

## Wellness 360 Male Blood Test

### Sample

## Understanding your results

### Optimal vs standard

Optimal ranges for results refer to the values that are considered ideal for good health and can help to prevent disease. These values may be narrower than the standard ranges, and they are based on research that suggests that certain health outcomes are associated with particular levels of specific blood markers. Optimal ranges may differ depending on the individual's age, sex, and health history.

On the other hand, standard ranges for results are the values that are considered normal for most people, based on statistical analysis of a large group of healthy individuals. These ranges are used as a reference to determine whether a patient's test results fall within the expected range for their age, sex, and overall health. Standard ranges are typically wider than optimal ranges, as they take into account a broader range of health conditions and genetic variations.

In summary, optimal ranges for test results aim to identify the most desirable values for good health, while standard ranges provide a reference point to assess a patient's overall health status. Both optimal and standard ranges are useful in interpreting test results, and their interpretation should be done in consultation with a qualified healthcare provider who can consider the individual's unique health situation

## Summary

### Outside of normal range

<a href="#">ALP</a>	42.0 IU/L - <b>Below Optimal</b>
<a href="#">ALT</a>	31.0 U/L - <b>Above Optimal</b>
<a href="#">Amylase</a>	19.0 U/L - <b>Below Optimal</b>
<a href="#">Cholesterol</a>	5.57 mmol/L - <b>High</b>
<a href="#">Cortisol</a>	253.0 nmol/L - <b>Below Optimal</b>
<a href="#">DHEA-Sulphate</a>	3.53 umol/L - <b>Low</b>
<a href="#">Ferritin</a>	226.0 ug/L - <b>Above Optimal</b>

<a href="#">Free T3</a>	4.57 pmol/L - <b>Below Optimal</b>
<a href="#">Free Testosterone</a>	0.494 nmol/L - <b>Below Optimal</b>
<a href="#">GGT</a>	24.0 U/L - <b>Above Optimal</b>
<a href="#">HDL</a>	2.05 mmol/L - <b>Above Optimal</b>
<a href="#">LDL</a>	3.16 mmol/L - <b>Above Optimal</b>
<a href="#">MCH</a>	34.0 pg - <b>High</b>
<a href="#">MCV</a>	99.1 fl - <b>High</b>
<a href="#">Omega 6:3 ratio</a>	99 - <b>High</b>
<a href="#">Platelets</a>	232.0 x10 <sup>9</sup> /L - <b>Above Optimal</b>
<a href="#">Progesterone</a>	0.5 nmol/L - <b>Below Optimal</b>
<a href="#">RBC</a>	4.26 x10 <sup>12</sup> /L - <b>Below Optimal</b>
<a href="#">SHBG</a>	44.0 nmol/L - <b>Above Optimal</b>
<a href="#">Serum Folate</a>	11.3 nmol/L - <b>Below Optimal</b>
<a href="#">TSH</a>	1.16 mU/L - <b>Below Optimal</b>
<a href="#">Total Protein</a>	68.3 g/L - <b>Below Optimal</b>
<a href="#">Vitamin D (25 OH)</a>	79.0 nmol/L - <b>Below Optimal</b>
<a href="#">WBC</a>	4.4 x10 <sup>9</sup> /L - <b>Below Optimal</b>
<a href="#">Zinc (Bloods)</a>	11.77 umol/L - <b>Below Optimal</b>

## Adrenal

### Cortisol



**253.0 nmol/L - Below Optimal**

Cortisol is a hormone produced by the adrenal glands that is involved in the body's stress response. It helps regulate blood sugar levels, blood pressure, and the immune system's response to inflammation. Cortisol levels naturally fluctuate throughout the day, with higher levels in the morning and lower levels at night. Out of range levels of cortisol in the blood can indicate various health issues, such as adrenal gland disorders, stress-related conditions, or pituitary gland disorders.

### DHEA-Sulphate



**3.53 umol/L - Low**

DHEA-S (Dehydroepiandrosterone sulfate) is a hormone produced by the adrenal glands. It serves as a precursor to the sex hormones estrogen and testosterone. DHEA-S levels in the blood can be used to assess adrenal gland function and may be used in the diagnosis of conditions such as adrenal insufficiency, polycystic ovary syndrome, and infertility.

