

(Blood Circulation System) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Blood Viscosity	48.264 - 65.371	65.89	
Total Cholesterol	56.749 - 67.522	70.125	
Blood Fat	0.481 - 1.043	1.239	
Vascular Resistance	0.327 - 0.937	1.813	
Vascular Elasticity	1.672 - 1.978	1.171	
High Density Lipoprotein	1.449 - 2.246	2.466	
Low Density Lipoprotein	0.831 - 1.588	1.532	
Triglyceride content of abnormal coefficient	1.341 - 1.991	1.67	

Reference Standard:

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

Blood Viscosity:	48.264-65.371(-) 69.645-73.673(++)	65.371-69.645(+) >73.673(+++)
Total Cholesterol:	56.749-67.522(-) 69.447-74.927(++)	67.522-69.447(+) >74.927(+++)
Blood Fat:	0.481-1.043(-) 1.669-1.892(++)	1.043-1.669(+) >1.892(+++)
Vascular Resistance:	0.327-0.937(-) 1.543-1.857(++)	0.937-1.543(+) >1.857(+++)
Vascular Elasticity:	1.672-1.978(-) 1.511-1.047(++)	1.672-1.511(+) <1.047(+++)
High Density Lipoprotein:	1.449-2.246(-) 3.449-5.325(++)	2.246-3.449(+) >5.325(+++)
Low Density Lipoprotein:	0.831-1.588(-) 0.327-0.715(++)	0.715-0.831(+) <0.327(+++)

Triglyceride content of abnormal coefficient:	1.341-1.991(-)	1.991-3.568(+)
	3.568-5.621(++)	>5.621(+++)

Parameter Description
<p>Blood Viscosity(N): The basic indicator of Hemorheology refers to the internal friction among blood molecules. Hyperviscosity state: Namely, the viscosity of blood is high, and blood flow is affected. Therefore, high blood pressure patients with high viscosity are prone to have cerebrovascular accidents, such as stroke and other phenomena; coronary heart disease patients with high viscosity are prone to have myocardial infarction and so on. The blood flow in the blood vessels is in a laminar flow state, which is stratified flow. The flow velocity close to the vessel wall is slower, and the flow velocity is fastest in the middle. Thus, the larger the shear rate is, the greater the slope is, the greater the shear stress is, the faster the flow velocity is, and the lower the N is. The smaller the shear rate is, the lower the slope is, the smaller the shear stress is, the lower the flow velocity is, and the higher the N is.</p>
<p>Total Cholesterol: When the total cholesterol is high, it will form a hardened plate in the arteries of the animal. As the hardened plate increases, the artery gradually becomes narrow and even blocked, and the artery is mainly responsible for loose oxygen and nutrients in various tissues of the animal, so that once the body tissues cannot be Timely access to nutrition and oxygen can cause illnesses such as myocardial ischemia, angina, and cerebral infarction.</p>
<p>Blood Fat: Blood fat abnormality is divided into primary abnormality and secondary abnormality. 1. Primary Hyperlipoproteinemia: refers to hyperlipoproteinemia caused by the possibility of unknown cause related to certain environmental factors (including diet, nutrition, drugs, etc.), or gene mutations. 2. Secondary Hyperlipoproteinemia: refers to hyperlipidemia caused by certain systemic diseases or drugs, such as hyperlipidemia caused by diabetes, hypothyroidism, nephrotic syndrome, chronic renal failure and acute renal failure and so on.</p>
<p>Vascular Resistance: Vascular resistance, the total resistance to blood flow in the vascular system, occurs mostly in small arteries, especially the arterioles. Contraction and relaxation of arterioles and arterioles can significantly affect blood flow in organs and tissues.</p>
<p>Vascular Elasticity: Refers to the expansion extent of arterial vascular elasticity during systolic ejection. Influence Factors: (1) The size of SV. The greater the SV is, the greater the FEK is. (2) Emptying rate. The faster the emptying rate is, the smaller the FEK is. (3) Bad vascular elasticity. The SV is not low, the emptying rate is not fast, and the FEK is also small, so it is possible to determine the possibility of hardening of blood vessels. It should not determine the possibility by a single parameter. The increase of vascular elasticity is seen in the mildly elevated systolic blood pressure, the mildly reduced diastolic blood pressure, the mildly increased pulse press and slightly higher blood pressure.</p>
<p>High Density Lipoprotein: HDL (High Density Lipoprotein) is the 'good cholesterol' because it protects the vessel walls from fatty deposits. An increased HLD value therefore means a lower risk of arteriosclerosis.</p>
<p>Low Density Lipoprotein: LDL (Low Density Lipoprotein) is a transport protein for cholesterol. It is referred to as 'the bad cholesterol' because it is deposited in an oversupply of vessel walls and increases the risk of</p>

atherosclerosis.

Triglyceride content of abnormal coefficient:

Day consumption of caloric over consumption of energy required divided by the liver and muscle glycogen in the form of storage, almost completely converted to fat and store in the library of body fat, mainly triglycerides, due to limited glycogen reserves. Therefore, fat as the major storage form of body heat. Such as recurrent excessive intake of neutral fat and carbohydrates, fat synthesis accelerated as the external causes of obesity.

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









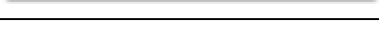
(Gastrointestinal Function) Analysis Report Card

Name: Kitty
Weight: 3kg





Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Pepsin Secretion Coefficient	59.847 - 65.234	57.501	
Gastric Peristalsis Function Coefficient	58.425 - 61.213	58.505	
Gastric Absorption Function Coefficient	34.367 - 35.642	31.338	
Small Intestine Peristalsis Function Coefficient	133.437 - 140.476	132.633	
Small Intestine Absorption Function Coefficient	3.572 - 6.483	2.757	
Large intestine peristalsis function coefficient	4.572 - 6.483	3.421	
Colonic absorption coefficient	2.946 - 3.815	3.435	
Intestinal bacteria coefficient	1.734 - 2.621	1.584	
Intraluminal pressure coefficient	1.173 - 2.297	2.76	

Reference Standard:

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

Pepsin Secretion Coefficient:	59.847-65.234(-) 55.347-58.236(++)	58.236-59.847(+) <55.347(+++)
Gastric Peristalsis Function Coefficient:	58.425-61.213(-) 53.103-56.729(++)	56.729-58.425(+) <53.103(+++)
Gastric Absorption Function Coefficient:	34.367-35.642(-) 28.203-31.467(++)	31.467-34.367(+) <28.203(+++)
Small Intestine Peristalsis Function Coefficient:	133.437-140.476(-) 124.321-126.749(++)	126.749-133.437(+) <124.321(+++)
Small Intestine Absorption Function Coefficient:	3.572-6.483(-) 2.203-3.109(++)	3.109-3.572(+) <2.203(+++)

Large intestine peristalsis function coefficient:	4.572-6.483(-) 2.031-3.249(++)	3.249-4.572(+) <2.031(+++)
Colonic absorption coefficient:	2.946-3.815(-) 0.803-1.775(++)	1.775-2.946(+) <0.803(+++)
Intestinal bacteria coefficient:	1.734-2.621(-) 0.237-1.046(++)	1.046-1.734(+) <0.237(+++)
Intraluminal pressure coefficient:	1.173-2.297(-) 3.341-4.519(++)	2.297-3.341(+) >4.519(+++)

