



Blood Chemistry Analysis

Functional Health Report



Patient Report

Prepared for . Sample Report
49 year old male born Aug 12, 1970

Requested by Dr. Rick Davids
The Health Formula

Test date Aug 03, 2019

What's Inside?

An introduction to functional blood chemistry analysis and your report.

An in-depth functional system and nutrient evaluation.

A full breakdown of all individual biomarker results, showing distance from optimal, comparative and historical views.

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- 3 Functional BCA
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An introduction to functional blood chemistry analysis and your report.

Introduction

- 1 What's Inside?
- 3 Functional BCA
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Functional Blood Chemistry Analysis

Functional Blood Chemistry Analysis can be defined as the process by which complex and comprehensive blood biomarkers are organized, analyzed and interpreted to provide a comprehensive assessment of the state and trends of the main body systems, the supporting body accessory systems, along with the status of nutrients and trends towards and away from clinical dysfunction.

WHY BLOOD TESTING?

Blood has a lot to tell us about your state of health and the blood chemistry and CBC / hematology test is the most commonly ordered medical lab test worldwide. These blood tests are an integral part of Western clinical medicine and are used to aid in the diagnostic decision-making process. Patients understand and are educated that blood testing is the norm for health assessment.

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

"NORMAL" IS NOT OPTIMAL

Most patients 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 and not on whether a certain value represents good health or optimal physiological function. The problem is that "normal" reference ranges usually represent "average" populations rather than 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 chem screen and CBC analysis is oriented around changes in physiology 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 the 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 your otherwise hidden trend towards or away from a functional health optimal.

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report is the result of 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.

Patient Report

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

DR. RICK DAVIDS

Functional Medicine Practitioner

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report uniquely organises and creates an interpretation providing a comprehensive insight and assessment into the state of previously hidden health trends of the main body systems, its supporting body accessory systems, along with reporting on the status of key nutrients and trends to and from clinical dysfunction.

The 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.

ASSESSMENT

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

The Body Systems and Accessory reports show the level of dysfunction that exists in the various physiological and supporting accessory systems in your body.

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

Each of the assessment reports is accompanied by a section that contains detailed descriptions and interpretation 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 Chemistry Screen and Hematology test and gives you a sense of whether or not there has been an improvement on the individual biomarker level.

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.

A Blood Test Score report is made showing which markers exhibit the largest shifts away from an optimal norm either higher or lower.

HEALTH IMPROVEMENT PLAN

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



An in-depth functional system and nutrient evaluation.

Assessment

- 6 Functional Body Systems
- 11 Accessory Systems
- 13 Macronutrient Status
- 16 Nutrient Deficiencies

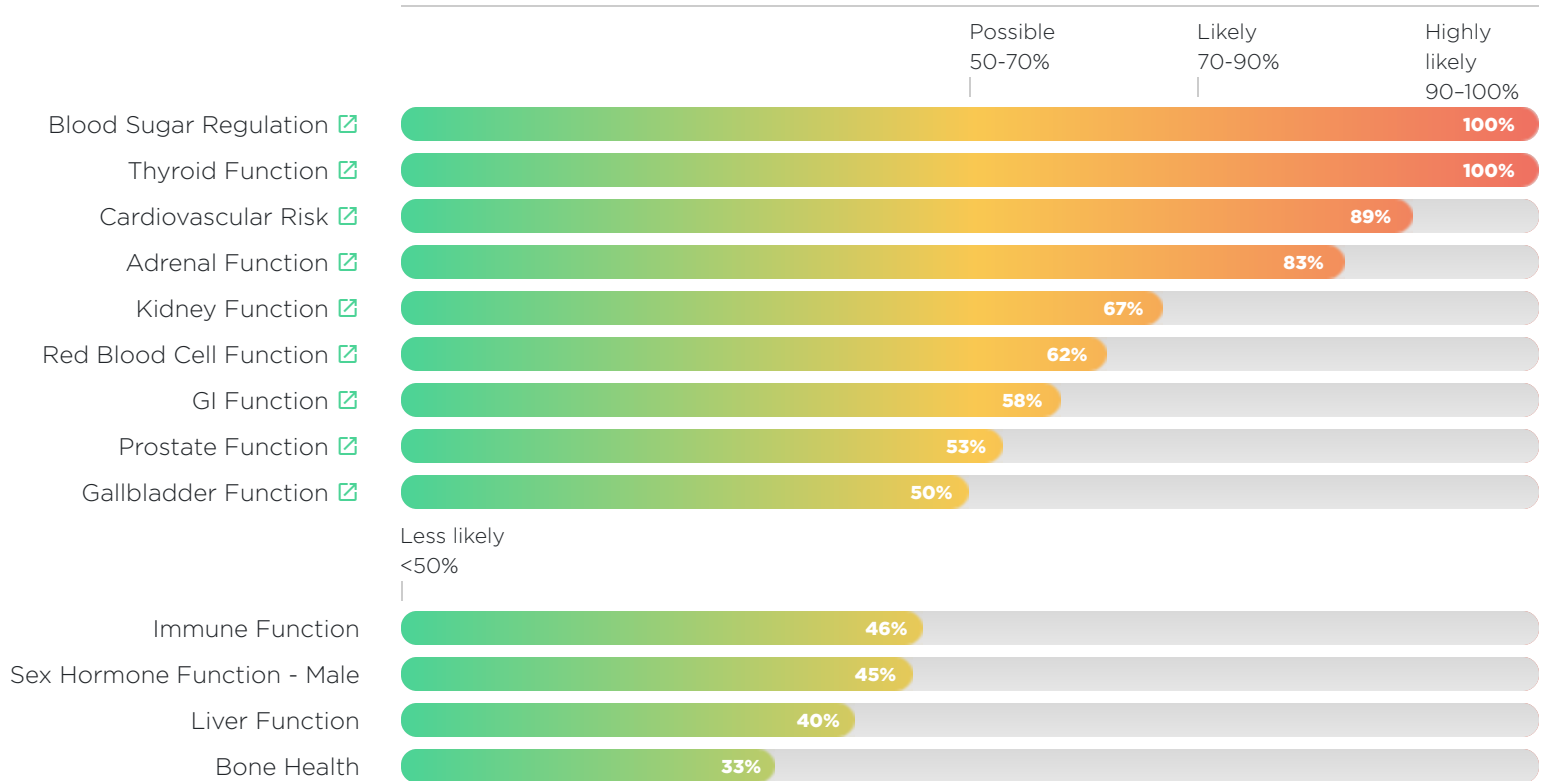
Functional Body Systems

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.

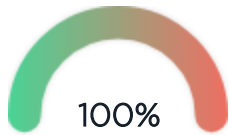
Each Body System that has a probability of dysfunction above 50% is included in the section that follows so you can read a highly detailed description and individual explanation of the results shown in this report.

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.



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 [↑](#), LDH [↓](#), Hemoglobin A1C [↑](#), Insulin - Fasting [↑](#), Cholesterol - Total [↑](#), Triglycerides [↑](#), LDL Cholesterol [↑](#)

Biomarkers considered

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

Patient result not available - consider running in future tests:

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



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, for 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

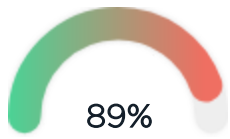
TSH [↑](#), T4 - Free [↓](#), T3 - Free [↓](#), Thyroid Peroxidase (TPO) Abs LABCORP [↑](#)

Biomarkers considered

TSH, T4 - Free, T3 - Free, Thyroid Peroxidase (TPO) Abs LABCORP

Patient result not available - consider running in future tests:

T4 - Total, T3 - Total, Reverse T3, T3 Uptake, Free Thyroxine Index (T7), Thyroglobulin Abs, Thyroglobulin Abs LABCORP, Thyroid Peroxidase (TPO) Abs, Free T3:Reverse T3



89%

Dysfunction Likely.
Improvement required

CARDIOVASCULAR RISK [🔗](#)

The Cardiovascular Risk score looks at 15 biomarkers on a blood test to assess your risk of cardiovascular dysfunction. A high Cardiovascular Risk score indicates that you may be at an increased risk of developing cardiovascular disease. The Cardiovascular Risk 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

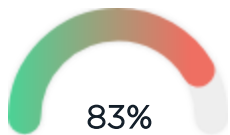
Triglyceride:HDL [↑](#), Glucose - Fasting [↑](#), Cholesterol - Total [↑](#), Triglycerides [↑](#), LDL Cholesterol [↑](#), Homocysteine [↑](#), Hemoglobin A1C [↑](#), Testosterone Total - Male [↓](#), Insulin - Fasting [↑](#), Vitamin D (25-OH) [↓](#), Testosterone Free - Male [↓](#)

Biomarkers considered

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

Patient result not available - consider running in future tests:

Fibrinogen, Hs CRP - Male, Estradiol - Male, Testosterone Free - Male LABCORP



83%

Dysfunction Likely.
Improvement required

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

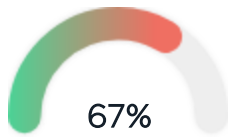
Sodium [↑](#), Potassium [↓](#), BUN [↑](#), Cholesterol - Total [↑](#), Triglycerides [↑](#)

Biomarkers considered

Sodium, Potassium, Sodium:Potassium, Glucose - Fasting, BUN, Chloride, CO₂, Cholesterol - Total, Triglycerides

Patient result not available - consider running in future tests:

DHEA-S - Male, Cortisol - AM, Cortisol - PM



67%

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

KIDNEY FUNCTION [🔗](#)

The Kidney Function score reflects the degree of function in your kidneys. The kidneys help to filter waste and toxins from the body and also help regulate fluid and mineral balance, help regulate blood pressure and regulate acid-alkaline balance in the body. Factors affecting kidney function include heavy metal toxicity, dehydration, caffeine and alcohol, liver dysfunction and may over the counter and prescription drugs. Kidney dysfunction can be a slow decrease in function (a condition called renal insufficiency) or impaired function associated with kidney infections and disease.

Rationale

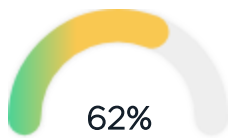
BUN ↑, Creatinine ↑, eGFR Non-Afr. American ↓, Uric Acid - Male ↑, Magnesium - Serum ↑

Biomarkers considered

BUN, Creatinine, BUN:Creatinine, Phosphorus, eGFR Non-Afr. American, Uric Acid - Male, AST, LDH, Magnesium - Serum

Patient result not available - consider running in future tests:

eGFR African American



62%

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

RED BLOOD CELL FUNCTION [🔗](#)

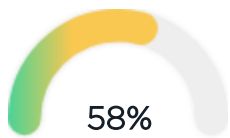
The Red Blood Cell Function score assesses the body's ability to produce red blood cells and reflects whether or not an anemia may be present in the body. Red blood cells function to carry oxygen to all the tissues and cells of the body. Nutrient deficiencies and other dysfunctions can disrupt this process causing an anemia. Some of the nutrient deficiency causes of anemia include deficiencies in iron, B12/folate, vitamin B6, copper and vitamin C.

Rationale

Hemoglobin - Male ↓, MCV ↓, RDW ↑

Biomarkers considered

RBC - Male, Hemoglobin - Male, Hematocrit - Male, MCV, MCHC, RDW, MCH



58%

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

GI FUNCTION [🔗](#)

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

Rationale

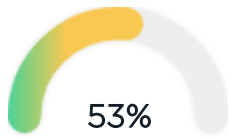
BUN ↑, Albumin ↓, Alk Phos ↓, MCV ↓, Basophils - % ↑, Iron - Serum ↓, Anion Gap ↑, Uric Acid - Male ↑, GGT ↑, Hemoglobin - Male ↓

Biomarkers considered

BUN, Protein - Total, Globulin - Total, Albumin, Phosphorus, Alk Phos, MCV, Eosinophils - %, Basophils - %, Iron - Serum, Creatinine, Chloride, Anion Gap, Uric Acid - Male, Calcium, GGT, Total WBCs, Hemoglobin - Male

Patient result not available - consider running in future tests:

Gastrin



53%

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

PROSTATE FUNCTION [🔗](#)

The Prostate Function score can help us identify dysfunctions in your prostate. These can be a swollen prostate (a condition called Benign Prostatic Hypertrophy - BPH), an infection in the prostate (a condition called prostatitis), or a Urinary Tract Infection (UTI).

Rationale

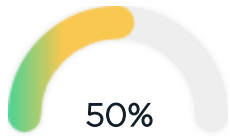
Creatinine ↑, Monocytes - % ↑

Biomarkers considered

Creatinine, Monocytes - %

Patient result not available - consider running in future tests:

PSA - Total



50%

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

GALLBLADDER FUNCTION [🔗](#)

The Gallbladder Function Index reflects the degree of function in your gallbladder. The gallbladder plays an essential role in helping your body digest the fat in the diet. It does this through the release of a substance called bile. Bile is not only essential for fat digestion but it also helps the body get rid of certain toxins and also excess cholesterol from the body. Factors affecting gallbladder function include the inability of the liver to produce bile (a condition called biliary insufficiency), the progressive thickening of the bile in the gallbladder (a condition called biliary stasis) or the presence of obstructions in the gallbladder itself (a condition called biliary obstruction).

