Blood Chemistry Analysis

Functional Health Report

Client Report

Prepared for	Female Sample 56 year old female born Nov 01, 1966 Fasting	
Requested by	Anne Swanson	
Collected Date	Jun 12, 2023	
Lab	Quest	
Powered by	ODX | OptimalDX	

What's Inside?

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

An in-depth functional system and nutrient evaluation.

An in-depth analysis of your biomarker results.

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

Introduction

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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.

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. Clients 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, clients 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 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" reference ranges represent "average" populations rather that the optimal level required to maintain good health. Most "normal" 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" 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.

Client Report

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

ANNE SWANSON

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 the results of your blood test results and shows you if an individual biomarker is outside of the optimal range and/or outside of the clinical lab 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 reference 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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An in-depth functional system and nutrient evaluation.

Assessment

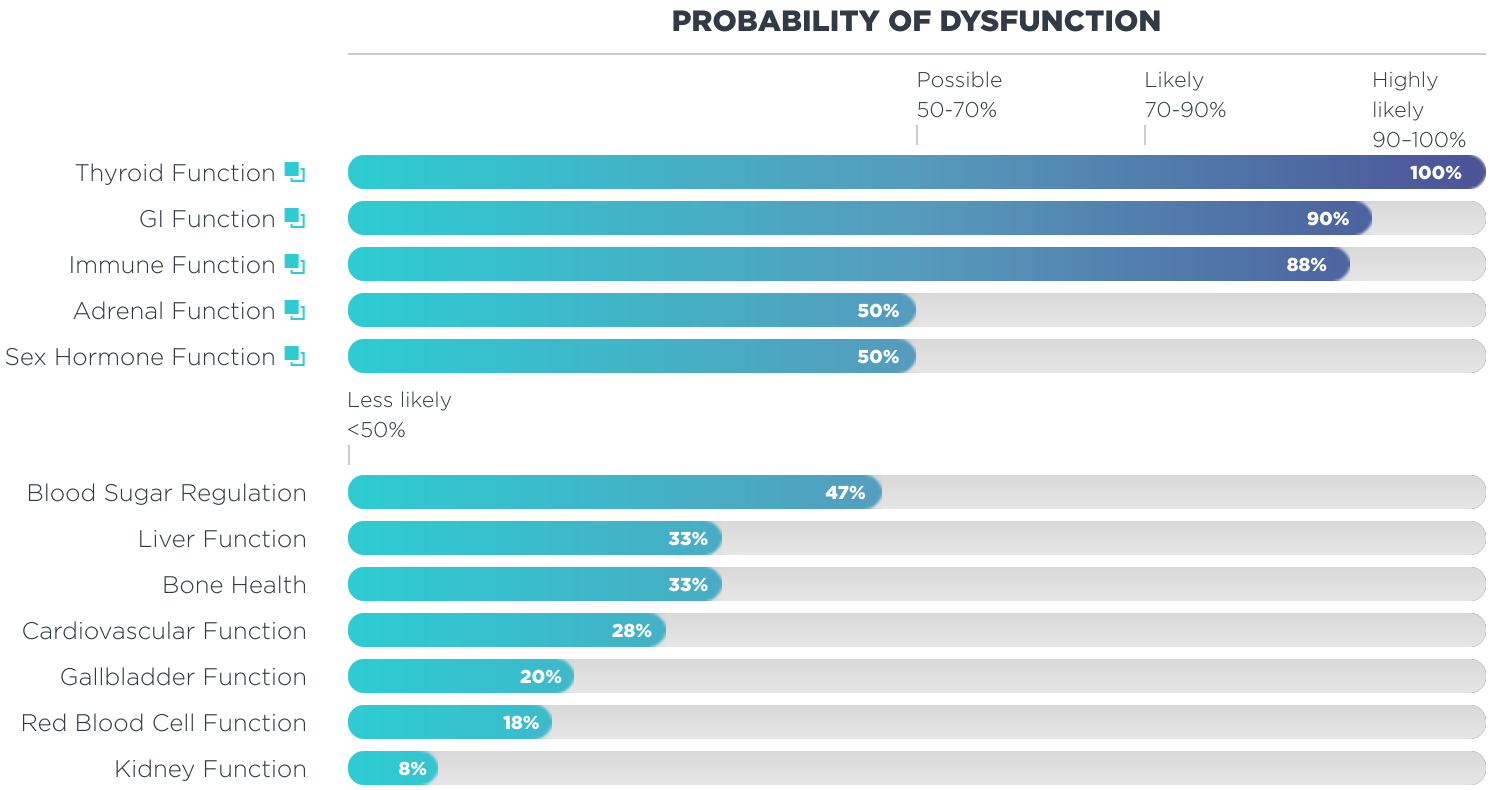
6 Functional Body Systems
9 Accessory Systems
11 Nutrient Status
14 Nutrient Deficiencies

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.

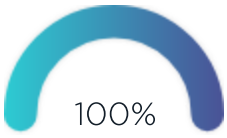
This report gives you an indication of the level of dysfunction that exists in the various physiological systems in your body.

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

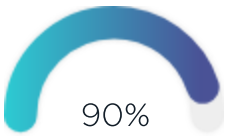
The Thyroid Function score allows us to assess the functional health of your thyroid. The thyroid produces hormones that control how the body uses energy. They are responsible for controlling metabolism in the body, maintaining body temperature, regulating cholesterol, and controlling mood. By examining 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, Thyroglobulin Abs, Thyroid Peroxidase (TPO) Abs, Free Thyroxine Index (T7), Free T3 : Reverse T3



Dysfunction Highly Likely. Much improvement required.

GI FUNCTION

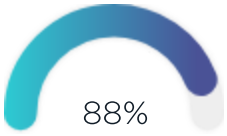
The GI Function score reflects the degree of function in your gastrointestinal (GI) system. The gastrointestinal system is responsible for the digestion and breakdown of macronutrients (proteins, fats, and carbohydrates) into small particles so they can be easily absorbed and utilized. The GI system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

Biomarkers considered

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



Dysfunction Likely
Improvement required.

IMMUNE FUNCTION

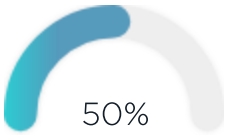
The Immune Function score allows us to assess the state of function in your immune system. When the immune system is in a state of balance we are able to cope and deal with infections with little or no lasting negative side effects. Biomarkers on a blood test allow us to check and see if the immune system 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 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

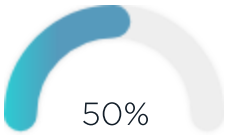
Sodium : Potassium ↑, Potassium ↓, Cortisol - Total/AM ↓, Triglycerides ↓

Biomarkers considered

Sodium : Potassium, Sodium, Potassium, Cortisol - Total/AM, Glucose - Fasting, BUN, Chloride, CO2, Cholesterol - Total, Triglycerides, DHEA-S - Female

Biomarkers not available - consider having run in future tests:

Cortisol - PM



Dysfunction Possible
There may be improvement needed in certain areas.

SEX HORMONE FUNCTION

The Female Sex Hormone score helps us assess levels of important hormones in your body: testosterone, DHEA, progesterone, 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. We can measure sex hormone levels in your blood and determine from the Sex Hormone Function score whether the levels are optimal for your continued optimal health and wellness.

Rationale

Estradiol - Female ↓, Testosterone Total - Female ↓, Progesterone - Female ↓

Biomarkers considered

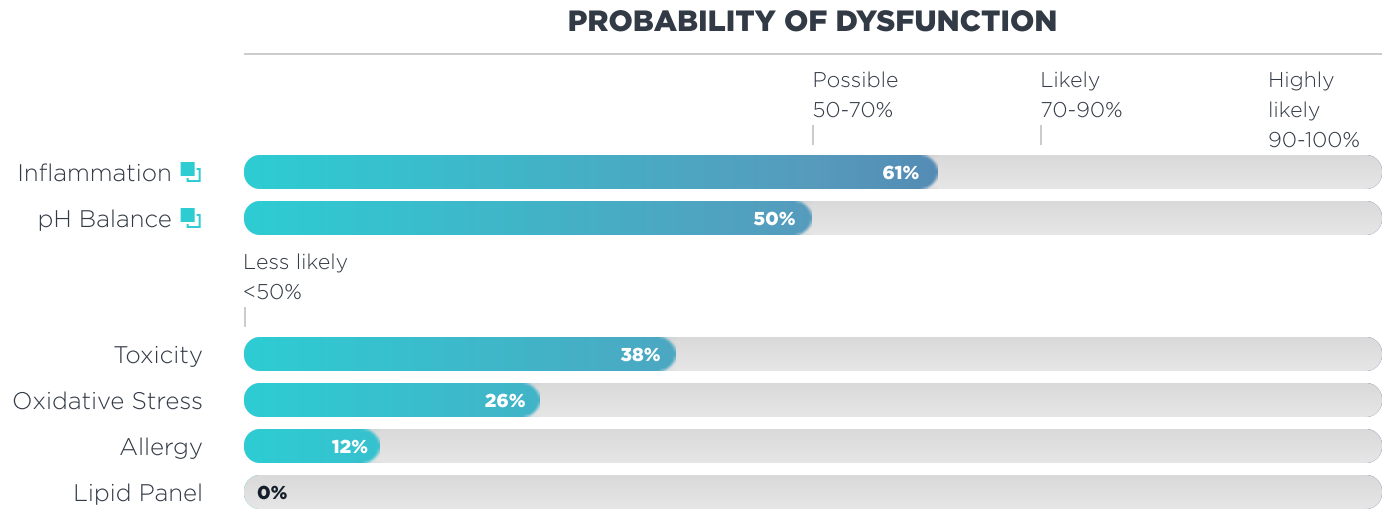
Estradiol - Female, Testosterone Total - Female, Testosterone Free - Female, Sex Hormone Binding Globulin - Female, DHEA-S - Female, Progesterone - Female

Accessory Systems

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

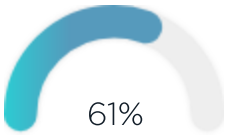
The Accessory Systems Report represents an algorithmic analysis of this blood test. These results have been converted into an individualized risk evaluation based on the latest research.

