



Nutrition for Family Living

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March, 2001 Topics

Upcoming Physical Activity Videoconference
Children's Diets in the 1990's
Soft Drinks and Children's Diets
Prevalence of Childhood Obesity
Parents' Effect on Young Children's Eating

Upcoming Physical Activity Videoconference

Please register now to join Amy Rettammel, Outreach Specialist for the Wisconsin Nutrition Education Program, and Charmaine Garry, Fitness Director for the Ho-Chunk Nation's House of Wellness in Baraboo, on **Tuesday, March 13, from 1-3 pm.**

IF YOUR COUNTY/PROJECT IS...not even mentioning physical activity in your nutrition education because you're afraid to 'cross the line'...

THIS IS WHAT'S IN IT FOR YOU...suggestions for how you can incorporate teaching about physical activity into your current teaching and a better understanding of WNEP guidelines.

IF YOUR COUNTY/PROJECT IS...already incorporating the topic of physical activity into your current nutrition education...

THIS IS WHAT'S IN IT FOR YOU...some new ideas and materials for incorporating the topic of physical activity into your current nutrition education, and clarification of WNEP guidelines.

IF YOU SIMPLY WISH TO...update your knowledge about how physical activity relates to a healthy lifestyle...

THIS IS WHAT'S IN IT FOR YOU...current information about physical activity recommendations, benefits of physical activity, and how nutrition and physical activity work together to promote health.

Registration Information (per a 2/9/01 email announcement from Gloria Green)

Decide what location you will be attending for the videoconference and email the site coordinator for that location (see table below). Include in the email the names of individuals who will be attending the videoconference at that location on March 13th.

Registration deadline is March 6th.

If you have any questions about the program, please email gloria.green@ces.uwex.edu



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SITE LOCATION	SITE COORDINATOR	EMAIL ADDRESS
UW-Green Bay	John Pinkart	JOHN.PINKART@CES.UWEX.EDU
UW-Extension/DNR Rhinelanders	Lori Duchrow	PAM.CIRA@CES.UWEX.EDU (note: in subject line, indicate "to Lori")
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Pyle Center, Madison	Gloria Green	GLORIA.GREEN@CES.UWEX.EDU

For related reading:

See "Lower Direct Medical Costs Associated with Physical Activity" in the November 2000 issue of *Nutrition for Family Living* at <http://www.uwex.edu/ces/wnep/p3/mmpdfs/0011.pdf#page=5>

See January 2001 news release written by Beth Swedeen and Amy Rettammel at <http://www1.uwex.edu/ces/news/>. The release summarizes a study showing that people who accumulated 30 minutes of moderate physical activity throughout the day gained health benefits equal to those gained by people who engaged in 30 minutes of moderate physical activity all at once.

See a number of websites from the Centers for Disease Control and Prevention (CDC):

- <http://www.cdc.gov/nccdphp/sgr/npai.htm>
 - *CDC's National Physical Activity Initiative*
- <http://www.cdc.gov/nccdphp/dnpa/>
 - *CDC's Nutrition and Physical Activity site*
- <http://www.cdc.gov/nccdphp/sgr/fact.htm>
 - *Fact Sheets on physical activity for various populations*
- <http://www.cdc.gov/nccdphp/dnpa/readysset/index.htm>
 - *Physical Activity: Ready, Set, It's Everywhere You Go campaign*
- <http://www.cdc.gov/nccdphp/sgr/sgr.htm>
 - *Surgeon General's report on Physical Activity and Health*
- See the "Aim for Fitness" section of the *Dietary Guidelines for Americans*, 5th edition at <http://www.usda.gov/cnpp/DietGd.pdf>



Children's Diets in the 1990's

Two reports from the USDA use findings from the Continuing Survey of Food Intake by Individuals (CSFII) to describe changes in school-age children's diets during the mid-1990's. The first report describes children's mean food and nutrient intake, reports the percentage meeting various dietary standards, and compares the diets of participants and non-participants in the school breakfast and lunch programs. The second report focuses on changes between the early and mid-1990's in children's dietary intake.

