

(Trace Element) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Calcium	1.219 - 3.021	3.003	
Iron	1.151 - 1.847	1.264	
Zinc	1.143 - 1.989	1.311	
Selenium	0.847 - 2.045	1.177	
Phosphorus	1.195 - 2.134	1.426	
Potassium	0.689 - 0.987	0.822	
Magnesium	0.568 - 0.992	0.567	
Copper	0.474 - 0.749	0.327	
Cobalt	2.326 - 5.531	3.515	
Manganese	0.497 - 0.879	0.498	
Iodine	1.421 - 5.490	4.618	
Nickel	2.462 - 5.753	5.351	
Fluorine	1.954 - 4.543	4.244	
Molybdenum	0.938 - 1.712	1.228	
Vanadium	1.019 - 3.721	2.569	
Tin	1.023 - 7.627	5.106	
Silicon	1.425 - 5.872	1.272	
Strontium	1.142 - 5.862	3.361	
Boron	1.124 - 3.453	3.229	

Parameter Description

Calcium(Ca):

Calcium is a metallic element, being silver-white crystal and being easy for chemical combination. For instance, animal bones, clam shells and eggshells contain calcium carbonate, calcium

phosphate, etc. Calcium is one of constant elements of the body, accounting for the fifth place. The role of calcium in the body:

1. It composes the human skeleton and supports the body, being the fulcrum of muscle flexing.
2. In the soft tissue of blood cells, it plays important roles, such as heart rate maintenance, nerve conduction, muscle flexing stress, blood coagulation and cell adhesion.

Unfortunately, although it is very important, it can be synthesized by the body self only by external intake.

Iron(Fe):

Iron accounts for the fifth place of the trace elements in the body.

It is the necessary matter for constituting hemoglobin, cell chromatin and tissue enzyme and has the oxygen carrier function. Iron deficiency can cause anemia, lower oxygen carrier function and make tissues hypoxia to cause diseases. A healthy adult's body contains 3-5g of iron, and a healthy baby's body contains 500mg.

Zinc(Zn):

Zinc as an important trace element in the human body is composition and activator composing hundreds of kinds of enzymes in the body. Its main function: it catalyzes human biochemical reactions, activates various enzyme proteins and is involved in protein synthesis to promote active metabolism.

Zinc deficiency can cause:

1. Dull sense of taste and blocking of the taste buds of the tongue
2. Partial eclipse and pica, such as eating cinders, mud, nails, plaster, etc.
3. Dwarfism
4. It is difficult to heal wounds.
5. Hypoplasia of secondary sexual characteristic
6. Women's menstrual cramps, or amenorrhea
7. It affects the sperm motility to cause sterility.

Selenium(Se):

Selenium is one of the necessary trace elements of the human body. Selenium is a carrier of calcium, and calcium can not be attached on the bone if there is no selenium. Selenium can help to activate antioxidant enzymes, such as glutathione peroxidase, which can neutralize potentially harmful free radicals. Selenium is the necessity for maintenance of muscle (including heart) health. Selenium also has a certain effect for maintain eyesight, skin and hair healthy.

Human selenium deficiency can have a variety of expression modes, and the common expression modes include: myalgia, myositis, myocardial fatty change, Keshan disease, hemolytic anemia, bone changes (Kashin-Beck disease), etc. Leukocyte bactericidal capacity and cell-mediated immunity are reduced to be infected.

Phosphorus(P):

Almost all of the foods contain phosphorus. Plenty of phosphorus can be obtained in diet. A supplement is not needed. The excessive intake of phosphorus will destroy the balance of minerals and cause calcium deficiency. Especially in people over the age of 40, the kidneys can no longer help to excrete excess phosphorus, which will lead to calcium deficiency. Therefore, the meat intake should be reduced, and more milk and vegetables should be taken.

Too much phosphorus in the blood will reduce the concentration of calcium, which will cause hypocalcemia, leading to enhanced neural excitability, tetany and convulsion. The manifestations:

1. Brittle and Fragile bones;
2. Tooth decay;
3. Various symptoms resulting from calcium deficiency become increasingly evident;
4. Nervous breakdown;
5. The unbalance of other minerals.

Potassium(K):

Potassium is an essential macronutrient in human. The content of potassium in an adult body is about 150 g. Potassium is stored mainly in the body cells. It is an essential nutrient in human body and an important electrolyte for the organism. The main function of it is maintaining and regulating volume and osmotic pressure of the intracellular fluid, maintaining acid-base balance of humor and the conduction of nerve actions. Potassium plays very important roles on the

metabolism and the maintenance of the structure and function of human cells. It can enhance the excitability of human nerve and muscle, reducing myocardial excitability, so it can maintain the normal function of nerves and muscles, especially the normal movement of the heart.

Normally the concentration of serum potassium is 3.5 to 5.5 mmol / l, and the symptom of the concentration of potassium lower than 3.5 mmol / l is called hypokalemia. The most outstanding manifestation of hypokalemia is limb numbness with different levels of neuromuscular relaxation and paralysis, especially in the crura. That is called potassium-deficiency-caused flaccid paralysis. It usually starts from the lower extremities, especially from the quadriceps, with the symptoms of infirm standing, weakness or difficulty ascending. Then with the aggravation of the potassium deficiency, muscle weakness can be more serious: the loss of muscle strength of trunk and upper limbs is becoming serious gradually until effect to the respiratory muscles, or even lead to respiratory failure, or accompanied by severe dysfunction of the cardiovascular system, such as chest tightness, palpitation, and even respiratory muscle paralysis, difficulty breathing and severe arrhythmia.