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.



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.



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

INFLAMMATION

The Inflammation score can help us identify whether or not you are suffering from inflammation. This is important because inflammation can be silent, i.e. not have any symptoms. A number of biomarkers on a blood test can indicate the presence of inflammation. These are markers of inflammation and are not specific to any particular inflammatory condition or disease but they can help us look at the underlying dysfunctions that are the true cause of inflammation in the body.

Rationale

Hs CRP - Female ↑, Homocysteine ↑, Uric Acid - Female ↑, ESR - Female ↑, Lymphocytes - % ↑, Basophils - % ↑, C-Reactive Protein ↑

Biomarkers considered

Hs CRP - Female, Fibrinogen, Homocysteine, Uric Acid - Female, LDH, Cholesterol - Total, Triglycerides, HDL Cholesterol, Iron - Serum, Ferritin, ESR - Female, Lymphocytes - %, Basophils - %, Creatine Kinase, ALT, RDW, Vitamin D (25-OH), C-Reactive Protein

Biomarkers not available - consider having run in future tests:

Myeloperoxidase (MPO)

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

PH BALANCE

It is possible that you are starting to show signs of pH imbalance. The pH Balance score can help us pinpoint imbalances in the body's pH (acid-alkaline) regulation system. You are trending towards imbalance. Please work with your physician to help bring this score down in future blood test results.

Rationale

Anion Gap ↑, Potassium ↓, Calcium ↓

Biomarkers considered

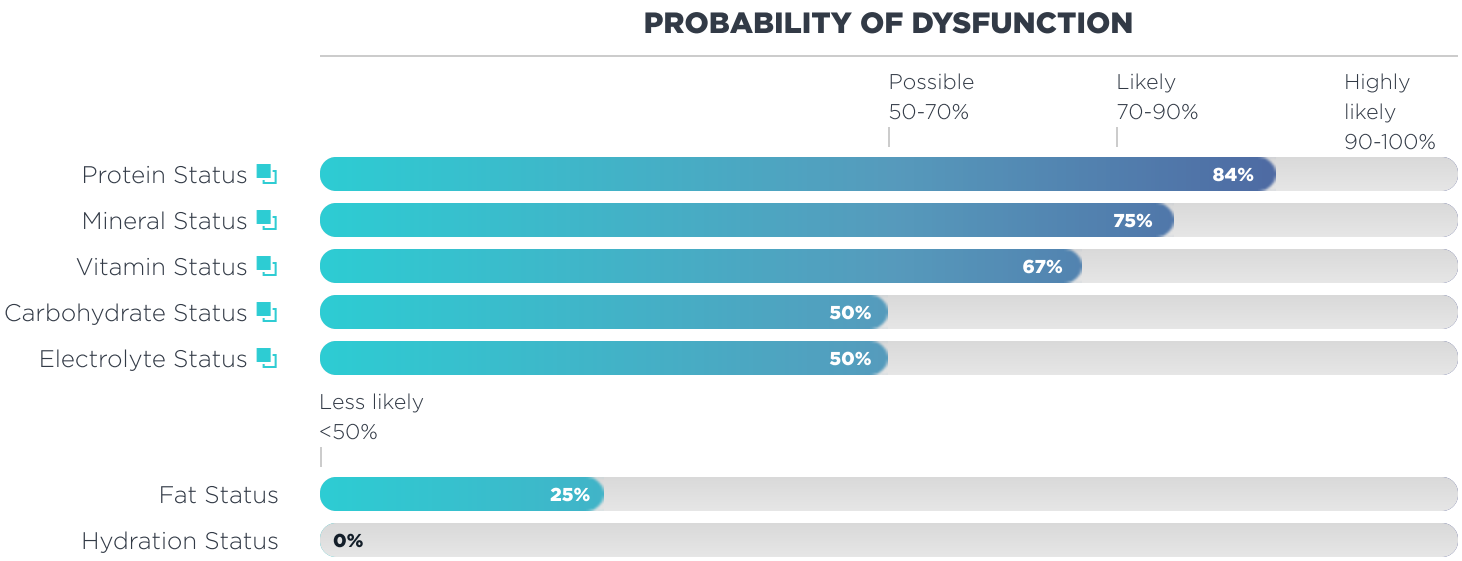
Anion Gap, Potassium, Chloride, CO2, Calcium

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.

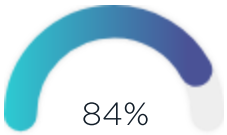
This report gives you an indication of your general nutritional status. The Nutrient Status is influenced by actual dietary intake, digestion, absorption, assimilation, and cellular uptake of the nutrients themselves.

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

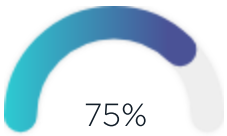
You may be trending toward a protein deficiency or need, causing an increase in your Protein Status score. Protein deficiency is quite common and is often due to a diet that is low in protein and high in refined carbohydrates (white flour, white rice, white pasta, etc.) and sugars. Another reason for 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.

MINERAL STATUS

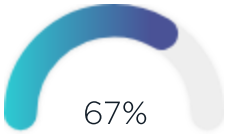
You may be trending towards a mineral deficiency or need, causing an increase in your Mineral Status score. Mineral levels in the body are closely regulated and deficiency in one or more minerals may be due to a number of factors such as the amount in your diet, the ability to digest and break down individual minerals from the food or supplements you consume, and the ability of those minerals to be absorbed, transported and ultimately taken up by the cells themselves.

Rationale

Copper - Serum ↓, Zinc - Serum ↓, Potassium ↓, Calcium ↓, Phosphorus ↓, GGT ↓, Iron - Serum ↓, Ferritin ↓, T3 - Total ↓, T3 - Free ↓

Biomarkers considered

Magnesium - Serum, Copper - Serum, Zinc - Serum, Potassium, Uric Acid - Female, Calcium, Phosphorus, Alk Phos, GGT, Iron - Serum, Ferritin, TIBC, % Transferrin saturation, T3 - Total, T3 - Free, MCV



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

VITAMIN STATUS

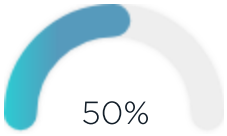
You may be in the early stages of vitamin deficiency or need, causing an increase in your Vitamin Status score. While this may not require immediate attention, we will want to keep an eye on your vitamin levels and keep monitoring this on future blood tests.

Rationale

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

Biomarkers considered

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



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

CARBOHYDRATE STATUS

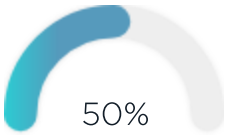
You may be in the early stages of having difficulties handling your dietary intake of carbohydrates, especially refined carbohydrates and sugars. This may begin to cause shifts in your ability to regulate blood sugar. While this may not require immediate attention, we will want to keep an eye on this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

Rationale

Phosphorus ↓, LDH ↓, Total WBCs ↓

Biomarkers considered

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



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

ELECTROLYTE STATUS

The Electrolyte Status score gives us a sense of the balance of electrolytes in your body. Electrolytes such as calcium, potassium, sodium, and magnesium are essential for optimal health and wellness. An electrolyte imbalance can show up as low blood pressure, cold hands or feet, poor circulation, swelling in the ankles, and immune insufficiency.

