CONTENTS

Your Results
of Interest

The results presented in this section are a summary of all the tests that are either positive or fall outside the reference ranges. What does this mean? A reference range is a term used to determine if your results are within what is considered to be the 'normal' range of the population.If your results are outside the range for a test, it does not automatically mean the result is abnormal. Depending on each person's individual medical history, current medications and ongoing conditions or diseases, the results must be interpreted in this context to fully understand what these results mean to you. Therefore, in this section those results that are either positive or fall outside the reference range are highlighted so that they can be reviewed by a GP / Consultant to understand the relevance to your health. These results will also appear again throughout the report alongside the other results for that profile.

Full Blood Count

Mean Cell Haemoglobin Concentration (MCHC)

Mean Cell Haemoglobin Concentration (MCHC) is the average concentration of haemoglobin present in red blood cells (RBCs). Low MCHC is a feature of conditions such as iron-deficiency anaemia, anaemia of chronic disease and thalassaemia (a group of hereditary blood disorders that impair haemoglobin production). Red blood cells that contain high concentrations of haemoglobin (increased MCHC) are observed in conditions such as hereditary spherocytosis (a rare hereditary condition in which RBCs are ball-shaped and more fragile than usual), sickle cell disease (a group of conditions in which RBCs are abnormally shaped) and autoimmune haemolytic anaemia (anaemia caused by premature destruction of RBCs).

<320	320 - 360	>360
Low	Optimal	High

316 g/l
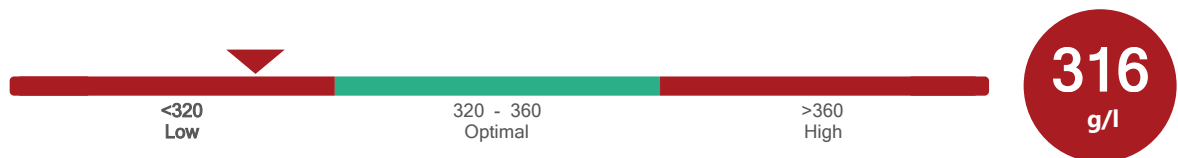
Eosinophil Count

Eosinophil Count refers to the number of eosinophils per volume of blood. Eosinophils are white blood cells that are involved in allergic reactions and in resisting infection. A high eosinophil count may be due to asthma, eczema, hay fever, parasitic infections, autoimmune disease (conditions caused by the generation of an immune response against the body's own tissues), leukaemia and certain medications. A low eosinophil count may be associated with excess production of adrenal hormones (e.g. Cushing's syndrome), alcohol intoxication and stress.

<0.04	0.04 - 0.4	>0.4
Low	Optimal	High

0.49 10^9/l
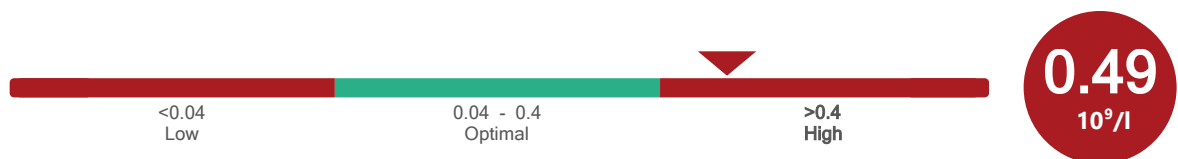
Neutrophil Count

Neutrophil Count refers to the number of neutrophils per unit volume of blood. Neutrophils are white blood cells that kill and ingest bacteria and fungi. An increased neutrophil count may be associated with infection, inflammation, myeloproliferative disorders (conditions in which the bone marrow produces cells excessively), cancer and some medications (e.g. corticosteroids). A decreased number of neutrophils may be the result of overwhelming bacterial or viral infections, dietary deficiencies (e.g. vitamin B12 or folic acid deficiency), aplastic anaemia (failure of bone marrow to produce blood cells), and the use of certain medications or radiation.

<2	2 - 7.5	>7.5
Low	Optimal	High

1.82 10^9/l
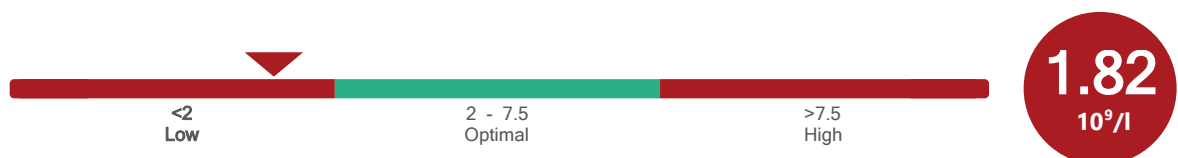
Heart Health

Total Cholesterol

Total Cholesterol refers to the measurement of all cholesterol circulating in the blood. Cholesterol is essential for various body functions such as the formation of bile acids, which facilitate digestion and absorption of nutrients, and production of hormones, which are vital for normal growth and development. Elevated total cholesterol levels are associated with increased risk of cardiovascular disease and stroke, as accumulation of cholesterol and fat can narrow blood vessels and impair blood flow. Low total cholesterol levels are associated with decreased risk of cardiovascular disease; however, low total cholesterol may also be associated with other problems, such as malnutrition, malabsorption disorders (conditions that affect the ability of the intestine to absorb nutrients) and liver disease.

| <5 Desirable | ≥5 High | 6.33 mmol/l |

LDL Cholesterol

LDL Cholesterol describes cholesterol that is bound to low-density lipoprotein (LDL). Lipoproteins are responsible for transporting cholesterol in the blood. LDL cholesterol deposits excess cholesterol in the walls of blood vessels, which can narrow blood vessels or lead to blockage of blood flow to organs such as the heart and brain (a process known as atherosclerosis). Increased LDL cholesterol levels are associated with increased risk of atherosclerosis, cardiovascular disease, stroke and liver disease.

| <3 Desirable | ≥3 High | 3.19 mmol/l |

Apolipoprotein A-I

Apolipoprotein A-I is the main protein component of HDL cholesterol ('good' cholesterol). Apolipoprotein A-I (apo A-I) and HDL cholesterol transport cholesterol to the liver where it is processed and subsequently removed from the body. For this reason, a higher apo A-I level is desirable and deficiency is associated with increased risk of developing cardiovascular disease. Low apo A-I levels may be associated with uncontrolled diabetes, kidney or liver disease, obesity, smoking, high triglyceride levels or certain medications (e.g. beta-blockers). Increased levels of apo A-I may not be clinically significant but can be associated with familial hyperalphalipoproteinaemia (a rare genetic disorder), alcohol consumption, physical exercise, pregnancy, weight loss and certain prescribed drugs (such as oestrogens, oral contraceptives and statins).

| <120 Low | 120 - 176 Optimal | >176 High | 177.2 mg/dl |
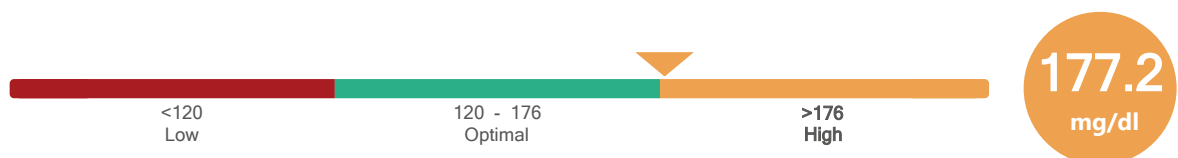
Lipoprotein (a)

Lipoprotein (a) is similar to low-density lipoprotein (LDL) as it contains apolipoprotein B, which is the main protein component of LDL ('bad') cholesterol. In addition, it also contains apolipoprotein (a). Apolipoprotein (a) may promote accumulation of LDL particles within blood vessel walls, which can cause arteries to narrow and harden, and may contribute to blood clot formation, which could potentially block blood vessels and increase the risk of a heart attack or stroke. Increased lipoprotein(a) levels are associated with increased risk of cardiovascular disease. Other conditions that may contribute to elevated lipoprotein (a) include oestrogen depletion (e.g. menopause), severe hypothyroidism (an underactive thyroid gland), uncontrolled diabetes and chronic kidney disease. Lipoprotein (a) is genetically determined and levels tend to remain constant throughout life. Unlike other lipoproteins, diet, exercise, lifestyle modification and most medications used to lower cholesterol levels have no effect on lipoprotein (a) levels.

<300	≥300
Optimal	High

1055.8 mg/l

Kidney Health

Creatinine

Creatinine is a waste product produced by muscle tissue. Creatinine concentration in the blood represents a balance between muscle production and the filtration and subsequent removal of creatinine from the body by the kidneys. As production from muscle is relatively constant, the filtering ability of the kidneys determines creatinine concentration in the blood. Therefore, when kidney function diminishes, creatinine levels increase. Increased creatinine may be associated with glomerulonephritis (kidney inflammation), pyelonephritis (kidney infection), acute tubular necrosis (death of kidney tubule cells) and situations in which blood flow to the kidney is reduced, such as dehydration, heart failure and complications associated with diabetes. Muscle injury may cause a temporary increase in creatinine. Low creatinine values are rare and can be a sign of low muscle mass.

