ISSUE REPORT

The State of Obesity: 2018

Better Policies for a Healthier America






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Acknowledgements

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This report can be viewed online at tfah.org/stateofobesity2018. For more data on obesity prevalence, policies and programs, visit stateofobesity.org.

The State of Obesity

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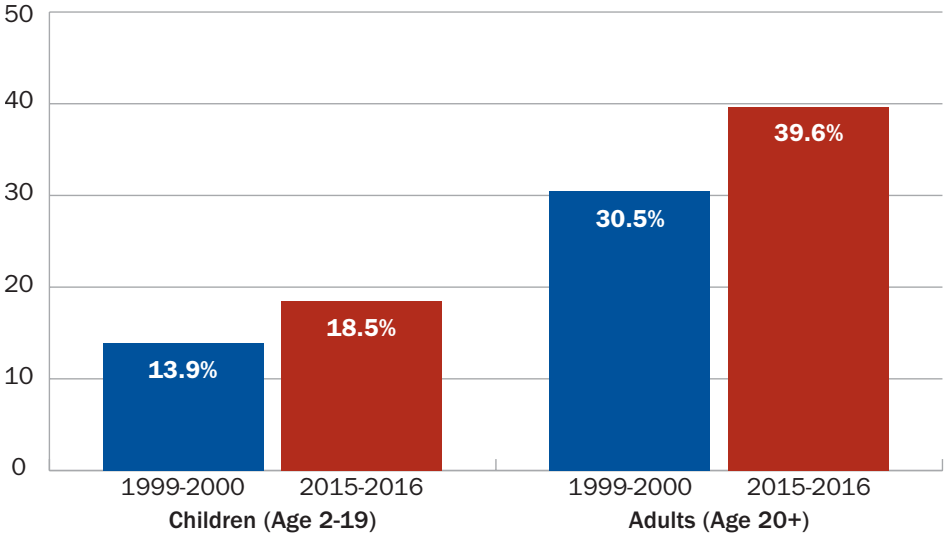
Introduction

Each year, the *State of Obesity: Better Policies for a Healthier America* report highlights the latest obesity trends as well as strategies, policies, programs, and practices that can reverse the epidemic. *State of Obesity* also demonstrates the level of commitment necessary to effectively fight obesity on a large scale and includes key recommendations for specific action.

New studies documenting national obesity rates and trends from the past year reinforce what we already know: obesity rates are alarmingly high; sustained, meaningful reductions have not yet been achieved nationally except possibly among our youngest children in low-income families; many populations continue to see steady increases in obesity; and racial, ethnic, and geographic disparities are persistent. Therefore, addressing the obesity epidemic remains imperative for ensuring the health of the nation.

According to the most recent National Health and Nutrition Examination Survey (NHANES), 18.5 percent of children and 39.6 percent of adults had obesity in 2015–2016. These are the highest rates ever documented by NHANES.[1] There were no statistically significant changes in youth or adult rates compared with the 2013–2014 survey, but rates have increased significantly since 1999–2000, when 13.9 percent of children and 30.5 percent of adults had obesity.[2]

National Obesity Rates for Adults (Age-Adjusted) and Children



Source: NHANES

The severity of racial, ethnic, and geographic disparities remains striking. Black and Latino children and adults continue to have higher obesity rates than Whites and Asians. The Youth Risk Behavior Survey, which is based on self-reported data, found that 14.8 percent of U.S. high school students had obesity in 2017.[3] That survey also reported persistent inequities–18.2 percent of Black and Latino high schoolers had obesity compared with 12.5 percent of their White peers. Two other studies found that adults and children who live in rural areas have higher rates of severe obesity.[4,5]

While obesity rates can seem intractable, there have been some promising developments among age- and geographic-specific populations. Rates of obesity and severe obesity have declined among 2- to 4-year-olds enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). From 2010 to 2014, the rate dropped from 15.9 percent to 14.5 percent nationally. The drop was geographically widespread: 31 states and three U.S. territories reported declines.[6,7] Some communities also have documented declines in overall childhood obesity rates.[8]

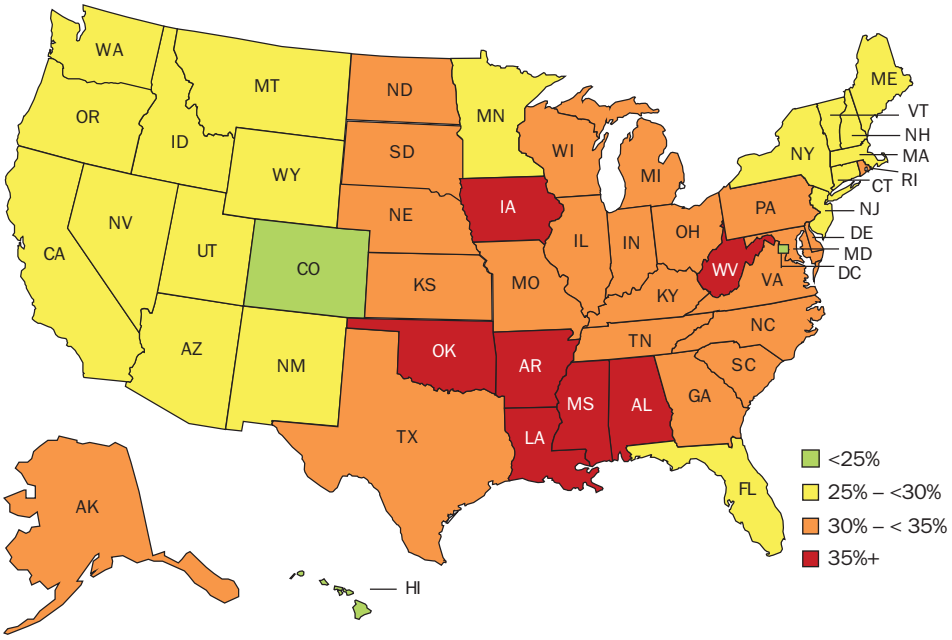
And, in the past year, more evidence and lessons emerged from research of policies and programs focused on addressing obesity at the individual, community, and state levels. First, the U.S. Centers for Disease Control and Prevention (CDC) shared encouraging research about a project in Texas that found an intensive, multi-sector program with a clinical focus can be successful at reducing the weight of children in low-income communities who are overweight or have obesity—but that long-term, continued support is needed or improvement can be lost.[9,10] Second, the Healthy Communities Study, which included more than 5,000 children in 1,000 communities, found that children living in localities that did more to encourage physical activity and healthy nutrition had lower body mass index and waist circumference measures.[11] And third, a recent study found that states implementing CDC-funded nutrition and physical activity programs between 2000 and 2010 had 2.4 percent to 3.8 percent reduction in the odds of obesity among adults.[12] Together, these studies demonstrate that states and communities that support multi-sector collaborations and innovative policy approaches over sustained periods can achieve reductions in obesity and offer models for nationwide adoption.

In addition, our analysis of new data from the 2017 Behavioral Risk Factor Surveillance System (BRFSS) survey shows substantial variation in adult obesity rates across the country. The South (32.4 percent) and Midwest (32.3 percent) had higher obesity rates than the Northeast (27.7 percent) and West (26.1 percent). Differences were even more pronounced between some states. For example, adult obesity rates in West Virginia, where 38.1 percent of residents had obesity, were nearly 70 percent higher than those in Colorado, where 22.6 percent of residents had obesity.[13]

Accelerating progress to address obesity will require collaboration, sufficient resources, and sustained efforts, including by federal, state, and local agencies and the private sector. For decades, experts at CDC, National Institutes of Health (NIH), U.S. Department of Agriculture (USDA), U.S. Department of Education, the Administration for Children and Families, and the Food and Drug Administration (FDA) have been researching and developing strategies to prevent and address obesity. Over the past 15 years, policymakers have taken significant steps to implement new approaches through the WIC program, the Supplemental Nutrition Assistance Program, the National School Lunch and Breakfast Programs, updated menu labeling rules, and an updated Nutrition Facts label. Some of these efforts were delayed or weakened, preventing full implementation and thus denying researchers the ability to effectively study which efforts best help people maintain a healthy weight.

For instance, a USDA rule published in November 2017 scaled back key nutrition standards for school breakfast and lunch programs that went into effect in 2012. The question is whether schools will continue the healthy changes that they already implemented. In 23 states, 100 percent of school food agencies were compliant as of September 2016 and at least 90 percent of agencies were compliant in every state.[14,15] FDA requirements for food retailers and restaurants to post calorie information on menus and elsewhere went into effect in May 2018, more than eight years after becoming law and after several unnecessary delays.[16] Recent federal budget proposals include deep cuts to key health programs such as the CDC's National Center for Chronic Disease Prevention and Health Promotion. This cut would eliminate dedicated funding for addressing nutrition, physical activity, and obesity.

Adult Obesity Rates by State, 2017



SOURCE: BRFSS

Limiting policies and funding for obesity-prevention efforts at a moment when the enormity and intractability of this public health problem is so pressing will have adverse consequences for the country and its residents. After all, Americans' health is directly tied to national security and the U.S. economy.[17,18]

In response to ongoing high levels of obesity, the United States must be bold enough to find and test new strategies, and resolute enough to intensify evidence-based solutions that are already making a difference. This means communities, governments, and other institutions need to work across sectors and levels to support policies, practices, and programs that work. Over time, these investments can pay off—in lives saved and in reduced healthcare costs.

Recommendations

The annual *State of Obesity* reports have documented how, over the past 15 years, a series of evidenced-based policies and programs have helped Americans eat healthier and provided more opportunities for physical activity in their homes, schools, and communities. These initiatives have taken root at the local, state, and federal levels, with participation from the private sector.

The impact has been substantial:

- More than 30 million children eat healthier school breakfasts, lunches, and snacks thanks to the updated nutrition standards ushered in by the Healthy, Hunger-Free Kids Act of 2010.[19]
- Major food and beverage companies removed 6.4 trillion calories from the marketplace between 2007 and 2012.[20]
- Thirty-three states have implemented Complete Streets policies to encourage and facilitate walking and biking.[21]
- Thirty-five states have made Healthy Food Financing Initiative investments to increase healthy food access in underserved communities.[22]
- In 2017, new rules strengthened school wellness policies to ensure healthier food marketing in schools, and updated nutrition standards for the more than four million children who participate in programs associated with the Child and Adult Care Food Program.[23,24]
- In 2018, menu labeling provisions of the Affordable Care Act took effect, covering approximately 300,000 food retail establishments nationwide; FDA estimates this will save approximately $8 billion in health costs over the next two decades.[25,26]

A renewed commitment to obesity-prevention policies and programs, and continued innovation at the state and local levels is critical to achieving success among more children and adults in our country.

But this progress is fragile, and at risk of being halted or even reversed. This is particularly troubling because sustained, meaningful reductions in obesity have not yet been achieved nationally (except possibly among our youngest children in low-income families), and racial, ethnic, and geographic disparities in obesity rates persist.

A renewed commitment to obesity-prevention policies and programs, and continued innovation at the state and local levels is critical to achieving success among more children and adults in our country. Effective obesity prevention efforts also require substantial investment to support multi-faceted, multi-sector collaborations; merging multiple sources of public and private funding can best ensure that these efforts are sustainable as a long-term enterprise. This is particularly important for populations that have elevated risk.

TFAH and RWJF recommend three guiding principles regarding obesity prevention:

1. **Promote policies and scale programs that take a multi-sector approach.** Multi-sector, aligned initiatives—collaborations that involve, for example, health departments, schools, transportation departments, local businesses, and other agencies—are more likely to achieve results.

2. **Adopt and implement policies that help make healthy choices easy.** Federal, state, and local governments can create conditions in schools, communities, and workplaces that make healthy eating and active living accessible, affordable, and convenient.

3. **Invest in programs that level the playing field for all individuals and families.** While obesity affects all populations, some have significantly higher levels than others—often due to social and economic factors largely beyond their control, such as racism, poverty, and lack of access to healthcare. Carefully designed initiatives, that are informed by community input and address these challenges, are critically important. Investing in these programs requires not only adequate funding, but also staffing, public promotion, and other community resources.

TFAH and RWJF offer the following specific recommendations to federal policymakers, state and local policymakers, the food and restaurant sectors, and healthcare providers and systems.

Federal Policymakers

Congress and the Administration

- Support and expand policies and programs aimed at addressing obesity at the federal, state, and community levels, including programs in CDC's Division of Nutrition, Physical Activity and Obesity, community health programs like the Racial and Ethnic Approaches for Community Health program (REACH), and programs that focus on school health in CDC's Division of Population Health.
- Ensure that every state public health agency receives targeted support to promote healthy eating and active living. Maintain and increase obesity-related emphasis in the Prevention and Public Health Fund and support the Healthy Food Financing Initiative in the Administration for Children and Families to ensure that underserved communities have access to grocery stores.
- Maintain and strengthen essential nutrition supports for low-income children, families, and individuals through programs—like the Supplemental Nutrition Assistance Program (SNAP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)—and expand programs and pilots to make healthy foods more available and affordable through the program.

U.S. Department of Agriculture

- Maintain nutrition standards for school meals that were in effect prior to USDA's interim final rule from November 2017, as well as current nutrition standards for school snacks.
- Continue to implement the Community Eligibility Provision that allows schools in high-poverty areas to serve free meals to all students, regardless of family income.
- Support and implement local school wellness policy rules, including the provision that all foods and beverage advertisements on school campuses meet Smart Snacks nutrition guidelines.
- Expand and evaluate pilots and programs aimed at increasing consumption of fruits, vegetables, and other healthy foods under SNAP and other nutrition programs.
- Continue to ensure that WIC provides mothers, infants, and young children with access to affordable, healthy food and breastfeeding support.

U.S. Department of Health and Human Services

- In partnership with the U.S. Department of Agriculture, ensure that the 2020-2025 Dietary Guidelines for Americans reflect the latest and best nutrition science, including developing recommendations for children ages 2 and under in a transparent, timely manner.
- Actively support the recommendations of "Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities."

U.S. Department of Education

- Maintain the Office of Safe and Healthy Schools, as well as Title I and Title IV programs under the Every Students Succeeds Act (ESSA), through which schools can receive funding for physical education and physical activity initiatives.
- Issue regular guidance covering programs, such as early childhood programs, supported through ESSA that encourage healthy eating, opportunities for physical activity, limits on screen time, and other activities that promote health.

U.S. Food and Drug Administration

- Ensure no further delays to the implementation of the updated Nutrition Facts label, currently scheduled to begin in 2020, and encourage and provide guidance to companies who wish to utilize the updated label prior to the deadline.
- Ensure full compliance with menu labeling rules covering chain restaurants and similar food retail establishments.
- Encourage non-chain restaurants to implement menu labeling rules voluntarily.

State and Local Policymakers

- States should continue to meet or exceed federal nutrition standards for school meals and snacks.
- Education agencies and school districts should continue and expand flexible breakfast programs, such as second-chance breakfasts, breakfast on-the-go, and breakfasts in classrooms.
- States should ensure that all students receive at least 60 minutes of physical education or activity during each school day.
- Education agencies and school districts should continue to support local wellness plan implementation to ensure students have healthy learning environments conducive to improved school performance.
- State ESSA plans should encourage schools and partners in healthcare and public health to address childhood obesity.
- States should follow expert guidance and adopt and implement best practices for nutrition, activity, and screen time regulations covering child care and day care settings, including by investing in Quality Improvement Ratings Systems.
- States should support access for low-income families to targeted home visiting and community-based programs that provide families with resources and connections to parenting education, nutrition programs, and other services.
- States and localities should ensure the availability of healthy food retailers in underserved communities.
- States and localities should implement evidence-based nutrition standards for foods and beverages offered in government food service and vending machines.
- States and localities should ensure all restaurant meals marketed to children meet nutrition standards, and remove sugary drinks from all restaurant children's meals.
- States should support efforts to make Safe Routes to School programs universally available and secure state-level appropriations or Transportation Alternatives Program allocations for infrastructure and other projects.
- At the state and local level, require that all road construction and reconstruction projects adopt a Complete Streets approach, ensuring that transportation plans are safe and convenient for all users.
- States should incentivize employers and businesses to expand effective employee wellness programs to promote healthy eating and physical activity.
- States should encourage innovation by implementing and testing pilot policies that show promise.
- States should refrain from adopting preemption policies that limit the ability of local communities to improve the health of their residents.

Food and Restaurant Sectors

- Food and beverage companies should follow the American Heart Association's guidance concerning children's intake of added sugars as they develop, reformulate, and market foods and beverages intended for children, and adopt the updated Nutrition Facts label on all products as quickly as possible.
- Food and beverage companies should eliminate children's exposure to advertising and marketing of unhealthy products.
- Restaurants should remove sugary drinks from all children's meals, and ensure the meals they market to children meet minimum nutrition standards.
- Restaurants should incorporate more fruits and vegetables into menus and make healthy beverages and sides the default option.
- Non-chain restaurants should voluntarily abide by the FDA's new menu labeling rules.

Healthcare System and Providers

- Hospitals should no longer sell or serve sugary drinks on their campuses; they should also improve the nutritional quality of meals and promote breastfeeding.
- Nonprofit hospitals should prioritize childhood obesity prevention programs as they work to meet their community benefit requirements.
- All public and private health plans should cover the full range of obesity-prevention, treatment, and management services, including nutritional counseling, medications, and behavioral health consultation.
- Medicare should encourage eligible beneficiaries to enroll in obesity counseling as a covered benefit, and evaluate its use and effectiveness. Health plans, medical schools, continuing medical education, and public health departments should raise awareness about the need and availability of these services.

- The healthcare system should extend programs that are effective in terms of costs and performance, such as the Diabetes Prevention Program (DPP) and the community health worker–clinical coordination models. Providers and payers should allocate resources to educating and referring patients to DPP and other covered benefits as appropriate.
- Public and private payers should cover value-based purchasing models that incorporate health outcome measures that incentivize clinicians to prioritize healthy weight.

SECTION 2:

The State of Obesity

Causes and Consequences of Obesity

Obesity is a harmful, costly, and complex health problem.

The underlying causes of obesity are complex and interconnected, ranging from economic and policy dynamics to environmental influences, social norms, and individual and family factors.[27] Individuals are key to ensuring that they and their families are living a healthy lifestyle, but the places people live, learn, work and play have major impacts on the choices available to them. For example, high-calorie foods are less expensive and more available in some neighborhoods; many communities lack safe, accessible places to walk, bike, and play; and children and adults are inundated by advertising for unhealthy foods and beverages. As a consequence, many Americans eat too few fruits and vegetables and consume too many calories in the form of highly processed foods, and fewer than half meet national guidelines for physical activity.[28,29,30,31]

Low-income communities, rural areas and communities of color are disproportionately affected by obesity.[32,33,34,35] For example, according to NHANES 2015-2016, obesity rates among Latino and Black Americans are 20 percent higher than among Whites. Not coincidentally, Black communities have more fast-food

establishments and fewer grocery stories than White communities.[36,37] Similarly, low-income communities are far less likely to have healthy food, parks, and green spaces available to them and are four and a half times less likely to have recreational facilities such as pools, tracks, tennis courts, and sports fields.[38,39,40] Researchers have also found that food and beverage companies disproportionately target advertising for many of their least nutritious brands, including fast food, candy, sugary drinks, and snacks to Black and Latino youth.[41]

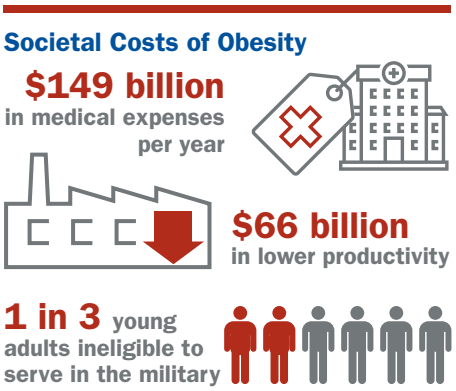
These factors intersect and contribute to higher obesity rates, increasing the risk of a range of diseases and higher mortality.[42,43,44] Specifically, obesity increases the risk of developing type 2 diabetes, high blood pressure, heart disease, stroke, arthritis, sleep apnea, liver disease, kidney disease, gallbladder disease, and certain types of cancer.[45] In parallel with obesity rates, a record high number of Americans—40 percent—are living with diabetes or prediabetes according to CDC.[46] That's more than 100 million American adults.

