Demo Practice

Functional Health Report

A comprehensive analysis of your patient's test results.

BLOOD CHEMISTRY ANALYSIS

Practitioner Report

Prepared for	Male Sample 58 year old male born Nov 01, 1966 Fasting
Requested by	Dr. Sample Practitioner, ND Optimal DX
Collected Date	Sep 05, 2025
Lab	Lab Corp
Powered by	Optimal DX

What's Inside?

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An introduction to Functional Blood Chemistry Analysis and this report.

SECTION 2: ANALYSIS

A full breakdown of all individual biomarker results.

SECTION 3: ASSESSMENT

An in-depth functional system and nutrient evaluation.

SECTION 4: HEALTH CONCERNS

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Additional information pertinent to this report.

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

Introduction

Dr. Sample Practitioner's Report Notes

This report highlights the notes made by Dr. Sample Practitioner

REPORT NOTES

Health Goals:

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

Signs and Symptoms

The following signs and symptoms were reported:

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

Functional Blood Chemistry Analysis (FBCA)

Functional Blood Chemistry Analysis is the process by which blood biomarkers are organized, analyzed, and interpreted. FBCA provides a comprehensive assessment of the state of health in the main functional systems and the supporting accessory systems of the body. It also gives us a window into the nutrient status of the body and whether you are trending towards or away from optimal health.

Dr. Sample Practitioner, ND
Optimal DX

WHY BLOOD TESTING?

Blood has a lot to tell us about our 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 people feel unwell long before a traditional blood test becomes diagnostic. More often than not, our patients 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 reference ranges used on a traditional lab test are based on statistics, not on whether a certain value represents good health or optimal physiological function. The problem is that "normal" ranges represent "average" populations rather than the optimal level required to maintain good health. Most "normal" reference ranges are too broad to adequately detect health problems before they become pathology and are not useful for detecting the emergence of dysfunction.

THE FUNCTIONAL APPROACH

The functional approach to chem screen and CBC analysis is oriented around changes in physiology and not pathology. We use ranges based on optimal physiology, not the "normal" population. This results in a tighter "Functional Physiological Range," which allows us to evaluate the area within the "Normal" reference range to detect patients with changes in physiological "function." We can identify the factors that obstruct the patient from achieving optimal physiological, biochemical, and metabolic functioning in their 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 a client's 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 the 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.

Practitioner Report

Your Practitioner Report is the result of a detailed and proprietary algorithmic analysis of your patient's complex and comprehensive blood biomarkers.

Dr. Sample Practitioner, ND
Optimal DX

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report uniquely organizes 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 the 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 Functional Body Systems and Accessory Reports show the level of dysfunction that exists in the various physiological systems in the body.

The Nutrient Systems report gives you an indication of your client's general nutritional status as well as the degree of deficiency for individual nutrients.

The Assessment section also includes the Practitioner Only "Clinical Dysfunctions Report", which lists the individual dysfunctions and conditions themselves that may be causing the changes seen in the Body and Accessory Systems reports.

ANALYSIS

The Analysis section shows you the actual results of the blood test itself.

The Blood Test Results Report lists the results of the patient's blood test results and shows you if an individual biomarker is optimal, outside of the optimal range or outside of the standard range.

The Blood Test Results Comparative Report compares results of the patient's 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 CONCERNS

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

Based on the results of the analysis of this blood test, there may be a "Recommended Further Testing" report, which indicates areas that may require further investigation.

APPENDIX

The appendix may contain the "What to Look For" report, which contains detailed descriptions and interpretation explanations of each biomarker that is out of optimal giving you even more information on dysfunctions associated with each biomarker.

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

Analytics

Blood Test Results

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

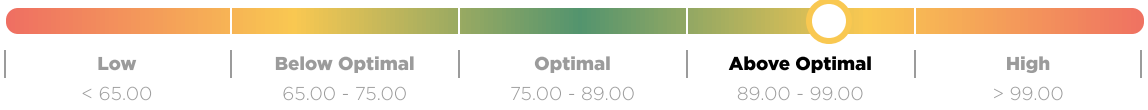
Some biomarkers in the Blood Test Results Report that are above or below the Optimal or marked Low or High may be hyperlinked into the "Out of Optimal Range Report", so you can read some background information on those biomarkers and why they may be high or low.

0	2	11	55	8	5	0	81
Alarm Low	**Low**	**Below Optimal**	**Optimal**	**Above Optimal**	**High**	**Alarm High**	**Total**

BLOOD GLUCOSE

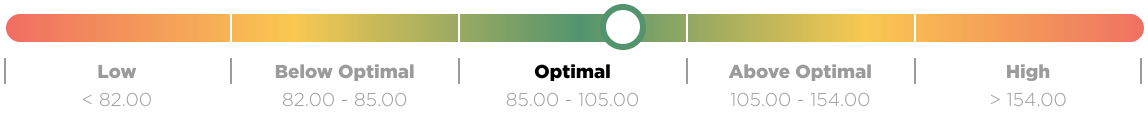
Keeping your blood sugar balanced is one of the best ways to maintain steady energy and overall wellness. The tests in this category show how well your body handles sugar both day-to-day and over longer periods, helping to catch early signs of trouble before they turn into bigger issues. By taking a functional approach, we can use these results to make simple yet powerful changes to support healthier blood sugar levels.

Glucose Fasting
95.00 mg/dL



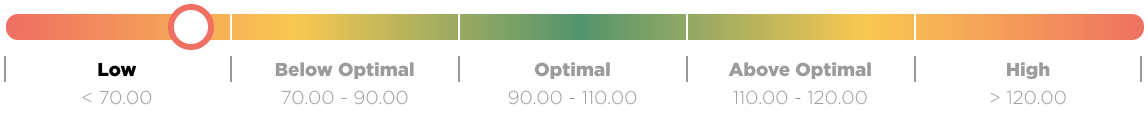
Hemoglobin A1C
5.00 %

eAG
99.00 mg/dl

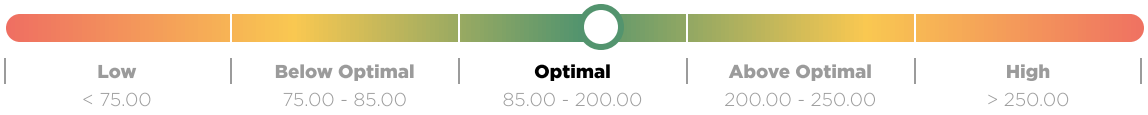


Insulin - Fasting
4.80 µIU/ml

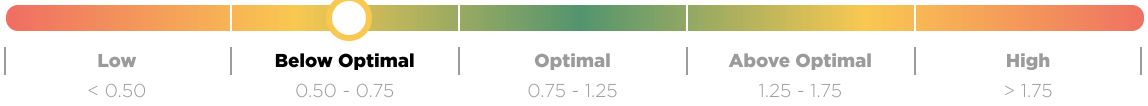
HOMA2-%B
62.20 %



HOMA2-%S
157.30 %

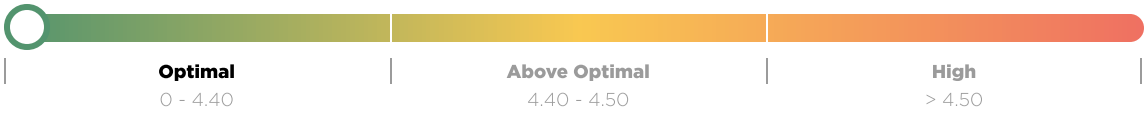


HOMA2-IR
0.63 Index



QUICKI
0.38 Index

Triglyceride-Glucose Index (TyG)
0.00 Index

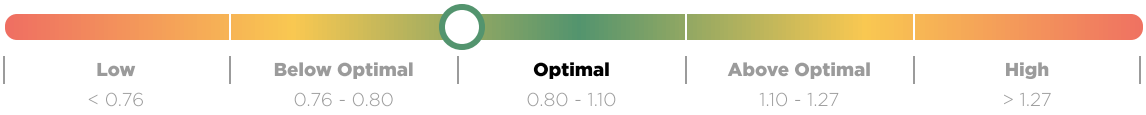


RENAL

Your kidneys act as filters, clearing out waste and keeping the right balance of fluids and minerals in your blood. These biomarkers measure how well your kidneys are doing their job, often catching early changes so we can address them before they become bigger problems. A functional approach means looking at the whole picture—from diet and hydration to everyday habits that support kidney health.

BUN
11.00 mg/dL

Creatinine
0.81 mg/dL



BUN : Creatinine
13.58 Ratio

PROSTATE

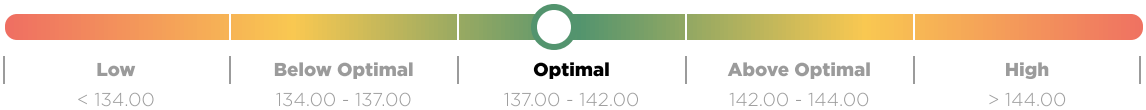
Your prostate gland's health can be monitored through specific proteins it produces, helping us understand how it's functioning over time. By tracking these markers, we can detect changes early and guide you toward choices that support optimal prostate health as you age.

PSA - Total
0.80 ng/ml

ELECTROLYTES

Electrolytes help your body stay hydrated, regulate blood pressure, and keep your muscles and nerves working properly. When these levels are out of balance, you may feel fatigued, dizzy, or have muscle cramps. By monitoring these important minerals in your blood, we can understand how well your body maintains its internal balance and guide you toward the right choices to help you feel energized and well.

Sodium
139.00 mEq/L



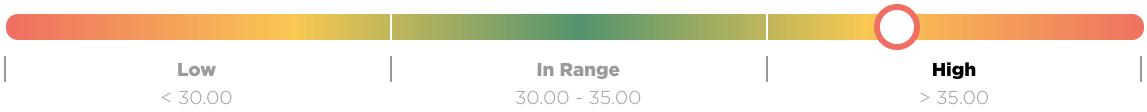
Potassium
4.50 mEq/L

Chloride
103.00 mEq/L

CO2
24.00 mEq/L

Sodium : Potassium

37.00 ratio

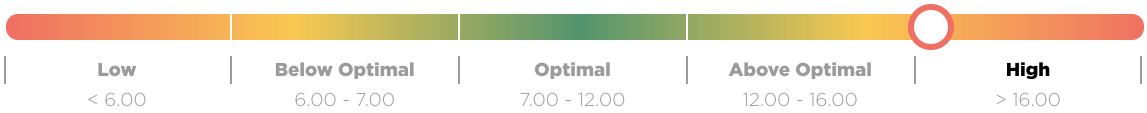


METABOLIC

Metabolic biomarker analysis provides key insights into how your body manages energy, muscle function, and electrolyte balance. By spotting early changes in these biomarkers, we can develop appropriate support strategies to keep your metabolism running smoothly.

Anion Gap

16.50 mEq/L

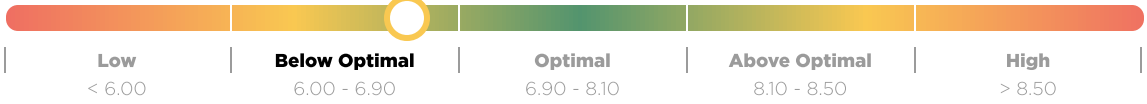


PROTEINS

Protein analysis gives us a clear look at the proteins in your blood, which play a vital role in keeping you healthy by supporting everything from your immune system to your overall nutrition. With these insights, we can help you maintain a balanced level of these important proteins and boost your well-being.

Protein - Total

6.70 g/dL

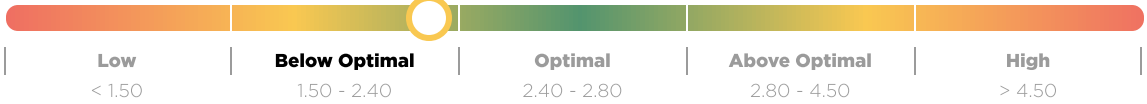


Albumin

4.40 g/dL

Globulin - Total

2.30 g/dL



Albumin : Globulin

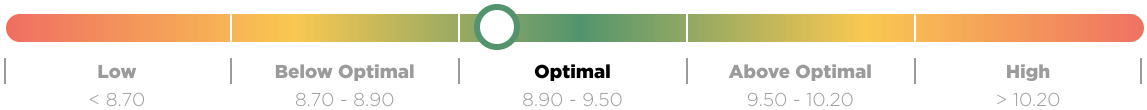
1.90 ratio

MINERALS

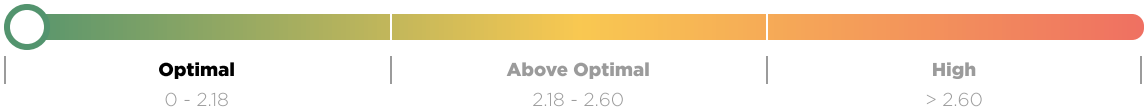
Minerals are essential for everything from bone health to energy production and immune function. By measuring both the minerals in your blood and inside your cells, we can understand if you're getting and properly using these vital nutrients, helping us guide you toward choices that maintain optimal mineral balance for your health.

Calcium

9.00 mg/dL



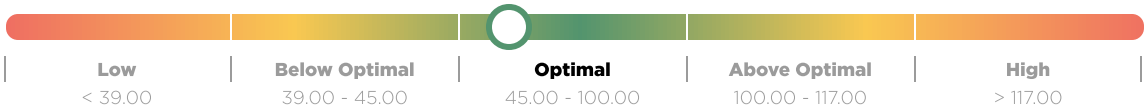
Calcium : Albumin
0.00 ratio



LIVER AND GB

Liver and gallbladder biomarkers give us an indication of how well your liver and gallbladder are working to support your overall health. By spotting early signs of stress or imbalance, we can make appropriate support strategies to help keep these vital organs functioning smoothly and support their optimal function.

Alk Phos
56.00 IU/L



AST
24.00 IU/L

ALT
25.00 IU/L

Bilirubin - Total
1.00 mg/dL

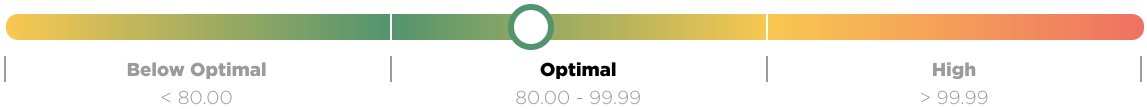
LIPIDS

The lipid panel assesses the distribution and ratios of various lipid fractions. By examining these different markers, we can better understand the role lipids play in your cardiovascular health.

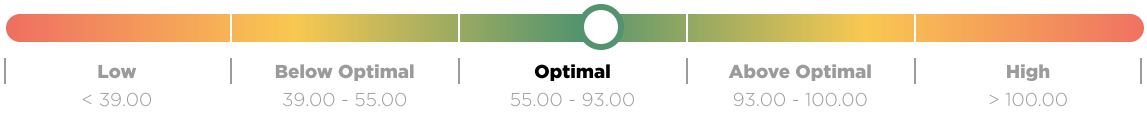
Cholesterol - Total
221.00 mg/dL

Triglycerides
114.00 mg/dL

LDL Cholesterol
87.50 mg/dL

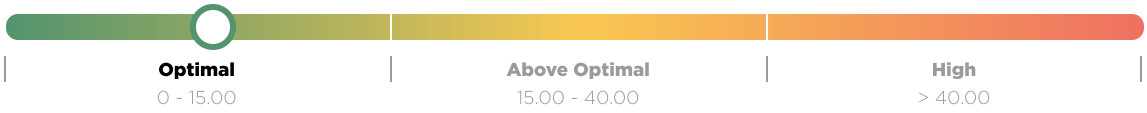


HDL Cholesterol
79.00 mg/dL

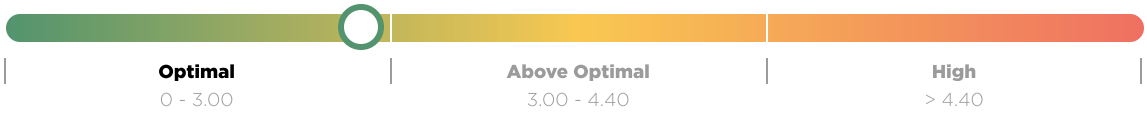


Non-HDL Cholesterol
87.00 mg/dl

VLDL Cholesterol
8.00 mg/dl

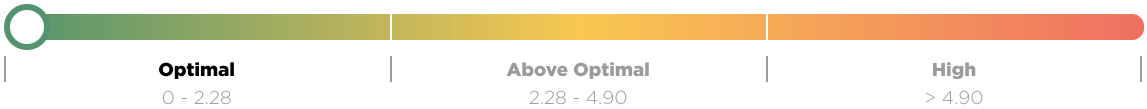


Cholesterol : HDL
2.80 Ratio



Triglyceride:HDL
0.70 ratio

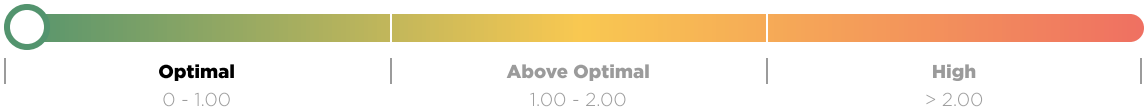
LDL : HDL
0.00 Ratio



CARDIOMETABOLIC

Your heart and blood vessel health depends on many complex factors, and these specialized tests help us understand how your cardiovascular system is working at a deeper level than standard heart tests. By looking at these biomarkers, we can spot potential concerns early and guide you toward specific strategies that best support your long-term heart health and overall wellness.