<44	44 - 80	>80
Low	Optimal	High

80.5 µmol/l
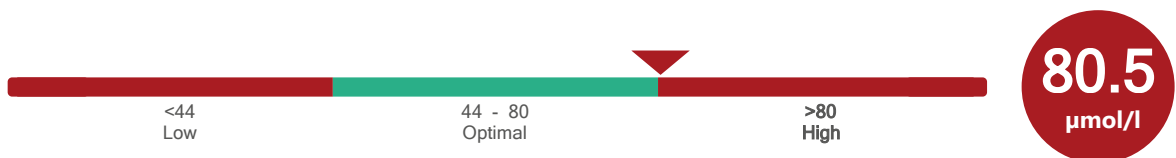
Urinalysis

Red Blood Cells (Urine)

Red Blood Cells (Urine) in urine can be associated with kidney and urinary tract diseases or infection, menstrual bleeding, blood clotting disorders, chronic diseases (e.g. diabetes, high blood pressure), strenuous exercise and use of certain medications.

Negative	0 - 10	11 - 25	26 - 50	51 - 250
Optimal	+1	+2	+3	+4

250 RBC/µl
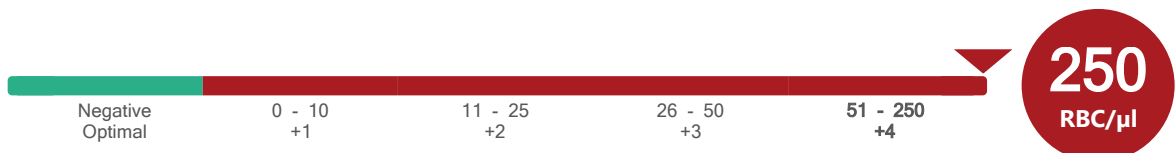
Infection & Inflammation

Complement Component 3 (C3)

Complement Component 3 (C3) is a protein that is part of the complement system. The complement system is an essential part of the immune system that helps to promote inflammatory and immune responses and eradicate infectious agents. Therefore, C3 levels rise during episodes of acute (short-lived) or chronic (long-lasting) inflammation. Low C3 levels may be associated with autoimmune diseases, e.g. systemic lupus erythematosus (a connective tissue disorder that affects many organs), kidney disease, recurrent bacterial infections, malnutrition and angio-oedema (an allergic reaction in the skin causing patches of swelling). Infection caused by parasites or fungi may also be associated with low C3 levels.

<0.9 Low	0.9 - 1.7 Optimal	>1.7 High

0.889 g/l
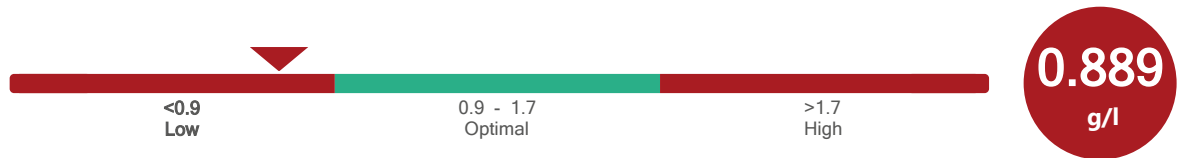
Antistreptolysin O (ASO)

Antistreptolysin O (ASO) is a blood test that detects antibodies to the streptolysin O toxin produced by streptococcal bacteria. The presence of ASO antibodies is indicative of a recent or current streptococcal infection. Streptococcal bacteria are commonly associated with throat and skin infections and in the long-term may cause complications including glomerulonephritis (inflammation of the kidney) and endocarditis (inflammation of the lining of the heart).

≤200 Optimal	>200 High

255.9 IU/ml

Personal Health Measurements

Measurements include pulse, blood pressure, waist circumference and calculation of body mass index (BMI). Various lifestyle and hereditary factors can influence these parameters, which are useful in the overall assessment of an individual's risk of developing conditions such as cardiovascular disease or diabetes. The measurement of oxygen saturation by pulse oximetry is also included. A low blood oxygen level, or hypoxaemia, may be associated with airway obstruction, which occurs in conditions such as asthma, emphysema and chronic obstructive pulmonary disease.

Body Mass Index (BMI)

| <18.5 Underweight | 18.5 - 24.9 Optimal | 25 - 29.9 Overweight | ≥30 Obese |

21 kg/m²

Waist Circumference

| <81 Optimal | 81 - 89 Moderate risk | >89 High risk |

77 cm

Waist / Hip Ratio

| <0.80 Low risk | 0.80 - 0.85 Moderate risk | >0.85 High risk |

0.786

Pulse

| <60 Low | 60 - 100 Optimal | >100 High |

73 BPM
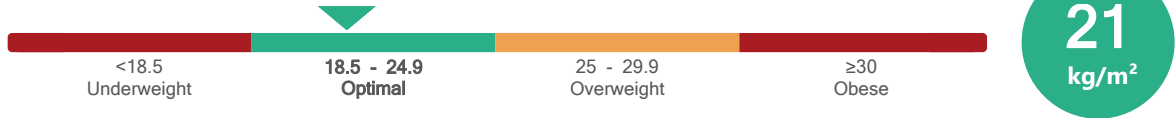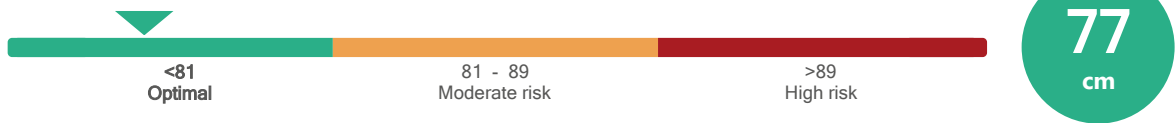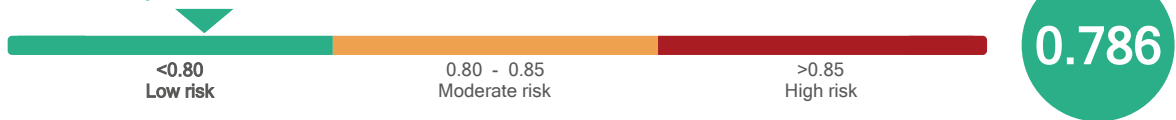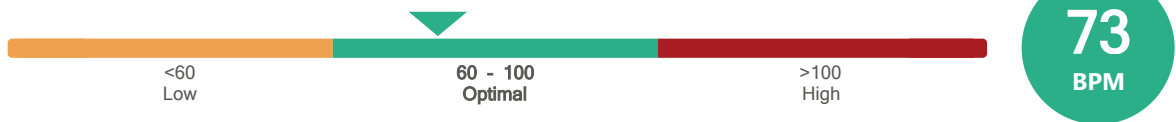
Blood Pressure

Blood Pressure is a measurement of the force applied to the walls of the arteries as the heart pumps blood through the body. Systolic blood pressure refers to the pressure of blood as your heart contracts. Diastolic blood pressure refers to the pressure of blood as your heart rests between beats. High blood pressure is a significant risk factor for the development of heart disease, stroke, kidney disease and metabolic syndrome. Dehydration, bleeding, inflammation, infection, heart disease, pregnancy and various medications can cause low blood pressure. Physically fit individuals may have low blood pressure and in some individuals, blood pressure is naturally low.
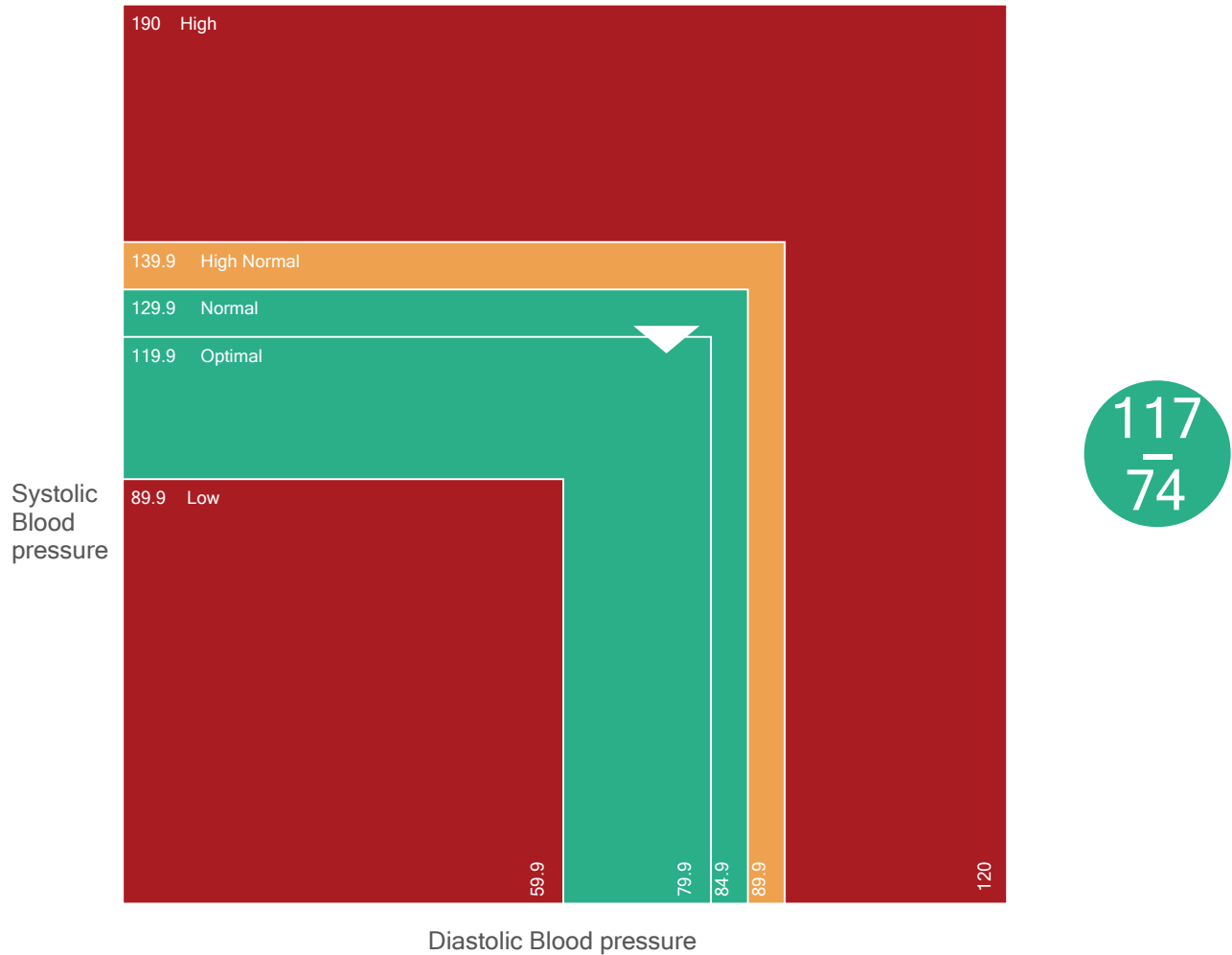
Height	Weight	Hip circumference
1.71 m	61.4 kg	98 cm

