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Ninety Percent of Sea Salt Contains Plastic

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STORY AT-A-GLANCE

- Research data show 90% of sea salt sold worldwide contains plastic microparticles, leading researchers to believe most people consume nearly 2,000 particles a year in their sea salt
- Your body requires a specific sodium-to-potassium ratio to normalize your blood pressure. Low salt intake may result in an increased risk of heart disease and osteoporosis, and low magnesium levels accompanied by a long list of other potential health risks
- Important since ancient times, salt has been used as currency and was one trigger in the French Revolution. Today, salt is mined from deep in the earth or extracted from saltwater sources
- Your best option to salt your whole foods is Himalayan sea salt, created long before the environment was polluted by plastics and chemical toxins

Editor's Note: This article is a reprint. It was originally published October 31, 2018.

Your body requires a specific sodium-to-potassium ratio to normalize your blood pressure that does not rely on your total sodium intake. In other words, your body uses the sodium you eat to help maintain the balance, and excretes the sodium you don't need. Research has demonstrated potassium helps to relax the walls of your arteries and lower your blood pressure.[1]

In one study,[2] researchers found women without high blood pressure who consumed the most potassium had a 21% reduced risk of stroke and were also 12% less likely to die during the study than those who consumed the least.

Another study[3] evaluating salt intake in older adults found an increase was not associated with higher mortality over 10 years, or an increased incidence of cardiovascular disease or heart failure.

However, as the bad reputation of salt is slowly reversing and more are turning to using a perceived healthier choice, sea salt, environmental damage has now reached your dinner table. In a study analyzing 39 salt brands from 21 countries, including the U.S. and China, researchers found more than 90% contain microplastics.

Sea Salt May Not Be Your Healthiest Salt Option

The extent to which plastic microparticles have spread throughout the world had been unclear. This study[4] evaluating salt brands sampled worldwide is the first on this scale to analyze the geographical spread of microplastic in sea salt and the correlation to where plastic pollution is found in the environment.[5]

Only three brands originating from Taiwan, China and France did not contain microplastic particles. While the density of microplastics found in the analyzed samples were dramatically different, data showed those from Asian brands continue to be especially high. The highest quantities were found in Indonesia, which ranks as suffering the second-worst level of **plastic pollution** in the world.[6]

The findings highlight concerns raised earlier[7] when researchers found nearly 90% of popular bottled water brands contained microplastics. Mikyoung Kim, campaigner at Greenpeace East Asia said:[8]

> *"Recent studies have found plastics in seafood, wildlife, tap water and now in salt. It's clear that there is no escape from this plastics crisis, especially as it continues to leak into our waterways and oceans. We need to stop plastic pollution at its source. For the health of people and our environment, it's*

incredibly important that corporations reduce their reliance on throwaway plastics immediately."

Researchers in the featured study estimate the average adult consumes nearly 2,000 microplastic beads each year from salt. A separate study[9] planned to assess the risks microplastic have on the environment and concluded, despite a review of 320 existing studies, that there are major knowledge gaps in the scientific understanding of the impact of microplastics.

Historical References Demonstrate the Importance of Salt

Salt was one of the greatest treasures in the ancient world, often used as currency.[10] In fact, the high value of salt prompted an ancient Roman proverb, which says people who do their job well are "well worth their salt," or "worth their weight in salt." Even after the Roman Empire domination ended, salt remained an important item in trade and ancient economies.

One of the most traveled salt routes was from Morocco across the Sahara Desert to Timbuktu. Ships carrying salt traveled from Egypt to Greece across the Mediterranean and the Aegean Sea. The great wealth of Venice was attributed to common salt and not exotic spices.[11]

Moving into the Middle Ages, the purity of salt moved toward the superstitious. If salt was spilled it was a premonition of doom. After spilling, the spiller had to cast a pinch of salt over his left shoulder as this was thought to be where evil spirits tended to congregate.[12]

As late as the 18th century, the rank of a guest at a banquet was gauged by where they were seated in relationship to the salt cellar at the table. Taxes on the mineral help dissolve the French governments as they were forced to buy all their salt from royal depots. The tax was so high it eventually helped spark the French Revolution.[13]

As late as the 1930s Mahatma Gandhi led a pilgrimage of followers to the seaside as a protest against high British taxes on salt in India.[14] Throughout the past centuries salt

has played a unique and powerful role in health, politics and commerce.

