)	56.20	50.00 - 90.00	30.00 - 100.00	ng/mL
Vitamin B12	462.00 ↓	545.00 - 1100.00	200.00 - 1100.00	pg/mL
Folate - Serum	15.20	15.00 - 27.00	5.50 - 27.00	ng/mL
Methylmalonic Acid	261.00 ↑	0 - 260.00	0 - 318.00	nmol/L
Folate - RBC	376.00 ↓	500.00 - 1504.00	280.00 - 1504.00	ng/mL
HORMONES				
DHEA-S - Female	285.00	275.00 - 391.00	18.00 - 391.00	µg/dL
FSH - Female	16.30 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	2.50 - 10.20 1.50 - 9.10 3.10 - 17.70 23.00 - 116.30	mIU/mL
LH - Female	9.80 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	1.90 - 12.50 0.50 - 16.90 8.70 - 76.30 10.00 - 54.70	mIU/mL
Testosterone Total - Female	33.20 ↓	35.00 - 45.00	2.00 - 45.00	ng/dL
Testosterone Free - Female	3.38	3.25 - 4.60	0.10 - 6.40	pg/mL
Sex Hormone Binding Globulin - Female	75.00	50.00 - 80.00	17.00 - 124.00	nmol/L
Estradiol - Female	55.00 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	19.00 - 144.00 56.00 - 214.00 64.00 - 357.00 0.00 - 31.00	pg/mL
Progesterone - Female	8.00 *UNKNOWN*	Follicular Luteal Ovulation Post Menopausal	0.00 - 1.00 2.60 - 21.50 0.10 - 12.00 0.00 - 0.50	ng/mL
Cortisol - Total/AM	9.00 ↓	10.00 - 15.00	4.00 - 22.00	µg/dL
Cortisol : DHEA-S	0.03	0 - 0.09		ratio
Gastrin	46.00	45.00 - 90.00	0 - 100.00	pg/mL
Testosterone Bioavailable - Female	8.10	5.50 - 8.50	0.50 - 8.50	ng/dL
CBC				
RBC - Female	4.23 ↓	4.30 - 4.80	3.80 - 5.10	m/cumm
Hemoglobin - Female	13.80	13.50 - 14.50	11.70 - 15.50	g/dL
Hematocrit - Female	40.00	37.00 - 44.00	35.00 - 45.00	%
MCV	94.60 ↑	82.00 - 89.90	80.00 - 100.00	fL
MCH	32.60 ↑	28.00 - 31.90	27.00 - 33.00	pg
MCHC	34.50	34.00 - 36.00	32.00 - 36.00	g/dL
Platelets	187.00 ↓	190.00 - 300.00	140.00 - 400.00	10E3/uL
MPV	8.80 ↑	7.50 - 8.20	7.50 - 11.50	fL
RDW	12.40	11.00 - 12.60	11.00 - 15.00	%
WBCS				
Total WBCs	2.60 ↓ ↓	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	50.40	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	40.20 ↑	30.00 - 35.00	14.00 - 46.00	%

Biomarker	Quest			
	Current Mar 21 2023	Optimal Range	Standard Range	Units
Monocytes - %	6.80	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	1.50	0 - 3.00		%
Basophils - %	1.10 ↑ ↑	0 - 1.00		%
Neutrophils - Absolute	1.31 ↓ ↓	1.90 - 4.20	1.50 - 7.80	k/cumm
Lymphocytes - Absolute	1.05 ↓	1.44 - 2.54	0.85 - 3.90	k/cumm
Monocytes - Absolute	0.18 ↓ ↓	0.20 - 0.40	0.20 - 0.95	k/cumm
Eosinophils - Absolute	0.04	0 - 0.20	0 - 0.50	k/cumm
Basophils - Absolute	0.03	0 - 0.10	0 - 0.20	k/cumm
Neutrophil : Lymphocyte	1.25	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 21 2023
BLOOD GLUCOSE	
Glucose Fasting	87.50 ↑
Hemoglobin A1C	4.60
eAG	85.00
Insulin - Fasting	3.70
C-Peptide	1.11
Fructosamine	201.00
HOMA2-%B	87.50 ↓
HOMA2-%S	124.00
HOMA2-IR	0.80
QUICKI	0.40 ↓
KIDNEY	
BUN	6.00 ↓ ↓
Creatinine	0.65 ↓
BUN : Creatinine	9.00 ↓
eGFR	104.00
ELECTROLYTES	
Sodium	141.90

Biomarker	Latest Test Result Quest Mar 21 2023
Potassium	3.90 ↓
Chloride	106.00
CO2	26.00
Sodium : Potassium	36.38 ↑ ↑
METABOLIC	
Anion Gap	13.80 ↑
Uric Acid - Female	5.65 ↑
Creatine Kinase	72.00
Leptin - Female	12.20 ↑
ENZYMES	
Amylase	42.00
Lipase	25.00
PROTEINS	
Protein - Total	6.10 ↓
Albumin	4.40 ↓
Globulin - Total	1.70 ↓ ↓
Albumin : Globulin	2.60 ↑ ↑
MINERALS	
Calcium	9.10
Phosphorus	2.90
Magnesium - Serum	2.30
Magnesium - RBC	6.20
Copper - Serum	76.00 ↓
Zinc - Serum	65.70 ↓
Zinc - RBC	9.20 ↓
Copper : Zinc Ratio	1.16