Full Blood Count

This panel provides information about the type and number of cells in the blood, including red blood cells, white blood cells and platelets. Red blood cells contain haemoglobin, a protein that carries oxygen from the lungs to all the tissues of the body and carbon dioxide back to the lungs. White blood cells form part of the immune system and help to defend the body against infection from foreign substances such as bacteria, fungi and viruses. The major types of white blood cells are neutrophils, lymphocytes, monocytes, eosinophils and basophils, with each having their own role in protecting the body from infection. Platelets are important for blood clotting. Their sticky surface enables them, along with other substances, to help wounds heal by forming clots to stop bleeding. The Full Blood Count is useful for evaluating general health status and as a screening tool for a variety of conditions, such as anaemia, infection, inflammation and other blood disorders.

Haemoglobin

<115	115 - 165	>165
Low	Optimal	High

117 g/l

Haematocrit

<0.37	0.37 - 0.47	>0.47
Low	Optimal	High

0.37 l/l

Mean Cell Haemoglobin (MCH)

<27.0	27.0 - 32.0	>32.0
Low	Optimal	High

30.6 pg

Mean Cell Haemoglobin Concentration (MCHC)

<320	320 - 360	>360
Low	Optimal	High

316 g/l

Red Blood Cell Mean Cell Volume (MCV)

<76	76 - 100	>100
Low	Optimal	High

96.9 fl

Red Blood Cell Count

<3.8	3.8 - 5.8	>5.8
Low	Optimal	High
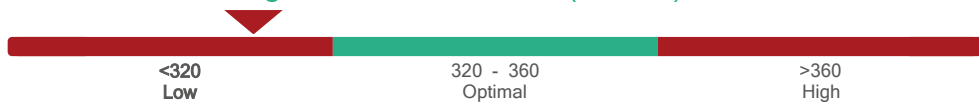
3.82 10^{12}/l

Basophil Count

<0.01	0.01 - 0.1	>0.1
Low	Optimal	High

0.03 10^9/l

Eosinophil Count

<0.04	0.04 - 0.4	>0.4
Low	Optimal	High
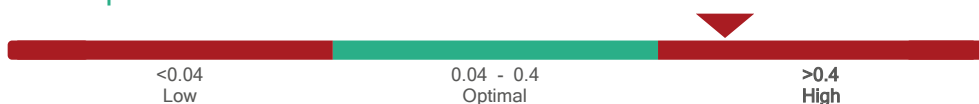
0.49 10^9/l

Lymphocyte Count

<1.0 Low	1.0 - 3.5 Optimal	>3.5 High

1.96 $10^9/l$

Monocyte Count

<0.2 Low	0.2 - 0.8 Optimal	>0.8 High

0.39 $10^9/l$

Neutrophil Count

<2 Low	2 - 7.5 Optimal	>7.5 High

1.82 $10^9/l$

White Blood Cell Count

<4.0 Low	4.0 - 10.0 Optimal	>10.0 High

4.69 $10^9/l$

Platelet Count

<150 Low	150 - 450 Optimal	>450 High
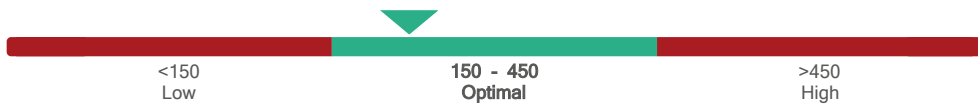
222 $10^9/l$

Iron Status

Iron is essential for red blood cell formation. Most of the body's iron, approximately 70%, is present in red blood cells, where its primary role is to carry oxygen from the lungs to all the tissues of the body. Additionally, iron facilitates energy production and release from cells and participates in the functioning of the immune and central nervous systems. Iron Status is useful for evaluating conditions such as iron-deficiency, which can cause anaemia, and iron overload, which can cause organ damage, particularly to the liver.

Iron

<5.8	5.8 - 34.5	>34.5
Low	Optimal	High

21.9 µmol/l

Ferritin

<10	10 - 120	>120
Low	Optimal	High

27.4 µg/l

Total Iron Binding Capacity (TIBC)

<44.8	44.8 - 80.6	>80.6
Low	Optimal	High

58.5 µmol/l

Transferrin

<2.0	2.0 - 3.8	>3.8
Low	Optimal	High

2.37 g/l

Transferrin Saturation

<15	15 - 50	>50
Low	Optimal	High

37.4 %
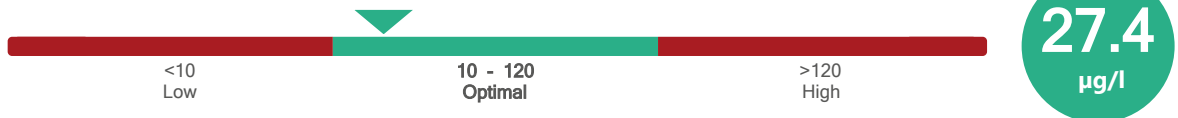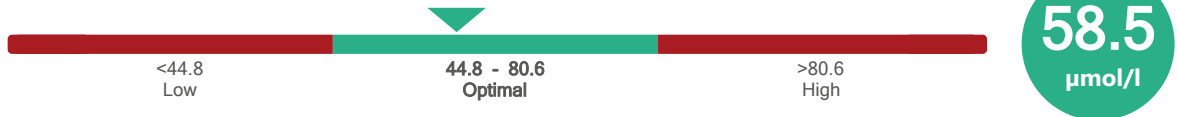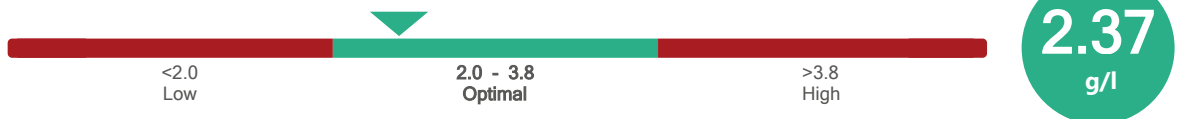
Heart Health

A major contributing factor to heart disease is the gradual accumulation of fat and cholesterol within blood vessel walls, a process known as atherosclerosis. Cholesterol is a fatty substance that is vital for the normal functioning of the body. However, too much cholesterol is damaging and the risk of developing heart disease is greater in individuals with high cholesterol levels. Heart Health helps assess an individual's risk of developing cardiovascular diseases such as heart disease and stroke.

Total Cholesterol

<5 Desirable	≥5 High

6.33 mmol/l

LDL Cholesterol

<3 Desirable	≥3 High

3.19 mmol/l

HDL Cholesterol

<1.55 Low	≥1.55 Desirable

2.20 mmol/l

Total Cholesterol / HDL Cholesterol Ratio

<5 Desirable	≥5 High

2.88

Triglycerides

<2.3 Desirable	≥2.3 High

0.80 mmol/l

Apolipoprotein A-I

<120 Low	120 - 176 Optimal	>176 High

177.2 mg/dl

Apolipoprotein B

<63 Low	63 - 114 Optimal	>114 High

99 mg/dl

Apolipoprotein B / A-I Ratio

≤0.9 Optimal	0.91 - 1.5 Moderate Risk	>1.5 High Risk

0.56

Small LDL Cholesterol

≤60.8 Optimal	>60.8 High
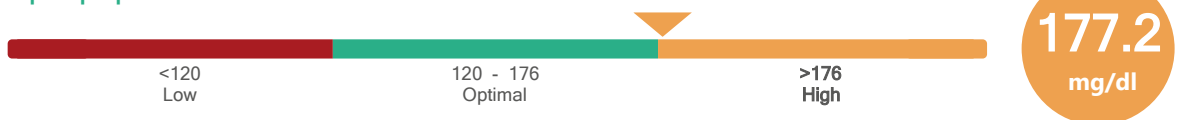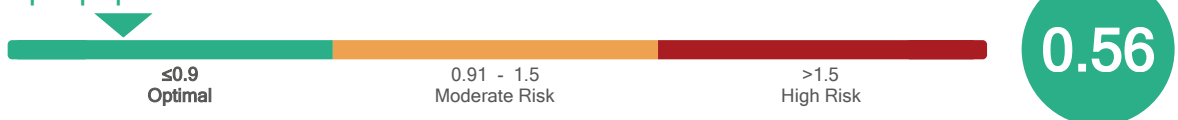
24.99 mg/dl

Lipoprotein (a)

<300 Optimal	≥300 **High**

1055.8 mg/l

High Sensitivity C-Reactive Protein (hs-CRP)

