Sodium Reduction: Facts and Fiction



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Overview

- Excess sodium intake: A significant health problem
- Sodium and blood pressure: Cause and effect
- Reducing sodium in the food supply: Restoring choice
- Myths and misconceptions about sodium: Straight talk

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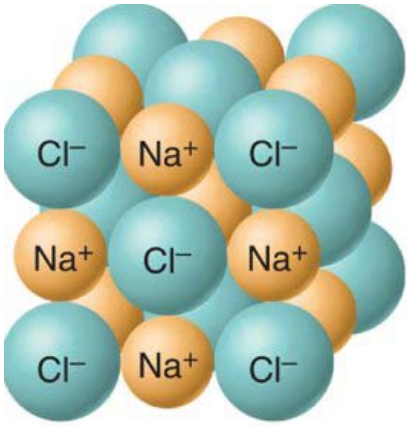
Salt or Sodium?

- **Sodium chloride (NaCl) is the chemical name for dietary salt**
  - NaCl is 40% sodium and 60% chloride
- **Sources of sodium**
  - Nearly all of our sodium intake is from salt added to food
  - The vast majority is already in processed and restaurant foods
  - A small amount of sodium in food occurs naturally (e.g., fruits, vegetables, and whole grains)



NaCl crystal

Nutrition Facts
Serving Size 1 oz

Amount Per Serving 3 olives

Calories 20	Calories from Fat 15
	% Daily Value*
Total Fat 2g	**3%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 240mg	**10%**
Total Carbohydrate 2g	**1%**
Dietary Fiber 1g	**3%**
Sugars 0g	
Protein 0g	

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Why is Excess Sodium Intake a Critical Public Health Issue?

- **Excess sodium intake causes hypertension**
  - Nearly 1 in 3 U.S. adults has hypertension (68 million people)
  - Middle-aged and older men and women have a 90% lifetime risk of developing hypertension
  - More than 1 in 2 people with hypertension do not have it under control

Vital Signs: MMWR 2011; 60(4):1-3–8
Vasan, et al. JAMA 2002;287:1003–1010

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Why is Excess Sodium Intake a Critical Public Health Issue?

- **Sodium, through hypertension, is a major contributor to death, disability, health disparities, and costs attributable to cardiovascular diseases (CVDs)**
  - CVDs are the leading causes of death (~800,000 adults/year)
  - CVDs are the leading causes of health disparities
- **Economic burden**
  - Treatment for heart disease, stroke, and other CVD accounts for 1 in 6 U.S. health dollars spent ($273 billion in 2008)
- **In 23 developing countries, 8.5 million deaths could be averted over 10 years through a 15% reduction in sodium intake**

Vital Signs: MMWR 2011; 60(4):1-3–8
Heidenreich PA, et al. Circulation 2011;123;933–944
Asaria P, et al. Lancet 2007;370:2044–53

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Sodium Intake Levels: Recommended and Actual

- **Recommended levels of sodium intake**
  - 2010 Dietary Guidelines for Americans
  - For specific populations: 1,500 mg/day
    - ≥51 years old
    - African Americans
    - Have high blood pressure, diabetes, or chronic kidney disease
    - About half the U.S. population and the majority of adults
  - For all others: Reduce to 2,300 mg/day
- **Actual sodium intake**
  - Average daily sodium intake for U.S. adults is >3,400 mg/day

USDA and HHS. Dietary Guidelines for Americans, 2010. 7th edition. Washington, DC: Government Printing Office; 2010

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The Good News: An Easy Solution Exists for Reducing Sodium Intake

- **Reducing sodium intake reduces blood pressure: For most people in only days to weeks**
- **Reducing the average population systolic blood pressure by just 5 mm Hg can have a major impact**
  - 1 in 7 reduction in stroke deaths
  - 1 in 11 reduction in coronary heart disease
- **Reducing average population sodium intake to 1,500 mg/day may**
  - Reduce cases of hypertension by 16 million
  - Save $26 billion health care dollars
  - Gain 459,000 Quality Adjusted Life Years (QALYs)

Sacks FM, et al. N Eng J Med 2001;344:3–10
Stamler R. Hypertension 1991;17(suppl1):I16–I20
Palar K, et al. Am J Health Promot 2009;24(1):49–57

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The Good News: An Easy Solution Exists for Reducing Sodium Intake

- **Even reducing sodium intake to 2,300 mg/day could**
  - Reduce cases of hypertension by 11 million
  - Save $18 billion health care dollars
  - Gain 312,000 QALYs

Palar K, et al. Am J Health Promot 2009;24(1):49–57
QUALYs, Quality-adjusted life years

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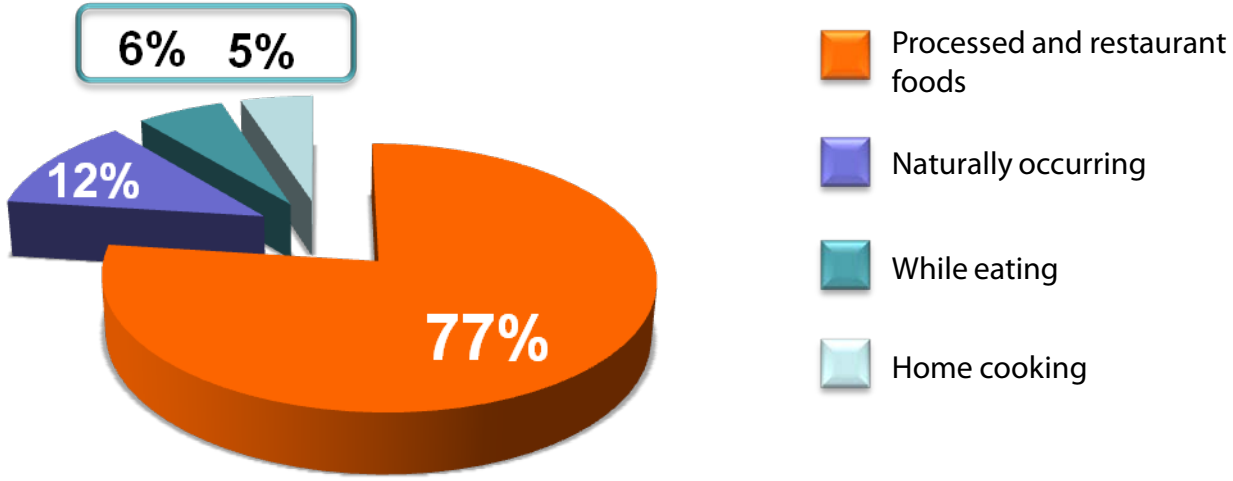
The Opportunity: Reducing Sodium in the Food Supply

- **Most sodium is already in the food we eat and is mostly invisible**
  - It comes from processed and restaurant food



- **It is not just the salt shaker!**

Mattes RD, et al. J AM Coll Nutr 1991;10:383–393

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The Opportunity: Giving People Choice

- **Consumers have little choice in the amount of sodium they consume every day**
  - Hard to guess how much sodium is in a given food
  - Hard to find truly low-sodium products or menu items
  - Once sodium has been added to your food, you cannot take it out

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The Opportunity: Reducing Sodium in the Food Supply

- Reducing the sodium content of restaurant and processed foods is a vital approach to reducing sodium intake
- The food supply must change to enable greater choice
- Other approaches include giving consumers more information at the point of decision making, both on food labels and on restaurant menus
- Industry action: Signs of change

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Myths and Misconceptions
1. There is Not Enough Evidence to Act

