

# Enjoy More Fruits and Vegetables



**SCHOOL-AGE  
CHILDREN  
& YOUTH:  
Trends, Effects,  
Solutions**

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## SCHOOL-AGE CHILDREN & YOUTH: **Trends, Effects, Solutions**



*Eating smart and moving more are the cornerstone of a healthy lifestyle and provide a solid foundation for children and youth to succeed in school and in life.*

There are many health benefits associated with good nutrition and physical activity. Eating smart and moving more help children and youth maintain a healthy weight, feel better and have more energy. These positive health benefits have the potential to translate into academic benefits at school. Good nutrition and physical activity nourish the brain and body, resulting in students who are present, on-time, attentive in class, on-task and possibly earning better grades.

As students work hard to achieve high academic standards, it is more important than ever that we provide opportunities for them to be active and eat healthy throughout the day. Families, schools and communities must share the responsibility of promoting and supporting children and youth to eat smart and move more.

Research points to seven key behaviors that can help children, youth and adults eat healthier and be more active:

1. Prepare and eat more meals at home
2. Tame the tube
3. Choose to move more every day
4. Right-size your portions
5. Re-think your drink
6. Enjoy more fruits and veggies
7. Breastfeed your baby



This paper will explore trends in and effects of fruit and vegetable consumption. It will also offer solutions for schools, government, communities and families to support children and youth in eating more fruits and vegetables.

# Trends in Fruit and Vegetable Consumption

The Dietary Guidelines for Americans 2005 state that most of us should eat between 2½ to 6½ cups of fruits and vegetables each day. This depends upon the total number of calories needed—based on age, sex and activity level.<sup>1</sup>

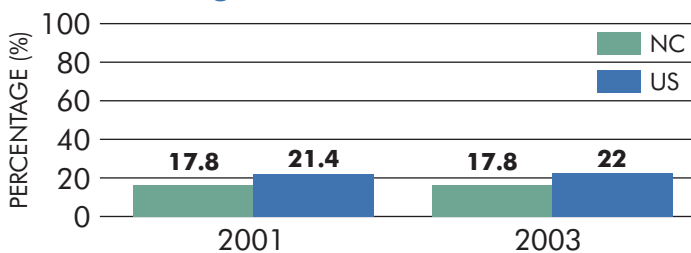
## How much is enough for school-age children?<sup>2</sup>

- Boys and girls ages 4-8 need 3 to 4 cups of fruits and vegetables a day, with 1½ cups coming from fruit and the remaining from vegetables.
- Girls ages 9-13 need 3½ to 4 cups of fruits and vegetables a day, with 1½ cups coming from fruits and the remaining from vegetables.
- Boys ages 9-13 require more calories each day. They need 4 to 4½ cups of fruits and vegetables a day, with 1½ to 2 cups coming from fruits and the remaining from vegetables.<sup>2</sup>

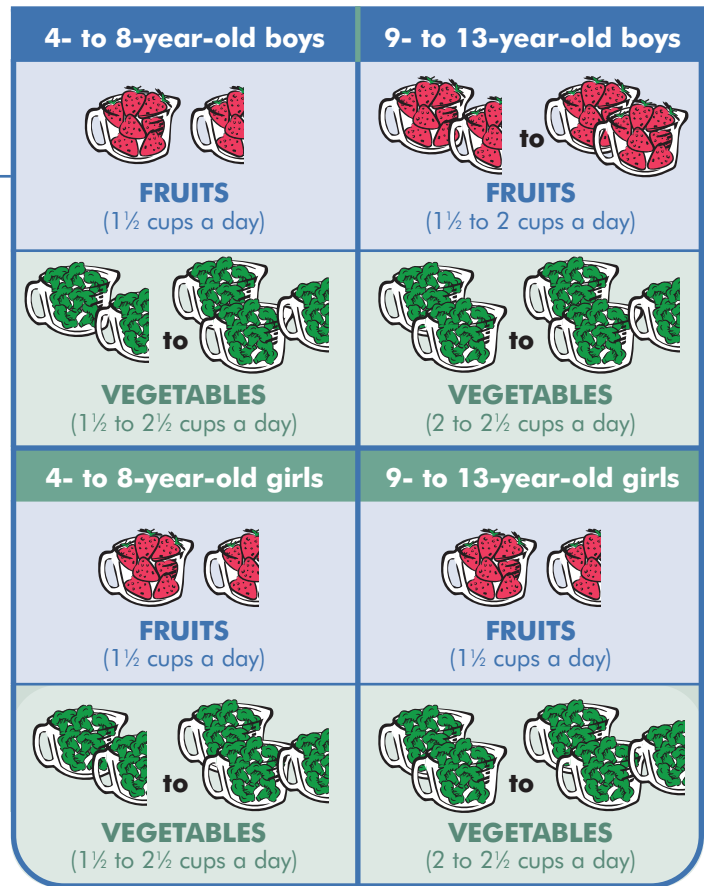
National and state survey results (based on recommendations and serving sizes that were different prior to 2005) show that school-age children are not eating the amount and variety of fruits and vegetables recommended.

