

# Farm-to-School AmeriCorps Training Nutrition Education & Evaluation



**Jill Camber Davidson, RD, CD & Amy Meinen, MPH, RD, CD  
November 5, 2008**



# Presentation Outline

- **Overview of the Obesity Problem**
- **Childhood Obesity Prevention**
  - Current Collaborative Efforts in WI
- **Farm-to-School (F2S) Role**
- **Nutrition Education for Schools**
- **Fruit and Vegetable-Related Resources**
- **Evaluating Fruit and Vegetable Consumption**
- **Questions**

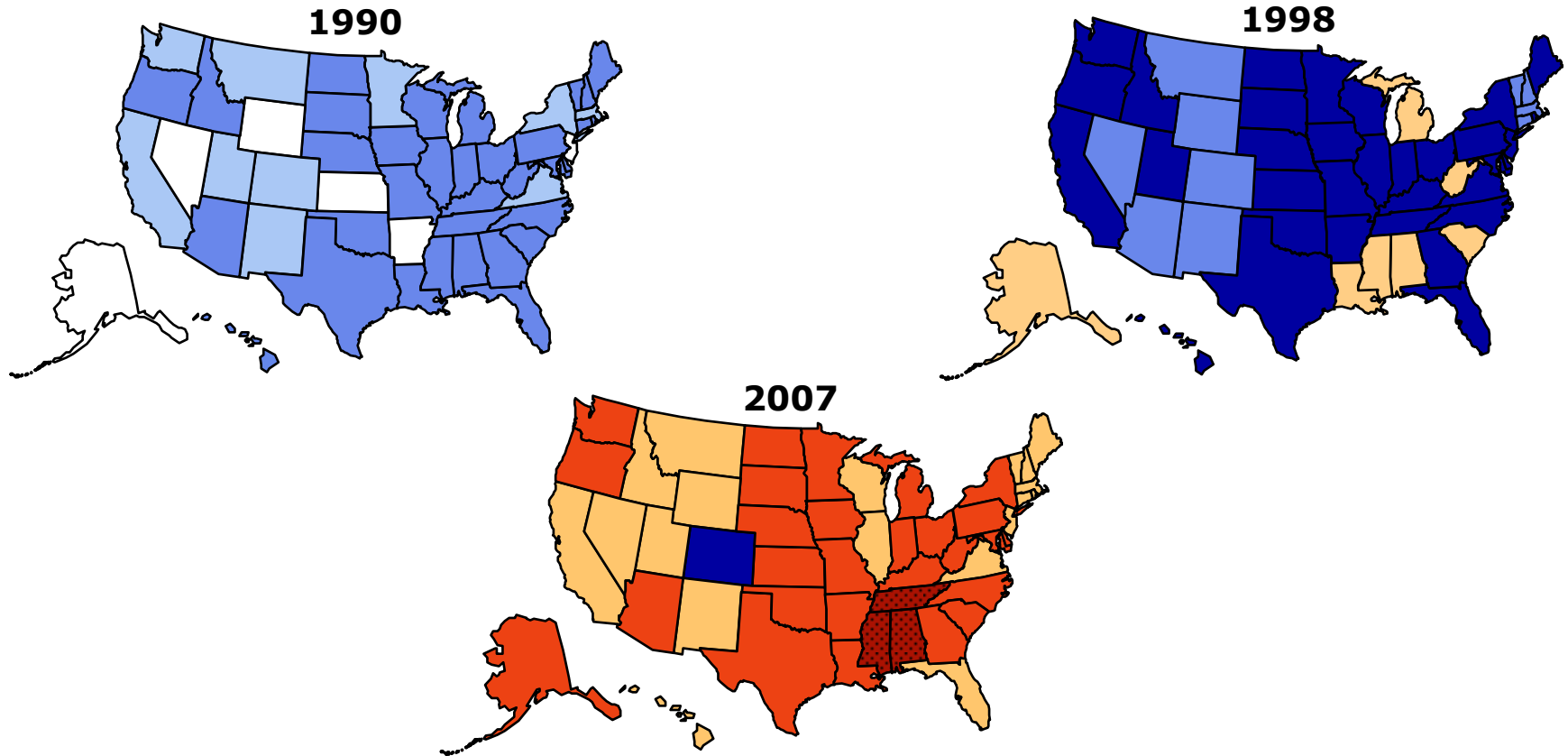


# Overweight and Obesity: Overview of the Problem

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1990, 1998, 2007

(\*BMI  $\geq 30$ , or about 30 lbs. overweight for 5'4" person)



□ No Data   □ <10%   □ 10%–14%   □ 15%–19%   □ 20%–24%   □ 25%–29%   □  $\geq 30\%$

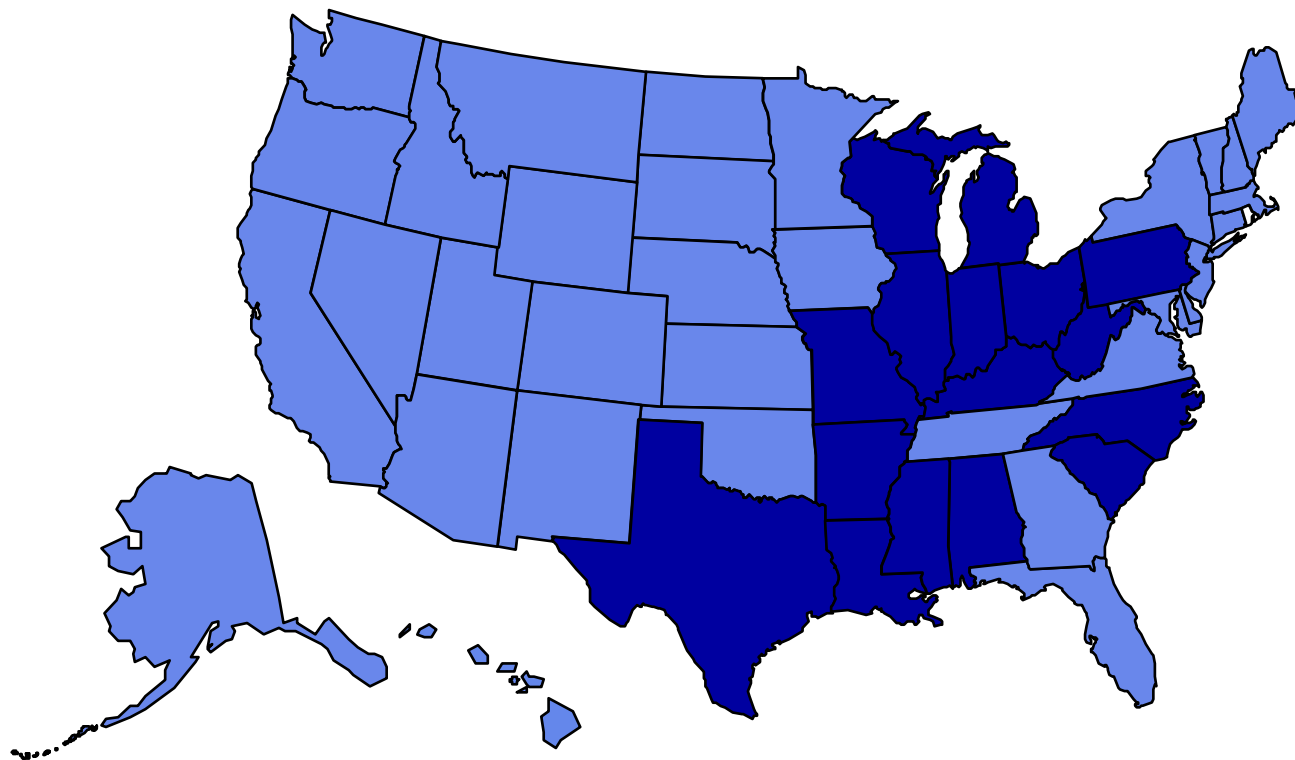


Source: CDC Behavioral Risk Factor Surveillance System.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 1994

