
Breakfast: The Beginning of Good Nutrition

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The Kellogg's logo is written in a red, cursive script font.

Objectives

- Discuss the benefits of breakfast
 - Review the objectives of recent government actions affecting school breakfast
 - 2010 Dietary Guidelines
 - USDA Proposed Rule for Nutrition Standards
 - Discuss the role of and issues surrounding key nutrients to encourage and limit at breakfast
 - Whole Grains and Fiber
 - Sodium
 - Protein
 - Sugar
-

Breakfast makes a difference

- After 8-12 hours of fasting, the body and brain need to refuel
- Eating breakfast helps improve mental alertness and physical performance
- Nutrients missed at breakfast are not recovered in later meals¹
- Eating breakfast is positively associated with improvements in short-term memory.^{2,3,4}



1 Preziosi P et al. Breakfast type, daily nutrient intakes and vitamin and mineral status of French children, adolescents and adults. *J Am Coll Nutr.* 1999;18:171-78.

2. Michaud C, et al. Effects of breakfast-size on short-term memory, concentration, mood and blood glucose. *J Adolesc Health.* 1991; 12:53-57.

3. Simeon DT, et al. Effects of missing breakfast on the cognitive functions of school children of differing nutritional status. *Am J Clin Nutr.* 1989; 49:646-653.

4. Pollitt E, et al. Brief fasting, stress, and cognition in children. *Am J Clin Nutr.* 1981;34:1526

Breakfast and School Performance

- A review of 22 studies suggested that eating breakfast may help children do better in school by improving:
 - Memory
 - Test grades
 - School attendance
 - Psycho-social function
 - Mood⁵



5. Rampersaud GC et al, Breakfast habits, nutritional status, body weight, and academic performance. *J Am Diet Assoc.* 2005; 105:643-760.

Breakfast Eaters and Nutrient Intake

- A study of 467 U.S. children published in the *Journal of the American Dietetic Association* found:⁶
 - Those who ate breakfast had higher intakes of vitamins A and E, iron and the B vitamins
 - Higher percentage of breakfast skippers (16% of participants) were less likely to achieve even 2/3 of their recommended daily intake for vitamins and minerals



⁶ Nicklas TA et al. Breakfast consumption affects adequacy of total daily intake in children. *J Am Diet Assoc.* 1993;93(8):886-891.

Skipping Breakfast Has Lasting Effects⁷

- Skipping breakfast is associated with higher body fat and higher BMI's in children/adolescents
- Skippers are less likely to meet daily recommendations for food groups such as vegetables and fruits.
- School breakfast is an important solution to a growing problem

7. Deshmukh-Taskar PR, et al. The Relationship of Breakfast Skipping and Type of Breakfast Consumption with Nutrient Intake and Weight Status in Children and Adolescents: The National Health and Nutrition Examination Survey 1999 – 2006. *J Am Diet Assoc.* 2010;11:-869-878.

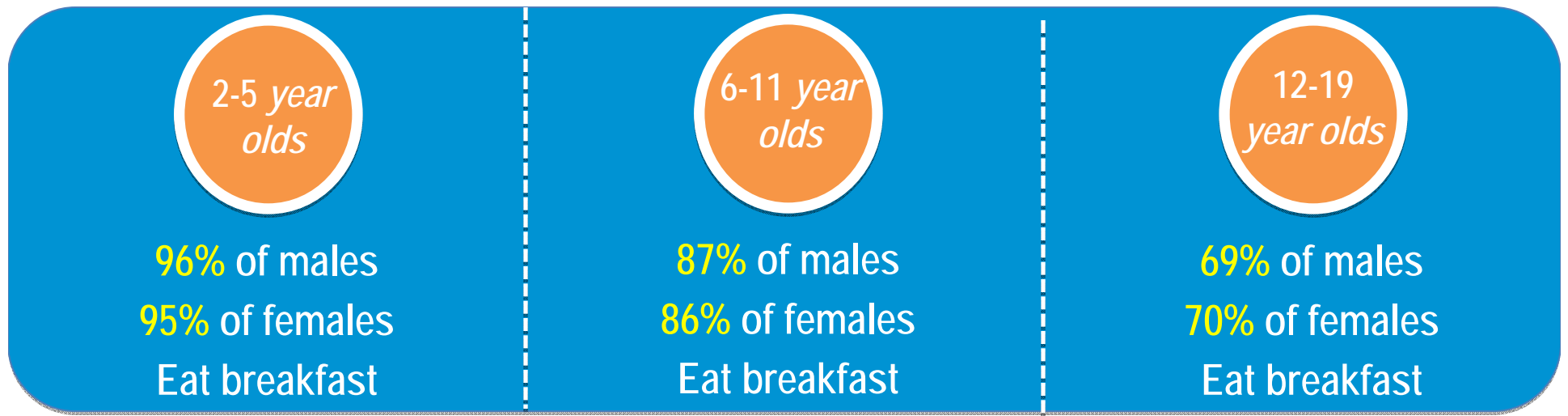
Calories at Breakfast and Performance

- Breakfast should provide approximately 20% of your daily energy intake and nutrient needs
 - A study of 195 children published in the *International Journal of Food Science* showed that when children consumed 20% of their daily calories at breakfast their physical endurance and performance on a creativity test were much better than when they consumed less than 10% of their recommended calories at breakfast⁸
- School breakfast currently aims to meet 25% of the RDA for energy, protein, vitamins A and C, calcium and iron

⁸ Wyon DP et al. An experimental study of the effects of energy intake at breakfast on test performance of 10-year-old children in school. *Int J Food Sci Nutr.* 1997;48:5-12.

Breakfast Consumption is Declining

- Today, people in the U.S. are eating breakfast 10% less than before⁹
- Recent data indicates that U.S. children tend to eat breakfast less often as they get older¹⁰



⁹ International Food Information Council, IFIC Review: Breakfast and Health. 2008;12.

¹⁰ What We Eat America, NHANES, 2001-2002. Table 5: Percentage of Americans eating breakfast on any given day and location where eaten. US Department of Agriculture, Agricultural Research Service website.

Popular Breakfast Choices

FIGURE 72: KID USE OF BREAKFAST FOOD, OCTOBER 2007-DECEMBER 2008

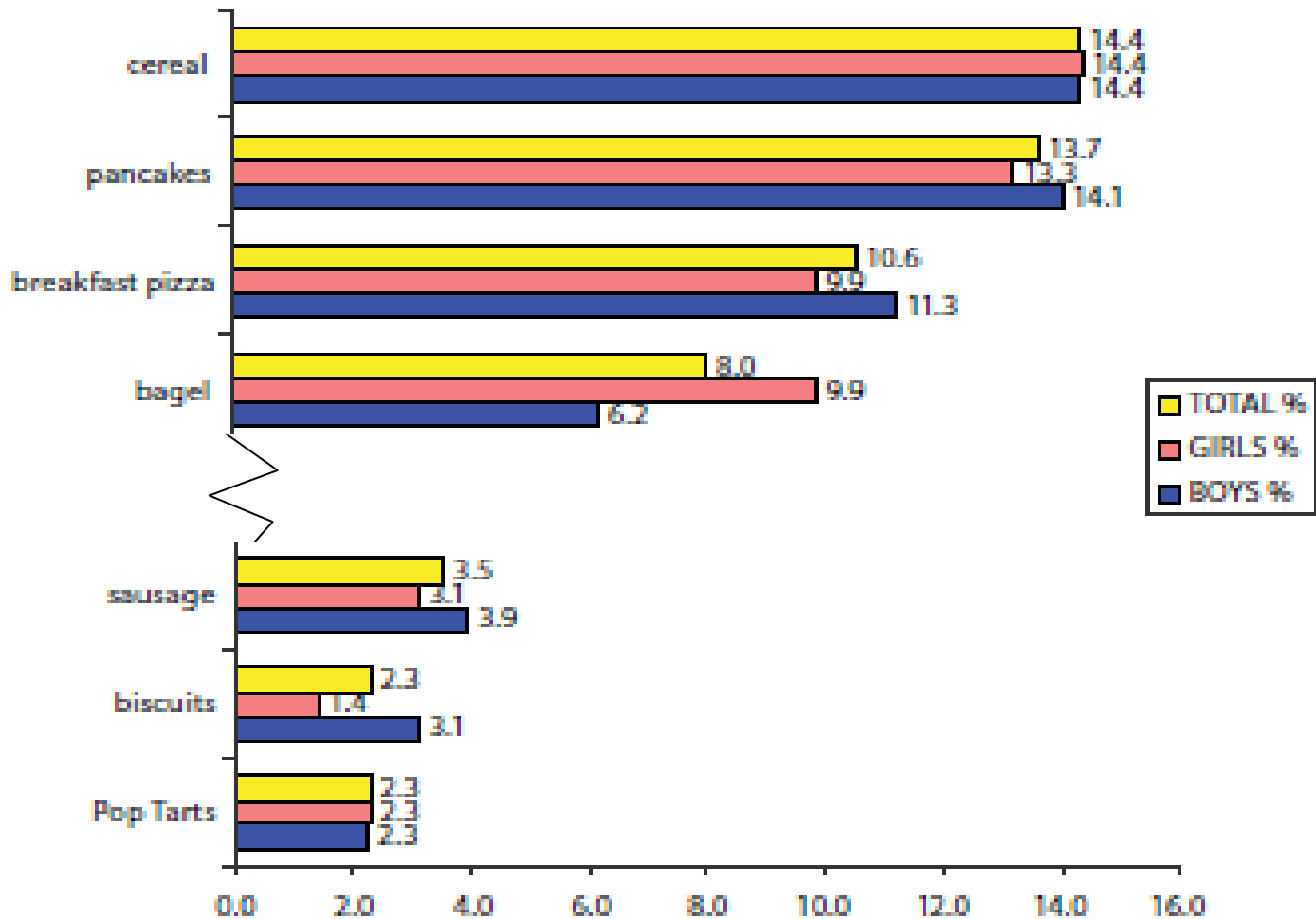
"Do you eat?"