## Biochemistry

### Albumin



**42.2 g/L - Optimal**

Albumin is a protein produced by the liver that plays a critical role in maintaining various bodily functions. It helps to regulate fluid balance in the body by transporting substances such as hormones, drugs, and nutrients through the bloodstream. Albumin also acts as a buffer, helping to maintain the pH balance of the blood. Additionally, it plays a crucial role in maintaining blood pressure and transporting fatty acids. Low levels of albumin can indicate liver or kidney damage, malnutrition, or other underlying health issues.

### Amylase



**19.0 U/L - Below Optimal**

Amylase is an enzyme that plays a crucial role in the breakdown of carbohydrates in the body. It is primarily produced in the pancreas and salivary glands and is involved in the process of digesting starch and glycogen into simpler sugars, such as glucose. Amylase levels can be used as a marker of pancreatic or salivary gland function. High levels of amylase in the blood or urine can also indicate other health issues such as kidney disease or gallbladder inflammation.

### Globulin



### 26.1 g/L - Optimal

Globulins are a group of proteins found in the blood that play a variety of roles in the body. It plays a role in transporting hormones and other molecules, aiding in immune function, and helping to regulate blood clotting. Measuring globulin levels in the blood can be used to evaluate overall protein levels in the body linked to low stomach acid levels. It is also associated with infections or inflammation in the body.

### HbA1c



### 32.0 mmol/mol - Optimal

HbA1c (glycated haemoglobin) is a blood test that measures the average level of glucose (sugar) in the blood over the past 2-3 months. It does this by measuring the percentage of haemoglobin (a protein in red blood cells that carries oxygen) that is coated with glucose. The higher the blood sugar level over the previous 2-3 months, the higher the percentage of haemoglobin that is coated with glucose. It is an important monitoring tool for blood sugar control in people with type 2 diabetes and in people who are at risk.

### Omega 6:3 ratio



### 9.9 - High

The Omega 6:3 ratio is a measure of the relative levels of omega-6 and omega-3 fatty acids in the body. Both types of fatty acids are essential for human health, but they must be consumed in the right balance to support optimal health. A diet with a high ratio of omega-6 to omega-3 fatty acids has been linked to increased inflammation and a higher risk of chronic diseases, such as heart disease, cancer, and autoimmune disorders.

### Total Protein



### 68.3 g/L - Below Optimal

The test measures two types of protein: albumin and globulin. Albumin is the most common protein in the blood and helps maintain blood volume and blood pressure. Globulins are a group of proteins that include antibodies, enzymes, and other proteins involved in immune function and blood clotting. Total protein is a laboratory test that measures the total amount of protein in the blood.

## Uric acid



**247.0 umol/L - Optimal**

Uric acid is a waste product produced by the body when it breaks down purines, which are found in some foods and also occur naturally in the body. It is typically filtered out of the blood by the kidneys and excreted in urine. Elevated levels of uric acid in the blood can lead to a condition called hyperuricemia, which can cause gout, kidney stones, and other health problems.

## Hormones

### FSH



**2.6 IU/L - Optimal**

FSH (follicle-stimulating hormone) is a hormone produced by the pituitary gland. It plays a key role in sexual development and reproduction. In women, FSH stimulates the growth and development of follicles in the ovaries, which release eggs during ovulation. In men, FSH stimulates the production of sperm in the testes. Measuring FSH levels in the blood can be used to diagnose conditions such as infertility, pituitary gland disorders, and menopause.

### Free Testosterone



**0.494 nmol/L - Below Optimal**

Free testosterone is a hormone and form of testosterone in the blood that is not bound to proteins, allowing it to freely circulate throughout the body and interact with cells. It plays a key role in sexual development, fertility, and overall health. Measuring free testosterone levels in the blood can be used to diagnose conditions such as hypogonadism, polycystic ovary syndrome, or infertility. It can also be used to monitor testosterone replacement therapy and assess the risk of certain health conditions, such as osteoporosis or cardiovascular disease.

### LH



### 3.1 IU/L - Optimal

LH (luteinizing hormone) is a hormone that plays a crucial role in reproductive health. In women, LH triggers ovulation, which is the release of an egg from the ovary. In men, LH stimulates the production of testosterone in the testes. Measuring LH levels in the blood or urine can indicate infertility, polycystic ovary syndrome, and menopause in women. Abnormal levels of LH can also be indicative of other health conditions, such as pituitary gland disorders in men and women.