Vitamins and minerals

- Mean daily intakes of vitamins and minerals vary greatly with age and gender. Despite the differences, for Vitamin C and the B vitamins – except folate – mean intakes for all groups are greater than the RDA.
- Teenage girls are at especially high risk of having low vitamin and mineral intakes. For folate, calcium and magnesium, fewer than 15% of girls age 14-18 meet the RDA. For vitamin A, vitamin E, iron, phosphorus and zinc, half of teenage girls meet the standards.
- Children age 6-8 are most likely to meet the standards for all vitamins and minerals except vitamin E and zinc.

Food Guide Pyramid

- Only 2% of children get the recommended number of servings for all five pyramid groups.
- Overall, 23% get the recommended number of servings of grains, 14% for fruit, 20% for vegetables, 17% for meat and 20% for milk.
- 56% to 85%, depending on age and gender, consume soft drinks on any given day. Over a third of teenage males consume three or more servings per day.

Dietary Guidelines

- Fewer than one-third of 14-18-year-old girls meet the recommendations for total fat and saturated fat. The percent is even smaller in other age/gender groups.
- Young children are most likely to meet the recommendations for sodium and fiber.
- Seven percent of black children meet the recommendation for total fat, 5% meet saturated fat recommendations, and 11% meet sodium recommendations.
- For all children, added sugars contribute an average of 20% of calories.
- Intakes of fat, saturated fat and sodium are closer to the recommendations at breakfast than at other meals. However, large numbers of children skip breakfast.

School meal participation and dietary intake

- Food from the cafeteria provides an average of 20% of children's calorie intake on school days. This includes both those who participate in school meals and those who don't.
- School breakfast participants, who usually also eat school lunch, get about half their day's energy from school meals.
- School lunch participants consume more vitamins and minerals, and less added sugar, soda and fruit drinks than non-participants. Participants are more likely than non-participants to consume foods from the vegetable, milk and meat groups, both at lunch and throughout the day.



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- Students who participate in both school breakfast and school lunch have higher intakes of energy, seven vitamins and minerals, total fat, saturated fat, fiber, and sodium than students who don't participate in either program. Participants are less likely to meet Dietary Guidelines for fat and sodium.
- Compared with students who don't participate, students who participate in school breakfast and lunch consume more than twice as many servings of milk and of fruit and vegetables, and one-quarter the number of servings of soda and fruit drinks.

Changes in Children's Diets: 1989-1991 to 1994-1996

- Food energy intake increased significantly among light, moderate and heavy eaters. The increase was mainly due to increases at dinner and snacks, since energy intake at breakfast and lunch stayed approximately the same.
- Despite the increase in energy intake, vitamin and mineral intake stayed about the same.
- Because children consumed additional calories, protein intake as a percent of calories decreased – but the actual number of grams of protein stayed about the same and is still in excess of the RDA. Carbohydrate intake as a percent of calories increased.
- Dietary cholesterol intake decreased slightly, especially among younger children.
- Overall fiber intake increased, but fiber intake expressed as grams/1000 calories consumed stayed about the same. The percent of children meeting fiber recommendations remained consistent and low (28%).
- Intake of grains and vegetables increased significantly but remained less than recommendations.
- Intake of milk and meat products decreased significantly, and the number of children meeting recommendations also decreased.
- Children decreased their intake of whole milk, and increased non-fat milk, soda and fruit drinks. These changes were especially pronounced among older children.

Children's Diets in the 1990's: Dietary Intake and its Relationship with School Meal Participation

Changes in Children's Diets: 1989-1991 to 1994-1996

Food and Nutrition Service, U.S. Department of Agriculture www.fns.usda.gov/oane

For related articles describing different analyses of CSFII data, see the October 1998 and December 1999 issues of Nutrition for Family Living. Links can be found at www.uwex.edu/ces/wnep/p3/mmrcv.html and www.uwex.edu/ces/wnep/p3/mmidx.html.