- **Large body of strong scientific evidence**
  - Increasing sodium intake increases blood pressure
  - Reducing sodium intake reduces blood pressure
  - Current sodium intake far exceeds safe and healthy levels
- **Numerous scientific bodies and health professional organizations support sodium reduction to prevent and control high blood pressure. Recent examples:**
  - American Medical Association (2009)
  - American Public Health Association (2009)
  - Institute of Medicine (2010)
  - Dietary Guidelines for Americans (2010)
  - American Heart Association (2011)

Institute of Medicine. Dietary reference intakes for water, potassium, sodium chloride, and sulfate. Washington, DC: National Academies Press;2004
Institute of Medicine. Strategies to reduce sodium intake in the United States. Washington, DC: National Academies Press;2010

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Myths and Misconceptions

2. Population Sodium Reduction Is a Risky Experiment

- **The U.S. population has come to be exposed to highly excessive levels of sodium in our food supply**
- **Reducing sodium intake has been shown to be safe and effective**

Institute of Medicine. Dietary reference intakes for water, potassium, sodium chloride, and sulfate. Washington, DC: National Academies Press;2004
Institute of Medicine. Strategies to reduce sodium intake in the United States. Washington, DC: National Academies Press;2010

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Myths and Misconceptions

3. Sodium Reduction is Only Important for People with High Blood Pressure

- Limiting sodium intake is important for everyone
- The lower the sodium intake, the lower the blood pressure
- Risks of heart attacks and strokes decreases with blood pressure reduction, well below the "normal" range

- There is no basis to recommend sodium intake that exceeds the adequate intake (AI) level

Ness RB. Ann Epidemiol 2009;19(2):118–120
http://www.who.int/dietphysicalactivity/Salt_Report_VC_april07.pdf

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Myths and Misconceptions
4. There Is No Justification for Government Action

- **Reliance on voluntary efforts to lower sodium levels in processed and restaurant foods has not worked, over the past 40 years**
- **Consumers deserve more choices and more control of the sodium levels in the foods they eat**
- **Government can promote or require changes in sodium content of foods through food procurement policies, public information, industry regulation, etc., coupled with monitoring and surveillance**
  - GSA/HHS Health and Sustainability Guidelines for Federal Concessions and Vending Operations

http://www.gsa.gov/graphics/pbs/Guidelines_for_Federal_Concessions_and_Vending_Operations.pdf
http://www.cdc.gov/salt/pdfs/DHDSP_Procurement_Guide_Summary.pdf

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Myths and Misconceptions
5. Food Will Lose Its Taste

- Excess salt masks other flavors
- Salt taste changes with changing intake
- Gradual changes go largely unnoticed
- Resetting the palate: Less sodium means more natural flavors

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Summary

- Excess sodium intake causes hypertension
- Average daily sodium intake for U.S. adults is more than double what is recommended as a safe level of intake for most adults
- Changes in the food supply are needed to restore choice and bring sodium intake to within recommended levels
- Government has a critical role to play at federal, state, and local levels

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SODIUM REDUCTION: TIME FOR CHOICE

- **Darwin R. Labarthe, MD, MPH, PhD**
  Sodium Reduction: Facts and Fiction
- **Jeremiah Fasano, PhD**
  Salt as Food Ingredient: Technological Context
- **Mary E. Cogswell, DrPH**
  Monitoring Progress in Sodium Reduction
- **Christine Johnson, MBA**
  National Salt Reduction Initiative: A Voluntary Framework to Reduce Population Sodium Intake

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Salt as a Food Ingredient: Technological Context



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Office of Food Additive Safety
Center for Food Safety and Applied Nutrition
Food and Drug Administration

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Overview

- Why is salt added to food?
- What can replace salt in food?
- FDA activities related to reducing sodium intake
- The 2010 recommendations of the Institute of Medicine

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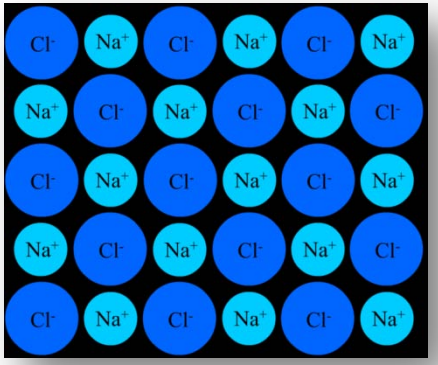
Why Is Salt So Widely Used in Food?

- **Flavor**
  - Tastes good
- **Safety**
  - Most microbes do not like high salt concentrations
- **Processing**
  - Changes how other food components behave



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Flavor

- **Salt is one of the 5 primary tastes**
  - Sweet, salty, sour, bitter, and umami
  - The sodium ion causes the perception of saltiness
  - Recent research suggests that mammals have dedicated salt-sensing taste cells that are highly specific for the sodium ion
- **Saltiness alters our perception of other tastes**
  - Salt can mask bitterness
  - Salt can enhance sweetness

Chandrashekar et al. Nature 2010;464,297–301

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Safety

- **Salt is the oldest food preservative**
- **Salt reduces water available for microbes**
  - Microbes need water to grow and reproduce
  - Salt 'holds' water so that microbes can't use it
  - Sufficiently high salt concentrations can kill microbes by hyperosmotic shock
- **Salt can interfere with microbial 'digestion'**
  - Microbes send enzymes into their surroundings
  - High salt inhibits these enzymes
- **Sodium is a component of other commonly used preservatives**

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Processing

- **Serves as a tenderizer**
  - Salt can cause separation of groups of proteins
- **Allows foods to hold their shape**
  - Salt can make proteins lose their native shapes, and these 'denatured' proteins tend to stick together
- **Controls fermentation and ripening**
  - Some foods are made using controlled enzyme activity or bacterial growth, which can be regulated by salt concentration
  - The ripening of cheeses is one example of this process
- **Provides texture**
  - Salt holds water and can retain moisture and enhance food texture

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Examples of Sodium's Technical Effects in Food

Bread	Affects texture Controls yeast growth and fermentation rate Reduces spoilage
Cheese	Reduces the metabolic activity of the starter-culture bacteria Modifies enzyme activity during maturation of some cheeses Causes physical changes in cheese proteins, which influence solubility and texture
Meats	Preserves product Increases water-holding capacity in some products Increases meat binding in other products
Savory Snacks	Affects product texture in some expanded products (e.g., cheese puffs) Acts as a solid carrier of applied seasonings and flavors, enabling accurate measurement and improving dispersion

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Can Salt Be Substituted?

- **Direct replacements**
  - Potassium, calcium, and magnesium salts
  - Reduced-sodium sea salts (increased magnesium and potassium)
  - Challenges: Different flavor profiles, cost, may not be suitable for full replacement
- **Flavor enhancers**
  - Lysine, arginine, ornithyl-3-alanine, trehalose
  - Umami substitutes (fermentation products, monosodium glutamate, glutamate salts)
  - Challenges: Cost, altered flavor profiles
- **Preservatives**
  - Potassium and calcium lactates; phages
  - Challenges: Cost, validating efficacy

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New Technologies in Development

- **Microcapsules**
  - Examples: Potassium chloride and agent to reduce bitterness
- **Hollow microspheres of sodium**
  - Impart a similar taste experience for a lower absolute quantity of salt
- **Manipulation of ion channels**
  - Ingredients that directly manipulate the properties of ion channels in the taste receptor cells to amplify the sensory signal of a given amount of sodium

Increased cost can limit utility of both current and future replacements

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FDA Activities to Promote Awareness of Sodium Content and Encourage Its Reduced Intake

- **Required sodium labeling as early as 1984**
  - Later subsumed by NLEA
- **Promulgated standards for sodium-related nutrient content and health claims**
- **Conducted a public hearing on sodium (Nov 2007)**
- **Executing front-of-pack initiative and related work on nutrition facts panel**
- **Implementing menu labeling required by Patient Protection and Affordable Care Act of 2010 (PPACA)**

