

How is sodium linked to heart health? Current actions and scope of opportunity

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Overview

- Impact of sodium on heart health
- Sodium in the food supply
- Institute of Medicine report
- Current efforts and strategies to lower sodium intake
- Scope and opportunity



Salt or Sodium?

- Sodium chloride (NaCl) = “salt”
- 90% of the sodium we consume is in the form of salt
- Sodium’s impact on health has been a large focus
- Some other food additives and ingredients contain sodium as well



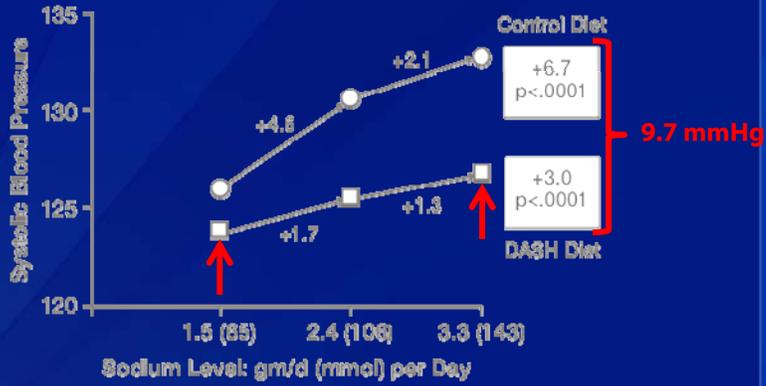
Salt and Hypertension

- Nearly one in three U.S. adults has hypertension and > 50% of people with hypertension do not have it under control.
- Lifetime risk of developing hypertension is 90%.*
- Excess sodium raises blood pressure and, subsequently, risk for cardiovascular events.
- Sodium, through hypertension, is a major contributor to death, disability, disparities, and costs attributable to cardiovascular diseases.**

*Vasan, JAMA 2002;287:1003.

**American Heart Association. Heart Disease and Stroke Statistics – 2010 Update.
<http://circ.ahajournals.org/cgi/content/full/121/7/e46>.

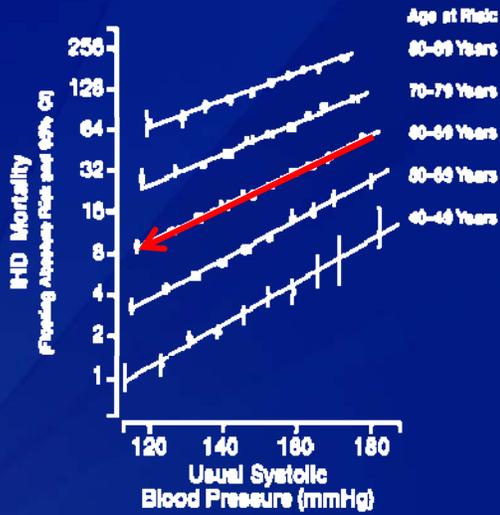
Lowest Sodium Intake Means Lowest BP



*Adapted from: Sacks, 2001(412 prehypertensive and hypertensive adults)

Figure 12-11 DASH-Sodium Trial: Effects of Dietary Changes on Blood Pressure.
Source: Adapted with permission from New Engl J Med, Vol 344, Sacks FM, Svelkey LP, Vollmer WM et al, pp 3-10. © 2001 Massachusetts Medical Society.

Risk of Death ↓ with ↓ Blood Pressure



Reprinted with permission from The Lancet, Vol 360, Prospective Studies Collaboration, p 1908.

Estimated Effects of Sodium Reduction in the U.S.

- Reducing average population intake to 2,300 mg per day (current recommended maximum) may:
 - Reduce cases of hypertension by 11 million
 - Save \$18 billion health care dollars
 - Gain 312,000 quality-adjusted life years (QALYs)
- Even fewer cases of hypertension and more dollars could be saved if intake were reduced to 1,500 mg per day (recommended maximum level for “specific populations”)

American Journal of Health Promotion. 2009;24:49-57.

Sodium Recommendation: DGA 2005

- 2005 Dietary Guidelines for Americans (DGA) recommendation: < 2,300 mg/day
- “Specific populations” recommended to consume \leq 1,500 mg/day:
 - Hypertensives
 - Blacks
 - Middle-aged or older Americans



Source: 2005 Dietary Guidelines for Americans.
<http://www.health.gov/dietaryguidelines/dga2005/document/pdf/DGA2005.pdf>

Most Everyone Consumes Too Much (mg/day)

Age	Mean Sodium Intake (mg)
4-8 years	2,694
9-13 years	3,227
14-18 years	3,793
19-30 years	3,535
31-50 years	3,781
51-70 years	3,306
71+ years	2,686

Source: Sources of Sodium Among the US Population, 2005-06. Risk Factor Monitoring and Methods Branch Website. Applied Research Program. National Cancer Institute.

