

# The Great Salt Debate

By Juliann Schaeffer

*Experts Stand Behind Salt Restriction's Cardioprotective Effects*

**C**an you pass the salt?" is a common question we hear at the breakfast, lunch, and dinner table each day. We shake a little here, a little extra there to get our food to taste just right before we dig in. And we do

this in addition to eating processed foods and restaurant fare on a regular basis, which experts say is where most of our sodium intake comes from. But is all of this sodium we're eating really damaging our long-term cardiovascular health? Or is what we've heard thus far a bit of an exaggeration?

Recently, a media firestorm erupted over a July report in the *Cochrane Database of Systematic Reviews*, also appearing simultaneously in the *American Journal of Hypertension*, which seemed to call into question the basis for salt restriction

recommendations. After researchers looked at the data of 6,500 participants, they concluded that the cardioprotective benefits of salt restriction couldn't be proven based on current evidence.

Shortly after this controversial meta-analysis hit the airwaves, two U.K. preventive medicine experts quickly countered these claims. They reanalyzed the same data and concluded in a comment in the July 30 issue of *The Lancet* that "the results of our reanalysis, contrary to the claims by Taylor and colleagues, support current public-health recommendations to reduce salt intake in the whole population."

Many in the medical community as well as the RDs interviewed by *Today's Dietitian* agree with the U.K. researchers' assessment.

"Salt is a vital nutrient required for the body to function properly," wrote Janet Bond Brill, PhD, RD, CSSD, in *Prevent a Second Heart Attack: 8 Foods, 8 Weeks to Reverse Heart Disease*. Yet while essential in small amounts, consuming too much salt has led many Americans to associate the nutrient with an unfortunately all-too-common ailment: high blood pressure, a leading risk factor for heart disease.

High blood pressure is extraordinarily common in the United States, affecting approximately one-third of the adult population, Brill says. "Hypertension is a powerful and unequivocal independent risk factor for cardiovascular and renal diseases, including coronary heart disease, stroke, and renal failure. Despite major advances in the understanding and treatment of hypertension over the past several decades, the disease remains the most common primary diagnosis in the United States and is a major public health concern," she adds.

According to World Health Organization (WHO) estimates, hypertension causes 5 million premature deaths per year worldwide. And across WHO regions, research indicates that about 62% of strokes and 49% of heart attacks are caused by hypertension, according to Brill.

It's an issue dietitians and doctors know well. Also well known is part of the popular lifestyle prescription to help patients fight or prevent hypertension and heart disease: sodium restriction.

"Irrefutable scientific evidence supports the fact that reducing sodium intake, [as well as] increasing potassium intake, lowers blood pressure. Myriad randomized controlled clinical trials collectively have demonstrated the benefits of sodium reduction for blood pressure control in both normotensive and hypertensive individuals," Brill says. She says people with a blood pressure of greater than or equal to 130/85 have a 1.5 to 2.5 times greater risk of experiencing a heart attack than those with a blood pressure value of less than 120/80.

So what's the real story? Such conflicting reports can create confusion, especially when clients catch only half the story on the nightly news. As patients come calling with questions, salt shaker at the ready, you'll need to know how to respond to their sodium queries. In the following article, nutrition professionals evaluate

the historical evidence on the link between sodium, hypertension, and cardiovascular disease (CVD) risk and offer some strategies you can use to answer your clients' tough questions.

## Professionals' Take

Probably to the dismay of consumers, many dietitians and doctors overwhelmingly agreed with the follow-up conclusions to the controversial Cochrane review findings and say they have no plans to change their sodium recommendations anytime soon.

"Clearly these findings are far out in left field and do not reflect the overwhelming amount of strong scientific evidence gathered over decades that supports the fact that reducing sodium intake reduces blood pressure, thereby reducing risk of cardiovascular disease, our nation's leading cause of death," Brill says of the Cochrane report.

She refers to one such piece of evidence to back up her stance in *Prevent a Second Heart Attack*. "A recent study published in the April 2007 issue of *BMJ* concerning a group of individuals with borderline to high blood pressure found that cutting back on their salt intake slashed their risk of developing heart disease by 25% and of dying of the disease by up to 20%. The researchers surmised that sodium acts directly on blood vessel walls, stiffening them and making them more susceptible to atherosclerosis."