Base: 2,162 kids aged 6-11

	All %
Breakfast cereal - cold	97
Frozen waffles, pancakes, French toast	82
Toaster pastries	67
Breakfast cereal - hot	65
Frozen breakfast entrées and sandwiches	47

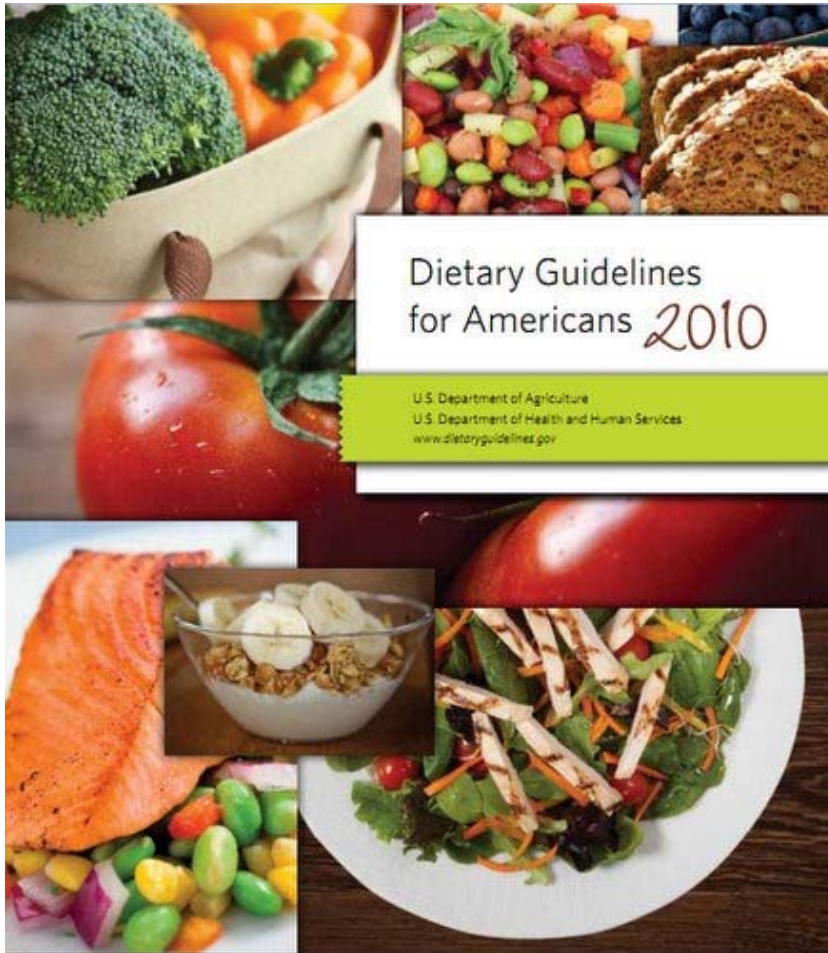
SOURCE: MINTEL/EXPERIAN SIMMONS NCS/NHCS: FALL 2008 KIDS FULL YEAR—POP

Which food and drink items do you like for breakfast at school? ~ Food



Source: KidSay Tracker Nov/Dec 2009

Government Focus on Nutrition



FEDERAL REGISTER

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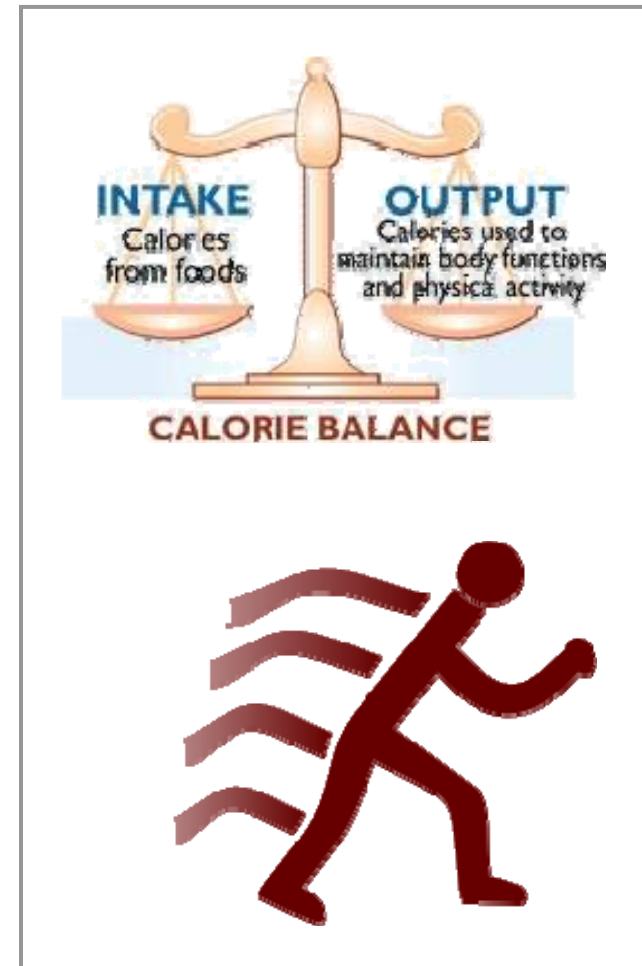
Part III

Department of
Agriculture

7 CFR Parts 210 and 220
Nutrition Standards in the National School Lunch and School Breakfast
Programs; Proposed Rule

2010 Dietary Guidelines for Americans

- The 2010 Dietary Guidelines encompasses two overarching concepts:
 1. Maintain **calorie balance** over time to achieve and sustain a healthy weight
 2. Focus on consuming **nutrient-dense** foods and beverages
- The following strategies are identified to help people attain and maintain a healthy weight, reduce their risk of chronic disease and promote overall health:
 1. consume **fewer calories**
 2. make **informed food choices**
 3. be **physically active**





Proposed Rule for School Lunch and School Breakfast Programs

Objectives:

- To revise the meal patterns and nutrition requirements for the NSLP and NSBP with the Dietary Guidelines for Americans
- Increase the availability of fruits, vegetables, whole grains and fat-free and low-fat fluid milk in school meals
- Reduce the levels of sodium and saturated fat in meals
- Help meet the nutrition needs of school children within their calorie requirements

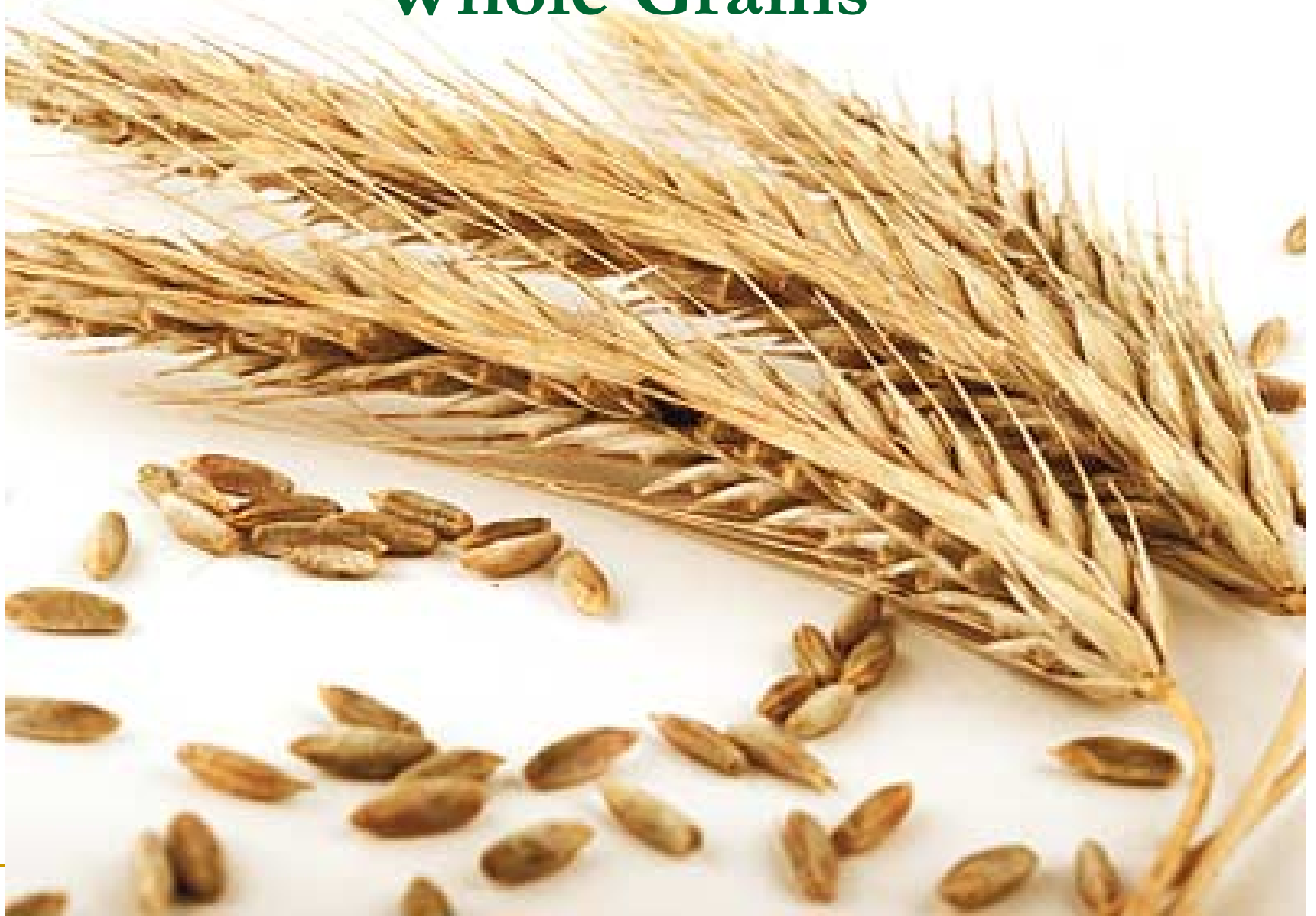
Key Nutrients of Concern

- The proposed guidelines aim to help children obtain more of the key nutrients of concern:
 - Calcium
 - Fiber
 - Potassium
 - Magnesium
 - Vitamin E
-