Parameter Description
<p>Pepsin Secretion Coefficient:</p> <p>The stomach has two kinds of duct glands, wherein one is gastric gland which mainly secretes digestive juice and the other is cardiac gland which mainly secretes mucus to protect the mucosa of the cardia. The gastric gland is consist of three kinds of cells: mucous neck cells, chief cells and parietal cells, wherein the mucous neck cells secrete mucus and are located on the surface and below the cortex; the chief cells secrete digestive juice and are located in the middle of the glands and below the neck mucous cells, and the digestive juice mainly includes pepsin; the parietal cells secrete hydrochloric acid, namely the so-called gastric acid, and they are located at the bottom of stomach closing to the cardia, containing many small ducts communicated with the glandular cavity.</p>
<p>Gastric Peristalsis Function Coefficient:</p> <p>There are oblique, circular and longitudinal smooth muscles on the gastric wall, and their contraction and relaxation make the stomach have the capability of peristalsis. Gastric peristalsis grinds the food for further processing as well as the role of gastric juice to make food into a gruel kind of chyme, and then the chime are ejected in the small intestines in batches through the pylorus. The time of processing food in the stomach is different. The processing time of carbohydrate foods is shorter than that of protein foods, and the processing time of fat and oil foods is longest, so we are not easy to hunger after eating meat and oily foods. The food is preliminarily digested by the gastric motion (peristalsis) and gastric juice (mucus, gastric acid, protease, etc.) secreted by the stomach to form a paste (chyme), and then enters the small intestines (including: duodenum, jejunum and ileum) after eating about 3-4 hours.</p>
<p>Gastric Absorption Function Coefficient:</p> <p>The gastric gland in gastric mucosa secretes a kind of colorless and transparent acidic gastric juice. Gastric juice contains three main components, namely, pepsin, hydrochloric acid and mucus. The pepsin can decompose proteins in food into proteose and protease with smaller molecules. Hydrochloric acid is gastric acid. Gastric acid can change protease with no activity into active pepsin and create a suitable acidic environment for pepsin, having the function for killing bacteria entering into the stomach with food. Gastric acid can stimulate the secretion of pancreatic juice, bile and small intestinal fluid after entering into the small intestines. The acidic environment caused by the gastric acid can help the small intestines absorb iron and calcium. With the role of lubrication, gastric mucus can reduce the damage of food for gastric mucosa and can also reduce the erosion of gastric acid and pepsin for gastric mucosa, having a protective effect for stomach.</p>
<p>Small Intestine Peristalsis Function Coefficient:</p> <p>Small intestine peristalsis is in a unique movement style, being an alternating motion of rhythmic contraction and relaxation with circular muscle as the main.</p> <p>Function: it promotes chyme and digestive juice to be fully mixed for chemical digestion; it makes chyme close to the intestine wall to promote absorption; it squeezes the intestine wall to promote reflux of blood and lymph.</p>

Small Intestine Absorption Function Coefficient:

- (1) The absorption of sugar: the sugar is generally decomposed into simple sugar to be absorbed, and only a small amount of biose is absorbed.
- (2) The absorption of protein: 50-100 grams of amino acids and a small amount of dipeptides and tripeptides are absorbed each day.
- (3) The absorption of fat: mixed small micelles are transported to arrive in microvilli, bile salts remain in the intestine, and fat digestion products (fatty acids, monoglyceride, cholesterol and lysolecithin) are diffused into the cells. The middle and short-chain fatty acids (<10-12C) do not need to be esterified, and can be directly diffused into the capillaries of villi. Other fat digestion products are esterified in smooth endoplasmic reticulum to form triglycerides (long-chain fatty acids + glyceride), cholesterol ester and lecithin to combine with the apoprotein / apolipoprotein (synthesized by intestinal epithelial cells) into chylomicrons; the chylomicrons are packaged into secretory granules in the GC for exocytosis to enter into the thoracic duct, then are absorbed by the lymphatic vessel and finally enter the blood circulation.
- (4) The absorption of water: the water is passively absorbed by osmotic pressure gradient formed by the absorption of nutrients and electrolytes in the intestine (osmosis).

Large intestine peristalsis function coefficient:

Large intestine has similar segmental motion and peristalsis with the small intestine, but its frequency is slower, this adapts the large intestine is mainly a function of absorbing water and temporary storage of manure. If the intestinal peristalsis speed is too slow, fecal moisture is excessive absorption and will cause constipation, its main performance is: reduction in stool frequency, stool weight reduction, dry stool, defecation exertion.

Colonic absorption coefficient:

The absorption function of the colon is the absorption of water and electrolytes, and can adjust the electrolyte concentration. Some of the fat hydrolysis products can also be colon, especially the absorption cell of the ascending colon, the formation of chylomicrons in cells, release to the lamina propria. Each part of colon absorption ability is of different sizes, right (L) the maximum absorption capacity of colon, transverse colon, descending colon. Pathological factors such as colitis, will reduce the absorption of water and sodium ion of colon.

Intestinal bacteria coefficient:

Intestinal bacteria can cause acidic environment intestinal, conducive to the growth of their own, at the same time control the growth of harmful bacteria, keep beneficial intestinal health. In normal human body beneficial and harmful bacteria can balance, once out of balance, the disease will be waiting in the wings. In the cold, diarrhea, constipation, peptic ulcer, cirrhosis patients, the phenomenon that the intestinal bacteria reduced and harmful bacteria is relatively increased can be found.

Intraluminal pressure coefficient:

Intestinal flatulence can be caused by the followings:

- 1) food fermentation under normal circumstances, there is a large number of bacteria exist in the lower ileum and colon, if the chyme in the intestine, for some reason, long time of residence, under the action of bacteria, can cause the chyme fermentation, produce large amounts of gas, cause abdominal distension.
- 2) inhaled air
- 3) intestinal gas absorption barrier , under normal circumstances, most of the gas within the abdominal cavity, the intestinal vascular absorption, the lungs in vitro. Some diseases, intestinal blood circulation disorder, effect of intraluminal gas absorption, causing bloating.
- 4) intestinal gas exhaust obstacle for some reason, intestinal peristalsis weaken or disappear, so the gas from the intestinal lumen row not in vitro, thus cause abdominal distension.