### Oestradiol



### 91.0 pmol/L - Optimal

Oestradiol is a hormone that plays a crucial role in the development and maintenance of female reproductive organs and secondary sexual characteristics. It is a type of estrogen hormone that is primarily produced by the ovaries in women, as well as in smaller amounts by the testes in men. Oestradiol is involved in regulating the menstrual cycle, supporting pregnancy, and maintaining bone density in women. In men it plays a role in sexual function and libido, cognitive function, cardiovascular as well as bone health. Abnormal levels of oestradiol can lead to a range of health issues, including infertility, cardiovascular disease, weight control issues and osteoporosis.

### PSA (Prostate)



### 0.55 ng/mL - Optimal

Prostate-specific antigen (PSA) is a protein produced by the prostate gland in men. It is primarily used as a screening test for prostate inflammation and cancer. Elevated levels of PSA in the blood may indicate the prostate inflammation or cancer, although other factors such as age, prostate size, and infections can also affect PSA levels.

### Progesterone



### 0.5 nmol/L - Below Optimal

Progesterone is a hormone primarily produced by the ovaries in women and the testes in men, as well as the adrenal glands. In women, progesterone helps prepare the uterus for pregnancy and supports fetal development during early pregnancy. In men, progesterone is a precursor to other hormones like testosterone, helps regulate the immune system and may be involved in sperm function. Additionally, in both men and women, progesterone helps regulate mood and promotes overall well-being. Low levels of progesterone in women can cause irregular menstrual cycles, difficulty becoming pregnant, and may increase the risk of miscarriage. In men, low progesterone levels may lead to erectile dysfunction, decreased libido, and contribute to infertility.

## Prolactin



### 151.0 mU/L - Optimal

Prolactin is a hormone produced by the pituitary gland in the brain, and It is essential for lactation and milk production in women after childbirth. It is primarily used as a screening test for prostate inflammation and cancer. Elevated levels of PSA in the blood may indicate the prostate inflammation or cancer, although other factors such as age, prostate size, and infections can also affect PSA levels.

## SHBG



### 44.0 nmol/L - Above Optimal

Sex hormone-binding globulin (SHBG) is a protein made by the liver that binds to sex hormones such as testosterone and estrogen in the bloodstream. It regulates the levels of free, unbound hormones by binding to them and making them inactive. The amount of SHBG in the blood can affect the amount of available hormones. High levels of SHBG can lead to lower levels of free testosterone, while low levels of SHBG can lead to higher levels of free testosterone. SHBG levels can be affected by factors such as age, gender, metabolic dysregulation and certain medical conditions.

## Testosterone



### 26.2 nmol/L - Optimal

Testosterone is a hormone that plays a vital role in the development and maintenance of male reproductive tissues and secondary sex characteristics. It is also produced in smaller amounts by females. Testosterone is responsible for the development of muscle mass, bone density, and body hair growth, as well as sex drive and the production of sperm. In addition, testosterone is important for maintaining overall health, including maintaining mood, cognitive function, and cardiovascular health. Out of range testosterone levels can lead to various health problems, such as infertility, erectile dysfunction, and osteoporosis.

## Kidney Function

### Creatinine



## 82.0 umol/L - Optimal

Creatinine is a waste product that is produced by the muscles during normal daily activity. It is filtered out of the blood by the kidneys and excreted in the urine. Measuring creatinine levels in the blood and urine is a common way to evaluate kidney function, as impaired kidney function can lead to an accumulation of creatinine in the blood. Creatinine levels in the blood can also be used to monitor certain medications and to diagnose conditions such as kidney disease or muscle disorders.

## Urea



## 4.5 mmol/L - Optimal

Urea is a waste product produced by the liver. It is produced by breaking down proteins and excreted by the kidneys. Urea is measured in blood tests as an indicator of kidney function. High levels of urea in the blood may indicate reduced kidney function or other conditions that affect the kidneys, such as dehydration. Urea levels can also be elevated due to excessive protein intake, gastrointestinal issues, or certain medications.

# Lipids

## Cholesterol



## 5.57 mmol/L - High

Cholesterol is a type of fat that is essential for many bodily functions. It is a key component of cell membranes and is necessary for the production of hormones, vitamin D, and bile acids that aid in digestion. High levels of cholesterol in the blood can increase the risk of cardiovascular disease.

