
Blood Chemistry Analysis Functional Health Report



Patient Report

Prepared for 40 year old male born 1982

Fasting

Requested by Dr. Jacey Folkers

Blokes

Collected Date Feb 02, 2023

Lab Lab Corp



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.

SECTION 1: INTRODUCTION

- 1 What's Inside?

The health concerns that need the most support.

SECTION 4: HEALTH CONCERNS

- 35 Health Concerns

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- 3 Functional Body Systems
- 6 Accessory Systems
- 9 Nutrient Status
- 12 Nutrient Deficiencies

Additional information pertinent to this report.

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SECTION 3: ANALYSIS

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An in-depth functional system and nutrient evaluation.

Assessment

- 3 Functional Body Systems
- 6 Accessory Systems
- 9 Nutrient Status
- 12 Nutrient Deficiencies

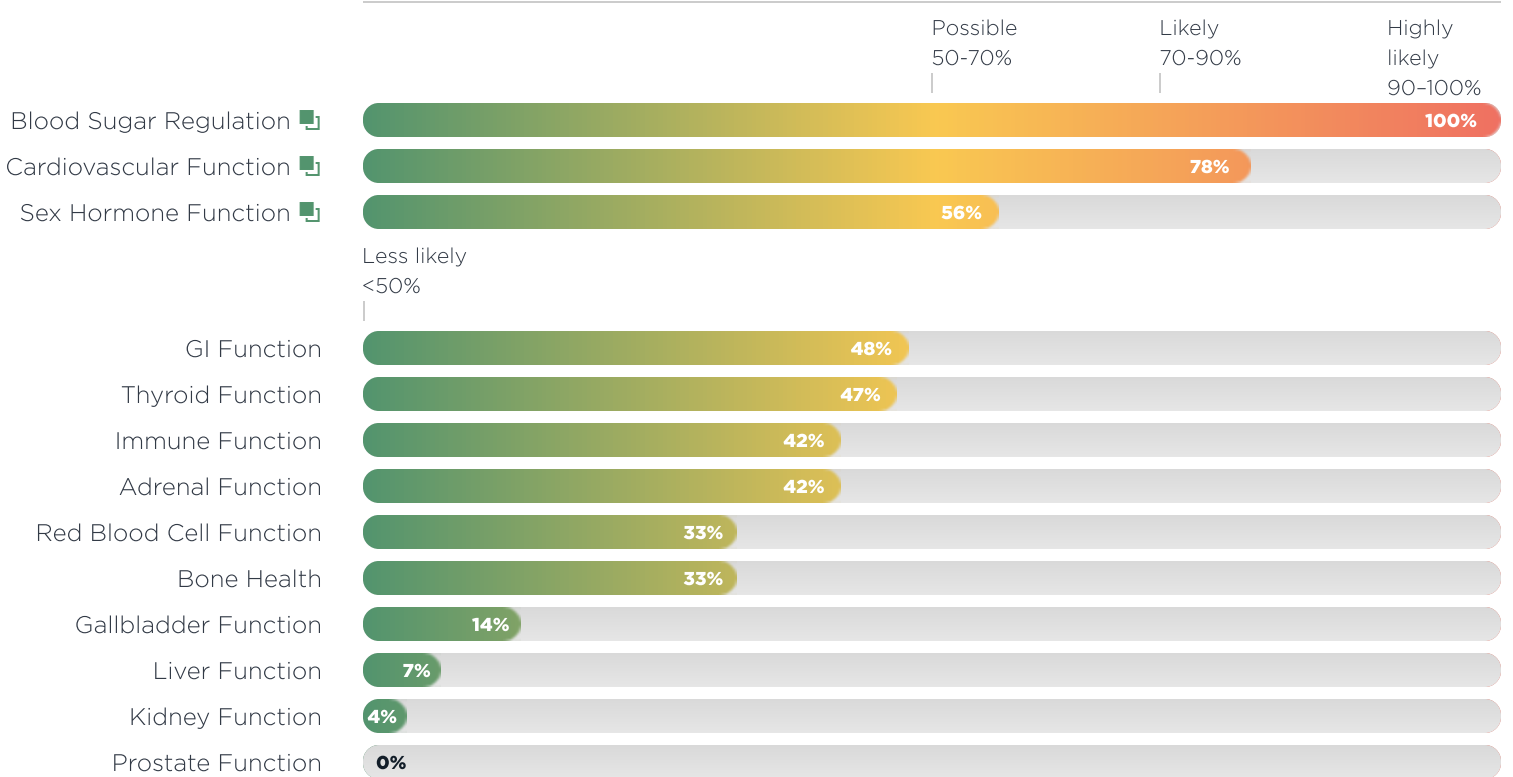
Functional Body Systems

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

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

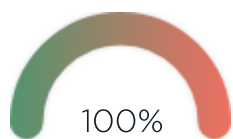
Each Body System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Functional Body Systems Details

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



100%

Dysfunction Highly Likely.
Much improvement
required.

BLOOD SUGAR REGULATION

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

Rationale

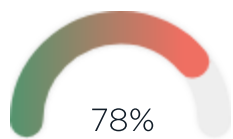
Glucose - Fasting ↓, Insulin - Fasting ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, HDL Cholesterol ↓

Biomarkers considered

Glucose - Fasting, Hemoglobin A1C, Insulin - Fasting, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol

Biomarkers not available - consider having run in future tests:

LDH, DHEA-S - Male, Leptin - Male, C-Peptide, Fructosamine



78%

Dysfunction Likely
Improvement required.

CARDIOVASCULAR FUNCTION

The Cardiovascular Function score looks at biomarkers on a blood test to assess your risk of cardiovascular dysfunction. Your Cardiovascular Function score indicates that you may be at an increasing risk of developing cardiovascular disease. The Cardiovascular Function score will be used along with information from an examination of your diet, lifestyle, exercise, body mass index, and family history to give us a more complete picture of what is going on.

Rationale

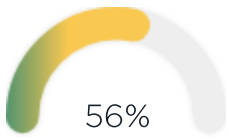
Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑, HDL Cholesterol ↓, Hs CRP - Male ↑, Homocysteine ↑, Estradiol - Male ↑, Insulin - Fasting ↑, Vitamin D (25-OH) ↓

Biomarkers considered

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

Biomarkers not available - consider having run in future tests:

LDH, Fibrinogen



56%

Dysfunction Possible
There may be improvement needed in certain areas.

SEX HORMONE FUNCTION

The Male Sex Hormone Function 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 - Male 

Biomarkers considered

Estradiol - Male, Testosterone Free - Male, Testosterone Total - Male, PSA - Total

Biomarkers not available - consider having run in future tests:

