

The State of Obesity:

Better Policies for a Healthier America 2016

ISSUE REPORT



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Acknowledgements

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REPORT AUTHORS

Laura M. Segal, MA

*Director of Public Affairs
Trust for America's Health*

Jack Rayburn, MPH

*Senior Government Relations Manager
Trust for America's Health*

Alejandra Martín, MPH

*Health Policy Research Manager
Trust for America's Health*

Table of Contents

What Is The State Of Obesity In America? . . . 5

Introduction 7

SECTION 1: Adult Obesity Trends 13

2015 Behavioral Risk Factor Survey Adult Obesity Rates 14

Racial and Ethnic Inequities and Obesity . . . 21

- American Indian/Alaska Native State Data . . 23

SECTION 2: Childhood Obesity Trends 24

Overview: Children and the Importance of Maintaining a Healthy Weight 25

- Obesity and Adverse Childhood Experiences (ACEs) and Toxic Stress 26

WIC Preschoolers (Supplemental Nutrition Program for Women Infants and Children Participant and Program Characteristics data) 27

Children Ages 10 to 17 (National Survey of Children’s Health data) 29

High School Students (Youth Risk Behavior Surveillance data) 30

Food-Insecure Children 32

Prenatal and Maternal Health 35

- Women Enrolled in WIC and were Obese Prepregnancy–1994, 2004 and 2014 . . . 36
- Breastfeeding 37

SECTION 3: High-Impact Policy Opportunities 38

A. Early Childhood Policies and Programs . . 38

- Overview: Nutrition and Physical Activity in Infants, Toddlers and Young Children 40
- Child and Adult Care Food Programs (CACFP) – 2016 Standards 41
- Implementation of the 2014 Reauthorization of the Child Care and Development Block Grant (CCDBG) 42
- State Requirements for Child Care Settings 43
- Examples of Early Child Care Initiatives: Let’s Move, Young Star 46
- Head Start – Performance Standards 47
- Implementation of the Early Education Components of Every Student Succeeds Act (ESSA) of 2015 48
- CDC’s Early Childhood Initiatives – Technical Assistance, School Health Grants, National Early Care and Education Learning Collaborative . . 49
- WIC – Continued Emphasis on Nutrition and Breastfeeding Support 50
- Additional Measures to Increase Breastfeeding Support –Insurance, Medical Practices and Workplace Policies 51
- Some Key Breastfeeding Laws in States: Birth Facilities Support, Workplace and Jury Duty, Public Indecency Exemption and Support in Child Care Facilities 51

- Example Initiative: Texas Ten Step Star Achiever Breastfeeding Learning Collaborative 53

● Supporting At-Risk Children – Early Identification and Follow-Up Support Systems 54

- Example Initiative: Nurse-Family Partnership 55

B. School-Based Policies and Programs . . . 56

● Overview: Nutrition and Physical Activity in School-Aged Children and Teens 57

- High School Students Dietary Behaviors and Physical Activity (YRBS data) 59

● Child Nutrition Reauthorization in 2016 – and School Meal and Snack Programs 66

● Implementation of the Elementary and Secondary Components of ESSA, 2015 . . 71

● Local School Wellness Policies 74

● Examples of School-Based Programs: Children’s Aid Society-Community Schools, HealthMPowers and Healthy Out-of-School Time Coalition (HOST) 76

● CDC School Health Cooperative Agreements and National Goals and Guidance 78

● New Models for School-Based Health and Social Services 78

● State Policy Reviews: 79

- Water Availability 79
- Breakfast Policies 80
- Farm-to-School 81
- Zero-Exemption School Nutrition Policies 82
- Out-of-School and School Celebration Nutrition Policies 82
- Physical Education Requirements 83
- Physical Activity Requirements 84
- Safe Routes to School Programs 84
- Shared-Use Policies 86
- Health Assessments 87

C. Community-Based Policies and Programs 88

● Overview: U.S. Eating Habits, Physical Activity, Built Environment, Health, Food Deserts and Food Marketing 89

● CDC Support for Obesity, Nutrition and Physical Activity Programs 92

● Marketplace Incentives to Improve Healthy Food Availability in More Communities: Healthy Food Financing Initiatives (HFFI) and New Market Tax Credits (NMTC) 94

● Implementation of Restaurant Menu Labeling Requirements 97

● Revised Nutrition Facts Label Information . . 97

● Revised Dietary Guidelines for Americans . . 98

● DoD’s Operation Live Well (OLW) and Healthy Base Initiative (HBI) 99

● State Policy Reviews: 100

- Complete Streets and Transportation Alternative Programs 100

The State of Obesity: Obesity Policy SERIES

Table of Contents (continued)

- Nutrition Assistance and Education Programs 102
- State Government Workplace and Facilities Nutrition Standards 105
- Overview: Sugar-Sweetened Beverages – Consumption and Impact 106
- Local and State Taxing Policies 107

D. Health, Healthcare and Obesity 108

- Overview: Major Obesity-Related Health Concerns 109
- Overview: Obesity and Healthcare Costs . . 111
- Healthcare Coverage 112
 - Status of Medicaid Fee-for-Service Treatment and Obesity Interventions . . 113
- Healthcare – Screening and Encouraging Healthy Practices and Connecting to Supportive Services 114
- Examples of Centers for Medicare and Medicaid (CMS) Obesity Prevention Pilots and Programs 115

- Hospitals Supporting Local Health Improvement Efforts: Including through Nonprofit Community Benefit Programs . . . 117
- Review of Community Benefit and Childhood Obesity Efforts by the Catholic Health Association of the United States 118

SECTION 4: State Of Obesity Policy Recommendations 120

- A. Invest in Obesity Prevention 120
- B. Early Childhood Policies and Programs . . 120
- C. School-Based Policies and Programs . . 120
- D. Community-Based Policies and Programs 121
- E. Health, Healthcare and Obesity 121

APPENDIX: Methodology For Behavioral Risk Factor Surveillance System For Obesity, Physical Activity And Fruit And Vegetable Consumption Rates 122

MAPS AND TABLES

- State Maps:** Adult Rates, 2015 13
- State Table:** Obesity and Overweight Rates and Related Health Indicators in the States . . . 14
- State Maps:** Past Obesity Trends among U.S. Adults 17
- State Maps:** Obesity Rates for Baby Boomers, Seniors and Young Adults, 2015 18
- State Table:** Obesity Rates by Age and Ethnicity 21
- State Map:** Percent of Children Ages 2 to 4 Enrolled in WIC Classified as Obese 27
- State Map:** Children Enrolled in WIC, Differences in Obesity Rates between 2008 and 2012 . . 28
- State Map:** Percent of Children Classified as Obese PedNSS 2011 28
- State Map:** Percent of Children Ages 10 to 17 Classified as Obese, 2011 NSCH 29
- State Map and Table:** Percentage of High School Students Classified as Obese 30
- State Map:** Percent of Women Classified as Obese Prepregnancy, 2011 35
- State Maps:** Percent of Women Enrolled in WIC and Classified as Obese Prepregnancy–1994, 2004 and 2014 36
- State Map:** Percent of Infants Exclusively Breastfeeding at 6 Months, 2012 Births . . 37

- State Table:** Voices for Healthy Kids and Nemours Policy Scan on ECE Obesity Prevention 44
- State Map:** Breastfeeding Support in Birth Facilities 51
- State Maps:** State Breastfeeding Laws . . 52
- State Map and Table:** Percent of High School Students who did not Eat Fruit or Drink 100 Percent Fruit Juices 59
- State Map and Table:** Percent of High School Students Who Did Not Eat Vegetables . . . 60
- State Map and Table:** Percent of High School Students Who Drank a Can of Soda 61
- State Map and Table:** Percent of High School Students Who Did Not Eat Breakfast 62
- State Map and Table:** Percent of High School Students Who Were Not Active all Week . . 63
- State Map and Table:** Percent of High School Students Who Played Games or Used a Computer Three or More Hours per Day . . 64
- State Map and Table:** Percent of School Districts Participating in Farm-to-School . . 81
- State Map and Table:** Percent of Total Budget School District Spent on Local Food 81
- State Map:** State Fundraising Exemption Policies 82

- State Map:** State Requires Physical Education for Elementary, Middle and High Schools . . 83
- State Map:** State Requires a Minimum Time to Participate in Physical Education 83
- State Map:** State Requires Minimum Amount of Time for Physical Activity per Day/Week . . 84
- State Map:** State had Statutes or Regulations on Safe Routes to School 84
- State Map:** Percent Obligated State-Controlled TAP Funds for SRTS Projects 85
- State Map:** State has Shared-Use Agreements 86
- State Map:** State Requires BMI Screening or Weight-Related Assessments 87
- State Map:** Percent of Adults Who are Inactive 90
- State Map:** Healthy Food Financing Initiative: Grants Distributed from 2011 to 2015 . . . 95
- State Map:** Complete Street Policies and Intent for Action by State 101
- State Map:** Percent Sales Tax on Regular Soda in Food Stores by State 107
- State Map:** Percent of Adults with Diabetes 109
- State Map:** Percent of Adults with Hypertension 110

The State of Obesity: *Obesity Policy*

SERIES

State of Obesity:

BETTER POLICIES FOR A HEALTHIER AMERICA

WHAT IS THE STATE OF OBESITY IN AMERICA?



The following is a letter from Risa Lavizzo-Mourey, MD, MBA, president and CEO of the Robert Wood Johnson Foundation (RWJF), and Richard Hamburg, Interim President and CEO Trust for America's Health (TFAH)

The Trust for America's Health (TFAH) and the Robert Wood Johnson Foundation (RWJF) believe that all adults should have access to affordable, healthy foods and beverages and the opportunity to live healthy, active lives.. We also believe all children in the United States—no matter who they are or where they live—should have the chance to grow up at a healthy weight. Since this report was first issued more than a decade ago, we've seen progress toward achieving this vision.

Take, for example, CentraCare Health, a nonprofit healthcare system in central Minnesota that, in the early 2000s, set out to help children in the region reach a healthy weight. With support from Stearns County Public Health and a grant from Minnesota's Statewide Health Improvement Program, CentraCare Health brought together a coalition of medical professionals, policymakers, educators and other local organizations committed to making healthy foods and physical activity a regular part of children's lives. The result?

- New, safer routes to school.
- Grocery stores and local schools adopted a nutrition scoring system to make it easier for families to make healthy choices.
- School districts updated their wellness policies

- And between 2008 and 2015, the obesity rate among 12-year-olds in St. Cloud dropped from 17 percent to 13 percent, a 24 percent relative decline.

Stories like this illustrate the progress we have seen in recent years. The obesity rate is declining among our nation's youngest children and has held steady among older children and teens for ten years but is still increasing among younger teens. In addition to St. Cloud, a number of cities, counties and states, Cherokee County, South Carolina, Seminole County, Florida, Southern California, Philadelphia, Colorado, and New Mexico, have reported declines in their childhood obesity rates in the last year alone, joining a list of many others from coast to coast.

Growth in adult rates have slowed over time. We used to see dozens of states reporting increases in their adult obesity rates each year. This year, just two did. But rates overall are



still far too high. Twenty-five states have adult obesity rates over 30 percent, putting millions of people at increased risk for heart disease, cancer and diabetes. Rates are even higher among Black, Latino and Native American families, as well as families living in poverty.

Fortunately, we have also seen significant progress on the policy front this year that will benefit millions of families and neighborhoods across America:

- The U.S. Department of Agriculture (USDA) issued updated nutrition standards for the foods and beverages served in the Child and Adult Care Food Program (CACFP). More than four million young children from low-income families, as well as more than 120,000 adults, will benefit from the updated standards.
- The U.S. Department of Agriculture also released updated requirements for local school wellness policies that will ensure any food or beverage marketed in schools meets Smart Snacks nutrition standards.
- The U.S. Food and Drug Administration issued final updates to the Nutrition Facts panel found on packaged foods and beverages

and put the finishing touches on new menu labeling requirements that cover chain restaurants and other food retail establishments. These changes will provide important nutrition information to consumers when they shop at the grocery store or go out to eat. With more information, families will be able to make healthier choices.

- Thanks to the enactment of the landmark Every Student Succeeds Act (ESSA), physical education is included for the first time among the “well-rounded” subjects eligible for federal funding for schools with a high percentage of students from lower-income families.

These changes will take time to be fully implemented, but we are confident that they will ultimately result in healthier schools and communities for families across the country.

States and cities are continuing to show a lot of forward momentum too. Some examples over the past year include:

- Ohio enacted a budget that includes \$2 million in seed capital to create a Healthy Food Financing Initiative (HFFI), which will be a flexible grant and loan fund;

- Mississippi enacted a bill setting snack nutrition standards that goes beyond Smart Snacks requirements;
- Virginia enacted a bill setting minimum time requirements for physical activity in elementary schools; and,
- Los Angeles approved requirements for all farmers’ markets to accept SNAP Electronic Benefit Transfer (EBT) cards.

This year’s report has a renewed focus on what states already are doing to help all children grow up at a healthy weight, and has implications for leaders across sectors.

This progress makes us hopeful about the future. We need that hope. Because there’s still no question that obesity is a bigger threat to our health and our country now than it was when we were children.

This year’s *State of Obesity* report is an urgent call to action for government, industry, healthcare, foundations, schools, child care and families around the country to redouble efforts to provide a brighter, healthier future for our children. Together we can build an inclusive Culture of Health in this country and ensure that all children and families live healthy lives.

The State of Obesity: Obesity Policy SERIES

Introduction

After decades of increasing, the national childhood obesity rate has leveled off and the rise in obesity among adults is beginning to slow. This is progress, but rates are alarmingly higher than they were a generation ago as demonstrated by this report, which looks at data over the past 25 years.

Obesity remains one of the biggest threats to the health of our children and our country, putting millions of Americans at increased risk for a range of chronic diseases and contributing to more than \$147 billion to \$210 billion dollars in preventable healthcare spending.¹

Some of the most concerning trends include:

For children and youth:

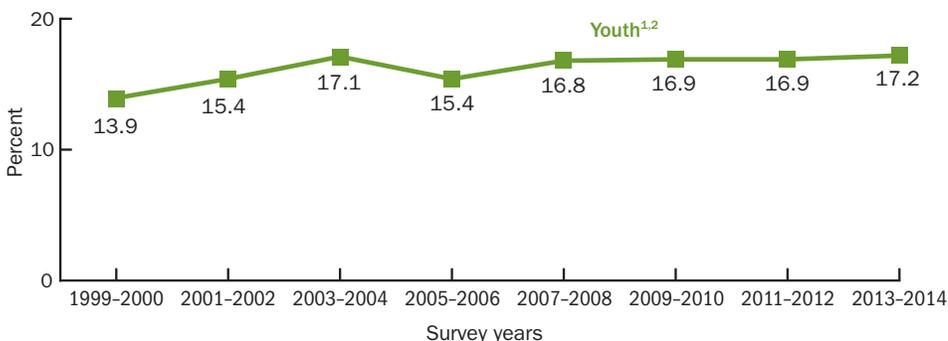
Nationally, childhood obesity rates have remained stable for the past decade — at around 17 percent [ages 2 to 19, National Health and Nutrition Examination Survey (NHANES), 2011-2014 data].² Rates are declining among 2- to 5-year-olds, stable among 6- to 11-year-olds, and increasing among 12- to 19-year-olds.

- Since 1980, the childhood obesity rates (ages 2 to 19) have tripled — with the

rates of obese 6- to 11-year-olds more than doubling (from 7 percent to 17.5 percent) and rates of obese teens (ages 12 to 19) quadrupling from 5 percent to 20.5 percent.^{3,4} [NHANES, 2011-2014 data]

- Obesity rates have also become much higher starting in earlier ages — 8.9 percent of 2- to 5-year-olds are now obese, and approximately 2 percent are extremely obese.⁵ [NHANES, 2011-2014 data]
- Among high school students, out of 37 states, obesity rates exceeded 15 percent in 11 states and no state had a rate below 10 percent.⁶ [Youth Risk Behavior Survey (YRBS), 2015 data]
- Nearly 2 percent of young children (ages 2 to 5) are extremely obese, 5.6 percent of 6- to 11-year olds are extremely obese

Trends in obesity prevalence among youth aged 2–19 years: United States, 1999–2000 through 2013–2014

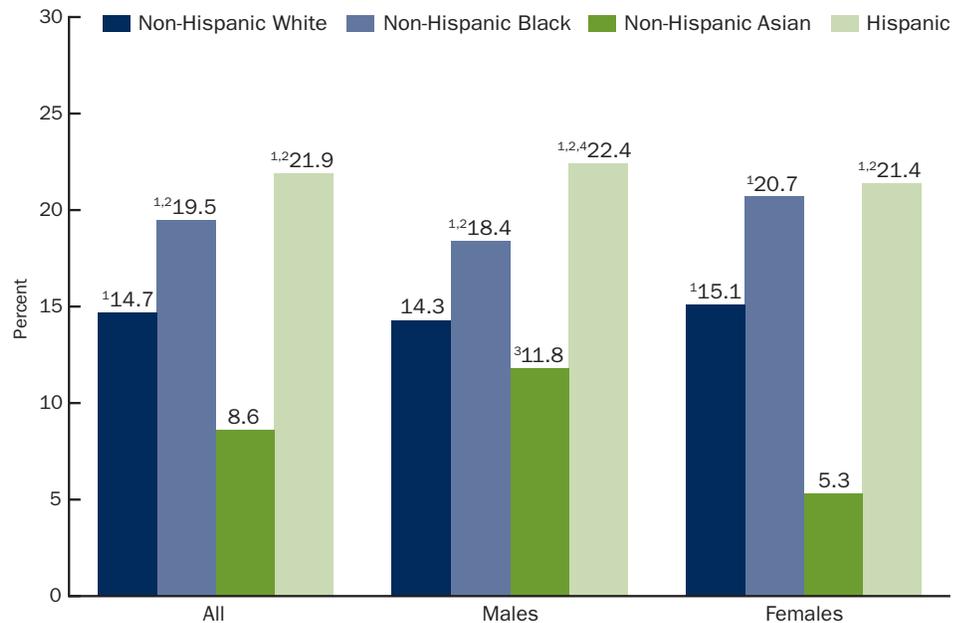


¹ Significant increasing linear trend from 1999–2000 through 2013–2014.

² Test for linear trend for 2003–2004 through 2013–2014 not significant ($p > 0.05$).

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey.

Prevalence of obesity among youth aged 2–19 years, by sex and race and Hispanic origin: United States, 2011–2014



¹ Significantly different from non-Hispanic Asian persons.
² Significantly different from non-Hispanic White persons.
³ Significantly different from females of the same race and Hispanic origin.
⁴ Significantly different from non-Hispanic Black persons.
 SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, 2011–2014.

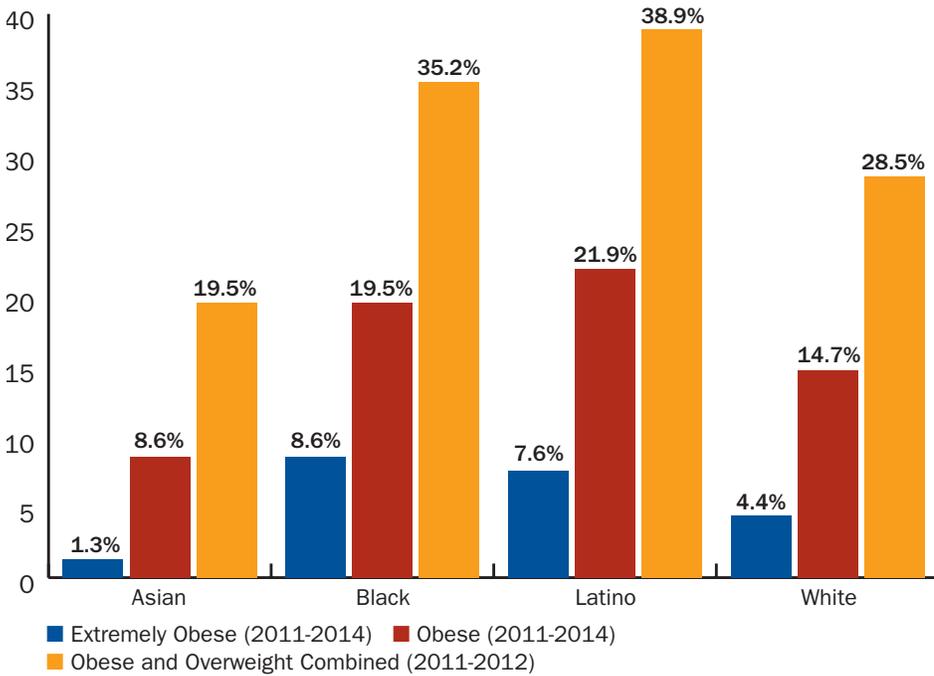
and 7.8 percent of 12- to 19-year-olds are extremely obese (body mass index (BMI) at or above 120 percent of the sex-specific 95th percentile on the CDC BMI-for-age growth charts).⁷ [NHANES, 2011-2014 data]

- There are also significant racial and ethnic inequities. Rates are higher among Latino (21.9 percent) and Black (19.5 percent) children than among White (14.7 percent) and Asian (8.6 percent) children (ages 2 to 19) — and the rates are higher starting at earlier ages and increase faster.⁸ [NHANES, 2011-2014 data]
- 21.4 percent of Latina females and 22.4 percent of Latino males are obese;

- 20.7 percent of Black females and 18.4 percent of Black males are obese;
- 15.1 percent of White females and 14.3 percent of White males are obese; and
- 5.3 percent of Asian females and 11.8 percent of Asian males are obese.
- Among preschoolers (ages 2 to 5), Latinos are three times as likely (15.6 percent) and Blacks are twice as likely (10.4 percent) to be obese as Whites (5.2 percent) and Asians (5.0 percent).
- Among American Indian/Alaska Native children, 25 percent of 2- to 5-year-olds, 31 percent of 6- to 11-year-olds and 31 percent of 12- to 19-year-olds are obese.⁹ [Indian Health Service, 2008 data]

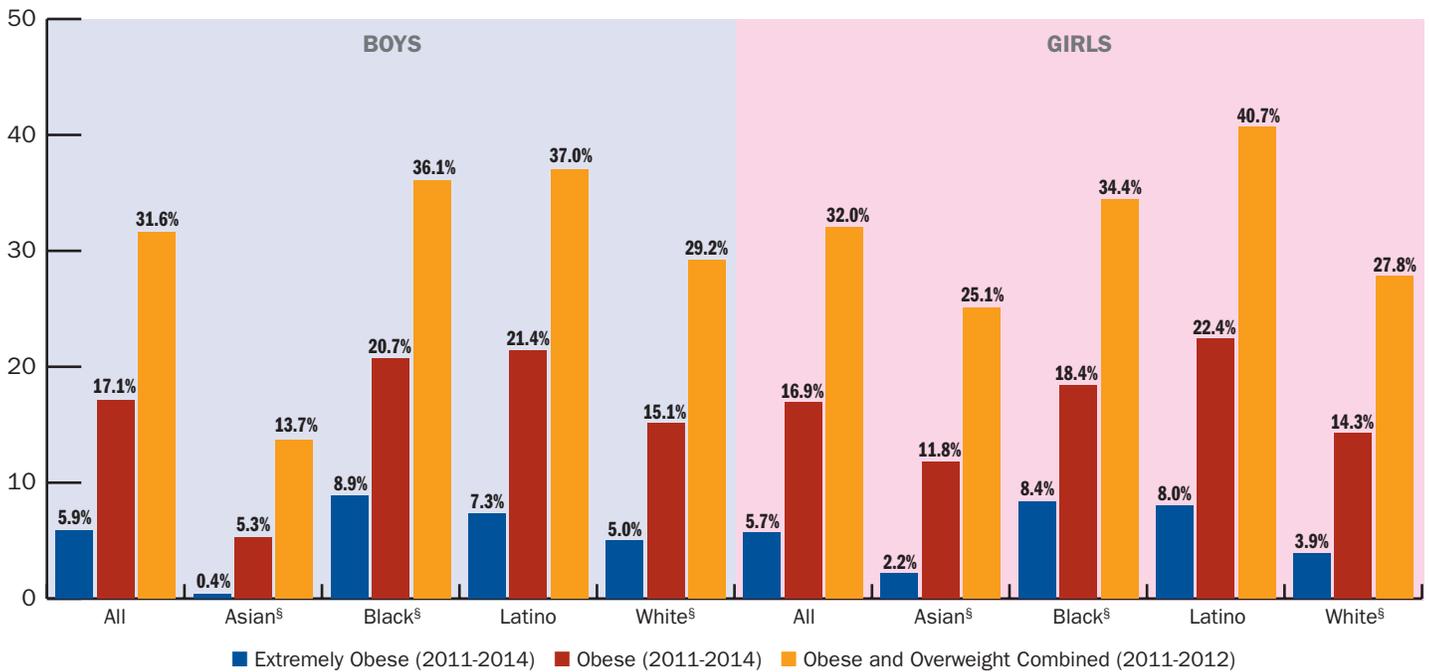
- In addition, there are also significant inequities in rates of extreme obesity (body-mass-index) at or above 120 percent of the sex-specific 95th percentile on the Centers for Disease Control and Prevention (CDC) BMI-for-age growth charts.¹⁰ [NHANES, 2011-2014 data]
- Almost 9 percent of Black, 7.6 percent of Latino, 4.4 percent of White and 1.3 percent of Asian children are extremely obese (ages 2 to 19).
- Among preschoolers (ages 2 to 5), Latinos (7.6 percent) and Blacks (8.6 percent) are almost twice as likely to be extremely obese as Whites (4.4 percent).

Obesity and Overweight Rates for Children Ages 2 to 19, NHANES



Note: The Centers for Disease Control and Prevention uses the term Hispanic in analysis. § = non-Hispanic; Extreme obesity in children = BMI at or above 120% of the 95th percentile on BMI-for-age growth charts.

Obesity and Overweight Rates for Children Ages 2 to 19, NHANES by Gender and Race¹¹



Note: The Centers for Disease Control and Prevention uses the term Hispanic in analysis. § = non-Hispanic.

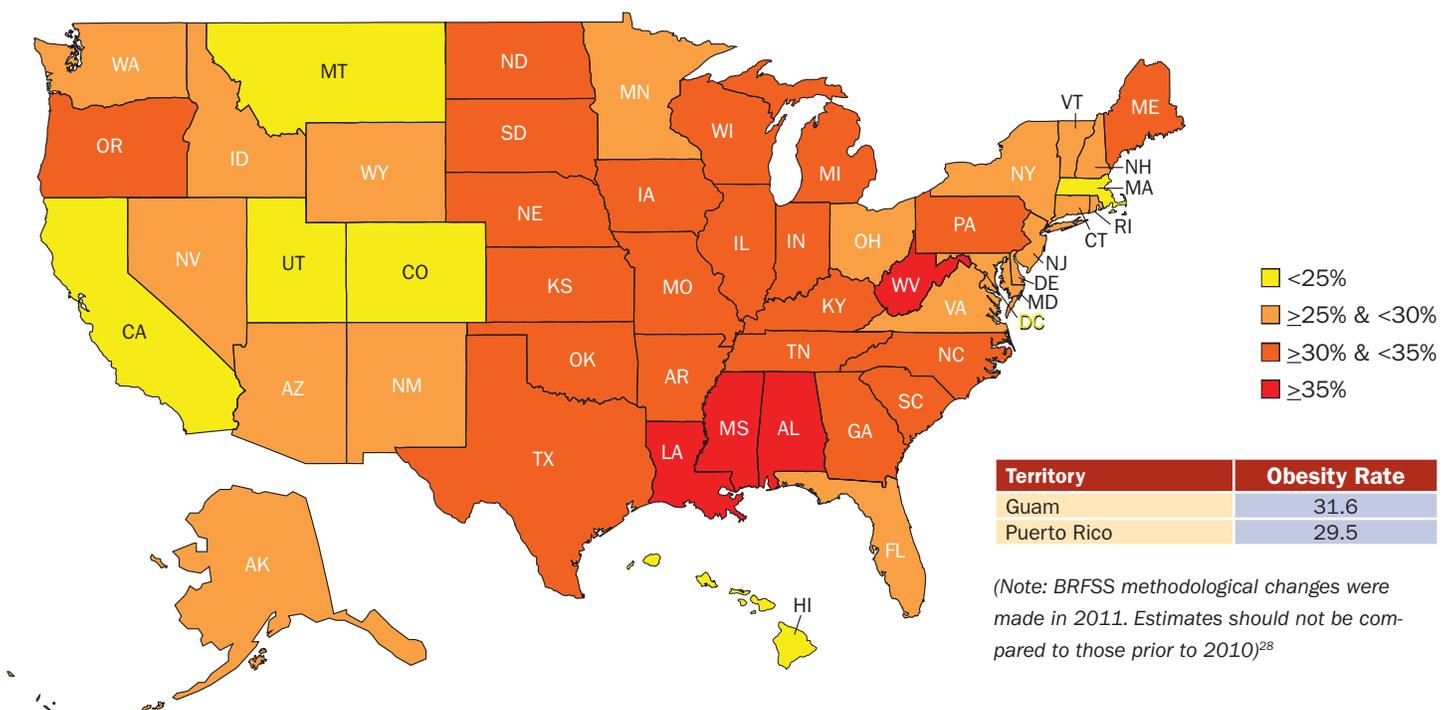
For adults:

- Obesity rates exceeded 35 percent in four states, 30 percent in 25 states and are above 20 percent in all states. The lowest rate was 20.2 percent in Colorado. [Behavioral Risk Factor Surveillance Survey, 2015]
- 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; and, in 2006, only Mississippi and West Virginia were above 31 percent.
- Nationally, nearly 38 percent of adults are obese.¹⁴ [NHANES, 2013-2014 data]
- Nearly 8 percent of adults are extremely obese (BMI greater than or equal to 40.0);
- Obesity rates are higher among women (40.4 percent) compared to men (35.0 percent). Between 2005 and 2014, the difference in obesity among women was 5.1 percent higher among women and 1.7 percent higher among men.

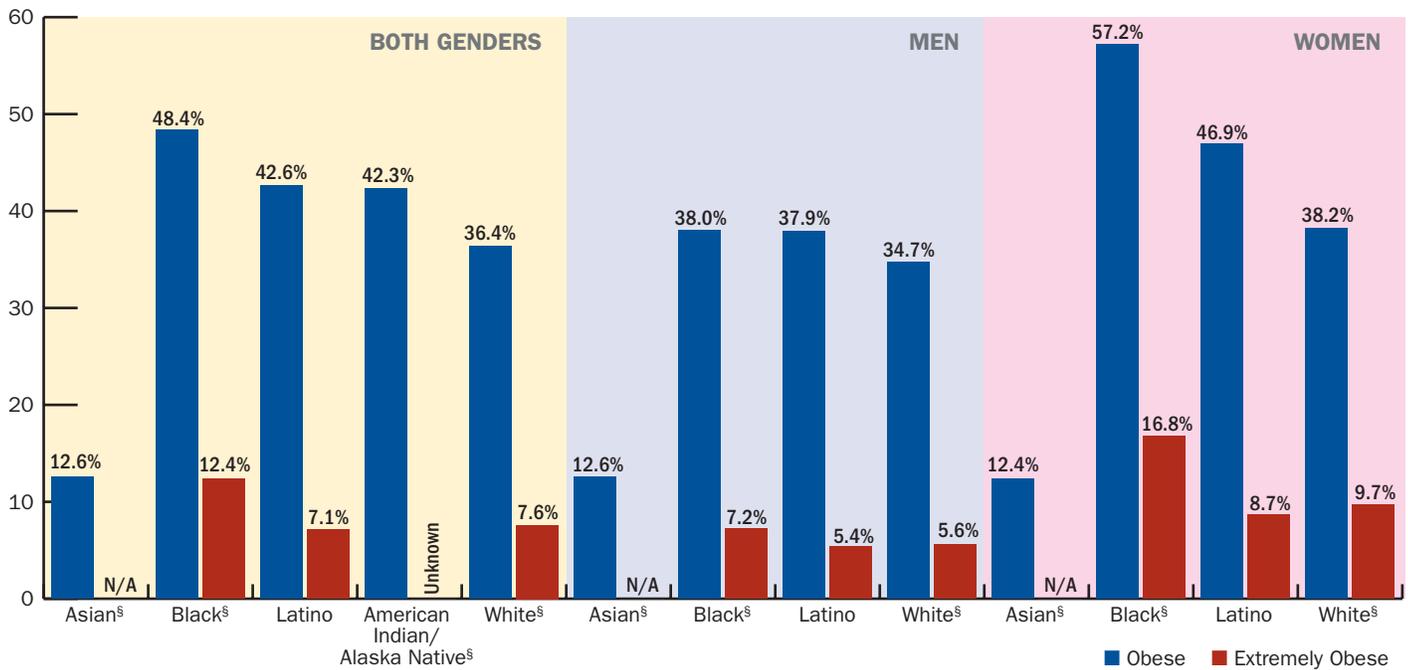
- Women are also almost twice as likely (9.9 percent) to be extremely obese compared to men (5.5 percent);
- In addition, rates are the highest among middle-age adults (41 percent for 40- to 59-year-olds), compared to 34.3 percent of 20- to 39-year-olds and 38.5 percent of adults ages 60 and older.
- There are significant racial and ethnic inequities [NHANES, 2013-2014 data]:
 - Obesity rates are higher among Blacks (48.4 percent) and Latinos (42.6 percent) than among Whites (36.4 percent) and Asian Americans (12.6 percent).¹⁵
 - The inequities are highest among women: Blacks have a rate of 57.2 percent, Latinos of 46.9 percent, Whites of 38.2 percent and Asians of 12.4 percent. For men, Latinos have a rate of 37.9 percent, Blacks of 38.0 percent and Whites of 34.7 percent.¹⁶

- Black women (16.8 percent) are twice as likely to be extremely obese as White women (9.7 percent).¹⁷
- And there are income and/or education inequities:
 - Nearly 33 percent of adults who did not graduate high school were obese compared with 21.5 percent of those who graduated from college or technical college. [2008-2010 data]
 - More than 33 percent of adults who earn less than \$15,000 per year are obese compared with 24.6 percent of those who earned at least \$50,000 per year.¹⁸ [2008-2010 data]
- Approximately one in four young adults — ages 17 to 24 — are too overweight to join the military. Being overweight or obese is the leading medical reason why young adults cannot enlist.^{19, 20} And, the military spends more than \$1.5 billion on healthcare costs and on recruiting replacements for those who are too unfit to serve.

2015 ADULT OBESITY RATES



**Obesity and Overweight Rates for Adults, National Health and Nutrition Examination Survey, 2013 to 2014²¹
(with Native American/Alaska Native Rates per 2014 National Health Interview Survey²²)**



Note: The Centers for Disease Control and Prevention uses the term Hispanic in analysis. § = non-Hispanic; N/A data only included 2 participants.

Reversing the epidemic — and ensuring that all children have the opportunity to grow up at a healthy weight — will require intensifying our investments in the most effective programs and policies.

Evidence about what’s working to help curb the epidemic is growing and some key lessons have emerged.

First, prevention should be a top priority, especially among young children and pregnant women. It is easier and more effective to prevent unhealthy weight gain than it is to reverse it later. Strategies that focus on helping every child maintain a healthy weight are critical. By giving children a healthy start, they will be on a much better trajectory for lifelong health as they age.

Second, making healthy choices an easier part of people’s daily lives is

essential. While personal responsibility is an important consideration in obesity prevention, the choices families and youth make are impacted by where they live, learn, work and play. In many neighborhoods, healthy foods are scarce and more expensive, while cheap processed foods are widely available and heavily marketed. Finding safe, accessible places to be physically active can be a challenge for many.

Third, it is essential to target more intense efforts in areas where there are the greatest challenges. Obesity rates are highest among racial and ethnic minorities, people who live in low-income communities and those living in the South. These populations are more likely to have limited access to healthy options and progress in addressing the inequities has been limited.

Experts have identified a range of policies and programs that can help make healthy eating and physical activity part of the daily routine, including improving school nutrition, complete streets initiatives, access to open space, incentives for healthy food purchases, food labeling and limits on advertising to children.

Many of the most successful approaches for preventing obesity focus on matching the specific needs and leveraging the existing resources within a local community. These place-based approaches ensure that people who live in the community are invested in making a difference in their own cities and towns. For example, a place-based approach may involve creating local partnership networks that involve leaders from the public health, healthcare, education, philanthropic, social service, transportation and housing sectors. Those partners work together to determine key priorities for that community; identify local assets, resources and potential funding sources; and evaluate the most effective strategies for achieving the shared goal.

A growing number of mechanisms support place-based approaches. This strategy brings together partners from healthcare, public health and boards of health, social services, community groups, local governments and private businesses to focus on shared interests and goals and combine resources to achieve a stronger collective impact. For instance, healthy food financing initiatives help increase the availability of accessible, affordable foods in many communities. Nonprofit hospitals have a new focus on conducting regular

community health needs assessments and are considering providing community benefit funds aimed at improving residents' health. New healthcare models, such as Accountable Health Organizations (AHOs), Patient-Centered Medical Homes (PCMH) and prevention initiatives focused on improving the health of Medicaid populations are also engaging communities and investing resources into obesity and other prevention programs.

Research also shows a strong return on investment for community-based prevention programs. CDC, The New York Academy of Medicine (NYAM) and other experts have identified a range of programs that have proved effective in reducing obesity and obesity-related disease levels by 5 percent or — in some cases — more.^{23, 24, 25} The analysis showed that investment of \$10 per person per year in proven community-based programs to increase physical activity, improve nutrition and prevent smoking and other tobacco use could save the country more than \$16 billion annually within five years — a return of \$5.60 for every \$1.²⁶

Yet the current investment in prevention programs represents a small fraction of this level and there is a significant challenge in bringing these efforts to scale across the country. For instance, the federal budget only includes \$50 million annually to promote nutrition, physical activity and obesity prevention programs at CDC, which are distributed through small targeted grants across the country. CDC's total chronic disease prevention funding is only \$1.17 billion a year, which is less than one-quarter of

CDC's overall budget and equals around 5 percent of the budget for the National Institutes of Health (NIH).²⁷ In addition, many federal, state and local prevention initiatives either narrowly address a particular concern or shift to a new focus or approach after a short time period.

This report is an urgent call to action.

There are more effective ways to use available federal, state and local public health funds to prevent obesity and improve health. New strategies are needed to secure other funding sources and engage diverse partners in support of the most promising approaches for helping all Americans eat healthier and be more active. Success will require individuals, families, schools, communities, businesses, government and every other sector of American society to play a role in building an inclusive Culture of Health, in which every person has an equal opportunity to live the healthiest life they can.

In this report, TFAH and RWJF examine:

Section 1: Adult Obesity Trends

Section 2: Childhood Obesity Trends

Section 3: High-Impact Policy Opportunities

- A. Early Childhood Policies and Programs**
- B. School Aged Children and Teen Policies and Programs**
- C. Community Policies and Programs**
- D. Healthcare and Health Policies and Programs**

Section 4: Recommendations

The State of Obesity: Rates & Trends

Adult Obesity Trends

Twenty-five states have adult obesity rates above 30 percent, 43 states have rates above 25 percent, and every state is above 20 percent.

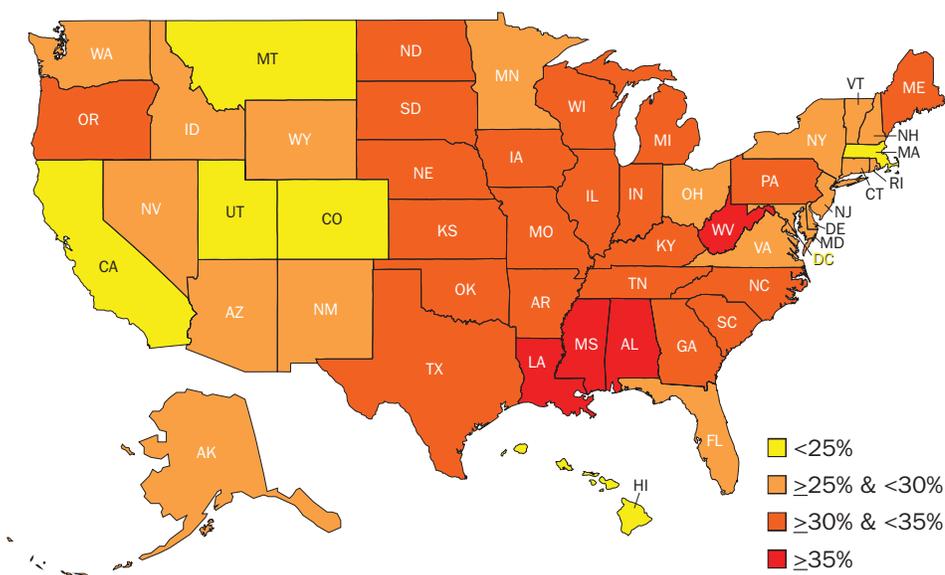
In 1985, no state had an adult obesity rate higher than 15 percent; in 1991, no state was over 20 percent; in 2000, no state was over 25 percent; and, in 2006, only Mississippi and West Virginia were above 30 percent.

Since 2005, there has been some evidence that the rate of increase has been slowing across the states. In 2005, every state but one experienced an increase in obesity rates from the previous year; from 2007 to 2008, rates increased in 37 states; from 2009 to 2010, rates increased in 28 states; and, from 2010 to 2011, rates increased in 16 states (in 2011, CDC changed methodologies for the Behavioral Risk Factor Surveillance System),

(see discussion in rates and rankings methodology for more details on the differences). Between 2011 and 2012, only one state had an increase. Between 2012 and 2013, six states had increases. Between 2014 and 2015, two states had increases and four decreases.²⁸

In 2010, the U.S. Department of Health and Human Services (HHS) set a national goal to reduce the adult obesity rate from 33.9 percent to 30.5 percent by 2020, which would be a 10 percent decrease.²⁹ *Healthy People 2020* also set a goal of *increasing* the percentage of people at a healthy weight from 30.8 percent to 33.9 percent by 2020. As of 2014, 17 states fell short of that goal.³⁰

2015 ADULT OBESITY RATES



(Note: BRFSS methodological changes were made in 2011. Estimates should not be compared to those prior to 2010)²⁸

Territory	Obesity Rate
Guam	31.6
Puerto Rico	29.5

CHART ON OBESITY AND OVERWEIGHT RATES

ADULTS

States	Obesity (BRFSS 2015 Data)		Overweight & Obesity (BRFSS 2015 Data)		Diabetes (BRFSS 2015 Data)		Physical Inactivity (BRFSS 2015 Data)		Hypertension (BRFSS 2015 Data)	
	Percent of Obese Adults (95% C.I.)	Ranking	Percent of Overweight and Obese Adults (95% C.I.)	Ranking	Percent of Adults with Diabetes (95% C.I.)	Ranking	Percent of Adults Who are Physically Inactive (95% C.I.)	Ranking	Percent of Adults Who have Hypertension (95% C.I.)	Ranking
Alabama	35.6 (+/-1.5)	2	68.7 (+/-1.5)	6	13.5 (+/-0.9)	3	31.9 (+/-1.5)*	5	40.4 (+/-1.5)	3
Alaska	29.8 (+/-2.4)	26	67.2 (+/-2.6)	10	7.6 (+/-1.4)	48	22.0 (+/-2.4)	41	27.5 (+/-2.2)	48
Arizona	28.4 (+/-1.6)	34	65.3 (+/-1.7)	28	10.1 (+/-0.8)	24	24.7 (+/-1.5)*	32	30.8 (+/-1.4)	27
Arkansas	34.5 (+/-2.3)	6	69.5 (+/-2.3)	3	12.6 (+/-1.3)	7	34.2 (+/-2.3)*	2	39.3 (+/-2.2)	4
California	24.2 (+/-1.0)	47	60.3 (+/-1.2)	44	10.0 (+/-0.7)	25	20.0 (+/-1.0)**	47	28.5 (+/-1.0)	46
Colorado	20.2 (+/-1.1)	51	56.6 (+/-1.4)	50	6.8 (+/-0.5)	51	17.9 (+/-1.1)*	51	25.7 (+/-1.1)	50
Connecticut	25.3 (+/-1.2)	42	61.6 (+/-1.3)	42	9.3 (+/-0.7)	31	23.5 (+/-1.2)*	35	30.4 (+/-1.1)	30
Delaware	29.7 (+/-2.1)	28	66.8 (+/-2.2)	14	11.5 (+/-1.2)	10	29.4 (+/-2.1)*	10	34.5 (+/-2.0)	12
D.C.	22.1 (+/-2.5)	50	54.4 (+/-3.4)	51	8.5 (+/-1.3)	39	19.4 (+/-2.5)	48	29.4 (+/-2.5)	41
Florida	26.8 (+/-1.3)	35	64.1 (+/-1.4)	35	11.3 (+/-0.8)	15	26.2 (+/-1.4)*	24	33.5 (+/-1.3)	16
Georgia	30.7 (+/-1.9)	19	65.5 (+/-2.0)	26	11.3 (+/-1.0)	15	27.3 (+/-1.9)*	15	36.2 (+/-1.8)	9
Hawaii	22.7 (+/-1.4)	49	57.0 (+/-1.7)	49	8.5 (+/-0.8)	39	22.5 (+/-1.4)*	38	32.0 (+/-1.5)	23
Idaho	28.6 (+/-1.8)	33	65.2 (+/-2.0)	29	8.1 (+/-0.8)	45	21.2 (+/-1.6)*	45	31.2 (+/-1.7)	25
Illinois	30.8 (+/-1.6)	18	66.2 (+/-1.7)	20	9.9 (+/-0.9)	26	24.8 (+/-1.5)	30	30.8 (+/-1.5)	27
Indiana	31.3 (+/-1.8)	15	66.5 (+/-1.9)	16	11.4 (+/-1.1)	13	29.4 (+/-1.8)*	10	32.4 (+/-1.6)	21
Iowa	32.1 (+/-1.6)	12	66.7 (+/-1.7)	15	8.8 (+/-0.8)	36	26.3 (+/-1.5)*	23	30.6 (+/-1.4)	29
Kansas	34.2 (+/-0.8)*	7	68.0 (+/-0.8)*	9	9.7 (+/-0.4)	29	26.5 (+/-0.7)*	21	31.6 (+/-0.7)	24
Kentucky	34.6 (+/-1.7)*	5	67.2 (+/-1.8)	10	13.4 (+/-1.1)	4	32.5 (+/-1.7)	4	39.0 (+/-1.6)	6
Louisiana	36.2 (+/-1.9)	1	69.2 (+/-1.9)	4	12.7 (+/-1.1)*	5	31.9 (+/-1.8)*	5	39.3 (+/-1.8)	4
Maine	30.0 (+/-1.4)	24	66.5 (+/-1.5)*	16	9.9 (+/-0.8)	26	24.8 (+/-1.3)*	30	34.1 (+/-1.3)	14
Maryland	28.9 (+/-1.7)	31	65.0 (+/-1.9)	30	10.3 (+/-0.9)	22	24.1 (+/-1.6)*	34	32.5 (+/-1.6)	19
Massachusetts	24.3 (+/-1.3)	46	59.7 (+/-1.5)	46	8.9 (+/-0.8)	35	26.5 (+/-1.4)*	21	29.6 (+/-1.2)	38
Michigan	31.2 (+/-1.3)	16	66.2 (+/-1.3)	20	10.7 (+/-0.8)	18	25.5 (+/-1.2)	27	33.1 (+/-1.2)	18
Minnesota	26.1 (+/-0.9)**	39	62.8 (+/-1.0)	39	7.6 (+/-0.4)	48	21.8 (+/-0.8)*	42	26.3 (+/-0.8)	49
Mississippi	35.6 (+/-1.9)	2	70.1 (+/-1.8)	2	14.7 (+/-1.2)*	1	36.8 (+/-1.8)*	1	42.4 (+/-1.8)	2
Missouri	32.4 (+/-1.6)	10	66.3 (+/-1.7)	19	11.5 (+/-0.9)	10	27.0 (+/-1.5)	17	34.1 (+/-1.5)	14
Montana	23.6 (+/-1.6)**	48	61.0 (+/-1.9)	43	7.9 (+/-0.9)	47	22.5 (+/-1.5)*	38	29.1 (+/-1.5)	45
Nebraska	31.4 (+/-1.1)	14	67.0 (+/-1.2)	12	8.8 (+/-0.6)	36	25.3 (+/-1.0)*	28	29.9 (+/-1.0)	34
Nevada	26.7 (+/-2.7)	36	64.7 (+/-2.9)	31	9.7 (+/-1.5)	29	24.7 (+/-2.6)	32	28.3 (+/-2.4)	47
New Hampshire	26.3 (+/-1.5)	38	63.6 (+/-1.8)	37	8.1 (+/-0.7)	45	22.6 (+/-1.5)*	36	29.2 (+/-1.4)	44
New Jersey	25.6 (+/-1.3)	41	63.4 (+/-1.5)	38	9.0 (+/-0.7)	33	27.2 (+/-1.4)*	16	30.9 (+/-1.3)	26
New Mexico	28.8 (+/-1.8)	32	64.5 (+/-1.9)	32	11.5 (+/-1.1)	10	22.6 (+/-1.6)	36	30.0 (+/-1.5)	33
New York	25.0 (+/-1.1)**	44	59.5 (+/-1.3)	48	9.8 (+/-0.7)	28	29.3 (+/-1.2)*	12	29.3 (+/-1.0)	43
North Carolina	30.1 (+/-1.4)	22	65.8 (+/-1.5)	25	10.7 (+/-0.8)	18	26.2 (+/-1.3)*	24	35.2 (+/-1.4)	11
North Dakota	31.0 (+/-1.8)	17	67.0 (+/-1.9)	12	8.7 (+/-0.9)	38	26.8 (+/-1.7)*	19	30.4 (+/-1.6)	30
Ohio	29.8 (+/-1.4)**	26	66.5 (+/-1.5)	16	11.0 (+/-0.8)	17	27.0 (+/-1.4)*	17	34.3 (+/-1.4)	13
Oklahoma	33.9 (+/-1.7)	8	68.9 (+/-1.7)	5	11.7 (+/-0.9)	9	33.2 (+/-1.7)*	3	36.2 (+/-1.6)	9
Oregon	30.1 (+/-1.7)	22	64.5 (+/-1.7)*	32	10.7 (+/-1.0)*	18	18.8 (+/-1.5)*	50	30.1 (+/-1.5)	32
Pennsylvania	30.0 (+/-1.6)	24	66.2 (+/-1.7)	20	10.4 (+/-1.0)	21	27.8 (+/-1.6)*	14	32.5 (+/-1.6)	19
Rhode Island	26.0 (+/-1.7)	40	62.6 (+/-1.9)	40	9.0 (+/-0.9)	33	28.1 (+/-1.8)*	13	32.4 (+/-1.6)	21
South Carolina	31.7 (+/-1.2)	13	66.2 (+/-1.3)	20	11.8 (+/-0.7)	8	26.7 (+/-1.2)	20	37.8 (+/-1.2)	8
South Dakota	30.4 (+/-1.9)	21	64.5 (+/-2.1)	32	9.3 (+/-1.0)	31	21.5 (+/-1.7)	44	29.9 (+/-1.7)	34
Tennessee	33.8 (+/-1.9)	9	68.7 (+/-2.0)	6	12.7 (+/-1.1)	5	30.4 (+/-1.9)*	8	38.5 (+/-1.8)	7
Texas	32.4 (+/-1.5)	10	68.7 (+/-1.5)	6	11.4 (+/-0.9)	13	29.5 (+/-1.5)	9	29.5 (+/-1.3)	40
Utah	24.5 (+/-1.0)	45	59.6 (+/-1.2)	47	7.0 (+/-0.5)	50	20.3 (+/-1.0)*	46	23.6 (+/-0.9)	51
Vermont	25.1 (+/-1.4)	43	59.9 (+/-1.7)	45	8.2 (+/-0.8)	44	22.2 (+/-1.4)*	40	29.4 (+/-1.4)	41
Virginia	29.2 (+/-1.4)	29	64.1 (+/-1.5)	35	10.3 (+/-0.8)	22	25.1 (+/-1.3)	29	33.2 (+/-1.3)	17
Washington	26.4 (+/-1.0)	37	62.5 (+/-1.1)	41	8.4 (+/-0.5)	41	19.0 (+/-0.9)	49	29.7 (+/-0.9)	37
West Virginia	35.6 (+/-1.5)	2	71.1 (+/-1.4)	1	14.5 (+/-1.0)	2	30.8 (+/-1.4)*	7	42.7 (+/-1.5)	1
Wisconsin	30.7 (+/-1.7)	19	66.0 (+/-1.8)	24	8.4 (+/-0.9)	41	21.6 (+/-1.5)	43	29.6 (+/-1.5)	38
Wyoming	29.0 (+/-2.0)	30	65.4 (+/-2.2)	27	8.4 (+/-0.9)	41	26.2 (+/-1.9)*	24	29.9 (+/-1.8)	34

Note: For ranking, 1 = Highest rate and 51=Lowest rate; Red and * indicates a statistically significant increase and green and ** indicates a statistically significant decrease; CI = Confidence Intervals.
Source: Behavior Risk Factor Surveillance System (BRFSS), CDC.