Soft Drinks and Children's Diets

An analysis of the 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII) looked at the effect of different beverages on nutrient consumption in over 4,000 children aged 2-5, 6-11, and 12-17 years.

- For all age groups, kids who drank milk were more likely to get enough vitamin A, folate, vitamin B12, calcium, and magnesium.
- For all age groups, kids who drank juice were more likely to get enough vitamin C and folate. Kids age 6 and older who drank juice also were more likely to get enough magnesium.
- For all age groups, kids who drank carbonated soda were less likely to get enough vitamin A. For children younger than 12, kids who drank soda were less likely to get enough calcium. For children age 6 and older, kids who drank soda were less likely to get enough magnesium.

The authors comment that their analysis shows a strong association between the amount of milk or 100% juice consumed on a given day and the likelihood of getting recommended amounts of the nutrients they examined. A decrease of one glass of soda combined with an increase of one glass of milk or juice could have a substantial effect on a child's daily nutrient intake.

Ballew C, Kuester S, Gillespie C. Beverage Choices Affect Adequacy of Children's Nutrient Intakes. *Arch Pediatr Adolesc Med.* 2000;154:1148-1152.

Soft Drinks and Childhood Obesity Risk

A study published in the *Lancet* has been in the news in recent weeks. Researchers tracked 548 11 and 12-year-old children in Massachusetts for two school years and monitored their consumption of sugared beverages and their body weight. They wanted to see if baseline consumption of sugared drinks, and change in consumption of sugared drinks over time, would predict a change in Body Mass Index (BMI) over time.

Fifty-seven percent of students increased their consumption of sugared drinks during the two school years, with adolescent boys being the biggest consumers of soft drinks. In this study, if children increased their sugared drink consumption, both BMI and the odds of becoming obese increased even after controlling for anthropometric, demographic, dietary, and lifestyle variables. For students who increased their consumption, each extra drink made them 60% more likely to become obese, regardless of how many sugared drinks they were consuming in the beginning. Both baseline consumption and increased consumption predicted an increase in BMI.

Soft drinks tracked in the study included regular sodas, Hawaiian Punch, lemonade, Kool-Aid, sweetened iced tea and other sugared fruit drinks. Pure fruit juice was also tracked but did not account for the effect. Students who drank diet sodas were less likely to become obese.

One explanation the authors propose is that while people tend to eat less at a meal if they have eaten more at a previous meal, evening out the calories, this does not seem to happen when the calories come from drinks. The authors comment that they cannot conclude that drinking sugared drinks causes children to gain weight, but they can suggest that sugared drinks may be an important contributing factor in childhood obesity.



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Half of all Americans and most adolescents (65% of girls and 74% of boys) consume soft drinks daily, and soft drinks constitute the leading source of added sugars in the diet. Sugared drinks, race, and socioeconomic status are among many contributing factors to the rise in childhood obesity. Inactivity and diets high in fat and calories are still the most influential factors. Educators should continue to recommend increasing physical activity, eating a diet moderate in dietary fat as recommended by the Dietary Guidelines, and reminding children and families that sugared soft drinks belong at the tip of the Food Guide Pyramid and should be used sparingly.

Ludwig et al. Relation between consumption of sugar sweetened drinks and childhood obesity: a prospective observational analysis. *The Lancet*. 2000. 357(9255):505.



Prevalence of Childhood Obesity

A comparison of several large-scale studies of children and adolescents confirms that the prevalence of overweight children is increasing. These authors compared results of the Child and Adolescent Trial for Cardiovascular Health (CATCH) study with NHANES I (1971-1973) and NHANES III (1988-1994), and the Bogalusa Heart Study (1992-1994). In the CATCH study, Body Mass Index (BMI) and skinfold measurements were collected from 5,106 children at age 9 in 1991 with follow-up data collected at age 11 in 1994.

Children in the CATCH study were both heavier and had more body fat than children in NHANES I, and were more comparable to the NHANES III population, especially at the higher percentiles. The prevalence of obesity was higher in boys than in girls at both baseline and follow-up.