How much sodium was in your dinner?

	calories	mg of sodium
Fast Food Burger Combo w/ Beverage	1,207	1,405
2 Slices of Pepperoni Pizza	463	1,146
Pasta Dish at a Sit-down Restaurant	1,110	2,970
Chicken Entrée with side at a Sit- down Restaurant	933	2,067

Values were derived from taking the means of three popular combo meals or 3 "favorite" meals from restaurants listed as top 100 companies or top selling QSRs

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving		Calories from Fat 110	
		% Daily Value*	
Total Fat	12g		18%
Saturated Fat	3g		15%
Trans Fat	1.5g		
Cholesterol	30mg		10%
Sodium	470mg		20%
Total Carbohydrate	31g		10%
Dietary Fiber	0g		0%
Sugars	5g		
Protein	5g		

Vitamin A		4%
Vitamin C		2%
Calcium		20%
Iron		4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Sample Food Label, U.S.

Low Sodium

Reduced Sodium

No Added Salt

50% Less Sodium

Lightly Salted

Product Variability



Product Variability—International

Kellogg's
Special K

	mg Na per portion	mg Na per 100 gm
Canada	270	931
Mexico	260	867
U.S.	220	710
France	200	450
Italy	200	450
U.K.	100	450
Turkey	200	400

Source: WASH

Sources of Dietary Sodium

Rank	Food Group
1	Yeast breads
2	Chicken and chicken mixed dishes
3	Pizza
4	Pasta and pasta dishes
5	Cold cuts
6	Condiments
7	Mexican mixed dishes
8	Sausage, franks, bacon, and ribs
9	Regular cheese
10	Grain-based desserts

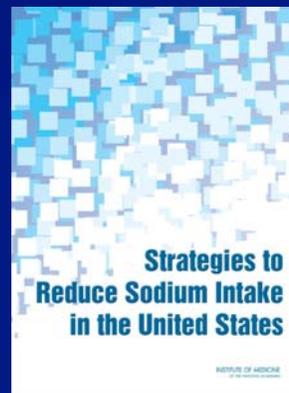
Source: Sources of Sodium Among the US Population, 2005–06. Risk Factor Monitoring and Methods Branch Website. Applied Research Program. National Cancer Institute.

Some Previous Sodium Initiatives

- 1969: White House
- 1970–2009: NRC/IOM
- 1972–2006: NHLBI
- 1973–2008: AHA
- 1975–2007: FDA
- 1977: Senate
- 1979–2000: HHS
- 1979–2006: AMA
- 1980–2005: USDA/HHS
- 1982–2007: WHO
- 1993–2008: USDA
- 2002: APHA
- 2007: ADA
- 2008–2009: State and local agencies

IOM Strategies to Reduce Sodium Intake

- In 2008, CDC received congressional language to support an IOM study
- Other sponsors: FDA, ODPHP, NHLBI
- Study examined and made recommendations about various means to reduce dietary sodium intake
- Report released in April 2010



IOM Strategies to Reduce Sodium Intake

- "...excess sodium intake is strongly associated with elevated blood pressure, a serious public health concern related to increased risk of heart disease, stroke, congestive heart failure, and renal disease."
- "The current level of sodium added to the food supply—by food manufacturers, foodservice operators, and restaurants—is simply too high to be 'safe' for consumers."

IOM Recommendations

Primary Strategy

- FDA should expeditiously initiate a process to set mandatory national standards for the sodium content of foods
 - Applies to processed and restaurant foods
 - Utilize generally recognized as safe (GRAS) status of salt

Interim Strategy

- Food industry should voluntarily act to reduce the sodium content of foods in advance of the implementation of mandatory standards

IOM Recommendations

Supporting Strategies

- Government agencies, public health organizations, consumer organizations, and food industry should carry out activities to support the reduction of sodium in food supply
 - Revise daily value for sodium
 - Re-evaluate sodium claims/disclosures on foods
 - Label foods sold to restaurants
 - Food procurement standards
 - Innovative restaurant initiatives

IOM Recommendations

Supporting Strategies Continued

- Government agencies, public health organizations, consumer organizations, health professionals, the health insurance industry, food industry, and public-private partnerships should conduct augmenting activities to support consumers in reducing sodium intake
 - HHS nationwide campaign to reduce sodium intake
 - Continuation and expansion of existing efforts

IOM Recommendations

Supporting Strategies Continued

- Federal agencies should ensure and enhance monitoring and surveillance relative to sodium intake measurement, salt taste preference, and sodium content of foods, and should ensure sustained and timely release of data in user-friendly formats

Top 10 Food Processors: U.S. and Canada

Nestle	Worldwide policy to make reductions in products with greater than 100 mg sodium/100 calories. Will reduce sodium by 25 percent over the next five years
Tyson Foods Inc.	Corporate-wide initiative focused on ways to limit the use of sodium in our meat and poultry products without significantly impacting flavor (2009)
Kraft Foods	Will reduce sodium an average of 10 percent in North America over next two years. Some products will be reduced up to 20 percent. NSRI commitment
PepsiCo Inc.	Will reduce sodium by 25 percent in average salt levels by 2015 using 2006 sodium content baseline
General Mills Inc.	Will reduce salt by 20 percent n 40 percent of its product line by 2015
Dean Foods Co.	No activities or commitments listed
Mars Inc	NSRI commitment to lowering the sodium content in its UNCLE BEN'S® brand flavored rice products by 25 percent over five years.
Smithfield Foods Inc.	No activities or commitments listed
Kellogg Co.	Reduced sodium in popular cereals worldwide
ConAgra Foods Inc.	Will reduce salt across its portfolio of food products by 20 percent by 2015

