EARLY CHILDHOOD OBESITY IN COLORADO

Why early childhood obesity is a problem
Young children who have overweight and obesity often become school-age children, youth, and adults who have overweight and obesity, increasing their risk of chronic and obesity-related disease over time. The risk of early childhood obesity begins before conception and continues during pregnancy and into the earliest years of life. Women who have overweight and obesity prior to and during pregnancy, as well as those who experience inadequate and excessive gestational weight gain, can perpetuate the occurrence of obesity into the next generation. In addition, early patterns of eating, physical activity, and sleep greatly influence child health and weight, permanently altering neurological and metabolic systems and behavior.¹

From 2012 to 2017, the proportion of children who had overweight and obesity in Colorado decreased. In 2012, 14.5 percent of low-income children ages 2-4 had overweight and 8.4 percent had obesity, falling to 12.8 percent and 7.5 percent, respectively, in 2017 (Figure 1).²

Figure 1. Percent of Colorado children ages 2-4 in low-income families who had overweight or obesity, 2012-2017.²

In 2014, the USDA reported that Colorado had the second lowest obesity rate among children ages 2-4 years across all states.³ Despite having low childhood obesity rates, over 1 in 5 Colorado children had overweight or obesity in recent years.² Colorado’s 2020 target is to decrease the proportion of children who have overweight to 12.6 percent and children who have obesity to 6.0 percent.

Growth charts measuring stature and weight for age by gender are used to determine overweight and obesity in children. Children ages 2 and over are considered to have overweight if their Body Mass Index (BMI) falls between the 85th and 95th percentiles and to have obesity if their BMI is at or above the 95th percentile.⁴

¹Reliable Colorado data are limited to approximately 30,000 participants of USDA’s Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) at this time. Pregnant, postpartum breastfeeding and non-breastfeeding women, and children under age of 5 years are eligible to participate in WIC if their annual household income does not exceed 185 percent of Federal Poverty Guidelines.

One in five Colorado children has overweight or obesity.²
Social health disparities in women and children

In 2017, 8.8 percent (95% CI: 8.4-9.2) of Hispanic children had obesity, a significantly higher proportion than among all other race/ethnicity groups with the exception of American Indian/Alaska Native children. Additionally, 15.4 percent (95% CI: 11.9-19.0) of American Indian/Alaska Native children had overweight, significantly higher than among black, non-Hispanic and Asian/Pacific Islander children (Figure 2).²

Overweight and obesity are especially prevalent among low-income Hispanic and American Indian/Alaska Native children. Additionally, pre-pregnancy obesity and gestational weight gain above IOM recommendations were most prevalent among American Indian/Alaska Native women; however, between one-third and half of women across all race/ethnicity groups gained weight above IOM recommendations.⁵

In 2014-2015, 32.2 percent (95% CI: 29.8-34.7) of American Indian/Alaska Native women entered pregnancy having obesity, a significantly higher proportion than in all other race/ethnicity groups. Just 15.5 percent (95% CI: 14.7-16.2) of Asian/Pacific Islander and 17.4 percent (95% CI: 17.1-17.6) of white, non-Hispanic women entered pregnancy having obesity, significantly lower than among black, non-Hispanic; Hispanic; and American Indian/Alaska Native women. Similarly, 24.1 percent (95% CI: 23.8-24.4) of white, non-Hispanic and 24.6 percent (95% CI: 23.8-25.5) of Asian/Pacific Islander women entered pregnancy having overweight, significantly lower than among black, non-Hispanic; Hispanic; and American Indian/Alaska Native women (Figure 3).⁵

In 2014-2015, 48.9 percent (95% CI: 46.3-51.6) of American Indian/Alaska Native women gained gestational weight above the Institute of Medicine (IOM) recommendations, significantly higher than all other race/ethnicity groups. White, non-Hispanic women had the next highest rate of gestational weight gain above IOM recommendations, with 44.4 percent (95% CI: 44.1-44.8) gaining weight above the IOM recommendations. Additionally, 29.6 percent (95% CI: 28.6-30.7) of black, non-Hispanic women and 28.9 percent (95% CI: 27.9-29.8) of Asian/Pacific Islander women gained gestational weight below the IOM guidelines, a significantly greater proportion than among white, non-Hispanic; Hispanic; and American Indian/Alaska Native women (Figure 4).⁵

WIC overweight and obesity data are available at the county-level at www.colorado.gov/cdphe/wic-reports.
Risk and protective factors for early childhood obesity

Obesity in early childhood results from a complex interplay of multiple environmental, behavioral, and genetic factors. Exposures to these factors occur among women prior to and during pregnancy and among children before the age of five years.

