ways2well

Blood Chemistry Analysis

Functional Health Report

Practitioner Report

Prepared for	Tyler Anderton 28 year old male born May 26, 1995 Fasting
Requested by	Joseph Hurt, FNPC Ways 2 Well
Collected Date	Sep 15, 2023
Lab	Quest
Powered by	ODX | OptimalDX

What's Inside?

An introduction to Functional Blood Chemistry Analysis and this report.

An in-depth functional system and nutrient evaluation.

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

SECTION 1: INTRODUCTION

SECTION 2: ASSESSMENT

SECTION 3: ANALYSIS

Additional notes and information pertinent to this report.

SECTION 4: APPENDIX

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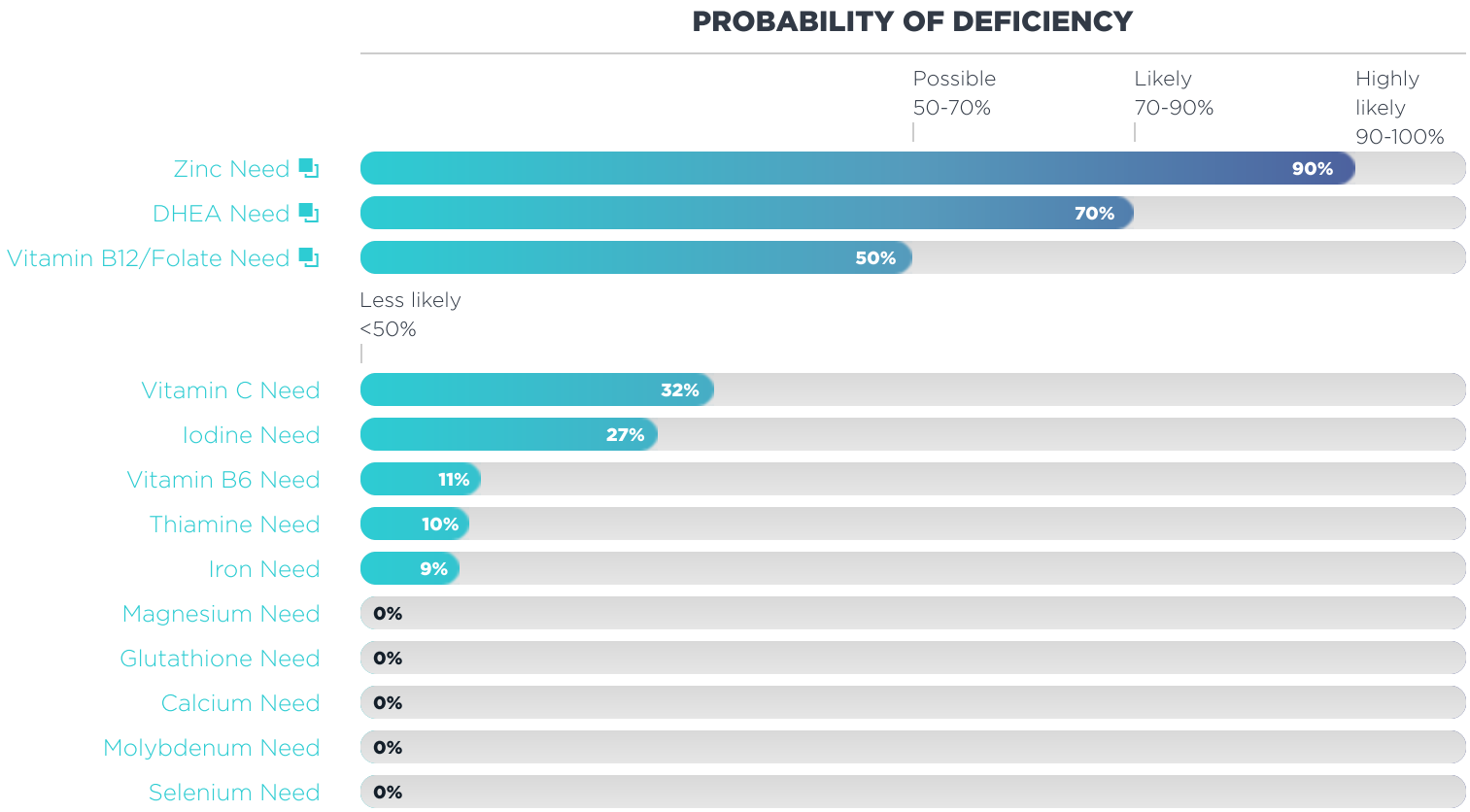
An in-depth functional system and nutrient evaluation.

Assessment

Individual Nutrient Deficiencies

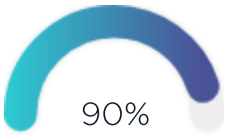
The values represent the degree of deficiency for individual nutrients based on your patient's blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of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

ZINC NEED

Consider a zinc need if the Serum Zinc levels are decreased along with a decreased Alk phos.

Rationale

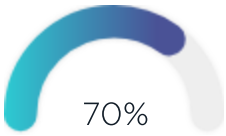
Alk Phos ↓

Biomarkers considered

Alk Phos

Patient result not available - consider running in future tests:

Zinc - RBC, Zinc - Serum



Deficiency Likely. Improvement required.

