

ISSUE BRIEF (2021)

OBESITY PREVENTION



NATIONAL ASSOCIATION OF
CHRONIC DISEASE DIRECTORS
Promoting Health. Preventing Disease.



INTRODUCTION

Obesity is a common, serious, and costly chronic disease that puts people at risk for many other chronic diseases and can cause serious complications for infectious diseases like COVID-19.^{1,2} The causes of obesity are complex and encompass both individual and environmental factors as well as social policies and social determinants of health. Efforts to address obesity have moved beyond focusing on individual-level behavior and now encompass policy, systems, and environmental change. This issue brief is intended to support NACDD Members' work to address obesity prevention in their states.



The causes of obesity are complex and encompass both individual and environmental factors as well as social and political determinants of health.

BACKGROUND

In 2017-2018, the age-adjusted prevalence of adults with obesity was 42.4%. The age-adjusted prevalence of adults with severe obesity was 9.2% and was higher in women than in men.³ For children 2-19 years old in 2017-2018, the prevalence of obesity was 19.3% and affected about 14.4 million children and adolescents.⁴

The estimated annual medical cost of obesity in the United States was \$147 billion in 2008 U.S. dollars; the medical cost for people with obesity was \$1,429 higher than those of normal weight.² The overall cost of obesity includes an annual nationwide productivity cost related to absenteeism that ranges between \$3.38 billion (\$79 per individual with obesity) and \$6.38 billion (\$132 per individual with obesity).⁵ Spending on public health programming and prevention per capita is approximately \$0.25, far below the estimated per capita cost of obesity-related medical care.

Defining Overweight and Obesity

For adults, if BMI is 25.0 to <30, it falls within the overweight range.⁶ For children and teens, overweight is defined as a BMI at or above the 85th percentile and below the 95th percentile for children and teens of the same age and sex from the reference population.⁷

For adults, a BMI of 30.0 or higher falls within the obese range.⁶ Obesity often is subdivided into the following categories:⁶

- Class 1: BMI of 30 to <35
- Class 2: BMI of 35 to <40
- Class 3: BMI of 40 or higher. Class 3 obesity is sometimes categorized as “severe” obesity.

For children and teens, obesity is defined as a BMI at or above the 95th percentile for children and teens from the reference population.⁷



RISK FACTORS FOR OBESITY

Risk factors for obesity are complex and include genetic, behavioral, and environmental factors including:⁸

- Lack of physical activity, unhealthy eating behaviors, poor sleep, and chronic stress.
- Social factors such as low socioeconomic status or an unhealthy/unsafe neighborhood environment.
- Built environment factors such as easy access to unhealthy foods, limited access to recreational facilities or parks, and few safe or convenient ways to move actively within a neighborhood.
- Genetic factors (including evidence that certain elements of DNA are associated with obesity).

Obesity and COVID-19

Overweight, obesity, or severe obesity increases the risk of severe illness from COVID-19.¹

HEALTH EQUITY PERSPECTIVE

Social and economic inequities that fuel overall health disparities also drive disparities in obesity rates. Non-Hispanic Black adults had the highest prevalence of self-reported obesity (39.8%), followed by Hispanic adults (33.8%), and non-Hispanic white adults (29.9%).⁹ The estimated percentage of adult deaths between 1986 and 2006 associated with overweight and obesity was 5.0% and 15.6% for Black and white men, and 26.8% and 21.7% for Black and white women, respectively.¹⁰

Policy, systems, and environmental interventions are needed to address the drivers of obesity. Policymakers and public health professionals must consider the social and built environmental factors that contribute to disparities in overweight and obesity.¹⁰ To effectively address disparities in obesity rates, these policies and interventions must be designed to intentionally address social determinants of health (such as access to healthy food outlets and safe access to convenient physical activity) to ensure that communities, environments, and systems support healthy people.⁹

If interventions and policies don't take into account the existing health disparities and the differences in the social and built environments that produce them, obesity prevention policies in certain populations may be limited in their efficacy.¹¹

ISSUE OVERVIEW: OBESITY AND OTHER CHRONIC DISEASES

Arthritis⁸

Obesity may cause osteoarthritis.

Alzheimer's Disease

There is growing evidence linking obesity to the development and continued progression of impaired cognitive function.¹² Research has shown that mid-life obesity is a risk factor for future dementia.¹³



Asthma¹⁴

Asthma prevalence is higher among adults with obesity compared with overweight adults and adults who do not have overweight or obesity. Women with obesity had higher asthma prevalence than women in normal weight and overweight categories.