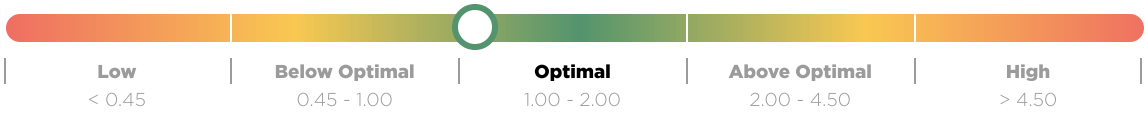
Atherogenic Index of Plasma (AIP)
0.00 Index



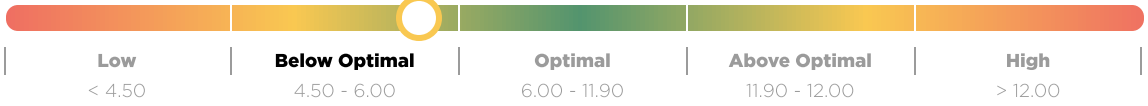
THYROID

Your thyroid is like your body's metabolic thermostat, controlling energy production, temperature regulation, and countless other functions throughout your body. By looking at thyroid biomarkers, we can understand how well your thyroid is working at every stage, helping us guide you toward strategies that support optimal thyroid function.

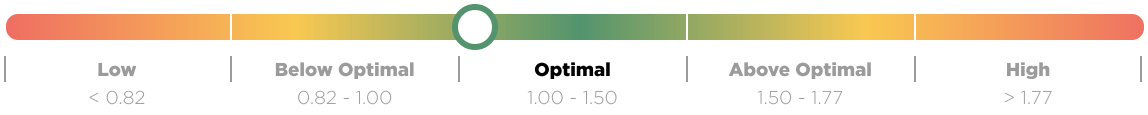
TSH
1.08 µU/mL



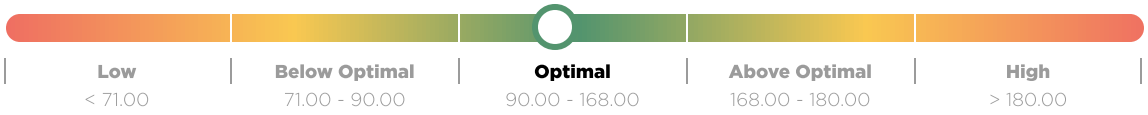
T4 - Total
5.70 µg/dL



T4 - Free
1.04 ng/dL

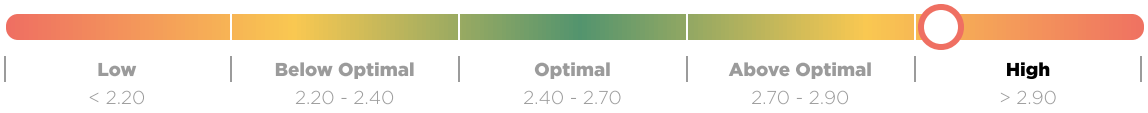


T3 - Total
123.00 ng/dL



T3 - Free
3.40 pg/ml

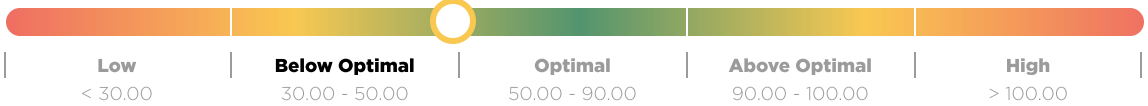
Free T3 : Free T4
3.27 Ratio



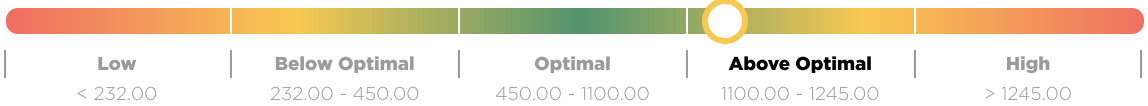
VITAMINS

Vitamin biomarker analysis helps us see if your body is getting the right vitamins to produce energy, support your immune system, and maintain overall health. By measuring both the amounts and active forms of these vital nutrients, we can understand if you're getting and properly using the vitamins you need, helping us guide you toward choices that optimize your nutritional status.

Vitamin D (25-OH)
49.40 ng/ml



Vitamin B12
1128.00 pg/ml



HORMONES

Hormones act as your body's messengers, controlling energy, mood, sleep, and overall well-being. When they are out of balance, you may feel tired, stressed, or have trouble with weight, focus, or sleep. By measuring various hormone levels, we can understand how well your endocrine system is performing as a whole and guide you toward strategies that help maintain optimal hormonal balance.

DHEA-S
117.40 µg/dL

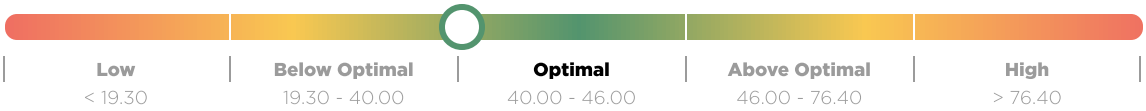
FSH
3.00 mIU/ml

LH
2.00 mIU/ml

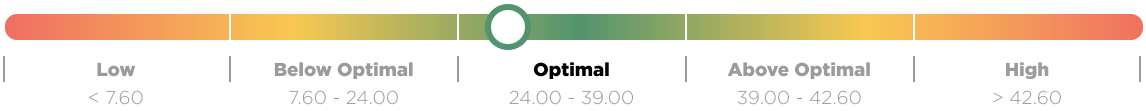
Testosterone Total
820.00 ng/dl

Testosterone Free
167.32 pg/ml

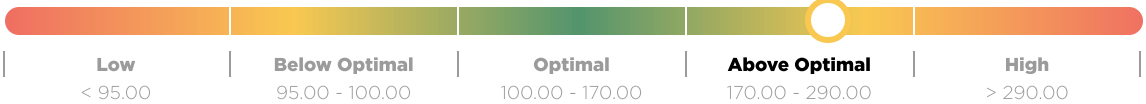
Sex Hormone Binding Globulin
40.00 nmol/L



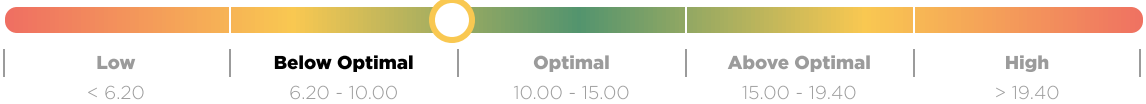
Estradiol
27.70 pg/ml



IGF-1
244.00 ng/ml



Cortisol - Total/AM
9.90 µg/dL



Cortisol : DHEA-S
0.08 ratio

Testosterone Bioavailable
401.16 ng/dl

% Testosterone Bioavailable
48.92 %

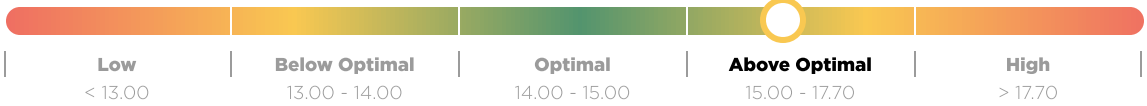
% Testosterone Free
2.04 %

CBC

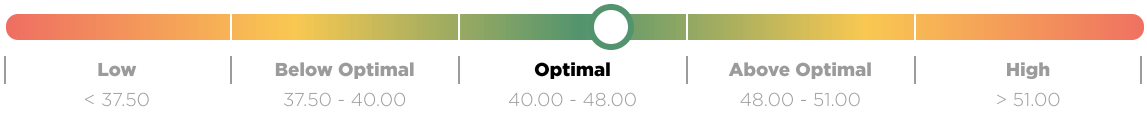
Your blood is responsible for carrying oxygen and supporting your immune system. The biomarkers on the Complete Blood Count (CBC) help us understand how well they're doing their job. By looking at the number, size, and characteristics of the different blood cells in the CBC, we can spot early signs of imbalances that might affect your energy, immune function, or overall health. We can then guide you toward choices that support healthy blood cell production.

RBC
5.18 m/cumm

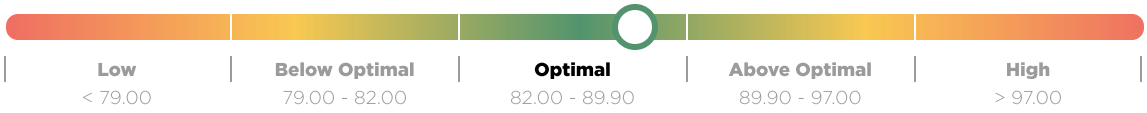
Hemoglobin
16.10 g/dl



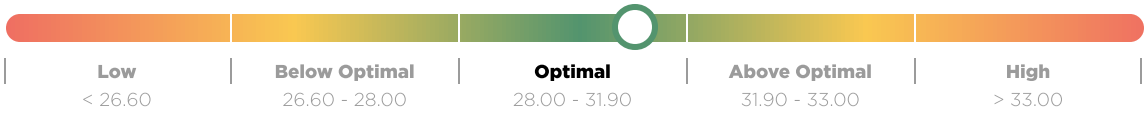
Hematocrit
45.40 %



MCV
88.00 fL

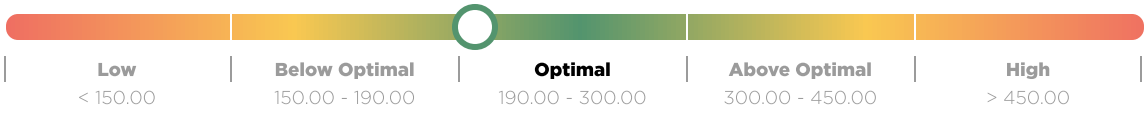


MCH
31.10 pg



MCHC
35.50 g/dL

Platelets
199.00 10E3/µL

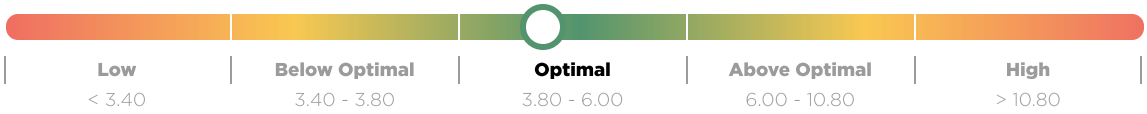


RDW
14.40 %

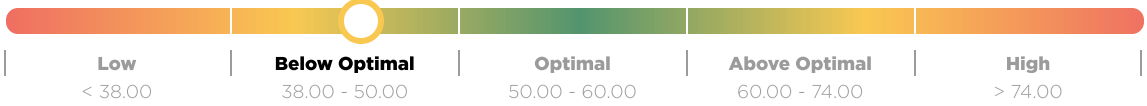
WBCS

White blood cell analysis checks the different types of cells that help fight off infections and keep your body balanced. With this information, we can spot any early signs of immune-related issues and put together strategies to support your immune health and overall well-being.

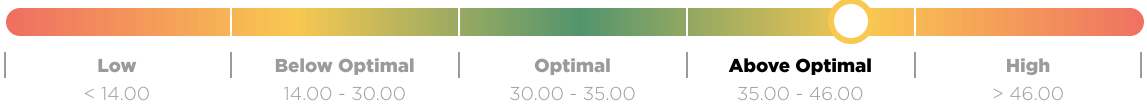
Total WBCs
4.60 k/cumm



Neutrophils - %
45.00 %



Lymphocytes - %
43.00 %

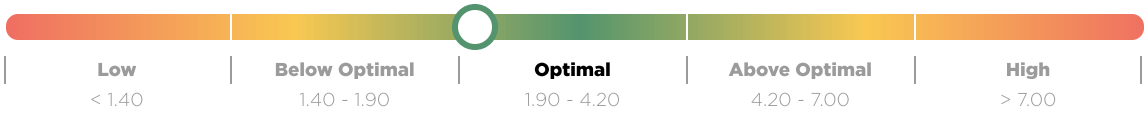


Monocytes - %
7.00 %

Eosinophils - %
4.00 %

Basophils - %
1.00 %

Neutrophils - Absolute
2.10 k/cumm

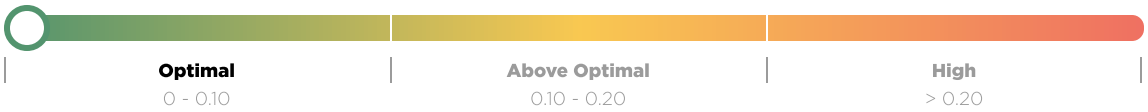


Lymphocytes - Absolute
1.90 k/cumm

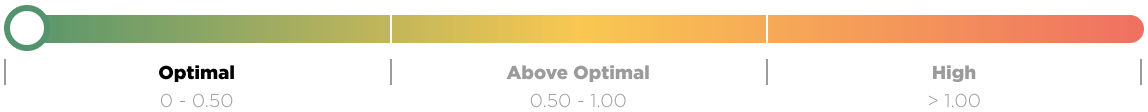
Monocytes - Absolute
0.30 k/cumm

Eosinophils - Absolute
0.20 k/cumm

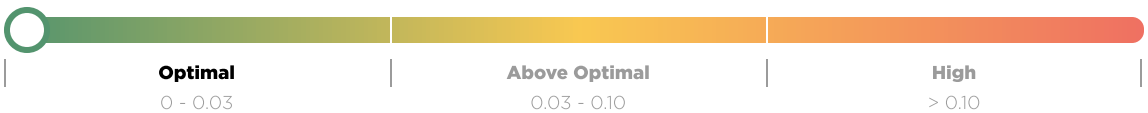
Basophils - Absolute
0.00 k/cumm



Immature Granulocytes - %
0.00 %



Immature Granulocytes - Absolute
0.00 k/cumm



Out of Optimal Range

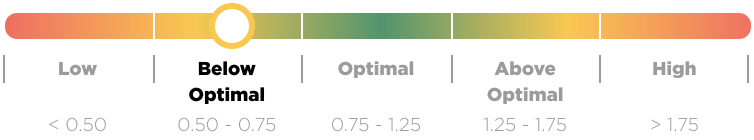
The following report shows all of the biomarkers that are out of the optimal range and gives you some important information as to why each biomarker might be elevated or decreased.

0	2	11	8	5	0
Alarm Low	Low	Below Optimal	Above Optimal	High	Alarm High

BLOOD GLUCOSE

HOMA2-IR

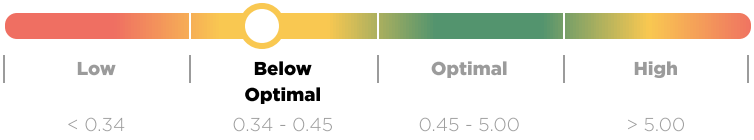
0.63 Index



The HOMA2 (Homeostasis Model Assessment) calculator is a tool used to express the degree of insulin sensitivity and insulin resistance. HOMA2-IR helps estimate the degree of cellular resistance to the hormone insulin. Interestingly, a HOMA2-IR that's below optimal shows an increasing trend towards reactive hypoglycemia.

QUICKI

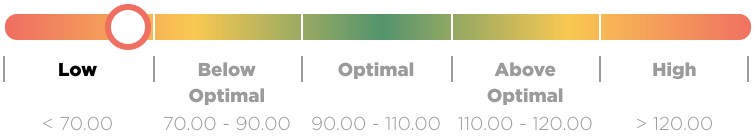
0.38 Index



QUICKI is a simple calculation that uses fasting glucose and fasting insulin to assess insulin sensitivity. Decreased QUICKI results are associated with a trend towards increasing insulin resistance, cardiovascular risk, metabolic syndrome, and fatty liver.