AND RELATED HEALTH INDICATORS IN THE STATES

CHILDREN AND ADOLESCENTS

States	Young Children Ages 2 to 4: Obesity (WIC PC 2012 Data)	Children and Teenagers Ages 6 to 17: Obesity and Physical Activity (NSCH 2011 Data)			Children and Teenagers Ages 6 to 17: Obesity and Physical Activity (NSCH 2011 Data)			Food Insecurity (USDA 2013-2015 Data)
	Percent of Obese Low-Income Children Ages 2-4 (95% C.I.)	Percent of Obese Children Ages 10-17 (95% C.I.)	Ranking	Percent of Children Participating in Vigorous Physical Activity per Day (Ages 6-17)	Percentage of Obese High School Students (95% Conf Interval)	Percentage of Overweight High School Students (95% Conf Interval)	Percentage of High School Students Who Were Physically Active At Least 60 Minutes on All 7 Days	Percent of Households with Food Insecurity, Average
Alabama	15.6 (+/- 0.4)	18.6 (+/- 3.9)	11	32.7	17.1 (+/- 2.7)	15.8 (+/- 2.7)	24.8 (+/- 2.4)	17.6*
Alaska	20.6 (+/- 0.9)	14.0 (+/- 3.3)	32	32.9	12.4 (+/- 2.1)	13.7 (+/- 2.6)	20.9 (+/- 2.8)	13.3
Arizona	14.9 (+/- 0.3)	19.8 (+/- 4.6)	7	26.4	10.7 (+/- 2.7)	12.7 (+/- 1.9)	21.7 (+/- 2.5)	14.9
Arkansas	14.6 (+/- 0.4)	20.0 (+/- 4.2)	6	31.6	17.8 (+/- 2.2)	15.9 (+/- 2.5)	27.5 (+/- 3.0)	19.2*
California	17.6 (+/- 0.1)	15.1 (+/- 4.1)	21	25.2	N/A	N/A	N/A	12.6**
Colorado	8.9 (+/- 0.3)	10.9 (+/- 3.6)	47	28.3	N/A	N/A	N/A	12.1**
Connecticut	16.6 (+/- 0.5)	15.0 (+/- 3.2)	23	25.8	12.3 (+/- 2.3)	13.9 (+/- 1.6)	26.0 (+/- 3.2)	13.1
Delaware	16.9 (+/- 0.8)	16.9 (+/- 4.1)	16	26.5	14.2 (+/- 1.4)	16.3 (+/- 1.7)	23.7 (+/- 2.0)	11.9**
D.C.	14.4 (+/- 1.0)	21.4 (+/- 5.5)	3	26.8	N/A	N/A	N/A	13.2
Florida	13.7 (+/- 0.2)	13.4 (+/- 3.3)	38	31.5	11.6 (+/- 1.2)	14.7 (+/- 1.2)	25.3 (+/- 1.4)	12.7**
Georgia	13.4 (+/- 0.3)	16.5 (+/- 3.8)	17	30.6	12.7 (+/- 1.7)	17.1 (+/- 2.1)	24.7 (+/- 2.2)	14.9
Hawaii	10.2 (+/- 0.5)	11.5 (+/- 2.6)	44	28.7	13.4 (+/- 1.9)	14.9 (+/- 2.0)	22.0 (+/- 1.5)	9.7**
Idaho	11.8 (+/- 0.5)	10.6 (+/- 3.4)	49	25.5	9.6 (+/- 1.5)	15.7 (+/- 1.3)	27.9 (+/- 2.7)	13.8
Illinois	15.9 (+/- 0.2)	19.3 (+/- 3.9)	9	23.5	11.5 (+/- 1.8)	14.4 (+/- 1.7)	25.4 (+/- 2.3)	11.1**
Indiana	14.7 (+/- 0.3)	14.3 (+/- 3.7)	28	28.6	N/A	N/A	N/A	14.8
Iowa	15.1 (+/- 0.4)	13.6 (+/- 3.2)	35	31.2	N/A	N/A	N/A	10.6**
Kansas	13.1 (+/- 0.4)	14.2 (+/- 3.6)	31	28.2	12.6 (+/- 2.1)	16.3 (+/- 1.8)	38.3 (+/- 2.3)	14.6
Kentucky	13.5 (+/- 0.4)	19.7 (+/- 3.9)	8	32.3	18.0 (+/- 2.5)	15.4 (+/- 2.1)	22.5 (+/- 2.6)	17.6*
Louisiana	13.8 (+/- 0.4)	21.1 (+/- 4.0)	4	31.1	13.5 (+/- 2.7)	16.4 (+/- 1.9)	N/A	18.4*
Maine	14.9 (+/- 0.7)	12.5 (+/- 3.0)	42	32.0	11.6 (+/- 1.6)	14.2 (+/- 0.9)	22.3 (+/- 1.6)	15.8*
Maryland	16.2 (+/- 0.4)	15.1 (+/- 3.7)	21	24.4	11.0 (+/- 0.4)	14.8 (+/- 0.4)	21.6 (+/- 0.6)	10.7**
Massachusetts	16.9 (+/- 0.4)	14.5 (+/- 3.5)	25	25.5	10.2 (+/- 1.8)	12.9 (+/- 1.7)	23.0 (+/- 2.3)	9.7**
Michigan	13.9 (+/- 0.2)	14.8 (+/- 3.6)	24	27.7	13.0 (+/- 1.8)	15.5 (+/- 1.3)	26.7 (+/- 2.8)	14.9
Minnesota	12.2 (+/- 0.3)	14.0 (+/- 3.7)	32	28.7	N/A	N/A	N/A	9.9**
Mississippi	14.8 (+/- 0.4)	21.7 (+/- 4.4)	1	27.7	15.4 (+/- 2.4)	13.2 (+/- 2.6)	25.9 (+/- 3.5)	20.8*
Missouri	13.5 (+/- 0.3)	13.5 (+/- 3.0)	36	33.7	14.9 (+/- 2.8)	15.5 (+/- 2.3)	27.2 (+/- 2.6)	15.2
Montana	11.3 (+/- 0.7)	14.3 (+/- 3.4)	28	32.4	9.4 (+/- 1.1)	12.9 (+/- 1.2)	27.7 (+/- 1.7)	12.2
Nebraska	17.2 (+/- 0.6)	13.8 (+/- 3.1)	34	31.3	12.7 (+/- 2.0)	13.8 (+/- 1.6)	32.3 (+/- 2.6)	14.8
Nevada	12.9 (+/- 0.4)	18.6 (+/- 4.2)	11	22.4	11.4 (+/- 2.0)	14.6 (+/- 2.5)	24.0 (+/- 2.6)	14.2
New Hampshire	14.8 (+/- 0.9)	15.5 (+/- 3.6)	19	28.1	11.2 (+/- 1.7)	13.8 (+/- 1.6)	22.9 (+/- 2.3)	10.1**
New Jersey	16.8 (+/- 0.3)	10.0 (+/- 2.9)	50	25.3	8.7 (+/- 2.2)	14.0 (+/- 2.2)	27.6 (+/- 3.7)	11.1**
New Mexico	13.5 (+/- 0.5)	14.4 (+/- 3.7)	27	29.6	12.6 (+/- 2.4)	15.0 (+/- 1.8)	31.1 (+/- 2.4)	14.4
New York	15.1 (+/- 0.2)	14.5 (+/- 3.2)	25	24.6	10.6 (+/- 1.1)	13.8 (+/- 1.1)	25.7 (+/- 3.3)	14.1
North Carolina	13.5 (+/- 0.3)	16.1 (+/- 4.0)	18	31.6	12.5 (+/- 1.9)	15.2 (+/- 2.2)	25.9 (+/- 2.6)	15.9*
North Dakota	14.0 (+/- 1.1)	15.4 (+/- 3.8)	20	30.4	13.5 (+/- 1.8)	15.1 (+/- 1.8)	24.7 (+/- 2.5)	8.5**
Ohio	13.0 (+/- 0.2)	17.4 (+/- 3.7)	14	28.5	13.0 (+/- 2.4)	15.9 (+/- 2.0)	25.9 (+/- 3.7)	16.1*
Oklahoma	15.0 (+/- 0.4)	17.4 (+/- 3.6)	14	34.9	11.8 (+/- 2.0)	15.3 (+/- 2.4)	38.5 (+/- 3.4)	15.5*
Oregon	15.9 (+/- 0.4)	9.9 (+/- 2.8)	51	28.5	N/A	N/A	N/A	16.1*
Pennsylvania	13.1 (+/- 0.3)	13.5 (+/- 3.5)	36	27.0	N/A	N/A	N/A	12.4**
Rhode Island	16.7 (+/- 0.8)	13.2 (+/- 3.3)	41	25.2	10.7 (+/- 1.3)	16.2 (+/- 2.5)	23.2 (+/- 3.8)	11.8**
South Carolina	12.6 (+/- 0.3)	21.5 (+/- 4.1)	2	30.3	13.9 (+/- 2.5)	16.8 (+/- 2.1)	23.8 (+/- 3.0)	13.2
South Dakota	14.8 (+/- 0.8)	13.4 (+/- 3.3)	38	30.2	11.9 (+/- 2.3)	13.2 (+/- 1.6)	27.7 (+/- 2.5)	11.5**
Tennessee	15.3 (+/- 0.3)	20.5 (+/- 4.2)	5	34.5	16.9 (+/- 1.9)	15.4 (+/- 2.3)	25.4 (+/- 3.1)	15.1*
Texas	15.9 (+/- 0.1)	19.1 (+/- 4.5)	10	29.0	15.7 (+/- 1.9)	15.6 (+/- 1.6)	30.0 (+/- 2.4)	15.4*
Utah	8.7 (+/- 0.4)	11.6 (+/- 3.3)	43	18.1	6.4 (+/- 1.9)	11.0 (+/- 2.2)	19.7 (+/- 2.7)	11.9**
Vermont	13.7 (+/- 0.9)	11.3 (+/- 2.7)	45	33.3	13.2 (+/- 2.1)	15.8 (+/- 1.0)	25.4 (+/- 1.9)	11.4**
Virginia	20.1 (+/- 0.4)	14.3 (+/- 3.6)	28	26.1	12.0 (+/- 1.3)	14.7 (+/- 1.4)	23.8 (+/- 1.6)	9.8**
Washington	14.3 (+/- 0.3)	11.0 (+/- 3.1)	46	28.5	N/A	N/A	N/A	12.9
West Virginia	14.1 (+/- 0.6)	18.5 (+/- 3.4)	13	34.1	15.6 (+/- 2.3)	15.5 (+/- 2.0)	31.0 (+/- 2.4)	15.0
Wisconsin	15.2 (+/- 0.3)	13.4 (+/- 3.1)	38	28.3	11.6 (+/- 2.1)	13.0 (+/- 1.2)	24.0 (+/- 2.3)	11.3**
Wyoming	10.6 (+/- 0.9)	10.7 (+/- 4.2)	48	30.2	10.7 (+/- 1.4)	12.8 (+/- 1.2)	28.2 (+/- 2.0)	13.2

Source: USDA, Women, Infants, and Children Participant and Program Characteristics (WIC PC), 2012.

Note: For ranking, 1 = Highest rate and 51 = Lowest rate. Source: National Survey of Children's Health (NSCH), 2011 data.

Note: Previous YRBS reports used the term "overweight" to describe youth with a BMI at or above the 95th percentile for age and sex and "at risk for overweight" for those with a BMI at or above the 85th percentile, but below the 95th percentile. However, this report uses the terms "obese" and "overweight" based on the 2007 recommendations from the Expert Committee on the Assessment, Prevention and Treatment of Child and Adolescent Overweight and Obesity convened by the American Medical Association. Source: Youth Risk Behavior Survey (YRBS) 2015, CDC. YRBS data are collected every 2 years. Percentages are as reported on the CDC website and can be found at: <http://www.cdc.gov/HealthyYouth/yrebs/index.htm>.

Source: Calculated by USDA, Economic Research Service using data from the Current Population Survey Food Security Supplement. Red and * indicate state rate is statistically significantly higher than the national average of 13.7. Green and ** indicates state rate is statistically significantly lower than the national rate.

**STATES WITH THE HIGHEST OBESITY RATES
(BRFSS 2015 DATA)**

Rank	State	Percentage of Adult Obesity (95% C.I.)
1	Louisiana	36.2 (+/-1.9)
2	Alabama	35.6 (+/-1.5)
2	Mississippi	35.6 (+/-1.9)
2	West Virginia	35.6 (+/-1.5)
5	Kentucky	34.6 (+/-1.7)
6	Arkansas	34.5 (+/-2.3)
7	Kansas	34.2 (+/-0.8)
8	Oklahoma	33.9 (+/-1.7)
9	Tennessee	33.8 (+/-1.9)
10	Missouri	32.4 (+/-1.6)
10	Texas	32.4 (+/-1.5)

Note: For rankings, 1 = Highest rate of obesity. C.I. = Confidence Intervals.

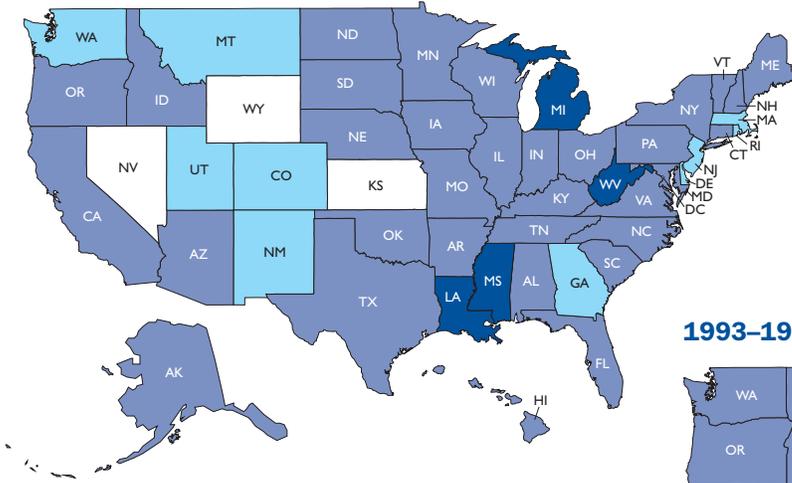
**STATES WITH THE LOWEST OBESITY RATES
(BRFSS 2015 DATA)**

Rank	State	Percentage of Adult Obesity (95% C.I.)
51	Colorado	20.2 (+/-1.1)
50	D.C.	22.1 (+/-2.5)
49	Hawaii	22.7 (+/-1.4)
48	Montana	23.6 (+/-1.6)
47	California	24.2 (+/-1.0)
46	Massachusetts	24.3 (+/-1.3)
45	Utah	24.5 (+/-1.0)
44	New York	25.0 (+/-1.1)
43	Vermont	25.1 (+/-1.4)
42	Connecticut	25.3 (+/-1.2)

Note: For rankings, 51 = Lowest rate of obesity. C.I. = Confidence Intervals.



1991



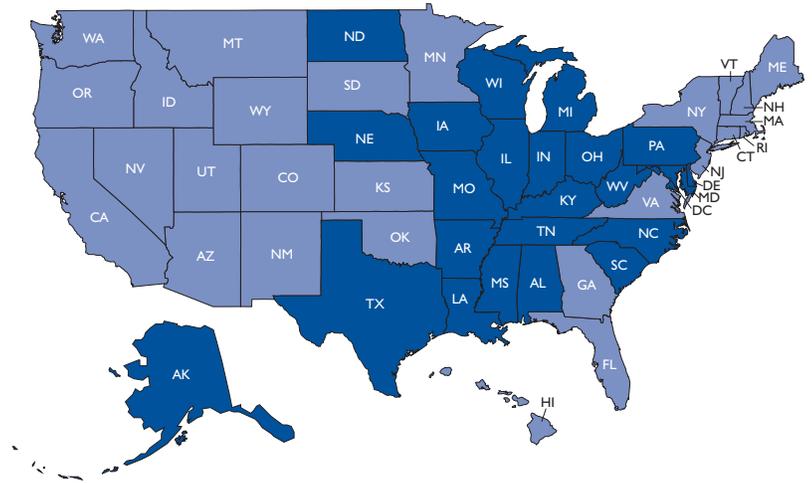
PAST OBESITY TRENDS* AMONG U.S. ADULTS

BRFSS: 1991, 1993 to 1995, 1998 to 2000, and 2005 to 2007 Combined Data

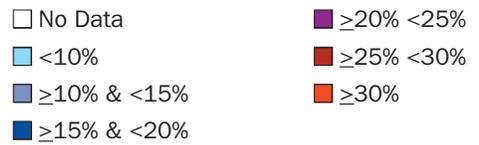
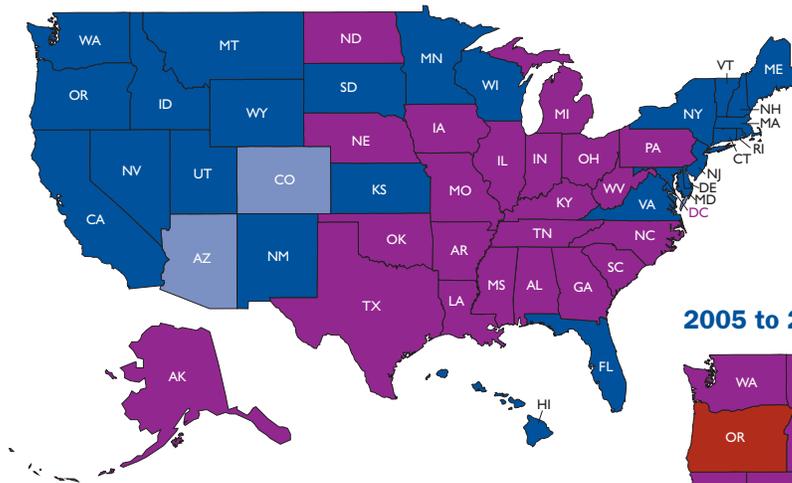
(*BMI >30, or about 30lbs overweight for 5'4" person)

Interactive maps and timelines for all years are available at stateofobesity.org

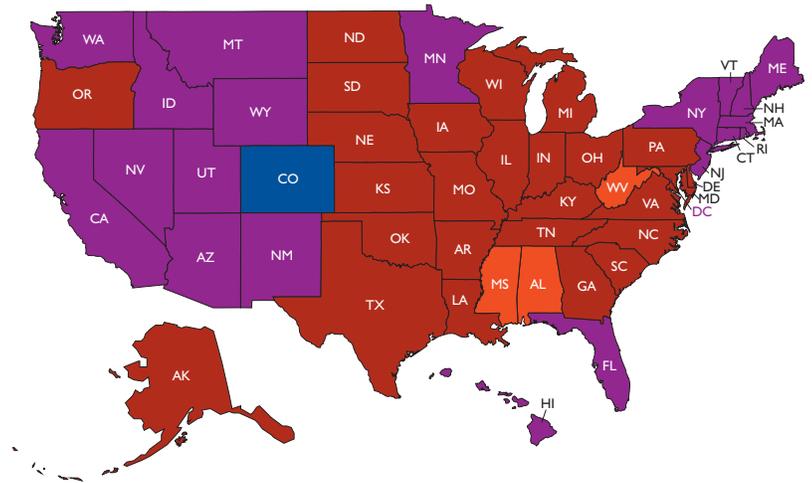
1993–1995 Combined Data



1998 to 2000 Combined Data

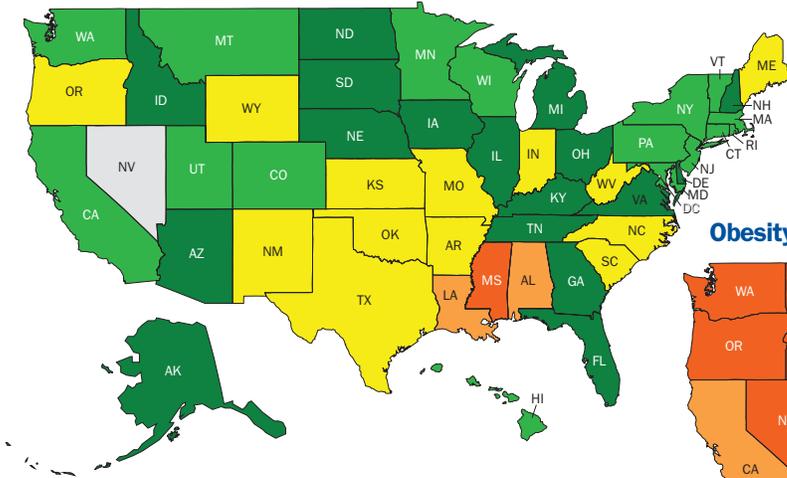


2005 to 2007 Combined Data

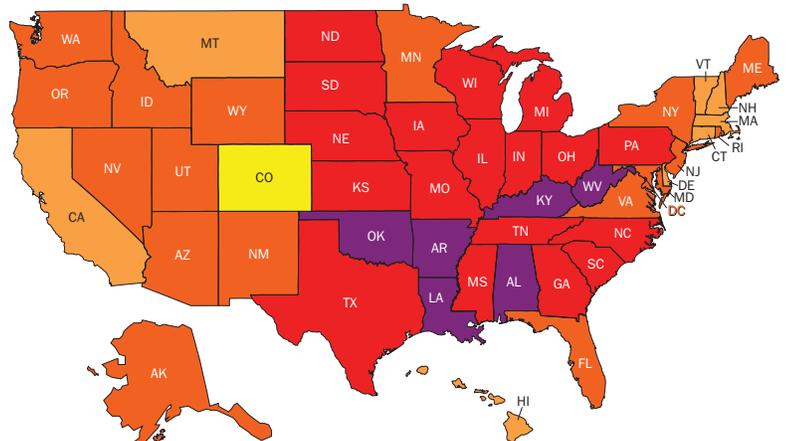


Note: BRFSS methodological changes were made in 2011. Estimates should not be compared to those prior to 2010.
Source: CDC, BRFSS

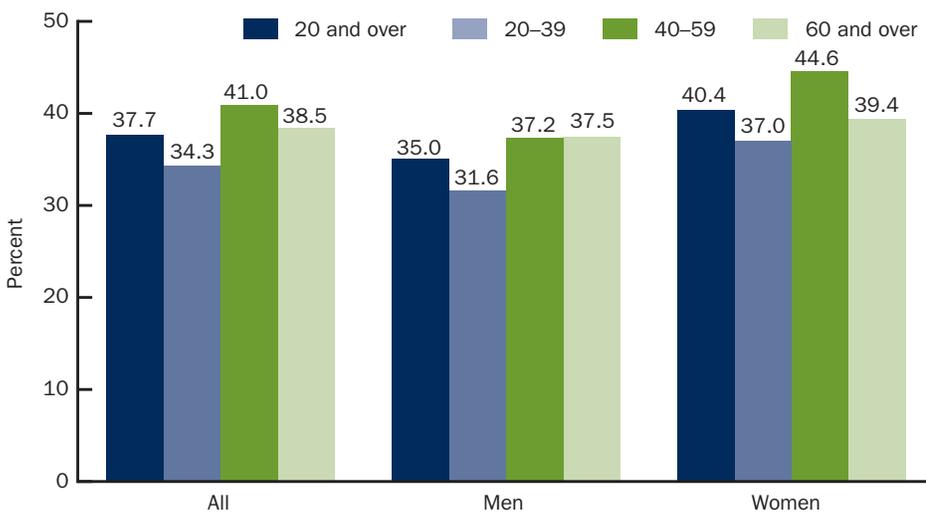
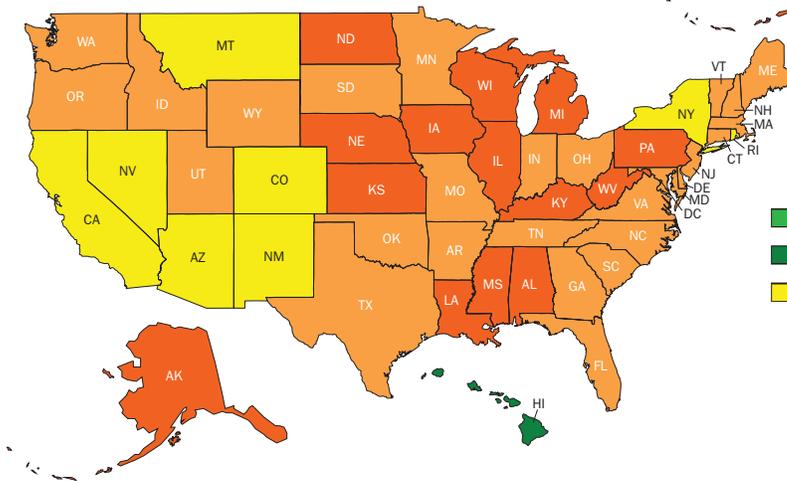
Obesity Rates for Young Adults (18- to 25-year-olds) BRFSS 2015



Obesity Rates for Baby Boomers (45- to 64-year-olds) BRFSS 2015



Obesity Rates for Seniors (65+ year-olds) BRFSS 2015



Prevalence of obesity among adults aged 20 and over, by sex and age: United States, 2013-2014

NOTES: Totals were age-adjusted by the direct method to the 2000 U.S. census population using the age groups 20-39, 40-59, and 60 and over. Crude estimates are 37.9% for all, 35.2% for men, and 40.5% for women. SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey, 2013-2014.

RATES AND RANKINGS METHODOLOGY

ADULT OBESITY DATA SETS

National Health and Nutrition Evaluation Survey (NHANES)	National data – based on weight and height measurements	2013-14 (bi-annual)
Behavioral Risk Factor Surveillance System (BRFSS)	National and state data – based on state level phone surveys	2015 (annual)

The state obesity analysis in *State of Obesity* compares data from the Behavioral Risk Factor Surveillance System.

BRFSS is the largest ongoing telephone health survey in the world. It is a state-based system of health surveys established by CDC in 1984. BRFSS completes more than 400,000 adult interviews each year. For most states, BRFSS is the only source of population-based health behavior data about chronic disease prevalence and behavioral risk factors.

BRFSS surveys a sample of adults in each state to get information on health risks and behaviors, health practices for preventing disease and healthcare access mostly linked to chronic disease and injury. The sample is representative of the population of each state.

Washington, D.C., is included in the rankings because CDC provides funds to the city to conduct a survey in an equivalent way to the states.

Racial and Ethnic Populations — Limited Data

The total sample size for BRFSS in states is often 600 to 800 people.

Many states do not have large enough populations of Asian/Pacific Islanders and American Indian/Alaska Natives — and in some states even of Blacks and Latinos — to be reflected within the survey findings.

Increased funds to expand the sample sizes for each state would provide an opportunity to collect more meaningful information about different racial and ethnic groups in each state.

The data are based on telephone surveys by state health departments, with assistance from CDC.

People self-report their weight and height, which are used to calculate BMI. A number of studies have shown that rates of overweight and obesity are probably higher than shown by the data because people tend to underreport their weight and exaggerate their height.³²

BRFSS made two changes in methodology for its dataset starting in 2011 to make the data more representative of the total population. The changes included making survey calls to cell phone numbers and adopting a new weighting method:³³

- The first change is including and then growing the number of interview calls made to cell phone numbers. Estimates today are that three in 10 U.S. households have only cell phones.
- The second is a statistical measurement change, which involves the way the data are weighted to better match the demographics of the population in the state.

The new methodology means the BRFSS data will better represent lower-income and racial and ethnic minorities, as well as populations with lower levels of formal education. Although generalizing is difficult because of these variables, it is likely that the changes in methods will result in somewhat higher estimates for the occurrence of behaviors that are more common among younger adults and certain racial and ethnic groups.

The change in methodology does not allow for direct comparisons to data collected prior to 2011.

More information on the methodology is available in Appendix A.

Obesity is defined as an excessively high amount of body fat or adipose tissue in relation to lean body mass.^{34,35} Overweight refers to increased body weight in relation to height, which is then compared to a standard of acceptable weight.³⁶ Body mass index is a common measure expressing the relationship (or ratio) of weight to height. The equation is:

of the same age and sex; childhood obesity is defined as a BMI at or above the 95th percentile for children of the same age and sex; and severe childhood obesity is defined as a BMI greater than 120 percent of 95th percentile for children of the same age and sex. CDC makes growth charts available to plot BMI for children and adolescents (ages 2 to 20)

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

*Note: In the metric system, BMI is kg / height²
(the 703 is the conversion needed when using pounds and inches.)*

Adults with a BMI of 25 to 29.9 are considered overweight, while individuals with a BMI of 30 or more are considered obese. Adults with a BMI of 35 or higher and an obesity-related condition (e.g., diabetes) and adults with a BMI of 40 or higher are considered severely obese.

For children, overweight is defined as a BMI at or above the 85th percentile and lower than the 95th percentile for children

to determine percentile at http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html.

BMI is considered an important measure for understanding population trends. For individuals, it is one of many factors that should be considered in evaluating healthy weight, along with waist size, body fat composition, waist circumference, blood pressure, cholesterol level and blood sugar.³⁷



RACIAL AND ETHNIC INEQUITIES AND OBESITY

OBESITY RATES BY AGE AND ETHNICITY

	Obesity Rates by Age – BRFSS 2015								Obesity Rates by Ethnicity – BRFSS 2015							
	18-24 Year Olds		25-44 Year Olds		45-64 Year Olds		65+ Year Olds		Obesity Among Blacks		Obesity Among Latinos		Obesity Among Whites			
	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank	Percent Obese, 2015 (95% C.I.)	Rank		
Alabama	25.1 ^b	3	38.1 ^b	2	40.4 (+/-2.3)	5	30.2 (+/-2.4)	13	43.2 (+/-1.9)	2	27.6 (+/-7.8)	40	31.1 (+/-1.0)	11		
Alaska	19.2 ^b	18	31.3 (+/-4.5)	20	30.7 (+/-3.4)	41	34.7 (+/-5.3)	1	40.5 (+/-9.1)	14	28.3 (+/-6.4)	34	27.7 (+/-1.3)	29		
Arizona	17.5	24	31.4 (+/-3.2)	19	32.7 (+/-2.4)	30	24.2 (+/-2.0)	45	34.2 (+/-6.1)	37	35.5 (+/-2.9)	8	24.4 (+/-1.1)	43		
Arkansas	20.7	11	36.8 (+/-4.8)	5	40.5 (+/-3.6)	3	29.8 (+/-3.0)	15	43.9 (+/-3.6)	1	36.9 (+/-7.2)	3	33.2 (+/-1.4)	2		
California	13.6 (+/-2.3)	36	26.2 (+/-1.8)	38	26.9 (+/-1.8)	49	22.8 (+/-2.2)	48	32.8 (+/-3.1)	39	31.3 (+/-1.3)	23	22.2 (+/-0.8)	48		
Colorado	11.2 ^b	43	19.8 ^b	50	24.1 (+/-1.7)	51	20.0 (+/-1.7)	50	27.7 (+/-3.8)	45	28.3 (+/-1.7)	34	19.1 (+/-0.6)	49		
Connecticut	11.2 (+/-3.5)	43	26.2 (+/-2.4)	38	29.2 (+/-1.8)	45	25.5 (+/-1.9)	41	35.5 (+/-3.1)	29	30.3 (+/-2.7)	29	24.0 (+/-0.9)	44		
Delaware	18.2 ^b	19	29.9 (+/-4.4)	29	34.8 (+/-3.3)	25	27.9 (+/-2.9)	21	36.6 (+/-3.0)	23	35.3 (+/-4.9)	10	29.4 (+/-1.3)	20		
D.C.	N/A	N/A	16.0 (+/-3.9)	51	31.0 (+/-4.2)	38	29.7 (+/-3.9)	16	35.2 (+/-2.2)	34	18.5 (+/-6.0)	51	9.9 (+/-1.4)	51		
Florida	16.5 (+/-4.2)	28	25.7 (+/-2.8)	42	32.1 (+/-2.3)	34	25.8 (+/-1.9)	40	35.3 (+/-2.4)	33	26.5 (+/-1.9)	44	25.2 (+/-0.8)	39		
Georgia	16.0 ^b	31	30.8 ^b	22	36.9 (+/-2.9)	15	29.7 ^b	16	37.8 (+/-2.0)	19	27.1 (+/-4.4)	42	28.0 (+/-1.1)	26		
Hawaii	14.1 ^b	34	26.4 ^b	37	25.2 (+/-2.2)	50	17.9 (+/-2.3)	51	33.6 (+/-10.7)	38	31.8 (+/-3.2)	18	17.9 (+/-1.4)	50		
Idaho	15.5 ^b	32	30.1 (+/-3.5)	27	33.3 (+/-2.9)	28	27.3 (+/-2.7)	32	N/A	N/A	36.3 (+/-4.6)	6	28.1 (+/-1.1)	24		
Illinois	17.1 ^b	25	30.3 (+/-3.2)	24	36.1 (+/-2.6)	19	31.3 (+/-2.8)	5	40.7 (+/-3.3)	13	36.0 (+/-3.5)	7	28.3 (+/-1.1)	22		
Indiana	22.6 ^b	4	29.6 (+/-3.5)	31	37.4 (+/-2.7)	11	29.5 ^b	19	41.5 (+/-3.6)	10	31.4 (+/-4.2)	21	31.3 (+/-0.9)	9		
Iowa	17.8 ^b	21	35.1 (+/-3.4)	10	35.9 (+/-2.4)	20	31.1 (+/-2.5)	7	35.4 (+/-6.9)	30	34.0 (+/-4.2)	12	31.6 (+/-0.9)	6		
Kansas	22.1 (+/-2.5)	8	36.9 ^b	4	38.9 (+/-1.3)	8	30.5 (+/-1.2)	11	42.7 (+/-2.8)	5	35.4 (+/-2.1)	9	31.0 (+/-0.5)	12		
Kentucky	17.8 ^b	21	36.8 (+/-3.6)	5	40.5 (+/-2.6)	3	31.2 ^b	6	42.7 (+/-4.2)	5	24.3 (+/-7.2)	49	32.9 (+/-0.9)	3		
Louisiana	29.0 ^b	2	35.9 (+/-3.6)	8	40.7 (+/-3.0)	2	33.6 ^b	2	42.5 (+/-2.2)	7	29.9 (+/-6.9)	30	31.9 (+/-1.2)	5		
Maine	22.5 ^b	5	30.2 (+/-3.0)	26	32.7 (+/-2.1)	30	29.0 (+/-2.1)	23	35.9 (+/-12.7)	26	25.3 (+/-7.6)	47	29.2 (+/-0.8)	21		
Maryland	10.3 (+/-4.4)	48	29.4 (+/-3.7)	32	34.4 (+/-2.6)	26	29.4 (+/-2.6)	20	38.0 (+/-1.9)	18	25.1 (+/-4.1)	48	26.7 (+/-1.0)	33		
Massachusetts	10.6 ^b	47	23.0 (+/-2.4)	48	29.9 ^b	42	25.2 (+/-2.7)	42	35.9 (+/-3.5)	26	32.4 (+/-2.6)	16	23.0 (+/-0.7)	46		
Michigan	16.3 ^b	29	33.9 ^b	11	35.1 (+/-2.0)	23	30.0 ^b	14	37.6 (+/-2.4)	20	36.9 (+/-4.8)	3	30.2 (+/-0.8)	15		
Minnesota	13.1 ^b	38	24.6 (+/-1.7)	46	30.9 (+/-1.4)	40	28.5 (+/-1.6)	26	29.9 (+/-3.5)	42	31.2 (+/-3.9)	24	26.5 (+/-0.6)	35		
Mississippi	32.8 ^b	1	38.4 ^b	1	36.8 (+/-2.7)	16	30.8 (+/-2.6)	9	43.2 (+/-1.9)	2	25.4 (+/-10.2)	46	31.5 (+/-1.3)	7		
Missouri	21.4 ^b	10	33.7 (+/-3.3)	12	37.0 (+/-2.5)	14	29.4 (+/-2.3)	20	38.4 (+/-3.5)	17	31.5 (+/-6.9)	19	30.4 (+/-1.0)	14		
Montana	12.9 ^b	40	23.0 (+/-3.3)	48	28.3 (+/-2.5)	47	23.2 (+/-2.4)	47	N/A	N/A	26.8 (+/-6.2)	43	23.8 (+/-0.9)	45		
Nebraska	15.1 ^b	33	31.6 ^b	18	37.4 ^b	11	32.0 ^b	3	36.3 (+/-4.4)	25	30.8 (+/-3.0)	26	30.0 (+/-0.6)	16		
Nevada	N/A	N/A	28.0 (+/-5.0)	34	32.7 (+/-4.8)	30	23.9 (+/-4.7)	46	34.5 (+/-5.9)	35	30.5 (+/-3.7)	28	26.3 (+/-1.6)	37		
New Hampshire	19.9 ^b	17	24.4 ^b	47	28.9 (+/-2.1)	46	27.8 (+/-2.2)	30	27.6 (+/-11.5)	46	27.8 (+/-8.3)	38	27.3 (+/-0.9)	31		
New Jersey	10.7 ^b	46	25.7 (+/-2.6)	42	29.7 (+/-2.1)	44	26.9 (+/-2.6)	35	36.6 (+/-2.2)	23	28.8 (+/-2.0)	32	25.6 (+/-0.9)	38		
New Mexico	21.7 ^b	9	33.6 (+/-3.6)	13	31.2 (+/-2.6)	36	22.3 (+/-2.6)	49	37.5 (+/-8.0)	21	31.2 (+/-1.6)	24	22.8 (+/-1.1)	47		
New York	12.7 (+/-3.0)	42	24.7 (+/-2.1)	45	29.9 (+/-1.7)	42	24.9 (+/-1.8)	43	32.3 (+/-2.3)	40	30.6 (+/-2.1)	27	24.9 (+/-0.9)	40		
North Carolina	20.1 ^b	16	30.1 (+/-2.8)	27	35.7 (+/-2.3)	21	26.7 (+/-2.6)	37	39.9 (+/-1.9)	15	28.1 (+/-3.0)	36	27.2 (+/-0.9)	32		
North Dakota	16.7 (+/-5.0)	26	31.8 (+/-3.5)	15	37.1 (+/-2.7)	13	30.9 (+/-2.8)	8	20.0 (+/-9.1)	47	35.1 (+/-9.0)	11	31.3 (+/-1.0)	9		
Ohio	17.8 ^b	21	27.9 (+/-2.8)	35	36.3 (+/-2.2)	18	29.0 (+/-2.1)	23	37.1 (+/-2.9)	22	26.3 (+/-5.2)	45	30.5 (+/-0.8)	13		
Oklahoma	22.5 ^b	5	35.3 (+/-3.3)	9	40.4 (+/-2.5)	5	28.1 (+/-2.1)	28	35.4 (+/-3.4)	30	33.9 (+/-3.8)	13	32.5 (+/-0.9)	4		
Oregon	20.3 (+/-5.7)	14	31.2 (+/-3.4)	21	33.1 (+/-2.7)	29	28.9 (+/-2.6)	25	29.4 (+/-10.0)	43	31.4 (+/-4.5)	21	28.1 (+/-1.0)	24		
Pennsylvania	12.8 ^b	41	30.3 (+/-3.3)	24	35.5 (+/-2.7)	22	30.8 (+/-2.9)	9	35.7 (+/-2.9)	28	39.1 (+/-5.1)	2	29.5 (+/-0.8)	19		
Rhode Island	10.8 ^b	45	27.7 ^b	36	31.4 (+/-2.6)	35	24.4 (+/-2.4)	44	34.5 (+/-4.8)	35	28.9 (+/-3.3)	31	26.4 (+/-1.0)	36		
South Carolina	20.3 ^b	14	33.4 ^b	14	36.5 (+/-1.9)	17	28.5 (+/-1.9)	26	42.2 (+/-1.5)	8	32.1 (+/-5.0)	17	28.3 (+/-0.8)	22		
South Dakota	16.1 ^b	30	30.7 ^b	23	38.0 (+/-3.2)	10	26.5 (+/-2.8)	38	N/A	N/A	28.8 (+/-9.8)	32	29.6 (+/-1.1)	18		
Tennessee	18.1 ^b	20	37.7 (+/-4.0)	3	39.4 (+/-3.1)	7	27.7 (+/-2.6)	31	43.0 (+/-3.3)	4	27.6 (+/-8.8)	40	31.5 (+/-1.2)	7		
Texas	22.4 ^b	7	31.7 (+/-2.6)	17	38.6 (+/-2.6)	9	29.7 (+/-2.6)	16	41.5 (+/-3.1)	10	36.9 (+/-1.6)	3	27.9 (+/-1.0)	28		
Utah	10.2 ^b	49	25.0 (+/-1.7)	44	31.1 (+/-1.9)	37	26.2 (+/-2.2)	39	30.9 (+/-8.3)	41	27.7 (+/-2.1)	39	24.5 (+/-0.6)	42		
Vermont	13.0 ^b	39	25.8 ^b	41	27.9 ^b	48	26.9 ^b	35	29.0 (+/-13.0)	44	22.4 (+/-8.1)	50	24.8 (+/-0.8)	41		
Virginia	16.7 ^b	26	29.2 ^b	33	34.1 (+/-2.2)	27	29.3 ^b	22	39.2 (+/-2.1)	16	27.9 (+/-3.7)	37	26.7 (+/-0.8)	33		
Washington	13.6 ^b	36	26.0 ^b	40	31.0 ^b	38	27.2 ^b	34	35.4 (+/-4.7)	30	31.5 (+/-2.9)	19	27.7 (+/-0.7)	29		
West Virginia	20.7 (+/-4.6)	11	36.8 (+/-3.0)	5	43.2 (+/-2.4)	1	30.3 (+/-2.5)	12	41.5 (+/-5.8)	10	40.2 (+/-9.4)	1	35.2 (+/-0.9)	1		
Wisconsin	14.1 ^b	34	31.8 ^b	15	35.1 (+/-2.7)	23	31.8 ^b	4	41.6 (+/-6.3)	9	33.4 (+/-6.1)	14	29.8 (+/-1.0)	17		
Wyoming	20.4 (+/-7.5)	13	29.9 (+/-4.0)	29	32.5 (+/-3.0)	33	27.3 (+/-2.6)	32	N/A	N/A	33.4 (+/-5.2)	14	28.0 (+/-1.1)	26		

Note: For ranking, 1 = Highest rate and 51 = Lowest rate; ^b = confidence intervals could not be calculated; C.I. = Confidence Intervals.

Source: Behavior Risk Factor Surveillance (BRFSS), CDC

Obesity rates are higher among adult Blacks (48.4 percent), Latinos (42.6 percent) and American Indian/Alaska Natives (42.3 percent) than among Whites (36.4 percent) and Asian Americans (12.6 percent).^{38, 39}

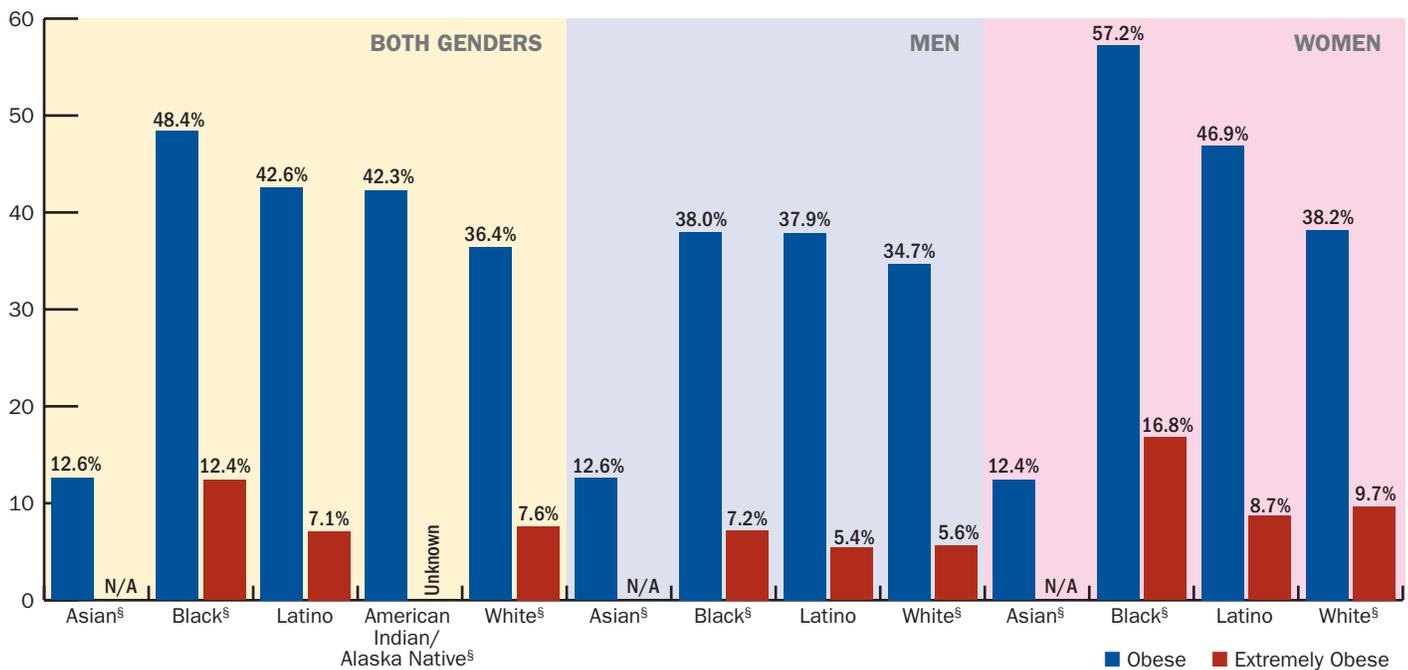
- The disparities are highest among women: Blacks have an obesity rate of 57.2 percent, Latinos of 46.9 percent, Whites of 38.2 percent and Asians of 12.4 percent. Black women are twice as likely to be severely obese as White women.⁴⁰
- For men, Blacks have an obesity rate of 38.0 percent, Latinos of 37.9 percent and Whites of 34.7 percent.⁴¹

Many neighborhoods with higher rates of racial and ethnic minorities experience less access to affordable, healthy food options; limited access to safe places to be physically active; higher rates of food

insecurity; and more targeted marketing of less nutritious foods.^{42, 43}

- Eliminating health inequalities could reduce medical expenditures by \$54 billion to \$61 billion per year, and recover \$13 billion annually because of work missed due to illness and about \$250 billion per year due to premature deaths, according to a study of data from 2003 to 2006.⁴⁴
- Differences in rates among Latinos, Blacks and Whites for a set of preventable diseases (diabetes, heart disease, high blood pressure, renal disease and stroke — many of which are often related to obesity) cost the healthcare system \$23.9 billion annually, according to an Urban Institute analysis.⁴⁵ Based on current trends, by 2050, this is expected to more than double to \$50 billion a year.

