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Topol on Salt: Time to Shake the Sodium Guidelines?

Eric J. Topol, MD

DISCLOSURES  |  August 26, 2014
Dear Medscape Readers,

This month I’d like to delve into the salt controversy with you, because there’s a wealth of new data that have shed light on long “established” guidelines dating back to 1980 and even earlier. This is important stuff that the public wants to know about.

Recall that the American Heart Association (AHA) has been pushing a 1.5 gram per day (g/d) limit on sodium intake for some time.[1]

But in 2013, when the Institute of Medicine (IOM) reviewed the evidence for what should be the suggested guideline for sodium intake, the agency reported that there was no evidence to support the 1.5 g/d limit.[2]

The most recent controversy over sodium guidelines comes in the August 14 issue of the *New England Journal of Medicine*, which published 3 major papers[3,4,5] on the health effects of sodium consumption. The papers detail the results from 2 study groups: the Prospective Urban Rural Epidemiology (PURE) group[4] and the Global Burden of Diseases Nutrition and Chronic Diseases Expert Group (NutriCoDE) group.[5]

The PURE study demonstrated the expected relationship between blood pressure (BP) and magnitude of sodium intake, whereas the NutriCoDE study was established by the proxy of urinary excretion and looked at sodium’s effect on global cardiovascular mortality. The PURE study found that the relationship between sodium and BP was nonlinear, with BP really only increasing when sodium was consumed at a rate of 3.5-4 g/d and higher.

The most striking evidence of the relationship of sodium and cardiovascular events is shown in the Figure below.

![Figure. Data from Mente A, et al.[4]](image)

Although there was a trend of higher adverse cardiovascular events with sodium excretion of > 5 g/day, this was much more pronounced at levels < 2 g/d. In other words, consumption of too little sodium is as harmful as consumption of too much sodium. In fact, the AHA guideline would lead -- at least according to this latest research -- to about a twofold risk for major adverse events.

To put these findings in context, these data are from 101,945 individuals in 17 countries.
NutriCoDE was a modeling study that suggested that this relationship may not hold, but there were no direct measurements made; the data were extrapolated from published surveys from 66 countries. Both studies had warts, as Suzanne Oparil, MD,[6] nicely explains in an accompanying editorial. The usual call for a large, long-term randomized trial was made, but I think it is quite clear that that will go nowhere.

Our crackerjack cardiovascular news managing editor, Shelley Wood, published a superb article on Medscape | theheart.org, with many of the parties and leading experts weighing in. For me, the real coup de grâce was the Wall Street Journal's editorial column, "The Salt Libel," which highlighted this conclusion: "[T]he illusion that science can provide some objective answer that applies to everyone...is a special danger."

I believe that adequately sums up all there is to say about sodium, at least for now. The AHA, however, isn't backing off from its 1.5 g/d sodium guideline. But I think there's a big lesson here about guidelines without adequate evidence: They can do harm. Hopefully this lesson will prove to be impactful, because that certainly has not been the case to date (as in cholesterol/LDL, BP, PSA, mammography, and a very long list of poorly conceived, nonanchored guidelines).

Isn't it about time to recognize that there shouldn't be rules for populations? Some people are exquisitely sensitive to salt intake, while others are remarkably resistant. Average is over.

As always, I'll be interested in your views.

Eric Topol @EricTopol

Editor-in-Chief, Medscape
Recommendations

2001 Standards Needed for Salt Studies As 'Big Food' Takes Sides

2001 Moderate Sodium Intake Tied to Lower CVD Events: PURE

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