Rationale

Potassium ↓, Calcium ↓, Phosphorus ↓

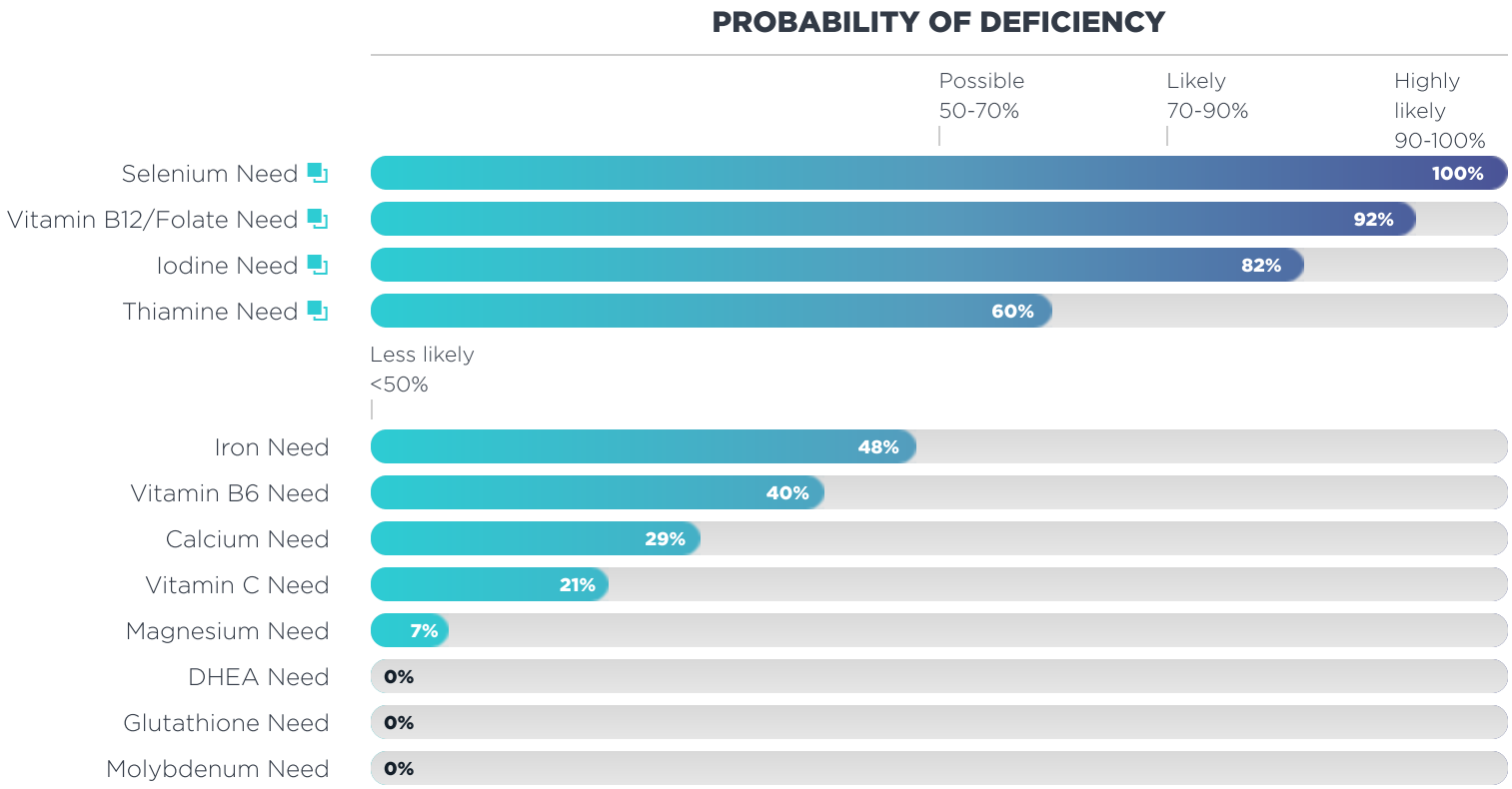
Biomarkers considered

Sodium, Potassium, Chloride, Calcium, Phosphorus, Magnesium - Serum

Individual Nutrient Deficiencies

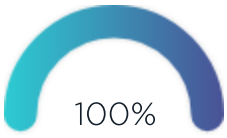
The values represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors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

SELENIUM NEED

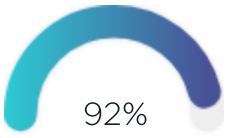
Your high Selenium Need score indicates that your selenium levels might be lower than optimal, and there may be an increased need for selenium.

Rationale

T3 - Total ↓, T3 - Free ↓, T3 Uptake ↓

Biomarkers considered

T3 - Total, T3 - Free, T3 Uptake



Deficiency Highly Likely. Much improvement required.

VITAMIN B12/FOLATE NEED

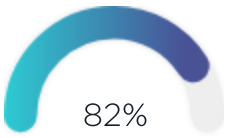
Your high Vitamin B12/Folate Need score indicates that your vitamin B12/folate levels might be lower than optimal, and there may be an increased need for vitamin B12/folate.

Rationale

Methylmalonic Acid ↑, MCV ↑, Homocysteine ↑, Total WBCs ↓, MCH ↑, Folate - RBC ↓

Biomarkers considered

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



Deficiency Likely. Improvement required.

IODINE NEED

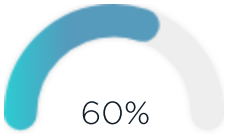
You may be trending toward an iodine need, causing an increase in your Iodine Need score.

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

3

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 clinical lab range plus a comparative and historical view.

Analytics

18 Blood Test Results
29 Blood Test Comparative
33 Blood Test History
38 Out of Optimal Range

Blood Test Results

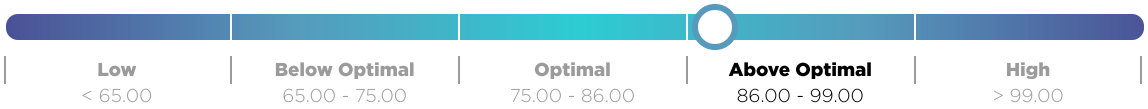
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range. The biomarkers are grouped into their most common categories.

Some biomarkers in the Blood Test Results Report that are above or below the Optimal or Standard Range 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	28	61	15	6	0	118