Biomarker	Latest Test Result Quest Mar 21 2023
Calcium : Albumin	2.07
Calcium : Phosphorus	3.14
LIVER AND GB	
Alk Phos	46.00
AST	14.00
ALT	11.00
LDH	131.00 ↓
Bilirubin - Total	0.60
Bilirubin - Direct	0.10
Bilirubin - Indirect	0.50
GGT	8.00 ↓
AST : ALT	1.27 ↑ ↑
IRON MARKERS	
Iron - Serum	79.00 ↓
Ferritin	12.00 ↓ ↓
TIBC	284.00
UIBC	205.00
% Transferrin saturation	28.00
Transferrin	255.00
LIPIDS	
Cholesterol - Total	165.00
Triglycerides	65.00 ↓
LDL Cholesterol	70.00 ↓
HDL Cholesterol	81.00
Non-HDL Cholesterol	84.00
VLDL Cholesterol	14.20

Biomarker	Latest Test Result Quest Mar 21 2023
LDL : HDL - Female	0.86
Triglyceride:HDL	0.80
Cholesterol : HDL	2.04
CARDIOMETABOLIC	
Homocysteine	7.50 ↑
THYROID	
TSH	2.95 ↑
T4 - Total	5.20 ↓
T4 - Free	0.98 ↓
T3 - Total	89.20 ↓
T3 - Free	2.80 ↓
Reverse T3	28.00 ↑ ↑
T3 Uptake	26.20 ↓
Free Thyroxine Index (T7)	1.36 ↓ ↓
Thyroid Peroxidase (TPO) Abs	1.10
Thyroglobulin Abs	<1.00
Free T3 : Reverse T3	10.00
Free T3 : Free T4	2.86 ↑
INFLAMMATION	
Hs CRP - Female	1.15 ↑ ↑
C-Reactive Protein	4.65 ↑
ESR - Female	11.20 ↑
Fibrinogen Activity	221.00
VITAMINS	
Vitamin D (25-OH)	56.20
Vitamin B12	462.00 ↓

Biomarker	Latest Test Result Quest Mar 21 2023
Folate - Serum	15.20
Methylmalonic Acid	261.00 ↑
Folate - RBC	376.00 ↓
HORMONES	
DHEA-S - Female	285.00
FSH - Female	16.30 *UNKNOWN*
LH - Female	9.80 *UNKNOWN*
Testosterone Total - Female	33.20 ↓
Testosterone Free - Female	3.38
Sex Hormone Binding Globulin - Female	75.00
Estradiol - Female	55.00 *UNKNOWN*
Progesterone - Female	8.00 *UNKNOWN*
Cortisol - Total/AM	9.00 ↓
Cortisol : DHEA-S	0.03
Gastrin	46.00
Testosterone Bioavailable - Female	8.10
CBC	
RBC - Female	4.23 ↓
Hemoglobin - Female	13.80
Hematocrit - Female	40.00
MCV	94.60 ↑
MCH	32.60 ↑
MCHC	34.50
Platelets	187.00 ↓
MPV	8.80 ↑
RDW	12.40

Biomarker	Latest Test Result Quest Mar 21 2023
WBCS	
Total WBCs	2.60 ↓ ↓
Neutrophils - %	50.40
Lymphocytes - %	40.20 ↑
Monocytes - %	6.80
Eosinophils - %	1.50
Basophils - %	1.10 ↑ ↑
Neutrophils - Absolute	1.31 ↓ ↓
Lymphocytes - Absolute	1.05 ↓
Monocytes - Absolute	0.18 ↓ ↓
Eosinophils - Absolute	0.04
Basophils - Absolute	0.03
Neutrophil : Lymphocyte	1.25

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 a see a more detailed view of the blood test result itself.

Total number of biomarkers by range

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	7	27	60	14	6	0	114

Above Optimal

Basophils - %

1.10 %

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

Hs CRP - Female

1.15 mg/L

High Sensitivity C-Reactive Protein (Hs-CRP) is a blood marker that can help indicate the level of chronic inflammation in the body. Increased levels are associated with an increased risk of inflammation, cardiovascular disease, stroke, and diabetes.

Reverse T3

28.00 ng/dL

Reverse T-3 is formed from the thyroid hormone T-4 (thyroxine). It is thought to be an inactive form of thyroid hormone that acts as a sort of metabolic brake on the body. High stress and cortisol levels, chronic illness, inflammation, multiple vitamin deficiencies, fasting, yo-yo dieting, poor nutrition, calorie restriction, lack of exercise, and increased alcohol intake can all raise reverse T-3 levels.

AST : ALT

1.27 Ratio

The AST:ALT ratio, also known as the De Ritis ratio, provides a tool for assessing and monitoring liver function and the progression and the severity of liver disease. An increasing AST:ALT ratio above 1 is associated with a trend towards progressive impairment of liver function

Sodium : Potassium

36.38 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. An increased Sodium:Potassium ratio is associated with acute stress.

Albumin : Globulin

2.60 ratio

The albumin: globulin ratio is a measure that compares the amounts of albumin and globulins in your blood. Albumin and globulins are types of proteins that play crucial roles in your body, including nutrient transport, immune response, and inflammation management. An elevated albumin: globulin ratio often occurs when there's a high level of albumin or a low level of globulins. This might suggest conditions such as dehydration, where albumin concentration increases as body fluids decrease. Alternatively, it could indicate lower globulin levels, which might occur in immune system disorders where antibody production is compromised.

Methylmalonic Acid

261.00 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.

ESR - Female

11.20 mm/hr

The ESR test is based on the fact that certain blood proteins will become altered in inflammatory conditions, causing aggregation of the red blood cells. Elevated levels of ESR are associated with inflammation.