- On average, children ages 6-11 ate a combined average of less than 3½ servings of vegetables and fruits daily. Overall, only one in five children surveyed met the recommended minimum goal of five servings (based on recommendations prior to 2005) of fruits and vegetables per day.<sup>3</sup>
- In North Carolina, 82 percent of high school students reported eating fewer than five servings

### High School Students Who Ate Five or More Fruits & Vegetables within the Last Week<sup>4</sup>



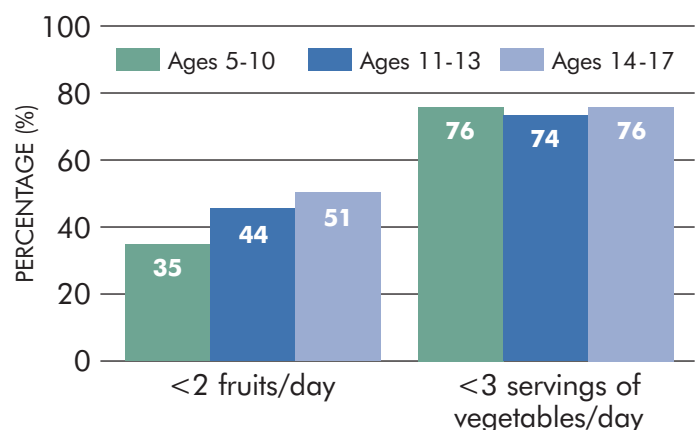
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of fruits and vegetables daily in the seven days prior to the survey. This data continues to put North Carolina high school students below the national average. This is the case for students of all racial groups, both boys and girls.<sup>4</sup>

The 2005 North Carolina Child Health Assessment and Monitoring Program (CHAMP) survey shows that three-quarters (75 percent) of children and youth ages 5-17 years old were reported by their parents or caretakers to eat less than the recommended minimum of three

### Consumption of Fruits and Vegetables in NC Children and Youth<sup>5</sup>



servings of vegetables on a typical day, and 43 percent ate less than the recommended minimum of two servings of fruit (excluding juice).<sup>5</sup>

The Dietary Guidelines for Americans 2005 state that we should select from all five vegetable subgroups (dark green, orange, legumes, starchy vegetables and other vegetables) and, specifically, eat 3 cups of dark green and 2 cups of orange vegetables every week.<sup>1</sup> This includes foods like broccoli, kale and other dark leafy greens, and orange vegetables such as carrots, sweet potatoes, pumpkin and winter squash. When it comes to quantity and variety, all forms of fruits and

vegetables count—fresh, frozen, canned, dried and 100 percent juice.

According to the most recent National Health and Nutrition Examination Survey (NHANES) results, children ages 6-11 ate just over two vegetable servings per day. Of those two servings only 5 percent were dark green vegetables, 5 percent were deep yellow vegetables and 23 percent were tomatoes. White potatoes, in contrast, made up almost half (43 percent) of total daily vegetable servings.<sup>3</sup> Given current recommendations, children’s intakes of dark green and orange vegetables should almost triple and their potato consumption should be cut in half.

## Overweight in Children and Youth

According to the 2001 Surgeon General’s *Call to Action to Prevent and Decrease Obesity*, today there are nearly twice as many overweight children and almost three times as many overweight adolescents as there were in 1980.<sup>6</sup> Results from the 2003-04 National Health and Nutrition Examination Survey (NHANES), using Body Mass Index (BMI), indicate that an estimated 13.9 percent of children ages 2-5 years, 18.8 percent of children ages 6-11 years, and 17.4 percent of adolescents ages 12-19 years are overweight.<sup>7</sup> North Carolina 2005 data from children seen in public health settings show an even greater increase in the number of overweight children.<sup>8</sup>

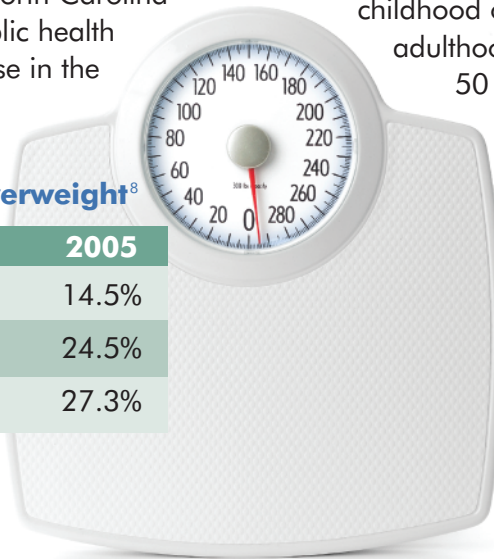
### Percent of North Carolina Children and Youth Who Are Overweight<sup>8</sup>