## HDL



## 2.05 mmol/L - Above Optimal

HDL (high-density lipoprotein) is often referred to as the "good" cholesterol. It helps remove excess cholesterol from the blood and transports it to the liver for processing and removal from the body. HDL also has anti-inflammatory and anti-oxidant properties that help protect against heart disease and other health conditions. Higher levels of HDL are associated with a reduced cardiovascular risk, while low levels of HDL can increase the risk.



## LDL



### 3.16 mmol/L - Above Optimal

LDL (low-density lipoprotein) is often referred to as the "bad" cholesterol. It can contribute to the buildup of plaque in the arteries under specific immune and inflammatory conditions. This increases the risk of heart disease and stroke. High levels of LDL in the blood can lead to the formation of fatty deposits in the blood vessels, which can narrow and harden them over time, reducing blood flow to vital organs.

## Triglyceride



### 0.79 mmol/L - Optimal

Triglycerides are a type of fat found in the blood that are produced in the liver and also obtained from the diet. They are used as a source of energy by the body. High levels of triglycerides can increase the risk of developing heart disease and stroke. Triglyceride levels are affected by factors such as diet, physical activity, and genetics.

## Liver Function

### ALP



### 42.0 IU/L - Below Optimal

ALP (alkaline phosphatase) is an enzyme found in various tissues throughout the body, including the liver, bones, and intestines. It plays a crucial role in the process of removing phosphate groups from molecules, which is important for a wide range of bodily functions. ALP levels in the blood are commonly used as a marker of liver or bone disease, as well as other conditions such as gallstones or certain types of cancer. Out of range levels of ALP can indicate underlying health issues and may require further medical investigation.

### ALT



### 31.0 U/L - Above Optimal

ALT (alanine transaminase) is an enzyme primarily found in liver cells. It plays a critical role in the metabolism of amino acids, which are the building blocks of proteins. When liver cells are damaged or destroyed, ALT is released into the bloodstream, causing levels of the enzyme to rise. ALT levels in the blood are commonly used as a marker of liver function. High levels of ALT can also indicate other conditions such as drug toxicity, viral infections, or alcohol abuse.

### GGT



### 24.0 U/L - Above Optimal

GGT (gamma-glutamyl transferase) is an enzyme that is mainly found in the liver, but is also present in other organs such as the pancreas and kidneys. It plays a role in the metabolism of drugs and other substances in the body. Elevated GGT levels in the blood can indicate liver damage, alcohol consumption, or other health conditions. Measuring GGT levels can be used as a diagnostic marker for these conditions and to monitor treatment progress.

### Total Bilirubin



### 7.7 umol/L - Optimal

Total Bilirubin is a blood test that measures the amount of bilirubin, a yellowish pigment that is formed when red blood cells break down, in the blood. It is used to evaluate liver function and screen for liver and gallbladder disease. High levels of bilirubin can indicate liver disease, such as hepatitis or cirrhosis, or blockage of the bile ducts, while low levels can be associated with anemia or problems with the breakdown of red blood cells.

## Minerals - Blood

### Copper



### 12.0 umol/L - Optimal

Copper is an essential mineral that is important for many bodily functions. It plays a role in the formation of red blood cells, maintenance of healthy bones and connective tissue, and proper functioning of the nervous and immune systems. Copper also acts as an antioxidant, protecting cells from damage caused by free radicals. Out of range levels of copper in the blood can indicate liver or kidney disease, and malnutrition.

### Ferritin



**226.0 ug/L - Above Optimal**

Ferritin is a protein found in many tissues, including the liver, spleen, and bone marrow. Its sole function is to store iron. Increased levels happen with iron overload. Too much iron can increase the risk of heart disease and inflammation.

### Iron



**17.5 umol/L - Optimal**

Iron is an essential mineral that plays a critical role in various bodily functions. It is primarily responsible for producing haemoglobin, a protein found in red blood cells that carries oxygen throughout the body. Iron also plays a crucial role in the immune system, cognitive function, and energy metabolism. Lower iron levels in the blood may contribute to the indication of iron-deficiency anaemia and other negative health conditions.

### Magnesium



**0.96 mmol/L - Optimal**

Magnesium is an essential mineral that plays a crucial role in numerous bodily functions. It is involved in energy metabolism, muscle and nerve function, protein synthesis, and the regulation of blood pressure, among others. Magnesium also supports bone health and is necessary for the proper functioning of the cardiovascular and immune systems. A deficiency in magnesium can cause various health issues, including muscle cramps, headaches, and heart rhythm abnormalities. Adequate dietary intake or supplementation of magnesium is essential for optimal health.

