

What are overweight and obesity?

- Overweight and obesity are conditions that result from excess body fat and/or abnormal body fat distribution.
- For children and adolescents, the amount of body fat is usually estimated by using weight and height to calculate a number called the body mass index (BMI). For a child and teen BMI calculator, visit nccd.cdc.gov/dnpabmi/Calculator.aspx. BMI is not a direct measure of body fat, but it is a reasonable indicator of the amount of body fat for most children and adolescents.
- Overweight and obesity in children and adolescents are generally defined using an age- and sex-specific percentile for BMI rather than the BMI categories used for adults because children's body composition varies with age and between boys and girls.

After a child or adolescent's BMI has been calculated from his/her weight and height, it is compared to a standard growth chart to determine the percentile in which his/her BMI falls and his/her weight status. Standard growth charts are derived by aggregating the BMI of thousands of children and adolescents according to age and sex. For standard growth charts used by the Centers for Disease Control and Prevention (CDC), visit www.cdc.gov/growthcharts/cdc_charts.htm. Table 1 shows how BMI-for-age and sex percentile is generally used to classify weight status for children and adolescents.

Table 1. Classification of weight status by BMI-for-age and sex percentile for children and adolescents

Body Mass Index (BMI)-for-age and sex percentile	Weight Status
Below 5	Underweight
5 to less than 85	Healthy weight
85 to less than 95	Overweight
95 or higher	Obese

Created based on information from www.cdc.gov/obesity/childhood/basics.html.

- A variety of factors play a role in overweight and obesity including: behavior, environment, genetics, some health conditions, medications, psychological factors, culture, socioeconomic status and others.

How many children and adolescents are overweight or obese?

- North Carolina has the 23rd highest overweight and obesity rates among children age 10 to 17 in the nation.¹
- About one in three (32.3%) high school students in North Carolina are either overweight or obese.²
- Among North Carolina children ages 2–4 who participate in the Supplemental Nutrition Program for Women, Infants and Children (WIC), the prevalence of overweight and obesity is 29.7%.³

What are the complications of obesity?

- Overweight or obesity in children and adolescents increases the risk of several conditions including:
 - Hypertension (high blood pressure).
 - Hyperlipidemia including high cholesterol.
 - Abnormal glucose tolerance including type 2 diabetes.
 - Liver and gallbladder disease, sleep apnea, asthma and other respiratory problems.
 - Joint, muscle and bone problems.
 - Social and psychological problems (e.g., discrimination, poor self-esteem).
- Overweight or obese children and adolescents are more likely to become severely overweight or obese adults. For more information about overweight and obesity in adults, visit communityclinicalconnections.com/Data.

What are the risk factors for overweight and obesity?

- The basic cause of overweight and obesity is calorie (energy) imbalance whereby calorie intake is greater than calorie use. Consequently, diet (calorie intake) and physical activity (calorie use) are major determinants of overweight and obesity.
- Time of onset, duration and exclusivity of breastfeeding, as well as consumption of sugar-sweetened beverages and television viewing and screen time are also important risk factors for overweight and obesity in children and adolescents.
- Environments that lack places for physical activity or have limited access to healthy food options also contribute to overweight and obesity. For example, a child or adolescent's ability to be physically active may be limited because he or she doesn't have access to convenient, safe places to play.
- In certain rare disorders, genes can directly cause overweight and obesity. More commonly however, multiple genes may increase one's susceptibility for overweight or obesity but require outside factors, such as excess calorie intake and/or insufficient physical activity, for overweight or obesity to actually develop.

What options are available to prevent or manage overweight and obesity?

- The main objectives for the management of overweight and obesity are gradual and steady weight loss until a healthy weight is achieved, and thereafter, maintenance of a healthy weight. Even modest weight loss may lead to significant health benefits and the prevention or delay of complications.
- Maintaining a healthy diet and engaging in regular physical activity are the underpinnings of any successful weight loss plan. (See Table 3 for detailed physical activity guidelines for children and adolescents.) For general information on physical activity,

healthy eating and strategies for healthy weight loss in children and adolescents, please visit

—www.cdc.gov/HealthyYouth/physicalactivity/guidelines.htm.

—cdc.gov/healthyweight.

- **North Carolina's Plan to Address Obesity: Healthy Weight and Healthy Communities: 2013–2020⁴** identifies the following core behaviors to address overweight and obesity in children and adolescents:

- Increase physical activity.
- Increase consumption of fruits and vegetables.
- Decrease consumption of sugar-sweetened beverages.
- Reduce consumption of energy-dense foods.
- Decrease television viewing and screen time.
- Increase breastfeeding initiation, duration and exclusivity.

To learn how strategies related to these behaviors can be applied in eight different community settings, please visit EatSmartMoveMoreNC.com.

- Creating environments that make it easier to engage in physical activity and healthy eating in community, home, child care, school, health care and workplace settings is a proven strategy in controlling overweight and obesity. To learn more about the North Carolina Division of Public Health's efforts to promote environments that foster physical activity and healthy eating, please visit communityclinicalconnections.com/What_We_Do/improve.html.
- In some cases, medication and surgical procedures may be needed to complement lifestyle changes for weight loss.
- Children or adolescents on medications or with health conditions that may lead to weight gain should talk to their health care provider about how to best manage their condition and prevent obesity.

Table 2: Risk Factors for Overweight and Obesity among High School Students²

Risk Factor	Students
Did not meet physical activity recommendations	75.7%
Spent 3 or more hours per day watching TV	30.5%
Spent 3 or more hours per day playing video games	42.3%

Table 3: Key Physical Activity Guidelines for Children and Adolescents

Children and adolescents should do 60 minutes or more of physical activity daily.

Aerobic: Most of the 60 or more minutes a day should be either moderate- or vigorous-intensity aerobic physical activity, and should include vigorous-intensity physical activity at least 3 days a week.

Muscle-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include muscle-strengthening physical activity on at least 3 days of the week.

Bone-strengthening: As part of their 60 or more minutes of daily physical activity, children and adolescents should include bone-strengthening physical activity on at least 3 days of the week.

It is important to encourage young people to participate in physical activities that are appropriate for their age, that are enjoyable and that offer variety.

Source: www.health.gov/paguidelines/guidelines/chapter3.aspx

REFERENCES

1. National Survey of Children's Health (2011-12). U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. Available at: www.childhealthdata.org/browse/survey/results?q=2415&r=35
2. Youth Risk Behavioral Survey (High School Survey Results). North Carolina Healthy Schools. Department of Public Instruction and Department of Health and Human Resources. 2015. Available at: <http://www.nchealthyschools.org/docs/data/yrbs/2015/statewide/highschool/tables.pdf>
3. North Carolina–Nutrition and Epidemiology Surveillance System (NC-NESS). 2014 Report produced upon request, July 08, 2016.
4. Eat Smart, Move More North Carolina Leadership Team. 2013. North Carolina's Plan to Address Obesity: Healthy Weight and Healthy Communities 2013–2020. Eat Smart, Move More NC, Raleigh, NC. Available at: www.EatSmartMoveMoreNC.com

In addition to the above references, this fact sheet was developed with heavy reliance on information from the Centers for Disease Control and Prevention website: www.cdc.gov/obesity/childhood/index.html.