Progesterone - Male

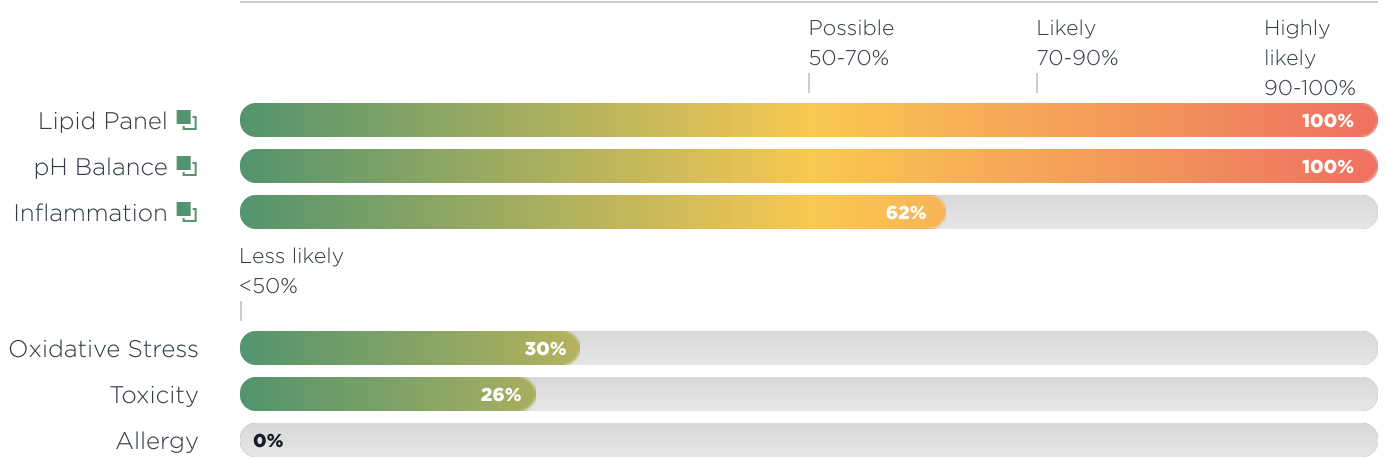
Accessory Systems

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

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

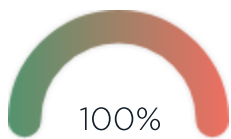
Each Accessory System that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Accessory Systems Details

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



100%

Dysfunction Highly Likely.
Much improvement
required.

LIPID PANEL

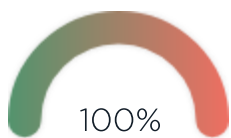
The Lipid Panel score gives us an indication of the levels of cholesterol and fat in your blood. An increased Lipid Panel score indicates that you have higher than optimal levels of cholesterol and fat in your blood (a condition called hyperlipidemia). Hyperlipidemia is associated with an increased risk of cardiovascular disease and may be genetic or be due to dietary factors, hormonal imbalances, blood sugar dysregulation and/or other metabolic imbalances.

Rationale

Cholesterol - Total \uparrow ,
Triglycerides \uparrow , LDL
Cholesterol \uparrow , Cholesterol :
HDL \uparrow , HDL Cholesterol \downarrow

Biomarkers considered

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



100%

Dysfunction Highly Likely.
Much improvement
required.

PH BALANCE

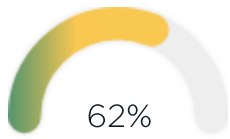
Your risk of pH imbalance is high. The pH Balance score can help us pinpoint imbalances in the body's pH (acid-alkaline) regulation system. There are a number of biomarkers in the blood that will go out of balance when the body gets too acidic or too alkaline. It is important to remember that we are talking about functional imbalances in the acid/alkaline system. Please work with your physician to help bring this score down in future blood test results.

Rationale

Anion Gap \uparrow , Chloride \downarrow ,
CO2 \downarrow

Biomarkers considered

Anion Gap, Potassium, Chloride,
CO2, Calcium



62%





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 - Male ,
Homocysteine , Uric Acid - Male , Vitamin D (25-OH) 

Biomarkers considered

Hs CRP - Male, Homocysteine, Uric Acid - Male, Cholesterol - Total, Triglycerides, HDL Cholesterol, Iron - Serum, Ferritin, ESR - Male, Lymphocytes - %, Basophils - %, ALT, RDW, Vitamin D (25-OH)

Biomarkers not available - consider having run in future tests:

Fibrinogen, Myeloperoxidase (MPO), LDH, Creatine Kinase, C-Reactive Protein

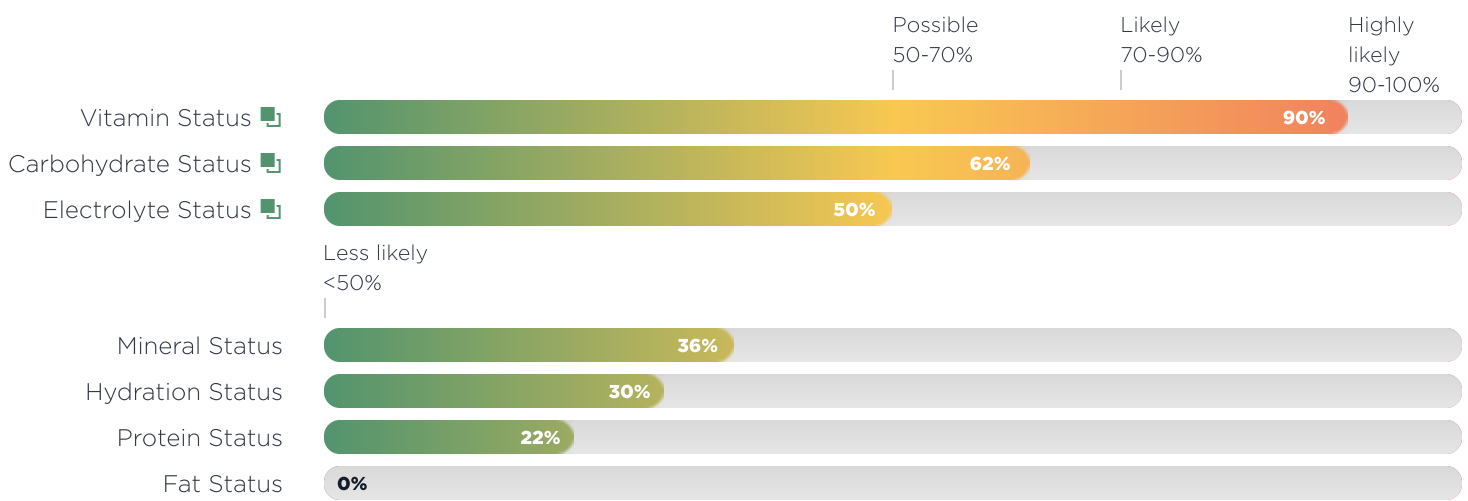
Nutrient Status

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

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

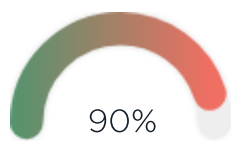
Each Nutrient category that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Nutrient Status Details

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








90%

Dysfunction Highly Likely.
Much improvement
required.

VITAMIN STATUS

The Vitamin Status score gives us a general indication of the balance of certain vitamins in your body. 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

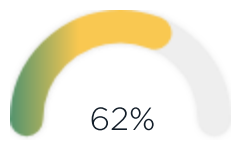
Anion Gap , Homocysteine , Vitamin D (25-OH) , MCV , Folate - Serum 

Biomarkers considered

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

Biomarkers not available - consider having run in future tests:

GGT, Methylmalonic Acid



62%

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

CARBOHYDRATE STATUS

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

Rationale

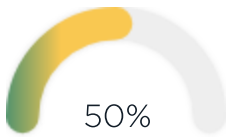
Phosphorus , Cholesterol - Total , LDL Cholesterol , HDL Cholesterol 

Biomarkers considered

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

Biomarkers not available - consider having run in future tests:

