Childhood Overweight and Obesity in Colorado

How many children have overweight or obesity in Colorado?

Nearly 1 in 4 children had overweight or obesity in 2016. (22.3% or about 145,500 children ages 5-14 years)

The percent of children ages 5-14 years who had overweight or obesity did not change significantly from 2012-2016.

**Data source:** Colorado Child Health Survey.
Height and weight reported by child’s primary caregiver.

*Due to rounding, the sum of the values represented here for overweight (13.0) and obese (10.1) do not add to the actual estimate of overweight and obese (23.2).

**Why is childhood obesity a public health concern?**
Childhood obesity has become a national epidemic and is now the number one health concern among parents.\(^1\) Nationally, the percent of children ages 2-19 years who have overweight or obesity more than doubled from 15.4% in 1971-1974 to 33.4% in 2013-2014. The percent of children who have obesity more than tripled from 5.2% in 1971-1974 to 17.2% in 2013-2014. Additionally, since 2001-2002 the percent of children who have obesity has been greater than the percent of children who have body mass indexes (BMIs)* that are categorized as overweight.\(^2\)

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**The percent of low-income preschool children ages 2-4 who had overweight or obesity decreased significantly from 2012-2016.**

Height and weight obtained by healthcare provider at designated WIC clinic.

**The percent of high school students who had overweight or obesity did not change significantly from 2013 to 2015.**

Data source: Healthy Kids Colorado Survey.
Height and weight are self-reported.

*Underweight, healthy weight, overweight, and obesity are defined based on an individual’s body mass index (BMI) calculated from their height and weight. For more information on these definitions, including how the Colorado Department of Public Health and Environment reports childhood BMI refer to: www.chd.dphe.state.co.us/Resources/factsheets/CHS-BMI-factsheet.pdf
The Colorado Department of Public Health and Environment acknowledges that generations-long social, economic and environmental inequities result in adverse health outcomes. They affect communities differently and have a greater influence on health outcomes than either individual choices or one’s ability to access health care. Reducing health disparities through policies, practices and organizational systems can help improve opportunities for all Coloradans.

What populations bear the burden of childhood obesity?

The percent of children ages 5-14 years who had overweight or obesity by demographic factors, Colorado, 2012-2016.

Data source: Colorado Child Health Survey.

FPL: federal poverty level.

*Food insecurity data are from 2012-2013 and 2015-2016. Food insecurity is defined as caregiver reporting that they often or sometimes rely on low-cost food to feed the child. Medical home defined as having a usual source of care, a personal doctor or nurse, family-centered care, and effective care coordination and getting needed referrals.

The prevalence of overweight or obesity was significantly higher among children who had:

- Food insecurity.
- Household incomes of 250% federal poverty level or less.
- No medical home.

The prevalence of overweight or obesity was significantly higher among Black, Hispanic and other race children compared with White non-Hispanic and Asian or Pacific Islander children.

Males were more likely to have obesity compared with females.

The prevalence of overweight or obesity did not differ significantly based on health insurance status or child’s age.

Low-income and food-insecure children are more vulnerable to overweight and obesity for several reasons, including limited resources and lack of access to healthy, affordable foods; fewer opportunities for physical activity; cycles of food deprivation and over-eating; high stress levels; greater exposures to marketing of obesity-promoting products; and limited access to health care.¹

Childhood overweight and obesity is a problem that affects children across Colorado, regardless of where they live.

The 2012-2016 prevalence of childhood overweight or obesity varied significantly for only two Health Statistics Regions (HSRs). Douglas County comprises an HSR that had an overweight or obesity prevalence that was significantly lower than the statewide prevalence. Pueblo County comprises an HSR that had an overweight or obesity prevalence that was significantly higher than the statewide prevalence.
What causes overweight and obesity among children?