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



No Data   <10%   10%–14%   15%–19%



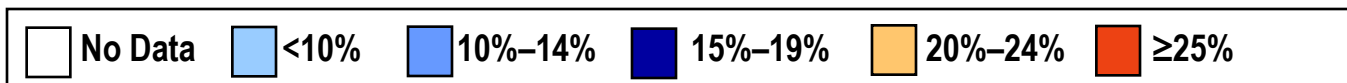
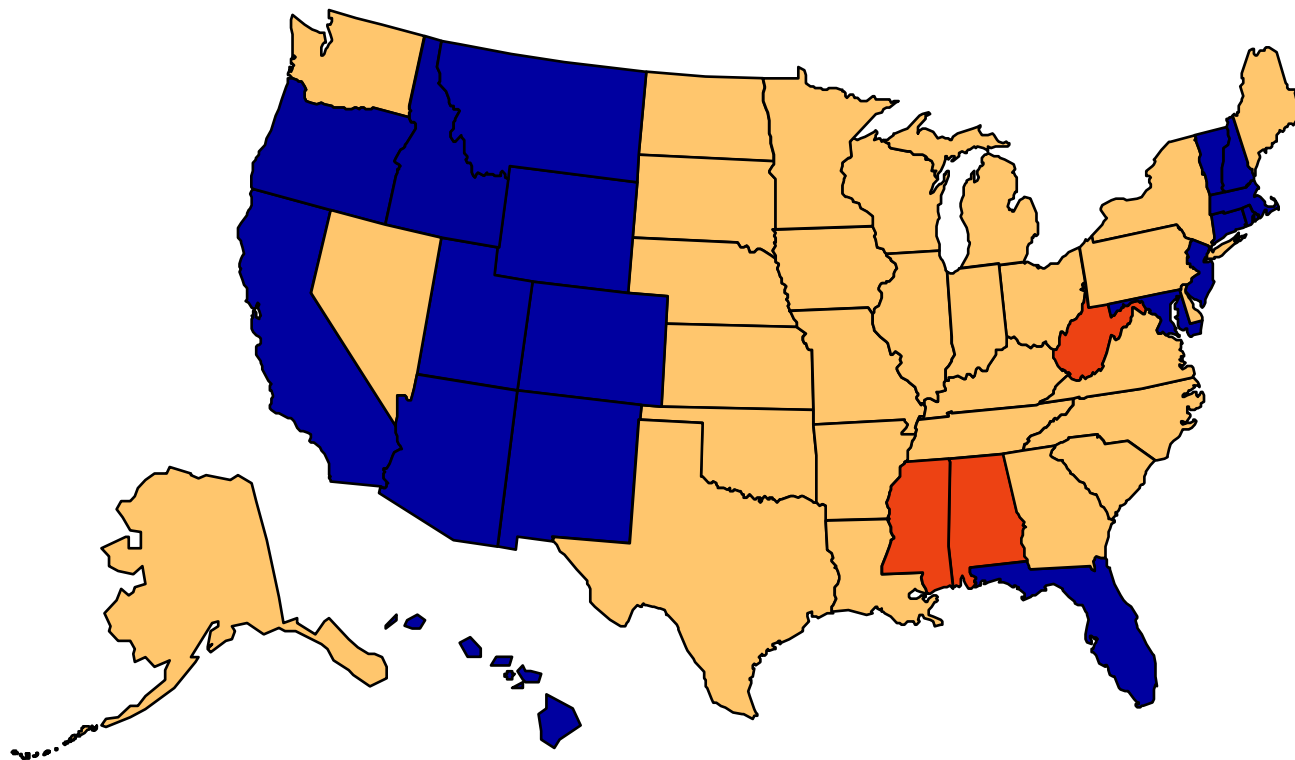
Source: CDC Behavioral Risk Factor Surveillance System.



# Obesity Trends\* Among U.S. Adults

## BRFSS, 2002

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

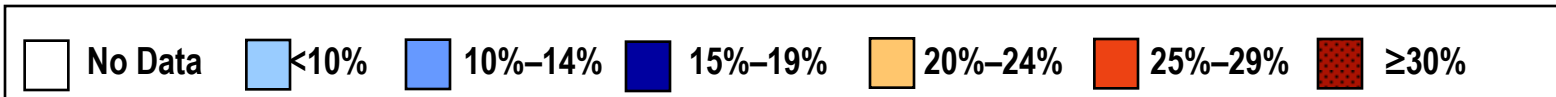
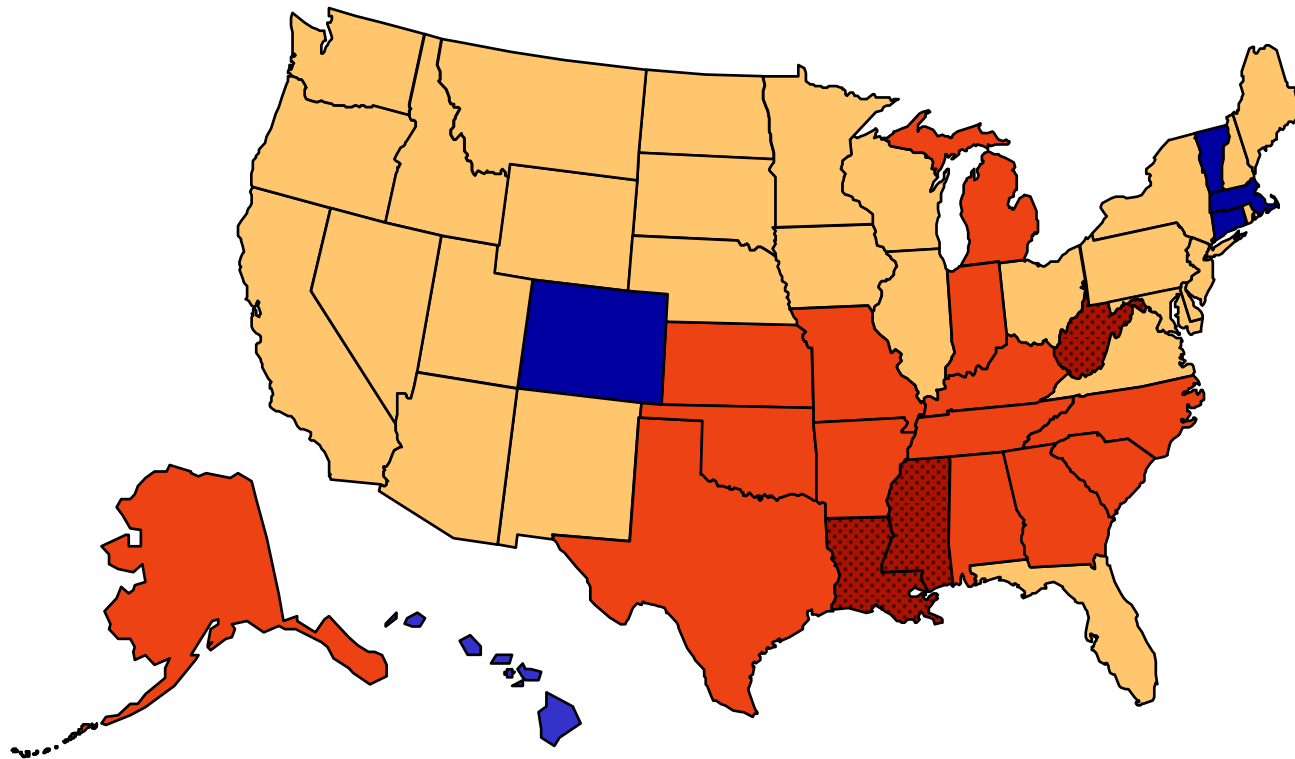


Source: CDC Behavioral Risk Factor Surveillance System.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2005