Homocysteine

7.50 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.

Glucose Fasting

87.50 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.

MCH

32.60 pg

The Mean Corpuscular Hemoglobin (MCH) is a calculated value and is an expression of the average weight of hemoglobin per red blood cell. MCH, along with MCV can be helpful in determining the type of anemia present. It is elevated with B12/folate deficiency and hypochlorhydria.

Leptin - Female

12.20 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.

Anion Gap

13.80 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.

Free T3 : Free T4

2.86 Ratio

The Free T3: Free T4 ratio is a measure that assesses the balance between two important thyroid hormones in your blood: Free T3 (triiodothyronine) and Free T4 (thyroxine). These hormones play vital roles in regulating energy, metabolism, and many other bodily functions. A normal ratio indicates a balanced conversion of T4 (a storage hormone) to T3 (the active hormone). A high ratio, on the other hand, indicates that there might be an excessive conversion of T4 to T3, which can be seen in situations of hyperactive thyroid function where there's excessive T3 production. In certain situations, an elevated ratio may also be associated with an emerging hypothyroidism.

C-Reactive Protein

4.65 mg/L

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

Uric Acid - Female

5.65 mg/dL

Uric acid is produced as an end-product of purine, nucleic acid, and nucleoprotein metabolism. Levels can increase due to over-production by the body or decreased excretion by the kidneys. Increased uric acid levels are associated with gout, atherosclerosis, oxidative stress, arthritis, kidney dysfunction, circulatory disorders and intestinal permeability.

MCV

94.60 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.

MPV

8.80 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.

TSH

2.95 µU/mL

TSH or thyroid-stimulating hormone is a hormone produced by the anterior pituitary to control the thyroid gland's production of the thyroid hormone thyroxine (T4). TSH levels can be confusing because TSH levels increase when there is too little thyroid hormone in circulation. An elevated TSH is a sign that the body needs more thyroid hormone. Elevated levels of TSH are associated with primary hypothyroidism.

Lymphocytes - %

40.20 %

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

Monocytes - Absolute

0.18 k/cumm

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

Free Thyroxine Index (T7)

1.36 Index

The Free Thyroxine Index is a calculated measurement used to determine how much active thyroid hormone (thyroxine/Free T4) is available. Decreased levels are associated with hypothyroidism.

Neutrophils - Absolute

1.31 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.

Total WBCs

2.60 k/cumm

The total White Blood Cell (WBC) count measures the sum of all the WBCs in the peripheral blood. Decreased total White Blood Cell Levels are associated with chronic bacterial or viral infections, immune insufficiency, and may be seen in people eating a raw food diet.

BUN

6.00 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.

Ferritin

12.00 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.

Globulin - Total

1.70 g/dL

Globulins constitute the body's antibody system and Total globulin is a measurement of all the individual globulin fractions in the blood. Decreased levels are associated with inflammation in the digestive system and immune insufficiency.

T3 - Total

89.20 ng/dL

T-3 is the most active thyroid hormone and is primarily produced from the conversion of thyroxine (T-4) in the peripheral tissue. T-3 is 4 -5 times more metabolically active than T-4. Total T3 reflects the total amount of T3 present in the blood i.e. amount bound to protein and free levels. Decreased total T-3 are associated with Hypothyroidism and/or a selenium deficiency.

QUICKI

0.40 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.

Platelets

187.00 10E3/uL

Platelets or thrombocytes are the smallest of the formed elements in the blood. Platelets are necessary for blood clotting, vascular integrity, and vasoconstriction. They form a platelet plug, which plugs up breaks in small vessels. Decreased levels are associated with oxidative stress, heavy metal body burden and infections.

T4 - Free

0.98 ng/dL

T-4 is the major hormone secreted by the thyroid gland. T-4 production and secretion from the thyroid gland are stimulated by the pituitary hormone TSH. Deficiencies of zinc, copper, and vitamins A, B2, B3, B6, and C will cause a decrease in the production of T4 by the follicles of the thyroid gland. Free T-4 is the unbound form of T4 in the body. Only about 0.03 – 0.05% of circulating T4 is in the free form. Free T-4 will be decreased in hypothyroidism and is associated with iodine deficiency.

T3 Uptake

26.20 %

The T-3 uptake test has nothing to do with actual T-3 levels, as the name might suggest. Decreased levels are associated with hypothyroidism and deficiencies of iodine and selenium.

Potassium

3.90 mEq/L

Potassium is one of the main electrolytes in the body. Due to the critical functions of potassium for human metabolism and physiology, it is essential for the body to maintain optimal serum levels even though a small concentration is found outside of the cell. Potassium levels should always be viewed in relation to the other electrolytes. Potassium concentration is greatly influenced by adrenal hormones. Decreased levels are associated with adrenal stress and may also be decreased with high blood pressure.

Folate - RBC

376.00 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.

HOMA2-%B

87.50 %

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. Decreased HOMA2-%B levels indicate a decreased output of insulin from the pancreas. This, along with a number of other factors, points to an increasing trend towards the progression of Type 2 Diabetes.

Iron - Serum

79.00 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.

T4 - Total

5.20 µg/dL

T-4 is the major hormone secreted by the thyroid gland. T-4 production and secretion from the thyroid gland is stimulated by the pituitary hormone TSH. Total T4 reflects the total amount of T4 present in the blood i.e. amount bound to thyroxine-binding globulin and free levels. Decreased total T-4 levels are associated with Hypothyroidism and/or a selenium deficiency.