Rationale

GGT ↑, Cholesterol - Total ↑, ALT ↑

Biomarkers considered

GGT, Alk Phos, Cholesterol - Total, ALT, LDH, Bilirubin - Total, Triglycerides

Patient result not available - consider running in future tests:

Bilirubin - Direct, Gastrin

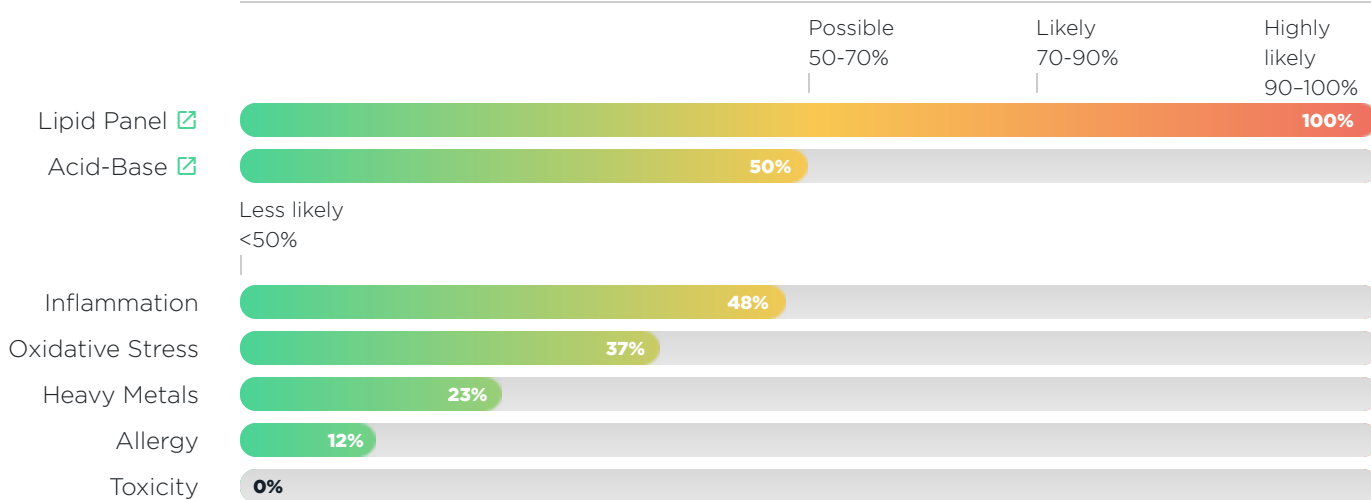
Accessory Systems

The Accessory System results represent an algorithmic analysis of this blood test. These results have been converted into your individual Accessory 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.

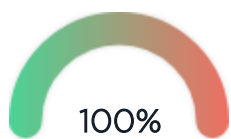
Each Accessory System that has a probability of dysfunction above 50% is included in the section that follows so you can read a highly detailed description and individual explanation of the results shown in this report.

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 [🔗](#)

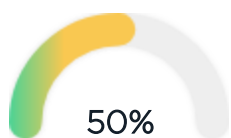
The Lipid Panel score gives us an indication of the levels of cholesterol and fat in your blood. An increased Lipid Panel score indicates that you have higher than optimal levels of cholesterol and fat in your blood (a condition called hyperlipidemia). Hyperlipidemia is associated with an increased risk 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 ↑, Triglycerides ↑, LDL Cholesterol ↑, Cholesterol:HDL ↑, Triglyceride:HDL ↑

Biomarkers considered

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



50%

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

ACID-BASE [🔗](#)

The Acid-Base 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 (a condition called metabolic acidosis) or too alkaline (a condition called metabolic alkalosis).

Rationale

Anion Gap ↑, Potassium ↓

Biomarkers considered

Anion Gap, Potassium, Chloride, CO2, Calcium

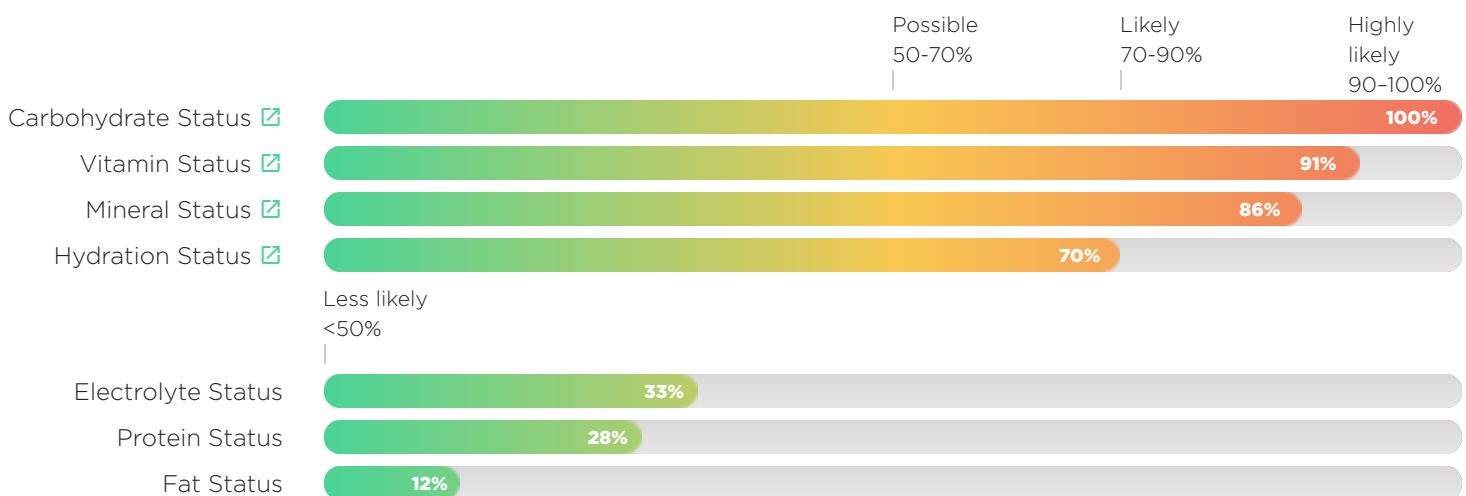
Macronutrient Status

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

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

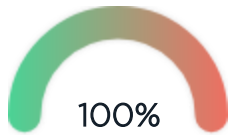
Each Macronutrient that has a probability of dysfunction above 50% is included in the section that follows so you can read a highly detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Macronutrient Status Details

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



100%

Dysfunction Highly Likely.
Much improvement
required.

CARBOHYDRATE STATUS [🔗](#)

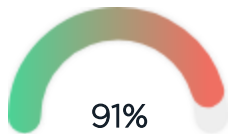
The Carbohydrate Status score gives us an assessment of how your body copes with your dietary intake of carbohydrates, especially refined carbohydrates (white flour, white rice, white pasta, etc.) and sugars. A diet high in refined carbohydrates and sugars will deplete important nutrients that are used by the body to handle carbohydrates and may also increase blood glucose and blood fat levels, all of which can be measured in your blood.

Rationale

Glucose - Fasting [↑](#), LDH [↓](#),
Cholesterol - Total [↑](#),
Triglycerides [↑](#), LDL
Cholesterol [↑](#)

Biomarkers considered

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



91%

Dysfunction Highly Likely.
Much improvement
required.

VITAMIN STATUS [🔗](#)

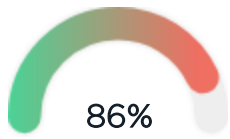
The Vitamin Status score gives us a general indication of the balance of certain vitamins in your body. Vitamin levels are constantly fluctuating based on a number of factors, such as the amount in your diet, your ability to digest and break down individual vitamins from the food or supplements you consume, the ability of those vitamins to be absorbed, transported and ultimately taken up into the cells themselves.

Rationale

Anion Gap [↑](#), Albumin [↓](#),
Homocysteine [↑](#), Vitamin D
(25-OH) [↓](#), MCV [↓](#), Folate -
Serum [↓](#), Methylmalonic Acid
[↑](#)

Biomarkers considered

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



86%

Dysfunction Likely.
Improvement required

MINERAL STATUS [📄](#)

The Mineral Status score gives us a general indication of the balance of certain minerals in your body based on the results of this blood test. 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

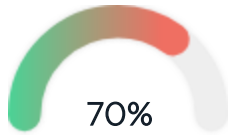
Potassium ↓, Alk Phos ↓, Iron - Serum ↓, Ferritin ↓, T3 - Free ↓, MCV ↓, Zinc - Serum ↓

Biomarkers considered

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

Patient result not available - consider running in future tests:

TIBC, T3 - Total



70%

Dysfunction Likely.
Improvement required

HYDRATION STATUS [📄](#)

The Hydration Status score gives us a good indication of how well hydrated you were at the time your blood was drawn. Adequate hydration is necessary for many basic chemical reactions in your body, including digestion, electrolyte balance, hormone transport, and kidney and heart function. Dehydration is a very common problem and is most often due to insufficient water intake and/or excessive use of diuretics (substances that increase water loss from the body). These would include certain over the counter and prescription drugs, botanical medicines, caffeine, etc. These are some of the most common causes of dehydration and may be a cause of an increased Hydration Status score.

Rationale

BUN ↑, Sodium ↑, RBC - Male ↑, Hematocrit - Male ↑

Biomarkers considered

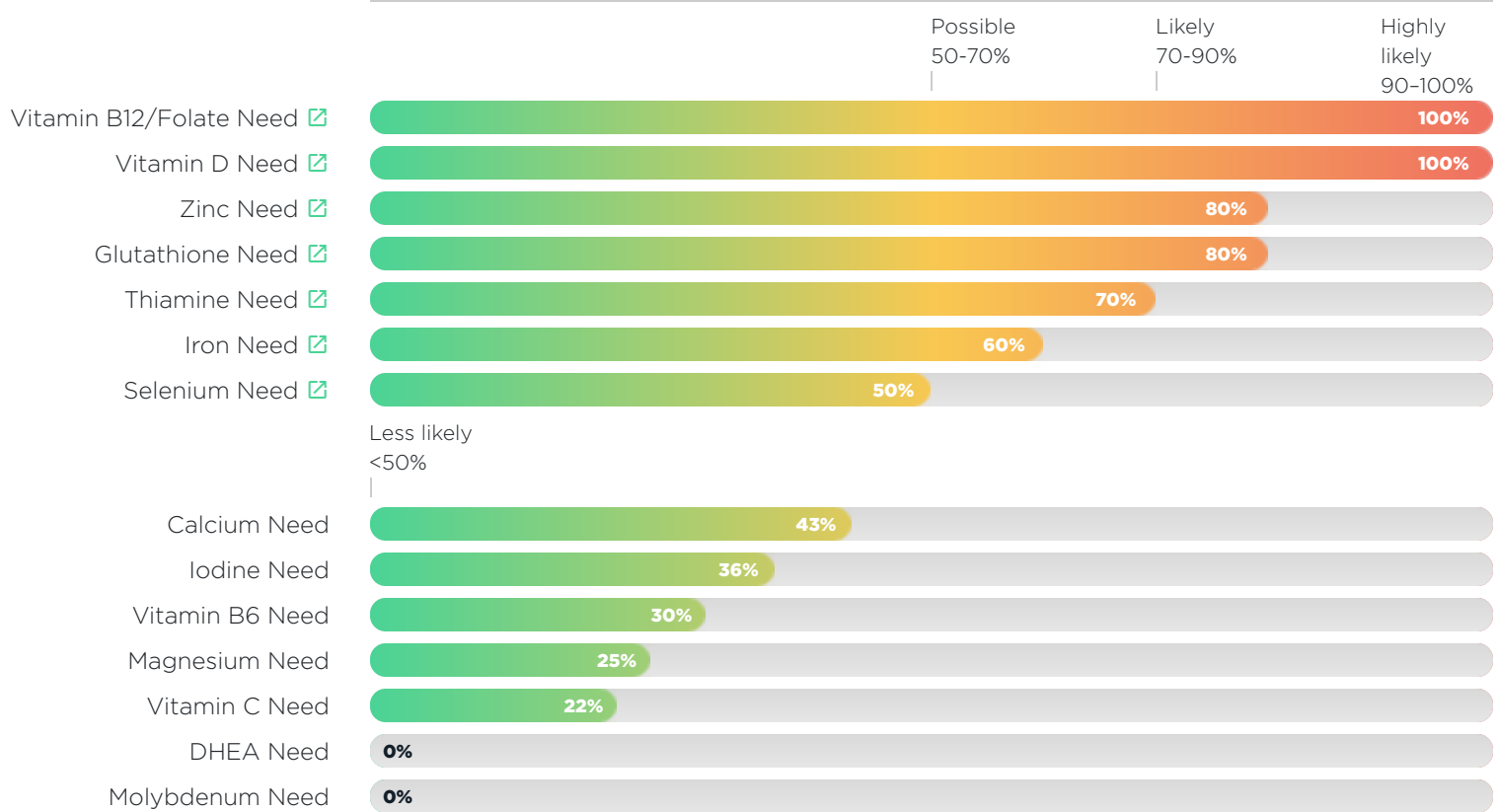
Albumin, BUN, Sodium, Potassium, Protein - Total, RBC - Male, Hemoglobin - Male, Hematocrit - Male

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.