NLEA, Nutrition Labeling and Education Act of 1990
PPACA, Patient Protection and Affordable Care Act of 2010

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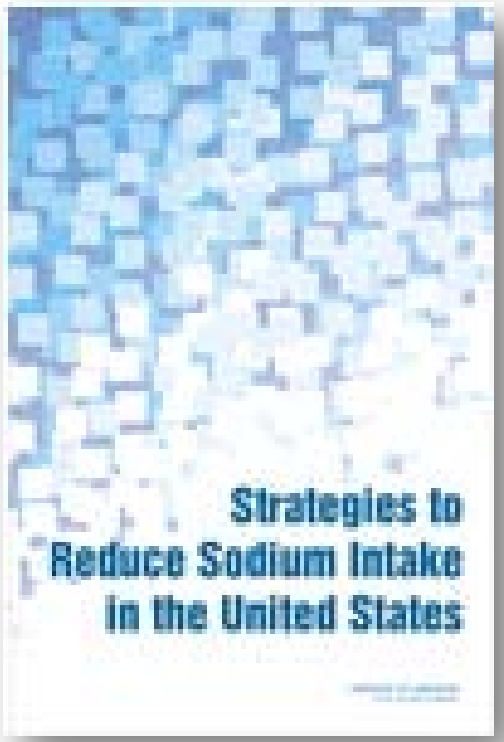
Sodium Reduction Efforts: The IOM Assessment

- IOM Report "Strategies to Reduce Sodium Intake in the United States." (2010)
- IOM concluded that labeling and education efforts in isolation had not significantly reduced sodium consumption in the United States



Henney et al. Strategies to Reduce Sodium Intake in the United States. 2010
http://www.iom.edu/Reports/2010/Strategies-to-Reduce-Sodium-Intake-in-the-United-States.aspx

The IOM Assessment: Recommendations

- **Reduce the sodium content of the U.S. food supply**
  - Broad, gradual reductions
  - Begin with voluntary initiatives
  - Industry in collaboration with government and other stakeholders
  - Initiation of a process to set mandatory standards
- **Revise and extend labeling to support sodium reduction efforts**
- **Monitor changes in**
  - Sodium intake
  - Salt taste preference
  - Sodium content of food

Henney et al. Strategies to Reduce Sodium Intake in the United States. 2010
http://www.iom.edu/Reports/2010/Strategies-to-Reduce-Sodium-Intake-in-the-United-States.aspx

Monitoring Progress in Sodium Reduction in Foods



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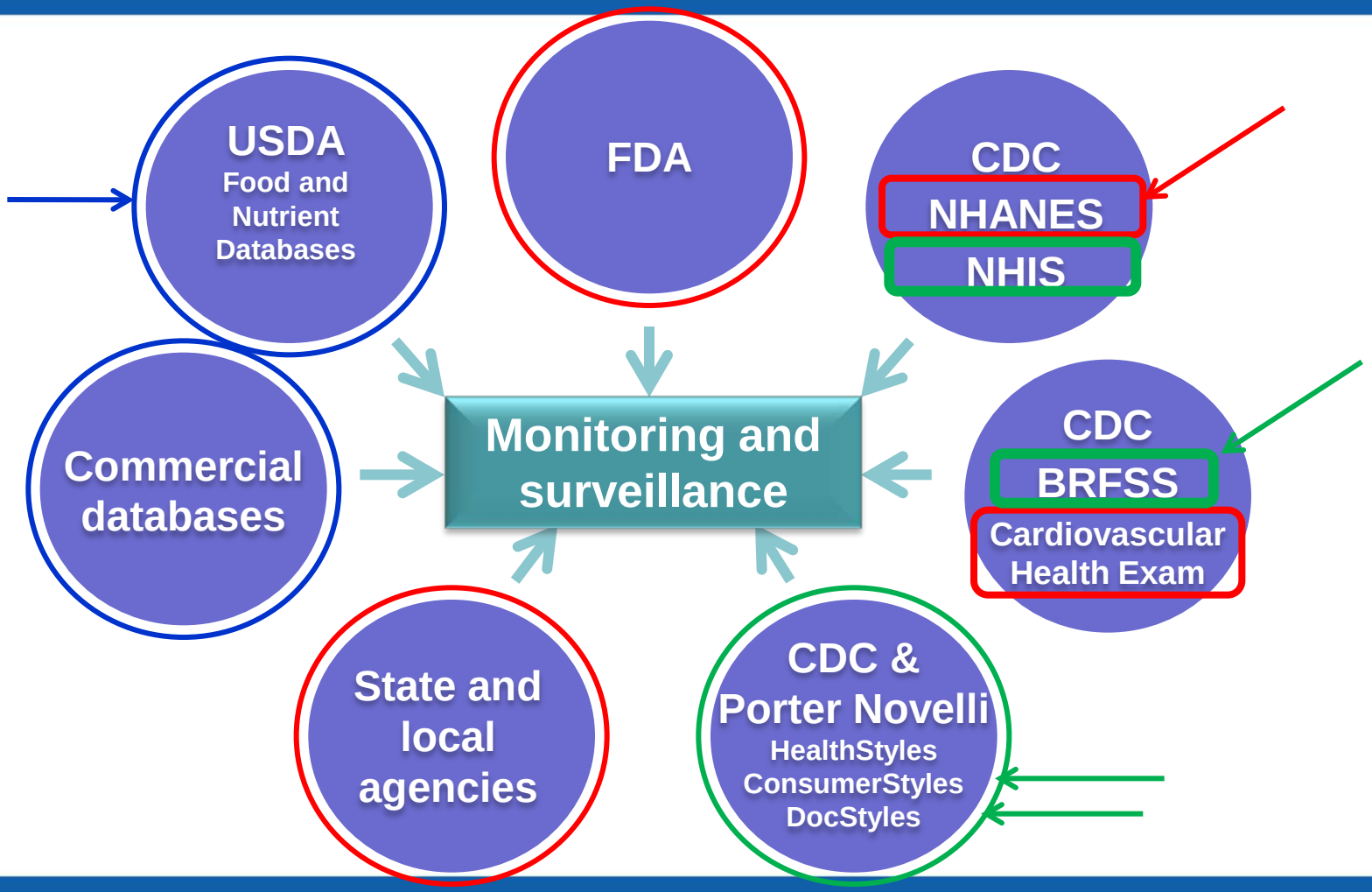
Outline

- How much sodium is in the food we eat?
- How much sodium do we consume?
- Are we ready for a nationwide action to reduce sodium intake?