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

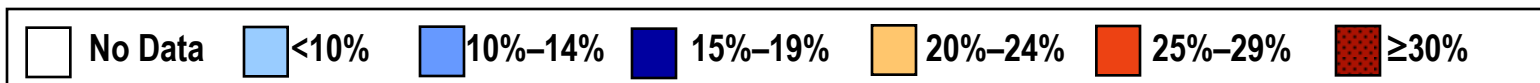
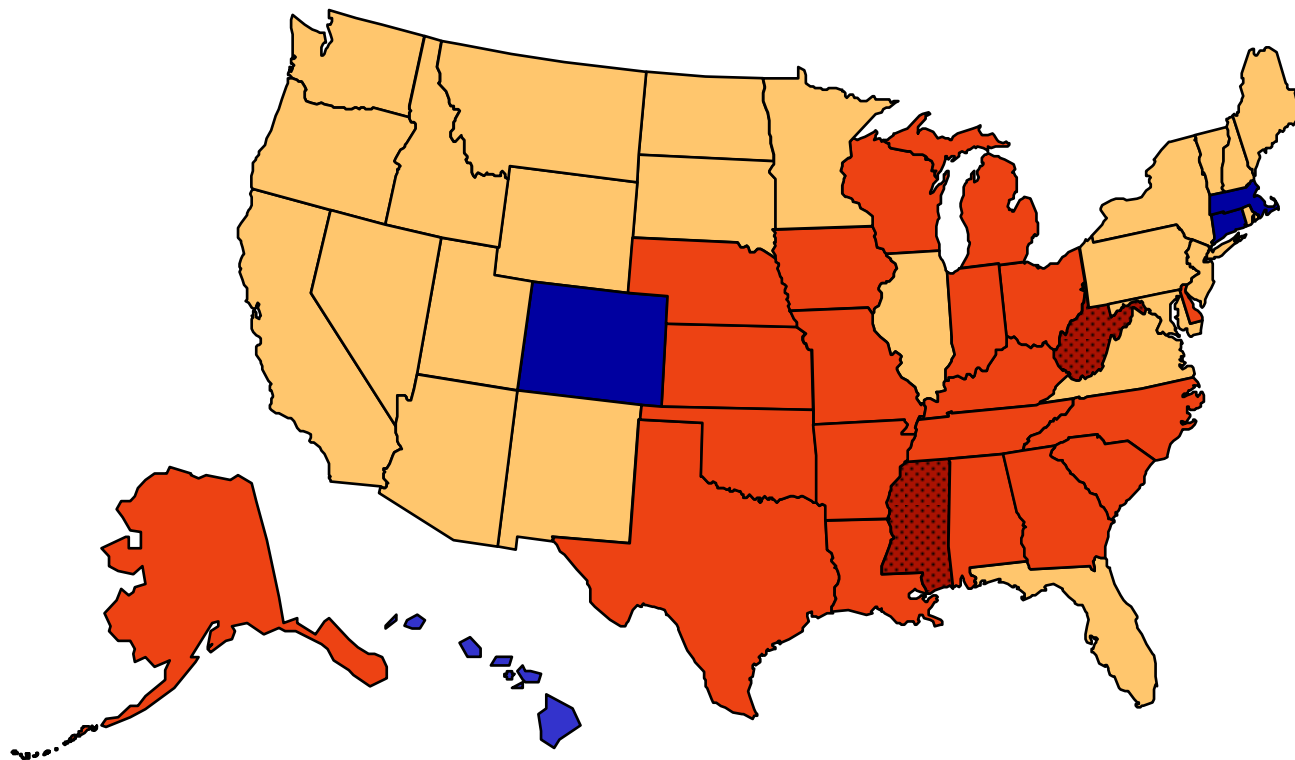


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2006

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)

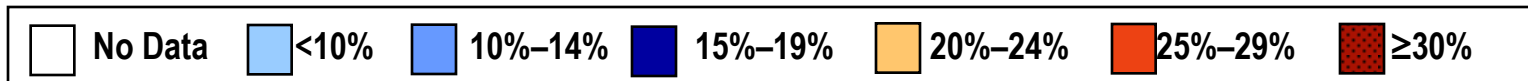
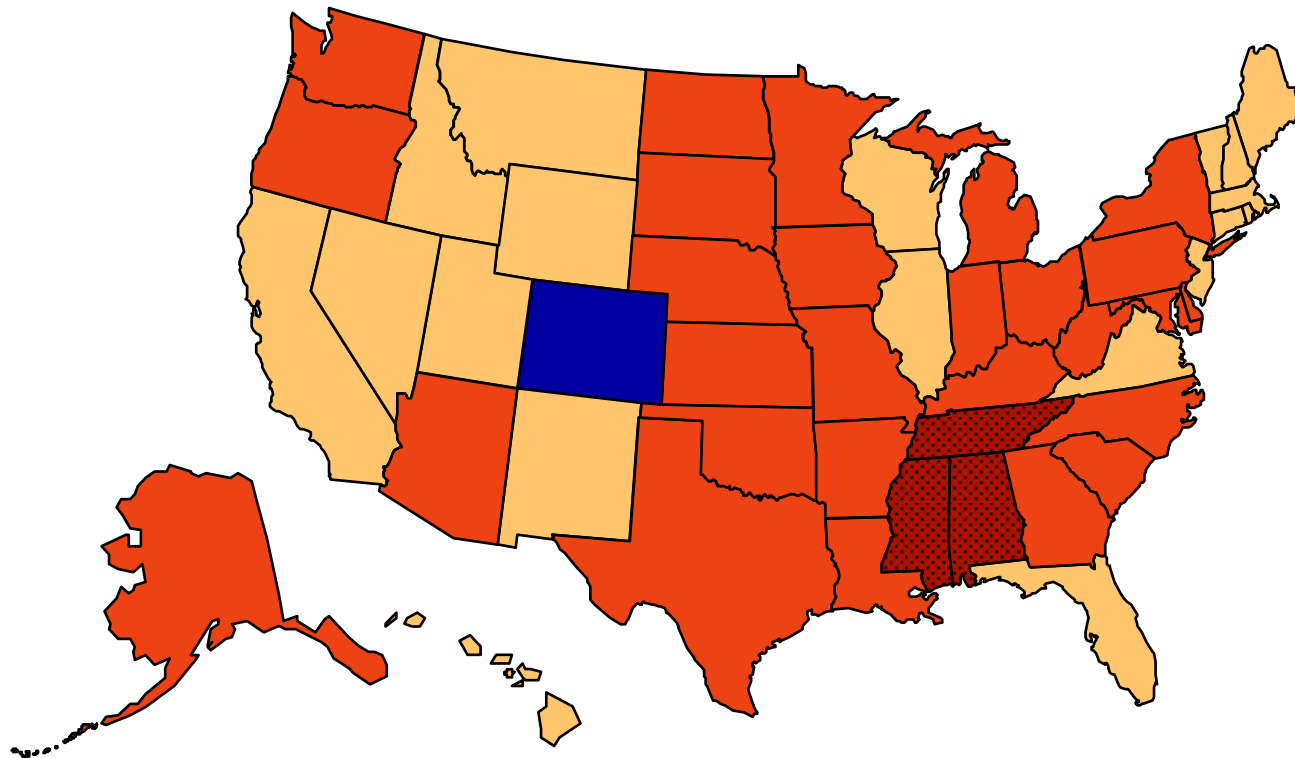


Source: Behavioral Risk Factor Surveillance System, CDC.

# Obesity Trends\* Among U.S. Adults

## BRFSS, 2007

(\*BMI  $\geq 30$ , or  $\sim 30$  lbs. overweight for 5' 4" person)



Source: Behavioral Risk Factor Surveillance System, CDC.



## Current State

- 64.9% of Wisconsin adults are considered overweight or obese (BRFSS)
- 25.1% of Wisconsin high school students are considered overweight or obese (YRBS)
- Of Wisconsin children 2-4 participating in WIC, 29.3% are overweight or obese (PedNSS)



## Current State

- Only 17.9% of Wisconsin high school students report eating fruits and vegetables five or more times per day. (YRBS)
- Twenty-five percent of Wisconsin high school students report drinking soda or pop daily. (YRBS)



## Other Contributing Factors

- Lack of access to fruits and vegetables
- Affordability of healthy foods and beverages
- Competing foods; high-energy density
- Increased fast-food consumption; convenience foods
- Portion sizes

