FunctionalDX

MaxDX
Functional Performance Analysis

Patient Report

Prepared for	John Doe
Requested by	Mr. Jonathan Cohen FDx Clinic
Test date	Nov 01, 2016

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An introduction to functional blood chemistry anaysis and your report.

Introduction

What's Inside?

An introduction to functional blood chemistry anaysis and your report.

Your view into your health through an in-depth functional system and nutrient evaluation.

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

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

SECTION 1: INTRODUCTION

SECTION 2: ASSESSMENT

SECTION 3: ANALYSIS

SECTION 4: APPENDIX

Functional Blood Chemistry Analysis

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

WHY BLOOD TESTING?

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

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

"NORMAL" IS NOT OPTIMAL

Most patients who feel "unwell" will come out "normal" on a blood test. Clinical experience suggests that these people are by no means "normal" and are a far cry from being functionally optimal. They may not yet have progressed to a known disease state but they are what we call dys-functional, i.e. their physiological systems are no longer functioning properly and they are starting to feel un-well.

The issue is not that the blood test is a poor diagnostic tool, far from it. The issue is that the ranges used on a traditional lab test are based on statistics and not on whether a certain value represents good health or optimal physiological function. The problem is that "normal" reference ranges usually represent "average" populations rather that the optimal level required to maintain good health. Most "normal" ranges are too broad to adequately detect health problems before they become pathology and are not useful for detecting the emergence of dysfunction.

THE FUNCTIONAL APPROACH

The functional approach to chem screen and CBC analysis is oriented around changes in physiology and not pathology. We use ranges that are based on optimal physiology and not the "normal" population. This results in a tighter "Functional Physiological Range", which allows us to evaluate the area within the "Normal" range that indicates that something is not quite right in the physiological systems associated with this biomarker. This gives us the ability to detect changes in your physiological "function". We can identify the factors that obstruct you from achieving optimal physiological, biochemical, and metabolic functioning in your body.

Another thing that separates the Functional Blood Chemistry Analysis from the Traditional approach is we are not simply looking at one individual biomarker at a time in a linear report of the data. Rather, we use trend analysis between the individual biomarkers to establish your otherwise hidden trend towards or away from a functional health optimal.

THE FUNCTIONAL HEALTH REPORT

The Functional Health Report is the result of a detailed algorithmic analysis of your blood test results. Our analytical and interpretive software analyzes the blood test data for its hidden meaning and reveals the subtle, web-like patterns hidden within the numbers that signal the first stages of functional change in your body.

SUMMARY

In closing, Blood testing is no longer simply a part of disease or injury management. It's a vital component of a comprehensive Functional Medicine work up and plays a vital role in uncovering hidden health trends, comprehensive health promotion and disease prevention.

Patient Report

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

MR. JONATHAN COHEN
Practitioner

THE FUNCTIONAL HEALTH REPORT

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

The analytical and interpretive software analyzes the blood test data for its hidden meaning and reveals the subtle, web-like patterns hidden within the numbers that signal the first stages of functional change in your body.

ASSESSMENT

The Assessment section is at the very heart of the Functional Health Report. It is here that the findings of the algorithmic trend analysis are presented. The Body Systems and Accessory Reports show the level of dysfunction that exists in the various physiological and supporting accessory systems in your body. The Nutrient Systems report gives you an indication of your general nutritional status as well as the degree of deficiency for individual nutrients.

All the information on the Assessment section of the report is summarized in the Health Improvement Plan, which focuses on the top areas of need as presented in this report.

ANALYSIS

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

The Blood Test Results Report lists the results of your blood test results and shows you if an individual biomarker is outside of the optimal range and/or outside of the clinical lab range.

The Blood Test Results Comparative Report compares results of the latest and previous Chemistry Screen and Hematology test and gives you a sense of whether or not there has been an improvement on the individual biomarker level.

The Blood Test History report allows you to compare results over time and see where improvement has been made and allows you to track progress in the individual biomarkers.

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

APPENDIX

The appendices contain highly detailed descriptions and interpretation explanations of the results presented in each of the reports in the assessment and analysis sections.

Here you will be able to read in depth what each biomarker means, see the patterns used in the algorithmic analysis and see what factors have gone into the creation of the health trend assessment levels reported.

This section is both informative and highly educational.

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Your view into your health through an in-depth functional system and nutrient evaluation.

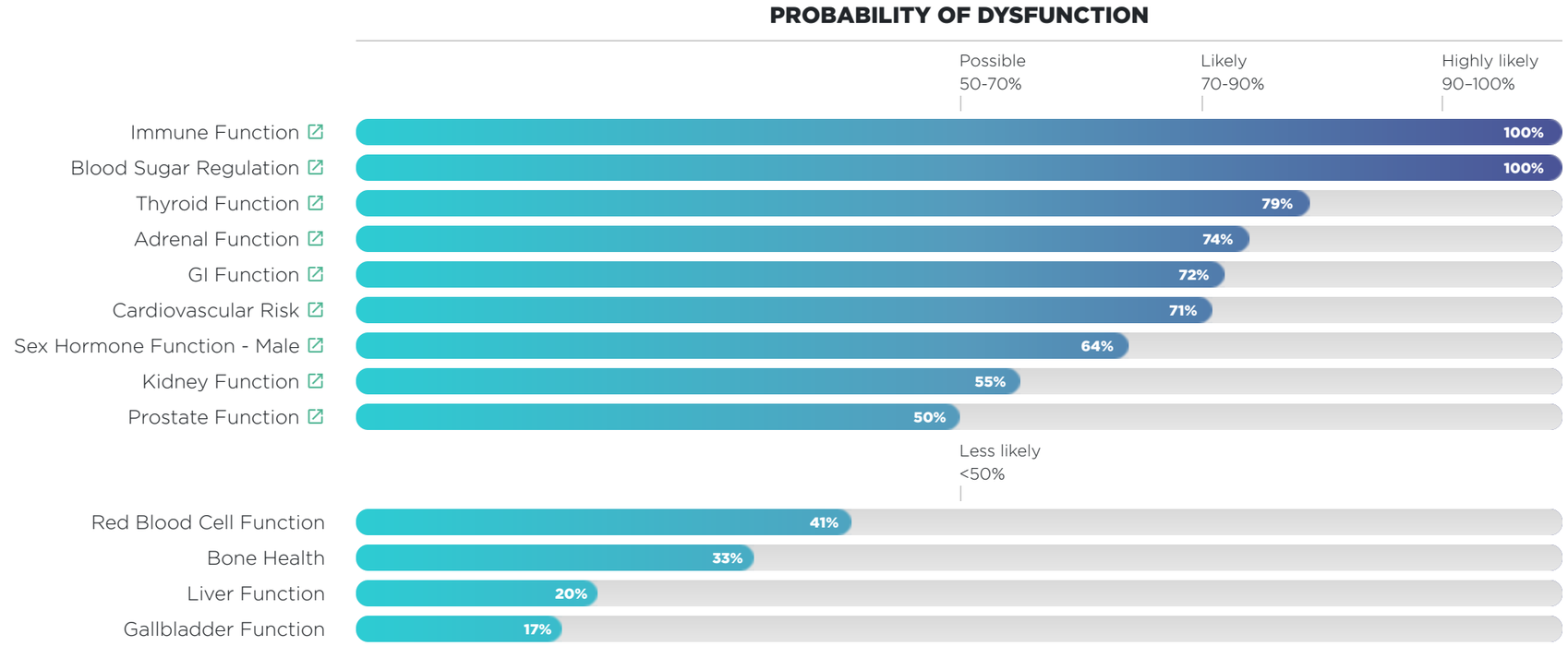
Assessment

Functional Body Systems

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

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

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

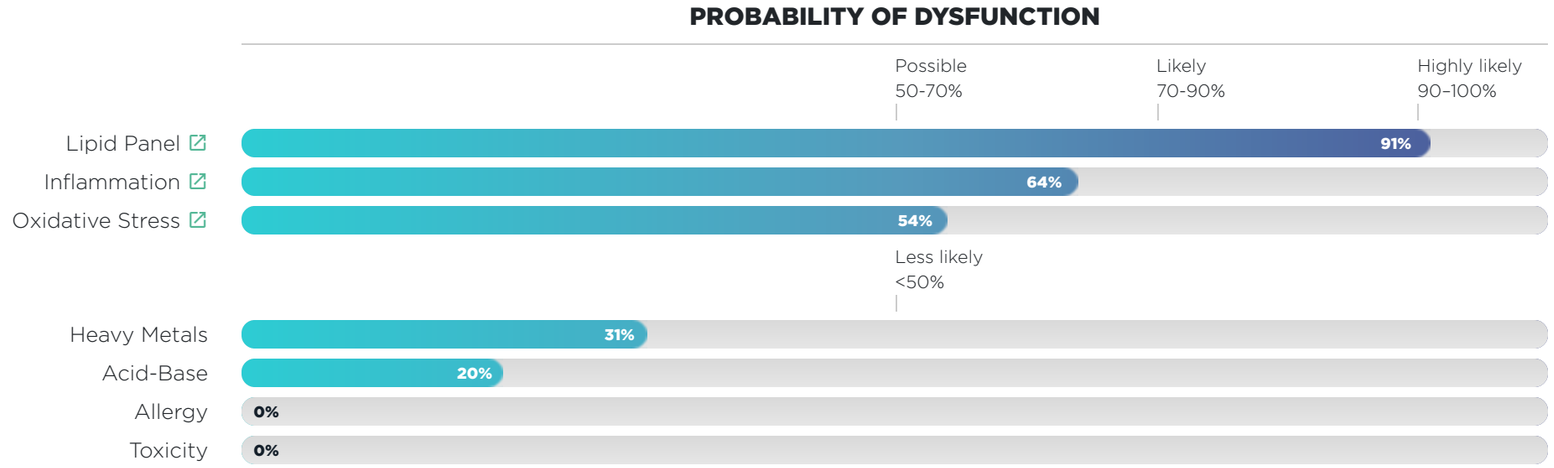


Accessory Systems

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

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

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

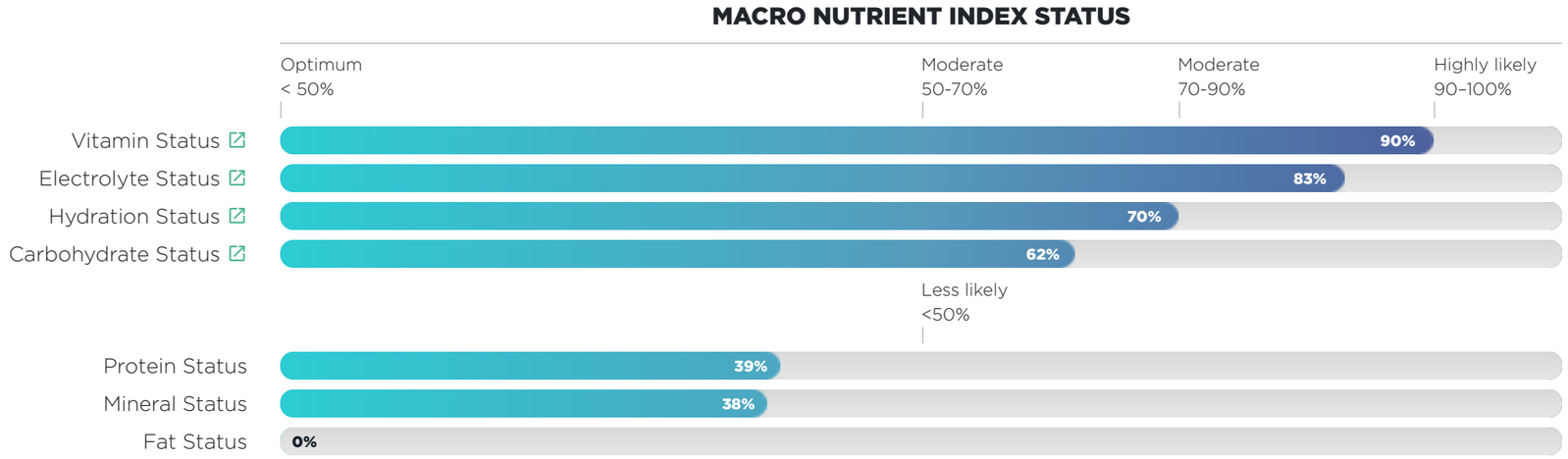


Macronutrient Status

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

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

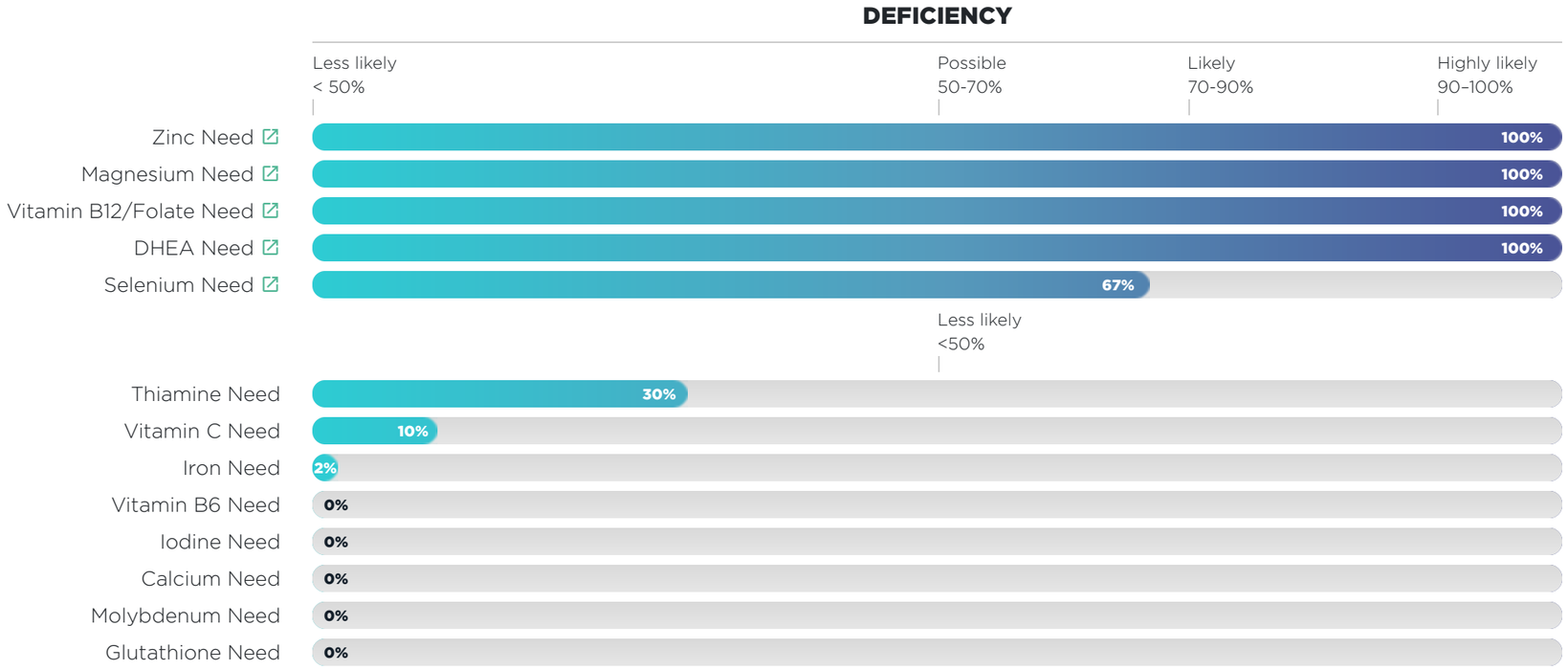
Each Macronutrient that has a probability of dysfunction above 50% is hyperlinked into the appendix section so you can read a highly detailed description and individual explanation of the results shown in this report.