Obesity and Overweight Rates for Adults, National Health and Nutrition Examination Survey, 2013 to 2014⁴⁶ (with American Indian/Alaska Native Rates per 2014 National Health Interview Survey⁴⁷)



Note: The Centers for Disease Control and Prevention uses the term Hispanic in analysis. § = non-Hispanic; N/A data only included 2 participants.

AMERICAN INDIAN/ALASKA NATIVE STATE DATA

According to an analysis by the Kaiser Family Foundation (KFF) of 2014 BRFSS surveys in states with reportable data for American Indian/Alaska Native populations, 14 of the 24 states analyzed had adult overweight and obesity rates above 70 percent. Ohio had the highest adult rate at 93.9 percent, and North Carolina had the lowest at 60.9 percent.⁴⁸

States with the Highest Reported Overweight and Obesity Rates for American Indian/Alaska Native Adults

Rank	State	Percent of Adults Obese and Overweight
1	Ohio	93.9%
2	Maryland	84.8%
3	New Mexico	79.5%
4	Arizona	77.5%
5	Oklahoma	76.4%
6	Kansas	75.7%
7	North Dakota	75.2%

Source: Kaiser Family Foundation

Note: Confidence intervals were not reported.

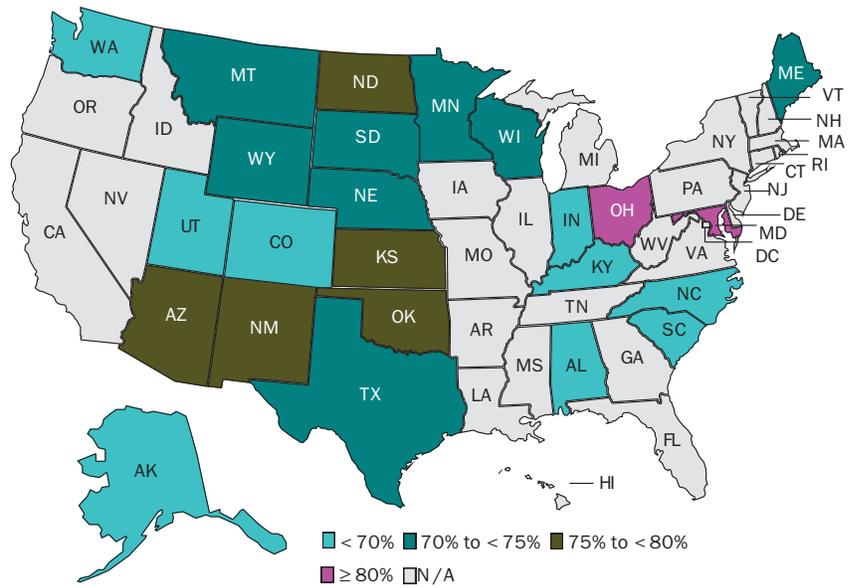
States with the Lowest Reported Overweight and Obesity Rates for American Indian/Alaska Native Natives

Rank	State	Percent of Adults Obese and Overweight
24	North Carolina	60.9%
23	South Carolina	63.7%
22	Colorado	64.1%
21	Washington	64.2%
20	Kentucky	64.3%
19	Utah	66.0%
18	Alaska	67.9%

Source: Kaiser Family Foundation

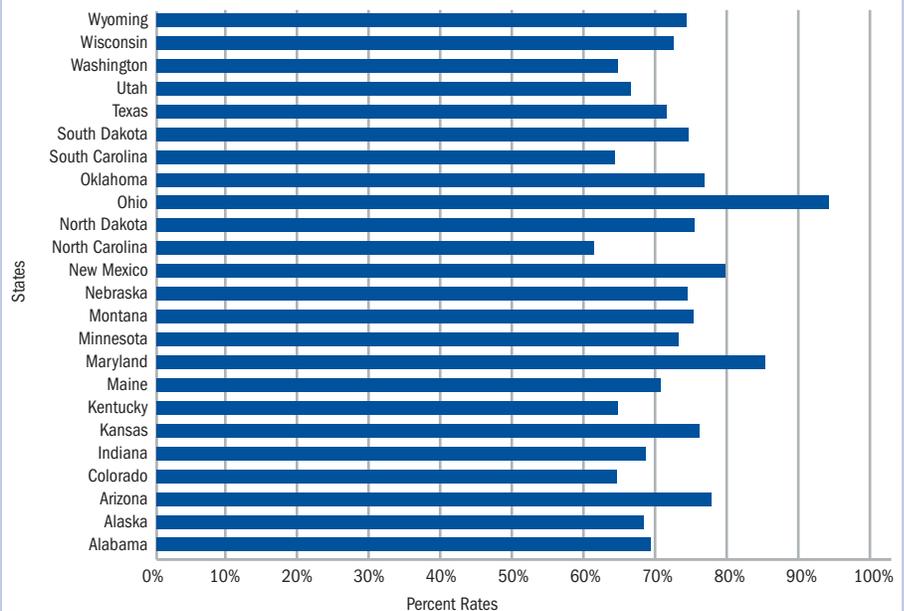
Note: Confidence intervals were not reported.

Rates of American Indian/Alaska Native Adults Who Were Overweight and Obese, 2014 BRFSS



Source: Kaiser Family Foundation

Overweight and Obesity Rates for American Indian/Alaska Native Adults 2014 BRFSS Data



Source: Kaiser Family Foundation

The State of Obesity: *Obesity Policy Series*

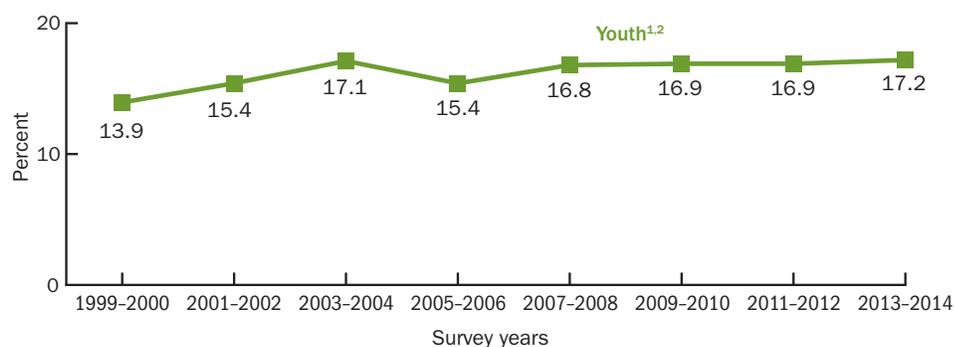
Childhood Obesity Trends

Childhood obesity rates have remained at around 17 percent for the past decade.⁴⁹

The federal government has several sources that track different obesity rates, including a National Health and Nutrition Evaluation Survey, and three

major studies that track national trends as well as different childhood obesity rates in U.S. states.

Trends in obesity prevalence among youth aged 2–19 years: United States, 1999–2000 through 2013–2014



¹ Significant increasing linear trend from 1999–2000 through 2013–2014.

² Test for linear trend for 2003–2004 through 2013–2014 not significant ($p > 0.05$).

SOURCE: CDC/NCHS, National Health and Nutrition Examination Survey.

CHILDHOOD OBESITY DATA SETS

National Health and Nutrition Evaluation Survey (NHANES)	National data – based on weight and height measurements	2-19 year olds	2013-14 (bi-annual)
Supplemental Nutrition Program for Women, Children and Infants Participant and Program Characteristics (WIC PC)	National and state data – based on weight and height measurements	Low-income 2-5 year olds and mothers enrolled in WIC	2012 for children, 2014 for mothers (bi-annual)
National Survey of Children's Health (NSCH)	National and state trends– based on phone survey of parents	10-17 year olds	2011 (periodically, around every four years)
Youth Risk Behavior Survey (YRBS)	State data – based on weight and height measurements	High school students	2015 (bi-annual)

CHILDREN AND THE IMPORTANCE OF MAINTAINING A HEALTHY WEIGHT

Good nutrition and physical activity are particularly important for infants, toddlers and young children who need an adequate intake of key nutrients while their brains and bodies are rapidly developing. The foundations for lifelong, healthy eating and physical activity begin in these formative years. A child's health is even impacted by the mother's underlying health before and during pregnancy — where a mother's obesity and diabetes puts the child at increased risk for a range of health concerns.

- Children who are overweight or obese are more likely to be obese as adults. Being overweight or obese can put children at a higher risk for health problems such as heart disease, hypertension, type 2 diabetes, stroke, cancer, asthma and osteoarthritis — during childhood and as they age.^{50, 51}
- Preventing obesity early can impact a child's lifetime trajectory. A study of more than 7,700 children found that a third of the children who were overweight in kindergarten were obese by eighth grade. When the children entered kindergarten, 12.4 percent were obese and another 14.9 percent were overweight; in eighth grade, 20.8 percent were obese and 17 percent were overweight. Overweight 5-year-olds were more than four times as likely as healthy-weight children to become obese.⁵²

Obesity is associated with higher healthcare needs and costs among children:

- Overweight and obesity in childhood is associated with \$14.1 billion in additional prescription drug, emergency room and outpatient visit healthcare costs annually.⁵³ An obese 10-year-old child who continues to gain weight throughout adulthood has lifetime medical costs



that are \$19,000 higher compared to a healthy-weight 10-year-old who maintains a normal weight throughout life.⁵⁴

- A child who is obese for two consecutive years has a \$194 higher outpatient visit expenditure, a \$114 higher prescription drug expenditure and a \$12 higher emergency room expenditure compared to a normal/underweight child during the same two years, based on a Medical Expenditure Panel Survey (2002-2005).⁵⁵
- The average total annual health cost for a child treated for obesity under private insurance is \$3,743, while the average health cost for all children covered by private insurance is \$1,108.⁵⁶
- Hospitalizations of children and youths with a diagnosis of obesity nearly doubled between 1999 and 2005, while total costs for children and youths with obesity-related hospitalizations increased from \$125.9 million in 2001 to \$237.6 million in 2005 (in 2005 dollars).⁵⁷

Focusing on nutrition and physical activity early can help improve a child's future

health — particularly among children from low-income families:

- Children who grow up in low-income families and neighborhoods are at higher risk for obesity and related health problems.^{58, 59}
- More than 15 million children (20.9 percent) experience food insecurity annually — where their family has limited access to adequate food and nutrition due to cost, proximity and/or other reasons.^{60, 61}
- Nearly half of infants and toddlers under 3-years-old live in low-income families; 24 percent live in poverty; and 6.6 percent of the U.S. population lives in deep poverty.^{62, 63} (Low-income is defined as two times the federal poverty level (FPL); poverty is below FPL; deep poverty is earning less than \$6,000 per year or raising a child on less than \$7,600 per year.)
- Seventy percent of Black, 66 percent of Native American, 64 percent of Latino and 34 percent of White children under the age of three live in low-income families.

OBSESITY AND ADVERSE CHILDHOOD EXPERIENCES (ACES) AND TOXIC STRESS

Stress and trauma in childhood can harm and alter a child's body and brain. Adverse childhood experiences, adverse family experiences and toxic stress can dramatically increase a child's likelihood of becoming obese and for developing many obesity-related illnesses.

Adverse Family Experiences

- Around one-third (30.5 percent) of children experienced two or more adverse family experiences, including 1) divorce or separation; 2) death; 3) incarceration of a parent or guardian; 4) living with anyone who was mentally ill, suicidal or severely depressed; 5) living with anyone who had an alcohol or drug problem; 6) witnessing any violence in the household; 7) being the victim of violence or witnessing violence in the neighborhood; 8) suffering racial discrimination; and 9) having a caregiver who often found it hard to get by on the family's income.^{64, 65}
- Youth ages 10 to 17 who have experienced two or more adverse family experiences have an 80 percent higher chance of obesity than children who do not experience such events, according to an analysis of the 2011–2012 National Survey of Children's Health (NSCH).⁶⁶ The strongest association between adverse family experiences and obesity was among White children, and there was no reported association among Black children.

Toxic Stress

Toxic stress occurs when children experience not just one traumatic event but rather are exposed to repeated and ongoing traumas, such as physical, sexual or emotional abuse, chronic neglect, caregiver substance abuse or mental illness, repeated exposure to violence in the home or in their neighborhood and/or the accumulated burden and stress of family economic hardship.⁶⁷ More than half of U.S. public school students live in poverty, which can contribute to toxic stress as well as to obesity.^{68, 69}

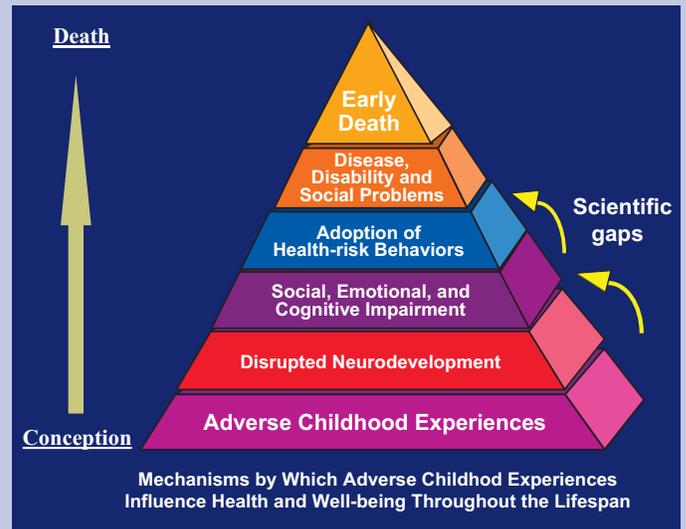
Adverse Childhood Experiences

More than half of children experience an adverse event during childhood — and many experience multiple co-occurring adverse events.^{70, 71} The most commonly reported ACEs were physical abuse (28.3 percent), substance abuse in the household (26.9 percent), sexual abuse (24.7 percent for girls and 16 percent for boys) and parent divorce or separation (23.3 percent).⁷² More than one-quarter (27 percent) of children experience at least two ACEs, 14 percent experience three and 7 percent experience four or more. The more ACEs experienced, the higher likelihood for increased negative outcomes. The prevalence of ACEs in-

creases with a child's age, except for economic hardship, which is reported relatively equally for children of all ages.

Children with four or more ACEs had a 220 percent greater risk of heart disease than children experiencing no ACEs. They had a 240 percent greater risk of stroke, and 160 percent greater risk of diabetes. An ACE score of 6 or more could lower life expectancy by two decades.⁷³ Adults who were abused as children have higher incidences of heart disease, chronic lung disease, cancer and liver disease; and are more likely to be smokers or obese.^{74, 75}

Research also shows that support from caring adults and protective systems can help buttress or reduce the negative effects that toxic stress, ACEs and other adverse family experiences can have on a child. Programs and services that help give parents and caregivers additional resources, skills and support can help them in turn provide safe, stable and nurturing environments for their children.⁷⁶



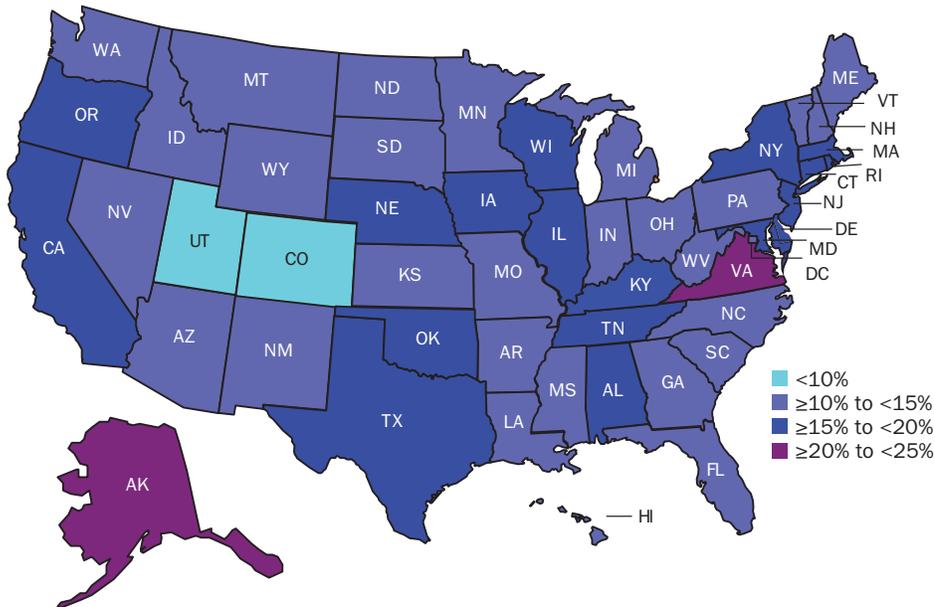
Source: Centers for Disease Control and Prevention

ACE-Related Odds of Having a Physical Health Condition

Health Condition	0 ACEs	1 ACEs	2 ACEs	3 ACEs	4+ ACEs
Arthritis	100%	130%	145%	155%	236%
Asthma	100%	115%	118%	160%	231%
Cancer	100%	112%	101%	111%	157%
COPD	100%	120%	161%	220%	399%
Diabetes	100%	128%	132%	115%	201%
Heart Attack	100%	148%	144%	287%	232%
Heart Disease	100%	123%	149%	250%	285%
Kidney Disease	100%	83%	164%	179%	263%
Stroke	100%	114%	117%	180%	281%
Vision	100%	167%	181%	199%	354%

Source: Iowa Aces 360

Percent of Children Ages 2 to 4 Enrolled in WIC Classified as Obese 2012



Note: Obesity rates for Guam = 10.0 percent, Puerto Rico = 15.7 percent and Virgin Islands = 12.9 percent. Source: USDA, Food and Nutrition Service

• WIC PRESCHOOLERS:

Approximately 14 percent of children (ages 2 to 5) enrolled in WIC were obese [2014 WIC Participant and Program Characteristic (PC) national data, 2012 state-level data, measured weight and height of participants].⁷⁷

- Rates ranged from highs of 20.6 percent in Alaska and 20.1 percent in Virginia to lows of 8.9 percent in Colorado and 8.7 percent in Utah, in 2012. The rates exceed 15 percent in 18 states.⁷⁸ The obesity rate for Puerto Rico was 15.7 percent, the Virgin Islands was 12.9 percent and Guam was 10.0 percent.
- Racial and ethnic differences are significant: 16.6 percent of American Indian/Alaska Natives, 16.1 percent of Latinos, 15.5 percent of Native Hawaiian/Pacific, 14 percent of Whites, 11.2 percent of Blacks and 10.1 percent of Asians were obese, in 2014.
- Between 2008 and 2012, obesity rates decreased from almost 15 percent

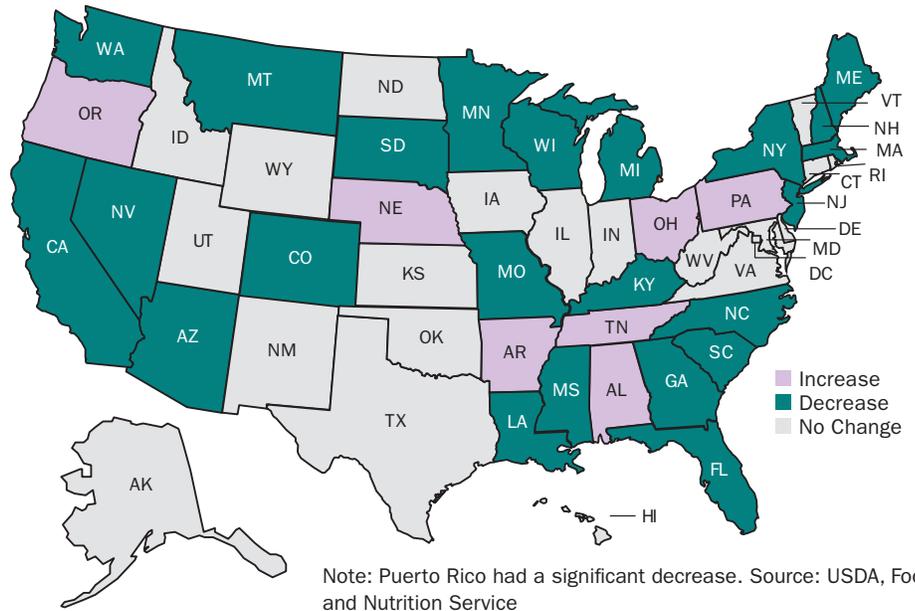
to 14 percent. During that time, rates significantly decreased for 25 states (Arizona, California, Colorado, Florida, Georgia, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, South Carolina, South Dakota, Texas, Utah, Washington and Wisconsin); and rates significantly increased for seven states (Alabama, Arkansas, Nebraska, Ohio, Oregon, Pennsylvania and Tennessee). Puerto Rico was the only U.S. territory that had a significant decrease.

- In 2007, USDA published interim nutritional changes to the WIC program, updating standards to align closely to the National Academies of Medicine (NAM, formerly the Institute of Medicine) and the Dietary Guidelines for Americans—which had been the first major change in more than 30 years. Changes expanded access to

healthy fruits and vegetables; whole grains; and low-fat dairy for women, infants and children; and gave states and local WIC programs more flexibility to meet the national and cultural needs of WIC participants.⁷⁹ The final rules were published in March of 2014.

- The WIC program is one of the longest running nutrition support programs in the country. It provides nutrition support to low-income pregnant, postpartum and breastfeeding women, infants and children up to age 5 who are at risk for inadequate nutrition.⁸⁰ WIC participation in states ranged from a low of 0.12 percent in Wyoming to a high of 16.5 percent in California, in 2014.⁸¹

Children Enrolled in WIC, Significant Increase and Decrease in Obesity Rates between 2008 and 2012 by State



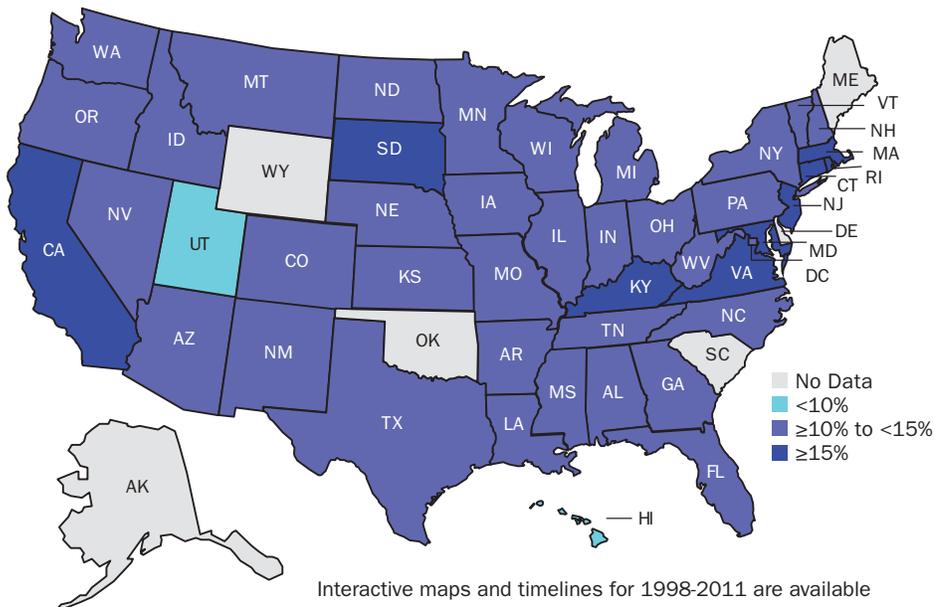
SIGNS OF PROGRESS AMONG LOW-INCOME PRESCHOOLERS

From 1998 to 2011, the Pediatric Nutrition Surveillance System (PedNSS) tracked obesity rates among low-income children ages 2 to 5

[data from children in the WIC; Early Periodic Screening, Diagnosis and Treatment (EPSDT); and Title V Maternal and Child Health programs].

In 1999, the obesity rate for these children was 12.7 percent. It peaked at 15.2 percent in 2003 and dropped to 14.7 percent in 2011.^{82, 83, 84} Between 2008 and 2011, obesity rates decreased significantly in 18 states and in the U.S. Virgin Islands and only increased in three states (out of 43 states).⁸⁵

PedNSS Rates as of 2011⁸⁶



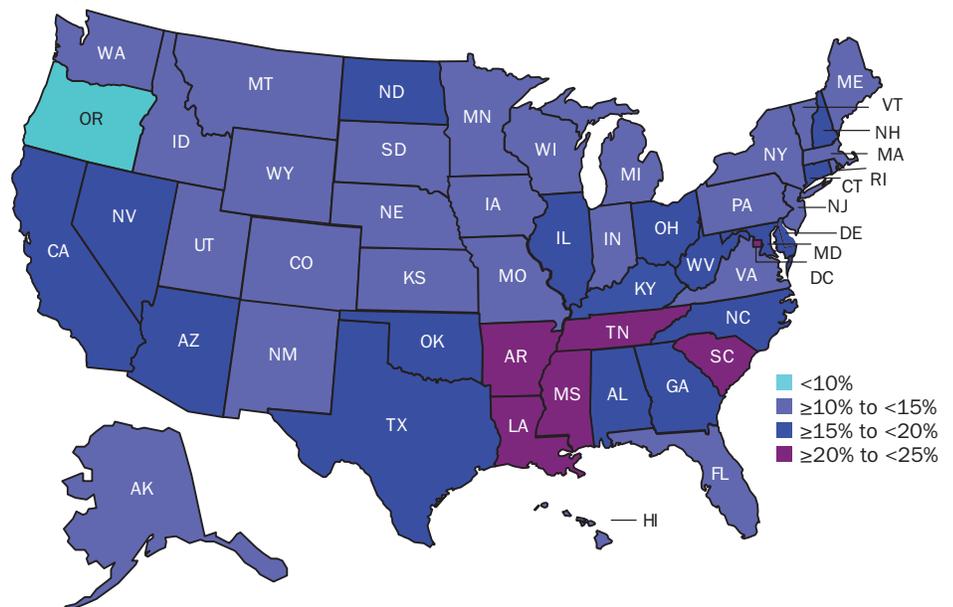
Interactive maps and timelines for 1998-2011 are available at stateofobesity.org. The data for PedNSS is based on actual measurements rather than self-reported data.

Not all states, or federally funded clinics within states, participated in PedNSS, which limited the data set. The last PedNSS data was collected in 2011. The WIC Participant and Program Characteristic continues to collect height and weight information — along with age and sex and other participant characteristics— and is conducted biennially in April by USDA in all 50 states, Washington, D.C. and U.S. territories (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico and the Virgin Islands).



- CHILDREN AGES 10 to 17:** Nearly one-third (31.3 percent) of children ages 10 to 17 are overweight or obese [2011-2012, National Survey of Children's Health, phone surveys of parents in each state].^{87, 88}
- Rates ranged from a low of 9.9 percent in Oregon to a high of 21.7 percent in Mississippi.
- Seven out of 10 states with the highest rates are in the South. The obesity rate in the South (41.8 percent) was nearly three times the rate in the Northeast (14.6 percent). Rates in the Midwestern states were 22.2 percent and 21.5 percent in the West.
- Rates exceeded 15 percent in 19 states and were 20 percent or above in four states.

Percentage of Children Ages 10 to 17 Classified as Obese by State, 2011 National Survey on Children's Health



An interactive map and timeline of these data are available at stateofobesity.org
 Source: National Survey on Children's Health, 2011

- **High School Students:** 13.9 percent of high school students are obese, and an additional 16.0 percent are overweight [2015, Youth Risk Behavior Surveillance System, 37 states participating, self-reported data].⁸⁹

- In 2015, obesity rates ranged from a low of 10.3 percent in Montana to a high of 18.9 percent in Mississippi.
- Obesity rates exceeded 15 percent in eleven states, were between 10 and 15 percent in 26 states and no states were below 10 percent.

PERCENTAGE OF HIGH SCHOOL STUDENTS WHO WERE OBESE—SELECTED U.S. STATES YOUTH RISK BEHAVIOR SURVEILLANCE SYSTEM, 2015⁹⁰

An interactive map and timeline of these data are available at stateofobesity.org

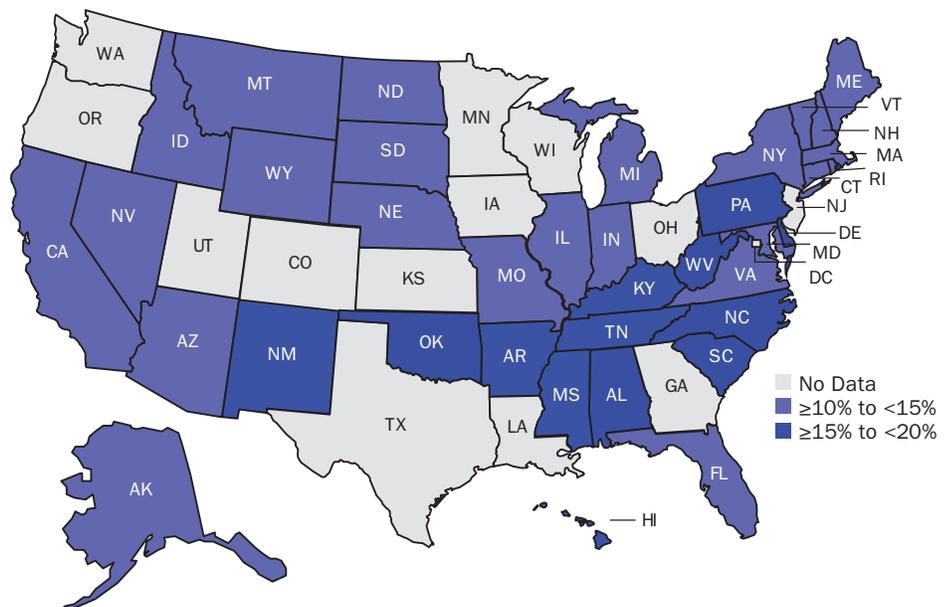
Nationally, self-reported obesity among high school students has increased by 31.1 percent, from 10.6 percent in 1999 to 13.9 percent in 2015.⁹¹

- Rates are higher among males (16.8 percent) than females (10.8 percent).
- Rates vary by race/ethnicity: 16.8 percent among Blacks, 16.4 percent

among Latinos, 15.9 percent among American Indian/Alaska Natives and 12.4 percent among Whites.

- Among females: Blacks have a rate of 15.2 percent, Latinas of 13.3 percent and Whites of 9.1 percent.
- Among males: Latinos have a rate of 19.4 percent, Blacks of 18.2 percent and Whites of 15.6 percent.

Percentage of High School Students Classified as Obese by State, 2015 YRBS



Note: U.S. Territories: Guam = 20.4 percent, Northern Mariana Islands = 16.0 percent, Palau = 14.1 percent, and Puerto Rico = 11.1 percent; data not available for Colorado, District of Columbia, Georgia, Iowa, Kansas, Louisiana, Minnesota, New Jersey, Ohio, Oregon, Texas, Utah, Washington and Wisconsin.

Source: CDC, Youth Risk Behavior Surveillance System

Obesity Rates for High School Students by Race/Ethnicity and Gender, YRBS 1999 to 2015

	1999	2001	2003	2005	2007	2009	2011	2013	2015
TOTAL	10.6%	10.5%	12.0%	13%	12.8%	11.8%	13%	13.7%	13.9%
BY RACE/ETHNICITY									
American Indian/ Alaskan Native [§]	N/A	17.2%	17.5%	13%	19.5%	8.2%	17.5%	9.10%	15.9%
Asian [§]	3.6%	6.7%	6.8%	5.4%	7.2%	7.2%	9.8%	5.6%	5.5%
Black [§]	12.3%	16.0%	16.1%	15.9%	18.3%	15.0%	18.2%	15.7%	16.8%
Latino	13.2%	15.1%	16.2%	16.7%	16.3%	14.9%	14.1%	15.2%	16.4%
Native Hawaiian/ Other Pacific Islander [§]	12.5%	7.5%	N/A	N/A	N/A	20.1%	21.4%	7.5%	N/A
White [§]	10.0%	8.8%	10.3%	11.7%	10.6%	10.2%	11.5%	13.1%	12.4%
Multiple Race [§]	11.2%	9.2%	9.6%	13.5%	13.5%	13.4%	13.6%	15.2%	17.5%
BY GENDER									
Female	7.4%	6.9%	8.1%	9.9%	9.4%	8.1%	9.8%	10.9%	10.8%
Male	13.7%	14.2%	15.7%	15.9%	16.2%	15.2%	16.1%	16.6%	16.8%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic

Obesity Rates for High School Students by Race/Ethnicity and Gender, YRBS 1999 to 2015

	1999	2001	2003	2005	2007	2009	2011	2013	2015
ASIAN[§]									
Female	0.7%	2.7%	1.9%	1.3%	2.3%	3.5%	5.3%	2.1%	1.9%
Male	5.9%	10.8%	11.1%	8.8%	11.4%	10.9%	13.8%	9.9%	8.3%
BLACK[§]									
Female	12.3%	14.6%	13.9%	16.0%	17.6%	12.5%	18.6%	16.7%	15.2%
Male	12.3%	17.5%	18.2%	15.8%	18.9%	17.5%	17.7%	14.8%	18.2%
LATINO									
Female	9.2%	8.8%	11.3%	11.9%	12.4%	10.8%	8.6%	11.4%	13.3%
Male	17.3%	21.4%	21.2%	21.2%	20.2%	18.8%	19.2%	19.0%	19.4%
WHITE[§]									
Female	6.1%	5.3%	6.3%	8.2%	6.7%	6.1%	7.7%	9.7%	9.1%
Male	13.5%	12.4%	13.9%	15.1%	14.5%	13.7%	15.0%	16.5%	15.6%
MULTIPLE RACE									
Female	7.7%	6.7%	2.6%	11.6%	8.2%	10.3%	12.5%	14.4%	14.3%
Male	16.0%	12.3%	16.6%	15.4%	20.2%	17.3%	14.8%	16.1%	21.1%

Note: Breakdowns not available for American Indian/Native American and Native Hawaiian/Other Pacific Islanders – less than 100 respondents for each of the subgroups. § = non-Hispanic.

FOOD-INSECURE CHILDREN

More than 15 million U.S. children live in “food-insecure” households — having limited access to adequate food and nutrition due to cost, proximity and/or other resources.⁹² Low income individuals are at increased risk for both food insecurity and obesity. Lower-income individuals often have more limited access to affordable, healthier food options — living in neighborhoods with fewer grocery stores with less healthy options — and that have more available less expensive food options, such as processed or fast foods, are of lower nutritional value and are calorie-dense with added sugar and/or fats.^{93, 94, 95} In addition, some families have cycles of food deprivation and overindulgence — where they restrict

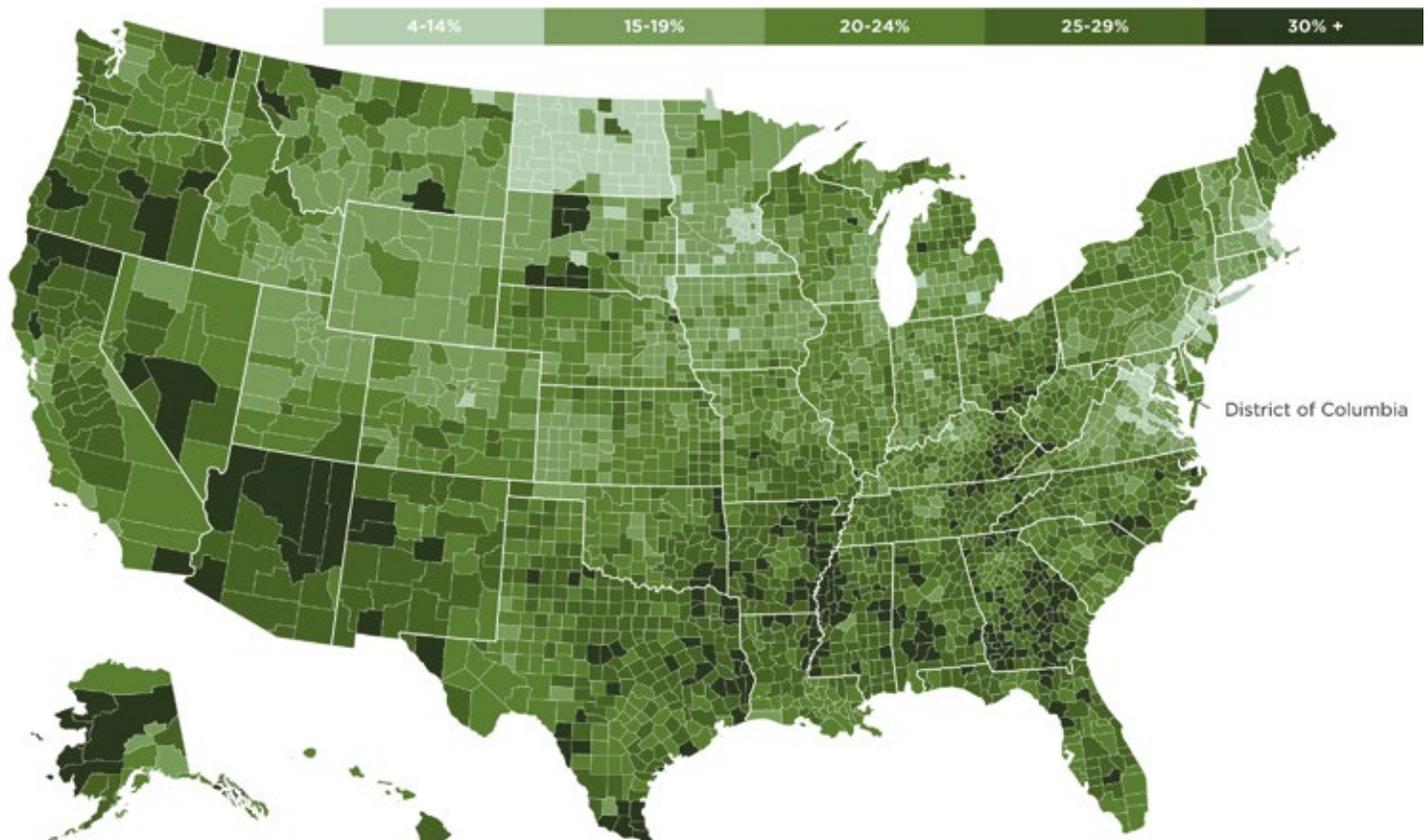
or skip meals sometimes due to lack of funds — which can contribute to increased risk for obesity. In addition, stress, anxiety and less access to safe, convenient places for physical activity can contribute to increased risk for obesity.

Food insecurity is particularly concentrated in different areas around the country — in 321 counties, the average food insecurity rate is 23 percent, while in the other 2,821 counties, the average rate is 15 percent.⁹⁶ Fifty percent of the high food-insecurity counties are in rural areas, 26 percent are metropolitan and 90 percent are in the South.

Rates of child food insecurity range from a low of 8.5 percent in North Dakota to

a high of 20.8 percent in Mississippi. Very low food security—when one or more members of a household reduces their food intake or disrupts their eating patterns because of insufficient money and other food resources—range from 2.9 percent in North Dakota to 7.9 in Mississippi.⁹⁷ According to a review by the U.S. Department of Agriculture, food insecurity in states varies by, and depends on, household factors, such as income, employment and household structure (i.e. single parents), as well as state-level characteristics, such as average wages, cost of housing, levels of participation in food assistance programs (including summer meal programs for children) and tax policies.⁹⁸

Child Food Insecurity in The United States



Source: Feeding America

- Low-income Americans (at/under 100 percent of the FPL) spend a larger percentage of their income on food (16.1 percent) but spend less in real dollar amounts (\$35 per person per week) than do higher-income Americans (13.2 percent; \$50 per person per week).^{99, 100}

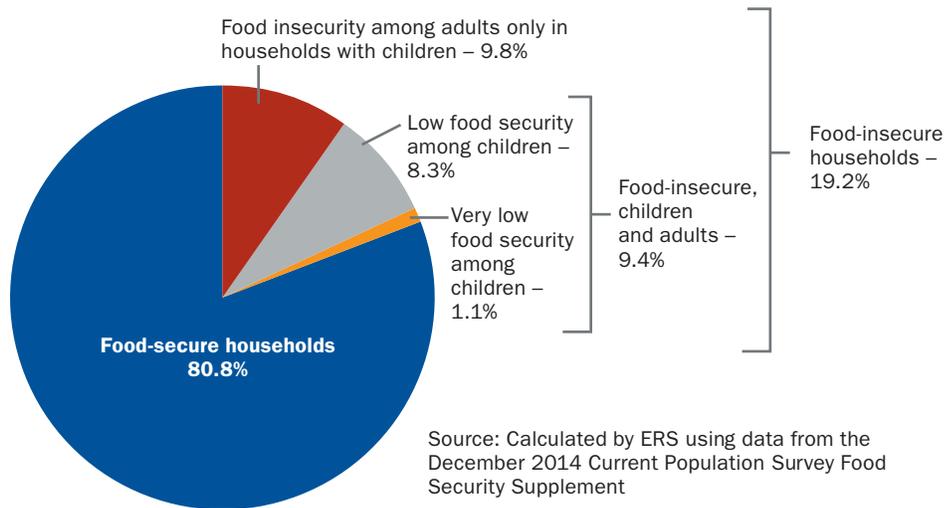
- Approximately 25 percent of Black and Latino families experience food-insecurity compared to 11 percent of White households.¹⁰¹ Black and Latino families have earned \$1 for every \$2 earned by White families for the past 30 years.¹⁰²

- Nearly 60 percent of counties where Native American/Alaska Natives make up the majority population have the highest food-insecurity rates in the nation. Among all 3,142 Native American/Alaska Native counties, those living in Apache County, Arizona (at 42 percent) and Wade Hampton, Alaska (at 40 percent) have the highest child food-insecurity in the nation, approximately double the national rate of 20.9 percent.^{103, 104}

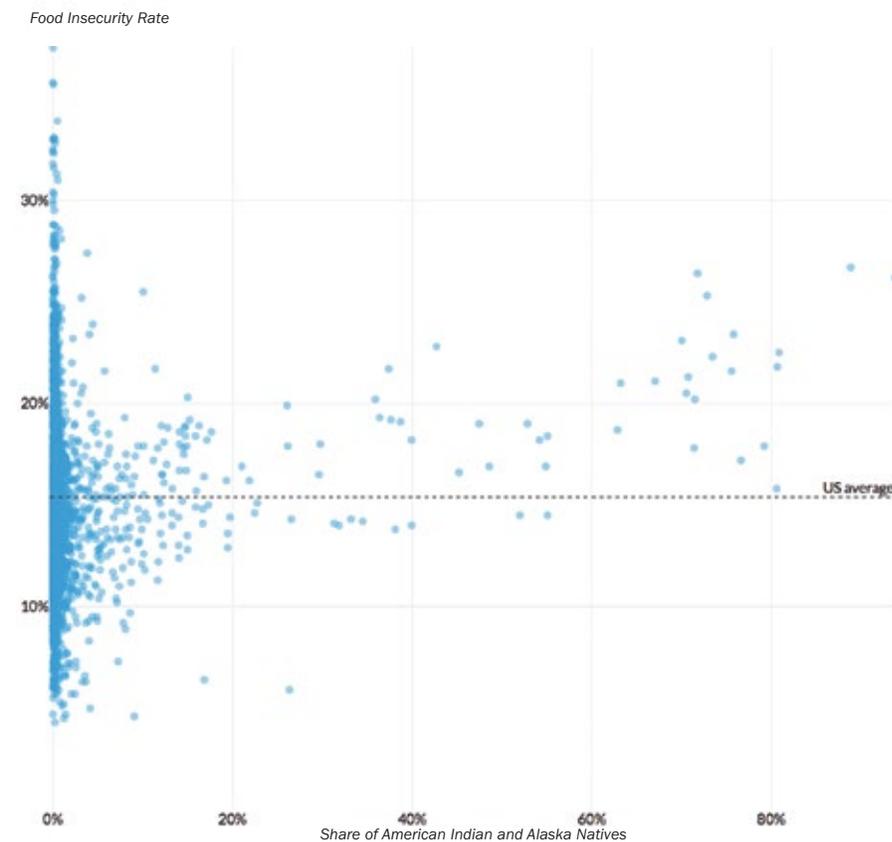
- Black and Latino families spend around \$10 per person per week less on food (\$40 to \$44) compared with White families (\$50).¹⁰⁵ ZIP codes with the highest concentration of Blacks have about half the number of chain supermarkets as ZIP codes with the highest concentration of Whites, and ZIP codes with the highest concentrations of Latinos have only one-third as many.¹⁰⁶ Many of these same neighborhoods also are struggling with high rates of obesity and unemployment and depressed economies.