<1.0 **Low risk**	1.0 - 3.0 Average risk	>3.0 High risk
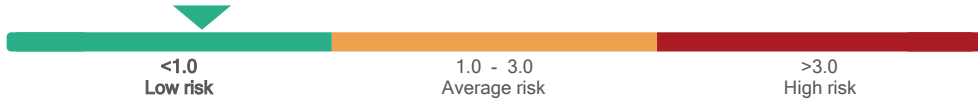
0.43 mg/l

Cardiovascular Risk Score

<10 **Desirable**	10 - 20 Moderate Risk	>20 High Risk
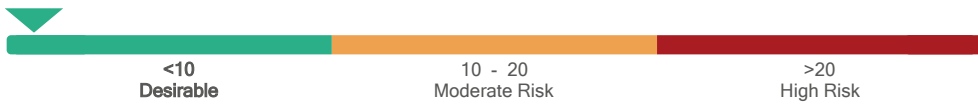
2% for same age and gender

1 %

Diabetes Health

Diabetes mellitus is a chronic condition that is characterised by a high blood glucose level. Normally, insulin (a hormone produced by the pancreas) regulates blood glucose levels. Type 1 diabetes is a condition in which the insulin producing cells of the pancreas are destroyed resulting in very little or no insulin production. Type 2 diabetes is a condition in which the pancreas continues to produce insulin but blood sugar levels remain high due to an insufficient amount of insulin or insulin resistance. Although glucose provides an essential fuel for the body, long-term high levels of glucose are destructive, causing damage to blood vessels, nerves and organs. This damage can increase the risk of developing high blood pressure, heart disease, kidney disease and loss of vision. The Diabetes Health panel includes measurement of glucose and HbA1c levels in the blood, which is useful for the diagnosis and monitoring of diabetes. Higher than normal levels can be associated with a greater risk of developing diabetes in the future ('high risk' or 'pre-diabetes').

Glucose

<4.0	4.0 - 5.59	5.6 - 6.99	≥7.0
Low	Optimal	Pre-diabetic	High

4.55 mmol/l

HbA1c

<42	42 - 47.9	≥48
Optimal	Pre-diabetic	High

26.7 mmol/mol

Insulin

<17.8	17.8 - 173.0	>173.0
Low	Optimal	High

23.6 pmol/l

C-peptide

<1.1	1.1 - 4.4	>4.4
Low	Optimal	High

1.15 ng/ml
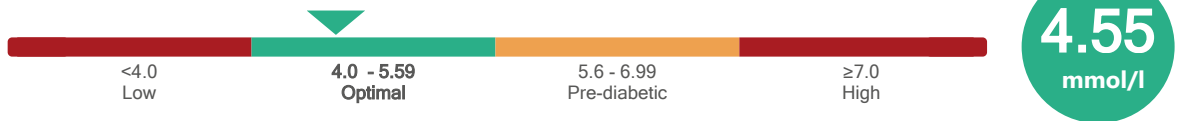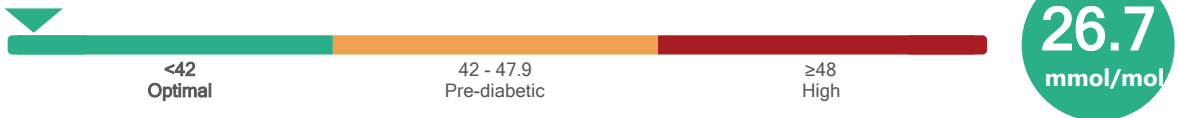
Metabolic Syndrome

Metabolic syndrome refers to a collection of risk factors occurring simultaneously that together increase the risk of developing cardiovascular disease, type 2 diabetes and stroke. The National Cholesterol Educational Program (NCEP) Adult Treatment Panel III (ATP III) has defined metabolic syndrome as the presence of three or more of the following five factors: central obesity (increased body mass index (BMI) or waist circumference), high blood pressure, high fasting blood glucose, low HDL cholesterol, and elevated triglycerides. Previous diagnosis of type-2 diabetes, treatment for high blood pressure, or specific treatments for low HDL cholesterol and high triglycerides also count as factors. The risk of future heart disease, stroke or diabetes increases with the number of risk factors acquired. The Metabolic Syndrome panel includes the measurement of the five factors mentioned above and is indicative of an individual's risk of future cardiovascular disease and type-2 diabetes.

Body Mass Index (BMI)

≤30 Optimal	>30 Risk

21 kg/m²

Waist Circumference

<80 Optimal	≥80 Risk

77 cm

Systolic Blood pressure

<130 Optimal	≥130 Risk

117 mmHg

Diastolic Blood pressure

<85 Optimal	≥85 Risk

74 mmHg

Glucose

<5.6 Optimal	≥5.6 Risk

4.55 mmol/l

HDL Cholesterol

<1.29 Risk	≥1.29 Optimal

2.20 mmol/l

Triglycerides

<1.7 Optimal	≥1.7 Risk

0.80 mmol/l

HbA1c

<42 Optimal	42 - 47.9 Pre-diabetic	≥48 High

26.7 mmol/mol

Insulin

<17.8 Low	17.8 - 173.0 Optimal	>173.0 High

23.6 pmol/l

C-peptide

<1.1 Low	1.1 - 4.4 Optimal	>4.4 High
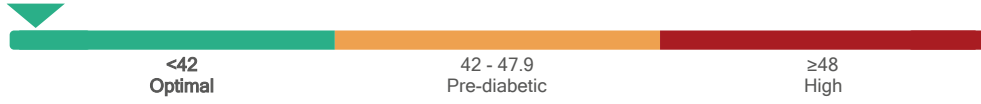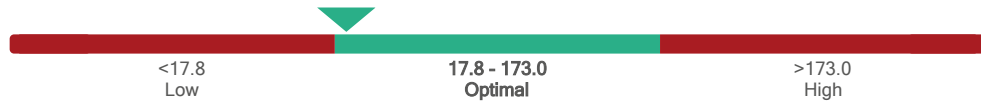
1.15 ng/ml

High Sensitivity C-Reactive Protein (hs-CRP)

<1.0 Low risk	1.0 - 3.0 Average risk	>3.0 High risk

0.43 mg/l

Height	Weight
1.71 m	61.4 kg

Kidney Health

The kidneys are responsible for the production of urine and regulation of water and salt levels in the blood. The kidneys filter blood to remove waste products, water and salts. The fluid containing these waste products travels through kidney tubules where re-absorption of water and salts takes place. This absorption process is crucial to the maintenance of fluid balance in the body, which is also important for blood pressure regulation. Many conditions can impair the filtering ability of the kidney or lead to destruction of kidney tissue, including urinary tract obstruction, glomerulonephritis and acute kidney injury. Kidney Health helps evaluate the filtering ability of the kidneys and can indicate how well the kidneys are functioning.

Creatinine
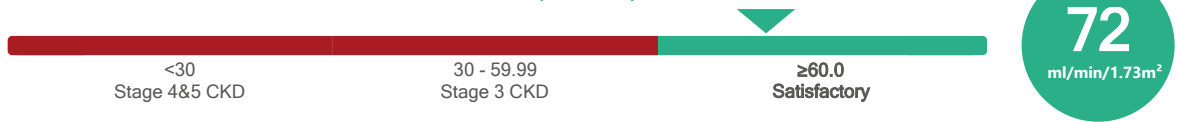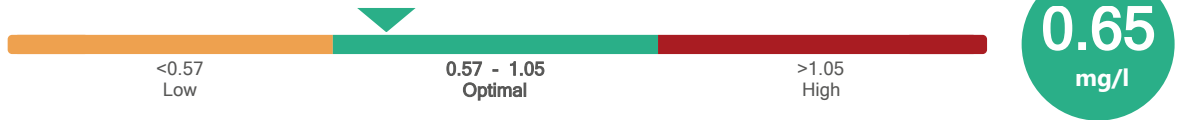
<44	44 - 80	>80
Low	Optimal	High

80.5 µmol/l

Estimated Glomerular Filtration Rate (eGFR)

<30	30 - 59.99	≥60.0
Stage 4&5 CKD	Stage 3 CKD	Satisfactory

72 ml/min/1.73m²

Cystatin C

<0.57	0.57 - 1.05	>1.05
Low	Optimal	High

0.65 mg/l

Calcium (adjusted)

<2.20	2.20 - 2.60	>2.60
Low	Optimal	High

2.28 mmol/l

Chloride

<95	95 - 108	>108
Low	Optimal	High

102 mmol/l

Magnesium

<0.7	0.7 - 1.1	>1.1
Low	Optimal	High

0.88 mmol/l

Phosphate

<0.80	0.80 - 1.50	>1.50
Low	Optimal	High

1.220 mmol/l

Potassium

<3.5	3.5 - 5.3	>5.3
Low	Optimal	High

3.89 mmol/l

Sodium

<133 Low	133 - 146 Optimal	>146 High

136.8 mmol/l

Urea

<2.5 Low	2.5 - 7.8 Optimal	>7.8 High

3.13 mmol/l

Uric Acid

<140 Low	140 - 360 Optimal	>360 High
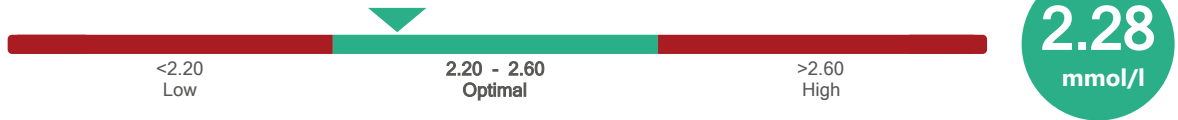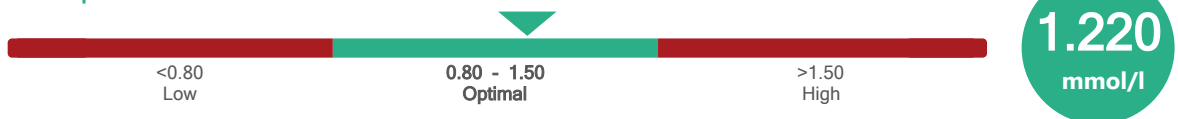
237.0 µmol/l

Urinalysis

Urinalysis is part of routine diagnostic and screening evaluations. It can reveal a significant amount of preliminary information about the kidneys and other metabolic processes. Urinalysis tests for substances that are normally not present or are present at low concentrations in the urine. In addition, pH measurement helps determine the acidity of urine and is indicative of acid-base balance in the body.