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

(Hepatobiliary Function) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Protein Metabolism	116.34 - 220.621	100.627	
Energy Production Function	0.713 - 0.992	.707	
Detoxification Function	0.202 - 0.991	.386	
Liver Fat Content	0.097 - 0.419	.359	
Bile Secretion Function	0.432 - 0.826	.423	
Total Bilirubin (TBIL)	0.253 - 0.659	.398	
Serum Total Bile Acid (TBA)	0.442 - 0.817	.45	

Reference Standard:

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

Protein Metabolism:	116.34-220.621(-) 60.23-90.36(++)	90.36-116.34(+) <60.23(+++)
Energy Production Function:	0.713-0.992(-) 0.381-0.475(++)	0.475-0.713(+) <0.381(+++)
Detoxification Function:	0.202-0.991(-) 0.043-0.094(++)	0.094-0.202(+) <0.043(+++)
Liver Fat Content:	0.097-0.419(-) 0.582-0.692(++)	0.419-0.582(+) >0.692(+++)
Bile Secretion Function:	0.432-0.826(-) 0.132-0.358(++)	0.358-0.432(+) <0.132(+++)
Total Bilirubin (TBIL):	0.253-0.659(-) 0.053-0.115(++)	0.115-0.253(+) <0.053(+++)
Serum Total Bile Acid (TBA):	0.442-0.817(-) 0.169-0.262(++)	0.262-0.442(+) <0.169(+++)

Parameter Description
<p>Protein Metabolism:</p> <p>Protein in food is digested and absorbed by the intestinal tract to be sent to the liver for conversion and reorganization, different types of amino acids are metabolized to manufacture a variety of proteins for the need of cells according to the body's need. In addition, the liver will decompose the useless protein into amino acids, and then the amino acids are further changed into urea to be excreted by the kidney or intestinal tract.</p>
<p>Energy Production Function:</p> <p>After carbohydrates are digested, the liver will carry out powdered sugar metabolism to produce energy for the need of cells and then convert overmuch powdered sugar into glycogen for storage. After fatty foods are digested, the liver will further convert fat into energy.</p>
<p>Detoxification Function:</p> <p>Food will produce some toxins in the digestive process and the metabolism process. The liver as well as detoxifying enzymes carry out detoxification to decompose the hazardous substances (alcohol and ammonia) into harmless substances (such as urea, water and carbon dioxide) to be excreted out of the body.</p>
<p>Liver Fat Content:</p> <p>If the liver fat content is more than 5% of wet weight or over 1/3 liver cells of per unit area on liver biopsy have lipid droplets under a microscope, the liver is called as a fatty liver. The fatty liver is also known as liver fatty degeneration which refers to fat accumulation in liver cells due to a variety of causes.</p> <p>What are the symptoms of fatty liver? The animal with mild fatty liver can have no any discomfort. The patients with moderate or severe fatty liver can have loss of appetite, fatigue, nausea, vomiting, abdominal distension, diarrhea, liver pain and other symptoms.</p>
<p>Bile Secretion Function:</p> <p>Bile is the end product of metabolism in the liver, which has the role of fat digestion and promotes the body to absorb fat-soluble vitamins A, D, E and K. The overmuch bile will be sent to gallbladder for standby.</p>
<p>Total Bilirubin (TBIL):</p> <p>Total bilirubin is the sum of direct bilirubin and indirect bilirubin. Indirect bilirubin refers to bilirubin that does not bind to glucuronic acid. Indirect bilirubin is difficult to dissolve in water and cannot be excreted through the kidneys. Indirect bilirubin is converted in hepatocytes and combines with glucuronic acid to form direct bilirubin (binding bilirubin). Direct bilirubin is soluble in water and can be excreted from the kidneys through the kidneys. The liver plays an important role in the metabolism of bilirubin, including the process of hepatocyte uptake, binding and excretion of unconjugated bilirubin in the blood. Any one of the processes may cause bilirubin to accumulate in the blood, there is jaundice.</p>
<p>Serum Total Bile Acid (TBA):</p> <p>Serum total bile acid is the final product of cholesterol catabolism in the liver and is closely related to the absorption, metabolism and regulation of cholesterol. When hepatocytes develop lesions or blockages inside and outside the liver, bile acid metabolism occurs and the blood flows into the blood, and the serum total bile acid concentration increases. Therefore, changes in total bile acid levels can be sensitive to liver function.</p>

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




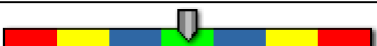
(Kidney Function) Analysis Report Card

Name: Kitty
Weight: 3kg





Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Urobilinogen Index	2.762 - 5.424	6.436	
Uric acid Index	1.435 - 1.987	1.592	
Blood urea nitrogen(BUN) Index	4.725 - 8.631	10.203	
Proteinuria Index	1.571 - 4.079	3.378	

Reference Standard:

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

Urobilinogen Index:	2.762-5.424(-) 6.826-8.232(++)	5.424-6.826(+) >8.232(+++)
Uric acid Index:	1.435-1.987(-) 2.544-3.281(++)	1.987-2.544(+) >3.281(+++)
Blood urea nitrogen(BUN) Index:	4.725-8.631(-) 10.327-12.154(++)	8.631-10.327(+) >12.154(+++)
Proteinuria Index:	1.571-4.079(-) 5.218-6.443(++)	4.079-5.218(+) >6.443(+++)

Parameter Description
<p>Urobilinogen Index: Urobilinogen is a colourless product of bilirubin reduction. It is formed in the intestines by bacterial action. Some urobilinogen is reabsorbed, taken up into the circulation and excreted by the kidney. Most of urobilinogen will be excreted along with feces, and other part will be absorbed by the liver reback to the intestinal, then from the liver enter into the kidney or the blood and excret out together with the urine. There will form Urobilinogen after exposure to the air.</p>
<p>Uric acid Index: Uric acid concentrations in blood plasma above and below the normal range are known, respectively, as hyperuricemia and hypouricemia. Most uric acid dissolves in blood and travels to the kidneys, where it passes out in urine. Some animal develop gout, kidney stones or kidney failure due to high uric acid levels. A high uric acid level may appear prior to the development of high blood pressure, heart disease or chronic kidney disease.</p>
<p>Blood urea nitrogen(BUN) Index: Blood urea nitrogen (BUN) measures the amount of urea nitrogen, a waste product of protein</p>

metabolism, in the blood. Urea is formed by the liver and carried by the blood to the kidneys for excretion. The amino acid deamination produces NH_3 and CO_2 , and which synthesis to urea in the liver. Per gram of protein metabolism of urea is 0.3g. The nitrogen have almost half content of 28/26 in the urea. Diseased or damaged kidneys cause an elevated BUN because the kidneys are less able to clear urea from the bloodstream. In conditions in which renal perfusion is decreased, such as hypovolemic shock or congestive heart failure, BUN levels rise.

Proteinuria Index:

There always have a certain amount of essential for animal life activeites protein in the blood. A part of proteins will be filtered by sphere in the kidney and enter into the urine, but it may be absorbed in the renal tubules reback to the blood. Therefore, if the function of the kidneys is normal, the protein in the urine just has a little. However, when the kidneys and catherter leakage arises obstacles that will have a large amount of protein become to proteinuria. It's normal that have trace protein in the healthy animal urine, and the normal range defined as negative. When the protein in urine up to more than 0.15g/24h, called proteinuria, and this can be as a positive qualitative urine.