- Among counties where American Indian/Alaska Natives are the majority population, the average meal price was \$3.18, and went as high as \$4.14,

U.S. Households with Children by Food Security Status of Adults and Children, 2014



Counties with Large Shares of American Indians and Alaska Natives Have High Rates of Food Insecurity



Sources: Feeding America Community Survey 2010–14

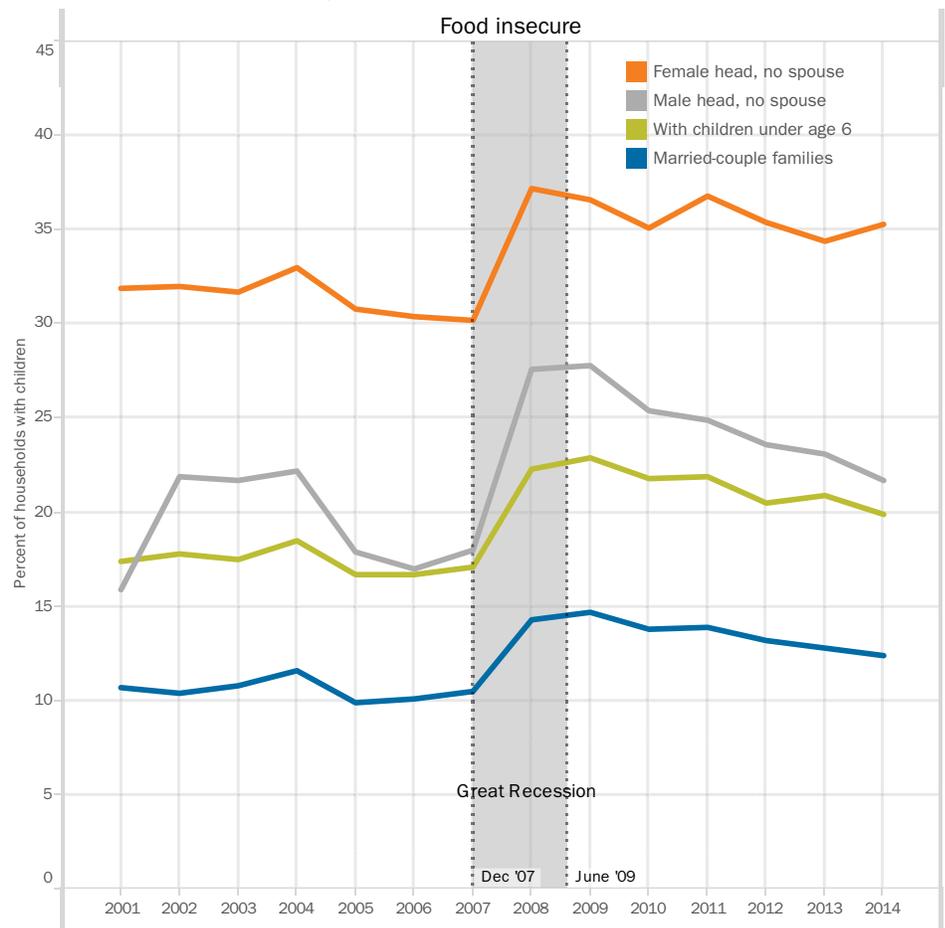
Note: American Indian and Alaska Natives are those who indicate American Indian and Alaska Native alone and no Hispanic ethnicity

compared with the average meal across all U.S. counties of \$2.82. Those same counties are also grappling with high levels of poverty (at 32 percent) and unemployment (at 10.8 percent).¹⁰⁷

More than 29 million Americans live in “food deserts,” meaning they do not have a supermarket or supercenter within a mile of their home if they live in an urban area, or within 10 miles of their home if they live in a rural area, making it challenging to access healthy, affordable food.¹⁰⁸

- Families in predominantly minority and low-income neighborhoods have limited access to supermarkets and fresh produce. Greater accessibility to supermarkets is consistently linked to lower rates of overweight and obesity.¹⁰⁹ Studies have found that there is less access to supermarkets and nutritious, fresh foods in many urban and lower-income neighborhoods and less healthy items are also often more heavily marketed at the point-of-purchase through product placement in these stores.^{110, 111}

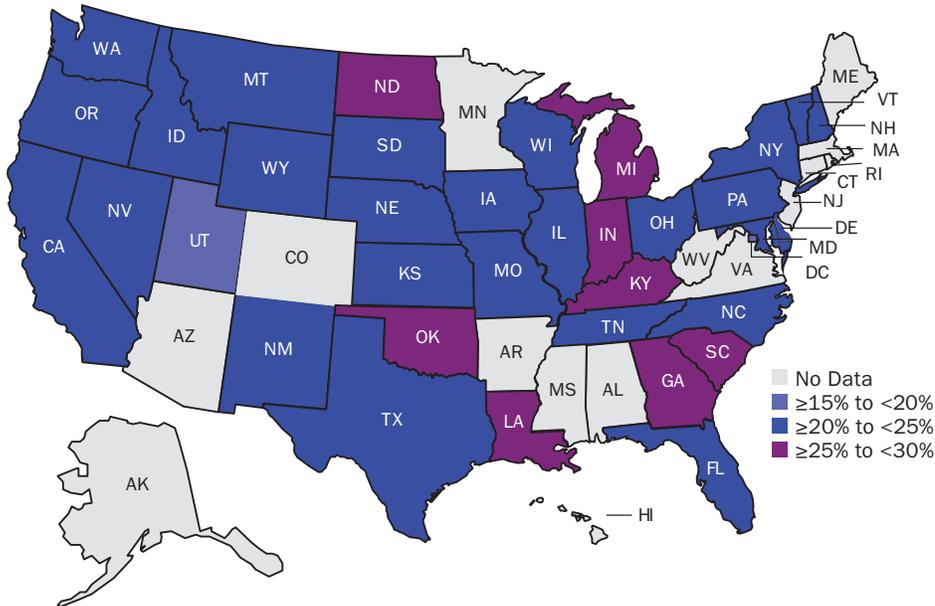
Female-headed households with children consistently have higher rates of food insecurity than other households with children



Source: USDA, Economic Research Service

PRENATAL AND MATERNAL HEALTH

Percent of Women Classified as Obese Prepregnancy by State, 2011



Note: Puerto Rico = 20.5 percent

Source: CDC, National Vital Statistics Reports, U.S. Birth Certificate

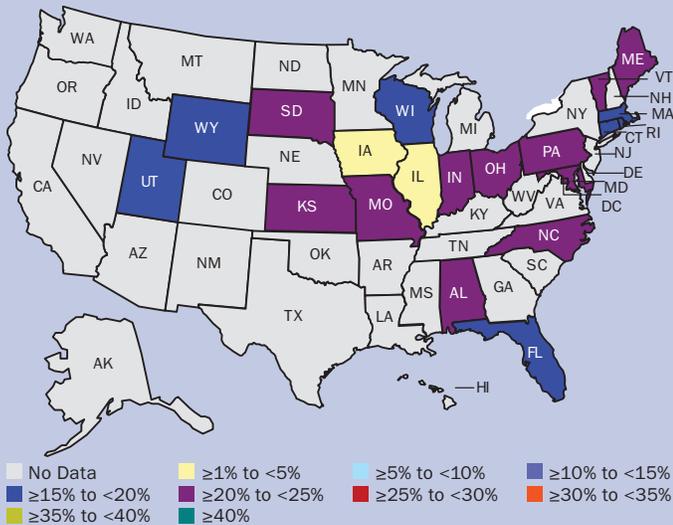
Nearly one in four (23.4 percent) women are obese before becoming pregnant — which can increase the risk for a wide range of health complications for the baby and the

mother.¹¹² More than 6 percent (approximately one in 16) of pregnant women have or develop diabetes during pregnancy — known as gestational diabetes.¹¹³



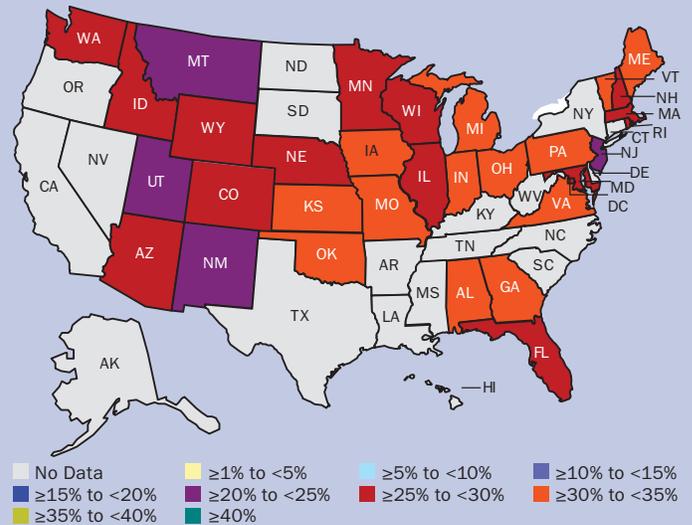
WOMEN ENROLLED IN WIC AND WERE OBESE PREPREGNANCY 1994, 2004 AND 2014

Percent of Women Enrolled in WIC and Classified as Obese Prepregnancy by State, 1994



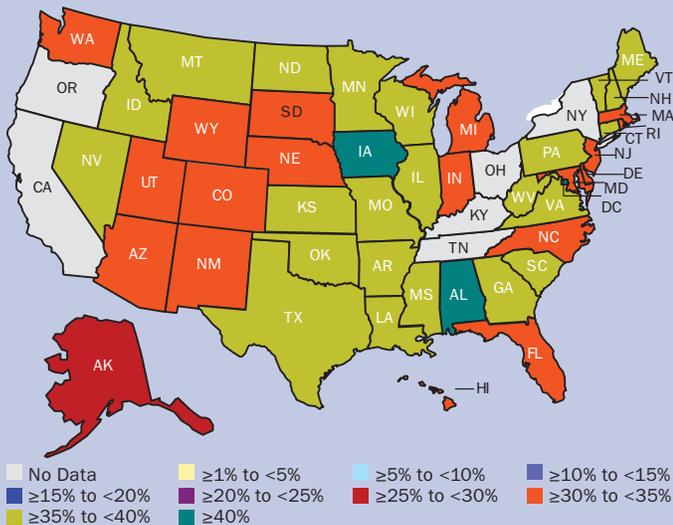
Note: The Virgin Islands = 21.7 percent.
Source: USDA, Food and Nutrition Services

Percent of Women Enrolled in WIC and Classified as Obese Prepregnancy by State, 2004



Note: American Samoa = 36.3 percent, Guam = 28.0 percent, Puerto Rico = 20.3 and the Virgin Islands = 32.4 percent.
Source: USDA, Food and Nutrition Services

Percent of Women Enrolled in WIC and Classified as Obese Prepregnancy by State, 2014



Note: America Samoa = 26.9 percent, Guam = 36.6 percent and the Virgin Islands = 30.2 percent.
Source: USDA, Food and Nutrition Services

The rate of women who were obese before becoming pregnant and participating in the WIC program has dramatically increased over the past 20 years, increasing 86 percent from 19.2 percent in 1994 to almost 36 percent in 2014.^{114, 115} In 1994, the rates ranged from a low of 1 percent in Iowa to a high of 24.7 percent in Vermont.

By 2004, 28.8 percent of women who were enrolled in the WIC program were obese prior to becoming pregnant.¹¹⁶ Rates ranged from a low of 21.1 percent in Rhode Island to a high of 34.3 in Alabama. Nineteen states and Washington D.C. had more than a 20 percent increase of women being obese, with five states having more than a 45 percent increase. [19 states out of 31 and Washington, D.C. reported data in 1994 and 2004.]

And by 2014, the percent of women who were obese doubled in 13 states and Washington, D.C.¹¹⁷ Iowa had the greatest increase from 1 percent in 1994 to 40.8 percent in 2014, followed by Illinois, which increased by more than seven times, from 5 percent in 1994 to 35.9 percent in 2014. [19 states out of 44 and Washington D.C. reported data in 1994 and 2014.]

Maternal health — including obesity, poor nutrition and type 2 diabetes — can increase risk for miscarriages, birth defects, slow fetal growth, prematurity and low birth weight babies. Poor maternal nutrition can also lead to increased risk for abnormal brain development, developmental delays, diabetes, hypertension, heart disease, obesity and lower IQ in babies.^{118, 119}

- One in nine children in the United States is born prematurely (before 37 weeks of gestation or 3 weeks early). Premature births cost the country \$26.2 billion annually, or \$51,600 per baby, in direct medical and lifetime added costs.^{120, 121}
- On average, there were approximately 23,400 infant deaths per year in the United States over the past decade.¹²² The U.S. infant

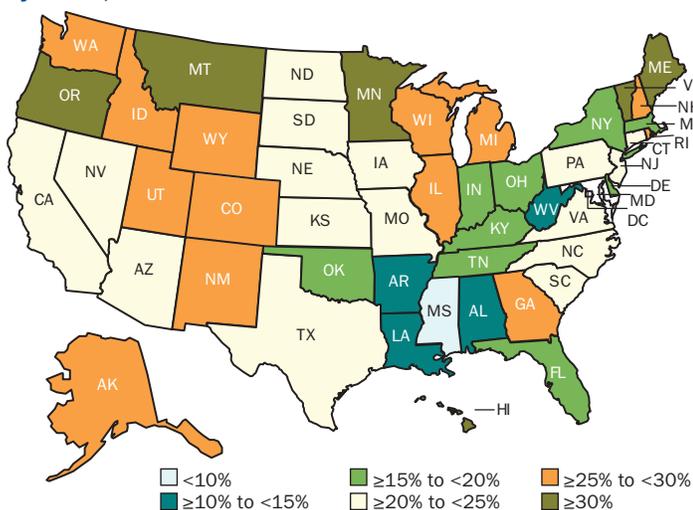
mortality rate (6.0 per 1,000 live births, 2013) is almost twice as high as some comparable countries — the average infant mortality in comparable countries is 3.5 per 1,000 live births.¹²³ The United States ranks 24th among developed countries.¹²⁴

Good prenatal healthcare is important to help reduce risks and complications. Many experts, however, now believe that much of prenatal care, which usually begins during the first three months of pregnancy, comes too late to prevent many serious maternal and childhood health problems. Even the first few weeks after conception are critical for healthy fetal development. Medical professionals recommend an increased focus on regular well-care and preventive healthcare for women throughout childbearing age, including screening for risk of obesity and related chronic health conditions.

BREASTFEEDING

The American Academy of Pediatrics (AAP) recommends breastfeeding as a natural source of nutrition that “provides the healthiest start for an infant.” The NAM and AAP recommend that babies be breastfed exclusively for about the first 6 months and should continue breastfeeding through the first year of life.^{125, 126, 127}

Percent of Infants Exclusively Breastfeeding at Six Months by State, 2013 Births



Note: Puerto Rico = 20.1 percent.

Source: CDC, Division of Nutrition, Physical Activity and Nutrition

Only around half (51.8 percent) of infants are breastfeeding at 6 months — with rates of exclusive breastfeeding rates ranging from 9.3 percent in Mississippi to 33.8 percent in Montana.¹⁴⁴

HEALTH BENEFITS OF BREASTFEEDING

There are mixed findings on the potential relationship between breastfeeding and obesity among infants.^{128, 129, 130} However, there are a number of identified health benefits for breastmilk as the “first food.” In addition, there are weight-related benefits that have been identified for mothers who breastfeed.^{131, 132} Women who exclusively breastfeed for at least three months lose up to 3.2 pounds more compared to women who do not breastfeed or breastfeed non-exclusively one-year postpartum, and are more likely to return to the same or lower BMI as prepregnancy.¹³³

- **Infants:** Lower risk of ear and gastrointestinal infections, necrotizing enterocolitis (a gastrointestinal disease), diabetes and obesity.¹³⁴ Some research suggests it may also reduce risk for asthma and allergies, childhood leukemia and sudden infant death syndrome (SIDS).^{135, 136, 137, 138} Some research has found children who are breastfed longer are more likely to have better developed language skills, verbal and nonverbal intelligence during childhood, greater upward social mobility, higher neurological development and lower stress markers.^{139, 140}
- **Mothers:** Lower risk of breast and ovarian cancer, type 2 diabetes and postpartum depression. It has been shown to help mothers bond with the child and mothers who nurse miss less work.^{141, 142}
- **Economic:** Families can save on cost of formula. In addition, around \$2.2 billion could be saved in annual medical costs if breastfeeding recommendations were met.¹⁴³

The State of Obesity: *Obesity Policy Series*

High-Impact Policy Opportunities

Currently, millions of Americans are not getting adequate or recommended levels of quality nutrition or physical activity.

The health and social risks are particularly acute for children. Unhealthy weight, poor nutrition and insufficient physical activity increases a child's risk for physical, mental, behavioral, emotional, learning and dental problems — including making it hard to perform basic tasks and regulate their social-emotional behavior.¹⁴⁵

A range of strategies can make it easier for Americans to make healthier choices

every day. Research particularly supports strategies that target young children— practicing healthy habits at a young age makes it more likely that those habits will continue into adulthood.

In this section, TFAH and RWJF review a range of recent policy trends, changes and opportunities that build on lessons learned and leverage promising approaches to promote a healthy weight in all children and healthy lives for all adults.

A. EARLY CHILDHOOD POLICIES AND PROGRAMS

It is easier and more effective to prevent overweight and obesity during early childhood than reverse trends later in life. Starting in early childhood pays the biggest dividends; by promoting good nutrition and physical activity from the start, children will be more likely to enter kindergarten at a healthy weight and maintain healthy habits for life.

Rates of overweight and obesity are highest among children from low-income families and racial and ethnic inequities persist as they age. These trends are often related to limited access to affordable, nutritious food and lack of safe, convenient places to be physically active.

There are a number of federal policies and programs aimed specifically at improving nutrition, activity and health for infants, toddlers and young

children both at home and in child care settings. Many of these efforts focus on providing support via families, neighborhoods, healthcare services and child care programs.

A recent research review of early childhood obesity prevention efforts in the first 1,000 days of life conducted by Healthy Eating Research found that efforts focusing on multiple risk factors and delivered at multiple levels (individual, family and community) through various sectors (healthcare, industry and policy) may help reduce the risk of childhood obesity.^{146, 147} Researchers concluded that “the challenge now is to be innovative in the creation of population-level obesity prevention interventions that are cost-effective and sustainable.”¹⁴⁸



Key policies highlighted in this section include:

- **Child and Adult Care Food Program (CACFP)**
- **Implementation of the 2014 Reauthorization of the Child Care and Development Block Grant (CCDBG)**
- **State Obesity-Related Child Care Licensing and Standards Trends**
- **Head Start — Performance Standards**
- **Implementation of the Early Education Components of Every Student Succeeds Act (ESSA) of 2015**
- **CDC’s Early Childhood Initiatives — Technical Assistance, School Health Grants and National Early Care and Education Learning Collaborative**
- **WIC — Continued Emphasis on Nutrition and Breastfeeding Support**
- **Additional Measures to Increase Breastfeeding Support — Through Insurance, Medical Practices and Workplace Policies**

Budgets for Some Key Federal Child Care and Obesity-Related Programs	Enacted Budget FY 2016
Child and Adult Care Food Program (USDA)	\$3.340 billion ¹⁴⁹
Child Care and Development Block Grant	\$2.761 billion ¹⁵⁰
Head Start	\$9.168 billion ¹⁵¹
WIC (USDA)	\$6.35 billion ¹⁵²

Note: For some of these programs, only a portion of the funding goes toward obesity-related activities (i.e., nutrition, physical activity).

NUTRITION AND PHYSICAL ACTIVITY IN INFANTS, TODDLERS AND YOUNG CHILDREN

Currently, significant number of infants, toddlers and preschoolers do not meet the Dietary Guidelines for Americans or AAP recommendations for a healthy diet or sufficient physical activity.¹⁵³ Chronic poor nutrition (from food of poor nutritional value and/or hunger) and insufficient activity impairs physical development, as well as the cognitive development of zero- to 3-year-olds — a time of rapid brain growth, changing the fundamental neurological architecture of the brain and central nervous system. In addition, malnourished children have lower academic achievement and more social and behavioral problems.¹⁵⁴

- **Meeting Recommended Activity**

Levels: According to Shape America, each day, toddlers (2- to 3-year-olds) should get at least 30 minutes of structured physical activity (adult-led); at least 60 minutes unstructured physical activity (free play); and not be inactive for more than one hour at a time (except for sleeping).¹⁵⁵ Active children have lifelong health benefits of stronger muscles and bones, leaner bodies by controlling body fat, lower risk of high blood pressure or high blood cholesterol levels and are less likely to become overweight or obese and to develop type 2 diabetes.¹⁵⁶

- **Safe and Accessible Places to be**

Active: Unsafe conditions and neighborhoods and limited knowledge among parents and caregivers about recommended types and amount of activity at each stage of development can contribute to young children not being sufficiently active.

- **Limit Screen Time:** The NAM also recommends that parents and caregivers limit young children's screen time, since it promotes sedentary behavior and takes away from time that could be spent in more physical activities.^{157, 158} NAM also recommends keeping children active throughout the day and ensuring adequate sleep each night. AAP the American Public Health Association (APHA) and the National Resource Council for Health and Safety in Child Care and Early Education recommends no more than 30 minutes of screen time per week for children in child care and early education settings for education or physical activity use only.¹⁵⁹

- **Recommended Nutrition:** Around one-third of toddlers and preschoolers (ages 2 to 4) do not eat any fruits or vegetables in a given day, and only one-third meet the daily recommendation of one cup of fruit and 1 cup of vegetables for children ages 2 to 3 and one to one-and-one-half cups for children ages 4 to 8. French fries are the most eaten vegetable by toddlers and preschoolers.^{160, 161}

- **No Sugar-Sweetened Beverages:**

The AAP recommends pediatric practice should aim to remove all sugar-sweetened beverages from children's diets, "because there is no evidence for the health benefits of sugar-sweetened beverages," which currently make up 8 percent of children's total daily calories.^{162, 163}

Child and Adult Care Food Program — 2016 Standards

More than half of American children under the age of 6 regularly spend a significant amount of time in child care settings.¹⁶⁴ And, more than 11 million children under age 6 spend an average of 30 hours in non-parental child care settings, with children of working parents spending almost 40 hours a week in child care sites.¹⁶⁵

CACFP provides nutritious meals and snacks to more than four million children each day in Head Start/Early Head Start, child care centers and home- and family-based day care centers.^{166,167} In April 2016, USDA released updated nutrition standards for food and beverages served through CACFP, as part of a requirement of the Healthy, Hunger-Free Kids (HHFK) Act of 2010 to better align with the most current nutrition science and the Dietary Guidelines for Americans. The standards include more whole grains; a greater variety of vegetables and fruits; less added sugars and solid fats; healthy beverages, including low-fat and fat-free milk; and support for breastfeeding. The requirements were designed to be “significant, achievable and cost-neutral.” This was the first major revision to CACFP’s meals since 1968. Implementation is required by October 1, 2017. The new standards have the added benefit of being more closely aligned with recently-updated nutrition standards for the School Breakfast Program and the National School Lunch Program.

The updated standards build on a 2011 requirement that child care sites participating in CACFP make drinking water available throughout the day and serve only low-fat or non-fat milk to children ages 2 and older.

The program provides child care operators with specific meal patterns and portion sizes, and provides sample menus and meal planning training to child care providers. Studies show that child care programs participating in CACFP serve meals that are more nutritious — including higher amounts of key nutrients and fewer servings of fats and sweets — than those served by child care programs that do not participate in CACFP.¹⁶⁸

Many child care providers face challenges in implementing the new standards.¹⁶⁹ For instance, many providers — particularly small, individual-owned providers — have limited food budgets and preparation facilities and/or lack sufficient nutrition training.^{170, 171}

Implementation of the 2014 Reauthorization of the Child Care and Development Block Grant

CCDBG, the primary federal funding stream for child care assistance for low-income families, was reauthorized in 2014 and included a set of stronger requirements to: 1) protect the health and safety of children in care through more consistent standards and monitoring of standards; 2) improve the quality of care, including increased supports for child care providers; and 3) enable families to easily access child care assistance to support stable, continuous care that is better coordinated with other programs and resources.^{172, 173}

The law provides some new opportunities for states, localities and child care providers to better promote nutrition, activity and health education for families. States must provide information on public-facing websites about eligibility for the Supplemental Nutrition Assistance Program (SNAP) and CACFP; research and best practices on healthy eating and physical activity; and may include information about training requirements for child care staff. States must also use a portion of their funding (7 percent in fiscal year (FY) 2016-2017; 8 percent in FY 2018-2019; and 9 percent in 2020) to support at least one of 10 defined activities. Activities include: training and professional development of the child care workforce using scientifically-based, age appropriate strategies to promote development of a young child; training on children's learning and nutritional and physical activity needs; and supporting efforts to develop high-quality health, mental health, nutrition, physical activity and development standards. CCDBG reauthorizes the Child Care and Development Funds (CCDF) for states, and each state has created a plan for FY 2016 to FY 2018.

Healthy Child Care, Healthy Communities — an initiative of Child Care Aware of America supported by a grant from RWJF — is providing technical assistance to six states around implementation of CCDBG, including policies and toolkits for support creating healthier child care environments via their state plans, which were required by March 2016 with compliance required by September 30, 2016. States continue to have the opportunity to update practices to align with recommendations beyond their formal plans. Some key areas of emphasis include:¹⁷⁴

- **Implementing best practice standards for nutrition, physical activity and health — and maintaining continuous quality improvement:** There should be written policies to support infant/child nutrition, screen time, physical activity and breastfeeding, ongoing provider training and consistent parent and caregiver communication around common healthy eating and active play messaging. Policies should be aligned with established evidence and research. Best practice information should be disseminated to provide clear, consistent, age-appropriate guidance to parents and caregivers through multiple mediums — supporting positive meal-time experiences and inclusive feeding consideration for children with special needs. Best practices should be aligned as well as possible with Quality Rating and Improvement Systems (QRIS) standards;
- **Referrals and integration with healthcare, health and other social services:** There should be systems in place to refer children and families to other local health and social service programs, including nutrition and breastfeeding programs as needed;

- **Encouraging healthy relationships with food and physical activity:** Early learning and development guidelines should support eating competency as the preferred social-emotional-behavioral intervention in response to promoting healthy relationships with food. Guidelines should support family-style meals and socialization during meal-times, which helps build emotional, gross and fine motor development — as well as promoting opportunities for children's active play every day; and

- **Professional development, education and training for providers:** Caregivers and staff should receive ongoing continuing education and professional development opportunities in health, nutrition and physical activity standards; including support for breastfeeding.

A review of CCDBG by the Center for Law and Social Policy (CLASP) and the National Women's Law Center (NWLC) identified a key challenge: a large number of new requirements were added for states but funding was not significantly increased to implement the changes. Discretionary CCDBG funding (starting at a base of \$2.44 billion in FY 2015) was increased by 16 percent over six years and mandatory funding remained flat at \$2.92 billion annually.¹⁷⁵ The FY 2016 budget allocation for CCDBG was \$2.76 billion.¹⁷⁶ According to their assessment, the funding is not sufficient for raising health and safety standards, increasing quality of care and maintaining core support for child care assistance to low-income families. The actual discretionary funding level must be allocated by Congress annually. States are also required to contribute matching and maintenance-of-effort (MOE) funding.

STATE REQUIREMENTS FOR CHILD CARE SETTINGS

States can set licensing and/or other requirements for child care providers to operate in the state — including setting standards related to obesity, nutrition and physical activity.

In addition, 41 states and Washington, D.C. have adopted QRIS Standards to help improve the availability of quality child care. QRIS Standards provide a framework for improving child care by making program quality comparable across the field, creating and aligning program standards with early learning and child care practitioner standards, developing and aligning infrastructure to support quality improvement and assessing achievement along a continuum.¹⁷⁷ States' systems differ significantly in their level of funding support and implementation status.^{178, 179} In addition, different states have different requirements for how QRIS and licensing requirements can work together. In some states, for instance, licensing works as a first step of the QRIS process or is a prerequisite for participating in QRIS.

Two organizations, Nemours and Voices for Healthy Kids (VFHK), have conducted reviews of Early Childhood Education standards related to obesity. The chart on pages 44-45 reflects the findings of different state requirements.

- Nemours — a pediatric care organization, committed to the health of children in Delaware, New Jersey, Pennsylvania and Florida, as well as research, education and advocacy — conducted a scan of obesity prevention standards in state licensing requirements and QRIS systems, as of March 2016.¹⁸⁰
- In addition, the Public Health Law Center conducted a review of the Y-USA's Healthy Eating and Physical Activity (HEPA) standards with state child care licensing laws and regulations for phys-



ical activity and screen time (between July 2015 and November 15)—HEPA standards support QRIS standards in promoting quality child care settings.¹⁸¹ Twenty-one types of child care settings, varying by state, were reviewed including: Child Care Centers and Child Care Family Centers for infants to 13-year-olds; school-age child care for 5-years-old and older; Day Care Homes for children under the age of 12; and Day Care Centers for children under the age of 18. The review found that for afterschool programs, only Alaska had requirements for outdoor activities when possible, for promoting a mixture of types of physical activity and limits on screen time.

HEPA standards include:¹⁸²

- Role modeling: Staff model healthy eating and active living.
- Family engagement: Engage parents/caregivers using informational materials and/or activities focused on healthy eating and physical activity a minimum of once a quarter.
- Physical Activity: Ensure that children engage in at least 30 minutes of physical activity for half-day programs and 60 minutes for full-day programs,

including a mix of moderate and vigorous physical activities that promote bone and muscle strengthening. Play will take place daily outdoors whenever possible.

- Screen Time: Eliminate screen time for children under two years of age. For children over two, screen time is limited to less than 30 minutes per day for children in half-day programs and less than one hour per day for those in full-day programs.
- Food: Serve fruits or vegetables at every meal and snack. Children serve themselves (family-style). No partially hydrogenated oils (trans fat), fried or pre-fried foods. Serve whole grains when grains are served. Serve foods free of sugar as one of the first three ingredients or less than eight grams of added sugar.
- Beverages: Offer water at the table during every meal and accessible at all times. Serve only water and plain, low-fat (one percent) or non-fat milk.
- Infant Feeding: Adults who work with infants and their families should promote and support exclusive breastfeeding for six months and continuation of breastfeeding in conjunction with complementary foods for one year or more.

AHA VOICES FOR HEALTHY KIDS STATE POLICY REVIEW ON OBESITY PREVENTION: EARLY CHILDHOOD EDUCATION

Early Childhood Education (Ages 0 to 5)									
State*	Child and Adult Care Food Program (CACFP): State has licensing laws linked to CACFP that automatically update	Physical Activity (PA)					Screen Time (ST)		
		Defined PA: State defines PA as moderate or vigorous for at least: 60 mins/day for full-day and 30 mins/day for part-day programs	Mixture of Activities: State requires mixture of moderate and vigorous activities, including bone- and muscle-strengthening	Outdoor PA: State requires active play outdoors whenever possible	Infant Varied Activity: State requires indoor and outdoor activities under adult supervision	Infant Tummy Time: State requires daily tummy time for infants less than 6 months of age	Screen Time Defined: State defines screen-time to include T.V., movies, cell phones, video games, computer, and other digital devices	Screen Time Limits for Children Under the Age of Two: State eliminates screen time for children under the age of two	Screen Time Limits for Children Under the Age of Two: State limits screen time to 1 hour/day for full-day programs and 30 mins/day for part-day programs
Alabama			√ ^{C,F}	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}			
Alaska	√ ^A								
Arizona			√ ^C			√ ^C	√ ^C	√ ^C	
Arkansas	√ ^{D,F}		√ ^C	√ ^C		√ ^C		√ ^C	√ ^C
California						√ ^C			
Colorado		√ ^C	√ ^C	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}	√ ^F	√ ^C	√ ^C
Connecticut	√ ^D					√ ^C			
Delaware			√ ^{C,F}	√ ^{C,F}		√ ^F	√ ^F		
D.C.	√ ^V	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Florida						√ ^{C,F}	√ ^C	√ ^C	√ ^C
Georgia	√ ^L	√ ^C	√ ^C	√ ^C		√ ^C	√ ^C		
Hawaii	√ ^{D,G,F}		√ ^{C,F}						
Idaho		√ ^C							
Illinois				√ ^F	√ ^F	√ ^F			
Indiana			√ ^{C,F}	√ ^{C,F}	√ ^{C,F}				
Iowa	√ ^{D,V}			√ ^C					
Kansas				√ ^C	√ ^C				
Kentucky				√ ^{C,F}					
Louisiana	√ ^A		√ ^C	√ ^C					
Maine				√ ^C	√ ^C			√ ^C	
Maryland	√ ^{D,G,F}		√ ^C	√ ^C	√ ^C		√ ^C	√ ^C	
Massachusetts									
Michigan				√ ^{C,F}			√ ^C	√ ^C	
Minnesota	√ ^D		√ ^C						
Mississippi									
Missouri				√ ^{C,F}	√ ^{C,F}				
Montana	√ ^{D,F}								
Nebraska				√ ^{C,F}	√ ^{C,F}				
Nevada									
New Hampshire									
New Jersey	√ ^{D,F}	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}				
New Mexico	√ ^{D,F}	√ ^{C,F}			√ ^{C,F}			√ ^{C,F}	
New York	√ ^D								
North Carolina	√ ^{D,F}	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}	√ ^C	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}	√ ^{C,F}
North Dakota				√ ^{C,F}					
Ohio				√ ^C	√ ^C				
Oklahoma				√ ^{C,F}	√ ^C				
Oregon			√ ^C	√ ^C	√ ^C				
Pennsylvania	√ ^D								
Rhode Island	√ ^{D,F}		√ ^C	√ ^C	√ ^C	√ ^C	√ ^C	√ ^C	√ ^C
South Carolina	√ ^D			√ ^C					
South Dakota									
Tennessee			√ ^{C,F}	√ ^{C,F}	√ ^{C,F}				
Texas			√ ^{C,F}	√ ^{C,F}	√ ^{C,F}			√ ^C	
Utah	√ ^{D,F}		√ ^{C,F}	√ ^C					
Vermont			√ ^{C,F}						√ ^{C,F}
Virginia		√ ^C	√ ^C	√ ^C	√ ^C	√ ^C			
Washington	√ ^F		√ ^{C,F}	√ ^{C,F}		√ ^{C,F}			
West Virginia	√ ^D	√ ^C	√ ^C	√ ^{C,F}	√ ^F	√ ^{C,F}	√ ^C	√ ^C	√ ^C
Wisconsin	√ ^{D,F}		√ ^F	√ ^F	√ ^F	√ ^F			
Wyoming				√ ^{C,F}					
Total States	20 States + D.C.	8 States	23 States	32 States	27 States	13 States	10 States	12 States	7 States

Note: *Applies to Child Care Centers or Child Care Family Care Homes only. √ = State has a law, statute or both.
A = All Child Care Facilities; C = Child Care Centers D = Child Day Care Centers; G = Child Care Group Homes; F = Child Care Family Homes; L = Child Learning Centers; V = Child Development Centers; N/A = Data was not collected for D.C.

NEMOURS STATE POLICY REVIEW ON OBESITY PREVENTION: EARLY CHILDHOOD EDUCATION

NEMOURS STATE POLICY REVIEW ON OBESITY PREVENTION: EARLY CHILDHOOD EDUCATION								
State Early Childhood Education (ECE) Licensing Regulations/Quality Rating and Improvement System (QRIS) Standards to Prevent Obesity (Ages 0 to 5)								
State*	Healthy Eating: State has regulations requiring licensed ECE programs to have healthy eating policies	Breastfeeding: State has regulations requiring licensed ECE programs to allow/encourage onsite breastfeeding	Private Breastfeeding Space: State has regulations requiring licensed ECE programs to have a private space available for mothers to breastfeed infants	Physical Activity: State has regulations requiring licensed ECE programs to have time for daily physical activity	Screen Time: State has regulations requiring licensed ECE programs that either prohibit screen time for children under age 2 or sets limits	Drinking Water: State has regulations requiring licensed ECE programs to make drinking water available to children	Nutritional USDA Standards: State has regulations requiring licensed ECE programs to provide food (meals and snacks) that meet USDA standards"	CACFP: State has regulations requiring licensed ECE programs to meet CACFP for meals and snacks
Alabama	√ ^L	√ ^L		√ ^L	√ ^L	√ ^L	√ ^L	
Alaska	√ ^L	√ ^L		√ ^L	√ ^L	√ ^L	√ ^L	
Arizona	√ ^L	√ ^L		√ ^L	√ ^L	√ ^L		
Arkansas	√ ^{LQ}	√ ^L		√ ^{LQ}	√ ^L	√ ^L	√ ^L	
California	√ ^L	√ ^L		√ ^L		√ ^L		
Colorado	√ ^{LQ}			√ ^{LQ}				
Connecticut	√ ^L			√ ^L		√ ^L		
Delaware	√ ^{LQ}		√ ^L	√ ^{LQ}	√ ^L	√ ^L		
D.C.	√ ^L	√ ^L	√ ^L	√ ^L			√ ^L	
Florida	√ ^L			√ ^L	√ ^L	√ ^L	√ ^L	
Georgia	√ ^{LQ}	√ ^L		√ ^{LQ}	√ ^L	√ ^L	√ ^L	
Hawaii	√ ^L			√ ^L		√ ^L	√ ^L	
Idaho	√ ^Q			√ ^Q				
Illinois	√ ^L			√ ^L	√ ^L	√ ^L		
Indiana	√ ^{LQ}	√ ^L		√ ^{LQ}	√ ^{LQ}	√ ^L		
Iowa	√ ^{LQ}			√ ^L		√ ^L	√ ^L	
Kansas	√ ^L			√ ^L		√ ^L		
Kentucky	√ ^L			√ ^L	√ ^L	√ ^L		
Louisiana	√ ^L			√ ^L		√ ^L	√ ^L	
Maine	√ ^L			√ ^{LQ}	√ ^L	√ ^L		
Maryland	√ ^{LQ}			√ ^{LQ}	√ ^Q	√ ^L	√ ^L	√ ^Q
Massachusetts	√ ^{LQ}			√ ^{LQ}		√ ^L	√ ^L	
Michigan	√ ^{LQ}	√ ^L		√ ^{LQ}	√ ^L	√ ^L	√ ^L	√ ^Q
Minnesota	√ ^{LQ}			√ ^{LQ}		√ ^L	√ ^L	
Mississippi	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	
Missouri	√ ^L			√ ^L		√ ^L		
Montana	√ ^{LQ}	√ ^{LQ}		√ ^L		√ ^L		√ ^Q
Nebraska	√ ^{LQ}	√ ^Q		√ ^{LQ}	√ ^Q		√ ^L	√ ^Q
Nevada	√ ^{LQ}	√ ^{LQ}		√ ^{LQ}		√ ^L		√ ^Q
New Hampshire	√ ^L			√ ^L		√ ^L		
New Jersey	√ ^{LQ}	√ ^Q		√ ^{LQ}	√ ^L	√ ^L	√ ^L	
New Mexico	√ ^{LQ}			√ ^{LQ}	√ ^{LQ}	√ ^L	√ ^L	
New York	√ ^{LQ}	√ ^{LQ}		√ ^{LQ}	√ ^{LQ}	√ ^L	√ ^{LQ}	
North Carolina	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	√ ^L	
North Dakota	√ ^{LQ}	√ ^L		√ ^{LQ}		√ ^L	√ ^L	
Ohio	√ ^L	√ ^L		√ ^L		√ ^L	√ ^L	
Oklahoma	√ ^L			√ ^{LQ}	√ ^Q	√ ^L		
Oregon	√ ^{LQ}			√ ^{LQ}		√ ^{LQ}	√ ^L	
Pennsylvania	√ ^{LQ}			√ ^{LQ}		√ ^L		
Rhode Island	√ ^L			√ ^{LQ}	√ ^L	√ ^L		
South Carolina	√ ^{LQ}			√ ^{LQ}	√ ^{LQ}	√ ^L	√ ^{LQ}	
South Dakota	√ ^L			√ ^L				
Tennessee	√ ^L	√ ^L		√ ^L	√ ^L	√ ^L		
Texas	√ ^{LQ}	√ ^L		√ ^L	√ ^L	√ ^L	√ ^L	
Utah	√ ^{LQ}	√ ^Q	√ ^Q	√ ^{LQ}	√ ^Q	√ ^Q	√ ^L	
Vermont	√ ^L	√ ^L		√ ^L	√ ^L	√ ^L		
Virginia	√ ^L	√ ^L		√ ^L		√ ^L	√ ^L	
Washington	√ ^{LQ}			√ ^{LQ}				
West Virginia	√ ^L			√ ^L	√ ^L	√ ^L	√ ^L	
Wisconsin	√ ^{LQ}			√ ^{LQ}	√ ^L	√ ^L		
Wyoming	√ ^L			√ ^L				
Total States	50 States + D.C.	22 States + D.C.	4 States + D.C.	50 States + D.C.	28 States	43 States	26 States + D.C.	5 States

Note: *Applies to Child Care Centers or Child Care Family Care Homes only. √ = State has either licensing regulations, QRIS Standards or both.
L= licensing regulations; Q = QRIS Standards

EXAMPLES OF EARLY CHILD CARE INITIATIVES

Lets' Move! Child Care¹⁸³

Let's Move! Child Care encourages child care and early education providers to meet a basic set of best practices in five goal areas:

- 1) Physical activity: provide one to two hours of physical activity throughout the day, including outside play when possible;
- 2) Screen time: none for children under age 2 and for those 2 years and older, limit screen time to 30 minutes per week during child care and no more than one to two hours per day at home;
- 3) Food: serve fruits or vegetables at every meal, eat meals family-style whenever possible and avoid serving fried foods;

- 4) Beverages: give water during meals and throughout the day and avoid sugary drinks. For children two years and older, serve low- or non-fat milk and four to six ounces maximum of 100 percent juice a day; and

- 5) Infant feeding: provide breast milk to infants of mothers who wish to breastfeed, welcome mothers to nurse mid-day and support parents' decisions with infant feeding.

The Department of Defense, General Services Administration, Bright Horizons, Knowledge Universe, the Learning Care Group, New Horizons, YMCA, the Boys and Girls Clubs of America and others have made commitments to the Partnership for a Healthier America to meet the Let's Move! Child Care standards that are aligned with the initiative's goals.¹⁸⁴

YoungStar¹⁸⁵

YoungStar — a quality rating and improvement system of Wisconsin's Department of Children and Families — seeks to improve the care children receive by creating incentives to encourage providers to make child care healthier and educating parents or caregivers on how best to select providers.

YoungStar engages with parents, preschools, home-based programs, learning centers and others to ensure children are cared for in places that are healthy and safe. The program measures the quality of care and rates providers yearly. The organization then provides detailed information to the public. For the providers, YoungStar offers tools and training to improve care and sets standards for quality of care.

To ensure children are engaging in healthy activities, YoungStar requires all providers to serve nutritious foods (if the provider wants to have at minimum a three star

rating out of five). Programs eligible for certification must be CACFP participants, provide three months of menus that have been reviewed by a nutrition professional and/or receive a good score on the Early Childhood Environment Rating Scale. Providers can earn additional points by scheduling at least 60 minutes of physical activity each day.¹⁸⁶

YoungStar has also partnered with Wisconsin Shares — the state's child care subsidy program. Through the partnership, Wisconsin Shares reimbursements are tied to YoungStar quality ratings. Partly because of this partnership, nearly 75 percent of children in the Wisconsin Shares program attend quality child care centers.

YoungStar has rated nearly 4,000 providers that care for about 44,000 children. In total, more than 700 providers caring for more than 32,000 children have received three stars, certifying they serve healthy foods.¹⁸⁷

Head Start — Performance Standards

More than 1.1 million children from low-income families are enrolled in Head Start and Early Head Start programs. More than 80 percent of participants are 3- to 5-year-olds, 38 percent are Latino and 28 percent are Black.¹⁸⁸ The programs have a number of requirements for participating providers, including health; nutrition; education; social services; and parental engagement. To support the nutritional needs of enrolled children, Head Start and Early Head Start programs participate in either CACFP or the federal School Meal Programs.

For the first time in 40 years, Head Start is revising program standards. Final standards — intended to improve quality, including increased focus on supporting health and well-being — are expected in 2016.¹⁸⁹

In 2015, HHS also released a new version of an early learning framework, Head Start Early Learning Outcome Framework (HSELOF), incorporating recent developmental research to create stimulating and foundational learning experiences and to support better health among young children.¹⁹⁰ HSELOF covers five domains: approaches to learning; social and emotional development; language and literacy; cognition; and perceptual, motor and physical development.¹⁹¹ The framework includes nutrition and physical activity, including support for physical development milestones like balance and coordination, and for developing healthy eating habits and relationships with food.¹⁹²

A number of Head Start and Early Head Start programs are making concerted efforts to ensure enrolled children have access to and are referred to healthcare



More than 80 percent of Head Start participants are 3- to 5-year-olds, 38 percent are Latino and 28 percent are Black.

services — and there are opportunities to increase coordination and case management for children and families. Around 90 percent of children enrolled in Head Start are also enrolled in Medicaid, Children’s Health Insurance Program (CHIP) or state-funded health insurance; 97 percent have a medical home; 91 percent have a dental care home provider; and 97 percent have recommended immunizations.¹⁹³ Twelve percent of Head Start enrollees are children with disabilities (special plans under Individuals with Disabilities Education Act (IDEA)), compared to 6 percent of all preschool aged children.

Implementation of the Early Education Components of Every Student Succeeds Act of 2015

ESSA, the primary law supporting federal early and secondary education programs, was reauthorized in December 2015 and includes a number of provisions that increase options and flexibility that could support early childhood education, health and well-being.¹⁹⁴ Provisions of the law focus on the importance of good health (which includes nutrition, relationships to food, physical activity and overall well-being) for young children to thrive and be ready for school, and at the same time to reduce the risk for obesity and associated health problems. Some key early education and health components of ESSA include:

- Competitive Preschool Development Grants — authorized at \$250 million annually (for FY 2017 to FY 2020) — to provide assistance to states for strategic planning, building partnerships with Head Start providers and other child care/early education related organizations and improving parental choice among existing early education options. States may use funds to support school readiness of “low-income and disadvantaged” children and improve transitions to the kindergarten K-12 system. Efforts can include health-related efforts, social-emotional learning and overall well-being. The program replaces the current Preschool Development Grant program, which focused on building preschool programs in high-

need communities, and will be jointly administered by the Department of Education (Ed) and HHS.^{195, 196}

- Explicitly allowing for the use of Title I funds (federal grants directed through states to local school districts and public schools with high percentages of children from low-income families) to help support early education programs and encourage planning for transition from pre-Kindergarten (pre-K) programs to elementary schools. In the past, states and localities have used only a small portion of Title I money to support early education.
- Use of Title II funds for professional education support to provide programs and activities to meet the needs of young children; to develop the skills of principals, teachers or other school leaders; to measure whether efforts are progressing; and to help address the child’s transition to elementary school.
- Establishment of Full-Service Community Schools and Promise Neighborhoods support “pipeline” services as a continuum of coordinated care for children from birth through entry into school and success through graduation — including early childhood services that improve school readiness as well as physical and social emotional development.

CDC's Early Child Education Initiatives — Technical Assistance, School Health Grants and National Early Care and Education Learning Collaborative

CDC's Division of Nutrition, Physical Activity and Obesity (DNPAO) supports a number of obesity prevention initiatives designed to embed obesity prevention standards, and implementation support for these standards, into components of state and local early care and education (ECE) systems.¹⁹⁷ The agency provides funding, training and technical assistance to a variety of state and community agencies and other organizations to implement obesity prevention efforts targeting ECE settings.

The agency developed a framework and technical assistance materials for obesity prevention in ECE settings; convenes experts and disseminates best practices and research; and provides cooperative agreement grant funding to all 50 states and Washington, D.C. to promote school health and prevent and control diabetes, heart disease, obesity and associated risk factors. This funding requires all grantees to promote physical activity in the ECE setting

In addition, in October 2012, CDC launched a five-year cooperative agreement with Nemours — a nonprofit children's health organization and healthcare provider network (to conclude in 2017) — to partner with states to implement ECE learning collaboratives to improve nutrition, breastfeeding, physical activity and screen time policies and practices at both the state and ECE provider levels.¹⁹⁸ ECE providers in participating states exchange ideas with peers, learn



from experts, share tools and receive training to assist in improving policies and practices, and participating states work on strengthening support for obesity prevention in their ECE systems using CDC's Spectrum of Opportunities framework as a guide. More than 1,500 programs (child care, Head Start, pre-Ks and family child care) have participated, serving more than 146,000 children in 11 states (Alabama, Arizona, California, Florida, Indiana, Kansas, Kentucky, Missouri, New Jersey, Virginia and Washington.)¹⁹⁹

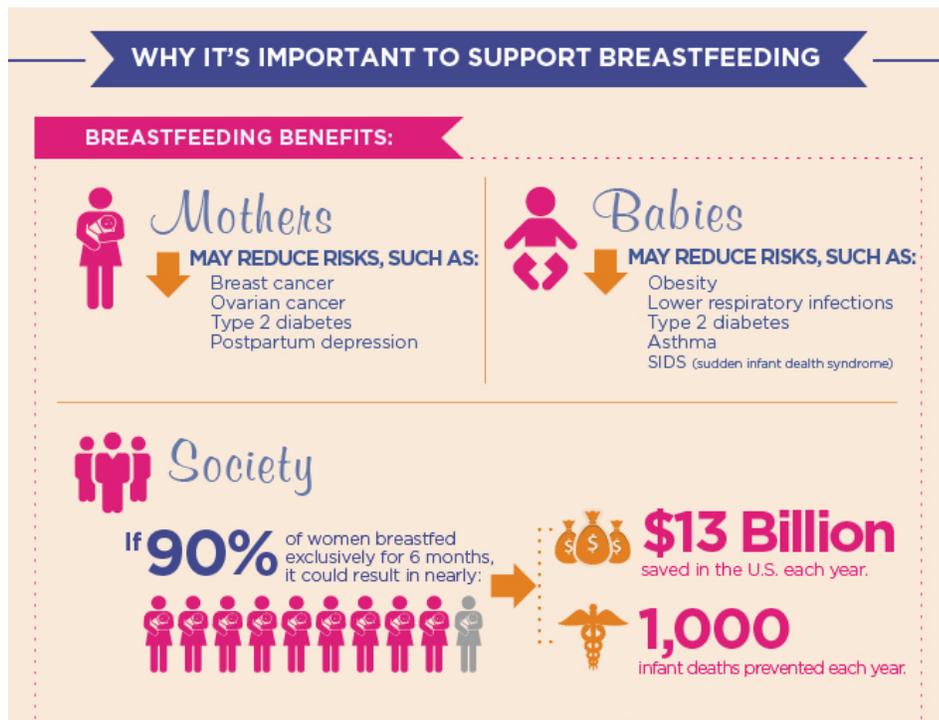
WIC — Continued Emphasis on Nutrition and Breastfeeding Support

More than half (52 percent) of all infants in the United States participate in WIC. WIC provides benefits — direct food assistance as well as counseling and education support — to around 8 million low-income individuals, including around 2 million pregnant and post-partum women, 2 million infants and 4 million children under the age of 5.²⁰⁰

Researchers have identified that revised nutrition standards and options that went into effect in the WIC program in 2009 and increases in breastfeeding contributed to a decline in obesity rates among WIC-enrolled preschoolers between 2008 and 2011.²⁰¹

WIC clinics in all 50 states, Washington, D.C., and U.S. territories provide nutritious food, nutrition education, breastfeeding promotion and support and referrals to other health and social services to participants at no charge.²⁰² More than 40 states and all U.S. territories participate in the WIC Farmers' Market Nutrition Program to make fresh produce and other foods more easily available to enrollees.²⁰³ Participants also have access to a number of resources, such as health screenings, nutrition counseling and breastfeeding supplies and counseling, immunization screenings and referrals and substance abuse referrals.²⁰⁴ Breastfeeding promotion and services are also top WIC priorities.

WIC has shown positive results in promoting healthy weight and nutritionally-balanced diets among



Source: National WIC Association

young children. It has helped to reduce the chances of low birthweight babies by 29 percent and very low birthweight babies by 50 percent; increased breastfeeding initiation and duration; and reduced maternal obesity at the onset of future pregnancies. Children whose mothers participated in the program prenatally had improved vocabulary scores, and children who participated in WIC after the first year of life experienced significantly improved memory. For every dollar spent on WIC pregnant women, up to \$4.21 is saved in Medicaid spending.^{205, 206, 207}

WIC appropriations were \$6.35 billion in FY2016, which the President's budget has requested again for FY2017.²⁰⁸

Congress is currently considering Child Nutrition Reauthorization bills, which include reauthorization of WIC. The Senate Agriculture Committee and the House Education and Workforce Committee approved separate reauthorization of Improving Child Nutrition Integrity Act bills in 2016.^{209, 210} The Senate version includes a provision to expand WIC eligibility for children from 5-years-old to 6-years-old, and emphasizes development of an Electronic Benefit Transfer system to be in place by 2020. The House version also modifies the EBT system and would authorize USDA to conduct pilot projects to test alternative certification, food delivery procedures and service delivery methods.