Breakfast Challenges and Opportunities

- Conversations with Minnesota Food Service Directors revealed:
 - Time is the most significant barrier to trial of new products – need items that are quick and easy to eat or grab and go
 - Some have limited choices to improve efficiency, while others have increased choices to improve participation
 - Primary nutritional challenges are around increasing whole grains, reducing sodium and sugar, and meeting the protein requirement at breakfast
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Whole Grains



Proposed Guidelines – Whole Grains

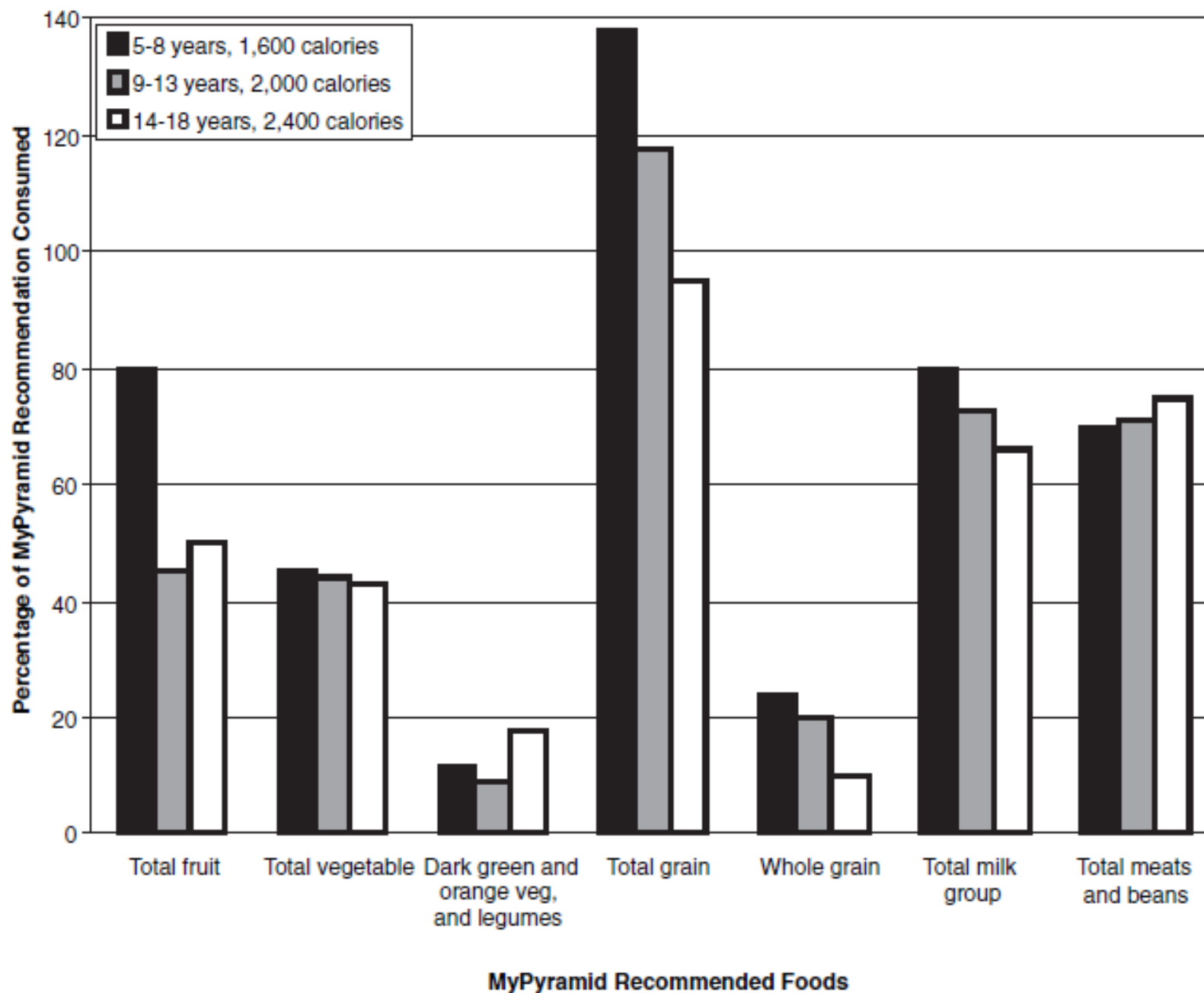
- Upon implementation, at least half of all grains must be whole-grain rich
 - Two years post implementation, all grains must be whole grain-rich
 - Whole-grain rich defined by IOM as:
 - Provides ≥ 8 g of whole grain per serving
 - Carries the FDA-approved whole grain health claim
 - Includes a whole grain as the first ingredient, or as the first grain ingredient (mixed dishes)
-

Whole Grain Benefits

- Reduced risk of serious chronic diseases
 - **Cardiovascular diseases**
 - Including heart disease and stroke
 - Increased intake of fiber may help reduce LDL-and total cholesterol¹¹
 - Large-scale population-based studies have shown significant risk reductions^{12,13,14}
 - **Type 2 Diabetes**
 - Possible correlation due to affect on carbohydrate metabolism and decreased insulin demand^{15, 16}
 - **Digestive Cancers**¹⁷
 - Dietary fiber decreases transit time and increases fecal bulk
 - Antioxidant activity of nutrients found in whole grains
 - Short-chain fatty acids reduce risk of colon cancer.¹⁸
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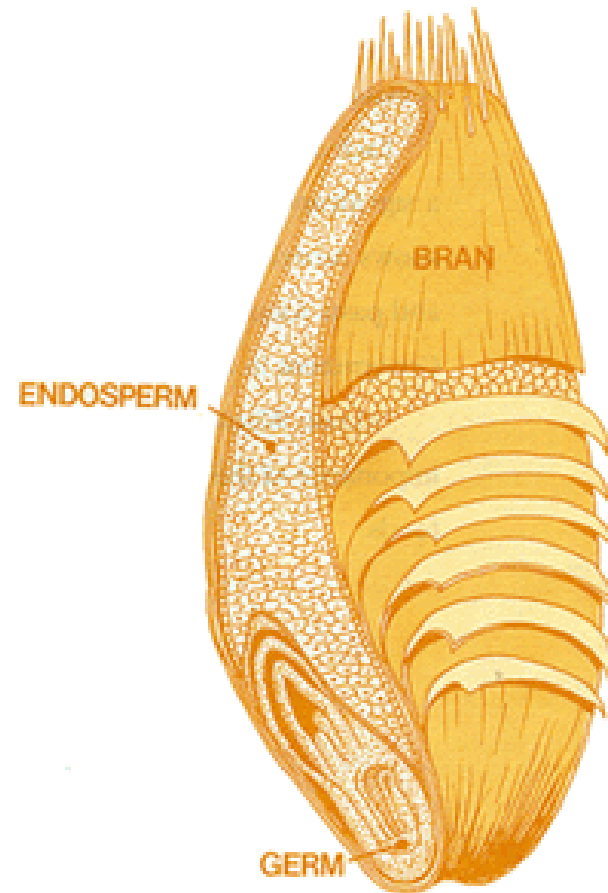
Whole Grain Intake Among Children

- Children's consumption of whole grains is extremely low relative to recommendations
 - Based on 1999-2002 NHANES data:
 - Children ages 5-8 years consumed only 24% of the recommended amount of whole grains
 - Older children consumed even less
-



What is a Whole Grain?

- A whole grain contains the entire grain seed of the plant: the bran, germ and endosperm
- “Whole grain” on its own doesn't necessarily mean more health benefits
- Studies show that many of the health benefits from eating whole-grain foods come from the fiber content



A whole grain is an **INGREDIENT**, not a **NUTRIENT**

Types of Whole Grains

- Amaranth
- Barley
- Buckwheat
- Corn
- Millet
- Oats
- Quinoa
- Rice (Brown and Colored)
- Rye
- Sorghum (or Milo)
- Teff
- Triticale
- Wheat
 - Common
 - Spelt
 - Farro
 - Kamut
 - Bulgur
 - Cracked
- Wild Rice

Importance of Fiber-Rich Foods

- Fiber is an important nutrient lacking in 90% of American diets
- Fiber helps contribute to overall health
- Consistent, strong evidence supports role of fiber-containing foods to help:¹⁹
 - Improve digestive health
 - Lower cholesterol, important in prevention of heart disease
 - Protect against chronic disease, such as obesity, diabetes and certain cancers



¹⁹ International Food Information Council. *Fiber Fact Sheet*. 2008; see www.IFIC.org.

What is Fiber?