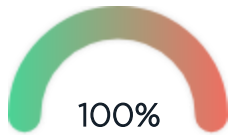
Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is included in the section that follows so you can read a highly detailed description and individual explanation of the results shown in this report.

PROBABILITY OF DYSFUNCTION



Individual Nutrient Deficiencies Details

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



100%

Dysfunction Highly Likely.
Much improvement
required.

VITAMIN B12/FOLATE NEED [🔗](#)

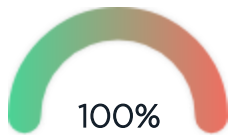
The results of your blood test indicate that your Vitamin B12 and Folate levels might be lower than optimal.

Rationale

Homocysteine ↑,
Methylmalonic Acid ↑,
Albumin ↓, Hemoglobin - Male
↓, RDW ↑, Folate - Serum ↓

Biomarkers considered

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



100%

Dysfunction Highly Likely.
Much improvement
required.

VITAMIN D NEED [🔗](#)

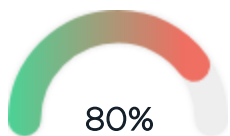
The results of your blood test indicate that your Vitamin D levels might be lower than optimal.

Rationale

Vitamin D (25-OH) ↓

Biomarkers considered

Vitamin D (25-OH)



80%

Dysfunction Likely.
Improvement required

ZINC NEED [🔗](#)

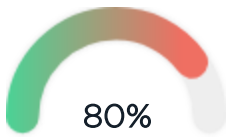
The results of your blood test indicate that your Zinc levels might be lower than optimal.

Rationale

Alk Phos ↓, Zinc - Serum ↓

Biomarkers considered

Alk Phos, Zinc - Serum



80%

Dysfunction Likely.
Improvement required

GLUTATHIONE NEED [🔗](#)

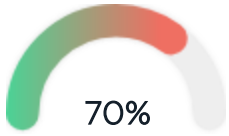
The results of your blood test indicate that your glutathione levels might be lower than optimal. Glutathione is one of the most powerful antioxidants in your body.

Rationale

GGT [↑](#)

Biomarkers considered

GGT



70%

Dysfunction Likely.
Improvement required

THIAMINE NEED [🔗](#)

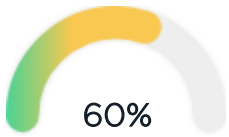
The results of your blood test indicate that your thiamine levels might be lower than optimal.

Rationale

Anion Gap [↑](#), Glucose - Fasting [↑](#), LDH [↓](#), Hemoglobin - Male [↓](#)

Biomarkers considered

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



60%

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

IRON NEED [🔗](#)

The results of your blood test indicate that your iron levels might be lower than optimal.

Rationale

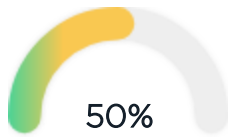
Iron - Serum [↓](#), Ferritin [↓](#), Hemoglobin - Male [↓](#), MCV [↓](#), RDW [↑](#)

Biomarkers considered

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

Patient result not available - consider running in future tests:

TIBC



50%

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

SELENIUM NEED

The results of your blood test indicate that your selenium levels might be lower than optimal.

Rationale

T3 - Free ↓

Biomarkers considered

T3 - Free

**Patient result not available -
consider running in future
tests:**

T3 - Total, T3 Uptake



A full breakdown of all individual biomarker results, showing distance from optimal, comparative and historical views.

Analytics

- 21 Blood Test Results
- 34 Blood Test Results Comp.
- 37 Blood Test Score
- 39 Blood Test History
- 42 Out of Optimal Range

Blood Test Results

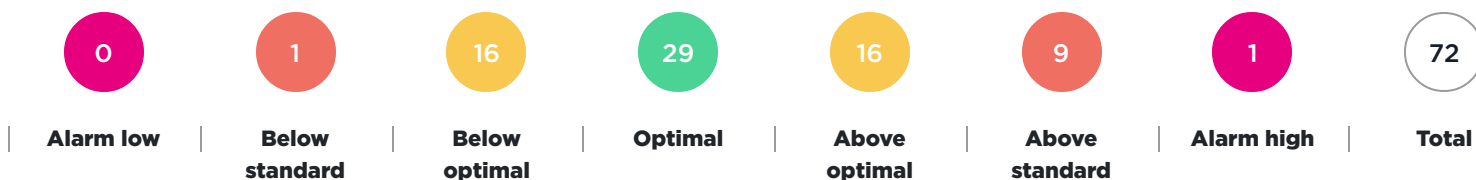
Blood Test Results Comp.	Blood Test Score	Blood Test History	Out of Optimal Range
Blood Glucose Minerals Inflammation	Renal Liver and GB Vitamins	Electrolytes Iron Markers Hormones	Metabolic Lipids CBC/Hematology Proteins Thyroid White Blood Cells

Blood Test Results

The Blood Test Results Report lists the results of the 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.

Each biomarker in the Blood Test results report that is above or below the Optimal or Standard Range hyperlinks into our Out of Optimal Range report so you can read a description of the biomarker and some of the reasons why it may be high or low.

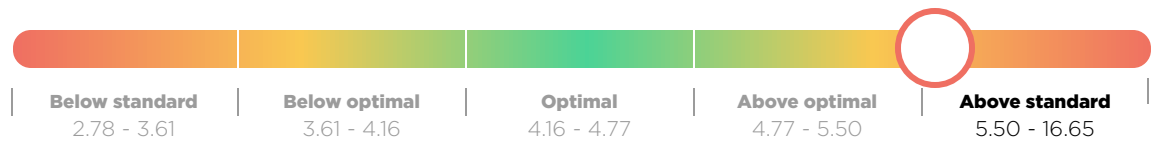
Total number of biomarkers by optimal range



BLOOD GLUCOSE

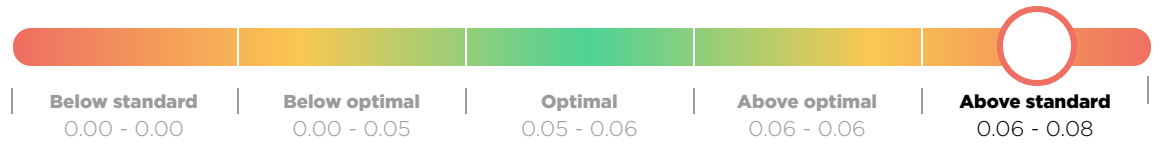
Glucose - Fasting [📄](#)

6.20 mmol/L



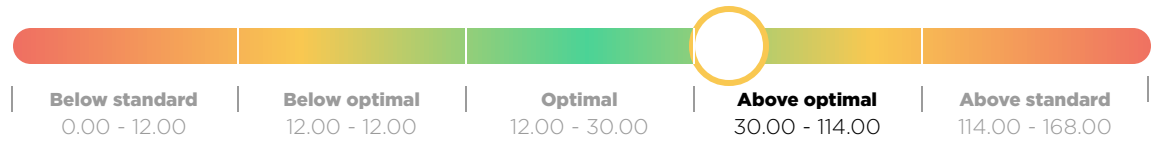
Hemoglobin A1C [📄](#)

0.07 Proportion of 1.0



Insulin - Fasting [📄](#)

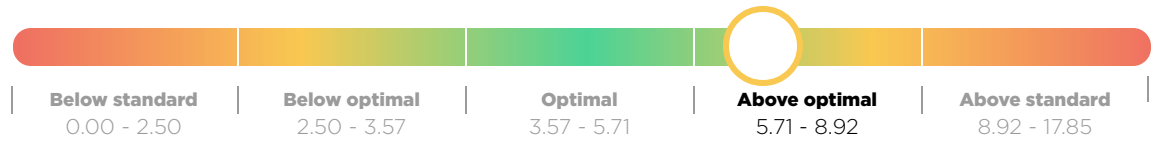
45.00 pmol/L



RENAL

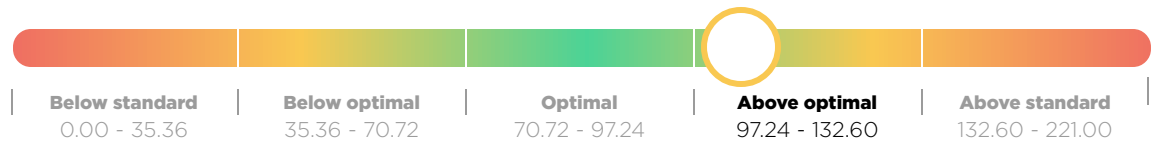
BUN [📄](#)

6.80 mmol/L urea



Creatinine [📄](#)

106.00 μ mol/L



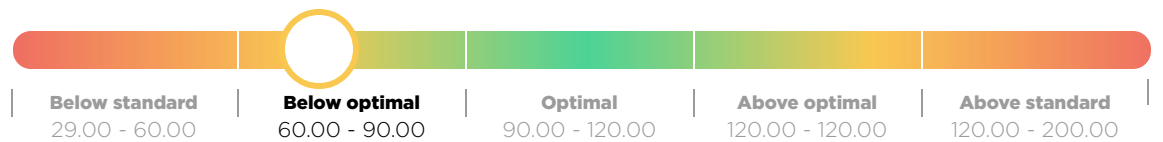
BUN:Creatinine

0.06 Ratio



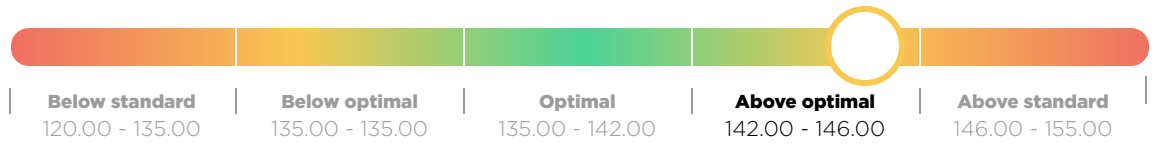
eGFR Non-Afr. American [📄](#)