Low Salt Intake May Threaten Your Health

This long history of reliance on salt took a wrong turn when Western medicine began demonizing the mineral, relating it to high blood pressure. Historically, people consumed 10 times more than we do today, as it was the primary preservative before the invention of refrigerators.

The correlation with blood pressure was popularized by the Dietary Approaches to Stop Hypertension (DASH) study, during which lowering intake resulted in improvements in blood pressure. However, the diet not only lowers salt recommendations, but also advocates eating substantially less processed foods and sugars,[15] which have a far greater impact on your blood pressure measurements.

According to James DiNicolantonio, Pharm.D., and author of "**The Salt Fix: Why the Experts Got It All Wrong — and How Eating More Might Save Your Life**," your blood pressure may go down with a reduction in salt, but your ratio of total cholesterol to high-density lipoprotein, a much better predictor of heart disease, worsens. Triglyceride levels and insulin resistance also increase.

This means that, overall, your heart disease risk increases rather than decreases, even though your blood pressure readings appear to be better. When your body does not have enough salt it starts pulling sodium from your bones, stripping magnesium and calcium to maintain a normal sodium level.[16]

This results in a reduction in sodium excretion in sweat, substituting magnesium and calcium instead. Low sodium also elevates aldosterone, a sodium-retaining hormone, which in turn reduces magnesium by shuttling it out through your urine. As a result, low sodium intake may damage your bone and heart health, as magnesium is a vital mineral for biological function.

Today, most processed foods are loaded with added sugar, processed salt and harmful industrially processed oils while containing virtually no healthy saturated fats or natural,

unprocessed salt. So, while most sea salt may contain plastic microbeads, eliminating salt from your nutritional intake is not the answer.

How Salt Is Manufactured

Before discussing your best salt option, it's helpful to understand the three basic methods used to process salt. Manufacturers may use solar evaporation, vacuum evaporation or rock salt mining.[17]

The solar method is the oldest means of producing salt. Practically, it may be used only in warm climates where the evaporation rate exceeds the precipitation rate for an extended period of time. Using solar evaporation, large quantities of natural salt water are transported to shallow ponds where the water is allowed to evaporate, leaving crystals of sodium and other natural minerals.[18]

Rock salt mining is the second oldest method of producing salt, accessing underground veins of salt. Large machines move through cave-like passageways. Salt appears in veins or may be found in domes. Most domes in North America are located between Alabama and Texas.

In some cases the salt is mined through hydraulic mining or solution mining during which water is pumped below the surface to dissolve salt deposits and then pumped out.[19]

The fluid is then added to commercial vacuum pans and undergoes vacuum evaporation, incorporating steam heat in a large commercial evaporator. This method yields fine-textured, high-purity salt.[20]

Salt Myths Impacting Your Long-Term Health

Studies have consistently failed to support the premise that high amounts of salt increase your thirst and contribute to high blood pressure and heart disease. Actually, the converse is true. Here's a summary of findings that may surprise you:

- Studies suggest salt may have a surprising influence on your weight. In one study using Russian cosmonauts, data revealed eating more salt lowered thirst and increased hunger.[21] Animal models support these results,[22] showing a high-salt diet increases metabolism in the animals, forcing the animals to eat 25% more to maintain their weight.
- The correct potassium-to-sodium balance influences your risk for high blood pressure and heart disease far greater than high sodium alone.[23] Processed foods are typically low in potassium and high in sodium.
- A low-salt diet may worsen heart disease and raise the risk of early death.[24]
- Nearly 71% of your salt intake comes from processed food.[25] Eating a whole food diet eliminates your exposure to table salts and ensures a more appropriate sodium-to-potassium ratio.
- When processed food manufacturers lower salt content, many add monosodium glutamate (MSG) instead. This flavor enhancer is associated with headaches, obesity, eye damage, fatigue and depression.[26] As it overexcites neurons, MSG may raise your risk of neurological disorders such as Alzheimer's, Parkinson's and Lou Gehrig's disease.

The Problems With Ingesting Plastics

Unfortunately, very little of the earth has been left untouched by plastic pollution. There are nearly 700 marine species at risk for extinction as a result of microplastic pollution.[27] Single-use plastics certainly contribute to this epidemic, and microplastics from the Great Pacific Garbage Patch have been found as far as the Arctic Ocean.[28]

A team of researchers from Heriot-Watt University[29] placed petri dishes with sticky dust traps next to plates at dinner time and were able to capture up to 14 pieces of plastic at the end of each meal from household dust. According to this study, the average person swallows an estimated 68,415 plastic fibers each year just from the dust landing on their plates during meals.