LDH



50%

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

Chloride ↓, Phosphorus ↓

Biomarkers considered

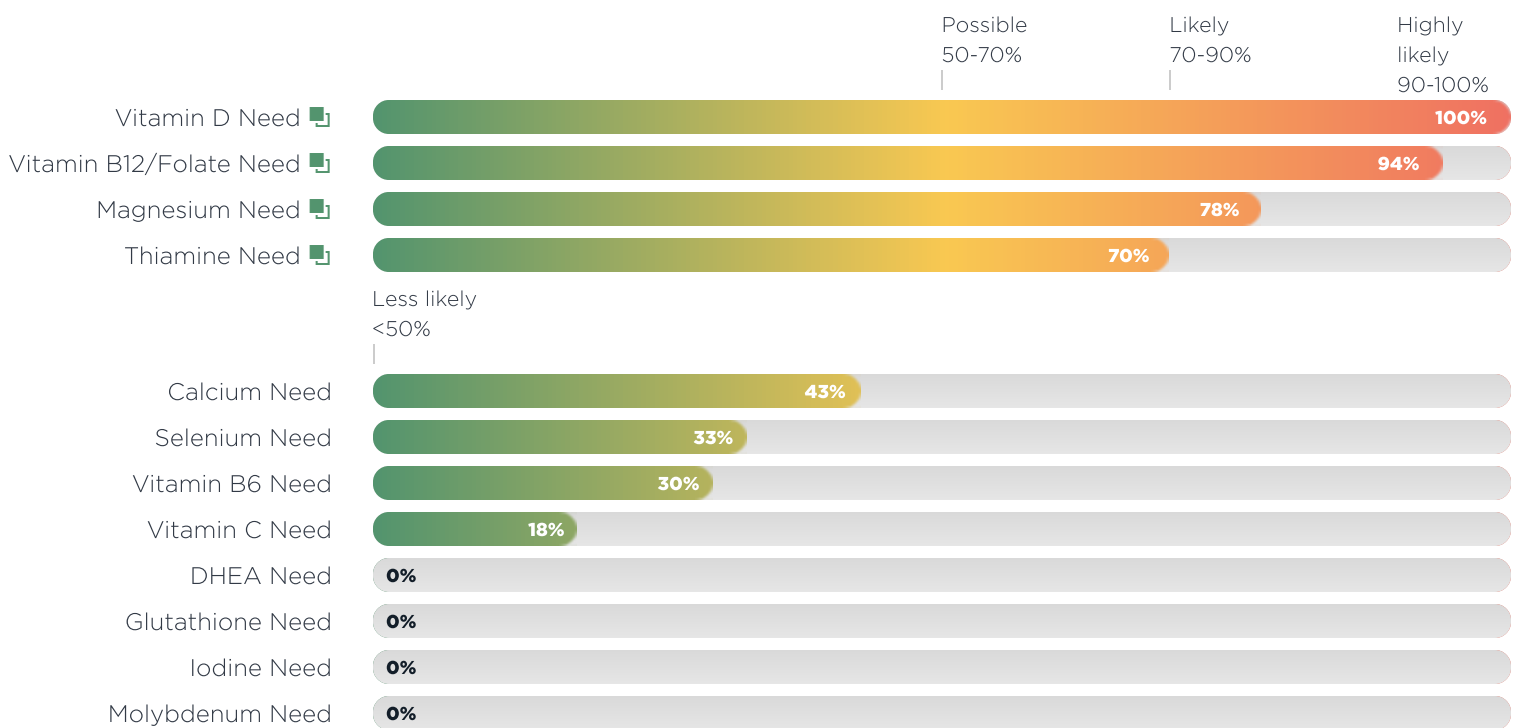
Sodium, Potassium, Chloride, Calcium, Phosphorus, Magnesium - Serum

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.

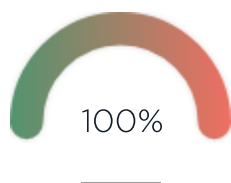
Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is included in the section that follows so you can read a detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DEFICIENCY



Individual Nutrient Deficiency Details

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



VITAMIN D NEED

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

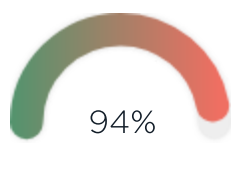
Rationale

Vitamin D (25-OH) ↓

Biomarkers considered

Vitamin D (25-OH)

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

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

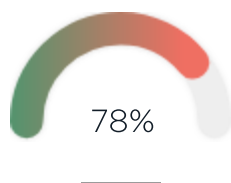
Biomarkers considered

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

Deficiency Highly Likely.
Much improvement
required.

Biomarkers not available - consider having run in future tests:

Methylmalonic Acid, LDH



MAGNESIUM NEED

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

Rationale

Magnesium - Serum ↓

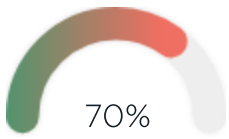
Biomarkers considered

Magnesium - Serum

Biomarkers not available - consider having run in future tests:

Magnesium - RBC, GGT

Deficiency Likely.
Improvement required.



70%

Deficiency Likely.
Improvement required.

THIAMINE NEED

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

Rationale

Anion Gap , CO2 

Biomarkers considered

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

Biomarkers not available - consider having run in future tests:

LDH



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

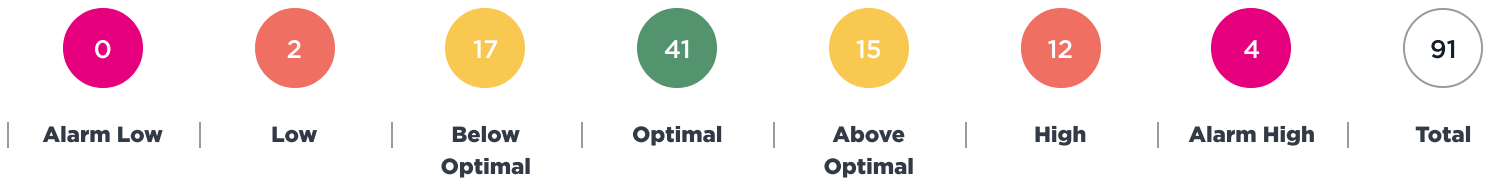
- 16 Blood Test Results
- 24 Out of Optimal Range

Blood Glucose	Renal	Prostate	Electrolytes	Metabolic
Proteins	Minerals	Liver and GB	Iron Markers	Lipids
NMR Lipoprotein	Cardiometabolic	Thyroid	Vitamins	Hormones
CBC/Hematology	White Blood Cells	Inflammation		

Blood Test Results

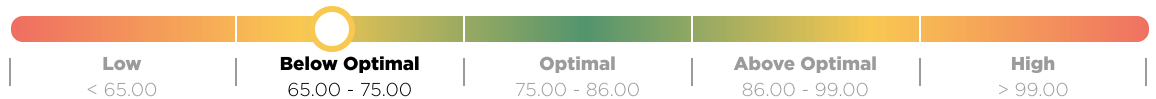
The Blood Test Results Report lists the results from your Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range. The biomarkers are grouped into their most common categories.

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.