Bilirubin (Urine)

Negative Optimal	0 - 1 +1	2 - 3 +2	4 - 6 +3

Negative mg/dl

Glucose (Urine)

Normal Optimal	0 - 50 +1	51 - 100 +2	101 - 300 +3	301 - 1000 +4

Normal mg/dl

Ketones (Urine)

Negative Optimal	0 - 5 (+)	6 - 15 +1	16 - 50 +2	51 - 150 +3

Negative mg/dl

Nitrite (Urine)

Negative Optimal	Positive High

Negative mg/dl

pH (Urine)

<5 Low	5 - 7.5 Optimal	>7.5 High

7.0 pH

Protein (Urine)

Negative Optimal	0 - 25 +1	26 - 75 +2	76 - 150 +3	151 - 500 +4

Negative mg/dl

Red Blood Cells (Urine)

Negative Optimal	0 - 10 +1	11 - 25 +2	26 - 50 +3	51 - 250 +4

250 RBC/µl

Urobilinogen (Urine)

Normal Optimal	0 - 1 +1	2 - 4 +2	5 - 8 +3	9 - 12 +4

Normal mg/dl

White Blood Cells (Urine)

Negative Optimal	0 - 25 +1	26 - 100 +2	101 - 500 +3

Negative

Leuk/µl

L Liver Health

The liver is a vital organ that plays a major role in the regulation of metabolism. The liver performs many complex functions, which include processing of carbohydrates, proteins and fats, breakdown of harmful or toxic substances, decomposition of red blood cells, removal of waste products from the blood and the production and secretion of bile. Bile is a fluid, which aids in the digestion of fats. Once secreted from the liver, bile travels through a series of ducts to the small intestine or to the gallbladder for storage. Liver disease encompasses many conditions that can cause damage to the liver, such as cirrhosis (irreversible scarring of liver tissue), hepatitis (inflammation of the liver), fatty liver disease, gallbladder disease and bile duct obstruction. The Liver Health panel consists of tests that evaluate the function of the liver.

Alanine Aminotransferase (ALT)
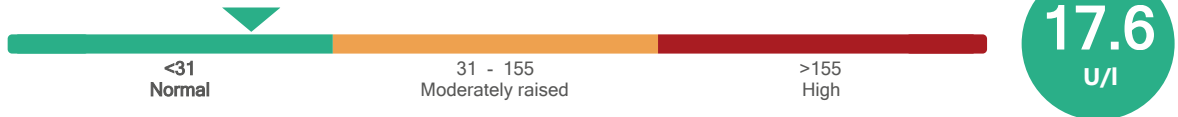
<31 Normal	31 - 155 Moderately raised	>155 High

17.6 U/l

Alkaline Phosphatase (ALP)

<30 Low	30 - 120 Optimal	>120 High

33 U/l

Aspartate Aminotransferase (AST)

<32 Normal	32 - 155 Moderately raised	>155 High

21.5 U/l

Gamma-Glutamyltransferase (GGT)

<8 Low	8 - 42 Optimal	>42 High

11.6 U/l

Total Bilirubin

<21 Optimal	≥21 High

10.59 µmol/l

Albumin

<35 Low	35 - 50 Optimal	>50 High

42.7 g/l

Ferritin

<10 Low	10 - 120 Optimal	>120 High

27.4 µg/l
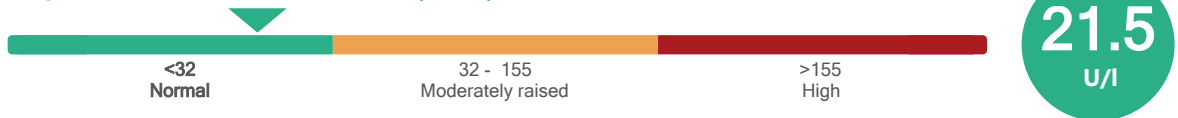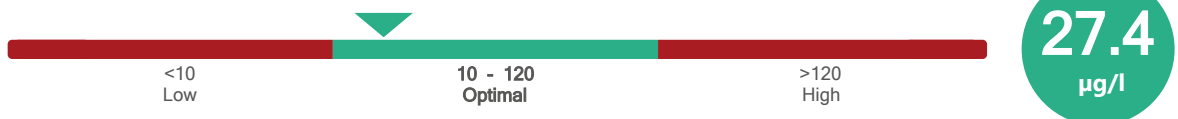
Pancreatic Health

The pancreas is a gland that produces hormones, pancreatic juice and digestive enzymes. Digestive enzymes (e.g. amylase) pass from the pancreas into the small intestine where they contribute to digestion. These enzymes help to further breakdown carbohydrates, proteins and fats in chyme (the partially digested mass of food). Pancreatic Health is useful for evaluating pancreatitis (inflammation of the pancreas) and other disorders that can affect the function of the pancreas.

Pancreatic Amylase

<13	13 - 53	>53
Low	Optimal	High

37 U/l

Lipase

<5	5 - 65	>65
Low	Optimal	High

47.0 U/l

Digestive Health

The process of digestion occurs in the gastrointestinal tract, which encompasses the stomach and intestine. The stomach is responsible for the storage and breakdown of ingested food. Food and fluids enter the stomach via the oesophagus and mix with stomach acids and digestive enzymes to begin the process of digestion. Partially digested food then enters the intestine where digestion continues and absorption of nutrients occurs. A protective layer of mucus coats the lining of the stomach to prevent damage by digestive acids and enzymes. Anti-inflammatory drug use (such as aspirin) and infection with H. pylori bacteria can disrupt this protective layer and lead to gastritis (inflammation of the stomach) and stomach ulcers. Damage to the intestine impairs the ability of the body to digest food and absorb nutrients. Coeliac disease is an autoimmune disorder in which the body's immune system reacts to gluten in the diet causing inflammation of the intestine. Anti-tissue Transglutaminase (Anti-tTG) Antibody is a sensitive marker for coeliac disease; however, testing is only appropriate in individuals who continue to consume gluten. The Digestive Health panel contains markers that are useful for the evaluation of health issues such as heartburn, acid reflux and coeliac disease.

H. pylori

<0.9	0.9 - 1.1	>1.1
Negative	Indeterminate	Positive
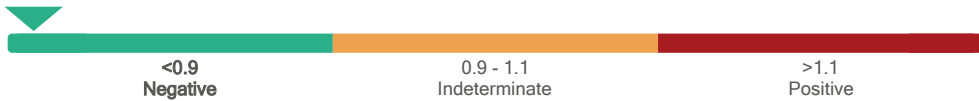
<0.40 U/ml

Anti-Tissue Transglutaminase Antibodies (Coeliac Disease)

Negative	Positive

Negative

Nutritional Health

Nutrition is the supply of materials (in the form of food), which are necessary to allow the body to function normally. Vitamins and minerals support normal growth, and help organs and cells to function. Therefore, good nutrition is vital for health and wellbeing. A poor diet or malabsorption disorders (conditions caused by an impaired ability to digest and/or absorb nutrients from food) may lead to nutritional deficiency. The Nutritional Health panel evaluates the levels of various nutrients and can help identify whether an individual's nutritional status is adequate.

Total Antioxidant Status (TAS)

<1.3	≥1.3
Low	Optimal

1.69 mmol/l

Albumin

<35	35 - 50	>50
Low	Optimal	High

42.7 g/l

Calcium (adjusted)

