



Reducing Sodium: Strategies to Meet Target I Levels

Jessica Beaudoin, MS, RD

Clinical Dietitian

Providence Little Company of Mary Medical Center





Don't cry, no need to panic!





Overview

- **Background**
 - Sodium in Food
 - Sodium Recommendations, NSLP Regulations
- **Steps to Reduce Sodium in School Meals**
 1. Identify Low Sodium Options
 2. Meal Patterns
 3. Revamping Recipes
 4. Sell, sell, sell!



Background



Sodium and Health

- Sodium's role
- High blood pressure – hypertension
- Starts in childhood
- Risk for disease

(IOM, 2010; Vasan et al., 2002; WHO, 2012)



Sodium and Health

- Recommendations and limit
 - Controversy
- The bottom line
 - Sodium reduction
 - “Neither fixed, nor innate.”

(CDC, 2011; IOM, 2005; IOM, 2013; USDA & DHHS, 2010)



Sodium Recommendations for Children

Age Group	Adequate Intake (mg)	Upper Limit (mg)
4 – 8 years	1, 000	1, 500
9 – 13 years	1, 500	1, 900
14 – 18 years	1, 500	2, 300

(IOM, 2005)



Sodium in School Meals

- School Meals Initiative
- School Nutrition Dietary Assessment Study IV
 - $\frac{3}{4}$ schools exceed sodium limit by $> 50\%$
 - Breakfast is better
 - Trends over time
- Failing grade in sodium

(CDC, 2011; Fox & Condon, 2012)



Healthy, Hunger Free Kids Act of 2010

- Key reports
 - 2010 *Dietary Guidelines for Americans*
 - IOM report, *School Meals: Building Blocks for Healthy Children*
- USDA Final Rule
 - Sodium reductions legislated

(IOM, 2010; USDA & DHHS, 2010)

Grade	Target 1 2014 – 2015	Target 2 2017 – 2018	Target 3 2022 – 2023
School Breakfast Program			
K – 5	≤ 540	≤ 485	≤ 430
6 – 8	≤ 600	≤ 535	≤ 470
9 – 12	≤ 640	≤ 570	≤ 500
School Lunch Program			
K – 5	≤ 1,230	≤ 935	≤ 640
6 – 8	≤ 1,360	≤ 1,035	≤ 710
9 – 12	≤ 1,420	≤ 1,080	≤ 740
<p>Note: All values indicate milligrams of sodium. Adapted from Federal Register, Vol. 17, No. 17</p>			



4 Steps to Reduce Sodium

Meeting Target I Sodium Limits . . . and Beyond

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1. Identify Low Sodium Foods