Obesity is also associated with mental health conditions, including higher rates of depression. Weight bias and stigma are pervasive and can heighten or even create mental health issues.[47,48] Obesity also increases the chances of pregnancy complications, including gestational diabetes, preeclampsia, cesarean delivery, and stillbirth.[49,50,51] These health consequences translate to higher medical costs. One study found that individuals with obesity had medical costs that were 42 percent higher than healthy-weight individuals.[52]

Children who have obesity are at greater risk for certain diseases like type 2 diabetes and high blood pressure.[53,54,55] A 2017 study of new diabetes diagnoses in children between 2001 and 2012 found a 7.1 percent annual increase in type 2 cases diagnosed per 100,000 children ages 10 to 19. Over the same period, type 1 diabetes diagnoses increased by 1.4 percent annually for children ages 0 to 19.[56] Research also shows that children with obesity perform worse in school and have higher risk of bullying and depression.[57] Ensuring that all kids have the opportunity to grow up at a healthy weight, including by having access to nutritious food and plenty of time for active play every day, would help more young people reach their full potential.

The obesity epidemic also poses several threats to our nation: obesity increases healthcare costs, decreases on-the-job productivity, and impacts our nation's military readiness. A 2016 study found that obesity costs the United States $149 billion in medical expenses annually—with about half of those expenses paid by publicly financed Medicare and Medicaid programs.[58,59,60] Indirect, or non-medical, costs from obesity also run into the billions of dollars due to missed time at school and work, lower productivity, premature mortality, and increased transportation costs.[61]

Being overweight or having obesity is the most common reason young adults are ineligible for military service. In addition, the proportion of active-duty service members who have obesity has risen in the past decade—along with healthcare costs and lost work time.[62] According to Mission: Readiness, a nonpartisan group of more than 700 retired admirals and generals, excess weight prevents nearly one in three young adults from qualifying for military service and the Department of Defense is spending more than $1 billion each year on obesity-related issues.[63,64]



Obesity increases the risk of developing type 2 diabetes, high blood pressure, heart disease, stroke, arthritis, sleep apnea, liver disease, kidney disease, gallbladder disease, and certain types of cancer

America's obesity problem developed over decades and likewise will require decades to fix. The nation needs a long-term, continuous commitment to policies and programs that will help all children and adults—no matter where they live, how much money they make, or what their racial or ethnic background is—achieve a healthy weight and live healthier, longer, and more productive lives.

WHAT IS OBESITY?

"Obesity" means that an individual's body fat and body fat distribution exceed the level considered healthy.[65,66] There are many methods of measuring body fat. Body mass index (BMI) is an inexpensive method that is often used as an approximate measure, although it has its limitations and is not accurate for all individuals.[67] BMI is calculated by dividing a person's weight (in kilograms) by his or her height (in square meters). The BMI formula for measurements in pounds and inches is:

$$\text{BMI} = \left(\frac{\text{Weight in pounds}}{(\text{Height in inches}) \times (\text{Height in inches})} \right) \times 703$$

For adults, BMI is associated with the following weight classifications:

BMI LEVELS FOR ADULTS AGES 20+	
BMI Level	**Weight Classification**
Below 18.5	Underweight
18.5 to < 25	Healthy weight
25 to < 30	Overweight
30 and above	Obesity
40 and above	Obesity Class 3 or Severe Obesity

Childhood obesity is measured differently. That's because body fat levels change over the course of childhood and are different for boys and girls. Childhood weight classifications are determined by comparing a child's height and weight with BMI-for-age growth charts developed by the CDC using data collected from 1963 to 1965 and from 1988 to 1994.[68]

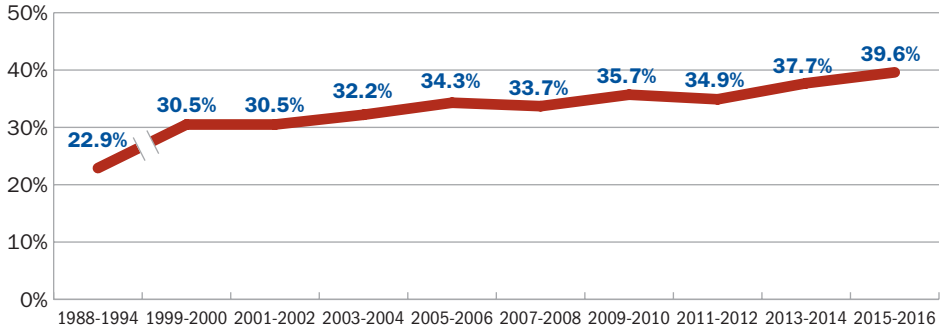
BMI LEVELS FOR CHILDREN AGES 2-19	
BMI Level	**Weight Classification**
Below 5th percentile	Underweight
5th to < 85th percentile	Healthy weight
85th to < 95th percentile	Overweight
95th percentile and above	Obesity
120 percent of 95th percentile and above	Severe Obesity

Obesity-Related Data and Trends

A. TRENDS IN ADULT OBESITY

For decades, the national adult obesity rate, as measured by the National Health and Nutrition Examination Survey (NHANES), has been rising.[69] The most recent data, from 2015–2016, show adult obesity rates now approaching 40 percent, after holding at around 34-35 percent between 2005 and 2012.[70,71] While recent year-to-year changes have not been statistically significant, additional data will provide greater clarity on recent national trends.

Percent of Adults with Obesity, 1988-2016 (Age-Adjusted)



Source: NHANES

State and local data shows more nuance. Some communities are maintaining a more stable rate and some are seeing higher increases. Six states — Iowa, Massachusetts, Ohio, Oklahoma, Rhode Island, and South Carolina — had statistically significant increases in their obesity rate between 2016 and 2017, while the other 44 states and the District of Columbia had no statistically significant change in their obesity rates between 2016 and 2017.

Obesity rates also can differ from county to county and neighborhood to neighborhood. Nearly 800 of the nation's 3,000 counties have a self-reported adult obesity rate at or above 35 percent. Obesity rates range from a high of 48 percent in Macon, Alabama, to a low of 13 percent in Eagle, Colorado.[72]

The next sections present the most recent data available on adult obesity levels by demographics and geography, using the two primary U.S. surveys used to track adult obesity rates, NHANES and Behavioral Risk Factor Surveillance System (BRFSS).

Obesity rates range from a high of 48 percent in Macon, Alabama, to a low of 13 percent in Eagle, Colorado.

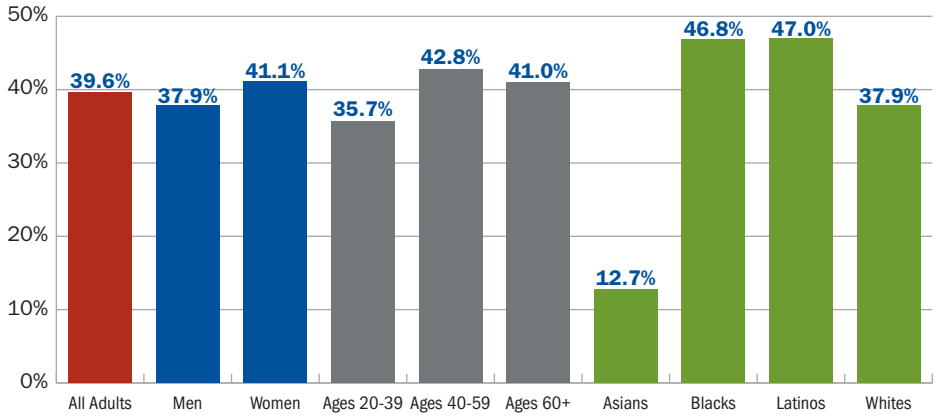
DATA SOURCES FOR ADULT OBESITY MEASURES

1. **The National Health and Nutrition Examination Survey** is the source for national obesity data in this report. As a survey, the NHANES has two main advantages: (1) it examines a nationally representative sample of Americans ages 2 and older, and (2) it combines interviews with physical examinations to ensure data accuracy. The downsides of the survey include a time delay from collection to reporting and a small survey size (approximately 5,000 interviews per two years) that inhibit break out of state or local data, as well as break out by racial and ethnic groups by age.[73]
2. **The Behavioral Risk Factor Surveillance System** is the source for state-level adult obesity data in this report. As a survey, BRFSS has three major advantages: (1) it is the largest ongoing telephone health survey in the world (approximately 400,000 interviews per year) (2) each state survey is representative of the population of that state, and (3) the survey is conducted annually, so new obesity data are available each year.[74] The downsides of the survey include using self-reported weight and height, which results in lower reported obesity rates than actual rates due to people's tendency to underreport their weight and exaggerate their height, and sample sizes that, in some small states, prohibit meaningful data about racial and ethnic groups.

i. DEMOGRAPHIC ANALYSIS

Obesity levels vary substantially among demographic groups. Below are breakdowns of available demographic groups from the most recent NHANES data (2015–2016).[75]

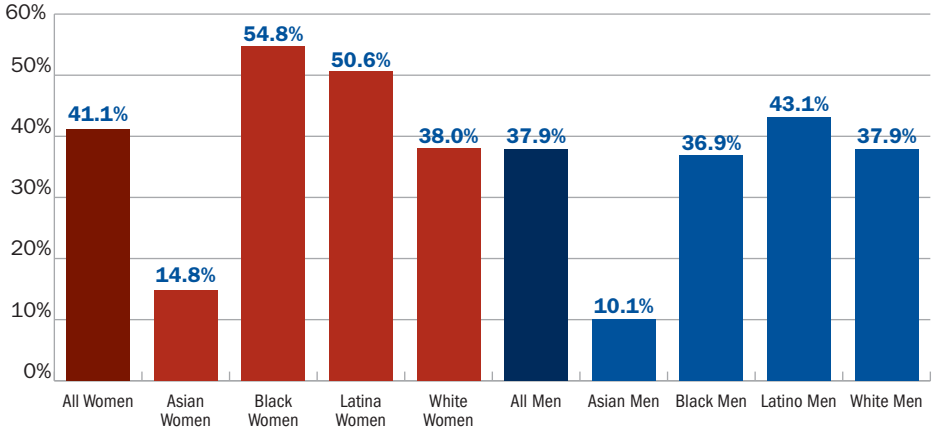
Percent of Adults With Obesity by Demographic Group, 2015-2016 (Age-Adjusted)



Source: NHANES

- **Race/ethnicity:** There are large differences in obesity levels among racial and ethnic groups:
  - Obesity rates are much higher among Latinos (47.0 percent) and Blacks (46.8 percent) than among Whites (37.9 percent).
  - Asian Americans have far lower rates of obesity than any other racial or ethnic group (12.7 percent). Notably, however, there is discussion that Asians should have a lower BMI cut-off for obesity than other race/ethnicities since they have higher health risks at a lower BMI.[76]

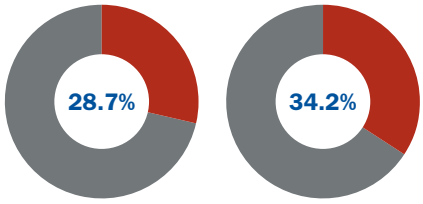
Percent of Adults With Obesity by Race/Ethnicity and Sex, 2015-2016 (Age-Adjusted)



Source: NHANES

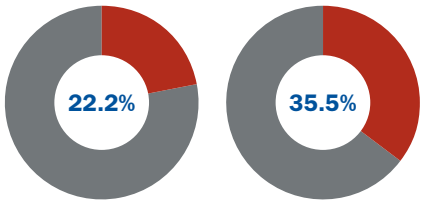
- **Sex:** Women have slightly higher levels of obesity and severe obesity compared with men:
  - In 2015–2016, 41.1 percent of women had obesity versus 37.9 percent of men.
  - Women are also more likely to have severe obesity (9.7 percent of women compared with 5.6 percent of men).
  - Racial/ethnic inequities are largely driven by the differential obesity rates among women: more than half of Black and Latina women (54.8 percent and 50.6 percent, respectively) have obesity compared with 38.0 percent of White women. In contrast, Latino, White, and Black men have relatively similar obesity rates (43.1, 37.9, and 36.9 percent, respectively).
- **Age:** Obesity levels vary moderately among Americans of different ages:
  - Middle-age and older adults are more likely to have obesity: 42.8 percent of 40- to 59-year-olds and 41.0 percent of adults ages 60 and over have obesity, which is about 20 percent higher than younger adults ages 20 to 39 (35.7 percent have obesity).
  - Middle-age adults are more likely to have severe obesity (8.5 percent) followed by younger adults (7.8 percent) and older adults (6.3 percent).

Percent of Adults with Obesity in Metro and Rural Areas, 2016



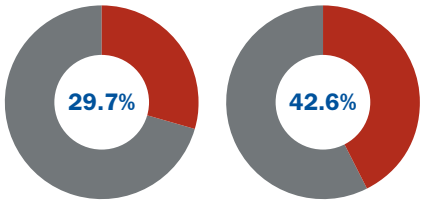
Adults in Metro Areas | Adults in Rural Areas

Percent of Adults with Obesity by Education Level, 2016



Adult College Graduates | Adults with Less than a High School Education

Percent of Adults with Obesity by Income, 2011-2014



Adults with Incomes 400%+ FPL | Adults with Incomes 100-400% FPL

Additionally, other analyses and research show important variations in obesity rates by education, income level, and urban or rural population:

- **Education:** Individuals with lower education levels are more likely to have obesity.
  - According to 2016 BRFSS data, 35.5 percent of adults with less than a high school education had obesity compared with 22.2 percent of college graduates—a difference of more than 50 percent.[77]
  - The difference is even greater when looking at children and the education level of the head of household. A CDC analysis of 2011-2014 NHANES data found that, when looking at homes where the head of household was a high school graduate or less, 21.6 percent of children ages 2-19 had obesity, while in homes with a head of household that graduated college, 9.6 percent of children had obesity. That's less than half the rate for kids with parents who attended college.[78]
- **Income:** Generally, the more someone earns, the less likely they are to have obesity.
  - According to a CDC analysis of 2011-2014 NHANES data, there is one exception to this trend: the very poor, who live below the federal poverty line (FPL), had lower obesity rates (39.2 percent in 2015) than those with incomes just above the poverty line (42.6 percent). But, both income groups—those below the poverty line and those at 100 to 199 percent FPL—had higher obesity levels than those with incomes at 400 percent FPL or more (29.7 percent).[79] *Note: these data are driven by rates among White women.*
  - This dynamic holds true for children, too. A CDC analysis of 2011-2014 NHANES data for children ages 2-19 found that 18.9 percent of kids in the lowest income group (≤130 percent FPL) had obesity, 19.9 percent of kids in the middle-income group (>130 percent to ≤350 percent FPL) had obesity, and 10.9 percent of kids in the highest income group (>350% percent FPL) had obesity.[80]
- **Rural/urban:** Rural areas and counties have higher rates of obesity.
  - According to 2016 BRFSS data, adult obesity rates were 19 percent higher in rural regions than they were in metro areas. More than one-third (34.2 percent) of adults in rural areas had obesity compared with 28.7 percent of metro adults. This trend holds true at the state-level—except in Wyoming—as well. Rural areas also have higher levels of obesity-associated chronic diseases (e.g., diabetes and heart disease).[81]
  - Likewise, a CDC analysis of 2013-2016 NHANES data found that adults (age 20 and older) who live in the most urban areas of the country had the lowest obesity rates. They also found that obesity rates increased between 2001-2004 and 2013-2016, across urban, suburban, or rural areas.[82]

WHY ARE REPORTED NATIONAL OBESITY RATES HIGHER THAN STATE-BY-STATE RATES?

How is it that only 6 states have adult obesity rates exceeding 35 percent, yet the national obesity rate is 39.6 percent? It's because state obesity rates come from BRFSS, which collects self-reported height and weight. Research has demonstrated that people tend to overestimate their height and underestimate their weight. In fact, one study found that, due to this phenomenon, BRFSS may underestimate obesity rates by nearly 10 percent.[83] NHANES, from which the national obesity rate is derived, calculates its obesity rate based on physical examinations of respondents. Accordingly, the higher rates found by NHANES are a more accurate reflection of obesity in the United States.[84]

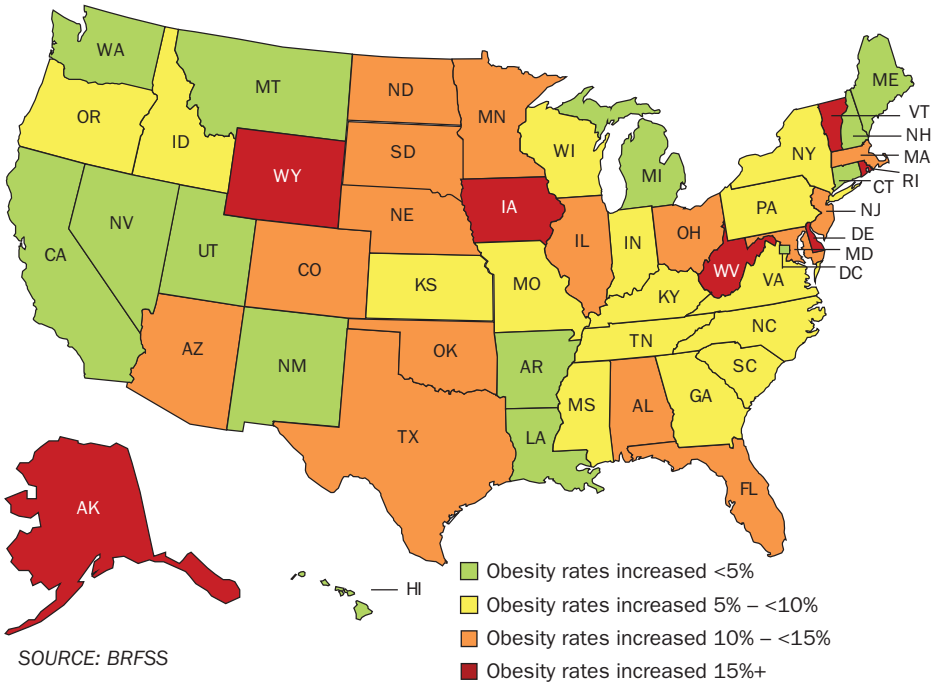
ii. State Analysis

State-level obesity rates vary considerably, from a low of 22.6 percent in Colorado to a high of 38.1 in West Virginia, according to 2017 BRFSS data.[85] Other key findings include:

- In 2017, the adult obesity rate was at or above 35 percent in seven states. Iowa and Oklahoma had adult obesity rates above 35 percent for the first time ever, while Alabama, Arkansas, Louisiana, Mississippi, and West Virginia also had rates above 35 percent in 2016.
- Just two states — Hawaii and Colorado — and the District of Columba had adult obesity rates below 25 percent in 2017. Nineteen states had adult obesity rates between 25 and 30 percent and 22 states were between 30 and 35 percent.
- Between 2016 and 2017, six states — Iowa, Massachusetts, Ohio, Oklahoma, Rhode Island, and South Carolina — had statistically significant increases in their obesity rates. The other 44 states and the District of Columbia had no statistically significant change in their obesity rate between 2016 and 2017.
- Between 2012 and 2017, the majority of states (31) had statistically significant increases in their obesity rates. No states had statistically significant decreases in their obesity rate over the last five years.[86]
- In 1985, no state had an adult obesity rate higher than 15 percent; in 1991, no state was over 20 percent; in 2000, no state was over 25 percent; in 2006, only Mississippi and West Virginia were above 30 percent.[87]

For additional state-level data from BRFSS, see charts on pages 20 and 22.