Sodium in Food and People: Data Sources



FDA, Food and Drug Administration
USDA, US Department of Agriculture
NHANES, National Health and Nutrition Examination Survey
NHIS, National Health Interview Survey
BRFSS, Behavioral Risk Factor Surveillance System

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Sodium in Food
Data Sources: USDA Food and Nutrient Databases

- **Updated sodium values of foods that are major contributors to U.S. diet**
  - Reviewed ~1,300 mainly processed foods
  - Updated ~450 foods in 2010 National Nutrient Database
- **Conducting laboratory analysis of sentinel foods that contribute high proportions of added sodium to U.S. diet, e.g., bread contributes 7.3% of sodium**
  - Sodium values can vary up to 10-fold, e.g., ~50 to 500 mg/100 g for French fries from 4 different family-style chain restaurants
  - ~64 restaurant and processed foods analyzed since Oct 2009

USDA, US Department of Agriculture
http://www.ars.usda.gov/SP2UserFiles/Place/12354500/Data/SR23/sr23_doc.pdf
http://riskfactor.cancer.gov/diet/foodsources/sodium/table1a.html

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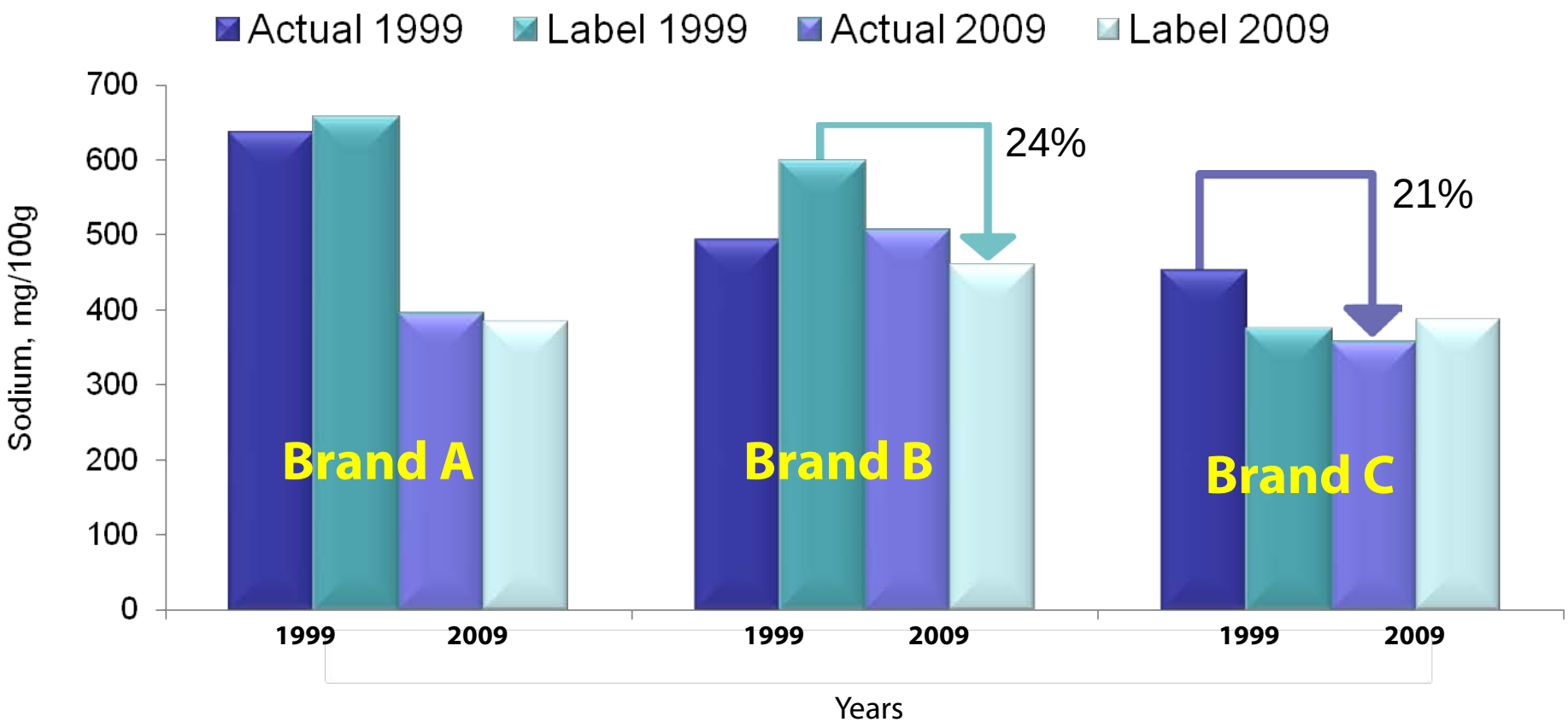
Actual and Labeled Sodium Values in Three Brands of Pasta Sauce



USDA, ARS, Nutrient Data Laboratory, National Food and Nutrient Analysis Program, [unpublished data] 2011

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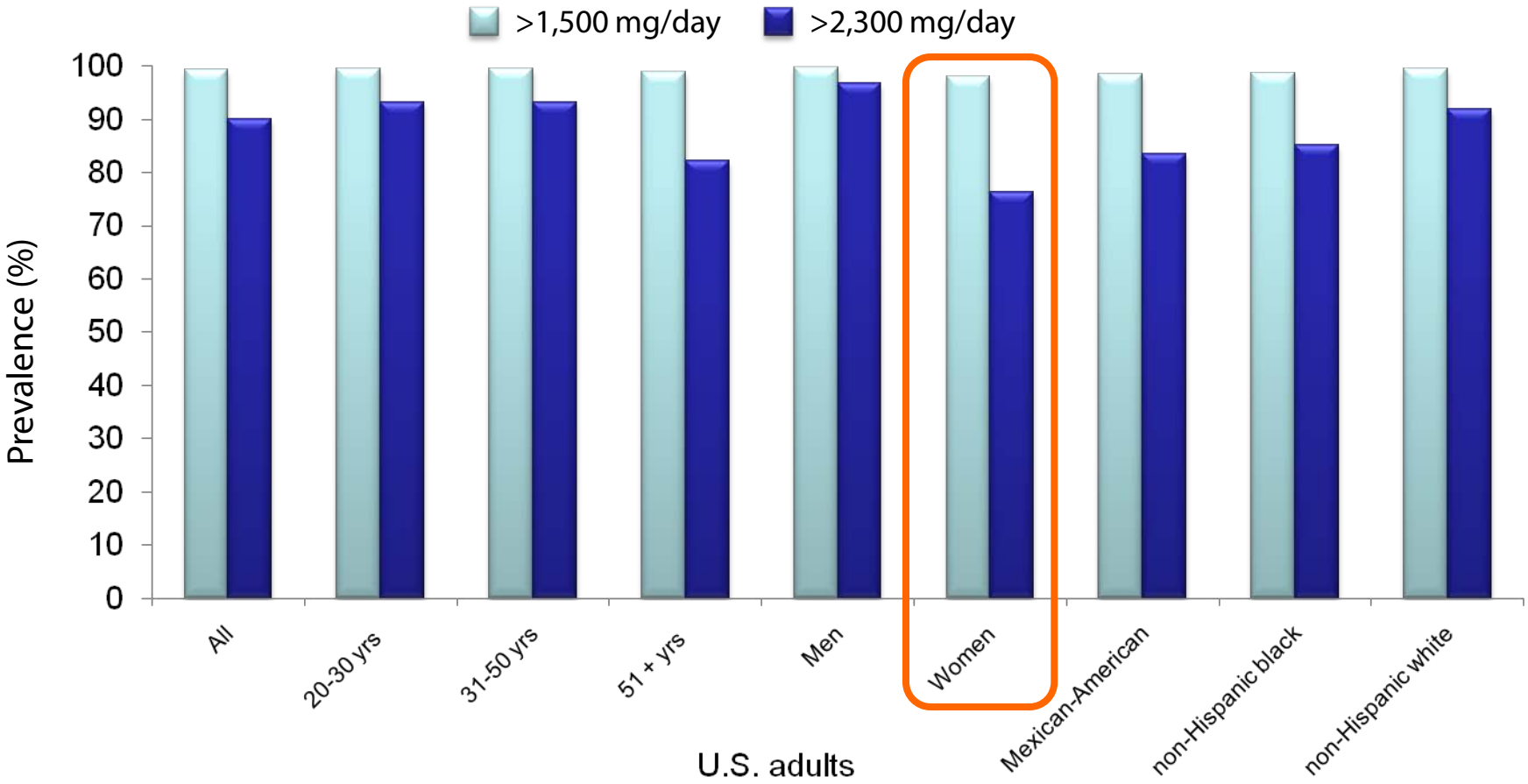
U.S. Adults ≥20 Years Who Consume More Sodium than Recommended