Individual Nutrient Deficiencies

The values opposite represent the degree of deficiency for individual nutrients based on your blood results. The status of an individual nutrient is based on a number of factors such as actual dietary intake, digestion, absorption, assimilation and cellular uptake of the nutrients themselves. All of these factors will be taken into consideration before determining whether or not you actually need an individual nutrient.

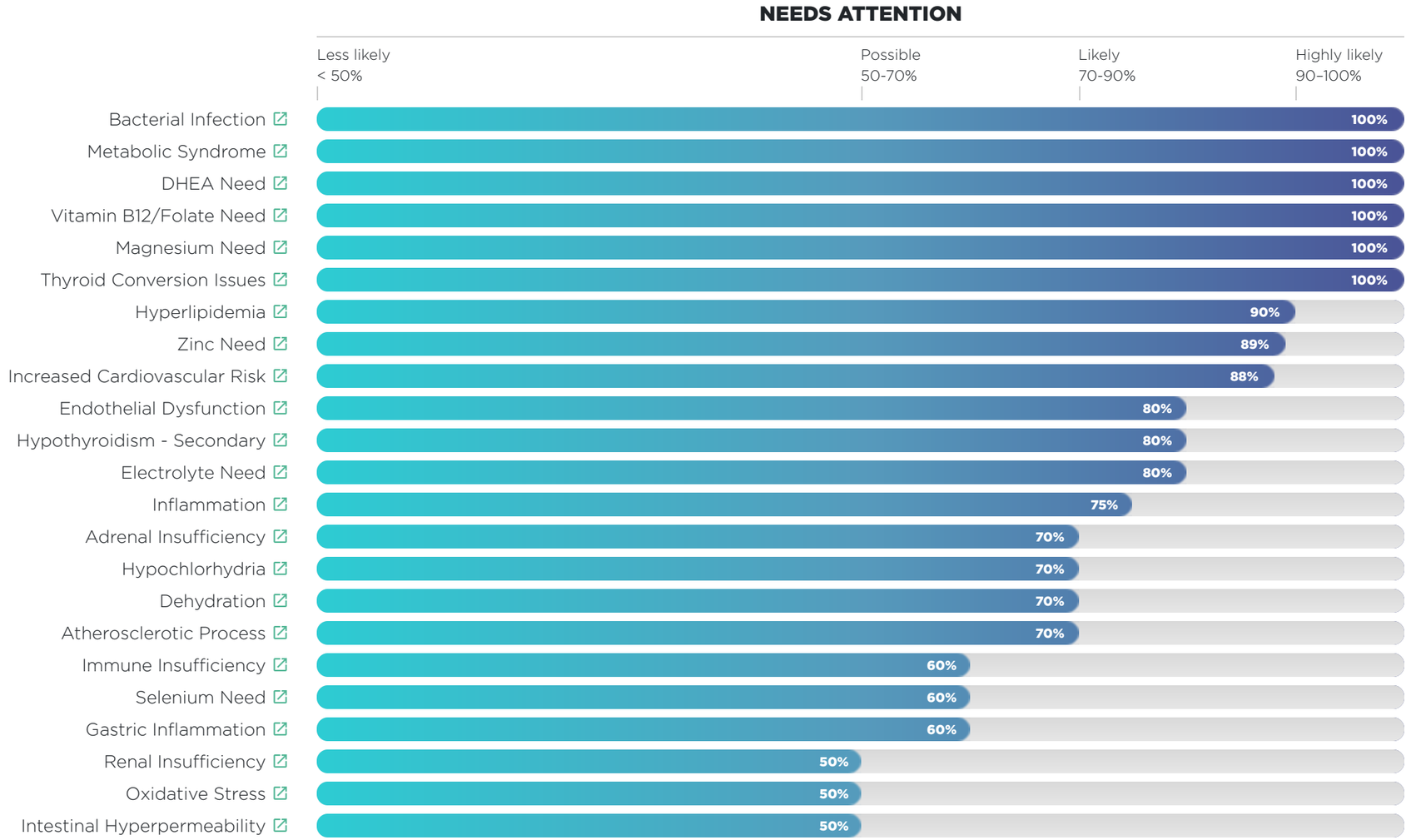
Each individual Nutrient Deficiency that has a probability of dysfunction above 50% is hyperlinked into the appendix section so you can read a highly detailed description and individual explanation of the results shown in this report.



Health Improvement Plan

The Health Improvement Plan takes all the information on this report and focuses on the top areas that need the most attention.

Each area of Health Improvement that has a probability of dysfunction above 50% is hyperlinked into the appendix section so you can read a highly detailed description and individual explanation of the results shown in this report.



3

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

Analytics

Blood Test Results

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

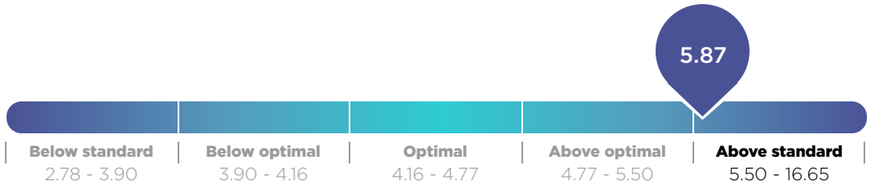
Each biomarker in the Blood Test results report that is above or below the Optimal or Standard Range hyperlinks into our Out of Optimal Range report so you can read a description of the biomarker and some of the reasons why it may be high or low.

Total number of biomarkers by optimal range

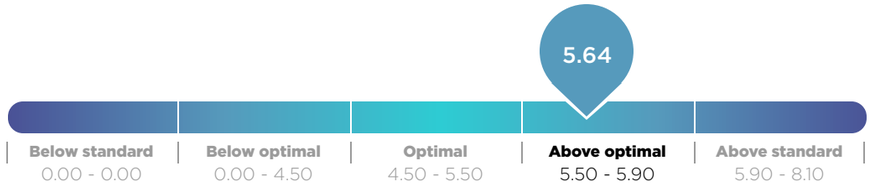
Alarm low	Below standard	Below optimal	Optimal	Above optimal	Above standard	Alarm high	Total
0	4	13	38	17	7	2	81