Percent Change in Adult Obesity Rates by State, 2012-2017



SOURCE: BRFSS

OBESITY AND OVERWEIGHT RATES

	ADULTS (2017)									
	Obesity		Overweight and Obesity		Diabetes		Hypertension		Physical Activity	
States	Percent of Adults Who Have Obesity (95% CI)	Ranking	Percent of Adults Who Have Obesity or Are Overweight (95% CI)	Ranking	Percent of Adults Who Have Diabetes (95% CI)	Rank	Percent of Adults Who Have Hypertension (95% CI)	Rank	Percent of Adults Who Are Not Physically Active	Ranking
Alabama	**36.3 (+/-1.6)**	5	**70.2 (+/-1.6)**	4	**14.1 (+/-1.0)**	3	41.9 (+/-1.6)	2	32.0 (+/-1.5)	6
Alaska	**34.2 (+/-2.9)**	9	66.7 (+/-2.9)	24	7.4 (+/-1.4)	49-T	31.8 (+/-2.6)	28	20.6 (+/-2.3)	48
Arizona	**29.5 (+/-1.0)**	30	**64.8 (+/-1.1)**	36	10.4 (+/-0.6)	29-T	30.7 (+/-0.9)	33	25.1 (+/-0.9)	30
Arkansas	35.0 (+/-2.4)	7	70.5 (+/-2.3)	3	12.2 (+/-1.29)	9	41.3 (+/-2.3)	3	32.5 (+/-2.4)	3
California	25.1 (+/-1.3)	48	60.9 (+/-1.5)	47	10.5 (+/-0.9)	24-T	28.4 (+/-1.3)	47	20.0 (+/-1.2)	49
Colorado	**22.6 (+/-1.1)**	51	**58.7 (+/-1.3)**	50	7.4* (+/-0.6)	49-T	25.9 (+/-1.0)	50	19.5 (+/-1.0)	50
Connecticut	26.9 (+/-1.2)	42	63.2 (+/-1.4)	40	9.8 (+/-0.7)	34	30.5 (+/-1.1)	36-T	24.0 (+/-1.2)	39-T
Delaware	**31.8 (+/-2.1)**	23	68.5 (+/-2.2)	11	11.3 (+/-1.2)	14-T	34.9 (+/-2.0)	11	31.0 (+/-2.09)	9-T
D.C.	23.0 (+/-1.6)	50	53.9 (+/-2.1)	51	**7.8 (+/-0.9)**	47-T	26.7 (+/-1.5)	48	23.0 (+/-1.7)	43
Florida	28.4	35-T	64.1	39	10.5** (+/-0.8)	24-T	34.6 (+/-1.4)	16	29.2 (+/-1.5)	14-T
Georgia	**31.6 (+/-1.6)**	24-T	65.3 (+/-1.7)	30	**11.4 (+/-0.9)**	12-T	33.1 (+/-1.5)	17-T	31.0 (+/-1.6)	9-T
Hawaii	23.8 (+/-1.4)	49	**58.8 (+/-1.6)**	49	**10.9 (+/-0.9)**	20	30.6 (+/-1.4)	34-T	23.5 (+/-1.39)	42
Idaho	**29.3 (+/-1.8)**	32	**65.9 (+/-2.0)**	27	8.7 (+/-0.9)	43	29.8 (+/-1.7)	41	24.2 (+/-1.7)	38
Illinois	**31.1 (+/-1.6)**	27	65.8 (+/-1.7)	28	**11.0 (+/-1.0)**	17-T	32.2 (+/-1.5)	26	24.0 (+/-1.5)	39-T
Indiana	**33.6 (+/-1.1)**	12	**68.0 (+/-1.1)**	14-T	11.8 (+/-0.6)	11	35.2 (+/-1.0)	10	29.8 (+/-1.1)	12
Iowa	**36.4* (+/-1.3)**	4	**70.1 (+/-1.3)**	5	9.6 (+/-0.7)	35-T	31.5 (+/-1.2)	29	25.0 (+/-1.2)	31-T
Kansas	**32.4 (+/-0.8)**	18	**67.2 (+/-0.9)**	20-T	**10.5* (+/-0.5)**	24-T	32.8 (+/-0.8)	20	27.9 (+/-0.8)	19
Kentucky	**34.3 (+/-1.7)**	8	67.8 (+/-1.7)	16-T	**12.9 (+/-1.1)**	7	39.4 (+/-1.6)	5	34.4 (+/-1.7)	1
Louisiana	36.2 (+/-1.8)	6	70.0 (+/-1.8)	6	13.6 (+/-1.2)	4	39.0 (+/-1.7)	6	31.8 (+/-1.8)	7
Maine	29.1 (+/-1.4)	33	65.1 (+/-1.6)	32	10.7 (+/-0.9)	21-T	34.8 (+/-1.4)	12	25.2 (+/-1.4)	29
Maryland	31.3 (+/-1.3)	26	**66.2 (+/-1.4)**	26	10.4 (+/-0.7)	29-T	32.4 (+/-1.2)	24-T	25.6 (+/-1.3)	26-T
Massachusetts	25.9*	44	61.4	45	9.5	37	28.6	46	24.8	35
Michigan	32.3 (+/-1.2)	19	67.2 (+/-1.2)	20-T	11.0 (+/-0.7)	17-T	34.7 (+/-1.1)	13-T	27.2 (+/-1.1)	21-T
Minnesota	**28.4 (+/-0.9)**	35-T	**64.9 (+/-1)**	33-T	**7.8** (+/-0.5)**	47-T	26.6 (+/-0.8)	49	24.6 (+/-0.9)	36
Mississippi	**37.3 (+/-2.0)**	2	69.9 (+/-2)	7	14.2 (+/-1.2)	2	40.8 (+/-1.9)	4	33.2 (+/-2.0)	2
Missouri	**32.5 (+/-1.5)**	17	67.8 (+/-1.6)	16-T	10.4 (+/-0.9)	29-T	32.0 (+/-1.4)	27	29.2 (+/-1.5)	14-T
Montana	25.3 (+/-1.6)	46-T	62.2 (+/-1.8)	43-T	7.9 (+/-0.9)	46	29.0 (+/-1.5)	45	25.0 (+/-1.5)	31-T
Nebraska	**32.8 (+/-1.2)**	15-T	**69.0 (+/-1.2)**	10	**10.1* (+/-0.7)**	33	30.6 (+/-1.1)	34-T	25.4 (+/-1.1)	28
Nevada	26.7 (+/-2.3)	43	65.7* (+/-2.4)	29	10.4 (+/-1.4)	29-T	32.6 (+/-2.2)	21-T	28.0 (+/-2.3)	18
New Hampshire	28.1 (+/-1.8)	38	**64.9 (+/-2.0)**	33-T	8.4 (+/-0.8)	44	30.0 (+/-1.6)	40	23.9 (+/-1.7)	41
New Jersey	**27.3 (+/-1.5)**	41	62.6 (+/-1.6)	41-T	**11.0* (+/-0.9)**	17-T	33.0 (+/-1.4)	19	29.0 (+/-1.5)	16
New Mexico	28.4 (+/-1.6)	35-T	**65.2 (+/-1.8)**	31	10.7 (+/-1.0)	21-T	30.5 (+/-1.5)	36-T	24.5 (+/-1.6)	37
New York	**25.7 (+/-1.1)**	45	61.3 (+/-1.3)	46	10.5 (+/-0.7)	24-T	29.4 (+/-1.1)	44	27.2 (+/-1.2)	21-T
North Carolina	**32.1 (+/-1.8)**	20	66.9 (+/-1.8)	23	11.4 (+/-1.1)	12-T	34.7 (+/-1.7)	13-T	25.6 (+/-1.7)	26-T
North Dakota	**33.2 (+/-1.6)**	13	**69.4 (+/-1.6)**	8-T	9.0 (+/-0.8)	40-T	29.5 (+/-1.3)	42-T	27.6 (+/-1.5)	20
Ohio	**33.8* (+/-1.3)**	11	**68.0 (+/-1.3)**	14-T	**11.3 (+/-0.7)**	14-T	34.7 (+/-1.2)	13-T	29.6 (+/-1.3)	13
Oklahoma	**36.5* (+/-1.6)**	3	**70.6 (+/-1.5)**	2	12.7 (+/-0.9)	8	37.7 (+/-1.5)	9	32.4 (+/-1.5)	4
Oregon	29.4 (+/-1.5)	31	**64.5 (+/-1.6)**	38	9.6 (+/-0.9)	35-T	30.1 (+/-1.4)	39	21.4 (+/-1.4)	46
Pennsylvania	**31.6 (+/-1.6)**	24-T	**67.1 (+/-1.6)**	22	10.6 (+/-0.9)	23	32.6 (+/-1.5)	21-T	24.9 (+/-1.5)	33-T
Rhode Island	**30.0* (+/-1.9)**	29	64.9 (+/-2)	33-T	8.9 (+/-0.9)	42	33.1 (+/-1.7)	17-T	26.3 (+/-1.79)	23
South Carolina	**34.1* (+/-1.3)**	10	**68.1 (+/-1.3)**	13	**13.4 (+/-0.8)**	5	38.1 (+/-1.2)	8	28.4 (+/-1.2)	17
South Dakota	**31.9 (+/-2.1)**	22	67.7 (+/-2.2)	18	**11.1* (+/-1.3)**	16	30.8 (+/-1.9)	30-T	24.9 (+/-1.9)	33-T
Tennessee	32.8 (+/-1.8)	15-T	**68.3 (+/-1.8)**	12	13.1 (+/-1.1)	6	38.7 (+/-1.7)	7	30.6 (+/-1.7)	11
Texas	**33.0 (+/-1.8)**	14	**69.4 (+/-1.8)**	8-T	11.9 (+/-1.2)	10	32.5 (+/-1.7)	23	32.1 (+/-1.9)	5
Utah	25.3 (+/-1.1)	46-T	**60.6 (+/-1.3)**	48	7.1 (+/-0.6)	51	24.5 (+/-1.0)	51	21.1 (+/-1.0)	47
Vermont	**27.6 (+/-1.6)**	40	62.6 (+/-1.8)	41-T	8.2 (+/-0.8)	45	30.4 (+/-1.5)	38	21.6 (+/-1.5)	45
Virginia	**30.1 (+/-1.4)**	28	**66.3 (+/-1.5)**	25	10.5 (+/-0.7)	24-T	32.4 (+/-1.29)	24-T	25.9 (+/-1.3)	24
Washington	27.7	39	62.2	43-T	9.1	38-T	29.5	42-T	19.2	51
West Virginia	**38.1 (+/-1.7)**	1	**71.7 (+/-1.6)**	1	**15.2 (+/-1.0)**	1	43.5 (+/-1.6)	1	31.6 (+/-1.5)	8
Wisconsin	32.0	21	67.3	19	9.1 (+/-1.0)	38-T	30.8 (+/-1.6)	30-T	22.4 (+/-1.6)	44
Wyoming	**28.8 (+/-1.7)**	34	64.7 (+/-1.9)	37	9.0 (+/-0.9)	40-T	30.8 (+/-1.6)	30-T	25.7 (+/-1.6)	25

Note: Red and * indicates state rate significantly increased between 2016 and 2017; Green and ** indicates state rate significantly decreased between 2016 and 2017; **bold** indicates state rates signficantly increased between 2012 and 2017. Test of signfnicance were not conducted for hypertesion and physical activity. CI=Confidence Intervals; if not referenced, confidence intervals could not be calculated. For rankings, 1=Higest rate and 51=Lowest rate.

Source: BRFSS

AND RELATED HEALTH INDICATORS

CHILDREN AND ADOLESCENTS

States	Young Children: Obesity (2014)	Children and Teenagers: Obesity and Physical Activity (2016)			High School (HS) Students: Obesity, Overweight, Physical Activity (2017)			Households: Food Insecurity (2014-2016)
	Percent of Low-Income Children Ages 2-4 Who Have Obesity	Percent of Children Ages 10-17 Who Have Obesity	Ranking	Percent of Children Ages 6-11 Who Participate in 60 Minutes of Physical Activity Everyday	Percent of HS Students Who Have Obesity (95% CI)	Percent of HS Students Who Are Overweight (95% CI)	Percent of HS Students Who Are Physically Active 60 Minutes On All 7 Days (95% CI)	Percent of Households with Food Insecurity
Alabama	16.3	18.2	12-T	40.0	N/A	N/A	N/A	18.1
Alaska	19.1	15.4	24	31.7	13.7 (+/-1.1)	17.5 (+/-2.55)	18.4 (+/-2.65)	12.7
Arizona	13.3	15.9	22	22.9	12.3 (+/-2.25)	15.9 (+/-2.85)	24.5 (+/-2.75)	14.6
Arkansas	14.4	19.1	8	29.6	21.7 (+/-4.2)	18.1 (+/-1.95)	21.4 (+/-6.05)	17.5
California	16.6	16.1	21	30.5	13.9 (+/-3.85)	15.0 (+/-1.9)	27.5 (+/-3.3)	11.8
Colorado	8.5	9.0	49	28.8	9.5 (+/-2.1)	12.3 (+/-2.05)	27.4 (+/-3.55)	10.3
Connecticut	15.3	13.4	37-T	32.2	12.7 (+/-2.1)	16.0 (+/-3.1)	22.3 (+/-2.1)	12.3
Delaware	17.2	16.8	18	29.5	15.1 (+/-2.15)	16.6 (+/-1.65)	25.1 (+/-2.45)	10.8
D.C.	13.0	16.3	20	23.8	16.8 (+/-0.95)	18.0 (+/-1.0)	13.4 (+/-0.9)	11.4
Florida	12.7	17.9	15	32.5	10.9 (+/-1.4)	14.2 (+/-1.0)	22.8 (+/-1.2)	12.0
Georgia	13.0	18.6	9-T	36.4	N/A	N/A	N/A	14.0
Hawaii	10.3	11.0	46	25.1	14.2 (+/-1.15)	14.2 (+/-1.65)	19.6 (+/-1.6)	8.7
Idaho	11.6	14.9	26-T	30.8	11.4 (+/-1.8)	14.7 (+/-2.25)	23.7 (+/-1.95)	12.1
Illinois	15.2	14.9	26-T	31.2	14.8 (+/-2.45)	16.1 (+/-2)	23.2 (+/-3.45)	11.1
Indiana	14.3	18.5	11	36.3	N/A	N/A	N/A	15.2
Iowa	14.7	17.5	16	26.0	15.3 (+/-3.75)	16 (+/-2.3)	29.4 (+/-3.85)	10.7
Kansas	12.8	11.6	45	32.0	13.1 (+/-3.35)	15.3 (+/-1.95)	26.5 (+/-3.35)	14.5
Kentucky	13.3	19.6	4	30.2	20.2 (+/-2.95)	16.1 (+/-2)	22 (+/-2.55)	17.3
Louisiana	13.2	19.2	5-T	25.4	17 (+/-3.05)	18.3 (+/-2.25)	20.5 (+/-4)	18.3
Maine	15.1	13.9	35-T	36.0	14.3 (+/-1.2)	16 (+/-1.15)	19.6 (+/-1.15)	16.4
Maryland	16.5	16.9	17	27.1	12.6 (+/-0.5)	15.2 (+/-0.45)	17.9 (+/-0.5)	10.1
Massachusetts	16.6	15.0	25	28.1	11.7 (+/-1.95)	14.0 (+/-1.6)	22.7 (+/-2.6)	10.3
Michigan	13.4	13.9	35-T	32.3	16.7 (+/-4.25)	16.3 (+/-1.7)	22.9 (+/-2.45)	14.3
Minnesota	12.3	13.4	37-T	32.6	N/A	N/A	N/A	9.7
Mississippi	14.5	26.2	1	34.3	N/A	N/A	N/A	18.7
Missouri	13.0	14.0	34	29.6	16.6 (+/-3.05)	15.7 (+/-2.25)	28.6 (+/-3.65)	14.2
Montana	12.5	12.4	43	30.3	11.7 (+/-1.4)	14.6 (+/-1.35)	28.0 (+/-1.45)	12.9
Nebraska	16.9	16.7	19	36.4	14.6 (+/-2.4)	16.6 (+/-3.15)	26.8 (+/-3.35)	14.7
Nevada	12.0	14.5	31	31.0	14.0 (+/-2.25)	14.3 (+/-2.8)	24.9 (+/-0.25)	12.1
New Hampshire	15.1	8.5	51	30.1	12.8 (+/-0.95)	14.1 (+/-0.95)	23.0 (+/-0.95)	9.6
New Jersey	15.3	14.8	28-T	24.7	N/A	N/A	N/A	11.1
New Mexico	12.5	13.1	39	31.8	15.3 (+/-1.65)	16.4 (+/-1.55)	30.8 (+/-2.45)	17.6
New York	14.3	14.8	28-T	22.9	12.4 (+/-1.85)	16.2 (+/-1.75)	23.2 (+/-2.55)	12.5
North Carolina	15.0	12.6	42	32.5	15.4 (+/-2.2)	15.5 (+/-2.1)	22.3 (+/-2.2)	15.1
North Dakota	14.4	15.8	23	34.8	14.9 (+/-1.75)	16.2 (+/-2.1)	26.1 (+/-2.3)	8.8
Ohio	13.1	18.6	9-T	34.9	N/A	N/A	N/A	14.8
Oklahoma	13.8	18.1	14	30.8	17.1 (+/-2.95)	16.5 (+/-1.95)	29.5 (+/-3.65)	15.2
Oregon	15.0	10.2	47	29.7	N/A	N/A	N/A	14.6
Pennsylvania	12.9	14.2	32	30.8	13.7 (+/-1.9)	15.7 (+/-1.9)	24.5 (+/-2.55)	12.5
Rhode Island	16.3	19.2	5-T	28.2	15.2 (+/-2.8)	15.9 (+/-2.7)	23.2 (+/-3.85)	12.8
South Carolina	12.0	18.2	12-T	31.3	17.2 (+/-3.2)	16.5 (+/-2.7)	21.7 (+/-3.8)	13.0
South Dakota	17.1	13.0	40	31.9	N/A	N/A	N/A	10.6
Tennessee	14.9	19.2	5-T	29.6	20.5 (+/-2.6)	17.5 (+/-1.9)	25.6 (+/-2.65)	13.4
Texas	14.9	21.3	2	23.8	18.6 (+/-2.45)	18.0 (+/-2.3)	25.2 (+/-3.35)	14.3
Utah	8.2	9.5	48	21.9	9.6 (+/-1.7)	13.2 (+/-1.4)	19.1 (+/-3.3)	11.5
Vermont	14.1	11.8	44	39.7	12.6 (+/-0.45)	14.1 (+/-0.5)	25.4 (+/-0.6)	10.1
Virginia	20.0	14.1	33	29.9	12.7 (+/-1.8)	15.5 (+/-1.55)	22.4 (+/-1.95)	9.9
Washington	13.6	8.7	50	33.7	N/A	N/A	N/A	11.6
West Virginia	16.4	19.9	3	32.1	19.5 (+/-3.15)	16.0 (+/-2.55)	23.4 (+/-1.4)	14.9
Wisconsin	14.7	14.6	30	32.5	13.7 (+/-1.0)	15.0 (+/-1.5)	24.7 (+/-3.1)	10.7
Wyoming	9.9	12.9	41	29.2	N/A	N/A	N/A	12.7