Magnesium(Mg):

In human cells, magnesium is the second most important cation (with potassium first). The content of magnesium is inferior to that of potassium. Magnesium has many special physiological functions: it can activate a variety of enzymes in the body, inhibit abnormal excitation of nerve system, maintain the stability of the structure of nuclear acids, and participate in protein synthesis, muscle contraction and body temperature regulation. Magnesium affects the [channel] for the intra and extra cellular mobility of potassium, sodium and calcium, and maintains the membrane potential.

The clinical manifestations of magnesium deficiency are: emotional disturbance, excitation, tetany, hyperreflexia, etc. Normally oral intake of overdose of magnesium will not lead to magnesium toxicity due to the regulation of the kidney. But in circumstance of renal insufficiency, a large number of oral magnesium can cause magnesium toxicity, manifested as abdominal pain, diarrhea, vomiting, polydipsia, fatigue, weakness, and difficulty in breathing, cyanosis, mydriasis etc in serious situation.

Copper(Cu):

The manifestations of copper deficiency are hypochromic small-cell anemia, stunted growth, bone lesions such as arthritis, proliferation and bone fractures, ulcer, hepatosplenomegaly, cardiovascular damage, coronary heartdisease, brain barrier, vitiligo, female infertility and curl hair etc.

The copper intake exceeds 100 times more than the requirement of human body will cause hemolytic anemia and necrotizing hepatitis. The poisoning symptoms of copper are salivation, nausea and vomiting, hematemesis, bellyache and diarrhea, acute gastroenteritis, hemolysis, hematuria, melena, red protein in the urinary, lysosomal membrane rupture, jaundice, arrhythmia, liver tissue necrosis, renal failure, uremia and shock. Excessive copper can not only cause schizophrenia, epilepsy and rheumatoid arthritis, but also related to tumors including esophageal cancer, gastric cancer, liver cancer and lung cancer. The toxicosis of overdose of copper can be treated by gastric lavage with dimercapto-propanol and potassium ferrocyanide or sodium thiosulfate.

Cobalt(Co):

Cobalt is the essential element of the human body. It exists in a state of ion. Cobalt is a component of vitamin B12, related to hematopoietic function. The daily intake of cobalt in human body is about 5 - 45 mg. Intake of overdose of cobalt will induce pneumonia, and lead to myocardial damage, thyroid damage and erythrocytosis, etc. Co-60?-ray has certain effects on the treatment of human cancer.

Manganese(Mn):

The Mn deficiency in human body will affect the growth and development. Mn deficiency in pregnant women causes baby Mn deficiency, which will lead to ataxia in newborns; Mn deficiency in children and adolescents may impair growth and lead to bone deformities; Mn deficiency in adults may cause reproductive dysfunction. Although the sea is very rich in manganese, and manganese plays an important role in human body, the body's requirement for

manganese is very tiny. The manganese requirement in diet of ordinary people is 4-9 mg per day, about half of which is absorbed by intestine.

Manganese is also involved in hematopoiesis. The mechanism of manganese in hematopoiesis is by improving the body utilization of copper to promote the absorption and utilization of iron and maturation and release of red blood cells.

Iodine(I):

Iodine is an essential micronutrient. The content of iodine in adults is about 20 to 50 mg, 70% to 80% of which concentrates in the thyroid near the throat, the rest presenting in muscle and other tissues. Iodine is the essential material for the synthesis of thyroid hormone, the deficiency of which can lead to hypothyroidism, causing mental and physical developmental disabilities. Illness in children will affect their growth and development; illness in pregnant women will not only result in goiter in herself but also affect fetal development, leading to slow growth, dwarfism, deafness, mental retardation, and even dementia in children after birth, which is called [cretinism]; goiter in adults can reduce the body's energy metabolism, causing myxedema, heart rate reduction, decreased sexual function, facial swelling, slow speech, and indifferent look.

The daily supply of iodine for adults is about 100 to 200 mg, and that for children aged 1 to 10 is 60 ~110 mg. Excessive iodine intake may cause iodine goiter, so the iodine intake is not the much, the better.

Iodine-rich food is seafood, such as kelp, seaweed, sea fish and sea salt. The iodine concentration of seaweed is thousands times higher than that of seawater. Iodine also exists in the soil of most areas. So the daily requirement for iodine can be obtained in vegetables and water as well.

Nickel(Ni):

Nickel is an essential element of life, mainly supplied by vegetable, cereal and seaweed, etc. Nickel is widely distributed in nature, but its content in the human body is extremely low. Normally, the adult body contains about 10mg of nickel, and the daily requirement for nickel is 0.3mg. Lack of nickel can cause diabetes mellitus, anemia, cirrhosis, uremia, renal failure and metabolic dysfunction of liver lipid and phospholipids, etc. Animal experiments showed that lack of nickel will cause slow growth, rising mortality rate of the organism, decrease of hematocrit, hemoglobin and iron content, reduce the bone calcium content and the zinc content in liver, hair, muscles and bones, and brain. Nickel deficiency is one of the causes of infertility.

Fluorine(F):

Fluorine is a nonmetallic element. The main toxic symptoms caused by excessive fluoride in human body are: yellow teeth, black teeth, X-or O-shaped legs, crookback or arm with dysfunction in stretching, dental fluorosis in mild sufferers, skeletal fluorosis in severe sufferers who might even lost the abilities of working and living. One suffering from fluorosis once will never be cured, and medications can only slow the aggravation of the disease. Endemic fluorosis is an endemic seriously endangering the health of people, which is a biogeochemical disease, divided into water-drinking type, coal-burning type and tea-drinking type.