Additional Measures to Increase Breastfeeding Support — Through Insurance and Medical Practices and Workplace Policies

According to the NAM, without the benefit of outside advice or resources, mothers are less likely to start breastfeeding or may stop earlier than recommended.²¹¹

The Affordable Care Act (ACA) requires private insurers and Medicaid expansion states to provide coverage of breastfeeding support, supplies, counseling — defined as comprehensive lactation support and counseling by a trained provider during pregnancy and/or in the postpartum period — and costs for renting breastfeeding equipment.²¹² Traditional state Medicaid programs can set their

own policies for breastfeeding support. A review by CMS found that: 16 states and Washington, D.C. provide lactation counseling for new mothers to provide support and education; at least 29 states and Washington, D.C. provide some form of breastfeeding education; 38 states and Washington, D.C. provide support for breastfeeding pumps and 15 states and Washington, D.C. provided support for other breastfeeding supplies.²¹³

The ACA also amended the Fair Labor Standards Act (FLSA) to require employers to provide “reasonable

break time for an employee to express breast milk for her nursing child for 1 year after the child’s birth each time such employee has a need to express the milk.”²¹⁴ State laws may provide additional protections for employees. A location must be made available that is a functional space — shielded from view, free from intrusions from co-workers and the public and is not a bathroom. Employers with fewer than 50 employees are not subject to the requirement if compliance would impose an undue hardship.

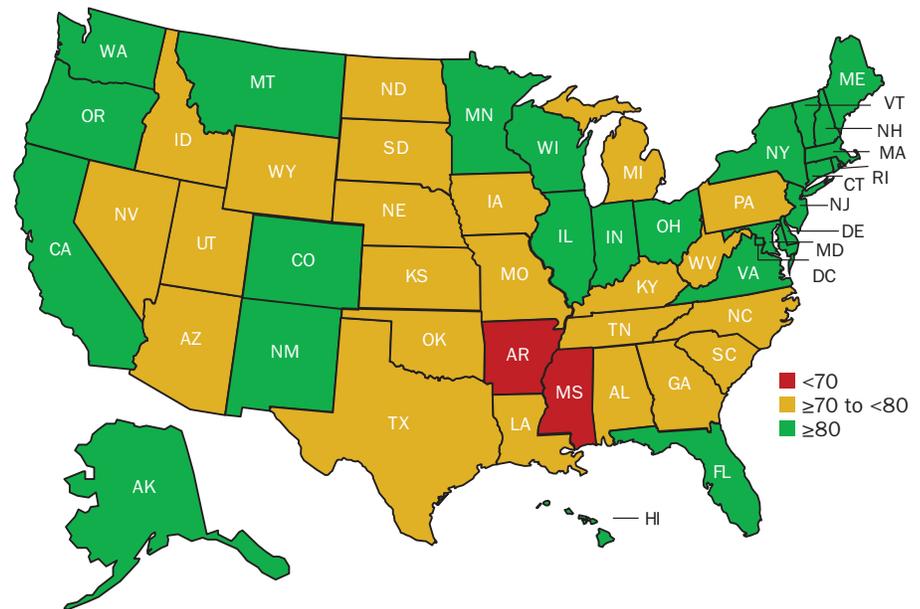
SOME KEY BREASTFEEDING LAWS IN STATES

Breastfeeding Support in Birth Facilities—State Averages

CDC’s Prevention Status Reports examined the extent to which hospitals, birth centers and other birth facilities in the state implemented evidence-based strategies to support breastfeeding in the categories of: 1) labor and delivery; 2) breastfeeding assistance; 3) mother-newborn contact; 4) newborn feeding practices; 5) breastfeeding support after discharge; 6) nurse/birth attendant breastfeeding training and education; and 7) structural and organizational factors related to breastfeeding.²¹⁵

Twenty-five states and Washington D.C. received an average score of 80 or higher (green) out of 100 (higher score representing more birth facilities that support breastfeeding); 23 states received a score of 70 to 79 (yellow); and two states scored 70 or lower (red). The national average score was 79. The data were obtained from CDC’s National Survey of Maternal Practices in Infant Nutrition and Care (mPINC).

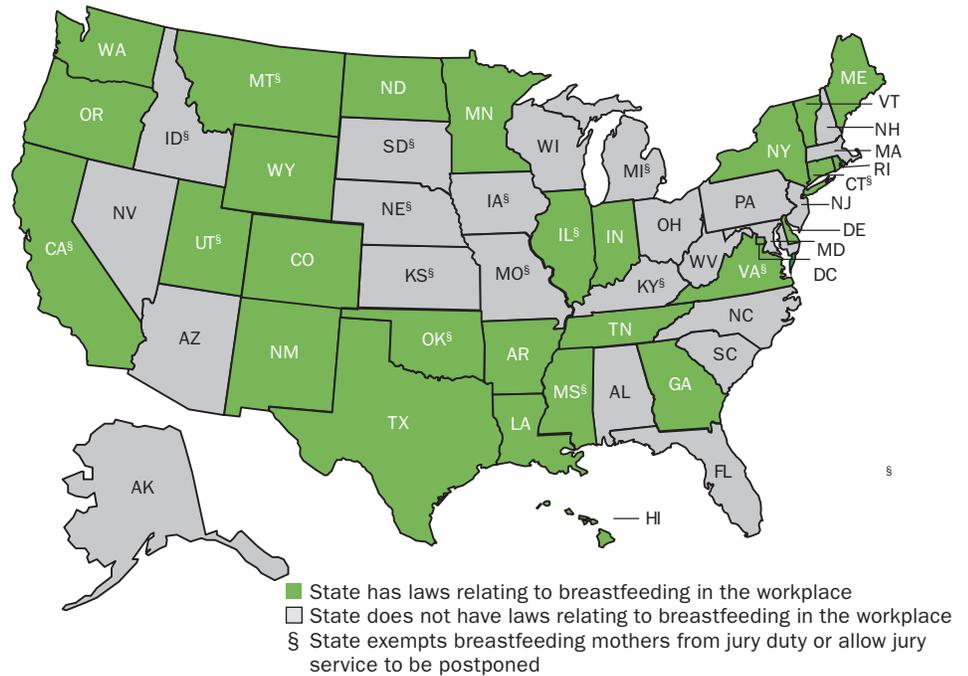
State Averages, Maternal Practices in Infant Nutrition and Care Score, 2015



Note: Puerto Rico = 69.
Source: CDC

Workplace and Jury Duty: Twenty-seven states and Washington, D.C. have additional laws relating to breastfeeding in the workplace, and 17 states exempt breastfeeding mothers from jury duty or allow for postponement of service.²¹⁶

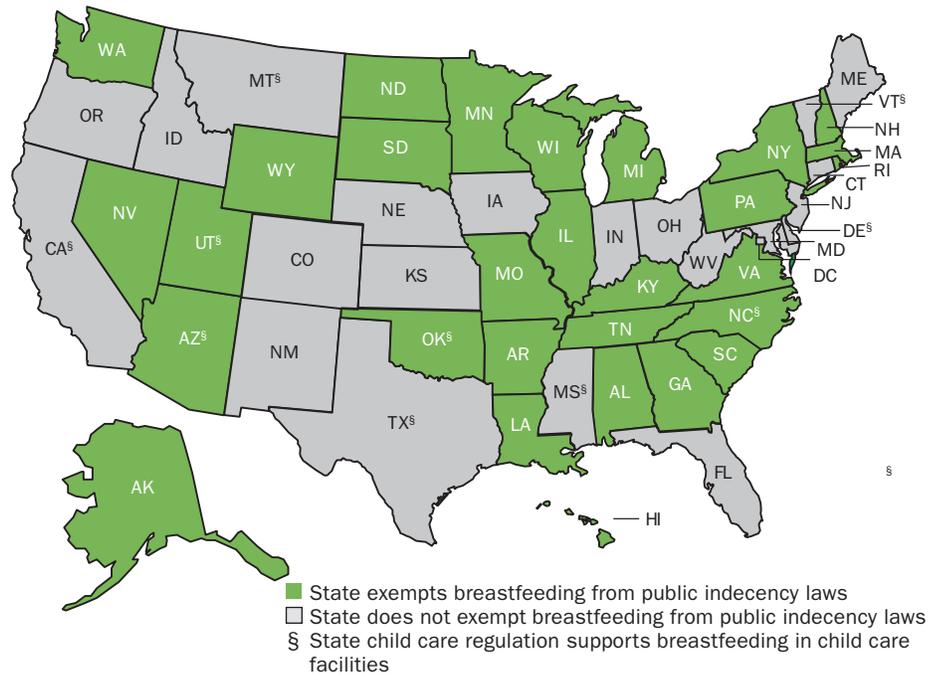
State Breastfeeding Laws: Workplace and Jury Duty



Source: National Conference of State Legislatures

Exempt from Public Indecency and Support in Child Care Facilities: While 49 states and Washington, D.C. have laws that specifically allow women to breastfeed in any public or private location, only 29 states and Washington, D.C. exempt breastfeeding from public indecency laws.²¹⁷ Seven states and Washington, D.C. have regulations that support onsite breastfeeding in child care facilities.²¹⁸

State Breastfeeding Laws: Public Indecency and Child Care Facilities



Source: National Conference of State Legislatures

EXAMPLE INITIATIVE:

Texas Ten Step Star Achiever Breastfeeding Learning Collaborative²¹⁹

The Texas Women, Infants and Children program partnered with the National Institute for Children's Health Quality (NICHQ) and the Texas Department of State Health Services (DSHS) to create a quality improvement project to help facilities increase exclusive breastfeeding at day two after birth. The collaborative addresses disparities by connecting community partners to resources that help them support breastfeeding. The 20 participating hospitals and birthing facilities will use quality improvement techniques in which teams work with each other and with national breastfeeding and quality improvement experts to increase rates of breastfeeding. The project aligns with the UNICEF/World Health Organization Ten Steps to Successful Breastfeeding, which are:

- 1.** Have a written breastfeeding policy that is routinely communicated to all healthcare staff.
- 2.** Train all healthcare staff in the skills necessary to implement this policy.
- 3.** Inform all pregnant women about the benefits and management of breastfeeding.
- 4.** Help mothers initiate breastfeeding within one hour of birth.
- 5.** Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
- 6.** Give infants no food or drink other than breast-milk, unless medically indicated.
- 7.** Practice rooming in — allow mothers and infants to remain together 24 hours a day.
- 8.** Encourage breastfeeding on demand.
- 9.** Give no pacifiers or artificial nipples to breastfeeding infants.
- 10.** Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center.



Supporting At-Risk Children — Early Identification and Follow-Up Support Systems

The healthcare system and related social services provide important opportunities for early identification and support for children who are at risk for becoming obese. Early identification of concerns and interventions during young childhood help families understand positive nutrition and activity practices — as well as how to identify risks, such as ACEs and toxic stress concerns — and connect children and their families to services to help prevent, delay or mitigate the negative impact these factors can have on healthy child development.²²⁰ (See additional information about obesity, ACEs and toxic stress on page 26.)

Every child is supposed to be screened by their pediatrician for regular developmental milestones — including weight and height — as well as for other risks relating to the home and neighborhood environment. Increasingly AAP and other experts have developed screening tools to identify toxic stress, trauma or adverse experiences. Once concerns are identified, building a regularized coordinated care and case worker system — both through the health system and across other social services — can help ensure children and their families receive the care and services they need. Providing specific referrals to services and programs in a local community as well as follow up case management ensures patients access and use the services. New health reform payment systems and incentives provide increased opportunities to

support this type of care, such as fees for coordinated care from patient-centered medical/health homes or reductions in recurring hospital admittances or emergency room visits. Models such as PCMH, Medicaid Home Health demonstration programs, hospital initiatives to reduce emergency-room use, smaller practice resource pooling and others are providing options to pay for and support care coordination approaches. Expanded use of Electronic Health Records (EHRs) — including integrating EHRs with other social service tracking systems — also helps identify concerns and track connection with ongoing use of care.

In addition, home visiting programs are an effective evidence-based strategy for targeting help to children at risk for a range of concerns that increase the likelihood of obesity and a range of other physical, behavioral and mental health concerns. The ACA expanded home visiting programs by creating The Maternal, Infant and Early Childhood Home Visiting Program to respond to the needs of children and families in communities at risk.²²¹ States conduct community needs assessments to determine the specific characteristics of their at-risk populations, such as disproportionately high rates of teen parents, first-time mothers, low-income parents and children exhibiting developmental concerns. The most effective home visiting programs are integrated with other programs and supports.²²²

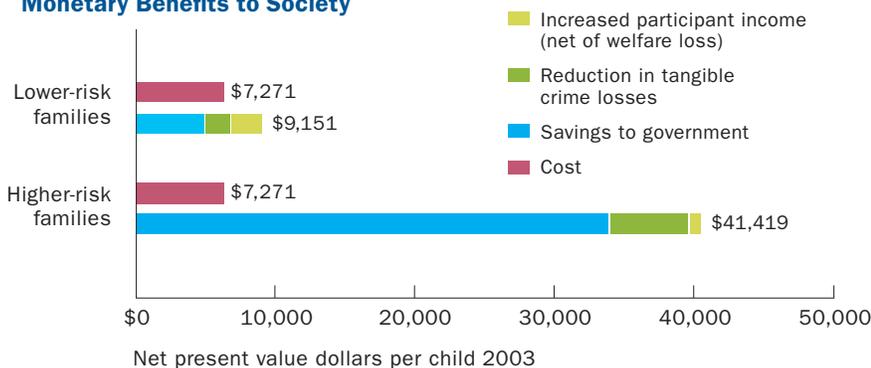
EXAMPLE INITIATIVE:

Nurse-Family Partnership²²³

Nurse-Family Partnership (NFP) works with young, low-income, first-time pregnant women who are not ready to take care of a child by, first, establishing a trusted relationship with a public health nurse, who meets with the mother from pregnancy until the baby turns two years old. For more than 35 years, NFP, which is supported by RWJF, has enrolled mothers early in their pregnancies and helped public health nurses continuously conduct home visits over a two-and-a-half year period. The home visits are important because they connect first-time mothers with the care and support they need to ensure a healthy pregnancy. The model has been shown to have significant benefits. For instance, when Medicaid pays for NFP services, the federal government gets a 54 percent return on its investment. NFP services have resulted in lower enroll-

ment in Medicaid and SNAP, a 9 percent reduction in Medicaid costs and an 11 percent reduction in SNAP costs in the 10 years following birth. A 2005 RAND analysis found a net benefit to society of \$34,148 (in 2003 dollars) per higher-risk family served, totaling a return of \$5.70 for every dollar invested.²²⁴ A 2012 study found long-term benefits of almost \$23,000 per participant.^{225, 226} The program has demonstrated the ability to reduce child abuse and neglect, arrests among children, emergency room visits for accidents and poisonings and behavior and intellectual problems among children. Participants demonstrated improved health behaviors after birth, including uptake in recommended nutrients in daily diets and higher levels of initiating breastfeeding.²²⁷ Nurse-Family Partnership programs currently operate in 43 states.

Monetary Benefits to Society



Source: 2005 RAND Corporation Study

B. SCHOOL-BASED POLICIES AND PROGRAMS

Studies show that school-based programs can help prevent and reduce obesity.²²⁸ Children and teens spend a significant portion of their time at school and in before- and after-school programs. They often eat as many as two meals and several snacks in these settings. For many children, the only reliable meals they have are at school and a significant number of students consume up to half of their total daily calories at school.^{229, 230}

The federal government can set national goals, recommendations and nutrition standards that are tied to schools' participation in federally-supported programs or compliance with grant requirements for other federal programs. For other policies, including physical education and activity and wellness programs, the more than 14,000 school districts in the country have primary jurisdiction — or “local control.” States often try to create incentives for school districts to follow compliance rules to qualify for state funding.

Over the past decade, school-based efforts have focused on improving the nutritional quality of food available in schools; improving the duration and quality of physical education; increasing opportunities for physical activity before, during and after school; and building evidence-based wellness programs.

School-based programs are most effective when they are coordinated and connected to strategies and programs

that support families and the larger community where children live and play.

Key policies highlighted in this section include:

- **Child Nutrition Reauthorization in 2016 — and School Meal and Snack Programs**
- **Implementation of the Elementary and Secondary School Components of the Every Student Succeeds Act of 2015**
- **Local School Wellness Policies**
- **CDC School Health Cooperative Agreements and National Goals and Guidance**
- **New Models for School-Based Health and Social Services**
- **State Policy Review: Water Availability, Breakfast Policies, Farm-to-School, Zero-Exemption School Nutrition Policies, Out of School and School Celebration Nutrition Policies, Physical Education Requirements, Physical Activity Requirements, Safe Routes to School Programs, Shared-Use Policies and Health Assessments**

Budgets for Some Key Federal School-Based Obesity-Related Programs	Enacted Budget FY 2016
National School Lunch Program (USDA)	\$ 12.528 billion ²³¹
School Breakfast Program (USDA)	\$ 4.339 billion ²³²
Title IV, U.S. Department of Education	\$24.198 billion ²³³
Farm-to School Program (USDA)	\$ 9.1 million ²³⁴
Safe Routes to School (Department of Transportation)	\$ 143.0 million ²³⁵
Division of Adolescent and School Health (CDC)	\$33 million ²³⁶

Note: For some of these programs, only a portion of the funding goes toward obesity-related activities (i.e., nutrition, physical activity).

NUTRITION AND PHYSICAL ACTIVITY IN SCHOOL-AGED CHILDREN AND TEENS

Proper nutrition improves healthy growth, brain capacity, cognitive capabilities and academic performance in school-age children.²³⁷ Conversely, an unhealthy diet, too much food of low nutritional value and/or insufficient food decreases academic performance and limits the brain's ability to perform properly.

- **School Achievement:** A range of studies have demonstrated the importance of healthy nutrition and sufficient physical activity for better school performance and behavior. Children who are overweight or obese are more likely to have lower academic achievement than non-overweight or non-obese children.^{238, 239, 240}
- Children who are persistently overweight or obese are likely to score poorer academically in math than their healthy-weight peers.²⁴¹ Poor scores were seen as early as the first grade.

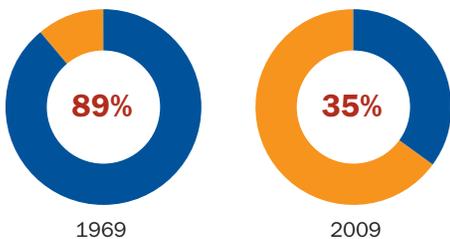
- Adolescents with metabolic syndrome — a composite of obesity components — have significantly lower overall intelligence scores, including in math and spelling, and have lower mental flexibility and attention spans than adolescents without metabolic syndrome.²⁴²
- Children who are more physically active and have a lower BMI have better academic scores.²⁴³ Increasing extracurricular activity has been shown to improve classroom behavior and self-esteem, lower dropout rates and indirectly improve academic achievement.²⁴⁴
- Students who do not eat breakfast; do not eat enough fruits, vegetables and dairy products; and are hungry due to insufficient food intake or have deficiencies in nutrients — Vitamins A, B6, B12, C, folate, iron and zinc — are more likely to have decreased cognitive performance, lower grades, higher

rates of absenteeism and tardiness and less focus in the classroom.²⁴⁵

- Regular physical activity helps maintain a healthy weight; builds healthy bones and muscles; decreases the likelihood of obesity and disease risk factors such as high blood pressure, high cholesterol and type 2 diabetes; reduces anxiety and depression; and promotes positive mental health.^{246, 247, 248}
- According to a CDC review of 50 studies on academic performance and physical activity, there is substantial evidence that physical activity can help improve academic achievement, including grades and standardized test scores; and physical activity can have an impact on cognitive skills, attitudes and academic behavior (including enhanced concentration, attention and improved classroom behavior).^{249, 250}



Percent of Kindergarteners Living Within One Mile of School Who Walk or Bike to School



• School Nutrition and Physical Activity Policies Can Have a Positive Impact:

A number of studies have examined how changes in nutrition and activity policies and practices can help improve health and promote healthier choices and better learning.

- School breakfast programs can help improve attendance rates and decrease tardiness; and, among undernourished children, can improve academic performance and cognitive functioning.²⁵¹ School breakfast participation is also associated with lower obesity and overweight rates among students.^{252, 253}
- Students in states with strong laws restricting the sale of unhealthy snack foods and beverages in school gained less weight over a three-year period than those living in states with no such policies.²⁵⁴
- Children eat less of their lunch, consume more fat, take in fewer nutrients and gain weight when schools sell unhealthy snacks and drinks outside of regular meals.^{255, 256, 257, 258, 259, 260, 261}
- Elementary schools are less likely to sell candy, ice cream, sugary drinks, cookies, cakes and other unhealthy snacks when states or school districts have policies that limit the sale of such items.²⁶²
- A 2012 health impact assessment found that schools serving healthier snacks and drinks generally increased their total food service revenues.²⁶³
- Farm-to-school programs have shown results in improving students' nutritional intake.²⁶⁴ A study by researchers at the University of California, Davis found that farm-to-

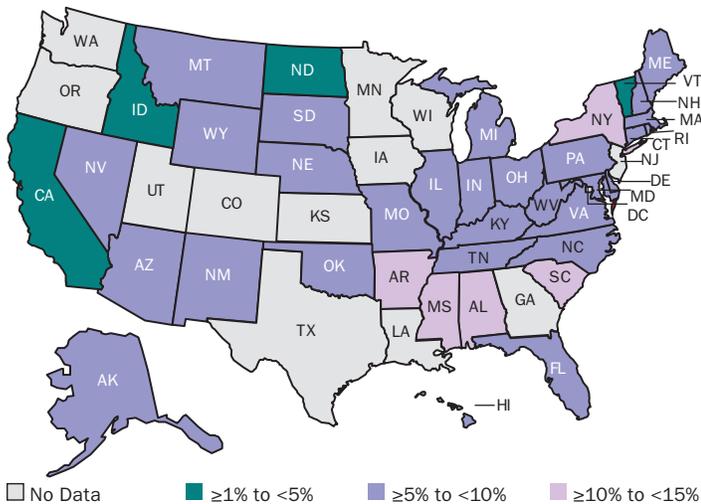
school programs not only increase consumption of fruits and vegetables, but change eating habits, leading students to choose healthier options at lunch. A recent health impact assessment examining Oregon's farm-to-school reimbursement law found that the law would create and maintain jobs for Oregonians, increase student participation in the school meals program, improve household food security and strengthen connections within Oregon's food economy.²⁶⁵

- Well-structured physical education programs can result in more active children.²⁶⁶ In addition, providing short activity breaks during the school day can increase physical activity in students and improve some measures of health, such as muscle strength, endurance and flexibility.²⁶⁷
- Nationwide, millions of children and adolescents participate in after-school programs. Integrating physical movement into the daily routine of such programs can lead to increased physical activity among youths.²⁶⁸
- When young people have access to school recreational facilities outside of school hours, they tend to be more active.²⁶⁹
- By 2009, only 35 percent of kindergarteners who lived within one mile of school walked or biked to school even once a week; in 1969, 89 percent regularly did.²⁷⁰ An analysis by Bridging the Gap found that laws requiring sidewalks, crossing guards and traffic safety measures increase the number of children walking or biking to school; and that certain laws, such as busing requirements for particularly short distances, decrease biking and walking rates.²⁷¹

HIGH SCHOOL STUDENTS DIETARY BEHAVIORS AND PHYSICAL ACTIVITY—SELECTED U.S. STATES, YOUTH RISK BEHAVIOR SURVEILLANCE SYSTEM 2015²⁷²

An interactive map and timeline of these data are available at stateofobesity.org

Percent of High School Students Who Did Not Eat Fruit or Drink 100 Percent Fruit Juices (During the Seven Days Before the Survey), YRBS 2015



Note: U.S. Territories: Guam = 8.6 percent, Northern Mariana Islands = 5.0 percent, Palau = 11.6 percent and Puerto Rico = 10.2 percent.

Source: CDC, Youth Risk Behavior Surveillance System

KEY YRBS NUTRITION, ACTIVITY AND SCREEN TIME FINDINGS

- Only 5.2 percent of high school students report not eating fruit or drinking 100 percent fruit juice, and only 6.8 percent report not eating vegetables.
- Around one in five (20.4 percent) of students drink one or more can, bottle or glass of soda per day — which is a 39.6 percent drop from rates in 2007 (33.8 percent). Thirteen percent drink two or more soda servings a day and 7.1 percent drink three or more. The question did not include energy or other added-sugar drinks.
- 13.8 percent of students do not eat breakfast regularly.
- 72.9 percent of students do not engage in at least 60 minutes of physical activity on all seven days of the week.
- 41.7 percent of students play video or computer games three or more hours a day — an 88.7 percent increase from 2003 (22.1 percent). Television viewing has dropped by 35.5 percent — from 38.2 percent to 24.7 percent.

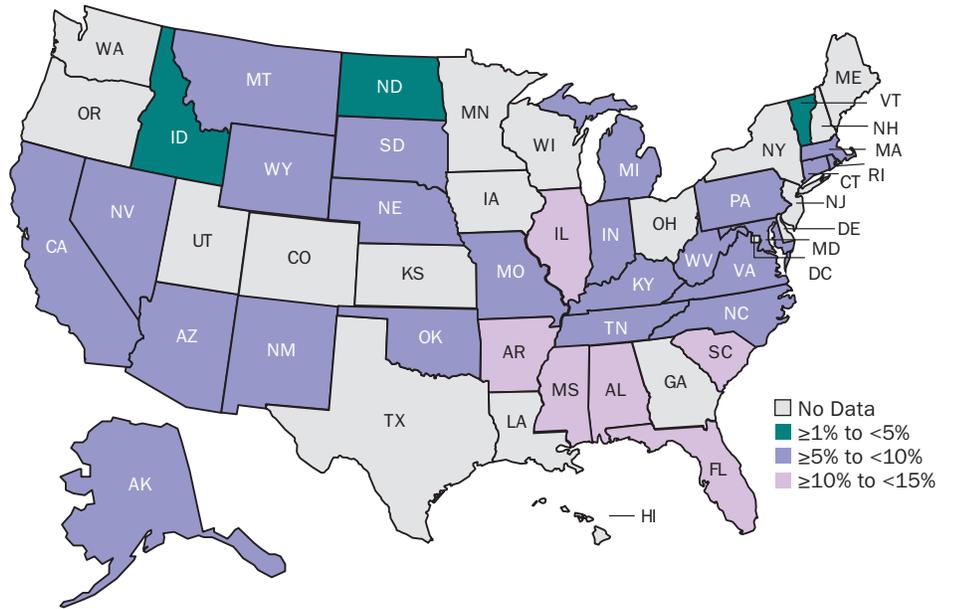
HIGH SCHOOL STUDENTS WHO DID NOT EAT FRUIT OR DRINK 100 PERCENT FRUIT JUICE (SEVEN DAYS BEFORE THE SURVEY) BY RACE/ETHNICITY AND GENDER, YRBS 1999-2015

TOTAL	1999	2001	2003	2005	2007	2009	2011	2013	2015
TOTAL	5.4%	6.1%	6.1%	5.8%	5.8%	5.1%	4.8%	5.0%	5.2%
BY RACE/ETHNICITY									
American Indian/Alaska Native [§]	N/A	7.3%	10.6%	14.9%	5.4%	10.0%	4.6%	13.7%	4.1%
Asian [§]	3.5%	6.4%	2.9%	2.6%	4.1%	3.7%	5.3%	2.9%	2.8%
Black [§]	5.6%	6.4%	8.0%	7.9%	6.7%	7.0%	6.5%	6.9%	6.9%
Latino	4.2%	4.7%	6.4%	4.5%	5.1%	4.9%	4.5%	4.1%	4.9%
Native Hawaiian/Other Pacific Islander [§]	4.5%	10.0%	N/A	N/A	5.4%	5.5%	7.5%	4.8%	N/A
White [§]	6.0%	6.0%	5.6%	5.6%	5.9%	4.8%	4.5%	4.9%	4.9%
Multiple Race [§]	2.2%	8.4%	8.1%	5.1%	5.4%	4.3%	3.7%	3.4%	7.3%
BY GENDER									
Female	5.1%	5.5%	5.2%	5.5%	5.1%	4.3%	4.3%	4.0%	4.3%
Male	5.8%	6.6%	7.0%	6.0%	6.4%	5.8%	5.3%	6.1%	5.9%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic.

Source: CDC, Youth Risk Behavior Surveillance System

Percent of High School Students Who Did Not Eat Vegetables (During the Seven Days Before the Survey), YRBS 2015



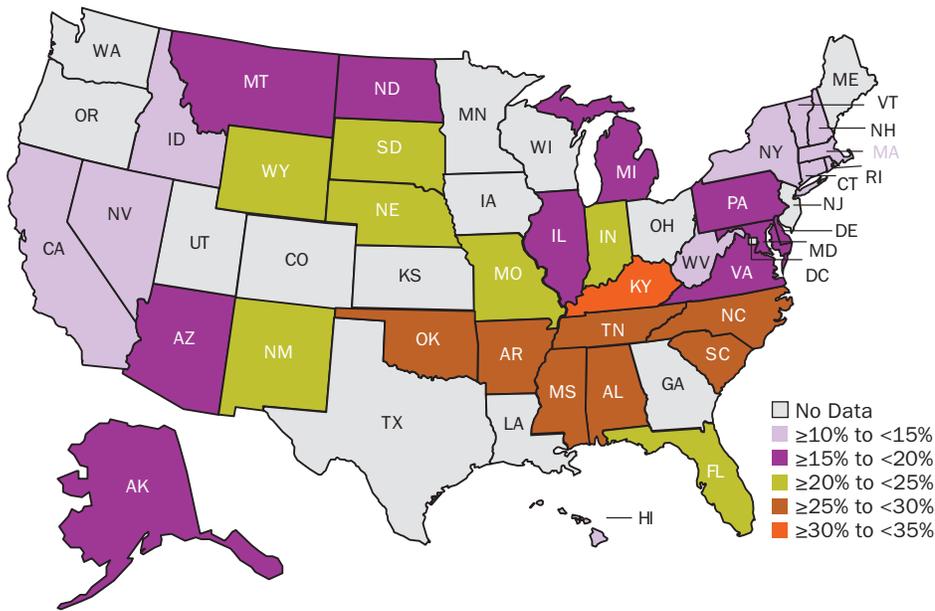
Note: U.S. Territories: Guam = 9.1 percent, Northern Mariana Islands = 6.1 percent, Palau = 8.1 percent and Puerto Rico = 15.5 percent.
 Source: CDC, Youth Risk Behavior Surveillance System

HIGH SCHOOL STUDENTS WHO DID NOT EAT VEGETABLES (SEVEN DAYS BEFORE THE SURVEY) BY RACE/ETHNICITY AND GENDER, YRBS 1999-2015

	1999	2001	2003	2005	2007	2009	2011	2013	2015
TOTAL	4.2%	4.6%	5.2%	6.0%	5.9%	6.0%	5.7%	6.6%	6.7%
BY RACE/ETHNICITY									
American Indian/Alaska Native [§]	N/A	5.4%	6.2%	9.6%	4.6%	5.3%	5.8%	8.6%	4.2%
Asian [§]	1.4%	3.7%	3.3%	3.0%	3.6%	2.9%	5.0%	2.3%	4.8%
Black [§]	8.4%	9.4%	11.2%	11.1%	11.5%	12.7%	9.9%	11.3%	10.9%
Latino	6.9%	7.6%	7.1%	8.5%	9.1%	8.6%	8.2%	9.3%	8.5%
Native Hawaiian/Other Pacific Islander [§]	10.7%	N/A	N/A	N/A	N/A	4.3%	7.3%	9.8%	N/A
White [§]	3.0%	3.2%	3.3%	4.2%	3.9%	3.6%	4.0%	4.5%	4.9%
Multiple Race [§]	2.6%	5.8%	8.0%	4.9%	3.3%	6.8%	4.7%	5.1%	9.0%
BY GENDER									
Female	3.5%	4.1%	4.6%	5.1%	5.2%	4.9%	4.5%	5.7%	5.6%
Male	4.8%	5.1%	5.9%	6.7%	6.6%	6.9%	6.9%	7.5%	7.7%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic
 Source: CDC, Youth Risk Behavior Surveillance System

Percent of High School Students Who Drank a Can, Bottle or Glass of Soda One or More Times per Day (During the Seven Days Before the Survey), YRBS 2015



Note: U.S. Territories: Guam = 16.7 percent, Northern Mariana Islands = 21.7, Palau = 29.3 percent and Puerto Rico = 30.2 percent.
 Source: CDC, Youth Risk Behavior Surveillance System

Drinking one or more can of soda per day decreased 39.6 percent from 2007 (at 33.8 percent) to 2015 (at 20.4 percent).

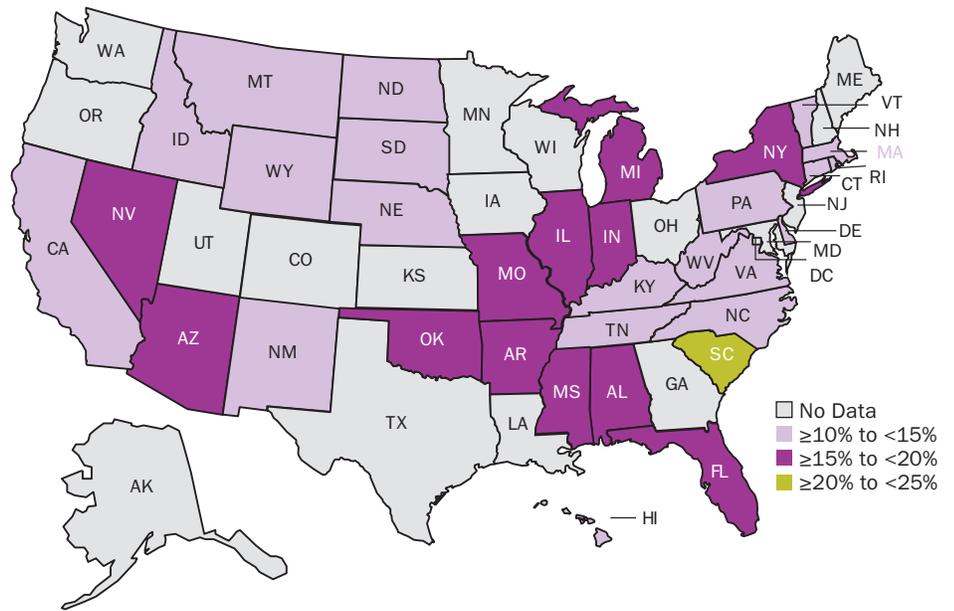
In 2015, 13 percent of students drank two or more cans, bottles or glasses of soda or pop a day, and 7.1 percent drank three or more. These questions did not include/account for energy drinks or waters with added sugars.

HIGH SCHOOL STUDENTS WHO DRANK A CAN OF SODA ONE OR MORE TIMES PER DAY (SEVEN DAYS BEFORE THE SURVEY) BY RACE/ETHNICITY AND GENDER, YRBS 2007-2015

	2007	2009	2011	2013	2015
TOTAL	33.8%	29.2%	27.8%	27.0%	20.4%
BY RACE/ETHNICITY					
American Indian/Alaska Native [§]	37.7%	32.5%	35.8%	33.8%	21.8%
Asian [§]	18.5%	16.3%	17.6%	12.2%	8.9%
Black [§]	37.6%	33.7%	28.0%	30.2%	22.7%
Latino	33.4%	28.1%	27.0%	22.6%	21.7%
Native Hawaiian/Other Pacific Islander [§]	34.6%	31.4%	23.8%	20.2%	N/A
White [§]	34.0%	29.0%	28.8%	29.0%	19.7%
Multiple Race [§]	29.6%	28.6%	23.2%	24.5%	24.0%
BY GENDER					
Female	29.0%	23.3%	24.0%	24.0%	16.4%
Male	38.6%	34.6%	31.4%	29.9%	24.3%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic
 Source: CDC, Youth Risk Behavior Surveillance System

Percent of High School Students Who Did Not Eat Breakfast (During the Seven Days Before the Survey), YRBS 2015



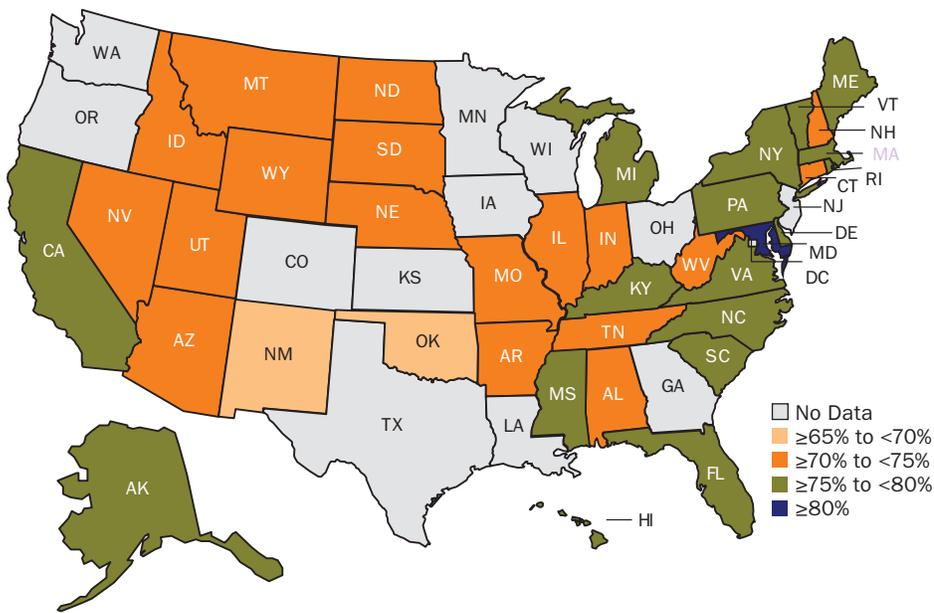
Note: U.S. Territories: Guam = 16.5 percent, Northern Mariana Islands = 8.3 percent, Palau = 18.5 percent and Puerto Rico = 17.5 percent.
Source: CDC, Youth Risk Behavior Surveillance System

HIGH SCHOOL STUDENTS WHO DID NOT EAT BREAKFAST (SEVEN DAYS BEFORE THE SURVEY) BY RACE/ETHNICITY AND GENDER, YRBS 2011-2015

	2011	2013	2015
TOTAL	13.1%	13.7%	13.8%
BY RACE/ETHNICITY			
American Indian/Alaska Native [§]	13.0%	18.6%	14.3%
Asian [§]	16.0%	12.8%	11.4%
Black [§]	16.1%	16.0%	18.0%
Latino	14.4%	17.4%	14.7%
Native Hawaiian/Other Pacific Islander [§]	N/A	21.6%	N/A
White [§]	12.0%	11.5%	12.0%
Multiple Race [§]	12.8%	12.6%	18.2%
BY GENDER			
Female	13.9%	13.8%	14.2%
Male	12.3%	13.5%	13.3%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic
Source: CDC, Youth Risk Behavior Surveillance System

Percent of High School Students Who Were Not Active all Seven Days of the Week (During the Seven Days Before the Survey), YRBS 2015



Note: U.S. Territories: Guam = 76.5 percent, Northern Mariana Islands = 72.6 percent, Palau = 75.0 percent and Puerto Rico = 81.7 percent.

Source: CDC, Youth Risk Behavior Surveillance System

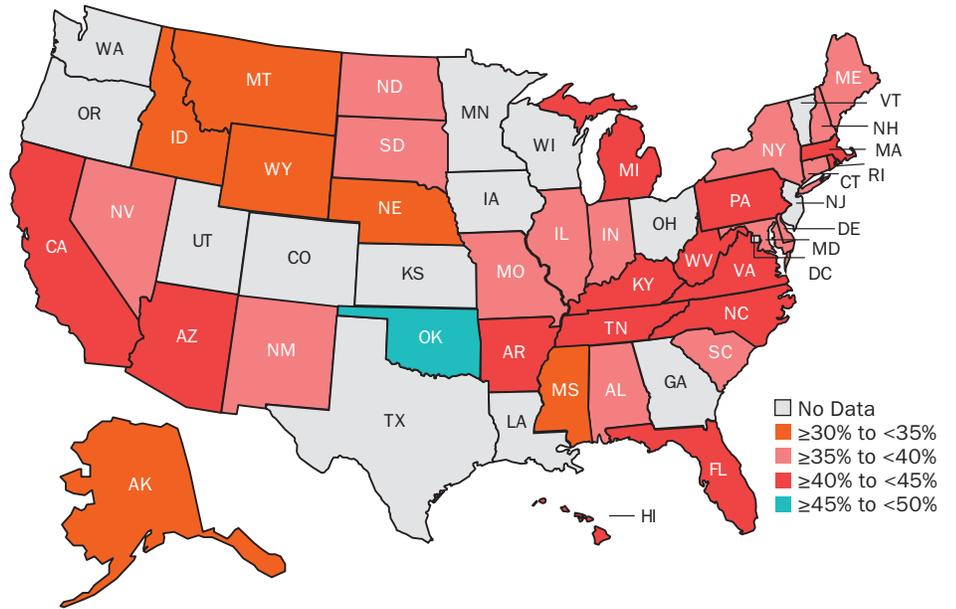
HIGH SCHOOL STUDENTS WHO WERE NOT PHYSICALLY ACTIVE ALL SEVEN DAYS OF THE WEEK (SEVEN DAYS BEFORE THE SURVEY) BY RACE/ETHNICITY AND GENDER, YRBS 2011-2015

	2011	2013	2015
TOTAL	71.3%	72.9%	72.9%
BY RACE/ETHNICITY			
American Indian/Alaska Native [§]	70.9%	70.0%	60.8%
Asian [§]	80.2%	78.2%	83.5%
Black [§]	74.0%	73.7%	75.8%
Latino	73.5%	74.5%	75.4%
Native Hawaiian/Other Pacific Islander [§]	72.4%	72.5%	N/A
White [§]	69.6%	71.8%	71.0%
Multiple Race [§]	68.1%	72.2%	69.6%
BY GENDER			
Female	81.5%	82.3%	82.3%
Male	61.7%	63.4%	64.0%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic

Source: CDC, Youth Risk Behavior Surveillance System

Percent of High School Students Who Played Video, Computer Games or Used a Computer Three or More Hours per Day (for Something Besides School Work), YRBS 2015



Note: U.S. Territories: Guam = 47.2 percent, Northern Mariana Islands = 50.3 percent, Palau = 22.4 percent and Puerto Rico = 37.4 percent.
Source: CDC, Youth Risk Behavior Surveillance System

HIGH SCHOOL STUDENTS WHO PLAYED VIDEO OR COMPUTER GAMES OR USED A COMPUTER THREE OR MORE HOURS PER DAY (FOR SOMETHING BESIDES SCHOOL WORK ON AN AVERAGE SCHOOL DAY) BY RACE/ETHNICITY AND GENDER, YRBS 2003-2015

	2003	2005	2007	2009	2011	2013	2015
TOTAL	22.1%	21.1%	24.9%	24.9%	31.1%	41.3%	41.7%
BY RACE/ETHNICITY							
American Indian/Alaska Native [§]	30.7%	22.7%	20.8%	28.5%	30.0%	46.1%	35.9%
Asian [§]	26.6%	32.7%	35.4%	39.9%	42.1%	51.5%	45.6%
Black [§]	26.2%	25.2%	30.5%	30.4%	38.1%	49.1%	44.6%
Latino	21.4%	19.8%	26.3%	25.7%	32.4%	43.4%	46.2%
Native Hawaiian/Other Pacific Islander [§]	N/A	N/A	29.0%	30.8%	29.0%	51.4%	N/A
White [§]	20.5%	19.6%	22.6%	22.1%	28.1%	37.4%	38.6%
Multiple Race [§]	26.9%	27.4%	22.6%	29.2%	33.3%	46.3%	46.9%
BY GENDER							
Female	16.5%	14.8%	20.6%	21.2%	26.6%	40.4%	42.8%
Male	27.3%	27.4%	29.1%	28.3%	35.3%	42.3%	40.6%

Note: The CDC uses the term Hispanic in analysis. § = non-Hispanic
Source: CDC, Youth Risk Behavior Surveillance System

DISPARITIES IN SCHOOL FOODS AND MILK OFFERED IN ELEMENTARY SCHOOLS

While, overall, the proportion of healthy food options in schools has increased significantly and unhealthy items have decreased from 2006-2007 to 2013-2014, majority-Black and -Latino schools and schools with lower-income students were less likely to have as many healthy offerings, such as fresh fruit and salads.²⁷³



Child Nutrition Reauthorization in 2016 — and School Meal and Snack Programs

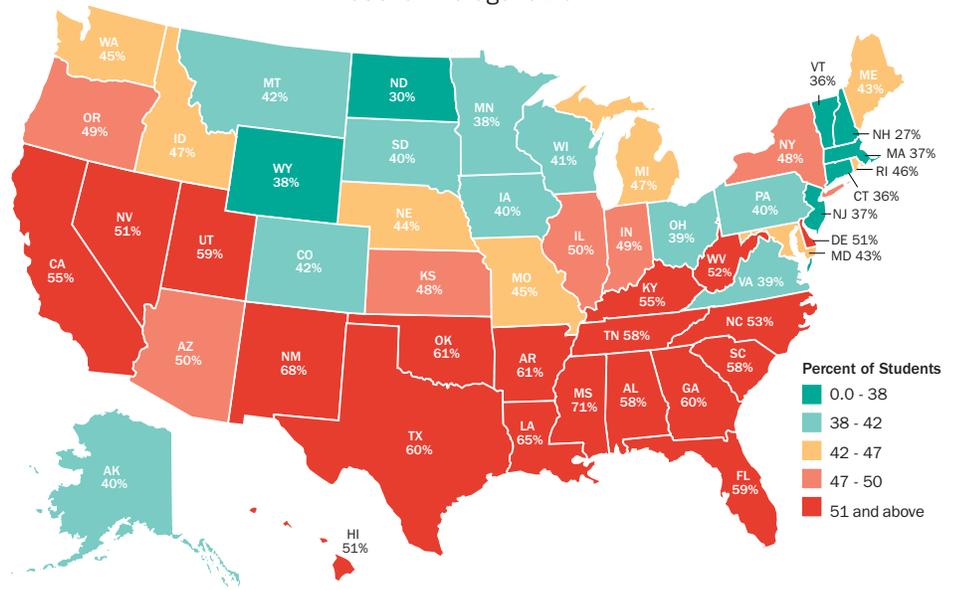
Nearly 31 million children participate in the National School Lunch Program — with around 21.5 million receiving free or reduced-cost meals. Around 14 million participate in the school breakfast program — with around 12 million receiving free or reduced-cost breakfasts.^{274, 275, 276}

More than half (51 percent) of public school students are from low-income families; 25 years ago, less than 32 percent of public school students were from low-income families.²⁷⁷

The 2010 Healthy, Hunger-Free Kid Act required USDA to align nutrition standards for school meals and snacks with the most recent Dietary Guidelines for Americans — which went into effect for school meals in 2012 and for school snacks in 2014. The nutrition standards include more whole grains, low-fat dairy,

PERCENT OF LOW INCOME STUDENTS IN U.S. PUBLIC SCHOOLS 2013

National Average: 51%



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Data Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data

fruits, vegetables and lean protein and limits on fat, added sugar and salt.^{278, 279} Schools snacks include any foods and drinks outside of breakfast and lunch in vending machines, school stores, bake sales and à la carte items.²⁸⁰

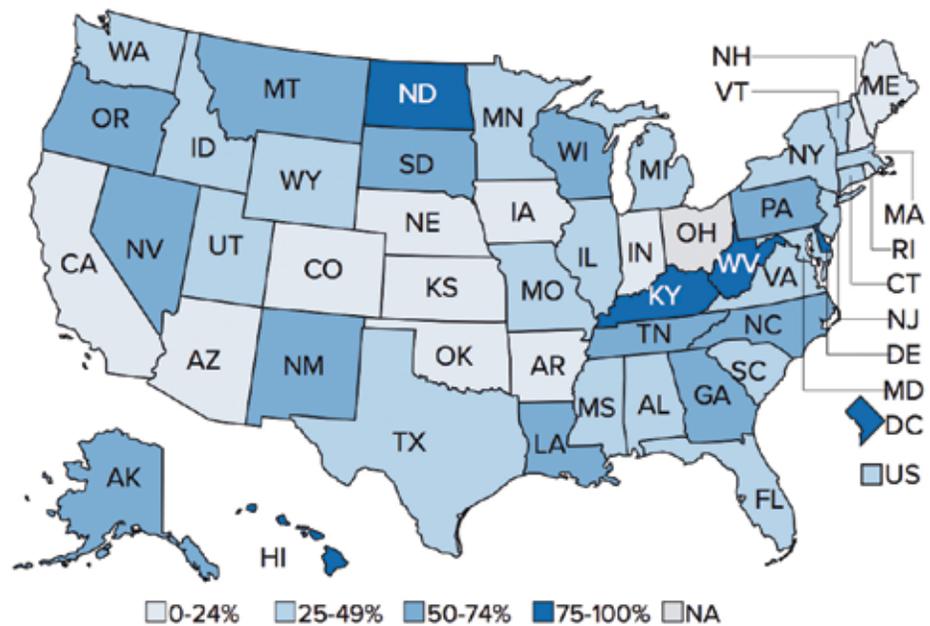
More than 98.5 percent of schools reported meeting the revised school meal nutrition requirements, as of December 2015.²⁸¹ Studies found that students consumed more fruit, threw away less of their entrees and vegetables (lowering the amount of wasted food) and consumed the same amount of milk via school meals in 2014 under the updated standards as they did in 2012.²⁸² A review of school meals in Washington state before and after the revised standard implementation found the nutritional quality of foods chosen by students increased by 29 percent and calorie content per gram decreased by 13 percent, and participation in the program was not impacted.²⁸³

In addition, more than 17,000 schools are participating in the Community Eligibility Provision (CEP) of the act, which allows schools in high-poverty areas to serve free meals to all students at their school — benefiting about 8.5 million students.^{284, 285} The provision helps reduce labor, processing and paperwork costs — families no longer have to complete applications and schools do not have to verify a family’s status — and reduced stigma in CEP schools helps improve meal uptake which can improve overall nutrition. Schools can also qualify for higher “severe need” reimbursement rates if 40 percent or more of their lunches are free or reduced-price meals.

