

OREGON PUBLIC HEALTH DIVISION • DEPARTMENT OF HUMAN SERVICES

## SHAKE THE SALT

Sodium can be a killer. Sodium intake is a major contributor to hypertension — current estimates attribute 21% of cases of hypertension to high salt intake.<sup>1</sup> In 2007, high blood pressure was the underlying cause of more than 600 Oregon deaths and a contributing cause of more than 4,400 (one out of seven) deaths. Treating hypertension costs approximately \$800 million per year in Oregon and \$73 billion nationally.<sup>1</sup>

The U.S. Departments of Agriculture and Health and Human Services recommend daily intake of less than 5.8 g of salt (2,300 mg of sodium), with a lower target of 3.7 g of salt (1,500 mg of sodium) per day for most adults (persons ≥40 years of age, African Americans, and persons with hypertension).<sup>2</sup> However, current intakes far exceed these guidelines. In 2005–2006, U.S. men consumed on average 10.4 g of salt per day, women 7.3 g per day.<sup>3</sup>

This *CD Summary* describes Oregon data on hypertension, recent national activities and recommendations for reducing dietary sodium in the food supply, and how clinicians can help patients “shake the salt”.

### BURDEN OF HYPERTENSION

In 2008, 28% of Oregon adults reported being told at some time that their blood pressure was high by a health care professional. For those ≥40 years of age, 38% reported being told they had high blood pressure; for those ≥65 years, the prevalence rises to 59%.<sup>\*</sup>

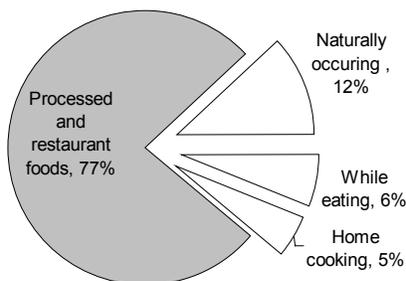
Based on national recommendations, the number of Oregon adults whose salt intake should be under 3.7 g per day (1,500 mg sodium) exceeds 1,700,000. This includes all African American adults 20–39 years (n=12,000), all adults ≥40 years without hypertension (n=1,000,000), and adults of any age with hypertension (n=680,000). Together that is two-thirds of Oregon’s adult population.

Reducing salt intake to recommended levels — on average, by more than half — will take effort from many different directions.

### SALT OF THE EARTH

Salt is everywhere. It peppers our language as well as our food. If just telling people to cut back on salt were enough, hypertension would be much less common. Most of the sodium Americans eat comes from processed food and food served in restaurants. Only 6% of the sodium consumed is added at the table (figure 1).<sup>4</sup>

Figure 1. Dietary sodium by source

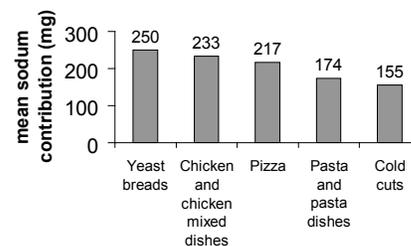


And to pour salt in the wound, many foods with sodium don’t always taste salty. The number one source of sodium in the American diet is bread because it is one of the staples of our diet (figure 2).<sup>5</sup> However, eating whole grain bread is an important part of a healthful balanced diet. Other foods, with more concentrated sources of dietary sodium may hold the greatest potential for reducing sodium intake on a population basis.

### SALT IT AWAY

It is clear that to avoid sodium, our food supply needs to become less salty. A new study published in the *New England Journal of Medicine* in February 2010 projects that reducing population salt intake by 3 g per day would prevent 44,000–92,000 deaths annually and substantially decrease rates of cardiovascular events in all populations across the United States.<sup>3</sup> This reduction could also save an estimated \$10–\$24 billion in health care

Figure 2. Mean sodium contribution (mg) of top five foods among U.S. population



costs annually; the savings to Oregon would total \$110–\$260 million. According to the authors, reducing nationwide sodium consumption would be more cost-effective than using medications to help people with hypertension lower their blood pressure.

Since the majority of sodium comes from food prepared outside the home, population-wide reductions in sodium use will take more than educating patients on cutting down on salt at the table. Significant changes in sodium consumption will mean that food manufacturers and restaurants will need to change recipes and manufacturing processes. Reducing salt in the national food supply is already underway in several countries including Canada, Australia, Finland, France, Ireland, and New Zealand.

While some U.S. companies, including Campbell Soup Company, General Mills and Nestle, have begun to voluntarily reduce sodium levels in some of their products, there is still a long way to go.