Cancer

Obesity is a leading cancer risk factor, and excess body weight is responsible for 7% of all cancer deaths.¹⁵ Overweight and obesity are associated with at least 13 different types of cancer. These cancers make up 40% of all cancers diagnosed.¹⁶

Cardiovascular Disease⁸

Obesity may lead to high blood cholesterol and high triglyceride levels as well as high blood pressure, atherosclerosis, heart attacks, and stroke.

Diabetes¹⁷

Among U.S. adults aged 18 years or older with diagnosed diabetes, rough estimates for 2013–2016 show that 89.0% were overweight or had obesity. Diabetes can lead to lower extremity amputations, renal failure, eye disease, sleep apnea, and other comorbidities.

Addressing obesity requires more than just changing individual behaviors. It requires policy solutions that are effective at the population-level.

POLICY OPTIONS FOR OBESITY PREVENTION

Addressing obesity requires more than just changing individual behaviors. It requires policy solutions that are effective at the population-level. Key settings to address childhood and adult obesity include early care and education programs, schools, worksites, and communities. Below is a selection of evidence-based policies, systems, and environmental changes that can be implemented in these different settings.



Early Care and Education (ECE)

- Increase access to healthier foods and physical activity opportunities by implementing initiatives such as farm-to-preschool programs, food purchasing cooperatives, and provider training.¹⁸
- Ensure safe drinking water is available to children.
- Establish nutrition and physical activity standards in licensing and quality rating and improvement systems.
- Integrate breastfeeding standards into licensing and quality rating and improvement systems.
- Require ECE programs to provide meals and snacks that meet general USDA and/or Child and Adult Care Food Program (CACFP) standards.



Schools

- School-based interventions that combine meal or fruit and vegetable snack interventions with physical activity interventions to improve health among elementary school students (through grade 6).¹⁹
- Meal interventions and fruit and vegetable snack interventions to increase the availability of healthier foods and beverages provided by schools.²⁰
- Develop Comprehensive School Physical Activity Programs (CSPAP), a framework for planning and organizing activities for school physical education and other opportunities offered to students to be physically active before, during, and after school.²¹

Worksites²²

- Locate worksites so that employees can get to work by walking, biking, or using public transportation.
- Increase healthy food and beverage choices and sustainable practices in cafeterias, concession stands, snack bars, and vending machines.
- Establish worksite programs that make healthy eating and physical activity choices easier, either as a standalone program or part of a comprehensive workplace well-being program.²³
- Provide flexible and comprehensive time and space solutions for all breastfeeding employees regardless of legal status and employment classification.²⁴

Communities

- Create comprehensive general, or master plans that guide community investments to improve obesity by increasing access to healthy food and places for safe physical activity, including parks, trails, and greenspace.
- Create or enhance access to places for physical activity (e.g., parks, greenspace, etc.) with a focus on walking.²⁵
- Implement Complete Streets Policies to increase opportunities for active transportation and access to everyday destinations.²⁶
- Design streets and communities that promote active lifestyles.²⁵
- Ensure full and fair participation of racial and ethnic minority groups in crafting the plans and policies that shape their neighborhood.
- Increase access to healthy foods and beverages through policies such as healthy food retail initiatives.²⁷
- Provide access to fruits and vegetables at farmers markets for SNAP recipients.
- Increase access to breastfeeding friendly environments, including hospitals and birth centers, worksites, and communities.
- Provide access to professional and peer support for breastfeeding.



EMERGING POLICIES

Taxes on Sugar Sweetened Beverages:²⁸

Over consumption of sugar contributes to diabetes, toothy decay, and obesity.²⁹ Taxing SSBs is a promising policy for reducing sugar consumption and preventing obesity. Evidence is still emerging about the effectiveness of this policy, but one important policy consideration is that if these taxes are not high enough, they will not change purchasing behavior.³⁰

Fresh Food and Exercise Rx:

There is emerging evidence that these interventions can increase healthier food intake and reduce patients' BMIs. One small study found that a veggie Rx program had a statistically significant impact on participants' BMI.³¹ Exercise prescriptions allow healthcare professionals to give advice and recommendations about physical activity to patients. These prescriptions are more effective when personalized to the patient rather than just general recommendations. These prescriptions often are combined with other elements such as telephone counseling and exercise logs.³²

Restrictions on Marketing Unhealthy Food to Children:

Advertisements for unhealthy foods are disproportionately targeted at children, and these ads influence children's preferences for unhealthy foods.³³ Black children and teens are disproportionately exposed to more advertisements for sugary drinks.³⁴ There is some evidence that restricting unhealthy food marketing can decrease children's consumption of unhealthy foods.³⁵

Fruit and Vegetable Incentives:

These programs provide participants with matching funds to purchase fruits and vegetables, often focusing on making them more affordable. These incentives often are used at farmers markets and grocery stores. There is strong evidence that these programs increase the affordability and consumption of fruit and vegetables, but more research is needed to confirm that changes in purchasing behavior and food consumption continue after the program ends.³⁶



Chronic Disease Directors facilitate work to create environments that encourage people to make healthy choices and work with partners to create obesity prevention interventions, policies, systems, and other environmental changes.



