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	Dec 07, 2023
Lab	Quest
Powered by	ODX | OptimalDX

What's Inside?

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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

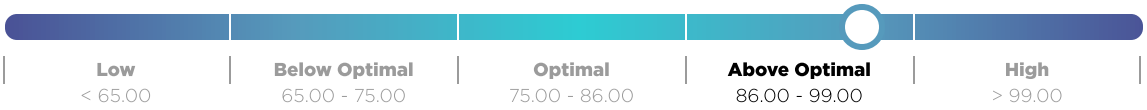
The Blood Test Results Report lists the results of your patient's Chemistry Screen and CBC and shows you whether or not an individual biomarker is optimal, outside of the optimal range, or outside of the standard range. The biomarkers are grouped into their most common categories.

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.

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	0	9	23	17	8	0	57

BLOOD GLUCOSE

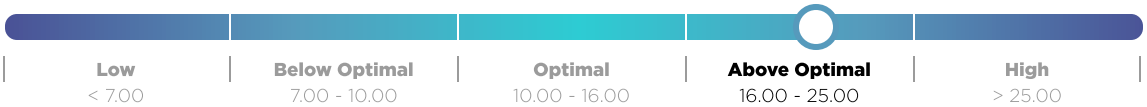
Glucose: Fasting
96.00 mg/dL



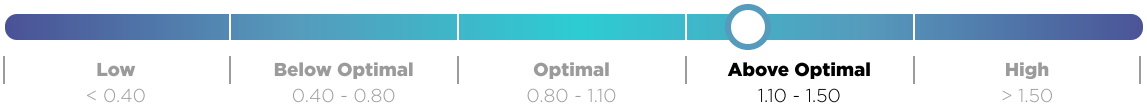
Insulin: Fasting
7.30 µIU/ml

RENAL

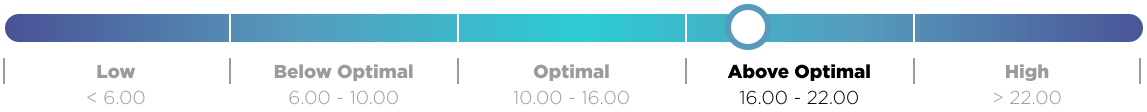
BUN
21.00 mg/dL



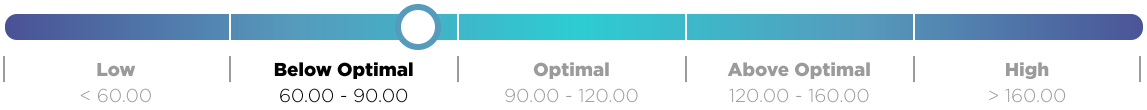
