

SALT AND HEALTH

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Abstract: This article elaborated in detail on the salt is the origin of life from the chemical property, the medical aspect and the cooking aspect. Salt is the necessity for the human body to maintain life. The article also discussed thoroughly about the iodized salt and the iodized salt containing different minerals and vitamins, which is important to eliminate the iodine deficiency and to improve healthy conditions for national people.

Key word: Salt Health

The salt is an origin of life. Salt, water and air are the necessities for human's life. As the saying goes "opening the door, there are seven matters: the firewood, the rice, the oil, the salt, the sauce, the vinegar, the tea". Obviously, the salt occupies an important status in the people lives. Now lets us enter the world of salt, discussing the intimate relation of the salt and the human body health.

1. REVIEWING OF SALT FROM CHEMISTRY ASPECT

The salt is the compound which is produced by the neutral reaction of acid and alkali. The chemical composition is sodium chloride. The structure of salt viewed form X optical fiber diffraction instrument is cubic crystal with transparent structure. The salt is congealed by the tiny crystallization particle with opaque appearance.

1.1 The chemical composition of sodium chloride's function to human's health.

The essential components of salt are chlorine and sodium, which is the necessity for the human body. The sodium (Na^+) is the main positive ion circulated outside the cell. The major function is to maintain sensitive of the muscle and nerve to receive the irritating quality, including heart muscle's activity,

promoting nutrition absorption, nerve cell's information transmission, adjustment and control of blood pressure related hormone secretion. The chloride ion (Cl^-) is the essential component for human body digesting fluid, it helps the amylolysis of protein and starch, and on the other hand, it combines with the sodium ions and the potassium ion to keep the balance of water and PH value of the blood.

Our body is composed by 6 thousand billion cells. Each cell floats in the solution of NaCl . Excessive shrinkage or expansion without explosion of cell is caused by the fluctuating content of sodium. It means that the concentration in or outside the cell should keep certain balance. When the balance is broken, it will cause either low blood pressure of exsiccosis patient or the edema symptom. Moreover the human body PH value should maintain at weak alkalinity (the PH value is about 7.4). However, the human body produces many acidic materials; it is sodium cushioning effect that maintains the body of weak alkalinity. When the sodium is insufficient in the body, the PH value will reduce, and the body will show anorexia, weary feeling, unstable spirit, symptoms of sleepiness.

1.2 Mineral substances contained in salt

The table salt contains many essential

mineral substances for human health maintenance. Representative mineral substances quantity of 10 grams of table salt and which food contains such minerals are shown in Table 1.

From the table, it can be seen clearly that

each kind of mineral substance content is micro. But the table salt is long-term essential edible item; therefore we can absorb the mineral substances for the human body needs. However, in order to absorb the sufficient

Mineral substance name	Human body required quantity	In 10 grams table salt content	Including mineral substance many foods
Calcium (Ca)	500-900mg	2 mg	Small fish, dairy products, seaweed, soybean product
Iron (Fe)	7-12 mg	below 0.0017 mg	Liver, dried laver, small mixed dried fish, shellfish
Table salt (NaCl)	below 10 grams	10 grams	Table salt, thick bean sauce, soy sauce
Potassium (K)	2-4 grams	0.01 gram	Seaweed, vegetables, fruit
Phosphorus (P)	1.3 grams		Small fish, fish shellfish, meats, egg-yolk, nonfat dry milk
Magnesium (Mg)	300-400 mg	2 mg	Tangle, cereal (unpolished rice), kernel class, soybean product
Zinc (ZN)	8-15 mg	Below 0.0012 mg	Fish shellfish, meats, milk, unpolished rice, legumes, kernel class
Copper (Cu)	1.28-205 mg	Below 0.006 mg	Liver, persimmon, legumes
Manganese (Mn)	3.4 mg		Cereal, kernel class, tea
Iodine (I)	0.36-1.02 mg	Below 0.4 mg	Tangle, sea product
Selenium (Se)	8.2-142μg		Fish flesh, beastly meat, cereal

mineral substance, we should take it from the fish, the meats, the shellfish, the dairy products, the kernel, the cereal and so on other absorb the mineral substance, including many other foods, which provides rich nutrition to the growth of body.