BLOOD GLUCOSE

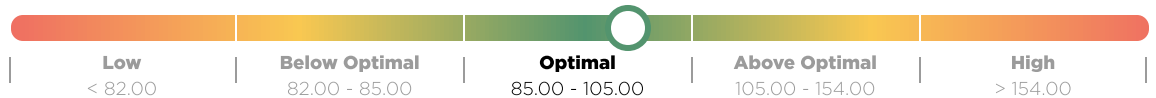
Glucose - Fasting 69.00 mg/dL



Hemoglobin A1C 5.10 %



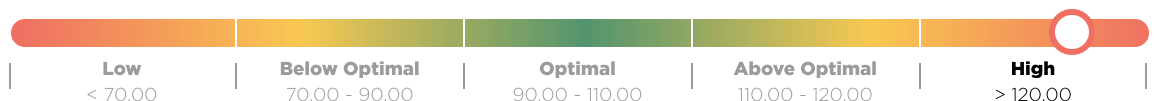
eAG 99.67 mg/dl



Insulin - Fasting 13.60 µIU/ml

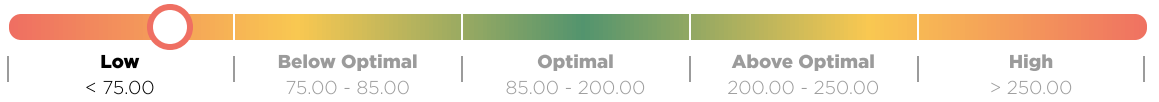


HOMA2-%B 237.20 %



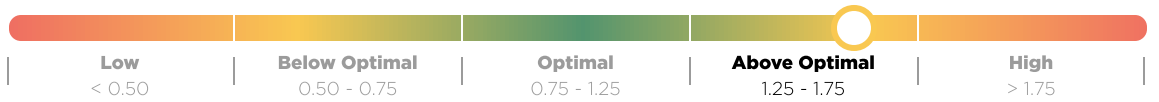
HOMA2-%S

61.70 %



HOMA2-IR

1.62 Index



QUICKI

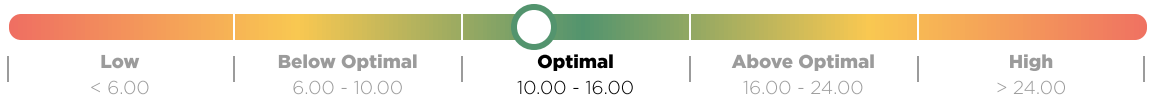
0.34 Index



RENAL

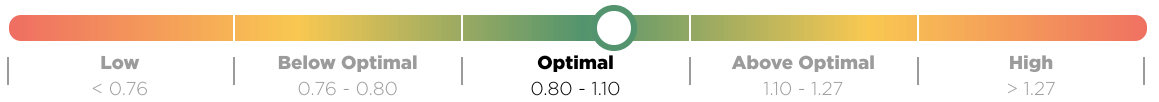
BUN

12.00 mg/dL



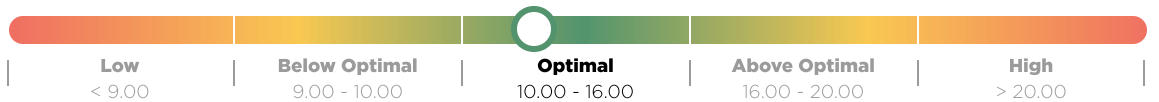
Creatinine

1.00 mg/dL



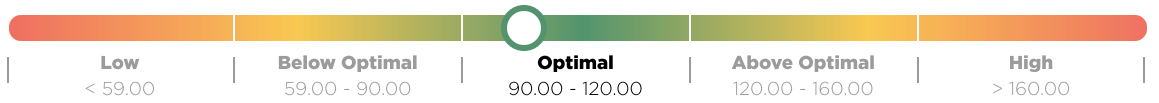
BUN : Creatinine

12.00 Ratio



eGFR

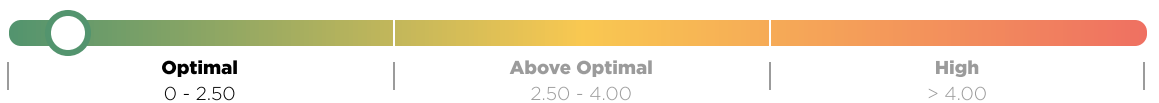
98.00 mL/min/1.73m2



PROSTATE

PSA - Total

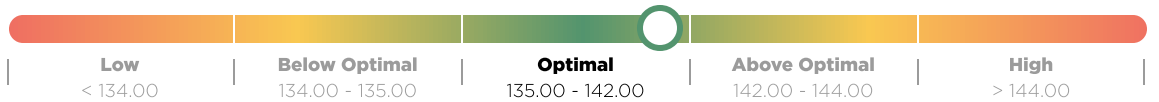
0.40 ng/ml



ELECTROLYTES

Sodium

141.00 mEq/L



Potassium

4.40 mEq/L



Chloride

99.00 mEq/L

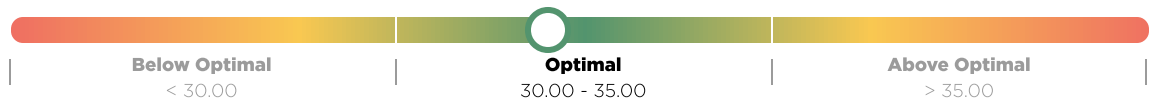


CO2

24.00 mEq/L

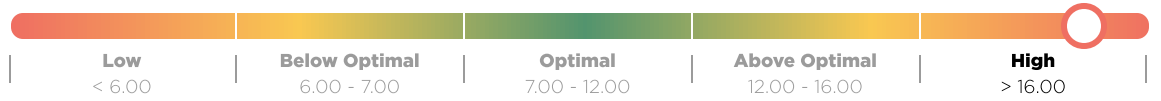


Sodium : Potassium
32.05 ratio



METABOLIC

Anion Gap
22.40 mEq/L

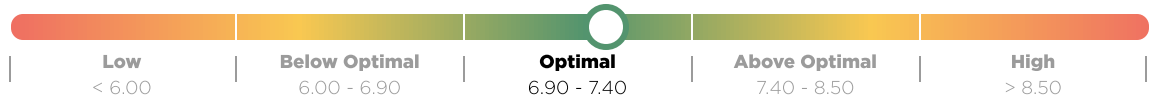


Uric Acid - Male
6.30 mg/dL



PROTEINS

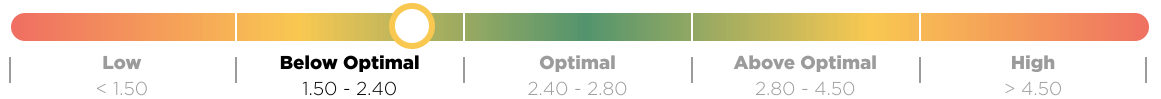
Protein - Total
7.20 g/dL



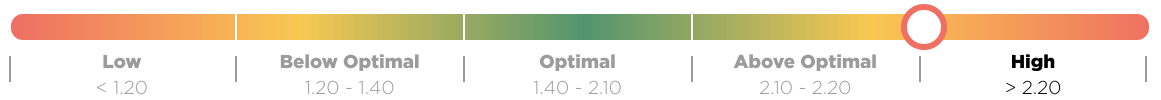
Albumin
5.00 g/dL



Globulin - Total
2.20 g/dL



Albumin : Globulin
2.30 ratio

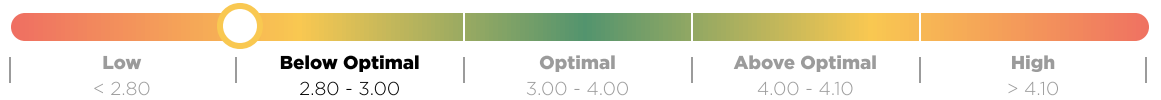


MINERALS

Calcium
9.30 mg/dL



Phosphorus
2.80 mg/dL



Magnesium - Serum
2.00 mg/dl



Calcium : Albumin
1.86 ratio

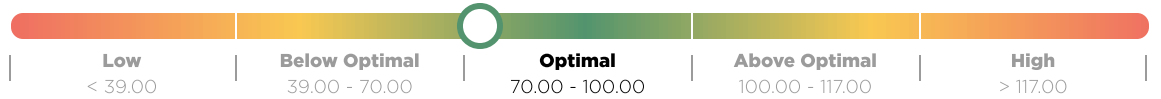


Calcium : Phosphorus
3.32 ratio



LIVER AND GB

Alk Phos
72.00 IU/L



AST
17.00 IU/L



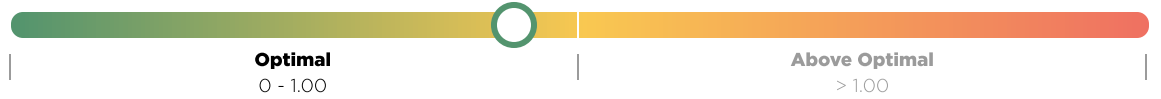
ALT
19.00 IU/L



Bilirubin - Total