BLOOD GLUCOSE

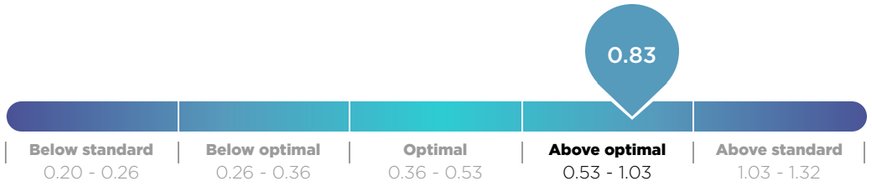
Glucose
mmol/L



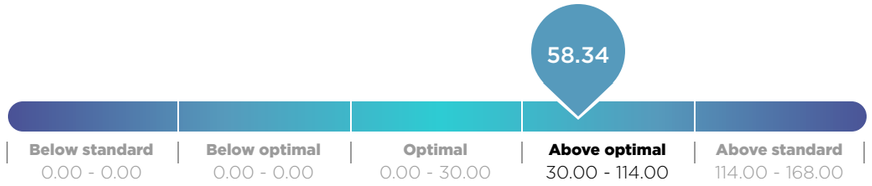
Haemoglobin A1C
%



C-Peptide
nmol/L

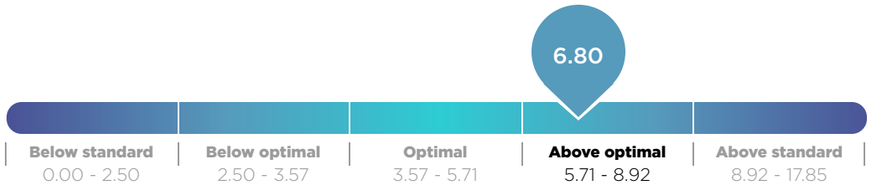


Insulin - Fasting
pmol/L

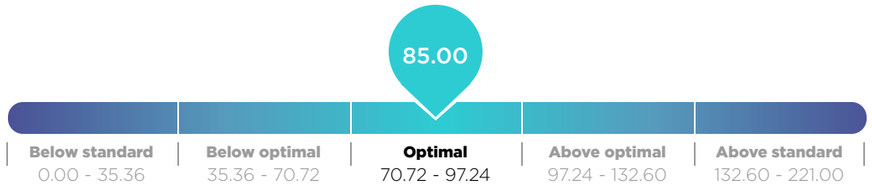


RENAL

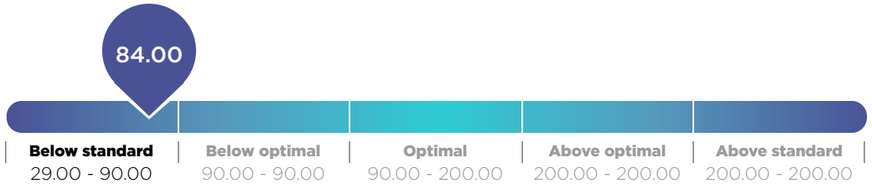
Urea
mmol/L



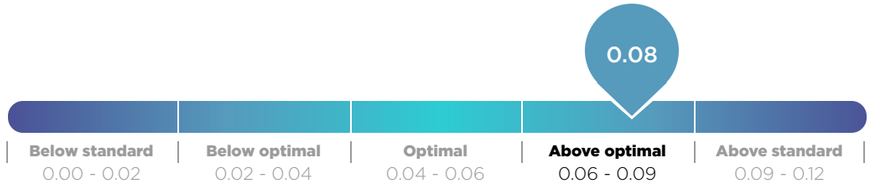
Creatinine
umol/L



eGFR
mL/min

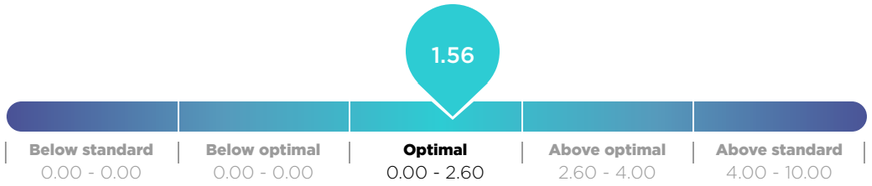


BUN:Creatinine
Ratio



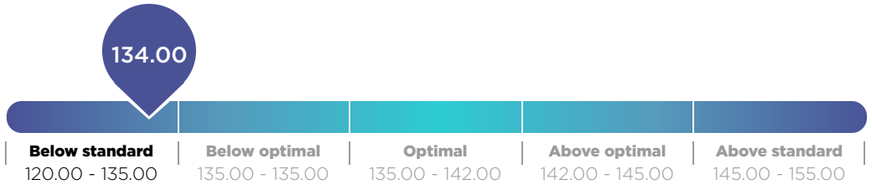
PROSTATE

PSA
ng/ml

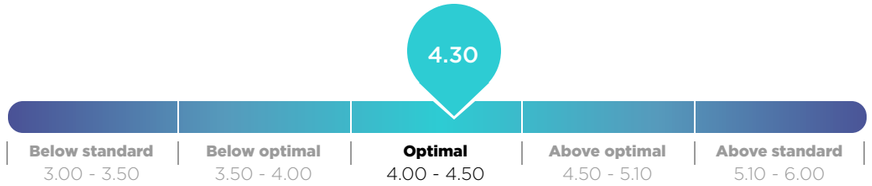


ELECTROLYTES

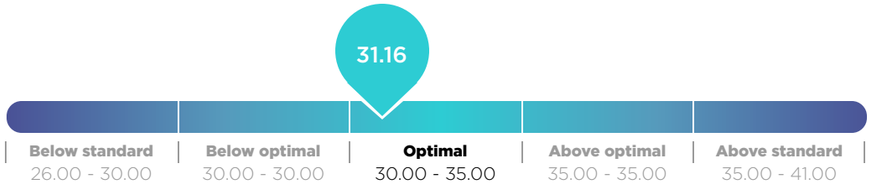
Sodium
mmol/L



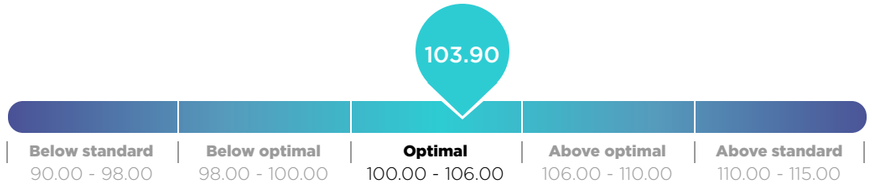
Potassium
mmol/L



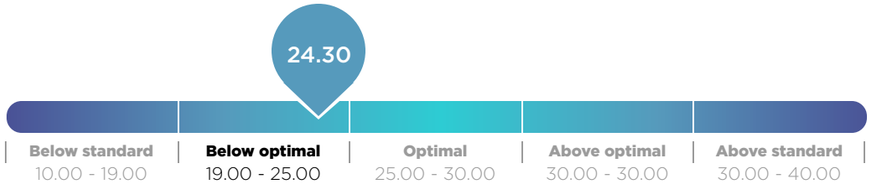
Sodium/Potassium
Ratio
ratio



Chloride
mmol/L

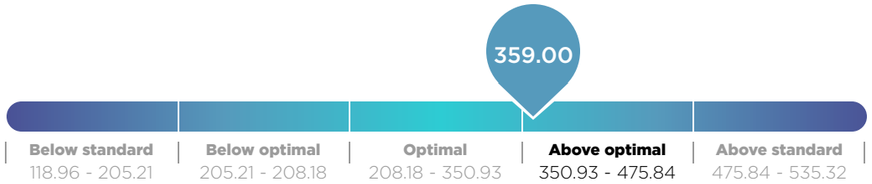


CO2
mmol/L

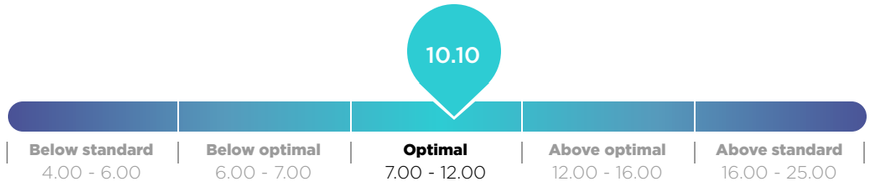


METABOLIC

Uric Acid - Male
umol/L

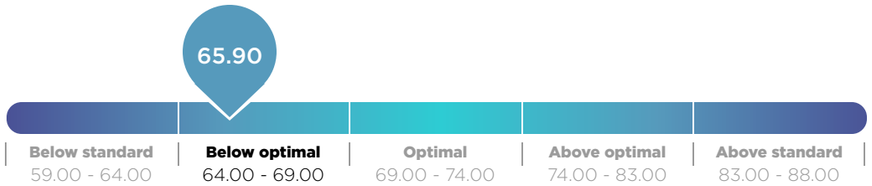


Anion Gap
mmol/L

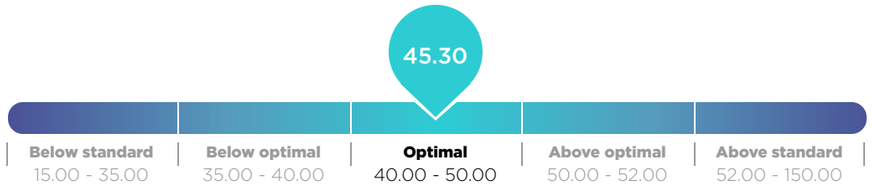


PROTEINS

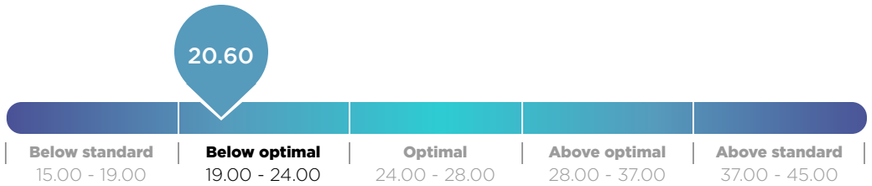
Protein - Total
g/L



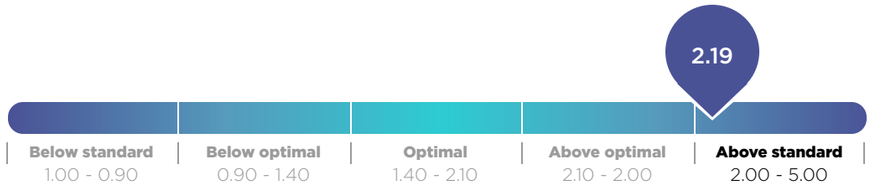
Albumin
g/L



Globulin - Total
g/L

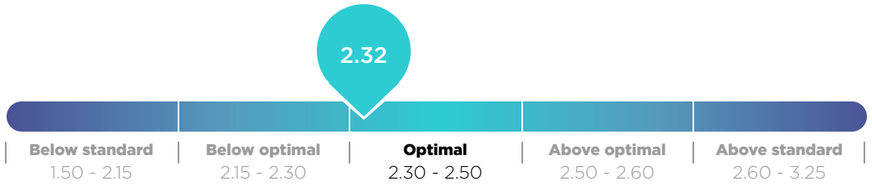


Albumin:Globulin
Ratio

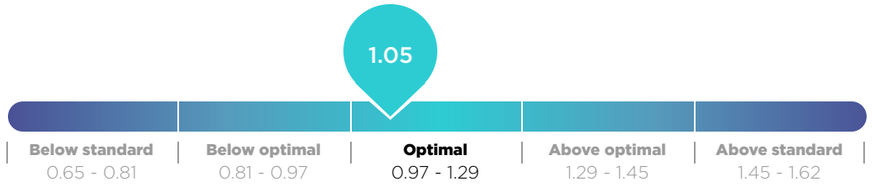


MINERALS

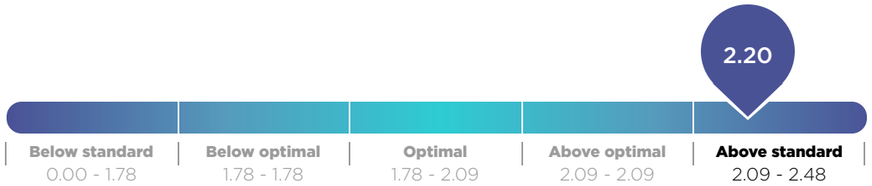
Calcium
mmol/L



Phosphorus
mmol/L

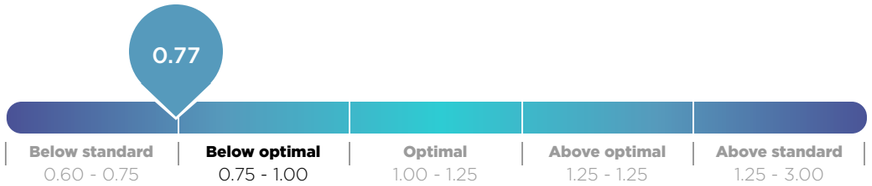


Calcium:Phosphorous
Ratio



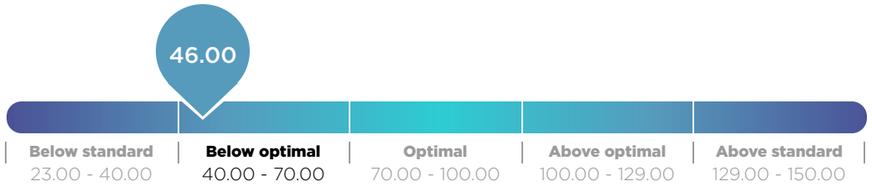
Calcium:Albumin
Ratio

Magnesium
mmol/L

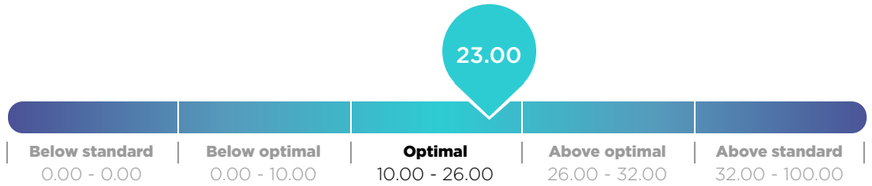


LIVER AND GALLBLADDER

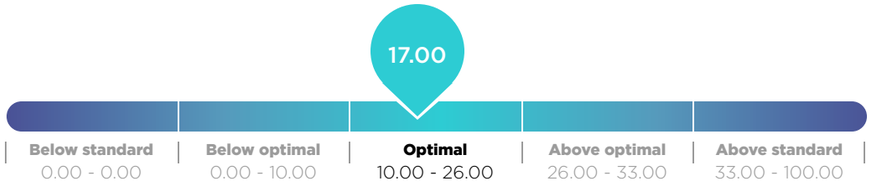
Alk Phos
U/L



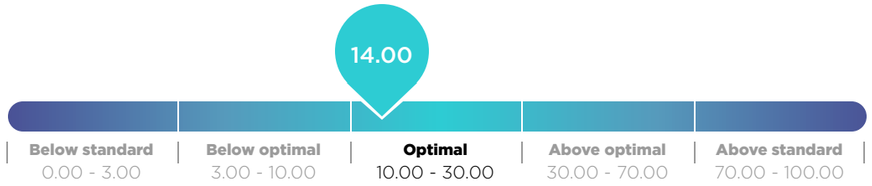
AST (SGOT)
IU/L



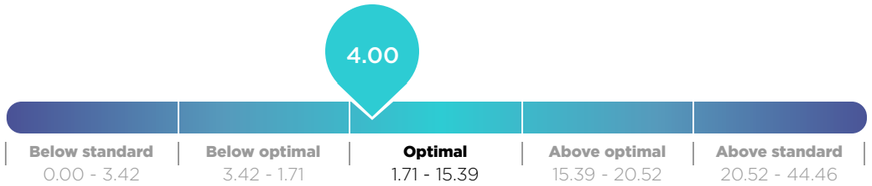
ALT (SGPT)
U/L



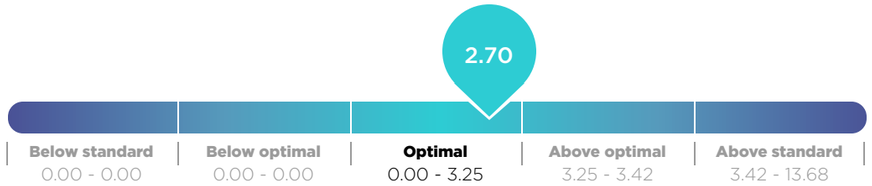
GGT
U/L



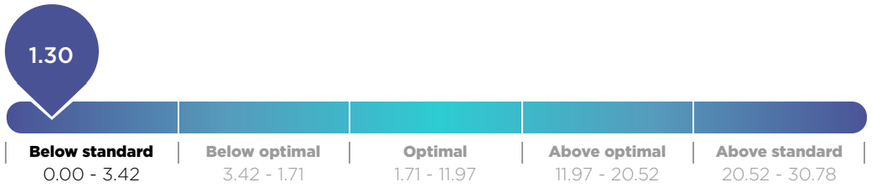
Bilirubin - Total
µmol/L



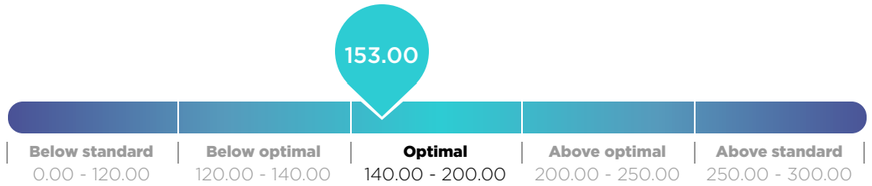
Bilirubin - Direct
Umol/L



Bilirubin - Indirect
Umol/L

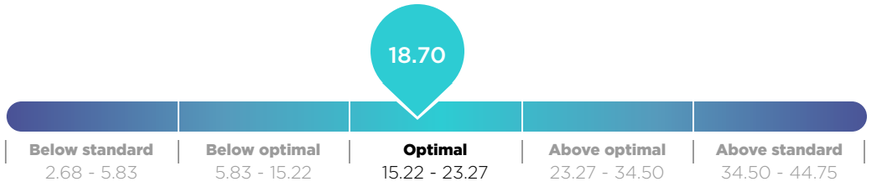


LDH
U/L

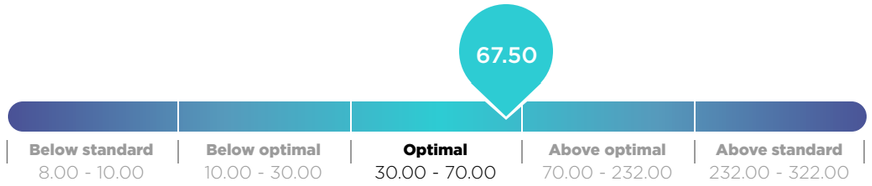


IRON MARKERS

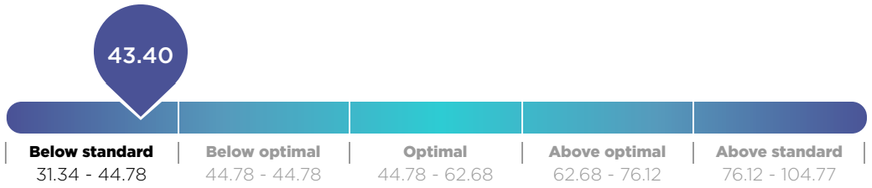
Iron - Serum
µmol/L



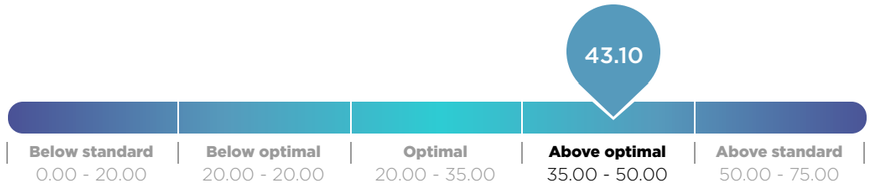
Ferritin
ng/ml



TIBC
umol/L

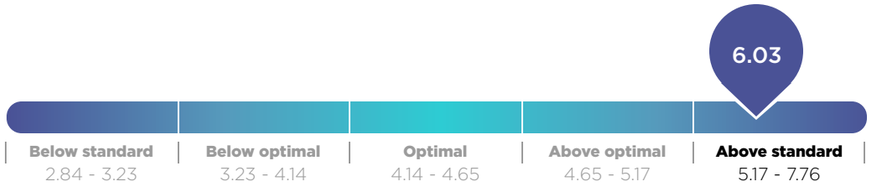


% Transferrin saturation
%

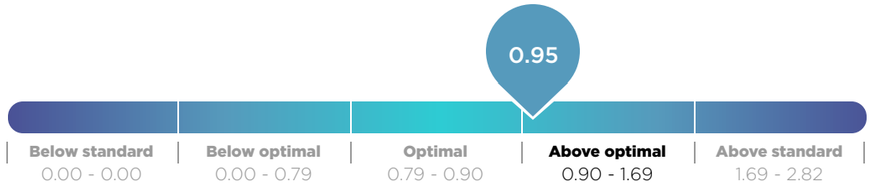


LIPIDS

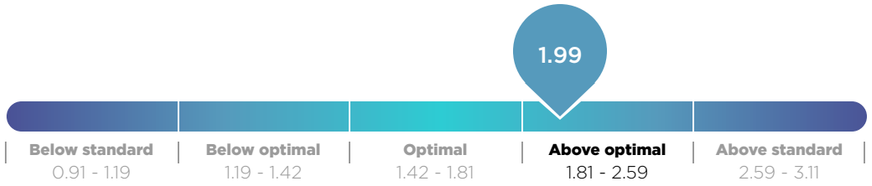
Cholesterol - Total
mmol/L



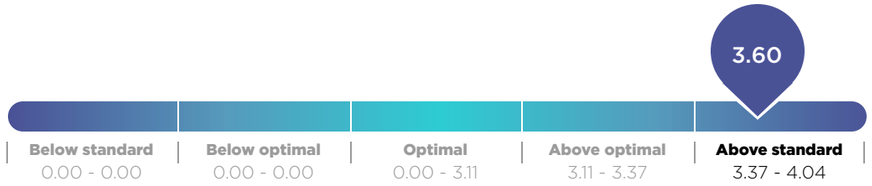