Molybdenum(Mo):

Molybdenum is one of the essential micronutrients. The total molybdenum content in adult body is about 9 mg, distributed in various tissues and fluids of the body, in which liver and kidney contains the highest content of molybdenum, Molybdenum requirements the body is very small, and molybdenum exists in a variety of foods. Molybdenum functions as the prosthetic group of enzymes, catalytically oxidating the corresponding substrate. Molybdenum deficiency will not occur under normal conditions, but may occur in long-term total parenteral nutrition patients. Lack of molybdenum in animals can cause weight loss, reduced fertility, and shortened life expectancy.

Vanadium(V):

Vanadium is one of the essential micronutrients, playing important roles on the maintenance of body growth and development, acceleration on the growth of bones and teeth, and promotion on hematopoiesis and the increase of body immunity. The proper amount of vanadium can also lower blood sugar, blood pressure and lipids, increasing myocardial contractility and preventing heart disease. At present what researchers are most concerned with is its hypoglycemic function. Insulin

is the only hormone to reduce blood glucose in human body. Vanadium can not only play a role as insulin, but also protect the islet cells, thus reducing the body blood sugar.

Daily diet provides about 15 mg of vanadium, which can meet the body requirement, and supplement of vanadium is not needed. But people lacking vanadium or patients with diabetes, high cholesterol and hypertension should pay attention to take vanadium in foods. Cereal products, meat, chicken, duck, fish, cucumber, shellfish, mushrooms and parsley contain plenty of vanadium. But inorganic vanadium salt has unsatisfied fat-solubility, bad absorption, and great toxicity, which will affect people's health.

Tin(Sn):

Tin is an essential micronutrient of human lives, and one of the earliest elements human found as well. Recent scientific research shows that: tin can improve the metabolism of protein and nucleic acid, conducive to growth and development. Lack of tin leads to slow development of the body, especially for children. Tin deficiency will affect the normal development, and in severe cases can cause dwarfism.

Silicon(Si):

Silicon is an essential mineral in the human body and a micronutrient as well. It is the silicon maintains flexibility and elasticity of our bodies, making us possessing soft skin and hard bone. Silicone can promote child growth and development, and also plays an irreplaceable role in the prevention of aging. Besides, silicon can promote the increase of collagen, resulting in some cosmetic effects. Lack of silicon will lead to dry skin, wrinkling and susceptibleness to fractures. With the growth of age, silicon content in various tissues gradually decreased. Thus, the reduction degree of silicon content can be used as an indicator for aging to remind the elderly to enhance health-care and anti-aging.

The harm of silicon to human body is made by the lack of silicon or excessive silicon. Silicon shortage may cause osteoporosis and fragile nails etc. But excessive silicon is also very harmful. For example the long-term inhalation of dioxide silicon dust will easily cause excessive silicon, leading to silicosis. Excessive silicon in body may result in focal glomerulonephritis.

Strontium(Sr):

Strontium is an essential micronutrient, which can promote the growth and development of the bone. In long-term people have been focus only on the relativity between bone development and VD and calcium, but neglected the importance of strontium. The latest research data shows that: the lack of strontium human body will lead to metabolic disorders, and will cause physical weakness, sweating and skeletal growth retardation, even resulting in serious consequences such as osteoporosis.

The research concludes that: children's insufficient intake of coarse grains and vegetables matching with food, blindly supplied with calcium supplements are the main causes of children strontium deficiency. To avoid the lack of strontium, children should pay attention to the thickness match of grain and the species match of meat and vegetables, and take the calcium supplements with dairy products and animal bones under the guidance of a doctor.

Boron(B):

Boron commonly exists in fruits and vegetables, which is one of the micronutrients to maintain the health of the bone and metabolism of calcium, phosphorus and magnesium. The lack of boron will increase the lack of vitamin C; on the other hand, boron also helps to improve the secretion of testosterone, strengthen the muscles, which is an essential nutrient for athletes. Boron also improves the brain function and enhances the reaction capacity. Although most people do not lack boron, it is necessary for the elderly to take proper amount of boron.

The test results for reference only and not as a diagnostic conclusion.

(Vitamin) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Vitamin A	0.346 - 0.401	0.31	
Vitamin B1	2.124 - 4.192	2.532	
Vitamin B2	1.549 - 2.213	1.758	
Vitamin B3	14.477 - 21.348	12.395	
Vitamin B6	0.824 - 1.942	1.386	
Vitamin B12	6.428 - 21.396	6.523	
Vitamin C	4.543 - 5.023	3.538	
Vitamin D3	5.327 - 7.109	6.944	
Vitamin E	4.826 - 6.013	4.128	
Vitamin K	0.717 - 1.486	0.719	

Reference Standard: ■ Normal(-) ■ Mildly Abnormal(+) ■ Moderately Abnormal(++) ■ Severely Abnormal(+++)

Vitamin A:	0.346-0.401(-) 0.286-0.311(++)	0.311-0.346(+) <0.286(+++)
Vitamin B1:	2.124-4.192(-) 0.643-1.369(++)	1.369-2.124(+) <0.643(+++)
Vitamin B2:	1.549-2.213(-) 1.147-1.229(++)	1.229-1.549(+) <1.147(+++)
Vitamin B3:	14.477-21.348(-) 8.742-12.793(++)	12.793-14.477(+) <8.742(+++)
Vitamin B6:	0.824-1.942(-) 0.399-0.547(++)	0.547-0.824(+) <0.399(+++)
Vitamin B12:	6.428-21.396(-) 1.614-3.219(++)	3.219-6.428(+) <1.614(+++)
Vitamin C:	4.543-5.023(-) 3.153-3.872(++)	3.872-4.543(+) <3.153(+++)
Vitamin D3:	5.327-7.109(-)	4.201-5.327(+)