### TIBC



**54.9 umol/L - Optimal**

TIBC stands for Total Iron Binding Capacity. It is a blood test that measures the amount of iron that can be bound by proteins in the blood. Elevated TIBC levels can indicate iron deficiency anemia or chronic inflammatory conditions, while low TIBC levels may suggest iron overload or hemochromatosis. TIBC results are often interpreted in conjunction with other iron tests to determine the underlying cause of iron metabolism abnormalities.

### Transferrin Saturation



#### 31.9 % - Optimal

Transferrin saturation is a measure of the amount of iron that is bound to transferrin in the blood. It is calculated by dividing the serum iron level by the total iron-binding capacity (TIBC) and multiplying by 100. This test is used to assess how well the body is able to transport and utilize iron. Low transferrin saturation may indicate iron deficiency, while high transferrin saturation may indicate iron overload or other conditions such as hemochromatosis.

### Zinc (Bloods)



#### 11.77 umol/L - Below Optimal

Zinc is an essential mineral that performs various functions in the body. Zinc plays a crucial role in the immune system, wound healing, and cell growth and division. It also aids in the synthesis of DNA and RNA and the production of proteins and enzymes. Zinc helps maintain healthy skin, hair, and nails and supports normal growth and development during pregnancy, childhood, and adolescence. Low levels of zinc can lead to impaired immune function, delayed wound healing, and other health problems.

## RBC

### Haematocrit



#### 0.422 L/L - Optimal

Haematocrit is a measure of the volume of red blood cells in the blood, expressed as a percentage of the total blood volume. Haematocrit plays a critical role in the body by determining the oxygen-carrying capacity of the blood. Red blood cells, which make up the majority of haematocrit, contain haemoglobin, a protein that binds to oxygen and carries it from the lungs to the body's tissues. Haematocrit can indicate anaemia, dehydration, and other conditions. A low haematocrit level can indicate a decreased number of red blood cells, which can lead to fatigue, shortness of breath, and other symptoms. A high haematocrit level can indicate an increased number of red blood cells, which can increase the risk of blood clots and other health issues.

### Haemoglobin



### 145.0 g/L - Optimal

Haemoglobin is a protein found in red blood cells. It plays a critical role in transporting oxygen from the lungs to the rest of the body. It binds to oxygen in the lungs and releases it in the tissues where it is needed for energy production. Measuring haemoglobin levels in the blood can be used to evaluate overall blood health. Low levels may be associated with Anaemia.

#### MCH



### 34.0 pg - High

MCH (mean corpuscular hemoglobin) is a measure of the average amount of hemoglobin (the oxygen-carrying protein in red blood cells) in each red blood cell. It is typically measured as part of a complete blood count (CBC) and is another method of assessing the ability of RBC to carry oxygen. MCH can be used to monitor various types of anemia, a condition in which the body does not have enough red blood cells or hemoglobin to carry oxygen to the body's tissues. Changes in MCH levels can also indicate underlying health conditions such as iron deficiency.

#### MCHC



### 344.0 g/L - Optimal

MCHC (mean corpuscular hemoglobin concentration) is a measure of the concentration of hemoglobin in a given volume of red blood cells. It is typically measured as part of a complete blood count (CBC) and is another method of assessing the ability of RBC to carry oxygen. MCHC can be used to monitor various types of anemia, such as hemolytic anemia or sickle cell disease. Changes in MCHC levels can also indicate underlying health conditions such as liver disease or alcoholism.

#### MCV



### 99.1 fl - High

MCV (mean corpuscular volume) is a measure of the average size of red blood cells. It is typically measured as part of a complete blood count (CBC) and is another method of assessing the ability of RBC to carry oxygen. MCV can be used to monitor various types of anemia, a condition in which the body does not have enough red blood cells or hemoglobin to carry oxygen to the body's tissues. Changes in MCV levels can also indicate underlying health conditions such as vitamin B12 or folate deficiency.