RBC - Female

4.23 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.

Vitamin B12

462.00 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.

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.

BUN : Creatinine

9.00 Ratio

The BUN/Creatinine is a ratio between the BUN and Creatinine levels. A decreased level is associated with a diet low in protein.

Testosterone Total - Female

33.20 ng/dL

The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). In women, low total testosterone levels have been linked to an increased risk for the following: osteoporosis, decreased lean body mass and decreased libido.

Cortisol - Total/AM

9.00 µg/dL

The serum cortisol test is used to identify dysfunction in the adrenal gland. Decreased levels are associated with adrenal hypofunction, a dysfunction where the adrenal glands do not produce enough cortisol.

Albumin

4.40 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.

Copper - Serum

76.00 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.

Zinc - RBC

9.20 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.

GGT

8.00 IU/L

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

Lymphocytes - Absolute

1.05 k/cumm

Lymphocytes are a type of white blood cell. Decreased levels are often seen in a chronic viral infection when the body can use up a large number of lymphocytes and oxidative stress. A decreased *Lymphocytes - Absolute* count may also indicate the presence of a fatigued immune response, especially with a low Total WBC count.

T3 - Free

2.80 pg/mL

T-3 is the most active thyroid hormone and is primarily produced from the conversion of thyroxine (T-4) in the peripheral tissue. Free T3 is the unbound form of T3 measured in the blood. Free T3 represents approximately 8 – 10% of circulating T3 in the blood. Free T-3 levels may be decreased with hypothyroidism and is associated with selenium deficiency.

Triglycerides

65.00 mg/dL

Serum triglycerides are composed of fatty acid molecules that enter the bloodstream either from the liver or from the diet. Serum Triglyceride levels may be decreased in liver dysfunction, a diet deficient in fat, and inflammatory processes.

Creatinine

0.65 mg/dL

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

LDL Cholesterol

70.00 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. There is no clinical significance for a decreased LDL level.

Protein - Total

6.10 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.

Zinc - Serum

65.70 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.

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

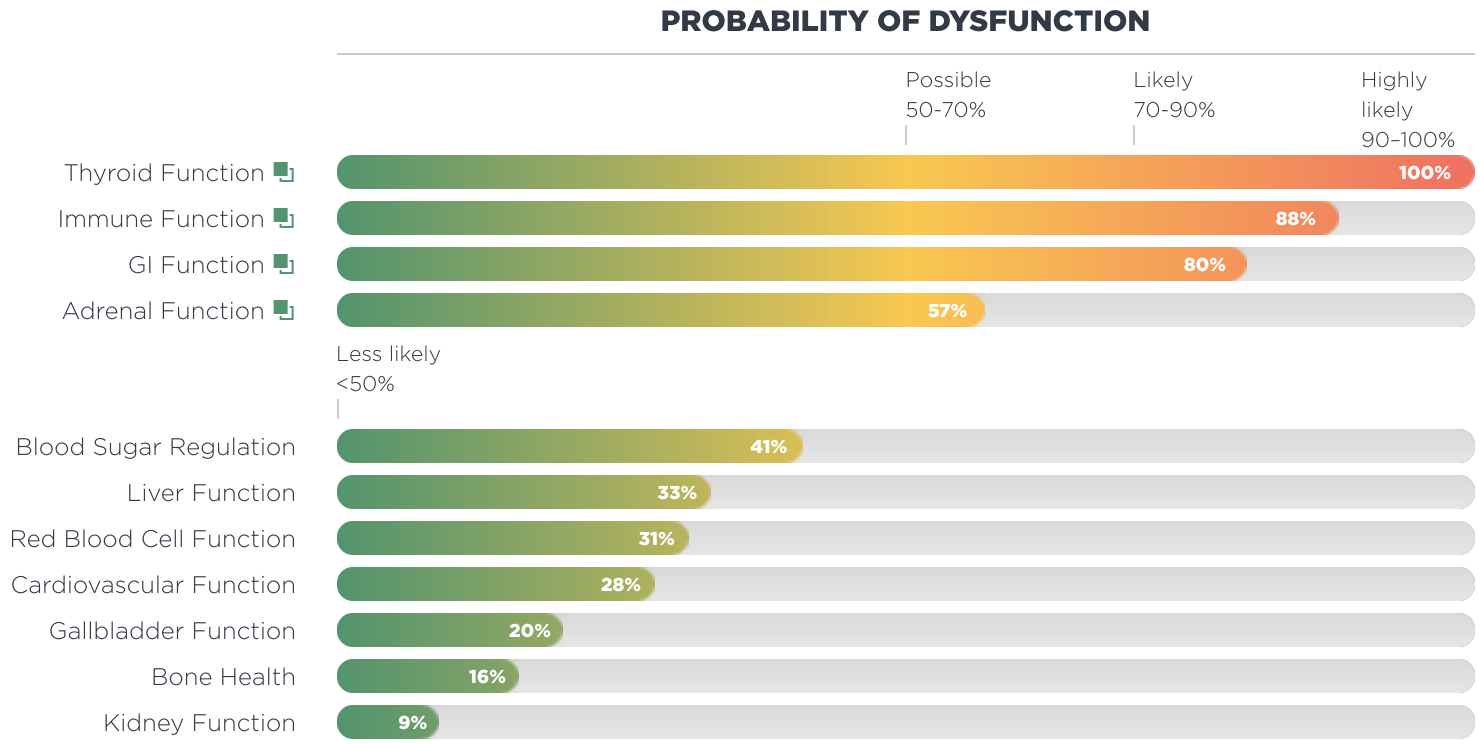
40 Functional Body Systems
43 Accessory Systems
44 Nutrient Status
47 Nutrient Deficiencies

Functional Body Systems

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

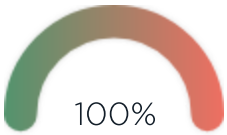
This report gives you an indication of the level of dysfunction that exists in the various physiological systems in your body.