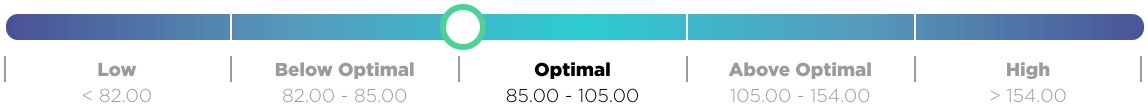
BLOOD GLUCOSE

Glucose - Fasting
87.50 mg/dL



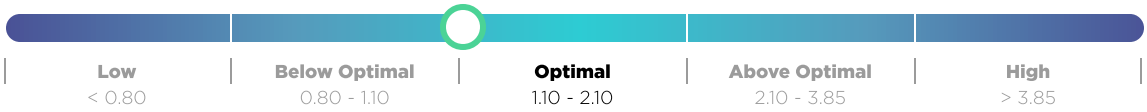
Hemoglobin A1C
4.60 %

eAG
85.00 mg/dl



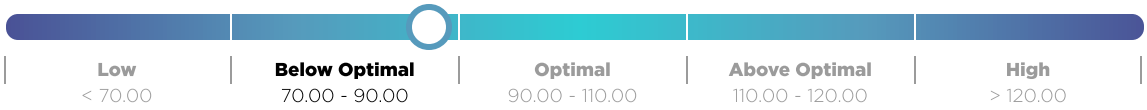
Insulin - Fasting
3.70 µIU/ml

C-Peptide
1.11 ng/ml

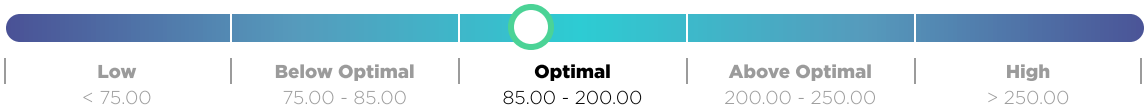


Fructosamine
201.00 µmol/L

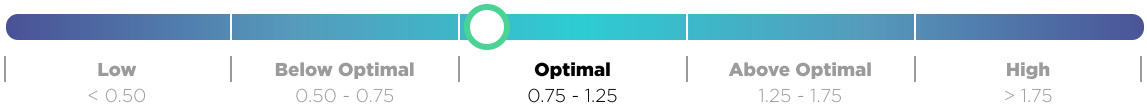
HOMA2-%B
87.50 %



HOMA2-%S
124.00 %



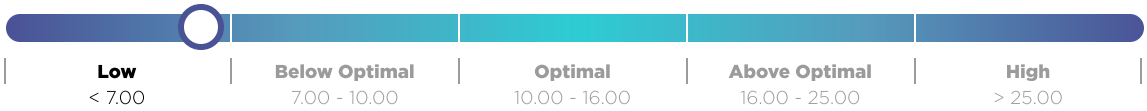
HOMA2-IR
0.80 Index



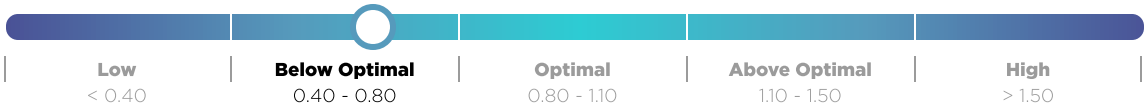
QUICKI
0.40 Index

KIDNEY

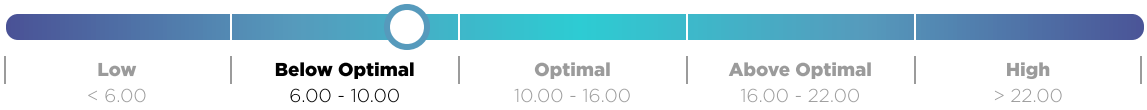
BUN
6.00 mg/dL



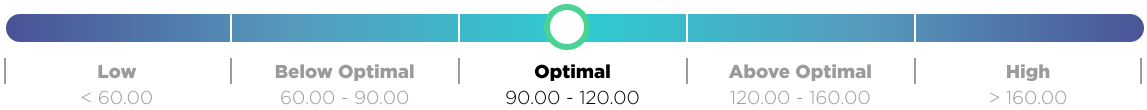
Creatinine
0.65 mg/dL



BUN : Creatinine
9.00 Ratio



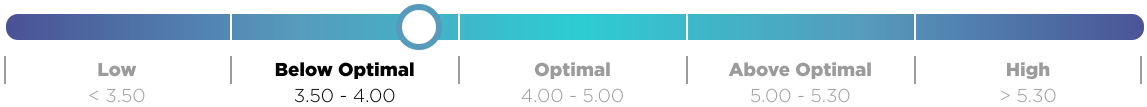
eGFR
104.00 mL/min/1.73m2



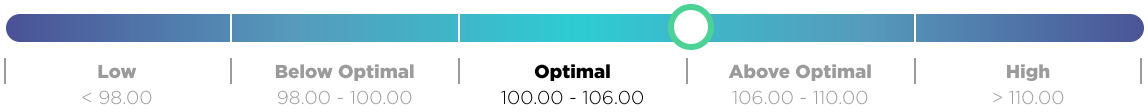
ELECTROLYTES

Sodium
141.90 mEq/L

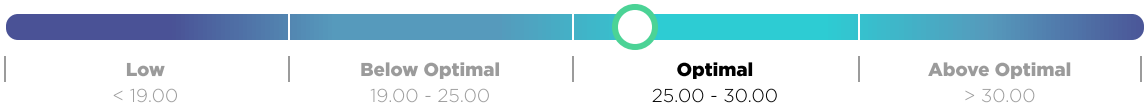
Potassium
3.90 mEq/L



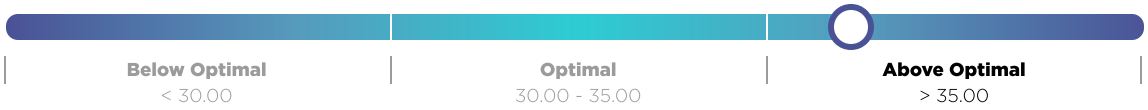
Chloride
106.00 mEq/L



CO2
26.00 mEq/L

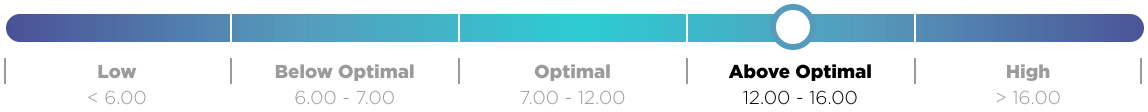


Sodium : Potassium
36.38 ratio

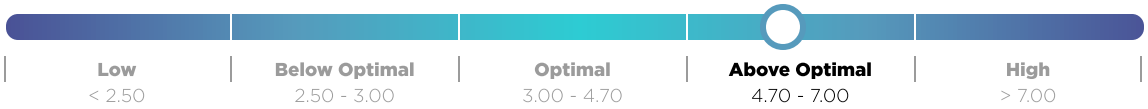


METABOLIC

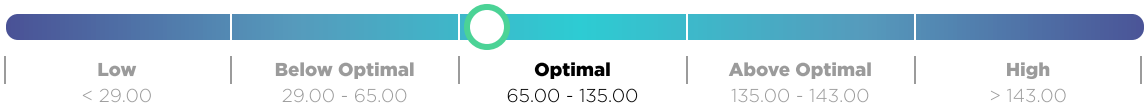
Anion Gap
13.80 mEq/L



Uric Acid - Female
5.65 mg/dL



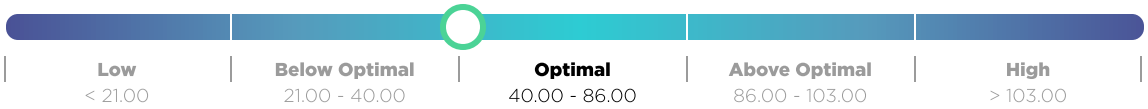
Creatine Kinase
72.00 u/l



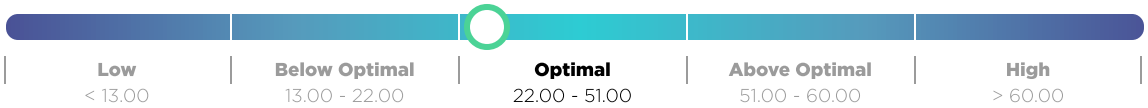
Leptin - Female
12.20 ng/ml

ENZYMES

Amylase
42.00 U/L



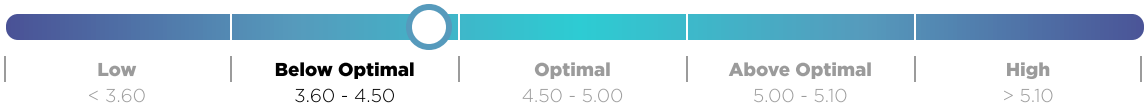
Lipase
25.00 U/L



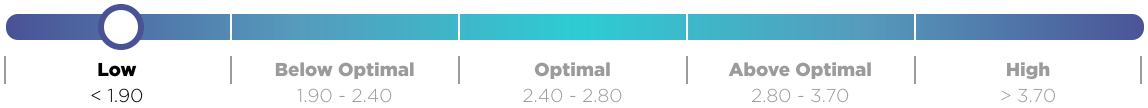
PROTEINS

Protein - Total
6.10 g/dL

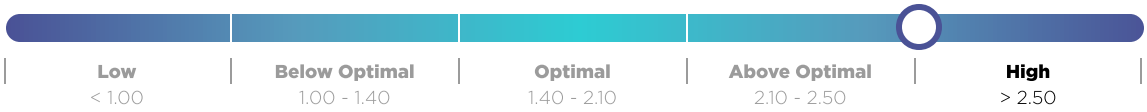
Albumin
4.40 g/dL



Globulin - Total
1.70 g/dL

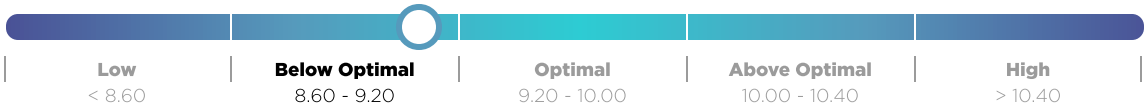


