Order	XXXX-XXXX
Name	Xxx Xxx
Date of Birth	XX-Xxx-XXXX
Fasted For	XX
Date of Sample Collection	XX-Xxx-Xxxx
Date of Report	XX-Xxx-Xxxx
Programme	Male/Female Fertility Panel

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Health Status

Track and improve your Health Status each time you visit Randox Health.



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.



Personal Health Measurements

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.



Diastolic Blood pressure



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.



HDL Cholesterol

HDL Cholesterol describes cholesterol that is bound to high-density lipoprotein (HDL). Lipoproteins are responsible for transporting cholesterol in the blood. HDL cholesterol is 'protective' as it removes cholesterol from the peripheral tissues and transports it back to the liver for removal from the body. A low HDL cholesterol level is undesirable and is associated with increased risk of atherosclerosis (accumulation of cholesterol and fatty material within blood vessel walls) and cardiovascular disease. Obesity, metabolic syndrome (a set of risk factors for diabetes and cardiovascular disease occurring simultaneously), uncontrolled diabetes, smoking, malnutrition and lack of exercise are associated with low HDL cholesterol levels.





Metabolic Syndrome

Diastolic Blood pressure

Diastolic Blood Pressure {Metabolic Syndrome} is a measure of the pressure in the blood vessels when the heart rests between contractions and refills with blood. According to the National Cholesterol Educational Program (NCEP) Adult Treatment Panel III (ATP III), diastolic blood pressure measurements equal to or greater than 85 mmHg are associated with metabolic syndrome. Additionally, individuals currently receiving treatment for high blood pressure are at risk of metabolic syndrome irrespective of blood pressure measurement.





Phosphate

Phosphate is essential for energy production in the body and is a major component of the skeleton, helping to provide bone strength. The body obtains phosphate from the diet and parathyroid hormone (PTH) regulates levels in the blood. When blood levels are too high, PTH acts on the kidneys to increase excretion of phosphate into the urine. Hyperphosphataemia, or elevated phosphate levels, may be associated with low blood calcium, hypoparathyroidism (decreased production of PTH) or kidney failure. Hypophosphataemia, or decreased phosphate levels, may be due to or associated with high blood calcium, hyperparathyroidism (increased production of PTH), vitamin D deficiency, chronic alcoholism or the use of certain antacids. Low phosphate levels are also associated with increased risk of osteomalacia (softening of the bones) and osteoporosis (weakening of the bones).



Liver Health

Alanine Aminotransferase (ALT)

Alanine Aminotransferase (ALT) is an enzyme found mainly in the liver. Normally, a low level of ALT exists in the blood. Liver injury or disease will release ALT into the bloodstream, thus elevating blood ALT levels. Very high levels of ALT can be due to acute hepatitis, often resulting from a viral infection. High levels can be associated with chronic liver disease, such as cirrhosis (scarring of the liver), excessive alcohol intake and conditions that cause blockage of the flow of bile from the liver. Mild elevations are often due to fatty liver disease, a common finding associated with mild liver dysfunction, obesity and increased risk of diabetes.



Aspartate Aminotransferase (AST)

Aspartate aminotransferase (AST) is an enzyme found mainly in the liver and heart but is also present in muscle cells. Disease or injury to these tissues causes release of AST into the bloodstream. Increased AST levels may be associated with hepatitis (inflammation of the liver), cirrhosis (scarring of the liver), drug-induced liver injury, heart disease and muscle damage. Mild elevations are often due to fatty liver disease, a common finding associated with mild liver dysfunction, obesity and increased risk of diabetes.





Phosphate

Phosphate is essential for energy production in the body and is a major component of the skeleton, helping to provide bone strength. The body obtains phosphate from the diet and parathyroid hormone (PTH) regulates levels in the blood. When blood levels are too high, PTH acts on the kidneys to increase excretion of phosphate into the urine. Hyperphosphataemia, or elevated phosphate levels, may be associated with low blood calcium, hypoparathyroidism (decreased production of PTH) or kidney failure. Hypophosphataemia, or decreased phosphate levels, may be due to or associated with high blood calcium, hyperparathyroidism (increased production of PTH), vitamin D deficiency, chronic alcoholism or the use of certain antacids. Low phosphate levels are also associated with increased risk of osteomalacia (softening of the bones) and osteoporosis (weakening of the bones).



(i)

Dehydroepiandrosterone Sulphate (DHEAs)

Dehydroepiandrosterone Sulphate (DHEAS) (Male) is a steroid hormone, produced by the adrenal glands, and found in the bloodstream of both men and women. Typically, DHEAS levels peak at around thirty years of age and then gradually fall.