HOMA2-%B

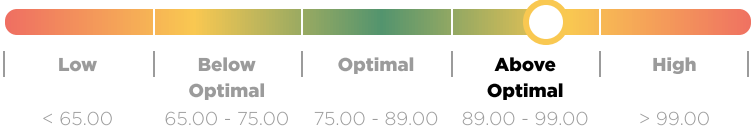
62.20 %



The HOMA2 (Homeostasis Model Assessment) calculator is a tool used to express the degree of insulin sensitivity and insulin resistance. HOMA2-%B helps estimate the beta-cell function of the pancreas. Beta-cells produce insulin. Decreased HOMA2-%B levels indicate a decreased output of insulin from the pancreas. This, along with a number of other factors, points to an increasing trend towards the progression of Type 2 Diabetes.

Glucose Fasting

95.00 mg/dL

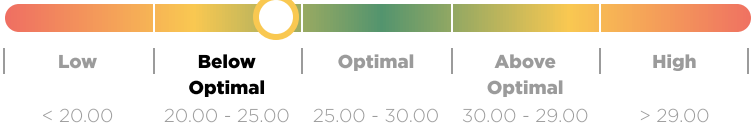


Blood glucose levels are regulated by several important hormones including insulin and glucagon. Glucose is also directly formed in the body from carbohydrate digestion and from the conversion in the liver of other sugars, such as fructose, and fat into glucose. Increased blood glucose is associated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

ELECTROLYTES

CO2

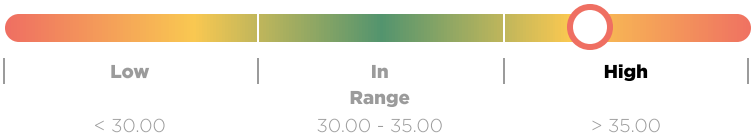
24.00 mEq/L



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.

Sodium : Potassium

37.00 ratio

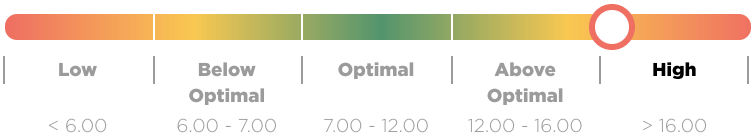


The Sodium:Potassium ratio is determined from the serum sodium and serum potassium levels. Both of these elements are under the influence of the adrenal glands. An increased Sodium:Potassium ratio is associated with acute stress.

METABOLIC

Anion Gap

16.50 mEq/L

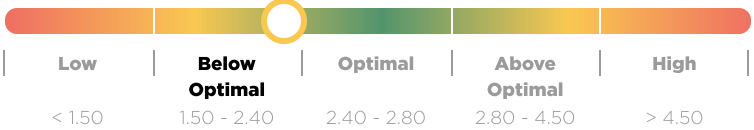


The anion gap is the measurement of the difference between the sum of the sodium and potassium levels and the sum of the serum CO2/bicarbonate and chloride levels. Increased levels are associated with thiamine deficiency and metabolic acidosis.

PROTEINS

Globulin - Total

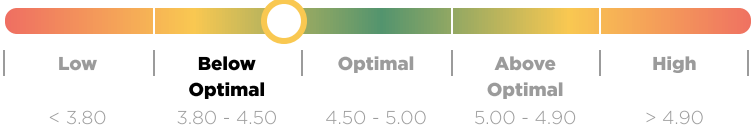
2.30 g/dL



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

Albumin

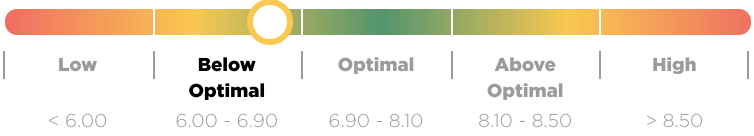
4.40 g/dL



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

Protein - Total

6.70 g/dL



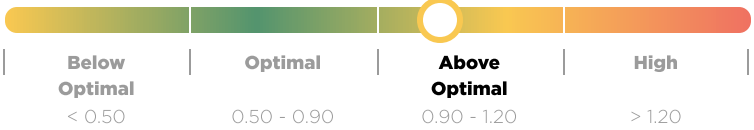
Low	Below Optimal	Optimal	Above Optimal	High
< 6.00	6.00 - 6.90	6.90 - 8.10	8.10 - 8.50	> 8.50

Total serum protein is composed of albumin and total globulin. Conditions that affect albumin and total globulin readings will impact the total protein value. A decreased total protein can be an indication of malnutrition, digestive dysfunction due to HCl need, or liver dysfunction. Malnutrition leads to a decreased total protein level in the serum primarily from lack of available essential amino acids.

LIVER AND GB

Bilirubin - Total

1.00 mg/dL



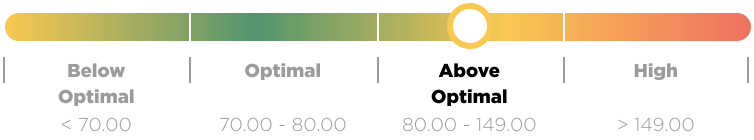
Below Optimal	Optimal	Above Optimal	High
< 0.50	0.50 - 0.90	0.90 - 1.20	> 1.20

The total bilirubin is composed of two forms of bilirubin: Indirect or unconjugated bilirubin, which circulates in the blood on its way to the liver and direct or conjugated bilirubin, which is the form of bilirubin made water-soluble before it is excreted in the bile. An increase in total bilirubin is associated with dysfunction or blockage in the liver, gallbladder, or biliary tree, or red blood cell hemolysis.

LIPIDS

Triglycerides

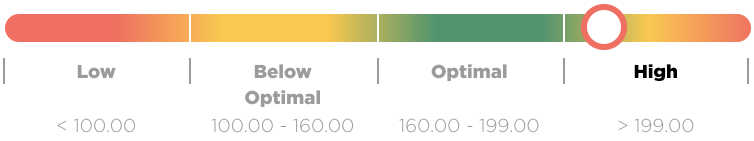
114.00 mg/dL



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

Cholesterol - Total

221.00 mg/dL

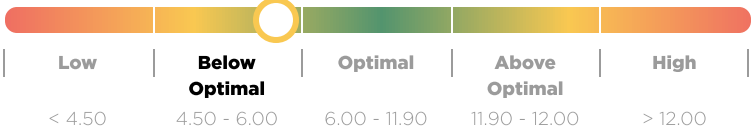


Cholesterol is a steroid found in every cell of the body and in the plasma. It is an essential component in the structure of the cell membrane where it controls membrane fluidity. It provides the structural backbone for every steroid hormone in the body, which includes adrenal and sex hormones and vitamin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

THYROID

T4 - Total

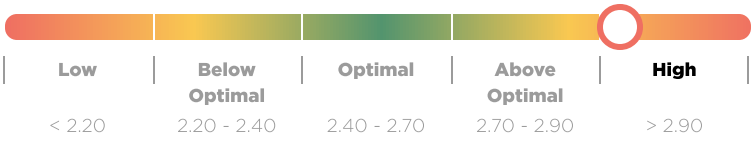
5.70 µg/dL



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

Free T3 : Free T4

3.27 Ratio

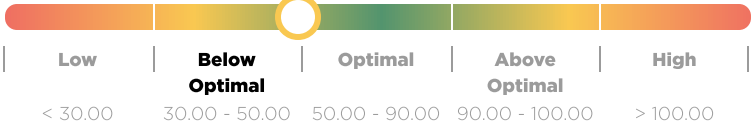


The Free T3: Free T4 ratio is a measure that assesses the balance between two important thyroid hormones in your blood: Free T3 (triiodothyronine) and Free T4 (thyroxine). These hormones play vital roles in regulating energy, metabolism, and many other bodily functions. A normal ratio indicates a balanced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

VITAMINS

Vitamin D (25-OH)

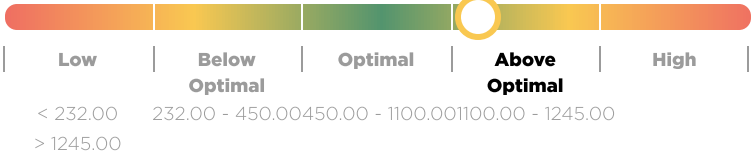
49.40 ng/ml



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.

Vitamin B12

1128.00 pg/ml

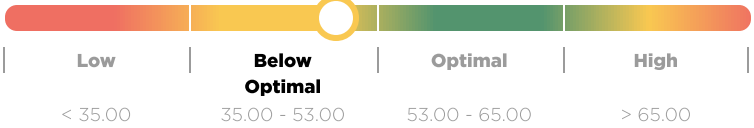


Vitamin B12 is an essential nutrient for DNA synthesis and red blood cell maturation and is also necessary for myelin sheath formation and the maintenance of nerves in the body. Paradoxically, elevated serum B12 levels may be accompanied by signs of B12 deficiency and may indicate a functional deficiency marked by inadequate uptake at the tissue level.

HORMONES

% Testosterone Bioavailable

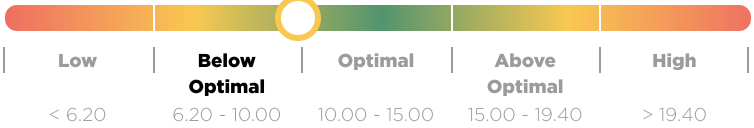
48.92 %



This test measures the % of bioavailable testosterone found in the blood. Bioavailable testosterone is the amount of testosterone in the blood that is readily available for biological activity. Decreased levels of % bioavailable testosterone are associated with a number of dysfunctions including metabolic syndrome, an increased risk of cardiovascular disease, an increase in abdominal obesity, decreased libido, and erectile dysfunction.

Cortisol - Total/AM

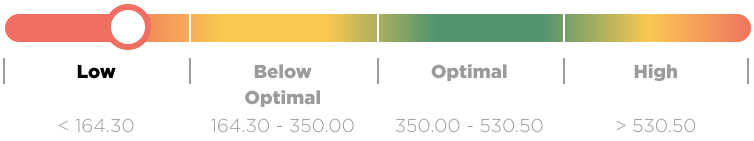
9.90 µg/dL



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

DHEA-S

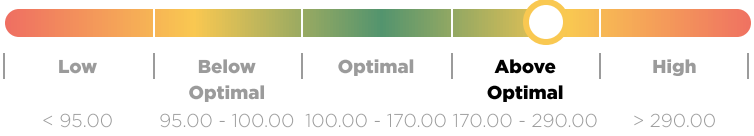
117.40 µg/dL



DHEA is produced primarily from the adrenals and is the most abundant circulating steroid in the human body and influences more than 150 known anabolic (repair) functions throughout the body and brain. It is the precursor for the sex hormones: testosterone, progesterone, and estrogen. Decreased levels are associated with adrenal insufficiency and many common age-related conditions, including diseases of the nervous, cardiovascular, and immune systems such as metabolic syndrome, coronary artery disease, osteoporosis, mood disorders, and sexual dysfunction. Ideally, DHEA levels should be maintained at the level of a healthy 30-year-old to maximize the anti-aging effects

IGF-1

244.00 ng/ml

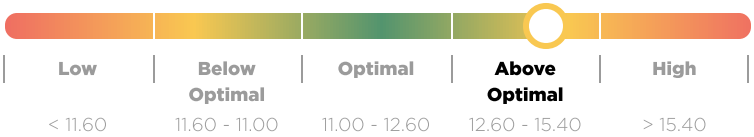


Insulin-like growth factor-1 (IGF-1), also known as somatomedin C, is a hormone that works with growth hormone to promote the normal development of bone, tissue, and lean muscle mass. Production of IGF-1 is stimulated by growth hormone from the pituitary gland. An elevation in IGF-1 can be associated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

CBC

RDW

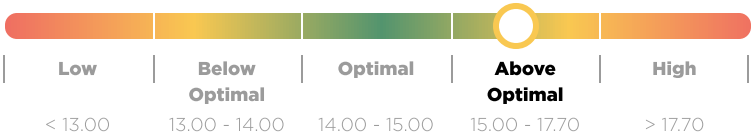
14.40 %



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 BI2 deficiency, folic acid, and iron anemia, it is increased most frequently with vitamin B12 deficiency anemia.

Hemoglobin

16.10 g/dl

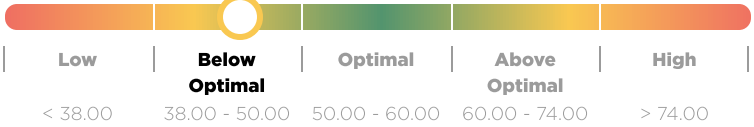


Hemoglobin is the oxygen carrying molecule in red blood cells. Hemoglobin levels may be increased in cases of dehydration.

WBCS

Neutrophils - %

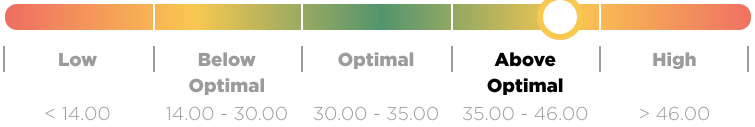
45.00 %



Neutrophils are the white blood cells used by the body to combat bacterial infections and are the most numerous and important white cell in the body's reaction to inflammation. Neutrophils - % tells us the % distribution of neutrophils in the total white blood cell count. Decreased levels are often seen in chronic viral infections.

Lymphocytes - %

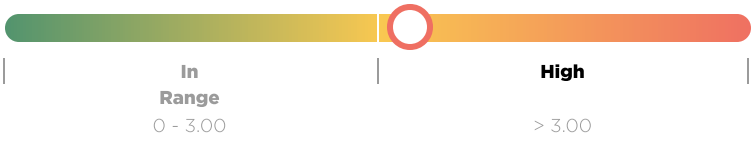
43.00 %



Lymphocytes are a type of white blood cell. An increase in ***Lymphocytes - %*** is usually a sign of a viral infection but can also be a sign of increased toxicity in the body or inflammation.

Eosinophils - %

4.00 %

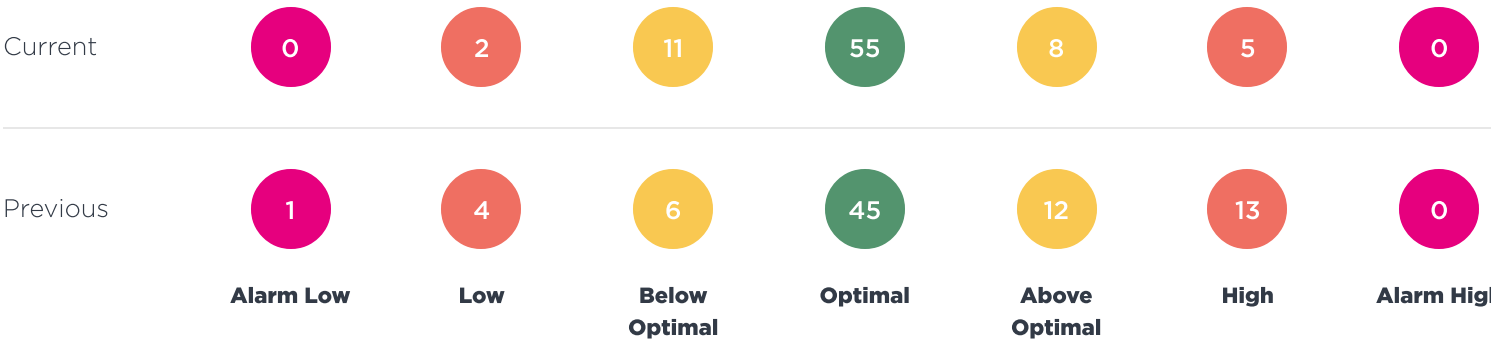


Eosinophils are a type of White Blood Cell, which are often increased in people that are suffering from intestinal parasites or food or environmental sensitivities/allergies.

Blood Test Results Comparative

The Blood Test Results Comparative Report lists the results of your patient's latest and previous Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range.