Sources: Food Processing, 2010, Company Press Releases, and Internet searches (as of Oct 31, 2010)

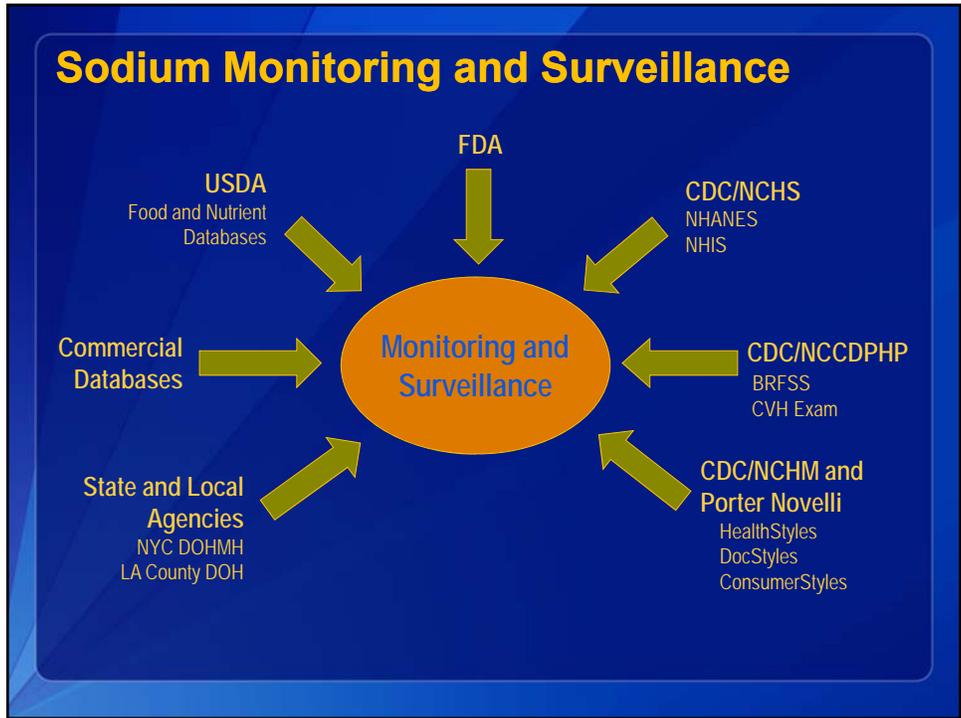
Top Restaurants/ Quick-Service Restaurants

McDonald's Corp.	Lists lower sodium foods on website, offers option of unsalted fries, hamburgers without grill seasoning
Subway	Participates in NSRI 2012 and 2014 targets for sandwiches with ham, cured meat, and soups
Burger King	In 2008 advertise only Kids Meals with 600mg sodium or less. Introduced lower sodium items (Chicken Tender and Chicken Patty).
Wendy's/Arby's Group Inc.	No activities or commitments listed
Starbucks Corp.	Participate in NSRI for breakfast sandwiches not on a biscuit
Darden Restaurants	Darden's Season 52 has a lower sodium menu
Yum! Brands	States in 2008 corporate responsibility report that its working to reduce sodium
Dunkin Donut	DDSmart Menu which is 25% reduced in sodium compared to base products
Sonic	No activities or commitments listed
Brinker International	No activities or commitments listed

Sources: Quick Service Restaurant Magazine 2010 sales figures, Nation's Restaurant News, and Internet searches (as of Oct 31, 2010)

Government Actions

- Convenes experts in science, policy, evaluation, communications, and program implementation
- Works with other federal agencies to enhance and expand sodium related surveillance



- ## Government Actions
- Convenes experts in science, policy, evaluation, communications, and program implementation
 - Works with other federal agencies to enhance and expand sodium related surveillance
 - Expands knowledge/contributes to science base of sodium and health
 - Educates the public
 - Regulation and Labeling
 - Facilitates special initiatives
 - Works with industry
 - Supports state and local initiatives

Sodium Reduction Communities 2010

- California Department of Public Health
- Kansas Department of Health and Environment
- Los Angeles County Department of Public Health
- New York City Department of Health and Mental Hygiene
- New York State Health Department

State- and Local-Level Action

- Councils, Committees and Taskforces
- Procurement Policies
- Pricing Strategies
- Venue-Based Policies
- Restaurant Policies and Initiatives
- Monitoring and Surveillance

Summary

- Scientific evidence demonstrates sodium's negative impact on blood pressure.
- Current sodium intake is high, and the current environment makes it difficult to lower sodium intake.
- This is a timely and important opportunity to support sodium reduction activities and strategies.

For More Information

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the CDC.



Thank You

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