Another study, published in the February 2010 issue of *The New England Journal of Medicine*, concluded that if everyone cut salt intake by just a ½ tsp/day, there would be close to 100,000 fewer heart attacks each year and the number of deaths from CVD would drop by up to 92,000 annually, Brill says of another piece of evidence in her arsenal for salt restriction.

In light of such findings, Brill says she's siding with the American Heart Association, which recommends all Americans aim for consuming less than 1,500 mg of sodium per day.

Nutrition research scientist James J. Kenney, PhD, RD, FACN, says he isn't surprised by the study's controversial findings, considering what he calls the limited quality of the data the authors had to work with. "Given how hard it is to get an accurate measure of people's salt intake over the long term and how hard it is for people to really restrict their salt intake, the failure of the Cochrane review to find low-salt diets reduce CVD and total mortality isn't surprising," he explains.

He says the authors' conclusions actually reflect the need for better data on the impact of long-term salt restriction on CVD and total mortality. "Keep in mind, a similar review article published in [*The American Journal of Clinical Nutrition* in March] last year failed to find an association between saturated fat intake and CVD events. Nevertheless, there's a known impact of saturated fat and salt on LDL cholesterol and blood pressure, respectively, in controlled clinical trials," he says. "What these data suggest is the failure to find an association in studies that measured these parameters inaccurately. The data is of little import and shouldn't alter clinical decisions."



Kenney notes that conflicting scientific data is very common and says examining and reexamining current recommendations is in the best interest of consumers. “So some of the controversy is a natural part of scientific investigation,” he says.

Amy Jamieson-Petonic, MEd, RD, CSSD, LD, LMT, director of wellness coaching at Cleveland Clinic and a spokesperson for the American Dietetic Association (ADA), agrees, and says clear-cut conclusions shouldn't be expected in the research world, as the nutrition and disease relationship isn't an exact science. “What we know to be true is that many research trials need to be completed to formulate a trend toward significant associations between good nutrition and health,” she says. “This is one study that tends to refute the clinical research done on salt intake and hypertension. It's important to look at the breadth of data over the years on the role of salt and hypertension.

“As a registered dietitian at Cleveland Clinic, as well as an ADA national media spokesperson, I'll continue to recommend that my clients reduce their intake of sodium,” she adds. “There's just so much research to support this.”

Kenney doesn't doubt the business side of salt also could be playing a part in the recent study's findings. “When research has negative implications on a commercial enterprise's ability to make money, you'd expect those businesses to want to fund studies with researchers who seem reluctant to accept current guidelines. No doubt there's some of that happening

now as public health efforts to restrict salt in foods increase around the world,” Kenney says. “Not surprisingly, much of the commercial food industry is resisting efforts to reduce salt added to foods because they [realize] salt is an inexpensive ingredient they long have used to successfully make food products people want to buy.”

When Ginny Bogle, MS, RD, LDN, an instructor at Middle Tennessee State University, first heard of the Cochrane review, she was perplexed to say the least. After reading the complete review, however, she believes the authors' wording contributed to the misperceptions of the public and the press.

“I do feel that the plain language summary that includes the phrase ‘cutting down on salt has no clear benefits...’ is misleading to the average person, which is disheartening considering that the plain language summary is what the press and food industry has picked up on,” she says.

Upon further examination, she says the Cochrane review actually seemed to contradict itself with the following finding:

“Our findings are consistent with the belief that salt reduction is beneficial in normotensive and hypertensive people. However, the methods of achieving salt reduction in the trials included in our review, and other systematic reviews, were relatively modest in their impact on sodium excretion and on blood pressure levels, generally required considerable efforts to implement and would not be expected to have major impacts on

the burden of CVD. The challenge for clinical and public health practice is to find more effective interventions for reducing salt intake that are both practicable and inexpensive.”

“I interpreted that to mean that the researchers felt it was the method of salt reduction (ie, dietary intervention, behavior change interventions, even how a client was educated on the need for intervention) that caused the decrease in salt to not have a statistically significant impact on CVD, and that isn't what the plain language summary stated,” Bogle says, noting this as another reason professionals should be diligent in their research in order to deliver the best message to clients.