Albumin : Globulin
2.60 ratio



MINERALS

Calcium
9.10 mg/dL

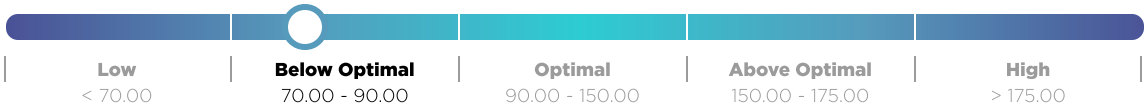


Phosphorus
2.90 mg/dL

Magnesium - Serum
2.30 mg/dl

Magnesium - RBC
6.20 mg/dl

Copper - Serum
76.00 µg/dL



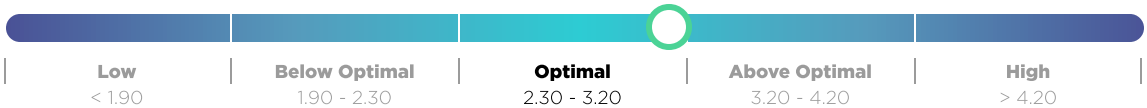
Zinc - Serum
65.70 µg/dL

Zinc - RBC
9.20 mg/L

Copper : Zinc Ratio
1.16 Ratio

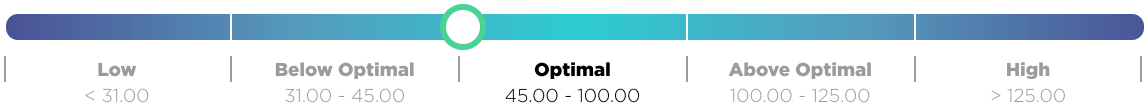
Calcium : Albumin
2.07 ratio

Calcium : Phosphorus
3.14 ratio



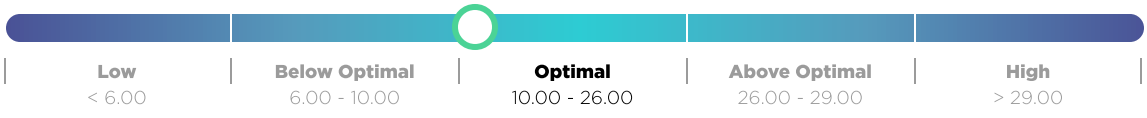
LIVER AND GB

Alk Phos
46.00 IU/L

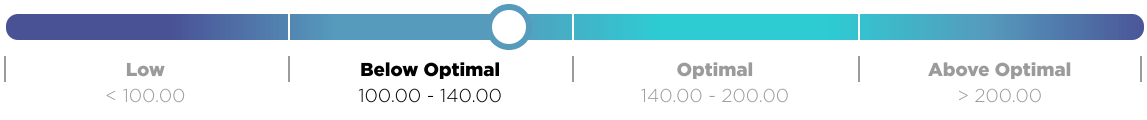


AST
14.00 IU/L

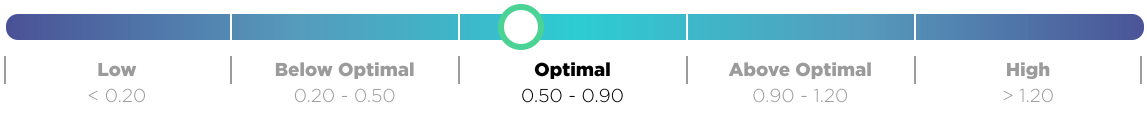
ALT
11.00 IU/L



LDH
131.00 IU/L

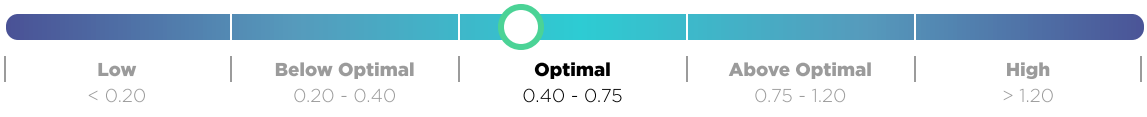


Bilirubin - Total
0.60 mg/dL

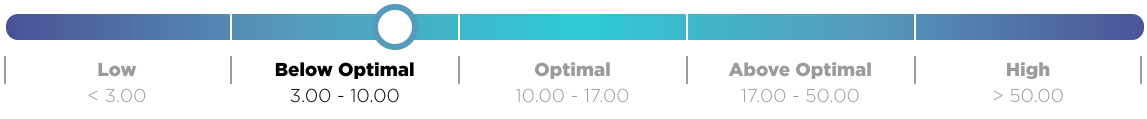


Bilirubin - Direct
0.10 mg/dL

Bilirubin - Indirect
0.50 mg/dL



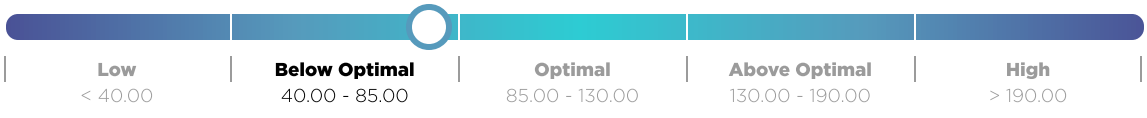
GGT
8.00 IU/L



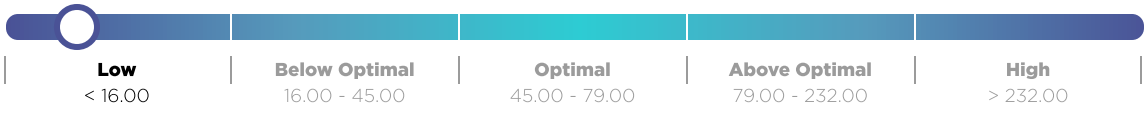
AST : ALT
1.27 Ratio

IRON MARKERS

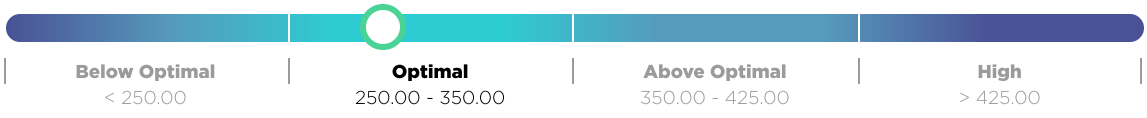
Iron - Serum
79.00 µg/dL



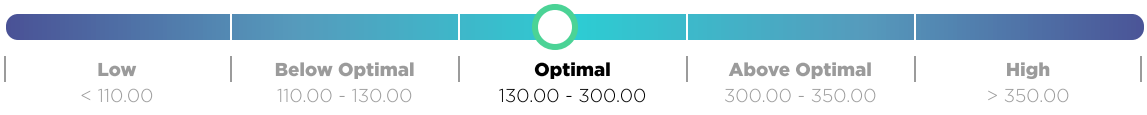
Ferritin
12.00 ng/mL



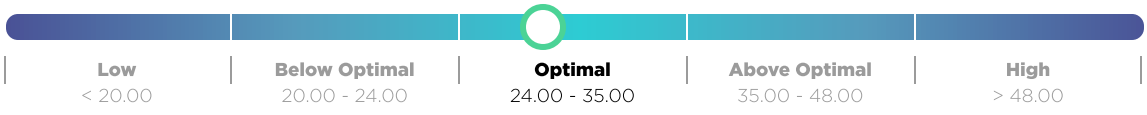
TIBC
284.00 µg/dL



UIBC
205.00 µg/dL



% Transferrin saturation
28.00 %



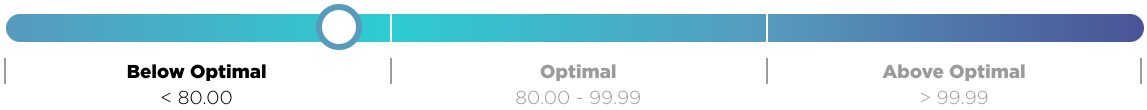
Transferrin
255.00 mg/dl

LIPIDS

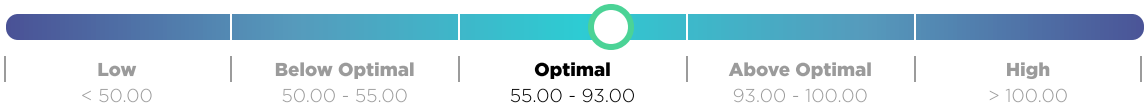
Cholesterol - Total
165.00 mg/dL

Triglycerides
65.00 mg/dL

LDL Cholesterol
70.00 mg/dL

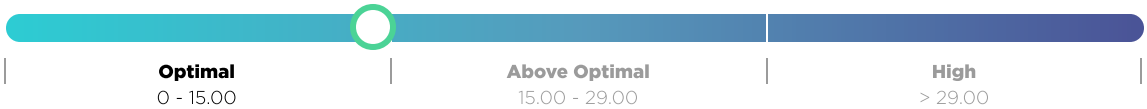


HDL Cholesterol
81.00 mg/dL

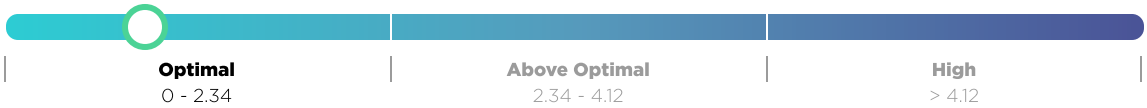


Non-HDL Cholesterol
84.00 mg/dl

VLDL Cholesterol
14.20 mg/dl



LDL : HDL - Female
0.86 Ratio



Triglyceride:HDL
0.80 ratio