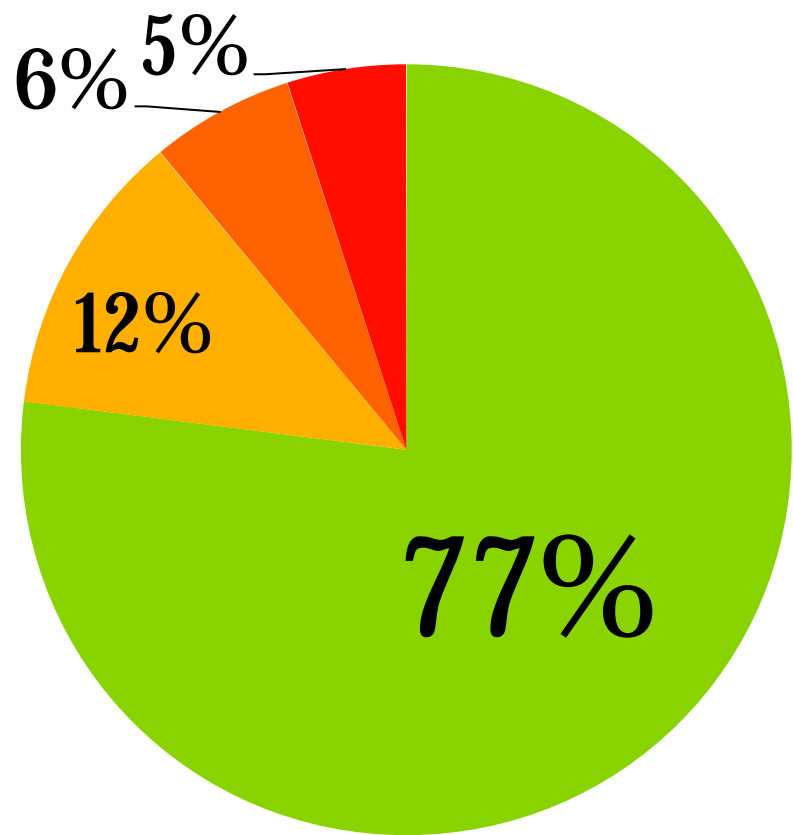


Sodium in Food

- Sodium vs. salt
- Historical preservative
 - Degree of processing
- Physical properties of food
 - Texture
 - Leavening



Sodium in the American Diet



- Processed and Restaurant
- Naturally Occurring
- Table
- Home



Dairy and Sodium

- Fluid milk = 105 grams
- Milk products
- Cheeses

Sodium in Cheeses	
Cheddar cheese	106 mg
Mozzarella, part skim, low moisture	152 mg
Swiss cheese	54 mg
American cheese	474 mg
Cottage cheese, 1/2 cup	410 mg



Protein Foods and Sodium

- Fresh vs. processed meats
 - Fresh is best!
 - Cut back: lunch/deli meats, ham, bacon, sausages, hot dogs
- Beans, nuts, seeds
 - Go for dried, unsalted
- Vegetarian alternatives



(IOM, 2010)



Grains and Sodium

Sodium in Grain Products	
Bread, whole wheat, 1 slice	113 mg
Biscuit, 2 ½ inches	348 mg
Corn flakes cereal, 1 cup	200 mg
Muffin, small, 2 ¾ inches	224 mg
Rice	1.4 mg
Macaroni	0.8 mg



(IOM, 2010)



Vegetables and Fruits and Sodium

- Vegetables
 - Fresh and frozen vs. canned
 - USDA commodity foods
- Fruits – naturally low in sodium!
 - Except some dried fruits





Condiments: High Sodium Culprits

- Salt, 1 tsp = 2,300 mg
- Soy sauce, 1 Tbsp = 533 mg
- Ketchup, 1 Tbsp = 154 mg
- Mayonnaise, 1 Tbsp = 88 mg
- Tajin, $\frac{1}{4}$ tsp = 185 mg

(USDA Nutrient Database)



Food Labeling: Identifying Low Sodium Foods

Claim

Definition

Sodium free

< 5 mg sodium per serving

Low sodium

< 140 mg sodium per serving

Reduced/less sodium

25% less sodium than reference

Light in sodium, Lightly salted

50% less sodium than reference

Source: Food and Drug Administration website, www.fda.gov



Nutrition Facts

Serving Size 1 cup (228g)

Servings Per Container about 2

Amount Per Serving

Calories 250

Calories from Fat 110

% Daily Value*

Total Fat 12g **18%**

Saturated Fat 3g **15%**

Trans Fat 3g

Cholesterol 30mg **10%**

Sodium 470mg **20%**

Total Carbohydrate 31g **10%**

Dietary Fiber 0g **0%**

Sugars 5g

Proteins 5g





USDA Commodity Foods

- Reduced sodium options
- No salt added frozen vegetables
- Other cutbacks





Voluntary Nutrient Standards: Look Twice

- **Alliance for a Healthier Generation**
 - Clinton Foundation
 - Standards for variety, healthy options
 - 480 mg sodium
- **Healthier US School Challenge**
 - USDA voluntary program
 - Limits sodium in competitive foods – entrée and non-entrée