DHEA NEED

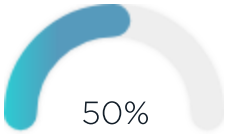
The results of this blood test indicate that this patient's DHEA levels might be lower than optimal.

Rationale

DHEA-S - Male ↓

Biomarkers considered

DHEA-S - Male



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

VITAMIN B12/FOLATE NEED

Consider a Vitamin B12 and folate need if the MCV is increased along with an increased MCH and an increased Methylmalonic Acid (MMA). If there is also an increased RDW, MCHC, and LDH (especially the LDH-1 isoenzyme fraction), and a decreased Uric Acid the probability of vitamin B-12/folate deficiency anemia is very high. Serum Vitamin B12 and serum Folate may also be decreased.

Rationale

MCV ↑, Albumin ↓

Biomarkers considered

MCV, Albumin, Total WBCs, RBC - Male, Hemoglobin - Male, Hematocrit - Male, MCH, MCHC, RDW, Neutrophils - %

Patient result not available - consider running in future tests:

Methylmalonic Acid, LDH, Homocysteine, Uric Acid - Male, Folate - Serum, Vitamin B12, Folate - RBC

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.

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	1	12	33	15	2	0	63

BLOOD GLUCOSE

Glucose - Fasting
98.00 mg/dL

Low	Below Optimal	Optimal	**Above Optimal**	High
< 65.00	65.00 - 75.00	75.00 - 86.00	**86.00 - 99.00**	> 99.00

Insulin - Fasting
3.20 µIU/ml

Below Optimal	**Optimal**	Above Optimal	High
< 2.00	**2.00 - 5.00**	5.00 - 19.60	> 19.60

Triglyceride-Glucose Index (TyG)
4.40 Index

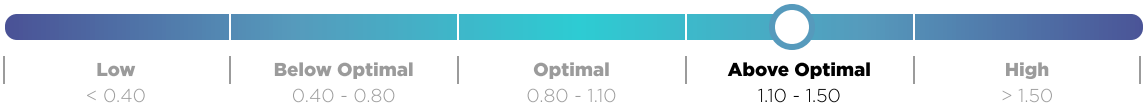
Optimal	Above Optimal	High
0 - 4.40	4.40 - 4.50	> 4.50

RENAL

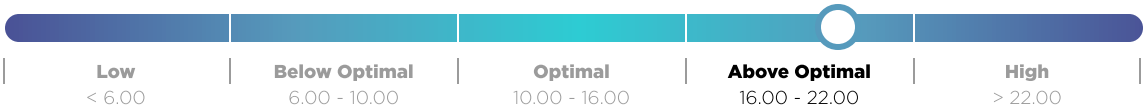
BUN
25.00 mg/dL

Low	Below Optimal	Optimal	**Above Optimal**	High
< 7.00	7.00 - 10.00	10.00 - 16.00	**16.00 - 25.00**	> 25.00