<2.20	2.20 - 2.60	>2.60
Low	Optimal	High

2.28 mmol/l

Magnesium

<0.7	0.7 - 1.1	>1.1
Low	Optimal	High

0.88 mmol/l

Iron

<5.8	5.8 - 34.5	>34.5
Low	Optimal	High

21.9 μmol/l

Folic acid

<3.80	3.80 - 26.80	>26.80
Low	Optimal	High

11.7 μg/l

Vitamin B12

<197	197 - 771	>771
Low	Optimal	High

525 ng/l

Vitamin D

<25	25 - 49.9	50 - 375	>375
Deficiency	Insufficiency	Sufficiency	Toxicity

69 nmol/l
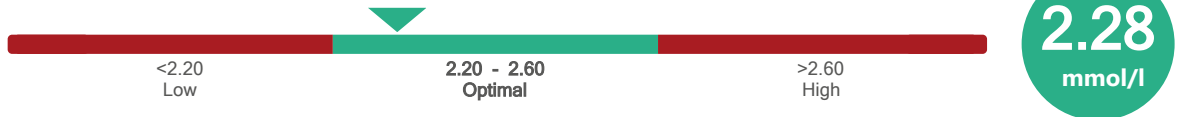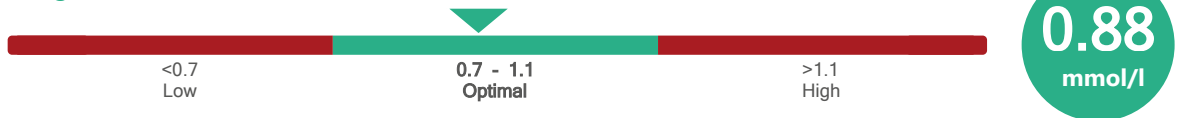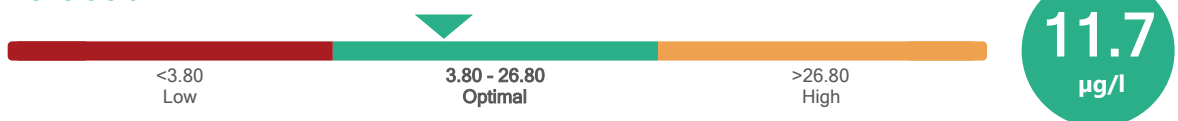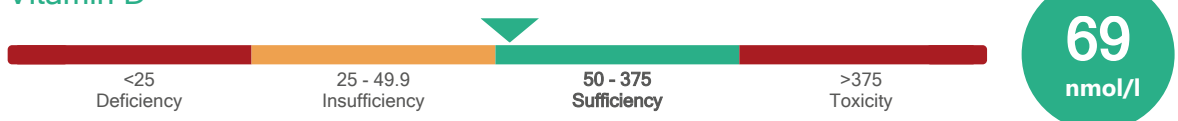
Muscle & Joint Health

Muscles, which are composed of bundles of contractile fibres, are responsible for the movement of various parts of the body. When muscle fibres contract, movement occurs. Damage to muscles occurs in conditions such as myopathies (muscle disorders that cause muscle weakness) and myositis (inflammation of the skeletal muscles). In addition, muscle damage can arise from injury and excessive use of muscles during exercise. Joints form the connections between bones and permit movement and flexibility in various parts of the body. Arthritis is a condition characterised by inflammation, pain and stiffness of the joints and many types exist, including rheumatoid arthritis and gout. The Muscle & Joint Health panel includes markers associated with muscle damage and joint problems such as arthritis and gout.

Creatine Kinase

<25	25 - 200	>200
Low	Optimal	High

153
U/l

Uric Acid

<140	140 - 360	>360
Low	Optimal	High

237.0
µmol/l

Bone Health

Bones provide structural support for the body and offer protection to delicate organs and tissues (e.g. the ribs protect the heart and lungs and the skull protects the brain). Bones are subject to a continuous remodelling process where old bone tissue is replaced with new tissue. For bones to remain strong and healthy, various factors are required, including calcium and vitamin D. Osteoporosis is a condition in which bones lose density and become weak. Risk factors for osteoporosis include oestrogen deficiency (post-menopause), vitamin D deficiency, calcium deficiency and an inactive lifestyle. Bone Health helps evaluate the levels of these important bone-strength factors, which can be useful for identifying individuals at risk of future bone-related health problems.

Alkaline Phosphatase (ALP)

<30	30 - 120	>120
Low	Optimal	High

33 U/l

Calcium (adjusted)

<2.20	2.20 - 2.60	>2.60
Low	Optimal	High

2.28 mmol/l

Phosphate

<0.80	0.80 - 1.50	>1.50
Low	Optimal	High

1.220 mmol/l

Vitamin D

<25	25 - 49.9	50 - 375	>375
Deficiency	Insufficiency	Sufficiency	Toxicity
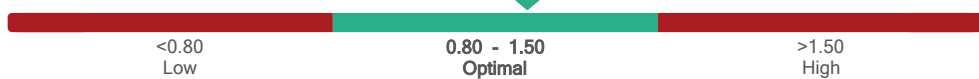
69 nmol/l

Parathyroid Hormone (PTH)

<1.6	1.6 - 6.9	>6.9
Low	Optimal	High

3.4 pmol/l

Allergy Evaluation

Allergies are increasingly common, with estimates suggesting that allergies will affect 25% of the population at some stage in life. An allergy is the immune system's response to a particular food or environmental substance (allergen). This response occurs in predisposed individuals and results in the production of a particular type of immune system protein (antibody) called immunoglobulin E (IgE). Subsequent exposure to the allergen generates IgE, which in turn causes the release of chemicals into the body. This chemical release causes the characteristic symptoms of allergies such as coughing, sneezing and itching. The Allergy Evaluation measures the total IgE level in the blood. However, generation of IgE is dependent on recent exposure to an allergen. The Allergy Evaluation may prove inconclusive in individuals who have limited their exposure to suspected allergens (e.g. removal of wheat from diet or avoidance of pets).

Immunoglobulin E (IgE)

≤100 Optimal	>100 High

54.2 kU/l

Infection & Inflammation

Inflammation is the body's natural response to infection, irritation or injury and is characterised by pain, swelling, warmth and redness of the affected area. Inflammation is a protective mechanism that occurs in an attempt to remove the cause of the injury or irritation and to initiate healing and repair. The Infection & Inflammation panel can indicate the presence of infection or inflammation in the body.

C-Reactive Protein (CRP)

≤5 Optimal	>5 High

0.43 mg/l

Rheumatoid Factor (RF)

<20 Optimal	≥20 High

16.49 kU/l

Albumin

<35 Low	35 - 50 Optimal	>50 High

42.7 g/l

Complement Component 3 (C3)

<0.9 Low	0.9 - 1.7 Optimal	>1.7 High

0.889 g/l

Complement Component 4 (C4)

<0.18 Low	0.18 - 0.49 Optimal	>0.49 High

0.240 g/l

Ferritin

<10 Low	10 - 120 Optimal	>120 High

27.4 µg/l

Immunoglobulin A (IgA)

<0.9 Low	0.9 - 4.5 Optimal	>4.5 High
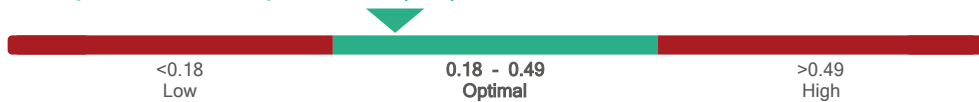
1.88 g/l

Immunoglobulin G (IgG)

<6 Low	6 - 16 Optimal	>16 High

10.00 g/l

Immunoglobulin M (IgM)

<0.7 Low	0.7 - 2.8 Optimal	>2.8 High

1.80 g/l

Antistreptolysin O (ASO)

≤200 Optimal	>200 High

255.9 IU/ml

T Tumour Associated Markers

Tumour associated markers are substances that circulate in the bloodstream and can indicate the presence of cancer in the body. Tumour markers are not diagnostic of cancer but can be helpful when staging cancer, monitoring response to therapy or detecting cancer recurrence. The Tumour Associated Markers profile measures the levels of a range of markers that evidence suggests are associated with various cancer types. However, no marker is diagnostic of a particular cancer and elevated tumour marker levels can occur in many benign (non-cancerous) conditions and in healthy individuals with no evidence of disease. Equally, a negative result does not exclude the possibility of cancer being present, as not every individual with cancer will produces these substances. Therefore, test results indicating the function of other areas of the body in conjunction with any symptoms or relevant medical history are important to consider when interpreting tumour associated marker results.

Cancer Antigen 125 (CA 125)

<35 Optimal	≥35 High

22 kU/l

Thyroid Health

The thyroid gland plays an important role in controlling the body's metabolism by producing hormones. The thyroid hormones help the body to use energy, stay warm and keep the heart, brain, muscle and other organs functioning properly. Thyroid Health consists of tests that can be used to help diagnose an 'underactive thyroid' (hypothyroidism) or an 'overactive thyroid' (hyperthyroidism), or to monitor the treatment of these conditions.

Thyroid Stimulating Hormone (TSH)
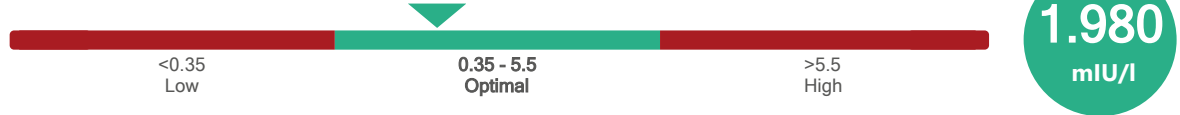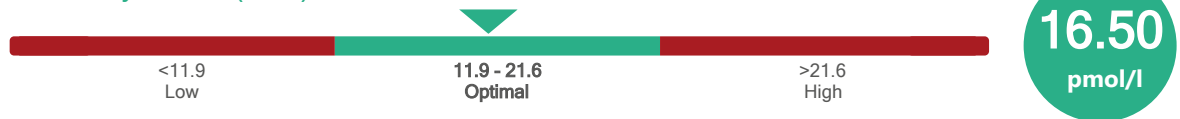
<0.35 Low	0.35 - 5.5 Optimal	>5.5 High

1.980 mIU/l

Free Thyroxine (FT4)

<11.9 Low	11.9 - 21.6 Optimal	>21.6 High

16.50 pmol/l

Free Tri-iodothyronine (FT3)

<3.1 Low	3.1 - 6.8 Optimal	>6.8 High

4.15 pmol/l

Anti-Thyroglobulin Antibody (Anti-Tg)

≤115 Optimal	>115 High

15.3 IU/ml

Anti-Thyroid Peroxidase Antibody (Anti-TPO)

≤34 Optimal	>34 High

9.77 kU/l

Female Hormonal Health

A hormone is a chemical substance that is produced in response to certain changes in the physiological processes that occur in the body. They carry information between cells allowing metabolism, growth, reproduction and mood alteration. In this panel, hormones that regulate the reproductive cycle are measured. These tests can be helpful in the evaluation of infertility, menstrual disorders or to assess if a woman is menopausal. Interpretation of the test results for females requires knowledge of the menstrual history, namely the first day of the last menstrual period (LMP), the length of cycle and the duration of menstruation. Other important factors include whether the woman is menopausal or post-menopausal, the previous obstetric history (e.g. if pregnant), current medication (such as infertility treatments, hormone replacement therapy (HRT) or contraception), and previous surgical history (such as hysterectomy).