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



Functional Body Systems Details

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



Dysfunction Highly Likely. Much improvement required.

THYROID FUNCTION

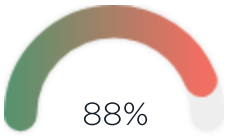
The Thyroid Function score allows us to assess the functional health of your thyroid. The thyroid produces hormones that control how the body uses energy. They are responsible for controlling metabolism in the body, maintaining body temperature, regulating cholesterol, and controlling mood. By examining specific biomarkers on the blood test we can see if your thyroid is in a state of increased activity, in a state of decreased function (hypothyroidism), or hopefully optimal function!

Rationale

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

Biomarkers considered

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



Dysfunction Likely Improvement required.

IMMUNE FUNCTION

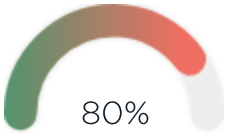
The Immune Function score allows us to assess the state of function in your immune system. When the immune system is in a state of balance we are able to cope and deal with infections with little or no lasting negative side effects. Biomarkers on a blood test allow us to check and see if the immune system is in a state of balance or not. Some of the factors to consider include a low functioning immune system (a condition called immune insufficiency), bacterial or viral infections, or GI dysfunction associated with decreased immune function: abnormal immunity in the gut lining, a decrease in immune cell function in the gut or an increase in abnormal bacteria, etc. in the gut (a condition called dysbiosis).

Rationale

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

Biomarkers considered

Total WBCs, Globulin - Total, Neutrophils - %, Lymphocytes - %, Monocytes - %, Monocytes - Absolute, Lymphocytes - Absolute, Neutrophils - Absolute, Albumin, Alk Phos, Ferritin



Dysfunction Likely Improvement required.

GI FUNCTION

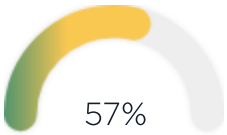
The GI Function score reflects the degree of function in your gastrointestinal (GI) system. The gastrointestinal system is responsible for the digestion and breakdown of macronutrients (proteins, fats, and carbohydrates) into small particles so they can be easily absorbed and utilized. The GI system is also responsible for the excretion and elimination of waste from the body. 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 ↑, Basophils - % ↑, Iron - Serum ↓, Creatinine ↓, Total WBCs ↓

Biomarkers considered

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



Dysfunction Possible There may be improvement needed in certain areas.

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 ↑, Potassium ↓, Cortisol - Total/AM ↓