Triglycerides
mmol/L



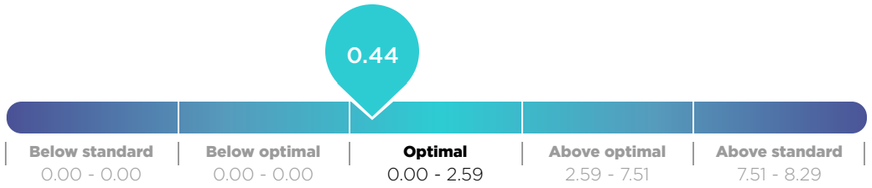
HDL Cholesterol
mmol/L



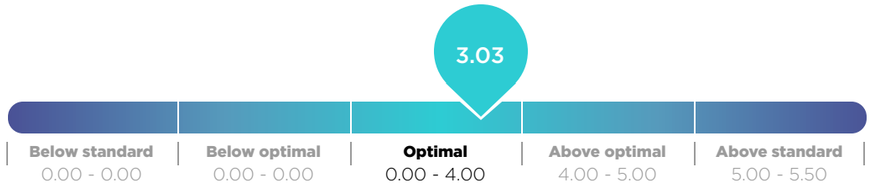
LDL Cholesterol
mmol/L



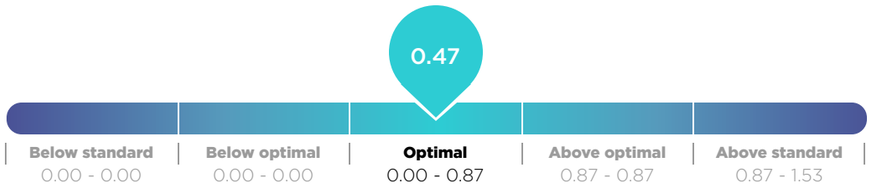
VLDL Cholesterol
mmol/L



Cholesterol:HDL
Ratio

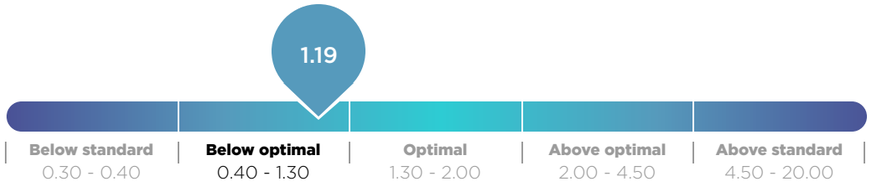


Triglyceride:HDL
Ratio

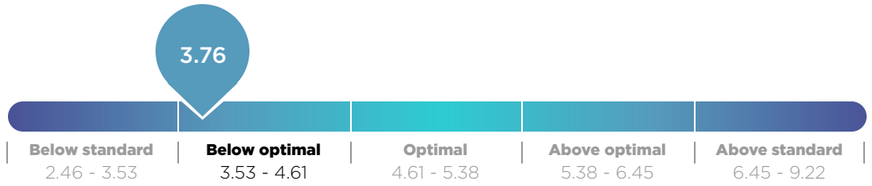


THYROID

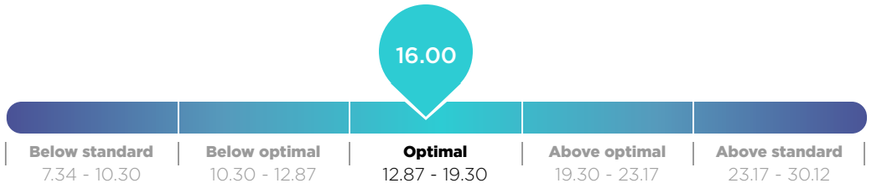
TSH
mIU/L



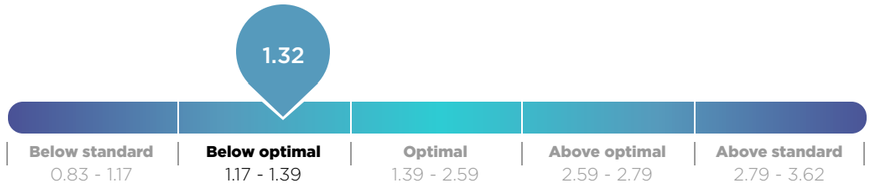
Free T3
pmol/L



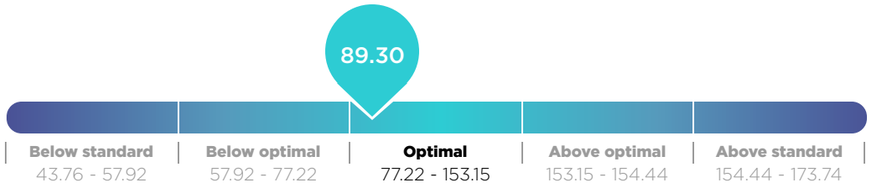
Free T4
pmol/L



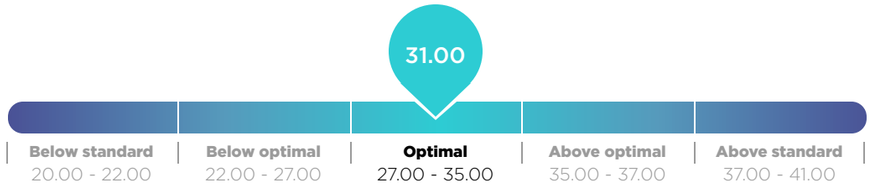
Total T3
nmol/L



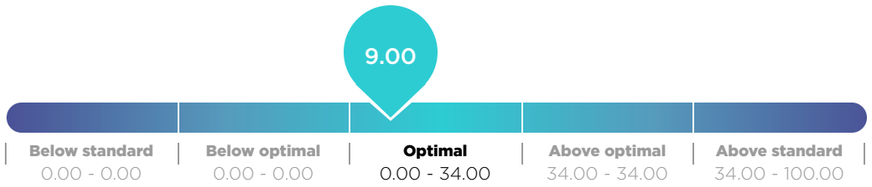
Total T4
nmol/L



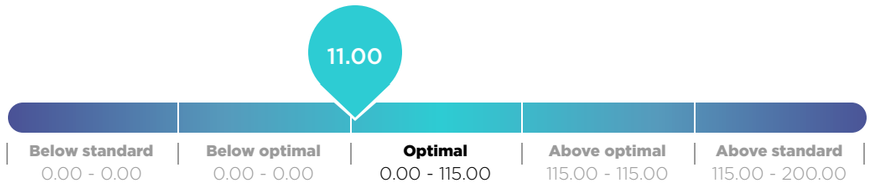
T3 Uptake
%



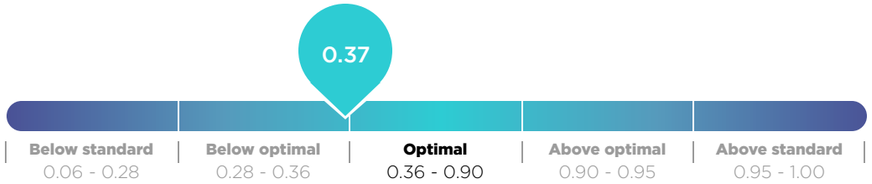
Thyroid Peroxidase (TPO) Abs
iU/L



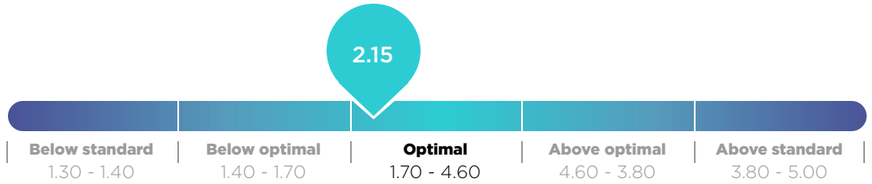
Thyroglobulin Abs
iIU/L



Reverse T3
ng/ml

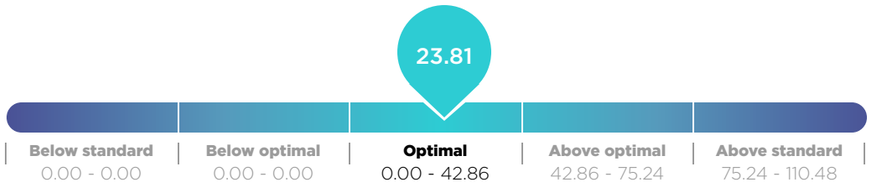


Free Thyroxine Index (T7)
Index

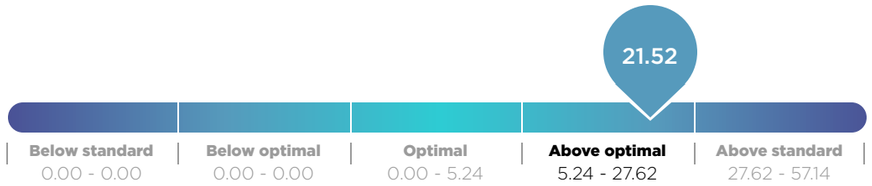


INFLAMMATION/OXIDATION

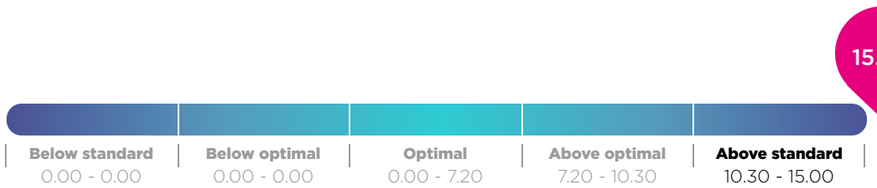
C-Reactive Protein
nmol/L



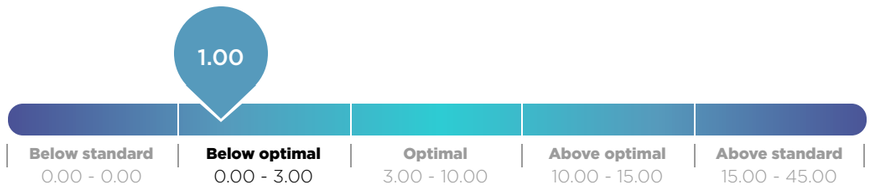
Hs CRP - Male
nmol/L



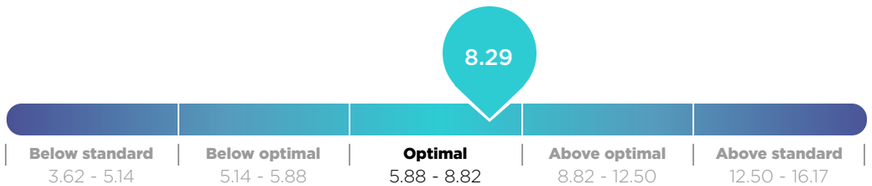
Homocysteine
µmol/L



ESR - Male
mm/hr

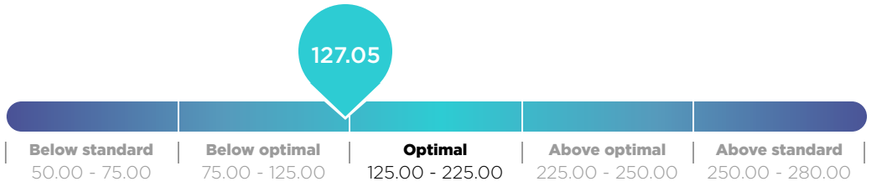


Fibrinogen
umol/L

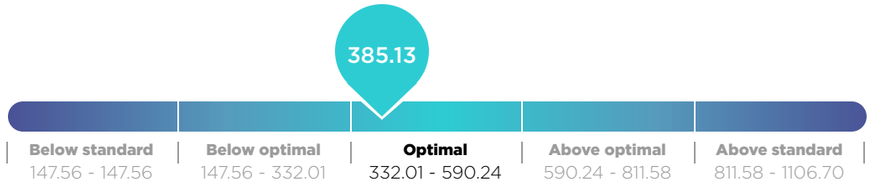


VITAMINS

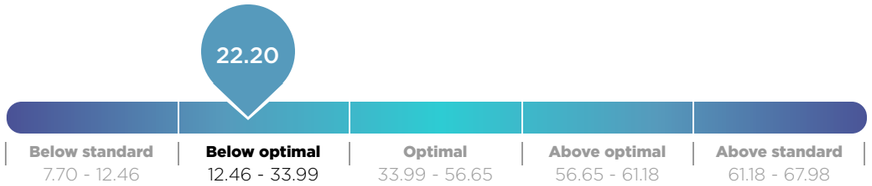
Vitamin D (25-OH)
nmol/L



Vitamin B12
pmol/L

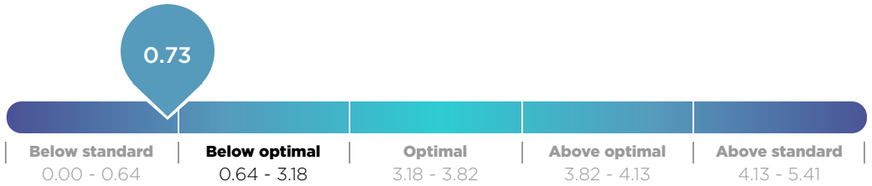


Folate
nmol/L

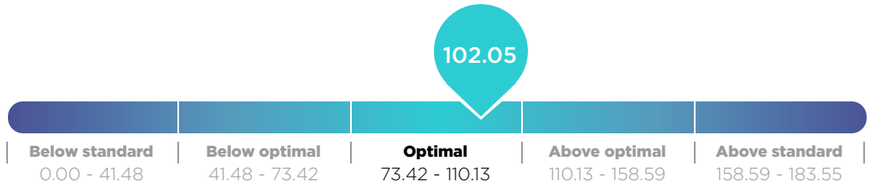


HORMONES

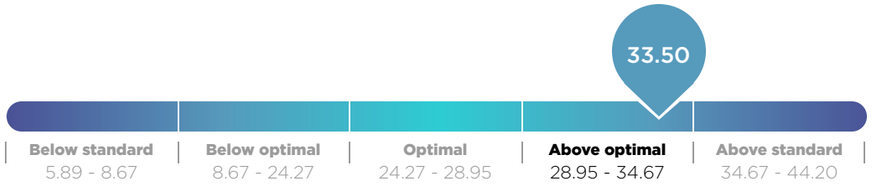
Progesterone - Male
nmol/L



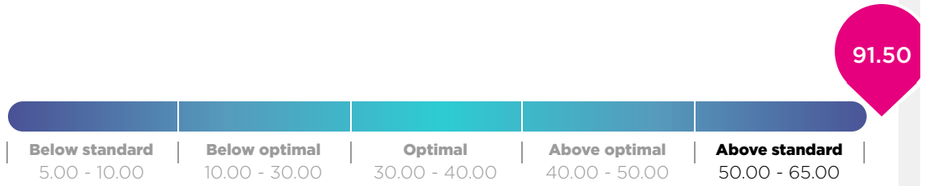
Estradiol - Male
pmol/L



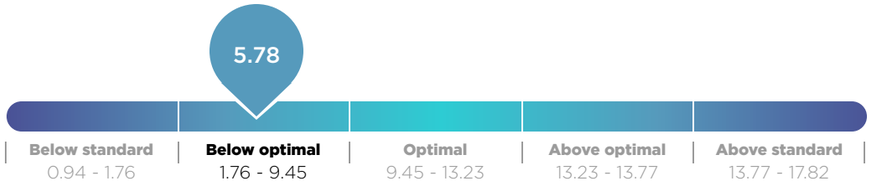
Testosterone Total - Male
nmol/L



Sex Hormone Binding Globulin - Male
nmol/L

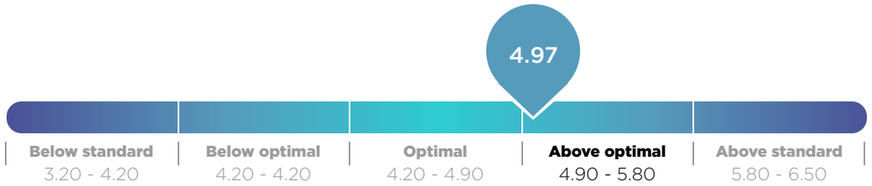


DHEA-S - Male
umol/L

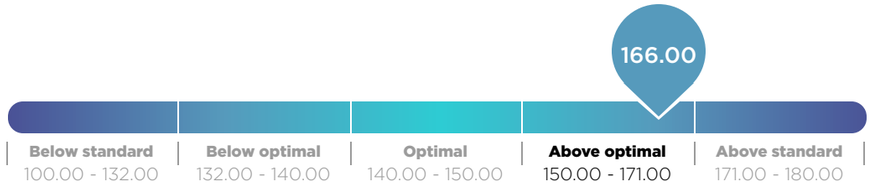


CBC/HEMATOLOGY

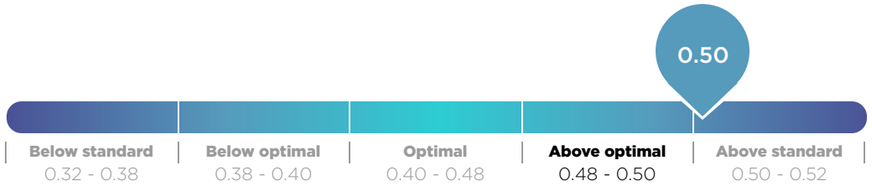
RBC - Male
x10*12/L



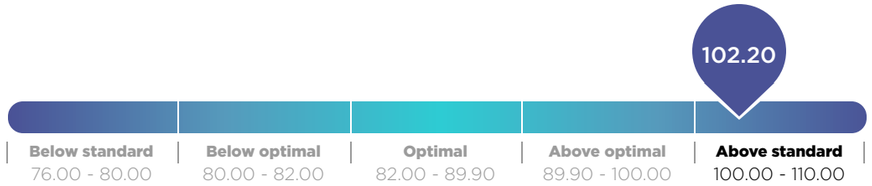
Haemoglobin - Male
g/L



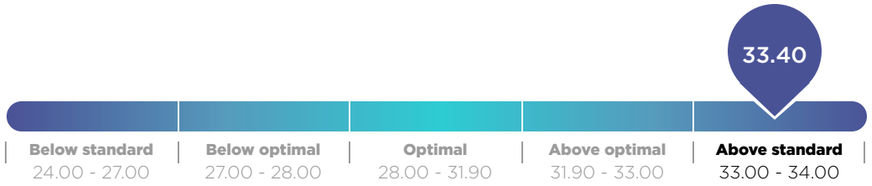
Haematocrit - Male
Prop. of 1.0



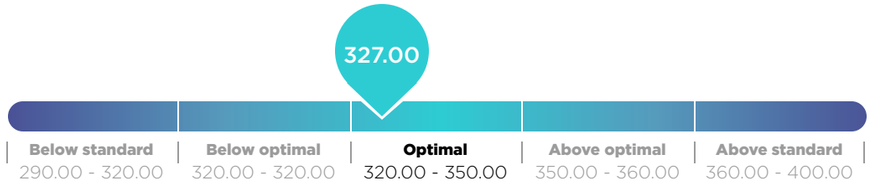
MCV
fL



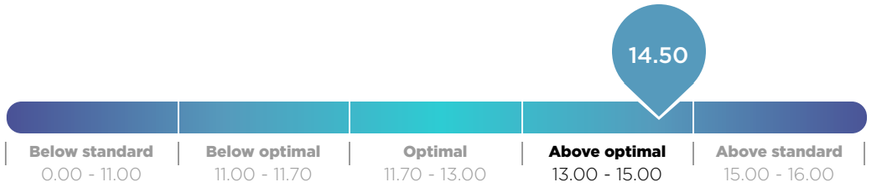
MCH
pg



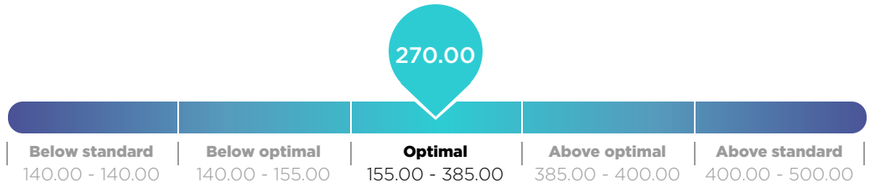
MCHC
g/L



RDW
%

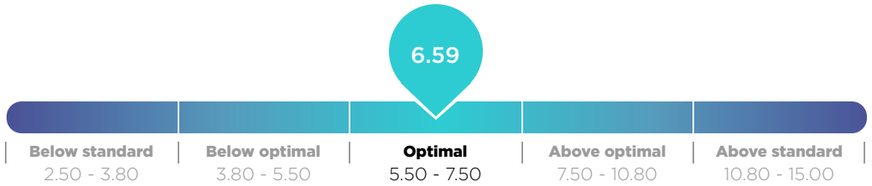


Platelets
x10*9/l

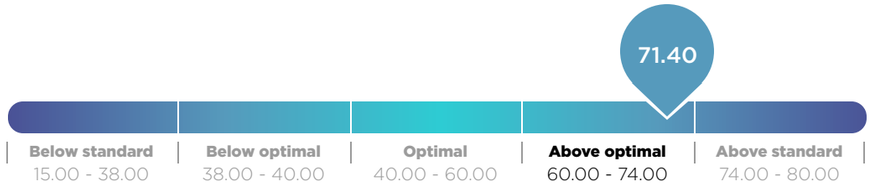


WHITE BLOOD CELLS