71.00 mL/min/1.73m²

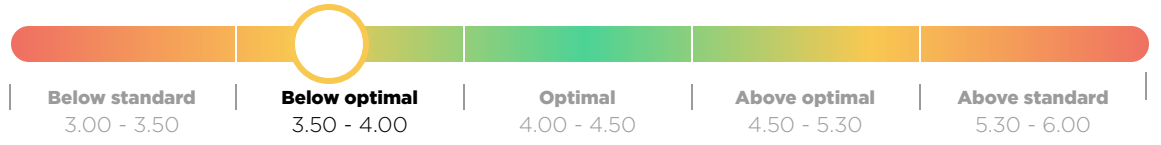


ELECTROLYTES

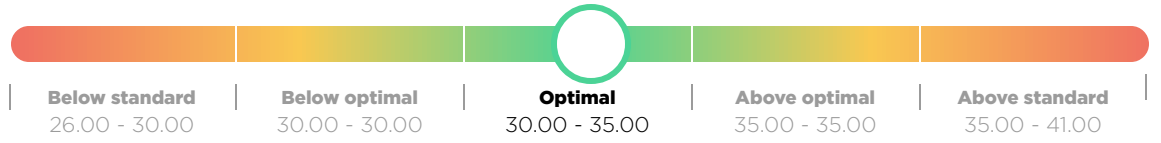
Sodium 
145.00 mmol/L



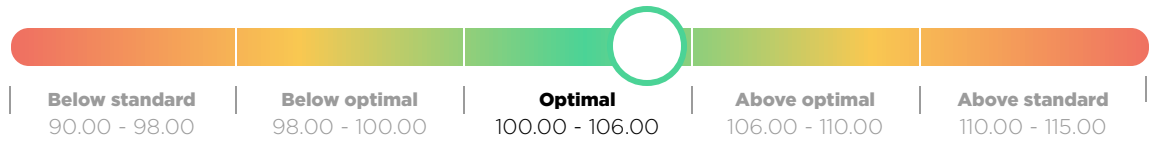
Potassium 
3.70 mmol/L



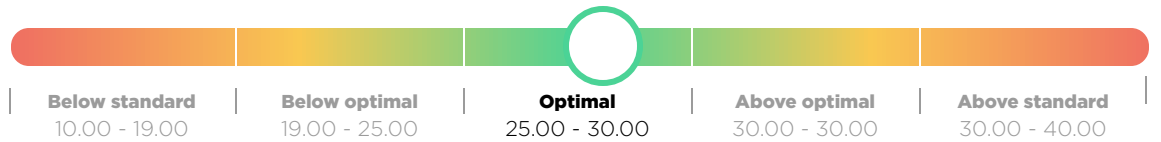
Sodium:Potassium
32.79 ratio




Chloride
105.00 mmol/L

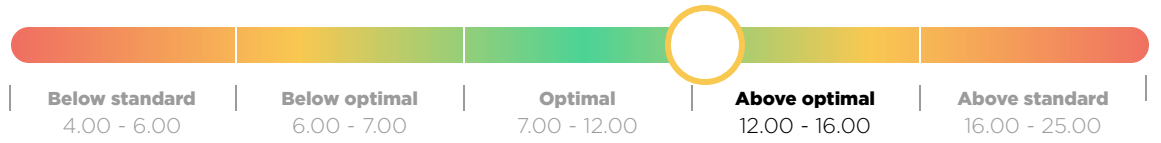



CO2
28.00 mmol/L

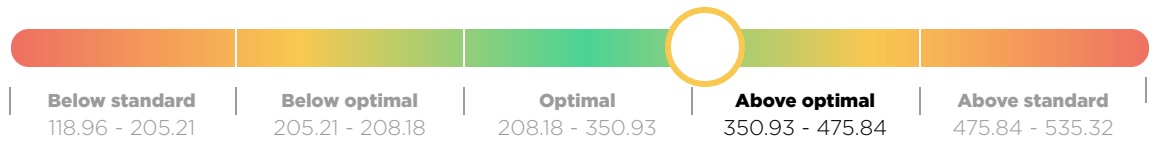


METABOLIC

Anion Gap 
12.30 mmol/L

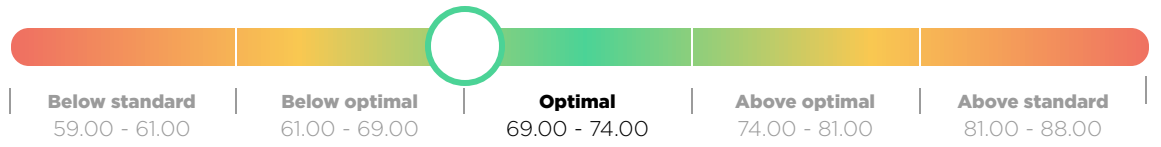


Uric Acid - Male 
360.00 μmol/L

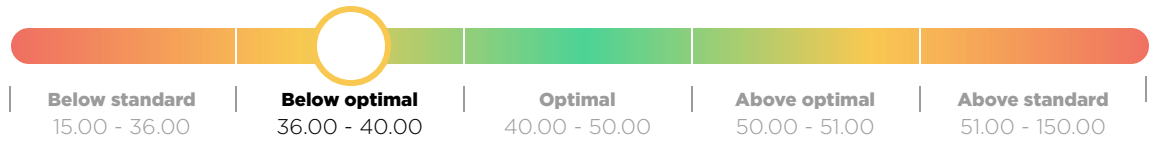


PROTEINS

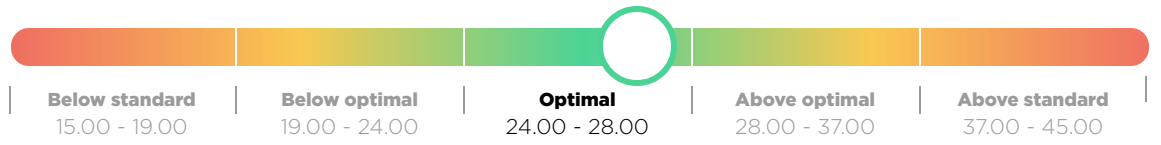
Protein - Total
69.00 g/L



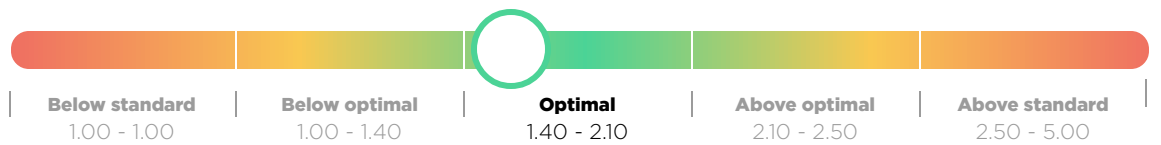
Albumin
38.00 g/L



Globulin - Total
27.00 g/L

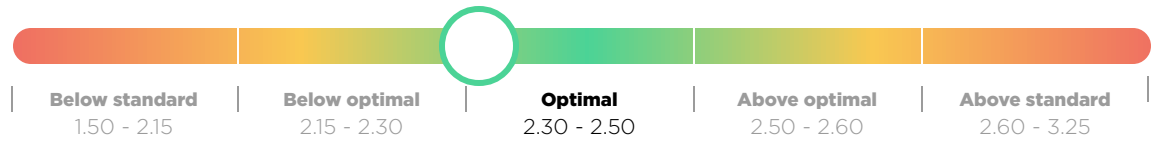


Albumin:Globulin
1.55 ratio

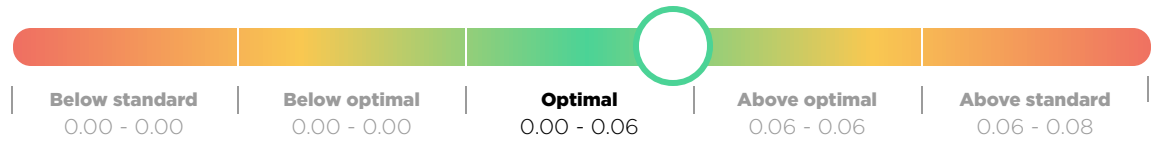


MINERALS

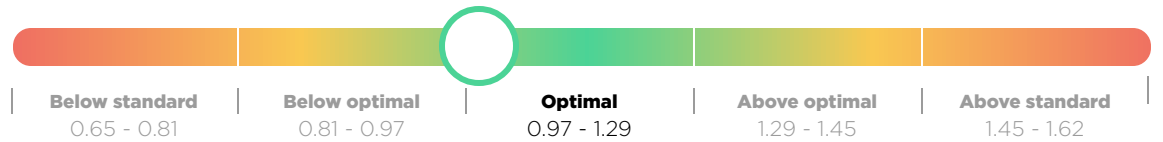
Calcium
2.31 mmol/L



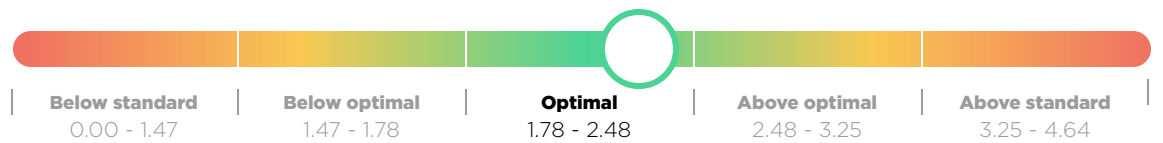
Calcium:Albumin
0.06 ratio



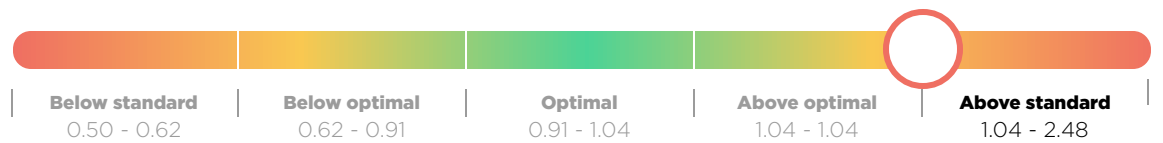
Phosphorus
0.99 mmol/L



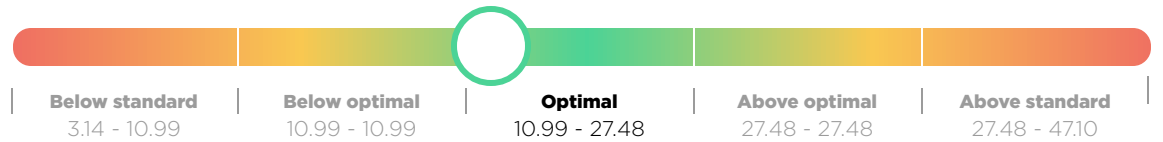
Calcium:Phosphorus
2.33 ratio



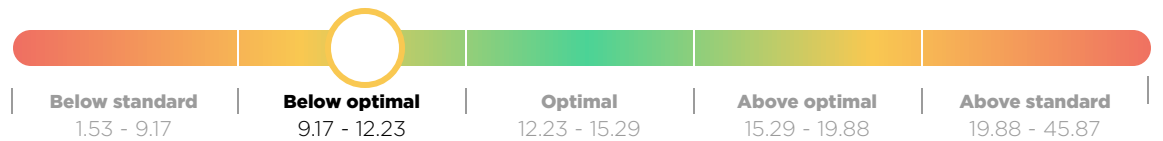
Magnesium - Serum
1.10 mmol/L




Copper - Serum
13.00 μmol/L

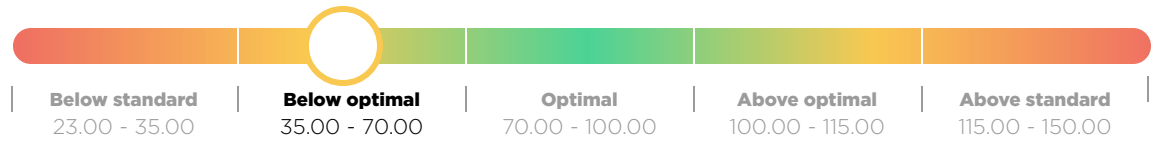


Zinc - Serum
11.00 μmol/L

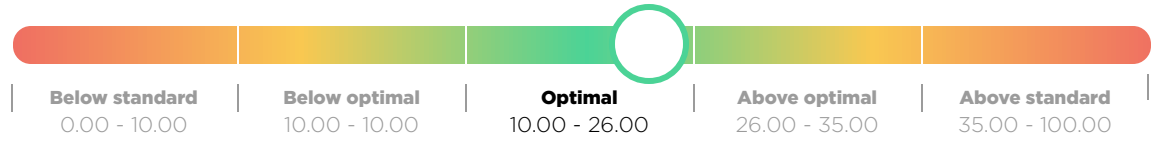



LIVER AND GB

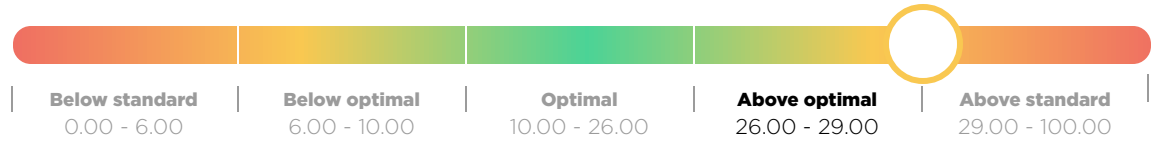
Alk Phos 
51.00 IU/L



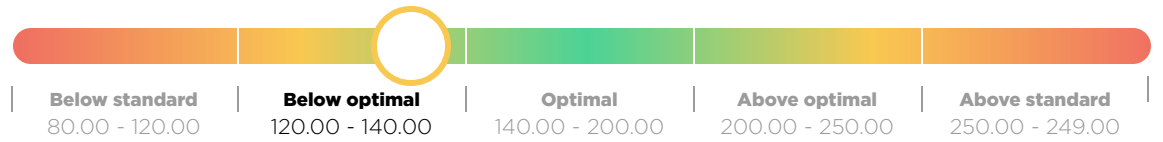
AST
23.00 IU/L