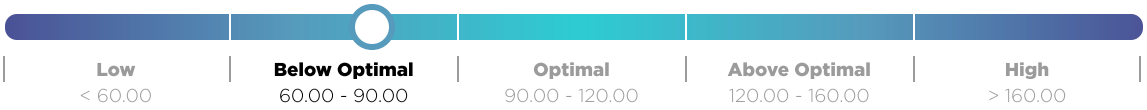
Creatinine
1.28 mg/dL



BUN : Creatinine
20.00 Ratio



eGFR
78.00 mL/min/1.73m2

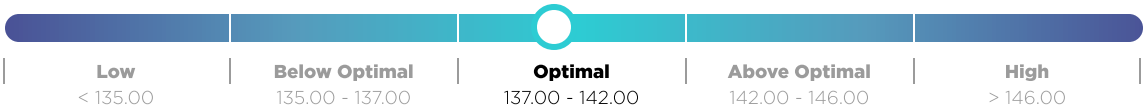


PROSTATE

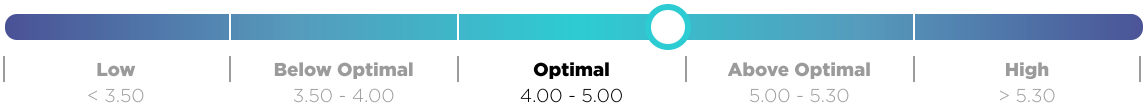
PSA - Total
0.54 ng/ml

ELECTROLYTES

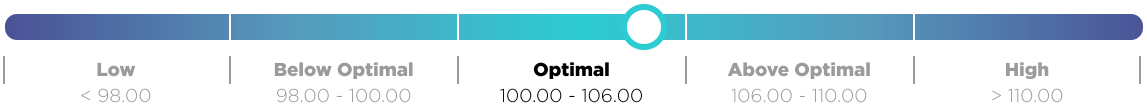
Sodium
139.00 mEq/L



Potassium
4.90 mEq/L



Chloride
105.00 mEq/L

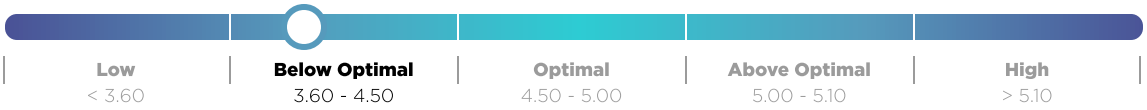


CO2
29.00 mEq/L

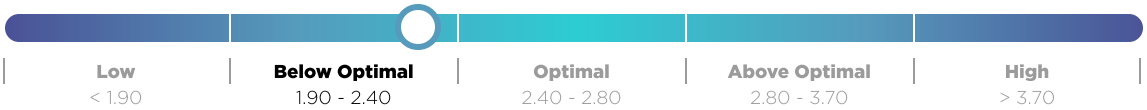
PROTEINS

Protein - Total
6.20 g/dL

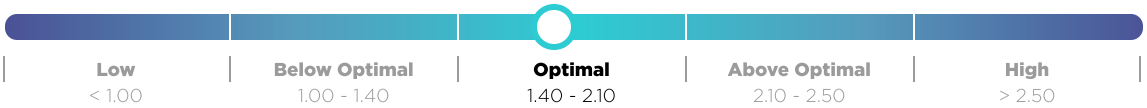
Albumin
3.90 g/dL



Globulin - Total
2.30 g/dL

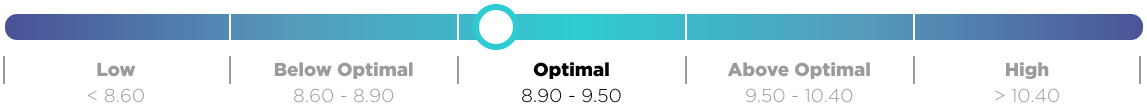


Albumin : Globulin
1.70 ratio

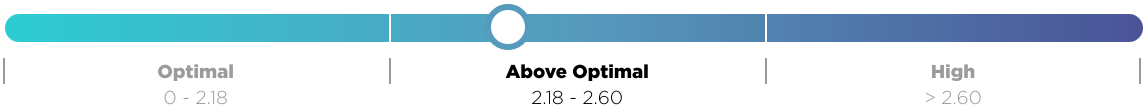


MINERALS

Calcium
9.00 mg/dL

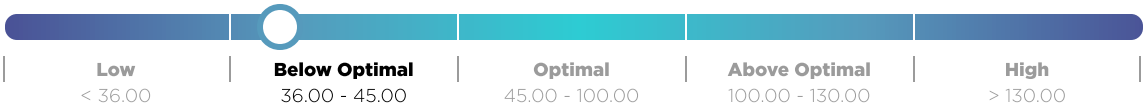


Calcium : Albumin
2.31 ratio

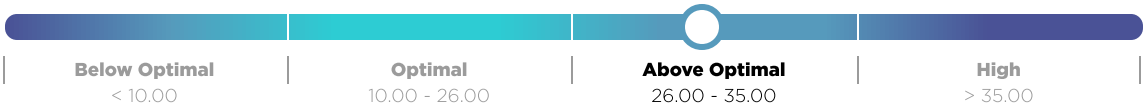


LIVER AND GB

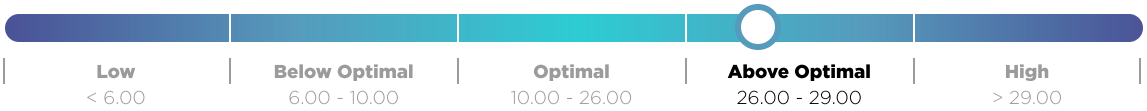
Alk Phos
38.00 IU/L



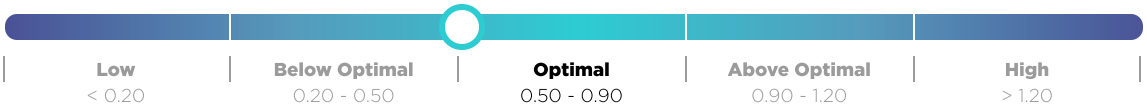
AST
30.00 IU/L



ALT
27.00 IU/L



Bilirubin - Total
0.50 mg/dL

