

Impact of Childhood Obesity and Type 2 Diabetes on Child Health



Key Takeaways

- Obesity and type 2 diabetes often originate in childhood and can lead to lifelong health concerns, like heart disease and respiratory conditions.
- Access to nutritious food and opportunities for physical activity can help children maintain a healthy weight and avoid developing type 2 diabetes, but many children do not have access to nutritious food and do not engage in regular physical activity.
- Interventions that promote healthy lifestyles in early care and education and schools can help children develop healthy habits, which can promote lifelong health.

Introduction

Obesity and *type 2 diabetes*, which often originate in *childhood*, can impact health and well-being during the early years and can also have *long-term impacts* that lead to serious health concerns like heart disease and other life-threatening conditions in adulthood. There are many factors, including diet, physical activity, and genetics, that can contribute to children developing *type 2 diabetes* and *obesity*. These can be influenced by external factors like access to *nutritious, affordable* food and safe places to run and play. With *rates of childhood obesity* and *type 2 diabetes* increasing, there is an ongoing opportunity to mitigate the root causes of these chronic diseases during childhood.

This backgrounder provides key stakeholders with an evidence-based overview of the short- and long-term impacts of childhood obesity on health outcomes and healthcare costs, as well as the impact of type 2 diabetes on health outcomes. It also discusses how interventions that promote nutritious eating and physical activity can help prevent the onset of obesity and type 2 diabetes and help children with these conditions manage them.

Impact of Childhood Obesity and Diabetes

In the U.S., approximately *1 in 5 children* — more than 14 million children total — ages 2–19 are considered obese, which can negatively affect their health and well-being and increase their risk for developing long-term *chronic conditions*. During childhood, *obesity* increases the risk of *respiratory conditions* (e.g., asthma and sleep apnea), *joint problems, gall stones and gallbladder disease*, and *mental health conditions* such as eating disorders, anxiety, and depression. Childhood obesity can also increase the risk of *cardiovascular conditions* (e.g., high blood pressure, high cholesterol), which can lead to *heart disease* and stroke in adulthood. Some impacts of childhood obesity that appear in adulthood include *fertility problems, insulin resistance, hypertension*, and several types of cancer.



Well Beyond Medicine

Health outcomes related to obesity can also increase the strain on the healthcare system. According to the Centers for Disease Control and Prevention (CDC), “obesity costs the U.S. healthcare system almost [\\$173 billion](#) a year.” Children who are considered obese are [more likely to be considered obese as adults](#). Consequently, preventing [childhood obesity](#) could also help prevent future obesity-related healthcare costs.

Like obesity, type 2 diabetes among children can have [long-term impacts](#), and as of 2021, approximately [48,000 children](#) under age 20 had type 2 diabetes. During childhood, type 2 diabetes can lead to health concerns ranging from [high blood pressure](#), high cholesterol, and depression to acute conditions related to blood sugar levels (e.g., [diabetic ketoacidosis](#) and [hyperosmolar hyperglycemic state](#)). Moreover, [in the long-term](#), high blood sugar can [damage](#) blood vessels and the nerves that control the heart, leading to heart disease, including stroke and heart attack. Managing [blood sugar levels](#) can help to mitigate these risks.

Opportunities to Promote Nutrition and Physical Activity During Childhood

There is an opportunity to address the health impacts of [type 2 diabetes](#) and [childhood obesity](#) through healthy lifestyles that include physical activity and a nutritious diet. Evidence suggests that American children typically do not meet [physical activity](#) or [diet recommendations](#) from the [Physical Activity Guidelines for Americans](#) or the [Dietary Guidelines for Americans, 2020-2025](#), respectively, putting them at risk for [obesity](#) and [type 2 diabetes](#). Lacking [access to nutritious food](#) or [safe places to play](#) may contribute to children falling short of these recommendations. Programs and initiatives that help children access nutritious food and physical activity or promote [healthy behaviors](#) can help children grow into healthy adults.