	1995	2000	2005
Ages 2-4	9.0%	12.2%	14.5%
Ages 5-11	14.7%	20.6%	24.5%
Ages 12-18	22.7%	26.0%	27.3%

BMI, an index of a person’s weight in relation to height, is commonly used to classify overweight and

obesity among adults and is also recommended to identify children who are overweight or at risk of becoming overweight. Children with a BMI  $\geq$  85th percentile but  $<$ 95th percentile are overweight (formerly considered at risk for being overweight) and children with a BMI  $\geq$  95th percentile are obese (formerly considered overweight).<sup>9</sup>

Studies have indicated that overweight children (especially adolescents) are at higher risk of becoming obese adults.<sup>10</sup> The likelihood that childhood overweight will persist into adulthood ranges from approximately 50 to 70 percent, increasing to 80 percent if one parent is overweight.<sup>11,12</sup> Obesity is no longer a concern for adults only. Signs of chronic disease associated with obesity are showing up in overweight children. These include atherosclerotic plaques,<sup>13</sup> hypertension,<sup>14,15,16</sup> increased triglycerides,<sup>14,16</sup> increased insulin resistance and type 2 diabetes.<sup>13,17</sup>



# Effects of Fruit and Vegetable Consumption

Eating fruits and vegetables is one of the most positive health habits that adults, youth and children can adopt. Virtually all national health organizations emphasize that people who eat a colorful variety of vegetables and fruits as part of a healthy diet are likely to experience an array of benefits. People who eat more fruits and vegetables have reduced risk of chronic diseases, including stroke, diabetes and some types of cancer. Research also suggests that fruits and vegetables may help in preventing and treating heart disease and high blood pressure.<sup>1</sup> Replacing fruits and vegetables for high-fat foods may also make it easier to control weight.<sup>1</sup> They also provide important nutrients like vitamins, minerals and fiber.

Both children and adults should eat a colorful variety of fruits and vegetables every day—dark green, orange, red, yellow, blue/purple and white—to get the broadest range of nutrients and minerals from fruits and vegetables.

Access to a good quantity and variety of fruits and vegetables at school, home and in the

It is important to note that dietary supplements containing any one of the nutrients found in fruits and vegetables are no match to the benefits that come from eating the whole fruit or vegetable. In addition, supplements usually contain only one or two nutrients and have not been proven effective or safe.

In regards to school meals, the U.S. Department of Agriculture (USDA) recommends that meals be comprised of a variety of foods, including fruits and vegetables that provide naturally occurring nutrients, rather than formulated foods which have been artificially fortified. Whole foods are necessary to obtain essential nutrients.<sup>18</sup>

community is critical. This is especially true for school-age children and youth, given that poor dietary habits can linger or worsen into the high school years and adulthood.<sup>19</sup> Establishing the habit of eating plenty of fruits and vegetables at an early age provides children and youth with a foundation for life-long healthy eating habits and reduces the risk of diet-related chronic diseases.

# Solutions for Increasing Fruit and Vegetable Consumption by Children and Youth

Lasting behavioral changes require supportive environments. Efforts must be made to make eating fruits and vegetables the easy, tasty and popular choice. Schools, government, communities and families must each play their part.

## Schools

Studies suggest that students who eat school breakfast and school lunch tend to eat fewer calories and eat more balanced meals, including fruits and vegetables. Students who choose from the variety of available à la carte items or

competitive foods (which are not subject to the nutritional standards imposed by the National School Lunch and School Breakfast Programs) tend to eat meals of lower nutritional quality.<sup>20</sup>

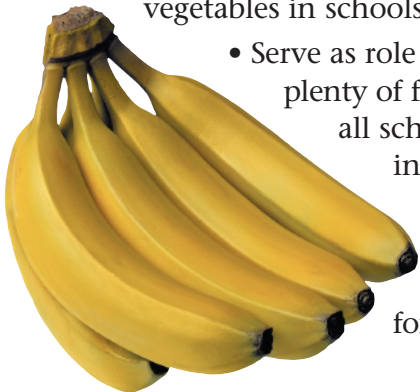
Approximately 88 percent of North Carolina public secondary schools surveyed in the 2004 School Health Profile allow students to purchase foods from vending machines, school stores or snack bars. Of these, only 40 percent made fruits and vegetables available for purchase.<sup>21</sup>

There are several policy and environmental changes that can be used to promote eating more fruits and vegetables at school.

