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## Childhood Obesity Causes & Consequences

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Childhood obesity is a complex health issue. It occurs when a child is well above the normal or healthy weight for his or her age and height. The main causes of excess weight in youth are similar to those in adults, including individual causes such as behavior and genetics. Behaviors can include dietary patterns, physical activity, inactivity, medication use, and other exposures. Additional contributing factors in our society include the food and physical activity environment, education and skills, and food marketing and promotion.

### Behavior

Healthy behaviors include a healthy diet pattern and regular physical activity. Energy balance of the number of calories consumed from foods and beverages with the number of calories the body uses for activity plays a role in preventing excess weight gain.<sup>1,2</sup> A healthy diet pattern follows the [Dietary Guidelines for Americans](http://www.health.gov/dietaryguidelines/2010.asp) (<http://www.health.gov/dietaryguidelines/2010.asp>) which emphasizes eating whole grains, fruits, vegetables, lean protein, low-fat and fat-free dairy products and drinking water. The [Physical Activity Guidelines for Americans](http://www.health.gov/paguidelines/guidelines/) (<http://www.health.gov/paguidelines/guidelines/>) recommends children do at least 60 minutes of physical activity every day.

Having a healthy diet pattern and regular physical activity is also important for long term health benefits and prevention of chronic diseases such as Type 2 diabetes and heart disease.

For more, see [Healthy Weight – Finding a Balance](#).

### Community Environment

American society has become characterized by environments that promote increased consumption of less healthy food and physical inactivity. It can be difficult for children to make healthy food choices and get enough physical activity when they are exposed to environments in their home, child care center, school, or community that are influenced by–

- **Advertising of less healthy foods.**

Nearly half of U.S. middle and high schools allow advertising of less healthy foods,<sup>3</sup> which impacts students' ability to make healthy food choices. In addition, foods high in total calories, sugars, salt, and fat, and low in nutrients are highly advertised and marketed through media targeted to children and adolescents,<sup>10</sup> while advertising for healthier foods is almost nonexistent in comparison.

- **Variation in licensure regulations among child care centers.**

More than 12 million children regularly spend time in child care arrangements outside the home.<sup>11</sup> However, not all states use licensing regulations to ensure that child care facilities encourage more healthful eating and physical activity.<sup>12</sup>



- **No safe and appealing place, in many communities, to play or be active.**

Many communities are built in ways that make it difficult or unsafe to be physically active. For some families, getting to parks and recreation centers may be difficult, and public transportation may not be available. For many children, safe routes for walking or biking to school or play may not exist. Half of the children in the United States do not have a park, community center, and sidewalk in their neighborhood. Only 27 states have policies directing community-scale design.<sup>13</sup>

- **Limited access to healthy affordable foods.**

Some people have less access to stores and supermarkets that sell healthy, affordable food such as fruits and vegetables, especially in rural, minority, and lower-income neighborhoods.<sup>14</sup> Supermarket access is associated with a reduced risk for obesity.<sup>14</sup> Choosing healthy foods is difficult for parents who live in areas with an overabundance of food retailers that tend to sell less healthy food, such as convenience stores and fast food restaurants.

- **Greater availability of high-energy-dense foods and sugar sweetened beverages.**

High-energy-dense foods are ones that have a lot of calories in each bite. A recent study among children showed that a high-energy-dense diet is associated with a higher risk for excess body fat during childhood.<sup>15,16</sup> Sugar sweetened beverages are the largest source of added sugar and an important contributor of calories in the diets of children in the United States.<sup>17</sup> High consumption of sugar sweetened beverages, which have few, if any, nutrients, has been associated with obesity.<sup>18</sup> On a typical day, 80% of youth drink sugar sweetened beverages.<sup>19</sup>



- **Increasing portion sizes.**

Portion sizes of less healthy foods and beverages have increased over time in restaurants, grocery stores, and vending machines. Research shows that children eat more without realizing it if they are served larger portions.<sup>20,21</sup> This can mean they are consuming a lot of extra calories, especially when eating high-calorie foods.

- **Lack of breastfeeding support.**

Breastfeeding protects against childhood overweight and obesity.<sup>22,23</sup> However, in the United States, while 75% of mothers start out breastfeeding, only 13% of babies are exclusively breastfed at the end of 6 months. The success rate among mothers who want to breastfeed can be improved through active support from their families, friends, communities, clinicians, health care leaders, employers, and policymakers.