Oestradiol

Your Result: 230.0 pmol/l

322 - 637 Follicular Phase
1598 - 3338 Ovulation
760 - 1334 Luteal Phase
<505 Post Menopausal

Follicle Stimulating Hormone

Your Result: 6.9 U/l

3.5 - 12.5 Follicular Phase
4.7 - 21.5 Mid Cycle
1.7 - 7.7 Luteal Phase
25.8 - 134.8 Post Menopausal

Luteinising Hormone

Your Result: 11.1 U/l

2.4 - 12.6 Follicular Phase
14.0 - 95.6 Mid Cycle
1.0 - 11.4 Luteal Phase
7.7 - 58.5 Post Menopausal

Progesterone

Your Result: 0.37 nmol/l

<0.616 Follicular Phase
0.175 - 13.20 Mid Cycle
13.10 - 46.30 Luteal Phase
<0.401 Post Menopausal

Prolactin

Your Result: 197 mIU/l

<102 Low
102 - 496 Optimal
>496 High

Testosterone

Your Result: 0.35 nmol/l

<0.29 Low
0.29 - 1.67 Optimal
<1.67 High

Sex Hormone Binding Globulin

Your Result: 105.00 nmol/l

<32.4 Low
32.4 - 128 Optimal
>128 High

Free Androgen Index

Your Result: 0.3

<0.3 Low
0.3 - 5.6 Optimal
>5.6 High

Results for your Doctor

This section contains all your test results. Your doctor may prefer to see your test results in this format. The results that are either positive or fall outside the reference range are highlighted in red.

Test	Result	Units	Reference Range
Personal Health Measurements			
Height	1.71	m	N/A
Weight	61.4	kg	N/A
Body Mass Index (BMI)	21	kg/m²	18.5 - 24.9 Optimal
Waist Circumference	77	cm	<81 Optimal
Hip circumference	98	cm	N/A
Waist / Hip Ratio	0.786		<0.80 Low risk
Pulse	73	BPM	60 - 100 Optimal
Systolic Blood pressure	117	mmHg	90 - 119.9 Optimal
Diastolic Blood pressure	74	mmHg	60 - 79.9 Optimal
Full Blood Count			
Haemoglobin	117	g/l	115 - 165 Optimal
Haematocrit	0.37	l/l	0.37 - 0.47 Optimal
Mean Cell Haemoglobin (MCH)	30.6	pg	27.0 - 32.0 Optimal
Mean Cell Haemoglobin Concentration (MCHC)	316	g/l	<320 Low 320 - 360 Optimal >360 High
Red Blood Cell Mean Cell Volume (MCV)	96.9	fl	76 - 100 Optimal
Red Blood Cell Count	3.82	10^{12}/l	3.8 - 5.8 Optimal
Basophil Count	0.03	10^9/l	0.01 - 0.1 Optimal
Eosinophil Count	0.49	10^9/l	<0.04 Low 0.04 - 0.4 Optimal >0.4 High
Lymphocyte Count	1.96	10^9/l	1.0 - 3.5 Optimal

Monocyte Count	0.39	10⁹/l	0.2 - 0.8 Optimal
Neutrophil Count	1.82	10⁹/l	<2 Low 2 - 7.5 Optimal >7.5 High
White Blood Cell Count	4.69	10⁹/l	4.0 - 10.0 Optimal
Platelet Count	222	10⁹/l	150 - 450 Optimal

Iron Status

Iron	21.9	µmol/l	5.8 - 34.5 Optimal
Ferritin	27.4	µg/l	10 - 120 Optimal
Total Iron Binding Capacity (TIBC)	58.5	µmol/l	44.8 - 80.6 Optimal
Transferrin	2.37	g/l	2.0 - 3.8 Optimal
Transferrin Saturation	37.4	%	15 - 50 Optimal

Heart Health

Total Cholesterol	6.33	mmol/l	<5 Desirable ≥5 High
LDL Cholesterol	3.19	mmol/l	<3 Desirable ≥3 High
HDL Cholesterol	2.20	mmol/l	≥1.55 Desirable
Total Cholesterol / HDL Cholesterol Ratio	2.88		<5 Desirable
Triglycerides	0.80	mmol/l	<2.3 Desirable
Apolipoprotein A-I	177.2	mg/dl	<120 Low 120 - 176 Optimal >176 High
Apolipoprotein B	99	mg/dl	63 - 114 Optimal
Apolipoprotein B / A-I Ratio	0.56		≤0.9 Optimal
Small LDL Cholesterol	24.99	mg/dl	≤60.8 Optimal
Lipoprotein (a)	1055.8	mg/l	<300 Optimal ≥300 High
High Sensitivity C-Reactive Protein (hs-CRP)	0.43	mg/l	<1.0 Low risk
Cardiovascular Risk Score	1	%	<10 Desirable

2% for same age and gender			

Diabetes Health

Glucose	4.55	mmol/l	4.0 - 5.59 Optimal
HbA1c	26.7	mmol/mol	<42 Optimal
Insulin	23.6	pmol/l	17.8 - 173.0 Optimal
C-peptide	1.15	ng/ml	1.1 - 4.4 Optimal

Metabolic Syndrome

Height	1.71	m	N/A
Weight	61.4	kg	N/A
Body Mass Index (BMI)	21	kg/m²	≤30 Optimal
Waist Circumference	77	cm	<80 Optimal
Systolic Blood pressure	117	mmHg	<130 Optimal
Diastolic Blood pressure	74	mmHg	<85 Optimal
Glucose	4.55	mmol/l	<5.6 Optimal
HDL Cholesterol	2.20	mmol/l	≥1.29 Optimal
Triglycerides	0.80	mmol/l	<1.7 Optimal
HbA1c	26.7	mmol/mol	<42 Optimal
Insulin	23.6	pmol/l	17.8 - 173.0 Optimal
C-peptide	1.15	ng/ml	1.1 - 4.4 Optimal
High Sensitivity C-Reactive Protein (hs-CRP)	0.43	mg/l	<1.0 Low risk

Kidney Health

Creatinine	80.5	µmol/l	<44 Low 44 - 80 Optimal >80 High
Estimated Glomerular Filtration Rate (eGFR)	72	ml/min/1.73m²	≥60.0 Satisfactory
Cystatin C	0.65	mg/l	0.57 - 1.05 Optimal
Calcium (adjusted)	2.28	mmol/l	2.20 - 2.60 Optimal

Chloride	102	mmol/l	95 - 108 Optimal
Magnesium	0.88	mmol/l	0.7 - 1.1 Optimal
Phosphate	1.220	mmol/l	0.80 - 1.50 Optimal
Potassium	3.89	mmol/l	3.5 - 5.3 Optimal
Sodium	136.8	mmol/l	133 - 146 Optimal
Urea	3.13	mmol/l	2.5 - 7.8 Optimal
Uric Acid	237.0	µmol/l	140 - 360 Optimal
Urinalysis			
Bilirubin (Urine)	Negative	mg/dl	Negative Optimal
Glucose (Urine)	Normal	mg/dl	Normal Optimal
Ketones (Urine)	Negative	mg/dl	Negative Optimal
Nitrite (Urine)	Negative	mg/dl	Negative Optimal
pH (Urine)	7.0	pH	5 - 7.5 Optimal
Protein (Urine)	Negative	mg/dl	Negative Optimal
Red Blood Cells (Urine)	250	RBC/µl	Negative Optimal 0 - 10 +1 11 - 25 +2 26 - 50 +3 51 - 250 +4
Urobilinogen (Urine)	Normal	mg/dl	Normal Optimal
White Blood Cells (Urine)	Negative	Leuk/µl	Negative Optimal
Liver Health			
Alanine Aminotransferase (ALT)	17.6	U/l	<31 Normal
Alkaline Phosphatase (ALP)	33	U/l	30 - 120 Optimal
Aspartate Aminotransferase (AST)	21.5	U/l	<32 Normal
Gamma-Glutamyltransferase (GGT)	11.6	U/l	8 - 42 Optimal
Total Bilirubin	10.59	µmol/l	<21 Optimal
Albumin	42.7	g/l	35 - 50 Optimal
Ferritin	27.4	µg/l	10 - 120 Optimal

Pancreatic Health

Pancreatic Amylase	37	U/l	13 - 53 Optimal
Lipase	47.0	U/l	5 - 65 Optimal

Digestive Health

H. pylori	<0.40	U/ml	<0.9 Negative
Anti-Tissue Transglutaminase Antibodies (Coeliac Disease)	Negative	na	Positive Negative

Nutritional Health

Total Antioxidant Status (TAS)	1.69	mmol/l	≥1.3 Optimal
Albumin	42.7	g/l	35 - 50 Optimal
Calcium (adjusted)	2.28	mmol/l	2.20 - 2.60 Optimal
Magnesium	0.88	mmol/l	0.7 - 1.1 Optimal
Iron	21.9	µmol/l	5.8 - 34.5 Optimal
Folic acid	11.7	µg/l	3.80 - 26.80 Optimal
Vitamin B12	525	ng/l	197 - 771 Optimal
Vitamin D	69	nmol/l	50 - 375 Sufficiency

