

Why Your Sodium to Potassium Ratio Is Important

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✓ Fact Checked

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STORY AT-A-GLANCE

- › If you eat a lot of processed foods, which contain processed table salt, your sodium to potassium ratio is likely out of balance
- › It's generally recommended that you consume five times more potassium than sodium, but most Americans get the opposite ratio, eating two times more sodium than potassium
- › Consuming more potassium is just as important for limiting chronic disease risk factors as limiting sodium
- › A New England Journal of Medicine study found those with the lowest risk for heart problems or death from any cause were consuming three to six grams of sodium a day — far more than U.S. daily recommended limits
- › Unprocessed, natural salt, such as sea salt and Himalayan salt, is higher in potassium than table salt

Salt has long been vilified as a risk factor for heart, kidney and other chronic diseases. And the medical dogma to limit your salt intake to protect your health runs deep. But it's not that simple. There are different types of salt — some healthy, some not. Your body requires healthy salt to function properly. If you get too little, you'll increase your risk of heart problems, not lower it.¹

The other part of the equation is potassium, a naturally occurring mineral your body uses as an electrolyte. It, too, is vital for optimal health, and studies clearly show that

having the correct balance of potassium to sodium is far more important to health than lowering salt alone.²

Why You Should Focus on Increasing Potassium

It's generally recommended that you consume five times more potassium than sodium, but most Americans get the opposite ratio, eating two times more sodium than potassium. But realistically, it's best to get a minimum threshold of about 5 grams of potassium from fresh fruits and vegetables and then your sodium intake becomes less of an issue.

While conventional health care practitioners may suggest you remedy this by limiting salt intake, especially when it comes to lowering the risk of health conditions like high blood pressure, focusing on increasing potassium is key. Research shows an association between higher potassium intake and lower blood pressure, regardless of sodium intake.³

Further, when University of Southern California researchers reviewed 70 studies, they found consuming more potassium is just as important for limiting chronic disease risk factors as limiting sodium. Potassium works in your body to relax artery walls, keep your muscles from cramping and lower your blood pressure.⁴

"Along with exercise, consuming a surfeit of dietary K^+ [potassium] is a good strategy, since our physiology evolved and was optimized to deal with high- K^+ -low- Na^+ [sodium] intake, often referred to as a Paleolithic diet," the team explained.⁵ As for how it works:⁶

"When dietary potassium intake is elevated, the kidneys – composed of millions of small tubes working together – shift fluid to the area near the end of the tubes where potassium secretes into the urine. This shift reduces the amount of sodium and water that's reabsorbed into the body. In this way, high potassium diet signals the body to reduce the amount of sodium that is retained.

This circular pattern regulates the levels of both minerals in the body, which in turn helps lower blood pressure. Higher intake and excretion of potassium has also been found to slow the progression of kidney and heart disease."

Even the American Heart Association explains, "Foods with potassium can help control blood pressure by blunting the effects of sodium. The more potassium you eat, the more sodium you process out of the body."⁷

I personally get all my potassium from food and not supplements. I take in about 5 grams of potassium per day with primary sources being watermelon, boiled red potatoes, oranges and orange juice. My sodium intake is about the same at 5 grams (half from salt and half from baking soda) so am not convinced on the general recommendation to take twice as much potassium as sodium as long as you are getting about 5 grams of potassium from your food.

The Type of Salt Matters

When considering what type of salt to eat, keep in mind that it's not all created equal. Salt provides two essential elements – sodium and chloride. In the U.S., the majority of salt that's consumed comes from processed foods. This processed salt contains 97.5% sodium chloride, with about 39% sodium.

The rest is made of chemical additives, such as moisture absorbents, anticaking agents, such as sodium aluminosilicate, and, often, iodine.⁸ Unprocessed, natural salt, such as sea salt and Himalayan salt, contains about 84% sodium chloride⁹ with about 37% sodium. The remaining 16% is composed of trace minerals such as silicon, phosphorus and vanadium.

Further, natural salt is higher in potassium than processed salt. Compared to iodized white table salt, which contains 151.68 milligrams per kilogram (mg/kg) of potassium, pink Himalayan salt contains 2,085.71 mg/kg.¹⁰

Further, as explained in the book, "The Ultimate Age-Defying Plan," "In particular, Himalayan salt is much higher in potassium and lower in sodium compared to other

salts. Himalayan salt contains 0.28% potassium, compared to 0.16% in Celtic salt and 0.09% in regular table salt."¹¹ So it's possible to improve your sodium to potassium ratio just by switching the type of salt you eat – from table salt to natural varieties such as pink Himalayan.

Why Low-Salt Advice Can Be Harmful

From my recent review of Ray Peat's work, it is clear that low sodium intake is associated with a decreased breakdown of serotonin, just like an SSRI drug. You might be thinking that was a good thing, but you would be mistaken as serotonin is not the "happy hormone" it is promoted to be but a toxic neurotransmitter when levels reach high concentrations.

Studies suggest that excess serotonin, rather than a dopamine deficiency is likely a major contributor to Parkinson's. Dopamine is the highly beneficial neurotransmitter, and it has an inverse correlation with serotonin. So when its levels are low, it tends to increase serotonin which is likely the greater contribution to the disease.

James DiNicolantonio, Pharm.D., author of "The Salt Fix," explains that the rise in high blood pressure, obesity and diabetes that began in the early 1900s parallels a reduction in salt intake.¹² Further, he explains that your body strives to maintain an optimal level of sodium regardless of your intake.