Hormonal Health

Dehydroepiandrosterone Sulphate (DHEAs)

Dehydroepiandrosterone Sulphate (DHEAS) (Male) is a steroid hormone, produced by the adrenal glands, and found in the bloodstream of both men and women. Typically, DHEAS levels peak at around thirty years of age and then gradually fall.



Progesterone

Progesterone (Male) is generally considered a female sex hormone with important roles in female reproductive function. However, progesterone is also found in males at much lower levels. To date, clinical research has not identified an established physiological role for progesterone in males.





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.



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.





Diastolic Blood pressure

Height	
1.8 m	

Weight 74 kg



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.







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.





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.





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').





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.





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.





The liver is a vital organ that plays a main

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.





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.





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.





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)		1.53
≤5.0 Optimal	>5.0 High	mg/l



The pituitary and adrenal glands are responsible for the production and release of hormones. Hormones are chemical messengers that travel through the bloodstream and enable communication between different tissues. The pituitary gland, located in the brain, regulates the hormone producing activity of other glands such as the adrenals, thyroid and ovaries, and helps to control various body processes, such as blood pressure, metabolism, growth, temperature and ovulation. The adrenal glands, located just above each kidney, produce hormones that help to regulate blood pressure and the body's response to stress. The Pituitary & Adrenal Health panel comprises the measurement of various hormones produced by each gland and can be useful for evaluating whether the pituitary or adrenal glands are overactive or underactive.





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.





Stress is the body's natural response to the daily demands and pressures put upon it. Every individual responds to stress differently but long-term excessive stress can be detrimental to health. Signs that an individual may be suffering from stress include difficulty sleeping, irritability, lack of appetite and anxiety. The Stress Health panel includes tests that are associated with stress, such as measurement of cortisol, a hormone released by the body in response to stress.





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. Hormones carry information between cells and help regulate metabolism, growth, reproduction and mood alteration.





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 Measureme	ents				
Height	1.8	m	N/A		
Weight	74	kg	N/A		
Body Mass Index (BMI)	22.8	kg/m²	18.5 - 24.9 Optimal		
Pulse	98	BPM	60 - 100 Optimal		
Systolic Blood pressure	122	mmHg	120 - 129.9 Normal		
Diastolic Blood pressure	88	mmHg	0 - 59.9 Low 59.9 - 79.9 Optimal 79.9 - 84.9 Normal 84.9 - 89.9 High Normal 90 - 140 High		
Full Blood Count					
Haemoglobin	160	g/l	130.0 - 180.0 Optimal		
Haematocrit	46.1	%	40.0 - 54.0 Optimal		
Mean Cell Haemoglobin (MCH)	31.5	pg	27.0 - 32.0 Optimal		
Mean Cell Haemoglobin Concentration (MCHC)	347	g/I	320.0 - 360.0 Optimal		
Red Blood Cell Mean Cell Volume (MCV)	90.7	fl	76.0 - 100.0 Optimal		
Red Blood Cell Count	5.08	10 ¹² /L	4.5 - 6.5 Optimal		
Basophil Count	0.03	10º/L	0.01 - 0.1 Optimal		
Eosinophil Count	0.03	10º/L	<0.04 Low 0.04 - 0.4 Optimal >0.4 High		
Lymphocyte Count	2.39	10º/L	1.0 - 3.5 Optimal		
Monocyte Count	0.63	10º/L	0.2 - 0.8 Optimal		
Neutrophil Count	4	10º/L	2.0 - 7.5 Optimal		
White Blood Cell Count	7.08	10º/L	4.0 - 10.0 Optimal		
Platelet Count	260	10º/L	150 - 450 Optimal		
Iron Status					
Iron	22.1	µmol/l	5.8 - 34.5 Optimal		
Ferritin	62.88	µg/l	20 - 300 Optimal		
Total Iron Binding Capacity (TIBC)	75.2	µmol/l	44.8 - 80.6 Optimal		