	2.413-4.201(++)	<2.413(+++)
Vitamin E:	4.826-6.013(-)	4.213-4.826(+)
	3.379-4.213(++)	<3.379(+++)
Vitamin K:	0.717-1.486(-)	0.541-0.717(+)
	0.438-0.541(++)	<0.438(+++)

Parameter Description
<p>Vitamin A: Vitamin A is related to growth and reproduction, and is an indispensable material of epithelial cells. The lack of vitamin A will cause cortex keratosis, rough skin, night blindness and dry eye.</p>
<p>Vitamin B1: Vitamin B1 is in charge of carbohydrate metabolism. The lack of vitamin B1 will make the substance not metabolized accumulate in the tissues to result in poisoning, athlete's foot, feet numbness, edema and weakened functions of muscle, skin or heart.</p>
<p>Vitamin B2: Vitamin B2 is in charge of fat and protein metabolism and detoxification in the liver. The lack of vitamin B2 will cause decreased growth and skin type and mouth type digestive disturbances.</p>
<p>Vitamin B3: Vitamin B3 is also known as nicotinic acid and nicotinamide. It can be dissolved in water and can make use of tryptophan for synthesis in the human body, and it is an essential substance of synthetic hormones. Vitamin B3 can promote blood circulation, lower blood pressure, lower cholesterol and triglycerides, reduce gastrointestinal disorder and alleviate the symptoms of Meniere's syndrome and so on. Vitamin B3 has effects for seborrheic dermatitis and eczema and the functions for whitening and activating the skin cells. Vitamin B3 exists in animal livers, kidneys, lean meat, eggs, wheat germ, whole wheat products, peanuts, figs, etc.</p>
<p>Vitamin B6: Vitamin B6 is related to amino acid metabolism. It can lead to disappearance of neurological irritability and have a certain role for the formation of immune substances and the prevention of atherosclerosis. The lack of vitamin B6 will cause anemia, frostbite and other skin disorders. In addition, it can inhibit tryptophan to convert into xanthurenic acid damaging the pancreas, thereby protecting the pancreas.</p>
<p>Vitamin B12: Vitamin B12 has the function for stimulating the hematopoietic function of bone marrow.</p>
<p>Vitamin C (Ascorbic acid): Vitamin C is colorless crystal, can be dissolved in water and alcohol, and can be easily destroyed. Its main functions: it can enhance the body immunity and protect capillaries, prevent scurvy and promote wound healing. Vitamin C can increase the use of iron, its chemical and biological process is that it reduces ferric iron in the diet to ferrous iron to promote the absorption of iron and to store iron in ferritin in the liver and bones. Practice shows that the supplementation of iron as well as adding VC can increase the iron absorption rate by 22%, it basically reaches the normal absorption rate of hemoglobin.</p>
<p>Vitamin D3: Its main physiological function is to promote intestinal calcium absorption, induce bone calcium-phosphorus attaching and prevent rickets.</p>
<p>Vitamin E:</p>

Its basic function is to protect the integrity of the internal structure of cells, and it can inhibit the oxidation of lipid in cells and on cell membranes and protect cells against damage of free radical. It also has the functions of anti-oxidation, anti-aging and beautifying.

Vitamin K:

Vitamin K is an important vitamin for promoting normal blood coagulation and bone growth. Vitamin K is the essential substance in the synthesis of four kinds of blood clotting proteins (prothrombin, factor VII, anti-hemophilia factor and stuart factor) in the liver. The human body has little vitamin K, but it can maintain normal function of blood coagulation, reduce heavy bleeding in the physiological period, and prevent internal bleeding and hemorrhoids. The person with frequent nosebleed should take in more vitamin K from the natural foods.

The test results for reference only and not as a diagnostic conclusion.

(Amino Acid) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Lysine	0.962 - 1.213	1.085	
Tryptophan	4.978 - 6.289	2.843	
Phenylalanine	1.928 - 2.491	2.083	
Methionine	1.245 - 1.637	1.483	
Threonine	1.194 - 1.685	0.895	
Isoleucine	4.582 - 5.657	5.611	
Leucine	6.982 - 9.256	9.102	
Valine	6.982 - 9.677	5.055	
Histidine	5.113 - 6.258	5.838	
Arginine	1.812 - 2.337	2.212	
Homocysteine	0.983 - 1.265	0.945	

Reference Standard: Normal(-) Mildly Abnormal(+) Moderately Abnormal(++) Severely Abnormal(+++)

Lysine: 0.962-1.213(-) 0.659-0.962(+)
0.253-0.659(++) <0.253(+++)

Tryptophan: 4.978-6.289(-) 3.709-4.978(+)
2.374-3.709(++) <2.374(+++)

Phenylalanine: 1.928-2.491(-) 1.307-1.928(+)
0.731-1.307(++) <0.731(+++)

Methionine: 1.245-1.637(-) 0.826-1.245(+)
0.432-0.826(++) <0.432(+++)

Threonine: 1.194-1.685(-) 0.817-1.194(+)
0.422-0.817(++) <0.422(+++)

Isoleucine: 4.582-5.657(-) 3.248-4.582(+)
1.831-3.248(++) <1.831(+++)

Leucine: 6.982-9.256(-) 4.579-6.982(+)
2.073-4.579(++) <2.073(+++)

Valine:	6.982-9.677(-) 2.012-4.892(++)	4.892-6.982(+) <2.012(+++)
Histidine:	5.113-6.258(-) 2.903-4.012(++)	4.012-5.113(+) <2.903(+++)
Arginine:	1.812-2.337(-) 0.710-1.209(++)	1.209-1.812(+) <0.710(+++)
Homocysteine:	0.983-1.265(-) 0.510-0.709(++)	0.709-0.983(+) <0.510(+++)