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








(Skeletal System) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Degree of Cervical Calcification	421 - 490	479.209	
Degree of Lumbar Calcification	4.326 - 7.531	7.504	
Osteoporosis Coefficient	2.019 - 4.721	6.019	
Osteoclast Coefficient	86.73 - 180.97	149.162	
Amount of Calcium Loss	0.209 - 0.751	.419	
Degree of Bone Hyperplasia	0.046 - 0.167	.524	
Bone Mineral Density	0.796 - 0.433	.188	

Reference Standard:

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

Degree of Cervical Calcification:	421-490(-)	490-510(+)
	510-540(++)	>540(+++)
Degree of Lumbar Calcification:	4.326-7.531(-)	7.531-8.214(+)
	8.214-9.137(++)	>9.137(+++)
Osteoporosis Coefficient:	2.019-4.721(-)	4.721-5.174(+)
	5.174-6.247(++)	>6.247(+++)
Osteoclast Coefficient:	86.73-180.97(-)	180.97-190.37(+)
	190.37-203.99(++)	>203.99(+++)
Amount of Calcium Loss:	0.209-0.751(-)	0.751-0.844(+)
	0.844-0.987(++)	>0.987(+++)
Degree of Bone Hyperplasia:	0.046-0.167(-)	0.167-0.457(+)
	0.457-0.989(++)	>0.989(+++)
Bone Mineral Density:	0.796-0.433(-)	0.433-0.212(+)
	0.165-0.212(++)	<0.165(+++)

Parameter Description
<p>Degree of Cervical Calcification:</p> <p>It shows the size of deposition rate of cervical bone hyperplasia. No calcification means there is no hyperplasia, basic calcification means the rate of hyperplasia reaches over 30%, and calcification means the rate of hyperplasia reaches over 70%.</p>
<p>Degree of Lumbar Calcification:</p> <p>It shows the size of deposition rate of lumbar bone hyperplasia. No calcification means there is no hyperplasia, basic calcification means the rate of hyperplasia reaches over 30%, and calcification means the rate of hyperplasia reaches over 70%.</p>
<p>Osteoporosis Coefficient:</p> <p>It is a phenomenon of bone reduction of the whole body. It is mainly showed that the content of bone matrix is significantly reduced, while the components of minerals (mainly containing calcium and phosphorus) in the bone are basically normal. In other words, in osteoporosis, the content of protein and other organic substances and water in the bone are decreased, and the content of calcium, phosphorus and other minerals are at the normal level. The bone matrix plays the role of support and connection between calcium, phosphorus and other minerals. Thus, if the bone matrix is reduced, the gaps among the minerals are increased, being expressed as osteoporosis. With the progress of osteoporosis, calcium, phosphorus and other minerals in the bone will also be constantly lost and reduced, and therefore the bone matrix and minerals of the bone are decreased.</p>
<p>Osteoclast Coefficient:</p> <p>Osteoclast consists of multinuclear giant cells that reach a diameter of 100μm, contain 2 ~ 50 nuclei and are mainly distributed in the bone surface and around bone vascular access. The osteoclasts whose number is less are combined by several single-nucleated cells, the basophilia of cytoplasm is aged following with the cells to be gradually changed to be eosinophilic.</p> <p>Osteoclast has a special absorption function. In absorbing some local inflammatory lesions, macrophages are also involved in the process of bone resorption. In the process of osteoclasts absorbing organic matters and mineral in bone matrix, the surface of matrix becomes irregular to form lacuna in a similar shape of cells, and the lacuna is called as howship. On the side toward the bone in the howship, the cells protrude a lot of hair-like protrusions which are like the longitudinal profile border and the brush border of the surface of epithelial cells. Under the electron microscope, one side close to the bone has many irregular microvilli, namely cell protrusions, being called as ruffled border. There is a circular cytoplasmic zone on the periphery of the ruffled border zone. The cytoplasmic zone contains some microfilament but lacks of other organelles, being known as clear zone where the cell membrane is smooth and is close to the bone surface. The clear zone is like a bounding wall consisting of cytoplasm and makes the surrounded area form a micro-environment. Osteoclast releases lactic acids, citric acids and others to the part. Under the acidic condition, the bone inorganic minerals are in pinocytosis from the ruffled border to form some pinocytotic vesicles or phagosomes in ruffled border matrix. In the osteoclast, the inorganic objects are degraded to be expelled into the blood stream in the form of calcium ions. The loss of inorganic objects makes collagen fibers in the bone matrix exposed. Osteoclast secretes a variety of lysosomal enzymes, especially cathepsin B and collagenolytic cathepsin. After osteoclasts leave from the bone surface, the ruffled border disappears, and the inner parts of cells are changed to enter the stationary phase. Mononuclear cells in blood or phagocytic cells in tissues can not be transformed into osteoclasts, because all these cells only contain mature, unsplit and late mononuclear phagocytes. Only the early immature proliferating mononuclear phagocytes are the precursors of osteoclasts.</p>
<p>Amount of Calcium Loss:</p> <p>Calcium is very important for the animal's life movement. If calcium deficiency has an effect on health and growth, it may also have some bone diseases.</p>
<p>Degree of Bone Hyperplasia:</p> <p>It is the bone state. In the process of growth, development and functional completion of bone, some parts lose the normal shape. Bone hyperplasia are in various forms and have their own characteristics because of the different parts.</p>

Bone Mineral Density:

It mainly reflects the strength of bone, and therefore it is the gold standard of the diagnosis of osteoporosis, but also can predict the risk of the occurrence of fracture. Although the transformation of post-menopausal bone has a sudden-jump process, the biochemical indicators which can reflect this change and predict the risk of the occurrence of fracture of patients are very limited. Undoubtedly, it brings a lot of inconvenience for the following up of clinical treatment and the development of research work. The researchers point out that the bone mineral density and the used biochemical indicators can not fully reflect the effects of anti-osteoporosis treatment and predict the risk of the occurrence of fracture of patients. But there is no a more valuable test indicator, so the bone mineral density is still the most commonly used indicators for diagnosis and following up. Determining and reflecting the biochemical indicators of transformation of the bone possess an important position both in the diagnosis of osteoporosis and the research of etiology or treatment.

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

(Trace Element) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Calcium	1.219 - 3.021	2.999	
Iron	1.151 - 1.847	1.189	
Zinc	1.143 - 1.989	.693	
Selenium	0.847 - 2.045	.648	
Phosphorus	1.195 - 2.134	1.891	
Potassium	0.689 - 0.987	.941	
Magnesium	0.568 - 0.992	.665	
Copper	0.474 - 0.749	.101	
Cobalt	2.326 - 5.531	4.828	
Manganese	0.497 - 0.879	.564	
Iodine	1.421 - 5.490	1.76	
Nickel	2.462 - 5.753	4.679	
Fluorine	1.954 - 4.543	3.743	
Molybdenum	0.938 - 1.712	1.359	
Vanadium	1.019 - 3.721	3.042	
Tin	1.023 - 7.627	4.554	
Silicon	1.425 - 5.872	5.658	
Strontium	1.142 - 5.862	4.551	
Boron	1.124 - 3.453	1.589	

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

Calcium: 1.219-3.021(-) 0.774-1.219(+)
 0.318-0.774(++) <0.318(+++)

Iron: 1.151-1.847(-) 0.716-1.151(+)