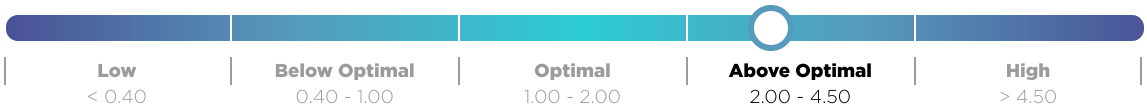
Cholesterol : HDL
2.04 Ratio

CARDIOMETABOLIC

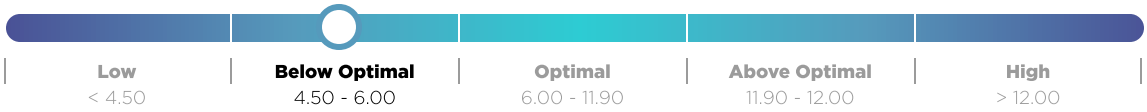
Homocysteine
7.50 µmol/L

THYROID

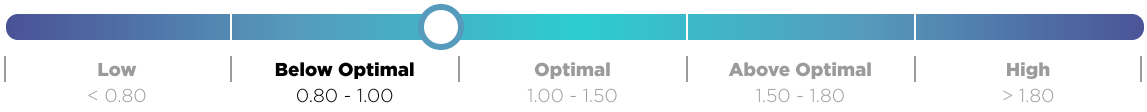
TSH
2.95 µU/mL



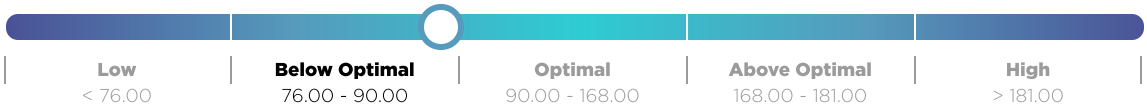
T4 - Total
5.20 µg/dL



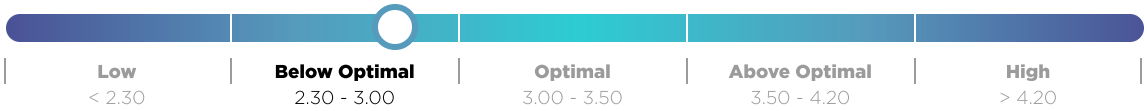
T4 - Free
0.98 ng/dL



T3 - Total
89.20 ng/dL



T3 - Free
2.80 pg/ml



Reverse T3
28.00 ng/dl

T3 Uptake
26.20 %

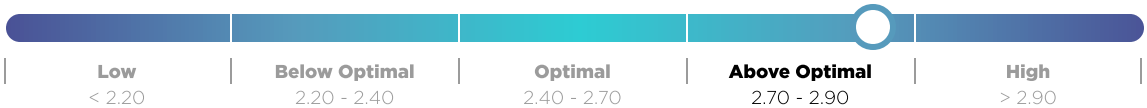
Free Thyroxine Index (T7)
1.36 Index

Thyroid Peroxidase (TPO) Abs
1.10 IU/ml

Thyroglobulin Abs
<1.00 IU/ml

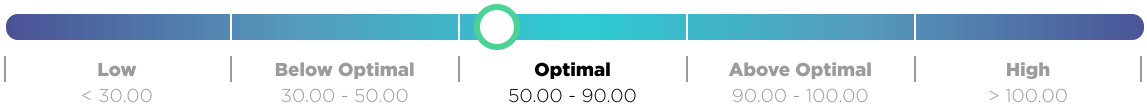
Free T3 : Reverse T3
10.00 Ratio

Free T3 : Free T4
2.86 Ratio



VITAMINS

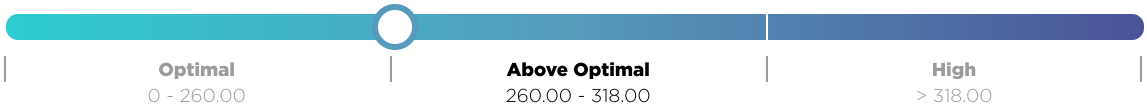
Vitamin D (25-OH)
56.20 ng/ml



Vitamin B12
462.00 pg/ml

Folate - Serum
15.20 ng/ml

Methylmalonic Acid
261.00 nmol/L

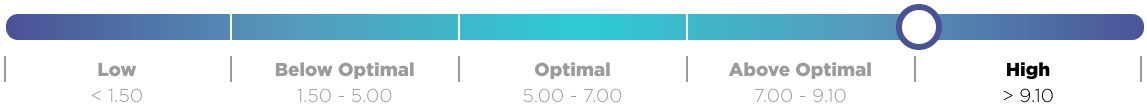


Folate - RBC
376.00 ng/ml

HORMONES

DHEA-S - Female
285.00 µg/dl

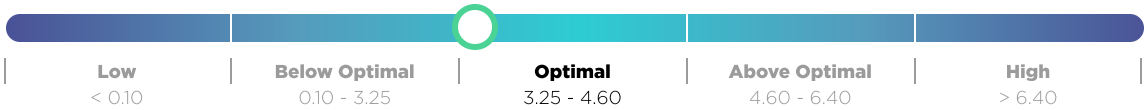
FSH - Female
16.30 mIU/ml



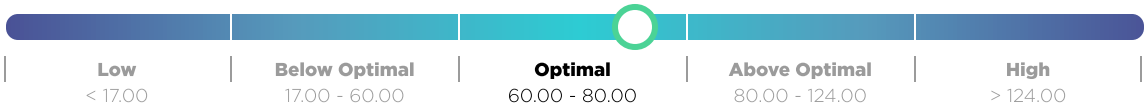
LH - Female
9.80 mIU/ml

Testosterone Total - Female
33.20 ng/dl

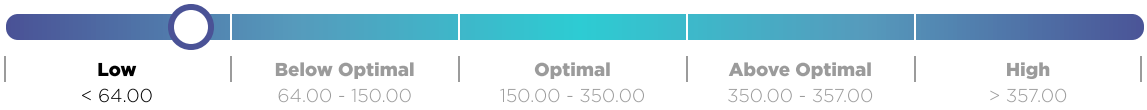
Testosterone Free - Female
3.38 pg/ml



Sex Hormone Binding Globulin - Female
75.00 nmol/L

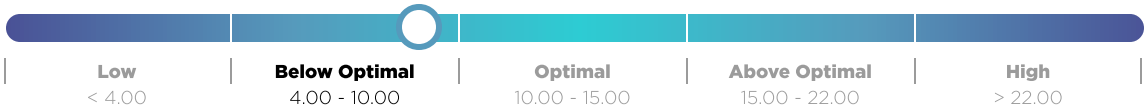


Estradiol - Female
55.00 pg/ml

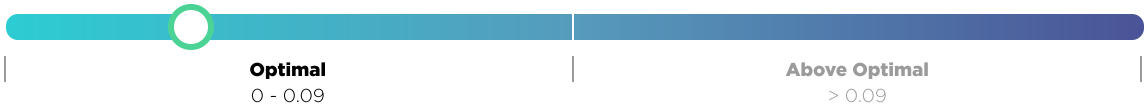


Progesterone - Female
8.00 ng/ml

Cortisol - Total/AM
9.00 µg/dL



Cortisol : DHEA-S
0.03 ratio

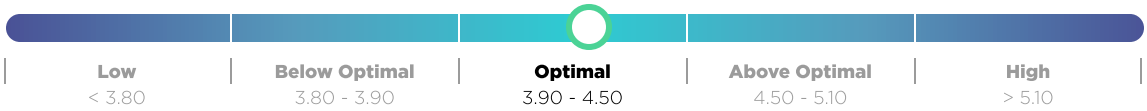


Gastrin
46.00 pg/ml

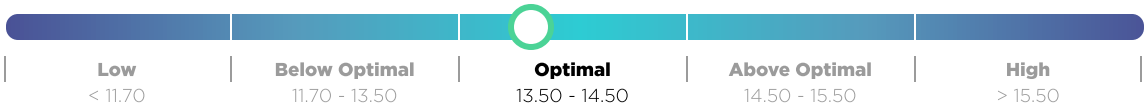
Testosterone Bioavailable - Female
8.10 ng/dl