Source: WIC Participants and Program Characteristics Surrvey, 2014

Note: For ranking, 1=Highest rate and 51=Lowest rate.
Source: NSCH, 2016

Note: CI= Confidence Intervals
Source: YRBS, 2017

Source: USDA, 2014-2016

OBESITY PREVALENCE BY AGE AND RACE/ETHNICITY (2017)

	Ages 18-24		Ages 25-44		Ages 45-64		Ages 65+		Black		Latino		White	
	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank	Percent Who Have Obesity (95% CI)	Rank
Alabama	20.7	11	39.2	3	44.1 (+/-2.6)	2	29.0 (+/-2.3)	27-T	45.0 (+/-1.9)	3	31.9	20-T	33.1 (+/-1.1)	7
Alaska	23.0	4	35.8 (+/-5.4)	10	36.9 (+/-4.2)	24	34.8 (+/-5.0)	1	44.7	4	28.8 (+/-7.8)	37-T	30.0 (+/-1.7)	21-T
Arizona	18.2	18	32.4	21	34.0 (+/-1.6)	34-T	25.5 (+/-1.4)	43	32.4	34	35.5 (+/-2.0)	7	26.1 (+/-0.8)	39
Arkansas	13.3 (+/-6.7)	44-T	40.3 (+/-5.4)	2	41.4 (+/-3.6)	7	30.6 (+/-3.1)	16-T	44.2 (+/-4.3)	5	30.1 (+/-8.2)	29	34.0 (+/-1.5)	3
California	12.7 (+/-3.2)	49	24.0 (+/-2.1)	49	31.7 (+/-2.4)	39	24.2 (+/-2.8)	46-T	31.4 (+/-3.2)	36	32.1 (+/-1.2)	19	23.1 (+/-0.9)	48
Colorado	13.1	46	22.0	50	27.0	50	22.4	49	28.9	42	27.4	47	20.3 (+/-0.7)	49
Connecticut	16.2 (+/-4.3)	30-T	27.1 (+/-2.6)	45	30.8 (+/-1.8)	43	26.4 (+/-2.0)	41	37.1 (+/-2.9)	24-T	31.8 (+/-2.3)	25	24.4 (+/-0.8)	44
Delaware	15.5	38	31.3 (+/-4.5)	27	36.1 (+/-3.5)	26-T	33.9 (+/-3.3)	3	37.4 (+/-3.2)	23	31.9 (+/-4.7)	20-T	29.7 (+/-1.4)	24
D.C.	16.0 (+/-5.5)	32	20.6 (+/-2.7)	51	29.6 (+/-2.7)	49	24.2 (+/-3.0)	46-T	36.2 (+/-1.9)	29	19.7 (+/-4.9)	51	10.4 (+/-1.4)	51
Florida	17.1	25-T	29.0	35-T	34.0 (+/-2.6)	34-T	25.4 (+/-2.2)	44	35.4	30	28.1	43	26.2 (+/-0.8)	38
Georgia	16.9	28	33.0	19	37.3 (+/-2.7)	23	29.3	24-T	37.1	24-T	29.9	30-T	29.5 (+/-1.2)	26
Hawaii	15.9	33-T	27.6	41	25.5 (+/-2.2)	51	19.8 (+/-2.4)	51	29.8 (+/-10.0)	40	31.9	20-T	17.5 (+/-1.3)	50
Idaho	16.2	30-T	30.4 (+/-3.7)	31	35.9 (+/-3.1)	28	26.1 (+/-2.8)	42	n/a	-	33.7	12	27.8 (+/-1.1)	33
Illinois	13.6	43	30.5 (+/-3.1)	30	38.8 (+/-2.7)	12	30.2 (+/-2.5)	22	39.5 (+/-2.9)	17	35.9 (+/-3.0)	6	30.3 (+/-1.1)	18
Indiana	20.5	12	33.8 (+/-2.2)	15	38.7 (+/-1.7)	13-T	33.3 (+/-1.6)	5	42.2	8	28.2	42	32.1 (+/-0.9)	8-T
Iowa	22.6	5	38.4	5	42.8	4	32.5	7	36.3	28	33.4	13	33.6 (+/-0.9)	4
Kansas	21.9	8	33.5	16	37.7 (+/-1.3)	21	29.3 (+/-1.3)	24-T	41.2	10	36.8	3-T	32.0 (+/-0.6)	10
Kentucky	20.3	13	37.3	6-T	38.2 (+/-2.8)	18-T	31.5 (+/-2.9)	13	40.2	13	28.5	40	34.4 (+/-1.0)	2
Louisiana	21.0	10	36.5	9	42.9 (+/-3.0)	3	34.2	2	42.6 (+/-2.4)	7	32.3	17	33.4 (+/-1.3)	5-T
Maine	12.9	48	29.7	33	34.3 (+/-2.2)	32	27.8 (+/-2.1)	34	24.8	45	32.2	18	29.8 (+/-0.8)	23
Maryland	18.4 (+/-4.5)	17	31.1	29	36.1 (+/-1.89)	26-T	31.2 (+/-1.9)	14	39.1 (+/-1.7)	18-T	27.6 (+/-4.0)	46	28.1 (+/-0.9)	30
Massachusetts	9.5	51	27.3 (+/-3.5)	42	30.1 (+/-3.0)	47	26.8	38-T	35.1	31	31.0 (+/-2.9)	28	24.0	46-T
Michigan	18.1	19	32.2	23	37.5	22	32.4 (+/-2.0)	8-T	39.9	14-T	38.6	1	30.9 (+/-0.7)	17
Minnesota	15.2	40	28.7 (+/-1.8)	37	32.6 (+/-1.5)	37	28.8 (+/-1.5)	29	30.4 (+/-3.0)	39	33.3 (+/-3.2)	14	27.5 (+/-0.5)	34
Mississippi	24.2	3	40.5	1	42.2 (+/-3.1)	5	33.1 (+/-2.8)	6	45.4 (+/-2.0)	2	29.2	34-T	32.1 (+/-1.3)	8-T
Missouri	19.4	14	32.8	20	38.7 (+/-2.6)	13-T	29.8 (+/-2.3)	23	39.1	18-T	29.9	30-T	31.6 (+/-1.0)	14
Montana	14.2	42	25.6 (+/-3.2)	46	30.6 (+/-2.7)	44	23.1 (+/-2.5)	48	n/a	-	26.0 (+/-6.8)	49	24.0 (+/-1.0)	46-T
Nebraska	18.0	20	33.3	18	39.1	11	31.8	12	39.9	14-T	32.8	16	31.7 (+/-0.7)	13
Nevada	17.4 (+/-6.3)	23	27.2 (+/-4.3)	43-T	30.0 (+/-4.0)	48	25.0 (+/-3.6)	45	29.2 (+/-5.0)	41	29.2 (+/-3.2)	34-T	25.7 (+/-1.6)	40-T
New Hampshire	17.1	25-T	29.3	34	30.3 (+/-2.5)	45-T	29.0 (+/-2.5)	27-T	25.9	44	24.1	50	27.4 (+/-1.0)	35
New Jersey	15.3	39	27.2 (+/-3.1)	43-T	31.4 (+/-2.2)	41	26.6 (+/-2.2)	40	36.4 (+/-2.6)	27	31.9	20-T	25.7 (+/-1.0)	40-T
New Mexico	17.1	25-T	32.3 (+/-3.3)	22	33.8 (+/-2.7)	36	21.6 (+/-2.3)	50	31.2	37	31.2 (+/-1.7)	27	24.3 (+/-1.3)	45
New York	12.3	50	25.0 (+/-2.1)	47-T	30.3 (+/-1.9)	45-T	26.9 (+/-2.1)	36-T	33.4	33	28.7	39	24.7 (+/-0.7)	42-T
North Carolina	15.6	36-T	33.4	17	38.2	18-T	30.3	20-T	41.1 (+/-2.2)	11	28.3	41	29.3 (+/-1.1)	27-T
North Dakota	21.5	9	34.6 (+/-3.1)	14	38.3 (+/-2.3)	17	32.1 (+/-2.2)	10	19.6 (+/-7.5)	47	36.5 (+/-8.4)	5	31.9 (+/-1.0)	11
Ohio	18.9	16	35.5	11	39.5 (+/-2.1)	9	30.9 (+/-2.0)	15	37.5 (+/-2.7)	22	31.9	20-T	31.2 (+/-0.8)	15
Oklahoma	28.2	1	37.3 (+/-3.1)	6-T	41.9 (+/-2.6)	6	31.9 (+/-2.2)	11	37.6 (+/-3.9)	21	36.8	3-T	33.4 (+/-1.0)	5-T
Oregon	17.9 (+/-4.8)	21	28.0 (+/-2.8)	40	34.2 (+/-2.7)	33	30.3 (+/-2.7)	20-T	30.8 (+/-9.2)	38	34.9 (+/-3.9)	9	29.3 (+/-1.0)	27-T
Pennsylvania	15.9	33-T	31.4 (+/-3.0)	26	36.7 (+/-2.6)	25	32.4 (+/-2.9)	8-T	36.8	26	34.7	10	30.1 (+/-1.0)	19-T
Rhode Island	15.8	35	31.6 (+/-3.9)	24	35.0 (+/-2.8)	31	28.3 (+/-2.7)	32	31.8	35	33.1	15	26.9 (+/-1.1)	36
South Carolina	22.3	7	36.7	8	39.8 (+/-2.0)	8	28.7 (+/-1.7)	30	42.0 (+/-1.6)	9	27.8	45	29.6 (+/-0.9)	25
South Dakota	19.3	15	31.2	28	38.5	15-T	30.4 (+/-3.3)	19	n/a	-	35.0	8	30.0 (+/-1.2)	21-T
Tennessee	15.6	36-T	34.9	12	38.5 (+/-2.9)	15-T	30.6 (+/-2.9)	16-T	46.4 (+/-3.4)	1	29.6	33	31.8 (+/-1.1)	12
Texas	16.4	29	34.8	13	39.2 (+/-3.2)	10	30.6 (+/-3.8)	16-T	39.8	16	37.9 (+/-1.9)	2	30.1 (+/-1.3)	19-T
Utah	13.3	44-T	25.0	47-T	31.8	38	26.8	38-T	26.3	43	27.9	44	24.7 (+/-0.7)	42-T
Vermont	14.3	41	29.0 (+/-3.5)	35-T	31.6 (+/-2.4)	40	27.4 (+/-2.6)	35	22.8	46	26.4	48	26.7 (+/-0.9)	37
Virginia	17.7	22	30.3	32	35.6 (+/-2.2)	29	28.2	33	41.0	12	29.9	30-T	27.9 (+/-0.9)	31-T
Washington	17.3	24	28.3	39	31.3	42	26.9	36-T	33.7	32	33.9	11	28.3 (+/-0.6)	29
West Virginia	24.5 (+/-6.6)	2	39.0 (+/-3.4)	4	45.0 (+/-2.5)	1	33.5 (+/-2.5)	4	43.6 (+/-5.6)	6	29.0 (+/-9.0)	36	37.0 (+/-0.9)	1
Wisconsin	22.5	6	31.5	25	38.1	20	29.1	26	38.1	20	31.5	26	31.0 (+/-1.0)	16
Wyoming	13.0	47	28.6 (+/-3.4)	38	35.4 (+/-2.8)	30	28.6 (+/-2.7)	31	n/a	-	28.8 (+/-4.9)	37-T	27.9 (+/-1.1)	31-T

Note: For ranking, 1=Highest rate and 51=Lowest rate. CI=Confidence Intervals; if not referenced, confidence intervals could not be calculated. Race/ethnicity data is averaged over three years (2015-2017) ir order to get a sufficient sample.

Source: BRFSS, 2017

B. TRENDS IN CHILDHOOD OBESITY

Children who are overweight or have obesity are more likely to have obesity as adults.[88] As such, targeting interventions that will help families and young children have access to healthy, affordable foods and safe places for physical activity is a promising strategy for addressing America's obesity epidemic. Like adults, most children in the United States are not eating enough nutritious foods or getting sufficient physical activity.[89,90,91]

This section includes the latest data available on childhood obesity. As with adults, this report relies on multiple surveys to better understand the full picture of childhood obesity.

DATA SOURCES FOR CHILDHOOD OBESITY MEASURES

1) **The National Health and Nutrition Examination Survey** is the primary source for national obesity data on adults and on children ages 2 to 19 in this report. NHANES is particularly valuable in that it combines interviews with physical examinations while also covering a wide age range of Americans. The downsides of the survey include a time delay from collection to reporting and samples that do not break out local data. The most recent NHANES data are from the 2015–2016 survey.

2) **The WIC Participant and Program Characteristics Report** is a biennial census of families who are served by the Special Supplemental Nutrition Program for WIC. USDA collects the data, and CDC analyzes the obesity data. Because the program only includes low-income mothers and young children (under the age of 5), this dataset is limited.[92] Nevertheless, because obesity disproportionately affects individuals with low incomes, early childhood is a critical time for obesity prevention, and the dataset provides valuable information for evaluating the effectiveness of programs aimed at reducing obesity rates and health disparities. The most recent public WIC data are from 2014.

3) **The National Survey of Children's Health (NSCH)** surveys parents of children ages 0 to 17 about aspects of their children's health, including height and weight. An advantage of this survey is that it includes state-level data. A disadvantage is that height and weight data are parent-reported, not directly measured. The NSCH survey is now annual and the most recent data are from its 2016 iteration. Because survey methodology changed in 2016, it is not possible to compare 2016 estimates to earlier iterations of the survey.

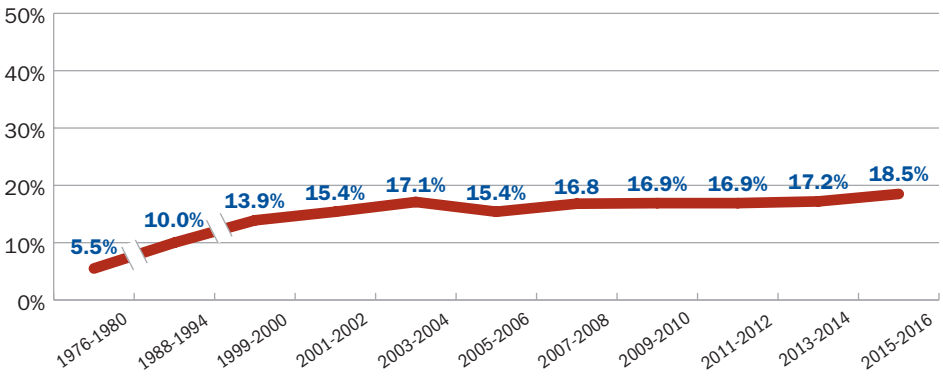
4) **The Youth Risk Behavior Survey (YRBS)** measures high-risk health behaviors among students in grades 9 to 12, including eating habits, physical activity, and obesity (by asking respondents to self-report about their height and weight). As in other surveys that use self-reported data to measure obesity, this survey likely underreports the true rates.[93] YRBS is conducted in odd-numbered years; 2017 is the most recent dataset available. The 2017 survey includes state-level samples for 39 states and the District of Columbia plus select large urban school district, as well as a separate national sample.[94]

i. National Childhood Obesity Rates

NHANES data show that 18.5 percent of children ages 2 to 19 had obesity in 2015–16, the highest rate ever documented by NHANES. Since the 1976–1980 NHANES survey, overall childhood obesity rates have more than tripled, up from 5.5 percent. The percentage of 2- to 5-year-olds with obesity more than doubled, from 5 to 13.9 percent, as did the percentage of 6- to 11-year-olds with obesity, from 6.5 to 18.4 percent. And the obesity rates of teens ages 12 to 19 quadrupled, from 5 to 20.6 percent.[95,96,97]

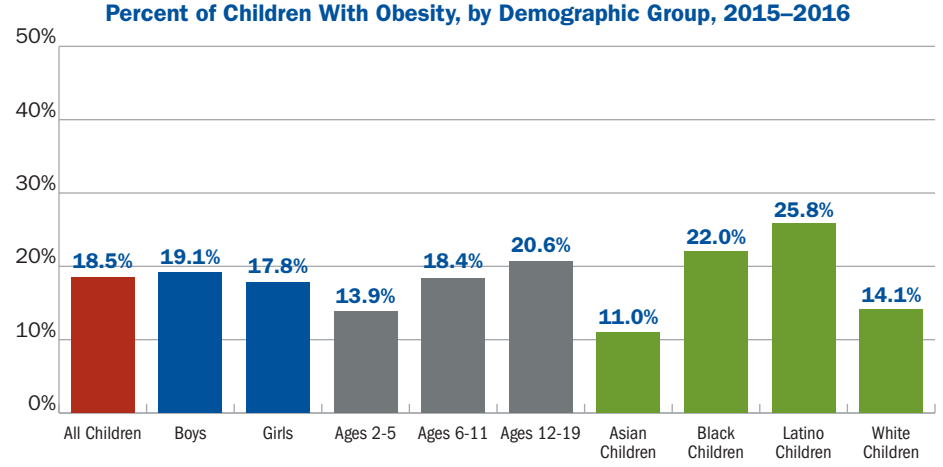
Since the 1976–1980 NHANES survey, overall childhood obesity rates have more than tripled, up from 5.5 percent.