A comparison of the total number of biomarkers by optimal range



Biomarker	Lab Corp Previous Aug 05 2025	Lab Corp Current Sep 05 2025	Optimal range	Standard range	Units
BLOOD GLUCOSE					
Glucose Fasting	89.00	95.00 ↑	75.00 - 89.00	65.00 - 99.00	mg/dL
Hemoglobin A1C	4.70	5.00	4.60 - 5.30	4.80 - 5.60	%
eAG	88.19	99.00	85.00 - 105.00	82.00 - 154.00	mg/dl
Insulin - Fasting	6.30 ↑	4.80	2.60 - 5.00	2.60 - 24.90	µIU/ml
HOMA2-%B	85.10 ↓	62.20 ↓ ↓	90.00 - 110.00	70.00 - 120.00	%
HOMA2-%S	122.20	157.30	85.00 - 200.00	75.00 - 250.00	%
HOMA2-IR	0.81	0.63 ↓	0.75 - 1.25	0.50 - 1.75	Index
QUICKI	0.90	0.38 ↓	0.45 - 5.00	0.34 - 5.00	Index
Triglyceride-Glucose Index (TyG)	4.44 ↑	0.00	0 - 4.40	0 - 4.50	Index
RENAL					
BUN	12.00	11.00	10.00 - 16.00	6.00 - 24.00	mg/dL
Creatinine	0.10 ↓ ↓	0.81	0.80 - 1.10	0.76 - 1.27	mg/dL
BUN : Creatinine	11.00	13.58	10.00 - 16.00	9.00 - 20.00	Ratio
PROSTATE					
PSA - Total	0.80	0.80	0 - 2.00	0 - 4.00	ng/ml

Biomarker	Lab Corp Previous Aug 05 2025	Lab Corp Current Sep 05 2025	Optimal range	Standard range	Units
ELECTROLYTES					
Sodium	140.00	139.00	137.00 - 142.00	134.00 - 144.00	mEq/L
Potassium	4.00	4.50	4.00 - 5.00	3.50 - 5.20	mEq/L
Chloride	104.00	103.00	100.00 - 106.00	96.00 - 106.00	mEq/L
CO2	29.00	24.00 ↓	25.00 - 30.00	20.00 - 29.00	mEq/L
Sodium : Potassium	33.00	37.00 ↑ ↑		30.00 - 35.00	ratio
METABOLIC					
Anion Gap	11.00	16.50 ↑ ↑	7.00 - 12.00	6.00 - 16.00	mEq/L
PROTEINS					
Protein - Total	8.50 ↑	6.70 ↓	6.90 - 8.10	6.00 - 8.50	g/dL
Albumin	4.90	4.40 ↓	4.50 - 5.00	3.80 - 4.90	g/dL
Globulin - Total	1.30 ⚠	2.30 ↓	2.40 - 2.80	1.50 - 4.50	g/dL
Albumin : Globulin	3.77 ↑ ↑	1.90	1.40 - 2.10	1.20 - 2.20	ratio
MINERALS					
Calcium	12.00 ↑ ↑	9.00	8.90 - 9.50	8.70 - 10.20	mg/dL
Calcium : Albumin	0.00	0.00	0 - 2.18	0 - 2.60	ratio
LIVER AND GB					
Alk Phos	88.50	56.00	45.00 - 100.00	39.00 - 117.00	IU/L
AST	29.00 ↑	24.00	10.00 - 26.00	0.00 - 40.00	IU/L
ALT	40.00 ↑	25.00	10.00 - 26.00	0.00 - 44.00	IU/L
Bilirubin - Total	1.00 ↑	1.00 ↑	0.50 - 0.90	0.00 - 1.20	mg/dL
LIPIDS					
Cholesterol - Total	199.00	221.00 ↑ ↑	160.00 - 199.00	100.00 - 199.00	mg/dL
Triglycerides	80.00	114.00 ↑	70.00 - 80.00	0 - 149.00	mg/dL
LDL Cholesterol	99.00	87.50	80.00 - 99.99	0 - 99.00	mg/dL
HDL Cholesterol	110.00 ↑ ↑	79.00	55.00 - 93.00	39.00 - 100.00	mg/dL
Non-HDL Cholesterol	87.00	87.00	70.00 - 99.00	0 - 129.99	mg/dl
VLDL Cholesterol	35.00 ↑	8.00	0 - 15.00	5.00 - 40.00	mg/dl
Cholesterol : HDL	0.00	2.80	0 - 3.00	0 - 4.40	Ratio
Triglyceride:HDL	0.73	0.70	0.50 - 1.90	0 - 2.00	ratio
LDL : HDL	0.00	0.00	0 - 2.28	0 - 4.90	Ratio
CARDIOMETABOLIC					
Atherogenic Index of Plasma (AIP)	-0.50 ↓ ↓	0.00	0 - 1.00	0 - 2.00	Index
THYROID					

Biomarker	Lab Corp Previous Aug 05 2025	Lab Corp Current Sep 05 2025	Optimal range	Standard range	Units
TSH	6.45 ↑ ↑	1.08	1.00 - 2.00	0.45 - 4.50	µU/mL
T4 - Total	5.00 ↓	5.70 ↓	6.00 - 11.90	4.50 - 12.00	µg/dL
T4 - Free	1.77 ↑	1.04	1.00 - 1.50	0.82 - 1.77	ng/dL
T3 - Total	100.00	123.00	90.00 - 168.00	71.00 - 180.00	ng/dL
T3 - Free	3.40	3.40	3.00 - 3.50	2.00 - 4.40	pg/ml
Free T3 : Free T4	2.89 ↑	3.27 ↑ ↑	2.40 - 2.70	2.20 - 2.90	Ratio
VITAMINS					
Vitamin D (25-OH)	33.00 ↓	49.40 ↓	50.00 - 90.00	30.00 - 100.00	ng/ml
Vitamin B12	220.00 ↓ ↓	1128.00 ↑	450.00 - 1100.00	232.00 - 1245.00	pg/ml
HORMONES					
DHEA-S	224.00 ↓	117.40 ↓ ↓	350.00 - 530.50	164.30 - 530.50	µg/dL
FSH	1.60	3.00	1.60 - 8.00	1.60 - 12.40	mIU/ml
LH	1.70	2.00	1.50 - 6.15	1.70 - 8.60	mIU/ml
Testosterone Total	885.00	820.00	700.00 - 1100.00	264.00 - 916.00	ng/dl
Testosterone Free	178.00	167.32	150.00 - 224.00	46.00 - 224.00	pg/ml
Sex Hormone Binding Globulin	45.00	40.00	40.00 - 46.00	19.30 - 76.40	nmol/L
Estradiol	41.00 ↑	27.70	24.00 - 39.00	7.60 - 42.60	pg/ml
IGF-1	244.00 ↑	244.00 ↑	100.00 - 170.00	95.00 - 290.00	ng/ml
Cortisol - Total/AM	9.90 ↓	9.90 ↓	10.00 - 15.00	6.20 - 19.40	µg/dL
Cortisol : DHEA-S	0.04	0.08		0 - 0.09	ratio
Testosterone Bioavailable	475.24	401.16	375.00 - 575.00	110.00 - 575.00	ng/dl
% Testosterone Bioavailable	38.00 ↓	48.92 ↓	53.00 - 65.00	35.00 - 65.00	%
% Testosterone Free	2.01	2.04	1.60 - 2.20	1.00 - 2.90	%
CBC					
RBC	5.30	5.18	4.80 - 5.50	4.14 - 5.80	m/cumm
Hemoglobin	17.00 ↑	16.10 ↑	14.00 - 15.00	13.00 - 17.70	g/dl
Hematocrit	55.00 ↑ ↑	45.40	40.00 - 48.00	37.50 - 51.00	%
MCV	84.00	88.00	82.00 - 89.90	79.00 - 97.00	fL
MCH	34.00 ↑ ↑	31.10	28.00 - 31.90	26.60 - 33.00	pg
MCHC	39.00 ↑ ↑	35.50	34.00 - 36.00	31.50 - 35.70	g/dL
Platelets	239.00	199.00	190.00 - 300.00	150.00 - 450.00	10E3/µL
RDW	24.00 ↑ ↑	14.40 ↑	11.00 - 12.60	11.60 - 15.40	%
WBCS					
Total WBCs	4.30	4.60	3.80 - 6.00	3.40 - 10.80	k/cumm
Neutrophils - %	58.00	45.00 ↓	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	49.00 ↑ ↑	43.00 ↑	30.00 - 35.00	14.00 - 46.00	%

Biomarker	Lab Corp Previous Aug 05 2025	Lab Corp Current Sep 05 2025	Optimal range	Standard range	Units
Monocytes - %	1.00 ↓ ↓	7.00	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	2.00	4.00 ↑ ↑		0 - 3.00	%
Basophils - %	3.00 ↑ ↑	1.00		0 - 1.00	%
Neutrophils - Absolute	4.00	2.10	1.90 - 4.20	1.40 - 7.00	k/cumm
Lymphocytes - Absolute	7.00 ↑ ↑	1.90	1.44 - 2.54	0.70 - 3.10	k/cumm
Monocytes - Absolute	1.90 ↑ ↑	0.30	0.20 - 0.40	0.10 - 0.90	k/cumm
Eosinophils - Absolute	0.56 ↑ ↑	0.20	0.03 - 0.20	0 - 0.40	k/cumm
Basophils - Absolute	0.00	0.00	0 - 0.10	0 - 0.20	k/cumm
Immature Granulocytes - %	0.00	0.00	0 - 0.50	0 - 1.00	%
Immature Granulocytes - Absolute	0.00	0.00	0 - 0.03	0 - 0.10	k/cumm

Blood Test Score Report

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

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

Biomarker	Lab result	Optimal range		% deviation	Optimal range
		Low	High		Low High
Triglycerides	114.00	70.00	80.00	390	
Free T3 : Free T4	3.27	2.40	2.70	240	
Lymphocytes - %	43.00	30.00	35.00	210	
RDW	14.40	11.00	12.60	162	
Hemoglobin	16.10	14.00	15.00	160	
IGF-1	244.00	100.00	170.00	156	
Anion Gap	16.50	7.00	12.00	140	
Cholesterol - Total	221.00	160.00	199.00	106	
Glucose Fasting	95.00	75.00	89.00	93	
Sodium : Potassium	37.00	30.00	35.00	90	
Eosinophils - %	4.00	0	3.00	83	
Bilirubin - Total	1.00	0.50	0.90	75	
Vitamin B12	1128.00	450.00	1100.00	54	
Monocytes - %	7.00	4.00	7.00	50	
Basophils - %	1.00	0	1.00	50	
Eosinophils - Absolute	0.20	0.03	0.20	50	
ALT	25.00	10.00	26.00	44	
Cholesterol : HDL	2.80	0	3.00	43	
Insulin - Fasting	4.80	2.60	5.00	42	
Cortisol : DHEA-S	0.08	0	0.09	39	
AST	24.00	10.00	26.00	38	
T3 - Free	3.40	3.00	3.50	30	
MCH	31.10	28.00	31.90	29	
MCV	88.00	82.00	89.90	26	
MCHC	35.50	34.00	36.00	25	
% Testosterone Free	2.04	1.60	2.20	23	
Albumin : Globulin	1.90	1.40	2.10	21	
eAG	99.00	85.00	105.00	20	
Hematocrit	45.40	40.00	48.00	18	
HDL Cholesterol	79.00	55.00	93.00	13	
HOMA2-%S	157.30	85.00	200.00	13	
BUN : Creatinine	13.58	10.00	16.00	10	

Biomarker	Lab result	Optimal range		% deviation	Optimal range	
		Low	High		Low	High
Non-HDL Cholesterol	87.00	70.00	99.00	9		
Hemoglobin A1C	5.00	4.60	5.30	7		
RBC	5.18	4.80	5.50	4		
VLDL Cholesterol	8.00	0	15.00	3		
Potassium	4.50	4.00	5.00	0		
Chloride	103.00	100.00	106.00	0		
Monocytes - Absolute	0.30	0.20	0.40	0		
T3 - Total	123.00	90.00	168.00	-8		
Lymphocytes - Absolute	1.90	1.44	2.54	-8		
Sodium	139.00	137.00	142.00	-10		
PSA - Total	0.80	0	2.00	-10		
LDL Cholesterol	87.50	80.00	99.99	-12		
Total WBCs	4.60	3.80	6.00	-14		
Testosterone Total	820.00	700.00	1100.00	-20		
Estradiol	27.70	24.00	39.00	-25		
Testosterone Free	167.32	150.00	224.00	-27		
FSH	3.00	1.60	8.00	-28		
Alk Phos	56.00	45.00	100.00	-30		
BUN	11.00	10.00	16.00	-33		
Calcium	9.00	8.90	9.50	-33		
Triglyceride:HDL	0.70	0.50	1.90	-36		
Testosterone Bioavailable	401.16	375.00	575.00	-37		
LH	2.00	1.50	6.15	-39		
Neutrophils - Absolute	2.10	1.90	4.20	-41		
Platelets	199.00	190.00	300.00	-42		
TSH	1.08	1.00	2.00	-42		
T4 - Free	1.04	1.00	1.50	-42		
Creatinine	0.81	0.80	1.10	-47		
Sex Hormone Binding Globulin	40.00	40.00	46.00	-50		
Calcium : Albumin	0.00	0	2.18	-50		
Basophils - Absolute	0.00	0	0.10	-50		
LDL : HDL	0.00	0	2.28	-50		
Triglyceride-Glucose Index (TyG)	0.00	0	4.40	-50		
Immature Granulocytes - %	0.00	0	0.50	-50		
Immature Granulocytes - Absolute	0.00	0	0.03	-50		
Atherogenic Index of Plasma (AIP)	0.00	0	1.00	-50		
Vitamin D (25-OH)	49.40	50.00	90.00	-52		
QUICKI	0.38	0.45	5.00	-52		
Cortisol - Total/AM	9.90	10.00	15.00	-52		
T4 - Total	5.70	6.00	11.90	-55		
Protein - Total	6.70	6.90	8.10	-67		

Biomarker	Lab result	Optimal range		% deviation	Optimal range	
		Low	High		Low	High
CO2	24.00	25.00	30.00	-70		
Albumin	4.40	4.50	5.00	-70		
HOMA2-IR	0.63	0.75	1.25	-74		
Globulin - Total	2.30	2.40	2.80	-75		
% Testosterone Bioavailable	48.92	53.00	65.00	-84		
Neutrophils - %	45.00	50.00	60.00	-100		
DHEA-S	117.40	350.00	530.50	-179		
HOMA2-%B	62.20	90.00	110.00	-189		

Blood Test History

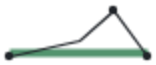
The Blood Test History Report lists the results of your patient's Chemistry Screen and CBC tests side by side with the latest test listed on the right-hand side. This report allows you to compare results over time and see where improvement has been made and allows you to track progress.