Parameter Description
<p>Lysine:enhance the development of the brain. It is the composition of liver and gallbladder, which enhances the metabolism of the fats, regulates the pineal gland, lactiferous glands, corpus luteum and ovary, and prevent the degradation of the cell.</p> <p>Lysine is the basic essential amino acid. Due to the low content in the cereal and the destruction during the food processing lysine is deficient, so it is called the first limiting amino acid. Symptoms for lack of lysine include fatigue, weakness, nausea, vomiting, dizziness, loss of appetite, growth retardation and anemia. Nutritious supplements can be taken in the advice of the medical professionals. The recommended intake for lysine is 10mg/pound for children, 3000-9000mg for adults. Lysine is the key material helpful to the absorption and utilization of other nourishment. Only when the body is supplied with sufficient lysine, the protein absorption and utilization of food can be enhanced, the nutrition can be balanced, and growth and development can be promoted.</p> <p>Lysine may adjust the balance of the human body metabolism. Lysine provides structural components for the synthesis of carnitine, which will lead to the synthesis of fatty acids in cells. Adding a small amount of lysine in foods will stimulate the secretion of pepsin and acid and improve the gastric secretion, which can enhance appetite and promote the growth and development of the infants. Lysine also increases absorption and accumulation of calcium in the body, accelerate bone growth. Lack of lysine may cause low gastric secretion, which will lead to anorexia and nutritional anemia, resulting in central nervous system disruption and dysplasia.</p>
<p>Tryptophan: promote the production of gastric and pancreatic juice</p> <p>Tryptophan can be converted to an important neurotransmitter in human brain---- 5 - hydroxy tryptamine, which can act as norepinephrine and epinephrine and can improve the sleep duration. When the content of 5 - HT decreases in the brain of an animal, the abnormal behavior, insanity hallucinations and insomnia will occur. In addition, 5 - HT has a strong effect of vasoconstriction. It may exist in many tissues, including platelets and intestinal mucosa cells. The injured organism will stanch bleeding by the release of 5 - HT. Tryptophan is often used as anti-nausea agent, anticonvulsant, gastric secretion regulator, gastric mucosal protection agent and strong anti-coma agent.</p>
<p>Phenylalanine:participate in eliminating the loss of the function of kidney and bladder</p> <p>Phenylalanine is one of the essential amino acids for human body. Ingested through food intake, some of the phenylalanine are used for protein synthesis, and the rest are converted into tyrosine in reaction with liver tyrosine hydroxylase, and then converted into other biologically active substances.</p>
<p>Methionine:the constituent of hemoglobin, tissue and serum with the function of promotion of the spleen, pancreas and lymph.</p> <p>Methionine is a sulfur-containing essential amino acid, closely related to the in-vivo metabolism of a variety of sulfur compounds. The lack of methionine will cause loss of appetite, growth-</p>

slowing or stagnation of weight-gaining, enlarged kidney and liver iron accumulation etc, then lead to liver necrosis or fibrosis.

Methionine can also methylate the toxics or drugs with its methyl to perform the function of detoxification. Thus, methionine can be used in the prevention and treatment of liver diseases such as chronic or acute hepatitis and cirrhosis, etc, and in the alleviation of the toxicity of harmful substances such as arsenic, chloroform, carbon tetrachloride, benzene, pyridine and quinoline and so on.

Threonine:has the function of converting of some kinds of amino acids to gain the balance.

Threonine has a hydroxyl in its structure, which retains water in human skin. Combining with the oligosaccharide chain, it plays an important role in protecting the cell membrane, and promotes in-vivo phospholipid synthesis and fatty acid oxidation. Its preparation has the medicinal function of enhancing human body development and resisting fatty liver, being a composition of the composite amino acid infusion. Meanwhile, threonine is the raw material to produce single-amide streptozotocina, an antibiotic with high efficiency and low allergenicity.

Isoleucine:participates in the regulation and metabolism of thymus, spleen and pituitary gland
Valine, leucine and isoleucine are branched-chain amino acids, and essential amino acids as well. Isoleucine can be used in the treatments of neurological disorders, loss of appetite and anemia, acting an important role in muscle protein metabolism.

Leucine:balances the isoleucine

Leucine can be used for the diagnosis and treatment of sudden hyperglycemia of children; it can also be used as therapeutic agents for dizziness and nutritional tonics.

Valine:acts on corpus luteum, galactophore and ovarian.

When valine is in a low level, the supply imbalance and dysfunction of central nervous system function of the rats will occur, which will result in limbs tremor. Anatomic slice of the brain tissue showed the red nucleus cell degeneration. Patients with advanced cirrhosis often contract high hyperinsulinemia due to the damage to the liver, and this result in the reduction of branched-chain amino acids in the blood. The ratio of branched-chain amino acids and aromatic amino acids decreases from the normal range of 3.0-3.5 to 1.0 -1.5. So the branched-chain amino acid injection such as valine is often used in the treatment of diseases as liver failure. In addition, it can also functions as a therapeutic agent accelerating the wound healing.

Histidine:Functions in metabolic regulation

The imidazole of histidine can form coordination compounds with Fe²⁺ or other ions, promoting the iron absorption. So histidine can be used in prevention of anemia. Histidine can reduce gastric acidity, ease the pain from gastrointestinal surgery, alleviate vomiting during pregnancy and burning sensation of the stomach, autonomic nervous inhibit the gastrointestinal ulcers caused by autonomic nervousness, and also be effective to allergic diseases such as asthma. In addition, due to its effect of dilating blood vessels and lowering blood pressure, histidine can be used for treatment of diseases such as angina and heart failure. The histidine content in the blood of patients with rheumatoid arthritis reduced significantly, but after the treatment of histidine, it is found that indicators including its grip strength, walking and erythrocyte sedimentation rate were improved. Adults can synthesize histamine, but children under 10 can not, so the requirement of histidine among children aged below 10 should be met by food supply.