0.40 mg/dL



AST : ALT
0.89 Ratio



IRON MARKERS

Iron - Serum
109.00 µg/dL

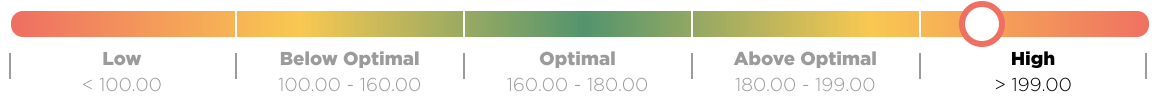


Ferritin
75.00 ng/mL



LIPIDS

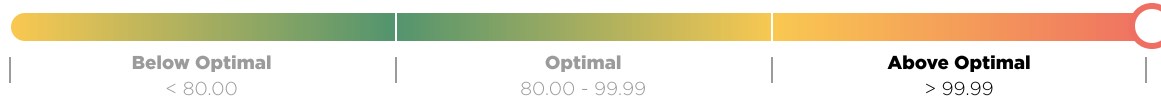
Cholesterol - Total
225.00 mg/dL



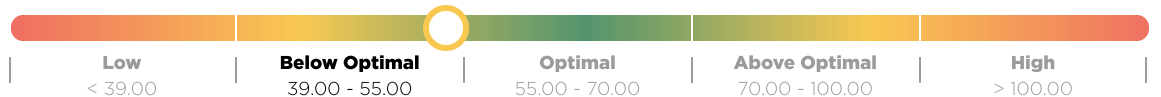
Triglycerides
84.00 mg/dL



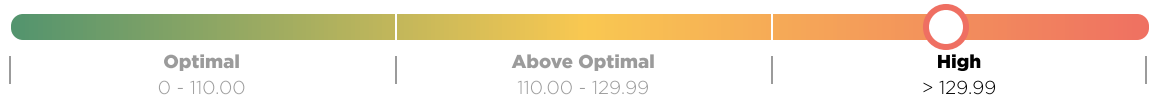
LDL Cholesterol
156.00 mg/dL



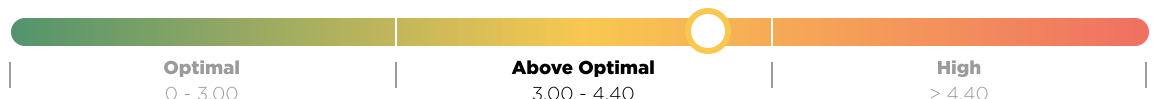
HDL Cholesterol
54.00 mg/dL



Non-HDL Cholesterol
171.00 mg/dl



Cholesterol : HDL
4.17 Ratio



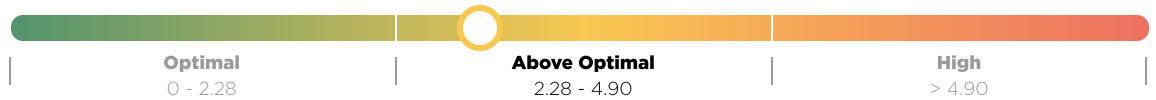
Triglyceride:HDL

1.56 ratio



LDL : HDL - Male

2.89 Ratio



NMR LIPOPROFILE

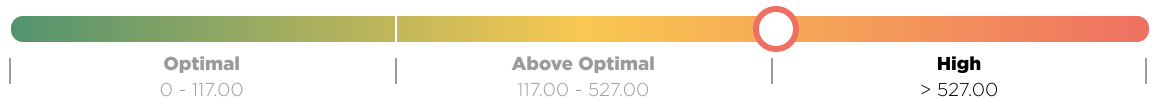
LDL-P (NMR)

1643.00 nmol/L



Small LDL-P (NMR)

583.00 nmol/L



HDL-P (NMR)

29.20 umol/L



LP-IR Score (NMR)

26.00 %



CARDIOMETABOLIC

Homocysteine

9.60 μmol/L



THYROID

TSH

1.06 μU/mL



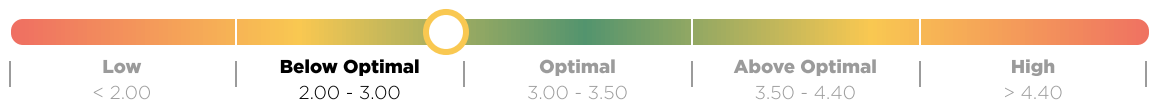
T4 - Free

1.09 ng/dL



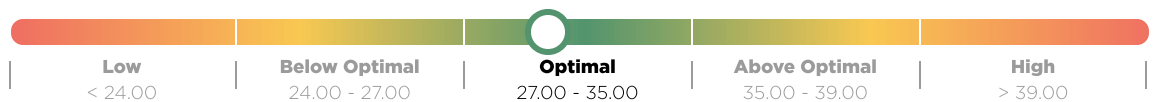
T3 - Free

2.90 pg/ml



T3 Uptake

30.00 %



Thyroglobulin Abs

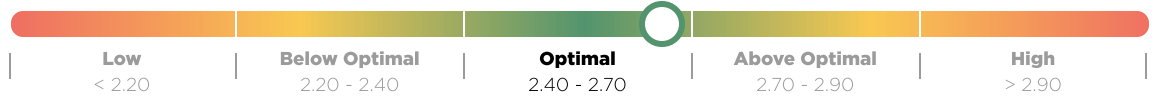
<1.00 IU/ml



Thyroid Peroxidase (TPO)
Abs LABCORP
17.00 IU/ml

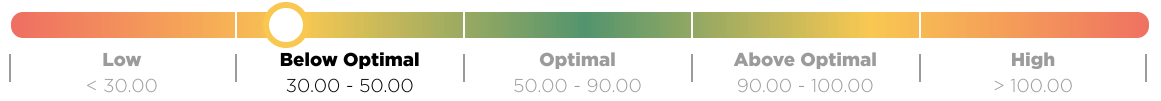


Free T3 : Free T4
2.66 Ratio

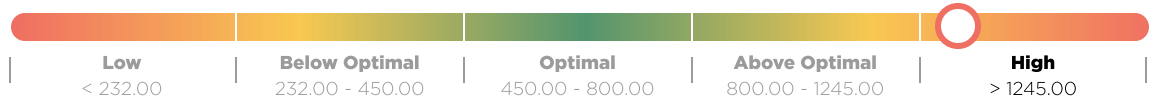


VITAMINS

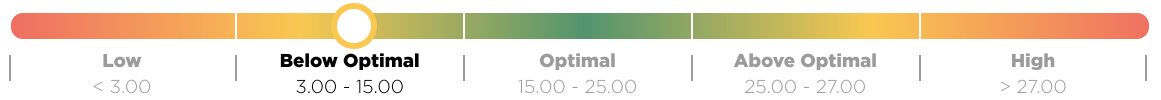
Vitamin D (25-OH)
34.80 ng/ml



Vitamin B12
1289.00 pg/ml



Folate - Serum
9.50 ng/ml



HORMONES

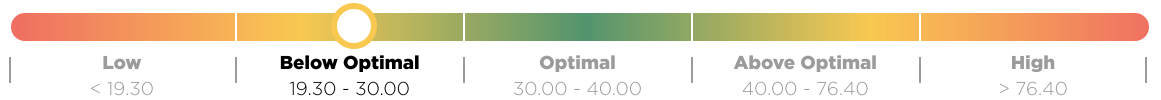
Testosterone Total - Male
944.60 ng/dl



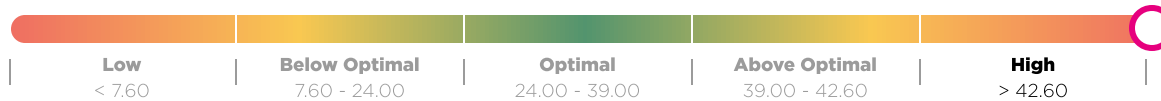
Testosterone Free - Male
414.70 pg/ml



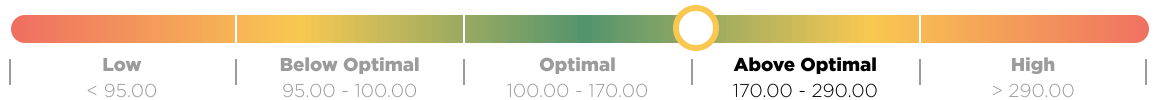
Sex Hormone Binding
Globulin - Male
25.10 nmol/L