Key

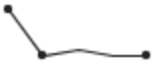
- Optimal
- Normal
- High / Low
- Alarm High / Alarm Low

Biomarker	Latest 5 Test Results				
	Lab Corp May 05 2025	Lab Corp Jun 05 2025	Lab Corp Jul 05 2025	Lab Corp Aug 05 2025	Lab Corp Sep 05 2025
BLOOD GLUCOSE					
Glucose Fasting	93.00 ↑	195.00 ↑ ↑	146.00 ↑ ↑	89.00	95.00 ↑
Hemoglobin A1C	5.90 ↑ ↑	5.00	5.50 ↑	4.70	5.00
eAG	122.63 ↑	98.00	149.00 ↑	88.19	99.00
Insulin - Fasting	7.00 ↑	4.00	5.90 ↑	6.30 ↑	4.80
HOMA2-%B	83.70 ↓	13.20 ⚠	30.50 ↓ ↓	85.10 ↓	62.20 ↓ ↓
HOMA2-%S	108.90	161.10	116.50	122.20	157.30
HOMA2-IR	0.91	0.62 ↓	0.85	0.81	0.63 ↓
QUICKI	0.36 ↓	0.37 ↓	0.34 ↓	0.90	0.38 ↓
Triglyceride-Glucose Index (TyG)	4.55 ↑ ↑	2.00	4.78 ↑ ↑	4.44 ↑	0.00
RENAL					
BUN	8.00 ↓	10.00	3.00 ↓ ↓	12.00	11.00
Creatinine	0.78 ↓	1.32 ↑ ↑	4.10 ⚠	0.10 ↓ ↓	0.81
BUN : Creatinine	9.00 ↓	4.00 ↓ ↓	17.00 ↑	11.00	13.58
PROSTATE					
PSA - Total	0.80	1.00	0.68	0.80	0.80
ELECTROLYTES					
Sodium	129.00 ↓ ↓	142.00	143.00 ↑	140.00	139.00

Biomarker		Latest 5 Test Results				
		Lab Corp May 05 2025	Lab Corp Jun 05 2025	Lab Corp Jul 05 2025	Lab Corp Aug 05 2025	Lab Corp Sep 05 2025
Potassium		4.50	8.00 ↑ ↑	7.00 ↑ ↑	4.00	4.50
Chloride		98.00 ↓	99.00 ↓	94.00 ↓ ↓	104.00	103.00
CO2		27.00	32.00 ↑ ↑	17.00 ↓ ↓	29.00	24.00 ↓
Sodium : Potassium		28.67 ↓ ↓	17.75 ⚠	20.43 ⚠	33.00	37.00 ↑ ↑
METABOLIC						
Anion Gap		8.50	19.00 ↑ ↑	39.00 ⚠	11.00	16.50 ↑ ↑
PROTEINS						
Protein - Total		7.00	7.50	8.00	8.50 ↑	6.70 ↓
Albumin		5.00	5.00	33.00 ⚠	4.90	4.40 ↓
Globulin - Total		5.00 ⚠	2.50	-25.00 ⚠	1.30 ⚠	2.30 ↓
Albumin : Globulin		3.00 ↑ ↑	2.10	2.00	3.77 ↑ ↑	1.90
MINERALS						
Calcium		12.00 ↑ ↑	12.00 ↑ ↑	3.00 ⚠	12.00 ↑ ↑	9.00
Calcium : Albumin		2.40 ↑	2.40 ↑	0.09	0.00	0.00
LIVER AND GB						
Alk Phos		45.00	67.00	74.00	88.50	56.00
AST		26.00	14.00	35.00 ↑	29.00 ↑	24.00
ALT		45.00 ↑ ↑	25.00	15.00	40.00 ↑	25.00
Bilirubin - Total		2.00 ↑ ↑	0.75	4.70 ⚠	1.00 ↑	1.00 ↑
LIPIDS						
Cholesterol - Total		208.00 ↑ ↑	290.00 ↑ ↑	142.00 ↓	199.00	221.00 ↑ ↑
Triglycerides		97.00 ↑	190.00 ↑ ↑	98.00 ↑	80.00	114.00 ↑
LDL Cholesterol		108.00 ↑ ↑	90.00	72.00 ↓	99.00	87.50
HDL Cholesterol		44.00 ↓	75.00	59.00	110.00 ↑ ↑	79.00
Non-HDL Cholesterol		164.00 ↑ ↑	78.00	75.00	87.00	87.00

Biomarker		Latest 5 Test Results				
		Lab Corp May 05 2025	Lab Corp Jun 05 2025	Lab Corp Jul 05 2025	Lab Corp Aug 05 2025	Lab Corp Sep 05 2025
VLDL Cholesterol		21.00 ↑	15.00	12.00	35.00 ↑	8.00
Cholesterol : HDL		4.73 ↑ ↑	3.87 ↑	2.41	0.00	2.80
Triglyceride:HDL		2.20 ↑ ↑	2.53 ↑ ↑	1.66	0.73	0.70
LDL : HDL		2.00	1.20	1.22	0.00	0.00
CARDIOMETABOLIC						
Atherogenic Index of Plasma (AIP)		-0.02 ↓ ↓	0.04	-0.14 ↓ ↓	-0.50 ↓ ↓	0.00
THYROID						
TSH		0.99 ↓	2.00	3.00 ↑	6.45 ↑ ↑	1.08
T4 - Total		3.00 ↓ ↓	6.00	9.00	5.00 ↓	5.70 ↓
T4 - Free		1.04	1.75 ↑	1.00	1.77 ↑	1.04
T3 - Total		108.00	99.00	125.00	100.00	123.00
T3 - Free		2.00 ↓	4.00 ↑	3.20	3.40	3.40
Free T3 : Free T4		1.92 ↓ ↓	2.29 ↓	3.20 ↑ ↑	2.89 ↑	3.27 ↑ ↑
VITAMINS						
Vitamin D (25-OH)		47.00 ↓	70.00	28.00 ↓ ↓	33.00 ↓	49.40 ↓
Vitamin B12		1400.00 ↑ ↑	358.00 ↓	328.00 ↓	220.00 ↓ ↓	1128.00 ↑
HORMONES						
DHEA-S		157.40 ↓ ↓	177.00 ↓	317.40 ↓	224.00 ↓	117.40 ↓ ↓
FSH		0.29 ⚠	2.00	0.26 ⚠	1.60	3.00
LH		0.40 ⚠	1.50	0.32 ⚠	1.70	2.00
Testosterone Total		1231.00 ↑ ↑	980.00	1091.00	885.00	820.00
Testosterone Free		185.65	222.00	187.00	178.00	167.32
Sex Hormone Binding Globulin		65.20 ↑	45.00	43.40	45.00	40.00
Estradiol		34.00	35.00	26.20	41.00 ↑	27.70
IGF-1		221.00 ↑	300.00 ↑ ↑	301.00 ↑ ↑	244.00 ↑	244.00 ↑

Biomarker	Latest 5 Test Results				
	Lab Corp May 05 2025	Lab Corp Jun 05 2025	Lab Corp Jul 05 2025	Lab Corp Aug 05 2025	Lab Corp Sep 05 2025
Cortisol - Total/AM	9.90 ↓	10.00	15.00	9.90 ↓	9.90 ↓
Cortisol : DHEA-S	0.06	0.06	0.05	0.04	0.08
Testosterone Bioavailable	505.80	604.82 ↑ ↑	3362.47 ⚠	475.24	401.16
% Testosterone Bioavailable	41.08 ↓	61.71	308.20 ⚠	38.00 ↓	48.92 ↓
% Testosterone Free	1.50 ↓	2.26 ↑	1.71	2.01	2.04
CBC					
RBC	8.00 ↑ ↑	6.00 ↑ ↑	5.18	5.30	5.18
Hemoglobin	19.00 ↑ ↑	18.00 ↑ ↑	16.10 ↑	17.00 ↑	16.10 ↑
Hematocrit	55.00 ↑ ↑	78.00 ⚠	45.40	55.00 ↑ ↑	45.40
MCV	98.00 ↑ ↑	99.00 ↑ ↑	92.00 ↑	84.00	88.00
MCH	20.00 ↓ ↓	35.00 ↑ ↑	42.00 ↑ ↑	34.00 ↑ ↑	31.10
MCHC	25.00 ↓ ↓	45.00 ↑ ↑	35.50	39.00 ↑ ↑	35.50
Platelets	158.00 ↓	278.00	20.00 ⚠	239.00	199.00
RDW	15.00 ↑	18.00 ↑ ↑	0.00 ↓ ↓	24.00 ↑ ↑	14.40 ↑
WBCS					
Total WBCs	6.00	5.90	4.60	4.30	4.60
Neutrophils - %	37.00 ↓ ↓	55.00	10.00 ⚠	58.00	45.00 ↓
Lymphocytes - %	38.00 ↑	44.00 ↑	12.00 ↓ ↓	49.00 ↑ ↑	43.00 ↑
Monocytes - %	3.00 ↓ ↓	9.00 ↑	16.00 ↑ ↑	1.00 ↓ ↓	7.00
Eosinophils - %	4.00 ↑ ↑	8.00 ↑ ↑	0.00	2.00	4.00 ↑ ↑
Basophils - %	2.00 ↑ ↑	2.00 ↑ ↑	0.00	3.00 ↑ ↑	1.00
Neutrophils - Absolute	3.00	3.00	3.00	4.00	2.10
Lymphocytes - Absolute	6.00 ↑ ↑	2.30	2.10	7.00 ↑ ↑	1.90
Monocytes - Absolute	0.00 ↓ ↓	0.40	0.30	1.90 ↑ ↑	0.30
Eosinophils - Absolute	0.00 ↓	1.00 ↑ ↑	0.00 ↓	0.56 ↑ ↑	0.20

Biomarker		Latest 5 Test Results				
		Lab Corp May 05 2025	Lab Corp Jun 05 2025	Lab Corp Jul 05 2025	Lab Corp Aug 05 2025	Lab Corp Sep 05 2025
Basophils - Absolute		1.00 ⚠	0.00	0.00	0.00	0.00
Immature Granulocytes - %		2.00 ↑ ↑	0.00	0.20	0.00	0.00
Immature Granulocytes - Absolute		2.00 ↑ ↑	0.00	0.30 ↑ ↑	0.00	0.00

3

An in-depth functional system and nutrient evaluation.

Assessment

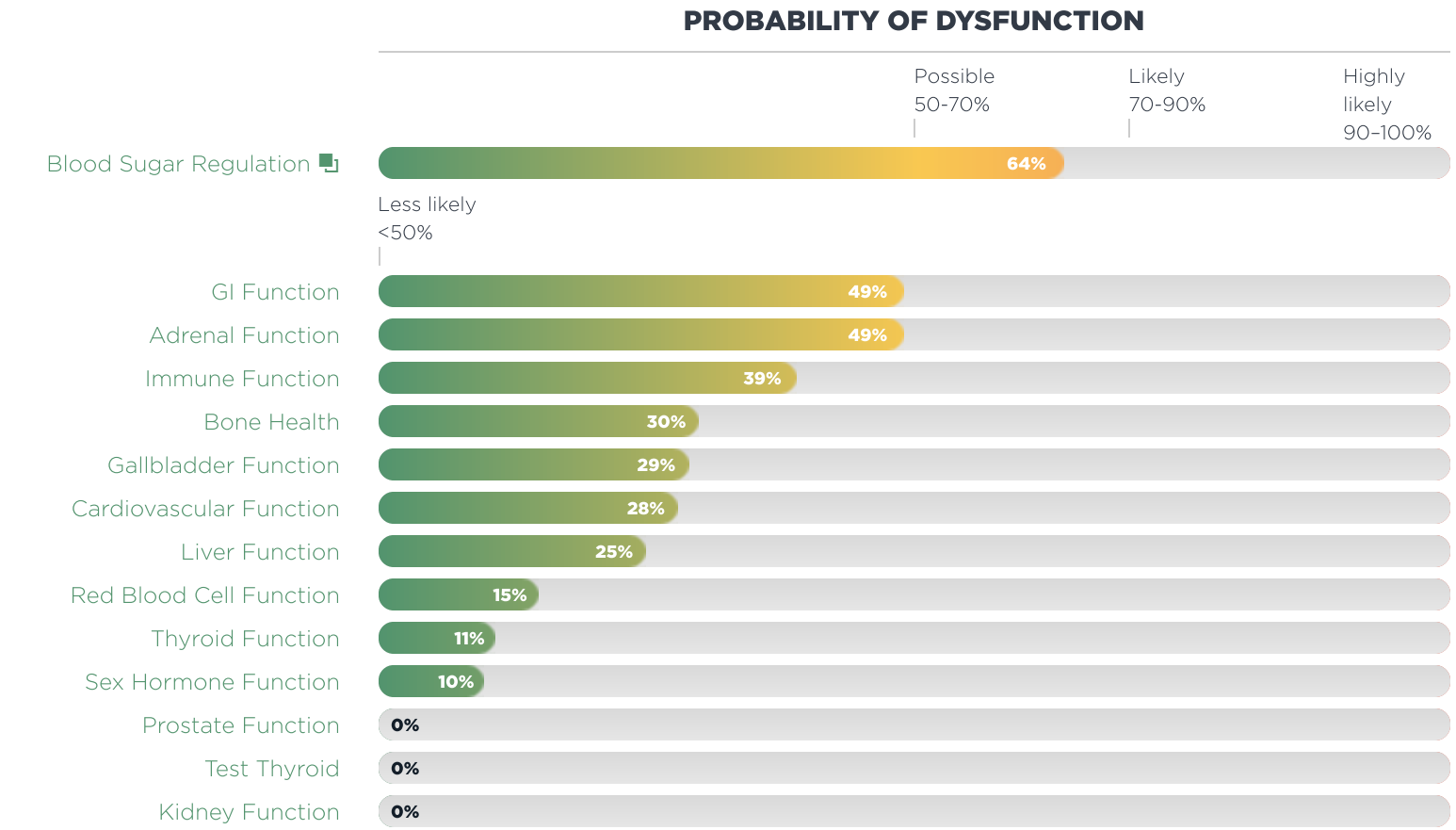
Functional Body Systems

The Functional Body System results represent an algorithmic analysis of this blood test. These results have been converted into your client's 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 the body.

Please use this report in conjunction with the "Practitioner's Only Clinical Dysfunctions Report" to identify which dysfunctions and conditions are causing changes in the Functional Body Systems.

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



Functional Body Systems Details

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

Dysfunction Possible
There may be improvement needed in certain areas.

BLOOD SUGAR REGULATION

It is possible that your patient is in the early stages of hypoglycemia, dysglycemia, metabolic syndrome, or insulin resistance, which is causing an increase in their Blood Sugar Regulation score. While this may not require immediate attention, you may want to keep an eye on this on future blood tests.

Rationale

Glucose Fasting ↑, Cholesterol - Total ↑, Triglycerides ↑, DHEA-S ↓

Biomarkers considered

Glucose Fasting, HOMA2-IR, Hemoglobin A1C, Insulin - Fasting, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, DHEA-S

Patient result not available - consider running in future tests:

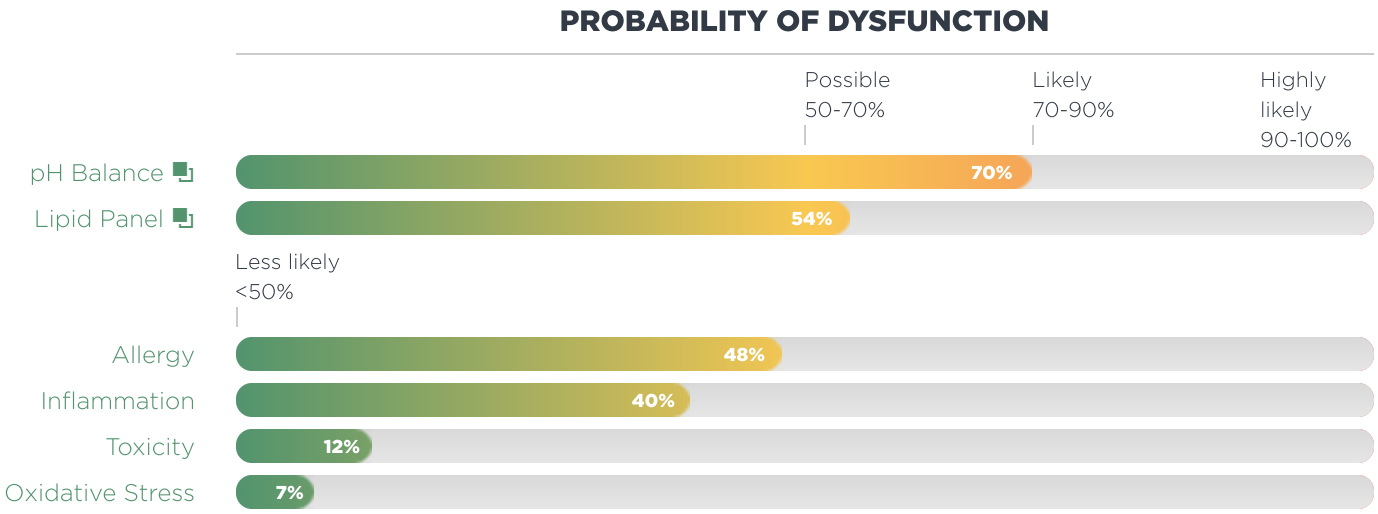
LDH, C-Peptide, Fructosamine, Leptin, OxLDL, Glutathione - Total (µg/mL), IgE (LabCorp)

Accessory Systems

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

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

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



Accessory Systems Details

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

Dysfunction Likely. Improvement required.

PH BALANCE

Your patient has an increased pH Imbalance score. They are likely trending towards a functional imbalance in their pH system. Consider that the patient is trending towards either metabolic acidosis or metabolic alkalosis.

Rationale

Anion Gap ↑, CO2 ↓

Biomarkers considered

Anion Gap, Potassium, Chloride, CO2, Calcium

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

LIPID PANEL

It is possible that your patient is in the early stages of hyperlipidemia, which is causing an increase in their Lipid Panel score. While this may not require immediate attention, you may want to keep an eye on this on future blood tests.

