Two half truths don’t make one whole truth. We have all heard the twin refrain, “Lower your salt consumption and you will reduce your blood pressure,” immediately followed by, “Lower blood pressure reduces heart disease and saves thousands of lives.” The anti-salt lobby never says explicitly, “Lowering salt consumption will reduce heart disease and save thousands of lives.”

Why is that? Why do they leave it to consumers to assume a whole truth instead of simply saying it themselves? It’s because there is no evidence that reducing salt improves health. On the contrary, there is a strong and growing body of clinical evidence that indicates salt reduction can definitely harm you.

It’s all because of the Renin-Angiotensin System or RAS, Mother Nature’s way to make up for inadequate salt (sodium chloride) consumption. When any one of our body’s sensory mechanisms detects that we’re not eating enough salt, the RAS kicks in to make the kidney reabsorb sodium and water back into the blood.

This complex hormonal chain reaction, perfected through millions of years of biological evolution, is critical for maintaining balance in our circulatory system.

Unfortunately, although the RAS helps us make up for too little salt consumption, it does so at a heavy cost to our health. Elevated RAS levels cause metabolic syndrome, insulin resistance, cardiovascular disease, and a host of other serious conditions. There is no longer any doubt that an elevated RAS is a very serious risk factor for overall health. So anyone who cuts salt to reduce blood pressure ends up increasing their risk for other diseases. Trading off one risk factor for another is no different than robbing Peter to pay Paul.

The diagram taken from Alderman, shows that as our sodium is reduced, the renin in our plasma shoots up dramatically – the body’s normal response to salt reduction. The blue arrow shows that, once our sodium intake falls below 150 mmol sodium/day (3,450 mg), the body reacts by producing high levels of renin in kick start the RAS chain reaction to conserve sodium. It’s nature’s way to make up for an inadequate salt consumption.

The level of 3,450 mg sodium per day comes to approximately 9 grams of salt, which is close to the average American consumption. (This is an interesting example of the ‘wisdom of the body,’ the idea that our body’s physiology is the best authority on determining our personal needs.) This average level of salt consumption is sufficient to prevent any spike in RAS activity. However, the Dietary Guidelines for Americans recommends that we drop our consumption down to 2,300 mg sodium (100 mmol)/day. At this level, the orange line, the renin begins to rise rapidly. To make matters worse, the 2010 issue of the Dietary Guidelines recommends 1,500 mg sodium (65 mmol) per day for more than half the American population. At this red line level, renin spikes up dramatically. Yet, in the Dietary Recommended Intakes, the original publication upon which all the supposed salt reduction benefit are based, nature’s response to reduced sodium was deliberately ignored in order to promote a salt reduction agenda. And it is this flawed publication that continues to drive the salt reduction agenda today!
While the Salt Institute has never questioned the benefits of reduced blood pressure, it has argued that salt reduction, as the primary strategy to achieve this, is a very poor and possibly dangerous choice. Other effective lifestyle strategies to reduce blood pressure, such as more physical exercise or the adoption of a Mediterranean diet, have no negative side effects. But, when you reduce your salt, it stimulates the RAS and results in a cascade of negative consequences. For salt sensitive people, trading one risk factor for another is a zero sum bargain. For the rest of us, it's nothing more than a rip-off – an increased health risk with no benefit. As an example, a very recent study from Harvard Medical School demonstrated that when healthy people were placed on a low-salt diet, they developed insulin resistance within 7 days\(^\text{12}\)

So, while reducing blood pressure can be very useful, what's more important is how you go about doing it.

For those scientists who have taken the trouble to do the research, there is a mountain of evidence showing the serious negative consequences of going on a low-salt diet. Here are just a few that have been published recently.

a) insulin resistance (precursor to diabetes)\(^\text{13}\)
b) metabolic syndrome (diabetes and cardiovascular disease)\(^\text{14}\)
c) congestive heart failure\(^\text{15}\)
d) diabetes 1 (all cause mortality)\(^\text{16}\)
e) diabetes 2 (all cause mortality)\(^\text{17}\)
f) cardiovascular events\(^\text{18}\)
g) iodine deficiency diseases\(^\text{19}\)
A recent issue of *American Heart Journal* makes it clear that the most important strategies to control cardiovascular disease involve blocking excess levels of renin and aldosterone, the principle components of the RAS. If blocking elevated RAS levels is so critical, then it’s clear that consuming enough salt to prevent elevated RAS in the first place is essential to good health.

And that is why the statement, “Lowering salt consumption will reduce heart disease and save thousands of lives” is a false whole truth.

It is vitally important for consumers to understand that the best way to ensure a healthful life is to eat a balanced diet with plenty of salads and vegetables, make sure you get enough exercise and don’t forget the salt.

When faced with public health bureaucrats that prefer to deal in half-truths, it’s up to consumers to connect the dots correctly themselves. After all, when all is said and done, - it’s your RAS!

**REFERENCES**