Creatinine
1.20 mg/dL



BUN : Creatinine
17.50 Ratio



eGFR
84.00 mL/min/1.73m2

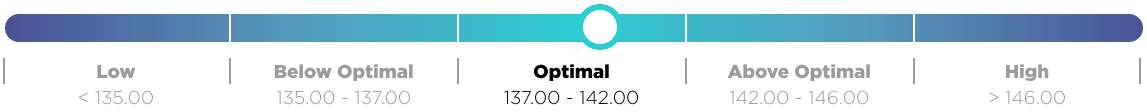


PROSTATE

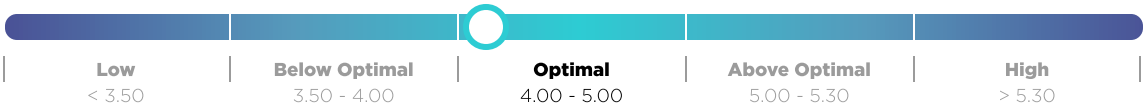
PSA - Total
0.45 ng/ml

ELECTROLYTES

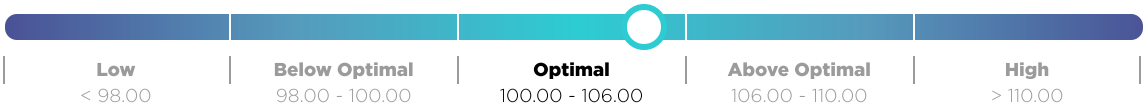
Sodium
140.00 mEq/L



Potassium
4.10 mEq/L



Chloride
105.00 mEq/L

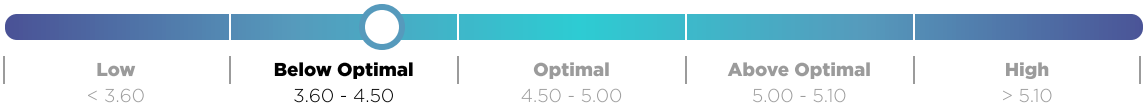


CO2
28.00 mEq/L

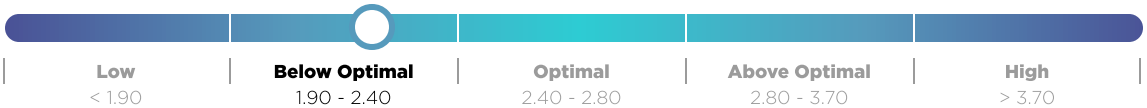
PROTEINS

Protein - Total
6.40 g/dL

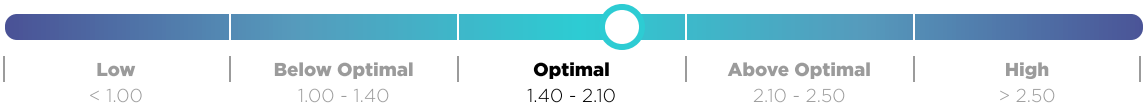
Albumin
4.20 g/dL



Globulin - Total
2.20 g/dL

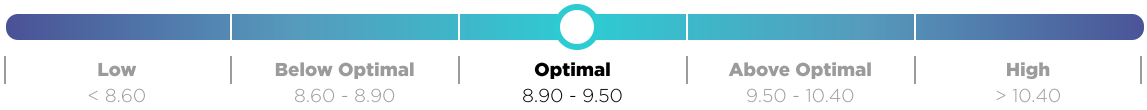


Albumin : Globulin
1.90 ratio



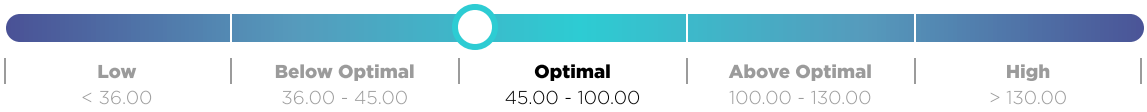
MINERALS

Calcium
9.20 mg/dL



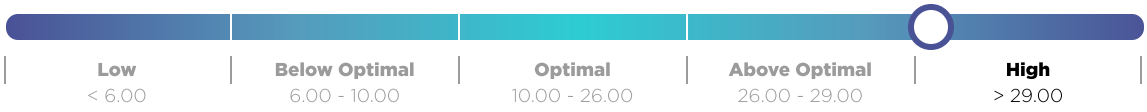
LIVER AND GB

Alk Phos
49.00 IU/L

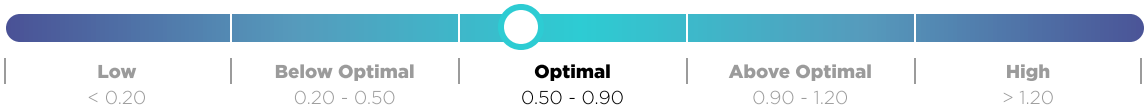


AST
33.00 IU/L

ALT
34.00 IU/L



Bilirubin - Total
0.60 mg/dL

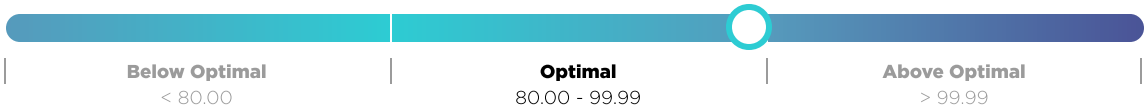


LIPIDS

