HAPPY DAYS

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Happy Days Dairies Ltd.

Article # 6- The Benefits of Bioorganic Sodium in Goat Milk
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Although the vast majority of people think of salt when they hear the work *sodium*, the terms should not be used interchangeably. Salt, also known as sodium chloride, is about 40% sodium and 60% chloride by weight. One teaspoon of salt weighs 5 grams and contains about 2300 milligrams of sodium. Over the last few decades, researchers have linked high sodium intakes to an increased risk for high blood pressure and heart disease. Due to this link, many people have come to believe that sodium is harmful to the body. On the contrary, however, sodium is an essential nutrient that our body needs in order to function optimally, and goat milk naturally contains a significant amount of this important element (Thompson et al., 2005).

Bioorganic Sodium

Organic sodium, a term used for sodium that is present in nature, is a key element essential to human health. In naturopathic medicine, this type of natural sodium is referred to as *bioorganic sodium*. According to naturopaths, bioorganic sodium is known as the element of youth, preventing the development of arthritis with old age. The deficiency of this essential mineral in humans and many other mammals results in the development of symptoms associated with the ageing process. Among the natural dairy alternatives, the highest source of bioorganic sodium is found in goat milk and sweet goat whey, the presence of which is believed to contribute to keeping the animals young, active and flexible throughout their lives (Belewu and Aiyegbusi, 2002).

Functions & Benefits of Bioorganic Sodium

Sodium is found in virtually all connective tissue, joints, bone, cartilage, ligaments, synovial membranes, liver, spleen, muscles, stomach, brain, and blood. About 0.2% is found in the liver, 0.2% in the brain, and 0.2% in the blood. Large amounts of sodium (0.9%) are contained in the cartilage, 0.7% in the lymph fluid, 0.7% in fibrous tissues and 0.8% in the synovial fluid (Jensen, 1983). Thus, it comes as no surprise that sodium plays an important role in many areas of the body.

The preliminary functions of sodium in the human body include maintaining proper acid-base balance, assisting with nerve signal transmission, assisting with muscle contraction and the absorption of glucose and other essential nutrients. In addition, sodium is beneficial for the digestion process as well as maintaining joint health.

Acid-base balance

Sodium is the main positively charged electrolyte, or cation, in extracellular fluid, which is the plasma outside your cells. Sodium works, sort of as a pump, with potassium, the main cation in your cells. This sodium-potassium pump regulates the amount of water in the body and allows for the exchange of nutrients and waste into

and out of cells. Sodium also works in conjunction with chloride, which is the main negatively charged electrolyte, or anion, in extracellular fluid.

Nerve impulses & muscle contraction

The transmission of nerve signals depends on the presence of sodium, which in turn aids in muscle contraction, as the release of sodium from inside to outside the cell stimulates the spread of nerve signals to nervous tissue and muscles. The stimulation of muscles by nerve impulses provides the impetus for muscle contraction (Thompson et al., 2005). This stimulation also helps prevent the muscles from cramping.

Joint and Muscular Health

As sodium has been identified as being present in the joints, it is thought that this mineral plays a role in keeping calcium, magnesium and other minerals in the bloodstream, stimulates the adrenal glands, maintains the integrity of cartilage, lubricating the synovial fluid, connective tissues and muscles. Naturopathic medicine identifies sodium as being the fluidity element, and by helping to keep essential elements in solution, the joints are provided with the nutrients they need in order to remain healthy and possibly help prevent arthritis (Cousens, 2005).

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Digestive health

Sodium plays a role in digestive health, by aiding the metabolism of food through the digestion and absorption process. When food is being mechanically broken down in the mouth, sodium activates the release of an oral enzyme called salivary amylase. At this point, the salt allows the taste buds to taste the food, in addition to playing a role in its preliminary breakdown before entering the stomach for further digestion. As sodium is found in the stomach wall, when food moves into the stomach, sodium helps with the secretion of hydrochloric acid, which is a necessary secretion for the digestion of food components. In addition, it plays an important role in neutralizing excess stomach acid secreted during the digestion process, once digestion has been completed. The neutralizing power of sodium in the walls of the stomach and bowel keep those organs from being destroyed by the hydrochloric acid and enzymes in digestive juices.

Upon consuming a meal, sodium also helps in the absorption of certain essential nutrients such as glucose. Glucose cannot be passively absorbed into the cell through the cell membrane. Cells transport glucose via the process of active transport, which involves assistance from a sodium-potassium pump. This pump works by acting as a carrier protein that transports glucose through the cell membrane (Thompson et al., 2005). Furthermore, sodium is critical for the absorption of amino acids, which are the building blocks of proteins, across the intestinal lining.

Finally, sodium helps dissolve mucus in the stomach and fights pathogenic bacteria in the stomach and intestinal tract. It produces an alkaline medium that inhibits the growth of pathogenic bacteria. Sodium seems to feed and activate the healthy bacteria of the bowel (Cousens, 2005).

Too Much Sodium

High blood pressure is more common in individuals who consume high-sodium diets. This strong relationship between high-sodium diets and high blood pressure has prompted many health organizations to recommend low sodium intakes. Whether high-sodium diets actually cause high blood pressure is unclear and controversial. In addition there are other less controversial reasons to consume no more than the recommended amount of sodium each day. An excessive intake of sodium can cause an increased excretion of calcium in some people, which in turn may increase the risk for bone loss; however, the extent to which excess sodium intake affects bone health is also the subject of controversy. Consuming excess sodium also causes bloating, as water is pulled from inside the cells into the extracellular space in an attempt to dilute the excess sodium (Thompson et al., 2005).

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Hypernatremia refers to an abnormally high blood sodium concentration. It is usually caused by a rapid intake of high amounts of the element. In a healthy person, consuming too much sodium usually will not cause hypernatremia, as the kidneys are able to excrete sodium in order to avoid this condition. However, individuals with congestive heart failure or kidney disease are not able to excrete sodium effectively, making them more prone to the condition. Hypernatremia is dangerous because it causes an abnormally high blood volume, leading to edema of our tissues and raising blood pressure to unhealthy levels (Thompson et al., 2005).

Sodium Deficiency

It may be difficult to believe, and although deficiencies, particularly in developed countries, are rare, sodium deficiency can occur in individuals who sweat heavily or consume little or no sodium in the diet. Hyponatremia, or low blood sodium levels, can occur in active people who drink large volumes of water and fail to replace sodium. Severe diarrhea, vomiting or excessive prolonged sweating can also cause hyponatremia. Symptoms include headaches, dizziness, fatigue, nausea, vomiting and muscle cramps. If this condition is left untreated, it can lead to seizures, coma and death. Treatment for hyponatremia includes replacement of the lost minerals by consuming liquids and foods high in sodium and other minerals. It may be necessary to administer electrolyte-rich solutions intravenously if the person has lost consciousness or is not able to consume beverages and foods by mouth (Thompson et al., 2005).

Conclusion

All food contains sodium, as it is an element naturally present in the soil. The primary cause of diseases such as hypertension and heart disease as a result of elevated sodium levels in the body are due to the consumption of processed foods, such as processed meats, cheeses and spreads, flavored nuts and crackers, breads and cereals as well as the addition of table salt to meals. Organic sodium is the best and only necessary form of sodium that the body needs in order to maintain muscular, skeletal, nervous system and digestive health. Goat milk is a rich source of organic sodium, in addition to having several other beneficial health effects as we have previously discussed. Thus, decreasing the consumption of processed foods and relying on natural alternatives in order to get the sodium you need is the best way to help prevent and possibly even reverse the severity of these types of diseases.

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