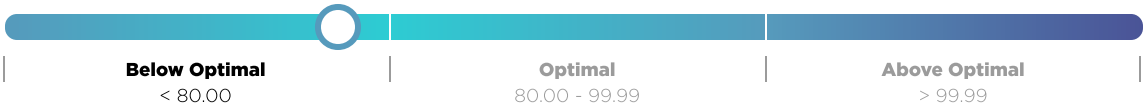


LIPIDS

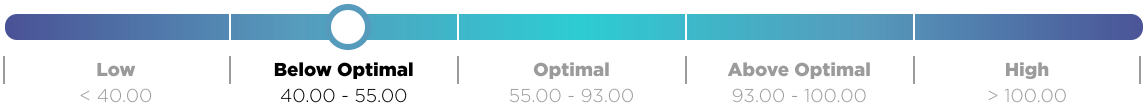
Cholesterol - Total
132.00 mg/dL

Triglycerides
68.00 mg/dL

LDL Cholesterol
70.00 mg/dL



HDL Cholesterol
48.00 mg/dL



Non-HDL Cholesterol
84.00 mg/dl

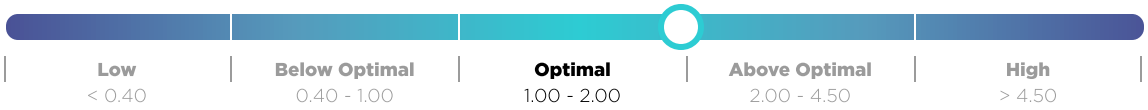
LDL : HDL - Male
1.46 Ratio

Triglyceride:HDL
1.42 ratio

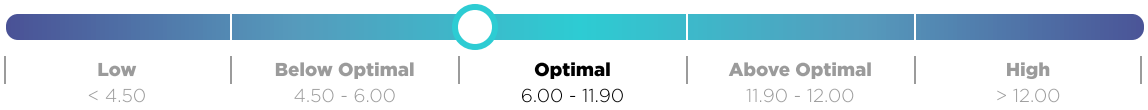
Cholesterol : HDL
2.80 Ratio

THYROID

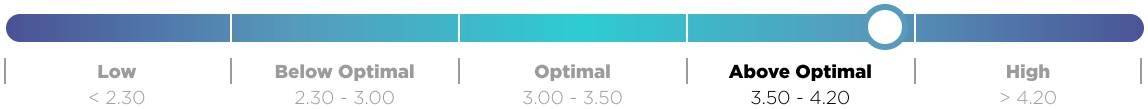
TSH
1.98 µU/mL



T4 - Total
6.40 µg/dL



T3 - Free
4.10 pg/ml

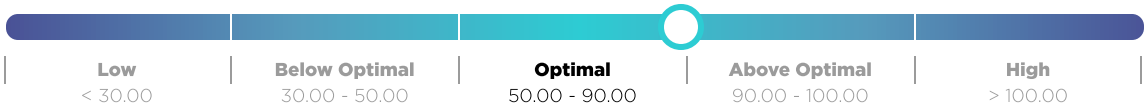


T3 Uptake
33.00 %

Free Thyroxine Index (T7)
2.10 Index

VITAMINS

Vitamin D (25-OH)
89.00 ng/ml



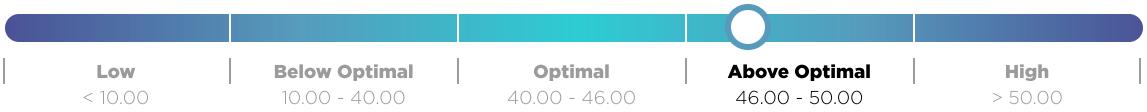
HORMONES

DHEA-S - Male
346.00 µg/dL

Testosterone Total - Male
1259.00 ng/dl

Testosterone Free - Male
160.80 pg/ml

Sex Hormone Binding Globulin - Male
47.00 nmol/L

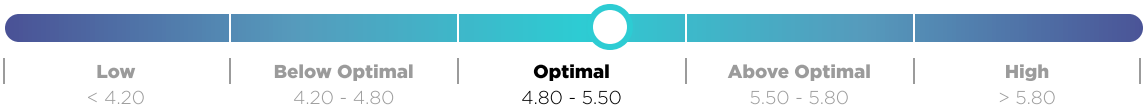


% Testosterone Bioavailable - Male
22.93 %

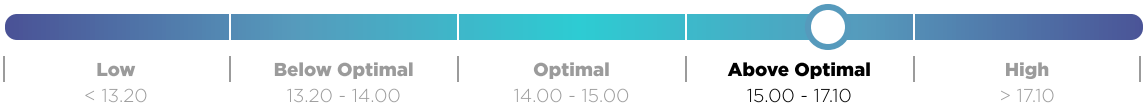
Testosterone Bioavailable - Male
288.70 ng/dl