# Larger Portion Sizes

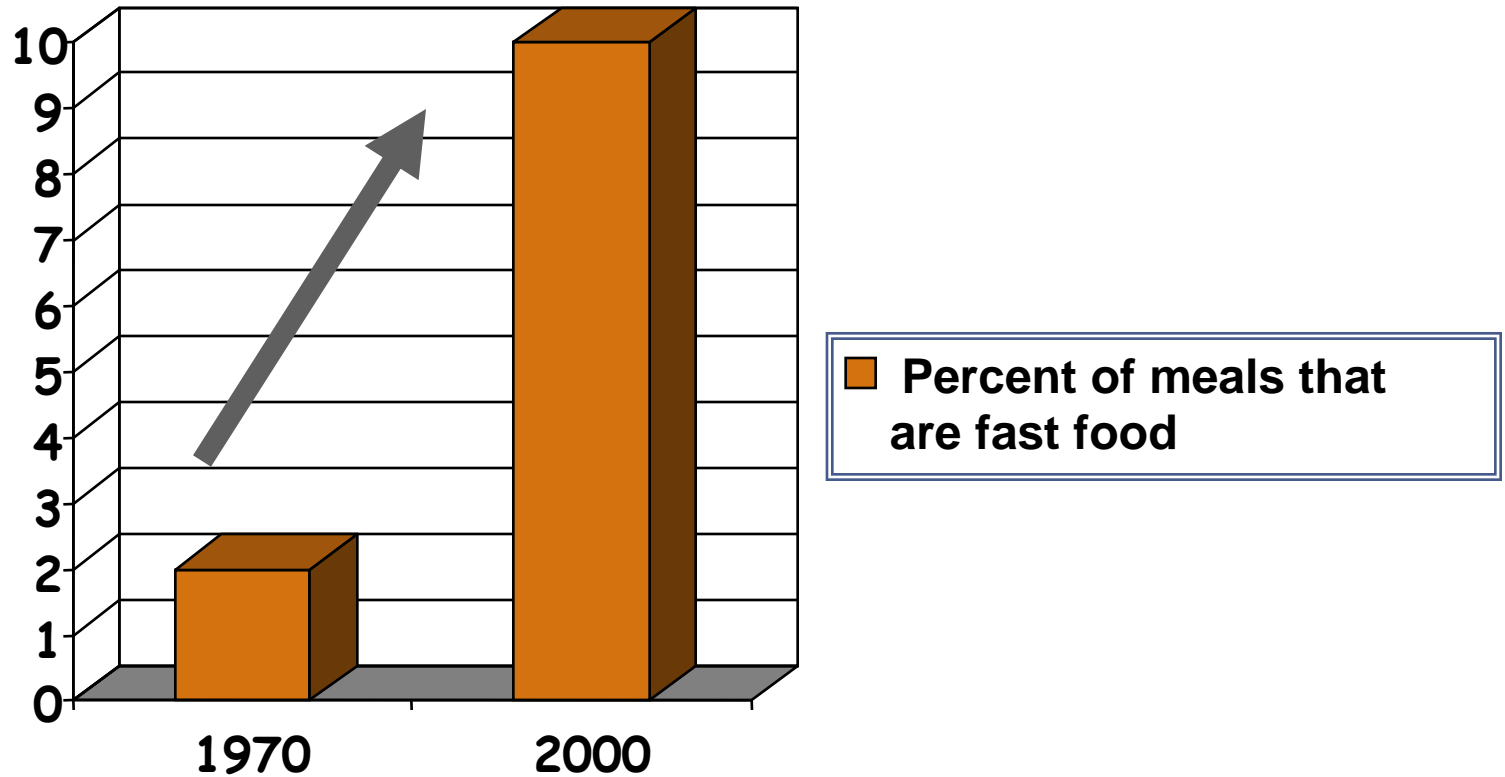


20 years ago  
333 calories



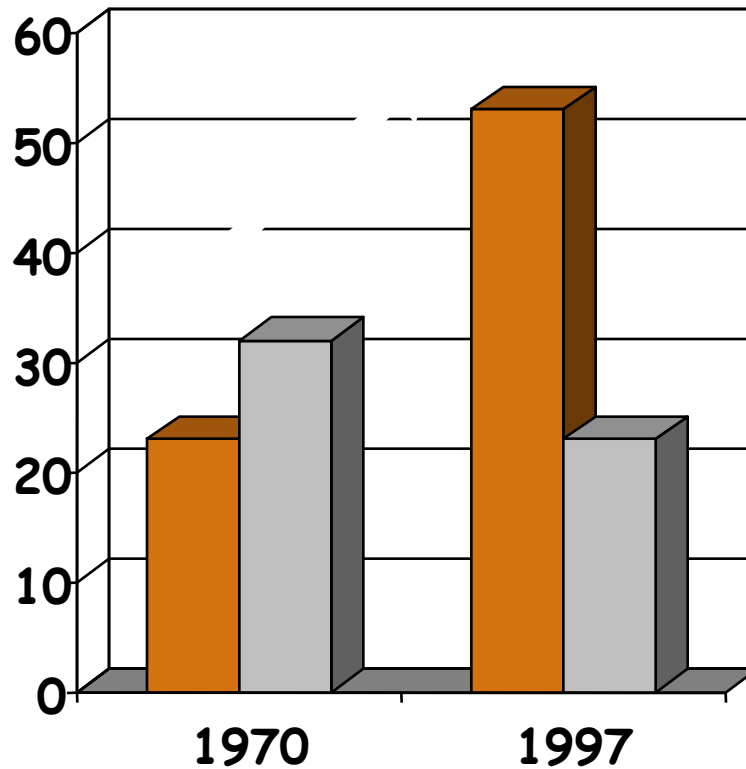
Today  
590 calories

# Fast Food Growth in US



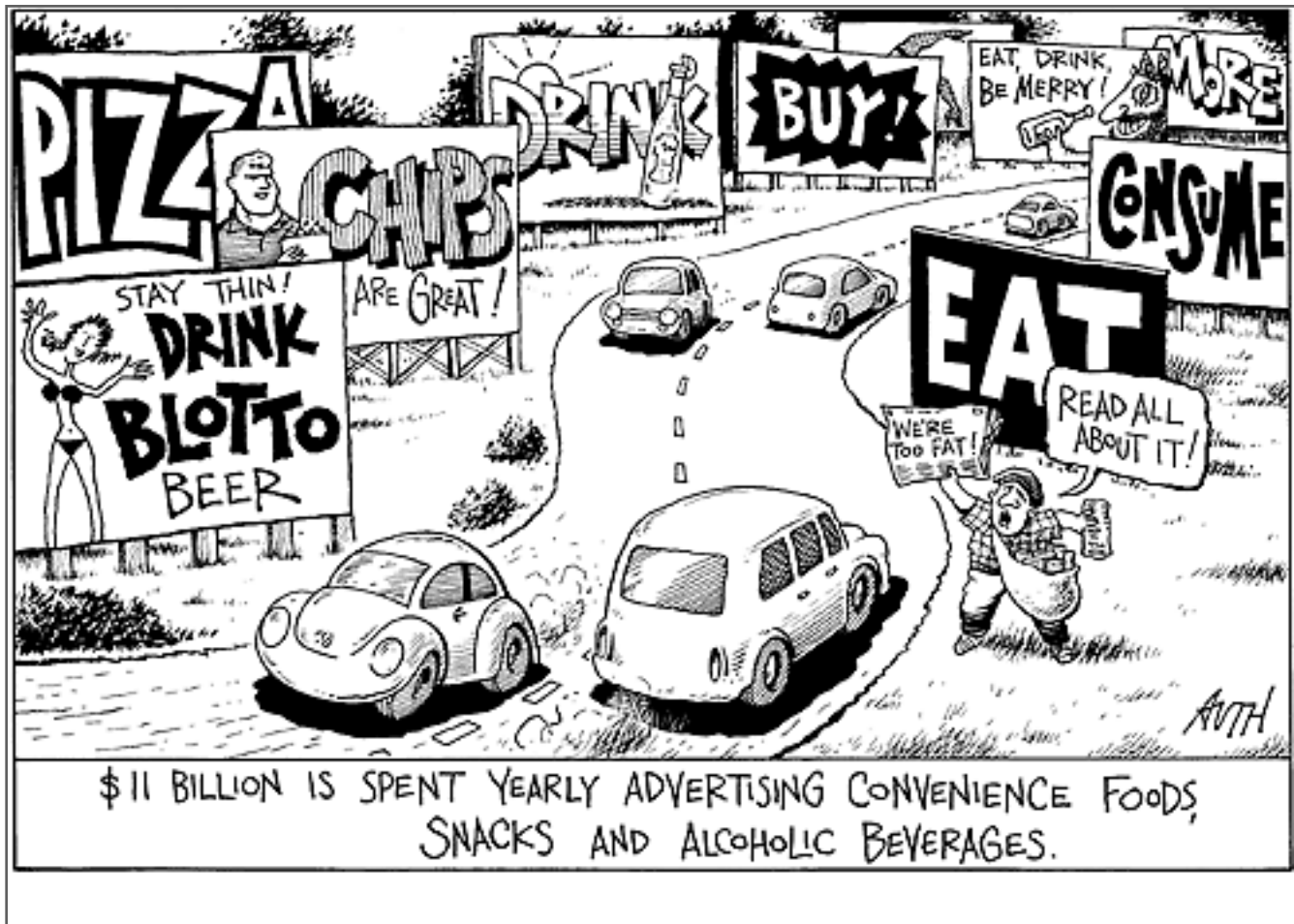
5 fold increase from 1970 to 2000

# Soft Drink Growth in US



- Annual gallons of soft drinks consumed per capita
- Annual gallons of milk consumed per capita