Alanna Morrison, PhD, an assistant professor of epidemiology at The University of Texas Health Science Center at Houston School of Public Health, conducted research looking at salt's role in CVD, published in the April issue of *Annual Review of Public Health*, which serves as the basis for her support of salt restriction's cardioprotective benefits.

While noting that clinical trial data is limited (there aren't enough studies of sufficient size with sufficient length of follow-up), Morrison says observational studies are conclusive that reduction in sodium intake has cardiovascular benefits. “I feel that dietitians should heed the strong evidence from observational studies and the Dietary Guidelines for Americans.”

Morrison believes a goal of less than 1,500 mg of sodium per day, while unrealistic for many Americans, is still something to

strive for. “Most Americans are unable to achieve this—but at least they'll be aware and headed in the correct direction (ie, dietary sodium reduction),” she says.

### Ways to Answer Clients

The assessment of these experts is clear: One study's conclusions, let alone those from the aforementioned Cochrane review, isn't reason enough to change sodium intake recommendations. But what's the best way to explain this to clients if they cite a news story claiming salt intake no longer matters?

• **Stick to the facts.** “I'd explain to them that the evidence linking added dietary salt to higher blood pressure is overwhelming,” Kenney says. He adds that you can cite national organizations consumers recognize to support your position, such as the American Heart Association, the Centers for Disease Control and Prevention, and the new U.S. Dietary Guidelines, which have reviewed the evidence and concluded that most middle-aged and older Americans should ideally consume no more than 1,500 mg of sodium per day. (The 2010 Dietary Guidelines for Americans list 2,300 mg as the upper limit for healthy individuals.)

“Perhaps share with your client some of the published comments from spokesmen from these organizations that put these recent anomalous studies in perspective,” he explains.

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mortality, this study doesn't show the whole picture," she explains.

• **Be a detective.** Jamieson-Petonic says part of the role of any RD is to sort through emerging scientific controversies for clients. "[Being an RD] is a bit like being a detective. Nutrition is an ever-changing science, and you have to be able to sort out fact from fiction. I always look at the science first, and the 'hype' later. I always look at the breadth of data, and that's on my side," she says.

Encouraging clients to be cognizant of ever-changing research also can be helpful. "Tread lightly when you hear info like this.

There's usually more to the story than meets the eye, and there may be additional factors or justification for a story such as this that they may not be aware of," she tells patients.

When in doubt, Jamieson-Petonic tells her clients, "Always, always seek out the RD" to clear up nutrition confusion.

### Broader View

Experts advise RDs to keep a broader view in mind (not just focusing on sodium intake guidelines) when talking salt restriction with clients. While sodium intake recommendations can help guide clients trying to curtail the amount of salt in their diet, Kenney says cutting back on processed foods will help more than eliminating the salt shaker at the dinner table.

"To be successful [in restricting sodium appropriately], you have to do both—cut back on refined processed foods and consume more natural foods but also read labels to avoid high-sodium processed foods," he says.

In addition, limiting the days per week clients eat out at restaurants, another culprit of excessive sodium, is easier than attempting to choose low-sodium items, Kenney says, as salt hides in many unsuspecting places in the restaurant world. "[Avoiding] salt in most restaurants today is like trying to avoid secondhand smoke in restaurants back in the 1970s. Solving the 'secondhand' salt problem in restaurants today likely will require regulatory actions as it's now very difficult; your options are so limited."

Kenney also advises clients not to risk their health on media hype. "Don't get so caught up in the media hype that you make changes to your diet based on such hype. The vast majority of case studies such as these with anomalous findings are proven to be defective," he says.

• **Expose the study's flaws.** Get specific and provide clients with the evidence on which you base your recommendations, Morrison says. "Assure them that this report is one report based on limited data and that the authors of this review also acknowledge the limitations of their conclusions," Morrison adds. "Provide them with the substantial longstanding evidence from observational studies that reduction in sodium has significant health benefits."

• **Think big picture.** Bogle advises other RDs to "get the entire picture for yourself. Don't just go by the abbreviated plain language statement." And never forget who the people are behind any health recommendations. "After you review the research, remember that your clients are real, average people that are making these changes. They aren't just stats that can be analyzed from many different perspectives; therefore even small decreases [that might not be statistically significant] in blood pressure will be beneficial," she says.