CBC

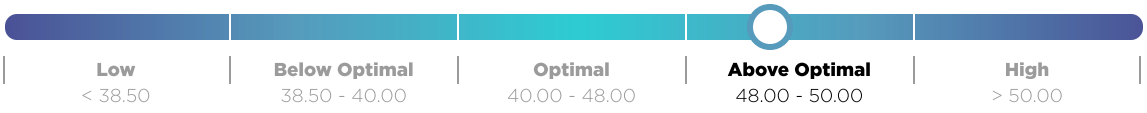
RBC - Male
5.28 m/cumm



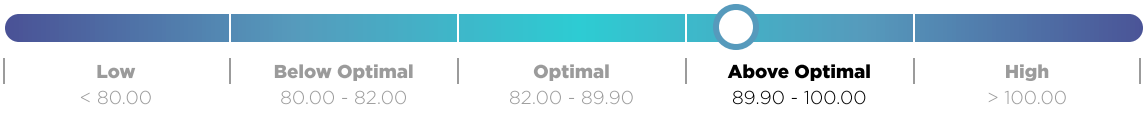
Hemoglobin - Male
16.30 g/dl



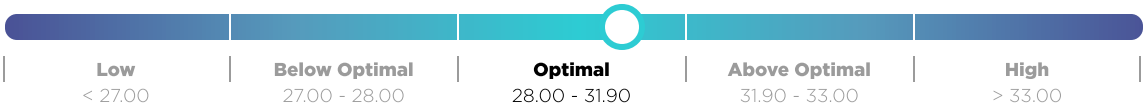
Hematocrit - Male
48.70 %



MCV
92.20 fL

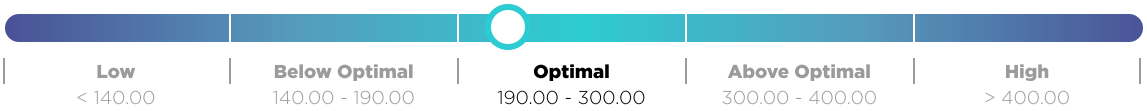


MCH
30.90 pg



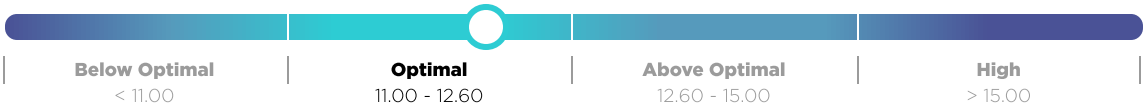
MCHC
33.50 g/dL

Platelets
213.00 10E3/µL



MPV
9.50 fL

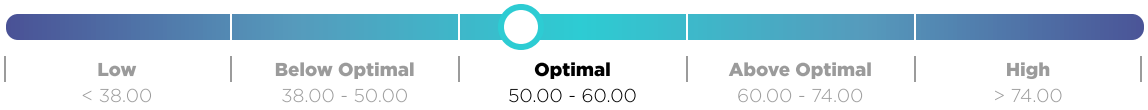
RDW
12.10 %



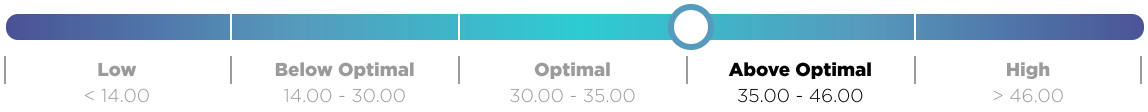
WBCS

Total WBCs
4.80 k/cumm

Neutrophils - %
52.70 %

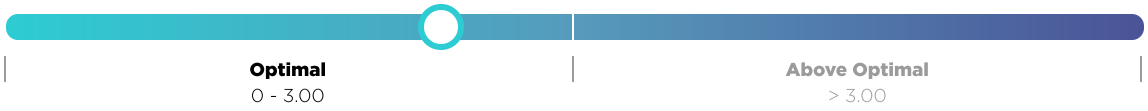


Lymphocytes - %
35.40 %



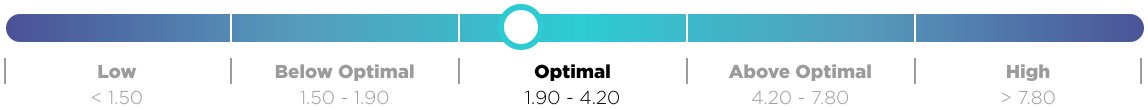
Monocytes - %
8.30 %

Eosinophils - %
2.30 %

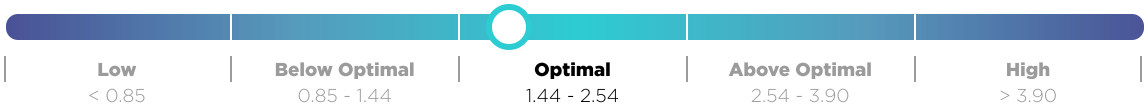


Basophils - %
1.30 %

Neutrophils - Absolute
2.53 k/cumm



Lymphocytes - Absolute
1.70 k/cumm



Monocytes - Absolute
0.40 k/cumm

Eosinophils - Absolute
0.11 k/cumm

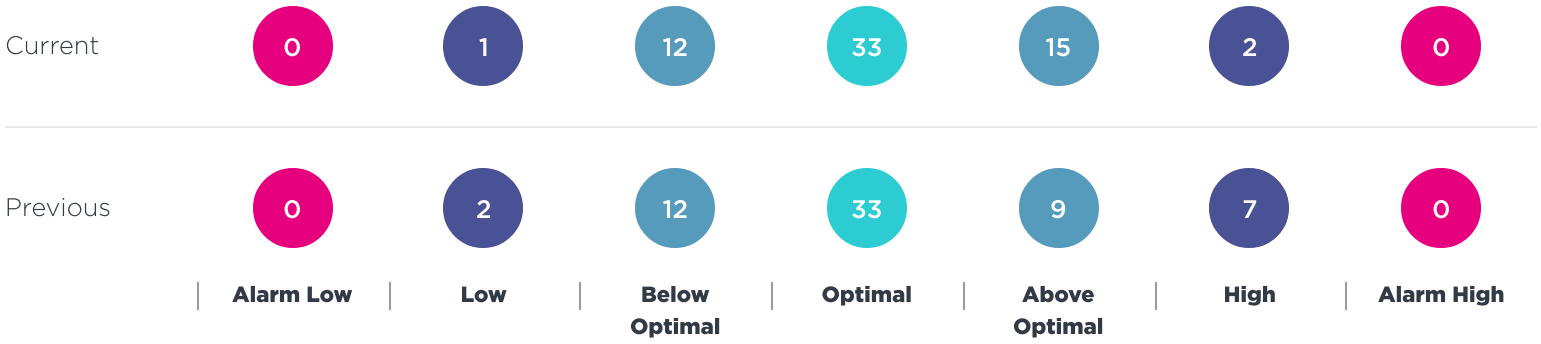
Basophils - Absolute
0.06 k/cumm

Neutrophil : Lymphocyte
1.49 Ratio

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	Quest Previous Jun 03 2023	Quest Current Sep 15 2023	Optimal range	Standard range	Units
Glucose - Fasting	81.00	98.00 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Insulin - Fasting	3.20	3.20	2.00 - 5.00	0 - 19.60	µIU/ml
Triglyceride-Glucose Index (TyG)	4.20	4.40	0 - 4.40	0 - 4.50	Index
BUN	22.00 ↑	25.00 ↑	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	1.24 ↑	1.28 ↑	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN : Creatinine	17.74 ↑	20.00 ↑	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	81.00 ↓	78.00 ↓	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
PSA - Total	0.41	0.54	0 - 2.00	0 - 4.00	ng/ml
Sodium	139.00	139.00	137.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	4.20	4.90	4.00 - 5.00	3.50 - 5.30	mEq/L
Chloride	103.00	105.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2	29.00	29.00	25.00 - 30.00	19.00 - 30.00	mEq/L
Protein - Total	6.60 ↓	6.20 ↓	6.90 - 8.10	6.10 - 8.10	g/dL
Albumin	4.20 ↓	3.90 ↓	4.50 - 5.00	3.60 - 5.10	g/dL