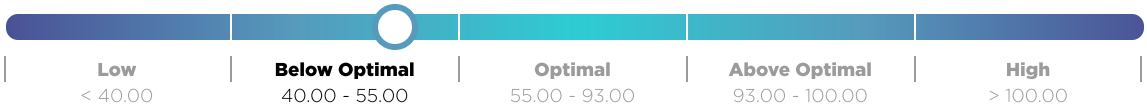
Cholesterol - Total
171.00 mg/dL

Triglycerides
112.00 mg/dL

LDL Cholesterol
99.00 mg/dL

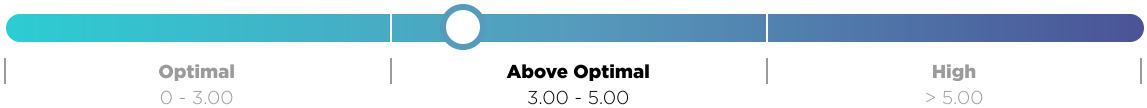


HDL Cholesterol
51.00 mg/dL



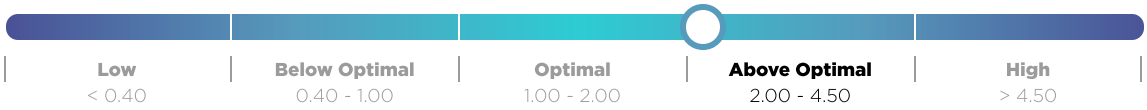
Non-HDL Cholesterol
120.00 mg/dl

Cholesterol : HDL
3.40 Ratio

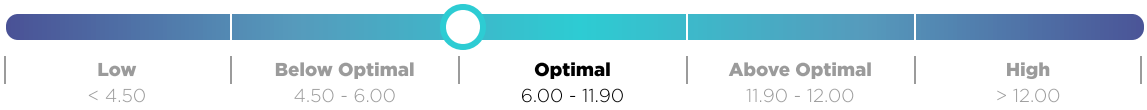


THYROID

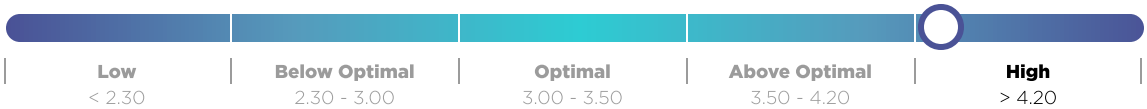
TSH
2.24 µU/mL



T4 - Total
6.00 µg/dL



T3 - Free
4.40 pg/ml

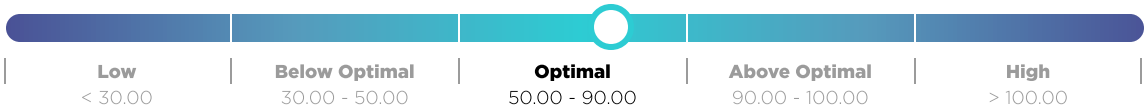


T3 Uptake
33.00 %

Free Thyroxine Index (T7)
2.00 Index

VITAMINS

Vitamin D (25-OH)
76.00 ng/ml



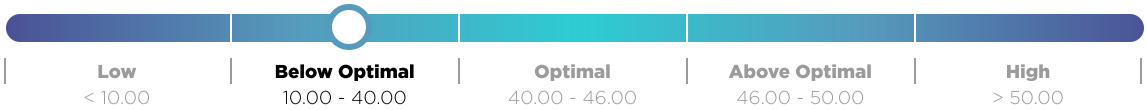
HORMONES

DHEA-S - Male
343.00 µg/dL

Testosterone Total - Male
1188.00 ng/dl

Testosterone Free - Male
261.10 pg/ml

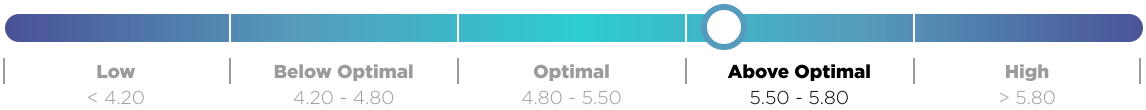
Sex Hormone Binding Globulin - Male
25.00 nmol/L



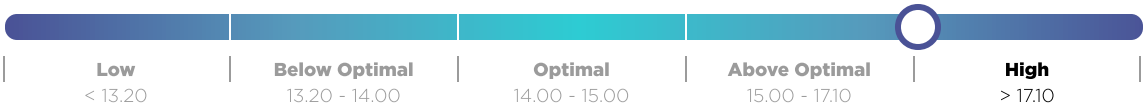
Testosterone Bioavailable - Male
502.90 ng/dl