WHAT IS THE ROLE OF CHRONIC DISEASE DIRECTORS?

State Health Departments and Chronic Disease Units perform critical work to address obesity prevention. They translate evidence-based information on effective obesity reduction and prevention practices into programs and policies. They also facilitate work to create environments that encourage people to make healthy choices and work with partners to create obesity prevention interventions, policies, systems, and environmental changes.

CDC's Division of Nutrition, Physical Activity, and Obesity (DNPAO) leads efforts to prevent chronic diseases by promoting good nutrition, regular physical activity, and a healthy weight. One critical state program is the State Physical Activity and Nutrition Program (SPAN) to implement evidence-based strategies at state and local levels to improve nutrition and physical activity. Currently, only 16 states receive funding from DNPAO through SPAN to support physical activity and healthy eating through state-based public health programs.

DNPAO also funds activities supporting 20 states to implement the Building Resilient Inclusive Communities (BRIC) Program. The BRIC Program works with Chronic Disease Directors and their staff to implement a national, state, and community partner-based technical assistance approach to continuing to promote policy, systems, and environmental approaches to support healthy lifestyles during the COVID-19 pandemic with a special emphasis on health equity and social justice.



REFERENCES

- 1 - Centers for Disease Control and Prevention. People with Certain Medical Conditions. (2020, February 11). Retrieved June 2021 from <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html#obesity>
- 2 - Centers for Disease Control and Prevention. Adult Obesity Facts. (2021, June 7). Retrieved June 2021 from <https://www.cdc.gov/obesity/data/adult.html>.
- 3 - Hales, C. M., Carroll, M. D., Fryar, C. D., & Ogden, C. L. (2020, February). Prevalence of Obesity and Severe Obesity Among Adults: United States, 2017–2018. <https://www.cdc.gov/nchs/products/databriefs/db360.htm>
- 4 - Centers for Disease Control and Prevention. Childhood Obesity Facts. (2021). Retrieved June 2021 from <https://www.cdc.gov/obesity/data/childhood.html>
- 5 - Centers for Disease Control and Prevention. Adult Obesity Causes and Consequences. (2021, March 22). Retrieved June 2021 from <https://www.cdc.gov/obesity/adult/causes.html>
- 6 - Centers for Disease Control and Prevention. Defining Adult Overweight and Obesity. (2021, June 7). Retrieved June 2021 from <https://www.cdc.gov/obesity/adult/defining.html>
- 7 - Centers for Disease Control and Prevention. Defining Childhood Weight Status. (2021, June 21). Retrieved June 2021 <https://www.cdc.gov/obesity/childhood/defining.html>
- 8 - National Institutes of Health. Overweight and Obesity. (2021, June 23). Retrieved June 2021 from <https://www.nhlbi.nih.gov/health-topics/overweight-and-obesity>
- 9 - Centers for Disease Control and Prevention. Obesity, Race/Ethnicity, and COVID-19. (2021). Retrieved June 2021 from <https://www.cdc.gov/obesity/data/obesity-and-covid-19.html>
- 10 - Masters, R. K., Reither, E. N., Powers, D. A., Yang, Y. C., Burger, A. E., & Link, B. G. (2013). The impact of obesity on US mortality levels: the importance of age and cohort factors in population estimates. *American journal of public health*, 103(10), 1895–1901. <https://doi.org/10.2105/AJPH.2013.301379>
- 11 - Kumanyika, S. 2017. Getting to Equity in Obesity Prevention: A New Framework. NAM Perspectives. Discussion Paper, National Academy of Medicine, Washington, DC. <https://doi.org/10.31478/201701c>
- 12 - Naderali, E. K., Ratcliffe, S. H., & Dale, M. C. (2009). Obesity and Alzheimer's disease: a link between body weight and cognitive function in old age. *American journal of Alzheimer's disease and other dementias*, 24(6), 445–449. <https://doi.org/10.1177/1533317509348208>
- 13 - Amen, D. G., Wu, J., George, N., & Newberg, A. (2020). Patterns of Regional Cerebral Blood Flow as a Function of Obesity in Adults. *Journal of Alzheimer's Disease*, 77(3), 1331–1337. <https://doi.org/10.3233/JAD-200655>
- 14 - Centers for Disease Control and Prevention. Current Asthma Prevalence by Weight Status Among Adults: United States, 2001–2014. (2016). Retrieved June 2021 from <https://www.cdc.gov/nchs/products/databriefs/db239.htm>
- 15 - American Cancer Society. Does Body Weight Affect Cancer Risk? (2020). Retrieved June 2021 from <https://www.cancer.org/cancer/cancer-causes/diet-physical-activity/body-weight-and-cancer-risk/effects.html>
- 16 - Centers for Disease Control and Prevention. Cancer and Obesity. (2017, October 1). Retrieved June 2021 from <https://www.cdc.gov/vitalsigns/obesity-cancer/index.html>
- 17 - Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2020. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2020.
- 18 - Centers for Disease Control and Prevention. (2021, November). Weight of the Nation™ Early Care and Education Policy Review. Retrieved June 2021 from https://www.cdc.gov/obesity/downloads/Early-Care-and-Education-Policy-Review-FINAL_web508.pdf
- 19 - The Community Guide. Obesity Prevention and Control: Meal or Fruit and Vegetable Snack Interventions Combined with Physical Activity Interventions in Schools. (2020, September 30). Retrieved June 2021 from <https://www.thecommunityguide.org/findings/obesity-prevention-control-meal-fruit-vegetable-snack-interventions-combined-physical-activity-interventions-schools>
- 20 - The Community Guide. Obesity: Meal or Fruit and Vegetable Snack Interventions to Increase Healthier Foods and Beverages Provided by Schools. (2020, September 30). Retrieved June 2021 from <https://www.thecommunityguide.org/findings/obesity-meal-fruit-vegetable-snack-interventions-increase-healthier-foods-beverages-schools>
- 21 - Centers for Disease Control and Prevention. Increasing Physical Education and Physical Activity: A Framework for Schools. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2019.