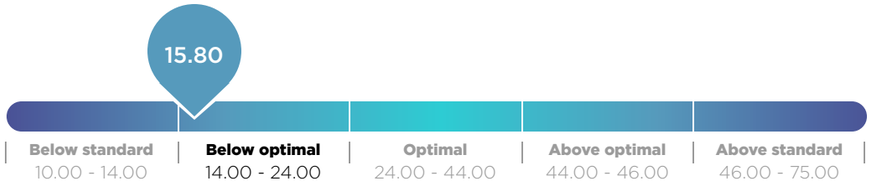
Total WBCs
x10*9/l



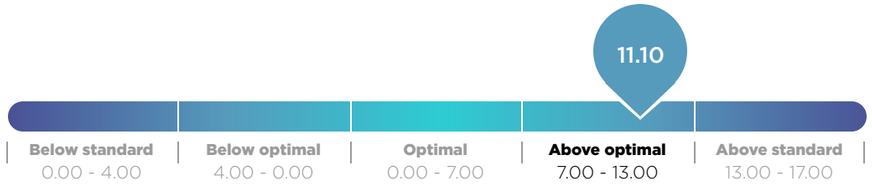
Neutrophils
%



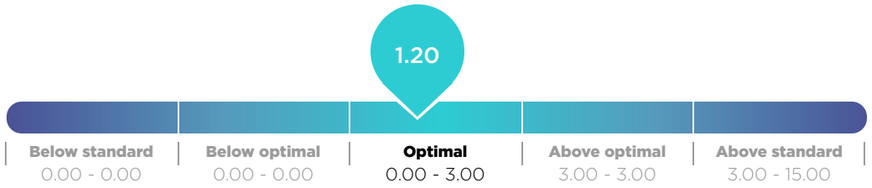
Lymphocytes
%



Monocytes
%



Eosinophils
%



Basophils
%

Blood Test Results Comparative

The Blood Test Results Comparative Report lists the results of the latest and previous Chemistry Screen and CBC and shows you whether or not an individual biomarker is outside of the optimal range and/or outside of the clinical lab range.

Comparative total number of biomarkers by optimal range

	Alarm low	Below standard	Below optimal	Optimal	Above optimal	Above standard	Alarm high
Current	0	4	13	38	17	7	2
Previous	0	0	0	0	0	0	0

Comparative Report

continued

Biomarker	Current Nov 01 2016	Optimal range	Standard range	Units
RBC - Male	4.97	4.20 - 4.90	4.20 - 5.80	x10*12/L
Haemoglobin - Male	166.00	140.00 - 150.00	132.00 - 171.00	g/L
Haematocrit - Male	0.50	0.40 - 0.48	0.38 - 0.50	Prop. of 1.0
MCV	102.20	82.00 - 89.90	80.00 - 100.00	fL
MCH	33.40	28.00 - 31.90	27.00 - 33.00	pg
MCHC	327.00	320.00 - 350.00	320.00 - 360.00	g/L
RDW	14.50	11.70 - 13.00	11.00 - 15.00	%
Total WBCs	6.59	5.50 - 7.50	3.80 - 10.80	x10*9/l
Neutrophils	71.40	40.00 - 60.00	38.00 - 74.00	%
Lymphocytes	15.80	24.00 - 44.00	14.00 - 46.00	%
Monocytes	11.10	0.00 - 7.00	4.00 - 13.00	%
Eosinophils	1.20	0.00 - 3.00	0.00 - 3.00	%
Basophils	0.50	0.00 - 1.00	0.00 - 1.00	%
Platelets	270.00	155.00 - 385.00	140.00 - 400.00	x10*9/l
Glucose	5.87	4.16 - 4.77	3.90 - 5.50	mmol/L
Haemoglobin A1C	5.64	4.50 - 5.50	0.00 - 5.90	%
Iron - Serum	18.70	15.22 - 23.27	5.83 - 34.50	µmol/L
Cholesterol - Total	6.03	4.14 - 4.65	3.23 - 5.17	mmol/L
Triglycerides	0.95	0.79 - 0.90	0.00 - 1.69	mmol/L
HDL Cholesterol	1.99	1.42 - 1.81	1.19 - 2.59	mmol/L
LDL Cholesterol	3.60	0.00 - 3.11	0.00 - 3.37	mmol/L
VLDL Cholesterol	0.44	0.00 - 2.59	0.00 - 7.51	mmol/L
Cholesterol:HDL	3.03	0.00 - 4.00	0.00 - 5.00	Ratio
Triglyceride:HDL	0.47	0.00 - 0.87	0.00 - 0.87	Ratio
Alk Phos	46.00	70.00 - 100.00	40.00 - 129.00	U/L
AST (SGOT)	23.00	10.00 - 26.00	0.00 - 32.00	IU/L
ALT (SGPT)	17.00	10.00 - 26.00	0.00 - 33.00	U/L
GGT	14.00	10.00 - 30.00	3.00 - 70.00	U/L
Protein - Total	65.90	69.00 - 74.00	64.00 - 83.00	g/L
Albumin	45.30	40.00 - 50.00	35.00 - 52.00	g/L
Globulin - Total	20.60	24.00 - 28.00	19.00 - 37.00	g/L
Albumin:Globulin	2.19	1.40 - 2.10	0.90 - 2.00	Ratio
Bilirubin - Total	4.00	1.71 - 15.39	3.42 - 20.52	µmol/L
Bilirubin - Direct	2.70	0.00 - 3.25	0.00 - 3.42	Umol/L