2. REVIEWING FROM MEDICAL ASPECT TO THE HUMAN BODY

2.1 The ancients understanding about salt

In the ancient times, the salt was the extremely precious thing, it was the wealth symbol, and it is called as "the white gold". The Swiss medical scientist Para Syre Souze once said: "the human must eat the salt, the place without salt, everything can be corrupted". The Chinese is the earliest to know the medical value and the medical function, dating from the Zhou Dynasty. "Zhou rite" has recorded about the palace practice of medicine system. Doctors in Zhou Dynasty, had "the food medicine" (to govern diet therapy), "illness medicine" (internal

medicine department), "the sore medicine" (surgical department) and other different division of labor. "The Medical Classic of the Yellow Emperor" also elaborated the salt function (one of five senses) to the human body. Li Shi Zhen also wrote in "Native Chinese Plants" that in the five senses, only the salt is indispensable. Prime Minister Guan Zhong of Qi Guo of Spring and Autumn Period wrote a epoch-making character in Chinese salt administration history, he created integrated the table salt industry system and the transportation and sale by the government monopolization, the abbreviation "the Guanshan sea", he assisted Qi Huan to become the first overlord of Spring and Autumn Period time. Guan zhong carried on management to the table salt, he also notice the salt to the human body health, he was the first man proposing "no salty will make the body swelling" It is abundant proof of the judgment "the salt was the medicine since old times".

2.2 Reviewing from modern medicine

aspect, the human body needs the salt like

According to Darwinism's explanation, all land animals come from the sea. Therefore, nearly all animal has salinity. The sodium chloride density in the blood, the sweat and other liquids is nearly same as the sea water. In human body fluid, the salt has become the most basic medium. From modern medicine's angle, the salt has four basic functions in the human body: Adjusting the balance of water content and the osmotic pressure; maintenance PH value balance, transmitting the muscle and the nerve, forming the gastric juice which helps the digestion. Therefore, the relation of person and salt are close. Salt plays the pivotal role in the humanity lives, just like water. The human cannot live without salt.

The World Health Organization suggested: Generally the crowd daily consumption of table salt is 6-8 grams, our country resident diet guidance advocated that the daily table salt quantity should be less than 6 grams. If not taking in the right amount salt normally, it will directly cause the human body PH value imbalance and the electrolyte disorder. Human body metabolism will have serious problems. It will present the dehydration sickness and blood pressure low, dizzy, edema, anorexia, weary feeling, spirit unstable, sleepy and so on. When blood sodium content is excessively low, it will also cause the hair to bleach the retina pathological change. From this point, it was called the salt "salt of the life".

The salt may also served as the medicine, treating some diseases. In the external use aspect, it may cure the ear illness, the toothache, the sore wound, the bee insect to bite and so on, it may also served as the salt water to bathe the relieve fatigue. In the external use aspect, it may be used as laxative, nauseate, treating sore throat or the headache. Generally the common physiological saline is to supplement water and salt by intravenous injection when the body dehydrated excessively or lost blood massively. In addition, the table salt solution has effect of sterilization and astringency. In surgical processing, the salt was used to make cough medicine. It also used in disinfection, which has the excellent curative effect.

3 Reviewing from the cooking aspect, salt make life colorful.

The older generation revolutionary

the water

comrade Taozhu wrote in his prose collection "Skill Sea Ascends Shell" that in the Guangdong local food vulgar article the people called the table salt as "the excellent taste". The article recounted that in the banquet, if the Cantonese thought that the dish was light flavor, they would shout that "please take 'the 'excellent taste '! " This "the excellent taste" is salt.

Salt is the head of the hundred tastes, the salt is the flower bud for the taste. It not only can display the raw flavor, and also has the function of eliminating the mutton smell. It can cause traditional Chinese food more tasteful. No matter the food is spicy, sour, sweet, hot, bitter or astringent, it is based on the salty flavor. For instance, when we boil the chicken soup, we will start to cook with the clear water, and then to taste. The taste will not be fresh. The chicken soup fresh taste will come out when adding salt. This is because amino acid inside the meat reacts with the sodium ion, which produced the monosodium glutamate essential component glutamic acid sodium. Also when we eat the steamed bun without salt, you can taste the sweet flavor in a long time. But if you eat some brined vegetable, the sweet taste came out quickly. That is because the sodium ion has the activation function, the sodium ion and the chloride ion may activate the saliva the amylase. We can say that the salt indeed make our lives more flavorful.

4. TABLE SALT CONTAINING THE IODINE BEARS THE IMPORTANT MISSION OF ELIMINATING THE IODINE DEFICIENCY AND IMPROVING OVERALL QUALITY OF PEOPLE'S LIVES.