Arginine:Promotes wound healing, sperm protein components

Arginine is an integral component in ornithine cycle, with extremely important physiological functions. Eating more arginine can increase the activity of arginase in liver and help converting ammonia in the blood into urea for excretion. Therefore, arginine is quite effective to diseases such as hyperammonemia and liver dysfunction.

Homocysteine:

Homocysteine is an amino acid that is produced as a degradation product in the human carbon cycle. Elevated values can cause damage to the blood vessels. A close relationship with premature senile dementia, the so-called Alzheimer's disease, is also being discussed.

Homocysteine has the psychological significance: lack of willingness to change destroys the joy of life.

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(Coenzyme) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Nicotinamide	2.074 - 3.309	2.017	
Biotin	1.833 - 2.979	0.997	
Pantothenic acid	1.116 - 2.101	1.549	
Folic acid	1.449 - 2.246	1.465	
Coenzyme Q10	0.831 - 1.588	0.743	
Glutathione	0.726 - 1.281	0.528	

Reference Standard: ■ Normal(-) ■ Mildly Abnormal(+)
■ Moderately Abnormal(++) ■ Severely Abnormal(+++)

Nicotinamide:	2.074-3.309(-) 0.626-1.348(++)	1.348-2.074(+) <0.626(+++)
Biotin:	1.833-2.979(-) 0.373-1.097(++)	1.097-1.833(+) <0.373(+++)
Pantothenic acid:	1.116-2.101(-) 0.432-0.809(++)	0.809-1.116(+) <0.432(+++)
Folic acid:	1.449-2.246(-) 1.243-1.325(++)	1.325-1.449(+) <1.243(+++)
Coenzyme Q10:	0.831-1.588(-) 0.418-0.627(++)	0.627-0.831(+) <0.418(+++)
Glutathione:	0.726-1.281(-) 0.171-0.476(++)	0.476-0.726(+) <0.171(+++)

Parameter Description
<p>Nicotinamide: Nicotinamide is an essential coenzyme in vivo, plays a role in the biological oxidation of hydrogen transfer, can activate a variety of enzyme systems, to promote nucleic acid, protein, polysaccharide synthesis and metabolism, increasing regulation and control of material transport and improve metabolism.</p>
<p>Biotin:</p>

It is the necessary material of synthesis of vitamin C, is essential to normal metabolism of fat and protein substances. It is necessary for the body's natural growth and to maintain normal body function as water-soluble vitamins; It is an essential fat and protein metabolism of the material, also to maintain normal growth, development and health of the necessary nutrients.

Pantothenic acid:

Participate in the manufacture of energy in the body, and can control fat metabolism. It is necessary for brain and nerve nutrient. Helps the body anti-stress hormones (steroids) secretion. To maintain healthy skin and hair.

Folic acid:

Folic acid is the necessary material of the body's use of sugars and amino acids, it is the necessary material of the body cell growth and reproduction. Lack of folic acid can cause giant cell anemia and leukopenia to the human body, also lead to physical weakness, irritability, loss of appetite, and psychiatric symptoms.

Coenzyme Q10:

Coenzyme Q10 is a fat-soluble antioxidant, coenzyme Q10 is indispensable to human life, one of the important elements that can activate the body's cells and energy nutrients, improve immunity, enhance anti-oxidation, anti-aging and enhance the vitality of the human body, etc. function. The total body content of coenzyme Q10 is only 500-1500mg and with the elderly and reduced. The organ in the human content of coenzyme Q10 in the age of 20 reached a peak and then rapidly decreased.

Glutathione:

Glutathione is composed of three amino acids peptide, exists in almost every cell of the body. Normal glutathione helps the body maintain a normal immune system function. Another major physiological role of glutathione is an important antioxidant in the body. It can rid the body of free radicals, clean and purify the human body, environmental pollution, thus enhancing people's health.

The test results for reference only and not as a diagnostic conclusion.

(Essential Fatty Acid) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Linoleic acid	0.642 - 0.985	0.622	
α -Linolenic acid	0.814 - 1.202	0.99	
γ -Linolenic acid	0.921 - 1.334	0.781	
Arachidonic acid	0.661 - 0.808	0.479	

Reference Standard: ■ Normal(-) ■ Mildly Abnormal(+) ■ Moderately Abnormal(++) ■ Severely Abnormal(+++)

Linoleic acid:	0.642-0.985(-) 0.195-0.356(++)	0.356-0.642(+) <0.195(+++)
α -Linolenic acid:	0.814-1.202(-) 0.347-0.502(++)	0.502-0.814(+) <0.347(+++)
γ -Linolenic acid:	0.921-1.334(-) 0.310-0.623(++)	0.623-0.921(+) <0.310(+++)
Arachidonic acid:	0.661-0.808(-) 0.283-0.478(++)	0.478-0.661(+) <0.283(+++)

Parameter Description
<p>Linoleic acid: Linoleic acid is an essential fatty acid, the effect on the human body mainly in: softening cardiovascular, promote blood circulation, lowering blood pressure, promote metabolism, endocrine regulation and slow aging and so on. Can serve to prevent human serum cholesterol deposition in the vessel wall, the [vascular scavenger] in the world, has the effect of prevention and treatment of atherosclerosis and cardiovascular disease.</p>
<p>α-Linolenic acid: Once the body lacks, that will lead from the body's lipid metabolism, resulting in reduced immunity, forgetfulness, fatigue, vision loss, the occurrence of atherosclerosis and other symptoms.</p>
<p>γ-Linolenic acid: γ-Linolenic acid is a structural material of human tissues and biological membranes, is a precursor of prostaglandin synthesis. Metabolic conversion of linoleic acid generated by the adult daily requirement is about 36mg / kg. Such as inadequate intake can cause the body function disorder, cause certain diseases, such as diabetes, high cholesterol and so on.</p>
<p>Arachidonic acid:</p>

Important material of human brain and optic nerve development, to improve intelligence and enhanced visual acuity has an important role. At the same time the structure of lipids in the blood, liver, muscle and other organ systems as phospholipid binding plays an important role, having esterified cholesterol, increasing the elasticity, reduce blood viscosity, regulation of blood cell function and a series of physiological activity.