Cogswell M, et al. [unpublished data] NHANES 2003-2008

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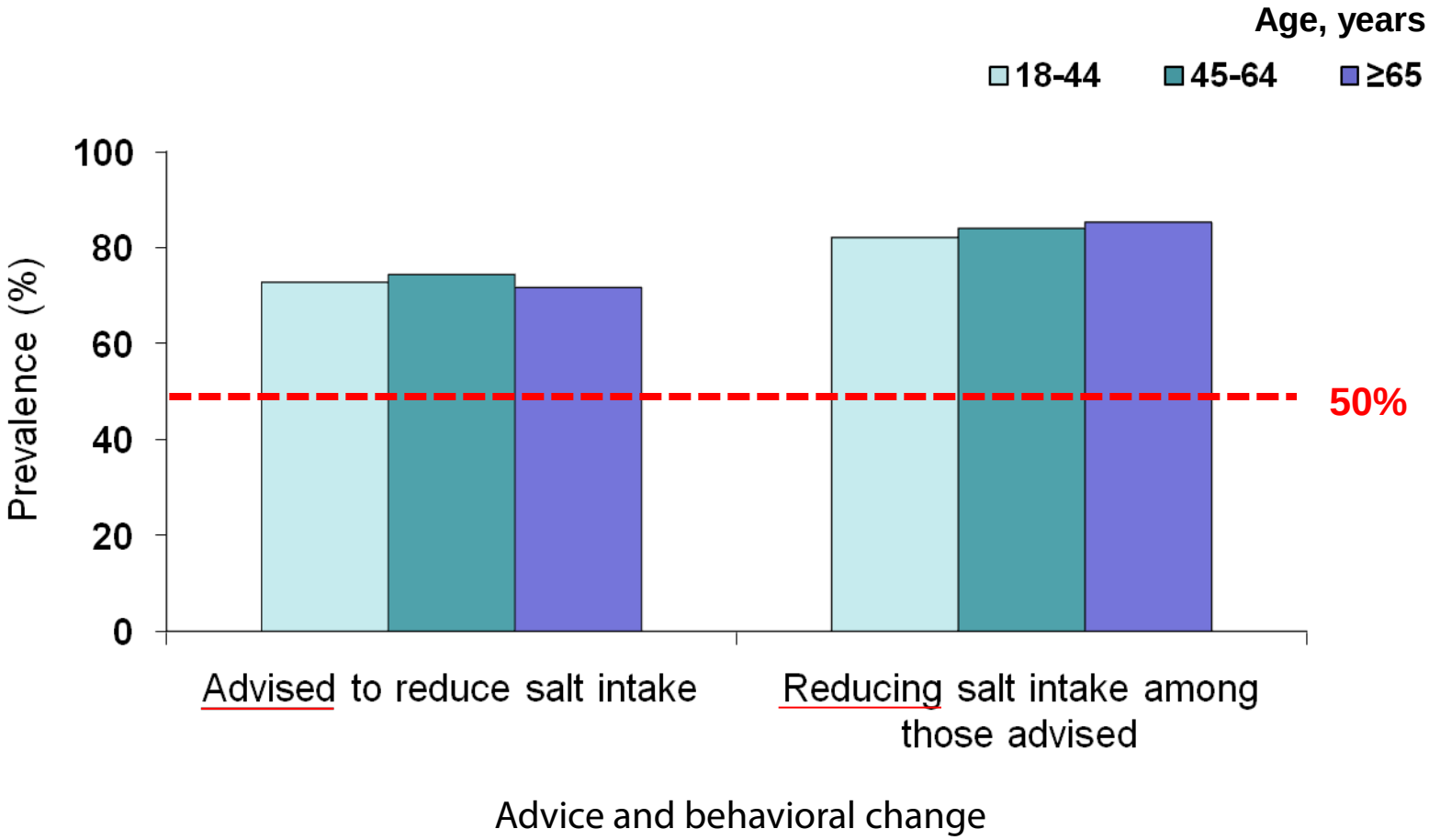
Adults with Self-Reported Hypertension Who Received and Acted on Low-Salt Advice



Behavioral Risk Factor Surveillance System, 19 states, 1 territory, and Washington, DC, 2007

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Consumer Understanding of the Relationship of Sodium Intake and Health

Consumers	Frequency of Responses (%) to "Salt Really Isn't That Bad for You"				
	Strongly disagree	Moderately disagree	Neither agree or disagree	Moderately agree	Strongly agree
All	33	29	26	9	3
18–50 years	27	31	29	10	3
≥51 years	41	25	21	9	4
White	29	31	27	10	3
Black	46	22	19	7	5
Hispanic	36	25	27	9	3

ConsumerStyles [unpublished data].2010

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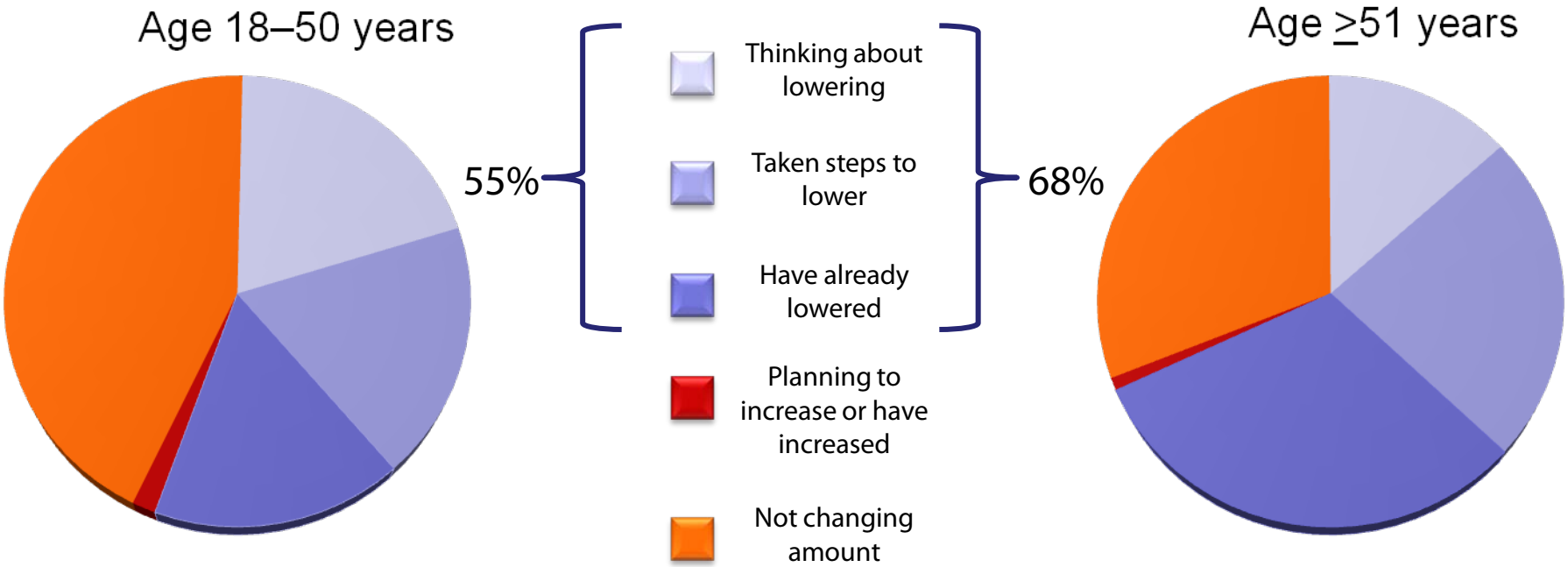
Consumer Intention or Action to Reduce Salt Intake

Question: "Thinking about your salt intake, which of the following best describes you?"



