

# Brief Research-to-Results

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*...information on fostering good nutrition in schools and in out-of-school time programs.*

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## **RESEARCH-BASED RECOMMENDATIONS TO IMPROVE CHILD NUTRITION IN SCHOOLS AND OUT-OF-SCHOOL TIME PROGRAMS**

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### **OVERVIEW**

This brief discusses aspects of healthy diets for children in elementary and middle school. It summarizes the current guidelines and recommendations for child nutrition and provides information for schools and out-of-school time programs about how to measure child nutrition.

### **BACKGROUND**

Good nutrition fosters children's healthy growth and development and reduces the risk that children will become overweight or obese, factors that greatly increase the chances of having medical problems in adulthood.<sup>1</sup> Despite the importance of good nutrition, more than 8 in 10 U.S. children do not have healthy diets: their nutrition is inadequate for optimal physical and emotional development, and/or they consume too many calories.<sup>2</sup> In addition, many children who eat a lot of high-calorie foods also have insufficient amounts of vitamins, minerals, fruits and vegetables.<sup>3</sup> Since children may eat many of their meals and snacks away from home, schools and in out-of-school time programs have an opportunity to encourage children to "eat healthy" and to make sure that they provide children with nutritious food.<sup>a,4,5,6,7,8,9</sup>

### **WHAT CONSTITUTES A HEALTHY DIET?**

The U.S. Department of Agriculture's dietary guidelines describe a healthy diet as one that:

- Emphasizes fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products;
- Includes lean meats, poultry, fish, beans, eggs, and nuts; and
- Is low in saturated fats, trans fats, cholesterol, salt (sodium), and added sugars.<sup>10</sup>

These guidelines also suggest that:

- Children between the ages of 6 and 11 eat approximately 1,800 calories a day, on average.
- Children ages 12 and above eat approximately 2,000 calories a day, on average.<sup>11</sup>

### **WHAT PERCENTAGE OF CHILDREN LACK HEALTHY DIETS?**

The Federal Interagency Forum on Child and Family Statistics reported that "[i]n 2001-2002, as in previous years, more than 8 in 10 children had a diet that was poor or needed improvement."<sup>12</sup> Studies find that approximately 80 percent of children do not eat the recommended amount of fruits and vegetables.<sup>13</sup> Moreover, as children get older, the quality of their diets tends to decline.

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<sup>a</sup> Although these recommendations are based on research that has been done on elementary school students in school settings, the recommendations could also be implemented in out-of-school time programs.

It is perhaps not surprising that children have nutritionally poor diets, given how readily available unhealthy foods are to children. Recent research using nationally representative fifth-grade data from the Early Childhood Longitudinal Study-Kindergarten (ECLS-K) found that in 2004-2005:

- More than one-half of schools represented in the study sold sweets on school property.
- Nearly one-half of these schools offered salty snacks, sodas, sports drinks, or fruit drinks that were not 100 percent juice.<sup>14,15</sup>

### **WHAT ARE THE CONSEQUENCES OF AN UNHEALTHY DIET FOR CHILDREN?**

As a result of having unhealthy diets—combined with not getting enough exercise—more and more children are becoming overweight and obese.<sup>16</sup> The percentage of overweight children between the ages of 6 and 17 has increased from 6 percent in the period 1976-1980 to 18 percent in the period 2003-2004.<sup>17</sup> Obesity in childhood greatly increases the likelihood of developing medical problems as an adult. For example, obesity increases the risks of hypertension, cardiovascular disease, gallbladder disease, osteoarthritis, orthopedic complications, menstrual irregularities, sleep apnea, learning and memory problems, depression, and low self-esteem.<sup>18</sup>

### **WHAT CAN SCHOOLS AND OUT-OF-SCHOOL TIME PROGRAMS DO TO IMPROVE CHILDREN'S NUTRITION?**

To enhance children's nutrition and to counteract the attraction of junk food, schools and out-of-school time programs can:

- ***Provide children with more healthy food options.*** Research indicates that greater exposure to nutritious foods results in children making healthier food choices.<sup>19</sup> Schools and out-of-school time programs can provide more healthy food options by:
  - Serving children more fruits, vegetables, and low-fat foods as snacks;<sup>20</sup>
  - Replacing unhealthy selections in vending machines with healthier alternatives;
  - Replacing sugar-sweetened beverages with non-caloric drinks, such as water, or serving low-fat milk;<sup>21</sup>
  - Replacing high-fat, high-sodium snacks, such as potato and tortilla chips, with baked versions or other types of foods;<sup>22</sup>
  - Reducing the portion sizes of food served to children,<sup>23</sup> for example, limiting the amount of desserts and pastries served;<sup>24</sup> and
  - Limiting opportunities for children to indulge in fast food, such as french fries.<sup>25</sup>
- ***Implement programs to improve children's nutrition.*** A number of programs have been found to improve children's nutrition. Activities that schools and out-of-school time programs can offer to promote better nutrition might include:
  - Giving children tips on how to buy healthy foods;
  - Providing children with instruction on how to read food labels;
  - Talking to children about the caloric content of fast-food items and giving children guidance on which items to purchase when at a fast-food restaurant; and
  - Teaching children practical food preparation skills.<sup>26</sup>
- ***Get parents involved in children's nutrition.*** Some ways to involve parents include:
  - Sending home nutritional information, recipes, and healthy snacks;
  - Inviting parents to the out-of-school time program and teaching them healthier food preparation techniques along with their children; parents could then bring home the food that they helped to prepare at the program site;

- Teaching families how to modify recipes of dishes they commonly cook at home so they are healthier. For example, using low-fat cheese, replacing lard with more healthy fats, or baking instead of frying chicken;
- Providing parents with information on how to select healthy foods on a limited budget;<sup>27,28</sup> and
- Improving parents' access to healthy foods by notifying them about local farmers' markets, nutritional programs and services, contact information for applying for food stamps, etc.