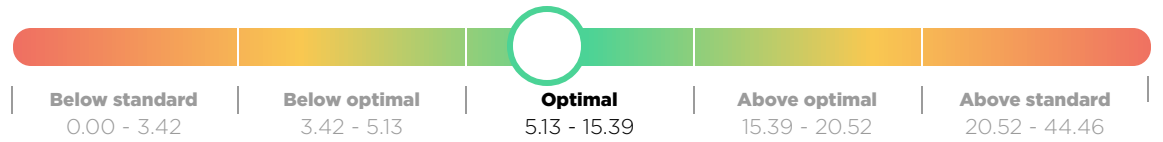
ALT 
29.00 IU/L




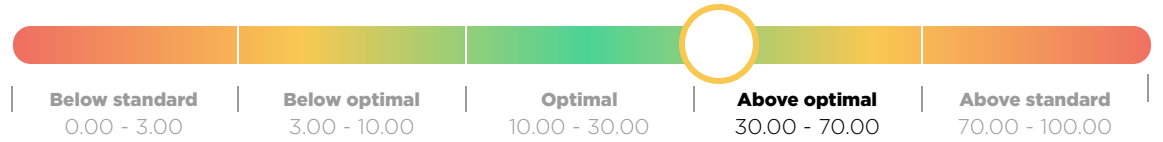
LDH 
135.00 IU/L




Bilirubin - Total
9.00 μmol/L

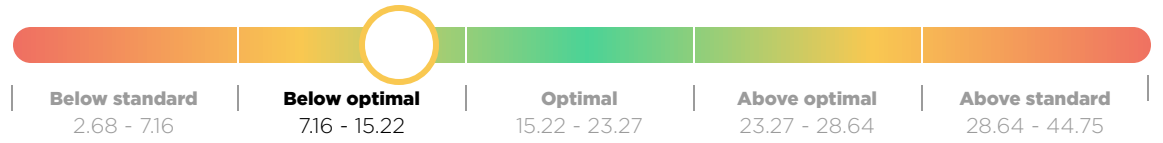


GGT 
35.00 IU/L

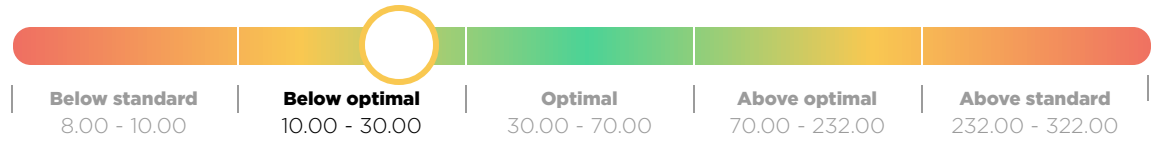


IRON MARKERS

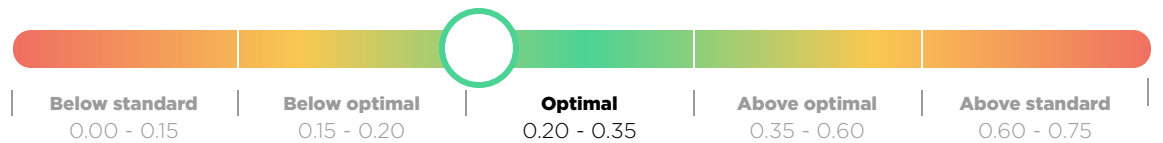
Iron - Serum 
12.90 μmol/L



Ferritin 
24.00 μg/L



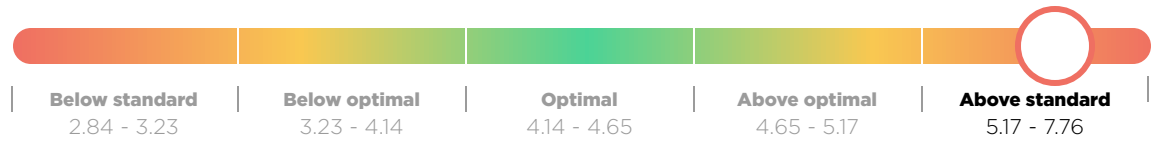
% Transferrin saturation
0.21 fraction saturation



LIPIDS

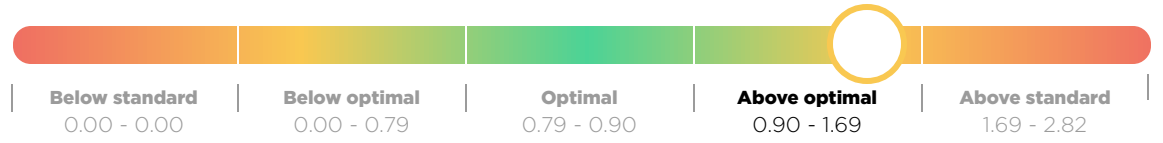
Cholesterol - Total 

7.20 mmol/L



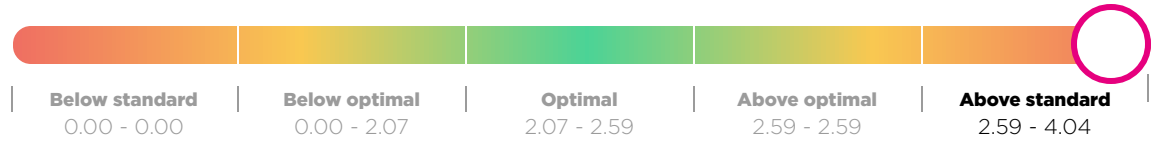
Triglycerides 

1.50 mmol/L



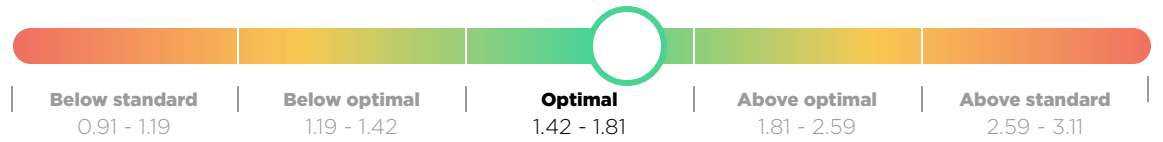
LDL Cholesterol 

4.80 mmol/L 



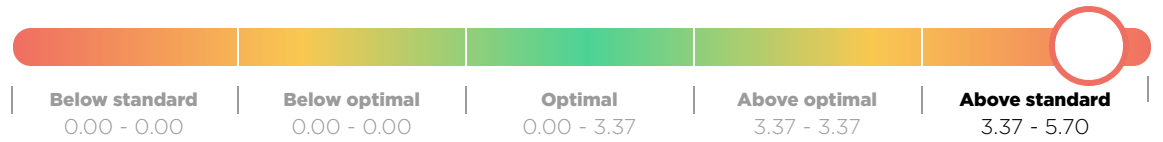
HDL Cholesterol


1.70 mmol/L



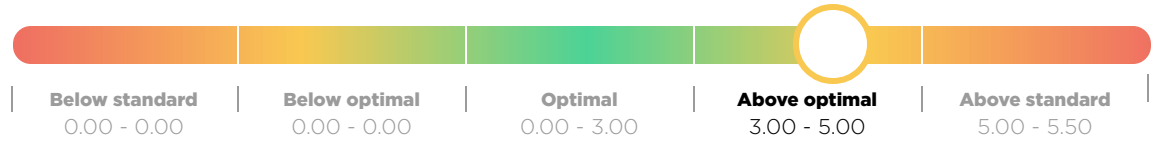
Non-HDL Cholesterol 

5.50 mmol/L



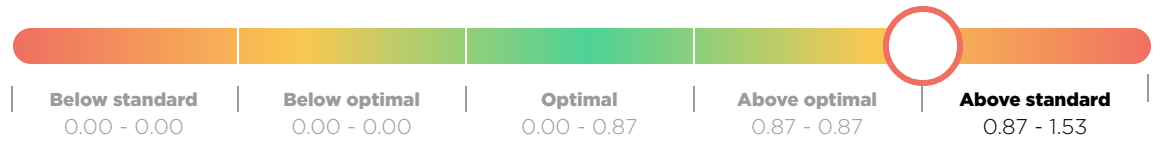
Cholesterol:HDL 

4.23 Ratio



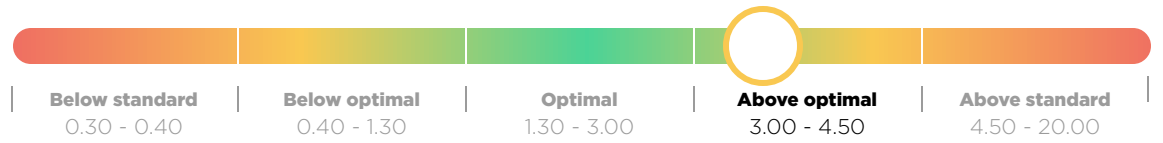
Triglyceride:HDL 

0.88 ratio

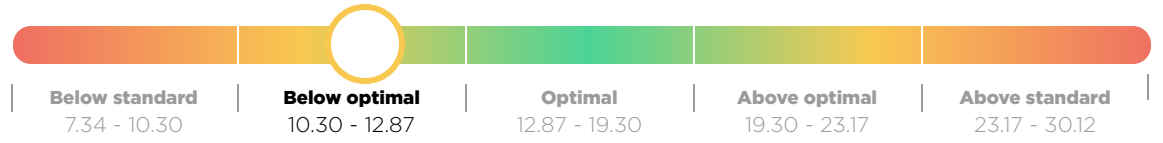


THYROID

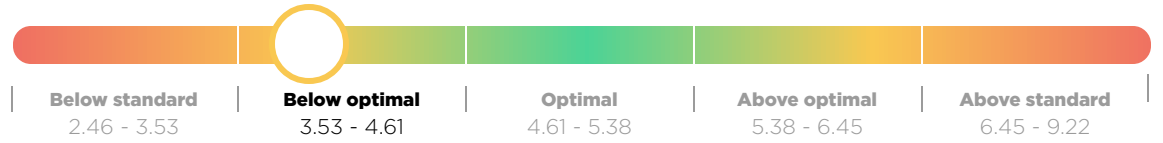
TSH 
3.50 mIU/L




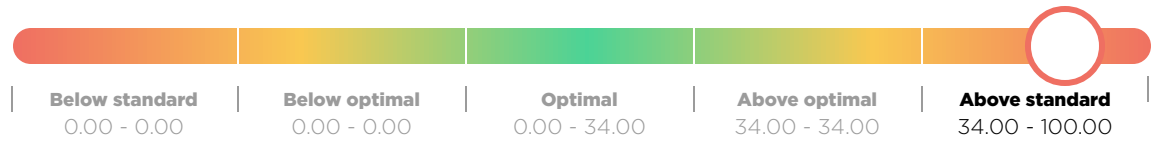
T4 - Free 
11.80 pmol/L



T3 - Free 
3.90 pmol/L

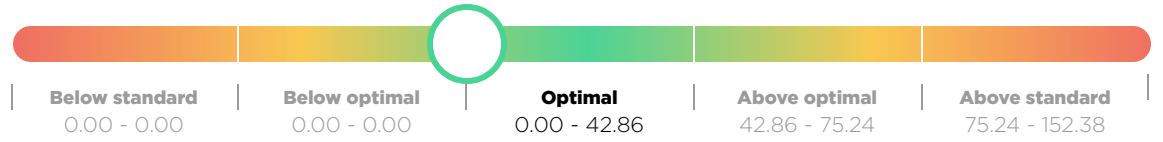



Thyroid Peroxidase (TPO)
Abs LABCORP 
89.00 IU/ml

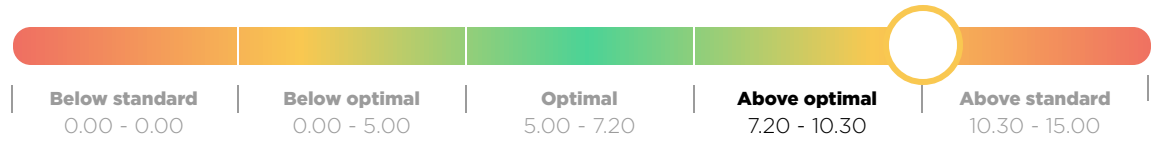


INFLAMMATION

C-Reactive Protein
0.64 nmol/L



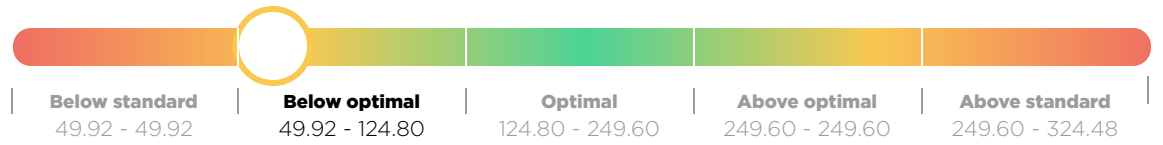
Homocysteine 
10.30 μ mol/L



VITAMINS

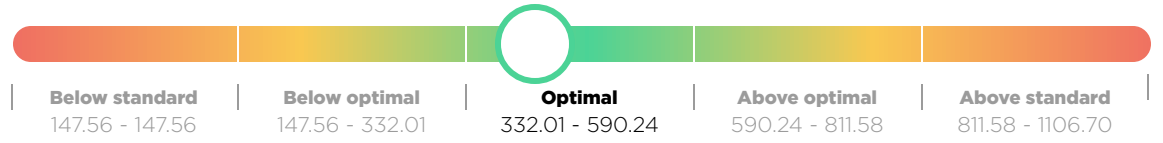
Vitamin D (25-OH) 