- Fiber is a non-digestible component of plant foods (like grains, fruits, vegetables and legumes) that supports good health.
 - Soluble fiber is soluble in water. It can actually absorb water and, in doing so, forms a gel.
 - Insoluble fiber is not soluble in water. Acting like a sponge, this fiber swells in size , absorbing up to 15 times its own weight in water (providing bulk)

“But isn’t whole grain more than just fiber?”

- Whole grains do provide more than just fiber. Each whole grain contains varying amounts of other vitamins, minerals and phytochemicals.
 - However, there is growing concern that there has not been enough meaningful study to determine the health effects of these components.
 - Many studies that have investigated whole grains included bran—such as wheat bran, oat bran and other bran products.
 - Bran, which is the fiber-rich outer layer of the whole grain kernel, used to be considered a whole grain. Bran is often referred to as one of the original “super nutrients” with decades of undisputed research supporting its benefits.
 - While bran is no longer included in the FDA’s official whole grain definition, it is often included in whole grain studies.
 - In other words, whole grain study results are usually confounded by the presence of bran.
-

Breakfast Sources of Fiber

■ Cereal

- ❑ Low-fat, cholesterol-free
- ❑ Helps increase milk consumption

■ Breads (Fresh & Frozen)

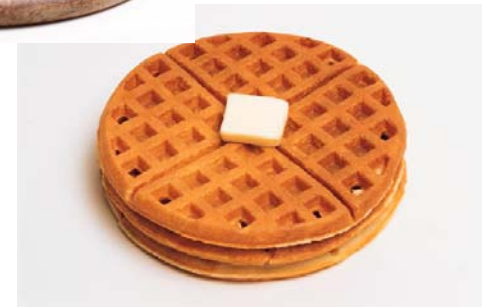
- ❑ Variety of whole grain offerings

■ Fruits

- ❑ Whole fruit with the peel is best
- ❑ Canned, pureed, processed are lower

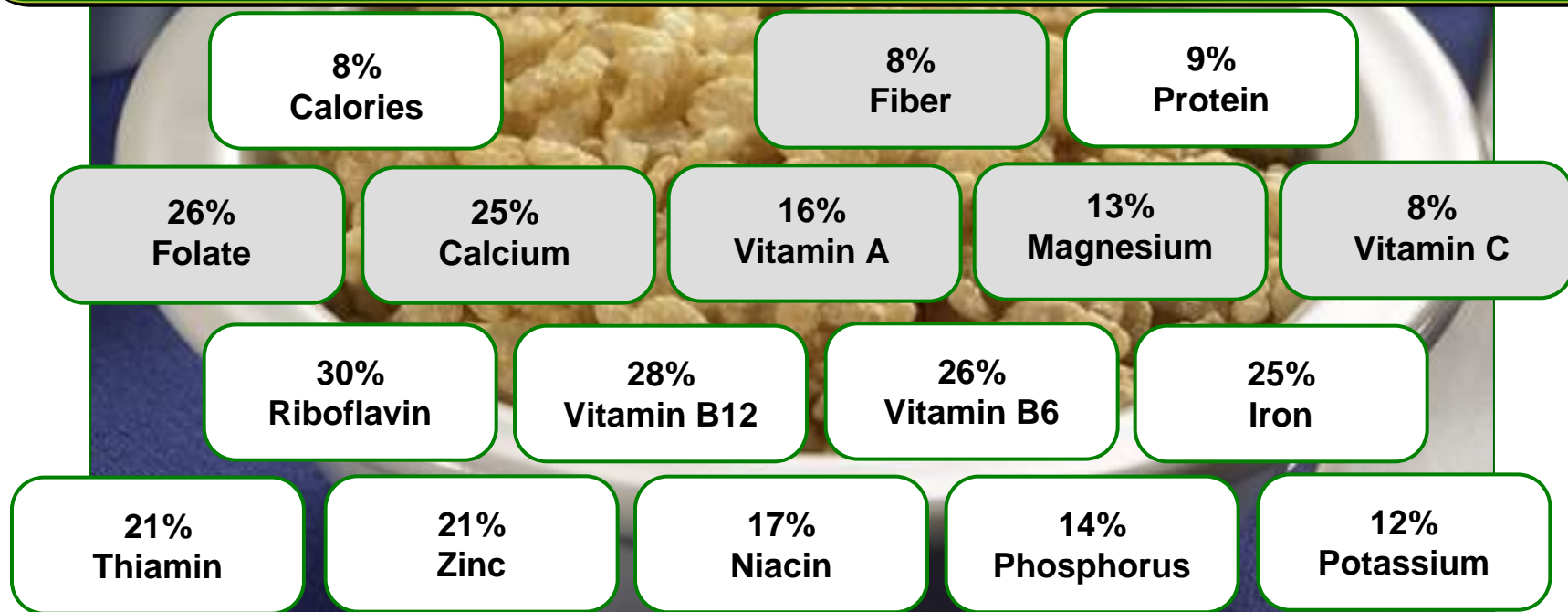
■ Vegetables

- ❑ Serve with eggs at breakfast



Cereal is Nutrient Dense

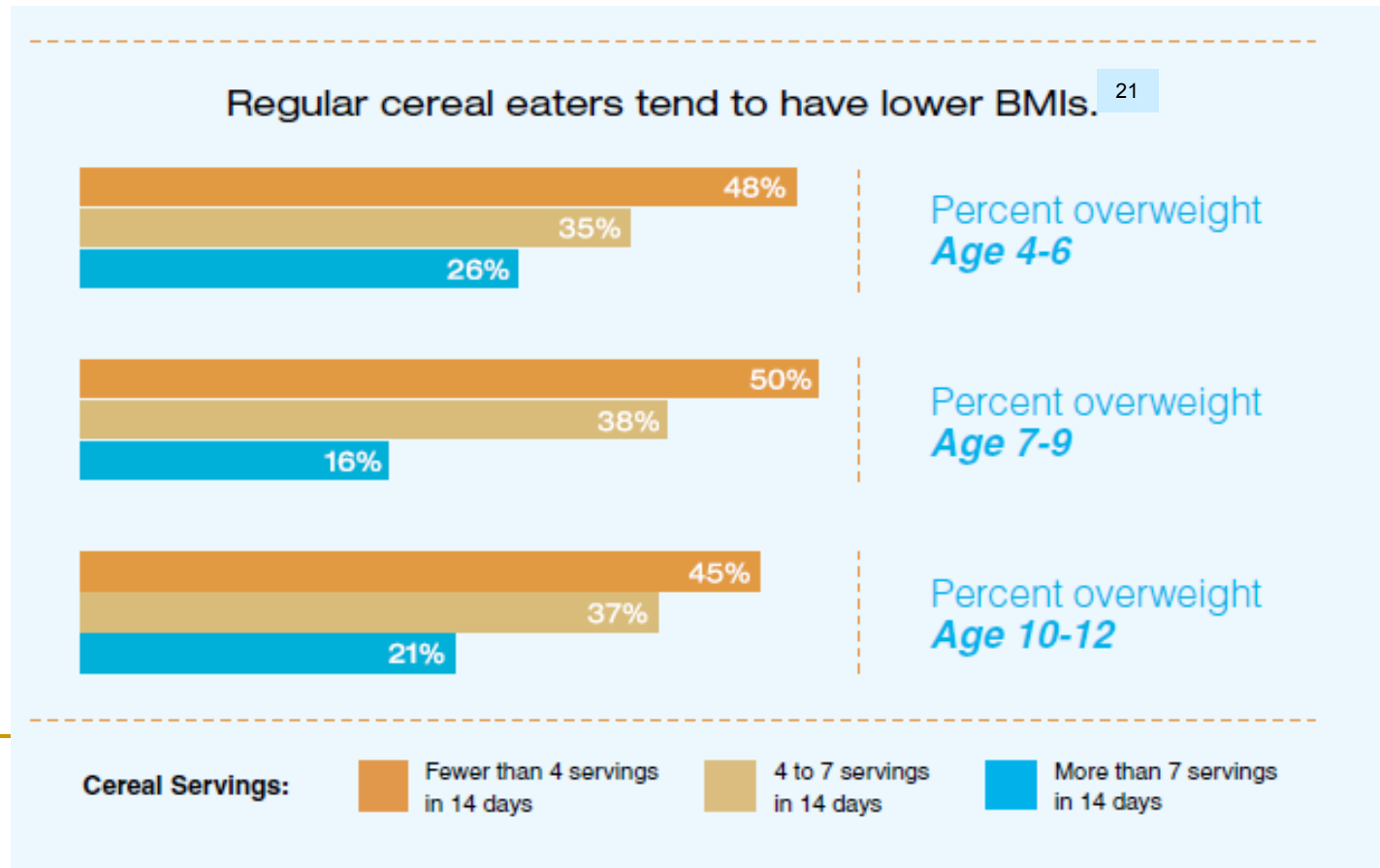
“RTEC and milk is the number one source of 10 nutrients in the diet of U.S. children. No other two food groups provide so much to the diet.” NHANES²⁰



■ Key nutrient deficiencies kids 4-18 (< 60% of recommended amount)

Cereal Promotes a Healthy Weight

- Research over the past decade has demonstrated a positive relationship between cereal consumption and a healthy body weight in children and adolescents



Cereal Promotes Milk Consumption

- According to the 2010 U.S. Dietary Guidelines, 41% of all milk consumed by children in the U.S. is via ready-to-eat cereal²²
 - 48% for Hispanic children
 - 54% for African American Children



Increasing Whole Grains at Breakfast

- Substitute half of white flour with wheat flour in baked goods
- Offer more whole grain cereals, and add whole grain cereals to yogurt parfaits
- Look for whole grain pancakes, waffles, and other prepared items that are increasingly available
 - ❑ Graham crackers
 - ❑ Cereal Bars
 - ❑ Hot cereals

Breakfast is the leading meal for incorporating whole grains into the diet!

