



SODIUM REDUCTION:

The Intersection of Public Policy, the Food Industry and Individual Choice

The consumer message about the role of sodium in the development of hypertension has not changed over the past 40 years. What have changed are the target audience, recommended intakes and the potential for federal regulations to reduce sodium intake at the source of exposure—the food supply. Mandating sodium-reduction targets for the food industry, revising the Daily Value (DV) for sodium downward to 1,500 mg and changing the Generally Recognized as Safe (GRAS) status of salt are all on the radar. This issue of *Health Connections* discusses the heightened need for nutrition education amid these efforts, as consumer action is essential to make reduction of sodium in the food supply effective and not merely efficient.

The Challenge

Consumers need to lower their sodium intake by one-third to meet the 2010 Dietary Guidelines for Americans (DGA) recommendation. However, a majority of Americans are unaware of any government recommendations regarding sodium and are unsure about how much sodium they consume.¹ Past sodium messages and nutrition-labeling initiatives focused on those with or at risk for high blood pressure. Current DGAs advise all adults and children (2 years of age or more) to lower daily sodium to less than 2,300 mg/day; and those with hypertension, diabetes or chronic kidney disease, over 50 years of age and all African-Americans to lower intake to 1,500 mg/day. These levels are intended to prevent or minimize age-related increases in blood pressure. Including children addressed concerns about the development of early salt preference and the increasingly early development of high blood pressure.

Diet modification can prevent and treat hypertension, although there is still discussion on whether lowering blood pressure results in overall lower morbidity or mortality and whether salt reduction should be broadly recommended to lower blood pressure in individuals without hypertension (see Side Bar). Body weight, physical activity, alcohol intake and levels of other nutrients influence blood pressure. Focusing on sodium needs to be put into perspective relative to diet quality. Food-modeling studies showed that the 1,500-mg/day goal was not feasible, and the lowest sodium food patterns that were theoretically achievable were high in fruit juices, nuts and seeds, but low in grains and meats.²

Reducing Risk at the Source

Consumers' desire for convenience and reliance on food prepared outside the home—even if eaten at the family table—gives them less control over the sodium they consume. The Institute of Medicine (IOM) maintains it is unlikely that consumers can successfully reduce sodium intake without changes to the greater food environment.³ Phased targets to gradually reduce the sodium content of foods processed, prepared or offered to consumers at a variety of venues—retail, foodservice operations,

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Mary Jo Feeney, MS, RD, FADA

HEALTH CONNECTIONS EDITOR

Mary Jo Feeney specializes in nutrition communications and marketing. With over 30 years experience in public health nutrition and education, she currently is a leading consultant to the food, agriculture and health care industries. A charter Fellow of the American Dietetic Association, Mary Jo served on the Board of Directors of both the American Dietetic Association (ADA) and its Foundation (ADAF) and received the association's Medallion Award in 1996.

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federal food and nutrition programs—are proposed, although voluntary initiatives by the food industry have been in place for several years.

Health by Stealth

Gradual, unadvertised reductions—“silent reductions”—are designed to lower sodium gradually so that regular consumers of the product will not notice the change and can slowly ratchet down their taste preferences—being weaned away from salt—while companies avoid losses in market share that sometimes occur with advertised reductions.

A gradual 25 percent reduction across the board for all products by 2014 is estimated to lower daily sodium consumption from about 3,300 mg to 2,600 mg (still above the recommended 2,300 mg). Although standards for levels of salt added to foods on the basis of food categories may work in theory, food companies with thousands of products and formulations may opt to prioritize sodium-reduction efforts and make strategic

business decisions using product composition and consumption information. Identifying products contributing the most sodium to the diet (for example, based on sales weighted averages) allows a targeted approach to lowering sodium in those foods consumed by the most people. As an example, a 15-mg-per-serving reduction in a frequently consumed, moderate-sodium product (such as bread) is likely more impactful than a 200-mg-per-serving reduction in an occasionally consumed, high-sodium snack (such as pretzels).⁴

Informed, Individual Choice

Many Americans are doing something regarding sodium in an effort to take more personal responsibility for their health, such as checking the sodium content of packaged foods and limiting the amount of salt added to food.⁵ However, public policy and education must work hand in hand while still respecting personal choice so consumers can successfully modify their food choices.

Practice Points for Health Professionals

- Direct consumers to compare sodium levels using the Nutrition Facts Panel, front of pack, and shelf-tag rating systems.
- Encourage clients to follow the DASH Eating Plan, a framework consistent with the 2010 DGA that focuses on fruits, vegetables, low-fat dairy, whole grains, fish, poultry, seeds and nuts.
- Encourage clients to use nutrition information available on restaurant websites. (<http://www.restaurant.org/foodhealthyliving/kidslivewell/index.cfm>).
- Consider physical-activity levels, exposure to heat and the elements and family history of heart disease and stroke to help individualize sodium-intake levels that meet your clients' health needs.
- Take the initiative to work together with health professionals in all areas of practice—public policy, individual counseling, marketing/communications, foodservice, retail, agriculture—to improve the health of the population, individual by individual.