CBC

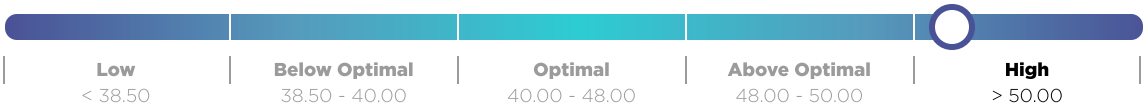
RBC - Male
5.55 m/cumm



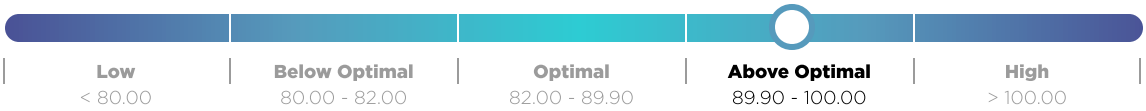
Hemoglobin - Male
17.20 g/dl



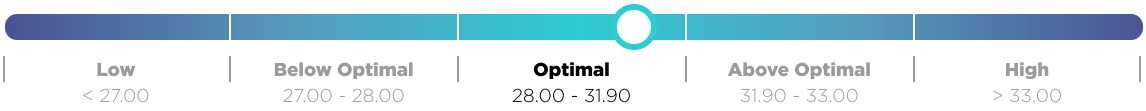
Hematocrit - Male
52.50 %



MCV
94.60 fL

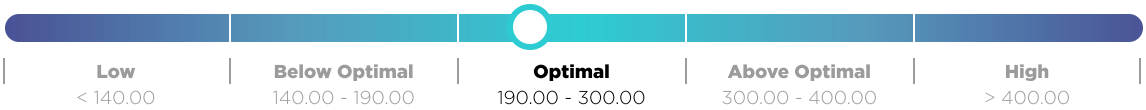


MCH
31.00 pg



MCHC
32.80 g/dL

Platelets
227.00 10E3/µL



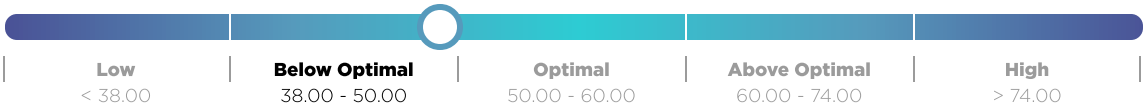
MPV
9.20 fL

RDW
12.20 %

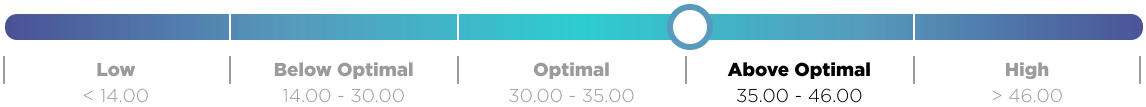
WBCS

Total WBCs
4.60 k/cumm

Neutrophils - %
48.90 %

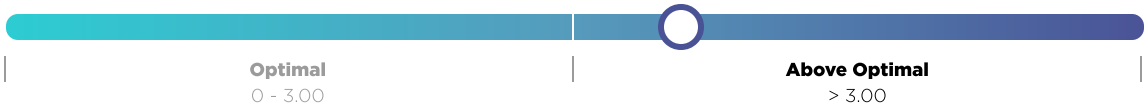


Lymphocytes - %
35.20 %



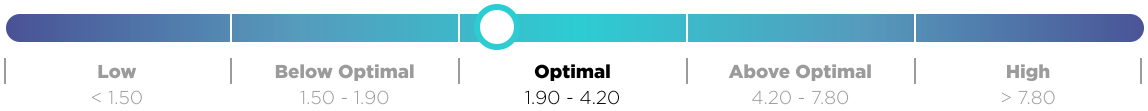
Monocytes - %
9.60 %

Eosinophils - %
5.20 %

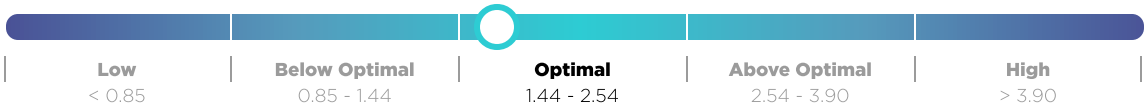


Basophils - %
1.10 %

Neutrophils - Absolute
2.25 k/cumm

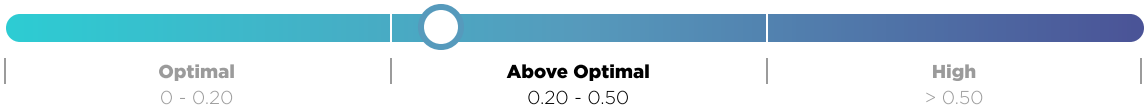


Lymphocytes - Absolute
1.62 k/cumm



Monocytes - Absolute
0.44 k/cumm

Eosinophils - Absolute
0.24 k/cumm

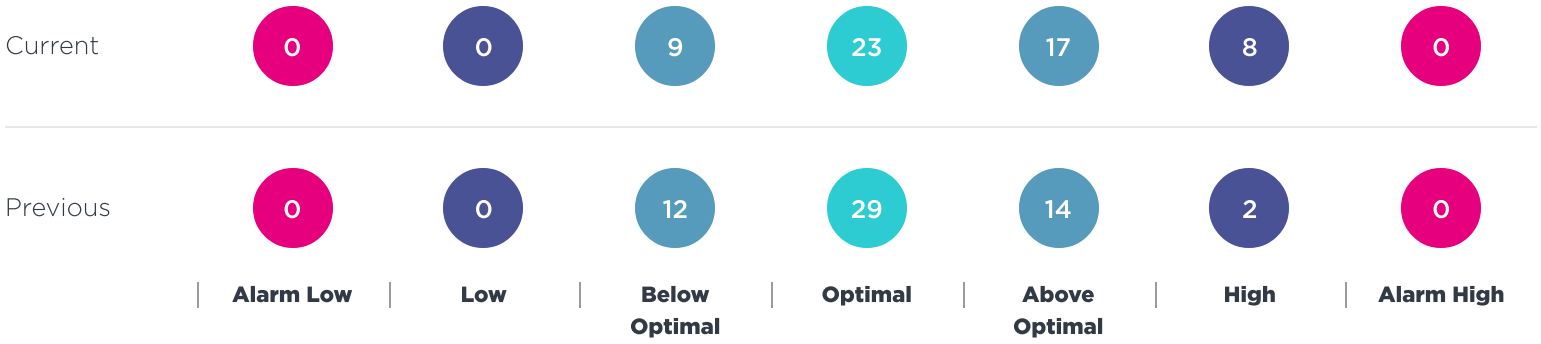


Basophils - Absolute
0.05 k/cumm

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 Sep 15 2023	Quest Current Dec 07 2023	Optimal range	Standard range	Units
BLOOD GLUCOSE					
Glucose: Fasting	98.00 ↑	96.00 ↑	75.00 - 86.00	65.00 - 99.00	mg/dL
Insulin: Fasting	3.20	7.30 ↑	2.00 - 5.00	0 - 18.40	µIU/ml
RENAL					
BUN	25.00 ↑	21.00 ↑	10.00 - 16.00	7.00 - 25.00	mg/dL
Creatinine	1.28 ↑	1.20 ↑	0.80 - 1.10	0.40 - 1.50	mg/dL
BUN : Creatinine	20.00 ↑	17.50 ↑	10.00 - 16.00	6.00 - 22.00	Ratio
eGFR	78.00 ↓	84.00 ↓	90.00 - 120.00	60.00 - 160.00	mL/min/1.73m2
PROSTATE					
PSA - Total	0.54	0.45	0 - 2.00	0 - 4.00	ng/ml
ELECTROLYTES					
Sodium	139.00	140.00	137.00 - 142.00	135.00 - 146.00	mEq/L