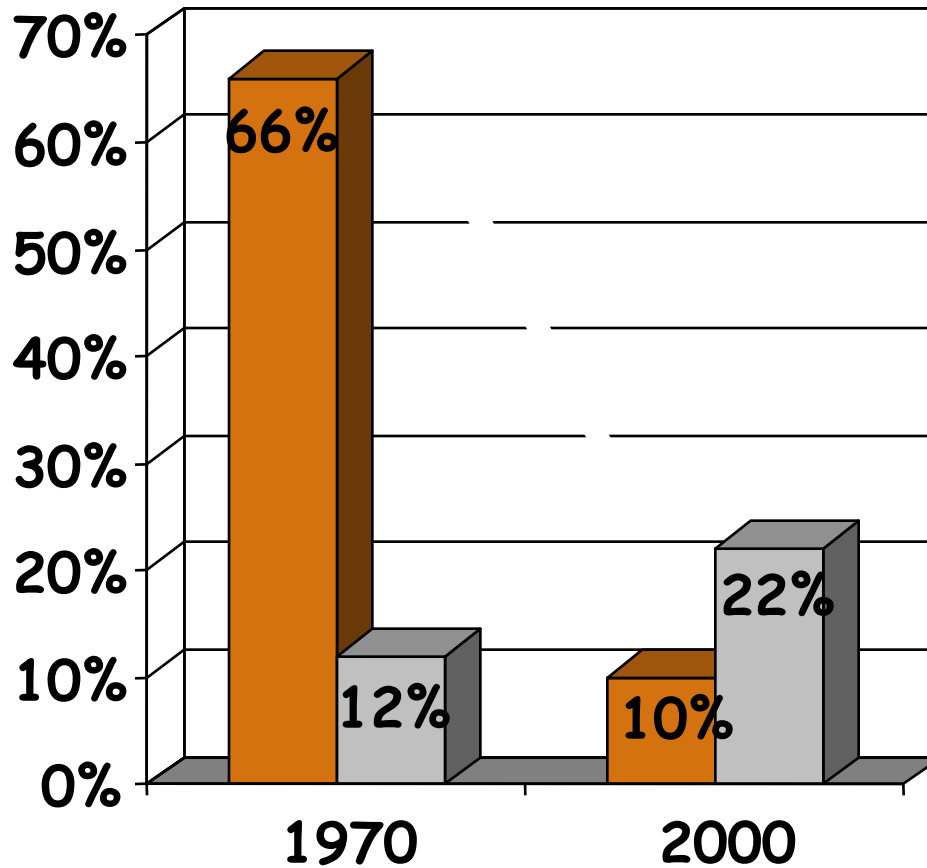
# Today's Reality



# What do you mean there's a physical activity problem in the US?



# # of US Children Walking to Schools



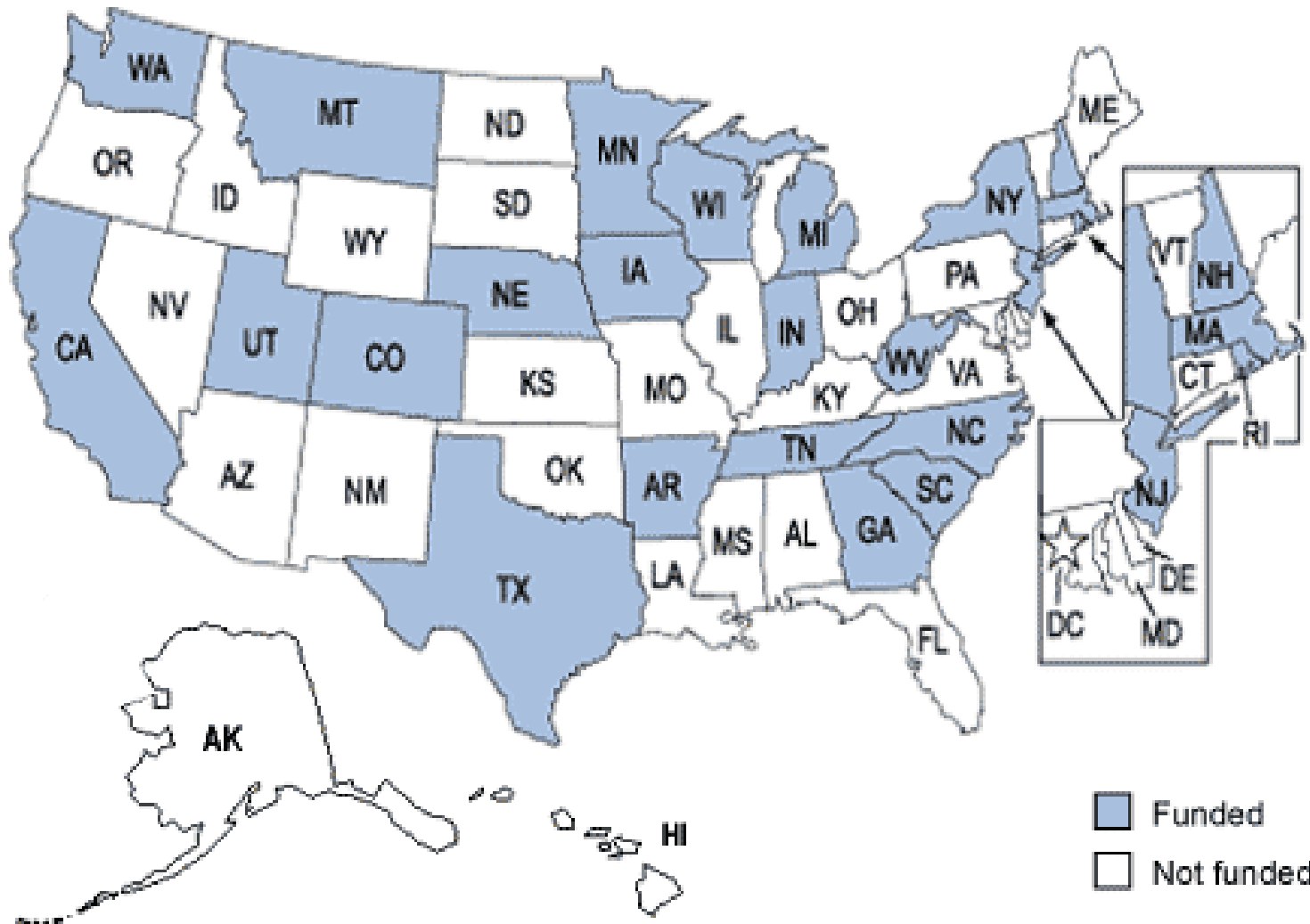
■ % Kids Walking to School  
■ % Kids Overweight



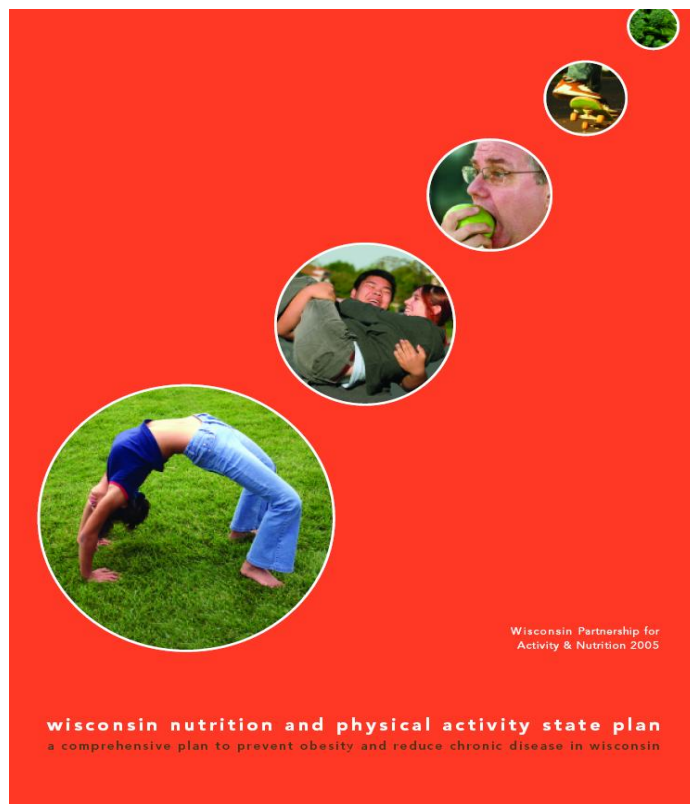
# Childhood Obesity Prevention

## Wisconsin's Current Efforts

# CDC Obesity Funded States



# WI Nutrition and Physical Activity State Plan





# Wisconsin Partnership for Activity and Nutrition

- **180+ WI PAN members; ~130 organizations**
- **Chair, bylaws, executive committee, standing committees**
  - Schools
  - Advocacy
  - Families and Communities
  - Environment
  - Surveillance
  - Business and Industry
  - Healthcare