Rationale

Cholesterol - Total ↑, Triglycerides ↑

Biomarkers considered

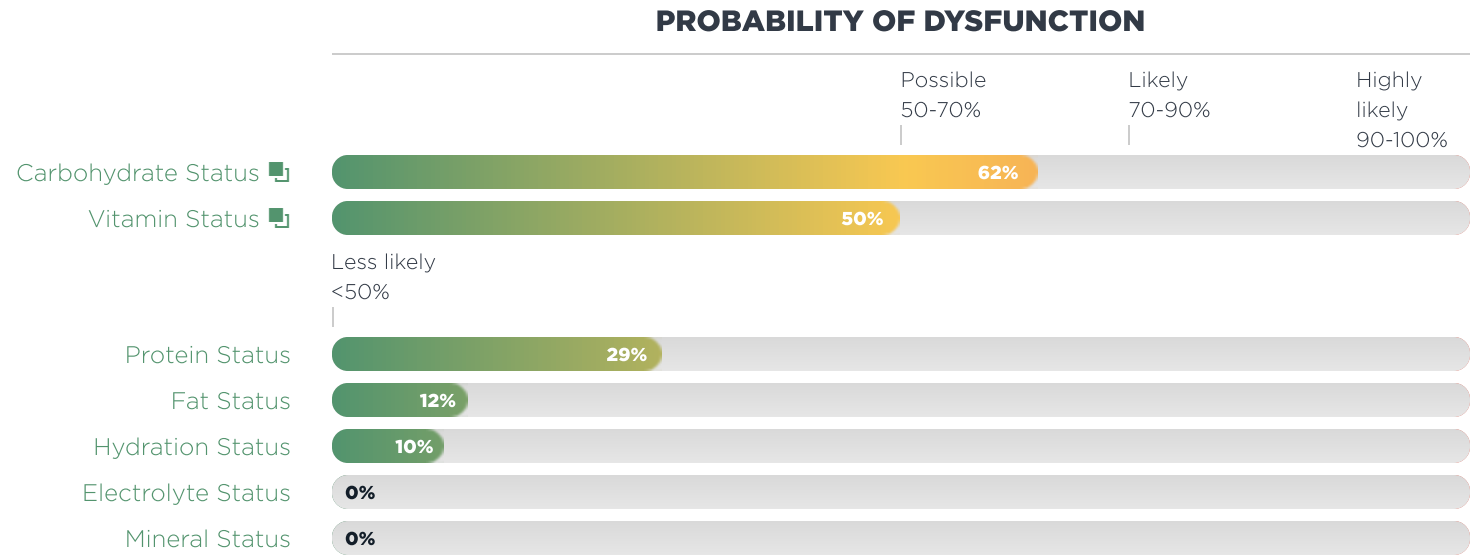
Cholesterol - Total, Triglycerides, LDL Cholesterol, Cholesterol : HDL, Triglyceride:HDL, HDL Cholesterol

Nutrient Status

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

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

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



Nutrient Status Details

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

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

CARBOHYDRATE STATUS

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

Rationale

Glucose Fasting ↑, Cholesterol - Total ↑, Triglycerides ↑

Biomarkers considered

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

Patient result not available - consider running in future tests:

Phosphorus, LDH

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

VITAMIN STATUS

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

Rationale

Anion Gap ↑, Vitamin D (25-OH) ↓

Biomarkers considered

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

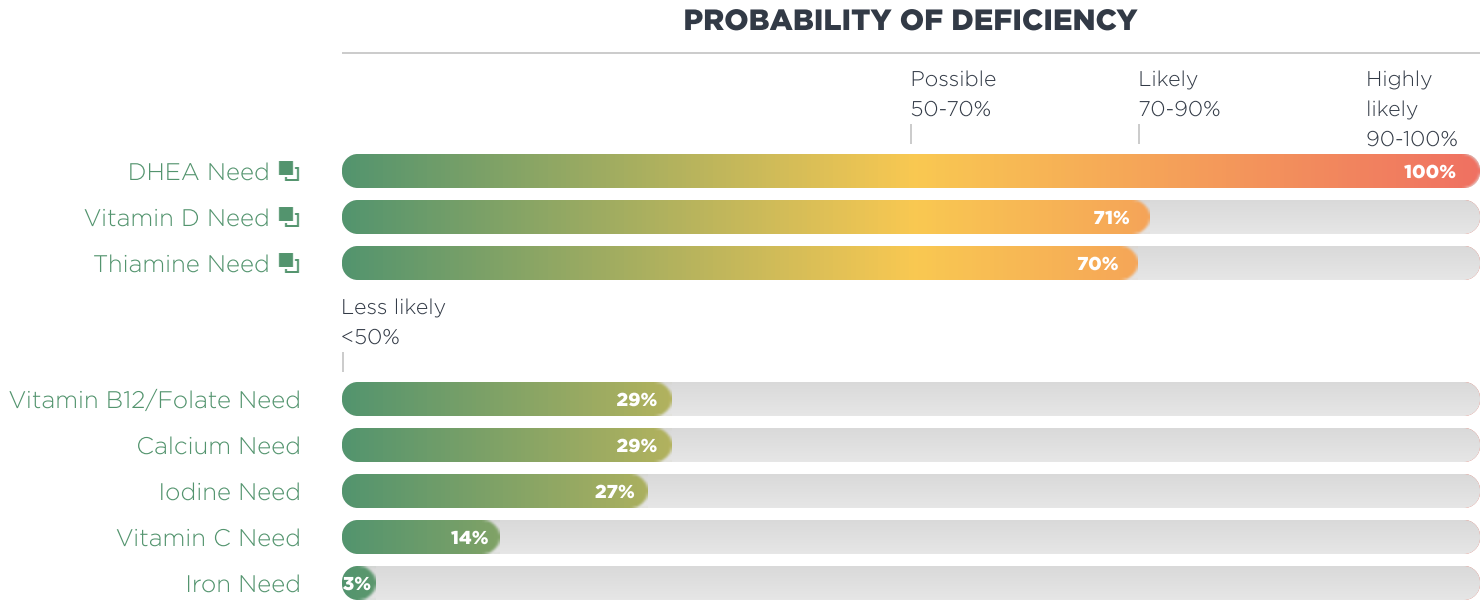
Patient result not available - consider running in future tests:

GGT, Homocysteine, Folate - Serum, Methylmalonic Acid, Folate - RBC

Individual Nutrient Deficiencies

The values represent the degree of deficiency for individual nutrients based on your patient's 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 must be taken into consideration before determining whether or not your patient actually needs an individual nutrient.

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



Individual Nutrient Deficiency Details

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

Deficiency Highly Likely. Much improvement required.

DHEA NEED

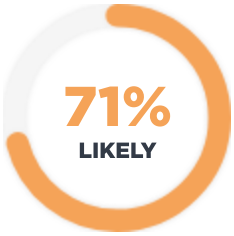
The results of this blood test indicate that this patient's **DHEA** levels might be lower than optimal.

Rationale

DHEA-S ↓

Biomarkers considered

DHEA-S



Deficiency Likely. Improvement required.

VITAMIN D NEED

The results of this blood test indicate that this patient's **Vitamin D** levels might be lower than optimal.

Rationale

Vitamin D (25-OH) ↓

Biomarkers considered

Vitamin D (25-OH)

Deficiency Likely.
Improvement required.

THIAMINE NEED

Consider Thiamine deficiency with an **increased anion gap** along with a **decreased CO_2**. **Hemoglobin** and **hematocrit** levels may be normal or decreased. Due to thiamine's role in glycolysis, **LDH** levels may be decreased and **glucose** levels may be normal to increased.

Rationale

Anion Gap ↑, CO2 ↓

Biomarkers considered

Anion Gap, CO2, Glucose Fasting, Hemoglobin, Hematocrit

Patient result not available - consider running in future tests:

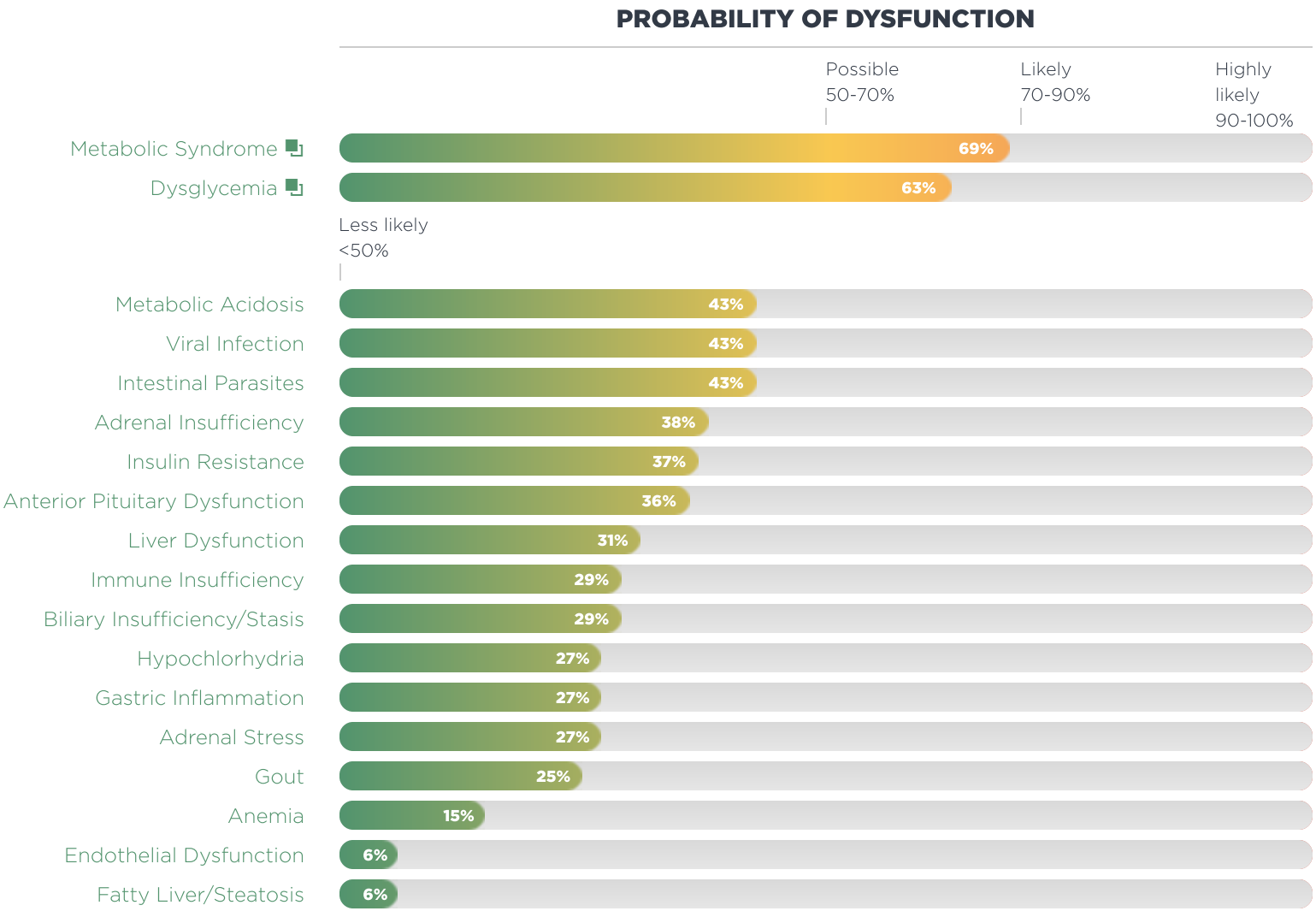
LDH

Clinical Dysfunctions

Advanced practitioner only report

The Clinical Dysfunctions Report shows a list of likely Health Concerns that your client may be suffering from based on an analysis of their Chemistry Screen and CBC results.

Each Clinical Dysfunction 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.



Clinical Dysfunctions Details

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

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

METABOLIC SYNDROME

Consider metabolic syndrome with an increased **triglyceride**, an increased **total cholesterol**, an increased **LDL** cholesterol, a decreased **HDL**, an increased fasting **blood glucose** and an increased **hemoglobin A1C**. Additional elements that may be out of range with metabolic syndrome include an increased fasting **insulin**, an increased **uric acid** and decreased **DHEA**.

Rationale

Triglycerides ↑, Cholesterol - Total ↑, DHEA-S ↓

Biomarkers considered

Glucose Fasting, Triglycerides, Hemoglobin A1C, Insulin - Fasting, Cholesterol - Total, LDL Cholesterol, HDL Cholesterol, DHEA-S, Sex Hormone Binding Globulin

Patient result not available - consider running in future tests:

Uric Acid, Leptin

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

DYSGLYCEMIA

Dysglycemia is an imbalance in the ability of the body to regulate blood glucose levels causing unhealthy blood glucose levels that can lead to Diabetes, Metabolic Syndrome, Obesity, Insulin Resistance and Hyperinsulinemia. Consider dysglycemia with an **elevated blood glucose level** and an **elevated hemoglobin A1C level**.

Rationale

Glucose Fasting ↑

Biomarkers considered

Glucose Fasting, Hemoglobin A1C

Patient result not available - consider running in future tests:

Leptin

4

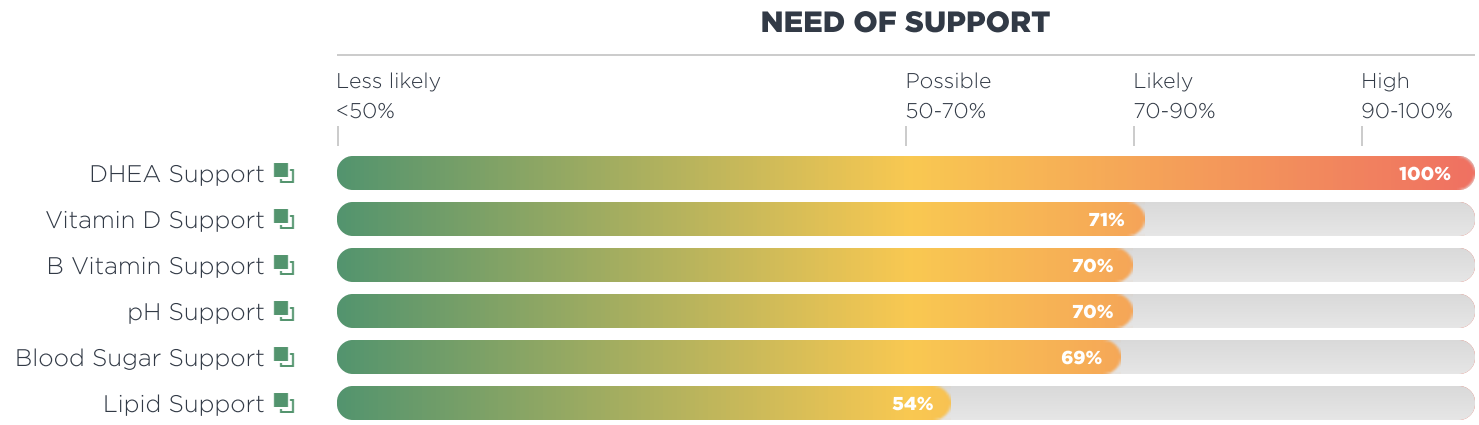
The Health Concerns report takes all the information on the Analytics and Assessment sections and focuses on the top areas of health concern that need the most support.

Health Concerns

Health Concerns Report

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

Each health concern is included in the following section so you can read an explanation of the results shown in this report.



Health Concerns Details

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

DHEA SUPPORT

Highly Probably text

Rationale

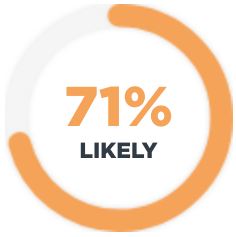
DHEA-S ↓

VITAMIN D SUPPORT

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

Rationale

Vitamin D (25-OH) ↓



B VITAMIN SUPPORT

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

Rationale

Anion Gap ↑, CO2 ↓

PH SUPPORT

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

Rationale

Anion Gap ↑, CO2 ↓

BLOOD SUGAR SUPPORT

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

Rationale

Triglycerides ↑, Cholesterol - Total ↑, DHEA-S ↓

LIPID SUPPORT

The results of this blood test indicate a tendency towards hyperlipidemia, which has been shown to increase the risk of developing atherosclerotic coronary artery disease. There is a need for cardiovascular support, especially support to help lower excessive blood fats.

Rationale

Cholesterol - Total ↑, Triglycerides ↑

Further Testing

Advanced practitioner only report

Based on the results of the analysis of this blood test, the following areas may require further investigation. The suggestions for further testing are merely examples and do not attempt to provide you with an exhaustive list of further evaluation methods.