The test results for reference only and not as a diagnostic conclusion.

(ADHD) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
An oxygen-hydroxy phenyl ethanol	1.163 - 2.206	2.162	
GE neurotransmitters	0.753 - 0.972	0.743	
Vanilloid	0.232 - 0.981	0.725	
Creatine hormone	0.150 - 0.240	0.216	

The test results for reference only and not as a diagnostic conclusion.

(Adolescent Intelligence) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Observation	7.432 - 9.476	6.508	
Memory	6.128 - 7.455	5.059	
Imagination	7.143 - 9.215	8.756	
Creativity	5.361 - 7.644	3.7	
Analysis and Judgment	8.423 - 10.217	9.055	
Thinking Ability	6.714 - 8.989	5.657	
Resilience	8.248 - 11.818	11.671	
Reasoning Ability	5.637 - 7.714	5.931	

Reference Standard: ■ Normal(-) ■ Mildly Abnormal(+)
■ Moderately Abnormal(++) ■ Severely Abnormal(+++)

Observation:	7.432-9.476(-) 3.426-5.474(++)	5.474-7.432(+) <3.426(+++)
Memory:	6.128-7.455(-) 3.075-4.697(++)	4.697-6.128(+) <3.075(+++)
Imagination:	7.143-9.215(-) 2.951-5.082(++)	5.082-7.143(+) <2.951(+++)
Creativity:	5.361-7.644(-) 1.145-3.108(++)	3.108-5.361(+) <1.145(+++)
Analysis and Judgment:	8.423-10.217(-) 4.516-6.623(++)	6.623-8.423(+) <4.516(+++)
Thinking Ability:	6.714-8.989(-) 2.073-4.477(++)	4.477-6.714(+) <2.073(+++)
Resilience:	8.248-11.818(-) 2.629-5.176(++)	5.176-8.248(+) <2.629(+++)
Reasoning Ability:	5.637-7.714(-) 1.213-3.437(++)	3.437-5.637(+) <1.213(+++)

The test results for reference only and not as a diagnostic conclusion.

(Adolescent Growth Index) Analysis Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Height and body mass index	4.439 - 5.847	5.15	
Height bust index	4.126 - 5.457	2.983	
Height sitting height index	3.346 - 4.215	2.68	
BMI index	4.679 - 5.648	4.624	
Grip and back muscle index	5.421 - 6.714	4.979	
Vital capacity index	4.512 - 6.382	4.581	

Reference Standard:

Normal(-)	Mildly Abnormal(+)
Moderately Abnormal (++)	Severely Abnormal (+++)

Height and body mass index:	4.439-5.847(-)	3.247-4.439(+)
	1.921-3.247(++)	<1.921(+++)
Height bust index:	4.126-5.457(-)	2.897-4.126(+)
	1.573-2.897(++)	<1.573(+++)
Height sitting height index:	3.346-4.215(-)	2.485-3.346(+)
	1.656-2.485(++)	<1.656(+++)
BMI index:	4.679-5.648(-)	3.509-4.679(+)
	2.247-3.509(++)	<2.247(+++)
Grip and back muscle index:	5.421-6.714(-)	4.262-5.421(+)
	3.051-4.262(++)	<3.051(+++)
Vital capacity index:	4.512-6.382(-)	2.765-4.512(+)
	0.971-2.765(++)	<0.971(+++)

Parameter Description
<p>Height and body mass index: It means the weight of the unit height, which reflects the human body's fullness and also reflects the nutritional status.</p>

Height bust index:

Reflects the development of the thorax to reflect the body shape.

Height sitting height index:

Through the ratio of sitting height to height, it reflects the proportional relationship between the human body and the lower limbs, reflecting the body characteristics. According to the size of the index, the individual body shape can be divided into a long body shape, a middle body type and a short body type.

BMI index:

Also known as the body mass index. In recent years, it has been highly valued by scholars at home and abroad. It is believed that it can not only reflect the body's fullness and body fatness, but also be less affected by height. It is related to the thickness of the sebum and the upper arm circumference. Also high. The established 'BMI overweight and obesity gender-age screening criteria' for school-age children and adolescents in China is the specific application of BMI in the field of children's growth and development. At the age of 18, the index is ≥ 24 and ≥ 28 , which can be screened as overweight and obesity, respectively.

Grip and back muscle index:

Both use the close relationship between muscle strength and body weight, and use the weight of the unit weight and the strength of the back muscle to correct the weight, respectively, showing the muscle strength of the upper arm and the lower back, which is more comparable than the original index.

Vital capacity index:

Using the close relationship between vital capacity and body weight and height, the lung capacity is corrected by unit weight or height to more accurately reflect the body's lung ventilation capacity.

The test results for reference only and not as a diagnostic conclusion.