Biomarker	Quest Previous Jun 03 2023	Quest Current Sep 15 2023	Optimal range	Standard range	Units
Globulin - Total	2.40	2.30 ↓	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin : Globulin	1.80	1.70	1.40 - 2.10	1.00 - 2.50	ratio
Calcium	9.30	9.00	8.90 - 9.50	8.60 - 10.40	mg/dL
Calcium : Albumin	2.21 ↑	2.31 ↑	0 - 2.18	0 - 2.60	ratio
Alk Phos	46.00	38.00 ↓	45.00 - 100.00	36.00 - 130.00	IU/L
AST	39.00 ↑ ↑	30.00 ↑	10.00 - 26.00	10.00 - 35.00	IU/L
ALT	35.00 ↑ ↑	27.00 ↑	10.00 - 26.00	6.00 - 29.00	IU/L
Bilirubin - Total	0.50	0.50	0.50 - 0.90	0.20 - 1.20	mg/dL
Cholesterol - Total	117.00 ↓ ↓	132.00 ↓	160.00 - 199.00	125.00 - 199.00	mg/dL
Triglycerides	55.00 ↓	68.00 ↓	70.00 - 80.00	0 - 149.99	mg/dL
LDL Cholesterol	56.00 ↓	70.00 ↓	80.00 - 99.99	0 - 99.99	mg/dL
HDL Cholesterol	47.00 ↓	48.00 ↓	55.00 - 93.00	40.00 - 100.00	mg/dL
Non-HDL Cholesterol	70.00	84.00	70.00 - 99.00	0 - 129.99	mg/dl
LDL : HDL - Male	1.19	1.46	0 - 2.28	0 - 4.90	Ratio
Triglyceride:HDL	1.17	1.42	0.50 - 1.90	0 - 2.00	ratio
Cholesterol : HDL	2.50	2.80	0 - 3.00	0 - 5.00	Ratio
TSH	1.02	1.98	1.00 - 2.00	0.40 - 4.50	µU/mL
T4 - Total	7.20	6.40	6.00 - 11.90	4.50 - 12.00	µg/dL
T3 - Free	3.70 ↑	4.10 ↑	3.00 - 3.50	2.30 - 4.20	pg/ml
T3 Uptake	34.00	33.00	27.00 - 35.00	22.00 - 35.00	%
Free Thyroxine Index (T7)	2.40	2.10	1.70 - 4.60	1.40 - 3.80	Index
Vitamin D (25-OH)	115.00 ↑ ↑	89.00	50.00 - 90.00	30.00 - 100.00	ng/ml
DHEA-S - Male	239.00 ↓	346.00 ↓	350.00 - 690.00	85.00 - 690.00	µg/dL
Testosterone Total - Male	617.00 ↓	1259.00 ↑ ↑	700.00 - 1100.00	250.00 - 1100.00	ng/dl
Testosterone Free - Male	71.20 ↓	160.80	150.00 - 224.00	46.00 - 224.00	pg/ml
Sex Hormone Binding Globulin - Male	42.00	47.00 ↑	40.00 - 46.00	10.00 - 50.00	nmol/L
% Testosterone Bioavailable - Male	22.23 ↓ ↓	22.93 ↓ ↓	53.00 - 65.00	35.00 - 65.00	%
Testosterone Bioavailable - Male	137.20 ↓	288.70 ↓	375.00 - 575.00	110.00 - 575.00	ng/dl
RBC - Male	5.48	5.28	4.80 - 5.50	4.20 - 5.80	m/cumm
Hemoglobin - Male	17.20 ↑ ↑	16.30 ↑	14.00 - 15.00	13.20 - 17.10	g/dl
Hematocrit - Male	51.10 ↑ ↑	48.70 ↑	40.00 - 48.00	38.50 - 50.00	%
MCV	93.20 ↑	92.20 ↑	82.00 - 89.90	80.00 - 100.00	fL