## WI PAN's Mission

***To improve the health of Wisconsin residents by decreasing overweight and obesity, improving nutrition and increasing physical activity***

- Resource for N & PA information
- Coordinate N & PA efforts
- Plan, implement and evaluate the State Plan
- Advocate for policy change at all levels
- Encourage individual and population based lifestyle changes



- **Nutrition & Physical Activity Program Website:**
  - [http://dhfs.wisconsin.gov/health/physical activity](http://dhfs.wisconsin.gov/health/physical%20activity)
  
- **WI PAN Listserve (to subscribe):**
  - <http://lists.uwex.edu/mailman/listinfo/winpaw>



## Who Else is Involved?

### State-Level Partners:

- Wisconsin Action for Healthy Kids
- UW-Extension
- Department of Agriculture, Trade & Consumer Protection
- Department of Public Instruction
- Department of Transportation
- UW-Faculty (WiPOD)
- Governor's Council on Physical Fitness & Health



# Who Else is Involved?

## Local-Level Partners:

- Local Nutrition & Physical Activity Coalitions
  - 43+ in Wisconsin
  - [http://dhs.wisconsin.gov/health/physicalactivity/pdf\\_files/2008CoalitionWebinfo.pdf](http://dhs.wisconsin.gov/health/physicalactivity/pdf_files/2008CoalitionWebinfo.pdf)



# Action for Healthy Kids

National AFHK is a nonprofit organization formed specifically to address the epidemic of overweight, undernourished and sedentary youth by focusing on changes at school.

- <http://www.actionforhealthykids.org/index.php>



# AFHK Mission

- Improve children's nutrition and physical activity in schools by collaborating with diverse stakeholders in advocating, promoting, and implementing national and state initiatives

# Wisconsin Action for Healthy Kids



That schools provide an environment that fosters the development of lifelong habits of good nutrition and physical activity for all children

This is aimed at:

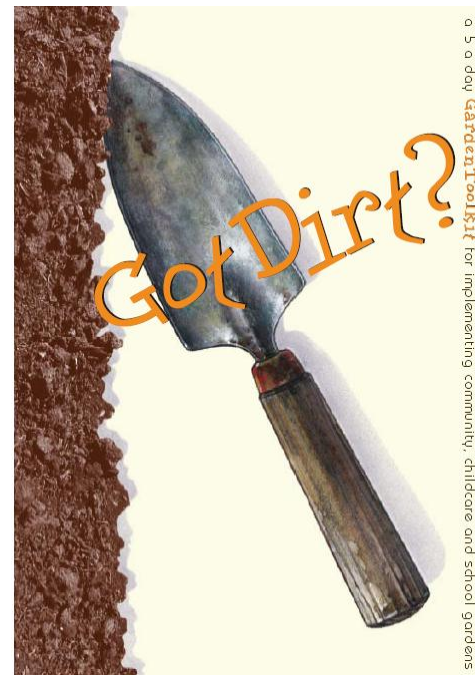
- slowing the rate of increase in overweight and obesity,
- decreasing the degree of overweight, and
- leading to the prevention of overweight and obesity in youth





# Got Dirt? Garden Initiative

- Purpose: To increase access to and consumption of fruits and vegetables through the implementation of school, after school, and childcare gardens
- The Initiative consists of:
  - Toolkit
  - Trainings
  - Resources





# Fresh Fruit & Vegetable Program

- Funding through the 2008 Farm Bill; allocated to DPI from USDA
- Provides funding for 56 elementary schools (greater than 50% free or reduced student designation)
- Fresh fruit or vegetable snack provided to student throughout the school year



# Fresh Fruit & Vegetable Program

- Nutrition education recommended
- DPI website (contains list of schools, nutrition education resources, etc.):
  - <http://dpi.wi.gov/fns/ffvp.html>



# Farm-to-School Role





# Role of Farm-to-School

- Improved access to fruits and vegetables
- Improved taste of fruits and vegetables; translates to variety consumed
- Students learn where their food comes from



# Making Healthy Choices Easier

## Individual

- ◆ Culture
- ◆ Knowledge
- ◆ Skills

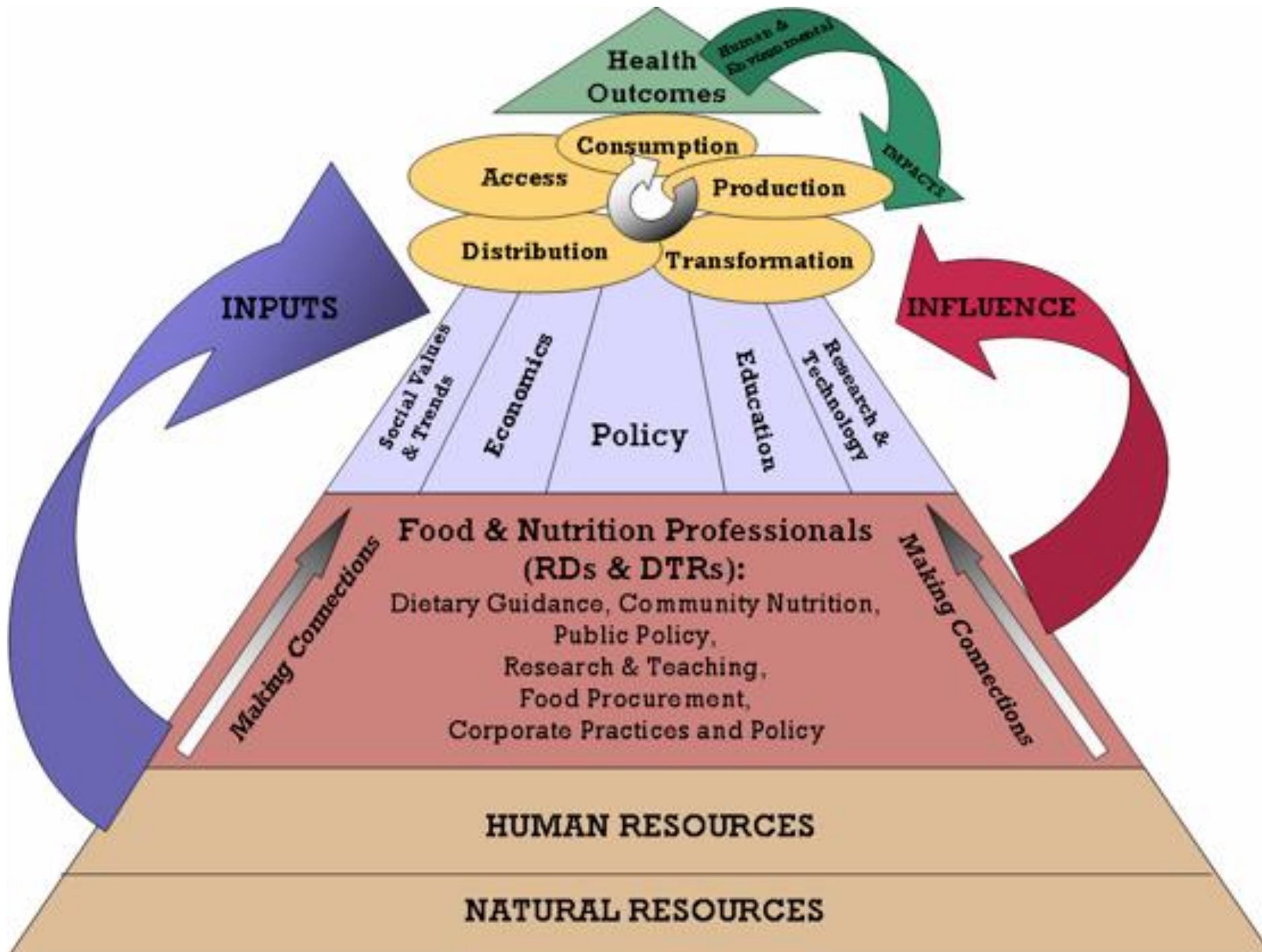
## Environment

- ◆ Affordability
- ◆ Access
- ◆ Advertising
- ◆ Policy
- ◆ Legislation



Fruit and  
Vegetable  
consumption

Environment






# Nutrition Education for Schools



Kids learn in more in school than then the curriculum indicates -- including eating behavior and food choices.