Additional school nutrition programs include: 1) the Fresh Fruit and Vegetable Program (FFVP), which operates in all 50



Percentage of Eligible Districts Adopting the Community Eligibility Provision Take-Up for School Year 2015-2016

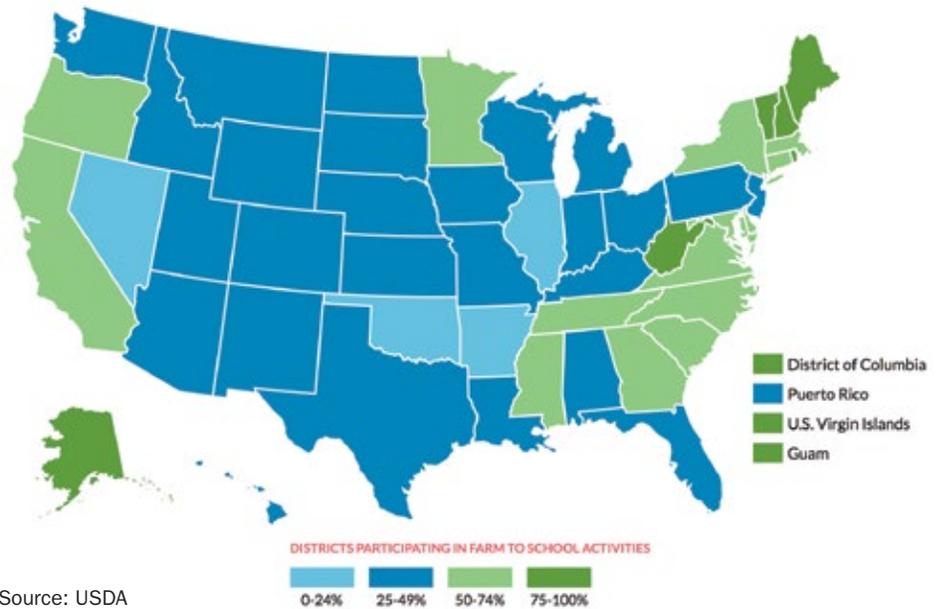


Source: Center on Budget and Policy Priorities and Food Research & Action Center

states and Washington, D.C. — 82 percent of FFVP schools serve produce 3 to 5 times per week;²⁸⁶ 2) the Department of Defense (DoD) Fresh Fruit and Vegetable Program, which provides schools with more than \$120 million worth of produce — through the efficiencies and leveraging

the buying power of DoD’s food procurement and distribution system;²⁸⁷ 3) the USDA’s Special Milk Program (SMP), which provides assistance to around 3,600 schools, 570 summer camps and 480 child care institutions that do not participate in other federal nutrition

Percentage of Districts Participating in Farm to School Activities



Source: USDA

programs to provide low-fat or non-fat milk to children;²⁸⁸ and 4) USDA's Farm-to-School program, which awards up to \$5 million in competitive grants annually. Nationally, an analysis by USDA found that more than 4,300 of the nation's 13,133 public school districts are participating in Farm-to-School programs benefiting more than 23 million students.²⁸⁹

In addition, nearly 3.2 million children participate in USDA's Summer Food Service Program or School-Sponsored Summer Programs.²⁹⁰ This only covers about one in seven children eligible for free and reduced-price school meals during the school year. In nine states, fewer than one in 10 students from low-income families receive summer meals.²⁹¹ Children are more vulnerable to rapid BMI gains and food insecurity during the summer because they do not have access to school meal programs.^{292, 293, 294}

In 2016, Congress is considering the Child Nutrition Reauthorization. The

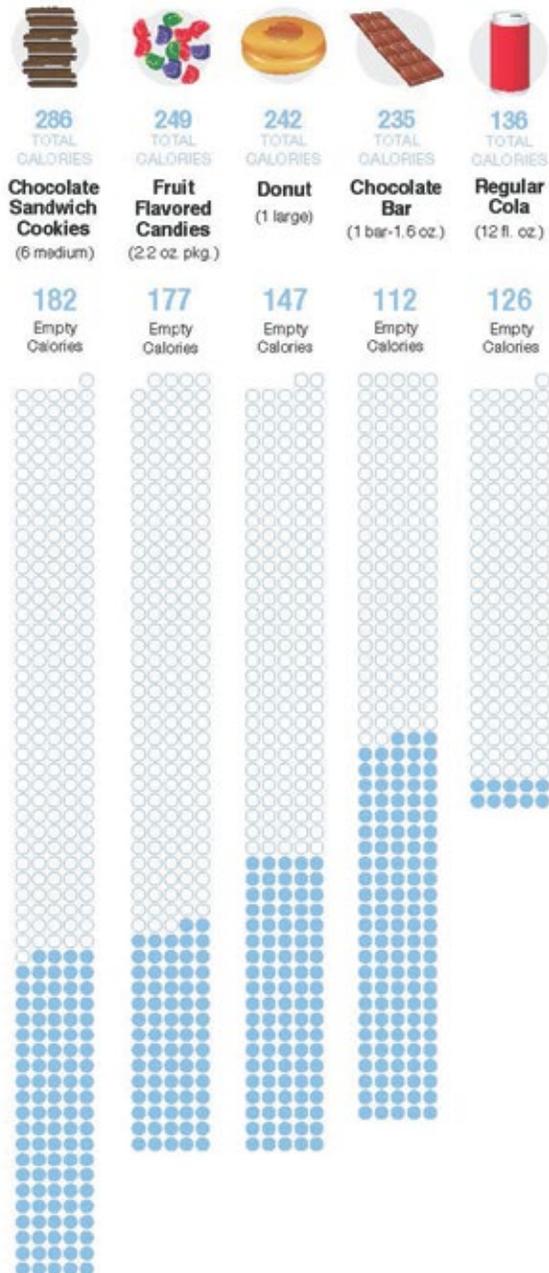
Senate released their version of the Improving Child Nutrition Integrity Act of 2016 in January, and the House released its version in April.^{295, 296} The Senate version includes a number of changes to the 2010 law. Some key changes include: simplifying eligibility and some administrative requirements for child care providers to participate in CACFP; expanding access to the Summer Food Service Program to include organizations beyond schools; introducing EBT options where available and piloting a third meal in six states; maintaining most of the school meal and snack nutrition standards from 2010 while reducing school meal whole grain standards to 80 percent and postponing the sodium reduction requirement for two years; doubling the Farm-to-School grants (to \$10 million); and redesigning the verification process for family school meal eligibility applications (schools implementing community eligibility programs would be exempt).^{297, 298, 299} A bi-partisan statement from the Senate Agriculture Committee said the intent

SMART SNACKS IN SCHOOL

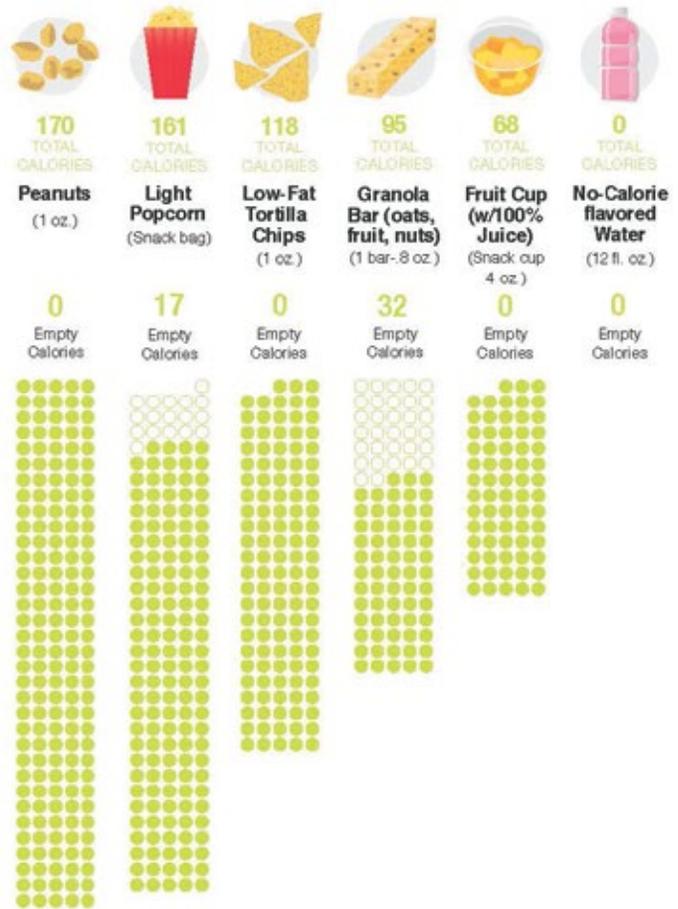
The Healthy, Hunger-Free Kids Act of 2010 requires USDA to establish nutrition standards for all foods sold in schools—beyond the federally-supported meals programs. This new rule carefully balances science-based nutrition guidelines with practical and flexible solutions to promote healthier eating on campus. The rule draws on recommendations from the Institute of Medicine, existing voluntary standards already implemented by thousands of schools around the country, and healthy food and beverage offerings already available in the marketplace.

● Equals 1 calorie ○ Shows empty calories*

Before the New Standards



After the New Standards



*Calories from food components such as added sugars and solid fats that provide little nutritional value. Empty calories are part of total calories.

Source: USDA



Source: USDA

of the school meal sections of the bill was to provide “flexibility to school food operators while preserving the intent to provide our nation’s schoolchildren with healthful meals, leading to improved academic performance and healthy eating habits.”³⁰⁰

The House version also includes a number of proposed changes to the 2010 law, including: changing the community eligibility threshold from 40 percent of a school’s students eligible for free or reduced-cost lunches to 60 percent; putting increased school meal application verification requirements in place; postponing the sodium nutrition

requirement and reducing the whole grain requirement; expanding the foods that can be sold à la carte; and exempting foods sold as part of school fundraisers from nutrition standards. It also would eliminate Paid Lunch Equity requirements, a pilot demonstration project in four states for expanding summer meals to allow for-profit businesses to provide meals in underserved areas, increase school breakfast reimbursement rate by 2 cents and reduce some administrative requirements for CACFP child care centers and expand eligibility to schools operated by the Bureau of Indian Affairs.^{301, 302, 303}

School Meal Program Eligibility, as of 2015 ³⁰⁴		
	Household Income: Free Lunch Eligible	Household Income: Reduced Lunch Eligible
	130 percent of FPL	185 percent of FPL
Household size: 2	\$20,709	\$29,471
Household size: 4	\$31,525	\$44,863

Source: Department of Agriculture, Food and Nutrition Service

IMPLEMENTING SCHOOL NUTRITION IMPROVEMENTS IN MASSACHUSETTS

A review of Massachusetts schools implementing nutrition standards for both school meals and snacks found that overall food service revenue was steady after two years of implementation, with

an increase in the second year making up for a loss in the first year.³⁰⁵ The review also found a 15 percent increase in school lunch participation among students eligible for reduce-priced meals.

Implementation of the Elementary and Secondary School Components of the Every Student Succeeds Act of 2015

ESSA includes increased emphasis on the health and overall well-being of children and school settings as being integral to student success and achievement. It includes a range of opportunities and options to help support a safe and healthy school and student improvements — but gives flexibility to states and localities for what they choose to focus on and prioritize.^{306, 307, 308, 309}

- The law significantly changes the approach to federally-supported school health and safety programs. It creates a Student Support and Academic Enrichment Grants program (Title IV) — as a block grant that can be used for activities in three areas, including: 1) supporting safe and healthy students (such as, health and physical education, comprehensive school mental health or drug and violence prevention); 2) supporting effective use of technology; and/or 3) providing students with a well-rounded education (for example, arts, civics and career counseling).³¹⁰ It eliminates and consolidates 49 previously existing grant programs, including the Carol M. White Physical Education Program (PEP). PEP had been the only federal funding stream for physical education programs to help states and community organizations implement comprehensive physical fitness and nutrition programs, but was limited to around \$44 million a year.

Title IV funds will be allocated to states and districts based on the Title I formula. Any district receiving an allocation above \$30,000 must conduct a needs assessment — which could include how the school environment

helps support nutrition and physical activity — and must spend 20 percent of its grant on safe and healthy school activities, 20 percent on well-rounded education activities and the remaining 60 percent can be spent on all three priority areas (with a 15 percent cap for spending on technology equipment). School districts receiving less than \$30,000 must use the funds in at least one of three categories listed earlier.

workforce readiness; 6) community-based support for students who are either living in the community or who have attended schools serviced by the pipeline; 7) social, health, nutrition and mental health services and supports; and 8) crime prevention and rehabilitation programs for youth.³¹² From 2010 to 2016, \$270 million in Promise Neighborhood grants supported efforts that focused on

ESSA authorizes \$1.65 billion for Title IV annually, although Congress is not obligated to appropriate the full amount. The President's FY 2017 proposed budget allocates \$500 million to this program. The total FY 2016 funding for the programs consolidated into this new block grant was \$275 million.³¹¹

- Title IV also authorizes a Promise Neighborhoods program — which can support elementary and secondary schools as well as early education efforts. The program supports local service organizations or nonprofits to partner with local schools or districts — to provide “pipeline services” from birth to post-secondary education and/or career attainment, which can include: 1) high-quality early childhood education programs; 2) high-quality school and out-of-school programs and strategies; 3) transitions from elementary school to middle school, from middle school to high school and from high school into and through postsecondary education and into the workforce; 4) family and community engagement and support; 5) postsecondary and

improvements for 50 distressed school districts and 700 schools.³¹³ The President's FY 2017 budget requested \$129 million which would support 15 Promise Neighborhood grants.³¹⁴

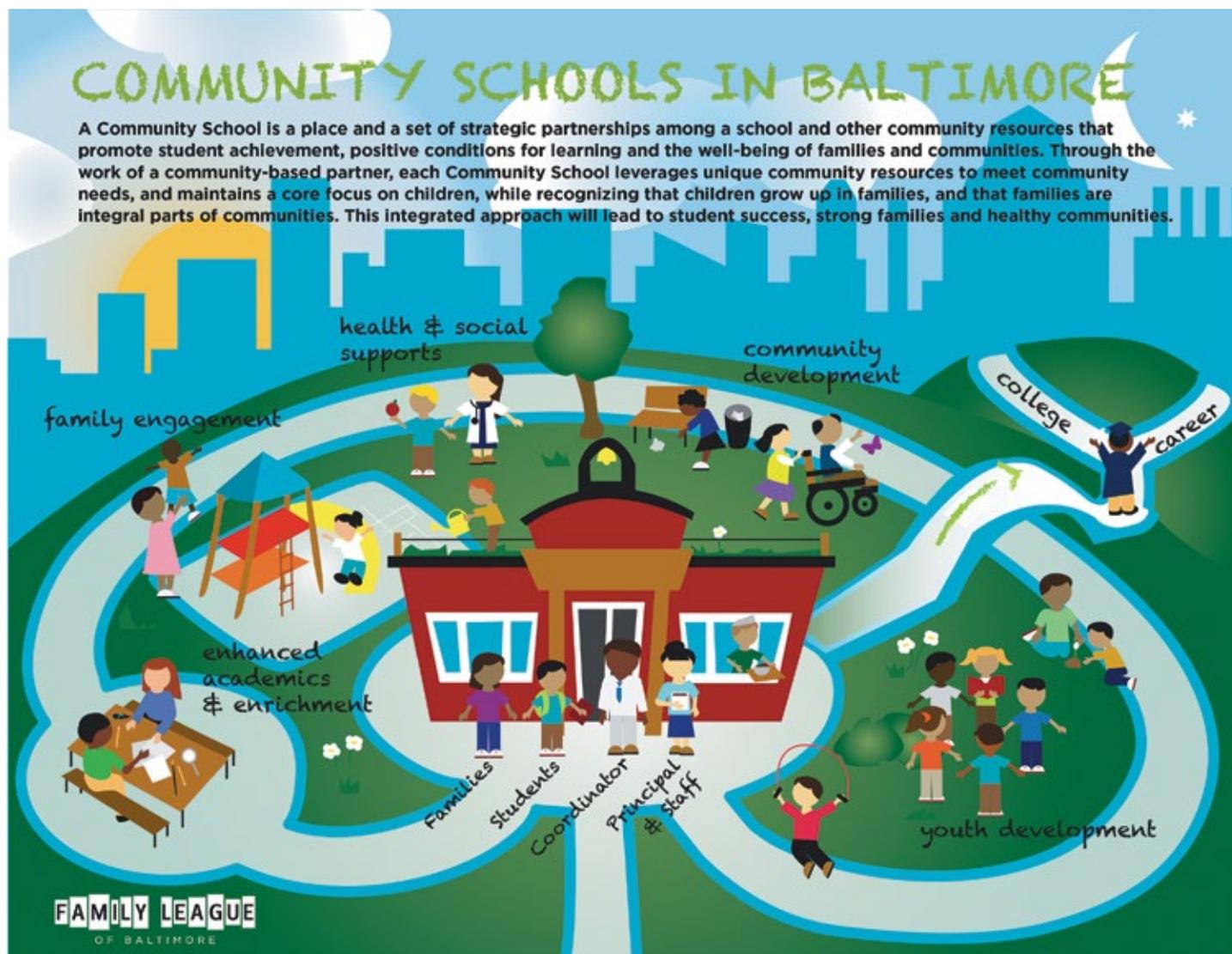
- There are also provisions to support a Full-Service Community Schools Program (the President's FY 2017 budget request is at \$10 million) to support local school districts to partner with community-based organizations, nonprofit organizations or other public or private entities to provide comprehensive and coordinated academic, social and health services for students and family members to support improved educational outcomes for children in neighborhoods with high rates of obesity, poverty, academic failure and involvement of community members in the justice system.

- The law allows increased flexibility in the use of a portion of Title I money (funds designated for socioeconomically disadvantaged or lower performing schools and students) to support school wide priorities. And, also allows for schools with the flexibility to be able to choose how portions of their Title II professional development money is allocated to support educators' and staff professional development and training priorities. These can include support for promoting health and

wellness priorities, providing for additional school health professionals or educators and staff training to support improving health. Title I, Part A of ESSA is authorized for \$15 billion in FY 2017 and \$16.2 billion by 2020. States can set aside up to 7 percent of these funds for school improvement efforts. The President's FY 2017 budget requests \$15.4 billion for Title I.³¹⁵

- State education agencies must also develop state accountability systems — which must include at least one non-academic indicator along with

three academic indicators (by 2017). Many of the example indicators can help support health — such as chronic absenteeism (an “early warning” system to identify children who miss significant amounts of school and may be at-risk for a range of health and social concerns and to connect them to services) and school climate (such as supporting a healthy campus environment or social-emotional development). For instance, Connecticut's accountability indicators include physical fitness and chronic absenteeism.³¹⁶



Source: Family League of Baltimore

CHILDREN'S AID SOCIETY COMMUNITY SCHOOLS³¹⁷

The Children's Aid Society (CAS) operates more than 20 community schools in New York City in partnership with the New York City Department of Education and other community resources. The model aims to combine the best educational practices with the delivery of an array of social, health, child and youth development services while also emphasizing community and parental involvement. CAS, through its National Center for Community Schools, offers training, consultation, planning tools and guidance on all aspects of de-

signing and implementing community school strategy. Programs are tailored to the unique needs and strengths of individual communities. Evaluations have shown positive results in academic gain, better student and teacher attendance, school readiness and parent engagement. A social return on investment study, conducted by the Finance Project, showed a return on investment of \$10.30 for every \$1 invested at the elementary level and \$14.80 for every \$1 invested at the middle school level.

UNITED WAY COMMUNITY SCHOOLS



Source: United Way of America

Local School Wellness Policies

The Child Nutrition Act of 2004 required every school district participating in the National School Lunch Program and School Breakfast Program to develop and implement a local wellness plan, and the Healthy, Hunger-Free Kids Act of 2010 strengthened those requirements. In 2014, USDA issued a proposed rule to update local school wellness policy standards, including proposing requiring that schools only allow the marketing of foods and beverages that meet the Smart Snacks in Schools nutrition standards, ensuring policies meet minimum standards to support an environment that promotes nutrition and student health and requiring transparency to the public about the policies and implementation.³¹⁸ An interim final rule was issued during the 2014-2015 school year. The final rule, issued in July 2016, aligns the nutritional quality of snacks sold to children during the school day with the same science-based improvements made to school breakfasts and lunches and gives states the flexibility to allow limited exemptions to school-sponsored fundraisers during the school day.³¹⁹

Wellness policies can lead to changes in promoting improved health, nutrition and physical activity in schools. For instance, while schools currently have the ability to limit food marketing during the school day, as of 2013, only 20 percent of public school districts had wellness policies that addressed food marketing, and only half of those districts specifically prohibit unhealthy food and beverage marketing.³²⁰ Food and beverages are marketed to students in some schools via signs, scoreboards, posters, branded fundraisers, corporate incentive programs, scholarships and education materials. Seventy percent of elementary and middle school students are exposed to poor quality, high caloric

food/beverages during school hours.³²¹

The Local School Wellness Policy final rule, released in July 2016, requires that any food or beverage that is marketed on school campuses during the school day meet the Smart Snacks standards. As of 2014, 11 states and Washington, D.C. have additional policies addressing marketing of unhealthy foods in schools (Alabama, Alaska, Connecticut, Iowa, Maine, Mississippi, Montana, Nevada, Oklahoma, Oregon and West Virginia).³²²

School district plans are required to include:

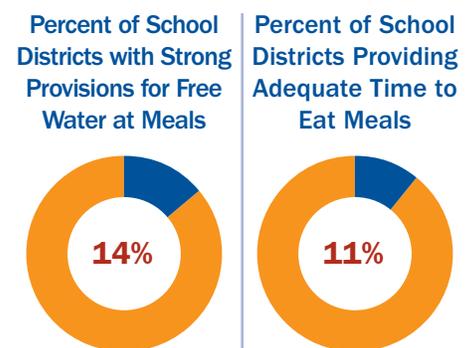
- Goals for nutrition promotion and education, physical activity and other school-based activities that promote student wellness.
- Nutrition guidelines for all foods available on each school campus during the school day to promote student health and reduce childhood obesity.
- Participation by parents, students, representatives of the school food authority, teachers of physical education, school health professionals, the school board, school administrators and the general public to participate in the development, implementation and update of the wellness policy.
- Informing and updating the public (including parents, students and others in the community) about the content and implementation of the local school wellness policy.
- Periodically measuring which schools are in compliance with the local wellness policy, the extent to which the local education agency's local wellness policy compares to model local school wellness policies, the progress made in attaining the goals of the local wellness policy and making this assessment available to the public.

A 2016 report by Bridging the Gap analyzed a range of ninety-five wellness policies and scored them based on comprehensiveness (all items covered for a given topic were addressed) and strength (strong policies had requirements and specified an implementation plan or strategy), scoring a total of 100 points for each individual category.³²³ Almost all school districts nationwide (95 percent) have adopted wellness policies from 2006-2007 to 2013-2014 and all policy categories have significantly improved in comprehensiveness and strength over the last eight years, yet policies vary greatly on how widely and stringently they are implemented. Overall, nutrition education policies were the most comprehensive (scoring 55.5 of 100) and strongest (scoring 36.4 of 100) and unhealthy food marketing and healthy food promotion policies were one of the least comprehensive (scoring 26.5 of 100) and weakest (scoring 10.4 of 100). Further analysis found that since the beginning of school year 2013-2014:

- Almost all districts (93 percent) had nutritional goals, however schools continue to lack the curriculum (67 percent) and the latest techniques for teaching nutrition education (90 percent);
- Eight-six percent of districts have implemented school meal plans that met federal nutrition standards since the 2006-2007 school year, however policies have begun to level off in what is addressed and at what strength (e.g., only 14 percent of school districts have strong provisions for free drinking water at meals and only 11 percent have adequate time to eat meals);
- The scope of competitive foods and beverages provisions are comprehensive

(48.5 of 100) but have become stagnant since the 2008-2009 school year and remain weak (17.7 of 100). Class parties (1 percent) and fundraisers (17 percent) remain the least regulated and the level of regulation varies from elementary schools (21.7 of 100) to middle school (16.4 of 100) to high school (14.7 of 100);

- Eighty-eight percent of districts have physical activity goals and physical education provisions in their wellness policies, however only 3 percent of districts have physical education requirements for all school levels, less than 10 percent of districts offer physical activity opportunities before/after school and 44 percent offer physical activity for every grade level. Very few schools meet physical education and physical activity national standards;
- Staff wellness and modeling continues to be under-addressed, being one of the least comprehensive (29.9 of 100) and weakest (14.5 of 100) provisions, with only one-quarter of districts having policies making staff role models for healthy behaviors, 11 percent having staff wellness programs and 8 percent having physical activity opportunities;
- The percent of districts restricting unhealthy food marketing or promoting healthy food choices remains relatively low, with only 14 percent of districts having strong restricted marketing of unhealthy food and 7 percent promoting healthy choices on campus; and
- Less than half of districts (49 percent) have ongoing health advisory committees for evaluating and implementing wellness policies.



EXAMPLES OF SCHOOL-BASED PROGRAMS

HealthMPowers³²⁴

HealthMPowers, which offers comprehensive school wellness programs throughout Georgia, was founded by two parents and community leaders, Andy Isakson and Mary Johnson, who wanted to promote healthy behaviors and environments by improving health education and empowering students, school staff and families.

HealthMPowers implements a three-year, school-wide intervention that trains teachers and parents and provides direct services and resource materials to support healthy school environments.

HealthMPowers evaluates each school's current health programs and policies and selects appropriate resources — programs, curricula and other teaching tools — to improve each school's unique health needs. A "School Health Council" is created to establish and execute an action plan to improve health education. In tandem with the school wellness plan, HealthMPowers provides development sessions and encourages the creation of wellness programs to help teachers and staff model healthy behaviors.

To reach the home, "Family Newsletters" with age-appropriate information on health issues are paired with activities families can use to reinforce healthy lessons learned at school. Additionally, seminars for families are

conducted to help demonstrate the link between health and academic achievement and further reinforce healthy steps that can be taken in the home.

Since 2003, HealthMPowers has reached more than 260 schools and more than 200,000 students, school staff and families. During the 2014–2015 school year, HealthMPowers provided more than 45,000 students in 86 SNAP-Ed sponsored schools and early child care centers with training, evaluation and resources. According to HealthMPowers, the increased learning and focus resulted in healthier school environments and improved student behaviors and outcomes: almost 90 percent of participating students improved in their health knowledge and behaviors, nearly 70 percent improved in their Progressive Aerobic Cardiovascular Endurance Run (PACER) and 80 percent either maintained or lowered their BMI over the course of the year.³²⁵

HealthMPowers also helped increase the number of students who participated in school based physical activity and extracurricular physical activity at least 5 days per week, improved the consumption of fruits and decreased screen time.³²⁶ According to their most recent annual report, each school moved from the unhealthy zone at baseline into the healthy target zone by the end of the year.

EXAMPLES OF SCHOOL-BASED PROGRAMS

Healthy Out-of-School Time Coalition³²⁷

In January 2009, the National Institute on Out-of-School Time (NIOST) at the Wellesley Centers for Women at Wellesley College, the University of Massachusetts Boston (UMB) and the YMCA of the USA collaborated to found the Healthy Out-of-School Time Coalition (HOST).

In 2010-2011, HOST created evidence-based, healthy eating and physical activity standards to foster positive nutrition and physical activity outcomes for children in grades K-12 attending before school, afterschool, holiday and summer programs.

These standards have been adopted by a wide range of coalition members, such as the National AfterSchool Association, the YMCA of the USA, the Council on Accreditation, the National Recreation and Park Association, the Boys & Girls Clubs of America and the Alliance for a Healthier Generation, and disseminated to tens of thousands of out-of-school time professionals and supporters.

Voices for Healthy Kids and other organizations are working to develop recognition and accreditation programs and standards for HEPA to help expand their HEPA implementation.

PARENTS WANT HEALTHY OPTIONS

More youth than ever before—

10.2 million

—are in afterschool programs.



8 in 10

parents want afterschool programs to provide opportunities for physical activity



more than

7 in 10

want programs to offer healthy meals, snacks, or beverages



Learn more at www.afterschoolalliance.org/AA3PM

www.afterschoolalliance.org/documents/AA3PM-2014/AA3PM_National_Report.pdf

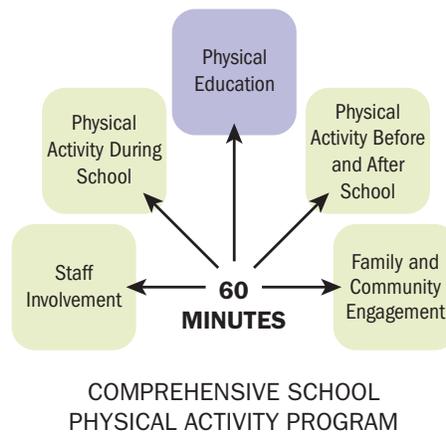
www.afterschoolalliance.org/AA3PM/Kids_on_the_Move.pdf

Source: After School Alliance

CDC School Health Cooperative Agreements and National Goals and Guidance

Every state and Washington, D.C. receives State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Associated Risk Factors and Promote School Health (DP13-1305) cooperative agreement funding via CDC. These funds help support school, workplace, early childhood and community-based programs to promote healthier school environments, nutrition, physical education and physical activity. Thirty-two states receive enhanced funding.³²⁸

CDC also provides states, localities and schools with guidance on evidence-based



Source: CDC

practices, programs and assessment tools and conducts surveys and other studies to monitor the status of students' health and policies.^{329, 330} The agency has collaborated with SHAPE America (Society of Health and Physical Educators) and other partners to develop the Comprehensive School Physical Activity Program, a multi-component approach where districts and schools provide opportunities for children and teens to achieve the nationally-recommended goal of at least 60 minutes of physical activity per day, most of which should be moderate or vigorous in intensity.^{331, 332, 333}

New Models for School-Based Health and Social Services

A range of new models are emerging to better address the health and social service needs of students as an integral part of helping them be successful in school, which can help provide support to students to address health issues related to obesity and risk for obesity — including nutrition counseling and education — or for managing health problems associated with nutrition and/or activity. In addition, they can help connect students and their families with other medical and support services — ranging from nutrition assistance to broader social service support, which can help increase access to healthy foods and opportunities to be physically active.

Often school health programs have centered on school nurses to respond to acute needs. A number of efforts focus on increasing support for school

nurses, but also expanding to develop approaches that can help ensure students who are not receiving sufficient care through the traditional health system can access the care they need.

These range from full on-site school based health centers (SBHCs) to mobile health centers to strong partnerships with local community health centers (CHCs) to designated case managers. There are also a range of potential payment models — for instance, in California, there are more than 230 SBHCs serving nearly a quarter million children, which are financed through a variety of sources, including reimbursement from public insurance programs and private health plans; local, state and federal grants; philanthropic foundations; and in-kind contributions from school districts and other partners.³³⁴

In December 2014, CMS issued a clarification of a longstanding rule that permits schools to be reimbursed for health services provided to students who are covered by Medicaid.³³⁵ This provides an important opportunity to have support for expanding the delivery of health services through schools.

The stronger connection between health services and education can also help support connecting students and their families to additional care and social services. For instance, a case worker system can ensure that students are receiving follow up care — such as appointments and services with specialists or therapists — or that the students and their families are being connected with other forms of support, such as supportive housing or food assistance programs.

STATE SCHOOL NUTRITION, PHYSICAL ACTIVITY AND HEALTH EDUCATION POLICY TRENDS

• Water Availability

Under federal law, schools are required to provide easily accessible, clean water to students at no cost. According to a review by Bridging the Gap, more than 10 percent of middle and high schools and nearly 15 percent of elementary schools did not meet the drinking water requirements during the 2011-2012 school year.³³⁶ And, one in four middle and high school students attend a school where water-quality issues are affecting drinking fountains.

Most children are not drinking the recommended amount of water during the school day.³³⁷ Children who drink more water consume less sugar and other beverages. While many schools have water fountains available, students may not make use of them due to limited availability, cleanliness or time-use barriers. For instance, availability of cups or water bottles can help encourage greater water consumption, but few schools provide them to students.³³⁹

There are also concerns about the quality and safety of the free water that is available in many schools.

In 2014, the CDC released the Water Access in Schools Toolkit to help schools meet federal requirements for making drinking water available during mealtimes and across school campuses.³⁴⁰ Included in the tool kit is a needs assessment checklist that guide schools through the process of evaluating current policies and practices related to drinking water, developing and prioritizing action plans to increase access to drinking water and evaluating changes.

An analysis by USA Today of U.S. Environmental Protection Agency (EPA) data showed that about 350 schools and day-care centers failed around 470 lead tests between 2012 and 2015.³⁴¹ The federal government only requires schools with their own water systems — about 10 percent of schools (8,225 facilities) — to test for lead. Federal law does not require

schools using a local public water supplier (e.g., municipal water system) to regularly test the water because the public water supplier is required to regularly test the water to ensure that it meets federal and state drinking water standards for contaminants, including bacteria and certain chemicals.³⁴² However, even if the water meets federal and state standards, water pipes and plumbing fixtures in the schools can affect the quality of the water. An analysis of California schools by Community Water Center, for example, found that 24 percent of the 6,974 schools were impacted by unsafe drinking water between 2003 and 2014.³⁴³ The most common contaminants included lead, copper, bacteria, arsenic, pesticide DBCP, nitrates, and disinfectant by-products.

The Flint, Michigan contaminated water crisis has brought increased attention to concerns about unsafe water. And a number of school systems around the country have increased testing and reporting on school water safety. For instance, 10 schools tested in Oregon, four out of 28 schools tested in Boston and 30 out of 67 schools in Newark, New Jersey have reported high lead levels in drinking water.^{344, 345, 346} Some groups are exploring mechanisms and funding to support cost-effective testing and remediation strategies for regular testing of water in schools.^{347, 348}

HOW MANY SCHOOLS MET FEDERAL DRINKING WATER REQUIREMENTS, 2011-2012 SCHOOL YEAR

	Elementary Schools	Middle Schools	High Schools
Fountains only	64.1%	61.9%	60.6%
Dispensers only	13.3%	14.9%	11.9%
Fountains and dispensers	7.5%	9.3%	16.6%
Other combinations	1.4%	1.4%	0.3%
Did not meet requirement	13.6%	12.6%	10.6%

Source: Bridging the Gap

- **Breakfast Policies**

A number of states have adopted policies to allow for more inclusive and flexible breakfast programs in schools, such as offering Breakfast in the Classroom, Breakfast After the Bell and/or Grab N' Go or Second Chance Breakfasts, which can provide additional opportunities for students to receive breakfast without having to arrive early for school and/or helps lessen the possible sense of stigma of being associated with participating in the free and reduced lunch program.

Washington, D.C. requires that all public schools and public charter schools offer free breakfast to all students. The program offered in elementary schools where more than 40 percent of students qualify for free or reduced-price meals is Breakfast in the Classroom, while middle and high schools that meet this threshold must offer any innovative breakfast service model, such as

Breakfast in the Classroom or Grab N' Go options.³⁴⁹

A number of states require schools to serve free Breakfast After the Bell if they have high rates of students qualifying for free and reduced meals, including Colorado (70 percent or more); Nevada (70 percent or more); New Mexico (all elementary schools to provide breakfast before or after beginning of instructional day); Texas (80 percent or more); and West Virginia (mandates expanding innovative breakfast delivery models such as Grab N' Go or Second Chance Breakfasts).^{350, 351, 352} A number of states have enacted legislation to recommend flexible breakfast delivery programs (such as Illinois and New Jersey) and/or increased funding for programs (such as Arkansas, Maryland and Virginia) without mandating requirements. In addition, a number of local school districts are requiring or supporting innovative breakfast programs.



Farm-to-School

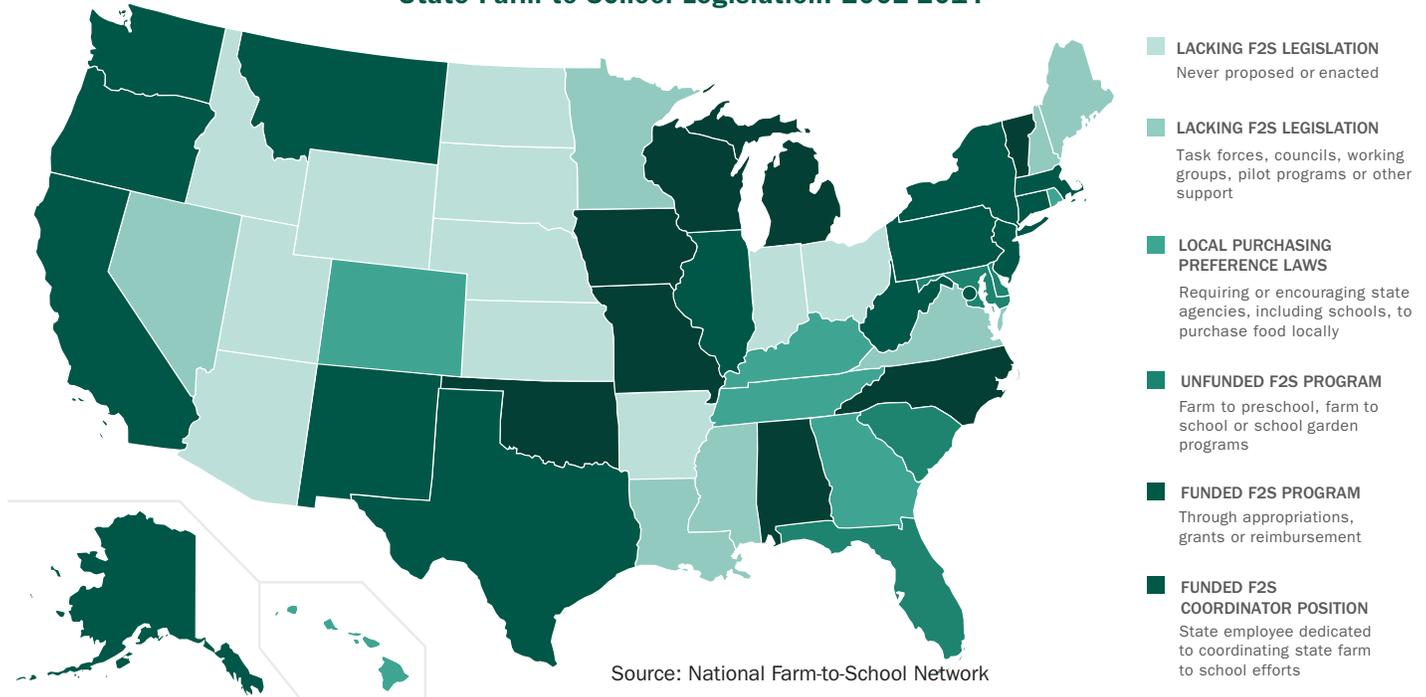
Farm-to-School programs are estimated to serve more than 42 percent of schools and 23.6 million children.³⁵³ In addition, more than 7,000 schools report having school gardens.

In 2013-2014, school districts reported purchasing nearly \$800 million in local food from

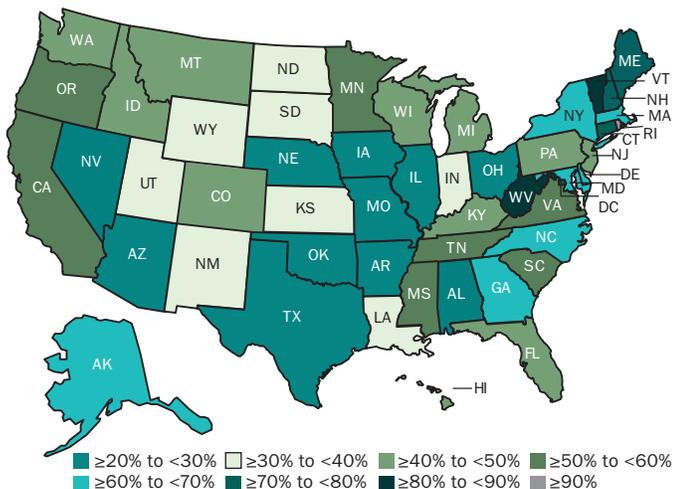
farmers, ranchers, fishermen and food processors and manufacturers — a 105 percent increase over the \$386 million purchased in the 2011-2012 school year.³⁵⁴ Schools that buy local food drive the local economy; for every dollar spent locally, another \$0.40 to \$1.60 of economic activity is generated.

According to a review conducted by the National Farm to School Network, 40 states and Washington, D.C. enacted Farm-to-School legislation between 2002 and 2014.³⁵⁵ However, many of these programs cover only select students or schools in these states rather than all students or schools.

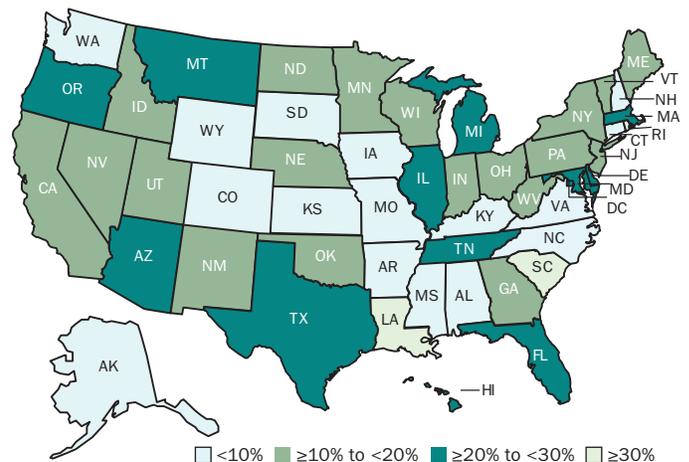
State Farm to School Legislation: 2002-2014



Percent of School Districts Participating in Farm-to-School Activities by State, 2013-2014



Percent of Total Budget School District Spent on Local Food by State, 2013-2014

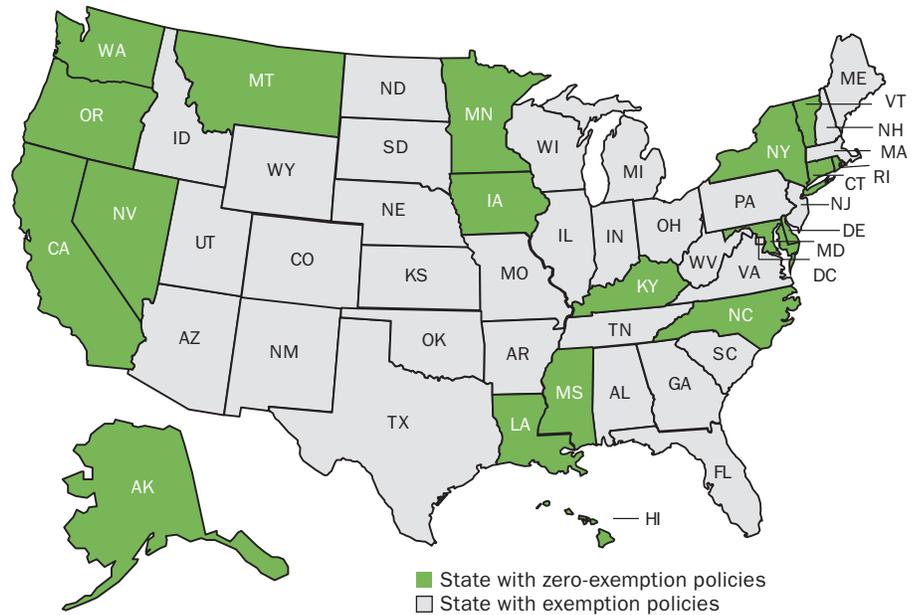


• Zero-Exemption School Nutrition Policies

A review by the Institute for Health Research and Policy at the University of Chicago found that, as of March 2016, 20 states and Washington, D.C. have adopted zero-exemption policies for foods sold on school campuses during the school day — meaning all foods sold, even for fundraising efforts, must comply

with the USDA's Smart Snacks nutrition standards: Alaska, California, Connecticut, Delaware, Hawaii, Iowa, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, Montana, Nevada, New Hampshire, New Jersey, New York, North Carolina, Oregon, Rhode Island, Washington.³⁵⁶

State Fundraising Exemption Policies, as of March 2016



Source: National Wellness Policy Study

• Out-of-School Time and School Celebration Nutrition Policies

A review by Voices for Healthy Kids of competitive food policies found that, in the fall of 2014, seven states and Washington, D.C. had standards for competitive snacks that align with USDA's Smart Snack in Schools nutrition standards and

also included standards for programs and events beyond school hours and/or for school celebrations (Hawaii, Maine, Mississippi, Oregon, Rhode Island, Washington and West Virginia).³⁵⁷

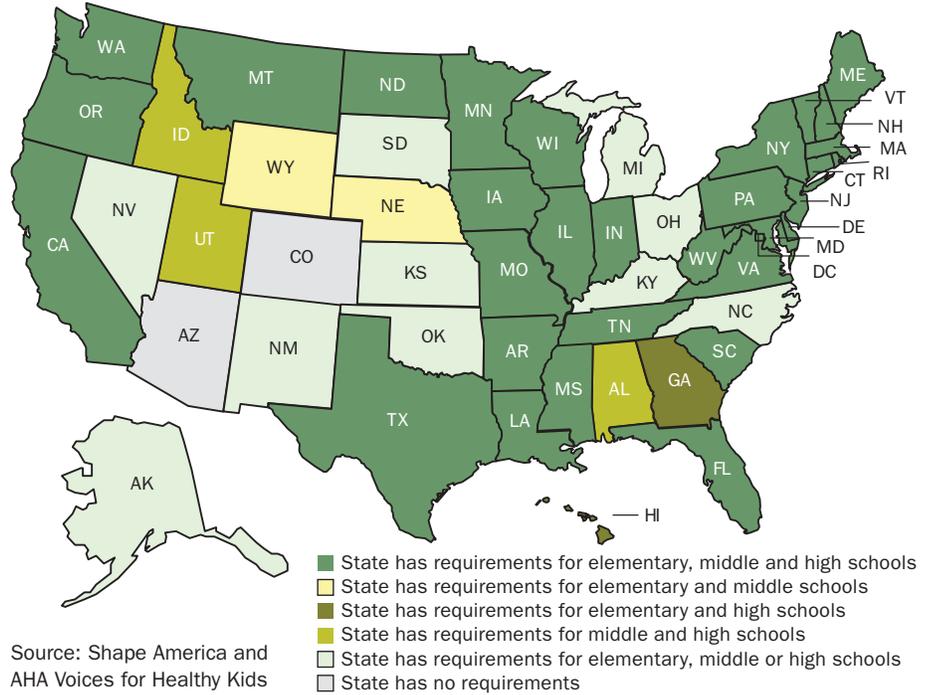
Physical Education

Every state has physical education requirements for students. However, these requirements are often limited or not enforced, and many programs are inadequate.³⁵⁸ National guidelines recommend at least one hour of moderate to intense daily physical activity for children. To help meet these guidelines, the American Heart Association (AHA) and SHAPE America recommend that states require elementary students receive 150 minutes per week and middle and high school students receive 225 minutes per week of instructional physical education.