Potassium	4.90	4.10	4.00 - 5.00	3.50 - 5.30	mEq/L

Biomarker	Quest Previous Sep 15 2023	Quest Current Dec 07 2023	Optimal range	Standard range	Units
Chloride	105.00	105.00	100.00 - 106.00	98.00 - 110.00	mEq/L
CO2	29.00	28.00	25.00 - 30.00	19.00 - 30.00	mEq/L
PROTEINS					
Protein - Total	6.20 ↓	6.40 ↓	6.90 - 8.10	6.10 - 8.10	g/dL
Albumin	3.90 ↓	4.20 ↓	4.50 - 5.00	3.60 - 5.10	g/dL
Globulin - Total	2.30 ↓	2.20 ↓	2.40 - 2.80	1.90 - 3.70	g/dL
Albumin : Globulin	1.70	1.90	1.40 - 2.10	1.00 - 2.50	ratio
MINERALS					
Calcium	9.00	9.20	8.90 - 9.50	8.60 - 10.40	mg/dL
LIVER AND GB					
Alk Phos	38.00 ↓	49.00	45.00 - 100.00	36.00 - 130.00	IU/L
AST	30.00 ↑	33.00 ↑	10.00 - 26.00	10.00 - 35.00	IU/L
ALT	27.00 ↑	34.00 ↑ ↑	10.00 - 26.00	6.00 - 29.00	IU/L
Bilirubin - Total	0.50	0.60	0.50 - 0.90	0.20 - 1.20	mg/dL
LIPIDS					
Cholesterol - Total	132.00 ↓	171.00	160.00 - 199.00	125.00 - 199.00	mg/dL
Triglycerides	68.00 ↓	112.00 ↑	70.00 - 80.00	0 - 149.99	mg/dL
LDL Cholesterol	70.00 ↓	99.00	80.00 - 99.99	0 - 99.99	mg/dL
HDL Cholesterol	48.00 ↓	51.00 ↓	55.00 - 93.00	40.00 - 100.00	mg/dL
Non-HDL Cholesterol	84.00	120.00 ↑	70.00 - 99.00	0 - 129.99	mg/dl
Cholesterol : HDL	2.80	3.40 ↑	0 - 3.00	0 - 5.00	Ratio
THYROID					
TSH	1.98	2.24 ↑	1.00 - 2.00	0.40 - 4.50	µU/mL
T4 - Total	6.40	6.00	6.00 - 11.90	4.50 - 12.00	µg/dL
T3 - Free	4.10 ↑	4.40 ↑ ↑	3.00 - 3.50	2.30 - 4.20	pg/ml
T3 Uptake	33.00	33.00	27.00 - 35.00	22.00 - 35.00	%
Free Thyroxine Index (T7)	2.10	2.00	1.70 - 4.60	1.40 - 3.80	Index
VITAMINS					
Vitamin D (25-OH)	89.00	76.00	50.00 - 90.00	30.00 - 100.00	ng/ml
HORMONES					
DHEA-S - Male	346.00 ↓	343.00 ↓	350.00 - 690.00	85.00 - 690.00	µg/dL