The school food environment, including lunch choices, time to eat and play, how food is used in the classroom and food at school activities can influence eating behaviors and attitudes.



# Why schools have a critical role

- Children develop lifelong habits & preferences in school
- Schools provide equality of access
- Feeding programs in place
- Key link to parents and community
- Children's nutrition & physical activity patterns influence their ability to learn
- Because of commercial interests in schools, greater need for actions to counterbalance



# The Academic Connection:

Healthy school environments, good nutrition and physical activity impact learning...



# Connection to Learning

- **Negative impacts on learning**
  - Undernourished children attain lower scores on standardized tests, are more irritable, have difficulty concentrating and have less ability to resist infection and may miss more school
  - Well nourished students who skip breakfast perform worse on tests and have poor concentration
  - Poor nutrition and hunger interfere with cognitive function and are associated with lower achievement



# Poor nutrition hampers academic achievement:

- **Food Insecure children ages 6 – 11**
  - had significantly lower arithmetic scores
  - were more likely to repeat a grade
- **Food Insecure children ages 12 – 16**
  - more likely to visit a psychologist
  - be suspended from school
  - have difficulty getting along with others
  - have no friends



## A More Tenuous Link

- Evidence of a direct effect of weight on achievement is less conclusive, however emerging research shows an association.
  - Very overweight children and adolescents were 4 times more likely than healthy children and adolescents to report “impaired school functioning”
  - Overweight kindergarteners had significantly lower math and reading test scores at the beginning of the year than did their non-overweight peers, and that these lower scores continued into first grade.



## Nutrition education

- Students' behavior and eating habits are impacted by learning about nutrition
- Students report that not knowing what foods are more nutritious is a barrier to healthier eating



# Nutrition Education

- Any set of learning experiences designed to facilitate the voluntary adoption of eating and other nutrition-related behaviors conducive to health and well –being (ADA 1996)
- Influence student’s eating behaviors





# Nutrition Education

- Students in grades pre-K through 12 receive nutrition education that is interactive and teaches the skills they need to adopt healthy eating behaviors
- Nutrition education is offered in the school dining room as well as in the classroom, with coordination between the foodservice staff and teachers



# Nutrition Education

- Students receive consistent nutrition messages throughout the school, classroom
- State and district health education curriculum standards and guidelines include nutrition education and physical education
- Positive nutrition experiences



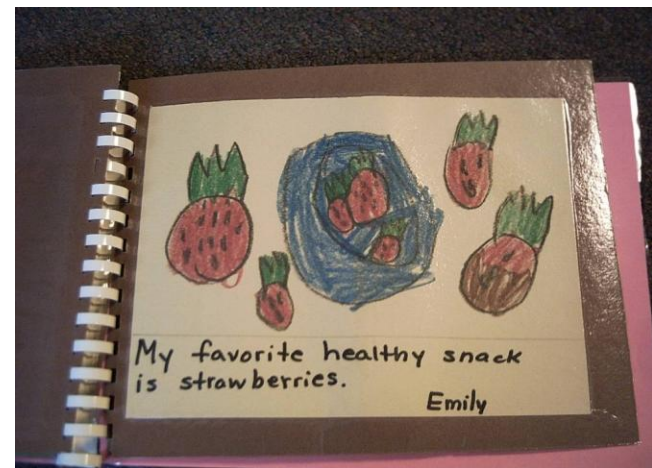
## Cafeteria to classroom...

When it comes to healthy eating, the food that students are served in the cafeteria needs to be connected to what they learn in the classroom. Many schools have reported that students are more likely to choose items from the cafeteria salad bar when they have learned about the principles of good nutrition in class.



# Role of Farm-to-School

- Improve access to fruits and vegetables
- Taste of fruits and vegetables; variety consumed
- Students learn where their food comes from
- Incorporating nutrition education from cafeteria to classroom



# Serving Models

- Local Product used in:
  - salad bars
  - hot entrees / other meal items
  - snack in classroom
  - taste tests
- Educational Activities:
  - chef/farmer in class, cooking demos
  - greenhouses, waste management, recycling
  - farm tours
  - harvest of the month



# Wisconsin TN 2008

- Farm to School Nutrition Education Lessons
  - “Nutritious, Delicious Wisconsin”
  - HUSSC
  - “Wellness is Local”
  - Community Connections





# Nutrition Education

- Connect to Nutrition Education Standards
- Develop and pilot test lessons
- Standard Format
- Teachers, students, parents, school staff
- School food service staff
- School communications



# Nutrition Education Resources



Enroll at: <http://teamnnutrition.usda.gov/team.html>

Fax it to 703-305-2549

Or mail it to:

Team Nutrition  
3101 Park Center Drive, Room 632  
Alexandria, VA 22302

Include Proof of Enrollment in Application



# READ IT *before you EAT IT!*

How many servings are you eating?

## Nutrition Facts

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

Amount Per Serving

Calories 250    Calories from Fat 110

% Daily Value\*

Total Fat 12g    18%

Saturated Fat 3g    15%

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

What food would have this Nutrition Facts label? Answer below.\*

Get What You Need!

Get LESS

5% or less is low

20% or more is high

Get ENOUGH

5% or less is low

20% or more is high



## What's the Best Choice for You?

Use the **5%-20% Guide to Daily Values** to choose foods.

\* Answer: Box of macaroni and cheese.

How do your choices stack up? The photos show approximate serving sizes from the five major food groups of the Food Guide Pyramid. This combination of food choices shows the servings from the Pyramid for an older child, a teen girl, an active woman, and most men, for one day. Teen boys and active men may need more servings of food.

[www.fns.usda.gov/tn](http://www.fns.usda.gov/tn)

United States Department of Agriculture Food and Nutrition Service | October 2002

©2002 by the United States Department of Agriculture

# What size is your serving?

Compare the Pyramid Servings  
with what you eat in a day.



How Many Each Day?	What Counts as a Serving		
<p><b>2 to 3 Servings</b></p> <p><b>Milk Group</b></p>	<p>8 oz. glass of milk = size of a small milk carton</p> 	<p>1 1/2 oz. of natural cheese = size of two 9-volt batteries</p> 	<p>8 oz. cup of yogurt = size of a baseball</p> 
<p><b>2 to 3 Servings</b> (total of 6 to 7 ounces)</p> <p><b>Meat &amp; Beans Group</b></p>	<p>2-3 oz. of meat, poultry or fish = size of a deck of cards</p> 	<p>2 tablespoons of peanut butter counts as 1 oz. = size of a roll of film</p> 	<p>1 cup of beans counts as 2 oz. = size of a baseball</p> 
<p><b>3 to 5 Servings</b></p> <p><b>Vegetable Group</b></p>	<p>1 cup of raw, leafy vegetables = size of a baseball</p> 	<p>10 french fries = size of a deck of cards</p> 	<p>1/2 cup of peas or other vegetables = size of a small computer mouse</p> 
<p><b>2 to 4 Servings</b></p> <p><b>Fruit Group</b></p>	<p>3/4 cup of fruit juice = size of a 6 oz can</p> 	<p>1/2 cup of sliced fruit = size of a small computer mouse</p> 	<p>1 medium fruit = size of a baseball</p> 
<p><b>6 to 11 Servings</b></p> <p><b>Grains Group</b></p>	<p>1 slice of bread = size of a disk</p> 	<p>1 cup of dry cereal = size of a baseball</p> 	<p>1/2 cup of pasta = size of a small computer mouse</p> 



Dietary Guidelines  
for Americans  
2005

<http://www.health.gov/dietaryguidelines/dga2005/document/>



- ✚ Action for Healthy Kids Wellness Policy Tool: [www.actionforhealthykids.org/resources\\_wp.php](http://www.actionforhealthykids.org/resources_wp.php)
- ✚ School Nutrition Association Local Wellness Policy Guidelines: <http://www.schoolnutrition.org/Index.aspx?id=1075>
- ✚ ADA Wellness Policy Tool: [www.eatright.org](http://www.eatright.org)
- ✚ Fit, Healthy and Ready to Learn: <http://www.nasbe.org/HealthySchools/fithealthy>



# Web Links

[www.teamnutrition.usda.gov](http://www.teamnutrition.usda.gov)

[www.fns.usda.gov/tn/healthy/wellnesspolicy.html](http://www.fns.usda.gov/tn/healthy/wellnesspolicy.html)