	0.262-0.716(++)	<0.262(+++)
Zinc:	1.143-1.989(-) 0.532-0.945(++)	0.945-1.143(+) <0.532(+++)
Selenium:	0.847-2.045(-) 0.545-0.663(++)	0.663-0.847(+) <0.545(+++)
Phosphorus:	1.195-2.134(-) 0.486-0.712(++)	0.712-1.195(+) <0.486(+++)
Potassium:	0.689-0.987(-) 0.256-0.478(++)	0.478-0.689(+) <0.256(+++)
Magnesium:	0.568-0.992(-) 0.079-0.214(++)	0.214-0.568(+) <0.079(+++)
Copper:	0.474-0.749(-) 0.082-0.241(++)	0.241-0.474(+) <0.082(+++)
Cobalt:	2.326-5.531(-) 0.632-1.319(++)	1.319-2.326(+) <0.632(+++)
Manganese:	0.497-0.879(-) 0.047-0.229(++)	0.229-0.497(+) <0.047(+++)
Iodine:	1.421-5.490(-) 0.741-1.193(++)	1.193-1.421(+) <0.741(+++)
Nickel:	2.462-5.753(-) 0.539-1.547(++)	1.547-2.462(+) <0.539(+++)
Fluorine:	1.954-4.543(-) 0.512-1.219(++)	1.219-1.954(+) <0.512(+++)
Molybdenum:	0.938-1.712(-) 0.163-0.501(++)	0.501-0.938(+) <0.163(+++)
Vanadium:	1.019-3.721(-) 0.123-0.498(++)	0.498-1.019(+) <0.123(+++)
Tin:	1.023-7.627(-) 0.184-0.578(++)	0.578-1.023(+) <0.184(+++)
Silicon:	1.425-5.872(-) 0.613-1.022(++)	1.022-1.425(+) <0.613(+++)
Strontium:	1.142-5.862(-) 0.147-0.661(++)	0.661-1.142(+) <0.147(+++)
Boron:	1.124-3.453(-) 0.243-0.701(++)	0.701-1.124(+) <0.243(+++)

Parameter Description
<p>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:</p> <ol style="list-style-type: none"> 1. It composes the animal 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.
<p>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.</p>
<p>Zinc(Zn): Zinc as an important trace element in the animal body is composition and activator composing hundreds of kinds of enzymes in the body. Its main function: it catalyzes animal biochemical reactions, activates various enzyme proteins and is involved in protein synthesis to promote active metabolism. Zinc deficiency can cause:</p> <ol style="list-style-type: none"> 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.
<p>Selenium(Se): Selenium is one of the necessary trace elements of the animal 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.</p>
<p>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. 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:</p> <ol style="list-style-type: none"> 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.
<p>Potassium(K): Potassium is an essential macronutrient in animal. It is an essential nutrient in animal 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 animal cells. It can enhance the excitability of animal nerve and muscle, reducing myocardial excitability, so it can maintain the normal function of nerves and muscles, especially the normal movement of the heart.</p>
<p>Magnesium(Mg): In animal 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,</p>

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.

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 etc.

Cobalt(Co):

Cobalt is the essential element of the animal 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 animal body is about 5 - 45 mg. Intake of overdose of cobalt will induce pneumonia, and lead to myocardial damage, thyroid damage and erythrocytosis, etc.

Manganese(Mn):

The Mn deficiency in animal body will affect the growth and development. 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, 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. Excessive iodine intake may cause iodine goiter, so the iodine intake is not the much, the better.

Nickel(Ni):

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.

Fluorine(F):

Fluorine is a nonmetallic element. The main toxic symptoms caused by excessive fluoride in animal body are: yellow teeth, black teeth, X-or O-shaped legs.

Molybdenum(Mo):

Molybdenum is one of the essential micronutrients. The total molybdenum content in animal 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 animal body growth and development, acceleration on the growth of bones and teeth, and promotion on hematopoiesis and the increase of body immunity.

Tin(Sn):

Tin is an essential micronutrient of animal lives. Recent scientific research shows that: tin can improve the metabolism of protein and nucleic acid, conducive to growth and development.

Silicon(Si):

Silicon is an essential mineral in the animal body and a micronutrient as well. It is the silicon maintains flexibility and elasticity of bodies, making us possessing soft skin and hard bone. Silicon shortage may cause osteoporosis and fragile nails etc.

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 animal body will lead to metabolic disorders, and will cause physical weakness, sweating and skeletal growth retardation, even resulting in serious consequences such as osteoporosis.

Boron(B):

Boron 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. Boron also improves the brain function and enhances the reaction capacity.

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

(Vitamin) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Vitamin A	0.346 - 0.401	.36	
Vitamin B1	2.124 - 4.192	2.511	
Vitamin B2	1.549 - 2.213	1.686	
Vitamin B3	14.477 - 21.348	14.408	
Vitamin B6	0.824 - 1.942	.764	
Vitamin B12	6.428 - 21.396	11.023	
Vitamin C	4.543 - 5.023	4.03	
Vitamin D3	5.327 - 7.109	6.18	
Vitamin E	4.826 - 6.013	4.525	
Vitamin K	0.717 - 1.486	1.115	

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(-) 2.413-4.201(++)	4.201-5.327(+) <2.413(+++)
Vitamin E:	4.826-6.013(-) 3.379-4.213(++)	4.213-4.826(+) <3.379(+++)
Vitamin K:	0.717-1.486(-) 0.438-0.541(++)	0.541-0.717(+) <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 animal body, and it is an essential substance of synthetic hormones. Vitamin B3 can promote blood circulation, lower blood pressure, lower cholesterol and triglycerides.</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.</p>
<p>Vitamin E: 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.</p>
<p>Vitamin K:</p>

Vitamin K is an important vitamin for promoting normal blood coagulation and bone growth. The animal 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 test results for reference only and not as a diagnostic conclusion.

(Amino Acid) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Lysine	0.253 - 0.659	1.208	
Tryptophan	2.374 - 3.709	3.511	
Phenylalanine	0.731 - 1.307	.806	
Methionine	0.432 - 0.826	.518	
Threonine	0.422 - 0.817	.702	
Isoleucine	1.831 - 3.248	2.403	
Leucine	2.073 - 4.579	4.296	
Valine	2.012 - 4.892	5.335	
Histidine	2.903 - 4.012	5.082	
Arginine	0.710 - 1.209	1.215	

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

Lysine:	0.253-0.659(-) 0.962-1.213(++)	0.659-0.962(+) >1.213(+++)
Tryptophan:	2.374-3.709(-) 4.978-6.289(++)	3.709-4.978(+) >6.289(+++)
Phenylalanine:	0.731-1.307(-) 1.928-2.491(++)	1.307-1.928(+) >2.491(+++)
Methionine:	0.432-0.826(-) 1.245-1.637(++)	0.826-1.245(+) >1.637(+++)
Threonine:	0.422-0.817(-) 1.194-1.685(++)	0.817-1.194(+) >1.685(+++)
Isoleucine:	1.831-3.248(-) 4.582-5.657(++)	3.248-4.582(+) >5.657(+++)
Leucine:	2.073-4.579(-) 6.982-9.256(++)	4.579-6.982(+) >9.256(+++)

Valine:	2.012-4.892(-) 6.982-9.677(++)	4.892-6.982(+) >9.677(+++)
Histidine:	2.903-4.012(-) 5.113-6.258(++)	4.012-5.113(+) >6.258(+++)
Arginine:	0.710-1.209(-) 1.812-2.337(++)	1.209-1.812(+) >2.337(+++)