CBC/HEMATOLOGY

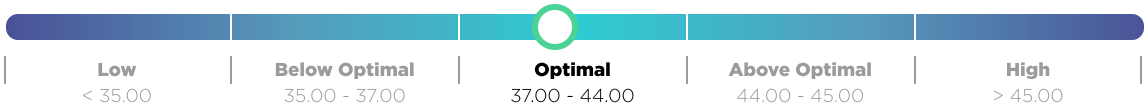
RBC - Female
4.23 m/cumm



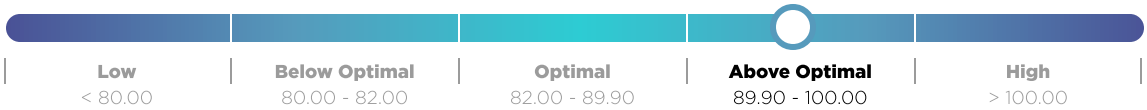
Hemoglobin - Female
13.80 g/dl



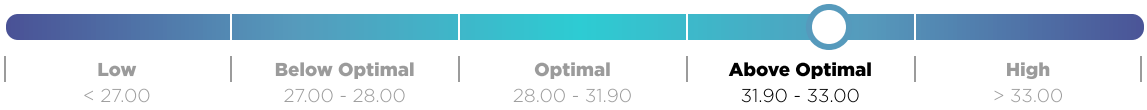
Hematocrit - Female
40.00 %



MCV
94.60 fL

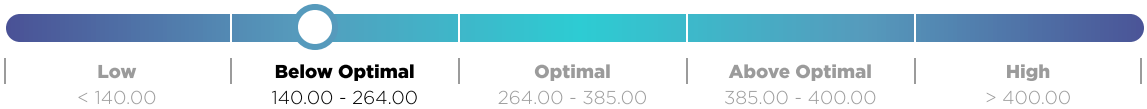


MCH
32.60 pg



MCHC
34.50 g/dL

Platelets
187.00 10E3/µL



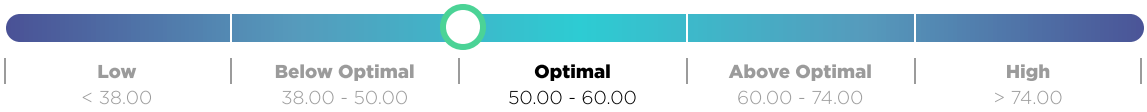
MPV
8.80 fL

RDW
12.40 %

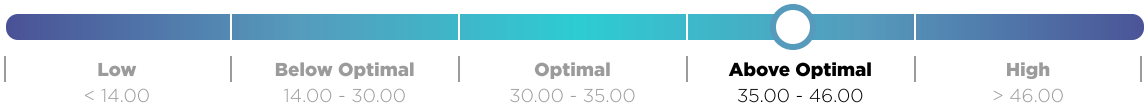
WHITE BLOOD CELLS

Total WBCs
2.60 k/cumm

Neutrophils - %
50.40 %

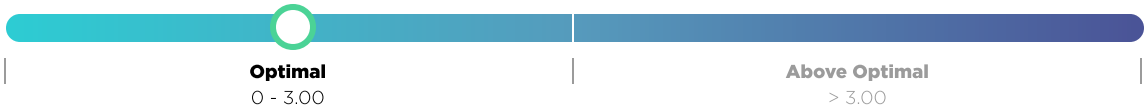


Lymphocytes - %
40.20 %



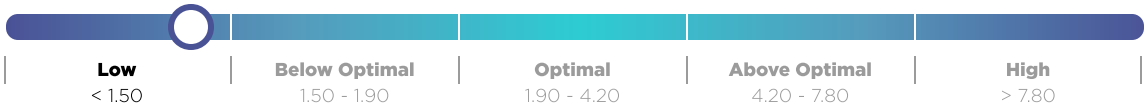
Monocytes - %
6.80 %

Eosinophils - %
1.50 %

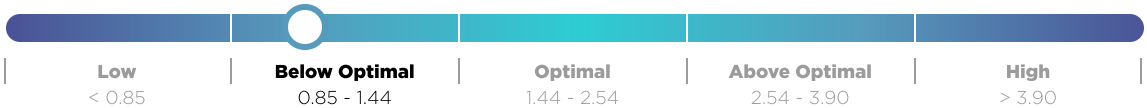


Basophils - %
1.10 %

Neutrophils - Absolute
1.31 k/cumm



Lymphocytes - Absolute
1.05 k/cumm



Monocytes - Absolute
0.18 k/cumm

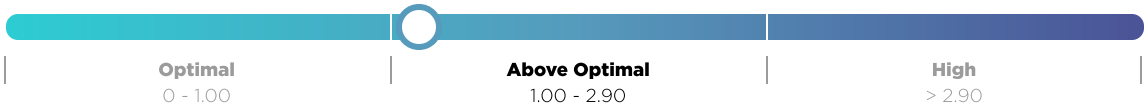
Eosinophils - Absolute
0.04 k/cumm

Basophils - Absolute
0.03 k/cumm

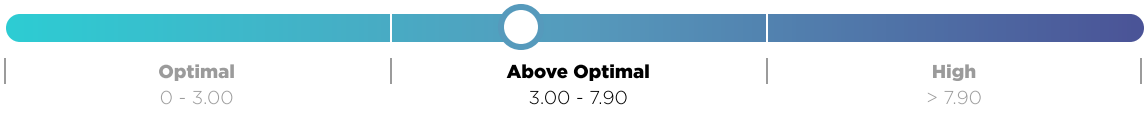
Neutrophil : Lymphocyte
1.25 Ratio

INFLAMMATION

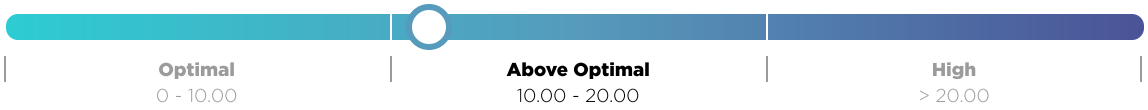
Hs CRP - Female
1.15 mg/L



C-Reactive Protein
4.65 mg/L



ESR - Female
11.20 mm/hr

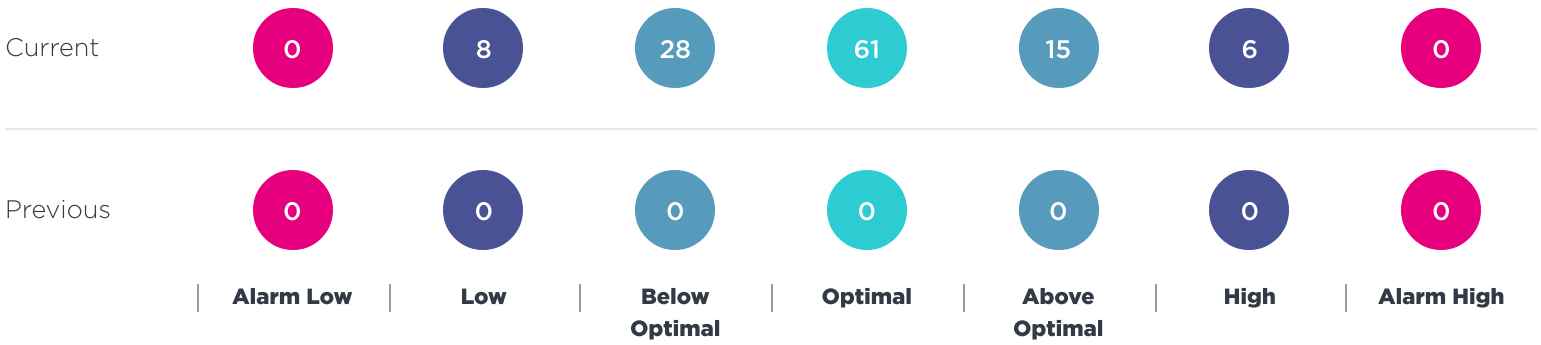


Fibrinogen
221.00 mg/dl

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.

Comparative total number of biomarkers by optimal range



Biomarker	Quest Current Jun 12 2023	Optimal range	Standard range	Units
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 - 19.60	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
BUN	6.00 ↓↓	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	0.65 ↓	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN : Creatinine	9.00 ↓	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	104.00	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
Sodium	141.90	135.00 - 142.00	135.00 - 146.00	mEq/L

Biomarker	Quest Current Jun 12 2023	Optimal range	Standard range	Units
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	30.00 - 35.00	ratio
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
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
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
Calcium	9.10 ↓	9.20 - 10.00	8.60 - 10.40	mg/dL
Phosphorus	2.90 ↓	3.00 - 4.00	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 - 2.60	0 - 2.60	ratio
Calcium : Phosphorus	3.14	2.30 - 3.20	1.90 - 4.20	ratio
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
Bilirubin - Indirect	0.50	0.40 - 0.75	0.20 - 1.20	mg/dL
GGT	8.00 ↓	10.00 - 17.00	3.00 - 50.00	IU/L
AST : ALT	1.27 ↑ ↑	0 - 1.00	0 - 1.00	Ratio
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
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

Biomarker	Quest Current Jun 12 2023	Optimal range	Standard range	Units
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
Homocysteine	7.50 ↑	5.00 - 7.20	0 - 10.30	µmol/L
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	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
Vitamin D (25-OH)	56.20	50.00 - 90.00	30.00 - 100.00	ng/ml
Vitamin B12	462.00	450.00 - 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
DHEA-S - Female	285.00	275.00 - 391.00	18.00 - 391.00	µg/dl
FSH - Female	16.30 ↑ ↑	5.00 - 7.00	1.50 - 9.10	mIU/ml
LH - Female	9.80	5.00 - 12.00	0.50 - 16.90	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	60.00 - 80.00	17.00 - 124.00	nmol/L
Estradiol - Female	55.00 ↓ ↓	150.00 - 350.00	64.00 - 357.00	pg/ml
Progesterone - Female	8.00 ↓	15.00 - 21.50	2.60 - 21.50	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	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
RBC - Female	4.23	3.90 - 4.50	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 ↓	264.00 - 385.00	140.00 - 400.00	10E3/µL
MPV	8.80 ↑	7.50 - 8.20	7.50 - 11.50	fL

Biomarker	Quest Current Jun 12 2023	Optimal range	Standard range	Units
RDW	12.40	11.00 - 12.60	11.00 - 15.00	%
Total WBCs	2.60 ↓ ↓	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	50.40	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	40.20 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes - %	6.80	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	1.50	0 - 3.00	0 - 3.00	%
Basophils - %	1.10 ↑ ↑	0 - 1.00	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
Hs CRP - Female	1.15 ↑	0 - 1.00	0 - 2.90	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	221.00	175.00 - 300.00	175.00 - 425.00	mg/dl

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 Jun 12 2023
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 ↓
BUN	6.00 ↓↓
Creatinine	0.65 ↓
BUN : Creatinine	9.00 ↓
eGFR	104.00
Sodium	141.90
Potassium	3.90 ↓
Chloride	106.00
CO2	26.00

Biomarker	Latest Test Result Quest Jun 12 2023
Sodium : Potassium	36.38 ↑ ↑
Anion Gap	13.80 ↑
Uric Acid - Female	5.65 ↑
Creatine Kinase	72.00
Leptin - Female	12.20 ↑
Amylase	42.00
Lipase	25.00
Protein - Total	6.10 ↓
Albumin	4.40 ↓
Globulin - Total	1.70 ↓ ↓
Albumin : Globulin	2.60 ↑ ↑
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
Calcium : Albumin	2.07
Calcium : Phosphorus	3.14
Alk Phos	46.00
AST	14.00
ALT	11.00
LDH	131.00 ↓
Bilirubin - Total	0.60

Biomarker	Latest Test Result Quest Jun 12 2023
Bilirubin - Direct	0.10
Bilirubin - Indirect	0.50
GGT	8.00 ↓
AST : ALT	1.27 ↑ ↑
Iron - Serum	79.00 ↓
Ferritin	12.00 ↓ ↓
TIBC	284.00
UIBC	205.00
% Transferrin saturation	28.00
Transferrin	255.00
Cholesterol - Total	165.00
Triglycerides	65.00 ↓
LDL Cholesterol	70.00 ↓
HDL Cholesterol	81.00
Non-HDL Cholesterol	84.00
VLDL Cholesterol	14.20
LDL : HDL - Female	0.86
Triglyceride:HDL	0.80
Cholesterol : HDL	2.04
Homocysteine	7.50 ↑
TSH	2.95 ↑
T4 - Total	5.20 ↓
T4 - Free	0.98 ↓
T3 - Total	89.20 ↓
T3 - Free	2.80 ↓
Reverse T3	28.00 ↑ ↑

Biomarker	Latest Test Result Quest Jun 12 2023
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 ↑
Vitamin D (25-OH)	56.20
Vitamin B12	462.00
Folate - Serum	15.20
Methylmalonic Acid	261.00 ↑
Folate - RBC	376.00 ↓
DHEA-S - Female	285.00
FSH - Female	16.30 ↑ ↑
LH - Female	9.80
Testosterone Total - Female	33.20 ↓
Testosterone Free - Female	3.38
Sex Hormone Binding Globulin - Female	75.00
Estradiol - Female	55.00 ↓ ↓
Progesterone - Female	8.00 ↓
Cortisol - Total/AM	9.00 ↓
Cortisol : DHEA-S	0.03
Gastrin	46.00
Testosterone Bioavailable - Female	8.10
RBC - Female	4.23
Hemoglobin - Female	13.80
Hematocrit - Female	40.00

Biomarker	Latest Test Result Quest Jun 12 2023
MCV	94.60 ↑
MCH	32.60 ↑
MCHC	34.50
Platelets	187.00 ↓
MPV	8.80 ↑
RDW	12.40
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
Hs CRP - Female	1.15 ↑
C-Reactive Protein	4.65 ↑
ESR - Female	11.20 ↑
Fibrinogen	221.00

Out of Optimal Range

The following report shows all of the biomarkers that are out of the optimal reference 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 optimal range

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	8	28	61	15	6	0	118

Above Optimal

16.30 mIU/ml

FSH - FEMALE

FSH or Follicle-Stimulating Hormone is a hormone produced in and secreted by the anterior pituitary. FSH plays an important role in puberty, the menstrual cycle, and fertility. Elevated levels will be seen in menopause, ovarian dysfunction, and Polycystic Ovary Syndrome.

40.20 %

LYMPHOCYTES - %

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.

2.95
µU/mL

TSH

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.

8.80
fL

MPV

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.

2.60
ratio

ALBUMIN : GLOBULIN

The albumin/globulin ratio is the ratio between the albumin and total globulin levels. An increased Albumin/Globulin ratio is uncommon and is usually due to dehydration.

94.60
fL

MCV

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.

5.65
mg/dL

URIC ACID - FEMALE

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.

4.65
mg/L

C-REACTIVE PROTEIN

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

2.86
Ratio

FREE T3 : FREE T4

Measuring Free T3 (FT3) and Free T4 (FT4) helps assess how much free and active thyroid hormone is available for use. Calculating the ratio of FT3 to FT4 can provide further information about the current thyroid status. An elevated FT3 : FT4 ratio is usually due to an increase in Free T3 and can be associated with a variety of conditions including hyperactive thyroid and blood sugar dysregulation.

13.80
mEq/L

ANION GAP

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.

36.38
ratio

SODIUM : POTASSIUM

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.