REFERENCES, CONTINUED

- 22 - Centers for Disease Control and Prevention. What's Your Role? Employers. (2021, August 31). Retrieved June 2021 from <https://www.cdc.gov/physicalactivity/activepeoplehealthnation/everyone-can-be-involved/employers.html>
- 23 - The Community Guide. Obesity: Worksite Programs. (2020, September 30). Retrieved June 2021 from <https://www.thecommunityguide.org/findings/obesity-worksite-programs>
- 24 - Centers for Disease Control and Prevention. Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies. Atlanta: U.S. Department of Health and Human Services; 2013.
- 25 - Centers for Disease Control and Prevention. Physical Activity: Strategies and Resources. (2020). Retrieved June 2021 from <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/physicalactivity.html>
- 26 - The State of Childhood Obesity. Complete Streets. (2020, March 10). Retrieved June 2021 from <https://stateofchildhoodobesity.org/state-policy/policies/completestreets/>
- 27 - Centers for Disease Control and Prevention. Nutrition: Strategies and Resources. (2020). Retrieved June 2021 from <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/nutrition.html>
- 28 - Wetsman, N. (2021, April 26). Taxing soda would help make kids healthier. Popular Science. <https://www.popsci.com/taxing-soda-sugar-kids-health-obesity/>
- 29 - World Health Organization. (2017). Taxes on Sugary Drinks: Why Do It?. Retrieved June 2021 from <https://apps.who.int/iris/bitstream/handle/10665/260253/WHO-NMH-PND-16.5Rev.1-eng.pdf>
- 30 - County Health Rankings & Roadmaps. Sugar Sweetened Beverage Taxes. (2017, February 23). Retrieved June 2021 from <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/sugar-sweetened-beverage-taxes>
- 31 - Cavanagh, M., Jurkowski, J., Bozlak, C., Hastings, J., & Klein, A. (2017). Veggie Rx: an outcome evaluation of a healthy food incentive programme. Public health nutrition, 20(14), 2636–2641. <https://doi.org/10.1017/S1368980016002081>
- 32 - County Health Rankings & Roadmaps. Exercise Prescriptions. (2017, February 9). Retrieved June 2021 from <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/exercise-prescriptions>
- 33 - American Heart Association. Unhealthy and Unregulated: Food Advertising and Marketing to Children. (2019, April). Retrieved June 2021 from <https://www.heart.org/-/media/files/about-us/policy-research/fact-sheets/healthy-schools-and-childhood-obesity/food-marketing-and-advertising-to-children-fact-sheet.pdf>
- 34 - The State of Childhood Obesity. Food Marketing to Children. (2021, June 29). Retrieved June 2021 from <https://stateofchildhoodobesity.org/policy/food-marketing-to-children/>
- 35 - County Health Rankings & Roadmaps. Child-focused Advertising Restrictions for Unhealthy Foods and Beverages. (2019, August 1). Retrieved June 2021 from <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/child-focused-advertising-restrictions-for-unhealthy-foods-beverages>
- 36 - County Health Rankings & Roadmaps. Fruit and Vegetable Incentive Programs. (2020, December 4). Retrieved June 2021 from <https://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/strategies/fruit-vegetable-incentive-programs>