Parameter Description
<p>Lysine: Lysine 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>Tryptophan: Tryptophan can be converted to an important neurotransmitter in animal brain--5 - hydroxy tryptamine, When the content of 5 - HT decreases in the brain of an animal, the abnormal behavior, insanity hallucinations and insomnia will occur.</p>
<p>Phenylalanine: Phenylalanine is one of the essential amino acids for animal 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: Methionine is the constituent of hemoglobin, tissue and serum with the function of promotion of the spleen, pancreas and lymph. 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-slowng or stagnation of weight-gaining, enlarged kidney and liver iron accumulation etc, then lead to liver necrosis or fibrosis.</p>
<p>Threonine: Threonine has the function of converting of some kinds of amino acids to gain the balance. 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.</p>
<p>Isoleucine: Participates in the regulation and metabolism of thymus, spleen and pituitary gland. Isoleucine can be used in the treatments of neurological disorders, loss of appetite and anemia, acting an important role in muscle protein metabolism.</p>
<p>Leucine: Leucine can be used for the diagnosis and treatment of sudden hyperglycemia of animal; it can also be used as therapeutic agents for dizziness and nutritional tonics.</p>
<p>Valine: 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. In addition, it can also functions as a therapeutic agent accelerating the wound healing.</p>
<p>Histidine: 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, autonomic nervous inhibit the gastrointestinal ulcers caused by autonomic nervousness. In</p>

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.

Arginine:

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.

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

(Coenzyme) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Nicotinamide	2.074 - 3.309	1.517	
Biotin	1.833 - 2.979	.694	
Pantothenic acid	1.116 - 2.101	1.486	
Folic acid	1.449 - 2.246	1.762	
Coenzyme Q10	0.831 - 1.588	.675	
Glutathione	0.726 - 1.281	.772	

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

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.

Biotin:

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 animal 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 animal body's use of sugars and amino acids, it is the necessary material of the animal body cell growth and reproduction. Lack of folic acid can cause giant cell anemia and leukopenia to the animal 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 animal life, one of the important elements that can activate the animal body's cells and energy nutrients, improve immunity, enhance anti-oxidation, anti-aging and enhance the vitality of the animal body, etc. function.

Glutathione:

Glutathione is composed of three amino acids peptide, exists in almost every cell of the animal 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 animal body, environmental pollution.

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

(Immune System) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Lymph node Index	133.437 - 140.47	136.504	
Tonsil immune Index	0.124 - 0.453	.337	
Bone marrow Index	0.146 - 3.218	2.783	
Spleen index	34.367 - 35.642	33.782	
Thymus index	58.425 - 61.213	56.975	
Immunoglobulin index	3.712 - 6.981	2.623	
Respiratory immune Index	3.241 - 9.814	5.029	
Gastrointestinal immune Index	0.638 - 1.712	1.701	
Mucosa immune Index	4.111 - 18.741	14.854	

Reference Standard:

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

Lymph node Index:	133.437-140.47(-) 146.926-153.164(++)	140.47-146.926(+) >153.164(+++)
Tonsil immune Index:	0.124-0.453(-) 0.073-0.097(++)	0.097-0.124(+) <0.073(+++)
Bone marrow Index:	0.146-3.218(-) 0.052-0.089(++)	0.089-0.146(+) <0.052(+++)
Spleen index:	34.367-35.642(-) 29.947-33.109(++)	33.109-34.367(+) <29.947(+++)
Thymus index:	58.425-61.213(-) 52.518-55.627(++)	55.627-58.425(+) <52.518(+++)
Immunoglobulin index:	3.712-6.981(-) 1.571-2.476(++)	2.476-3.712(+) <1.571(+++)
Respiratory immune Index:	3.241-9.814(-) 1.029-2.174(++)	2.174-3.241(+) <1.029(+++)

Gastrointestinal immune Index:	0.638-1.712(-)	0.434-0.638(+)
	0.218-0.434(++)	<0.218(+++)
Mucosa immune Index:	4.111-18.741(-)	2.647-4.111(+)
	1.138-2.647(++)	<1.138(+++)

Parameter Description
<p>Lymph node Index: Lymph node is the unique organ of mammals. Normal animal's superficial lymph nodes is very small, smooth, soft, no adhesion with surrounding tissue and no tenderness, less than 0.5 cm in diameter . When the bacteria enter into animal body from the site of injury, the lymphocytes will produce lymphokines and antibodies to kill the bacteria effectively. The result is lymphocytes hyperplasia and histiocytosis of the cellular response to lymph nodes within the lymph node, as lymph node reactive hyperplasia. viruses, certain chemicals, toxic products of metabolism, degeneration of tissue components and foreign matter Can cause lymph node reactive hyperplasia . Therefore, the enlarged lymph nodes are the body's beacon, a warning device.</p>
<p>Tonsil immune Index: Tonsil is the largest lymphoid tissue in pharyngeal. It is an active immune organ, containing all developmental stages of the cell, such as T cells, B cells, phagocytic cells. It therefore has a role in humoral immunity, resulting in a variety of immune globulin, also have some role in cellular immunity. Tonsil IgA immunoglobulins produced a strong immune system, inhibit bacterial adhesion to respiratory mucosa, and inhibit bacterial growth and spread of the virus has neutralization and inhibition.</p>
<p>Bone marrow Index: Animal hematopoietic bone marrow is located within the animal's bones. there are Two types of bone marrow: red marrow and yellow marrow. Red bone marrow manufacture red blood cells, platelets and various leukocytes. Platelets have hemostatic function, white blood cells can kill and suppress a variety of pathogens, including bacteria, viruses, etc.; some of the lymphocytes produce antibodies. Therefore, the bone marrow is not only the blood-forming organs, but also an important immune organ.</p>
<p>Spleen index: Spleen is the animal body's largest lymphoid organ. The main function of the spleen is filtering and storage of blood. Spleen is a crisp texture and a rich blood supply of organs, it is easy to break in the event of a strong external force to combat. Splenic rupture can cause serious bleeding, it is One of acute abdomen to death.</p>
<p>Thymus index: Thymus as an important animal body in lymphoid organs, a ductless glandular organ at the base of the neck that produces lymphocytes and aids in producing immunity; atrophies with age which is closely associated with immune function.</p>
<p>Immunoglobulin index: Immune globulin is a protein with antibody activity in animals. Mainly in plasma, also found in other body fluids, tissue, and some secretion of fluid. Most of immunoglobulin Human plasma present in the gamma globulin. Immune globulin can be divided into five types IgG, IgA, IgM, IgD, IgE .</p>
<p>Respiratory immune Index: Animal respiratory system is the main gateway connected with the outside world. pathogenic microorganisms and harmful substances can often lead to inflammatory diseases which enter into the respiratory tract with the air . there were lymphoid tissue locat in the entire respiratory tract from the nasopharynx to the respiratory bronchioles and alveoli, typical of the lymph nodes are in the surrounding of trachea and bronchi.</p>

Gastrointestinal immune Index:

Digestive tract of non-specific immunity include: full digestive tract from mouth to rectum mucosal barrier, all decomposition enzymes, bile, liver barrier, gastrointestinal peristalsis and natural flora.

