We Can Reduce Dietary Sodium, Save Money, and Save Lives

Most Americans consume far more salt than is healthy; the average sodium intake has increased over the past 30 years from already high levels to more than double the recommended amount (1, 2). Excess sodium consumption increases blood pressure (3); each 20–mm Hg increase in systolic blood pressure above 115 mm Hg doubles the risk for heart attack and stroke (4), which are the first and third leading causes of death in the United States, respectively (5). These effects of increased blood pressure on heart attack and stroke begin to occur at blood pressures that are well below levels at which drug treatment of hypertension is recommended currently (6).

Worldwide, cardiovascular disease is the leading cause of death among people aged 60 years or older and second among those aged 15 to 59 years; half or more of all strokes and heart attacks are attributable to high blood pressure (7). In the United States, approximately 100,000 deaths each year have been attributed to excess sodium intake (8). Because about one third of U.S. adults have hypertension and another 28% have levels above the desirable range (9), and because sodium consumption contributes to the increase in blood pressure observed with increasing age (9), reductions in salt intake will lead to substantial population-wide improvements in health.

Clinical care and health education require considerable individual attention and effort to help one person at a time through medical treatment or to adopt healthy behaviors. Policy interventions that change the environment to make default choices healthier are more efficient ways to improve the health outcomes of large numbers of people. Examples of successful policy interventions are those that reduced lead poisoning, motor vehicle injuries, and tobacco use (10). Furthermore, policy interventions often improve health at a low cost and can sometimes produce cost savings to the health care system.

In their analysis of the impact of sodium reduction strategies in this issue, Smith-Spangler and colleagues provide compelling evidence that a policy-driven approach can reduce sodium intake, save money, and save lives (11). They have appropriately analyzed earlier research and considered a range of assumptions, and arrive at conclusions consistent with other studies (8, 12, 13).

Smith-Spangler and colleagues conclude that strategies to reduce sodium intake on a population level in the United States can be both effective and cost-effective. They calculate that a decrease of 9.5% in mean population sodium intake (similar to the decline experienced in the United Kingdom [14]) would probably prevent hundreds of thousands of strokes and heart attacks and save more than $32 billion in medical expenses over the lifetimes of adults aged 40 to 85 years who are alive today (11). This study is consistent with, and shows even larger effects than, previous work suggesting that this intervention could yield savings of $18 billion in direct health care costs (15). Still-larger decreases in sodium intake than were examined in this study would probably result in even larger health improvements and cost savings and would be more cost-effective than using medications to lower blood pressure in people with hypertension (13).

After tobacco control, the most cost-effective intervention to control chronic diseases might be reduction of sodium intake. But because more than three fourths of Americans’ sodium intake comes from processed foods and restaurant meals (16), it is very difficult for individuals to limit their consumption to healthy levels. As a result, sodium reduction will rely on action by the food industry (14, 17).

Sodium reduction initiatives involving the food industry in other countries have been successful. In 2003, the United Kingdom introduced a voluntary strategy to decrease the sodium content of processed and packaged food, which has resulted in reductions of 20% to 30% in most processed food sold in stores (14). New sodium reduction targets in the United Kingdom are being established and are expected to lead to a total 40% reduction in population sodium intake by 2012 (14). Japan and Finland have also implemented effective salt reduction programs; Ireland, Australia, and Canada have recently begun similar initiatives; and many other countries have committed to reducing sodium intake at the population level (14).

Although substantial changes in food production will be required, large and sudden reductions in salt content may make food less palatable or acceptable to consumers (18). Implementing sodium reduction on an incremental basis makes larger goals more achievable (17); the salt reduction program in the United Kingdom successfully used such a stepwise approach (14).

A coalition of national health organizations and major U.S. cities led by New York City has called for reductions in Americans’ salt intake by 20% over the next 5 years (19), with a 10-year goal of a 40% reduction in population salt intake. To achieve these reductions, the sodium content of processed and packaged foods will need to decrease by 25% in 5 years and by 50% in 10 years. Mirroring the United Kingdom strategy, the U.S. National Salt Reduction Initiative has developed voluntary 2- and 4-year interim targets for cutting sodium levels in restaurant and packaged foods (19). Many products already meet these targets, and several leading food companies have responded favorably to the intent of the proposal (20).

In 2009, the U.S. Congress directed the Centers for Disease Control and Prevention (CDC) to work with the Institute of Medicine to develop strategies to reduce the amount of salt in the U.S. food supply. Strategies may include product development and reformulation by food manufacturers, public health and health education inter-
ventions, and regulatory or legislative options. As we implement sodium reduction strategies, CDC is enhancing surveillance systems to monitor exposure and outcomes and is also monitoring progress in reducing salt consumption and its health consequences. For example, CDC is developing strategies and methods to incorporate urinary sodium measurements in NHANES (National Health and Nutrition Examination Survey), which will help provide nationally representative estimates to enable surveillance for trends in sodium intake.

Smith-Spangler and colleagues also suggest that a tax on sodium used for food production could reduce consumption and provide health benefits and cost savings (11). However, the very low unit cost of salt and the complexity of taxing a component of multiple products make it likely that taxation would not be sufficiently high, practically implementable, or both. Point-of-purchase package labeling, such as a red-yellow-green color scheme (as is being done in the United Kingdom [14]) or specific warnings for high-sodium items (as is done in Finland [14]), could be a complementary strategy to support industry-wide reductions in sodium content and help consumers make informed choices.

Changing the food environment to make healthier choices the default option is possible, and reducing the salt content of our food will have large health and economic benefits.

Thomas R. Frieden, MD, MPH
Peter A. Briss, MD, MPH
Centers for Disease Control and Prevention
Atlanta, GA 30333

Potential Conflicts of Interest: None disclosed. Forms can be viewed at www.acponline.org/authors/icmje/ConflictOfInterestForms.do?msNum=M10-0455.

Corresponding Author: Thomas R. Frieden, MD, MPH, Centers for Disease Control and Prevention, 1600 Clifton Road, NE, MS D-14, Atlanta, GA 30333.

This article was published at www.annals.org on 2 March 2010.

Ann Intern Med. 2010;152:526-527

References

www.annals.org
Current Author Addresses: Drs. Frieden and Briss: Centers for Disease Control and Prevention, 1600 Clifton Road, NE, MS D-14, Atlanta, GA 30333.