



The Low-Salt Fiasco

For several decades, mainstream health authorities have recommended that we avoid saturated fat in our food and keep our cholesterol low. For about the same length of time, they've also warned us about the dangers of salt: that it causes hypertension – high blood pressure, a major risk factor for cardiovascular disease – and that we should all keep our salt intakes low, as low as possible. The first dogma, on cholesterol and fat, has come under increasing scrutiny and skepticism in recent years, exemplified by books like *Good Calories, Bad Calories* and *The Big Fat Surprise*. Now, James DiNicolantonio's new book, [The Salt Fix](#), aims to do for salt what others have done for fat and cholesterol.

Why low salt?

Humans have prized salt and gone out of their way to get it since before recorded history, and animals also seek it out. And of course they do, since salt is a required nutrient.

Chemically, ordinary table salt is sodium chloride, and it makes up about 90% of all minerals in the blood and other

body fluids, and is present at a concentration of about 0.8%. Given its importance in maintaining electrolyte balance, the body closely regulates the concentration of sodium and chloride, mainly through the action of the kidneys and various hormones secreted by them and acting on them. Both abnormally low and abnormally high blood sodium lead to, or are associated with, serious illness and even death.

Prehistoric humans and modern hunter-gatherers seek out salt, and DiNicolantonio cites evidence that salt consumption in Europe a few hundred years ago – 16th to 18th centuries – was many times higher than today. Due to the use of salt as a food preservative, early modern Europeans consumed 40 to 70 grams of salt daily, and in some places as much as 100 grams, compared to [the average American's current consumption of about 8 grams, or about 3.4 grams of sodium](#). (Keep in mind that sodium makes up about 40% of the weight of salt, and authorities often speak in terms of sodium, not total salt, consumption, so the numbers can be confusing.)

Salt consumption in the U.S. has been quite stable since the first half of the 20th century, yet the rate of hypertension is about 3 times higher. So why have health authorities argued that decreasing salt intake is critical for controlling hypertension?

DiNicolantonio traces the history of how the low-salt ball got rolling, and that story bears many similarities to the story of Ancel Keys and saturated fat. Several researchers became convinced, through dubious experiments and case reports, that salt caused hypertension, and went on a crusade to convince doctors and the public that salt was a villain.

Among those researchers was Dr. Walter Kempner, who devised the well-known (or infamous, perhaps) Kempner Rice Diet, which he put into use at a clinic for the treatment of severe hypertension, at a time when no drugs were available to treat it. The Kempner Rice Diet was low in sodium,

protein, and calories, and consisted mainly of rice, sugar, fruit, and fruit juice. Kempner made extraordinary claims for his diet, but even by his own less-than-scientific standards, it didn't help everyone, and in those it did help, results were modest. It also led to serious illness in some patients. Other researchers were unable to replicate his results. Furthermore, the diet was low in calories and caused weight loss, which may have been responsible for whatever success it had in lowering blood pressure.

A later study done at the Cleveland Clinic found that a low salt diet helped only about 25% of severe hypertensives, and even then results were modest.

Nevertheless, due to relentless campaigning, the McGovern committee recommended in 1977 that Americans limit their salt intake to 3 grams daily (about 1200 mg sodium). This was the same committee that recommended we stay away from saturated fat.

Low salt has less than impressive results and may be harmful

Severe sodium restriction has little effect on the blood pressure of normotensives, that is, people with normal blood pressure; it lowers their systolic blood pressure by around 1 mm Hg, or less than about 1%. Around 80% of normotensives see no rise in blood pressure from increased salt intake; among hypertensives, around 55% are unaffected by salt, and a reduction of sodium intake in them leads to an average reduction in systolic blood pressure of only about 3.6 mm Hg, an unimpressive result.

It's even possible that blood pressure can rise with low salt intake, since low salt activates the renin-angiotensin system, the purpose of which is to raise blood pressure. As we saw in [a recent article](#), inhibition of the renin-angiotensin system can increase lifespan even beyond its effects on blood pressure, so higher salt could be life-extending by decreasing renin-angiotensin activation. (Although that's my idea, and not from the book.)

Low salt consumption leads to [a higher heart rate, which is independently associated with higher mortality.](#) Therefore any benefit from lower blood pressure could be negated by a higher heart rate.

Low salt consumption could even lead to obesity, since if we're starving for salt we may eat more food to get it.

Increasing our salt intake may even be a healthy thing to do.

DiNicolantonio cites fascinating evidence regarding the effects of salt on sex and reproduction. In livestock, cutting sodium reduces birth weights and litter size, and may act as a "natural contraceptive". In humans, low salt causes a reduced sex drive, reduced odds of pregnancy, increased erectile dysfunction, fatigue, and poor sleep.

How much salt do we really need? DiNicolantonio believes that we have a "salt set point" that "seems to hover around 3 to 4 grams of sodium per day". (Around 7 to 10 grams of salt.) While sodium balance can be maintained on a low salt intake, that doesn't mean that that intake is optimal. We may be driven to maintain a sodium surplus, since someone with enough or excess sodium is more likely to survive a sodium-depleting event such as blood loss, diarrhea, or infection. More salt may also be required for heavy exercise, low-carbohydrate diets, and in pregnancy and lactation.

If salt didn't cause the rising epidemic of hypertension, what did? The author makes a good case for our huge consumption of sugar, and the obesity that goes with it.

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Ultimately, there seems no good reason for a population-wide restriction of sodium consumption, and in fact the urging of health authorities for everyone to restrict sodium may be doing considerable harm. In hypertensives, sodium restriction may benefit some, but even there, results may be modest and harm may result.

For most of us, limiting salt probably does more harm than good. Far from being a health panacea, eating less salt may be another fiasco brought about by bad science and overzealous health authorities.

Full disclosure: I've had a good deal of online contact with James DiNicolantonio, consider him a friend, and he sent me the book for review.

PS: My new book is [Best Supplements for Men](#).



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