Muscle & Joint Health

Creatine Kinase	153	U/l	25 - 200 Optimal
Uric Acid	237.0	µmol/l	140 - 360 Optimal

Bone Health

Alkaline Phosphatase (ALP)	33	U/l	30 - 120 Optimal
Calcium (adjusted)	2.28	mmol/l	2.20 - 2.60 Optimal
Phosphate	1.220	mmol/l	0.80 - 1.50 Optimal
Vitamin D	69	nmol/l	50 - 375 Sufficiency
Parathyroid Hormone (PTH)	3.4	pmol/l	1.6 - 6.9 Optimal

Allergy Evaluation

Immunoglobulin E (IgE)	54.2	kU/l	≤100 Optimal

Infection & Inflammation

C-Reactive Protein (CRP)	0.43	mg/l	≤5 Optimal
Rheumatoid Factor (RF)	16.49	kU/l	<20 Optimal
Albumin	42.7	g/l	35 - 50 Optimal
Complement Component 3 (C3)	0.889	g/l	<0.9 Low 0.9 - 1.7 Optimal >1.7 High
Complement Component 4 (C4)	0.240	g/l	0.18 - 0.49 Optimal
Ferritin	27.4	µg/l	10 - 120 Optimal
Immunoglobulin A (IgA)	1.88	g/l	0.9 - 4.5 Optimal
Immunoglobulin G (IgG)	10.00	g/l	6 - 16 Optimal
Immunoglobulin M (IgM)	1.80	g/l	0.7 - 2.8 Optimal
Antistreptolysin O (ASO)	255.9	IU/ml	≤200 Optimal >200 High

Tumour Associated Markers

Cancer Antigen 125 (CA 125)	22	kU/l	<35 Optimal

Thyroid Health

Thyroid Stimulating Hormone (TSH)	1.980	mIU/l	0.35 - 5.5 Optimal
Free Thyroxine (FT4)	16.50	pmol/l	11.9 - 21.6 Optimal
Free Tri-iodothyronine (FT3)	4.15	pmol/l	3.1 - 6.8 Optimal
Anti-Thyroglobulin Antibody (Anti-Tg)	15.3	IU/ml	≤115 Optimal
Anti-Thyroid Peroxidase Antibody (Anti-TPO)	9.77	kU/l	≤34 Optimal

Female Hormonal Health

Oestradiol	Follicle Stimulating Hormone
Your Result: 230.0 pmol/l	Your Result: 6.9 U/l
322 - 637 Follicular Phase 1598 - 3338 Ovulation 760 - 1334 Luteal Phase <505 Post Menopausal	3.5 - 12.5 Follicular Phase 4.7 - 21.5 Mid Cycle 1.7 - 7.7 Luteal Phase 25.8 - 134.8 Post Menopausal

Luteinising Hormone

Your Result: 11.1 U/l

2.4 - 12.6 Follicular Phase
14.0 - 95.6 Mid Cycle
1.0 - 11.4 Luteal Phase
7.7 - 58.5 Post Menopausal

Progesterone

Your Result: 0.37 nmol/l

<0.616 Follicular Phase
0.175 - 13.20 Mid Cycle
13.10 - 46.30 Luteal Phase
<0.401 Post Menopausal

Prolactin

Your Result: 197 mIU/l

<102 Low
102 - 496 Optimal
>496 High

Testosterone

Your Result: 0.35 nmol/l

<0.29 Low
0.29 - 1.67 Optimal
<1.67 High

Sex Hormone Binding Globulin

Your Result: 105.00 nmol/l

<32.4 Low
32.4 - 128 Optimal
>128 High

Free Androgen Index
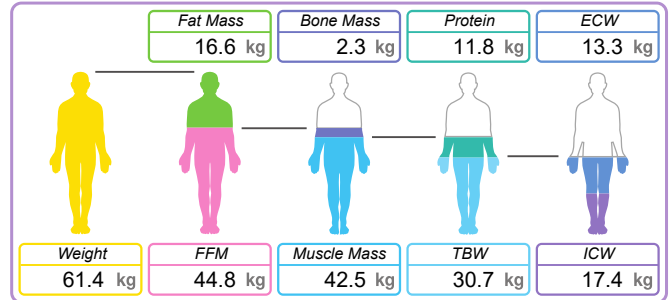
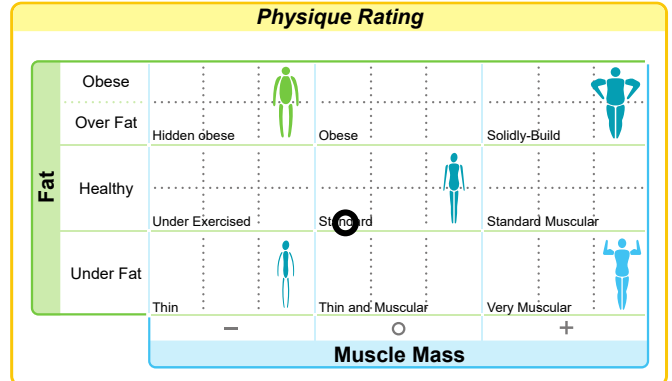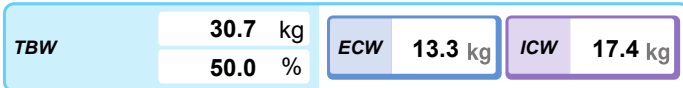### Your Result: 0.3

<0.3 Low
0.3 - 5.6 Optimal
>5.6 High

TANITA
Monitoring Your Health

Body Composition Analyzer
MC-980

Date	▓▓▓▓▓▓

ID	▓▓▓▓			
Name	▓▓▓▓		**Height**	171.0 cm
Age	▓▓▓	female		
Type	Normal		**PT**	1.0 kg

■ Details

MC-780	Result	Desirable	Target	
Weight	**61.4** kg	54.1-73.1 kg	kg	kg
Fat	**27.1** %	22.0-36.0 %	%	%
Fat Mass	**16.6** kg	12.6-25.2 kg	kg	kg
FFM	**44.8** kg			
Muscle Mass	**42.5** kg	40.4-45.9		
BMI	**21.0**	18.5-25.0		
Metabolic Age	**28**			

Fat Mass	Bone Mass	Protein	ECW
16.6 kg	2.3 kg	11.8 kg	13.3 kg

Weight	FFM	Muscle Mass	TBW	ICW
61.4 kg	44.8 kg	42.5 kg	30.7 kg	17.4 kg

■ BMR VFA TBW

BMR	5569 kJ	Under / Normal / More
	1331 kcal	
Visceral Fat Rating	3	Average / High / Very High
TBW	30.7 kg	ECW 13.3 kg / ICW 17.4 kg
	50.0 %	
ECW/TBW	43.3 %	35% 40% 45%

Physique Rating

Fat			
Obese	Hidden obese	Obese	Solidly-Build
Over Fat			
Healthy	Under Exercised	Standard	Standard Muscular
Under Fat	Thin	Thin and Muscular	Very Muscular
	−	○	+

Muscle Mass

■ Segmental Analysis

Muscle Mass

Trunk	25.3kg
Left Arm	1.9kg
Right Arm	1.9kg
Left Leg	6.7kg
Right Leg	6.7kg

+4 - +2 High
+1 - -1 Average
-2 - -4 Under

Fat

Trunk	22.4% / 7.7kg
Left Arm	31.4% / 0.9kg
Right Arm	31.0% / 0.9kg
Left Leg	33.4% / 3.6kg
Right Leg	33.3% / 3.5kg

+4 - +2 High
+1 - -1 Average
-2 - -4 Under

■ Balance

Muscle Mass Balance
Left Arm — Right Arm
Left Leg — Right Leg

Leg Muscle Score
Female / Male
92

Body Fat Distribution
Female / Male
1.08

■ History

	Weight	Muscle Mass	Fat in %
Current	61.4	42.5	27.1
Initial	61.4	42.5	27.1

Weight
62kg / 61kg / 60kg — Initial 12 11 10 9 8 7 6 5 4 3 2 1

Muscle Mass
43kg / 42kg / 41kg — Initial 12 11 10 9 8 7 6 5 4 3 2 1

Fat in %
28% / 27% / 26% — Initial 12 11 10 9 8 7 6 5 4 3 2 1
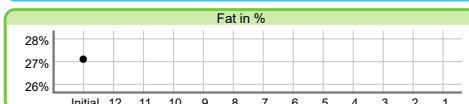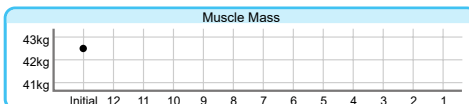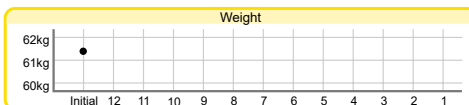
Reactance Resistance

	1kHz	5kHz	50kHz	250kHz	500kHz	1MHz	Phase Angle
H-L		886.5	**786.8**	703.4			**5.7°**
		35.2	**77.9**	66.8			
RL		353.5	314.0	282.7			5.7°
		13.4	31.2	22.8			
LL		356.6	315.8	284.8			5.6°
		14.4	31.2	22.8			
RH		505.5	445.6	390.7			6.1°
		21.2	47.9	44.1			
LH		503.3	446.4	393.8			5.8°
		20.3	45.1	42.7			
L-L		710.6	629.6	563.7			5.8°
		28.0	64.3	48.4			