## Consequences of obesity

### Health risks now

- Obesity during childhood can have a harmful effect on the body in a variety of ways. Children who are obese have a greater risk of –
  - High blood pressure and high cholesterol, which are risk factors for cardiovascular disease (CVD). In one study, 70% of obese children had at least one CVD risk factor, and 39% had two or more.<sup>24</sup>
  - Increased risk of impaired glucose tolerance, insulin resistance and type 2 diabetes.<sup>25</sup>
  - Breathing problems, such as sleep apnea, and asthma.<sup>26,27</sup>
  - Joint problems and musculoskeletal discomfort.<sup>26,28</sup>

- o Fatty liver disease, gallstones, and gastro-esophageal reflux (i.e., heartburn).<sup>25,26</sup>
- o Psychological stress such as depression, behavioral problems, and issues in school.<sup>29,30,31</sup>
- o Low self-esteem and low self-reported quality of life.<sup>29,31,32,33</sup>
- o Impaired social, physical, and emotional functioning.<sup>29</sup>

## Health risks later

- Children who are obese are more likely to become obese adults.<sup>34,35</sup> Adult obesity is associated with a number of serious health conditions including heart disease, diabetes, metabolic syndrome, and cancer.<sup>35,36</sup>
- If children are obese, obesity and disease risk factors in adulthood are likely to be more severe.<sup>34,35,37</sup>

## References

<sup>1</sup> DHHS, AIM for a Healthy Weight, page 5. Available online:

[http://www.nhlbi.nih.gov/health/public/heart/obesity/aim\\_hwt.pdf](http://www.nhlbi.nih.gov/health/public/heart/obesity/aim_hwt.pdf) [PDF - 2MB]

([http://www.nhlbi.nih.gov/health/public/heart/obesity/aim\\_hwt.pdf](http://www.nhlbi.nih.gov/health/public/heart/obesity/aim_hwt.pdf))

<sup>2</sup> Snyder TD, Dillow SA, Hoffman CM. *Digest 81. of education statistics* 2008. Washington (DC): U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics; 2009. NCES publication number 2009–020.

<sup>3</sup> Centers for Disease Control and Prevention. *Children's Food Environment State Indicator Report, 2011*.

<sup>4</sup> U.S. Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. Washington (DC): U.S. Department of Health and Human Services; 2008.

<sup>6</sup> Rideout VJ, Foehr UG, Roberts DF. Generation of M2 Media in the Lives of 8-18 Year Olds. A Kaiser Family Foundation Study; 2010.

<sup>7</sup> Rideout V & Hamill E. (2006). *The Media Family: Electronic Media in the Lives of Infants, Toddlers, Preschoolers, and Their Parents*. Menlo Park, CA: The Henry J. Kaiser Family Foundation; 2006.

<sup>8</sup> Zimmerman FJ, Bell JF. Associations of television content type and obesity in children. *Am J Public Health* 2010;100(2):334–40.

<sup>9</sup> Robinson TN. Television viewing and childhood obesity. *Pediatr Clin North Am* 2001;48(4):1017–25.

<sup>10</sup> Institute of Medicine, Food Marketing to Children and Youth: Threat or Opportunity? Washington, DC, National Academies Press; 2005.

<sup>11</sup> Pathways and Partnerships for Childcare Excellence. Available at

[http://www.acf.hhs.gov/programs/ccb/ta/pubs/pathways/pathways\\_partnerships\\_v1.pdf](http://www.acf.hhs.gov/programs/ccb/ta/pubs/pathways/pathways_partnerships_v1.pdf) [PDF - 250KB].

([http://www.acf.hhs.gov/programs/ccb/ta/pubs/pathways/pathways\\_partnerships\\_v1.pdf](http://www.acf.hhs.gov/programs/ccb/ta/pubs/pathways/pathways_partnerships_v1.pdf))

<sup>12</sup> Kaphingst, KM, and Story M. Child care as an untapped setting for obesity prevention: state child care licensing regulations related to nutrition, physical activity, and media use for preschool-aged children in the united states. *Preventing Chronic Disease: Public Research, Practice and Policy* 2009| 6(1):1–13. Available at [www.cdc.gov/pcd/issues/2009/jan/07\\_0240.htm](http://www.cdc.gov/pcd/issues/2009/jan/07_0240.htm) ([http://www.cdc.gov/pcd/issues/2009/jan/07\\_0240.htm](http://www.cdc.gov/pcd/issues/2009/jan/07_0240.htm))

<sup>13</sup> Centers for Disease Control and Prevention. State Indicator Report on Physical Activity, 2010. Available at