Percent of Children With Obesity, 1976–2016



Source: NHANES

Percent of Children With Obesity, by Demographic Group, 2015–2016



Source: NHANES

NHANES provides key breakdowns by subgroups, including:

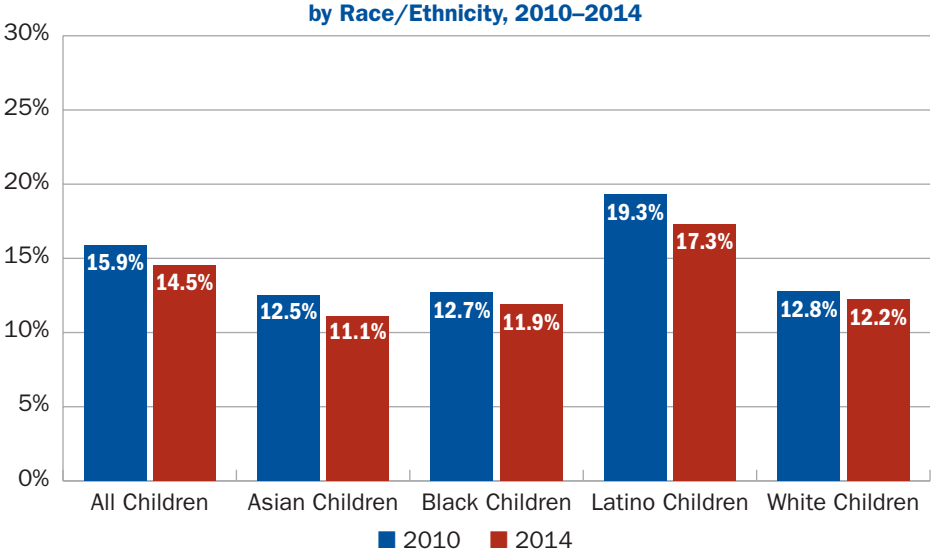
- **Race/ethnicity:** There are substantial differences in obesity rates among children of different races and ethnicities:
  - Obesity rates are higher among Latino children (25.8 percent) and Black children (22.0 percent) than among White children (14.1 percent) and Asian children (11.0 percent).[98]
  - Latino boys (28.0 percent) and Black girls (25.1 percent) are most likely to have obesity.
- **Sex:** Boys are slightly more likely to have obesity than girls.
  - In 2015–2016, 19.1 percent of boys had obesity and 17.8 percent of girls had obesity.
  - Between 2013–2014 and 2015–2016, the obesity rate of boys went up 11 percent, while the rate of girls with obesity went up 4 percent.[99]
- **Age:** The prevalence of obesity and severe obesity increases with age.
  - In 2015–2016, 13.9 percent of children ages 2 to 5, 18.4 percent of children ages 6 to 11, and 20.6 percent of children ages 12 to 19 had obesity.
  - Nearly 2 percent of children ages 2 to 5, 5.2 percent of children ages 6 to 11, and 7.7 percent of children ages 12 to 19 had severe obesity.

ii. Early Childhood Obesity Rates

According to WIC data, the percent of 2- to 4-year-old children enrolled in the program who had obesity declined from 15.9 percent in 2010 to 14.5 in 2014. This decrease is statistically significant. And these reductions were widespread—rates decreased among children in most states and among all major racial and ethnic groups. The drops were statistically significant in 31 states, while just four states had statistically significant increases.[100]

The obesity rates among children enrolled in WIC are still much higher than the general population of children, and certain races and ethnicities have much higher obesity rates than the overall population. Specifically, in 2014, 18.0 percent of American Indian/Alaska Native and 17.3 of Latino children who were enrolled in WIC had obesity, compared with 12.2 percent of White, 11.9 percent of Black and 11.1 percent of Asian/Pacific Islander children.

Percent of Young Children in WIC Program With Obesity, Overall and by Race/Ethnicity, 2010–2014

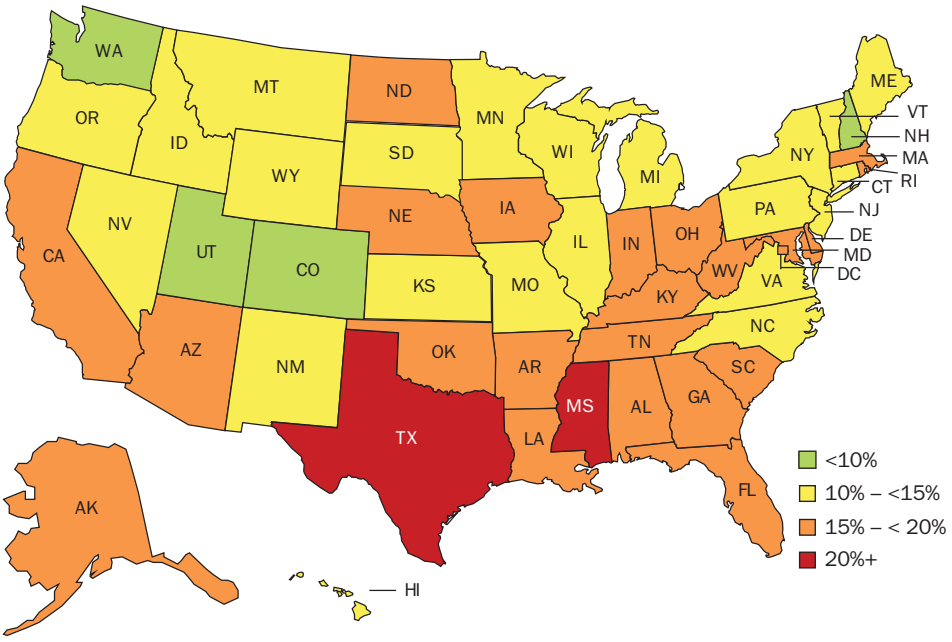


Source: WIC

iii. Obesity Rates in Children Ages 10 to 17

In 2016, the NSCH reported that nationwide, 16.1 percent of children ages 10 to 17 had obesity and 15 percent were overweight. The states with the highest rates of obesity for 10- to 17-year-olds were Mississippi (26.2 percent), Texas (21.3 percent), and West Virginia (19.9 percent); the states with the lowest rates of obesity were New Hampshire (8.5 percent), Washington (8.7 percent), and Colorado (9 percent). *See chart on page 21 for more state data.*

Percent Of Children Age 10-17 With Obesity, 2016



Source: NSCH

iv. High School Obesity Rates

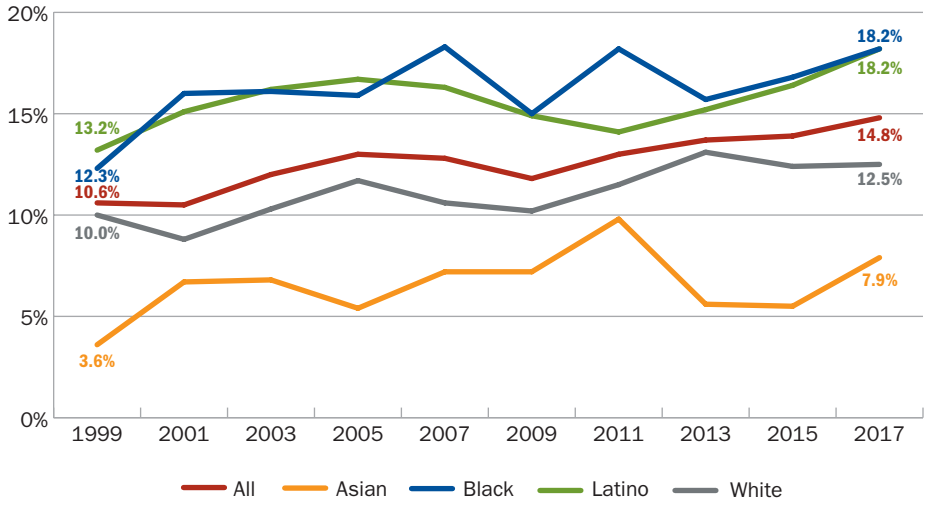
According to 2017 YRBS data, 14.8 percent of high school students (grades 9-12) nationwide had obesity and 15.6 percent were overweight. In 2015, YRBS found 13.9 percent of high schoolers had obesity and 16.0 were overweight. Obesity levels among high school students show a statistically significant increase in the long-term; in 1999, obesity rates among high schoolers participating in the survey were at 10.6 percent.[101]

Other takeaways include:

- High schoolers who were male (17.5 percent), Black (18.2 percent), Latino (18.2 percent), and lesbian, gay or bisexual (LGB) (20.5 percent) had particularly high levels of obesity in 2017. Male students who were Latino (22.2 percent) and male students who were LGB (21.9 percent) had the highest rates among these groups.
- The levels of obesity among high school students in different states varied considerably—from 9.5 percent in Colorado to 21.7 percent in Arkansas. This the first time that YRBS identified states with high school obesity rates above 20 percent, including in Arkansas (21.7 percent), Kentucky (20.2 percent), and Tennessee (20.5 percent).
- States with the highest level of high school obesity—all in the South—were: Arkansas (21.7 percent), Kentucky (20.2 percent), Louisiana (17.0 percent), Oklahoma (17.1 percent), South Carolina (17.2 percent), Tennessee (20.5 percent), Texas (18.6 percent), and West Virginia (19.5 percent).[102]
- States with the lowest high school obesity rates were: Colorado (9.5 percent), Florida (10.9 percent), Idaho (11.4 percent), Massachusetts (11.7 percent), Montana (11.7 percent), and Utah (9.6 percent).

See page 21 for state-by-state data on obesity, overweight, and activity levels among high school students.

Percent of High Schoolers with Obesity, Overall and by Race/Ethnicity, 1999–2017



Source: YRBS

Obesity-Related Programs and Policies

Scientists predict that, if current trends continue, more than half of today's children will have obesity by age 35.[103] A variety of public policy interventions can help alter this alarming trajectory. When schools serve nutritious meals to students, kids eat healthier foods. When nutrition information is available to consumers, they can make informed decisions about the foods they buy and eat. When schools set aside time for physical education and recess, kids are more active throughout the school day.

There is growing evidence that a comprehensive, long-term approach to promoting healthy eating and physical activity in schools and communities can have a positive impact on health and well-being. The policies and programs described below play a key role in addressing America's obesity epidemic.

A. NUTRITION ASSISTANCE

One of the most efficient and effective ways to help Americans eat a well-balanced diet is to provide them with healthy food. The federal government spends billions of dollars each year on nutrition assistance programs for low-income Americans. Some of these programs provide nutritious food that meets specific dietary guidelines, and/or have educational components to teach beneficiaries about healthy eating.

Jonathan Weiss / Shutterstock.com

i. Women, Infants, and Children Program

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides federal funds to states for nutrition and education services for low-income pregnant, postpartum, and breastfeeding women and their children under the age of 5. WIC is one of the largest federal nutrition programs, serving nearly 7.3 million women, infants, and children annually.[104]

State agencies administer WIC, which helps its recipients achieve and maintain a healthy weight by providing healthy foods and nutrition education; promoting breastfeeding and supporting nursing mothers; and providing healthcare and social-service referrals. Research has demonstrated WIC's success.[105] One study found that WIC recipients who received postpartum benefits were less likely to have obesity in their next pregnancy.[106] Another study found that breastfeeding rates among WIC recipients increased between 1994 and 2013.[107] Breastmilk is the best source of nutrition for most infants, and breastfed children have a reduced risk of obesity later in life.[108,109] WIC's Farmers' Market Nutrition Program provides fresh, locally grown produce to participants and has been proven to increase fresh fruit and vegetable consumption.[110] Nationwide, only about one-third of Farmers' Markets participate in the program.[111]

Congress requires USDA's Food and Nutrition Service (FNS), which administers WIC on the federal level, to periodically reevaluate the program's food packages to ensure they align with the latest U.S. dietary guidelines. As part of this process, in 2017, the National Academies of Sciences, Engineering and Medicine recommended additional improvements to the WIC food package. The recommendations include providing more fish; increasing whole grains, fruits, and vegetables; and reducing sodium and saturated fat. The report also recommends more flexibility in providing infant formula in order to promote breastfeeding. These recommendations build on changes previously made to the WIC food package in 2009, which were the first major changes since the program's inception.[112] The 2009 changes are associated with improved nutritional purchases among WIC households, including fewer calories and less sodium, total fats, and added sugars.[113]

The omnibus spending bill passed by Congress in March 2018, which funded the federal government for the remainder of fiscal year (FY) 2018, appropriated $6.175 billion for WIC, including a set-aside of $60 million for breastfeeding initiatives, and an additional $18.5 million for the WIC Farmers' Market Nutrition Program.[114] The total was $175 million below the FY 2017 funding level, and the bill also rescinded $800 million in unspent WIC funds.

ii. Child Nutrition Programs

Child nutrition programs provide food for more than 34 million American children each year.[115] The federal government funds these programs, which are administered by the FNS and state agencies. Participating providers receive cash subsidies—and, in some programs, USDA-purchased foods—for each meal they serve that meets federal nutrition standards; eligible participants receive free or reduced-price meals through these programs.

MAJOR CHILD NUTRITION PROGRAMS IN THE UNITED STATES

- **The Child and Adult Care Food Program (CACFP)** funds healthy meals and snacks for approximately 4.2 million children in daycare, preschool, and aftercare programs, as well as 130,000 adults in adult daycare centers.[116]
- **The National School Lunch Program** provides meals and snacks to more than 30 million students in public schools, private schools, and residential child-care facilities. Approximately 75 percent of these students qualify for free or reduced-price meals.[117]
- **The School Breakfast Program** provides breakfast to nearly 14.6 million students. Approximately 85 percent of these students qualify for free or reduced-price meals.[118]
- **The Summer Food Service Program** provides nutritious daily meals during summer vacation to approximately 2.6 million students from low-income families.[119,120]
- **The Special Milk Program for Children** provides free low-fat or skim milk to students who do not participate in school meal programs, such as half-day kindergarten students.[121]
- **The Fresh Fruit and Vegetable Program** provides fresh fruits and vegetables to select low-income schools.[122]
- **The Farm to School Program** brings fresh, local food into school cafeterias and facilitates hands-on learning activities, including school gardens, farm visits, and cooking classes.[123]

Because of the success of these programs, nutrition advocates are working toward increasing participation rates, particularly in the School Breakfast Program. Although more than 90 percent of schools that participate in the school lunch program also offer breakfast, only 57 percent of the students in the lunch program also participate in the breakfast program.[124,125]

The Healthy, Hunger-Free Kids Act of 2010 (HHFKA) required USDA to align school food nutrition standards with the updated Dietary Guidelines for Americans.[126,127] The rules require increased availability of whole grains, fruits and vegetables, skim and low-fat milk, and lower levels of added sugars and saturated fats.[128,129] The school lunch and breakfast program rules also require lower sodium levels; the changes are being phased in over several years.[130,131] Nearly all schools have successfully implemented these standards.[132]

Research has shown that students receiving free or reduced-price lunch ate more fruits and vegetables than children not participating in the program.[133] Research also demonstrates that the healthier lunches are generally liked by students,[134] and are popular among parents.[135, 136]

Recently, several aspects of these new rules have been rolled back. In 2017, USDA published an interim final rule covering the 2018-2019 school year that permits schools and child-care providers to provide flavored 1 percent milk to K-12 schoolchildren and to CACFP and Special Milk Program participants ages 6 or older. The rule also permits school meal programs to serve grains other than whole grains and foods with a higher sodium content than the phased-in rule would have required. USDA intends to issue a final rule on these provisions in fall 2018.[137] USDA has also proposed a rule exempting small school districts from the education and training requirements for nutrition directors.[138]

While the Administration proposed a budget cut in FY 2018, Congress passed an omnibus spending bill that provided $24.3 billion to carry out the majority of programs authorized under the Child Nutrition Act.[139] This includes increased funding for several initiatives:

- $30 million for schools to purchase food service equipment to serve healthier meals, improve food safety, or expand breakfast options;
- $5 million for the Farm to School Program, doubling current funding;
- $2.4 billion in additional CACFP funding, nearly doubling the program's budget for FY 2018 (the largest single-year increase in the history of the program).
- $2 million for child nutrition programs to train school food-service personnel.[140,141,142]

iii. Supplemental Nutrition Assistance Program

The Supplemental Nutrition Assistance Program (SNAP), formerly known as the Food Stamp Program, is the nation's largest nutrition-assistance effort, helping to feed about 40 million Americans each month.[143] The federal government funds SNAP benefits and splits the cost of administering the program with the states.[144] More than 7,000 farmers' markets and farmers nationwide now accept SNAP benefits.[145]

SNAP enables low-income families to better afford food, and research has shown that the program increases food security and can be associated with better health outcomes. One study found that SNAP participation reduced the percentage of families that were food insecure by as much as 17 percent,[146] while another study found that children participating in SNAP were a third less likely to experience food insecurity.[147] A study which examined long-term effects found that individuals whose households had access to food stamps during early childhood had better health outcomes than those who lived in counties without the program, including significantly lower rates of obesity, high blood pressure, and diabetes (the food stamp program was not available universally at the very beginning and this study looks at the differences stemming from kids at that time period).[148]

Despite the benefits, SNAP does not fully cover participants' food costs. A recent analysis by the Urban Institute found that the maximum SNAP benefit provides up to $1.86 per meal, although the average cost of a meal in low-income households is $2.36. Because SNAP does not take into account geographic differences in food prices, the average cost of a low-income meal in the most expensive areas of the country is between 68 and 136 percent higher than the per-meal SNAP benefit.[149]

Other studies have suggested that while SNAP reduces hunger, it has been less successful at improving diet quality. In 2013, USDA published results of the Healthy Incentives Pilot, a demonstration project that incentivized fruit and vegetable purchases among certain SNAP recipients.[150] The research found that an ongoing investment of less than 15 cents per person per day may result in a 25 percent increase in fruit and vegetable consumption among adults.