Biomarker	Current Nov 01 2016	Optimal range	Standard range	Units
Bilirubin - Indirect	1.30	1.71 - 11.97	3.42 - 20.52	Umol/L
Sodium	134.00	135.00 - 142.00	135.00 - 145.00	mmol/L
Potassium	4.30	4.00 - 4.50	3.50 - 5.10	mmol/L
Sodium/Potassium Ratio	31.16	30.00 - 35.00	30.00 - 35.00	ratio
Chloride	103.90	100.00 - 106.00	98.00 - 110.00	mmol/L
Urea	6.80	3.57 - 5.71	2.50 - 8.92	mmol/L
Creatinine	85.00	70.72 - 97.24	35.36 - 132.60	umol/L
eGFR	84.00	90.00 - 200.00	90.00 - 200.00	mL/min
Uric Acid - Male	359.00	208.18 - 350.93	205.21 - 475.84	umol/L
Calcium	2.32	2.30 - 2.50	2.15 - 2.60	mmol/L
Phosphorus	1.05	0.97 - 1.29	0.81 - 1.45	mmol/L
Calcium:Phosphorous	2.20	1.78 - 2.09	1.78 - 2.09	Ratio
Calcium:Albumin	0.05	0.00 - 0.06	0.00 - 0.06	Ratio
Magnesium	0.77	1.00 - 1.25	0.75 - 1.25	mmol/L
LDH	153.00	140.00 - 200.00	120.00 - 250.00	U/L
C-Reactive Protein	23.81	0.00 - 42.86	0.00 - 75.24	nmol/L
Hs CRP - Male	21.52	0.00 - 5.24	0.00 - 27.62	nmol/L
BUN:Creatinine	0.08	0.04 - 0.06	0.02 - 0.09	Ratio
CO2	24.30	25.00 - 30.00	19.00 - 30.00	mmol/L
Anion Gap	10.10	7.00 - 12.00	6.00 - 16.00	mmol/L
TSH	1.19	1.30 - 2.00	0.40 - 4.50	mIU/L
Free T3	3.76	4.61 - 5.38	3.53 - 6.45	pmol/L
Free T4	16.00	12.87 - 19.30	10.30 - 23.17	pmol/L
Total T3	1.32	1.39 - 2.59	1.17 - 2.79	nmol/L
Total T4	89.30	77.22 - 153.15	57.92 - 154.44	nmol/L
T3 Uptake	31.00	27.00 - 35.00	22.00 - 37.00	%
Thyroid Peroxidase (TPO) Abs	9.00	0.00 - 34.00	0.00 - 34.00	iU/L
Thyroglobulin Abs	11.00	0.00 - 115.00	0.00 - 115.00	iIU/L
Progesterone - Male	0.73	3.18 - 3.82	0.64 - 4.13	nmol/L
Estradiol - Male	102.05	73.42 - 110.13	41.48 - 158.59	pmol/L
Testosterone Total - Male	33.50	24.27 - 28.95	8.67 - 34.67	nmol/L
Sex Hormone Binding Globulin - Male	91.50	30.00 - 40.00	10.00 - 50.00	nmol/L
DHEA-S - Male	5.78	9.45 - 13.23	1.76 - 13.77	umol/L
Homocysteine	15.60	0.00 - 7.20	0.00 - 10.30	µmol/L

Biomarker	Current Nov 01 2016	Optimal range	Standard range	Units
C-Peptide	0.83	0.36 - 0.53	0.26 - 1.03	nmol/L
Insulin - Fasting	58.34	0.00 - 30.00	0.00 - 114.00	pmol/L
Reverse T3	0.37	0.36 - 0.90	0.28 - 0.95	ng/ml
Vitamin D (25-OH)	127.05	125.00 - 225.00	75.00 - 250.00	nmol/L
PSA	1.56	0.00 - 2.60	0.00 - 4.00	ng/ml
ESR - Male	1.00	3.00 - 10.00	0.00 - 15.00	mm/hr
Ferritin	67.50	30.00 - 70.00	10.00 - 232.00	ng/ml
Fibrinogen	8.29	5.88 - 8.82	5.14 - 12.50	umol/L
TIBC	43.40	44.78 - 62.68	44.78 - 76.12	umol/L
% Transferrin saturation	43.10	20.00 - 35.00	20.00 - 50.00	%
Vitamin B12	385.13	332.01 - 590.24	147.56 - 811.58	pmol/L
Folate	22.20	33.99 - 56.65	12.46 - 61.18	nmol/L
Free Thyroxine Index (T7)	2.15	1.70 - 4.60	1.40 - 3.80	Index

% Deviation Report

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

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

Biomarker	Lab result	Optimal range		% deviation	Optimal range
		Low	High		Low — High
Sex Hormone Binding Globulin - Male	91.50	30.00	40.00	565	
Hs CRP - Male	21.52	0.00	5.24	361	
Cholesterol - Total	6.03	4.14	4.65	316	
C-Peptide	0.83	0.36	0.53	231	
Glucose	5.87	4.16	4.77	230	
Haemoglobin - Male	166.00	140.00	150.00	210	
MCV	102.20	82.00	89.90	206	
Homocysteine	15.60	0.00	7.20	167	
RDW	14.50	11.70	13.00	165	
Testosterone Total - Male	33.50	24.27	28.95	147	
Insulin - Fasting	58.34	0.00	30.00	144	
BUN:Creatinine	0.08	0.04	0.06	114	
Monocytes	11.10	0.00	7.00	109	
Neutrophils	71.40	40.00	60.00	107	
% Transferrin saturation	43.10	20.00	35.00	104	
Urea	6.80	3.57	5.71	101	
HDL Cholesterol	1.99	1.42	1.81	96	
Triglycerides	0.95	0.79	0.90	91	
MCH	33.40	28.00	31.90	88	
Calcium:Phosphorous	2.20	1.78	2.09	86	
Haematocrit - Male	0.50	0.40	0.48	75	
LDL Cholesterol	3.60	0.00	3.11	66	
Haemoglobin A1C	5.64	4.50	5.50	64	
Albumin:Globulin	2.19	1.40	2.10	63	
RBC - Male	4.97	4.20	4.90	60	
Uric Acid - Male	359.00	208.18	350.93	56	
Ferritin	67.50	30.00	70.00	44	
Bilirubin - Direct	2.70	0.00	3.25	33	
Fibrinogen	8.29	5.88	8.82	32	
AST (SGOT)	23.00	10.00	26.00	31	
Estradiol - Male	102.05	73.42	110.13	28	
Calcium:Albumin	0.05	0.00	0.06	27	
Cholesterol:HDL	3.03	0.00	4.00	26	

Biomarker	Lab result	Optimal range		% deviation	Optimal range
		Low	High		Low — High
Chloride	103.90	100.00	106.00	15	
Anion Gap	10.10	7.00	12.00	12	
Potassium	4.30	4.00	4.50	10	
PSA	1.56	0.00	2.60	10	
C-Reactive Protein	23.81	0.00	42.86	6	
Total WBCs	6.59	5.50	7.50	4	
Triglyceride:HDL	0.47	0.00	0.87	4	
Creatinine	85.00	70.72	97.24	4	
Albumin	45.30	40.00	50.00	3	
Platelets	270.00	155.00	385.00	0	
T3 Uptake	31.00	27.00	35.00	0	
Basophils	0.50	0.00	1.00	0	
Free T4	16.00	12.87	19.30	1	
ALT (SGPT)	17.00	10.00	26.00	6	
Iron - Serum	18.70	15.22	23.27	7	
Eosinophils	1.20	0.00	3.00	10	
Thyroid Peroxidase (TPO) Abs	9.00	0.00	34.00	24	
Phosphorus	1.05	0.97	1.29	25	
MCHC	327.00	320.00	350.00	27	
Sodium/Potassium Ratio	31.16	30.00	35.00	27	
LDH	153.00	140.00	200.00	28	
Vitamin B12	385.13	332.01	590.24	29	
GGT	14.00	10.00	30.00	30	
VLDL Cholesterol	0.44	0.00	2.59	33	
Bilirubin - Total	4.00	1.71	15.39	33	
Total T4	89.30	77.22	153.15	34	
Free Thyroxine Index (T7)	2.15	1.70	4.60	34	
Calcium	2.32	2.30	2.50	40	
Thyroglobulin Abs	11.00	0.00	115.00	40	
Vitamin D (25-OH)	127.05	125.00	225.00	48	
Reverse T3	0.37	0.36	0.90	48	
Bilirubin - Indirect	1.30	1.71	11.97	54	
eGFR	84.00	90.00	200.00	55	

Biomarker	Lab result	Optimal range Low	Optimal range High	% deviation	Optimal range
					Low — High
Total T3	1.32	1.39	2.59	55	
TIBC	43.40	44.78	62.68	58	
CO2	24.30	25.00	30.00	64	
Sodium	134.00	135.00	142.00	64	
TSH	1.19	1.30	2.00	66	
ESR - Male	1.00	3.00	10.00	79	
Lymphocytes	15.80	24.00	44.00	91	
Folate	22.20	33.99	56.65	102	
Protein - Total	65.90	69.00	74.00	112	
Alk Phos	46.00	70.00	100.00	130	
Globulin - Total	20.60	24.00	28.00	135	
Magnesium	0.77	1.00	1.25	142	
DHEA-S - Male	5.78	9.45	13.23	147	
Free T3	3.76	4.61	5.38	160	
Progesterone - Male	0.73	3.18	3.82	435	

Blood Test History

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

Key

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

Biomarker	2016 Nov 1
GLUCOSE	5.87
INSULIN - FASTING	58.34
UREA	6.8

Biomarker	2016 Nov 1
HAEMOGLOBIN A1C	5.64
C-PEPTIDE	0.83
CREATININE	85

Biomarker	2016 Nov 1
BUN:CREATININE	0.08
PSA	1.56
POTASSIUM	4.3
CHLORIDE	103.9

Biomarker	2016 Nov 1
EGFR	84
SODIUM	134
SODIUM/ POTASSIUM RATIO	31.16
CO2	24.3

Biomarker	2016 Nov 1
ANION GAP	10.1
PROTEIN - TOTAL	65.9
GLOBULIN - TOTAL	20.6
CALCIUM	2.32

Biomarker	2016 Nov 1
URIC ACID - MALE	359
ALBUMIN	45.3
ALBUMIN:GLOBULIN	2.19
CALCIUM:ALBUMIN	0.05

Biomarker	2016 Nov 1
PHOSPHORUS	1.05
MAGNESIUM	0.77
LDH	153
ALT (SGPT)	17

Biomarker	2016 Nov 1
CALCIUM:PHOSPHOROUS	2.2
ALK PHOS	46
AST (SGOT)	23
GGT	14

Biomarker	2016 Nov 1
BILIRUBIN - TOTAL	4
BILIRUBIN - INDIRECT	1.3
FERRITIN	67.5
% TRANSFERRIN SATURATION	43.1

Biomarker	2016 Nov 1
BILIRUBIN - DIRECT	2.7
IRON - SERUM	18.7
TIBC	43.4
CHOLESTEROL - TOTAL	6.03

Biomarker	2016 Nov 1
TRIGLYCERIDES	0.95
LDL CHOLESTEROL	3.6
CHOLESTEROL:HDL	3.03
TSH	1.19

Biomarker	2016 Nov 1
HDL CHOLESTEROL	1.99
VLDL CHOLESTEROL	0.44
TRIGLYCERIDE:HDL	0.47
TOTAL T4	89.3

Biomarker	2016 Nov 1
TOTAL T3	1.32
FREE T3	3.76
FREE THYROXINE INDEX (T7)	2.15
THYROGLOBULIN ABS	11

Biomarker	2016 Nov 1
FREE T4	16
T3 UPTAKE	31
THYROID PEROXIDASE (TPO) ABS	9
REVERSE T3	0.37

Biomarker	2016 Nov 1
HS CRP - MALE	21.52
ESR - MALE	1
FIBRINOGEN	8.29
VITAMIN B12	385.13

Biomarker	2016 Nov 1
C-REACTIVE PROTEIN	23.81
HOMOCYSTEINE	15.6
VITAMIN D (25-OH)	127.05
FOLATE	22.2

Biomarker	2016 Nov 1
DHEA-S - MALE	5.78
SEX HORMONE BINDING GLOBULIN - MALE	91.5
PROGESTERONE - MALE	0.73
RBC - MALE	4.97

Biomarker	2016 Nov 1
TESTOSTERONE TOTAL - MALE	33.5
ESTRADIOL - MALE	102.05
TOTAL WBCS	6.59
HAEMOGLOBIN - MALE	166

Biomarker	2016 Nov 1
HAEMATOCRIT - MALE	0.5
MCH	33.4
PLATELETS	270
NEUTROPHILS	71.4

Biomarker	2016 Nov 1
MCV	102.2
MCHC	327
RDW	14.5
LYMPHOCYTES	15.8

Biomarker	2016 Nov 1
MONOCYTES	11.1
EOSINOPHILS	1.2

Biomarker	2016 Nov 1
BASOPHILS	0.5

Out of Optimal Range

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

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

Total number of biomarkers by optimal range

Alarm low	Below standard	Below optimal	Optimal	Above optimal	Above standard	Alarm high	Total
0	4	13	38	17	7	2	81

Above Optimal

91.50 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, uterus, brain, and placenta. SHBG acts as a transport molecule for carrying estrogen and testosterone around the body and delivering them to receptors on the cells.

21.52 nmol/L

HS CRP - MALE

High Sensitivity C-Reactive Protein (Hs-CRP) is a blood marker that can help indicate the level of chronic inflammation in the body. Increased levels are associated with in increased risk of inflammation, cardiovascular disease, stroke, and diabetes.

6.03 mmol/L

CHOLESTEROL - TOTAL

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

0.83 nmol/L

C-PEPTIDE

C-Peptide is used as an indicator for insulin production from the pancreas. It can help assess whether a high blood glucose is due to reduced insulin output from the pancreas or due to reduced glucose uptake by the cells, a condition called insulin resistance.