Future Test Recommendations

Biomarkers listed here would have contributed to the assessment outcomes of this report, but were unavailable. Consider running them in the future.

Biomarkers A patient result was not available. Consider running in future tests.	**Probability of Dysfunction**	**Assessment**
C-Peptide	Blood Sugar Regulation - 64%	Functional Body System
Fructosamine	Blood Sugar Regulation - 64%	Functional Body System
Glutathione - Total (µg/mL)	Blood Sugar Regulation - 64%	Functional Body System
IgE (LabCorp)	Blood Sugar Regulation - 64%	Functional Body System
LDH	Thiamine Need - 70%	Nutrient Deficiency
	Blood Sugar Regulation - 64%	Functional Body System
Leptin	Metabolic Syndrome - 69%	Dysfunction
	Blood Sugar Regulation - 64%	Functional Body System
	Dysglycemia - 63%	Dysfunction
OxLDL	Blood Sugar Regulation - 64%	Functional Body System
Uric Acid	Metabolic Syndrome - 69%	Dysfunction

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

Appendix

What to Look For When Values Are Out of Range

Advanced professional only report

This report shows what you need to look for when the blood test results are out of the optimal range. The report lists all the biomarkers that are above or below the optimal range and gives you possible associated health concerns with a short description.

% Testosterone Bioavailable

48.92 % ↓

Decreased % Bioavailable T Associated with:
Metabolic syndrome, an increased risk of cardiovascular disease, an increase in abdominal obesity, decreased libido, and erectile dysfunction.

Albumin

4.40 g/dL ↓

Hypochlorhydria
A decreased albumin level is often associated with a decreased production of hydrochloric acid in the stomach (hypochlorhydria). Hypochlorhydria is associated with an increased globulin level and a normal or decreased total protein and/or albumin, an increased BUN, a decreased or normal total protein and/or albumin and/or decreased serum phosphorous. Other values that may be reflective of a developing or chronic hypochlorhydria include increased or decreased gastrin, an increased MCV and MCH, a decreased or normal calcium and iron, a decreased chloride, and a decreased alkaline phosphatase.

Liver dysfunction
Albumin is produced almost entirely by the liver and dysfunction in the liver will have a great impact on albumin production and serum albumin levels. Therefore, a decreased albumin level may be indicative of a liver dysfunction that prevents the synthesis and formation of protein. A decreased albumin may be observed before any changes in liver enzymes are noted. Functionally oriented liver problems, such as detoxification issues, liver congestion, and conjugation problems are extremely common and should be evaluated based upon early prognostic indicators. The liver should always be viewed in the context of the hepato-biliary tree. Some of the key clinical indicators include:

- Pain between shoulder blades
- Stomach upset by greasy foods
- If drinking alcohol, easily intoxicated
- Headache over the eye
- Sensitive to chemicals (perfume, cleaning solvents, insecticides, exhaust, etc.)
- Hemorrhoids or varicose veins

Oxidative Stress
Oxidative stress should be investigated if albumin levels are decreased along with a decreased lymphocyte count, a total cholesterol that is suddenly below its historical level, an increased total globulin an increased uric acid and low platelet levels (<150). Oxidative stress can cause an increased destruction of red blood cells; in these situations you may see an

elevated bilirubin level.

Inflammation
Albumin decreases with inflammation, especially systemic inflammation due to decreased synthesis and increased degradation.

Vitamin C need
Albumin will frequently be decreased along a decreased HCT, HGB, MCH, MCHC, and serum iron. There will also be an increased MCV, alkaline phosphatase, and fibrinogen.

Pregnancy
A decreased albumin reading is considered normal in pregnancy.

Kidney Disease
Albumin can be lost in the urine with kidney disease, and can also appear further decreased with fluid overload.

Anion Gap

16.50 mEq/L ↑

Thiamine (vitamin B1) need
An increased anion gap is associated with thiamine deficiency. If the anion gap is increased along with a decreased CO2, thiamine deficiency is possible. Hemoglobin and hematocrit levels may be normal or decreased. Due to thiamine's role in glycolysis, LDH levels may be decreased and glucose levels may be normal to increased.

Metabolic Acidosis
Consider metabolic acidosis if the anion gap is increased along with a decreased CO2 and an increased chloride.

Bilirubin - Total

1.00 mg/dL ↑

Gallbladder Dysfunction: insufficiency or stasis
Consider gallbladder dysfunction due to either biliary stasis or biliary insufficiency when total bilirubin levels are elevated along with increased alkaline phosphatase. GGT, AST, and ALT may be normal or increased. Cholesterol levels may be also increased but in many cases of gallbladder dysfunction the cholesterol is decreased. Many cases of biliary stasis will show normal lab values. In these situations suspect biliary stasis or insufficiency if there are strong subjective indicators.

Thymus dysfunction
Consider an abnormality in the thymus with an elevated bilirubin and an increased HGB, HCT, and RBCs.

Biliary tract obstruction/biliary calculi
Bile tract obstruction/biliary calculi should be ruled out when the total bilirubin is increased along with an increase in both the direct and indirect bilirubin . You will likely see an increased GGT, a normal to increased ALT, an elevated alkaline phosphatase, and/or LDH.

Liver dysfunction
An increased total bilirubin is associated with liver dysfunction. Dysfunction in the liver may also cause an increase in albumin and an increase of ALT from hepatocytes.

RBC hemolysis
Increased hemolysis of red blood cells will lead to an increased formation of indirect or unconjugated bilirubin. The level of total bilirubin will rise when the level of indirect or unconjugated bilirubin exceeds the liver's ability to clear it from the blood. The direct or conjugated fraction remains normal or slightly elevated.

Gilbert's syndrome
Gilbert's syndrome is a genetic defect in the ability to clear unconjugated or indirect bilirubin due to a decreased function

in one of the phase II liver detoxification pathway enzymes. Males are affected more than females. Clinically, the disorder has elevated total bilirubin levels with 90% or more of the total bilirubin coming from indirect/unconjugated bilirubin. GGT, AST, and ALT show no signs of abnormality. Diagnosis is difficult. Follow the patient for 12-18 months. Persistently elevated total and unconjugated bilirubin level in the absence of other abnormal liver function tests are diagnostic for Gilbert's syndrome.

Cholesterol - Total

221.00 mg/dL ↑

Increased cardiovascular disease risk
Increased cholesterol levels are associated with an increased risk of developing cardiovascular disease, atherosclerosis, coronary artery disease and stroke. Although this may be true, it is important to look at many of the other risks for this disease before jumping to conclusion that elevated cholesterol levels are the culprit. Other risks for atherosclerosis, cardiovascular disease and stroke include: smoking, elevated homocysteine levels, elevated fasting glucose, elevated fasting insulin, elevated Hs-CRP, elevated fibrinogen, B6, B12 and folate deficiency, ingestion of chlorine, blood sugar dysregulation, and hypertension. Consider an increased risk of cardiovascular disease with an increased triglyceride level in relation to an increased total cholesterol with an increased uric acid level, a decreased HDL and an increased LDL. Platelet levels may also be increased. Homocysteine, Hs-CRP, and Fibrinogen levels are frequently increased.

Primary hypothyroidism
Primary hypothyroidism is possible if the total cholesterol is increased along with an increased triglyceride and TSH.

Adrenal insufficiency
Consider adrenal insufficiency if the total cholesterol is elevated with an increased triglyceride level and a decreased serum potassium. Confirm with salivary adrenal studies or other functional adrenal tests.

Secondary Hypothyroidism (Anterior pituitary dysfunction)
Increased cholesterol levels are associated with thyroid hypofunction that is secondary to an anterior pituitary dysfunction. If cholesterol levels are increased with a decreased TSH and an elevated serum triglyceride, then consider that anterior pituitary hypofunction is probable.

Gallbladder dysfunction - Biliary stasis
Thickened bile is the hallmark of biliary stasis. It may occur if the total cholesterol is increased. GGTP levels will frequently be increased but not necessarily. Bilirubin levels may also be elevated. There may also be an increased alkaline phosphatase. The ALT and AST may be normal or increased. However, many cases of biliary stasis will show normal lab values.

Metabolic Syndrome
If triglycerides are increased above the total cholesterol level with increased LDL cholesterol, a decreased HDL, and an increased fasting blood glucose, and fasting insulin, then metabolic syndrome and hyperinsulinemia is probable.

Fatty liver (early development) and Liver congestion
If total cholesterol, LDL, and triglyceride levels are increased and HDL levels are decreased, then fatty liver is possible. Liver congestion, due to the early development of fatty liver, should be considered if total cholesterol and triglycerides are both increased, and the ALT is decreased.

Early stage of insulin resistance
Elevated cholesterol and other lipids often accompany the elevated glucose levels that are seen in insulin resistance.

Poor metabolism and utilization of fats
This is often the case in patients that are eating an optimal diet and have elevated cholesterol and triglyceride levels.

Early stage Diabetes
Elevated blood lipids are seen in patients with diabetes. The triglycerides are often higher than the total cholesterol level. Lipid metabolism problems are a hallmark of the early stages of diabetes.

CO2

24.00 mEq/L ↓

Metabolic Acidosis
Serum CO2, or bicarbonate will be decreased (<25), in metabolic acidosis. Consider metabolic acidosis if the CO2 is decreased (<25), along with an increased chloride (>106) and/or an increased anion gap (>12).

Respiratory alkalosis
The CO2 levels (<25) are often decreased in respiratory alkalosis, which is due to conditions that cause excess loss of CO2 from the lungs. The classic presentation of this phenomenon is hyperventilation syndrome caused by hysteria, anxiety, stress, etc. Other causes include low blood pressure, shock, direct stimulation of the respiratory centers by drugs or trauma, and high altitude. Bicarbonate is lost due to the formation of CO2 in the lungs.

Cortisol - Total/AM

9.90 µg/dL ↓

Adrenal Fatigue and Adrenal Insufficiency
Adrenal fatigue and adrenal insufficiency cause a decrease in the glucocorticoid hormone cortisol. Additional findings include an increase in serum potassium along with a normal or decreased sodium and/or chloride. The sodium:potassium ratio will also be decreased. Other values that may be out of balance include decreased aldosterone level. Urinary chloride will be increased. Adrenal fatigue and adrenal insufficiency can be confirmed with salivary cortisol studies.

DHEA-S

117.40 µg/dL ↓

Adrenal Insufficiency
Physiological stress raises cortisol output from the adrenal glands, which causes a decrease in DHEA-S levels in the serum and an increased cortisol to DHEA ratio, a hallmark sign for stage 2 and 3 adrenal insufficiency.

Hyperinsulinemia
High levels of insulin in the blood (hyperinsulinemia)increases cortisol and epinephrine output and decreases the DHEA levels in the serum. Low DHEA-S levels are found in early and late-stage insulin resistance and Diabetes.

Immune Insufficiency & Low sIgA
Cortisol and DHEA systemically modulate the production and turnover of specialized immune cells called immunocytes (also known as plasmacytes) that produce the secretory antibodies that protect us. The primary antibody of defense is secretory IgA (sIgA). When cortisol is elevated and DHEA is low, suppression of these mucosal immune cells occurs, compromising our first-line immune defense, resulting in low sIgA output.

Low levels of DHEA are associated with many common age-related conditions
Low levels of DHEA are associated with many common age-related conditions, including diseases of the nervous, cardiovascular, and immune systems such as metabolic syndrome, coronary artery disease, osteoporosis, mood disorders and sexual dysfunction.

Eosinophils - %

4.00 % ↑

Intestinal parasites
It is important to do further studies if the Eosinophils - Absolute count is increased and/or the Eosinophils - % is increased, i.e. a digestive stool analysis with ova and parasite, especially if the subjective indicators are present. In some cases the

stool tests may be normal, especially with amoebic parasites or if the lab sample was not collected or analyzed appropriately by a qualified lab. Multiple and/or purged samples are sometimes necessary. Intestinal parasites are probable and should be ruled out if you see the following: An increased Eosinophils - %, an increased Eosinophils - Absolute count, an increased Basophils - %, an increased Basophils - Absolute count, an increased Monocytes - %, and an increased Monocytes - Absolute.

Food and Environmental allergy/sensitivity
An increased Eosinophils - Absolute count and/or an increased Eosinophils - % is associated with food allergies and/or sensitivities. There are a number of sophisticated and expensive tests for specific food allergies. These are often normal. In our experience, a weekly diet diary can be a very helpful tool to investigate possible food allergies and sensitivities. An elimination diet for 4 weeks and a subsequent challenge of suspect foods can help determine the most common foods that a patient is allergic or sensitive to. Foods that the patient may be sensitive to most often are: Dairy products, Gluten containing grains, Citrus, Shellfish, Foods containing additives and food dyes. Several methods of food sensitivity testing are available.

Asthma
An increased Eosinophils - Absolute count and/or an increased Eosinophils - % are often seen in asthma due to the connection between allergies and asthma. A digestive stool analysis will frequently indicate dysbiosis in an asthmatic, and a liver detoxification panel will often indicate liver dysfunction.

Free T3 : Free T4

3.27 Ratio ↑

Hyperactive Thyroid
An elevated FT3:FT4 ratio, reflecting increased Free T3 and/or decreased Free T4, can be associated with a hyperactive thyroid and in extreme cases Graves' disease.

Thyrotoxicosis- Graves' disease
Calculating the ratio of free T3 to free T4 can help differentiate Graves' disease from subacute thyroiditis. A ratio of free T3/free T4 greater than 4.4 suggests Graves' disease whereas a ratio of 2.73 is suggestive of subacute thyroiditis in those with thyroid dysfunction.

Metabolic Syndrome
Research suggests that an elevated FT3:FT4 ratio may be predictive of metabolic syndrome. Results from the Dutch population-based LifeLines Cohort study of 26,719 men and women revealed that increases in the FT3:FT4 ratio were associated with four of five defining components of metabolic syndrome (i.e. blood pressure, HDL-cholesterol, triglycerides, and waist circumference but not fasting blood glucose). Subjects in the highest quartiles of FT3:FT4 ratio had a 50-80% increased risk of metabolic syndrome than those in the lowest quartile [14]. Mean baseline FT3:FT4 ratio was 2.88 for men and 2.75 for women (FT3 in pg/mL and FT4 in ng/dL).

Non-alcoholic fatty liver disease (NAFLD)
An increased FT3/FT4 ratio is considered an independent risk factor for NAFLD. Insulin resistance, enlarged waist circumference, elevated body mass index, and hypertriglyceridemia are also considered independent risk factors for NAFLD.

Globulin - Total

2.30 g/dL ↓

Digestive Inflammation/Gastritis
Suspect primary digestive inflammation or inflammation secondary to HCL insufficiency. The pattern will be similar to that of hypochlorhydria but the globulin may be decreased unless inflammation is severe. Many patients with the subjective and laboratory indications of HCl need experience an aggravation of their symptoms when taking HCL supplementation. Patients with this type of reaction probably have gastric inflammation due to a long-term HCL need. If inflammation is

suspected or present, support the digestive terrain to heal the inflammation appropriately for 3 to 4 weeks prior to initiating HCl therapy. Acute digestive inflammation may lead to an increased globulin level due to the increased production of inflammatory immunoglobulins. Chronic digestive inflammation due to colitis, enteritis, Crohn's etc., will compromise protein breakdown and absorption, leading to a widespread protein deficiency in the body and a decreased level of the inflammatory immunoglobulins, hence the decreased total globulin level. Decreased total globulin, decreased serum phosphorous, increased BUN, increased basophils, an increased gastrin and an increased ESR.

Immune insufficiency
A decreased total globulin suggests immune insufficiency. Suspect an increased use of globulin by the liver, spleen, thymus, kidneys, or heart. Apart from known kidney or heart dysfunction, rule out a chronic immune disruptor (virus, xenobiotics, toxicity etc.) and consider a serum protein electrophoresis test (look for a decreased gamma fraction) in the investigation of immune insufficiency.

Glucose Fasting

95.00 mg/dL ↑

Insulin resistance (Early stage) and glucose intolerance
Research has shown that individuals progress through several stages of insulin resistance and glucose intolerance before becoming a classic type II diabetic. The stages include: Normal glucose tolerance hypoglycemia (often due to hyperinsulinemia) insulin insensitivity/resistance eventually overt type II diabetes. An increased fasting blood glucose level is a sign that this individual is possibly in an insulin resistant phase, also known as a pre-diabetic state.