Your body uses magnesium and calcium levels to control your sodium level. As your intake declines your body begins to pull sodium from the bone, and at the same time pulls out magnesium and calcium. As DiNicolantonio explained in Missouri Medicine, low-salt diets are therefore likely implicated in osteoporosis.¹³

"There is a large fraction of body sodium deposited in the bone, suggesting that bone might serve as a sodium reservoir which is mobilized during homeostatic stress. Salt also has a crucial role in maintaining positive magnesium and calcium balance.

If a reduction in serum sodium occurs, the bone may be stripped of sodium (as well as magnesium and calcium) to maintain normal serum sodium levels. Indeed, a low-salt diet has been shown to lead to negative calcium and magnesium balance which could result in osteoporosis. Thus, a low-salt diet may cause osteoporosis by stripping the bones of sodium, calcium, and magnesium."

Does a Low-Salt Diet Worsen Heart Risks?

Meanwhile, according to DiNicolantonio, your blood pressure may indeed go down when you reduce your salt intake. The problem is that your total cholesterol to high-density lipoprotein (HDL) ratio, which is a much better predictor of heart disease than low-density lipoprotein (LDL), is worsened right along with it. Triglycerides¹⁴ and insulin are also increased.

So, overall, your heart disease risk increases rather than decreases, even though your blood pressure readings appear better. What's worse, salt deficiency also increases your chances of developing insulin resistance, because one of the ways in which your body preserves salt is by raising your insulin level.

Higher insulin helps your kidneys retain more salt. Insulin resistance, in turn, is a hallmark of not only heart disease but most chronic diseases. DiNicolantonio and colleagues explained in the American Journal of Medicine:¹⁵

"There is evidence that a low sodium diet may lead to a worse cardiovascular prognosis in patients with cardiometabolic risk and established cardiovascular disease. Low sodium diets may adversely affect insulin resistance, serum lipids, and neurohormonal pathways, leading to increases in the incidence of new cardiometabolic disease, the severity of existing cardiometabolic disease, and greater cardiovascular and all-cause mortality.

Although a high sodium intake also may be deleterious, there is good reason to believe that sodium intake is regulated within such a tight physiologic range

that there is little risk to leaving sodium intake to inherent biology as opposed to likely futile attempts at conscious control."

Further, rather than focusing on reducing salt intake, researchers suggested that using self-monitoring tools to gauge sodium to potassium ratio via urine is a practical strategy for achieving healthier blood pressure levels:¹⁶

"Reducing the Na/K ratio is essential for preventing hypertension and CVDs [cardiovascular diseases] prior to clinical onset ...

The individual estimate of the 24-h urinary Na/K ratio that can be obtained by the repeated casual urine Na/K ratio may be useful in detecting individuals who need an easy dietary lifestyle modification during the prevention stage. For the treatment stage, self-monitoring devices may increase patient awareness of their dietary level and help to maintain appropriate levels."

How Much Salt Do You Need?

DiNicolantonio recommends eating about 3,500 mg of sodium daily,¹⁷ which is far more than the American Heart Association's recommended maximum limit of 2,300 mg a day, and their "ideal limit" of less than 1,500 mg a day.¹⁸

It's also revealing that a New England Journal of Medicine study found those with the lowest risk for heart problems or death from any cause were consuming three to six grams of sodium a day¹⁹ – far more than U.S. daily recommended limits.

If you're unsure how much sodium or potassium you're consuming, use cronometer.com/mercola, a nutrient tracker that allows you to enter the foods you eat and calculate the sodium to potassium ratio automatically.

However, your body also has a built-in "salt thermostat" that basically tells you how much you need by regulating your craving for salt. So, learn to listen to your body and remember that if you sweat profusely, either through exercise or sauna use, for example, or drink caffeinated beverages, you automatically will need more than usual.

A number of medical conditions can also increase sodium loss or prevent your body from absorbing salt well, such as inflammatory bowel diseases, sleep apnea, adrenal deficiency, bariatric surgery, kidney diseases, hypothyroidism and celiac disease. So, if you have any of these, you may need a bit more salt in your diet to compensate.

All of that said, there are some salt-sensitive subpopulations that may need to limit their salt intake to 2,300 mg per day. This includes those with:

- Endocrine disorders
- High aldosterone levels
- Cushing's syndrome
- Elevated cortisol
- Liddle syndrome, a rare condition affecting about 1 in 1 million individuals, causing them to retain too much salt. If treated with amiloride, salt intake probably does not need to be restricted

Three Steps to a Better Sodium to Potassium Ratio

So, rather than focusing on cutting back on salt, most people are better served by switching to natural salt and limiting intake of processed foods. In short, to optimize your sodium to potassium ratio for better health, focus on the following three steps:

1. Eliminate all processed foods, which are very high in processed salt and low in potassium and other essential nutrients
2. Eat a diet of whole, unprocessed foods, ideally organically and locally-grown to ensure optimal nutrient content. This type of diet will naturally provide much larger amounts of potassium in relation to sodium. Examples of potassium-rich foods include:²⁰

Watermelon

Orange juice

Boiled red potatoes

Avocado	Bananas	Cantaloupe
Oranges	Coconut water	Tomatoes
Yogurt	Winter squash	Wild-caught salmon

3. When using added salt, use a natural salt such as Himalayan salt

Finally, another way to find out if you're eating the right amount of salt for your body is with a fasting chemistry profile that shows your serum sodium. As a general rule, your ideal sodium level is 139, with an optimal range of 136 to 142. If it is much lower, you probably need to eat more natural salt. If it's higher, you'll likely want to restrict your processed salt intake.

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