In the U.S., the New York City Health Department is coordinating the National Salt Reduction Initiative (NSRI), a nationwide effort to prevent heart attacks and strokes by reducing salt in packaged and restaurant foods. The NSRI is a coalition of cities, states and health organizations (including the Oregon Public Health Division) working with food manufacturers and restaurants to voluntarily reduce salt in their products. The goal is to reduce Americans’ salt intake by 20% over five years (see web site below).

\* 2008 Oregon BRFSS



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### WORTH THEIR SALT

Health care providers are in a unique position to help reduce sodium intake in their communities. In 2007, a majority of Oregon patients with hypertension (62%) reported receiving guidance from healthcare providers to cut down on salt in their diets, and 71% of patients with hypertension reported taking action.<sup>†</sup> Because the average American consumes a whopping 3,436 mg of sodium per day,<sup>6</sup> substantially reducing sodium will take constant reminders by clinicians to pay attention to reducing sodium as well as population-wide efforts to change our salt-laden food environment.

Health care providers can be vocal advocates for policies restricting the sale of high sodium foods in cafeterias and vending machines in health care settings and for community efforts to call for reduced sodium in school, restaurant and processed food. For example, health care professionals were instrumental in developing Oregon Health Sciences University's (OHSU) Food and Nutrition Services Guidelines. Included in the purchasing guidelines for OHSU's "It's All Good" convenience store is the requirement that no products can be sold that contain more than 480 mg of sodium per serving. For details on their policy, see [www.docstoc.com/docs/32311197/OHSU-Its-All-Good-Store-Tour](http://www.docstoc.com/docs/32311197/OHSU-Its-All-Good-Store-Tour).

Reducing sodium intake will help everyone, not just those with currently diagnosed hypertension. Advising all patients to identify sodium content in foods and to select lower sodium options can help raise awareness.

† Oregon BRFSS 2007

### FOR MORE INFORMATION

Oregon's Health Promotion and Chronic Disease Prevention Programs, 971-673-0984; [www.oregon.gov/DHS/ph/hpcdp/index.shtml](http://www.oregon.gov/DHS/ph/hpcdp/index.shtml)

Dietary Guidelines for Americans 2005 for Sodium and Potassium, [www.health.gov/dietaryguidelines/dga2005/document/pdf/Chapter8.pdf](http://www.health.gov/dietaryguidelines/dga2005/document/pdf/Chapter8.pdf).

American Heart Association Diet and Lifestyle Recommendations Revision 2006; <http://circ.ahajournals.org/cgi/content/full/114/1/82>.

American Heart Association's "Sodium (Salt or Sodium Chloride)" webpage has information for consumers, how to read food labels, and FDA sodium guidelines; [www.americanheart.org/preenter/jhtml?identifier=4708](http://www.americanheart.org/preenter/jhtml?identifier=4708).

The National Salt Reduction Initiative, [www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative.shtml](http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative.shtml).

The DASH Diet is recommended by the National Heart Lung and Blood Institute, the American Heart Association, the U.S. guidelines for treatment of high blood pressure, [www.nhlbi.nih.gov/health/public/heart/hbp/dash/new\\_dash.pdf](http://www.nhlbi.nih.gov/health/public/heart/hbp/dash/new_dash.pdf).

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4. Mattes, RD, Donnelly, D. Relative contributions of dietary sodium sources. *J Am Coll Nutr* 1991; 10:383-93.

5. National Cancer Institute. NHANES (National Health and Nutrition Examination Survey, 2005-2006). <http://riskfactor.cancer.gov/diet/foodsources/sodium/table1b.html>. Accessed 11 May 2010.
6. CDC. Application of Lower Sodium Intake Recommendations to Adults — United States, 1999-2006. *MMWR* 2009;58:281-3.

### From Haiti with Dengue

In the March 30 CD Summary we relayed reports of malaria among persons returning from relief work in Haiti after the January 12 earthquake. Now the Haitian mosquitoes are wielding dengue virus. Several cases of dengue, one confirmed as serotype 1, have been reported among U.S. relief workers.

If you see a patient ill with fever, chills, myalgias, headache, or hemorrhagic manifestations beginning within 14 days of return from Haiti or another dengue-endemic area, report it to your local public health department, and consider sending specimens for dengue testing at CDC.

When possible, paired acute and convalescent samples should be submitted for diagnostic testing. Two ml of centrifuged serum accompanied by a Haiti Travel Dengue Case Investigation Form ([www.cdc.gov/Dengue/resources/caseformhaiti.pdf](http://www.cdc.gov/Dengue/resources/caseformhaiti.pdf)) should be sent to the CDC Dengue Branch at the Puerto Rico address at the top of that form.

More information about clinical presentation, laboratory testing options and medical management of dengue is available at [www.cdc.gov/dengue/clinicalLab/clinical.html](http://www.cdc.gov/dengue/clinicalLab/clinical.html).

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