62.00 nmol/L



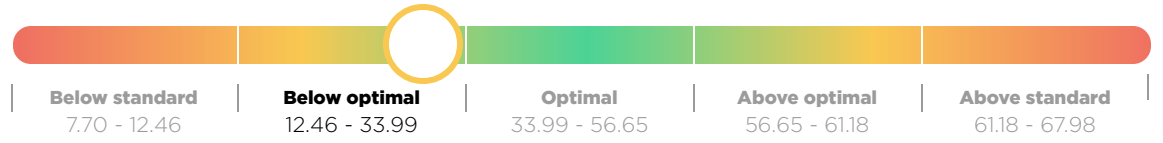
Vitamin B12

418.00 pmol/L



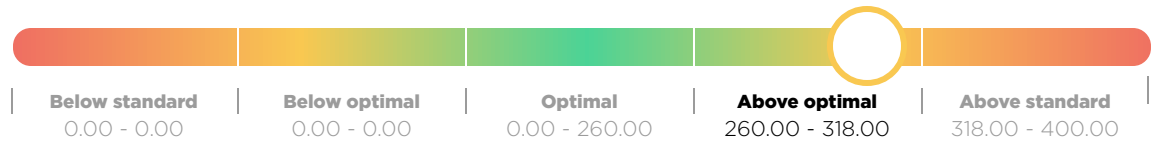
Folate - Serum 

30.20 nmol/L



Methylmalonic Acid 

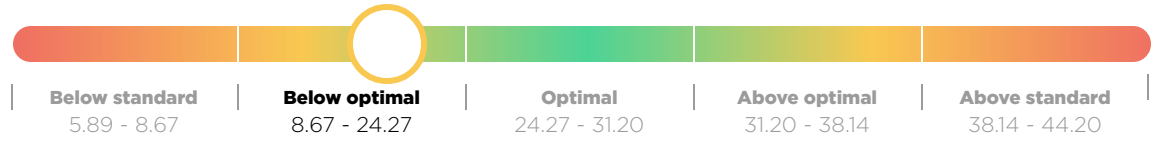
305.00 nmol/L



HORMONES

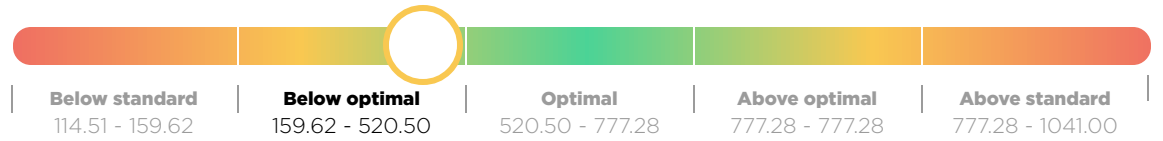
Testosterone Total - Male 

19.00 nmol/L



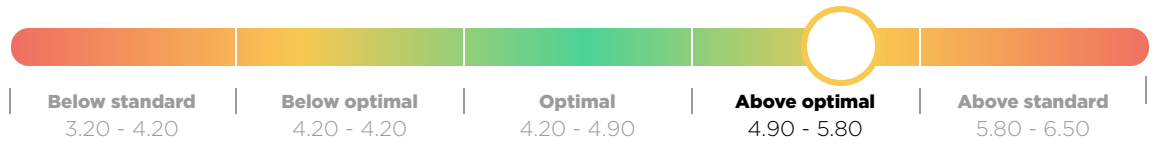
Testosterone Free - Male 

450.00 pmol/L

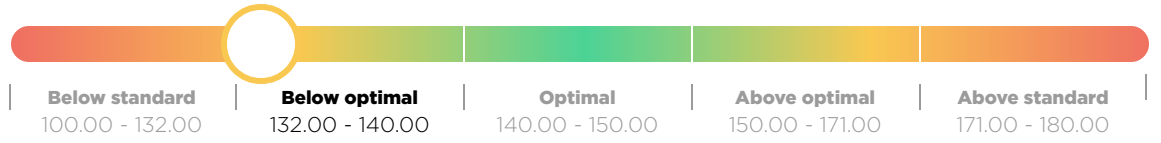


CBC/HEMATOLOGY

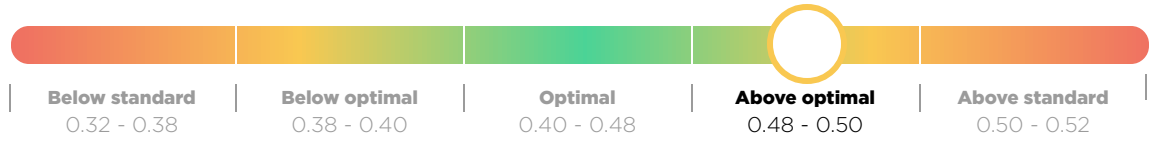
RBC - Male [🔗](#)
5.52 $10E12/L$



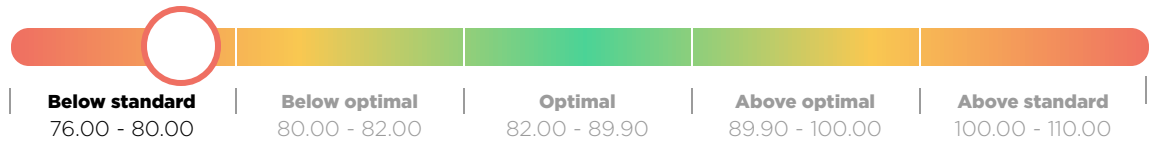
Hemoglobin - Male [🔗](#)
133.00 g/L



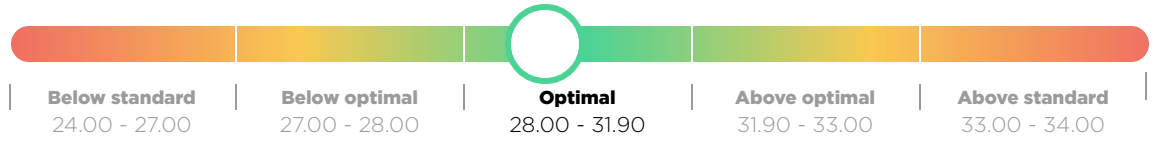
Hematocrit - Male [🔗](#)
0.49 Prop. of 1.0