1.27
Ratio

AST : ALT

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

28.00
ng/dl

REVERSE T3

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.

12.20
ng/ml

LEPTIN - FEMALE

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.

32.60
pg

MCH

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.

1.15
mg/L

HS CRP - FEMALE

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.

87.50
mg/dL

GLUCOSE - FASTING

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.

7.50
µmol/L

HOMOCYSTEINE

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.

11.20
mm/hr

ESR - FEMALE

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.

1.10
%

BASOPHILS - %

Basophils are a type of White Blood Cell, which will often be increased with tissue inflammation and is often seen with cases of intestinal parasites.

261.00
nmol/L

METHYLMALONIC ACID

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.

Below Optimal

1.70
g/dL

GLOBULIN - TOTAL

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.

8.00
ng/ml

PROGESTERONE - FEMALE

Progesterone is a steroid hormone mainly formed in the cells of the corpus luteum and during pregnancy in the placenta. The ODX range for progesterone is set for the Luteal Phase of the menstrual cycle. Low serum progesterone may be due to a natural low point in progesterone output based on the day of your cycle that the blood test was run or conditions such as Short Luteal Phase Syndrome.

65.70
µg/dL

ZINC - SERUM

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.

12.00
ng/mL

FERRITIN

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.

6.00
mg/dL

BUN

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.

6.10
g/dL

PROTEIN - TOTAL

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.

187.00
10E3/µL

PLATELETS

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.

2.60
k/cumm

TOTAL WBCS

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.

70.00
mg/dL

LDL CHOLESTEROL

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.

0.65
mg/dL

CREATININE

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

65.00
mg/dL

TRIGLYCERIDES

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.

55.00
pg/ml

ESTRADIOL - FEMALE

Estradiol (E2) is the most commonly measured estrogens, the others being estrone (E1) and estriol (E3). The serum estradiol level is not specific to any phase of the menstrual cycle. It is a general assessment of estradiol. Low levels of estradiol can be a risk factor for osteoporosis and bone fracture. Estradiol may improve the quality of life in menopausal women.

2.80
pg/ml

T3 - FREE

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.

1.05
k/cumm

LYMPHOCYTES - ABSOLUTE

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.

8.00
IU/L

GGT

Gamma Glutamyl Transferase (GGT) is an enzyme that is present in highest amounts in the liver cells and to a lesser extent the kidney, prostate, and pancreas. It is also found in the epithelial cells of the biliary tract. Decreased levels are associated with vitamin B6 and magnesium deficiency.

9.20
mg/L

ZINC - RBC

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.

1.31
k/cumm

NEUTROPHILS - ABSOLUTE

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.

76.00
µg/dL

COPPER - SERUM

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.

4.40
g/dL

ALBUMIN

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.

9.00
µg/dL

CORTISOL - TOTAL/AM

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.

33.20
ng/dl

TESTOSTERONE TOTAL - FEMALE

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.

9.00
Ratio

BUN : CREATININE

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

131.00
IU/L

LDH

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.

5.20
µg/dL

T4 - TOTAL

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 thyroid binding globulin and free levels. Decreased total T-4 levels are associated with Hypothyroidism and/or a selenium deficiency.

79.00
µg/dL

IRON - SERUM

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.

9.10
mg/dL

CALCIUM

Serum calcium levels, which are tightly regulated within a narrow range, are principally regulated by parathyroid hormone (PTH) and vitamin D. A low calcium level indicates that calcium regulation is out of balance and not necessarily that the body is deficient of calcium and needs supplementation. Check vitamin D levels, rule out hypochlorhydria (low stomach acid), the need for magnesium, phosphorous, vitamin A, B and C, unsaturated fatty acids, and iodine as some of the reasons for a calcium "need" before supplementing with calcium.

87.50
%

HOMA2-%B

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.

376.00
ng/ml

FOLATE - RBC

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.

1.36
Index

FREE THYROXINE INDEX (T7)

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.

3.90
mEq/L

POTASSIUM

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.

2.90
mg/dL

PHOSPHORUS

Phosphorous levels, like calcium, are regulated by parathyroid hormone (PTH). Phosphate levels are closely tied with calcium, but they are not as strictly controlled as calcium. Plasma levels may be decreased after a high carbohydrate meal or in people with a diet high in refined carbohydrates. Serum phosphorous is a general marker for digestion. Decreased phosphorous levels are associated with hypochlorhydria.

26.20
%

T3 UPTAKE

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.

0.18
k/cumm

MONOCYTES - ABSOLUTE

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.

0.98
ng/dL

T4 - FREE

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.

0.40
Index

QUICKI

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.

89.20
ng/dL

T3 - TOTAL

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.

4

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

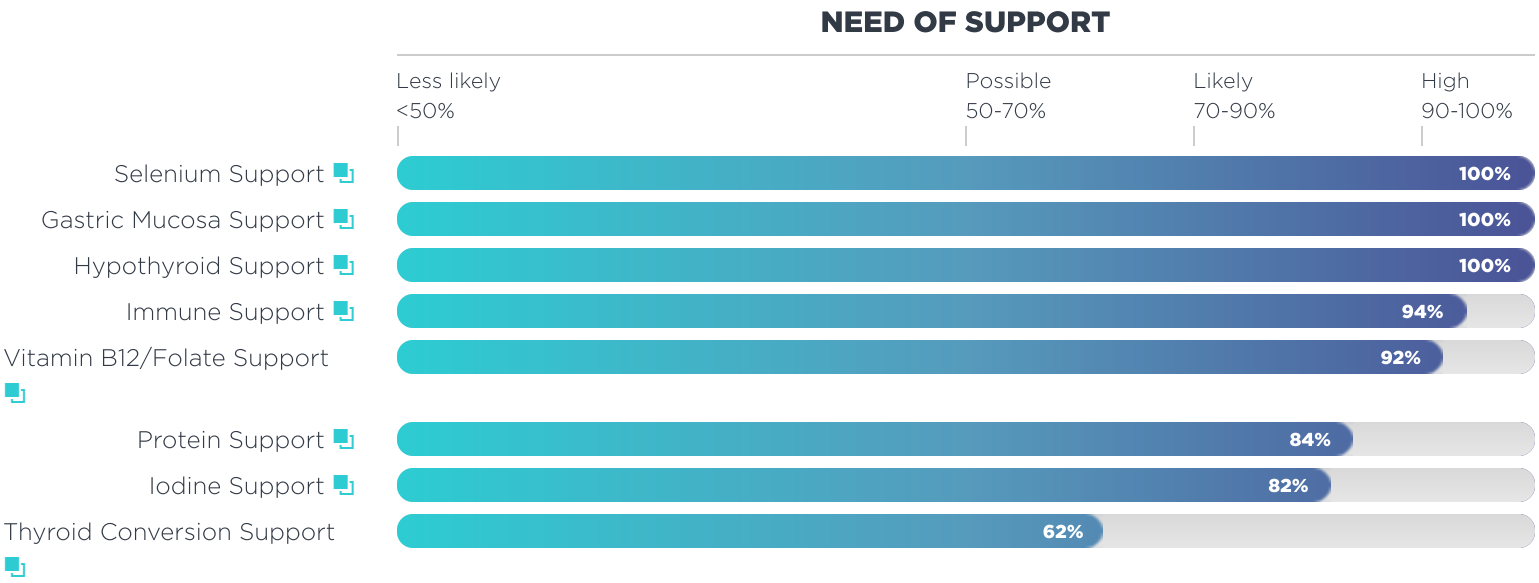
Health Concerns

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 a detailed description and individual 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 algorithmic analysis and the rationale behind the interpretation.

SELENIUM SUPPORT

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

Rationale

T3 - Total ↓, T3 - Free ↓, T3 Uptake ↓

GASTRIC MUCOSA SUPPORT

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

Rationale

Globulin - Total ↓, Protein - Total ↓, Creatinine ↓, Albumin ↓, Phosphorus ↓, ESR - Female ↑, Basophils - % ↑

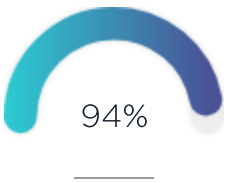
HYPOTHYROID SUPPORT

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

Rationale

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

IMMUNE SUPPORT

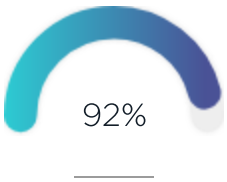


The results of your blood test indicate a tendency towards immune insufficiency and a need for immune support.

Rationale

Total WBCs ↓, Albumin ↓, Globulin - Total ↓

VITAMIN B12/FOLATE SUPPORT

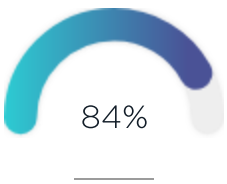


The results of your blood test indicate that your vitamin B12/folate levels might be lower than optimal and shows a need for vitamin B12/folate supplementation.

Rationale

Methylmalonic Acid ↑, MCV ↑, Homocysteine ↑, Total WBCs ↓, MCH ↑, Folate - RBC ↓

PROTEIN SUPPORT

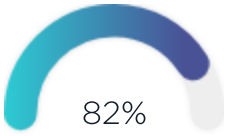


The results of your blood test indicate that your protein levels might be lower than optimal and shows a need for protein supplementation.

Rationale

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

IODINE SUPPORT

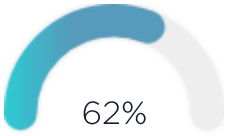


The results of your blood test indicate that your iodine levels might be lower than optimal and shows a need for iodine supplementation.

Rationale

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

THYROID CONVERSION SUPPORT



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

Rationale

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

5

Disclaimer

53 Disclaimer

Disclaimer

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