Biomarker	Quest Previous Sep 15 2023	Quest Current Dec 07 2023	Optimal range	Standard range	Units
Testosterone Total - Male	1259.00 ↑ ↑	1188.00 ↑ ↑	700.00 - 1100.00	250.00 - 1100.00	ng/dl
Testosterone Free - Male	160.80	261.10 ↑ ↑	150.00 - 224.00	46.00 - 224.00	pg/ml
Sex Hormone Binding Globulin - Male	47.00 ↑	25.00 ↓	40.00 - 46.00	10.00 - 50.00	nmol/L
Testosterone Bioavailable - Male	288.70 ↓	502.90	375.00 - 575.00	110.00 - 575.00	ng/dl
CBC					
RBC - Male	5.28	5.55 ↑	4.80 - 5.50	4.20 - 5.80	m/cumm
Hemoglobin - Male	16.30 ↑	17.20 ↑ ↑	14.00 - 15.00	13.20 - 17.10	g/dl
Hematocrit - Male	48.70 ↑	52.50 ↑ ↑	40.00 - 48.00	38.50 - 50.00	%
MCV	92.20 ↑	94.60 ↑	82.00 - 89.90	80.00 - 100.00	fL
MCH	30.90	31.00	28.00 - 31.90	27.00 - 33.00	pg
MCHC	33.50 ↓	32.80 ↓	34.00 - 36.00	32.00 - 36.00	g/dL
Platelets	213.00	227.00	190.00 - 300.00	140.00 - 400.00	10E3/µL
MPV	9.50 ↑	9.20 ↑	7.50 - 8.20	7.50 - 11.50	fL
RDW	12.10	12.20	11.00 - 12.60	11.00 - 15.00	%
WBCS					
Total WBCs	4.80	4.60	3.80 - 6.00	3.80 - 10.80	k/cumm
Neutrophils - %	52.70	48.90 ↓	50.00 - 60.00	38.00 - 74.00	%
Lymphocytes - %	35.40 ↑	35.20 ↑	30.00 - 35.00	14.00 - 46.00	%
Monocytes - %	8.30 ↑	9.60 ↑	4.00 - 7.00	4.00 - 13.00	%
Eosinophils - %	2.30	5.20 ↑ ↑	0 - 3.00		%
Basophils - %	1.30 ↑ ↑	1.10 ↑ ↑	0 - 1.00		%
Neutrophils - Absolute	2.53	2.25	1.90 - 4.20	1.50 - 7.80	k/cumm
Lymphocytes - Absolute	1.70	1.62	1.44 - 2.54	0.85 - 3.90	k/cumm
Monocytes - Absolute	0.40	0.44 ↑	0.20 - 0.40	0.20 - 0.95	k/cumm
Eosinophils - Absolute	0.11	0.24 ↑	0 - 0.20	0 - 0.50	k/cumm
Basophils - Absolute	0.06	0.05	0 - 0.10	0 - 0.20	k/cumm

Blood Test History

Key

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

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.

Biomarker	Latest 3 Test Results		
	Quest	Quest	Quest
	Jun 03 2023	Sep 15 2023	Dec 07 2023
BLOOD GLUCOSE			
Glucose: Fasting	81.00	98.00 ↑	96.00 ↑
Hemoglobin A1C	4.70		
eAG	88.19		
Insulin: Fasting	3.20	3.20	7.30 ↑
Triglyceride-Glucose Index (TyG)	4.20	4.40	
RENAL			
BUN	22.00 ↑	25.00 ↑	21.00 ↑
Creatinine	1.24 ↑	1.28 ↑	1.20 ↑
BUN : Creatinine	17.74 ↑	20.00 ↑	17.50 ↑
eGFR	81.00 ↓	78.00 ↓	84.00 ↓
PROSTATE			
PSA - Total	0.41	0.54	0.45
ELECTROLYTES			
Sodium	139.00	139.00	140.00
Potassium	4.20	4.90	4.10
Chloride	103.00	105.00	105.00
CO2	29.00	29.00	28.00
PROTEINS			

Biomarker	Latest 3 Test Results		
	Quest	Quest	Quest
	Jun 03 2023	Sep 15 2023	Dec 07 2023
Protein - Total	6.60 ↓	6.20 ↓	6.40 ↓
Albumin	4.20 ↓	3.90 ↓	4.20 ↓
Globulin - Total	2.40	2.30 ↓	2.20 ↓
Albumin : Globulin	1.80	1.70	1.90
MINERALS			
Calcium	9.30	9.00	9.20
Magnesium - Serum	2.20		
Calcium : Albumin	2.21 ↑	2.31 ↑	
LIVER AND GB			
Alk Phos	46.00	38.00 ↓	49.00
AST	39.00 ↑ ↑	30.00 ↑	33.00 ↑
ALT	35.00 ↑ ↑	27.00 ↑	34.00 ↑ ↑
Bilirubin - Total	0.50	0.50	0.60
IRON MARKERS			
Ferritin	117.00 ↑		
LIPIDS			
Cholesterol - Total	117.00 ↓ ↓	132.00 ↓	171.00
Triglycerides	55.00 ↓	68.00 ↓	112.00 ↑
LDL Cholesterol	56.00 ↓	70.00 ↓	99.00
HDL Cholesterol	47.00 ↓	48.00 ↓	51.00 ↓
Non-HDL Cholesterol	70.00	84.00	120.00 ↑
LDL : HDL - Male	1.19	1.46	
Triglyceride:HDL	1.17	1.42	
Cholesterol : HDL	2.50	2.80	3.40 ↑
THYROID			
TSH	1.02	1.98	2.24 ↑