Biomarker	Quest Previous Jun 03 2023	Quest Current Sep 15 2023	Optimal range	Standard range	Units
MCH	31.40	30.90	28.00 - 31.90	27.00 - 33.00	pg
MCHC	33.70 ↓	33.50 ↓	34.00 - 36.00	32.00 - 36.00	g/dL
Platelets	245.00	213.00	190.00 - 300.00	140.00 - 400.00	10E3/µL
MPV	9.60 ↑	9.50 ↑	7.50 - 8.20	7.50 - 11.50	fL
RDW	11.80	12.10	11.00 - 12.60	11.00 - 15.00	%
Total WBCs	4.00	4.80	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	48.40 ↓	52.70	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	36.10 ↑	35.40 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes - %	9.50 ↑	8.30 ↑	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	4.00 ↑ ↑	2.30	0 - 3.00	0 - 3.00	%
Basophils - %	2.00 ↑ ↑	1.30 ↑ ↑	0 - 1.00	0 - 1.00	%
Neutrophils - Absolute	1.94	2.53	1.90 - 4.20	1.50 - 7.80	k/cumm
Lymphocytes - Absolute	1.44	1.70	1.44 - 2.54	0.85 - 3.90	k/cumm
Monocytes - Absolute	0.38	0.40	0.20 - 0.40	0.20 - 0.95	k/cumm
Eosinophils - Absolute	0.16	0.11	0.03 - 0.20	0 - 0.50	k/cumm
Basophils - Absolute	0.08	0.06	0 - 0.10	0 - 0.20	k/cumm
Neutrophil : Lymphocyte	1.35	1.49	1.00 - 1.70	1.00 - 3.00	Ratio

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
- Above / Below Optimal
- Above / Below Standard
- Alarm High / Alarm Low

Biomarker	Latest 2 Test Results	
	Quest	Quest
	Jun 03 2023	Sep 15 2023
Glucose - Fasting	81.00	98.00 ↑
Hemoglobin A1C	4.70	
eAG	88.19	
Insulin - Fasting	3.20	3.20
Triglyceride-Glucose Index (TyG)	4.20	4.40
BUN	22.00 ↑	25.00 ↑
Creatinine	1.24 ↑	1.28 ↑
BUN : Creatinine	17.74 ↑	20.00 ↑
eGFR	81.00 ↓	78.00 ↓
PSA - Total	0.41	0.54
Sodium	139.00	139.00
Potassium	4.20	4.90
Chloride	103.00	105.00
CO2	29.00	29.00
Protein - Total	6.60 ↓	6.20 ↓
Albumin	4.20 ↓	3.90 ↓
Globulin - Total	2.40	2.30 ↓
Albumin : Globulin	1.80	1.70

Biomarker	Latest 2 Test Results	
	Quest	Quest
	Jun 03 2023	Sep 15 2023
Calcium	9.30	9.00
Magnesium - Serum	2.20	
Calcium : Albumin	2.21 ↑	2.31 ↑
Alk Phos	46.00	38.00 ↓
AST	39.00 ↑ ↑	30.00 ↑
ALT	35.00 ↑ ↑	27.00 ↑
Bilirubin - Total	0.50	0.50
Ferritin	117.00 ↑	
Cholesterol - Total	117.00 ↓ ↓	132.00 ↓
Triglycerides	55.00 ↓	68.00 ↓
LDL Cholesterol	56.00 ↓	70.00 ↓
HDL Cholesterol	47.00 ↓	48.00 ↓
Non-HDL Cholesterol	70.00	84.00
LDL : HDL - Male	1.19	1.46
Triglyceride:HDL	1.17	1.42
Cholesterol : HDL	2.50	2.80
TSH	1.02	1.98
T4 - Total	7.20	6.40
T3 - Free	3.70 ↑	4.10 ↑
T3 Uptake	34.00	33.00
Free Thyroxine Index (T7)	2.40	2.10
Vitamin D (25-OH)	115.00 ↑ ↑	89.00
Vitamin B12	1362.00 ↑ ↑	
Folate - Serum	21.10	
DHEA-S - Male	239.00 ↓	346.00 ↓
Testosterone Total - Male	617.00 ↓	1259.00 ↑ ↑

Biomarker	Latest 2 Test Results	
	Quest	Quest
	Jun 03 2023	Sep 15 2023
Testosterone Free - Male	71.20 ↓	160.80
Sex Hormone Binding Globulin - Male	42.00	47.00 ↑
Estradiol - Male	20.00 ↓	
Cortisol - Total/AM	9.00 ↓	
Cortisol : DHEA-S	0.04	
% Testosterone Bioavailable - Male	22.23 ↓ ↓	22.93 ↓ ↓
Testosterone Bioavailable - Male	137.20 ↓	288.70 ↓
RBC - Male	5.48	5.28
Hemoglobin - Male	17.20 ↑ ↑	16.30 ↑
Hematocrit - Male	51.10 ↑ ↑	48.70 ↑
MCV	93.20 ↑	92.20 ↑
MCH	31.40	30.90
MCHC	33.70 ↓	33.50 ↓
Platelets	245.00	213.00
MPV	9.60 ↑	9.50 ↑
RDW	11.80	12.10
Total WBCs	4.00	4.80
Neutrophils - %	48.40 ↓	52.70
Lymphocytes - %	36.10 ↑	35.40 ↑
Monocytes - %	9.50 ↑	8.30 ↑
Eosinophils - %	4.00 ↑ ↑	2.30
Basophils - %	2.00 ↑ ↑	1.30 ↑ ↑
Neutrophils - Absolute	1.94	2.53
Lymphocytes - Absolute	1.44	1.70
Monocytes - Absolute	0.38	0.40
Eosinophils - Absolute	0.16	0.11

Biomarker		Latest 2 Test Results	
		Quest	Quest
		Jun 03 2023	Sep 15 2023
Basophils - Absolute		0.08	0.06
Neutrophil : Lymphocyte		1.35	1.49

Out of Optimal Range

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

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

Total number of biomarkers by optimal range

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	1	12	33	15	2	0	63

Above Optimal

9.50 fL

MPV

MPV or Mean Platelet Volume is a calculated measurement of the relative size of platelets in the blood. Elevated levels of MPV are seen with platelet destruction.