SNAP-Ed, the educational component to the program, encourages participants to make healthy food choices, and emphasizes obesity prevention.[151] An evaluation of several SNAP-Ed nutrition programs found an increase in fruit and vegetable consumption among elementary school children and seniors in the program.[152] Examples of innovative SNAP-Ed programs include:

- The **Arkansas Hunger Relief Alliance** recently partnered with the Arkansas Department of Corrections on a nutrition education pilot program for female inmates nearing the completion of their sentences. Designed to assist the women with reintegration into the community, the class teaches them how to shop for nutritious ingredients and prepare healthy meals on a budget.[153]
- **St. Margaret's Center** in Los Angeles has started a weekly walking club for seniors. At the end of each walking session, program leaders provide participants with chilled water and healthy snacks and invite them to attend a nutrition class.[154]
- The **Rockland, Maine Farmers' Market** created the "Kids Club" in 2016, an interactive summer nutrition education program that introduced children ages 5-16 to new foods and local farmers. The Rockland Farmers' Market plans on continuing youth programming and Maine SNAP-Ed is working to replicate the Kids Club model statewide.[155]

The FY 2018 omnibus spending bill funded SNAP at $74 billion, a reduction of $4.5 billion from the program's FY 2017 level.[156] The bill increased discretionary funding for SNAP-Ed to $421 million from $411 million in FY 2017.[157,158]

iv. Food Insecurity Nutrition Incentive Program

Policies can also promote healthy choices by lowering the cost of nutritious foods. USDA's Food Insecurity Nutrition Incentive (FINI) program incentivizes SNAP participants to buy more fresh produce. Created under the 2014 Farm Bill, FINI is jointly administered by FNS and the USDA's National Institute of Food and Agriculture.[159] In 2017, USDA provided $16.8 million in awards to 32 FINI grantees.[160] The program was expanded for FY 2018 to provide $21 million in grant funding.[161]

FINI grantees use multiple strategies to encourage SNAP participants to buy more fruits and vegetables. For example, the AARP Foundation uses its FINI grant to support its Fre$h Savings program at participating farmers' markets and Kroger stores in Mississippi and Tennessee. With Fre$h Savings, every $10 spent by SNAP recipients on fruits and vegetables earns them a coupon good for 50 percent off their next fresh produce purchase.[162] Another FINI grantee, Michigan's Fair Food Network, started the Double Up Food Bucks program at a handful of sites in Detroit in 2009. The program allows participants to spend double the value of SNAP benefits when buying fruit and vegetables, and has since expanded to 250 stores across Michigan—and to 25 other states as well.[163] A five year study of the Double Food Bucks statewide program in Michigan found that more than 90 percent of participants at farmers' markets reported eating more fruits and vegetables and more than 80 percent reported buying fewer low-nutrition snacks.[164] These incentive programs help to support the bottom lines of participating retailers while improving health.[165]

B. NUTRITION INFORMATION AND EDUCATION

Survey research shows that Americans' general confusion about nutrition may contribute to the obesity crisis.[166] In addition to the educational components of the nutrition-assistance programs discussed above, the federal government also provides nutrition information via the Dietary Guidelines for Americans, considered the gold standard of healthy eating, and via nutrition information required on packaged foods and in chain restaurants.[167,168]

i. Dietary Guidelines

Every five years, USDA and the Department of Health and Human Services (HHS) jointly publish the Dietary Guidelines for Americans to reflect the latest nutrition science. The 2015–2020 Guidelines focus on how Americans ages 2 or older can achieve an overall healthy eating pattern.[169] The Guidelines explicitly detail or inform the nutritional basis for a multitude of federal and non-federal nutrition assistance programs and practices, including the school breakfast and lunch programs. The 2020–2025 guidelines, will, for the first time, include standards for pregnant women, infants, and toddlers.[170]

ii. Nutrition Labels

Since passage of the Nutrition Labeling and Education Act of 1990, FDA has required nutrition labels on most packaged foods and beverages.[171] In 2016, FDA finalized comprehensive changes to the label requirements to better reflect the latest scientific knowledge about healthy eating. These changes included increasing the text size of the nutrition information panel to make "calories" and "number of servings" more prominent, adding a new "added sugars" reporting requirement, and adjusting the serving sizes to more accurately reflect Americans' current dietary habits.[172] The FDA recently extended the compliance date to January 1, 2020 for large manufacturers and January 1, 2021, for smaller manufacturers.[173] Thousands of products already use the new label voluntarily.[174]

SIDE-BY-SIDE COMPARISON

Original Label

Nutrition Facts

Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving

Calories 230	Calories from Fat 72
	% Daily Value*
Total Fat 8g	**12%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**12%**
Dietary Fiber 4g	**16%**
Sugars 12g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

* Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

New Label

Nutrition Facts

8 servings per container
Serving size **2/3 cup (55g)**

Amount per serving
Calories **230**

	% Daily Value*
Total Fat 8g	**10%**
Saturated Fat 1g	**5%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 160mg	**7%**
Total Carbohydrate 37g	**13%**
Dietary Fiber 4g	**14%**
Total Sugars 12g	
Includes 10g Added Sugars	**20%**
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Source; FDA

iii. Menu Labeling

To help consumers make informed choices, the Affordable Care Act requires chain restaurants, other food retailers, and vending machine companies to provide nutritional information about their products.[175] Implementation of these requirements was delayed for several years until they took effect in May 2018. Under the rules, chain restaurants with 20 or more locations must prominently display calorie counts on menus and menu boards.[176] The vending machine rule went into effect in 2016, but for some products sold in glass-front vending machines, the rule was delayed until July 2018.[177]

Menu labeling is designed to provide nutrition information directly to consumers, who are eating more food away from home.[178] Food outside the home tends to have more calories,[179] yet consumers tend to underestimate the number of calories and sodium in those meals.[180,181]

Several studies show that posting nutritional information at the point of purchase can result in healthier choices.[182,183,184,185] In addition, there is evidence that menu labeling may lead restaurants and others to reformulate the nutritional content of their food to make it healthier.[186] Some studies have found significant results at specific establishments or among specific populations,[187,188] but others have found no changes in consumer behavior from menu labeling.[189]

Children are exposed to an average of 10 to 11 television ads for food each day—and most of those ads are for unhealthy products, such as fast food, candy, and sugary drinks.[192]

vi. Food and Beverage Marketing

Research has demonstrated a strong association between food and beverage marketing and childhood obesity rates.[190] One study found that even one advertisement can influence a person's product preference and that preferences are continually strengthened by repeated exposure.[191] A 2017 study found that children are exposed to an average of 10 to 11 television ads for food each day—and most of those ads are for unhealthy products, such as fast food, candy, and sugary drinks.[192] Another 2017 study found a link between fast-food advertising and consumption among preschoolers, with even moderate exposure increasing consumption by 31 percent.[193] Black and Latino youth are exposed to an even greater amount of unhealthy food marketing than White youth.[194,195] Children are exposed to these ads while watching television, playing video games,[196] watching YouTube videos,[197] interacting on social media platforms,[198] watching their favorite sports teams,[199] and while grocery shopping.[200]

In recent years, there have been fewer food ads on children's television, and the products advertised have made modest improvements in nutritional quality.[201,202] That's because some food and beverage companies, through the Children's Food and Beverage Advertising Initiative, have voluntarily pledged to adhere to nutrition standards and to limit food advertising to children under age 12.[203,204]

Studies have found, however, that self-regulation still falls short.[205] First, the industry only pledged to limit advertising that is "primarily directed" to children.[206,207] This definition captures only about half of the food and beverage television ads viewed by children, and it still permits marketing to a general audience on the websites and social media platforms that millions of children use.[208,209] Second, while many products marketed to kids meet the industry's nutrition standards, they fail more stringent standards set by experts in nutrition policy.[210,211] Third, industry pledges place no limits on marketing to children over the age of 11.[212] Finally, a number of large food and restaurant companies that market to children have not joined these industry efforts. In fact, a small number of companies have actually increased their food and beverage advertising on children's programming in recent years, partly offsetting any reductions.[213]

C. CHILD CARE AND EDUCATION REQUIREMENTS

Research demonstrates that comprehensive school programs are effective in preventing childhood obesity, encouraging healthier diets, and fostering more physical activity.[215]

Childhood is a critical time for obesity prevention. It is much easier to avoid obesity in the first place—by establishing lifelong habits of healthy eating and regular exercise—than it is to lose excess weight later in life. One recent study found that Finnish children ages 3 to 5 with a high BMI were more than three times as likely to have obesity as adults.[214]

Research demonstrates that comprehensive school programs are effective in preventing childhood obesity, encouraging healthier diets, and fostering more physical activity.[215] A recent study modeling impact and cost-effectiveness of six physical activity-increasing interventions in school and afterschool settings found that all the interventions assessed would increase youth physical activity levels and be either cost-saving or cost-effective, ultimately preventing between 2,500 and 110,000 cases of children with obesity.[216]

i. Early Child Care and Education

Head Start

Head Start and Early Head Start are federally funded programs that promote school readiness for young children from low-income families by providing education, health, and social services.[217] The programs served more than 1 million children and pregnant women during the 2016–2017 program year.[218] The federal government provides funding and oversight to local agencies that administer the programs. Head Start and Early Head Start programs participate in either CACFP or the National School Lunch Program.

Programs must meet nutritional and physical activity standards set by the Administration for Children and Families. In 2016, updated regulations went into effect, the first major rewrite since the 1970s.[219] The revised standards require Head Start programs to actively engage in obesity prevention both in the classroom and through its family-partnership process.[220] In addition to these direct changes to nutrition and physical activity practices, Head Start as a whole has been shown to improve health outcomes in young adulthood.[221]

States' Early Child Care and Education Requirements

Facilities that provide early care and education are largely regulated on the state level. Because most preschool-aged American children spend time in care outside their home,[222,223] state obesity-prevention requirements for early child-care and education (ECE) providers can help ensure millions of young children are eating healthy foods and getting plenty of time for active play.

The CDC offers a framework to assess states' ECE obesity-prevention efforts. In its 2016 evaluation of states' success, the CDC reported:

- 75 percent of states with Quality Rating and Improvement Systems standards for their ECE providers include obesity-prevention standards.
- 25 states improved the obesity standards in their ECE licensing regulations between 2011 and 2014.
- 29 states encourage enhanced nutritional standards in their CACFP program.
- 42 states offer online professional development training to ECE providers.[224]

CDC ECE Initiatives

Several CDC grant programs, like the Early Childcare and Education Learning Collaborative, provide training and technical assistance to states to help them with obesity prevention in ECE settings. CDC–in partnership with Nemours Health System and the Association of State Public Health Nutritionists—works with state public health and ECE leaders to: 1) improve state ECE systems, and 2) support select ECE providers with training and technical assistance through a learning collaborative.[225] In the past six years, this program has reached 15 states (Alabama, Arizona, Arkansas, California, Florida, Illinois, Indiana, Kansas, Kentucky, Missouri, New Jersey, Ohio, Tennessee, Virginia and Wyoming) and directly trained ECE providers from 2,300 programs, serving more than 194,000 children. ECE providers in the learning collaborative have shown a statistically significant increase in the adoption of best practices for healthy eating, physical activity, reduced screen time, and breastfeeding support.[226]

CDC also partnered with the Association of State Public Health Nutritionists to help states implement evidence-based, system-level approaches to prevent obesity among children ages 2 to 5. This Pediatric Obesity Mini-Collaborative Improvement and Innovation Network includes 13 states (Arkansas, California, Indiana, Iowa, Kentucky, Louisiana, Missouri, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, and Wisconsin).[227]

Other CDC grant recipients have more expansive initiatives. Through the State Public Health Actions program, CDC has provided funding, training and technical assistance to all states and DC since 2013 to strengthen nutrition and physical activity standards and practices in their ECE settings. For example, in North Dakota, it helps 25 child-care centers to improve nutrition and increase physical activity.[228] Similarly, through the High Obesity Program (described in more detail on page 42). West Virginia University trains ECE providers to improve the nutrition and physical activity at their facilities and to engage families in healthier lifestyles.[229]

In FY 2018, Congress appropriated $4 million for Early Childcare and Education Learning Collaboratives.[230]

ii. Elementary and Secondary Education

Local School Wellness Policies

Given that children spend so much time at school—where they consume up to half their daily calories[231]—school-based obesity prevention programs can have a large reach and impact. As of 2006, school districts that participate in federal child nutrition programs are required to develop a wellness policy—and these requirements were expanded with passage of HHFKA.[232] The final rule implementing the HHFKA wellness policy requirements took effect for the 2017–2018 school year.[233] Among other requirements, local wellness policies must:

- Establish nutrition promotion and physical activity goals.
- Include nutrition guidelines for foods available on campus.
- Limit food marketing to those products that meet the Smart Snacks in School nutrition standards (discussed in more detail below).

Despite the new requirements, a review of school district wellness policies found that only 57 percent of policies included all federally required topics.[234] Interested states and school districts can make adherence to wellness policies part of their state or local report card measures under the Every Student Succeeds Act.[235]

Smart Snacks in Schools

Since September 2016, all food sold at schools—including food sold in vending machines, at school stores, and at school fundraisers—must meet federal nutrition standards.[236] States can exempt infrequent school fundraisers from the standards, although 21 states have policies in place allowing zero exemptions.[237] The snacks standards are similar to requirements covering the National School Lunch and Breakfast Programs. The Smart Snacks in School rule exempts snacks sold after school hours, food intended to be eaten off school property, or food provided for free—for example, cupcakes brought in for a student's birthday.

CDC School Initiatives

The CDC assists elementary and secondary schools with obesity prevention efforts through its Healthy Schools program. Some examples of CDC resources include:

- **Virtual Healthy School** is an online tool that allows school administrators and policymakers to see policies that can improve student health in action. These include a virtual cafeteria offering healthy food choices and a virtual playground that promotes physical activity. Virtual Healthy School is part of the CDC's Whole School, Whole Community, Whole Child model.[238]
- **School Health Guidelines to Promote Healthy Eating and Physical Activity** synthesizes the latest obesity-prevention research and provides guidelines to help schools encourage their students to eat healthily and be physically active.[239]
- **School Health Index: Self-Assessment and Planning Guide 2017** allows schools to conduct a self-assessment of their health and safety policies and to develop an action plan for improving student health.[240]

CDC Healthy Schools also awarded 17 states with five-year Department of Education grants—called Improving Student Health and Academic Achievement through Nutrition, Physical Activity and the Management of Chronic Conditions in Schools—to implement and evaluate obesity prevention and chronic disease management initiatives.[241] The award is $355,000-$365,00 per year from 2018 to 2023. Tennessee also will receive additional funds to provide professional development and technical assistance on building capacity and evidence-based interventions to other states.[242]

The CDC Healthy Schools program received $15.4 million in funding for FY 2018.[243]

State Public Health Actions program, mentioned in the ECE section earlier, supported obesity prevention efforts in elementary and secondary schools between 2012 and 2017:

- Oregon spent its CDC State Public Health funding to create a dedicated staff position to coordinate school district wellness efforts.[244]
- New Hampshire used its funding to improve the nutrition of the food served in its schools, including by adding more attractive serving bowls for fruits and vegetables, using less packaged food, and cooking healthier foods from scratch—such as soups and smoothies.[245]
- Ohio's Cloverleaf School District used the funding to improve its nutrition program, which resulted in a 350 percent increase in produce consumption.[246]

School-Based Physical Activity and Physical Education Programs

Physical Education

Physical education (PE) provides important benefits for children, and research has demonstrated the cost-effectiveness of school-based physical activity programs and their efficacy in preventing childhood obesity.[247,248]

Despite the documented benefits of PE, there are no federal PE requirements, not all states require students to participate in PE, and few states require a minimum number of PE minutes per week. Only Oregon and Washington, D.C. require schools to meet the national standards for physical education at both the elementary and middle-school levels.[249] Even where state requirements are in place, however, schools are not necessarily in compliance. A 2016 Washington Post investigation found that only 10 of the more than 200 public and charter schools in Washington, D.C. were meeting the law's PE requirements.[250] Some states are loosening their PE requirements. In December 2017, *Chicago Tribune* reported that a recent change in Illinois law had "gutted" the state's PE rules. Once required daily, PE is only required three days per week under the new law.[251]

The Every Students Succeeds Act (ESSA) provides opportunities to promote PE:[252] ESSA:

- Expands the federal definition of a well-rounded education to include physical education.
- Permits federal funding for training classroom teachers and other school personnel on how to integrate physical activity breaks or nutrition education into the classroom.
- Allows schools to integrate PE-related measures—such as PE class size, minutes of PE offered by grade, or minutes of physical activity—into their state report cards.
- Requires that PE or physical activity programs be used as indicators of school quality in school accountability plans.

CDC, in collaboration with SHAPE America, developed the Comprehensive School Physical Activity Program to encourage schools and school districts to implement a variety of approaches to help students get their recommended 60 minutes or more of physical activity daily and to develop the knowledge and skills to be physically active throughout their lives.[253] The Comprehensive School Physical Activity Program enables schools to coordinate and align PE programs with physical activity before, during, and after school.

Recess

Research demonstrates that children benefit in numerous ways from having time for physically active free play during the school day.[254] The American Academy of Pediatrics (AAP) describes recess as "a crucial and necessary component of a child's development" and explains that "recess is unique from, and a complement to, physical education—not a substitute for it."[255] AAP specifically credits recess with helping students meet their recommended 60 minutes of daily physical activity, which in turn lowers rates of obesity.[256]

Elementary school recess requirements are set at the state level.[257,258] In 2017, the Council of State Governments reported that only four states—Connecticut, Missouri, Rhode Island, and Virginia—required daily recess for elementary school students,[259] and Indiana required daily physical activity, which can include recess.[260] Since then, at least two more states, Arizona and Florida, have passed laws requiring daily recess.

In 2017, CDC and SHAPE America published Strategies for Recess in Schools, created in collaboration with other national organizations, recommending 20 minutes or more of recess daily for elementary students and recommending a period of daily physical activity for middle and high school students in addition to physical education and classroom physical activity.[261]

Physical Activity Guidelines

In 2008, HHS released Physical Activity Guidelines to provide policymakers and health professionals guidance on physical activity that provides a substantial health benefit. The guidelines recommend the duration and kinds of activities for different groups of Americans (e.g., children/adolescents, adults, older adults, women who are pregnant/postpartum, adults with disabilities). For children and adolescents, the guidelines recommend one hour or more of physical activity daily, including aerobic (vigorous intensity), muscle-strengthening, and bone-strengthening activities three times a week each.[262] HHS is expected to release revised guidelines in late 2018.

D. COMMUNITY POLICIES AND PROGRAMS

Recent evidence highlights the importance of comprehensive, community-wide efforts to address nutrition and physical activity beyond school and child care settings. The Healthy Communities Study, which included more than 5,000 children from more than 1,000 communities, found that areas with policies and programs that targeted more kinds of healthy behaviors related to physical activity and nutrition were associated with lower BMI and smaller waist circumference in children.[263]

The 2017 Equity-Oriented Obesity Prevention Action Framework includes four categories of initiatives—increasing healthy options, reducing deterrents to healthy behaviors, improving social and economic resources, and building community capacity—to consider with respect to obesity prevention policies and programs.[264] Additionally, the CDC's Practitioner's Guide for Advancing Health Equity identifies evidence-based and promising strategies for improving health equity at the policy, systems, and environmental levels.[265]

Examples of community policies and programs that employ a comprehensive approach to addressing obesity and related disparities are described below.

i. Community Design and Land Use

Research has found a link between built environments—all the human-made physical aspects of a community—and both physical activity and obesity. The odds of a child having obesity or being overweight increase by 20 to 60 percent if he or she lives in a neighborhood with unfavorable environmental aspects, such as poor housing, unsafe conditions, and no access to sidewalks, parks, or recreation centers.[266] Thoughtful community design and land-use can encourage physical activity by providing safe and accessible sidewalks; investing in biking infrastructure, parks, and public transportation; and breaking down barriers to active commuting.

In April 2018, the U.S. Department of Transportation announced the availability of $1.5 billion in funding for Better Utilizing Investments to Leverage

Development (BUILD) grants. The BUILD grants replace the department's Transportation Investment Generating Economic Recovery (TIGER) grant program. Eligible grantees can apply for up to $25 million in funding to support roads, bridges, transit, rail, and other forms of intermodal transportation, including biking and walking trails.

Communities can use many strategies to promote physical activity:

- Zoning policies can encourage mixed-use neighborhoods, places where work sites, residences, and commercial areas are all within walking distance of each other. Residents of mixed-use neighborhoods are 33 percent more likely to meet physical activity guidelines by walking for transportation.[267]
- Building sidewalks and installing crosswalks, crossing signals, pedestrian signs, street lights, and features to reduce vehicle speed can improve conditions for walking. People in neighborhoods with sidewalks are 50 percent more likely to meet the recommended daily amount of physical activity.[268]
- Adding protected bike lanes, building bike paths, installing bike racks, and sponsoring bike-sharing services can create a safe bike environment. Installing a traffic-free bike route can increase time spent cycling,[269] and residents of neighborhoods where a higher percentage of people bike to work have lower BMIs.[270]
- Expanding and investing in public transportation is important because using public transportation can result in eight to 33 minutes of additional walking per day.[271]

One example of intentional community design is from the Chicago-based Safe Space to Grow initiative. This initiative reimagines and converts underused schoolyards into community spaces for physical activity and community vegetable gardens. By using green landscaping techniques, the city saves money on reduced water usage and flooding. A pilot study of the initiative found increases in physical activity among students.[272]

ii. Safe Routes to School

Walking or biking to school is an easy way for children to get more exercise: walking one mile to and from school each day provides a child with two-thirds of the recommended 60 minutes of daily physical activity.[273] A 2016 survey of 6,500 schools found that walking to and from school increased from less than 14 percent to more than 17 percent of all school trips between 2007 and 2014.[274] Safe Routes to School (SRTS) initiatives promote walking and biking to school by educating students and families about the benefits and ensuring that the school environment allows kids to do so safely. To implement an SRTS initiative, states, localities, and school districts can compete for federal funding, which is available through funding set aside for transportation alternatives under the Fixing America's Surface Transportation Act.[275]

SRTS programs have resulted in statistically significant improvements in active transportation to school. One study of 800 schools (in four states) with SRTS programs found that rates of walking and biking to school increased after the program started—and could even lead to a 25 percent increase over five years in walking and bicycling.[276]

In 2018, the Safe Routes to School National Partnership issued a report card assessing states on how well they support walking, biking, active kids, and active communities. Only two states—California and Washington—received the top grade.[277]

iii. CDC Community Initiatives

The CDC funds community-based obesity prevention initiatives around the nation. A recent study of CDC obesity-related health promotion and intervention programs from 2000 to 2010 found that states using these programs had reduced odds of obesity in adults.[278] This year, there are several major changes to the grants that CDC is offering. The State Public Health Actions program—which provided funding to all 50 states and the District of Columbia— ended June 20, 2018. It is being replaced with the State Physical Activity and Nutrition (SPAN) program, which will provide funding to 15 states and begin on September 30, 2018. There is also a proposed increase in the number High Obesity Program awards.