<http://dpi.wi.gov/ne/index.html>

<http://dpi.wi.gov/fns/wellnessplcy.html>

[http://dpi.wi.gov/fns/pdf/wafhk\\_brochure.pdf](http://dpi.wi.gov/fns/pdf/wafhk_brochure.pdf)

[http://dpi.wi.gov/fns/pdf/wellness\\_eval.pdf](http://dpi.wi.gov/fns/pdf/wellness_eval.pdf)

[www.farmtoschool.org](http://www.farmtoschool.org)

[www.schoolnutrition.org](http://www.schoolnutrition.org)



# Fruit and Vegetable Related Resources



## Fruit & Vegetable Resources

- In March 2007, the 5 A Day Program was replaced by a new brand
- All previous versions of the National 5 A Day for Better Health Program must be phased out by March 2009
- 5 A Day The Color Way and 5 to 9 A Day logos are expected to be phased out as well by March 2009



# The New Brand

## Word Form:

- Fruits & Veggies—More Matters®

## ■ Logo Form:





## The New Brand

- Brand Development Influenced by 2005 Dietary Guidelines for Americans
  - Increased daily recommended amounts of fruits and vegetables
  - Measurement form changed from servings to cups



## The New Brand

- Fruits & Veggies—More Matters® strives to help consumers:
  - Overcome old habits
  - Peer pressure
  - Picky eaters
  - Limited time
  - Tight budgets
- The brand is empathetic and supportive



## The New Brand

- Centers for Disease Control and Prevention (CDC) is the leading public health authority for the brand
  - Responsible for key scientific decisions regarding the brand
- Produce for Better Health Foundation (PBH) serves as the brand manager
  - Responsible for graphical criteria for the logo, written style guidelines, and assuring overall brand integrity



## Brand Core Messages

- Fruits and veggies provide the unrivaled combination of taste, nutrition, abundant variety and multiple product forms
- Eating fruits and veggies matters in maintaining a healthy weight and may reduce the risk of many diseases
- All product forms count—fresh, frozen, canned, dried, and 100% juice



## Brand Core Messages

- Eating a colorful variety of fruits and veggies provides a wider range of valuable nutrients like fiber, vitamins, and potassium
- Every step taken towards eating more fruits and veggies and getting more physical activity helps families be at their best



## Using The Brand

- Wisconsin was licensed by CDC to use the brand in late 2007
- Lead State Program Authorities: State Fruit & Vegetable Nutrition Coordinators (Amy Meinen) to serve as primary contacts for license



# Using The Brand

- Lead State Program Authorities may:
  - Sublicense public sector, non-profit entities, & in-state businesses
  - Monitor use to protect Brand
  - Develop activities and materials for use within state



## Using the Brand

- Farm-to-School/Nutrition Education:
  - Encourage you to use nationally-developed materials when you can



# National Materials

- **National Fruit & Vegetable Program**
  - Downloadable brochures & resources
  - Fruit & Vegetable of the Month (one-pagers)
  - [www.fruitsandveggiesmorematters.gov](http://www.fruitsandveggiesmorematters.gov)
- **Produce for Better Health Foundation**
  - [www.fruitsandveggiesmorematters.org](http://www.fruitsandveggiesmorematters.org)
  - Get Smart! Series; recipes; brochures and promotional items (for purchase)



## Using the Brand

- If you need to create your own materials using the brand, obtain a sublicense from Amy Meinen (follow sublicensing process below)
- **Sublicensing Process in Wisconsin:**
  - With primary contact (Amy Meinen), determine if sublicense is needed to meet needs vs. use of national materials that contain brand
  - If sublicense is needed, obtain sublicense agreement and brand usage guidelines from primary contact



## Using the Brand

- **Sublicensing Process in Wisconsin:**
  - Sign sublicense agreement and return to Amy Meinen ([Amy.meinen@wisconsin.gov](mailto:Amy.meinen@wisconsin.gov))
  - Once sublicense is on file, brand (logo files) will be released to sublicensee
  - After receiving the brand, any materials created with the new brand must be reviewed and approved by your primary contact (Note: Allow at least two weeks for review)
  - Primary contact will review for appropriate use of brand



# Using the Brand

- Any materials that contain the brand (logo, written form, or messaging) require approval prior to production and distribution; materials must be reviewed by the primary contact
- Examples include the following forms:
  - Power Point Presentation
  - Brochure
  - **Newsletter Article\*\*\***
  - Website
  - **Media/Press Release\*\*\***
  - Recipe
  - Email Announcement



# Brand Infringement

- No person or organization should use the brand without a sublicense; otherwise considered a brand infringement
- Brand infringements will be documented and reported to the CDC and PBH

# Three simple steps to eating more fruits and vegetables.

Eating a variety of fruits and vegetables every day is healthy for you. They have vitamins and minerals that can help protect your health. Most are also lower in calories and higher in fiber than other foods. As part of a healthy diet, eating fruits and vegetables instead of high-fat foods may make it easier to control your weight.

**1** Find out how many fruits and vegetables you need to eat every day.

**Women**

AGE	FRUITS	VEGETABLES
19-30	2 cups	2½ cups
31-50	1½ cups	2½ cups
51+	1½ cups	2 cups



**Men**

AGE	FRUITS	VEGETABLES
19-50	2 cups	3 cups
51+	2 cups	2½ cups



**Girls**

AGE	FRUITS	VEGETABLES
2-3	1 cup	1 cup
4-8	1 cup	1½ cups
9-13	1½ cups	2 cups
14-18	1½ cups	2½ cups



**Boys**

AGE	FRUITS	VEGETABLES
2-3	1 cup	1 cup
4-8	1½ cups	1½ cups
9-13	1½ cups	2½ cups
14-18	2 cups	3 cups



These amounts are for less active people. Visit [www.fruitsandveggiesmatter.gov](http://www.fruitsandveggiesmatter.gov) to see the amounts needed by more active people.

**2**

Example of National Materials:

-Written for low-literacy; low-income audiences



# Fruit & Vegetable Resources

- **Wisconsin Fruit & Vegetable Nutrition Program**
  - <http://dhs.wisconsin.gov/health/physicalactivity/F&V/brand.HTM>
  - Order Form for Free Materials



# Evaluating Fruit and Vegetable Consumption



# Evaluation

- **Measuring fruit and vegetable consumption in children and adolescents is challenging**
  - K-3<sup>rd</sup> grade; parent as primary reporter of dietary information
  - 4<sup>th</sup> grade and above; student as primary reporter of dietary information



# Evaluation

- Collection of pre/post measures is ideal
- Encourage collection of “predictors” of fruit and vegetable consumption to demonstrate short and intermediate-outcomes
  - Willingness to try
  - Likeability
  - Access to
  - Exposure to
  - Knowledge of



# Evaluation

- **Suggested Evaluation Instruments:**
  - Wisconsin Student Survey
    - [http://www.uwec.edu/jamelsem/papers/healthy\\_lunch/wi\\_f-v\\_survey\\_final.pdf](http://www.uwec.edu/jamelsem/papers/healthy_lunch/wi_f-v_survey_final.pdf)



# Evaluation

- **A Day in The Life (consumption)**

- Page 1:

[http://www.uwec.edu/jamelsem/papers/health\\_y\\_lunch/DITL%20Pg%201.pdf](http://www.uwec.edu/jamelsem/papers/health_y_lunch/DITL%20Pg%201.pdf)

- Page 2:

[http://www.uwec.edu/jamelsem/papers/health\\_y\\_lunch/DITL%20Pg%202.pdf](http://www.uwec.edu/jamelsem/papers/health_y_lunch/DITL%20Pg%202.pdf)

- Page 3:

[http://www.uwec.edu/jamelsem/papers/health\\_y\\_lunch/DITL%20Pg%203.pdf](http://www.uwec.edu/jamelsem/papers/health_y_lunch/DITL%20Pg%203.pdf)

- Page 4:

[http://www.uwec.edu/jamelsem/papers/health\\_y\\_lunch/DITL%20Pg%204.pdf](http://www.uwec.edu/jamelsem/papers/health_y_lunch/DITL%20Pg%204.pdf)



# Contact Information

- **Jill Camber Davidson, RD, CD**

- Email: [jill.CamberDavidson@dpi.wi.gov](mailto:jill.CamberDavidson@dpi.wi.gov)
- Phone: 608-264-6700

- **Amy Meinen, MPH, RD, CD**

- Email: [Amy.Meinen@wisconsin.gov](mailto:Amy.Meinen@wisconsin.gov)
- Phone: 608-267-9194