25.00 mg/dL

BUN

BUN or Blood Urea Nitrogen reflects the ratio between the production and clearance of urea in the body. Urea is formed almost entirely by the liver from both protein metabolism and protein digestion. The amount of urea excreted as BUN varies with the amount of dietary protein intake. Increased BUN may be due to increased production of urea by the liver or decreased excretion by the kidney. BUN is a test used predominantly to measure kidney function, where it will be increased. An increased BUN is also associated with dehydration and hypochlorhydria.

16.30
g/dl

HEMOGLOBIN - MALE

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

4.10
pg/ml

T3 - FREE

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

98.00
mg/dL

GLUCOSE - FASTING

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

20.00
Ratio

BUN : CREATININE

The BUN/Creatinine is a ratio between the BUN and Creatinine levels. An increased level is associated with renal dysfunction.

1.28
mg/dL

CREATININE

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

8.30
%

MONOCYTES - %

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

1259.00
ng/dl

TESTOSTERONE TOTAL - MALE

Testosterone is the primary sex hormone for men. The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). Elevated total testosterone levels may be seen in patients that are over supplementing with supplemental testosterone or can be a sign of testosterone over-production in the body.

1.30
%

BASOPHILS - %

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

92.20
fL

MCV

The MCV is a measurement of the volume in cubic microns of an average single red blood cell. MCV indicates whether the red blood cell size appears normal (normocytic), small (microcytic), or large (macrocytic). An increase or decrease in MCV can help determine the type of anemia present. An increased MCV is associated with B12, folate, or vitamin C deficiency.

30.00
IU/L

AST

AST is an enzyme present in highly metabolic tissues such as skeletal muscle, the liver, the heart, kidney, and lungs. This enzyme is at times released into the bloodstream following cell damage or destruction. AST levels will be increased when liver cells and/or heart muscle cells and/or skeletal muscle cells are damaged. The cause of the damage must be investigated.

47.00
nmol/L

SEX HORMONE BINDING GLOBULIN - MALE

Sex Hormone Binding Globulin (SHBG) is a protein produced primarily in the liver and to some extent the testes and the brain. SHBG acts as a transport molecule for carrying estrogen and testosterone around the body and delivering them to receptors on the cells. Elevated SHBG levels in the blood cause too much testosterone to be bound thus it becomes less available to do its functional work in the body and leads to a decrease in Free Testosterone levels.

48.70
%

HEMATOCRIT - MALE

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

35.40
%

LYMPHOCYTES - %

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

27.00
IU/L

ALT

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

2.31
ratio

CALCIUM : ALBUMIN

The Calcium:Albumin ratio is determined from serum calcium and albumin levels. Elevated levels can be a sign of protein deficiency or protein loss.

Below Optimal

22.93
%

% TESTOSTERONE BIOAVAILABLE - MALE

This test measures the % of bioavailable testosterone found in the blood. Bioavailable testosterone is the amount of testosterone in the blood that is readily available for biological activity. 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.

3.90
g/dL

ALBUMIN

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

132.00
mg/dL

CHOLESTEROL - TOTAL

Cholesterol is a steroid found in every cell of the body and in the plasma. It is an essential component in the structure of the cell membrane where it controls membrane fluidity. It provides the structural backbone for every steroid hormone in the body, which includes adrenal and sex hormones and vitamin D. The myelin sheaths of nerve fibers are derived from cholesterol and the bile salts that emulsify fats are composed of cholesterol. Cholesterol is made in the body by the liver and other organs and from dietary sources. The liver, the intestines, and the skin produce between 60-80% of the body's cholesterol. The remainder comes from the diet. Decreased cholesterol levels are a strong indicator of gallbladder dysfunction, oxidative stress, inflammatory process, low-fat diets, and an increased heavy metal burden.

6.20
g/dL

PROTEIN - TOTAL

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

70.00
mg/dL

LDL CHOLESTEROL

LDL functions to transport cholesterol and other fatty acids from the liver to the peripheral tissues for uptake and metabolism by the cells. It is known as "bad cholesterol" because it is thought that this process of bringing cholesterol from the liver to the peripheral tissue increases the risk for atherosclerosis. There is no clinical significance for a decreased LDL level.

288.70
ng/dl

TESTOSTERONE BIOAVAILABLE - MALE

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

78.00
mL/min/1.73m2

EGFR

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

2.30
g/dL

GLOBULIN - TOTAL

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

33.50
g/dL

MCHC

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

68.00
mg/dL

TRIGLYCERIDES

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

48.00
mg/dL

HDL CHOLESTEROL

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

38.00
IU/L

ALK PHOS

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

346.00
µg/dL

DHEA-S - MALE

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

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

Appendix

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