Biomarker	Latest 3 Test Results		
	Quest	Quest	Quest
	Jun 03 2023	Sep 15 2023	Dec 07 2023
T4 - Total	7.20	6.40	6.00
T3 - Free	3.70 ↑	4.10 ↑	4.40 ↑ ↑
T3 Uptake	34.00	33.00	33.00
Free Thyroxine Index (T7)	2.40	2.10	2.00
VITAMINS			
Vitamin D (25-OH)	115.00 ↑ ↑	89.00	76.00
Vitamin B12	1362.00 ↑ ↑		
Folate - Serum	21.10		
HORMONES			
DHEA-S - Male	239.00 ↓	346.00 ↓	343.00 ↓
Testosterone Total - Male	617.00 ↓	1259.00 ↑ ↑	1188.00 ↑ ↑
Testosterone Free - Male	71.20 ↓	160.80	261.10 ↑ ↑
Sex Hormone Binding Globulin - Male	42.00	47.00 ↑	25.00 ↓
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 ↓	502.90
CBC			
RBC - Male	5.48	5.28	5.55 ↑
Hemoglobin - Male	17.20 ↑ ↑	16.30 ↑	17.20 ↑ ↑
Hematocrit - Male	51.10 ↑ ↑	48.70 ↑	52.50 ↑ ↑
MCV	93.20 ↑	92.20 ↑	94.60 ↑
MCH	31.40	30.90	31.00
MCHC	33.70 ↓	33.50 ↓	32.80 ↓
Platelets	245.00	213.00	227.00

Biomarker		Latest 3 Test Results		
		Quest	Quest	Quest
		Jun 03 2023	Sep 15 2023	Dec 07 2023
MPV		9.60 ↑	9.50 ↑	9.20 ↑
RDW		11.80	12.10	12.20
WBCS				
Total WBCs		4.00	4.80	4.60
Neutrophils - %		48.40 ↓	52.70	48.90 ↓
Lymphocytes - %		36.10 ↑	35.40 ↑	35.20 ↑
Monocytes - %		9.50 ↑	8.30 ↑	9.60 ↑
Eosinophils - %		4.00 ↑ ↑	2.30	5.20 ↑ ↑
Basophils - %		2.00 ↑ ↑	1.30 ↑ ↑	1.10 ↑ ↑
Neutrophils - Absolute		1.94	2.53	2.25
Lymphocytes - Absolute		1.44	1.70	1.62
Monocytes - Absolute		0.38	0.40	0.44 ↑
Eosinophils - Absolute		0.16	0.11	0.24 ↑
Basophils - Absolute		0.08	0.06	0.05
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 range

Alarm Low	Low	Below Optimal	Optimal	Above Optimal	High	Alarm High	Total
0	0	9	23	17	8	0	57

Above Optimal

Basophils - %

1.10 %

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.

Testosterone Total - Male

1188.00 ng/dl

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.

ALT

34.00 IU/L

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).

Testosterone Free - Male

261.10 pg/ml

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

Hematocrit - Male

52.50 %

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.

Eosinophils - %

5.20 %

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.

T3 - Free

4.40 pg/ml

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.

Hemoglobin - Male

17.20 g/dl

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

Lymphocytes - %

35.20 %

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.

RBC - Male

5.55 m/cumm

The RBC Count determines the total number of red blood cells or erythrocytes found in a cubic millimeter of blood. The red blood cell functions to carry oxygen from the lungs to the body tissues and to transfer carbon dioxide from the tissues to the lungs where it is expelled. Increased levels are associated with dehydration, stress, a need for vitamin C and respiratory distress such as asthma.

Cholesterol : HDL

3.40 Ratio

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

Eosinophils - Absolute

0.24 k/cumm

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

Monocytes - Absolute

0.44 k/cumm

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.

TSH

2.24 µU/mL

TSH or thyroid-stimulating hormone is a hormone produced by the anterior pituitary to control the thyroid gland's production of the thyroid hormone thyroxine (T4). TSH levels can be confusing because TSH levels increase when there is too little thyroid hormone in circulation. An elevated TSH is a sign that the body needs more thyroid hormone. Elevated levels of TSH are associated with primary hypothyroidism.

BUN : Creatinine

17.50 Ratio

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

Creatinine

1.20 mg/dL

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.

AST

33.00 IU/L

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.

MCV

94.60 fL

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.

Non-HDL Cholesterol

120.00 mg/dl

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

Insulin: Fasting

7.30 µIU/ml

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

BUN

21.00 mg/dL

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.

Monocytes - %

9.60 %

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.

Glucose: Fasting

96.00 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.

MPV

9.20 fL

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.

Triglycerides

112.00 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

Below Optimal

DHEA-S - Male

343.00 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

HDL Cholesterol

51.00 mg/dL

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).

