Sorting out Salt

By Mary B Grosvenor, MS,RD and Lori A. Smolin, PhD

Salt… To the ancients, it was a rare commodity used to preserve food. Trade routes carried salt through Europe, Asia, and Northern Africa; it was so valuable that it was taxed, fought over, and traded ounce for ounce for gold. Salt was also revered for medicinal as well as mystical properties. [1] In the modern world, salt is desired primarily for its ability to enhance the flavor of food; it is the most popular seasoning in the world.[1,2] No longer rare, salt is mined, pulverized, iodized, and even demonized due to its connection to high blood pressure. Despite the potential ill health effects of salt, a growing market of artisanal varieties entice us with their exotic names and colors and claims of health promoting properties.[2] But are they really any different than plain old table salt?

Salt, a crystalline compound made up of the minerals sodium and chloride, comes from two main sources: mines and sea water. Salt from underground mines is in the form of

halite, also known as rock salt. The halite is processed to remove other minerals and crushed to achieve the fine texture of what we call table salt.[3,4] Himalayan salt is also harvested from mines, but it not processed and refined like table salt. It contains small amounts of additional minerals including iron, which contributes to its various hues. Salt from sea water is produced by evaporation. This sea salt is less processed than table salt and retains traces of other minerals, such as magnesium, potassium, and calcium, which provide flavor and color to the salt. Some salt, whether from a mine or the sea, also contains additives. Calcium silicate is often added to prevent clumping and iodine may be added to help prevent iodine deficiency. The addition of iodine to salt began in the United States in the 1920s; currently 88% of the world's population uses iodized salt.[5,6]

The sodium and chloride in salt are both dietary essentials. In the body they help regulate fluid and acid-base balance and are needed for nerve conduction and muscle contraction. However, too much sodium in the diet can contribute to high blood pressure; as sodium intake goes up so does blood pressure. High blood pressure over time can lead to heart failure, heart attack, and stroke.[7] The recommended sodium intake for most adults is no more than 2,300 mg a day with an ideal limit of 1,500 mg per day.[8] However, many of us consume more than this and as a result public health campaigns are underway to promote a reduction in sodium intake.[7]

In response to recommendations to reduce sodium intake, many Americans have switched to specialty salts such as pink Himalayan salt and sea salt thinking they are a healthier alternative. In a survey by the American Heart Association, 61% of respondents thought that sea salt was a lower sodium alternative to table salt. Others are choosing these salts because they are less processed and contain additional nutrients. [9] Unfortunately, Himalayan salt and sea salt have just as much sodium as table salt. They do have additional essential minerals, but the amounts are insignificant nutritionally. The claims on the healthfulness of these salts, such as reducing muscle cramping and maintaining normal pH balance, are also true of any form of salt.

Although specialty salts are not different nutritionally, they do add different qualities to food. The minerals in some salts give them distinct colors and flavors. For example, Himalayan pink salt is chosen for its attractive color. Volcanic black salt, whether from Hawaii or the Himalayas, is high in sulfur giving it an egg-like flavor; it is often used in Indian and vegan dishes. The size of the salt grain affects both taste and texture. Larger,

coarser salt granules or flakes such as Kosher salt and Flake salt offer a burst of flavor and a crunchier texture. They are best sprinkled on foods just before or immediately after cooking. Small grains of salt, what we typically think of as table salt, dissolve quickly, distribute evenly, and do not add any crunch. While some salts can be used interchangeably in recipes, choosing a small grain salt for baking is important. The small grains pack tightly in a measuring spoon, so if you replace a teaspoon of table salt with a teaspoon of coarser Kosher salt you will actually be adding less salt to your cookies.

Which salt you choose depends on your personal preferences for taste and appearance as well as what works best in your recipe. Nutritionally there are only minute differences in the amounts of sodium and other minerals in different types of salt. Public health guidelines suggest we keep our intake within recommend limits, so pick salts you enjoy and use them in moderation. Despite advertising, none have mystical powers, though the right crunch or color can transform your recipe.

References

[1] Roberts WC, Roberts WC. Facts and Ideas from Anywhere. *Baylor University Medical Center Proceedings*. 2001;14(3):314-322. doi:https://doi.org/10.1080/08998280.2001.11927784

[2] DiNicola C. Everything You Need To Know About Salt. Tasting Table. Published January 26, 2023. https://www.tastingtable.com/1179418/everything-you-need-to-know-about-salt/#:~:text=It%27s%20universally%20loved%20and%20heavily

[3] Salt Production and Processing. Morton Salt. https://www.mortonsalt.com/article/salt-production-processing

[4] Zeratsky K. Sea salt vs. table salt: What's the difference? Mayo Clinic. Published 2016. https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/sea-salt/faq-20058512

[5] Office of Dietary Supplements - Iodine. ods.od.nih.gov. Accessed March 13, 2024. https://ods.od.nih.gov/factsheets/Iodine-HealthProfessional/#:~:text=Overall%2C%20it%20appears%20that%20the

[6] Zimmermann MB, Andersson M. GLOBAL ENDOCRINOLOGY: Global perspectives in endocrinology: coverage of iodized salt programs and iodine status in 2020. *European Journal of Endocrinology*. 2021;185(1):R13-R21. doi:https://doi.org/10.1530/eje-21-0171

[7] Harvard T.H. Chan. Salt and Sodium. The Nutrition Source. Published July 18, 2013. https://www.hsph.harvard.edu/nutritionsource/salt-and-sodium/#:~:text=The%20human%20body%20requires%20a

[8] National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Food and Nutrition Board; Committee to Review the Dietary Reference Intakes for Sodium and Potassium; Oria M, Harrison M, Stallings VA, editors. Dietary Reference Intakes for Sodium and Potassium. Washington (DC): National Academies Press (US); *Summary*. National Academies Press (US); 2019. https://www.ncbi.nlm.nih.gov/books/NBK545430/

[9] Sea Salt vs. Table Salt. www.heart.org. https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sodium/sea-salt-vs-table-salt#:~:text=In%20a%20survey%20conducted%20by