Questions/Discussion



Sodium



Proposed Guidelines: Sodium

Objective:

- Achieve gradual yet significant reduction in sodium content of school meals

Method:

- Over 10 years, gradually reduce the sodium content of breakfast by 25-27% versus current intake levels

Proposed Sodium Reduction – School Breakfast Program			
	Target 1 (2 years)	Target 2 (4 years)	Final Target (10 years)
K-5	≤540 mg	≤485 mg	≤430 mg
6-8	≤600 mg	≤535 mg	≤470 mg
9-12	≤640 mg	≤570 mg	≤500 mg

Sodium and Health

- Sodium is an essential nutrient for life and health
 - Electrolyte balance
 - Normal cellular functions
- Dietary deficiency is very uncommon
 - Adequate Intake: 1500 mg
 - Active individuals require more²³



23. IOM FNB. *Dietary Reference Intake for Water, Potassium, Sodium, Chloride, and Sulfate*; National Academy of Sciences, IOM, FNB: Washington, DC, 2004| pp1-640.

Sodium and Health

- Sodium levels are tightly regulated by the body
 - Sodium intake may vary widely
 - Human body remains healthy by maintaining relatively constant levels of sodium
 - Certain conditions can affect the body's normal handling of sodium
 - Advancing age
 - Health conditions (e.g., kidney disease)
 - Consumption of other nutrients
-

Sodium and Blood Pressure

- Hypertension Affects 50 million Americans
 - Incidence increases with age
 - Higher among African Americans and the obese
- Definition
 - A BP of 140/90mg Hg or higher
- Causes
 - Obesity
 - Sedentary lifestyle
 - Genetics
 - Stress
 - Smoking
 - Excessive amounts of salt or alcohol in the diet



Sodium and Blood Pressure

- Little evidence that dietary sodium raises serum sodium unless “sodium sensitive”
- Scientific studies suggest that sodium reduction does decrease blood pressure
 - Individual responses vary
 - Less is known about effectiveness in children
 - Some research suggests that reducing dietary salt in adolescents could reduce onset of HTN and rates of CVD²
 - Lower blood pressure is associated with a lower risk of heart disease and stroke

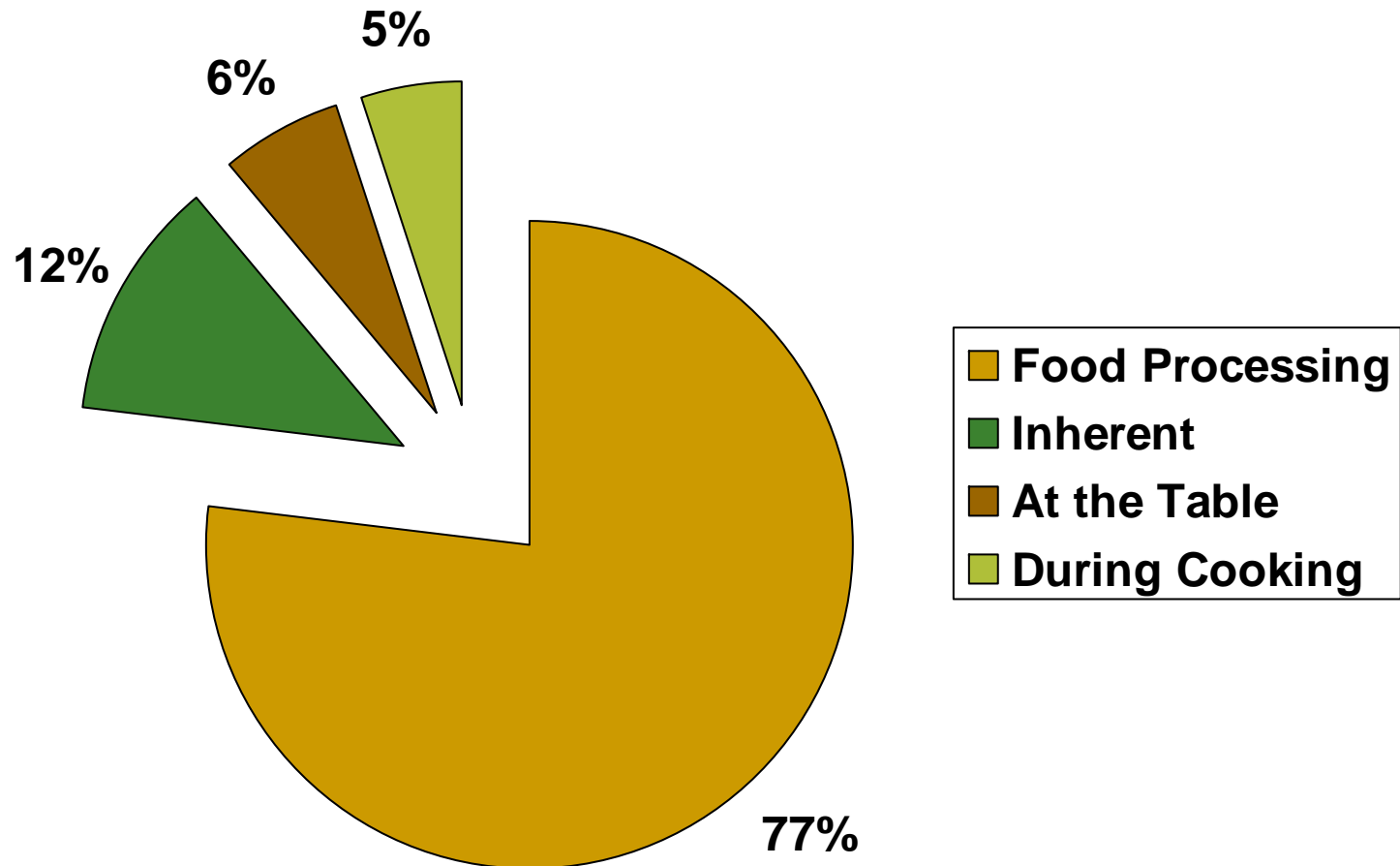
Role of Salt in Foods and Beverages

- Increases palatability
- Preservative
 - Creates a hostile environment for microorganisms
 - Inhibits bacterial growth and resulting spoilage
- Texture Aid
 - Strengthens gluten in bread dough
 - Improves tenderness in cured meats and adds smoothness to processed eets
 - Helps to develop consistency of cheese
- Binder
 - Helps bind proteins together in processed and formed meats
- Fermentation control
 - Controls leavening by slowing and controlling the rate of fermentation
- Color developer
 - Promotes color development in meats to help improve appeal
 - Enhances the golden color in bread crust be reducing sugar destruction in the dough and increasing caramelization²²

Sources of Sodium

- Naturally occurring: 10% of intake
 - Sodium is present in all food groups, with the exception of fruit
 - Discretionary use (added): 5-10%
 - Manufactured foods and restaurant foods: remaining 80-85%
 - NHANES data suggests:
 - Frequency of consumption is most related to sodium intake level
 - Overall dietary pattern is more important than amount of sodium in an individual food
-

Sources of Dietary Sodium²⁶



Current Consumption Levels of Sodium

- Average salt intake (adults): 9-12 grams (3,600-4,800 mg sodium)²²
- Average sodium intake (children):²⁵

Age	Males	Females
2-5	2265 mg	2189 mg
6-11	3169 mg	2717 mg
12-19	3990 mg	3013 mg

- According to the SNDA-III study, average sodium levels consumed at breakfast were:
 - K-5: 573 mg (24% DV)
 - 6-8: 629 mg (26% DV)
 - 9-12: 686 mg (29% DV)

25. Grocery Manufacturer's Association. Sodium and Salt: A Guide for Consumers, Policymakers and the Media; 2008: www.gmaonline.org

27. Centers for Disease Control and Prevention (CDC). National Center for Health Statistics (NCHS). National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2007-08. <http://www.cdc.gov/nchs/nhanes>.

