

A LITTLE SALT IN YOUR LIFE

WHAT IS SALT?

Salt or sodium chloride is a crystalline chemical compound made up of the elements chlorine and sodium. It varies in colour from colourless, when pure, to white, gray or brownish, typical of rock salt (halite).

Salt is produced either through mining from the inland deposits in the ground or through evaporation from seawater:

- *Mining from inland deposits:*

Salt is known as rock salt, or halite, when it is found in the ground. Rock salt can be extracted either by drilling, blasting and hauling it to the surface. Salt mined in this way is mostly used to de-ice roads in winter.

Solution mining, which involves pumping water underground. The water dissolves the salt, creating brine, which is then pumped back to the surface where the water is evaporated out of the brine, leaving behind salt deposits. Solution mining produces purer salt than rock salt mining. Solution mining is often used to produce salt for human consumption.

- *Seawater:*

Salt can also be removed from seawater through a process called solar salt production which involves removing seawater and allowing the water to evaporate. Salt deposits are left behind, forming sea salt. Sea salt is pure and highly sought after for cooking due to its clean taste.

From a nutritional standpoint there is no difference in the salt produced from the two sources but there are differences in taste and texture.

Sodium chloride is sold in several different particle sizes/gradations and forms, depending on the intended end use. Particle sizes range from the discrete crystals seen in rock salt to the fine granules typical of table salt and even finer popcorn salt. Kosher salt, pickling salt and ice cream salt are slightly coarser than table salt while small compressed pellets are used in water softeners and large salt blocks are used as salt licks for livestock.

SOME USES OF SALT

Most of us are accustomed to adding salt to our foods to enhance the taste, it is such a common occurrence we rarely take note. However, archaeologists believe that salt eating developed as humans learned how to keep animals and grow crops in the years after 10,000 BC. As the proportion of meat in their diet fell, people had to find salt for themselves and for their domesticated animals.

Salt also gained importance through its ability to preserve food. By 2000 BC, people knew that adding salt to food stopped it from spoiling. Salt was used to preserve meat, fish and vegetables, and to create delicacies such as salted olives, which added variety to the diet. The buying and selling of salt became one of the most important trading activities in the world and therefore the commodity became very important in the ancient economies of the world.

Its importance can be seen in the existence of phrases arising from the slave trade in ancient Greece involving exchange of salt for slaves which gave rise to the expression, “not worth his salt”. Also the English word “salary” is derived from the phrase “salarium argentum”, the name given to special salt rations given early Roman soldiers.

Similarly, throughout history, the essentiality of salt, and the expense of the work needed to extract it and transport it, has subjected it to governmental monopoly and special taxes. In modern times, Mahatma Gandhi defied British salt laws as a means of mobilizing popular support for self-rule in India.

Salt has also had an important place in people's imaginations through the centuries. In many religions, salt was given as a blessing. It was thought to drive out evil spirits and was linked to fertility and sexual desire. It was often used as a symbol of immutable, incorruptible purity.

Until the 19th century, the most important use of salt was in food, though it was also used to treat leather, dye textiles and in making pottery. In the 19th century, chemists discovered ways of using salt to make a whole range of new chemicals. Manufacturers today claim there are more than 14,000 uses for salt.

BUT DO WE NEED SALT?

Yes! But in small amounts. Sodium, one component of salt is an essential nutrient, meaning that the body cannot manufacture it for itself and therefore it must be taken in by the body. The most recent

recommendations put out by the World Health Organization suggest that dietary intake of sodium from all sources should be limited to less than 5 grams per day. At these levels it is almost impossible not to meet and in fact exceed the requirement if the foods available today are consumed.

Sodium has many important functions in the body:

- Sodium is the primary electrolyte that regulates the extra cellular fluid levels in the body and thus it helps to maintain the right balance of fluids in the body.
- The presence of sodium ions is essential for the contraction of muscles, including that largest and most important muscle, the heart.
- Sodium is important in the transmission of nerve impulses in the body.

Without sufficient sodium, your senses would be dulled and your nerves would not function.