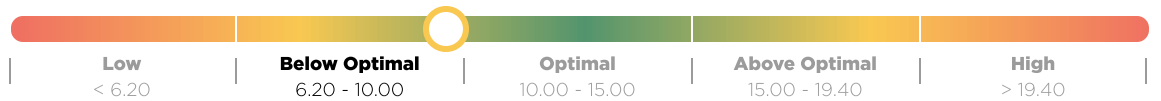
Estradiol - Male
51.20 pg/ml



IGF-1
174.00 ng/ml



Cortisol - Total
9.70 µg/dL

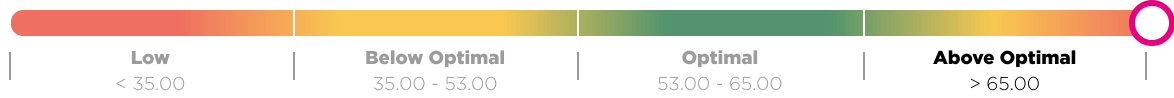


Testosterone Bioavailable -
Male
1129.81 ng/dl



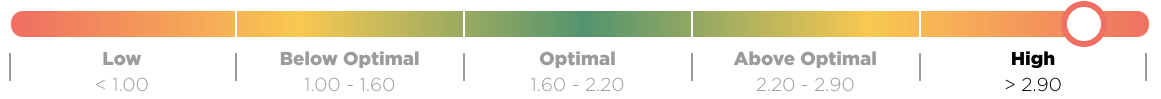
% Testosterone Bioavailable - Male

119.60 % 



% Testosterone Free - Male

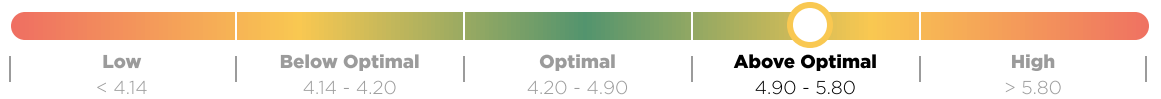
4.39 %



CBC/HEMATOLOGY

RBC - Male

5.37 m/cumm



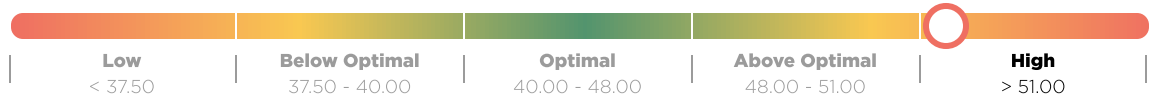
Hemoglobin - Male

17.20 g/dl



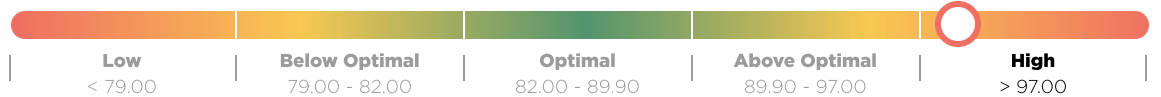
Hematocrit - Male

52.90 %



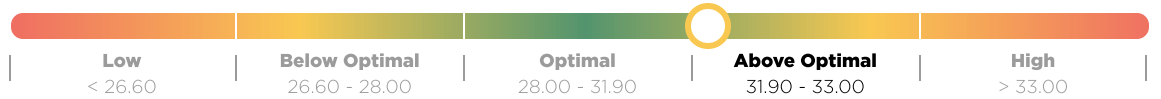
MCV

99.00 fL



MCH

32.00 pg



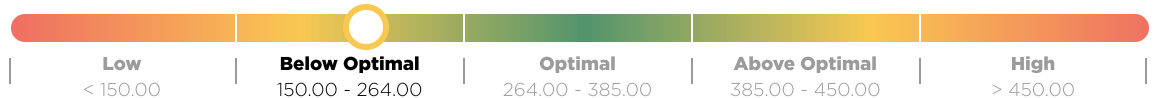
MCHC

32.50 g/dL



Platelets

213.00 10E3/ μ L



RDW

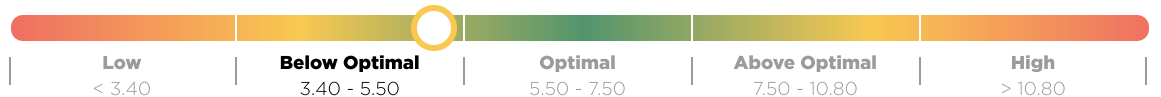
11.70 %



WHITE BLOOD CELLS

Total WBCs

5.20 k/cumm



Bands - %

0.00 %

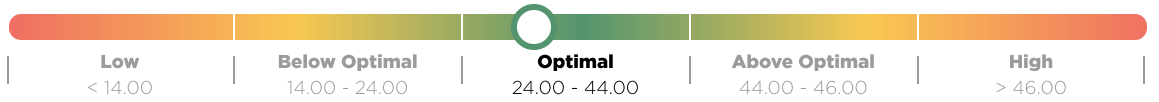


Neutrophils - %

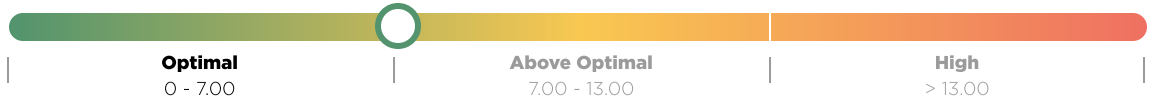
63.00 %



Lymphocytes - %
30.00 %



Monocytes - %
7.00 %



Eosinophils - %
0.00 %



Basophils - %
0.00 %



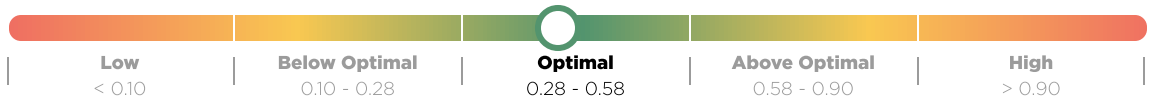
Neutrophils - Absolute
3.30 k/cumm



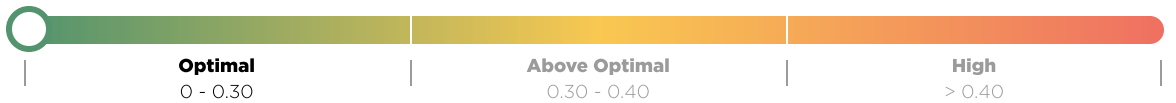
Lymphocytes - Absolute
1.50 k/cumm



Monocytes - Absolute
0.40 k/cumm



Eosinophils - Absolute
0.00 k/cumm



Basophils - Absolute
0.00 k/cumm

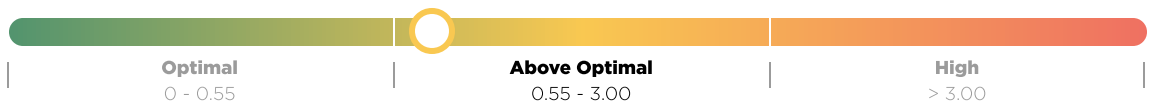


Neutrophil : Lymphocyte
2.20 Ratio



INFLAMMATION

Hs CRP - Male ■
0.80 mg/L



ESR - Male
2.00 mm/hr

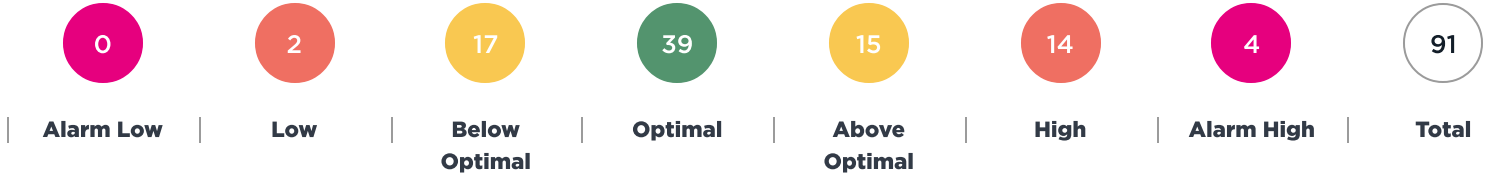


Out of Optimal Range

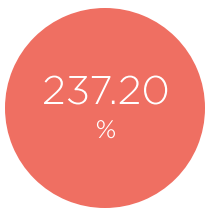
The following report shows all of the biomarkers that are out of the optimal reference range and gives you some important information as to why each biomarker might be elevated or decreased.