## **CHILD WEIGHT LOSS PROGRAMS THAT HAVE BEEN FOUND TO HAVE POSITIVE IMPACTS ON CHILDREN'S NUTRITION**

Child weight loss programs that have been evaluated in a random assignment experiment and found to have positive impacts on children's nutrition include:

- Shapedown;
- Planet Health;
- The Weigh to Eat;
- Bienstar;
- Child and Adolescent Trial for Cardiovascular Health (CATCH);
- Gimme 5;
- High 5;
- 5-a-Day Power Plus;
- Teens Eating for Energy and Nutrition at School (TEENS);
- Healthy For Life;
- Know Your Body;
- Stanford Heart Health Program; and
- Adolescent Training and Learning to Avoid Steroids (ATLAS).

More information about these programs can be found at: [www.childtrends.org/Lifecourse](http://www.childtrends.org/Lifecourse).

## **ASSESSING CHILDREN'S NUTRITION HABITS IN SCHOOLS OR OUT-OF-SCHOOL-TIME PROGRAMS**

The following questions can help you to assess the nutrition habits of children in your class or out-of-school time program. On the basis of what you learn about these habits, you will have a better idea of what interventions might be appropriate. These questions are modified versions of questions used in the Early Childhood Longitudinal Study-Kindergarten cohort questionnaire.<sup>b</sup> The children can answer the questions themselves. A researcher or a research organization can help you identify the best way to ask questions such as these. Researchers can also help you work with your local Institutional Review Board (often called an IRB), which can look over the questions, the way you are going to get the information (for example, paper-and-pencil survey, or in-person interview), and make sure that the children or adolescents have permission from their parents and have agreed to participate in the study.

### **Short Version of Questions**

In a typical week, how often do you ...

1. Eat candy or drink sugary drinks like soda, pop, or other soft drink?

<sup>b</sup> Child Trends modified a number of the questions listed below to reflect consumption of food by children, rather than the purchasing of food by children. Also, a number of the original questions were combined into a single question.

For questions 1-9 use these response categories:

a.) Never b.) Some days c.) Most days d.) Every day

2. Drink milk (dairy or non-dairy) or eat a dairy product such as cheese?
3. Eat at least two servings of fruit?
4. Eat two servings of vegetables?
5. Eat salty snacks such as potato chips, crackers, or tortilla chips?
6. Eat a meal or snack from a fast food restaurant?
7. Eat fried food?
8. Eat snacks from vending machines or from stop-n-go convenience stores?
9. How often do you eat breakfast?

### **Longer Version of Questions**

During the past seven days:

1. What kind of milk, if any, did you drink?  
a.) whole milk b.) low-fat milk c.) skim (or fat free) milk d.) chocolate milk e.) soy milk  
f.) rice milk g.) some other kind of milk h.) no milk
2. How many times did you drink 100 percent fruit drinks, such as orange juice, apple juice, or grape juice?

For questions 2-10 use these response categories:

a.) Never b.) 1 to 3 times a week c.) 4 to 6 times a week d.) Once a day e.) 2 times a day f.)  
3 or more times a day

3. How many times did you drink sodas or fruit drinks that are not 100 percent fruit juice?
4. How many times did you eat vegetables, such as carrots or green salad?
5. How many times did you eat fruit, such as apples, bananas, oranges, berries, or other fruit?
6. How many times did you eat desserts or pastries, such as cookies, brownies, or cakes?
7. How many times did you eat candy?
8. How many times did you eat salty snacks, such as potato chips, crackers, or tortilla chips?
9. How many times did you eat fried foods, such as french fries, fried onion rings, or fried mozzarella sticks?

10. How many times did you eat a meal or a snack from a fast-food restaurant that sells hamburgers, pizza, fried chicken, or other fast foods?

### **ADDITIONAL RESOURCES ON NUTRITION FOR YOUR PROGRAM**

#### **USDA Center for Nutrition Policy and Promotion.**

Information about healthy eating habits, dietary guidelines, and healthy eating activities for children and adolescents.

<http://www.cnpp.usda.gov>

#### **NIH Division of Nutrition Research Coordination.**

Information about nutrition policy research, dietary guidelines, and obesity research.

<http://dnrc.nih.gov/>

#### **CNN Fit Nation –The Obesity Fight**

Information about obesity and possible solutions to the problem, ways to get healthy, ways to stay fit, and an overweight calculator.

<http://www.cnn.com/SPECIALS/2007/fit.nation/>

#### **Robert Wood Johnson Foundation’s Childhood Obesity Initiative**

General information and research on obesity.

<http://www.rwjf.org/childhoodobesity/>

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