State Physical Activity and Nutrition Program (SPAN)—CDC-RFA-DP18-1807

In April 2018, the CDC announced the availability of FY 2018 funds for SPAN. SPAN grants replace the State Public Health Action (1305 funding) grants, moving from lower levels of funding to grantees in all states to higher funding in a subset of grantees. SPAN will support five-year projects that invest in statewide efforts to improve nutrition or increase physical activity. CDC plans to support approximately 15 projects with an average annual award of $900,000.[279]

In the past, State Public Health Action (1305 funding) has supported efforts like:

- Improving access to affordable fruits and vegetables to hundreds of Michigan families through the Quality Dairy convenience store program;[280]
- Helping 18 worksites in South Dakota make improvements to encourage physical activity, benefiting 2,800 employees;[281] and
- Educating community leaders in 21 cities, two counties, and one tribe in Washington state about better street design, which can improve safety and encourage physical activity.[282]

High Obesity Program—CDC-RFA-DP18-1809

This program funds land-grant colleges and universities in states with counties where the obesity rate exceeds 40 percent to conduct community and county level interventions.[283] Since 2014, the program has funded programs in 11 states.

- The University of Georgia is working with Calhoun and Taliaferro counties to establish community gardens to help stock food pantries, and it is promoting activities such as bike rodeos and exercise sessions for seniors.[284]
- Texas A&M University is enhancing parks and sidewalks for physical activity and promoting healthier food in retail establishments in Hidalgo County.[285]
- North Carolina State University helped develop a community garden that now produces 500 pounds of produce for low-income families and housebound adults in Roanoke Rapids.[286]

The FY 2018 omnibus spending bill funded this program at $15 million, a $5 million increase over FY 2017.[287] CDC plans on supporting 14 land grant universities for the 2018-2023 grant cycle.

Preventive Health and Health Services (PHHS) Block Grant

This program provides states with flexible support to address important health needs.[288] In FY 2017, states spent approximately 6 percent of total PHHS funding on healthy weight and nutrition efforts.[289]

PHHS funding has supported community-based obesity-prevention activities:

- Fairfield, Connecticut, created its first official bike route.[290]
- 24 Florida hospitals promoted breastfeeding.[291]
- Louisiana helped 93 organizations design employee wellness programs.[292]

Fourteen states and territories made reducing obesity an objective they targeted with their PHHS funding in FY 2017: Alaska, California, Guam, Kansas, Nevada, New Jersey, New Mexico, Pennsylvania, Puerto Rico, South Dakota, Tennessee, Utah, Vermont, and Wisconsin.[293] Funding for the PHHS Block Grant remained level in FY 2018 at $160 million.[294, 295]

Racial and Ethnic Approaches to Community Health (REACH)—CDC-RFA-DP18-1813

A national program to reduce health disparities, REACH provides funds to community organizations, tribes, universities, and state and local health departments to implement culturally appropriate programs, including obesity-prevention efforts, among African Americans, American Indians, Latinos, Asian Americans, Alaskan Natives, and Pacific Islanders.[296]

REACH-funded projects have:

- Educated more than 14,000 Latinos in Maryland about the benefits of drinking water instead of sugary beverages;[297]
- Provided fruit and vegetable vouchers to Navajo families in New Mexico who have limited access to healthy foods;[298] and
- Promoted the benefits of biking to the nearly 60,000 residents of Pontiac, Michigan, and installed 38 bike racks across the city.[299]

FY 2018 funding for the REACH program remained level at $51 million, with $35 million provided for a supplemental year of the three-year cooperative agreement for community programs and $16 million for Good Health and Wellness in Indian Country.[300, 301]

Childhood Obesity Research Demonstrations (CORD 2.0)

The second funding period (2016–2018) of this research project focuses on weight-management interventions for children in low-income families who are struggling with obesity in Massachusetts and Arizona. It focuses on the role of healthcare providers and community partners, such as the YMCA. The project uses BMI screening, nutrition and physical activity counseling, and healthy weight programs to help address obesity in young people.[302] Previously, CORD included three multi-sector interventions, including a 12 month program in Texas consisting of three months of an intensive intervention followed by a nine month transition phase at a lower intensity. The children enrolled in the program had significantly lower weights at three months compared with those not in the program—but the children did not maintain the weight loss after the full year.[303]

National Diabetes Prevention Program

Congress authorized the CDC to establish this program, a public-private partnership supporting evidence-based type 2 diabetes prevention interventions in communities around the country. The program works to prevent or delay a diagnosis of type 2 diabetes for the 86 million Americans with prediabetes.[304] The omnibus bill funded the National Diabetes Prevention Program at $25.3 million for FY 2018.[305] As of April 2018, Medicare will reimburse the program for patients with prediabetes. The decision to pay for this service offers the promise of expanding access to this evidence-based program to millions of people. *Additional information on this program is on page 49.*

The CDC also works to increase Americans' physical activity through its Active People, Healthy Nation initiative, which has five steps:

1. Delivering physical activity programs proven to work;
2. Mobilizing partners to work on physical activity efforts;
3. Sharing messages that promote active lifestyles;
4. Training leaders who will promote physical activity; and
5. Developing technologies, tools, and data to collect accurate information about Americans' physical activity.[306]

The 2018 omnibus spending bill provided $800 million in funding for the Prevention and Public Health Fund and $915 million for Chronic Disease Prevention and Health Promotion, including $54.9 million for nutrition, physical activity, and obesity.[307,308]

SELECT OBESITY-RELATED FUNDING OPPORTUNITIES FROM CDC

Grant/ Program Name	Grant Goal	Length of Grant	Number of Available Grants	Annual Grant Size	Estimated Total Funding
State Physical Activity Nutrition Program (1807)	Improve nutrition or increase physical activity	5 years starting in September 2018	15 states	$900,000 average	$70 million
High Obesity Program (1809)	Reduce obesity in areas with obesity rates over 40 percent	5 years starting in September 2018	14 projects at land-grant universities	$800,000 average	$56 million
Preventive Health and Health Services Block Grant	Provide each state with flexible support to address its most important health needs	Annual	50 states, D.C, 2 American Indian Tribes, and 8 U.S Territories (61 total)	n/a	$160 million (FY 2018)
Racial and Ethnic Approaches to Community Health (1813)	Reduce health disparities within minority communities through culturally appropriate programs	5 years starting in September 2018	32 projects	$780,000 average	$125.5 million
Improving Student Health and Academic Achievement through Nutrition, Physical Activity and the Management of Chronic Conditions in Schools (1801)	Increase number of students who eat nutritious food/ beverages, participate in daily physical activity, and can effectively manage their chronic health conditions	5 years starting in June 2018	17 states (AK, AZ, AR, CO, IL, KY, LA, MA, MN, MO, NE, NM, NC, OK, OR, TN, WA)	$400,000 average	$35 million

Source: CDC

E. FISCAL POLICIES TO PROMOTE NUTRITION

Fiscal incentives can affect food choices, obesity levels and resultant disease and death rates. Current agricultural subsidies focus on financing the production of commodities (corn, soybeans, wheat, rice, sorghum, dairy, and livestock) that are often converted into high-fat meat and dairy products, refined grains, corn sweeteners, and processed and packaged foods. Between 1995 and 2010, $170 billion was spent on these seven commodities and programs.[309] Higher consumption of calories from these subsidized foods has in turn been associated with greater probability of high BMI, high cholesterol, and other obesity-related risks.[310]

A 2017 review of 30 studies measuring the effect of food pricing found that every 10 percent price increase on unhealthy food reduced sales by 6 percent, while a 10 percent reduction in the cost of healthy foods increased their purchase by 16 percent.[311] Researchers recently modeled the potential effects of price subsidies (on fruits, vegetables, whole grains, and nuts/seeds) and taxes (on processed meat, unprocessed red meats, and sugar sweetened beverages), and found that, together, they could prevent more than 20,000 such deaths per year and might reduce disparities between those with differing levels of education as well.[312]

In addition to taxes and subsidies, there are also federal programs that financially incentivize development that increases access to healthy food or physical activity opportunities.

A few fiscal policies to this effect are highlighted below.

Every 10 percent price increase on unhealthy food reduced sales by 6 percent, while a 10 percent reduction in the cost of healthy foods increased their purchase by 16 percent.

i. Healthy Food Financing Initiative

More than 23 million Americans—including 6.5 million children—live in a food desert. The Healthy Food Financing Initiative—a joint effort of HHS, USDA, and the U.S. Treasury Department along with private businesses—helps establish and equip grocery stores in communities that lack access to affordable, healthy food. HHS awards competitive Community Economic Development grants that both help reduce food deserts and stimulate job and business development in low-income communities. USDA provides financial and technical assistance to food retailers to increase the availability of local foods and to help encourage demand for healthy foods. The Treasury Department's Community Development Financial Institutions Fund provides financing and technical assistance to institutions that invest in businesses that sell healthy foods.[313] Between 2011 and 2015, the Healthy Food Financing Initiative established or supported more than 1,000 grocery stores and healthy food businesses across 35 states.[314]

ii. New Markets Tax Credit

The New Markets Tax Credit encourages investment in low-income communities.[315] By incentivizing companies to build projects such as supermarkets or fitness facilities in communities that lack access to affordable, healthy foods and safe places to play and exercise, this program is removing some of the barriers to a healthy lifestyle that exist in low-income communities. Since 2003, the New Markets Tax Credit has supported more than 4,800 projects in every state, the District of Columbia, and Puerto Rico, including $42 billion in direct investments to low-income communities.[316,317]

iii. Beverage Taxes

Providing consumers with financial incentives to make healthier food choices has proved to be effective.[318] According to a model developed by the Childhood Obesity Intervention Cost-Effectiveness Study (CHOICES) at the Harvard T.H. Chan School of Public Health, a nationwide sugar-sweetened beverage tax of 1 cent per ounce would, over a decade, prevent more than half a million cases of childhood obesity. It would also save the United States more than $14 billion, mainly from reduced medical costs. Another CHOICES study modeled sugary drink taxes in 15 large cities, estimating the tax would prevent 115,000 cases of obesity and save more than $750 million over a decade.[319]

ESTIMATED EFFECT OF SUGARY DRINK TAX ($0.01 PER OUNCE) ON SELECT CITIES OVER 10 YEARS

City	Cases of Obesity Prevented	Deaths Averted	Net Savings	Health Care Cost Savings per $1 Invested
Baltimore	4,950	131	$31.6 million	$31.70
Charlotte	7,140	154	$33.6 million	$30.60
Columbus	7,690	154	$46.3 million	$37.80
Denver	5,120	93	$35.3 million	$36.40
Detroit	7,200	187	$33.6 million	$29.50
Indianapolis	7,710	174	$43.3 million	$36.80
Jacksonville	7,300	173	$39.6 million	$34.84
Las Vegas	4,678	95	$23.1 million	$26.30
Los Angeles	21,700	374	$177 million	$28.20
Louisville	6,793	181	$41.3 million	$52.10
Oklahoma City	4,590	110	$20.0 million	$24.80
Phoenix	13,510	221	$79.8 million	$35.80
San Diego	7,100	126	$58.3 million	$27.20
San Jose	5,200	93	$43.4 million	$27.50
Seattle	3,990	83	$52.8 million	$86.90

Source: Childhood Obesity Intervention Cost-Effectiveness Study

Local sugary drink taxes have shown early promise. Berkeley, California, implemented a 1-cent-per-ounce tax on sugary drinks in 2015. Four months after implementation, consumption of these beverages in low-income Berkeley neighborhoods had decreased by 21 percent, while water consumption had increased by 63 percent.[320] Another study looking at purchase data in Berkeley found that in the first year, the city had a 10 percent decrease in sugary drink sales and a 16 percent increase in water sales.[321] A recent study found that, in the first two months after Philadelphia's 1.5-cents-per-ounce sugary beverages tax went into effect in 2017, residents were 40 percent less likely to drink regular soda and 58 percent more likely to drink bottled water daily, compared with residents of nearby jurisdictions.[322] Longer term studies are needed to understand whether sugary drinks taxes affect overall calorie consumption and weight status and how the impacts differ by race, socioeconomic status, and gender.

Five other municipalities have also enacted sugary drink taxes, including Boulder, Colorado (2 cents per ounce); Seattle, Washington (1.75 cents per ounce); and three additional cities in California: San Francisco, Oakland, and Albany (1 cent per ounce each).[323,324,325] In a more comprehensive 2015 effort, the Navajo Nation added a 2-cents-per-dollar sales tax on all food and beverages with "minimal-to-no nutritional value"; it also eliminated all sales taxes on fresh fruits and vegetables.[326]

In some cases, cities with taxes on sugary drinks have directed the revenue toward programs that promote healthy eating and active living. For example:

- Albany, California—a city of 19,000 residents in the greater Bay area—implemented a 1-cent-per-ounce tax on April 1, 2017.[327] In the first nine months, the SSB tax raised $205,000, most of which the city used to: install hydration stations at parks and the community center; sponsor an education campaign that offered free exercise, nutrition, and cooking classes; and host a community walking challenge.[328]
- In Seattle, a tax on distributors of sugary drinks at 1.75 cents per ounce went into effect on January 1, 2018. It will raise an estimated $15 million annually—money that is earmarked for improving access to healthy foods, supporting early childhood programs, and addressing equity in K–12 education. In anticipation of 2018 revenue, Seattle allocated $3.8 million for healthy food access programs and food banks, $3.3 million for early learning services, $2.6 million for educational support and mentoring programs for high school students, and $2.8 million for additional community-based programs.[329]

The number of active-duty service members who are overweight or who have obesity increased by 61 percent between 2002 and 2011, threatening the military's ability to deploy.

F. OBESITY PREVENTION IN THE MILITARY

Obesity threatens America's military readiness and national security.[330] The number of active-duty service members who are overweight or who have obesity increased by 61 percent between 2002 and 2011, threatening the military's ability to deploy.[331] Service members with obesity are more likely to be injured,[332] and the Defense Department spends about $1.5 billion each year on obesity-related costs, including medical care for service members and their families and the cost of replacing unfit service members.[333]

i. Military Initiatives

Operation Live Well is the Department of Defense's overarching prevention initiative to promote health, well-being, and readiness among service members and in military communities. Operation Live Well includes an educational and outreach campaign as well as demonstration projects, such as the Healthy Base Initiative, which has brought healthy living initiatives to service members and their families on 14 pilot installations since 2014.[334] In a survey of more than 600 employees at one of the Healthy Base Initiative sites, 93 percent said the initiative helped change their behaviors, including their eating habits and physical activity; 83 percent used the program's farmers' market; and 65 percent participated in its stairwells program.[335] The Department of Defense plans to expand the most successful programs department-wide.

Also, across all of the branches, military base and facility planning/design is guided by the Unified Facilities Criteria (UFC), which encourages designs that promote walking running, and biking, as well as the incorporation of community gardens.[336]

Another military obesity-prevention effort is 5210 Healthy Military Children, a military-wide public education campaign that promotes four healthy behaviors children should do each day:

1. Eat **5** or more servings of fruit and vegetables.
2. Spend **2** or fewer hours on a screen.
3. Engage in **1** or more hours of physical activity.
4. Drink 0 sweetened beverages.[337]

The 5210 campaign has been used on Air Force bases in Idaho, Colorado, Oklahoma, Illinois, South Carolina, and Florida,[338] and the message has been promoted throughout the military.[339]

In addition, each branch of the armed services has enacted its own wellness program:

- **The Air Force's Commanders Wellness Program** works to improve healthy behaviors and improve airmen's readiness.
- **Healthy Army Communities** is a pilot program to transform installations into healthy living communities that emphasize good nutrition and physical activity.
- **The Navy and Marine Corps Public Health Center** is workplace health-promotion program that provides annual health assessments to sailors and marines.[340]

G. HEALTHCARE COVERAGE AND PROGRAMS

The healthcare sector assumes many of the direct costs of obesity but also plays a vital role within a comprehensive community-wide effort to reduce obesity. The estimated annual healthcare costs of obesity-related illness are $190 billion—or nearly 21 percent of annual medical spending in the United States.[341] A recent study found that the percentage of U.S. healthcare dollars devoted to caring for obesity-related illness rose 29 percent between 2001 and 2015 (from 6.1 to 7.9 percent).[342]At the same time, clinical interventions can help individuals achieve a healthier weight.[343] Healthcare coverage companies and healthcare systems, with budgets in the billions, can also use their influence with their patients and communities to boost healthy behaviors and choices at large.

i. Medicare and Medicaid

Obesity imposes high costs on Medicare, the federal healthcare program for Americans ages 65 and older, and on Medicaid, the government healthcare program for low-income Americans or those with disabilities. One study found that severe obesity alone costs state Medicaid programs almost $8 billion a year.[344]

Both Medicare and Medicaid cover a variety of obesity-prevention and treatment services. Medicare covers BMI screenings and behavioral counseling for patients with obesity;[345] it also covers bariatric surgery in some situations.[346,347] States can choose which obesity services to cover for Medicaid enrollees, and most states cover at least one obesity-related service. States vary widely on the specific services they cover and the kind of patients who are eligible. For children, states have to cover all medically necessary screening, diagnostic and treatment services, which can include obesity services.[348,349,350,351]

Examples of obesity-related CMS initiatives related Medicare and Medicaid include:

- **Medicare Diabetes Prevention Program:** One in three American adults have prediabetes,[352] a condition where a patient has glucose levels that are elevated but not high enough for a diagnosis of diabetes. Without changes to their lifestyle, as many as 30 percent of people with prediabetes will go on to develop type 2 diabetes.[353] The Medicare Diabetes Prevention Program (MDPP) helps avert the onset of diabetes among Medicare beneficiaries with prediabetes by providing patients with practical training on diet, physical activity, and weight-control strategies. A randomized, controlled clinical trial evaluated whether, in people who are at high risk for type 2 diabetes, lifestyle programs aimed at helping participants lose a modest amount of body weight could prevent or delay the disease. This study found that participants in the lifestyle program reduced their chances of developing diabetes by 58 percent compared with participants in a control group who did not have the lifestyle program.[354]

  In addition to preventing disease, MDPP also has a huge potential for cost savings, since Medicare spends $42 billion per year more on diabetes patients in Medicare Fee for Service compared with typical patients.[355] Due to the success of the lifestyle program, Medicare began covering MDPP as an additional preventive service with no cost for patients on April 1, 2018. This is the first time a prevention model from the Innovation Center (a section of CMS created by the Affordable Care Act with the mission of developing new healthcare payment and service delivery models) has expanded to all qualified beneficiaries.[356] Six states—California, Maryland, Montana, Oregon, Pennsylvania, and Washington—have instituted or are piloting similar programs.[357, 358,359,360,361]

- **Childhood Obesity Performance Improvement Projects:** The federal government mandates that states with a Medicaid managed care program require health plans to complete performance improvement projects (PIPs). Thirteen states reported a combined total of 26 PIPs that targeted childhood obesity in 2014–2015.[362]

ii. Healthcare Systems and Hospital Programs

Healthcare systems and providers can play key roles in obesity prevention and reduction by working with community partners, implementing evidence-based initiatives, and making better connections between clinical and community interventions.