Each biomarker in the Out of Optimal Range report hyperlinks back into the Blood Test Results report so you can see a more detailed view of the blood test result itself.

Total number of biomarkers by optimal range

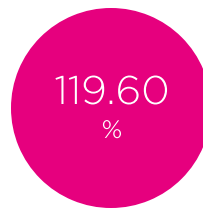


Above Optimal



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. Elevated HOMA2-%B levels indicate an increased beta-cell activity and an increase in insulin production. This points to an increasing trend towards pre-diabetes and insulin resistance.



% TESTOSTERONE BIOAVAILABLE - MALE

This test measures the % of bioavailable testosterone found in the blood. Bioavailable testosterone is the amount of testosterone in the blood that is readily available for biological activity. Increased levels of % bioavailable testosterone may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone overproduction in the body.

583.00
nmol/L

SMALL LDL-P (NMR)

An elevated number of Small LDL-P, which are small, dense LDL particles is associated with an increased risk of cardiovascular disease as well as insulin resistance and blood sugar dysregulation.

4.39
%

% TESTOSTERONE FREE - MALE

This test measures the % of free testosterone found in the blood. Less than 2% of testosterone is typically found in the "free" (uncomplexed) state and the remaining 98% is bound. Ideally, 1.5 - 2.2% of the testosterone in the blood should be "free". Increased levels of % free testosterone may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone overproduction in the body.

13.60
 μ U/ml

INSULIN - FASTING

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

156.00
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. An increased LDL cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, oxidative stress, and fatty liver.

1129.81
ng/dl

TESTOSTERONE BIOAVAILABLE - MALE

Bioavailable testosterone is the amount of testosterone in the blood is readily available for biological activity. Elevated bioavailable testosterone levels may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone overproduction in the body.

414.70
pg/ml

TESTOSTERONE FREE - MALE

Testosterone is the primary sex hormone for men. The free testosterone test measures the testosterone that is unbound to serum proteins such as Sex Hormone Binding Globulin (SHBG) and albumin. Elevated free testosterone levels may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone over-production in the body.

225.00
mg/dL

CHOLESTEROL - TOTAL

Cholesterol is a steroid found in every cell of the body and in the plasma. It is an essential component in the structure of the cell membrane where it controls membrane fluidity. It provides the structural backbone for every steroid hormone in the body, which includes adrenal and sex hormones and vitamin D. The myelin sheaths of nerve fibers are derived from cholesterol and the bile salts that emulsify fats are composed of cholesterol. Cholesterol is made in the body by the liver and other organs and from dietary sources. The liver, the intestines, and the skin produce between 60-80% of the body's cholesterol. The remainder comes from the diet. Increased cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, hypothyroidism, biliary stasis, and fatty liver.

17.20
g/dl

HEMOGLOBIN - MALE

Hemoglobin is the oxygen carrying molecule in red blood cells. Hemoglobin levels may be increased in cases of dehydration.

22.40
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.

1289.00
pg/ml

VITAMIN B12

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. Paradoxically, elevated serum B12 levels may be accompanied by signs of B12 deficiency and may indicate a functional deficiency marked by inadequate uptake at the tissue level.

99.00
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.

9.60
 $\mu\text{mol/L}$

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.

51.20
pg/ml

ESTRADIOL - MALE

Estradiol is a minor hormone in men. Estradiol is synthesized from testosterone and androstenedione in men and plays a role in male sex hormone physiology. High levels of estradiol in men are associated with abdominal obesity, an increased risk of cardiovascular disease, insulin sensitivity, and blood sugar dysregulation.

1.62
Index

HOMA2-IR

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

5.37
m/cumm

RBC - MALE

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. Increased levels are associated with dehydration, stress, a need for vitamin C and respiratory distress such as asthma.

1643.00
nmol/L

LDL-P (NMR)

The measurement of LDL-P can help identify individuals with residual cardiac risk despite having low LDL cholesterol. An elevation in the total number of LDL particles (LDL-P) represents an increased risk of cardiovascular disease.

52.90
%

HEMATOCRIT - MALE

The hematocrit (HCT) measures the percentage of the volume of red blood cells in a known volume of centrifuged blood. It is an integral part of the Complete Blood Count (CBC) or Hematology panel. Elevated levels of hematocrit are associated with dehydration. An increased hematocrit is also associated with but by no means diagnostic of asthma or emphysema. Due to the lack of optimum oxygenation of the blood, the body will increase the red blood cell count to increase the number of cells that can be oxygenated. The hematocrit will go up accordingly.

171.00
mg/dl

NON-HDL CHOLESTEROL

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

0.80
mg/L

HS CRP - MALE

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.

84.00
mg/dL

TRIGLYCERIDES

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

4.17
Ratio

CHOLESTEROL : HDL

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

2.30
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.

2.89
Ratio

LDL : HDL - MALE

The calculation of the LDL Cholesterol to HDL Cholesterol ratio provides a better assessment of cardiovascular risk than measuring either biomarker alone. Increased ratios are associated with increased cardiovascular risk.

6.30
mg/dL

URIC ACID - MALE

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.

63.00
%

NEUTROPHILS - %

Neutrophils are the white blood cells used by the body to combat bacterial infections and are the most numerous and important white cell in the body's reaction to inflammation. Neutrophils - % tells us the % distribution of neutrophils in the total white blood cell count. Levels will be increased in bacterial infections.

3.32
ratio

CALCIUM : PHOSPHORUS

The Calcium:Phosphorus ratio is determined from the serum calcium and serum phosphorus levels. This ratio is maintained by the parathyroid glands and is also affected by various foods. A high ratio is often caused by high serum calcium and low serum phosphorus, so investigating the reasons for this is important. A diet high in refined carbohydrates can decrease serum phosphorus thus increasing the Calcium:Phosphorus ratio.

75.00
ng/mL

FERRITIN

Ferritin is the main storage form of iron in the body. Increased levels are associated with iron overload, an increasing risk of cardiovascular disease, inflammation and oxidative stress.

174.00
ng/ml

IGF-1

Insulin-like growth factor-1 (IGF-1), also known as somatomedin C, is a hormone that works with growth hormone to promote the normal development of bone, tissue, and lean muscle mass. Production of IGF-1 is stimulated by growth hormone from the pituitary gland. An elevation in IGF-1 can be associated with a trend towards increased circulating insulin levels related to obesity and excess high simple sugar intake.

32.00
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.

Below Optimal

32.50
g/dL

MCHC

The Mean Corpuscular Hemoglobin Concentration (MCHC) measures the average concentration of hemoglobin in the red blood cells. It is a calculated value. Decreased levels are associated with a vitamin C need, vitamin B6 and iron deficiencies, and a heavy metal body burden.