5.87 mmol/L

GLUCOSE

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

102.20 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. A decreased MCV is associated with iron and B6 deficiency.

14.50 %

RDW

The Red Cell Distribution Width (RDW) is essentially an indication of the degree of abnormal variation in 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.

166.00 g/L

HAEMOGLOBIN - MALE

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

15.60 µmol/L

HOMOCYSTEINE

Homocysteine is a molecule formed from the incomplete metabolism of the amino acid methionine. Deficiencies in Vitamins B6, B12 and folate cause methionine to be converted into homocysteine. Homocysteine increases the risk of cardiovascular disease by causing damage to the endothelial lining of the arteries, especially in the heart. Increased levels of homocysteine are associated with an increased risk of cardiovascular disease and stroke, as well as cancer, depression and inflammatory bowel disease.

33.50 nmol/L

TESTOSTERONE TOTAL - MALE

Testosterone is the primary sex hormone for men. The total testosterone test measures both the testosterone that is bound to serum proteins and the unbound form (free testosterone). 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.

58.34
pmol/L

INSULIN - FASTING

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

11.10
%

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.

43.10
%

% TRANSFERRIN SATURATION

The % transferrin saturation index is a calculated value that tells how much serum iron is actually bound to the iron carrying protein transferrin. A % transferrin saturation value of 15% means that 15% of iron-binding sites of transferrin is being occupied by iron. It is a sign of iron overload or too much iron in the blood if it is above the optimal range.

0.08
Ratio

BUN:CREATININE

The BUN:Creatinine is a ratio between the BUN (or Urea) and Creatinine levels. An increased level is associated with renal dysfunction.

71.40
%

NEUTROPHILS

Neutrophils are the white blood cells used by the body to combat bacterial infections. They are the most numerous and important white cell in the body’s reaction to inflammation. Levels will be raised in bacterial infections. Decreased levels are often see in chronic viral infections.

6.80
mmol/L

UREA

Urea or Blood Urea Nitrogen (BUN) 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 Urea varies with the amount of dietary protein intake. Increased Urea may be due to an increased production of urea by the liver or decreased excretion by the kidney. Urea is a test used predominantly to measure kidney function, where it will be increased. An increased Urea is also associated with dehydration and hypochlorhydria.

1.99 mmol/L

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, increased HDL is considered protective.

0.95 mmol/L

TRIGLYCERIDES

Serum triglycerides are composed of fatty acid molecules that enter the blood stream either from the liver or from the diet. Patients that are optimally metabolizing their fats and carbohydrates tend to have a triglyceride level about one-half of the total cholesterol level. Levels will be elevated in metabolic syndrome, fatty liver, in patients with an increased risk of cardiovascular disease, hypothyroidism and adrenal dysfunction. Levels will be decreased in liver dysfunction, a diet deficient in fat, and inflammatory processes.

33.40 pg

MCH

The Mean Corpuscular Hemoglobin (MCH) is a calculated value and is an expression of the average weight of hemoglobin per red blood cell. MCH, along with MCV can be helpful in determining the type of anemia present.

2.20 Ratio

CALCIUM:PHOSPHOROUS

The calcium:phosphorous ratio is determined from the serum calcium and serum phosphorous levels. This ratio is maintained by the parathyroid glands and is also affected by various foods. Foods high in phosphorus and low in calcium tend to disrupt the balance and shift the body toward metabolic acidity, depleting calcium and other minerals and increasing inflammation.

0.50 Prop. of 1.0

HAEMATOCRIT - 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. Low levels of hematocrit are associated with an anemia. The hematocrit should be evaluated with the other elements on a CBC/Hemotology panel to determine the cause and type of anemia.

3.60 mmol/L

LDL CHOLESTEROL

LDL functions to transport cholesterol and other fatty acids from the liver to the peripheral tissues for uptake and metabolism by the cells. It is known as “bad cholesterol” because it is thought that this process of bringing cholesterol from the liver to the peripheral tissue increases the risk for atherosclerosis. An increased LDL cholesterol is just one of many independent risk factors for cardiovascular disease. It is also associated with metabolic syndrome, oxidative stress and fatty liver.

5.64
%

HAEMOGLOBIN A1C

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

2.19
Ratio

ALBUMIN:GLOBULIN

The albumin/globulin ratio is the ratio between the albumin and total globulin levels. An increased Albumin/Globulin ratio is fairly uncommon and is usually due to dehydration.

4.97
x10*12/L

RBC - MALE

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. The RBC Count determines the total number of cells or erythrocytes found in a cubic millimeter of blood. Increased levels are associated with dehydration, stress, a need for vitamin C and respiratory distress such as asthma. Decreased levels are primarily associated with anemia.

359.00
umol/L

URIC ACID - MALE

Uric acid is produced as an end product of purine, nucleic acid, and nucleoprotein metabolism. Levels can increase due to over-production by the body or decreased excretion by the kidneys. Increased uric acid levels are associated with gout, atherosclerosis, oxidative stress, arthritis, kidney dysfunction, circulatory disorders and intestinal permeability. Decreased levels are associated with detoxification issues, molybdenum deficiency, B12/folate anemia and copper deficiency.

Below Optimal

0.73 nmol/L

PROGESTERONE - MALE

Progesterone is often considered to be a female hormone but men produce progesterone too. In the body it's converted into testosterone and also serves to oppose and balance estrogen. As men age, their progesterone levels drop, which may cause the testosterone levels to fall.

5.78 umol/L

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 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 in order to maximize the anti-aging effects.

3.76 pmol/L

FREE T3

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 decreased with hypothyroidism.

0.77 mmol/L

MAGNESIUM

The majority of magnesium is found inside the cell so measuring magnesium levels in the serum may not be the best way to assess for magnesium deficiency. That being said, an increased serum magnesium is associated with kidney dyfunction and thyroid hypofunction. A decreased magnesium is a common finding with muscle cramps.

20.60 g/L

GLOBULIN - TOTAL

Total serum globulin is a measurement of all the individual globulin fractions in the blood. Globulins constitute the body's antibody system. A raised globulin level is associated with hypochlorhydria, liver dysfunction, immune activation, oxidative stress and inflammation. Decreased levels are associated with inflammation in the digestive system and immune insufficiency.

65.90 g/L

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. An increased total protein is most often due to dehydration.

15.80 %

LYMPHOCYTES

Lymphocytes are a type of white blood cell. An increase in lymphocyte concentration is usually a sign of a viral infection but can also be a sign of increased toxicity in the body or inflammation. Decreased levels are often seen in a chronic viral infection when the body can use up a large number of lymphocytes and oxidative stress..

46.00 U/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.

22.20 nmol/L

FOLATE

Folate functions as a coenzyme in the process of methylation. Along with vitamin B12, folate is essential for DNA synthesis. Low folate intake can result in folate deficiency, which can impair methylation, DNA synthesis, and red blood cell production.

1.00 mm/hr

ESR - MALE

The ESR test is based on the fact that certain blood proteins will become altered in inflammatory conditions, causing aggregation of the red blood cells and as such it is a non-specific measure for inflammation in the body. The ESR is useful for determining the level of tissue destruction, inflammation, and is an indication that a disease process is ongoing and must be investigated.

1.19 mIU/L

TSH

TSH is a hormone produced from the anterior pituitary to control thyroid function. TSH stimulates the thyroid cells to increase the production of thyroid hormone (T-4), to store thyroid hormone and to release thyroid hormone into the blood stream. TSH synthesis and secretion is regulated by the release of TRH (Thyroid Releasing Hormone) from the hypothalamus. TSH levels describes the body's desire for more thyroid hormone (T4 or T3), which is done in relation to the body's ability to use energy. A high TSH is the body's way of saying "we need more thyroid hormone". A low TSH is a reflection of the body's low need for thyroid hormone. Optimal TSH levels tell us that the thyroid hormone levels match the body's current need and/or ability to utilize the energy.

134.00 mmol/L

SODIUM

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

24.30 mmol/L

CO2

Carbon Dioxide is a measure of bicarbonate in the blood. CO_2, as bicarbonate, is available for acid-base balancing. Bicarbonate neutralizes metabolic acids in the body. Decreased levels are associated with metabolic acidosis.

43.40 umol/L

TIBC

Total Iron Binding Capacity is an approximate estimation of the serum transferrin level. Transferrin is the protein that carries the majority of the iron in the blood. Elevated levels are associated with iron deficiency anemia.

1.32 nmol/L

TOTAL T3

T-3 is the most active thyroid hormone and is primarily produced from the conversion of thyroxine (T-4) in the peripheral tissue. T-3 is 4 -5 times more metabolically active than T-4. Total T3 reflects the total amount of T3 present in the blood i.e. amount bound to protein and free levels. Elevated total T-3 levels can be very useful in the diagnosis of Hyperthyroidism especially if the Total or Free T4 level is normal. Decreased total T-3 levels should be used in conjunction with other abnormal thyroid tests before coming to a diagnosis of Hypothyroidism.

84.00 mL/min

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 60 are an indication of a loss of kidney function and may require a visit to a renal specialist for further evaluation.

1.30
Umol/L

BILIRUBIN - INDIRECT

Bilirubin is formed from the breakdown of red blood cells. Indirect or unconjugated bilirubin is the protein (albumin) bound form of bilirubin that circulates in the blood on its way to the liver prior to being eliminated from the body in the bile. Elevated levels of indirect or unconjugated bilirubin are usually associated with increased red blood cell destruction.

4

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

Appendix

Functional Body Systems Details

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

Dysfunction Highly Likely.
Much improvement required.

IMMUNE FUNCTION

The Immune Function score allows us to assess the state of function in your immune system. When the immune system is in a state of balance we are able to cope and deal with infections with little or no lasting negative side-effects. Biomarkers on a blood test allow us to check and see if the immune system is in a state of balance or not. Some of the factors to consider include a low functioning immune system (a condition called immune insufficiency), bacterial or viral infections or GI dysfunction associated with decreased immune function: abnormal immunity in the gut lining, a decrease in immune cell function in the gut or an increase in abnormal bacteria, etc. in the gut (a condition called dysbiosis).

Rationale

Globulin - Total ↓, Neutrophils ↑, Lymphocytes ↓, Monocytes ↑, Alk Phos ↓

Biomarkers considered

Total WBCs, Globulin - Total, Neutrophils, Lymphocytes, Monocytes, Albumin, Alk Phos, Iron - Serum, Ferritin

Dysfunction Highly Likely.
Much improvement required.

BLOOD SUGAR REGULATION

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

Rationale

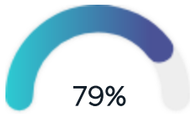
Glucose ↑, Haemoglobin A1C ↑, Insulin - Fasting ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, DHEA-S - Male ↓, C-Peptide ↑

Biomarkers considered

Glucose, LDH, Haemoglobin A1C, Insulin - Fasting, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, DHEA-S - Male, C-Peptide

Patient result not available - consider running in future tests:

Fructosamine



Dysfunction Likely.
Improvement required

THYROID FUNCTION

The Thyroid Function score allows us to assess the functional health of your thyroid. The thyroid produces hormones that control how the body uses energy. They are responsible for controlling metabolism in the body, for maintaining body temperature, regulating cholesterol and controlling mood. By examining specific elements on the blood test we can see if your thyroid is in a state of increased function (a condition called hyperthyroidism), in a state of decreased function (hypothyroidism) or hopefully optimal function!

Rationale

TSH ↓, Total T3 ↓, Free T3 ↓

Biomarkers considered

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

Dysfunction Likely.
Improvement required

ADRENAL FUNCTION

The Adrenal Function score reflects the degree of function in your adrenal glands. The adrenal glands produce certain hormones in response to stress. They are responsible for what is commonly called “the fight or flight response”. Unfortunately, when your body is under constant stress, which is very common, your adrenal glands become less functional. Adrenal dysfunction can be caused by an increased output of stress hormones (adrenal stress) or more commonly a decreased output of adrenal hormones (adrenal insufficiency).

Rationale

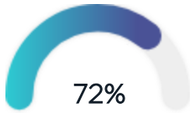
Sodium ↓, Urea ↑, Cholesterol - Total ↑, Triglycerides ↑, DHEA-S - Male ↓

Biomarkers considered

Sodium, Potassium, Sodium/Potassium Ratio, Glucose, Urea, Chloride, CO2, Cholesterol - Total, Triglycerides, DHEA-S - Male

Patient result not available - consider running in future tests:

Cortisol - AM, Cortisol - PM



Dysfunction Likely.
Improvement required

GI FUNCTION

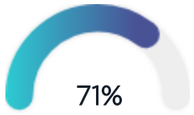
The GI Function Index reflects the degree of function in your gastrointestinal (GI) system. The gastrointestinal system is responsible for the digestion and breakdown of macronutrients (proteins, fats, and carbohydrates) into small particles so they can be easily absorbed and utilized. The GI systems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

Rationale

Urea ↑, Protein - Total ↓, Globulin - Total ↓, Alk Phos ↓, MCV ↑, Uric Acid - Male ↑

Biomarkers considered

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



Dysfunction Likely.
Improvement required

CARDIOVASCULAR RISK

The Cardiovascular Risk score looks at 15 biomarkers on a blood test to assess for your risk of cardiovascular dysfunction. A high Cardiovascular Risk score indicates that you may be at an increased risk of developing cardiovascular disease. The Cardiovascular Risk score will be used along with information from an examination of your diet, lifestyle, exercise, body mass index and family history to give us a more complete picture of what is going on.

Rationale

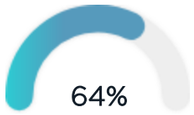
Glucose ↑, Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑, Hs CRP - Male ↑, Homocysteine ↑, Haemoglobin A1C ↑, Insulin - Fasting ↑

Biomarkers considered

Glucose, AST (SGOT), LDH, Cholesterol - Total, Triglycerides, LDL Cholesterol, HDL Cholesterol, Ferritin, Fibrinogen, Hs CRP - Male, Homocysteine, Haemoglobin A1C, Estradiol - Male, Testosterone Total - Male, Insulin - Fasting, Vitamin D (25-OH), Sex Hormone Binding Globulin - Male

Patient result not available - consider running in future tests:

Testosterone Free - Male



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

SEX HORMONE FUNCTION - MALE

The Male Sex Hormone score helps us assess levels of important hormones in your body: testosterone, DHEA, progesterone, and estradiol. Blood levels of these crucial hormones diminish with age, contributing to age-related dysfunctions such as low libido, blood sugar problems, excess weight, heart disease, etc. We can measure sex hormone levels in your blood and determine from the Sex Hormone Function score whether the levels are optimal for your continued optimal health and wellness.