Even consumers should be advised to question research, Bogle adds. Jamieson-Petonic agrees and advises RDs to review data for themselves. "Although at a quick glance it may look like salt intake doesn't have a role in hypertension or

Bogle says reading food labels is helpful although preparing more meals at home, with fresh fruits and vegetables and lean protein sources, is your clients' best bet at limiting sodium. While she says asking people to completely give up eating in restaurants and eating packaged food products just isn't realistic, "We [RDs] can educate them to moderate the amount of food eaten in restaurants and from packages by encouraging them to consume smaller portions of these foods, to have them less often, and to appropriately read food labels to choose products lower in sodium."

### Cooking Is Key

Taking a different angle altogether, Amanda Archibald, RD, founder of Field to Plate, believes the sodium issue is a culinary problem at its heart. Indeed, she says consumers who can't cook don't have the skills to succeed in salt restriction. "The larger picture is the more you can cook, the more control you have over your food. And so many people who cook don't start by heavily salting their food. They start by creating food and adding salt at the end. You don't have that control if you don't know how to cook, and you have to resort to eating out or buying packaged foods. So that's why I say, it's a culinary problem," she explains.

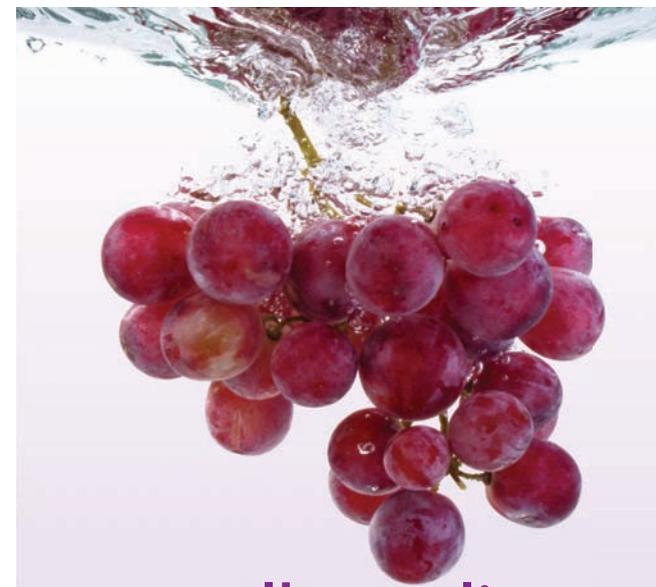
"I teach on the frontlines across America and ... the people I'm working with know that the only way we can be successful is to bring fresh food to people and give them the skills in order to be able to control what's coming in their door," she adds. "That's the only way we can get around the packaged food or eating-out problem, which is where the sodium is coming from because it's a preservative."

Instead of a focus on sodium intake guidelines, she wants RDs to focus on culinary solutions for clients. "It's very difficult when you're in a clinical setting to talk the culinary stuff. But if you deal with a client in a clinical setting and you say you need to reduce the amount of sodium you're eating to 1,500 mg, unless you're a really good chef and can show people based on their palate and their culture how to use herbs and spices to create the flavor they're desperate for, you are destined for disaster."

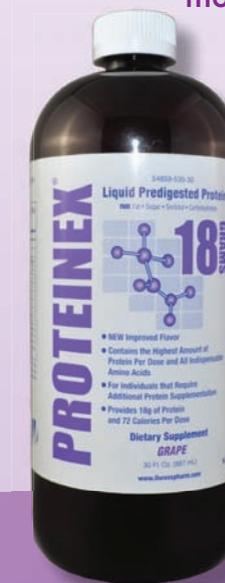
Focus on teaching basic cooking skills, and access to potassium-rich fresh produce, and Archibald says clients will be much closer to reducing their sodium intake than by memorizing the latest guidelines. That's the road to meaningful salt restriction.

For an in-depth review of the scientific literature on salt toxicity and hypertension, visit Kenney's CPE course at [www.foodandhealth.com](http://www.foodandhealth.com).

— Juliann Schaeffer is an associate editor at Great Valley Publishing Company and a regular contributor to *Today's Dietitian*.



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