2.00
mg/dl

MAGNESIUM - SERUM

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

29.20
umol/L

HDL-P (NMR)

A low level of HDL-P is associated with an increased risk of cardiovascular disease.

9.50
ng/ml

FOLATE - SERUM

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.

69.00
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. Decreased levels of blood glucose are associated with hypoglycemia.

2.20
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.

25.10
nmol/L

SEX HORMONE BINDING GLOBULIN - MALE

Sex Hormone Binding Globulin (SHBG) is a protein produced primarily in the liver and to some extent the testes and the brain. SHBG acts as a transport molecule for carrying estrogen and testosterone around the body and delivering them to receptors on the cells. Decreased SHBG levels are associated with metabolic syndrome and an increased risk of cardiovascular disease.

213.00
10E3/ μ L

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.

34.80
ng/ml

VITAMIN D (25-OH)

This vitamin D test measures for levels of 25-OH vitamin D and is a very good way to assess vitamin D status. Decreased vitamin D levels are a sign of Vitamin D deficiency.

61.70
%

HOMA2-%S

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

24.00
mEq/L

CO2

Carbon Dioxide is a measure of bicarbonate in the blood. CO₂, as bicarbonate, is available for acid-base balancing. Bicarbonate neutralizes metabolic acids in the body. Decreased levels are associated with metabolic acidosis.

2.80
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.

2.90
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.

99.00
mEq/L

CHLORIDE

Chloride plays an important role in human physiology. The amount of serum chloride is carefully regulated by the kidneys. Chloride is involved in regulating acid-base balance in the body. Decreased levels are associated with metabolic alkalosis. Chloride is an important molecule in the production of hydrochloric acid in the stomach so decreased levels are associated with hypochlorhydria.

5.20
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.

1.06
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 drop when there is too much thyroid hormone in circulation. A low TSH is associated with a hyperactive thyroid that is producing too much thyroid hormone or a situation called Anterior Pituitary Dysfunction, where the anterior pituitary slows down the production of TSH, causing a type of hypothyroidism called pituitary hypothyroidism.

54.00
mg/dL

HDL CHOLESTEROL

HDL functions to transport cholesterol from the peripheral tissues and vessel walls to the liver for processing and metabolism into bile salts. It is known as “good cholesterol” because it is thought that this process of bringing cholesterol from the peripheral tissue to the liver is protective against atherosclerosis. Decreased HDL is considered atherogenic (tending towards the formation of fatty plaques in the artery).

9.70
μg/dL

CORTISOL - TOTAL

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.

0.34
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.



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

Health Concerns

35 Health Concerns

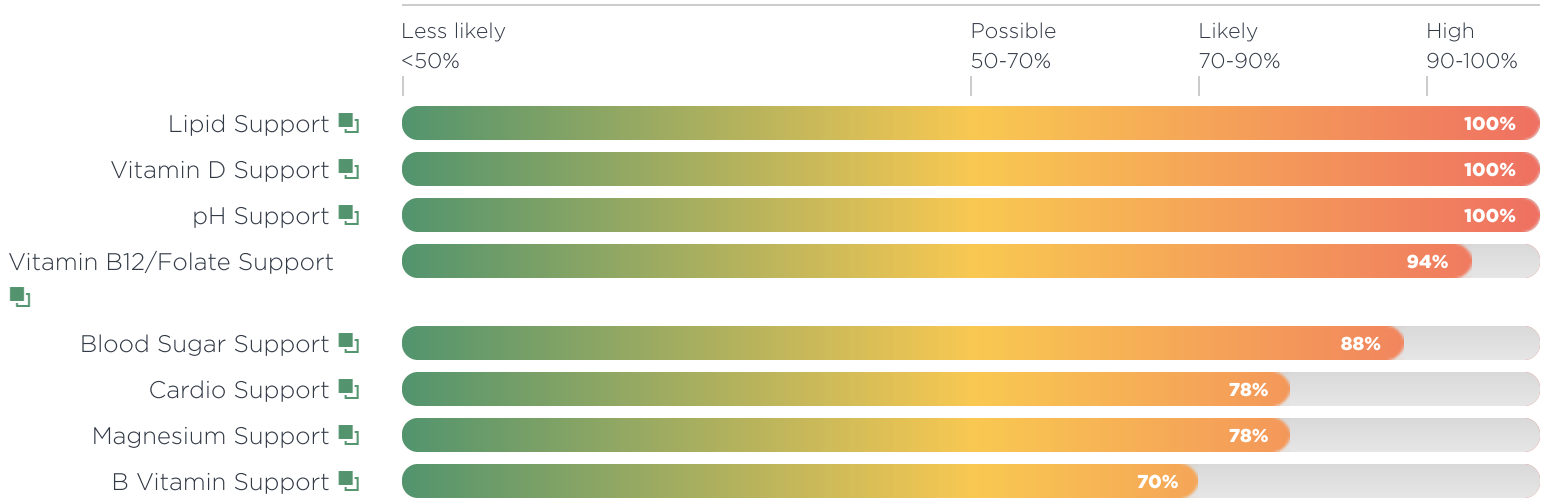


Health Concerns

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.

NEED OF SUPPORT



Health Concerns Details

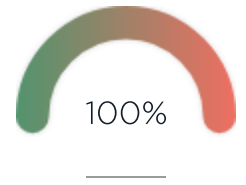
This section contains an explanation of the results presented in the Health Concerns report including all the biomarkers considered in the algorithmic analysis and the rationale behind the interpretation.

LIPID SUPPORT

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

Rationale

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

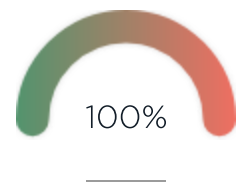


VITAMIN D SUPPORT

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

Rationale

Vitamin D (25-OH) 

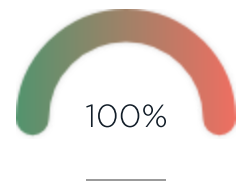


PH SUPPORT

The results of your blood test indicate a tendency towards metabolic acidosis and a need for pH support.

Rationale

Anion Gap , Chloride , CO2 

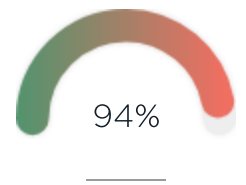


VITAMIN B12/FOLATE SUPPORT

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

MCV , Homocysteine , MCH , Folate - Serum 

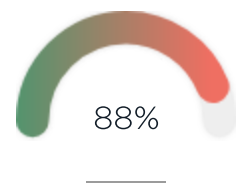


BLOOD SUGAR SUPPORT

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

Rationale

Triglycerides , Insulin - Fasting , Uric Acid - Male , Cholesterol - Total , LDL Cholesterol , HDL Cholesterol , Sex Hormone Binding Globulin - Male 

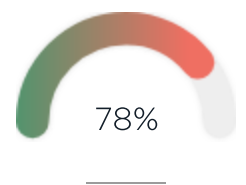


CARDIO SUPPORT

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

Rationale

Cholesterol - Total , Triglycerides , LDL Cholesterol , HDL Cholesterol , Hs CRP - Male , Homocysteine , Estradiol - Male , Insulin - Fasting , Vitamin D (25-OH) 

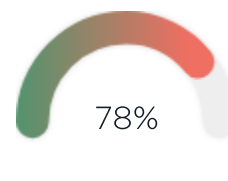


MAGNESIUM SUPPORT

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

Rationale

Magnesium - Serum 

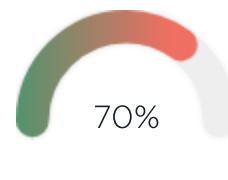


B VITAMIN SUPPORT

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

Rationale

Anion Gap  , CO2 





Disclaimer

39 Disclaimer



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