Biomarkers considered

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

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

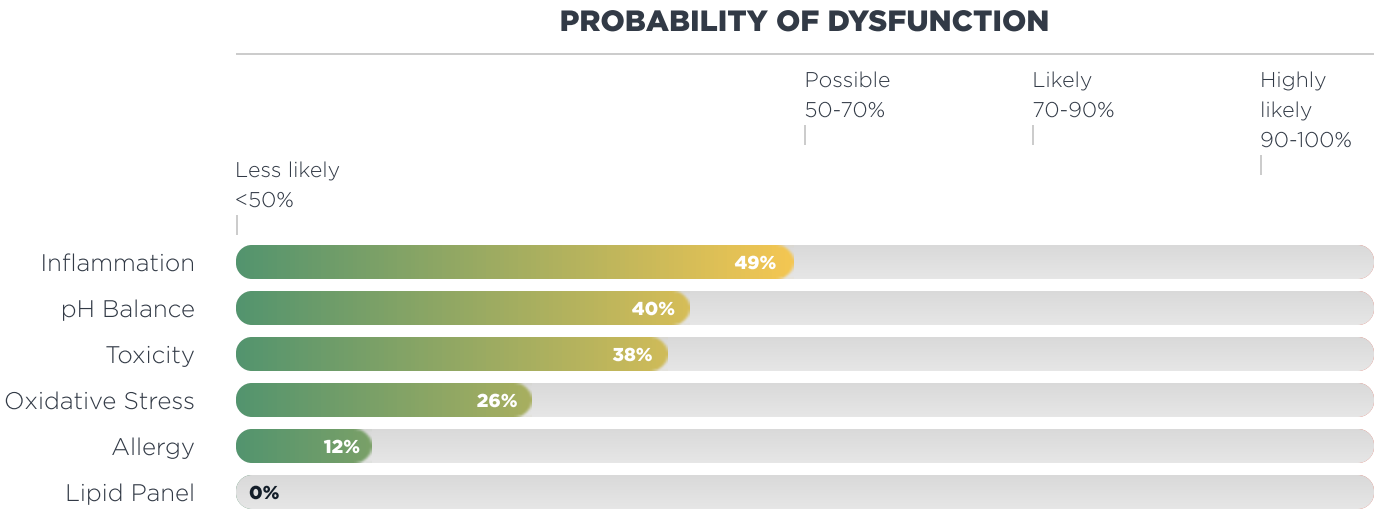
Aldosterone, Cortisol - PM

Accessory Systems

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

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

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

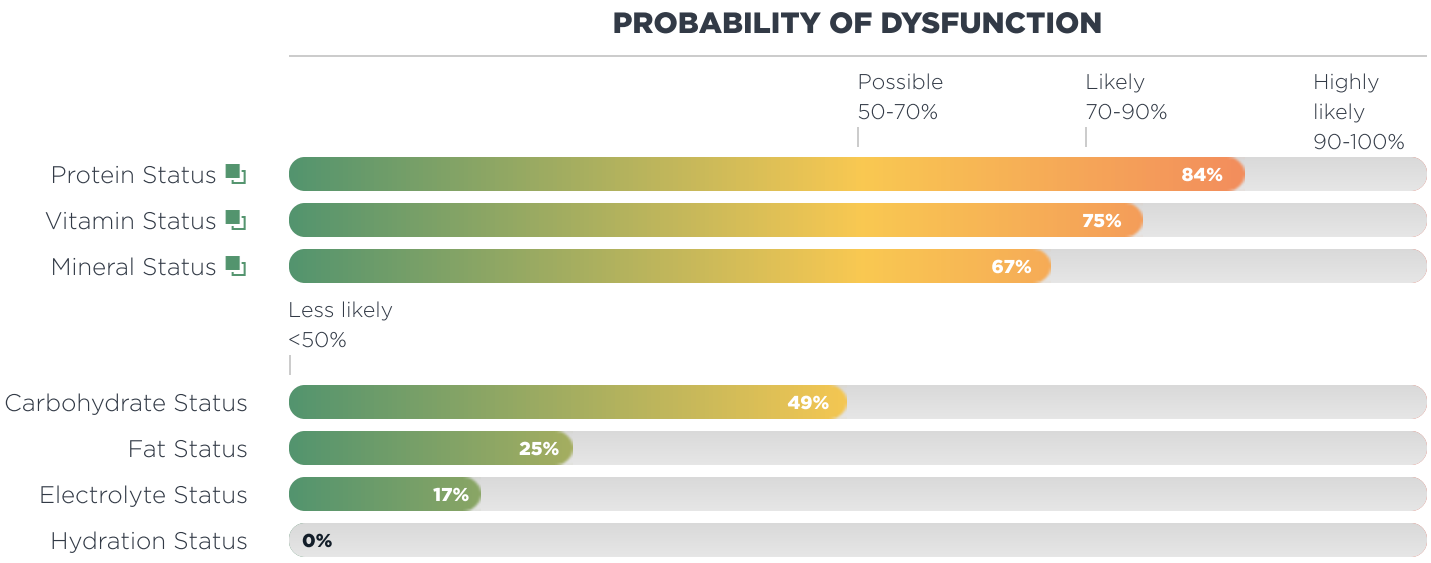


Nutrient Status

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

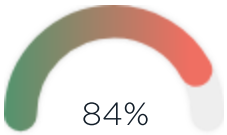
This report gives you an indication of your general nutritional status. The Nutrient Status is influenced by actual dietary intake, digestion, absorption, assimilation, and cellular uptake of the nutrients themselves.

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



Nutrient Status Details

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



Dysfunction Likely.
Improvement required.

PROTEIN STATUS

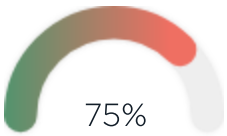
You may be trending toward a protein deficiency or need, causing an increase in your Protein Status score. Protein deficiency is quite common and is often due to a diet that is low in protein and high in refined carbohydrates (white flour, white rice, white pasta, etc.) and sugars. Another reason for protein deficiency is what we call digestive dysfunction, which will greatly compromise protein digestion and absorption. Protein is an essential nutrient for the body and is a vital part of every tissue, cell, and organ in your body.

Rationale

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

Biomarkers considered

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



Dysfunction Likely.
Improvement required.

VITAMIN STATUS

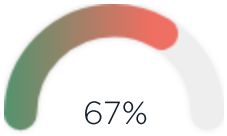
You may be trending towards a vitamin deficiency or need, causing an increase in your Vitamin Status score. Vitamin levels are constantly fluctuating based on a number of factors, such as the amount in your diet, your ability to digest and break down individual vitamins from the food or supplements you consume, the ability of those vitamins to be absorbed, transported and ultimately taken up into the cells themselves.