Mucosa immune Index:

Mucosal immune system is relatively independent of the systemic immune system, it had also inextricably linked with the systemic immune system. Mucosal immunity constitutes the two major functional areas: the immune induction site and parts of immune responses. Lymphocytes in the body immune system and mucosal immune system move continuously between the two major functional areas, accompanied by cell differentiation and maturation of their own.

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





(Thyroid) Analysis Report Card

Name: Kitty
Weight: 3kg





Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Free thyroxine (FT4)	0.103 - 0.316	.448	
Thyroglobulin	0.114 - 0.202	.351	
Anti-thyroglobulin antibodies	0.421 - 0.734	.622	
Three triiodothyronine (T3)	0.161 - 0.308	.491	

Reference Standard:

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

Free thyroxine (FT4):	0.103-0.316(-) 0.645-0.873(++)	0.316-0.645(+) >0.873(+++)
Thyroglobulin:	0.114-0.202(-) 0.447-0.627(++)	0.202-0.447(+) >0.627(+++)
Anti-thyroglobulin antibodies:	0.421-0.734(-) 0.210-0.323(++)	0.323-0.421(+) <0.210(+++)
Three triiodothyronine (T3):	0.161-0.308(-) 0.543-0.757(++)	0.308-0.543(+) >0.757(+++)

Parameter Description
<p>Free thyroxine (FT4): Free thyroxine (FT4) is a sensitive indicator of thyroid function in vitro tests, even cause thyroid binding proteins in plasma concentration of power and change in physiological and pathological situations, it can more accurately reflect thyroid function.</p>
<p>Thyroglobulin: Thyroglobulin thyroid follicular epithelial cells by synthesis of a glycoprotein molecules, is the main component of the thyroid follicular colloid, globulin synthesized in the form of thyroid hormone is stored in the follicular lumen. Under normal circumstances, only a trace amount of TG into the blood circulation.</p>
<p>Anti-thyroglobulin antibodies: Anti-thyroglobulin antibodies are thyroiditis caused by autoantibodies specific for the diagnosis of chronic lymphocytic thyroiditis index. Anti-thyroglobulin antibodies and anti-microsomal antibody positive rate of chronic lymphocytic thyroiditis (Hashimoto's thyroiditis) the highest, followed by primary hypothyroidism. Other thyroid diseases and can also be detected in the blood</p>

of healthy animal, but lower titers.

Three triiodothyronine (T3):

T3 is a thyroid follicular cell synthesis and secretion of hormones.

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

(Heavy Metal) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Lead	0.052 - 0.643	1.063	
Mercury	0.013 - 0.336	.033	
Cadmium	0.527 - 1.523	1.787	
Chromium	0.176 - 1.183	.474	
Arsenic	0.153 - 0.621	1.026	
Antimony	0.162 - 0.412	.392	
Thallium	0.182 - 0.542	.53	
Aluminum	0.192 - 0.412	.45	

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

Lead:	0.052-0.643(-) 1.005-1.582(++)	0.643-1.005(+) >1.582(+++)
Mercury:	0.013-0.336(-) 0.721-1.043(++)	0.336-0.721(+) >1.043(+++)
Cadmium:	0.527-1.523(-) 1.932-2.146(++)	1.523-1.932(+) >2.146(+++)
Chromium:	0.176-1.183(-) 1.843-2.663(++)	1.183-1.843(+) >2.663(+++)
Arsenic:	0.153-0.621(-) 1.243-1.945(++)	0.621-1.243(+) >1.945(+++)
Antimony:	0.162-0.412(-) 0.885-1.374(++)	0.412-0.885(+) >1.374(+++)
Thallium:	0.182-0.542(-) 1.133-1.721(++)	0.542-1.133(+) >1.721(+++)
Aluminum:	0.192-0.412(-) 0.726-1.476(++)	0.412-0.726(+) >1.476(+++)

Parameter Description
<p>Lead: Blood lead is generally believed that the relative safety standards should not exceed 10 micrograms to 14 micrograms / liter; long-term inhalation exposure to metallic lead or lead compounds in dust, can cause varying degrees of [lead poisoning] disease (serum concentration greater than 40 micrograms of lead / l); inhaled too much will harm the animal nervous system, heart and respiratory system, causing varying degrees of lead poisoning.</p>
<p>Mercury: Mercury ingested directly after sinking into the liver, brain, eye nerve damage greatly, mainly involving harm to animal central nervous system, digestive system and kidneys, in addition to have a certain impact of the respiratory system, skin, blood and eyes.</p>
<p>Cadmium: Cadmium would cause irritation for respiratory, long-term exposure can cause disease as loss of sense of smell, macular or gums had become a yellow circle, cadmium compounds can not easily be absorbed in the intestine, but can be absorbed into the body through breathing, accumulation in the liver or kidney cause obvious damage to the kidneys. Especially with the bone metabolic disruption, resulting in osteoporosis, atrophy, deformation and a series of symptoms.</p>
<p>Chromium: Chromium in nature mainly in the trivalent form of chromium and hexavalent chromium. Hexavalent chromium is mainly harm for animal with chronic poisoning, which can be through the digestive tract, respiratory tract, skin and mucous membrane into the animal body. The body accumulates mainly in liver, kidney and endocrine glands in the. Through the respiratory tract is easy to accumulate in the lungs. Hexavalent chromium has a strong oxidation, so the chronic poisoning often began with the development of local damage to the hopeless. Invade the animal body through the respiratory tract, the start against the upper respiratory tract, causing rhinitis, pharyngitis and laryngitis, bronchitis.</p>
<p>Arsenic: Arsenic invades the animal body, discharge by the urine, digestive tract, saliva, breast discharge, then accumulation in the Ministry of osteoporosis, liver, kidney, spleen, muscle, hair, nails and other parts. Arsenic on the nervous system, stimulate the blood-forming organs, a small amount into the animal body a long time, have a stimulating effect on erythropoiesis, long-term exposure to arsenic poisoning can cause cell and capillary poisoning.</p>
<p>Antimony: Antimony is a silvery white metal of natural, can irritate the eyes, nose, throat and skin, continuous exposure may damage the heart and liver function, inhalation of high levels of antimony antimony poisoning can cause symptoms including vomiting, headaches, breathing difficulties, and severe may cause dying.</p>
<p>Thallium: Thallium as a strong nerve poison, damage effect for the liver and kidney. Inhalation, oral can cause acute poisoning; also can be absorbed through the skin.</p>
<p>Aluminum: Aluminum will continue to accumulate in the animal body, causing disease of the nervous system, interfering animal thought, consciousness and memory function. Excessive intake of aluminum, but also lead to deposition of calcium in bone loss and inhibit bone formation, the occurrence of osteomalacia.</p>

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

(Collagen) Analysis Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

Actual Testing Results

Testing Item	Normal Range	Actual Measurement Value	Testing Result
Eye	6.352 - 8.325	5.235	
Tooth	7.245 - 8.562	5.299	
Hair and skin	4.533 - 6.179	1.598	
Circulatory system	3.586 - 4.337	3.893	
Digestive system	3.492 - 4.723	3.958	
Immune system	3.376 - 4.582	2.534	
Motion systems	6.458 - 8.133	5.257	
Muscle Tissue	6.552 - 8.268	4.492	
Fat Metabolism	6.338 - 8.368	6.872	
Detoxification and metabolism	6.187 - 8.466	6.765	
Nervous system	3.357 - 4.239	2.787	
Skeleton	6.256 - 8.682	7.996	