ConsumerStyles [unpublished data].2010

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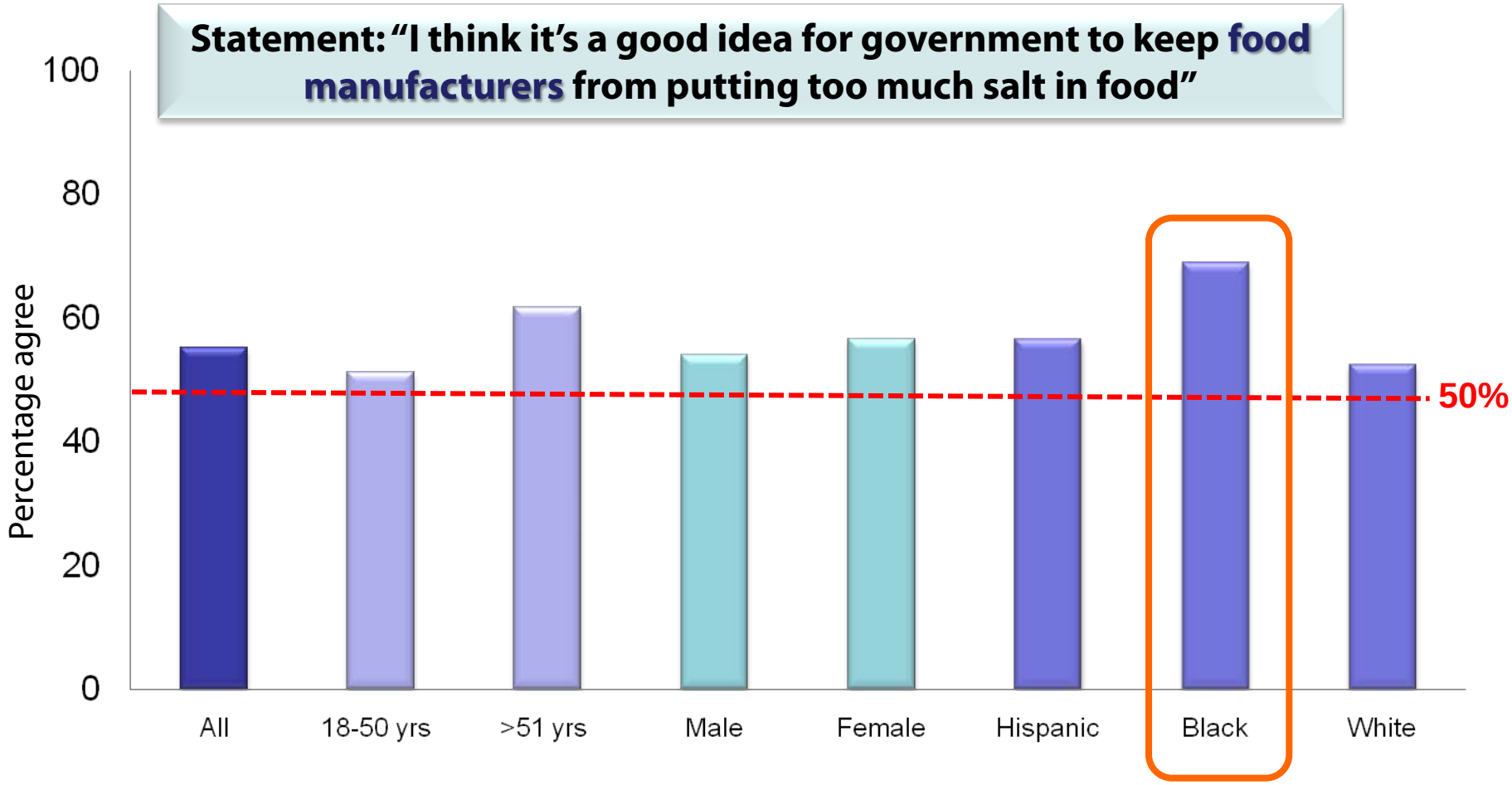
U.S. Consumers Who Agree with Government Salt Regulation



ConsumerStyles [unpublished data].2010

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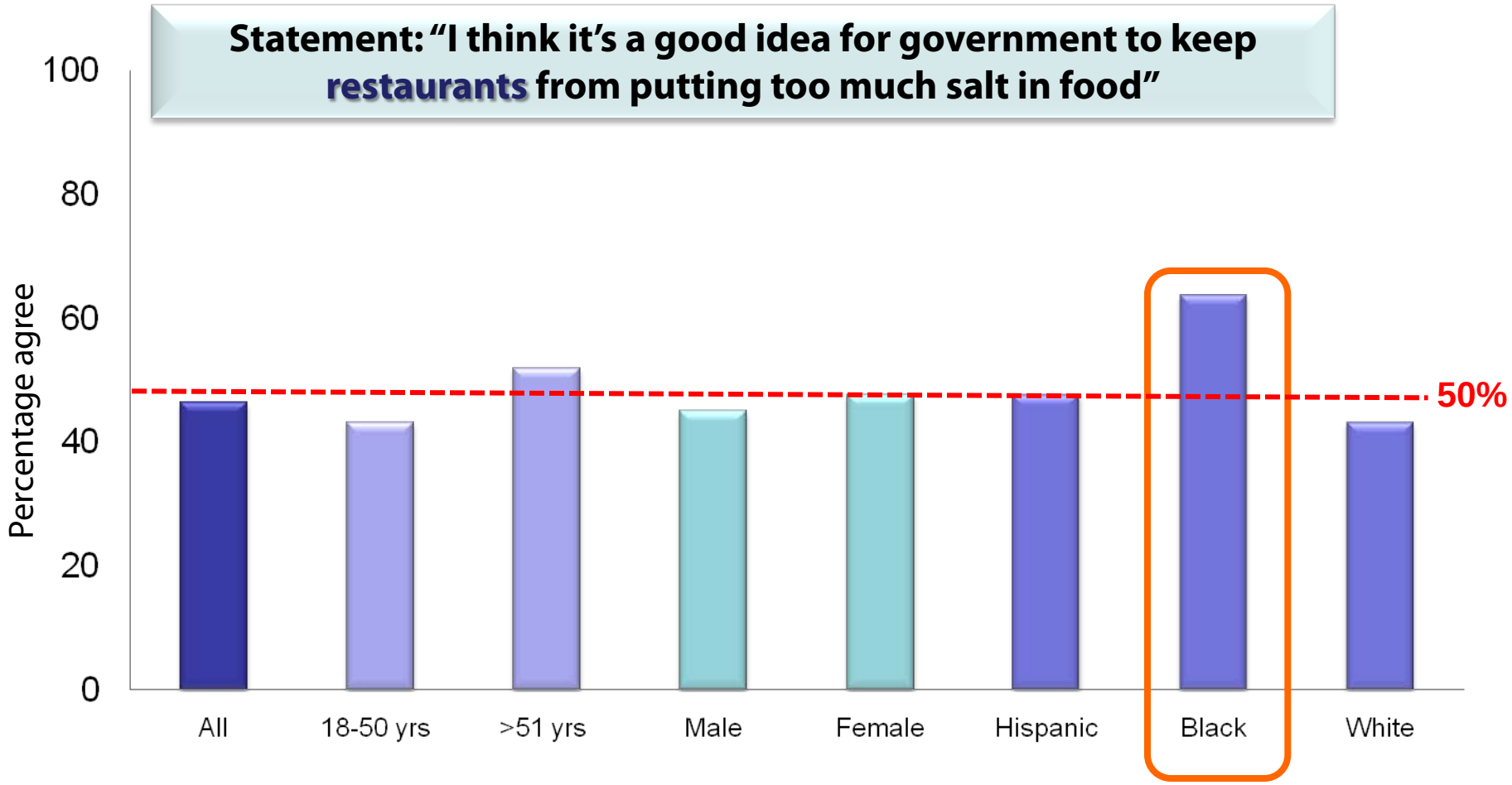
U.S. Consumers Who Agree with Government Salt Regulation