The prevalence of obesity in the CATCH study was higher among African-Americans and Hispanics than whites for both boys and girls. In NHANES III, the prevalence of marked overweight was higher in African Americans than in whites, but in the Bogalusa study, African Americans were less heavy than whites with the exception of 11-year-old girls.

The authors comment that race and socioeconomic variables are among many factors in the development of obesity, and race should not be considered without considering socioeconomic factors as well. Information on socioeconomic factors such as family income and urban residence was not collected in the Bogalusa or CATCH studies. They caution professionals not to attribute differences to race or ethnicity in this study or others if socioeconomic variables have not been taken into account.

Dwyer J et al. Prevalence of marked overweight and obesity in a multiethnic pediatric population: Findings from the Child and Adolescent Trial for Cardiovascular Health (CATCH) study. *J Am Diet Assoc.* 2000;100:1149-1156.



Parents' Effect on Young Children's Eating

Parents' Restrictive Eating Practices are Associated with Young Girls' Negative Self-evaluation of Eating

Recent research from Penn State confirms what some of us may remember from our childhood. If parents restrict young girls' access to good-tasting snack food, girls will eat more of it when it is available and feel worse about doing so.

One hundred ninety-seven five-year-old girls were given a standard lunch then offered free access to ten good-tasting snack foods (popcorn, potato chips, cookies, candy, ice cream, etc). Afterward, girls were asked how they felt about eating those foods and parents and girls were interviewed about whether parents usually restricted access to those foods.

Results showed that girls ate more of the foods their parents restricted when they had the chance to choose which and how much of those foods they could eat. They also felt badly about doing so.

Educators can remind parents that when they restrict access to certain foods, they draw children's attention to those foods which then seem more attractive. At the same time, they convey the message that eating those foods is somehow "bad" which sets children up to feel badly about eating them. The authors comment that girls may be more sensitive to this than boys because girls often have a stronger desire to please adults and take greater responsibility for failure.

Some suggestions for helping young children learn to regulate their own eating are found in the next article.

Fisher JO and Birch LL. Parents restrictive eating practices are associated with young girls' negative self-evaluation of eating. *J Am Diet Assoc.* 2000;100:1341-1346.

Improving Preschoolers' Self-Regulation of Energy Intake

There is a lot of variation in children's ability to self-regulate the amount they eat. In this study, researchers assessed children's ability to regulate their food intake before and after an intervention designed to help them focus on internal signals of hunger and fullness. The also examined whether parents' eating behaviors and parents' weight influenced children's self-regulation and weight.

Preschoolers in a day care setting were offered a lunch and their food intake was recorded. They then participated in a six-week intervention where they were taught to recognize feelings of hunger and fullness. After the intervention, children were offered a lunch and their intake was again recorded. During the study, parents completed a survey about their height and weight, and attitudes about dieting and impulsive eating.

At the beginning of the study, researchers found the children had little ability to regulate their intake. The degree to which they were able to regulate their intake was related to their body weight: overweight children ate more, and underweight children stopped eating sooner. After the intervention, both overweight and underweight children were better able to regulate. This suggests the intervention was successful in reaching both finicky eaters who overrespond to



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feelings of fullness, as well as heavier children who may not have previously connected feelings of fullness with the choice to stop eating.

The authors also found that parents serve as role models in ways they may not realize. Mothers who reported more dieting and impulsive eating had children with more trouble self-regulating their eating. After the intervention, this relationship disappeared.

Educators can remind parents that:

- Teaching children to pay attention to feelings of hunger and fullness is an effective way to help them learn to regulate their food intake.
- Children really are able to regulate how much they eat. The parent's job is to provide healthy foods in a supportive, structured environment.
- Parents serve as role models for eating behavior and can help children develop good – and bad – habits.

Johnson SL. Improving preschoolers' self-regulation of energy intake. *Pediatrics* 2000;106:1429-1435.