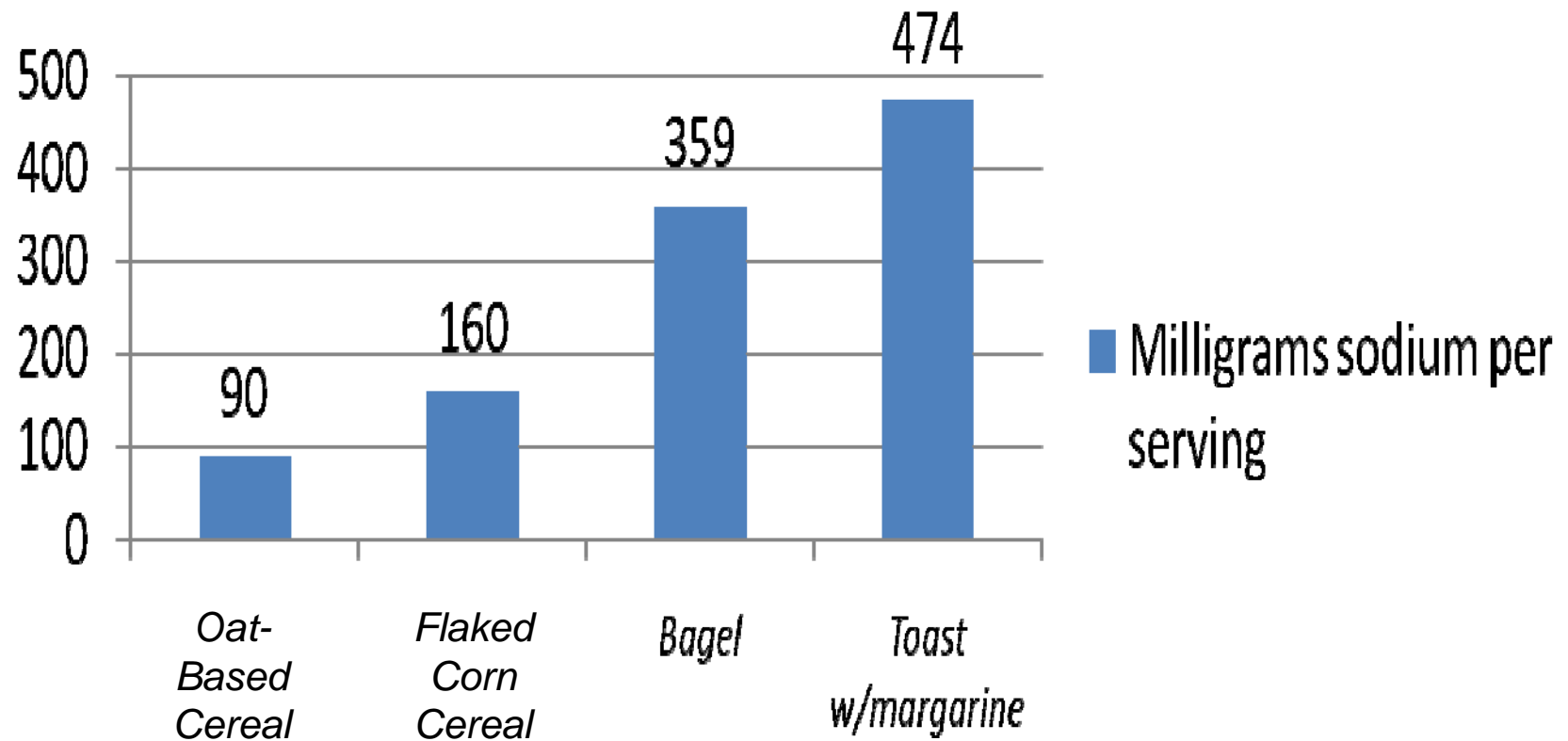
Top 20 Food Sources of Sodium²²

1. Meat pizza
 2. White bread
 3. Processed cheese
 4. Hot dogs
 5. Spaghetti w/sauce
 6. Ham
 7. Catsup
 8. Cooked rice
 9. White roll
 10. Flour (wheat) tortilla
 11. Salty snacks/corn chips
 12. Whole milk
 13. Cheese pizza
 14. Noodle soups
 15. Eggs
 16. Macaroni w/cheese
 17. Milk, 2%
 18. French fries
 19. Creamy salad dressings
 20. Potato chips
-

Breakfast Items and Sodium

- Cereal
 - Contains less than half the sodium of other breakfast items
 - Contributes about 2-3% of the sodium in the US diet
 - 0 – 180 mg
- Bread – Fresh
 - Wheat/White bread: ~130 mg/slice
- Bread Items – Frozen
 - Pancakes: ~300 mg
 - Waffles: ~200 mg
- Eggs
 - 1 scrambled: 88 mg
- Breakfast Meats
 - Turkey Sausage (2 links): 328 mg
 - Veggie Sausage (2 links): 300 mg
- Dairy
 - Skim Milk (8 oz): 103 mg
 - Yogurt (6 oz): ~100 mg

Sodium Content of Breakfast Foods



Source: US Department of Agriculture, Agricultural Research Service. 2009. USDA Nutrient Database for Standard Reference Release 22. Nutrient Data Laboratory website http://www.usda.gov/nutrient_data.

Sodium Reduction Strategies at Breakfast

- Use more herbs and spices for seasoning
- Read labels and choose products with the least sodium
- Go easy on condiments
- Choose canned items that are low in sodium
- Increase fresh and frozen offerings
- Focus on breakfast items that are lowest in sodium, such as cereal, fruit, and yogurt



Questions/Discussion



Protein



Protein at Breakfast

- Student intakes of protein currently exceed RDA targets²⁸
- Proposed guidelines do not increase daily protein requirements, but now require a meat or meat alternate with breakfast:

	Current Requirement	Proposed Requirement
Grains	2 grains <i>or</i> 2 meat/meat alternates, or 1 of each per day	1.4 – 2 grains per day plus
Meat/Meat Alternate		1-2 meat/meat alternates per day

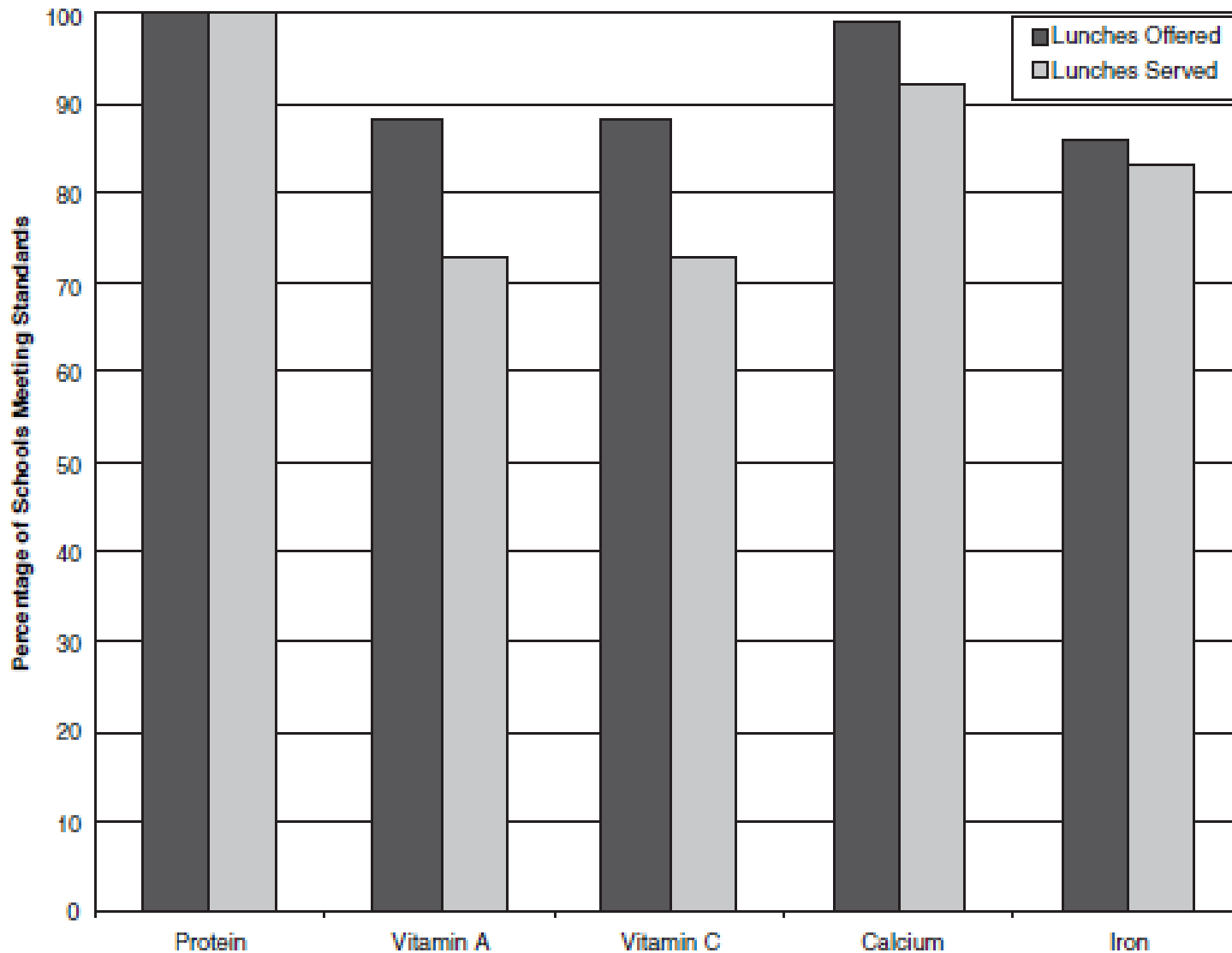


FIGURE 5-2 Percentages of schools meeting existing (School Meals Initiative) standards for key nutrients *as offered* by the schools and *as served* to the students in National School Lunch Program lunches.

SOURCE: USDA/FNS, 2007a.

Protein Recommendations from the 2010 Dietary Guidelines for Americans

- Replace protein foods that are higher in solid fats with choices that are lower in solid fats and calories and/or are sources of oils.
 - Choose a variety of protein foods, which include seafood, lean meat and poultry, eggs, beans and peas, soy products, and unsalted nuts and seeds.
 - Beans and peas are excellent sources of protein that also provide other nutrients, such as iron, zinc, fiber, potassium and folate.
-

Breakfast Protein Options

Cold/Ambient:

- Cheese*
- Yogurt
- Nuts/nut butters
 - Alternatives to peanuts:
soy nuts/butter,
sunflower seed butter,
sesame seed butter
- Nontraditional items?