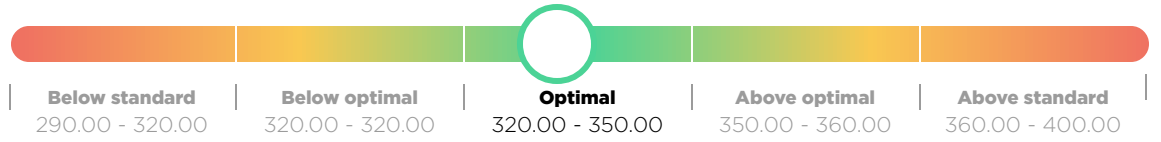
MCV [🔗](#)
79.00 fL



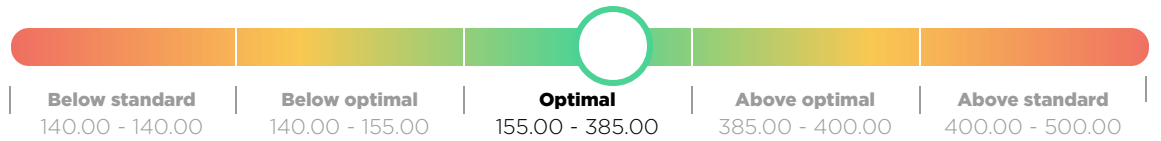
MCH
29.50 pg



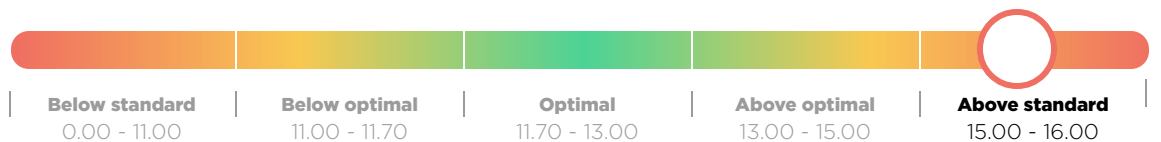
MCHC
332.00 g/L



Platelets
310.00 $\times 10E9/L$



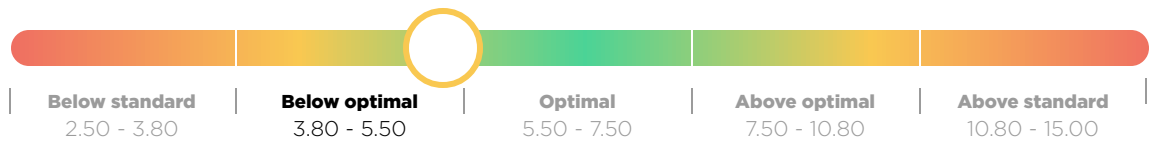
RDW [🔗](#)
15.60 %



WHITE BLOOD CELLS

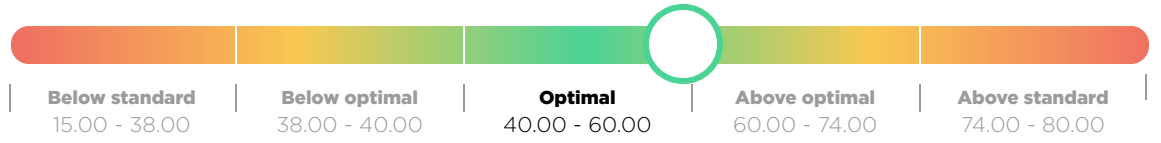
Total WBCs 📌

5.40 giga/L



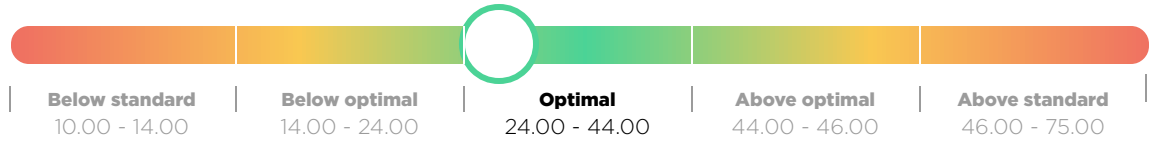
Neutrophils - %

59.26 %



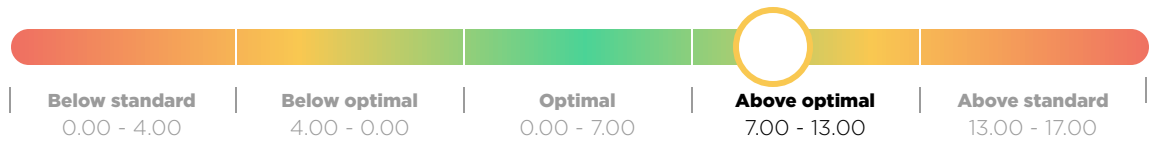
Lymphocytes - %

27.78 %



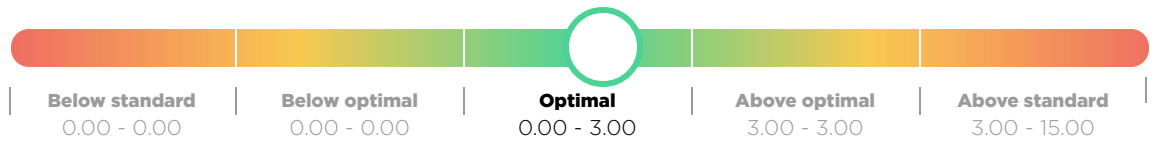
Monocytes - % 📌

9.26 %



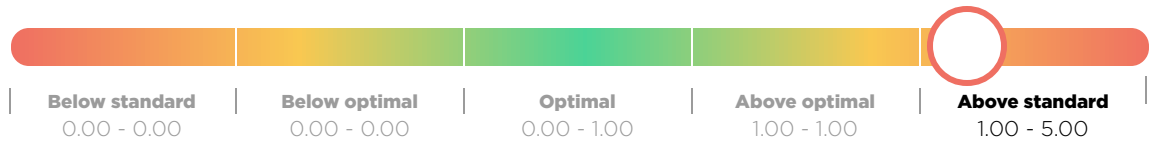
Eosinophils - %

1.85 %



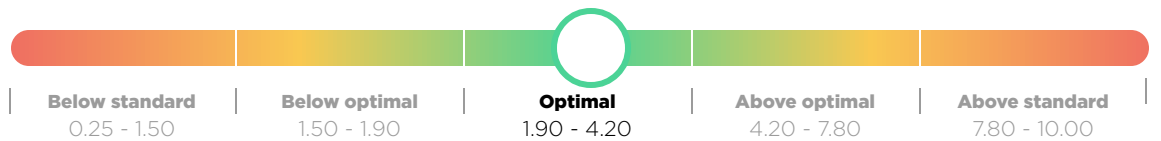
Basophils - % 📌

1.85 %



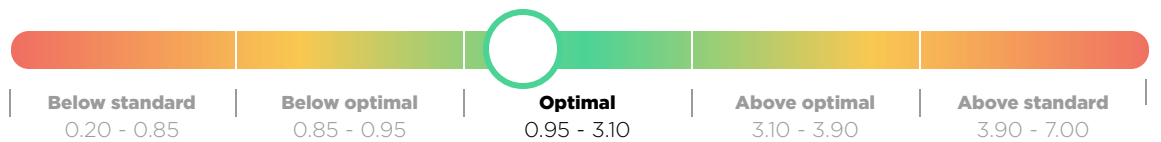
Neutrophils - Absolute

3.20 giga/L



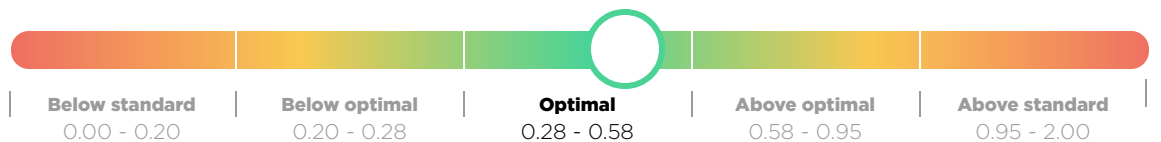
Lymphocytes - Absolute

1.50 giga/L



Monocytes - Absolute

0.50 giga/L

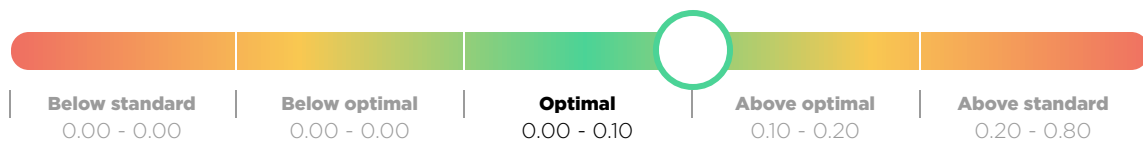


Eosinophils - Absolute

0.10 giga/L



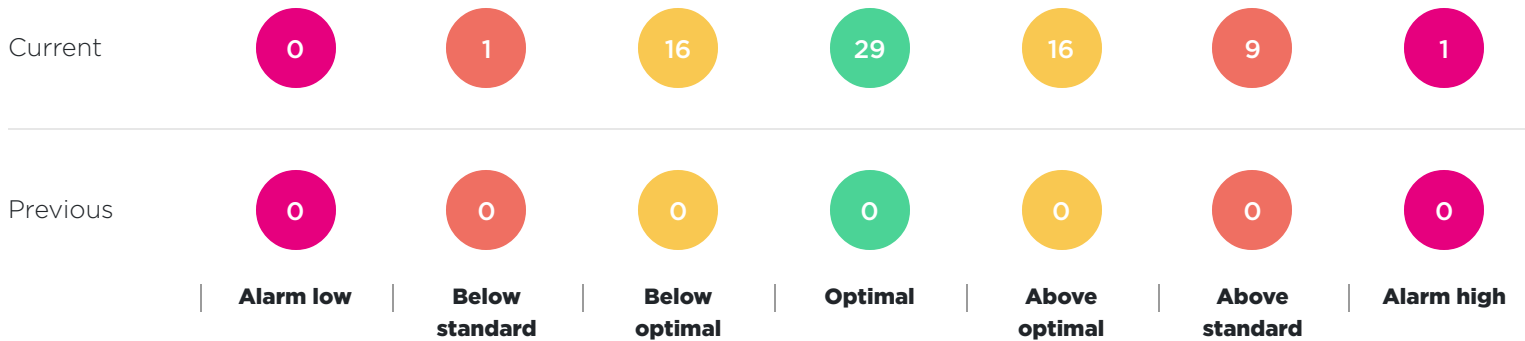
Basophils - Absolute
0.10 giga/L



Blood Test Results Comparative

The Blood Test Results Comparative Report lists the results of the latest and previous 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.

Comparative total number of biomarkers by optimal range



Comparative Report

continued

Biomarker	Current Aug 03 2019	Optimal range	Standard range	Units
Glucose - Fasting 🔗	6.20	4.16 - 4.77	3.61 - 5.50	mmol/L
Hemoglobin A1C 🔗	0.07	0.05 - 0.06	0.00 - 0.06	Proportion of 1.0
Insulin - Fasting 🔗	45.00	12.00 - 30.00	12.00 - 114.00	pmol/L
BUN 🔗	6.80	3.57 - 5.71	2.50 - 8.92	mmol/L urea
Creatinine 🔗	106.00	70.72 - 97.24	35.36 - 132.60	µmol/L
BUN:Creatinine 🔗	0.06	0.04 - 0.06	0.02 - 0.09	Ratio
eGFR Non-Afr. American 🔗	71.00	90.00 - 120.00	60.00 - 120.00	mL/min/1.73m2
Sodium 🔗	145.00	135.00 - 142.00	135.00 - 146.00	mmol/L
Potassium 🔗	3.70	4.00 - 4.50	3.50 - 5.30	mmol/L
Sodium:Potassium 🔗	32.79	30.00 - 35.00	30.00 - 35.00	ratio
Chloride 🔗	105.00	100.00 - 106.00	98.00 - 110.00	mmol/L
CO2 🔗	28.00	25.00 - 30.00	19.00 - 30.00	mmol/L
Anion Gap 🔗	12.30	7.00 - 12.00	6.00 - 16.00	mmol/L
Uric Acid - Male 🔗	360.00	208.18 - 350.93	205.21 - 475.84	µmol/L
Protein - Total 🔗	69.00	69.00 - 74.00	61.00 - 81.00	g/L
Albumin 🔗	38.00	40.00 - 50.00	36.00 - 51.00	g/L
Globulin - Total 🔗	27.00	24.00 - 28.00	19.00 - 37.00	g/L
Albumin:Globulin 🔗	1.55	1.40 - 2.10	1.00 - 2.50	ratio
Calcium 🔗	2.31	2.30 - 2.50	2.15 - 2.60	mmol/L
Calcium:Albumin 🔗	0.06	0.00 - 0.06	0.00 - 0.06	ratio
Phosphorus 🔗	0.99	0.97 - 1.29	0.81 - 1.45	mmol/L
Calcium:Phosphorus 🔗	2.33	1.78 - 2.48	1.47 - 3.25	ratio
Magnesium - Serum 🔗	1.10	0.91 - 1.04	0.62 - 1.04	mmol/L
Alk Phos 🔗	51.00	70.00 - 100.00	35.00 - 115.00	IU/L
AST 🔗	23.00	10.00 - 26.00	10.00 - 35.00	IU/L
ALT 🔗	29.00	10.00 - 26.00	6.00 - 29.00	IU/L
LDH 🔗	135.00	140.00 - 200.00	120.00 - 250.00	IU/L
Bilirubin - Total 🔗	9.00	5.13 - 15.39	3.42 - 20.52	µmol/L
GGT 🔗	35.00	10.00 - 30.00	3.00 - 70.00	IU/L
Iron - Serum 🔗	12.90	15.22 - 23.27	7.16 - 28.64	µmol/L
Ferritin 🔗	24.00	30.00 - 70.00	10.00 - 232.00	µg/L
% Transferrin saturation 🔗	0.21	0.20 - 0.35	0.15 - 0.60	fraction saturation
Cholesterol - Total 🔗	7.20	4.14 - 4.65	3.23 - 5.17	mmol/L
Triglycerides 🔗	1.50	0.79 - 0.90	0.00 - 1.69	mmol/L
LDL Cholesterol 🔗	4.80 ▲	2.07 - 2.59	0.00 - 2.59	mmol/L
HDL Cholesterol 🔗	1.70	1.42 - 1.81	1.19 - 2.59	mmol/L
Non-HDL Cholesterol 🔗	5.50	0.00 - 3.37	0.00 - 3.37	mmol/L
Cholesterol:HDL 🔗	4.23	0.00 - 3.00	0.00 - 5.00	Ratio
Triglyceride:HDL 🔗	0.88	0.00 - 0.87	0.00 - 0.87	ratio
TSH 🔗	3.50	1.30 - 3.00	0.40 - 4.50	mIU/L
T4 - Free 🔗	11.80	12.87 - 19.30	10.30 - 23.17	pmol/L

Biomarker	Current Aug 03 2019	Optimal range	Standard range	Units
T3 - Free 🔗	3.90	4.61 - 5.38	3.53 - 6.45	pmol/L
Thyroid Peroxidase (TPO) Abs LABCORP 🔗	89.00	0.00 - 34.00	0.00 - 34.00	IU/ml
C-Reactive Protein 🔗	0.64	0.00 - 42.86	0.00 - 75.24	nmol/L
Homocysteine 🔗	10.30	5.00 - 7.20	0.00 - 10.30	µmol/L
Vitamin D (25-OH) 🔗	62.00	124.80 - 249.60	49.92 - 249.60	nmol/L
Vitamin B12 🔗	418.00	332.01 - 590.24	147.56 - 811.58	pmol/L
Folate - Serum 🔗	30.20	33.99 - 56.65	12.46 - 61.18	nmol/L
Methylmalonic Acid 🔗	305.00	0.00 - 260.00	0.00 - 318.00	nmol/L
Testosterone Total - Male 🔗	19.00	24.27 - 31.20	8.67 - 38.14	nmol/L
Testosterone Free - Male 🔗	450.00	520.50 - 777.28	159.62 - 777.28	pmol/L
Total WBCs 🔗	5.40	5.50 - 7.50	3.80 - 10.80	giga/L
RBC - Male 🔗	5.52	4.20 - 4.90	4.20 - 5.80	10E12/L
Hemoglobin - Male 🔗	133.00	140.00 - 150.00	132.00 - 171.00	g/L
Hematocrit - Male 🔗	0.49	0.40 - 0.48	0.38 - 0.50	Prop. of 1.0
MCV 🔗	79.00	82.00 - 89.90	80.00 - 100.00	fL
MCH 🔗	29.50	28.00 - 31.90	27.00 - 33.00	pg
MCHC 🔗	332.00	320.00 - 350.00	320.00 - 360.00	g/L
Platelets 🔗	310.00	155.00 - 385.00	140.00 - 400.00	x10E9/L
RDW 🔗	15.60	11.70 - 13.00	11.00 - 15.00	%
Neutrophils - % 🔗	59.26	40.00 - 60.00	38.00 - 74.00	%
Lymphocytes - % 🔗	27.78	24.00 - 44.00	14.00 - 46.00	%
Monocytes - % 🔗	9.26	0.00 - 7.00	4.00 - 13.00	%
Eosinophils - % 🔗	1.85	0.00 - 3.00	0.00 - 3.00	%
Basophils - % 🔗	1.85	0.00 - 1.00	0.00 - 1.00	%
Neutrophils - Absolute 🔗	3.20	1.90 - 4.20	1.50 - 7.80	giga/L
Lymphocytes - Absolute 🔗	1.50	0.95 - 3.10	0.85 - 3.90	giga/L
Monocytes - Absolute 🔗	0.50	0.28 - 0.58	0.20 - 0.95	giga/L
Eosinophils - Absolute 🔗	0.10	0.00 - 0.30	0.00 - 0.50	giga/L
Basophils - Absolute 🔗	0.10	0.00 - 0.10	0.00 - 0.20	giga/L
Copper - Serum 🔗	13.00	10.99 - 27.48	10.99 - 27.48	µmol/L
Zinc - Serum 🔗	11.00	12.23 - 15.29	9.17 - 19.88	µmol/L

Blood Test Score Report

This report shows the biomarkers on the blood test that are farthest from optimal expressed as a %.

The biomarkers that appear closest to the top and the bottom are those biomarkers that are farthest from optimal and should be carefully reviewed.

Biomarker	Lab result	Optimal range		% deviation	Optimal range	
		Low	High		Low	High
Triglycerides	1.50	0.79	0.90	579		
Cholesterol - Total	7.20	4.14	4.65	542		
LDL Cholesterol	4.80	2.07	2.59	477		
Glucose - Fasting	6.20	4.16	4.77	284		
RDW	15.60	11.70	13.00	250		
Hemoglobin A1C	0.07	0.05	0.06	217		
Thyroid Peroxidase (TPO) Abs LABCORP	89.00	0.00	34.00	212		
Homocysteine	10.30	5.00	7.20	191		
RBC - Male	5.52	4.20	4.90	139		
Basophils - %	1.85	0.00	1.00	135		
Insulin - Fasting	45.00	12.00	30.00	133		
Non-HDL Cholesterol	5.50	0.00	3.37	113		
Magnesium - Serum	1.10	0.91	1.04	102		
BUN	6.80	3.57	5.71	101		
Sodium	145.00	135.00	142.00	93		
Cholesterol:HDL	4.23	0.00	3.00	91		
Creatinine	106.00	70.72	97.24	83		
Monocytes - %	9.26	0.00	7.00	82		
TSH	3.50	1.30	3.00	79		
GGT	35.00	10.00	30.00	75		
ALT	29.00	10.00	26.00	69		
Methylmalonic Acid	305.00	0.00	260.00	67		
Hematocrit - Male	0.49	0.40	0.48	62		
Uric Acid - Male	360.00	208.18	350.93	56		
Anion Gap	12.30	7.00	12.00	56		
Triglyceride:HDL	0.88	0.00	0.87	51		
Basophils - Absolute	0.10	0.00	0.10	50		
Neutrophils - %	59.26	40.00	60.00	46		
Calcium:Albumin	0.06	0.00	0.06	42		
Chloride	105.00	100.00	106.00	33		
AST	23.00	10.00	26.00	31		
BUN:Creatinine	0.06	0.04	0.06	31		
Calcium:Phosphorus	2.33	1.78	2.48	29		
Globulin - Total	27.00	24.00	28.00	25		

Biomarker	Lab result	Optimal range		% deviation	Optimal range	
		Low	High		Low	High
Monocytes - Absolute	0.50	0.28	0.58	23		
HDL Cholesterol	1.70	1.42	1.81	21		
Platelets	310.00	155.00	385.00	17		
Eosinophils - %	1.85	0.00	3.00	12		
CO2	28.00	25.00	30.00	10		
Neutrophils - Absolute	3.20	1.90	4.20	7		
Sodium:Potassium	32.79	30.00	35.00	6		
MCHC	332.00	320.00	350.00	-10		
MCH	29.50	28.00	31.90	-12		
Bilirubin - Total	9.00	5.13	15.39	-12		
Eosinophils - Absolute	0.10	0.00	0.30	-17		
Vitamin B12	418.00	332.01	590.24	-17		
Lymphocytes - Absolute	1.50	0.95	3.10	-24		
Albumin:Globulin	1.55	1.40	2.10	-29		
Lymphocytes - %	27.78	24.00	44.00	-31		
Copper - Serum	13.00	10.99	27.48	-38		
% Transferrin saturation	0.21	0.20	0.35	-43		
Phosphorus	0.99	0.97	1.29	-43		
Calcium	2.31	2.30	2.50	-45		
C-Reactive Protein	0.64	0.00	42.86	-49		
Protein - Total	69.00	69.00	74.00	-50		
Total WBCs	5.40	5.50	7.50	-55		
LDH	135.00	140.00	200.00	-58		
Ferritin	24.00	30.00	70.00	-65		
T4 - Free	11.80	12.87	19.30	-67		
Folate - Serum	30.20	33.99	56.65	-67		
Albumin	38.00	40.00	50.00	-70		
Testosterone Free - Male	450.00	520.50	777.28	-77		
Iron - Serum	12.90	15.22	23.27	-79		
MCV	79.00	82.00	89.90	-88		
Zinc - Serum	11.00	12.23	15.29	-90		
Vitamin D (25-OH)	62.00	124.80	249.60	-100		
Potassium	3.70	4.00	4.50	-110		
Alk Phos	51.00	70.00	100.00	-113		
eGFR Non-Afr. American	71.00	90.00	120.00	-113		
Hemoglobin - Male	133.00	140.00	150.00	-120		
Testosterone Total - Male	19.00	24.27	31.20	-126		
T3 - Free	3.90	4.61	5.38	-142		

Blood Test History

The Blood Test History Report lists the results of your Chemistry Screen and CBC tests 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 and allows you to track progress.