Test	Result	Units	Reference Range
Iron Status			
Transferrin	2.86	g/l	2.0 - 3.8 Optimal
Transferrin Saturation	29.4	%	20.0 - 50.0 Optimal
Heart Health			
Total Cholesterol	4.12	mmol/l	<5.00 Desirable
LDL Cholesterol	2.78	mmol/l	<3.00 Desirable
HDL Cholesterol	1.3	mmol/l	<1.55 Low ≥1.55 Desirable
Total Cholesterol / HDL Cholesterol Ratio	3.17	%	<5.0 Desirable
Triglycerides	1.05	mmol/l	<2.3 Desirable
Cardiovascular Risk Score	2	%	<10 Desirable
Diabetes Health			
HbA1c	26.34	mmol/mol	<42.0 Optimal
Insulin	43	pmol/l	17.8 - 173.0 Optimal
Metabolic Syndrome			
Height	1.8	m	N/A
Weight	74	kg	N/A
Body Mass Index (BMI)	22.8	kg/m²	≤30 Optimal
Systolic Blood pressure	122	mmHg	<130 Optimal
Diastolic Blood pressure	88	mmHg	<85 Optimal ≥85 Risk
HbA1c	26.34	mmol/mol	<42.0 Optimal
Insulin	43	pmol/l	17.8 - 173.0 Optimal
Kidney Health			
Chloride	99	mmol/l	95 - 108 Optimal
Phosphate	0.76	mmol/l	<0.8 Low 0.8 - 1.5 Optimal >1.5 High
Potassium	4.49	mmol/l	3.5 - 5.3 Optimal
Sodium	139.2	mmol/l	133.0 - 146.0 Optimal
Urea	6.26	mmol/l	2.5 - 7.8 Optimal
Liver Health			
Alanine Aminotransferase (ALT)	66.4	U/I	<40 Normal 40 - 200 Moderately raised >200 High

Test	Result	Units	Reference Range
Liver Health			
Alkaline Phosphatase (ALP)	89	U/I	30 - 120 Optimal
Aspartate Aminotransferase (AST)	62.2	U/I	<40 Normal 40 - 185 Moderately raised >185 High
Gamma-Glutamyltransferase (GGT)	11.2	U/I	10.0 - 71.0 Optimal
Total Bilirubin	13.46	µmol/l	<21.0 Optimal
Albumin	40.8	g/l	35.0 - 50.0 Optimal
Ferritin	62.88	µg/l	20 - 300 Optimal
Nutritional Health			
Albumin	40.8	g/l	35.0 - 50.0 Optimal
Iron	22.1	µmol/l	5.8 - 34.5 Optimal
Vitamin D	147	nmol/l	50 - 375 Sufficiency
Bone Health			
Alkaline Phosphatase (ALP)	89	U/I	30 - 120 Optimal
Phosphate	0.76	mmol/l	<0.8 Low 0.8 - 1.5 Optimal >1.5 High
Vitamin D	147	nmol/l	50 - 375 Sufficiency
Infection & Inflammation			
C-Reactive Protein (CRP)	1.53	mg/l	≤5.0 Optimal
Pituitary & Adrenal Health			
Thyroid Stimulating Hormone (TSH)	1.24	mIU/I	0.35 - 5.5 Optimal
Cortisol	474	nmol/l	138 - 690 Optimal
Follicle Stimulating Hormone	2	U/I	1.5 - 12.4 Optimal
Luteinising Hormone	7.2	U/I	1.7 - 8.6 Optimal
Prolactin	183	mIU/I	86 - 324 Optimal
Dehydroepiandrosterone Sulphate (DHEAs)	12.5	µmol/l	<4.3 Low 4.3 - 12.2 Optimal >12.2 High
Thyroid Health			
Thyroid Stimulating Hormone (TSH)	1.24	mIU/I	0.35 - 5.5 Optimal
Free Thyroxine (FT4)	16.1	pmol/l	11.9 - 21.6 Optimal
Free Tri-iodothyronine (FT3)	5.3	pmol/l	3.1 - 6.8 Optimal

Test	Result	Units	Reference Range	
Thyroid Health				
Anti-Thyroglobulin Antibody (Anti-Tg)	15.8	IU/ml	≤115.0 Optimal	
Anti-Thyroid Peroxidase Antibody (Anti-TPO)	15.6	kU/l	≤34.0 Optimal	
Stress Health				
Cortisol	474	nmol/l	138 - 690 Optimal	
Testosterone	15	nmol/l	8.64 - 29.0 Optimal	
Hormonal Health				
Cortisol	474	nmol/l	138 - 690 Optimal	
Dehydroepiandrosterone Sulphate (DHEAs)	12.5	µmol/l	<4.3 Low 4.3 - 12.2 Optimal >12.2 High	
Follicle Stimulating Hormone	2	U/I	1.5 - 12.4 Optimal	
Oestradiol	86.5	pmol/l	41.4 - 159.0 Optimal	
Luteinising Hormone	7.2	U/I	1.7 - 8.6 Optimal	
Progesterone	0.8	nmol/l	<0.47 Optimal ≥0.47 High	
Prolactin	183	mIU/I	86 - 324 Optimal	
Testosterone	15	nmol/l	8.64 - 29.0 Optimal	
Sex Hormone Binding Globulin	18.3	nmol/l	18.3 - 54.1 Optimal	
Free Androgen Index	81.97	%	35.0 - 92.6 Optimal	