ConsumerStyles [unpublished data].2010

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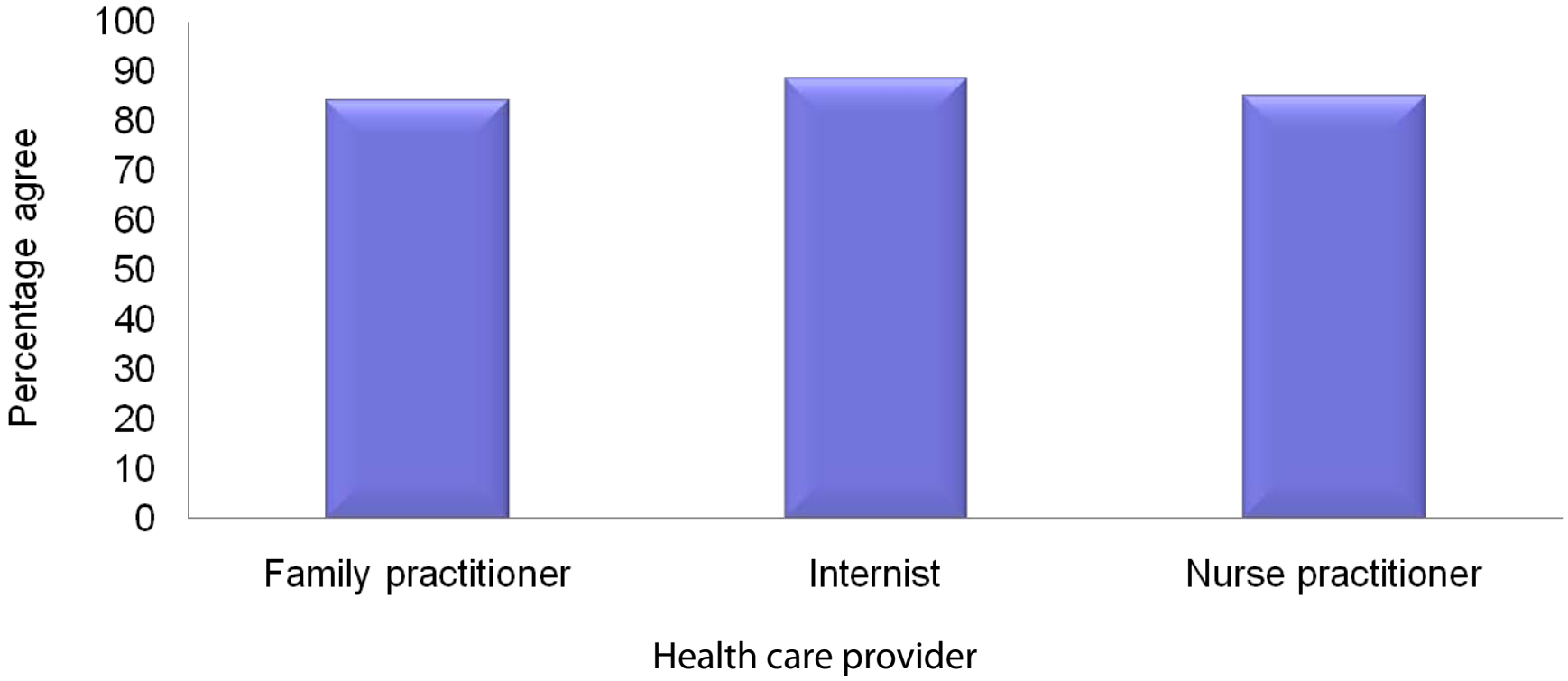
Health Care Providers Who Agree with Importance of Sodium Reduction for their Patients

Statement: "Most of my patients should reduce their sodium intake"



Fang J, et al. DocStyles [unpublished data]. 2010

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Summary

- **Vast majority of U.S. adults consume excess sodium**
- **Laboratory analysis of sodium in foods is essential**
  - Labeled sodium values vary from actual values
- **Consumers and health care providers seem ready for reduction of sodium in food**
  - Consumers understand link between sodium and health
  - Many consumers have taken some action to lower sodium intake
  - More than 80% of health care providers think their patients need to reduce sodium intake
  - The majority of consumers agree with government regulation of "too much salt" in manufactured foods, and >40% agree with regulation of restaurant foods

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Future Directions

- **Complete and implement USDA/CDC/FDA sentinel sodium food monitoring system**
- **Determine and implement the optimal method for population monitoring of U.S. sodium intake**
  - Compare spot versus 24-hour urine collections
  - Analyze stored urine samples from prior NHANES surveys
  - Include 24-hour urine collection in NHANES 2013–2014
- **Continue to monitor consumer readiness and acceptance of measures to eliminate excess sodium**

USDA, United States Department of Agriculture
FDA, Food and Drug Administration
BRFSS, Behavioral Risk Factor Surveillance System
NHANES, National Health and Nutrition Examination Survey

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National Salt Reduction Initiative:
A Voluntary Framework to Reduce Population Sodium Intake



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New York City Department of Health and Mental Hygiene

NYC Health

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Overview

- National Salt Reduction Initiative
- New York City Sodium Reduction Activities
- Sodium Reduction in Communities grant (CDC grant)

National Salt Reduction Initiative (NSRI)

GOAL

Reduce population sodium intake by 20% in 5 years
by
decreasing sodium content in foods by 25% over 5 years

http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-salt-factsheet.pdf

NYC Health

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National Salt Reduction Initiative (NSRI) Overview

- **Launched in 2008**
- **Coordinated by New York City Department of Health and Mental Hygiene**
- **Partnership of >70 local and state health authorities and health organizations**
  - National health organizations (e.g., AMA, AHA)
  - Local and state health associations
  - State health departments
  - Local/city health departments

Full listing of all partners provided at
http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative.shtml
AMA, American Medical Association
AHA, American Heart Association

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National Salt Reduction Initiative (NSRI) Strategy

- **Create national nutrition databases**
- **Develop targets for sodium reduction**
  - Feasible, based on the best available information and industry feedback
- **Monitor industry progress**
  - NSRI databases in 2012 and 2014
  - Company-submitted reports
- **Evaluate sodium intake in the New York City population**

NSRI, National Salt Reduction Initiative

Packaged and Restaurant Food Databases

- **Databases created and maintained by NYC DOHMH**
  - Contain proprietary data
- **Packaged food database**
  - Merges national sales data and nutrition data
  - Allows analysis of top 80% of items by sales
  - Allows calculation of sales-weighted mean and range of sodium
- **Restaurant food database**
  - Merges national market-share data and publicly-available nutrition data for 50 largest quick service restaurants
  - Allows calculation of market share-weighted mean and range of sodium

National Salt Reduction Initiative (NSRI) Targets

- **Developed voluntary sodium-reduction targets**
  - Packaged food: 62 categories
  - Restaurant food: 25 categories

Packaged food

Examples

Bread and rolls
Crackers
Canned beans
Processed cheese

Restaurant food

Examples

Hamburgers with cheese
Sandwiches w/ lunch meat
Pizza
Soup

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National Salt Reduction Initiative (NSRI) Targets

Sodium targets for packaged food

- Overall sales-weighted mean of sodium content must meet the relevant target for salt content, even if some individual products do not

Food type	2012 target	2014 target
Bread and rolls	440 mg/100 g	360 mg/100 g

Sodium targets for restaurant food

- The mean of all products in the category must meet the relevant target, even if some individual products do not