Reference Standard:

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

Eye:	6.352-8.325(-) 2.382-4.213(++)	4.213-6.352(+) <2.382(+++)
Tooth:	7.245-8.562(-) 4.694-5.981(++)	5.981-7.245(+) <4.694(+++)
Hair and skin:	4.533-6.179(-) 1.526-2.914(++)	2.914-4.533(+) <1.526(+++)
Circulatory system:	3.586-4.337(-) 1.964-2.791(++)	2.791-3.586(+) <1.964(+++)
Digestive system:	3.492-4.723(-) 0.987-2.116(++)	2.116-3.492(+) <0.987(+++)
Immune system:	3.376-4.582(-)	2.127-3.376(+)

	1.101-2.127(++)	<1.101(+++)
Motion systems:	6.458-8.133(-)	4.715-6.458(+)
	2.826-4.715(++)	<2.826(+++)
Muscle Tissue:	6.552-8.268(-)	4.832-6.552(+)
	3.117-4.832(++)	<3.117(+++)
Fat Metabolism:	6.338-8.368(-)	4.326-6.338(+)
	2.362-4.326(++)	<2.362(+++)
Detoxification and metabolism:	6.187-8.466(-)	3.904-6.187(+)
	1.783-3.904(++)	<1.783(+++)
Nervous system:	3.357-4.239(-)	2.415-3.357(+)
	1.526-2.415(++)	<1.526(+++)
Skeleton:	6.256-8.682(-)	3.827-6.256(+)
	1.517-3.827(++)	<1.517(+++)

Parameter Description
<p>Eye: Likely to cause the lack of collagen, such as the eyes, dry eyes, fatigue, spontaneous tears; poor corneal transparency, lens opacity, and lead to cataracts and other eye diseases.</p>
<p>Tooth: Calcium loss, susceptibility to tooth decay, gum disease; easy to loose teeth, loss, pain.</p>
<p>Hair and skin: Dryness of hair, breaking, hair loss, bald, bifurcation, spontaneous, increased dandruff; loose skin, cheeks, chin, eyes drooping. Rupture of collagen fibers, increase wrinkles; jaw ear contour is not clear, the formation of the accumulation of fat in a double chin and ear; dry skin, sensitive and easy, decreased flexibility, horny rough, large pores, oil, and a serious stain.</p>
<p>Circulatory system: Vascular wall elasticity variation, affect the stability of blood pressure: prone to lead to blood viscosity, fatty liver, high blood cholesterol; slow blood circulation and the body to absorb the poor metabolism, susceptibility to cardiovascular and cerebrovascular diseases.</p>
<p>Digestive system: Decreased abdominal pressure organ ptosis, cardiac pumping, increased waist and abdomen, flatulence, etc.; detoxify the liver abnormalities, gallstones, mouth pain; poor secretion absorption, diabetes, hematopoietic function weak, unbalanced, pernicious anemia and physical decline.</p>
<p>Immune system: Slow lymphatic circulation leading to decreased immunity, easy infection of epidemic diseases, muscle pain, physical lack of weakness and other symptoms; food collagen, immune function is to enhance the overall more than 100 times.</p>
<p>Motion systems: Joint pain, bone and joint flexibility; joint stiffness, bone hyperplasia; poor metabolism, back fat accumulation; easy to cause rheumatism, generalized muscle atrophy, bone deformation; measurements are not prominent, cold hands and feet, numbness of the limbs, blocked activity, slow bone healing, loss of calcium; loss of collagen ligament strain easy, flexible variation is easy to damage joints and skeletal sites; the fibrous tissue collapse, making the hips loose span sagging,</p>

deformation, fat followed by thickening.
<p>Muscle Tissue: Increase in fat mass, induration of the cervical muscles, cervical spondylosis; back pain, shoulder tingling; connective tissue block, lactic acid accumulation in the nerve system, Yin hinder the reflex areas; poor muscle contractions, loss of energy, muscle pulling force, decreased muscle tone, was eight-character drooping like.</p>
<p>Fat Metabolism: Metabolism decrease, fat accumulation, was acidic; easy fatigue, prone to diabetes, high blood pressure, resulting in liver and kidney failure.</p>
<p>Detoxification and metabolism: Susceptibility s to accumulation of toxins in the body yellow, rough skin, constipation, physical obesity, acidic; a variety of visceral recession, kidney and spleen of metabolic disorders, prone to nephritis, the heavier will lead to kidney failure; skin redness, itching skin, pain, fat particles; body acne, rot, various skin diseases, visceral dysfunction, mental decline, skin cancer.</p>
<p>Nervous system: Collagen contains a large number of amino acids, not only involved in the synthesis of new collagen, but also a central nervous inhibitory mechanism in the brain cells, the loss of collagen can cause memory loss, inability to concentrate, insomnia, anxiety, depression, irritability anxiety, poor response, nerve pain and so on.</p>
<p>Skeleton: 80% of the organic bone collagen, collagen loss will lead to decreased bone density, and the formation of hollow, will be a huge loss of calcium. Cause bone and joint pain, bone spurs, muscle atrophy, bones thicken, easy to cause bone cancer and legs paralysis, legs and feet are not flexible and can not stoop to mention heavy, osteoporosis, Glucosamine does not support, easy to fracture, bone healing slower bone toughness decline, bones become brittle.</p>

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

Comprehensive Report Card

Name: Kitty
Weight: 3kg

Sex: Female

Age: 0
Testing Time: 2019-06-14 11:36

About the problems of sub-health trends

System	Testing Item	Normal Range	Actual Measurement Value	Expert advice
Blood Circulation System	Total Cholesterol	56.749 - 67.522	70.125	
	Vascular Resistance	0.327 - 0.937	1.813	
	Vascular Elasticity	1.672 - 1.978	1.171	
Gastrointestinal Function	Pepsin Secretion Coefficient	59.847 - 65.234	57.501	
	Gastric Absorption Function Coefficient	34.367 - 35.642	31.338	
	Small Intestine Absorption Function Coefficient	3.572 - 6.483	2.757	
Skeletal System	Osteoporosis Coefficient	2.019 - 4.721	6.019	
	Degree of Bone Hyperplasia	0.046 - 0.167	.524	
	Bone Mineral Density	0.796 - 0.433	.188	
Trace Element	Zinc	1.143 - 1.989	.693	
	Selenium	0.847 - 2.045	.648	
	Copper	0.474 - 0.749	.101	
Amino Acid	Lysine	0.253 - 0.659	1.208	
Coenzyme	Biotin	1.833 - 2.979	.694	
Heavy Metal	Lead	0.052 - 0.643	1.063	
Collagen	Tooth	7.245 - 8.562	5.299	
	Hair and skin	4.533 - 6.179	1.598	
	Muscle Tissue	6.552 - 8.268	4.492	

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