Screening Services and Clinical Decision Support

Healthcare providers can help prevent obesity by referring patients with obesity to counseling and lifestyle coaching programs—a strategy the U.S. Preventive Services Task Force recommends.[363] However, successful implementation of such strategies requires physician training (such as the American College of Preventive Medicine's Lifestyle Medicine Core Competencies program, an evidence-based curriculum for physicians that emphasizes promotion of healthy behaviors and environments and utilizing team care models and community resources to deliver care), as well as reimbursement for registered dieticians and other non-physician providers. Providers can also screen patients for food insecurity and help connect low-income patients with nutrition assistance programs such as SNAP, WIC, and the school meals programs. The American Academy of Pediatrics also recommends such screenings and referrals.[364]

Providers who use electronic health records (EHRs) often have access to clinical decision support systems for assistance in obesity-prevention screening and treatment. For example, EHRs can be set up to alert clinicians when patients have a high BMI and to provide recommendations about counseling resources and weight-management programs. This type of clinical decision support is a cost-effective obesity-prevention tool,[365] and, if applied nationally, could prevent 43,000 cases of obesity over a 10-year period.[366]

Provider Competencies for the Prevention and Management of Obesity

Most healthcare providers receive insufficient training in the prevention and management of obesity. To help guide better provider training, obesity experts from the Integrated Clinical and Social Systems for the Prevention and Management of Obesity Innovation Collaborative agreed on 10 core competencies that all healthcare professionals need to properly care for patients. The competencies include a basic knowledge of the disease and epidemiology of obesity, an understanding of interprofessional care, and a commitment to using best practices for patient interactions and care.[367]

Community Benefit Programs

Most hospitals in the United States are nonprofit organizations.[368] To qualify for this tax exemption, they must demonstrate that their primary purpose is to benefit the community.[369] The Affordable Care Act built on this longstanding requirement by mandating that nonprofit hospitals specifically assess, implement, and evaluate strategies to address their local community's health needs.[370] Childhood obesity has emerged as a priority health need in many of these hospital assessments. For example, more than half of the Catholic Health Association's 203-member hospitals found childhood obesity to be a top priority for their communities,[371] while 70 percent of American Association of Medical Colleges' 238-member hospitals identified obesity as a priority health need.[372]

The IRS estimates that nonprofit hospitals spent $62.4 billion on community benefit programs in 2011,[373] which include a wide variety of initiatives, such as obesity-prevention activities like nutrition programs, physical activity programs, school-based programs, and public awareness campaigns.

- **Boston Children's Hospital** supports Fitness in the City, a local program that helps children who are overweight or have obesity meet fitness and physical activity goals.
- **Kaiser Permanente** supports a Healthy Eating Active Living campaign in in 170 communities across the United States designed to improve community health with a focus on reducing obesity and chronic disease.[374] Studies looking at health outcomes in some of these communities found the most success in their youth initiatives, particularly those in schools and those related to increasing physical activity.[375]
- **The Genesys Regional Medical Center** identified obesity-related diseases as their top priority and, in collaboration with a variety of community organizations, implemented a food security and education program to increase the availability and consumption of healthy foods in the Flint, Michigan area.[376]

Healthy Food Procurement

Healthcare facilities—particularly large institutions like hospitals—can require their food-service and vending-machine providers to offer healthier food choices to patients, visitors, and employees. The Healthy Food in Health Care Pledge assists the healthcare system in leveraging its purchasing power and building a healthier food system. More than 500 hospitals and food-service providers in the United States and Canada have signed the pledge, demonstrating their commitment to offering healthier options.[377] CDC has also developed a tool to help hospitals assess their food and beverage environment and make improvements.[378]

Breastfeeding Support

Children who are breastfed are at a significantly reduced risk for obesity later in life.[379] As nearly 99 percent of American babies are born in hospitals,[380] these facilities can help reduce obesity by supporting breastfeeding during the critical postpartum period. Data trends suggest that hospitals are improving their breastfeeding support practices. In 2016, 18.3 percent of children in the United States were born at facilities designated as Baby Friendly.[381] This was more than double the 2014 rate of 7.8 percent.[382] Most U.S. births, however, still take place in facilities that lack this designation. To become accredited as Baby Friendly, a hospital must implement 10 evidence-based practices shown to increase breastfeeding initiation and duration, and it must restrict the marketing of breastmilk substitutes.[383]

Appendix

STATE POLICY UPDATE								
Early Childhood Education								
	Healthy Eating (2018)	Breastfeeding (2018)			Physical Activity (2018)	Screen Time (2018)	Drinking Water (2018)	Nutritional Standards (2018)
	State requires licensed Early Childhood Education (ECE) programs to have healthy eating policies	State reequires licensed ECE programs to allow/encourage breastfeeding	State requires licensed ECE programs to allow/ encourage onsite breastfeeding	State requires licensed ECE programs to have private space available for breastfeeding	State requires licensed ECE programs to have time for daily physical activity	State requires licensed ECE programs to prohibit screen time for children under age 2 or sets limits	State requires licensed ECE programs to make drinking water available to children	State requires licensed ECE programs to provide meals and snacks that meet general USDA and/or CACFP standards
Alabama	√L,Q	√L			√L,Q	√L	√L	√L
Alaska	√L				√L	√L		√L
Arizona	√L	√L	√L		√L	√L	√L	
Arkansas	√L,Q	√L	√L		√L,Q	√L	√L	√L
California	√L	√L	√L	√L	√L		√L	
Colorado	√L,Q	√L	√L		√L,Q	√L	√L	√L
Connecticut	√L				√L		√L	
Delaware	√L,Q	√L	√L	√L	√L,Q	√L	√L	
D.C.	√L	√L	√L	√L	√L	√L	√L	√L
Florida	√L				√L	√L	√L	√L
Georgia	√L,Q	√L	√L		√L,Q	√L	√L	√L
Hawaii	√L				√L		√L	√L
Idaho	√Q				√Q			
Illinois	√L				√L	√L	√L	
Indiana	√L,Q	√L			√L,Q	√L,Q	√L	
Iowa	√L,Q				√L		√L	√L
Kansas	√L				√L		√L	
Kentucky	√L	√L			√L	√L	√L	
Louisiana	√L	√L			√L		√L	√L
Maine	√L				√L,Q	√L	√L	
Maryland	√L,Q				√L,Q	√L,Q	√L	√L,Q
Massachusetts	√L,Q				√L,Q		√L	√L
Michigan	√L,Q	√L	√L		√L,Q	√L	√L	√Q
Minnesota	√L,Q				√L,Q		√L	√L
Mississippi	√L	√L	√L	√L	√L	√L	√L	√L
Missouri	√L				√L		√L	
Montana	√L,Q	√Q			√L		√L	√Q
Nebraska	√L,Q	√Q			√L,Q	√Q		√L,Q
Nevada	√L,Q	√L,Q	√L,Q	√L	√L,Q		√L	√Q
New Hampshire	√L				√L		√L	√L
New Jersey	√L,Q	√Q	√Q		√L,Q	√L	√L	√L
New Mexico	√L,Q				√L,Q	√L,Q	√L	√L
New York	√L,Q	√L			√L,Q	√L,Q	√L	√L,Q
North Carolina	√L	√L	√L	√L	√L	√L	√L	√L
North Dakota	√L,Q	√L			√L,Q		√L	√L,Q
Ohio	√L	√L			√L		√L	√L
Oklahoma	√L	√L	√L		√L,Q	√L,Q	√L	√L
Oregon	√L,Q				√L,Q	√Q	√L	√L
Pennsylvania	√L,Q				√L,Q		√L	
Rhode Island	√L				√L,Q	√L	√L	√L
South Carolina	√L,Q				√L,Q	√L,Q	√L	√L,Q
South Dakota	√L				√L			
Tennessee	√L	√L			√L	√L	√L	√L
Texas	√L,Q	√L	√L		√L	√L	√L	
Utah	√L,Q	√Q	√Q	√Q	√L,Q	√L,Q	√L,Q	√L
Vermont	√L	√L	√L		√L	√L	√L	√L
Virginia	√L	√L	√L		√L		√L	√L
Washington	√L,Q				√L,Q			
West Virginia	√L				√L	√L	√L	√L
Wisconsin	√L,Q				√L,Q	√L	√L	√L,Q
Wyoming	√L				√L			

Nemours State Policy Review on Obesity Prevention[1]

Note: √ = State has either licensing regulations, QRIS Stanadards or both.

L= licensing regulations; Q = QRIS Standards

1. Source: Nemours Children's Health System. "State Policy Review on Obesity Prevention." August 2018.

STATE POLICY UPDATE

School Physical Activity (2018 report, based on 2016 data)

	Physical Education				Recess/General Activity Requirements		
	State requires at least 40 minutes of PE in elementary school	State requires at least 40 minutes of PE in middle school	State requires at least 40 minutes of PE in high school	State requires PE credits for high school graduation	State has recess requirements	State recommends recess	State has general activity requirements
Alabama	≥150 min/week	150-224 min/week	No	Yes			
Alaska	No	No	No	No			
Arizona	No	No	No	No			
Arkansas	40-89 min/week	40-149 min/week	No	Yes		√	√
California	90-149 min/week	150-224 min/week	150-224 min/week	Yes		√	
Colorado	No	No	No	No			√
Connecticut	No	No	No	Yes	√		
Delaware	No	No	No	Yes			
D.C.	≥150 min/week	≥225 min/week	No	Yes			
Florida	≥150 min/week	No	No	Yes			
Georgia	≥150 min/week	No	No	Yes			
Hawaii	40-89 min/week	150-224 min/week	150-224 min/week	Yes			
Idaho	No	No	No	No			
Illinois	No	No	No	No			
Indiana	No	No	No	Yes	√		
Iowa	No	No	No	Yes		√	√
Kansas	No	No	No	Yes		√	
Kentucky	No	No	No	Yes			
Louisiana	≥150 min/week	150-224 min/week	No	Yes			√
Maine	No	No	No	Yes			
Maryland	No	No	No	Yes			
Massachusetts	No	No	No	No			
Michigan	No	No	No	Yes		√	
Minnesota	No	No	No	No			
Mississippi	40-89 min/week	40-149 min/week	No	Yes			
Missouri	40-89 min/week	40-149 min/week	No	Yes	√		
Montana	No	≥225 min/week	No	Yes			
Nebraska	No	No	No	Yes			
Nevada	No	No	No	Yes		√	
New Hampshire	No	No	No	Yes		√	
New Jersey	≥150 min/week	150-224 min/week	150-224 min/week	Yes			
New Mexico	No	No	No	Yes		√	
New York	90-149 min/week	40-149 min/week	40-149 min/week	Yes			
North Carolina	No	No	No	Yes			√
North Dakota	40-89 min/week	40-149 min/week	No	Yes			
Ohio	No	No	No	Yes			
Oklahoma	40-89 min/week	No	No	No		√	
Oregon	≥150 min/week	≥225 min/week	No	Yes			
Pennsylvania	No	No	No	Yes			
Rhode Island	90-149 min/week	40-149 min/week	40-149 min/week	No	√		
South Carolina	40-89 min/week	No	No	Yes		√	√
South Dakota	No	No	No	Yes			
Tennessee	No	No	No	Yes			√
Texas	No	No	No	Yes			√
Utah	No	No	No	Yes			
Vermont	No	No	No	Yes		√	
Virginia	No	No	No	Yes	√		
Washington	90-149 min/week	40-149 min/week	No	Yes			
West Virginia	90-149 min/week	No	No	Yes			
Wisconsin	No	No	No	Yes			
Wyoming	No	No	No	Yes			

Safe Routes to School[2]

2. Lieberman M, Pasillas A, Pedroso M, Williams H, Zimmerman S. "Making Strides 2018: State Report Cards on Support for Walking, Bicycling, and Active Kids and Communities." Safe Routes to School National Partnership, 2018. https://www.saferoutespartnership.org/sites/default/files/resource_files/061218-sr2s-making-strides-2018_final.pdf (August 20, 2018).

The Council of State Governments[3]

3. Whitehouse E, Shafer M. "State Policies on Physical Activity in Schools." The Council of State Governments, March 2017. http://knowledgecenter.csg.org/kc/content/state-policies-physical-activity-schools (August 20, 2018)

STATE POLICY UPDATE

	School Nutrition					Food Financing and Taxes		
	Community Eligibility (2016-2017)	**State Fundrasising Exemptions (2018)**	**School Food Authorities (2016)**	**School Lunch and School Breakfast Programs (2016-2017)**		**Healthy Food Financing Initiative (2011-2017)**	**Sales Tax on Soda (2018)[a]**	
	Percent of eligible districts adopting the community eligibility provision take-up	State policy allows one or more fundraising exemptions	Percent of School Food Authorities Certified	Free and Reduced Price (FRP) Students in School Breakfast Program per 100 FRP Students in National School Lunch Program	School Breakfast Program Schools as % of National School Lunch Program Schools	Organization(s) in state awarded funding by the Community Development Financial Institution Fund	Soda treated same as groceries for sales tax determination	Soda treated differently than groceries for sales tax determination
Alabama	31.7	Yes	100	59.4	97.2		√[b]	
Alaska	78.8	Not specified	93.8	55.3	88.8		N/A	N/A
Arizona	32.2	Yes	99.8	54.4	94.4		√[c]	
Arkansas	25	Yes	98	63.8	99.9			√[d]
California	15.1	No	99	56.3	89.1	√		√[c]
Colorado	28.6	Yes	100	59.7	84.1	√		√[c]
Connecticut	45.7	No	99	51.6	84.8			√[c]
Delaware	76.5	No	98.1	62.3	99.6		N/A	N/A
D.C.	83	No	94	67.7	92.4			√[c]
Florida	65.1	NS	100	51.1	98.6	√		√[c]
Georgia	64.1	Yes	97.9	59.7	97.2	√	√[c]	
Hawaii	70.6	No	100	41.8	97.6		√[b]	
Idaho	46.8	Yes	100	58.7	95.8		√[b]	
Illinois	54	Not specified	100	47.6	83	√		√[d]
Indiana	30	Yes	100	51.6	90.8			√[c]
Iowa	30.8	No	99.6	43.8	93			√[c]
Kansas	12.7	Yes	99.8	50.2	93.7		√[b]	
Kentucky	88.3	No	100	65	95.2	√		√[c]
Louisiana	78	No	99	57	95.3	√	√[b]	
Maine	27.5	No Policy	96.7	60.8	96.4	√		√[c]
Maryland	45.2	No	100	63.3	98.6	√		√[c]
Massachusetts	36.9	No Policy	99.6	52.7	83.2	√	√[c]	
Michigan	48.1	Yes	100	59.3	91.6	√	√[c]	
Minnesota	40.4	No	99	53.9	87.7			√[c]
Mississippi	36.9	No	100	59.7	94.7	√	√[b]	
Missouri	35.6	Yes	100	59.6	93.1		√[d]	
Montana	72.5	No	100	52	89.7		N/A	N/A
Nebraska	27.6	No	100	42.8	84.2		√[c]	
Nevada	71.4	No	100	63.9	94.9		√[c]	
New Hampshire	20	Yes	99	41.1	91.2		N/A	N/A
New Jersey	40.8	No	99.2	59.4	81.4			√[c]
New Mexico	75.2	Yes	97.4	70.3	94.4		√[c]	
New York	55.4	No	100	52	93.8	√		√[c]
North Carolina	62.8	No	100	58.4	98.6	√		√[c]
North Dakota	85.7	Yes	100	49.6	89.5			√[c]
Ohio	92.2	No Policy	100	56	87.5	√		√[c]
Oklahoma	26.9	Yes	100	58.4	97.7	√	√[b]	
Oregon	64.5	No	99	53.8	95.5		N/A	N/A
Pennsylvania	46.6	Yes	93.5	50	91.2	√		√[c]
Rhode Island	12	No	90.4	52.8	98.4			√[c]
South Carolina	51.6	Yes	100	62.3	99.8	√	√[c]	
South Dakota	57.7	Yes	100	46.1	86.6		√[b]	
Tennessee	60.3	Not specified	100	65	98.3		√[d]	
Texas	31.6	Not specified	98	62.8	100.2	√		√[c]
Utah	38.9	Yes	97	39.6	88.8		√[d]	
Vermont	63.6	No	94	66.2	96.4		√[c]	
Virginia	42.2	Not specified	100	59.3	98.5	√	√[d]	
Washington	36.1	No	100	45.5	93.4			√[c]
West Virginia	87.3	No Policy	100	85.3	98.9			√[c]
Wisconsin	52.7	Yes	100	51.7	81.3			√[c]
Wyoming	71.4	Yes	98.5	43.9	91.5		√[c]	
	Food Research Action Center; U.S. Department of Agriculture[4]	Institute for Health Research and Policy[5]	U.S. Department of Agriculture[6]	Food Research Action Center; U.S. Department of Agriculture[7]	Community Development Financial Institutions Fund[8]	Tax Foundation[9]		

a Note: Sales taxes are distinct from soda excise taxes. Sales taxes are lower and added at the register instead of within the shelf price-and thus less likely to impact consumption.

b Groceries subject to sales tax

c Groceries exempt from sales tax

d Groceries taxed at lower rate than sales tax base

STATE POLICY UPDATE

Active Living

	Shared-Use Agreements (2018 report)			Complete Street Policies (CSP) and Intent for Action (2018)		
	State requires schools to allow community access to school recreational facilites outside of school hours	State recommends cooperation in allowing community access to school recreational facilites outside of school hours	State does not have shared use policy	State's CSP includes mandatory requirements for clear actions that demonstrate intent to meet needs of all users	State's CSP includes mandatory requirements, but does not have clear action or intent	State's CSP does not include mandatory requirements or has not adopted a CSP
Alabama		√				√
Alaska			√			√
Arizona		√				√
Arkansas		√				√
California	√			√		
Colorado		√		√		
Connecticut		√		√		
Delaware		√			√	
D.C.		√		√		
Florida		√		√		
Georgia		√		√		
Hawaii	√				√	
Idaho		√				√
Illinois		√		√		
Indiana		√			√	
Iowa		√				√
Kansas		√				√
Kentucky		√				√
Louisiana		√		√		
Maine		√			√	
Maryland	√				√	
Massachusetts		√		√		
Michigan		√			√	
Minnesota	√			√		
Mississippi		√			√	
Missouri		√			√	
Montana		√				√
Nebraska			√			√
Nevada		√		√		
New Hampshire		√				√
New Jersey		√		√		
New Mexico		√			√	
New York		√		√		
North Carolina		√			√	
North Dakota		√				√
Ohio	√					√
Oklahoma		√				√
Oregon		√			√	
Pennsylvania		√				√
Rhode Island		√			√	
South Carolina		√			√	
South Dakota		√				√
Tennessee		√		√		
Texas		√				√
Utah	√			√		
Vermont			√	√		
Virginia			√		√	
Washington		√			√	
West Virginia		√				√
Wisconsin		√				√
Wyoming		√				√

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