Hot:

- Breakfast meats/meat alternates (ham, pork, turkey, soy)*
- Eggs

*Higher sodium options

Questions/Discussion



Sugar



USDA Proposed Guidelines

- No specific levels of sugar are listed
- Must stay within calorie ranges
 - Limiting excessive amounts of added sugar can help
 - 35-10-35 Rule

	Grades K-5	Grades 6-8	Grades 9-12
Min Calories	350	400	450
Max Calories	500	550	600

Public Sugar Recommendations Have Been Scarce

- AHA Committee convened in 2010 to review added sugars
 - Historically, there has been no quantifiable recommendation for added sugars
 - DGAC 2000: “Choose beverages and foods to *moderate* your intake of sugars.”
 - DGAC 2005: “Choose and prepare foods and beverages with *little* added sugars or caloric sweeteners such as amounts in USDA Food Guide or DASH.”
 - DGAC 2010: “*Significantly reduce* intake of foods containing added sugars and solid fats because these dietary components contribute excess calories and few, if any, nutrients.”
-

Sugar Concerns

- **Obesity**

- Concerns that excess sugar consumption is responsible for excess calorie intake

- **Nutrient adequacy**

- Foods high in sugar typically do not provide significant levels of essential nutrients

- **Tooth decay**

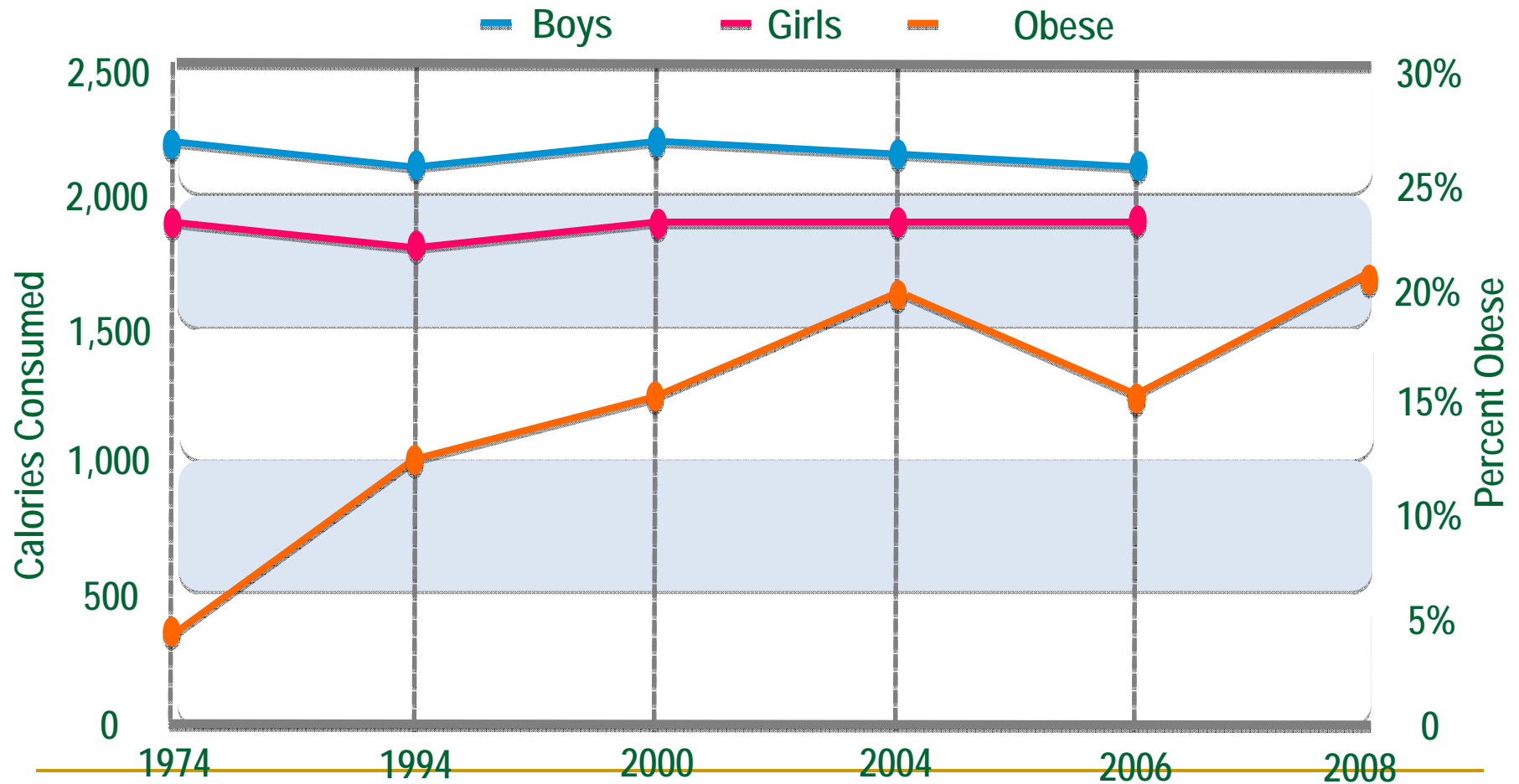
- All carbohydrates contribute

- **Hyperactivity**

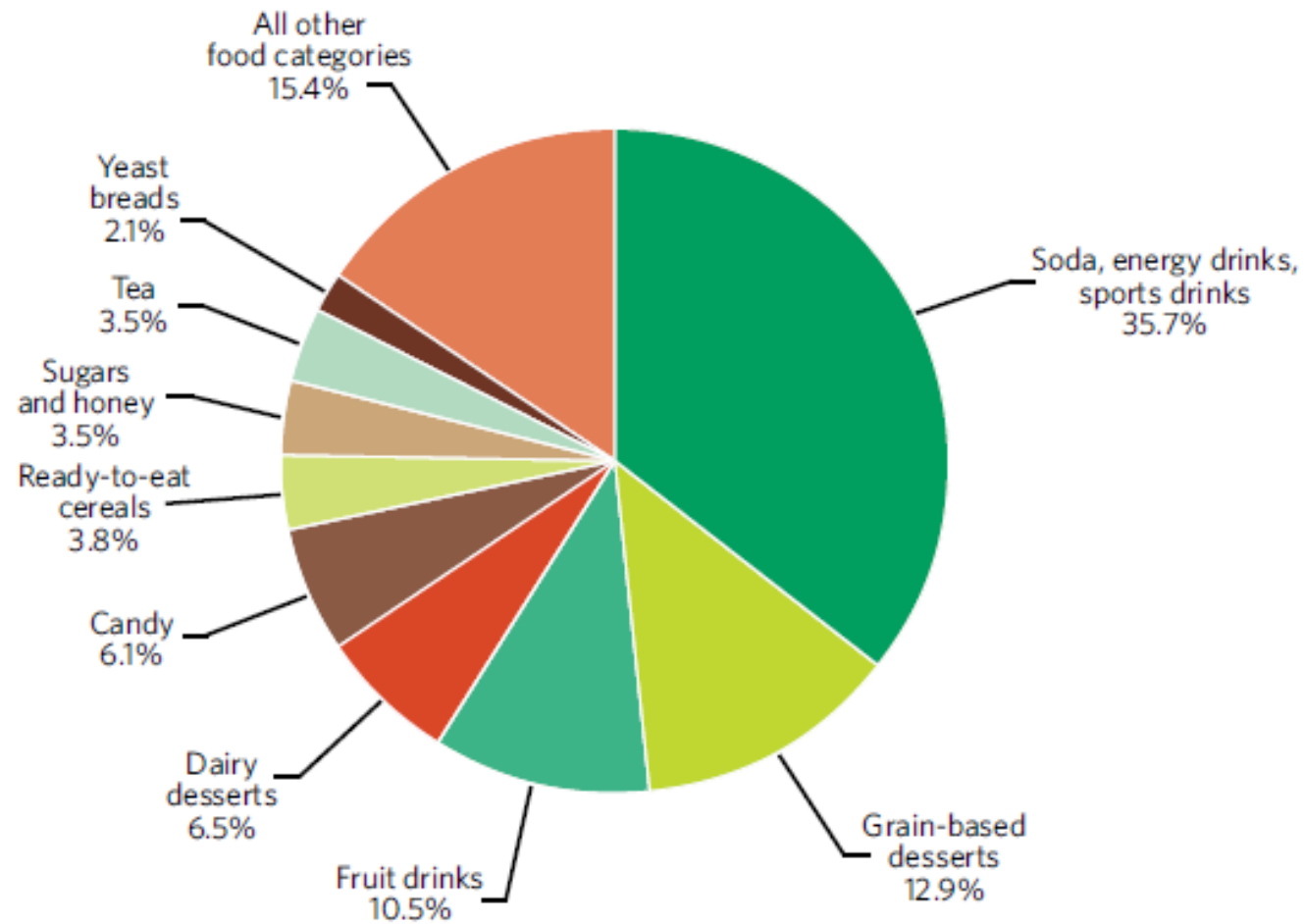
- Studies have failed to prove an association²⁹

Obesity as an Effect of Calorie Imbalance

CALORIES CONSUMED vs. PERCENT OBESE^{30, 31}



Sources of Sugar²²



22. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2010. 7th Edition, Washington, DC: U.S. Government Printing Office, December 2010.