Rationale

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

Biomarkers considered

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



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

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

Biomarkers considered

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

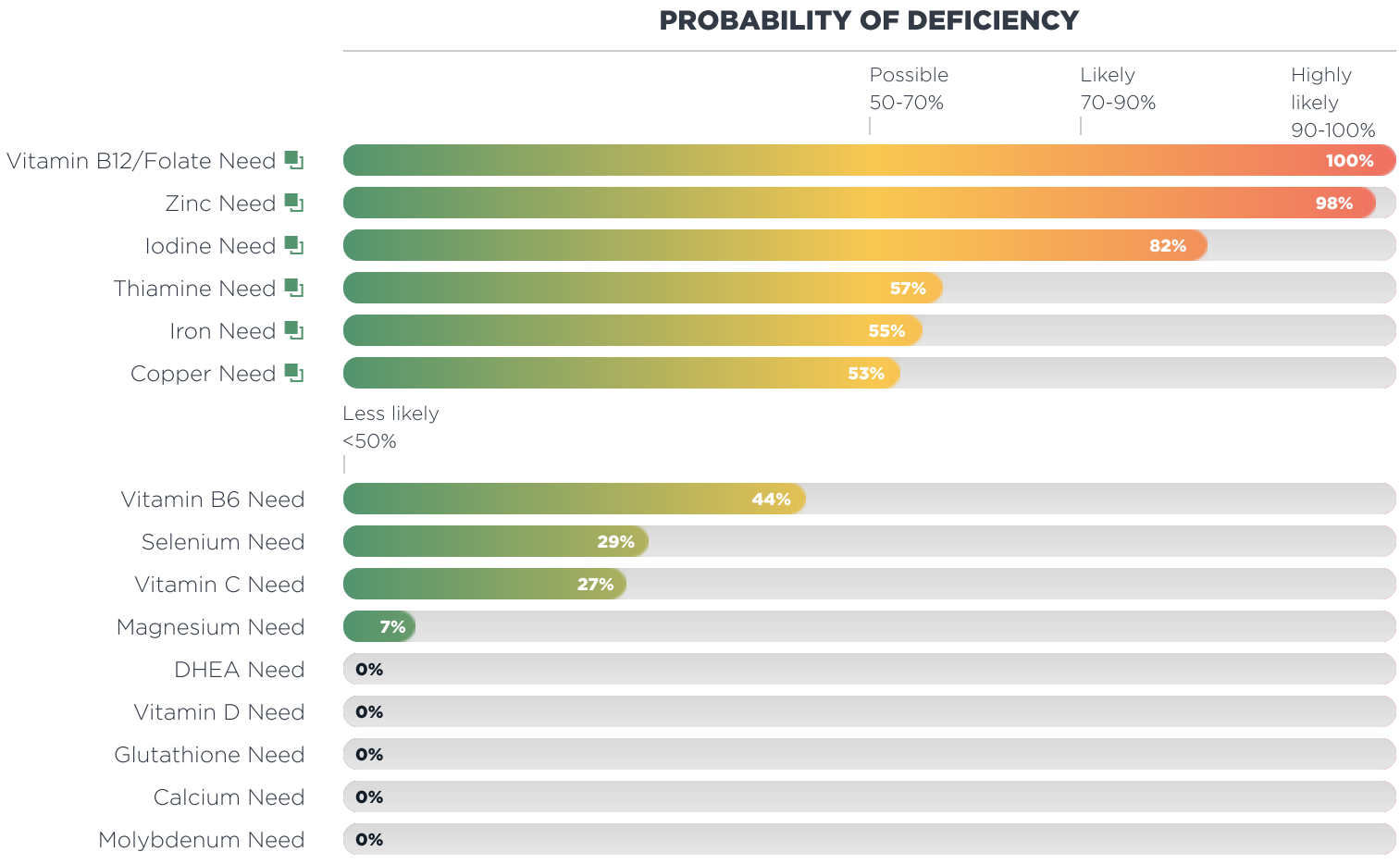
Biomarkers not available in this test - consider having run in future tests:

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

Individual Nutrient Deficiencies

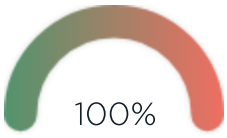
The scores represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors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

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



Individual Nutrient Deficiency Details

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



Deficiency Highly Likely. Much improvement required.

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

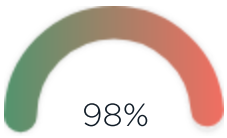
Vitamin B12 ↓, Methylmalonic Acid ↑, MCV ↑, Homocysteine ↑, MCH ↑, Folate - RBC ↓

Biomarkers considered

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

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

Active B12



Deficiency Highly Likely. Much improvement required.

ZINC NEED

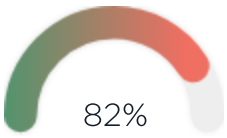
Your high Zinc Need score indicates that your zinc levels might be lower than optimal, and there may be an increased need for zinc.

Rationale

Zinc - Serum ↓, Zinc - RBC ↓

Biomarkers considered

Zinc - Serum, Zinc - RBC



Deficiency Likely. Improvement required.

IODINE NEED

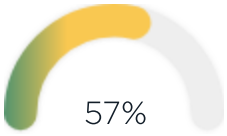
You may be trending toward an iodine need, causing an increase in your Iodine Need score.

Rationale

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

Biomarkers considered

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



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

THIAMINE NEED

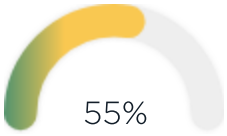
You may be in the early stages of thiamine need, causing your Thiamine Need score to rise. While this may not require immediate attention, you will want to watch this on future blood tests.

Rationale

Anion Gap ↑, Glucose Fasting ↑, LDH ↓

Biomarkers considered

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



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

IRON NEED

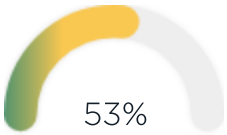
You may be in the early stages of iron need, causing your Iron Need score to rise. While this may not require immediate attention, you will want to watch this on future blood tests.