Industry Response

- JTM “Assault on Sodium”
- Schwan’s LiveSmart Schools
- Tyson foods

- *Counterpoint:* Not always a net nutritional gain



Identify Low Sodium Foods

- Vegetables, fruits, whole grains and beans are naturally low-sodium
 - As food is processed, sodium is added
- Dairy products vary
- Choose fresh meats
- Check the Facts – read the label



2. Modify Meal Patterns



Sources of Sodium in School Meals

- **Combination entrees**
 - Pizza
 - Mexican dishes
 - Entrée salads
- **Accompaniments**
 - Side dishes
 - Condiments



(Crepinsek et al., 2009)



Evaluate Your Menus

- Analyze menu
 - Identify highest sodium entrees, sides
 - Average sodium in side dishes
 - Condiments, added high sodium items
- Determine sodium wiggle room
- Check for patterns, item frequency



Example: Middle School Lunch

Sodium Limit	1,360
- Milk, 1%	105
- Fruit, fresh	0
- Entrée (2 /3 – 3/4)	837 – 941
- Side dish (1/4 – 1/3)	314 – 418



Do the Math

	Before		After
Bread, 2 slices	226	Bread, 2 slices	226
Ham, 1 oz	341	Roast chicken, 1 oz	125
American cheese, 1 oz	474	Swiss cheese, 1 oz	54
Milk, 1%	105	Milk, 1%	105
Fruit, fresh	0	Fruit, fresh	0
Carrots with 2 Tbsp ranch	654	Carrots with 2 Tbsp lite ranch	270
Baked chips	135	Baked chips	135
TOTAL SODIUM	1, 551	TOTAL SODIUM	915



Limit High Sodium Items

- **Processed foods**
 - Ask about lower sodium options
- **Limit cheesy entrees**
 - Non-cheese vegetarian options
 - Limit added cheeses
- **Back off breaded items**
- **Skip the salty sides**
 - Chips, pretzels



Limit High Sodium Items

- **Cut back on condiments**
 - Olives, pickles
 - Lower sodium alternatives
 - Portion control, limit access
- **Breakfast items**
 - Sausages and breakfast meats
 - Baked grain products
 - Cereal and milk



Menu Item Frequency

- Healthier entrees : Less healthful options
 - Fresh : Processed items
- Items to use less often:
 - Pizza
 - Breaded items
 - Cheesy entrees
 - Sandwiches



Menu Item Frequency

- Low sodium menu ideas:
 - Fruit and granola yogurt parfait
 - Salad with fruit and salt-free nuts, low-sodium dressing
 - Soups from scratch
 - Sandwiches with little or no cheese or sauce
 - Try tofu



3. Revamp Recipes



Cook From Scratch

- Best way to control sodium intake
 - Especially soups and stews
 - Sauces and spice rubs
- Use fewer “short-cut” ingredients
 - Premade sauces
 - Canned dishes – refried and baked beans, etc.



Cut Back on Salt

- Gradual reduction
 - Start *before* Target I
- Cut salt in recipes
- Test new recipes
 - Input from staff, students
 - Decision making





Flavoring Food Without Salt

- Herbs
- Spices
- DIY blends
- Citrus and acidity
- Pepper and heat
- Aromatics: onion, garlic, celery





The 5 Senses

- Sight
 - We eat with our eyes
- Smell
 - Temperature, freshness
- Taste, touch, hear
 - Make it taste good
 - Appealing texture
 - Crunch factor







4. Sell, sell, sell!



School Lunch Participation

- New meals might lead to changes in participation
- Prepare students and parents
- Build excitement
- Engage stakeholders, board members



Get Customer Buy-In

- **Students**
 - School-wide taste test and voting
 - Kid-driven options
- **Parents**
 - Promote the new and improved school meal
 - Advertise specific changes
- **Teachers**
 - Promote specials



Get Customer Buy-In

- **Foodservice staff**
 - Empower staff to try new recipes (within reason)
 - Employee taste tests, contests
 - Training in low sodium cooking
- **Marketing 101**
 - Clever food names – healthy, exciting descriptors
 - Signage for healthy items
 - Built environment



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Questions?



References

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