- **Local Wellness Policy:** Many schools across North Carolina and the nation are using these USDA-required policies<sup>22</sup> ([www.fns.usda.gov/tn/Healthy/wellnesspolicy.html](http://www.fns.usda.gov/tn/Healthy/wellnesspolicy.html)) to promote fruit and vegetable access to students. Engaging students, administrators, cafeteria staff, parents, teachers and community partners will ensure that creative, feasible strategies are incorporated into these policies.
- **À la carte sales:** Selling à la carte fruits and vegetables in place of less healthy options makes them more readily available.
- **Nutrition education in the classroom integrated with cafeteria activities:** Teaching students about the health benefits and varieties of fruits and vegetables in the classroom and allowing them to sample fruits and vegetables in the cafeteria is a win-win.
- **USDA Fresh Fruit and Vegetable Program:** The USDA Fruit and Vegetable Program is transforming schools into models for healthy behavior and better learning environments by funding schools to provide free fresh fruit or vegetable snacks to students during the school day. The program has been a success with school administrators, students and parents.<sup>23,24</sup> USDA funds 25 North Carolina elementary schools annually for the program. In addition, non-funded schools are looking at creative ways to provide fresh fruit and vegetable snacks through partnerships with vendors, grocery stores and community-based organizations.
- **Purchase of locally produced foods:** The National Farm-to-School Program works to connect schools and students with local farms. Not only are locally-produced foods good for the economy, but they also can be a way for students to learn where fruits and vegetables come from.

Additional ideas for promoting fruits and vegetables in schools include:

- Serve as role models by eating plenty of fruits and vegetables—all school staff can be involved.
- Implement and maintain the N.C. Nutrition Standards for Elementary Schools.



- Offer a variety of fruits and vegetables and make them convenient (bags of baby carrots, raisins and prepackaged salads).
- Plan a field trip to a farmer's market or local farm.
- Allow fruit and vegetable preparation and tasting in the classroom.
- Include fruits and vegetables in classroom celebrations.
- Plant a school garden.
- Price à la carte fruits and vegetables lower than other side dishes or snacks.
- Support fundraising efforts in the school that promote the sale of fruits and vegetables.
- Educate parents, school administrators, PTA/PTO and community about the positive steps your schools are taking to promote fruits and vegetables.

## Government

- Advocate for funding that increases access to fruits and vegetables within national, state and/or local programs.
- Increase access to community gardens and farmers' markets where fresh fruits and vegetables can be grown or purchased.
- Protect farmland and encourage new markets for farmers to grow fruits and vegetables.
- Require or incentivize local school systems to help fund school food service programs.
- Prioritize capital improvement projects to increase opportunities for healthy eating, such as increasing the number of facilities where fresh produce can be processed into other forms.

## Communities

- Advocate for adequate funding and resources for school food service programs and nutrition education in schools.
- Advocate for nutrition standards for all foods and beverages available at school.
- Create and support policies wherever you live, learn, earn, play or pray to buy and serve more fruits and vegetables (at church suppers, in worksite cafeterias, at local restaurants).

- Promote fruits and vegetables as the tasty, convenient and healthy choice.
- Develop and support community gardens.
- Increase access to a variety of affordable, healthy foods (including fruits and vegetables) in grocery stores, convenience marts in all neighborhoods.
- Involve community partners (worksites, coalitions, agencies and community members)



in changing the local environment to create opportunities for healthy foods to be grown, purchased and served.

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## Families

- Buy and prepare more fruits and vegetables. Keep canned and frozen fruits and vegetables on hand. Buy fresh produce in season.
- Eat a variety of fruits—whether fresh, frozen, canned or dried—rather than drinking juice.
- Vary your vegetables by eating more dark green vegetables, such as broccoli, kale, and other dark leafy greens; orange vegetables, such as carrots, sweet potatoes, pumpkin, and winter squash; and beans and peas, such as pinto beans, kidney beans, black beans, garbanzo beans, split peas and lentils.
- Enjoy more fruits and vegetables at every eating occasion, at home and away from home instead of other less nutritious foods and beverages.
- Check out [www.fruitsandveggiesmatter.gov](http://www.fruitsandveggiesmatter.gov) to see how easy getting more fruits and vegetables can be.

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Developed by the North Carolina School Nutrition Action Committee (SNAC), a partnership of the N.C. Department of Public Instruction, the N.C. Division of Public Health and the N.C. Cooperative Extension Service. The goal of SNAC is to coordinate school nutrition activities that link the cafeteria, classroom and community to eating smart and moving more.

These institutions are equal opportunity providers.

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