Rationale

Iron - Serum ↓, Ferritin ↓, RBC - Female ↓

Biomarkers considered

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



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

COPPER NEED

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

Rationale

Copper - Serum ↓

Biomarkers considered

Copper - Serum, Copper : Zinc Ratio

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

Copper - RBC

4

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

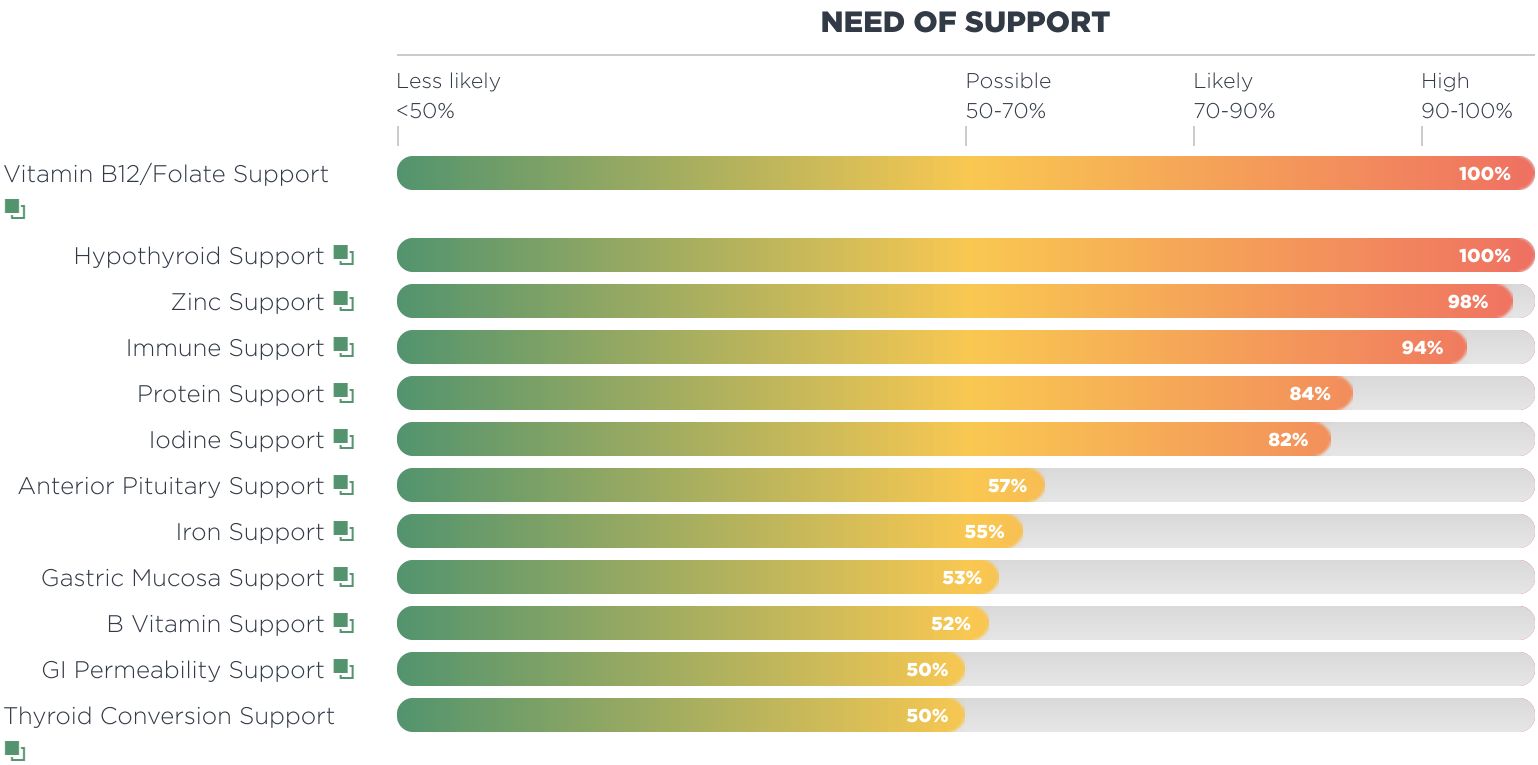
Health Concerns

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.



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.

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 ↑, MCH ↑, Folate - RBC ↓

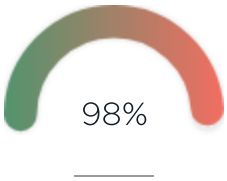
HYPOTHYROID SUPPORT

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

Rationale

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

ZINC SUPPORT

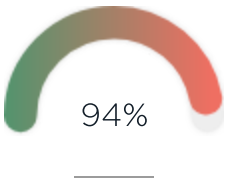


The results of your blood test indicate that your zinc levels might be lower than optimal and shows a need for zinc supplementation.

Rationale

Zinc - Serum ↓, Zinc - RBC ↓

IMMUNE SUPPORT

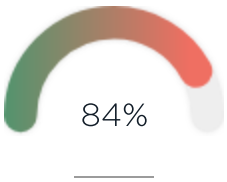


The results of your blood test indicate a tendency towards immune insufficiency and a need for immune support.

Rationale

Total WBCs ↓, Albumin ↓, Globulin - Total ↓

PROTEIN SUPPORT

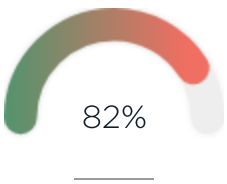


The results of your blood test indicate that your protein levels might be lower than optimal and shows a need for protein supplementation.

Rationale

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

IODINE SUPPORT

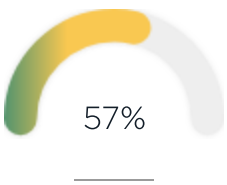


The results of your blood test indicate that your iodine levels might be lower than optimal and shows a need for iodine supplementation.

Rationale

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

ANTERIOR PITUITARY SUPPORT

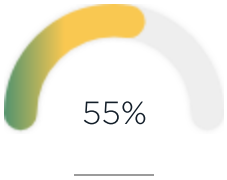


The results of your blood test indicate a need for thyroid support.

Rationale

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

IRON SUPPORT



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

Rationale

Iron - Serum ↓, Ferritin ↓, RBC - Female ↓

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Disclaimer

55 Disclaimer

Disclaimer

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