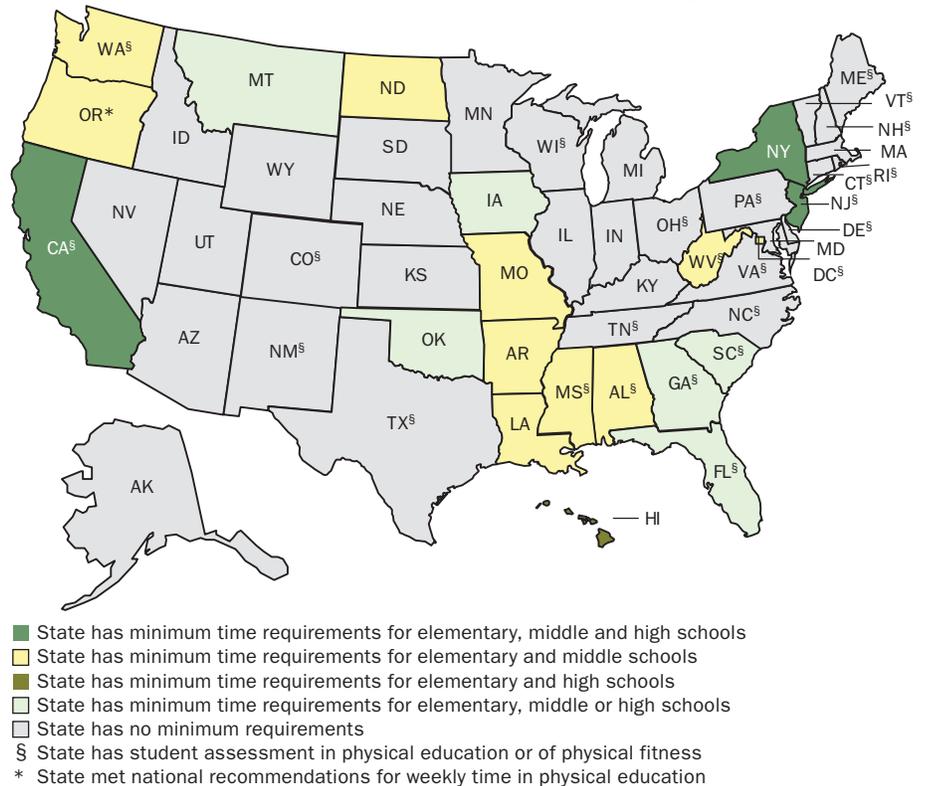
A 2016 review by Voices for Healthy Kids and SHAPE America found that physical education policies for elementary, middle and high schools vary significantly.³⁵⁹

- Thirty-eight states and Washington, D.C. require elementary school students to take physical education;
- Thirty-six states and Washington, D.C. require physical education for middle school students; and
- Forty-three states and Washington, D.C. require physical education for high school students.
- However, only 18 states and Washington, D.C. set a minimum amount of time that elementary students must participate in physical education; 14 states and Washington, D.C. set amounts for middle schools; and 6 set amounts for high schools;
- Only Oregon and Washington, D.C. meet the national recommendations for weekly time in physical education at both elementary and middle schools; and
- Twenty-seven states and Washington, D.C. require a student assessment in physical education or of student physical fitness.

State Requires Physical Education for Elementary, Middle and High Schools



State Requires Physical Education for Elementary, Middle and High Schools

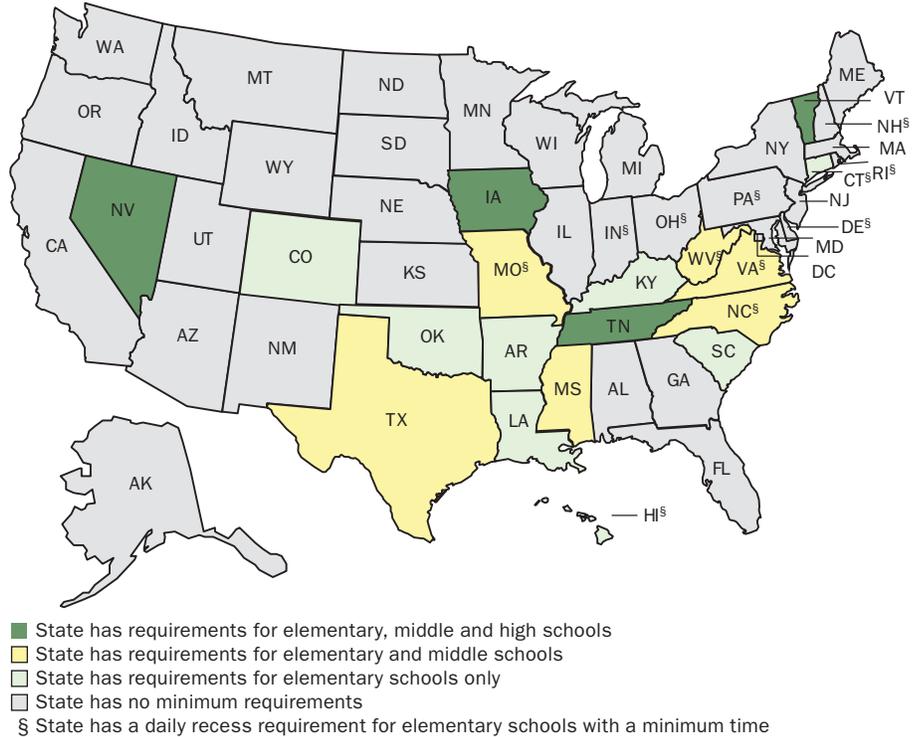


Physical Activity

Many states have started enacting laws requiring schools to provide a certain number of minutes and/or a specified difficulty level of physical activity.^{360, 361}

- Eighteen states specifically require schools to provide physical activity.
- Eight states have elementary school requirements; six states have both elementary and middle school requirements; and four states have requirements at all three school levels.
- Ten states require elementary schools to offer recesses on a daily basis for a certain number of minutes or total number of minutes per week. The amount of time dedicated to recesses may or may not be added towards the minutes of required physical activity.

State Requires Minimum Amount of Time for Physical Activity Per Day/Week



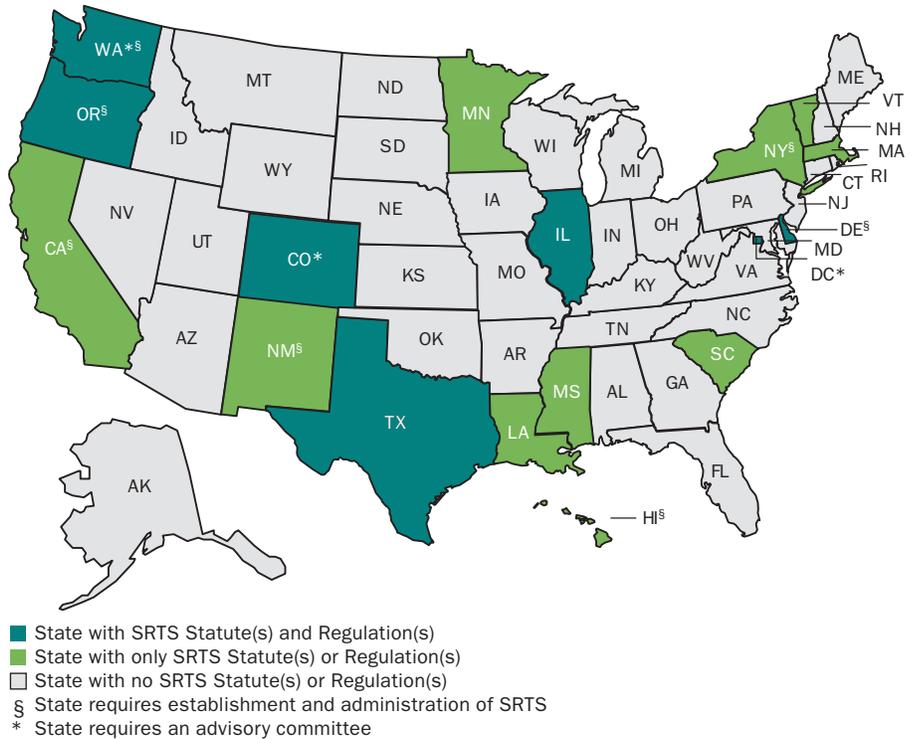
Sources: Education Commission of the States and Shape America and AHA Voices for Healthy Kids

Safe Routes to School (SRTS)

Every state and Washington, D.C. participates in some form of SRTS program to promote walking and biking to and from school. However, the programs vary significantly in their activities, implementation and funding. And, some states have initiatives without official laws or statutory requirements.

SRTS supports improving sidewalks, bike paths and safe street crossings; reducing speeds in schools zones and neighborhoods; addressing distracted driving; and educating people about pedestrian and bike safety. It includes a range of partners, such as educators, parents, students, government officials, city planners, business and community leaders and health officials. Early studies of SRTS have shown a positive effect on physically active travel among children

State had Statutes or Regulations on Safe Routes to School, as of August 2014



Source: Public Health Law Center

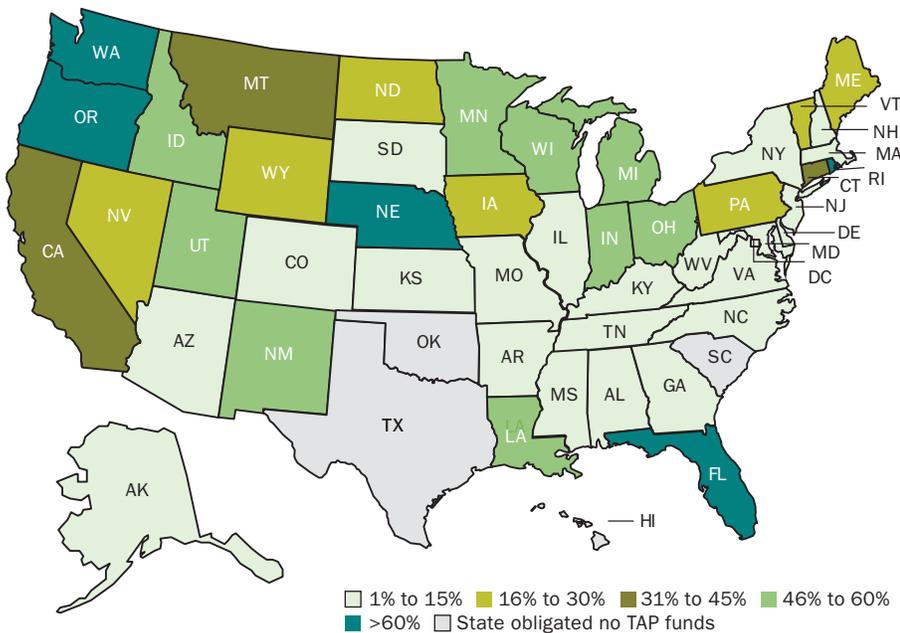
and a reduction in crashes involving pedestrians.^{362, 363, 364}

While many states have SRTS policies and programs, a review by Public Health Law Center, found that only 16 states and Washington D.C. have laws/rules strengthening their commitment and requirement on establishing, developing and implementing programs.³⁶⁵ Only seven states require the establishment and administration of SRTS programs and two states require the appointment of an advisory committee to develop a SRTS plan (Colorado and Washington). Colorado is the only state that requires their Department of Transportation (DOT) to notify schools and make information about safe-use of public streets and premises available to students. And, only Massachusetts has a healthy transportation compact established within the DOT that requires the

Secretary and the Secretary of Health and Human Services, the Administrator of Transportation for Highways, the Administrator of Transportation for Mass Transit and the Commissioner of Public Health to coordinate and cooperatively adopt best practices to expand services offered for SRTS programs. And, Vermont is the only state that requires the traffic committee to consider setting maximum highway speed limits near schools based on data collected from SRTS programs.

A review by the SRTS National Partnership and the YMCA of the USA found that only six states (California, Colorado, Florida, Hawaii, Minnesota and Washington) had dedicated funds for SRTS and only five states (Florida, Nebraska, Oregon, Rhode Island and Washington) specifically obligated more than 60 percent of federal transportation funds to support SRTS projects.³⁶⁶

Percent Obligated State-Controlled Transportation Alternatives Program (TAP) Funds for Safe Routes to School Projects by State



In many states, SRTS is targeted to traditionally underserved school communities. As of 2014, 69 percent of schools receiving SRTS awards are classified as Title I schools, or as having a high percentage of students from low-income families. Forty-seven percent of SRTS schools enroll students who are eligible to receive free and reduced-price meals.³⁶⁷

Source: Safe Routes to School National Partnership

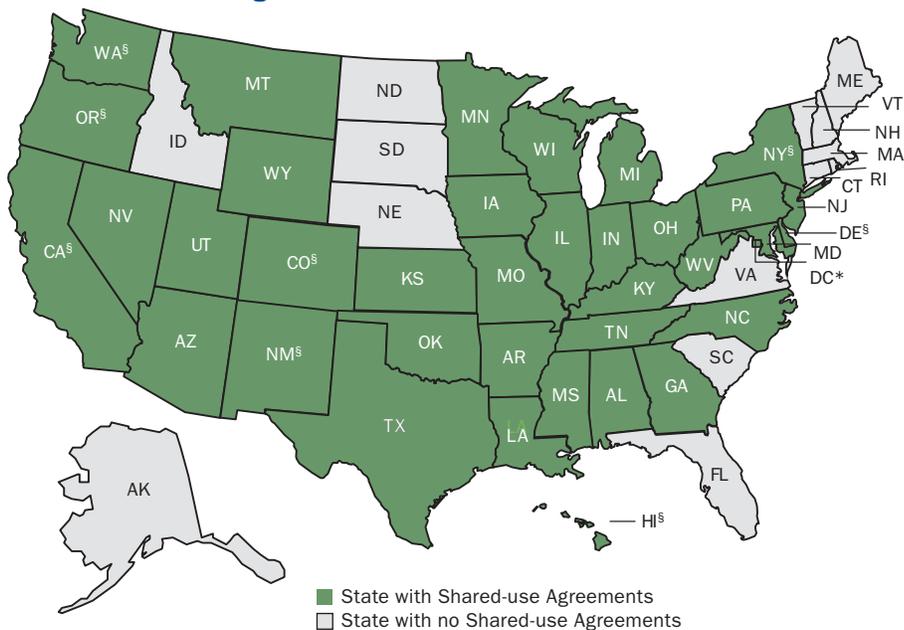
• **Shared-use Agreements**

Thirty-six states and Washington, D.C. have laws supporting shared-use of school facilities, opening school playgrounds and fields for recreational use to the community outside of school hours. Most of the laws recommend but do not require schools to implement shared-use practices.³⁶⁸

Many communities do not have enough safe and accessible places for people to be physically active, indoors and out. Schools often have gymnasiums, playgrounds, tracks and fields, but they are not accessible to the community when not in use by the school. Many schools keep their facilities closed during non-school hours for fear of liability in the event of an injury, vandalism and the cost of maintenance and security. Some states and communities have laws encouraging or requiring schools to make facilities available for use by the community through shared- or joint-use agreements.³⁶⁹ These agreements allow school districts, local governments and community-based organizations to overcome common concerns, costs and responsibilities that come along with opening school property to the public during non-school hours.

Shared-use programs in San Francisco, California and New York City, for example, show the benefits of opening school

State has Shared-use Agreements



Source: Safe Routes to School National Partnership

facilities to the local community.³⁷⁰ Programs are mostly funded by private-public money, and are maintained and developed through the collaborative work of the cities' departments of education and parks and recreation services.

- As of 2016, 80 schools in San Francisco have voluntarily opened up their playgrounds on the weekend, which has led to a decrease in school vandalism and littering, and an increase in community and local business engagement. San Francis-

co's Recreation and Park Services receives \$300,000 per year for a patrol officer to open, close and inspect schools and participating schools receive \$350,000 per year to use for PTA and community activities.

- New York City's Schoolyards to Playgrounds initiative has opened 220 schools, from after school hours until dusk during the week and from 8 a.m. to dusk on the weekends and holidays. Participating schools receive \$50,000 a year for associated labor and maintenance.

C. COMMUNITY-BASED POLICIES AND PROGRAMS

Many Americans only have a doctor’s appointment once or twice a year. The rest of the year they are often on their own to try to follow their doctor’s advice in their daily lives. A growing body of evidence shows that Americans cannot achieve health goals — including eating healthier, increasing physical activity and managing obesity and related health problems — without support in their neighborhoods, workplaces and schools.³⁸⁰

“Health professionals are adept at treating a vast range of diseases, injuries and other medical conditions. But their training and healthcare delivery incentives do not emphasize addressing the root causes of health problems that occur outside of the healthcare system — factors such as education, access to healthy food, job opportunities, safe housing, environment and toxic stress — that fundamentally shape how long or well people live,” according to a report by the RWJF Commission to Build a Healthier America.³⁸¹ According to CDC, a majority of chronic diseases, including many cases of obesity-related illnesses like type 2 diabetes and heart disease, could be prevented through lifestyle and environmental changes. A short list of key risk factors, including obesity, high blood pressure, physical inactivity and diets low in fruits and vegetables and high in saturated fats, have a major impact on overall risk for a range of health problems.³⁸²

A range of policies supporting the availability of accessible, affordable healthy foods and safe, convenient

places to be physically active can make it easier to make healthy choices. Federal, state and local governments can support a range of strategies and programs that can help prevent obesity around the country.

Key policies highlighted in this section include:

- **CDC Support for Obesity, Nutrition and Physical Activity Programs**
- **Marketplace Incentives to Improve Healthy Food Availability in More Communities: Healthy Food Financing Initiatives (HFFI) and New Market Tax Credits (NMTC)**

- **Implementation of Restaurant Menu Labeling Requirements**
- **Revised Nutrition Facts Label Information**
- **Revised Dietary Guidelines for Americans**
- **DoD’s Operation Live Well (OLW) and Healthy Base Initiative (HBI)**
- **State Policy Review: Complete Streets and Transportation Alternative Programs, Nutrition Assistance and Education Programs, State Government Workplace and Facilities Nutrition Standards and Local and State Taxing Policies**

Budgets for Some Key Federal Community-Based Obesity-Related Programs	Enacted Budget FY 2016
Division of Nutrition, Physical Activity and Obesity (CDC)	\$50 million
Chronic Disease Programs at CDC	\$1.2 billion
Healthy Food Financing Initiative	\$22 million ³⁸³
New Market Tax Credits	\$7 billion ³⁸⁴ (2015-2016 combined funding)
Transportation Alternative Programs	\$835 million ³⁸⁵
SNAP (USDA)	\$80.849 billion ³⁸⁶
SNAP-Ed (USDA)	\$408 billion

Note: For some of these programs, only a portion of the funding goes toward obesity-related activities (i.e., nutrition, physical activity).

U.S. EATING HABITS

The typical American diet exceeds recommendations for high-density energy foods (foods that are high in calories, saturated fat, sodium and added sugars), and does not have enough low-density energy foods (foods that are low in calories and fat and high in calcium, fiber, water and other vital minerals).^{387, 388, 389}

Low-income families have less access to many healthy, affordable foods — both due to cost and logistics. While the typical American family spends \$50 per person per week on food, low-income families spend \$35 per person per week and spend a relatively higher proportion of their total income on food.³⁹⁰

According to USDA and CDC, Americans eat more than the daily recommended calories, sodium, saturated fats, refined grains and added sugars, while consuming too few whole grains, fruits, vegetables, low-fat or fat-free dairy, lean meats and seafood and oils that are healthy.³⁹¹

- **Calories:** On average, Americans consume nearly 460 more calories a day than in 1970 (2,568 calories in 2010 compared to 2,109 in 1970).³⁹²
- **Portion Distortion:** Portions sizes have grown significantly over time — with restaurant portion sizes doubling or tripling over the past 20 years.^{393, 394}
- **Sugar:** Americans consume nearly three times the recommended amount of sugar; added sugar consumption has increased by 14 percent since 1970.^{395, 396}
- **Sugar-Sweetened Beverages (SSBs):** In 2005-2008, five percent of the U.S.

population consumed at least 567 calories from SSBs on any given day — equivalent to more than four 12-oz cans of soda.³⁹⁷ Although Americans are consuming less SSBs — an average of 155 calories per day, which is equal to one can of soda, SSBs still make up nearly 8 percent of children’s and 9 percent of adult’s (20- to 39-year-olds) total daily calories (NHANES data analysis, 1999-2010).³⁹⁸ While the most commonly consumed SSB is soda, there has also been a rise in non-traditional SSBs consumption — fruit drinks, sweetened bottled water, sports drinks and energy drinks — and adolescent sports drink and energy drink consumption has tripled, from 4 percent to 12 percent.³⁹⁹

- **Dietary Fat:** Americans consume an average of 640 calories worth of added fats per person per day.⁴⁰⁰
- **Fruits and Vegetables:** 37.7 percent of adults and 36 percent of adolescents eat fruit less than once a day and 22.6 percent and 37.7 percent of adolescents eat vegetables less than one time a day.⁴⁰¹
- **Restaurants, Fast Food and Prepared Foods:** Americans consume around one-third of their calories — and spend nearly half (48 percent) of their food budget (\$709.2 billion annually) — eating out.^{402, 403} Food eaten outside the home often can be higher in fat and sodium. Consumers routinely underestimate calories and fat when eating out, and children eat nearly double the number of calories when they eat out versus eating at home.^{404, 405, 406, 407, 408}

PORTION DISTORTION

20 Years Ago	Today
Bagel	
 140 calories 3 inches (diam.)	 350 calories 6 inches (diam.)
Coffee	
 With whole milk & sugar 45 calories 8 ounces	 Mocha, steamed whole milk & mocha syrup 350 calories 16 ounces
Muffin	
 210 calories 1.5 ounces	 500 calories 4 ounces
Cheeseburger	
 333 calories	 590 calories
Pizza	
 500 calories	 850 calories
Popcorn	
 270 calories 5 cups	 630 calories 11 cups

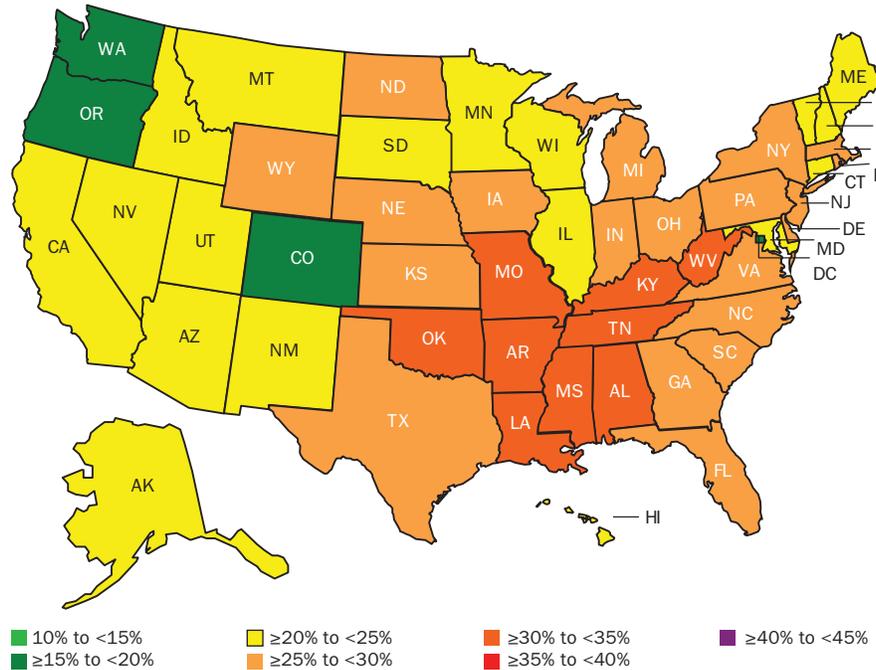
Source: National Heart, Lung, and Blood Institute

Physical Activity and Health

- Eighty percent of American adults do not meet the government’s national physical activity recommendations for aerobic and muscle strengthening.⁴⁰⁹ Around 45 percent of adults are not sufficiently active to achieve health benefits.⁴¹⁰ There are also benefits to being physically active, including decreased risk of mortality and metabolic syndrome.⁴¹¹
- Around \$117 billion in healthcare costs are associated with inadequate physical activity.⁴¹² Adults who are inactive pay \$1,437 more per year in healthcare costs than physically active adults.⁴¹³ Studies have also found the more inactive the mother, the more inactive the child, and the more physically active the mother, the more physically active the child early in life.⁴¹⁴

Mississippi had the highest reported percentage of inactivity among adults at 36.8 percent.

Percent of Adults Who are Physically Inactive, BRFSS 2015



Source: CDC, BRFSS

Built Environment and Health

Research has shown that children and families are more active when they live in neighborhoods that have sidewalks, parks, bicycle lanes and safe streets.⁴¹⁵

- According to the National Academy of Sciences (NAS), a healthy built environment — which includes having safe, accessible places to walk, bike or engage in other physical activity — “can facilitate... physical activity. The built environment can be structured in ways that give[s] people more...opportunities and choices to be physically active.”⁴¹⁶
- Residents of walkable communities are twice as likely to meet physical activity guidelines as those who do not live in walkable neighborhoods.⁴¹⁷
- A recent study published in the *Journal of the American Medical Association*

on three million people living in 8,777 urban-Canadian neighborhoods found an association between the walkability of a neighborhood and rates of obesity, overweight and diabetes.⁴¹⁸ The 12-year study found that those living in the most walkable neighborhoods had more than 10 percent lower overweight and obesity rates compared to those who lived in the least walkable areas. Overweight and obese rates increased by more than 9 percent among individuals living in the least walkable neighborhoods. Additionally, diabetes was significantly lower among individuals living in the most walkable neighborhoods compared to those living in the least walkable ones.

- Children in neighborhoods that lack access to parks, playgrounds and rec-

reation centers have a 20 percent to 45 percent greater risk of becoming overweight.^{419, 420, 421} In general, states with the highest levels of bicycling and walking have the lowest levels of obesity, high blood pressure and diabetes, and have the greatest percentage of adults who meet the recommended 30-plus minutes a day of physical activity.⁴²²

- National and local community studies show that access to public parks, public pools and green space is much lower in neighborhoods largely occupied by racial and ethnic minorities, and are related to higher obesity and lower physical activity rates.^{423, 424} For example, only one-third of Latinos live within walking distance of a park compared to almost half of all Whites.⁴²⁵

Food Deserts

- Nearly 30 million Americans — around 9 percent of the nation's population — live in food deserts — which means they do not have a supermarket or supercenter within a mile of their home if they live in an urban area, or within 10 miles of their home if they live in a rural area — making it challenging to access healthy, affordable food.⁴²⁶
- Families in predominantly minority and low-income neighborhoods have limited

access to supermarkets and fresh produce. Greater accessibility to supermarkets is consistently linked to lower rates of overweight and obesity.⁴²⁷ Studies have found that there is less access to supermarkets and nutritious, fresh foods in many urban and lower-income neighborhoods and unhealthier items are also often more heavily marketed at the point-of-purchase through product placement in stores in low-income neighborhoods.^{428, 429}



Nearly 30 million

Americans don't have access to a supermarket within a mile of their home if they live in urban areas, or within 10 miles if they live in rural areas.

Food Marketing

Nearly \$2 billion is spent annually to market foods and beverages to children and adolescents in the United States. A report from the NAM concluded that food advertising affects children's food choices, food purchase requests, diets and health.⁴³⁰ Food marketing is more prevalent in Black and Latino neighborhoods.

- Black children see twice as many calories advertised in fast food commercials as White children.⁴³¹ The products most frequently marketed to Blacks are high-calorie, low-nutrition foods and beverages. Billboards and other forms of outdoor advertisements, which often promote foods of low nutritional value, are 13 times denser in predominantly Black neighborhoods than they are in White neighborhoods.⁴³²
- Latinos are a major target audience for food marketers, particularly due to their population growth and relative spending power. Studies have found that 84 percent of youth-targeted food advertising on Spanish-language TV promotes food of low nutritional value. Between 2010 and 2013, fast food restaurants increased their overall advertising expenditures on Spanish-language TV by 8 percent. Latino preschool-

ers viewed almost one fast food ad on Spanish-language TV every day in 2013, a 16 percent increase from 2010.⁴³³ In addition, low-income Latino neighborhoods have up to nine times the density of outdoor advertising for fast food and sugary drinks as high-income White neighborhoods,⁴³⁴ and Latino children are more likely to attend a school that is close to fast-food restaurants and convenience stores.^{435, 436}



CDC Support for Obesity, Nutrition and Physical Activity Programs

CDC supports a range of obesity prevention programs in communities around the country. The National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) — including the Division of Nutrition, Physical Activity and Obesity — is the lead center working on obesity prevention and control, and it works in partnership with the School Health Branch of the Division of Population Health, Division of Heart Disease and Stroke, Division of Diabetes Translation and Division of Community Health.⁴³⁷ In addition, the National Center for Environmental Health (NCEH) also studies the relationship between the built environment (such as community planning and transportation) and health issues like obesity.

DNPAO received \$50 million in appropriations in FY 2016 to track and analyze obesity, nutrition and physical activity trends at national, state and local levels, and study and promote best practices for effective strategies and programs. It provides around \$17 million a year to states for obesity prevention activities. DNPAO also works on a series of obesity prevention priority initiatives, including breastfeeding, early child care education and a “high-obesity” program that provides \$7.5 million in competitive grants to communities where adult obesity rates are above 40 percent. As new priority initiatives have been introduced, there has not been a corresponding increase in funds; consequently money available for core activities has decreased by around \$10 million (16 percent).

Total federal funding for all CDC chronic disease prevention activities is approximately \$1.2 billion. This includes

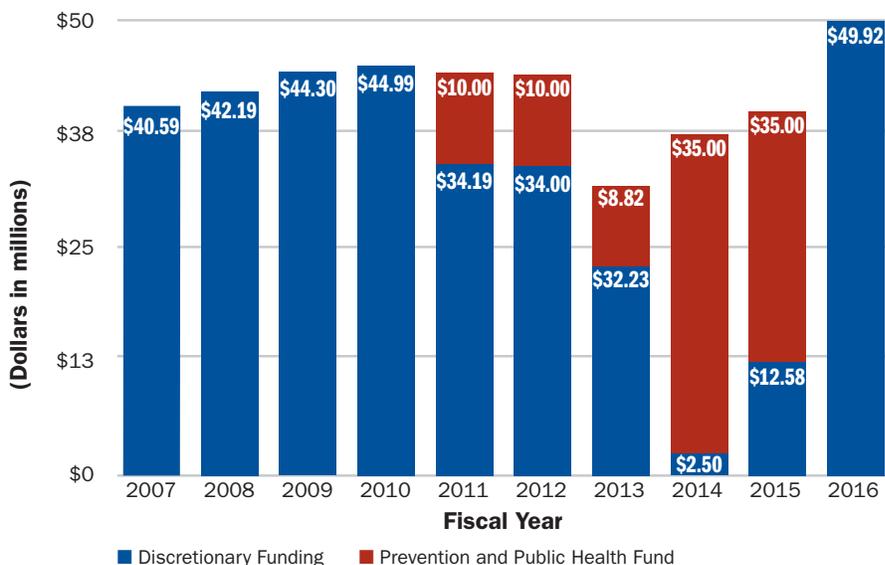
programs focused on some obesity-related illnesses, such as diabetes, heart disease and stroke. The United States spends an estimated \$190 billion annually on obesity-related illness costs, which is around 20 percent of all medical spending.⁴³⁸ Childhood obesity is responsible for \$14.1 billion in direct medical costs.

A large majority of NCCDPHP’s budget goes to state and community grant programs, based on the availability of funds. Some key obesity-related grants include:

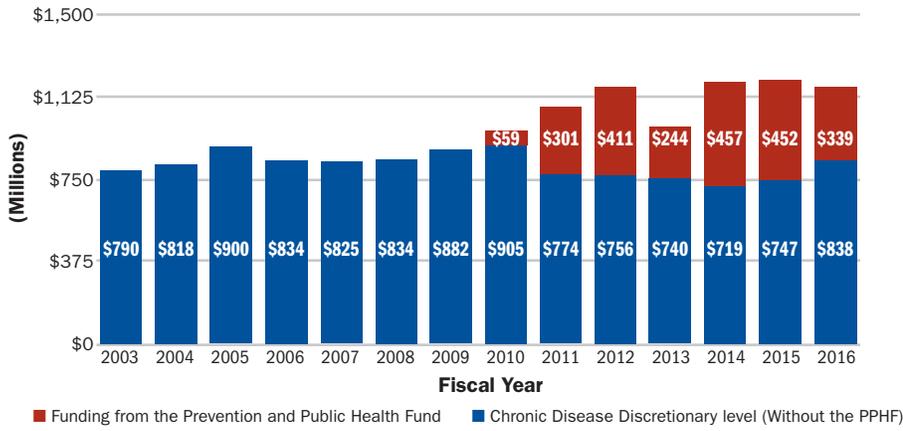
- **State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity and Related Risk Factors and Promote School Health (“1305” awards)**
 - Provides \$101.2 million to enhance key chronic disease prevention programs in states.

- Supports cross-cutting approaches to prevent risk factors that contribute to chronic diseases.
- Created a National Center for Chronic Disease Prevention and Promotion initiative across four divisions — Division of Heart Diseases and Stroke Prevention; Division of Diabetes Translation; Division of Nutrition, Physical Activity and Obesity; and Division of Population Health — aimed at efficiently implementing cross-cutting strategies that address risk factors for a range of chronic diseases and increasing coordination to improve the impact of preventing obesity, diabetes, heart disease and other related conditions.

**CDC Division of Nutrition, Physical Activity, and Obesity
Fiscal Year 2007 to Fiscal Year 2016**



Chronic Disease Funding — Fiscal Year 2003 to Fiscal Year 2016*



- State and Local Public Health Actions to Prevent Obesity, Diabetes, and Heart Disease and Stroke (“1422” awards)**

- A four-year project to create community strategies to promote health and integrate with healthcare systems.
- \$70 million was given to 17 states and four large cities.

- Partnership to Improve Community Health (PICH)**

- A three-year initiative supporting evidence-based strategies to improve the health of communities and reduce the prevalence of chronic diseases by addressing tobacco use and obesity.
- In 2014, \$49.3 million was awarded to 39 communities (\$30.9 million to 13 large cities and urban counties; \$14.2 million to 20 small cities and counties; and \$4.2 million to six American Indian tribes). The third and final year of this cooperative agreement will begin September 30, 2016.

- Racial and Ethnic Approaches to Community Health (REACH)**

- \$51 million supports 49 grants for culturally-tailored, evidence-based strategies to reduce health inequities at the community level.

- Million Hearts Campaign**

- \$4 million supports a national initiative aimed at preventing 1 million heart attacks and strokes by 2017.

- Good Health and Wellness in Indian Country**

- \$14 million supports 23 grants to prevent and manage heart disease, diabetes and associated risk factors in American Indian tribes and Alaska Native villages.

- Preventive Health and Health Services Block Grant**

- Provides every state with flexible support to address what they determine to be their most important health needs.
- Block grant funds have doubled from \$80 million in FY 2013 to \$160 million in FYs 2014, 2015 and 2016 under the Public Health and Prevention Fund (Prevention Fund).

Marketplace Incentives to Improve Healthy Food Availability in More Communities: Healthy Food Financing Initiatives and New Market Tax Credits (NMTC)

USDA, HHS and the Department of Treasury (Treasury) have developed a number of initiatives to support increased access to healthier food

options, including by providing incentives and programs to encourage more grocery and food stores to locate in low-income communities.

HEALTHY FOOD ACCESS

Having local, accessible stores with a quality selection of healthy foods helps make healthier choices easier:

- Supermarkets and supercenters provide the most reliable access to a variety of healthy, high-quality products at the lowest cost, and shoppers generally prefer these stores to smaller grocery stores and convenience stores.⁴³⁹
- Adults living in neighborhoods with supermarkets and/or grocery stores have the lowest rates of obesity (21 percent), and those living in neighborhoods with no supermarkets and access to only convenience stores and/or smaller grocery stores have the highest rates of obesity (32 percent to 40 percent).⁴⁴⁰
- Blacks living in a census tract with a supermarket are more likely to meet dietary guidelines for fruits and vege-

table consumption, and for every additional supermarket in a tract, produce consumption rises 32 percent. Among Whites, each additional supermarket corresponds with an 11 percent increase in produce consumption.⁴⁴¹

- Adults with no supermarkets within a mile of their homes are 25 percent to 46 percent less likely to have a healthy diet than those with the most supermarkets near their homes.⁴⁴²
- New and improved grocery stores can catalyze commercial revitalization in a community. An analysis of the economic impacts of five new stores that opened with Fresh Food Financing Initiative assistance found that, for four of the stores, total employment surrounding the supermarket increased at a faster rate than citywide trends.⁴⁴³

Healthy Food Financing Initiatives are public-private partnerships which use grants and loans to support the financing of supermarkets, farmers' markets, food hubs, urban farms and other healthy food retail options. The federal government has funded HFFI grants through HHS, USDA and Treasury since 2011.^{444, 445}

The Farm Bill of 2014 established a permanent federal HFFI program at

USDA, authorized at \$125 million. USDA supports loans, grants, promotion and other public and private investment programs designed to create healthy food options in food deserts across the country. The initiative provides financial and technical assistance to eligible fresh, healthy food retailers for the purposes of market planning and promotion efforts, as well as infrastructure and operational improvements designed to

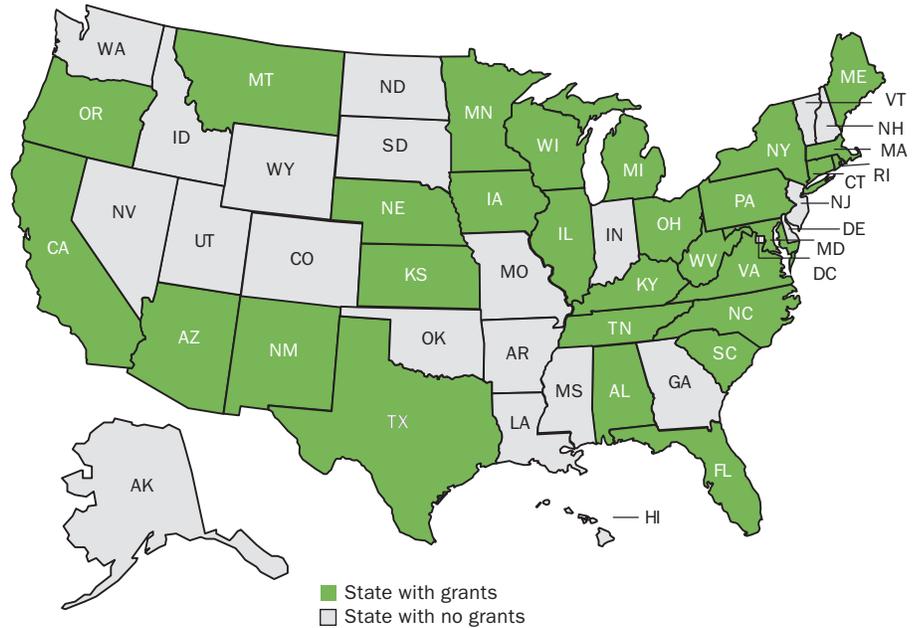
stimulate demand among low-income consumers for healthy foods and to increase the availability and accessibility of locally and regionally produced foods in underserved areas.

HHS awards competitive grants to Community Development Corporations to support projects that help finance grocery stores, farmers markets and other sources of fresh, nutritious foods. As of 2015, the Community Economic Development (CED)-HHFI programs have awarded more than \$44.5 million in grants to help support the dual goal of improving access to healthy food while helping to create jobs and business opportunities in low-income communities.

Through Treasury, the Community Development Financial Institutions (CDFI) Fund provides flexible financial assistance and specialized training and technical assistance to CDFIs (to support investments in low-income communities) that invest in businesses that provide healthy food options. Since 2011, the federal CDFI Fund has awarded \$90 million via 44 HFFI financial assistance awards in 29 states. These funds have leveraged more than \$1 billion in grants, loans, federal tax incentives and investments to finance projects to eliminate food deserts.⁴⁴⁶ HFFI-projects have created or retained 2,500 jobs.

In the first two rounds of HFFI, 23 CDFIs received awards over a three-year period and made 99 loans totaling \$43.5 million to 114 healthy food projects in low-income, low-access food deserts.⁴⁴⁷ These loans created more than 899,000 square feet of new space for 64 retail outlets ranging from small green grocers to large supermarkets,

Healthy Food Financing Initiative: Grants Distributed from 2011 to 2015 by State



Source: HHS, Office of Community Services

and also developed more than 1.12 million square feet of space for farming activities, food distribution centers and other non-retail healthy food projects.

Treasury also administers the New Markets Tax Credit Program, which encourages investments in low-income communities by allowing individual and corporate investors to receive a tax credit against their federal income tax in exchange for making equity investments in financial intermediaries called Community Development Entities (CDEs).^{448, 449} Since the NMTC program was created in 2000, it has distributed more than \$40 billion in federal tax credits. The NMTC program helped finance 49 supermarket and grocery store projects between 2003 and 2010 that improved healthy food access in low-income communities for more than 345,000 people, including 197,000 children.⁴⁵⁰

Local Food, Local Places is a federal initiative that provides technical support and expertise to rural communities to develop comprehensive strategies and strengthen local food systems and economies.⁴⁵¹ Six federal agency partners — USDA, EPA, DOT, CDC, Appalachian Regional Commission and Delta Regional Authority — selected 26 regions in 14 states — Alabama, Arizona, Arkansas, California, Kentucky, Louisiana, Maine, Mississippi, Missouri, New York, North Carolina, Oklahoma, Ohio and Pennsylvania — to develop specific projects and implement action plans to promote local foods and businesses, create permanent grocery stores and revitalize communities and underused land.⁴⁵² The intent is for communities to be able to diversify their local economies, while building sustainable communities and expanding accessibility to healthy foods.

THE MICHIGAN GOOD FOOD FUND⁴⁵³

Source: The Food Trust, PolicyLink and Reinvestment Fund

In 2015, the Michigan Good Food Fund (MGFF) — a statewide public-private healthy food financing program — was launched to increase access to healthy food, spur economic development and create jobs. Managed by Capital Impact Partners (CIP), a nonprofit CDFI that has been overseeing a California FreshWorks fund since 2011, MGFF will expand access to healthy food for Michigan residents in

underserved areas by providing loans and business assistance to support projects across the state's food value chain, including production, processing, aggregation, distribution and retail projects. Other core partners of the fund include Fair Food Network and the Michigan State University Center for Regional Food Systems. The MDFF is supported with a \$3 million federal grant from the federal HFFI as well as

further financial support from the W.K. Kellogg Foundation, the Kresge Foundation, and the Max M. & Marjorie S. Fisher Foundation. MGFF partners are implementing the program with a focus on promoting equitable access to food jobs, business ownership, and flexible capital; sustainable environmental practices; and locally grown and regionally produced foods.

ILLINOIS FRESH FOOD FUND⁴⁵⁴

Source: The Food Trust, PolicyLink and Reinvestment Fund

In 2007, the Illinois Food Marketing Task Force, convened by Voices for Illinois Children, the Illinois Retail Merchants Association, the Illinois Food Retailers Association, and The Food Trust, met to develop recommendations to overcome the barriers to supermarket and other fresh food retail access that plagues many communities throughout the state. This effort gave way to the Illinois Fresh Food (IFF) Fund, a statewide grocery financing program designed to increase access to healthy foods in underserved communities in Illinois. This new program was one of

the 10 policy recommendations put forth by the Task Force.

Governor Pat Quinn announced the launch of the new fund in 2012. The state is working with IFF, a CDFI, to administer the program and provide initial funding for the initiative in the form of a \$10-million grant. An additional \$3 million in funding has been secured by IFF through the federal Healthy Food Financing Initiative.

In addition to healthy food retail, the program supports community engagement programs, including

efforts to improve nutrition education. The program is modeled after the Pennsylvania Fresh Food Financing Initiative, the New York Healthy Food and Healthy Communities Fund and similar programs across the country. This new program will bring more grocery stores that sell fresh produce to underserved communities across Illinois, which improves health and wellness while also stimulating local economies and creating jobs. For more information, go to the Illinois Fresh Food Fund, <http://www.iff.org/>.

ADDITIONAL EXAMPLES OF FOOD FUNDS:

- The California FreshWorks Fund has raised \$272 million to bring grocery stores, fresh produce markets and other healthy food retail stores to communities that do not have them.⁴⁵⁵
- In New Orleans, the City Council prioritized healthy food retail as a rebuilding strategy after Hurricane Katrina, creating the Fresh Food Retailer Initiative to provide direct financial assistance to retail businesses by awarding forgivable and/

or low-interest loans to supermarkets and other fresh food retailers.^{456, 457}

- The Circle Foods store — the first Black owned grocery store in New Orleans, which was originally opened in 1939 and was destroyed by Hurricane Katrina — reopened in 2014 with the help of such assistance.
- The Pennsylvania Fresh Food Financing Initiative (FFFI), since 2004, has financed

supermarkets and other fresh food outlets in 78 urban and rural areas serving 500,000 residents.⁴⁵⁸ FFFI has also created or retained 4,860 jobs in underserved neighborhoods. Home values near new grocery stores have increased from 4 percent to 7 percent, and local tax revenues also have increased.⁴⁵⁹

Implementation of Restaurant Menu Labeling Requirements

In April 2016, FDA published final guidance to accompany menu labeling requirements.⁴⁶⁰ All chain restaurants (with 20 or more locations) and similar food establishments — including bakeries, grocery stores, convenience stores and coffee chains — will be required to clearly post the calorie count for each standard item on their menus. The requirements were

mandated by the ACA and will take effect in May 2017.

Other nutrition information — such as calories from fat, total fat, saturated fat, trans fat, cholesterol, sodium, total carbohydrates, fiber, sugars and protein — will be required to be made available in writing upon consumer request. Vending machines will be required to post nutrition information in a “direct, accessible, and

consistent manner” so that consumers can see it clearly before purchasing items.

Some market research has shown that menu labeling may impact the decisions of some segments of the population more than others; for instance, it may have a greater effect on women than men, on higher-calorie items and among certain types of restaurant chains.

Revised Nutrition Facts Label Information

In May 2016, FDA published a final rule establishing changes to the Nutrition and Supplement Facts Label.⁴⁶¹ The new nutrition label, scheduled to take effect on most products in 2018, will include visual information for consumers alongside changes, including:

- Changes in serving sizes as determined via separate FDA rulemaking based on changes in how much people tend to eat certain foods at one time;
- A requirement that products list added sugar in grams and as a percent daily value, that shows what percent of the daily recommended maximum of added sugar is provided by one serving of the product;
- Changes in the specific vitamins and minerals required based on changes in dietary recommendations and trends; and
- Additional changes to make it easier to read, such as larger font

NEW LABEL / WHAT'S DIFFERENT

Servings: larger, bolder type

New: added sugars

Change in nutrients required

Serving sizes updated

Calories: larger type

Updated daily values

Actual amounts declared

New footnote

Source: FDA

type, and adjusting the serving/ portions to full package labeling or dual size labeling (portion versus entire package) to better match what people may be consuming.

The final rule represents the first comprehensive update to the nutrition label in over two decades.

FOOD SERVING SIZES GET A REALITY CHECK

Serving Size Changes

What's considered a single serving has changed in the decades since the original nutrition label was created. So now serving sizes will be more realistic to reflect how much people typically eat at one time.

CURRENT SERVING SIZE

NEW SERVING SIZE

Packaging Affects Servings

Package size affects how much people eat and drink. So now, for example, both 12 and 20 ounce bottles will equal 1 serving, since people typically drink both sizes in one sitting.

Source: FDA

Revised Dietary Guidelines for Americans

In 2015, HHS and USDA jointly released the 8th edition of the Dietary Guidelines for Americans (DGA).⁴⁶² Guidelines are revised every 5 years to reflect the latest assessments of nutrition science. The 2015-2020 edition emphasizes the idea that Americans should shift food choices toward more nutrient-dense foods and beverages in place of less healthy choices. Most federal food programs are required by law to have nutrition standards that meet the DGA, including CACFP, National School Lunch Program, School Breakfast Program, Smart Snacks and WIC. The 2020 version will include the first guidelines for children under the age of 2. The guidelines also highlight the importance of all sectors play in helping Americans meet healthy eating and physical activity recommendations.



Source: USDA

- 1 Follow a healthy eating pattern across the lifespan.** All food and beverage choices matter. Choose a healthy eating pattern at an appropriate calorie level to help achieve and maintain a healthy body weight, support nutrient adequacy, and reduce the risk of chronic disease.
- 2 Focus on variety, nutrient density, and amount.** To meet nutrient needs within calorie limits, choose a variety of nutrient-dense foods across and within all food groups in recommended amounts.
- 3 Limit calories from added sugars and saturated fats and reduce sodium intake.** Consume an eating pattern low in added sugars, saturated fats, and sodium. Cut back on foods and beverages higher in these components to amounts that fit within healthy eating patterns.
- 4 Shift to healthier food and beverage choices.** Choose nutrient-dense foods and beverages across and within all food groups in place of less healthy choices. Consider cultural and personal preferences to make these shifts easier to accomplish and maintain.
- 5 Support healthy eating patterns for all.** Everyone has a role in helping to create and support healthy eating patterns in multiple settings nationwide, from home to school to work to communities.

Follow a healthy eating pattern over time to help support a healthy body weight and reduce the risk of chronic disease.