Full listing of all participating companies are provided at http://www.nyc.gov/html/doh/html/cardio/cardio-salt-initiative.shtml

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National Salt Reduction Initiative (NSRI) Commitments by 28 Companies

Packaged food

- ✓ Black Bear European Style Deli
- ✓ Boar's Head
- ✓ Butterball
- ✓ Campbell Soup Company
- ✓ Delhaize America
- ✓ Dietz & Watson
- ✓ Fresh Direct
- ✓ Furmano's
- ✓ Goya
- ✓ Hain Celestial
- ✓ Heinz
- ✓ Hostess Brands
- ✓ Ken's Foods
- ✓ Kraft
- ✓ LiDestri Foods/Francesco Rinaldi
- ✓ Mars Food
- ✓ McCain Foods
- ✓ Premio
- ✓ Red Gold
- ✓ Snyder's-Lance, Inc.
- ✓ Target Corporation
- ✓ Unilever
- ✓ White Rose

Restaurant food

- ✓ Au Bon Pain
- ✓ Bertucci's Italian Restaurant
- ✓ Starbucks
- ✓ Subway
- ✓ Uno Chicago Grill

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National Salt Reduction Initiative (NSRI) Monitoring Industry Progress

- **Mechanisms to monitor sodium in the food supply and to track companies' progress toward specific targets**
  - Recreate NSRI databases in 2012 and 2014 to track changes
    - By company
    - By category as a whole
  - Collect reports from committed companies at baseline, 2012, and 2014, to track changes
    - By category

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NSRI Evaluation
Measuring Changes in NYC Population Sodium Intake

- **Study sample**
  - 2,333 NYC adults recruited via the NYC Community Health Survey
  - Final analytic sample:1,775
  - Baseline in 2010, follow-up in 2014
- **Measures collected**
  - 24-hour urine: Sodium, potassium, albumin, creatinine
  - Other variables
    - Blood pressure
    - Anthropometry: Weight, height ,and waist circumference
    - Self-reported health measures: Nutritional status, family CVD history, personal CVD history, anti-hypertensive medications, etc.

Study funded by CDC, NACCHO, the RW Johnson Foundation, the WK Kellogg Foundation, and the New York State Health Foundation
CVD, Cardiovascular disease

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Baseline Evaluation Results

- Mean NYC adult intake is 3,150 mg sodium/day
- Only 11% of New Yorkers at high risk* meet recommended limit of 1,500 mg sodium/day
- Only 21% of New Yorkers meet their recommended limit (whether 1,500 mg/day or 2,300 mg/day)
- Further analysis is underway
- Future plans: Follow up in 2014 to track change in sodium intake

*High risk is defined as: 51+ years of age, Black race, have hypertension, diabetes, or chronic kidney disease

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Beyond the National Salt Reduction Initiative: NYC Sodium Reduction Activities

NYC Agency Food Standards

- **Standards for Meals/Snacks Purchased and Served**
  - Apply to all food purchased and served by city agencies: >260 million meals and snacks served each year at schools, senior centers, day-care centers, and homeless shelters
- **Standards for Beverage Vending Machines**
  - Apply to all agency-contracted machines

http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-vending-machines-bev-standards.pdf

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NYC Standards for Meals/Snacks Purchased and Served: Examples

- **Require cereal to contain ≤215 mg sodium/serving**
- **Require canned and frozen vegetables to contain ≤290 mg sodium/serving or have "No salt added"**
- **Require portion-controlled and other convenience items to contain ≤480 mg sodium/serving**
  - Breaded chicken, veal patties, frozen French toast, and waffles

Nutrition Facts

Serving Size ¾ cup (55g)
Servings Per Container 5

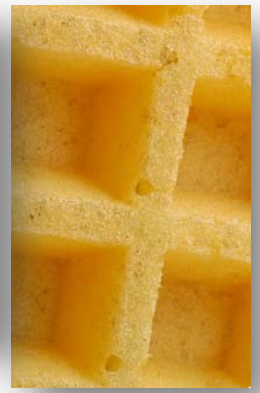
Amount Per Serving	
Calories 250	Calories from Fat 50
	% Daily Value*
Total Fat 6g	**9%**
Saturated Fat 0.5g	**3%**
Cholesterol <5mg	**<2%**
Sodium 200mg	**8%**
Total Carbohydrate 40g	**13%**
Dietary Fiber 4g	**16%**
Sugars 18g	
Protein 9g	**18%**

Vitamin A 25% • Vitamin C 50% • Calcium 30% • Iron 25%
*Percent Daily Values based on a 2,000 Calorie diet.

Nutrition Facts

Serving Size: 2 waffles (70g)

Amount Per Serving	
Calories 180	Calories from Fat 50
	% Daily Value*
Total Fat 6 g	**9%**
Saturated Fat 2 g	**10%**
Trans Fat 0 g	
Cholesterol 20 mg	**7%**
Sodium 440 mg	**18%**
Potassium 80 mg	**2%**
Total Carbohydrate 27 g	**9%**



http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-vending-machines-bev-standards.pdf

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NYC Standards for Beverage Vending Machines: 5 Criteria

1. Product mix

- 2 vending machine slots must stock water
- High-calorie beverages (≥25 calories/8-oz serving) limited to 2 slots

2. Product placement

- Water: Area with greatest selling potential at eye level
- High-calorie beverages: Area with least selling potential

http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-vending-machines-bev-standards.pdf

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New York City Standards for Beverage Vending Machines: 5 Categories

3. Product size

- All beverages except water are limited to ≤12 oz
- Water must be at least 12 oz

4. Promotional space

- Marketing on the outside of the machine must promote healthy lifestyles or healthy beverages

5. Calorie labeling

- All machines must post calories per container for each product

Recommended pricing models

Water priced at $1; high-calorie beverage priced at $1.50

http://www.nyc.gov/html/doh/downloads/pdf/cardio/cardio-vending-machines-bev-standards.pdf

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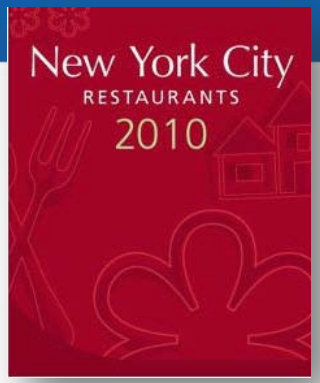
CDC Grant: Sodium Reduction in Communities
3 Initiatives



❑ Independent Restaurant Initiative

- 20,000 independent restaurants
- Goal: Reduce the sodium content of food purchased and served
- Activities: Education and outreach (e.g., mailings, website, and food safety course) to restaurants and suppliers

❑ Hospital Retail Food Standards

- Hospital cafeterias, snack bars/carts, other retail food venues
- Goal: Provide access to healthier foods, including lower-sodium foods
- Activities: Develop hospital retail food standards; work with NYC hospitals to implement standards in retail food establishments

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CDC Grant: Sodium Reduction in Communities
3 Initiatives

Salt Media Campaign

- Goal: Alert the public to hidden salt in processed foods and broaden awareness of the health impact of a high-sodium diet
- Activities: Print ad campaign conducted in NYC subways, newspapers, and online ads. Phase 1 completed in November 2010

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Summary

- Average daily sodium intake for U.S. adults is more than double what is recommended as a safe level
- Changes in the food supply are needed to lower sodium intake to recommended levels
- The NSRI is promising as a collaborative and voluntary process because it requires industry commitment and includes a mechanism for monitoring industry progress objectively
- Government has a critical role to play at federal, state, and local levels

SODIUM REDUCTION: TIME FOR CHOICE

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