Side Bar: The Importance of Individualized Recommendations

Nutrition-policy recommendations need to consider whether such diets improve health outcomes (in terms of survival, function and quality of life) in the general population and do not place others at risk.⁸

- A Cochrane review found no strong evidence that salt reduction reduced all-cause mortality or cardiovascular (CVD) morbidity in normotensives or hypertensives.⁹
- Sodium's effects on other surrogate markers—hormones and lipids involved in CVD—suggest that while salt reduction lowered blood pressure in normotensives and hypertensives, it also resulted in a significant increase in plasma renin and subsequent physiological events that led to increased cholesterol and triglyceride levels.¹⁰

In the absence of complete scientific consensus, evidence supports the benefits of a public-health sodium policy that focuses on improving diet quality in the entire population and recognizes different sodium target intake levels based on an individual's overall health status, responsiveness to lower levels of sodium intake, genetics and age.

INTERVIEW

Kathryn M. Kolasa Ph.D., R.D., L.D.N., Professor Emeritus, Department of Family Medicine Brody School of Medicine at East Carolina University, Greenville, NC

Q. With the emphasis on changing the food supply and implementing silent interventions, what is the role of nutrition education?

A. The trend to shift resources toward environmental and policy change does not negate the importance of nutrition education. Changing the environment is important to remove barriers so those who want to act can act. Although changing the food environment can trigger a shift in behavior that consumers may not have undertaken otherwise, nutrition education makes it easier for clients—especially those in the pre-contemplation and contemplation stages—to make appropriate changes that pay off in the long term.

Nutrition education is important in order for policies to have impact at the individual level. Within the scope of public-health policies, consumers still need the ability to make practical day-to-day decisions. In North Carolina, most hospitals are participating in the Healthy Food Environment project, which incorporates a variety of environmental cues in participating hospital cafeterias to address obesity and increase selection of nutritious foods. (See <http://www.ncpreventionpartners.org/dnn/WhatWeDo/Programs/HealthyNCHospitals/RedAppleProject/tabid/306/Default.aspx>.) Tactics include making more healthy options available 24/7, nutrition signage, a 'silent' substitution of ingredients like white whole-wheat bread for white bread and pricing incentives for a healthy choice of the day, as consumers do eat with their pocketbooks. However, if you don't inform in a controlled environment, when employees, visitors and clients go home, they do not know what to do unless nutrition education accompanies these efforts.

Q. How can nutrition education best be implemented to have a significant impact on consumers' behaviors?

A. We need to be clear about the message and focus on what clients can accomplish. Avoid the 'big blur.' Providing too much nice-to-know information about nutrition ancillary to the condition being addressed can confuse consumers about what is most important, impactful and achievable.

Since lowering sodium in the food supply to reduce blood pressure at the population level will take time—and consumers are looking for results now—I encourage clients to truly follow the DASH eating pattern for two weeks.⁶ Emphasizing fruits, vegetables, whole grains, lean protein and low-fat dairy is something consumers can implement immediately. If diet will make a difference, they will see a change in blood pressure within a couple

of weeks. The DASH diet was built around nutrients known to impact blood pressure—calcium, potassium, magnesium, fiber—each having some effect by itself, but all together provide a functional diet to lower blood pressure approximately 8–14 mm Hg, compared to 2–8 mm Hg for sodium reduction. (See <http://www.dairyCouncilofca.org/PDFs/SodiumHC.pdf>).

Q. What suggestions do you have for working with clients in a clinic setting?

A. We need messages for medical and health professionals as well as consumers. Research suggests that those with hypertension are not managing it well. They report being more confident that they could increase physical activity, follow DASH or lose weight than trying to lower their sodium intake.⁷

Consumers need to know how the changes they make in their food choices may or may not affect their health. If a person responds to a doctor's recommendation to 'eat less salt' as a way to improve his or her hypertension by just throwing away the salt shaker, it is unlikely that his or her blood pressure will change, and he or she will give up. However, if you teach the clients all the strategies to lower blood pressure (e.g., follow DASH, lose weight if overweight), they will experience success. Every small change that leads to success will lead to an additional change in behavior.

Physicians often do not discuss lifestyle factors other than medication, which consumers interpret then as the main way to control blood pressure. Nutrition educators and registered dietitians fill this void by helping clients to know their appropriate sodium intake levels and to develop comprehensive lifestyle strategies to lower intake, focusing on the whole diet. In addition, we need to use/be aware of tools such as smartphone applications that can help monitor sodium intake or other health behavior. In the clinic, I'm amazed that medical students and clients, who otherwise might 'complain' about tracking intake, don't when the phone does it for them.

It is also important to keep current on emerging research. Some research, although preliminary and not definitive, is looking at the role of sugar-sweetened/artificially sweetened carbonated beverages on blood pressure. When the focus is solely on sodium, such other potential contributing factors can be missed.



Kathryn M. Kolasa, Ph.D., R.D., L.D.N.