4.1 Reasons and characteristic of iodine deficiency.

The iodine deficiency is called the worldwide disease, which is caused by the deficiency of iodine. It is popular to various degree in many countries (The Icelandic is an exception), which is one kind of Earth chemical disease. According to the United Nations statistics, the world has 1.5 billion people lives in iodine deficiency; our country has 4 billion persons. Majority areas in our country are in iodine deficiency, including 1615 counties with a stupid population of 16 million. Iodine deficiency has the popular

name "goiter" with hypothyroidism sickness. The bigger harm was the low intelligence of the newborn babies and infants. The iodine deficiency child's intelligence quotient was lower than the normal child of 10-15 percentages. In 1976, the National Medical department discovered a "fool village" in the Miao national minority Dong minority autonomous prefecture of southeast Guizhou Province, the local soil does not contain the iodine. The grain, vegetables, water source, poultry meat are lack of iodine. Each family has 3-4 stupid members. The people are impossible to obtain the iodine element living in the iodine deficiency area.

4.2 Adding the iodine to the salt is the most effective method to eliminate the iodine deficiency.

The iodine is the necessary element for the synthesis of thyroxin in human body. The thyroxin is the essential hormone for cerebrum and physical growth, metabolism. Therefore, the iodine is called the trace element of intelligence. Once iodine is deficient, it will cause low intelligence and the disability. The table salt is essential item of three meals a day. After professional validations, compulsive adding of iodine to the edible salt is the best solution, which is proved by many countries. The table salt containing the iodine has three merits: First, it is safe and effective. If each person absorbs 5-15 grams iodized salt every day (average 10 grams), they will obtain 100-300 micrograms iodine every day (average 200 micrograms), which satisfies human body's physiological requirement. Second, it is a long-term mission. Because outside environment is deficient of iodine, the humanity needs to make up the iodine regardless of the race, the nationality, the age, the sex. Therefore the table salt is the best carrier for iodine. Third, it is easy to promote. The edible iodized salt is very economical and it only cost little money. It solves major problem in a economic way even for a very poor country. The medical research indicated that elimination of the iodine deficiency is different from elimination smallpox. Therefore the work of elimination of iodine deficiency is a long term job. Among hundreds of thousands of kind of commodities, there is not any single product has so much important influence to the Chinese health.

5 BOUNTIFUL NUTRIENT SALTS MAKE OUR LIFE HEALTHIER AND FASHIONABLE

5.1 concepts and characteristic of nutrient salt

Fast development along with the modern science technology improves people's living standard and the quality of life. The people earnestly have new request to the table salt. The nutrient salt takes the table salt as a carrier containing different minerals and vitamins. The nutrient salt has the same mode of iodized salt, which supplements necessary minerals and vitamins to daily consumption. The nutrient salt has the characteristics such as healthy, safe, convenient, economic, which is favored by the majority people.

5.2 nutrient salt classifications and function

At present in the market, the nutrient salt has the zinc nutrient salt, selenium nutrient salt, iron nutrient salt, calcium nutrient salt, the riboflavin salt, the low sodium salt and the multi-dimensional nutrient salt. The concrete use is: the zinc nutrient salt is able to enhance human body's immunologic function, intelligence. It also improves child growth, poor appetite and loss of appetite. It is helpful to the reproduction ability treatment. "the selenium is indispensable trace element of life". The selenium nutrient salt is able to enhance disintoxicating function to liver's, strengthening the liver activeness, enhancing the immunity and vision, delaying the cell to get older, it also prevents coronary disease, the arteriosclerosis, diabetes to some extent. The calcium nutrient salt is able to prevent anemia, regulating energy metabolism and the tissue respiration, enhancing organism immunity ability and anti-infection. Woman and children should supplement it frequently. The riboflavin salt is advantageous in promoting the skin to absorb oxygen and makes the skin to be exquisite, it also reduces cataract, cancer's morbidity probability. The low sodium salt contains more potassium and magnesium ions in the salt, which supplements potassium, magnesium to the blood vessel and the transmission nerve impulsion. It also suppresses irons of skeletal muscle contraction. It reduces hypertension, coronary disease and so on. The multi-dimensional nutrient salt contains many kinds of nutrition reinforcement in the table

salt, which is helpful for absorption.

These nutrient salts are "the third generation table salt" designed to adapt the different request. The common saying said: "Using medicines to build up one's health is inferior to the food; the food supplement was inferior to daily consumption." Eating meals with the nutrient salt is the optimal path for supplementing the mineral substance and the trace elements.

Sometimes because of the universal application of salt, which is similar to the air, we have ignored its existence. But through the above elaboration, it has proven that the salt is similar to the breath and has equally important to the human body health. The salt makes our life vigorous and colorful.