## MPV



### 9.8 fl - Optimal

MPV (mean platelet volume) is a measure of the average size of platelets in the blood. Platelets are small, colorless blood cells that are important in blood clotting. . MPV levels are typically measured as part of a complete blood count (CBC) and can be used to diagnose and monitor various bleeding and clotting disorders. High MPV levels can indicate an increased risk of blood clotting, while low MPV levels can indicate a risk of bleeding disorders

## Platelets



### 232.0 x10<sup>9</sup>/L - Above Optimal

Platelets are small, colorless blood cells that play a crucial role in blood clotting. When a blood vessel is damaged, platelets rapidly aggregate at the site of injury to form a plug that helps to stop bleeding. Platelets also release chemicals that activate the clotting system and promote the healing process. Out of range platelet function or count can result in bleeding disorders or clotting disorders, which can have serious health consequences.

## RBC



### 4.26 x10<sup>12</sup>/L - Below Optimal

Red blood cells (RBCs), also known as erythrocytes, are the most common type of blood cell in the body. They are responsible for transporting oxygen from the lungs to the body's tissues and removing carbon dioxide from the tissues and transporting it to the lungs to be exhaled. RBCs are produced in the bone marrow and contain hemoglobin, a protein that binds to oxygen and gives the cells their red color. Out of range RBC count or function can indicate various medical conditions, such as anemia, blood disorders, dehydration or poor circulation.

## RDW



## 12.2 % - Optimal

Red Cell Distribution Width (RDW) is a measure of the variation in the size of red blood cells. It is calculated by measuring the width of the distribution curve of red blood cells. The RDW test is often used in combination with other blood tests to help diagnose certain types of anemia. A high RDW value may indicate that the red blood cells are varying in size, which can be caused by various conditions, including iron deficiency anemia, vitamin B12 deficiency, and folic acid deficiency.

## Thyroid Function

### Anti-thyroglobulin Abs



## 12.0 IU/mL - Optimal

Anti-thyroglobulin antibodies (TgAbs) are proteins produced by the immune system that attack thyroglobulin. Thyroglobulin protein is produced by the thyroid gland and is essential for the production of thyroid hormones. High levels of TgAbs in the blood may indicate autoimmune thyroid conditions. TgAb testing is often used as a complementary tool in diagnosing and monitoring thyroid-related health issues.

### Anti-thyroidperoxidase abs



## 9.0 IU/mL - Optimal

Anti-thyroid peroxidase antibodies (TPOAbs) are proteins produced by the immune system that attack thyroid peroxidase. Thyroid peroxidase is an enzyme produced by the thyroid gland that is necessary for the production of thyroid hormones. Elevated levels of TPOAbs in the blood can be associated with autoimmune thyroid conditions. Testing for TPOAbs is used to assess the risk of future thyroid dysfunction in individuals with TPOAbs.

### Free T3



## 4.57 pmol/L - Below Optimal

Free T3 (triiodothyronine) is a hormone produced by the thyroid gland. It plays a role in regulating metabolism, body temperature, and other bodily functions. Free T3 is the active form of T3 that is not bound to proteins in the blood, allowing it to freely circulate throughout the body and be available for use by cells. Measuring Free T3 levels in the blood can be used to evaluate thyroid function and diagnose conditions such as hypothyroidism or hyperthyroidism.

### Free T4



### 18.3 pmol/L - Optimal

Free T4 (thyroxine) is a hormone produced by the thyroid gland. It plays a role in regulating metabolism, growth, and other bodily functions. Free T4 is the active form of T4 that is not bound to proteins in the blood, allowing it to freely circulate throughout the body and be available for use by cells. Measuring Free T4 levels in the blood can be used to evaluate thyroid function and diagnose conditions such as hypothyroidism or hyperthyroidism.

### T4 Total



### 84.8 nmol/L - Optimal

T4 Total is a blood test that measures the total amount of thyroxine (T4) hormone in the blood, including both free T4 and T4 that is bound to proteins in the blood. T4 is produced by the thyroid gland and is important for regulating metabolism, growth, and development in the body. Out of range levels of T4 Total can indicate thyroid dysfunction, such as hypothyroidism or hyperthyroidism. However, it is important to also measure free T4 and other thyroid hormones for a complete assessment of thyroid function.

### TSH



### 1.16 mU/L - Below Optimal

Thyroid-stimulating hormone (TSH) is a hormone released by the pituitary gland in the brain. It regulates the production of thyroid hormones by the thyroid gland in the neck. TSH levels in the blood are used to assess the functioning of the thyroid gland, which produces hormones that are essential for regulating metabolism, growth, and development in the body. Out of range TSH levels can indicate an overactive or underactive thyroid gland, which can cause a range of symptoms and health problems.