Chloride, the other component of the salt molecule is also essential to good health. It is a fundamental element in the digestion process; it preserves acid-base balance in the body; it aids potassium absorption; it supplies the chlorine for hydrochloric acid in the gastric juices, which are used in the stomach to help us to break down and digest the food we eat and control the level of bacteria present in the stomach. In addition, chloride enhances the ability of the blood to carry carbon dioxide from respiring tissues to the lungs.

SO I NEED IT, BUT CAN I HAVE TOO MUCH SALT?

Any excess salt that is ingested is usually excreted by your kidneys which regulate the amount of sodium in the body. In healthy persons, the kidneys conserve sodium when levels are low in the body and excrete excess amounts in the urine when levels become too high.

However if your kidneys can't eliminate enough sodium, the sodium accumulates in the blood. Sodium attracts and holds water, the volume of blood increases, resulting in increased stress on the heart to move blood through the vessels. This in turn results in increased pressure in the arteries – commonly known as high blood pressure or hypertension. Diseases such as heart failure, and chronic kidney disease can result in problems with sodium regulation by the kidneys.

Another way salt may help elevate blood pressure is through the action of the arterioles. Arterioles are blood vessels that dilate and constrict to regulate blood pressure and blood flow. By contracting under the influence of sodium, arterioles effectively increase the resistance to blood movement and lessen the volume of blood that is returned to the heart. This action also increases blood pressure. Other mechanisms linking sodium with hypertension are less well understood. The extent to which each person responds to high intake of salt is probably genetically determined. Some people are more susceptible to the effects of sodium than others, and sodium

sensitivity appears to increase with age. Research has shown that a decrease in sodium intake would have an effect of decreasing systolic blood pressure by 5 mmHg at age 15-19 years and 10mmHg at age 60-69 years.

A review of the most current literature and studies, indicate that sodium intake is directly associated with changes in blood pressure and that increased salt consumption increases the risk of becoming hypertensive and by extension coronary heart disease and stroke. It is estimated by the WHO that if dietary salt intake was reduced universally by 50 mmol/day, this would lead to a 16% reduction in the number of deaths from coronary heart disease.

In the face of this evidence linking excessive sodium intake to increased risk of disease, consumers should actively seek ways to limit their intake of salt. This is very challenging given the fact that many commonly eaten foods and condiments contain significant amounts of sodium. This is especially true of prepared or processed foods. The 3 main sources of sodium are:

1. Processed and prepared foods e.g., packet snacks, preserved or tinned meat
2. Condiments that contain sodium e.g., soy sauce, ketchup, prepared seasonings
3. Natural occurring sources of sodium e.g., meat, poultry dairy products and vegetables.

The daily limit can be reached easily when sodium from all sources is tallied up. Consumers therefore need to be very conscious of this and make efforts to reduce their intake.

Taste by itself is not a reliable guide to indicate which foods are high in sodium. This is because sodium can be present in foods in so many forms. For example items such as bread, do contain sodium and will contribute significantly to total sodium intake if eaten in large amounts.

The best way to identify high sodium foods is by reading food labels. Labels usually provide information not only on the amount of sodium in each serving but also lists the sodium and sodium containing ingredients in the content. Some important ones to look for are:

- Monosodium glutamate
- Baking soda
- Baking powder
- Sodium nitrate or nitrite

Sodium intake can be reduced by choosing and preparing foods with less sodium. This can be done by:

- Eating less processed foods and more fresh foods
- Choose low sodium processed foods
- Removing salt from recipes whenever possible
- Reducing usage of high sodium condiments

- Using herbs, spices and other flavourings instead of salt
- Using salt substitutes carefully as these still contain some sodium and can therefore still contribute to sodium intake if used too liberally.

HIGH SALT FOODS

- Cheese
- Chips (if salt added)
- Package soups
- Gravies
- Olives
- Pickles
- Pretzels
- Salted and dry roasted nuts
- Salt fish
- Sausages
- Smoked meat and fish
- Soy sauce
- Stock cubes
- Yeast extract
- Crackers

Salt is an essential part of our diet and must be included in the foods we eat. However many foods contain naturally occurring salts, or are processed with salt, *it is therefore rarely necessary to add salt to foods while preparing or at the table*. A modest reduction in salt consumption should have a positive effect in all individuals.

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