Researchers at the State University of New York[30] tested 259 bottles of 11 popular bottled water brands — including Aquafina, Nestle Pure Life, Evian, Dasani and San Pellegrino — finding, on average, 325 pieces of microplastic per liter.

Research[31] published in Science of the Total Environment found that the annual release of plastics to the land is estimated to be four to 23 times greater than what is released in the oceans.

This data means you are likely consuming tens of thousands of plastic microparticles every year from salt, food, dust and water. The end result of this plastic exposure has yet to be scientifically analyzed and reported.

However, as most plastic particles contain known endocrine disrupting chemicals and other toxins, it only makes sense to reduce your exposure as much as possible. In response to these and other findings, the World Health Organization has vowed to launch a safety review to assess the potential short- and long-term health risks of consuming microplastic in water.[32]

What Is Your Best Salt Option?

Your body needs sodium and chloride ions in salt crystals, but is unable to produce either. This means you must get it from your food. However, all salt is not created equally. Refined table salt is nearly all sodium chloride with some additional man-made chemicals.

Unprocessed salt, such as my particular favorite, pink Himalayan salt, has a different balance of sodium and chloride with added natural minerals your body also requires,[33] which contributes to the pink color of the salt. The crystals have matured untouched by pollutants over thousands of years.

Himalayan salt is mined from salt beds created long before plastic and other toxic chemicals were manufactured. When the ocean beds were lifted, as the Himalayan Mountains were formed, these salt beds rose from the sea and were later protected by lava and covered in snow and ice for thousands of years.

Compared to the salt mined from oceans laden with persistent organic pollutants and microparticles of plastic, Himalayan salt is by far your best option when you want to reduce your toxic load.

Himalayan salt also contains at least 80 naturally occurring trace elements in their natural mineral form, contributing to health benefits.[34] What remains after typical salt is "chemically cleaned" is sodium chloride — an unnatural chemical form of salt requiring additional energy from your body to metabolize, creating a burden on your elimination system.[35]

This form of salt is in almost every preserved product that you eat. Therefore, when you add more typical table salt to your already salted food, your body receives more sodium chloride than it can easily use.

Reduce Your Toxic Load Making Simple Everyday Choices

You have an impact on your environment and your health with each choice you make. By making the commitment to reduce or eliminate your use of plastic containers and disposable products packaged in plastic, you make an impact on your health, reducing your exposure to bisphenol-A and other chemicals that leach into your food and water, and on your environment.

Glass is a healthy, reusable and recyclable option to use at home. If you are purchasing a product that isn't whole food, seek out those packaged in glass and not plastic and commit to recycling that glass.

Sources and References

- [1] Harvard Health Publications, January 23, 2017
- [2] Stroke 2014;45(10):2874
- [3] JAMA 2015;175(3):410
- [4] Environmental Science and Technology, October 4, 2018; DOI: 10.1021/acs.est.8b04180
- [5] CBS News, October 17, 2018
- [6] The Conversation, September 5, 2017
- [7] CBS News, March 15, 2018

- [8] USA Today, October 17, 2018
- [9] National Geographic, October 17, 2018
- [10, 11] Ancient Origins, October 10, 2016
- [12, 14] Time, March 15, 1982
- [13] Salt Works, History of Salt
- [15] Mayo Clinic, DASH Diet: Healthy Eating to Lower Your Blood Pressure
- [16] Journal of Nutritional Science and Vitaminology, 2003;49(3):201
- [17, 20] Morton Salt, Salt Production and Processing
- [18, 19] The Spruce Eats, June 26, 2018
- [21] Journal of Clinical Investigation 2017; 127(5): 1932
- [22] Journal of Clinical Investigation 2017; 127(5): 1944
- [23] Advances in Nutrition, 2014;5(6): 712
- [24] New York Post December 30, 2012
- [25] US News May 9, 2017
- [26] Global Healing Center, June 19, 2014
- [27] One Green Planet, June 18, 2018
- [28] One Green Planet, October 17, 2018
- [29] Heriot-Watt University, April 3, 2018
- [30] Time, March 15, 2018
- [31] Science of the Total Environment, 2017; 586:127
- [32] BBC, March 15, 2018
- [33] The Meadow, Minerals in Himalayan Pink Salt
- [34, 35] Global Healing Center, April 6, 2017