Obesity among children or adults results from an energy imbalance, where energy intake (calories) exceeds energy expenditure. Although biology and genetics play a major role in obesity, the related energy imbalance is a result of a complex interaction of social, environmental, economic, and behavioral factors.4,5

Population-level childhood obesity prevention

The CDC and the Institute of Medicine (IOM) recommend several strategies in school, preschool and child-care center, community, home, and healthcare settings to increase healthy eating and physical activity.6,7 Many of these recommended strategies promote environmental factors that support the healthy choice being the easy choice for children and their parents. In other words, these recommended strategies aim to reduce environments that promote increased consumption of less healthy food and physical inactivity, e.g., by reducing sugary drinks and less healthy foods on school campuses; enacting licensing regulations to ensure that child care facilities encourage more healthful eating and physical activity; promoting daily, quality physical activity in all schools; changing the built environment to improve access to safe and appealing places for physical activity; and increasing support for breastfeeding. In selecting strategies to prevent or treat obesity, it is important to examine the more proximal influences on the factors that affect energy imbalance and to use an evidence-based, multi-pronged approach.8,9

Maternal behavioral factors influencing childhood obesity in Colorado

Factors related to the preconception, prenatal, and infancy periods are most strongly linked to obesity risk in early childhood:7

<table>
<thead>
<tr>
<th>Childhood obesity risk factor</th>
<th>2014 Colorado data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal obesity prior to pregnancy</td>
<td>43.6% of mothers had overweight or obesity before pregnancy</td>
</tr>
<tr>
<td>Excessive weight gain during pregnancy</td>
<td>44.7% of mothers gained more weight during pregnancy than recommended by the Institute of Medicine guidelines based on body mass index 32.4% gained an appropriate amount</td>
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<tr>
<td>High birth weight (4000 grams or more)</td>
<td>5.0% of babies had high birth weight</td>
</tr>
<tr>
<td>Low birth weight (less than 2500 grams)</td>
<td>8.0% of babies had low birth weight</td>
</tr>
<tr>
<td>Maternal smoking during pregnancy</td>
<td>6.4% of mothers smoked during the last 3 months of pregnancy (of those who smoked in the past 2 years)</td>
</tr>
</tbody>
</table>

Focus on Breastfeeding

Breastfeeding is associated with reduced risk of childhood overweight and obesity; the risk is even lower with longer duration of breastfeeding.10 While more research is needed, exclusive breastfeeding appears to have a stronger effect than combined breast and formula feeding, and the effect of breastfeeding on overweight and obesity appears to remain into the teenage years and adulthood.

The American Academy of Pediatrics recommends “exclusive breastfeeding for about 6 months, followed by continued breastfeeding as complementary foods are introduced, with continuation of breastfeeding for 1 year or longer as mutually desired by mother and infant.”11

Among children born in Colorado in 2014, 67.4% were breastfed at age 6 months, with much fewer being exclusively breastfed at this age (35.3%) as per American Academy of Pediatrics recommendations. A total of 40.3% of children continued to breastfeed until 12 months of age.

Data source: National Immunization Survey.
Do children in Colorado meet recommendations for preventive behaviors?

Physical activity, sufficient sleep duration, and a balanced diet (including consumption of fruits and vegetables and restricting sugary beverage consumption) are ways to help prevent obesity in individuals and populations. More than three quarters of children in Colorado meet recommendations for screen time on weekdays, sleep, and sugary beverage consumption, but there is much room for improvement. Children are not doing as well at meeting recommendations for physical activity, screen time on weekends, and fruit and vegetable consumption.