Key

- Optimal
- Above / Below optimal
- Above / Below standard
- Alarm high / Alarm low

Biomarker	Latest 1 Test Result Aug 03 2019
Glucose - Fasting 🔗	6.20
Hemoglobin A1C 🔗	0.07
Insulin - Fasting 🔗	45.00
BUN 🔗	6.80
Creatinine 🔗	106.00
BUN:Creatinine 🔗	0.06
eGFR Non-Afr. American 🔗	71.00
Sodium 🔗	145.00
Potassium 🔗	3.70
Chloride 🔗	105.00
CO2 🔗	28.00
Sodium:Potassium 🔗	32.79
Anion Gap 🔗	12.30
Uric Acid - Male 🔗	360.00
Protein - Total 🔗	69.00
Albumin 🔗	38.00
Globulin - Total 🔗	27.00
Albumin:Globulin 🔗	1.55
Calcium 🔗	2.31

Biomarker	Latest 1 Test Result Aug 03 2019
Phosphorus 🔗	0.99
Magnesium - Serum 🔗	1.10
Copper - Serum 🔗	13.00
Zinc - Serum 🔗	11.00
Calcium:Albumin 🔗	0.06
Calcium:Phosphorus 🔗	2.33
Alk Phos 🔗	51.00
AST 🔗	23.00
ALT 🔗	29.00
GGT 🔗	35.00
LDH 🔗	135.00
Bilirubin - Total 🔗	9.00
Iron - Serum 🔗	12.90
Ferritin 🔗	24.00
% Transferrin saturation 🔗	0.21
Cholesterol - Total 🔗	7.20
Triglycerides 🔗	1.50
LDL Cholesterol 🔗	4.80 ▲
HDL Cholesterol 🔗	1.70
Non-HDL Cholesterol 🔗	5.50
Cholesterol:HDL 🔗	4.23
Triglyceride:HDL 🔗	0.88
TSH 🔗	3.50
T4 - Free 🔗	11.80
T3 - Free 🔗	3.90
Thyroid Peroxidase (TPO) Abs LABCORP 🔗	89.00
C-Reactive Protein 🔗	0.64

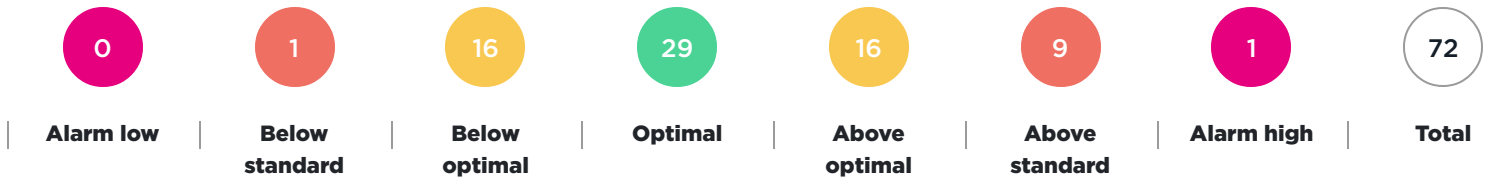
Biomarker	Latest 1 Test Result Aug 03 2019
Homocysteine 🔗	10.30
Vitamin D (25-OH) 🔗	62.00
Vitamin B12 🔗	418.00
Folate - Serum 🔗	30.20
Methylmalonic Acid 🔗	305.00
Testosterone Total - Male 🔗	19.00
Testosterone Free - Male 🔗	450.00
RBC - Male 🔗	5.52
Hemoglobin - Male 🔗	133.00
Hematocrit - Male 🔗	0.49
MCV 🔗	79.00
MCH 🔗	29.50
MCHC 🔗	332.00
RDW 🔗	15.60
Platelets 🔗	310.00
Total WBCs 🔗	5.40
Neutrophils - % 🔗	59.26
Lymphocytes - % 🔗	27.78
Monocytes - % 🔗	9.26
Eosinophils - % 🔗	1.85
Basophils - % 🔗	1.85
Neutrophils - Absolute 🔗	3.20
Lymphocytes - Absolute 🔗	1.50
Monocytes - Absolute 🔗	0.50
Eosinophils - Absolute 🔗	0.10
Basophils - Absolute 🔗	0.10

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

1.50
mmol/L

TRIGLYCERIDES

Serum triglycerides are composed of fatty acid molecules that enter the blood stream 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

7.20
mmol/L

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. An 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.

4.80
mmol/L

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.

6.20
mmol/L

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, into glucose. Increased blood glucose is associated with type 1 & 2 diabetes, metabolic syndrome, and insulin resistance.

15.60
%

RDW [↗](#)

The Red Cell Distribution Width (RDW) is essentially an indication of the degree of abnormal variation in the size of red blood cells (called anisocytosis). Although the RDW will increase with vitamin B12 deficiency, folic acid, and iron anemia, it is increased most frequently with vitamin B12 deficiency anemia.

0.07
Proportion of
1.0

HEMOGLOBIN A1C [↗](#)

The Hemoglobin A1C test measure the amount of glucose that combines with hemoglobin to form glycohemoglobin during the normal lifespan of a red blood cell, which is about 120 days. The amount of glycohemoglobin formed is in direct proportion to the amount of glucose present in the blood stream during the 120-day red blood cell lifespan. In the presence of high blood glucose levels (hyperglycemia) the amount of hemoglobin that is glycosylated to form glycohemoglobin increases and the hemoglobin A1C level will be high. Hemoglobin A1C is used primarily to monitor long-term blood glucose control and to help determine therapeutic options for treatment and management. Studies have shown that the closer to normal the hemoglobin A1C levels are kept, the less likely those patients are to develop the long-term complications of diabetes.

89.00
IU/ml

THYROID PEROXIDASE (TPO) ABS LABCORP [↗](#)

Thyroid peroxidase (TPO) is an enzyme inside the cells of the thyroid that attaches iodine molecules to a tyrosine molecule to form the thyroid hormone Thyroxine or T4. The Thyroid Peroxidase (TPO) antibody test measures the level of antibodies in the blood that attacks the TPO enzyme inside the thyroid cells. Elevated levels of Thyroid Peroxidase (TPO) Antibodies are found in Autoimmune Thyroiditis, such as Hashimoto's Thyroiditis.

10.30
 $\mu\text{mol/L}$

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.

5.52
10¹²/L

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.

1.85
%

BASOPHILS - % [↗](#)

Basophils are one of the circulating white blood cells. They constitute a small percentage of the total white blood cell count. Basophils play an important role in the inflammatory process by releasing important substances, such as heparin, to prevent clotting in the inflamed tissue. Basophils will often be increased with tissue inflammation and is often seen with cases of intestinal parasites.

45.00
pmol/L

INSULIN - FASTING [↗](#)

insulin is the hormone released 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.

5.50
mmol/L

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.

1.10
mmol/L

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. Magnesium is excreted by the kidney so an increased serum magnesium is associated with kidney dysfunction.

6.80
mmol/L urea

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. Increased BUN may be due to an increased production of urea by the liver or decreased excretion by the kidney. BUN is a test used predominantly to measure kidney function, where it will be increased. An increased BUN is also associated with dehydration and hypochlorhydria.

145.00
mmol/L

SODIUM

Sodium is an important blood electrolyte and functions to maintain osmotic pressure, acid-base balance, aids in nerve impulse transmission, as well as renal, cardiac and adrenal functions. Increased sodium is most often due dehydration (sweating, diarrhea, vomiting, polyuria, etc.) or adrenal stress.

4.23
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%.

106.00
 μ mol/L

CREATININE

Creatinine is produced primarily from the contraction of muscle and is removed by the kidneys. A disorder of the kidney and/or urinary tract will reduce the excretion of creatinine and thus raise blood serum levels. Creatinine is traditionally used with BUN to assess for impaired kidney function. Elevated levels can also indicate dysfunction in the prostate.

9.26
%

MONOCYTES - %

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.

3.50
mIU/L

TSH

TSH or thyroid stimulating hormone is a hormone produced by the anterior pituitary to control the thyroid gland's production of T4, to store T4 and to release it into the bloodstream. TSH synthesis and secretion is regulated by the release of TRH (Thyroid Releasing Hormone) from the hypothalamus. TSH levels describe the body's desire for more thyroid hormone (T4 or T3), which is done in relation to the body's need for energy. A high TSH is the body's way of saying "we need more thyroid hormone". Optimal TSH levels, in a normally functioning pituitary, can tell us that the amount of T4 in the blood match the body's current need and/or ability to utilize the energy necessary for optimal cell function. When the pituitary is not functioning in an optimal manner, the TSH test can be quite misleading.

35.00
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. GGT will be liberated into the bloodstream following cell damage or destruction and/or biliary obstruction. GGT is induced by alcohol and can be elevated following chronic alcohol consumption and in alcoholism.

29.00
IU/L

ALT [↗](#)

ALT is an enzyme present in high concentrations in the liver and to a lesser extent skeletal muscle, the heart, and kidney. ALT will be liberated into the bloodstream following cell damage or destruction. Any condition or situation that causes damage to the hepatocytes will cause leakage of ALT into the bloodstream. These include exposure to chemicals, viruses (viral hepatitis, mononucleosis, cytomegalovirus, Epstein Barr, etc.), alcoholic hepatitis. The most common non-infectious cause of an increased ALT is a condition called steatosis (fatty liver).

305.00
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.

0.49
Prop. of 1.0

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.

360.00
μmol/L

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.

12.30
mmol/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.

0.88
ratio

TRIGLYCERIDE:HDL [↗](#)

The Triglyceride:HDL ratio is determined from serum triglyceride and HDL levels. Increased ratios are associated with increased cardiovascular risk and an increased risk of developing insulin resistance and Type II Diabetes.

Below Optimal

3.90
pmol/L

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.

19.00
nmol/L

TESTOSTERONE TOTAL - MALE [↗](#)

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

133.00
g/L

HEMOGLOBIN - MALE [↗](#)

Hemoglobin is the oxygen carrying molecule in red blood cells. Measuring hemoglobin is useful to determine the cause and type of anemia and for evaluating the efficacy of anemia treatment.

71.00
mL/min/1.73m²

EGFR NON-AFR. AMERICAN [↗](#)

The eGFR is a calculated estimate of the kidney's Glomerular Filtration Rate. It uses 4 variables: age, race, creatinine levels and gender to estimate kidney function. Levels below 90 are an indication of a mild loss of kidney function. Levels below 60 indicate a moderate loss of kidney function and may require a visit to a renal specialist for further evaluation.

51.00
IU/L

ALK PHOS [↗](#)

Alkaline phosphatase (ALP) is a group of isoenzymes that originate in the bone, liver, intestines, skin, and placenta. It has a maximal activity at a pH of 9.0-10.0, hence the term alkaline phosphatase. Decreased levels of ALP have been associated with zinc deficiency.

3.70
mmol/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.

62.00
nmol/L

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.

11.00
μmol/L

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.

79.00
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). A decreased MCV is associated with iron and B6 deficiency.

12.90
μmol/L

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.

450.00
pmol/L

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. Decreased free testosterone levels are associated with a number of dysfunctions including metabolic syndrome, an increased risk of cardiovascular disease, increase in abdominal obesity, decreased libido and erectile dysfunction.

38.00
g/L

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.

30.20
nmol/L

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.

11.80
pmol/L

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 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.

24.00
µg/L

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.

135.00
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.

5.40
giga/L

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, an immune insufficiency and may be seen in people eating a raw food diet.

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Highly detailed and interpretive descriptions of the results presented in each of the assessment and analysis section reports.

Appendix

53 Disclaimer



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