Early stage of Hyperglycemia/Diabetes
If serum glucose and Hemoglobin A1C are both above optimal, diabetes is probable. Serum triglycerides are often higher than the total cholesterol in patients with diabetes. Urinary glucose may be increased, HDL levels decreased, and BUN and creatinine frequently increased with the renal damage associated with diabetes. Follow-up with appropriate testing to confirm the diagnosis, e.g. oral Glucose Insulin Tolerance Testing (GITT).

Metabolic Syndrome / insulin resistance
Metabolic Syndrome or hyperinsulinemia is a cluster of related symptoms: Increased triglycerides, increased total cholesterol, decreased HDL cholesterol, obesity, increased blood insulin levels, increased glucose and increased blood pressure. The hallmark of this syndrome is the insulin resistance that leads to high glucose levels and an imbalance in blood fats. The overall effect is an increased risk for cardiovascular disease and diabetes.

Thiamine (Vitamin B1) need
An increased glucose is associated with a thiamine need. Thiamine transports glucose across the blood brain barrier and is an essential component in the enzymatic conversion of pyruvate into acetyl CoA that allows pyruvate to enter the Kreb's cycle. If glucose is increased and the hemoglobin A1C is normal, thiamine need is possible. If CO2 is decreased and the anion gap is increased along with moderately high serum glucose, thiamine need is probable. Due to thiamine's role in glycolysis, LDH levels may be decreased.

Anterior Pituitary resistance to cortisol
During the decompensated/maladapted phase of the chronic stress response, the hypothalamus and pituitary become less and less sensitive to cortisol, causing increased cortisol resistance. The net result is an increase in cortisol levels in the body because the negative feedback loop that shuts cortisol production down is not activated. Increased levels of circulating cortisol will cause increased blood glucose levels through increased gluconeogenesis. Excess cortisol will also reduce the utilization and uptake of glucose by the cell.

Acute stress
Increasing levels of stress cause the body to move into the chronic stress response. This is marked by an increased Cortisol to DHEA ratio, which causes an increase in gluconeogenic activity and a concomitant rise in blood glucose levels. Excess cortisol will also reduce the utilization and uptake of glucose by the cell.

Fatty liver (early development) and Liver congestion
High blood glucose levels have been associated with increased levels of blood fats, e.g. high total cholesterol, LDL and

triglycerides, low HDL. In individuals with liver congestion, this may lead to the deposition of fat in the liver and the development of fatty liver.

Hemoglobin

16.10 g/dl ↑

Asthma and emphysema
An increased hemoglobin is by no means a definitive diagnostic marker for 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 hemoglobin will go up accordingly.

Polycythemia (relative or primary)
Relative: a polycythemia that is relative to the degree of hemoconcentration, i.e. dehydration.

Primary: Polycythemia vera- a myeloproliferative disease marked by an increase in all blood cells. The hemoglobin will go up according to the increase in cell volume.

Dehydration
If the hemoglobin is increased suspect dehydration. Suspect a short-term (acute) dehydration if there is an increased HGB and/or HCT along with an increased RBC count. A relative increase in Sodium and Potassium can be noted as well. Suspect a long-term (chronic) dehydration if any of the above findings are accompanied by an increased Albumin, increased BUN, and/or serum Protein.

HOMA2-%B

62.20 % ↓

Progression towards Type 2 Diabetes
After prolonged, untreated insulin resistance and overactivity of beta cells, the beta cells will lose their capacity to maintain an increased activity level, beta-cell function and insulin production will decline, and this will be expressed by a DECREASE in the HOMA2-%B measurement.

A decreasing HOMA2-%B measurement (a decline of beta-cell function and insulin secretion), in addition to an elevated HOMA2-IR measurement (rising level of insulin resistance), is indicative of progression to Type 2 Diabetes Mellitus.

HOMA2-IR

0.63 Index ↓

Reactive Hypoglycemia
A decreased HOMA2-IR is associated with reactive hypoglycemia along with a normal or decreased fasting glucose, low triglycerides, a decreased HOMA2-%B, an increased HOMA2-%s, and a decreased LDH.

Pancreatogenic (Type 3c) Diabetes - T3cDM
Pancreatogenic (Type 3c) Diabetes (T3cDM) is a type of secondary diabetes associated with diseases of the exocrine pancreas the most common of which is chronic pancreatitis. Other disease of the exocrine pancreatitis include cystic fibrosis, pancreatic cancer, and hemochromatosis. A decreased HOMA2IR is a sign of T3cDM along with a normal or low fasting glucose, low triglycerides, an increased HOMA2-%B, a decreased HOMA2-%S, and a decreased LDH. The urine may also be positivive for Urinary uric acid and urinary calcium oxalate.

IGF-1

244.00 ng/ml ↑

Abnormal growth
Excess IGF-1 and growth hormone cause an abnormal increase in the growth of the skeleton, causing gigantism or acromegaly. Complications of these conditions include enlarged organs (including the heart), type 2 diabetes, high blood pressure, arthritis, increased risk of cardiovascular disease, and decreased lifespan.

Cancer risk increase
Insulin-like growth factor-1 may promote prostate, breast, lung, and colon cancer. It may be instrumental in stimulating cancer cell growth and inhibiting their death.

Insulin resistance, obesity, simple carbohydrate intake
An elevation in IGF-1 can be associated with increased circulating insulin levels related to obesity and excess high simple sugar intake.

Pituitary gland tumor
A pituitary tumor (usually benign) is the most common cause of elevated growth hormone which in turn increases IGF-1 production. If levels of IGF-1 are significantly elevated then a pituitary hormone is strongly suspected. If levels are slightly elevated then a glucose suppression test can help confirm the presence of a growth hormone-producing pituitary tumor. Since an excess intake of sugar normally causes a drop in growth hormone, a sustained elevation of growth hormone indicates a pituitary tumor.

Lymphocytes - %

43.00 % ↑

Childhood diseases (Measles, Mumps, Chicken-pox, Rubella)
In childhood disease Lymphocytes - Absolute will be decreased in the early phase and increased in the later phase, and Lymphocytes - % will be decreased in the early phase and increased in the later phase.

Acute viral infection
In viral diseases such as upper respiratory infections, cytomegalovirus, infectious hepatitis, and toxoplasmosis, Lymphocytes - % will be increased, Lymphocytes - Absolute will be increased along with an increased total WBC count.

Chronic viral infection
In chronic viral infections, you may still see increased lymphocytes - % and an increased Lymphocytes - Absolute, with a *decreased* total WBC count.

Infectious mononucleosis
A disease caused by the Epstein-Barr virus. It is most common in adolescents and young adults. It is characterized by an increased Lymphocyte - Absolute count and the presence of atypical lymphocytes or Downey cells. LDH levels are usually elevated in about 95% of cases of infectious mononucleosis and Epstein Barr infection (EBV). You may expect the following changes: decreased WBCs in the first week, increased WBCs by 2nd week of illness, increased Alk Phos and AST (about 5-14 days after onset of illness), increased GGT (about 7-21 days after onset of illness).

Relative Lymphocytosis
Lymphocytosis = a Lymphocytes - Absolute count above the standard reference range
This finding, along with a greatly elevated Total WBC count and very low neutrophils, may suggest a need for further investigation into acute and chronic lymphatic leukemia lymphoma.

Acute bacterial infections
Lymphocytes will tend to be normal.

Inflammation
An increased Lymphocyte - Absolute count and an increased Lymphocytes - % will often be seen in acute and chronic inflammation, especially Crohn's disease and ulcerative colitis.

Systemic toxicity or Poor Detoxification
Increased Lymphocytes - % and an increased Lymphocytes - Absolute count are associated with an increased level of toxicity in the body. If lymphocytes are increased, consider that either the body is dealing with excessive systemic toxins or the body cannot handle the current toxicity load and may not be detoxifying efficiently. Rule out heavy metals, xenobiotics, parasites, etc.

Neutrophils - %

45.00 % ↓

Blood diseases
Anything that affects the output of white blood cells from the bone marrow can cause a decreased Neutrophil - Absolute and Neutrophils - % (aplastic anemia, pernicious anemia, acute lymphoblastic leukemia)

Chronic viral infection
A chronic viral infection is possible with a decreased Neutrophils - %, a decreased Neutrophils - Absolute, an increased Lymphocytes - %, an increased Lymphocytes - Absolute, and/or a decreased total WBC count.

Protein - Total

6.70 g/dL ↓

Hypochlorhydria
A decreased or normal total protein level is often associated with a decreased production of hydrochloric acid in the stomach (Hypochlorhydria). Hypochlorhydria is possible with an increased globulin level and a normal or decreased total protein and/or albumin. Hypochlorhydria is probable if globulin levels are increased along with an increased BUN, a decreased or normal total protein and/or albumin, and/or decreased serum phosphorous. Other values that may be reflective of a developing or chronic hypochlorhydria include increased or decreased gastrin, an increased MCV and MCH, a decreased or normal calcium and a decreased iron, a decreased CO2, and a decreased alkaline phosphatase.

Digestive dysfunction/ inflammation
Suspect primary digestive inflammation or inflammation secondary to HCL insufficiency with a low total protein. This pattern will be similar to that of Hypochlorhydria but the globulin may be decreased unless inflammation is severe. Decreased total globulin, decreased serum phosphorous, increased BUN, increased basophils, and increased ESR.

Liver dysfunction
Dysfunction in the liver will have a great impact on protein production and synthesis, which will affect total serum protein levels. Therefore, a decreased total serum protein level may be indicative of liver dysfunction. Functionally-oriented liver problems, such as detoxification issues, liver congestion, and conjugation problems are extremely common and should be evaluated based on early prognostic indicators. The liver should always be viewed in the context of the hepato-biliary tree. Some of the key clinical indicators include:

- Pain between shoulder blades
- Stomach upset by greasy foods
- If drinking alcohol, easily intoxicated
- Headache over the eye
- Sensitive to chemicals (perfume, cleaning solvents, insecticides, exhaust, etc.)
- Hemorrhoids or varicose veins

Diet- Low Protein/ Protein Deficiency/ Malnutrition/ Amino Acid Need
Protein digestion is dependent on an optimal pH in the stomach. A decreased total protein can be an indicator of digestive dysfunction, which will greatly compromise protein digestion and absorption. Protein malnutrition is due primarily to the lack of available essential amino acids in the diet.

QUICKI

0.38 Index ↓

Decreased Levels Associated with:
Insulin resistance
Metabolic syndrome
Non Alcoholic Fatty Liver Disease (NAFLD)
Diabetes
Obesity

RDW

14.40 % ↑

Conditions Associated with an Increased RDW:

- Iron Deficiency
- Vitamin B12/folate Deficiency
- Pernicious Anemia
- Thalassemia
- Inflammation

Sodium : Potassium

37.00 ratio ↑

Acute Stress
An elevated sodium:potassium ratio is an indication of acute stress. Acute stress causes an increase in adrenal activity and an increase in aldosterone output. Aldosterone causes sodium to be retained in the body and an increase in serum sodium. This also causes the potassium to be excreted thus lowering the serum potassium levels. The net effect is an increased sodium:potassium ratio.

An inflammation indicator
An elevated sodium:potassium ratio is an indication of a higher aldosterone output. Aldosterone is often considered a pro-inflammatory hormone and cortisol is an anti-inflammatory hormone so an increase in aldosterone, as seen in a high sodium:potassium ratio is seen as an inflammatory indicator associated with inflammation and pain.

T4 - Total

5.70 µg/dL ↓

Primary hypothyroidism
In primary hypothyroidism the problem is located in the thyroid gland itself, which fails to produce thyroid hormone. Primary hypothyroidism is often preceded by autoimmune thyroid disease. If you have a patient with suspected thyroid disease you should screen for thyroid antibodies. Primary hypothyroidism will present with increased TSH levels and you may see a normal or decreased total T4 level, total T3, free T4, and free T3 along with a possible increase in cholesterol and/or triglyceride level.

Secondary Hypothyroidism (Anterior Pituitary Hypofunction)
Thyroid hypofunction is often secondary to an anterior pituitary hypofunction (Secondary Hypothyroidism). Suspect anterior pituitary dysfunction if the subjective indications of thyroid hypofunction are present and the following pattern is seen: A decreased TSH, a normal T-3 uptake, a decreased or normal Total T4, a normal or decreased Free T4 and a normal or decreased Free T3. The likelihood increases if serum triglycerides are elevated and total cholesterol is increased.

Additional elements that may be out of range with secondary hypothyrodism include an increased BUN above the "normal" range and an increased calcium. Anterior pituitary hypofunction is a common problem and one that is frequently mistaken for thyroid hypofunction (the subjective indications are usually identical and the patient's axillary temperature will frequently be below normal).

Iodine deficiency
In an iodine deficiency the total T4 will often be decreased along with a decreased free T4. The total T3 is often increased and the TSH is either normal or mildly elevated. Serum iodine levels will also be decreased.

Triglycerides

114.00 mg/dL ↑

Metabolic Syndrome /hyperinsulinemia/early stage diabetes
If triglycerides are increased above the total cholesterol level with increased LDL cholesterol, a decreased HDL, and increased fasting blood glucose, then metabolic syndrome and hyperinsulinemia is probable. Metabolic Syndrome can lead to adrenal dysregulation, so adrenal hyperfunctioning should be ruled out. Elevated triglycerides are seen in patients with diabetes. The triglycerides are often higher than the total cholesterol level. Lipid metabolism problems are a hallmark of the early stages of diabetes.

Fatty liver and Liver congestion
Increased triglycerides are associated with liver congestion and the early development of fatty liver (steatosis). If total cholesterol, LDL and triglyceride levels are increased, and HDL levels are decreased, then the early development of fatty liver is possible. Liver congestion, due to the fatty liver, should be considered if total cholesterol is above 180, triglycerides are increased , and the ALT is decreased.

Early stage of insulin resistance
Elevated triglycerides often accompany the elevated glucose levels that are seen in hyperinsulinism and insulin resistance.

Increased risk of cardiovascular disease, stroke and atherosclerosis
An increased triglyceride level is associated with the development of atherosclerosis and an increase in cardiovascular risk and stroke. Atherosclerosis is probable with an increased triglyceride level in relation to total cholesterol with an increased uric acid level (>5.9 or > 351 mmol/dL), a decreased HDL and an increased LDL. Platelet levels may also be increased (>385). Homocysteine levels are frequently increased with atherosclerosis. Hs-CRP and fibrinogen levels are frequently increased. Diabetes and thyroid hypofunction should also be considered with this pattern.

Poor metabolism and utilization of fats
This is often the case in patients that are eating an optimal diet and have elevated triglyceride and cholesterol levels.

Hypothyroidism
Primary hypothyroidism is possible if the triglycerides and cholesterol levels are increased along with an increased TSH. Consider Secondary Hypothyroidism if the TSH is decreased.

Hyperlipoproteinemia
Lipoprotein disorders usually present with elevated total cholesterol and triglyceride levels. There are 6 distinctive sub-types of these disorders, which are mostly genetic in nature. The lipid electrophoresis is one of the bests methods for determining the various metabolic problems associated with hyperlipoproteinemia.

Alcoholism
Alcohol is extremely calorie dense. Regular alcohol consumption and alcoholism can lead to significantly elevated levels of triglycerides in the blood. This is often accompanied by a greatly increased GGTP.

Vitamin B12

1128.00 pg/ml ↑

Functional B12 Deficiency Marked by Inadequate Uptake at the Tissue Level
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.

Other Conditions That May Need to be Followed-Up
Elevated B12 levels are also associated with conditions such as chronic myeloproliferative neoplasm, diabetes, heart failure, obesity, AIDS, or severe liver disease, all of which may have an increased Vitamin B12 level.

In a symptomatic patient
If the patient is symptomatic and the serum B12 levels are elevated ask whether or not they have received a B12 shot from another clinician within that last 12 months or has received Total Parenteral Nutrition (TPN) or a Multi-Vitamin Infusion (MVI). You will also want to ask if they are self-treating with high-dose B12. If neither of these is true then consider a therapeutic trial of B12 and monitor.

Vitamin D (25-OH)

49.40 ng/ml ↓

Vitamin D deficiency
A decreased Vitamin D is suggestive of a deficiency in vitamin D. Treatment should be initiated to raise the levels into the optimal range.

Vitamin D deficiency is associated with a number of diseases and disorders not limited to:

- Diabetes Mellitus
- Cancer
- Hypertension
- Cardiovascular disease
- Autoimmune/inflammatory disorders
- Vitamin D insufficiency is prevalent in patients with chronic musculoskeletal pain.

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