2010 Dietary Guidelines on Added Sugar²²

- Added sugars contribute about 16% of the total calories in American diets
- Reducing added sugars allows for increased intake of more nutrient dense foods without exceeding calorie needs
- Small amounts of added sugar can increase the palatability of nutrient-dense foods, such as:
 - Whole-grain breakfast cereals
 - Fruit
 - Fat-free chocolate milk

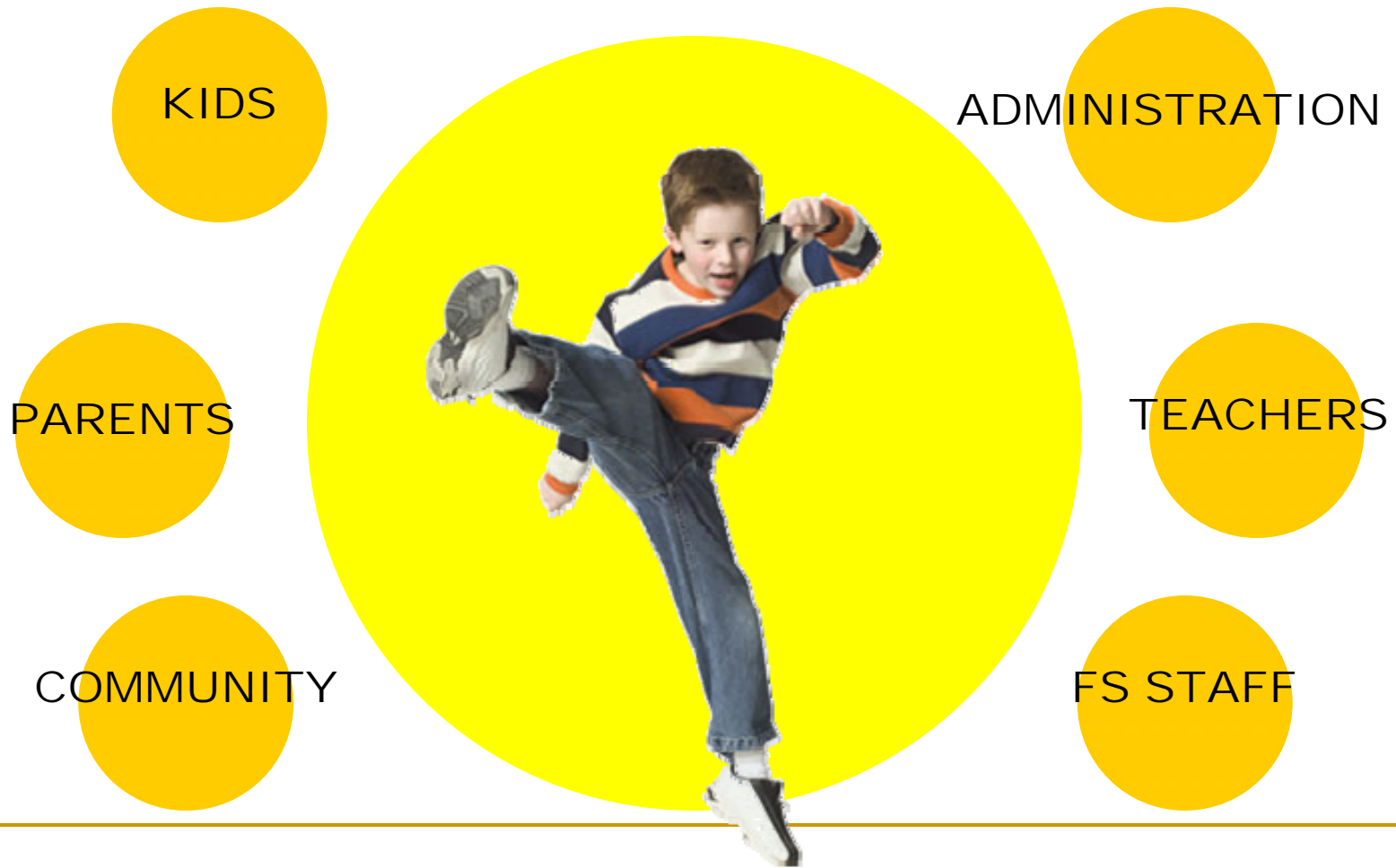
Questions/Discussion



MARKETING BREAKFAST NUTRITION

Eric Prospero, MBA

Who Cares about the Nutrition of Your Breakfast?



What do they need to know?

- The importance of breakfast
 - How to make healthy choices
 - School breakfast is nutritious
 - It's also convenient, affordable and fun!
-

STUDENTS



SCHOOL DISTRICT U-46

2010-2011 YOUTH ADVISORY COUNCILS



Glenbrook Elementary



Hanover Countryside



Horizon Elementary



Lincoln Elementary



Lowrie School



Ontarioville Elementary



Parkwood Elementary



Ridge Circle Elementary



Abbott Elementary



Eastview Middle School



Kenyon Woods Middle



Larsen Middle School



Bartlett High School



Elgin High School



Larkin High School



South Elgin High School

- “Food Coaching”
- Poster Contests
- Invitation to Breakfast
- Coach’s Breakfast
- **YAC YAC YAC**

The outside cover of the K-12 Breakfast Menu at Fayette County Public Schools (Lexington, KY) the inside includes menu, nutrition and payment information.



PARENTS

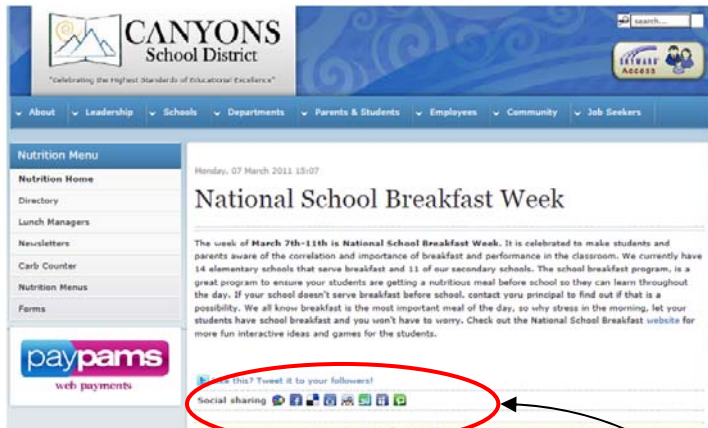


The outside cover of the K-12 Breakfast Menu at Fayette County Public Schools (Lexington, KY) the inside includes menu, nutrition and payment information.

- Parent advocates
- Nutrition updates
- Word of mouth
- **Breakfast-only Menu/Guide**
- Be Facebook and Twitter Friendly!

PARENTS

- **Be Facebook and Twitter Friendly!**



Like this? Tweet it to your followers!

Social sharing

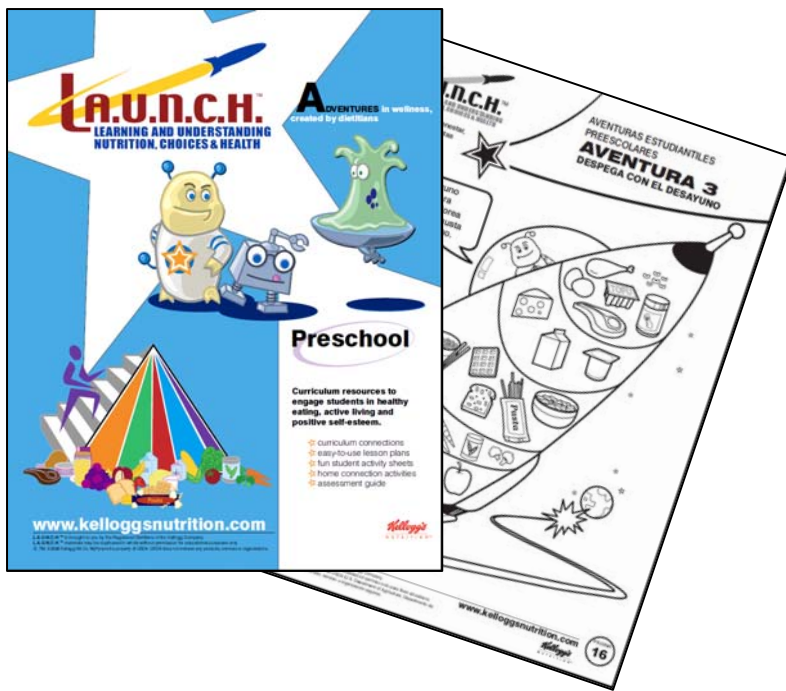
An example of social media being leveraged to promote discussion about breakfast taken from www.canyonsdistrict.org, Canyon School District's web page.

Frank Castro's Facebook page. Frank is the Director of Child Nutrition Services at Pleasanton Unified School District in California (enrollment 14,500). He uses Facebook and Twitter to send out information about nutrition and his program.



TEACHERS/ADMINISTRATORS

- Sample of new items
- Breakfast advocates
- Serve your best menu items at district staff meetings.
- ***Nutrition information library.***
- Speak and help teach



An example of educational materials available free from www.kfafh.com. L.a.u.n.c.h. was developed by Connie L. Evers, MS, RD -- a specialist in children's health and nutrition education and author multiple books (including *How to Teach Nutrition to Kids*) and works as a consultant to schools, universities and USDA child nutrition programs throughout the nation.

YOUR STAFF

- Early morning culture.
- Empowerment as local nutrition experts.
- Sampling of new items with nutrition info.
- Breakfast participation awards/recognition.



Griffin-Spalding County School System Nutrition (GA) Program director Mary Ramsaier, Superintendent Dr. Jesse Bradley, and Lead School Nutrition Manager Laverne Sims take a moment to show two of the 23 awards received from the Georgia School Nutrition Association for the 2008-2009 school year.

THE COMMUNITY

National School Breakfast Week at KPMS - Keyser, WV - Mineral Daily News-Tribune

NewsTribune info

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Eastern West Virginia Community & Technical College

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ValleyHealth Winchester Medical Center

National School Breakfast Week at KPMS

Mar 22, 2011 @ 07:54 PM

Students at Keyser Primary-Middle School celebrated National School Breakfast Week recently. Enjoy these reader-submitted photos!

Emma Robinson and Mom Samantha enjoy breakfast together at Keyser Primary-Middle School during National School Breakfast Week.

Mineral County Health Department

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- Make your communication priorities known to your district PR People.
- Provide positive and negative media examples.
- **Plan media-friendly events.**
- Develop fact sheets and a calendar of media opportunities.

Photo's from National School Breakfast Week in Keyser, WV as displayed on a local media website.

Tell us how you promote
nutrition in your district?

References

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