

# Salt And Health

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Edible salt, usually called just salt, is a flavour enhancer, comprising primarily of sodium chloride, and is one of the few minerals commonly eaten by humans. There are different forms of edible salt: unrefined salt (such as sea salt), refined salt (table salt), and iodised salt. It is a crystalline solid, white, pale pink or light grey in color, normally obtained from sea water or rock deposits. Natural sea salt includes vital trace minerals in addition to the sodium chloride. Edible rock salts may be slightly greyish in color due to this mineral content.

Sodium and chlorine, the two components of salt, are necessary for the survival of all living creatures, including humans, but they need not be consumed as salt, where they are found together in very concentrated form. Some isolated cultures, such as the Yanomami in South America, have been found to consume little salt. Salt is involved in regulating the water content (fluid balance) of the body. Salt flavor is one of the basic tastes. Salt cravings may be caused by trace mineral deficiencies as well as by a deficiency of sodium chloride itself.

Overconsumption of salt can increase the risk of health problems, including high blood pressure. In food preparation, salt is used as a preservative and as a seasoning.

## History of edible salt

Salt's preservative ability was a foundation of civilization. It eliminated dependency on the seasonal availability of food, allowed travel over long distances, and was a vital food additive. However, because salt (NaCl) was difficult to obtain, it became a highly valued trade item throughout history. Until the 1900s, salt was one of the prime movers of national economies and wars. Salt was often taxed; research has discovered this practice to have existed as early as the 20th century BC in China. The Romans valued salt highly and paid part of their soldiers' wages in salt. The Latin word *salarium*; meaning a payment made in salt is the root of the word "salary").

In the Mali Empire, merchants in 12th century Timbuktu—the gateway to the Sahara Desert and the seat of scholars—valued salt (NaCl) enough to buy it for its weight in gold; this trade led to the legends of the incredibly wealthy city of Timbuktu, and fueled inflation in Europe, which was importing the salt.

## Forms of edible salt

### Unrefined Salt

Different natural salts have different mineralities, giving each one a unique flavor. Fleur de sel, natural sea salt harvested by hand, has a unique flavor varying from region to region.

Some assert that unrefined sea salt is more healthy than refined salts. There are concerns, however, that raw sea or rock salts may not contain sufficient iodine salts to prevent iodine deficiency diseases like goitre.

### Refined Salt

Refined salt, that is most widely used presently, is mainly sodium chloride. Only about 7% of refined salt is used as a food additive. The majority is sold for industrial use, from manufacturing pulp and paper to setting dyes in textiles and fabric, to producing soaps and detergents, and has great commercial value.

The manufacture and use of salt is one of the oldest chemical industries. Salt is also obtained by evaporation of sea water, usually in shallow basins warmed by sunlight; salt so obtained was formerly called bay salt, and is now often called sea salt or solar salt. Today, most refined salt is prepared from rock salt: mineral deposits high in edible salt. These rock salt deposits were formed by the evaporation of ancient salt lakes. These deposits may be mined conventionally or through the injection of water. Injected water dissolves the salt, and the brine solution can be pumped to the surface where the salt is collected.

After the raw salt is obtained, it is refined to purify it and improve its storage and handling characteristics. Purification usually involves recrystallization. In recrystallization, a brine solution is treated with chemicals that precipitate most impurities (largely magnesium and calcium salts). Multiple stages of evaporation are then used to collect pure sodium chloride crystals, which are kiln-dried.

Anticaking agents (and potassium iodide, for iodised salt) are generally added at this point. These agents are hygroscopic chemicals which absorb humidity, keeping the salt crystals from sticking together. Some anticaking agents used are tricalcium phosphate, calcium or magnesium carbonates, fatty acid salts (acid salts), magnesium oxide, silicon

dioxide, sodium alumino-silicate, and alumino-calcium silicate. Concerns have been raised regarding the possible toxic effects of aluminium in the latter two compounds, however both the European Union and the United States Food and Drug Administration (FDA) permit their use in regulated quantities. The refined salt is then ready for packing and distribution.

### Table Salt

Table salt is refined salt, nearly pure (95% or greater) sodium chloride. It usually contains substances that make it free flowing (anticaking agents) such as sodium silicoaluminate as well as a minute amount of invert sugar to prevent the salt from turning a yellow colour when exposed to sunlight, and to prevent a significant loss of iodine via vaporization. It is common practice to put a few grains of uncooked rice in salt shakers to absorb extra moisture when anticaking agents are not enough. Table salt is also often iodised—a small amount of potassium iodide (in the US) or potassium iodate (in the EU) is added as an important dietary supplement. Table salt is mainly employed in cooking and as a table condiment. Iodised table salt has significantly reduced disorders of iodine deficiency in countries where it is used. Iodine is important to prevent the insufficient production of thyroid hormones (hypothyroidism), which can cause goitre, cretinism in children, and myxedema in adults.

Table salt is now used all over the world.

In European countries where fluoridation of drinking water is not practiced, some brands of fluorinated and iodised table salt are available. In Germany, 60% of sold table salt contains sodium or potassium fluoride. Another additive, especially important for pregnant women is Folic acid (B vitamin) giving the table salt a yellow color.