Rationale

DHEA-S - Male ↓, Progesterone - Male ↓, Sex Hormone Binding Globulin - Male ↑

Biomarkers considered

DHEA-S - Male, Estradiol - Male, Testosterone Total - Male, PSA, Progesterone - Male, Sex Hormone Binding Globulin - Male

Patient result not available - consider running in future tests:

Testosterone Free - Male

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

KIDNEY FUNCTION

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

Rationale

Urea ↑, BUN:Creatinine ↑, eGFR ↓, Uric Acid - Male ↑

Biomarkers considered

Urea, Creatinine, BUN:Creatinine, Phosphorus, eGFR, Uric Acid - Male, AST (SGOT), LDH, Magnesium

Patient result not available - consider running in future tests:

eGFR African American

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

PROSTATE FUNCTION

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

Rationale

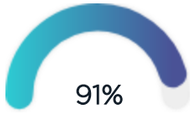
Monocytes ↑

Biomarkers considered

Creatinine, PSA, Monocytes

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 Highly Likely.
Much improvement required.

LIPID PANEL

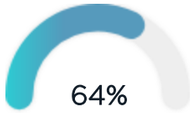
The Lipid Panel score gives us an indication of the levels of cholesterol and fat in your blood. An increased Lipid Panel score indicates that you have higher than optimal levels of cholesterol and fat in your blood (a condition called hyperlipidemia). Hyperlipidemia is associated with an increased risk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

Rationale

Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑

Biomarkers considered

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



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

INFLAMMATION

The Inflammation score can help us identify whether or not you are suffering from inflammation. This is important because inflammation can be silent, i.e. not have any symptoms. A number of biomarkers on a blood test can indicate the presence of inflammation. These are markers of inflammation and are not specific to any particular inflammatory condition or disease but they can help us look at the underlying dysfunctions that are the true cause of inflammation in the body.

Rationale

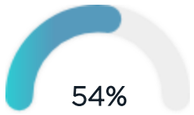
Hs CRP - Male ↑, Uric Acid - Male ↑, Homocysteine ↑, Globulin - Total ↓, HDL Cholesterol ↑, RDW ↑

Biomarkers considered

Hs CRP - Male, Uric Acid - Male, LDH, Fibrinogen, Homocysteine, Sodium/Potassium Ratio, Globulin - Total, Cholesterol - Total, Triglycerides, HDL Cholesterol, Iron - Serum, Ferritin, ESR - Male, Platelets, Lymphocytes, Basophils, Alk Phos, C-Reactive Protein, RDW, Vitamin D (25-OH)

Patient result not available - consider running in future tests:

Creatine Kinase



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

OXIDATIVE STRESS

The Oxidative Stress score gives us an indication of the level of oxidative stress activity in your body. Oxidative stress is a disturbance in the free radical/antioxidant balance in the body and is associated with the aging process and a number of degenerative diseases. Oxidative stress arises when the levels of free radicals in the body are high and/or the levels of antioxidants in the body are low. The primary contribution to increased free radicals is the exposure to toxins from our environment. A high Oxidative Stress score may indicate you need more antioxidants and/or need to make lifestyle changes such as quitting smoking, reducing stress, reducing alcohol consumption, etc.

Rationale

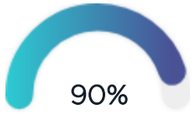
Lymphocytes ↓, Uric Acid - Male ↑, HDL Cholesterol ↑, LDL Cholesterol ↑, Neutrophils ↑

Biomarkers considered

Albumin, Globulin - Total, Cholesterol - Total, Platelets, Lymphocytes, Uric Acid - Male, Bilirubin - Total, HDL Cholesterol, LDL Cholesterol, Ferritin, Neutrophils

Macronutrient Statuses Details

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



Dysfunction Highly Likely.
Much improvement required.

VITAMIN STATUS

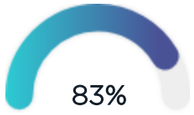
The Vitamin Status gives us a general indication of the balance of certain vitamins in your body. Vitamin levels are constantly fluctuating based on a number of factors, such as the amount in your diet, your ability to digest and break down individual vitamins from the food or supplements you consume,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

Rationale

Homocysteine ↑, MCV ↑, Folate ↓

Biomarkers considered

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



Dysfunction Likely.
Improvement required

ELECTROLYTE STATUS

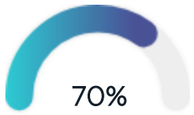
The Electrolyte Balance gives us a sense of the balance of electrolytes in your body. Electrolytes such as calcium, potassium, sodium, and magnesium are essential for optimal health and wellness. An electrolyte imbalance can show up as low blood pressure, cold hands or feet, poor circulation, swelling in the ankles and immune insufficiency.

Rationale

Sodium ↓, Magnesium ↓

Biomarkers considered

Sodium, Potassium, Chloride, Calcium, Phosphorus, Magnesium



Dysfunction Likely.
Improvement required

HYDRATION STATUS

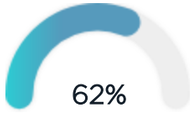
The Hydration Status gives us a good indication of how well hydrated you were at the time your blood was drawn. Adequate hydration is necessary for many basic chemical reactions in your body, including digestion, electrolyte balance, hormone transport, and kidney and heart function. Dehydration is a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

Rationale

Urea ↑, RBC - Male ↑, Haemoglobin - Male ↑, Haematocrit - Male ↑

Biomarkers considered

Albumin, Urea, Sodium, Potassium, Protein - Total, RBC - Male, Haemoglobin - Male, Haematocrit - Male



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

CARBOHYDRATE STATUS

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

Rationale

Glucose ↑, Cholesterol - Total ↑, LDL Cholesterol ↑

Biomarkers considered

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

Individual Nutrient Deficiencies Details

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

Dysfunction Highly Likely.
Much improvement required.

ZINC NEED

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

Rationale
Alk Phos ↓

Biomarkers considered
Alk Phos

Dysfunction Highly Likely.
Much improvement required.

MAGNESIUM NEED

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

Rationale
Magnesium ↓

Biomarkers considered
Magnesium, GGT, Potassium

Dysfunction Highly Likely.
Much improvement required.

VITAMIN B12/FOLATE NEED

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

Rationale

MCV ↑, Homocysteine ↑, MCH ↑, RDW ↑, Folate ↓

Biomarkers considered

MCV, LDH, Homocysteine, Uric Acid - Male, Albumin, Total WBCs, RBC - Male, Haemoglobin - Male, Haematocrit - Male, MCH, MCHC, RDW, Neutrophils, Folate, Vitamin B12

Dysfunction Highly Likely.
Much improvement required.

DHEA NEED

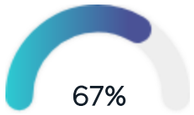
The results of your blood test indicate that your DHEA levels might be lower than optimal.

Rationale

DHEA-S - Male ↓

Biomarkers considered

DHEA-S - Male



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

SELENIUM NEED

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

Rationale

Total T3 ↓, Free T3 ↓

Biomarkers considered

Total T3, Free T3, T3 Uptake

Health Improvement Plan Details

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

BACTERIAL INFECTION

The results of your blood test indicate a tendency towards a bacterial infection and a need for immune support.

Rationale

Neutrophils ↑, Monocytes ↑, Lymphocytes ↓

METABOLIC SYNDROME

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

Rationale

Glucose ↑, Triglycerides ↑, Haemoglobin A1C ↑, Insulin - Fasting ↑, Uric Acid - Male ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, DHEA-S - Male ↓

DHEA NEED

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

Rationale

DHEA-S - Male ↓

VITAMIN B12/FOLATE NEED

The results of your blood test indicate that your vitamin B12/folate levels might be lower than optimal and shows a need for vitamin B12/folate supplementation.

Rationale

MCV ↑, Homocysteine ↑, MCH ↑, RDW ↑, Folate ↓

MAGNESIUM NEED

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

Rationale

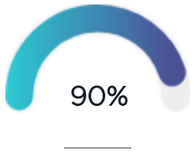
Magnesium ↓

THYROID CONVERSION ISSUES

The results of your blood test indicate a tendency towards a difficulty converting thyroxine (T4) into triiodothyronine (T3), which can cause symptoms of hypothyroidism, and a need for thyroid gland support.

Rationale

Total T3 ↓, Free T3 ↓

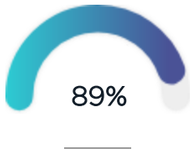


HYPERLIPIDEMIA

The results of your blood test indicate that you have higher than optimal levels of cholesterol and fat in your blood (a condition called hyperlipidemia), which is associated with an increased risk of cardiovascular disease.

Rationale

Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑

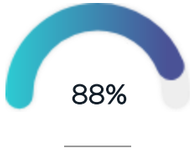


ZINC NEED

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

Rationale

Alk Phos ↓

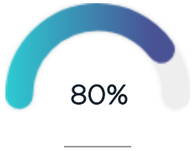


INCREASED CARDIOVASCULAR RISK

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

Rationale

Glucose ↑, Cholesterol - Total ↑, Triglycerides ↑, LDL Cholesterol ↑, Hs CRP - Male ↑, Homocysteine ↑, Haemoglobin A1C ↑, Insulin - Fasting ↑



ENDOTHELIAL DYSFUNCTION

The results of your blood test indicate a tendency towards endothelial dysfunction and a need for support for your cardiovascular system.

Rationale

Hs CRP - Male ↑, Homocysteine ↑, Glucose ↑

HYPOTHYROIDISM - SECONDARY

The results of your blood test indicate a need for thyroid support.

Rationale

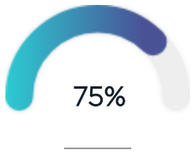
TSH ↓, Cholesterol - Total ↑, Triglycerides ↑, Free T3 ↓, Total T3 ↓

ELECTROLYTE NEED

The results of your blood test indicate that your electrolyte balance might be lower than optimal and shows a need for electrolyte/mineral supplementation.

Rationale

Sodium ↓, Magnesium ↓

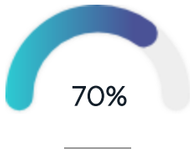


INFLAMMATION

The results of your blood test indicate a tendency towards inflammation and show a need for anti-inflammatory support.

Rationale

Hs CRP - Male ↑, Uric Acid - Male ↑, Homocysteine ↑, Globulin - Total ↓, HDL Cholesterol ↑, RDW ↑

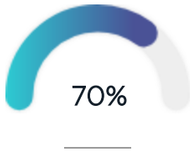


ADRENAL INSUFFICIENCY

The results of your blood test indicate a tendency towards adrenal insufficiency and a need for adrenal gland support. The adrenal glands produce certain hormones in response to stress. They are responsible for what is commonly called “the fight or flight response”. Unfortunately, when your body is under constant stress, which is very common, your adrenal glands become less functional and we recommend adrenal gland support.

Rationale

Sodium ↓, Cholesterol - Total ↑, DHEA-S - Male ↓

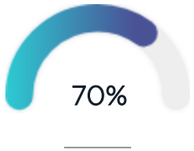


HYPOCHLORHYDRIA

The results of your blood test indicate a tendency towards hypochlorhydria, a condition of low stomach acid, and a need for digestive support.

Rationale

Urea ↑, Protein - Total ↓, Alk Phos ↓, MCV ↑

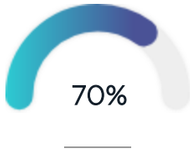


DEHYDRATION

The results of your blood test indicate that you may be dealing with dehydration, which is a very common problem. Dehydration often shows up on a standard blood chemistry and CBC test causing the elements listed below to be outside the optimal range. Insufficient water intake and/or excessive use of diuretics such as over the counter and prescription drugs, botanical medicines, caffeine etc. are the most common cause of dehydration.

Rationale

Urea ↑, RBC - Male ↑, Haemoglobin - Male ↑, Haematocrit - Male ↑

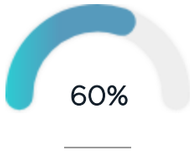


ATHEROSCLEROTIC PROCESS

The results of your blood test indicate a tendency towards atherosclerosis and a need for cardiovascular support.

Rationale

Uric Acid - Male ↑, Homocysteine ↑, Cholesterol - Total ↑, LDL Cholesterol ↑, Hs CRP - Male ↑

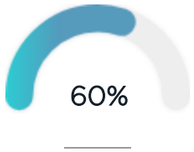


IMMUNE INSUFFICIENCY

The results of your blood test indicate a tendency towards immune insufficiency and a need for immune support.

Rationale

Globulin - Total ↓, Alk Phos ↓, RBC - Male ↑, Haemoglobin - Male ↑, Haematocrit - Male ↑

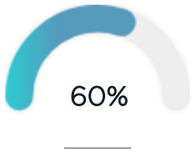


SELENIUM NEED

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

Rationale

Total T3 ↓, Free T3 ↓



GASTRIC INFLAMMATION

The results of your blood test indicate a tendency towards gastric inflammation and a need for support for the stomach lining.

Rationale

Globulin - Total ↓, Protein - Total ↓, Urea ↑

RENAL INSUFFICIENCY

The results of your blood test indicate a tendency towards renal insufficiency and a need for kidney support.

Rationale

Urea ↑, eGFR ↓, Uric Acid - Male ↑

OXIDATIVE STRESS

The results of your blood test indicate a tendency towards oxidative stress and show a need for antioxidant support.

Rationale

Lymphocytes ↓, Uric Acid - Male ↑, HDL Cholesterol ↑, LDL Cholesterol ↑, Neutrophils ↑

INTESTINAL HYPERPERMEABILITY

The results of your blood test indicate a tendency towards intestinal hyperpermeability, a condition commonly called Leaky Gut Syndrome, and a need for support for the mucosal lining of the gastrointestinal tract.

Rationale

Uric Acid - Male ↑

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