Obesity in women prior to pregnancy is a strong indicator of early childhood obesity, and Colorado women are entering pregnancy at increasingly higher BMIs. The pre-pregnancy overweight and obesity rates of women in Colorado have been steadily increasing in recent years. Nearly forty-six percent (95% CI: 45.5-46.1) of women who gave birth between 2014 and 2015 had overweight or obesity before pregnancy, rising from 42.3 percent (95% CI: 42.0-42.6) between 2008 and 2009 (Figure 5).

Figure 5. Percent of Colorado women entering pregnancy having normal weight, overweight, and obesity, 2008-2015.

In 2015, 71.8 percent of Colorado women of reproductive age (18-44 years) did not meet aerobic and muscle strengthening recommendations issued by the CDC, and 17.5 percent were inactive. Additionally, despite recommendations to increase fruit and vegetable consumption as part of a healthy diet, the median fruit consumption was 1.1 times per day and the median vegetable consumption was 1.9 times per day, falling short of the recommended minimum of 2 cups of fruit and 2.5 cups of vegetables per day. Just 65.2 percent of Colorado women of reproductive age consumed fruit at least once per day, and 84.7 percent consumed vegetables at least once per day.

Maternal weight gain outside of IOM recommendations during pregnancy also increases a child’s risk of obesity. Between 2014 and 2015, 65.9 percent of women who gave birth gained weight outside of IOM recommendations, with 42.7 percent (95% CI: 42.4-43.0) gaining above the recommendations and 23.2 percent (95% CI: 23.0-23.4) gaining below the recommendations. Just 34.1 percent (95% CI: 33.9-34.4) of women gained an appropriate amount of weight (neither too little nor too much) during pregnancy.

High and low birth weight, closely related to gestational weight gain, are also risk factors for obesity in early childhood. The percentage of low birth weight (less than 2,500 grams) babies born in Colorado has improved slightly, declining from 9.3 in 2005 to 9.0 in 2015. However, 5.2 percent of births in 2015 qualified as high birth weight (4,000 grams or more).
After birth, children continue to be susceptible to exposures that both increase and decrease their risk for developing obesity in early childhood. Contrary to popular belief that infants “outgrow their baby fat” over time, evidence links rapid weight gain during infancy with obesity in childhood. A number of studies have found a protective association between breastfeeding and a reduced risk for obesity in early childhood. Among children born in Colorado in 2013, just over a quarter (26.4 percent) were exclusively breastfed (no other food or liquids) at six months. A total of 66.2 percent received some breast milk at six months, and 40.6 percent of all infants continued breastfeeding to the recommended twelve months.

Into childhood, lifestyle practices play an important role in the complex issue of obesity. Child consumption of sugar-sweetened beverages and excessive screen time spent in combination with exposure to marketing of energy dense, nutrient-poor foods contribute to risk of early childhood obesity. In 2016, 24.7 percent of Colorado children ages 1-5 spent more than two hours watching TV or videos, playing video games, or playing on a computer each weekend day, and 11.9 percent consumed at least one glass or can of regular soda or other sweetened drinks per day. Feeding practices not responsive to hunger and satiety among infants and young children may also contribute to the risk of obesity. Additionally, poor sleep habits can result in shorter sleep duration among children, which is a strong predictor of obesity in early childhood. In 2016, 23.9 percent of Colorado children ages 1-5 typically did not get as many hours of sleep as were recommended for their age group. Nutrition, physical activity, and sleep habits developed in early childhood can continue into school age, adolescence, and adulthood.

Communities, environments, and larger structural forces also influence behaviors and impact young children’s risk for developing obesity. In 2016, 28.6 percent of Colorado children ages 1-5 lived in food-insecure households where parents often or sometimes relied on only a few kinds of low-cost food options because they were running out of money to buy food. Additionally, 16.2 percent of parents reported that they find it difficult for their child to be active in the local park or playground because it is not safe due to crime. Because obesity results from a combination of environmental, behavioral, and genetic factors and can be transmitted across generations, several different intervention targets are possible. Preventing and reducing early childhood obesity not only necessitates behavior modifications for individuals and families, but also requires larger structural changes at the community level.

The Colorado Department of Public Health and Environment acknowledges that social, economic and environmental inequities result in adverse health outcomes, such as obesity, and have a greater impact than individual choices. Reducing health disparities through systems change can help improve opportunities for all Coloradans and have an important impact on population health measures.
References


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