## Vitamins

### Serum Folate





### 11.3 nmol/L - Below Optimal

Serum folate is a blood test that measures the amount of folate, a B-vitamin essential for the formation of red blood cells and DNA synthesis, in the bloodstream. Adequate levels of serum folate are necessary for normal growth and development, especially during pregnancy, and deficiency can lead to anemia and birth defects. The test is typically used to monitor folate deficiency and the effectiveness of folate supplements or dietary changes. Serum folate levels may be affected by medications, malnutrition, alcoholism, and certain medical conditions.

### Vitamin B12



### 413.0 pmol/L - Optimal

Vitamin B12 is a water-soluble vitamin that plays an important role in many bodily functions and is primarily obtained by animal-based foods. It is involved in the production of red blood cells, DNA synthesis, proper nervous system function, and metabolism of homocysteine, an amino acid that has been linked to an increased risk of heart disease when present at high levels in the blood. Deficiency can lead to anemia, neuropathy, and other health problems.

### Vitamin D (25 OH)



### 79.0 nmol/L - Below Optimal

Vitamin D (25 OH) is a blood test that measures the level of 25-hydroxyvitamin D in the bloodstream. 25-hydroxyvitamin D is a precursor of the active form of vitamin D, which is essential for maintaining healthy bones, teeth, and muscles. Vitamin D is also involved in regulating the immune system and reducing inflammation. Low levels of vitamin D can lead to bone disease, including osteoporosis, and may increase the risk of autoimmune diseases, and other health problems. Vitamin D (25 OH) testing can help to identify deficiencies and guide treatment.

## WBC

### Basophils



### 0.04 x10<sup>9</sup>/L - Optimal

Basophils are a type of white blood cell that plays a role in the immune system's response to inflammation and allergies. They make up a very small percentage of the total white blood cells in the body. Basophils release histamine and other substances in response to allergens and other stimuli, causing symptoms such as itching, swelling, and inflammation. Basophil counts in the blood are commonly used to diagnose and monitor certain diseases, including allergies, and parasitic infections.

## Eosinophils



**0.08 x10<sup>9</sup>/L - Optimal**

Eosinophils are a type of white blood cell. They play a role in the immune system's response to allergic reactions, parasitic infections, and other inflammatory conditions. Eosinophils release chemical substances that can damage tissues and attack invading organisms. Elevated eosinophil counts in the blood can indicate allergic or parasitic diseases, while low counts can be a sign of certain infections or autoimmune disorders.

## Lymphocytes



**1.49 x10<sup>9</sup>/L - Optimal**

Lymphocytes are a type of white blood cell that plays a crucial role in the immune system. They are responsible for recognizing and attacking foreign invaders, such as viruses, bacteria, and cancer cells. There are two main types of lymphocytes: B cells and T cells, each with its unique function in the immune response. Measuring lymphocyte levels in the blood can be associated with various infections, and other conditions.

## Monocytes



**0.45 x10<sup>9</sup>/L - Optimal**

Monocytes are a type of white blood cell that play an important role in the immune system's defense against infection and disease. They are produced in the bone marrow and are part of the body's innate immune response. Monocytes are able to differentiate into macrophages and dendritic cells, which are important in engulfing and destroying foreign particles, such as bacteria and viruses. Elevated levels of monocytes in the blood can be a sign of infection and inflammation.

## Neutrophils



### 2.36 x10<sup>9</sup>/L - Optimal

Neutrophils are a type of white blood cell that play a crucial role in the immune system's response to infection and injury. They are produced in the bone marrow and are the most abundant type of white blood cell in the bloodstream. Neutrophils are able to identify and engulf foreign particles, such as bacteria and viruses, and then destroy them using special enzymes and chemicals. Elevated levels of neutrophils in the blood can be a sign of infection or inflammation.

### WBC



### 4.4 x10<sup>9</sup>/L - Below Optimal

White blood cells (WBCs) are a type of blood cell that is part of the body's immune system. They help defend the body against infections and foreign invaders. The WBC count is a measure of the total number of white blood cells in the blood. Out of range WBC count can indicate a wide range of medical conditions, including infections, autoimmune diseases, and allergies. The WBC count is usually measured as part of a complete blood count (CBC) test.