Physical Activity

Regular [physical activity](#) has many physical and mental health benefits for children, including helping children maintain a [healthy weight](#), reducing the risk of [type 2 diabetes](#), and [building strong muscles and bones](#). For children who are considered overweight or obese, regular physical activity can improve [cardiometabolic health](#), including blood pressure. Regular physical activity can also increase [insulin](#) sensitivity, which can lower blood sugar levels, helping to manage [type 2 diabetes](#). Additionally, regular physical activity can support children by improving their [sleep quality](#), benefiting their [self-esteem](#) and mental health, and [enhancing memory and attention](#), which can help them in school. In the long-term, [regular physical activity](#) can also reduce the [risk of health concerns](#) later in life, such as high blood pressure, heart disease, stroke, some types of cancer, and osteoporosis.



Despite the benefits of physical activity, in the U.S., many children do not have the opportunity for regular physical activity. The CDC's [Youth Risk Behavior Survey](#) found that in 2023, only about 25% of high school students were physically active for at least 60 minutes a day, meeting the federal guidelines for aerobic activity. [Factors](#) such as access to indoor or outdoor recreation facilities and [neighborhood safety](#), access to and affordability of physical activity programs, and other family commitments (e.g., parents' work schedules, homework, caring for siblings) may limit children's opportunities to meet recommendations for physical activity.

Nutritious Diets

In addition to regular physical activity, [nutritious diets](#) are critical to children's health. For children, eating a [nutritious diet](#) can lead to [physical and mental health benefits](#), including reducing the risk of [type 2 diabetes](#) and obesity and [managing](#) or losing weight. Additionally, since [blood sugar levels](#) can improve with weight loss, losing weight can help children manage type 2 diabetes. Moreover, following a healthy diet can help children with type 2 diabetes maintain a [target blood sugar range](#), mitigating the risk of dangerously high or low blood sugar, which can lead to adverse health outcomes. Other [important benefits](#) of a nutritious diet include healthy growth and development; protection against illness; and reduced risk of cavities, malnutrition, and unhealthy eating behaviors (i.e., eating disorders).

Access to nutritious food impacts children's diets. Lack of access may be due to inadequate [transportation](#) or [distance](#) from a grocery store — especially in rural areas. Additionally, whole foods (e.g., fruits, vegetables, whole grains, healthy fats and proteins) can be [expensive](#), and preparing them can be time consuming, which can push families to buy [cheaper](#), highly processed foods that lead to weight gain. In 2023, nearly [18% of households with children](#) had times during the year when they were uncertain of having enough or did not have enough food to meet the needs of their family.¹



Addressing Obesity and Type 2 Diabetes in Early Care and Education and School Settings

There is an opportunity to promote healthy behaviors, like eating nutritious food and physical activity, in early care and education and school settings. [Evidence](#) suggests the importance of developing healthy eating and physical activity patterns during childhood. These habits often start at [home](#) with [family](#), and there is also opportunity for [early care and education](#) programs and [schools](#) to promote healthy behaviors. Evidence suggests that [high quality early care and education programs](#) that include a focus on nutrition and [physical activity](#) can help children and families lead healthy lifestyles. Studies also show that high quality [early care and education programs](#) and other community health programs can lead to [improved health outcomes](#), including reduced [body mass index](#) and additional [adult health benefits](#) like better cardiovascular and [metabolic measures](#). One [study](#) showed that children ages 3–5 who were considered overweight or obese and who were enrolled in Head Start, on average, reduced their BMI over the course of the academic year.

Moreover, [K-12 schools](#) can help children meet [CDC recommendations](#) for [physical activity](#) through physical education classes, after school clubs, and sports. [Evidence](#) suggests that [school-based interventions](#) can help improve obesity outcomes, as well as generally increase levels of physical activity and fitness. A number of federal programs can also help support access to nutritious food and physical activity in early care and education, at schools, at home, and in the community.²

Conclusion

Obesity and type 2 diabetes can impact children's health and well-being in the short-term and into adulthood. While these chronic conditions can affect children's day-to-day health when they are young, the risks associated with obesity and type 2 diabetes become more significant as children mature. Moreover, these chronic conditions are costly to the American healthcare system. If supported at scale, policies and initiatives that promote healthy behaviors in early care and education programs, schools, and communities can improve children's health and well-being and lay the foundation for a healthier adulthood.

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Endnotes

1 In some of these households only the adults lacked sufficient food.

2 Examples include the Supplemental Nutrition Assistance Program, the Women, Infants and Children Program, the Child and Adult Care Food Program, the National School Lunch Program, Head Start, Safe Routes to School, the National Early Child Care Collaboratives Program, and others.



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