<table>
<thead>
<tr>
<th>Preventive behavior</th>
<th>How are children doing?</th>
<th>2016 Colorado data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity</td>
<td>About half of children meet recommendations</td>
<td>■ 50.8% of children ages 5-14 years met recommendation of at least 60 minutes per day</td>
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<tr>
<td></td>
<td>Most children meet recommendations on weekdays but have more screen time on weekends</td>
<td>■ 85.9% of children age 1-14 years had 2 hours or less of screen time on weekdays</td>
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<td></td>
<td></td>
<td>■ 82.5% of children ages 1-4</td>
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<td></td>
<td></td>
<td>■ 87.0% of children ages 5-14</td>
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<tr>
<td></td>
<td></td>
<td>■ 54.0% of children age 1-14 had 2 hours or less of screen time on weekend days</td>
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<td></td>
<td></td>
<td>■ 79.7% of children ages 1-4 years</td>
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<tr>
<td></td>
<td></td>
<td>■ 45.1% of children ages 5-14 years</td>
</tr>
<tr>
<td>Limited screen time</td>
<td>More than three quarters of children meet recommendations</td>
<td>■ 76.0% of children ages 1-14 years met age-specific sleep recommendations</td>
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<td></td>
<td></td>
<td>■ 81.0% of children ages 1-2 years (11+ hours)</td>
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<tr>
<td>Sleep</td>
<td>About half of children meet recommendations</td>
<td>■ 73.4% of children ages 3-5 years (10+ hours)</td>
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<td></td>
<td>■ 71.0% of children ages 6-12 years (9+ hours)</td>
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<td>■ 89.2% of children ages 13-14 years (8+ hours)</td>
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<tr>
<td>Fruit consumption</td>
<td>About half of children meet recommendations</td>
<td>■ 50.3% of children ages 1-14 years ate fruit 2 or more times per day</td>
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<td></td>
<td></td>
<td>■ 60.5% of children ages 1-4 years</td>
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<td></td>
<td></td>
<td>■ 46.9% of children ages 5-14 years</td>
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<tr>
<td>Vegetable consumption</td>
<td>About 1 in 8 children meet recommendations</td>
<td>■ 13.4% of children ages 1-14 years ate vegetables 3 or more times per day</td>
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<td></td>
<td></td>
<td>■ 14.1% of children ages 1-4 years</td>
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<tr>
<td></td>
<td></td>
<td>■ 13.1% of children ages 5-14 years</td>
</tr>
<tr>
<td>No sugary beverage consumption</td>
<td>Most children (about 8 in 10) drink less than 1 sugary drink per day</td>
<td>■ 85.8% of children ages 1-14 years did not drink any sugary drinks in a typical day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>■ 87.7% of children ages 1-4 years</td>
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<tr>
<td></td>
<td></td>
<td>■ 85.1% of children ages 5-14 years</td>
</tr>
</tbody>
</table>

Data source: Colorado Child Health Survey.

What are the consequences of childhood obesity?

Childhood obesity leads to health risks in childhood and later in life.\textsuperscript{21}

Health risk now

- High blood pressure and high cholesterol, which are risk factors for cardiovascular disease.
- Impaired glucose tolerance, insulin resistance and type 2 diabetes.
- Breathing problems such as sleep apnea and asthma.
- Joint problems and musculoskeletal discomfort.
- Fatty liver disease, gallstones and gastro-esophageal reflux (i.e., heartburn).
- Social and psychological problems, such as discrimination and poor self-esteem, which can continue into adulthood.

In the Bogalusa Heart Study, 70\% of obese children had at least one cardiovascular disease risk factor, and 39\% had two or more.\textsuperscript{22}

Health risk later in life

Children having obesity are more likely to become adults having obesity, and their obesity is likely to be more severe. Adult obesity is associated with several serious health conditions including heart disease, stroke, diabetes and some cancers.

In Colorado 2012-2016:

- 36\% of children who had obesity had \textit{difficulties with emotions, concentration, behavior, or getting along with others} compared with 23\% of children who had healthy weight BMIs.
- 12\% of children who had overweight or obesity had \textit{asthma} compared with 7\% of children who had underweight or normal weight BMIs.

Data source: Colorado Child Health Survey.
1 Overweight in Children. American Heart Association; 2014. Available at: http://www.heart.org/HEARTORG/HealthyLiving/HealthyKids/ChildhoodObesity/Overweight-in-Children_UCM_304054_Article.jsp#WVs17nmqie. Acc 2-17-17.


16 Definition of meeting screen time recommendation based on http://pediatrics.aappublications.org/content/132/5/958.full. Acc 4-27-17.