(Lecithin) Analysis Report Card

Name: amir







Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Phospholipid index	3.654 - 4.478	4.049	
Sphingolipid index	3.121 - 3.853	2.455	
Sphingomyelin index	3.341 - 4.214	4.014	
Lecithin index	4.365 - 5.142	5.038	
Brain phospholipid index	4.225 - 5.713	3.835	
Liposomal index	3.112 - 4.081	4.06	

Reference Standard: ■ Normal(-) ■ Mildly Abnormal(+) ■ Moderately Abnormal(++) ■ Severely Abnormal(+++)

Phospholipid index:	3.654-4.478(-) 1.326-2.458(++)	2.458-3.654(+) <1.326(+++)
Sphingolipid index:	3.121-3.853(-) 1.374-2.297(++)	2.297-3.121(+) <1.374(+++)
Sphingomyelin index:	3.341-4.214(-) 0.982-2.084(++)	2.084-3.341(+) <0.982(+++)
Lecithin index:	4.065-5.142(-) 1.747-2.904(++)	2.904-4.065(+) <1.747(+++)
Brain phospholipid index:	4.225-5.713(-) 2.113-3.728(++)	3.728-4.225(+) <2.113(+++)
Liposomal index:	3.112-4.081(-) 0.871-2.072(++)	2.072-3.112(+) <0.871(+++)

Parameter Description
<p>Phospholipid index: Phospholipids, which are phospholipid-containing lipid compounds, are life-based substances. Phospholipids also have the effect of promoting fat metabolism, preventing fatty liver, lowering serum cholesterol, improving blood circulation, and preventing cardiovascular diseases.</p>
<p>Sphingolipid index:</p>

Sphingolipids are generally found in plant and animal membranes, especially in tissues of the central nervous system. Excessive accumulation of sphingolipids in tissues can seriously affect the central nervous system and even life-threatening.

Sphingomyelin index:

Sphingomyelin is a major component of animal cell membranes and various other biofilms.

Lecithin index:

Lecithin, also known as lecithin, is known as the third nutrient alongside protein and vitamins.

Brain phospholipid index:

Cerebral phospholipid is an excellent natural active agent with unique biological activity and physiological functions, and is non-toxic, non-irritating and does not pollute the environment.

Liposomal index:

The liposome is a liposome prepared from lecithin, ceramide, etc., and has a bilayer structure which is identical to the structure of the skin cell membrane and has an excellent moisturizing effect on the skin.

The test results for reference only and not as a diagnostic conclusion.

(Fatty acid) Analysis Report Card

Name: amir





Sex: Male

Age: 6





Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Saturated fatty acid index	1.334 - 2.407	2.338	
Unsaturated fatty acid index	2.224 - 3.153	1.926	
Essential fatty acid index	2.144 - 3.238	2.161	
Triglyceride index	3.361 - 4.644	3.541	

Reference Standard:

 Normal(-)	 Mildly Abnormal(+)
 Moderately Abnormal (++)	 Severely Abnormal (+++)

Saturated fatty acid index:	1.334-2.407(-) 0.792-1.047(++)	1.047-1.334(+) <0.792(+++)
Unsaturated fatty acid index:	2.224-3.153(-) 1.071-1.597(++)	1.597-2.224(+) <1.071(+++)
Essential fatty acid index:	2.144-3.238(-) 1.054-1.889(++)	1.889-2.144(+) <1.054(+++)
Triglyceride index:	3.361-4.644(-) 1.347-2.101(++)	2.101-3.361(+) <1.347(+++)

Parameter Description
<p>Saturated fatty acid index: Saturated fatty acids are fatty acids containing saturated bonds. Dietary saturated fatty acids are mostly found in animal fats and milk fats. High intake of saturated fatty acids is the main cause of elevated blood cholesterol, triglyceride, and low-density lipoprotein cholesterol. It causes secondary arterial stenosis and formation of arteries. Atherosclerosis increases the risk of coronary heart disease.</p>
<p>Unsaturated fatty acid index: Unsaturated fatty acids are fatty acids that make up body fat and are indispensable fatty acids in the human body. Unsaturated fatty acids play a significant role in the metabolism of blood lipids, in promoting brain function, in maintaining and improving vision.</p>
<p>Essential fatty acid index: Essential fatty acids are essential for life activities of the body, but the body itself cannot synthesize polyunsaturated fatty acids that must be supplied by food. Essential fatty acids not only attract moisture to moisturize skin cells, but also prevent water loss.</p>

Triglyceride index:

Triglycerides are fat molecules formed by long-chain fatty acids and glycerol, and are the most abundant lipids in the human body. Triglycerides are an independent risk factor for coronary heart disease. High levels of triglycerides also include high blood pressure, gallstones, pancreatitis, senile dementia, male sexual dysfunction, and increased hepatitis.

The test results for reference only and not as a diagnostic conclusion.

Comprehensive Report Card

Name: amir

Sex: Male

Age: 6

Figure: 115cm, 22kg

Testing Time: 10/23/2023 20:21

About the problems of sub-health trends

System	Testing Item	Normal Range	Actual Measurement Value
Vitamin	Vitamin A	0.346 - 0.401	0.31
	Vitamin B3	14.477-21.348	12.395
	Vitamin C	4.543 - 5.023	3.538
	Vitamin E	4.826 - 6.013	4.128
	Expert advice	Supplement corresponding lacking trace elements by using a variety of foods, or by using through drugs or health products, if necessary.	
Amino Acid	Tryptophan	4.978 - 6.289	2.843
	Expert advice	Comparison of amino acid-rich foods are fish, such as cuttlefish, octopus, eel, loach, sea cucumber, squid, silkworm, chicken, frozen tofu, seaweed and so on. In addition, like beans, legumes, peanuts, almonds or bananas and other amino acids than more.	
Coenzyme	Biotin	1.833 - 2.979	0.997
	Expert advice	Supplement corresponding lacking trace elements by using a variety of foods, or by using through drugs or health products, if necessary.	

The test results for reference only and not as a diagnostic conclusion.