Neutrophils - %

48.90 %

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.

eGFR

84.00 mL/min/1.73m2

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.

Protein - Total

6.40 g/dL

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.

Globulin - Total

2.20 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.

MCHC

32.80 g/dL

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.

Albumin

4.20 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.

Sex Hormone Binding Globulin - Male

25.00 nmol/L

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

2

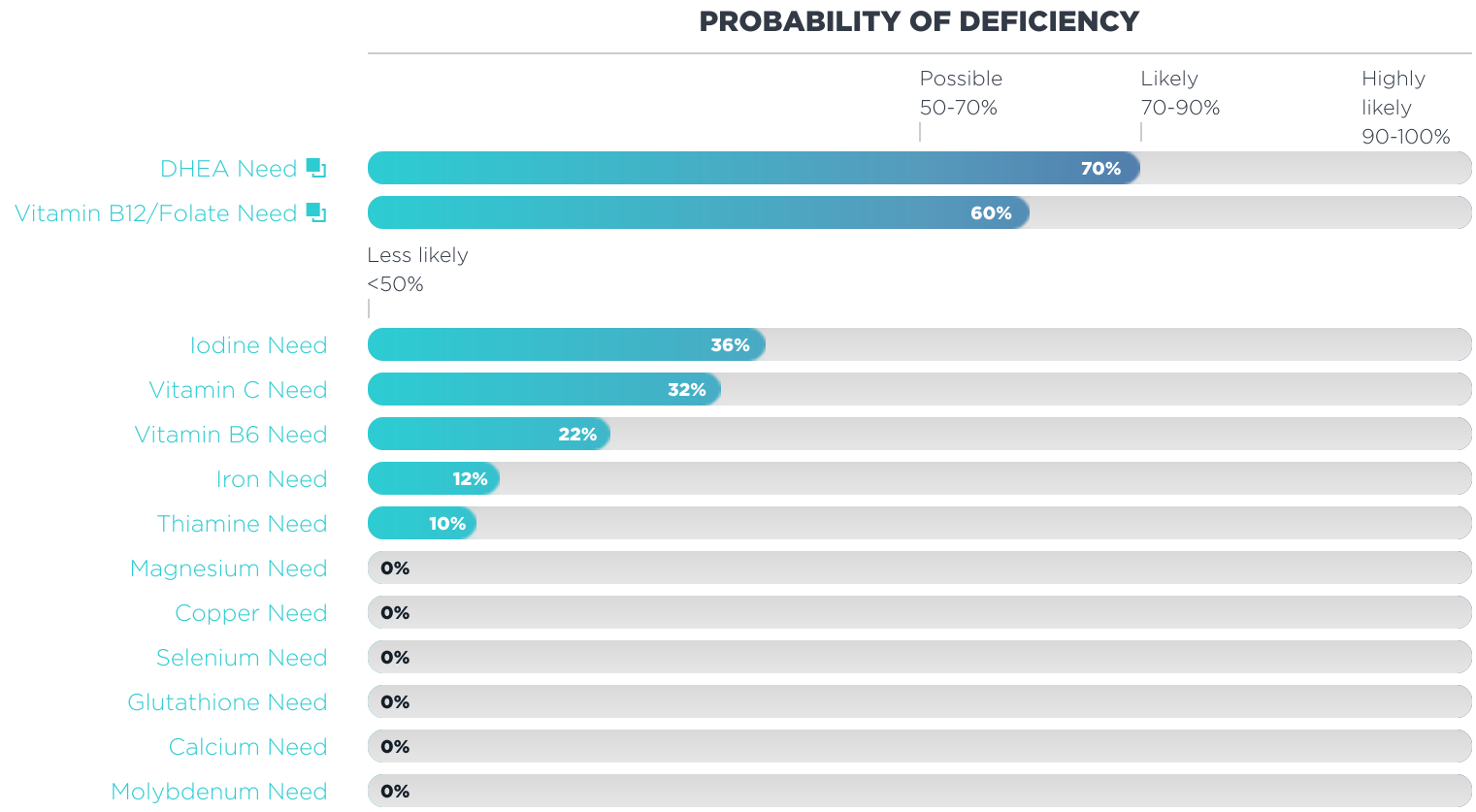
An in-depth functional system and nutrient evaluation.

Assessment

Individual Nutrient Deficiencies

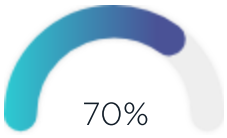
The scores represent the degree of deficiency for individual nutrients based on your patient's blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of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

DHEA NEED

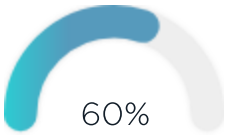
The results of this blood test indicate that this patient's DHEA levels might be lower than optimal.

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 ↑, Neutrophils - % ↓

Biomarkers considered

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

Biomarkers not available in this test - consider running in future tests:

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

3

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

Appendix

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