A healthy eating pattern includes:

Fruits

Vegetables

Protein

Dairy

Grains

Oils

A healthy eating pattern limits:

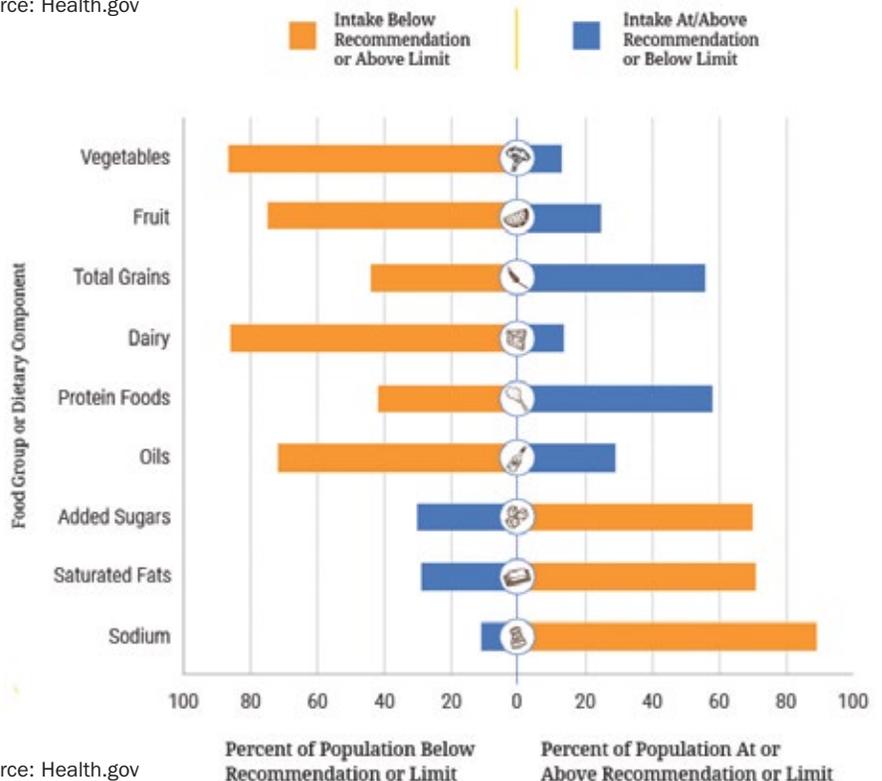
Saturated fats and trans fats

Added sugars

Sodium

Choose a variety of nutrient-dense foods

Source: Health.gov



Source: Health.gov

DoD's Operation Live Well (OLW) and Healthy Base Initiative (HBI)

Nearly one in three young men and women are ineligible to serve in the armed forces due to being overweight or obese.⁴⁶³ In 2011, more than 12 percent of active duty service members were obese, a 61 percent increase from 2002. Obese service members are more likely to be injured compared to healthy weight members. Unfit or overweight service members are dismissed, costing more money to screen and train replacements.

DoD's Operation Live Well is a strategic approach to create more ready, resilient and healthier armed forces and military communities.⁴⁶⁴ OLW brings together the resources and capabilities of local military communities, including commanders; health and medical experts; commissaries and dining facilities; education resources; places of worship; and morale, welfare and recreation programs.

OLW is DoD's long-term initiative to improve the health and wellness of the more than 10 million members of the U.S. defense community, including service members and their families, retirees and DoD civilians.

The initiative includes demonstration projects such as the Healthy Base Initiative (HBI), which is being implemented at 14 DoD sites worldwide. Action plans for HBI are based on assessments completed at the selected installations. HBI aims to identify best-practice efforts in reducing obesity and tobacco use, while improving fitness, readiness and resilience. In a survey of more than 600 employees at one of the HBI sites (the Defense Logistics Agency (DLA)), 93 percent of employees said the initiative is helping change their behaviors, including eating habits and physical activity, while 83 percent used the farmers' market(s) and 65 percent participated in the stairwells program.⁴⁶⁵

There is also continued support for the DoD school systems to launch initiatives to serve healthier meals to children. For example, Fort Campbell Army Base is a Department of Defense Education Activity school district of nine schools with 4,700 students that participates in the National School Lunch Program.⁴⁶⁶ With the help of registered dietitians, schools developed and implemented nutrition goals, launched farm-to-school programs and trained food service workers on nutrition standards.



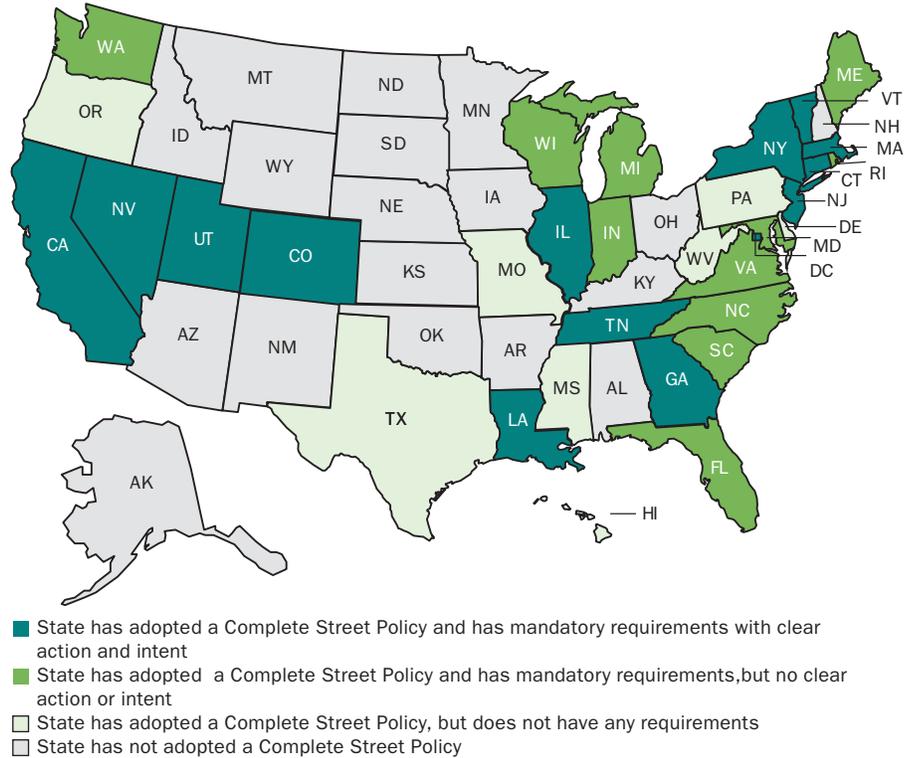
Glynis Jones / Shutterstock.com

Among the Making Strides indicators, state Complete Streets policies varied significantly.

- Thirteen states and Washington, D.C. included mandatory requirements for clear actions that demonstrate the state’s intent to meet a range of needs — to improve “active living” options balanced with ongoing other transportation and community development needs, such as by making walking, biking and public transportation options more available and convenient while also addressing car community concerns;
- Eleven states had mandatory requirements but did not have clear action or intent;
- Eight states did not have mandatory requirements; and
- Eighteen states had not adopted a policy.⁴⁶⁹

Local governments can implement strategies to promote physical activity such as zoning to support parks and recreation facilities and trails, green spaces, sidewalks and housing and retail development.

Complete Street Policies and Intent for Action by State



Source: Safe Routes to School National Partnership



Nutrition Assistance and Education Programs

More than 15 percent of Americans (46 million) are enrolled in the Supplemental Nutrition Assistance Program, with nearly 70 percent of recipients in families with children.^{471, 472} Young children and mothers with SNAP benefits are less likely to be overweight or in poor or fair health.^{473, 474, 475}

In addition to providing funds to help families buy food, SNAP programs support a number of strategies to foster healthy food choices.

More than 3,000 farmers' markets across the country accept SNAP benefit payments — EBTs SNAP programs

often make free processing equipment available to merchants, and/or through manual vouchers.

All 50 states, Washington, D.C. and U.S. territories participate in SNAP-Ed, a grant program that provides resources to states to manage evidence-based nutrition education programs and policy, environmental and systems changes to help SNAP participants have access to, understand the importance of and select healthy foods with their SNAP benefits and to be physically active. More than \$408 million was allocated in FY 2016 for state SNAP-Ed programs.⁴⁷⁶

Virginia Cooperative Extension

Virginia SNAP-ED Works

Supplemental Nutrition Assistance Program Education

Every \$1 spent on quality nutrition education saves as much as \$10 in long-term healthcare costs.

THE CHALLENGE



THE SNAP-ED SOLUTION

- TEACH families how to buy and prepare healthy foods
 - HELP families stretch tight budgets and buy nutritious options
 - CREATE a culture of health
- SUPPORT farmers markets to establish Electronic Benefits Transfer (EBT) and matching programs for SNAP participants

THE RESULTS

SNAP-Ed Works for Virginians

- 85% of families buy and prepare MORE HEALTHY FOODS
- FEWER FAMILIES go hungry
- Nutritious foods BECOME AFFORDABLE AND ACCESSIBLE, such as at Farmers Markets
- More Farmers Markets with SNAP EBT STRENGTHEN LOCAL ECONOMIES

In 2015, Virginia SNAP-Ed reached **81,987** limited resource children and **24,210** adults throughout the commonwealth.

For further information and resources go to www.move-more.ext.vt.edu

Funded by the USDA Food and Nutrition Service and Virginia Department of Social Services.

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VT18SNAP-ED-2016P

*18 USC 702



Source: Virginia Cooperative Extension

OHIO STATE UNIVERSITY EXTENSION

SNAP-ED WORKS

SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM EDUCATION

Every \$1 spent on nutrition education saves as much as \$10 in long-term health care costs

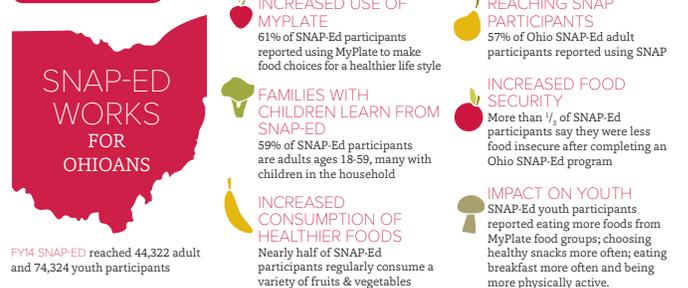
THE CHALLENGE



THE SNAP-ED SOLUTION

- INTRODUCE school kids to new fruits and vegetables through workshops, classes, and school gardens
- TEACH SNAP families how to buy and prepare healthy foods
- HELP low-income families stretch tight budgets and buy healthy options

THE RESULTS



FY14 SNAP-ED reached 44,322 adult and 74,324 youth participants

THE OHIO STATE UNIVERSITY

COLLEGE OF EDUCATION AND HUMAN ECOLOGY
COLLEGE OF FOOD, AGRICULTURAL, AND ENVIRONMENTAL SCIENCES

Source: Ohio State University Extension

WHOLESOME WAVE DOUBLE VALUE COUPON PROGRAM⁴⁷⁷

Wholesome Wave, a 501(c)(3) nonprofit dedicated to making healthy, locally and regionally grown food affordable to all, launched the Double Value Coupon Program (DVCP) in 2008. The program provides customers with a monetary incentive to spend federal nutrition benefits at participating farmers' markets. The program encompasses a network of more than 110 nutrition incentive programs operated at around 730 farmers' markets in at least 40 states and Washington, D.C. The incentive matches the amount spent and can be used to purchase healthy, fresh, locally grown fruits and vegetables.

The program reaches more than 150,000 participants and their families. Wholesome Wave collaborates with underserved communities, nonprofits, farmers, farmers' markets, healthcare providers and government entities to form networks that improve health, increase fruit and vegetable consumption and generate revenue for small and mid-sized farms. In 2015, Wholesome

Wave received a \$31.5 million federal Food Insecurity Nutrition Incentive (FINI) grant to help expand its network.⁴⁷⁸

- In 2013, federal nutrition benefits and private sector DVCP incentives accounted for \$2.45 million in sales at farmers' markets.⁴⁷⁹
- Communities also see an increase in economic activity. The \$2.45 million spent at local farmers' markets creates a significant ripple effect. In addition to the dollars spent at markets, almost one-third of DVCP consumers said they planned to spend an average of nearly \$30 at nearby businesses on market day, for a total of more than \$1 million.
- Wholesome Wave's 2012 Diet and Behavior Shopping Study indicated 90 percent of DVCP consumers increased or greatly increased their consumption of fresh fruit and vegetables, a behavior change that hopefully continues year-round.

SEEDS OF HOPE⁴⁸⁰

Seeds of Hope, a ministry of the Episcopal Diocese of Los Angeles that began in 2014, works with communities, congregations and schools to create gardens and orchards out of unused land to provide healthy foods to those in need.

The program started with a simple idea: many churches and communities have lots of land and there are also a lot of people that need access to healthy foods. The goal was to transform available lands into food-producers. Eight staffers, funded by grants—including from SNAP-Ed—help develop or expand gardens and provide health and nutrition classes.

Staff provide practical and technical support to help create and sustain gardens and can offer and marshal resources—raw materials (plants/trees) and volunteer crews—to aid in planting, tending, harvesting, packing and delivering food.

The initiative seeks to create and sustain gardens and healthy nutrition programs throughout the diocese and further promote physical activity. By coordinating a diocese-wide approach and increasing food production and distribution, Seeds of Hope benefits the hungry and undernourished.

Through Seeds of Hope-sponsored workshops and nutrition education, more congregations and their communities are eating healthier. In total, Seeds of Hope has started community-gardens and farms for more than 30 organizations, which in turn increases access to healthy foods among low-income community residents.

For instance, in Echo Park in Los Angeles, the Cathedral of St. Paul worked with Seeds of Hope to turn an empty lot into a parish garden. At the St. Andrew's Church in Fullerton, parishioner and landscape architect, Mark Rios, designed a garden for free using land and donated boats, which parishioners and Cal State Fullerton agriculture students tend to and the harvest, is donated to local food banks. At St. Luke's Church in Long Beach, which is located in a food desert and does not have much land, they created rolling gardens on beds of wheels, so they could be mobile to help the plants flourish but also move them out of the way when needed. Seeds of Hope helped bring knowledge, materials and interns to help with the project. In the first few months of the project, St. Luke's grew enough Swiss chard and red lettuce to supplement a biweekly meal plan for the homeless and has helped engage parishioners in larger exercise and nutrition classes.

DINE FOR LIFE⁴⁸¹

Dine for Life (DINE), created by the Durham County (North Carolina) Department of Public Health and supported by SNAP-Ed and local funding, is a school- and community-based nutrition education program that works with SNAP-eligible families and children to help foster healthy behaviors.

DINE provides nutrition education in elementary and middle schools, in child care settings and through healthy shopping initiatives. The program provides curriculum lessons based on the dietary guidelines and MyPlate,

cooking classes and nutritionists to help form Wellness Committees and provide support for students, families and staff. The healthy shopping initiative, DINE Healthy Environments Program, works with corner stores, grocery stores, farmers' markets and other mobile markets to increase access to healthy foods — to make healthier, affordable foods more available and accepting “double bucks” for SNAP benefits and Farmers Market Nutrition Program (FMNP) “coupons” to WIC participants.

GARDEN KITCHEN⁴⁸²

Garden Kitchen, a partnership between the City of South Tucson, Pima County, the University of Arizona College of Agriculture and Life Science and the Pima County Cooperative Extension, started as a nutrition education program.

But it quickly grew into a community program that incorporates food demonstrations, gardening classes, physical activity events and provides numerous resources to help communities and families get active and eat healthy. Known as a “seed-to-table” nutrition education program, Garden Kitchen gives families information on how to make healthy meals last on a budget.

The program hosts interactive classes intended to motivate families to cook healthy meals. In addition, Garden Kitchen provides detailed resources and how-to's for growing your own food, including in-depth PDFs that provide information on gardening across the seasons in Arizona.

Lastly, Garden Kitchen hosts family-friendly physical activity and healthy eating events on the first Saturday of every month along with many other community events. In addition, Garden Kitchen has created an EPIC (Encourage-Practice-Inspire-Change) Activities Blog to get kids moving. The blog contains how-to's related to pedometer challenges, how to be active with chalk, scavenger hunts, dance, yoga and other activities.

State Government Workplace and Facilities — Nutrition Standards

State governments can establish policies and serve as a role model by setting nutrition standards for food that is sold in government office buildings and other state-run facilities.

As an indicator in their Prevention Status Reports, CDC reviewed nutrition standards that states set for food and beverages sold on properties or facilities owned, leased or operated by the state executive branch (addressing fruits, vegetables, whole grains, water, added sugars, sodium, trans fat, saturated fat and calories/portion sizes.)⁴⁸³ Only the state of Washington and Washington, D.C. provided and referenced quantifiable nutrition standards and applied them to two or more food service venues on state executive branch property (green rating); only two states (California and Tennessee) met the standard for a single food service venue (yellow rating); and 47 states received a red rating for not achieving the standards.

The Public Health Law Center, on behalf of the Voices for Healthy Kids, reviewed state policies (statutes, regulations, executive orders) that set nutritional standards for state-level food and beverage procurement for 1) vending machines on state property, 2) agency food service facilities, and 3) state institutional feeding programs. Procurement policies were also compared with AHA VFHK's bottom line policies.

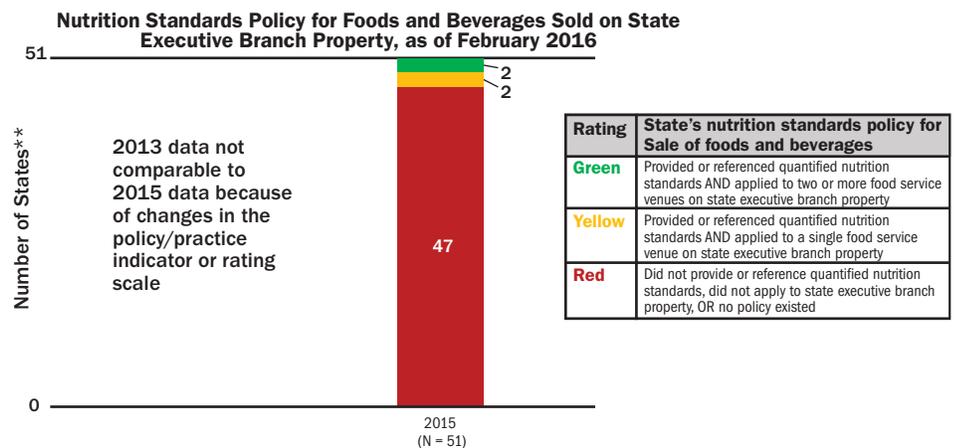
The review found that only five states have the authority to implement

regulations to support healthy food procurement (Connecticut, Delaware, Kentucky, New York and Oklahoma), only one state (Washington) and Washington, D.C. require specific nutritional standards for all three procurement levels and no state currently met all of AHA VFHK's bottom lines.

Some states have nutritional food standards relating to a specific state agency/department or population in a specific setting. Mississippi, for example, has a statute covering vending machines and food services facilities that recommends purchasing healthy food choices for snack bars, vending machines and state-run cafeterias located in state buildings, but does not require any specific nutritional standards. Washington state, on the other hand, has required nutritional

standards for food sold or provided to state employees through vending machines, cafeterias and at meetings or events, but it only applies to executive agencies and executive properties.

Colorado, Connecticut, Iowa and Missouri have rules requiring state funded nutrition services for meals provided to the elderly to meet "daily Recommended Dietary Allowance (RDA) set by the Food and Nutrition Board of the National Research Council of the National Academy of Science"; Kentucky has a rule for snack meals served in residential child care facilities to meet USDA's nutritional guidelines; and Arkansas, California, New Jersey and Texas have rules requiring meals served at juvenile detention facilities to meet the USDA's dietary requirements.



Source: CDC, Prevention Status Report

SUGAR-SWEETENED BEVERAGES: CONSUMPTION AND IMPACT

• **Sugar-Sweetened Beverage Consumption:** According to the 2013 BRFSS from 23 states and Washington, D.C., 30 percent of adults drank SSBs at least once a day.⁴⁸⁵ Younger adults, males, Blacks and adults who have lower education and are unemployed were more likely to drink one or more SSBs per day.

U.S. soda consumption has declined from 10.2 billion cases in 2004 (at its peak) to 8.7 billion cases in 2015.⁴⁸⁶ Other SSBs, such as fruit drinks, energy drinks and waters with added sugars, have experienced some increases.

According to studies through the mid-2000s, 90 percent of children ages 6 to 11 drank at least one SSB daily, and they were the top calorie source for teens.^{487, 488} Children are estimated to consume 155 calories per day — 8 percent of their total daily energy intake — from SSBs. Although among preschoolers (ages 2 to 5), SSBs make up only 5 percent of their daily energy intake, the percent of daily energy intake from SSBs increases as children get older, doubling among teenagers to 10 percent of daily energy intake.⁴⁸⁹ [NHANES 1999-2010].

In the past ten years, among children ages 2 to 19 there has been a significant decrease of total calories from beverages — including SSBs, whole milk, fruits juices with added sugars and fruit flavored drinks — from 24.4 percent energy in 2001-2002 to 21.1 percent energy in 2009-2010.⁴⁹⁰ And, among preschoolers (ages 2 to 5), total caloric intake from beverages fell by 77 calories per day (from 432 calories per day in 2003-2004 to 355 calories per day in 2011-2012).⁴⁹¹ [NHANES 1999-2012] Preschoolers are drinking significantly less whole fat milk (from 166 calories per day in 2003-2004 to 124 calories per day in 2011-2012) and less SSBs (from 154 calories per day in 2003-2004 to 97 calories per day in 2011-2012) and drinking more reduced fat milk (from 18 calories per day in 2003-2004 to 31 calories per day in 2011-2012) and more low/no-calorie beverages (from 22 calories per day in 2003-2004 to 35 calories per day in 2011-2012).

• **Increased Health Risks Related to Sugar-Sweetened Beverage Consumption:** A number of studies have found that regular consumption of SSBs contributes to weight gain in



Source: American Heart Association

adults and children and is also a major contributor to obesity and type 2 diabetes.^{492, 493} A recent study found that children who consumed a large amount of SSBs (at least five servings per week) were almost 3.5 times more likely to be obese than those who never or almost never consumed sugar-sweetened beverages.⁴⁹⁴ Adults who drink a soda or more per day are 27 percent more likely to be overweight than those who do not drink sodas, regardless of income or ethnicity. They also have a 26 percent higher risk for developing type 2 diabetes and a 20 percent higher risk for a heart attack.^{495, 496, 497}

Local and State Taxing Policies

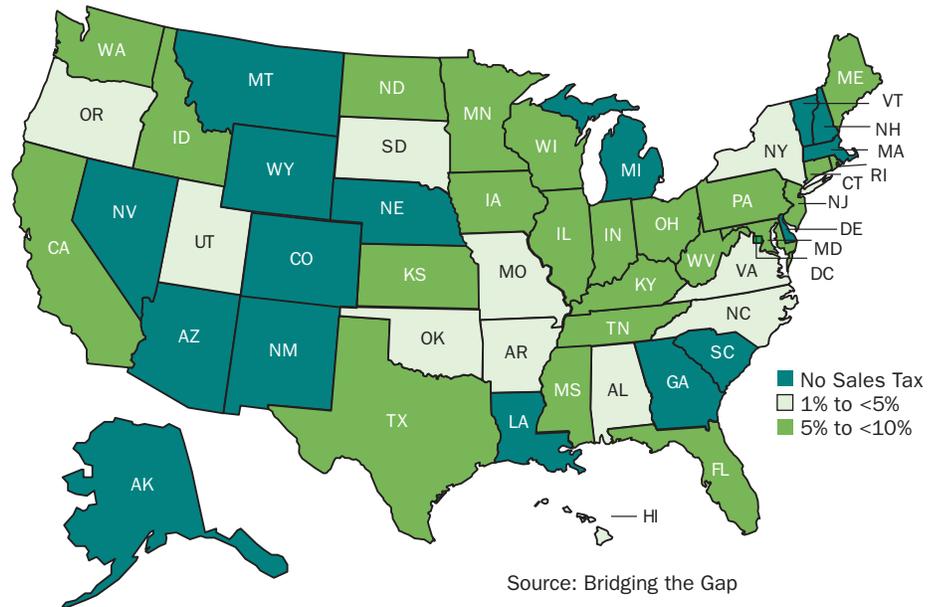
States and localities have the right to determine tax policies to meet their local interests. For instance, reviews by Bridging the Gap found that:

As of 2014, 34 states and Washington, D.C. charge a sales tax on soda sold at food stores: Alabama, Arkansas, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, West Virginia and Wisconsin.⁴⁹⁸

More than 30 communities have also proposed specific excise taxes on soda and other SSBs. In 2014, Berkeley, California became the first city to pass such a tax, with voters approving a penny-per-ounce tax on soda and other SSBs such as sports drinks and sweet teas, with proceeds to be used for nutrition and physical activity initiatives.^{499, 500} The Berkeley soda tax fund has already allocated \$1.5 million to programs aiming to reduce consumption of sodas and other SSBs, including \$637,5000 to school districts for cooking, gardening and nutrition programs; \$637,5000 to community-based agencies; and \$225,000 to the city Public Health Division to coordinate, evaluate and report on the programs.⁵⁰¹ In June 2016, Philadelphia was the next city to approve a tax on soda and other SSBs, 1.5 cents-per-ounce.⁵⁰² Funding will be used to boost pre-K education programs.

In November 2016, there will be a number of soda/SSB ballot tax initiatives. For instance, three cities in California are proposing a one-cent tax — San Francisco's soda tax will fund programs to reduce consumption of SSBs and Oakland's and Albany's soda tax intends to fund health programs.⁵⁰³ And, Boulder, Colorado is proposing a two-cent-tax per ounce directed to fund programs aimed at improving and promoting healthy nutrition and physical activity.⁵⁰⁴

Percent Sales Tax on Regular Soda in Food Stores by State, as of January 2014



A number of studies have shown that relative prices of foods and beverages can lead to changes in how much people consume them.^{505, 506, 507} Several studies have estimated that a 10 percent increase in the price of SSBs (including soft drinks and juices) could reduce consumption by 8 percent to 11 percent.^{508, 509, 510} As of 2012, the sales tax rate for every state that subjects soda to the tax is 7 percent or below, and it is 5 percent or lower in 14 states.⁵¹¹

Researchers at Yale University estimated that, if a national soda tax of a penny

per 12 ounces were instituted, it would generate \$1.5 billion a year, and the Congressional Budget Office estimated that a federal excise tax of three cents per 12 ounces of SSBs would have generated an estimated \$24 billion in revenue between 2009 and 2013.^{512, 513}

An SSB tax of one-peso-a-liter in Mexico has raised more than \$2 billion since it was passed in 2014, and consumption dropped by six percent among the general population and 9 percent among low-income households.⁵¹⁴

PHILADELPHIA SUGAR-SWEETENED BEVERAGE TAX IN 2016

In June 2016, the Philadelphia City Council approved a 1.5 cent-per-ounce tax on sugar-sweetened and diet beverages to support universal pre-K and community schools and renovations of neighborhood parks, recreation centers and libraries. The Council also adopted a tax credit for businesses that sell healthy beverages. The tax includes regular sodas, diet sodas, sports drinks, energy drinks and other nonalcoholic beverages with added

sweeteners. It goes into effect in January 2017 and is expected to raise around \$91 million annually. Opponents of the measure expressed concern about loss of jobs to bottlers, distributors and other workers and a regressive impact on low-income families.^{515, 516} According to the Wall Street Journal, the beverage industry has spent more than \$100 million since 2009 to defeat similar initiatives in more than two dozen cities and states.⁵¹⁷

D. HEALTH, HEALTHCARE AND OBESITY

Access to affordable, quality healthcare is important for maintaining good health. Doctors and other healthcare providers can provide guidance around nutrition and physical activity for patients, screen patients who are at risk for or who have developed obesity or obesity-related illnesses and provide counseling and support for ongoing care.

New models are also emerging to encourage and incentivize increased connection between doctor's care and support and services for people's daily lives.

Key policies highlighted in this section include:

- **Healthcare Coverage**
- **Healthcare — Screening and Encouraging Healthy Practices and Connecting to Supportive Services**
- **Hospitals Supporting Local Health Improvement Efforts: Including through Nonprofit Community Benefit Programs**

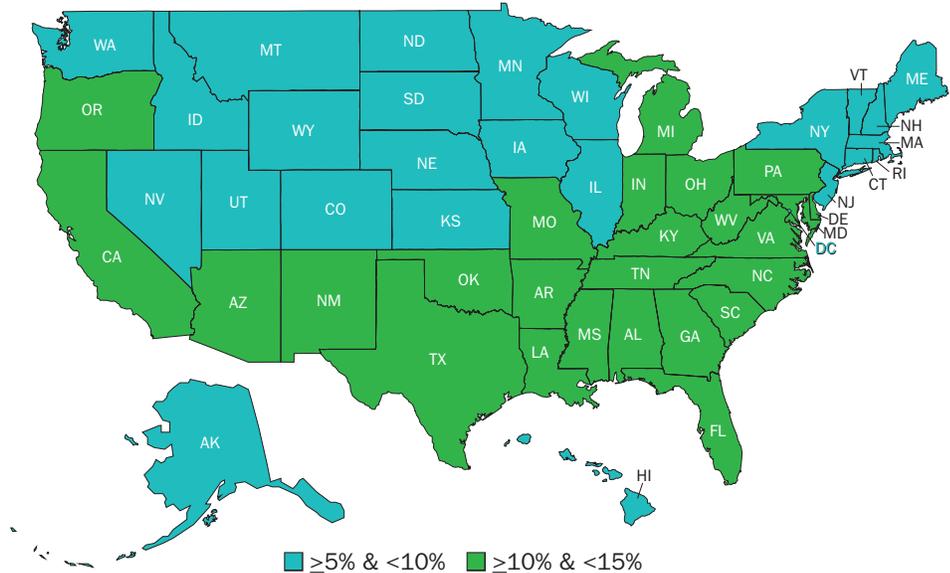


MAJOR OBESITY-RELATED HEALTH CONCERNS

- **TYPE 2 DIABETES:** Mississippi has the highest rate of diabetes at 14.7 percent. 10 of the 12 states with the highest type 2 diabetes rates are in the South.
- Diabetes rates have nearly doubled in the past 20 years — from 5.5 percent (1994) to 9.3 percent in 2012.^{518, 519}
- More than 29 million American adults have diabetes and another 86 million have prediabetes.⁵²⁰ The CDC projects that one-in-three adults could have diabetes by 2050.⁵²¹
- More than one-quarter of seniors (ages 65 and older) have diabetes (25.9 percent or 11 million seniors).
- Diabetes is the seventh leading cause of death in the United States, accounting for around \$245 billion in medical costs and lost productivity each year.⁵²² Average medical expenditures are around 2.3 times higher among people with diagnosed diabetes than what expenditures would be absent diabetes.
- More than 80 percent of people with diabetes are overweight or obese.
- Approximately 208,000 children and young adults (ages 2 to 20) have diabetes and two million teens (ages 12 to 19) have prediabetes.^{523, 524} Rates of type 2 diabetes among children and youth (ages 0 to 19) have increased by more than 30 percent since 2001.⁵²⁵

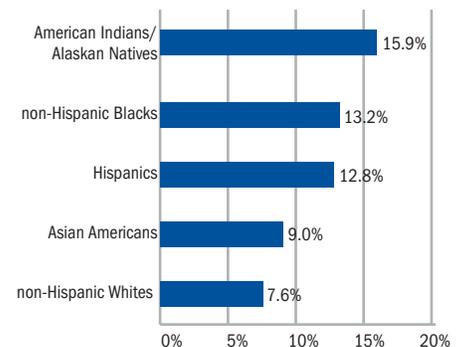
PERCENTAGE OF ADULTS WITH DIABETES BY STATE, 2015 BRFSS

An interactive map and timeline of these data are available at stateofobesity.org



- Diabetes rates are higher among American Indians/Alaska Natives (15.9 percent), Blacks (13.2 percent) and Latinos (12.8 percent) than Asians (9.0 percent) and Whites (7.6 percent).⁵²⁶
- Among Asian-Americans, rates are 12.0 percent for Asian Indians, 11.3 percent for Filipinos, 4.4 percent for Chinese and 8.8 percent for other Asians.
- Among Latinos, rates are 14.8 percent for Puerto Ricans, 13.9 percent for Mexican-Americans, 9.3 percent for Cuban-Americans and 8.5 percent for Central- and South-Americans.

Rates of Diagnosed Diabetes



Source: American Diabetes Association, 2012 data

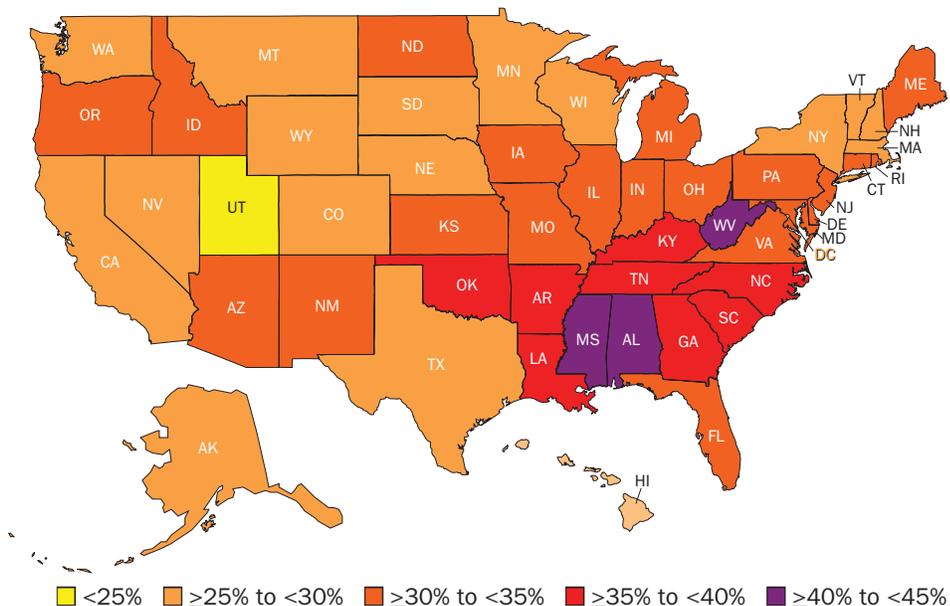
● **HEART DISEASE AND**

HYPERTENSION: The 10 states with the highest rates of hypertension are in the South. West Virginia has the highest rate at 42.7 percent.

- One in four Americans has some form of cardiovascular disease. Heart disease is the leading cause of death in the United States — responsible for one in three deaths.^{527, 528}
- At least one out of every five teens has abnormally high cholesterol, a major risk factor for heart disease; among obese teens, 43 percent have abnormally high cholesterol.⁵²⁹
- One in three adults has high blood pressure, a leading cause of stroke.⁵³⁰ Approximately 30 percent of hypertension cases may be attributable to obesity, and the figure may be as high as 60 percent in men under age 45.⁵³¹
- People who are overweight are more likely to have high blood pressure, high levels of blood fats and high LDL (bad cholesterol), which are all risk factors for heart disease and stroke.⁵³²
- Deaths from heart disease and stroke are almost twice as high among Blacks as among Whites.
- Latinos are more likely to suffer a stroke than are other ethnic groups. Specifically, Mexican Americans are 43 percent more likely to have a stroke — the leading cause of disability and the third-leading cause of death — than Whites.⁵³⁴

PERCENTAGE OF ADULTS WITH HYPERTENSION, 2015 BRFSS

An interactive map and timeline of these data are available at stateofobesity.org



- **CANCER:** Up to 40 percent of some forms of cancers are attributable to obesity.⁵³⁵ Approximately 20 percent of cancer deaths in women and 15 percent of cancer deaths in men are attributable to overweight and obesity.⁵³⁶
- A recent review published in the Journal of the American Medical Association found that adults who exercised the most decreased their risk of having 13 types of cancer — 42 percent less risk of esophageal cancer; 20 percent or more less risk of liver, lung, kidney, stomach, endometrial or myeloid leukemia cancer; and 10 percent to 17 percent less risk of myeloma, colon, head and neck, rectal, bladder or breast cancer.⁵³⁷ Overall, adults who exercised more lowered their risk of total cancers by 7 percent compared to those who exercised less.

- **ARTHRITIS:** Almost 70 percent of individuals diagnosed with arthritis are overweight or obese.⁵³⁸
- **NON-ALCOHOLIC FATTY LIVER DISEASE:** Up to 25 percent of adults have nonalcoholic fatty liver disease (NFLD), which can lead to liver damage (cirrhosis) or the need for transplants.⁵³⁹
- **KIDNEY DISEASE:** An estimated 24.2 percent of kidney disease cases among men and 33.9 percent of cases among women are related to being overweight or obese.⁵⁴⁰
- **ALZHEIMER'S/DEMENTIA:** Both overweight and obesity at midlife independently increase the risk of dementia, Alzheimer's disease and vascular dementia.^{541, 542}

● **MENTAL HEALTH:** Studies have shown an association between anxiety and obesity.^{543, 544, 545} The direction of the association can seem to be related to both cause and effect. Obese adults are more likely to have depression, anxiety and other mental health

conditions.^{546, 547, 548} One study of women ages 40 to 65 found that one-quarter of obese women had moderate to severe depression — with rates 4 times greater than non-obese and non-overweight women.⁵⁴⁹

HEALTHCARE COSTS

Obesity is one of the biggest drivers of preventable chronic diseases and healthcare costs in the United States. Reducing obesity, improving nutrition and increasing physical activity can help lower costs through fewer doctor’s office visits, tests, prescription drugs, sick days, emergency room visits and admissions to the hospital and lower the risk for a wide range of diseases.

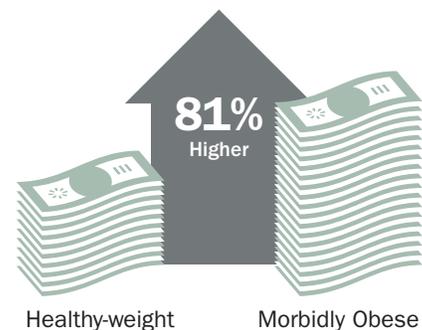
Currently, estimates for these costs range from \$147 billion to nearly \$210 billion per year.⁵⁵⁰ In addition, obesity is associated with job absenteeism, costing approximately \$4.3 billion annually⁵⁵¹ and with lower productivity while at work, costing employers \$506 per obese worker per year.⁵⁵²

Medicaid and Medicare pay for more than half of the nation’s obesity-related healthcare costs.⁵⁵³ Eleven percent of U.S. adult Medicaid expenditures are spent on treating obesity-related medical conditions.

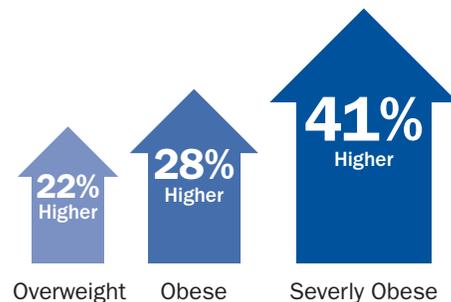
As a person’s BMI increases, so do the number of sick days, medical claims and healthcare costs.⁵⁵⁴ For instance:

- Obese adults spend 42 percent more on direct healthcare costs than adults who are at a healthy weight.⁵⁵⁵
- Per capita healthcare costs for severely or morbidly obese adults (BMI >40) are 81 percent higher than for healthy weight adults.⁵⁵⁶ In 2000, around \$11 billion was spent on medical expenditures for morbidly obese U.S. adults.
- Moderately obese (BMI between 30 and 35) individuals are more than twice as likely as healthy weight individuals to be prescribed prescription pharmaceuticals to manage medical conditions.⁵⁵⁷
- Costs for patients presenting at emergency rooms with chest pains are 41 percent higher for severely obese patients, 28 percent higher for obese patients and 22 percent higher for overweight patients than for healthy-weight patients.⁵⁵⁸

Difference in Direct Healthcare Costs for a Morbidly Obese adult Compared with a Healthy-weight Adult



Difference in Emergency Room Costs for Patients Presenting With Chest Pains Compared with a Healthy-weight Patient



Healthcare Coverage

Most private healthcare plans, Medicaid expansion plans and Medicare are required to cover a set of evidence-based preventive healthcare services, including no-cost screening and counseling for obesity. In particular, clinical services that meet United States Preventive Services Task Force (USPSTF) Grade B recommendations, or higher, are required to be covered at no additional cost.

Some emerging healthcare models — like Patient-Centered Medical Homes and Accountable Care Organizations (ACOs) — groups of healthcare providers who bear risk and prioritize coordinated care and quality to achieve improved health for their patients and reduce costs — are increasingly incentivized to focus on preventing obesity and related illnesses to help keep the pool of patients they cover healthier.⁵⁵⁹ This may include providing more doctor care and counseling for nutrition, physical activity and obesity, but also greater efforts to connect patients with community-based programs and support.

All state Medicaid and Children’s Health Insurance Programs are required to cover basic screening and services for children. This requirement is relevant to childhood obesity from a policy perspective since the USPSTF assigns a grade B recommendation to assessing BMI and referring those children with obesity to receive moderate to high intensity counseling — 26-75 hours of comprehensive weight management contact time in a 6 month period. Efforts are currently underway to determine how best to operationalize these recommendations for low-income children and their families, as in the Childhood Obesity Research Demonstration (CORD) Project. The initial CORD project (2011-2015) sought to test multi-sectoral and multi-level approaches to childhood obesity that

linked public health and healthcare.⁵⁶⁰ The second round of CORD funding (CORD 2.0; 2016-2018) will look more closely at developing healthcare delivery models that meet the USPSTF recommendations. HRSA also supports programs such as the Maternal and Child Health Block Grant, which increases the access, participation and quality of health services for children, particularly low-income children enrolled in Medicaid, and promotes healthy behavior as part of daily life.

Traditional Medicaid states can set their own policies for coverage for preventive obesity services for adults. CMS provides a one percentage point increase in the federal medical assistance percentage (FMAP) incentive for Medicaid states to provide coverage of adult preventive services recommended with an “A” or “B” rating by the U.S. Preventive Services Task Force — including obesity screening and counseling — to Americans enrolled in traditional Medicaid programs with no patient cost. Eight states have submitted applications to CMS to implement this enhanced match option. Adults covered through states participating in Medicaid expansion or who are insured through healthcare exchanges are eligible for “Preventive and Wellness Services and Chronic Disease Management” coverage — including obesity screening and counseling — with no co-payments.

While Medicare covers preventive services for seniors, a 2014 analysis by the STOP Obesity Alliance found that less than 1 percent of Medicare enrollees — 120,000 — have participated in obesity counseling since it became available in 2011.⁵⁶¹ Around 30 percent of seniors — more than 15 million Medicare enrollees — are obese and would be eligible for the benefit.

STATUS OF MEDICAID FEE-FOR-SERVICE TREATMENT OF OBESITY INTERVENTIONS

A 2016 review of obesity-related fee-for-service coverage by state Medicaid programs conducted by the George Washington University and the STOP Obesity Alliance found that:⁵⁶²

- **Prevention*:** Eight states cover all obesity-related preventive care services — via established medical fee billing called Current Procedural Terminology (CPT) codes. Twenty-one states and Washington, D.C. cover one or more obesity-related preventive care CPT codes. Nineteen states cover no obesity-related preventive care CPT codes and/or assert that obesity-related preventive care services are explicitly excluded in respective provider manuals.
- **Nutrition*:** 18 states and Washington, D.C. cover all obesity-related nutritional consult CPT codes. Twelve states cover one or more obesity-related nutritional consult CPT codes. Eighteen states cover no obesity-related nutritional consult CPT codes. Provider manuals indicated that while six states — Connecticut, Minnesota, New Mexico, South Dakota, Utah and West Virginia — may utilize nutrition CPT codes, they are not reimbursable for treating obesity. Provider manuals also indicated that four states — Georgia, Michigan, Nebraska and Vermont — do not utilize nutrition CPT codes but do reimburse for nutritional counseling.
- **Disease Management*:** Three states cover all obesity-related disease management CPT codes. Eleven states and Washington, D.C. cover one or more

obesity-related disease management CPT codes. Thirty-four states cover no obesity-related disease management CPT codes.

- **Behavioral Consultation*:** Sixteen states cover all obesity-related behavioral consultation CPT codes. Fifteen states and Washington, D.C. cover one or more obesity-related behavioral consult CPT codes. Seventeen states cover no obesity-related behavioral consult CPT codes.
- **Pharmaceuticals*:** Thirteen states cover obesity drugs. Of these, eight states have limited coverage (covers only lipase inhibitors) or require weight-loss benchmarks be met for continued coverage. Thirty-six states explicitly exclude all obesity drug coverage, with one state — Vermont — expressly citing safety concerns as justification for non-coverage.
- **Bariatric Surgery:** Forty-eight states and Washington, D.C. cover bariatric surgery. Of these states, 36 require prior authorization and 37 require criteria beyond BMI to determine eligibility. Two states — Montana and Mississippi— explicitly exclude bariatric surgery.

**Note: In some cases, coverage for Iowa, Kansas and/or Washington, D.C. was undetermined. Coverage for Tennessee was not assessed as the state's Medicaid population is entirely managed care.*

Healthcare — Screening and Encouraging Healthy Practices and Connecting to Supportive Services

A number of healthcare providers and hospital systems have developed programs and policies to help support healthy nutrition and physical activity inside and beyond the doctor's office — including by connecting patients to available supportive services. Some examples include:

- **Screening Patients for Food Insecurity and Linking to WIC and SNAP**

With one in seven Americans experiencing food insecurity — including 15 million children — doctors can play a role in helping screen children and adults for food insecurity and help connect them to food assistance resources, including federal nutrition programs like the SNAP, WIC and school lunch and breakfast programs.^{563, 564, 565}

The American Academy of Pediatrics has released a policy statement supporting the role of pediatricians in promoting food security for all children, through screening and connecting patients to resources as well as by promoting policies that support access to adequate healthy food.⁵⁶⁶

- **Fruit, Vegetable and Physical Activity “Prescriptions”**

Giving patients prescriptions to spend on fruits and vegetables or physical activity can help provide patients with information and encouragement to support healthy nutrition and increase physical activity.

For instance, the national Fruit and Vegetable Prescription (FVRx) Program includes a clinical visit to set nutrition goals and collect health indicators, along with prescriptions

that can be redeemed for fresh fruits and vegetables at participating retailers. Prescriptions must be refilled at monthly clinic visits, where new goals for healthy eating are set.⁵⁶⁷ More than 10,000 people have received FVRx prescriptions in rural and urban areas across 12 states, generating over \$500,000 in fruit and vegetable sales.⁵⁶⁸ During a four-month FVRx program in New York City, 80 percent of patients reported the program substantially increased how many fruits and vegetables their family eats, and 40 percent decreased their BMI.⁵⁶⁹

Prescribing physical activity — by suggesting the recommended amount of exercise and referring patients to certified trainers or exercise classes as needed — has also been shown to help increase activity levels. In a pilot program at four Kaiser Northern California centers, a physical activity prescription program was associated with weight loss in overweight patients and improved blood sugar control for diabetes patients.⁵⁷⁰

- **Healthy Food in Hospitals and Healthcare Settings — Policies for Procurement, Cafeterias and Vending Machines**

The healthcare sector spends \$12 billion annually on food and beverages. Changes in foodservice policies — what foods they purchase and make available to patients, staff and visitors — provides healthier options and helps model healthy choices.^{571, 572}

A national program, Healthy Food in Health Care Pledge, helps the healthcare system use its purchasing power and expertise to increase

access to healthy food and build a healthier food system, beginning with the food procured and served by hospitals. Changes made by hospitals include purchasing healthier beverages, increasing access to public drinking water, reducing meat options, purchasing meats raised without antibiotics and purchasing local and sustainably-grown produce.⁵⁷³ Hundreds of hospitals and Food Service Contractors have signed onto a Healthy Food in Health Care Pledge demonstrating their commitment to these and other strategies to provide local, nutritious and sustainable food.⁵⁷⁴

- **Using Electronic Health Records to Track Obesity Trends and Target Prevention Strategies and Support**

EHRs include timely, geographically specific and clinically valid health information — such as height, weight and other indicators of obesity — that can be used to better understand obesity trends and other health conditions in communities and within patient pools. EHR data is more accurate and specific than information collected via other methods like surveys, where data are self-reported and often lack detailed geographic information.^{575, 576}

For example, San Diego County developed a healthy weight surveillance system to collect height and weight data from EHRs, which provided accurate body mass index values to track the progress of local efforts to reduce obesity and to inform future efforts.⁵⁷⁷

EXAMPLES OF CMS OBESITY PREVENTION PILOTS AND PROGRAMS

● **Childhood Obesity Performance**

Improvement Projects: States implementing a Medicaid managed care program are mandated by the federal government to require health plans to complete performance improvement projects (PIPs).⁵⁷⁸ Thirteen states reported a combined total of 26 PIPs that targeted childhood obesity in 2014-2015. While specific interventions of each PIP varied across states and managed care organizations (MCOs), most of the programs included improving BMI percentile documentation, nutrition counseling and physical activity counseling. For instance, since 2008, all three MCOs in Georgia have operated improvement projects focused on reducing childhood obesity. The projects aim to improve performance on weight assessment and counseling measures, including increasing BMI percentile documentation, nutrition counseling and physical activity counseling for members ages 3 to 17. The MCOs focused on raising provider awareness of conducting and documenting weight assessment, counseling activities and face-to-face visits with health promotion coordinators.

● **Childhood Obesity Research**

Demonstration Project: An evaluation report is expected in 2016 of a Childhood Obesity Research Demonstration, a four-year project led by CDC targeted to children ages 2 to 12 in a set of communities with high numbers of children eligible for Medicaid or CHIP to integrate pediatric care with community prevention efforts.⁵⁷⁹

● Fifteen healthcare centers participated — including through provider

training, using electronic medical records, improving care coordination and developing educational materials and community resource lists. Community health workers provided patient education (including parenting practices and recipe planning) and helped link families to community resources such as physical activity options at local parks and YMCAs and referrals to WIC offices.

● Seventy-five schools and 60 early care and education centers participated through evidence-based programs, such as CATCH, SPARK, Eat Well Keep Moving and Planet Health. Grantees worked with school administrators, staff and other stakeholders, such as wellness committees and champions, to promote healthy eating and physical activity throughout the school day. These included improvements in school policies, systems and environments identified in CDC's School Health Guidelines as well as engaging children through media and social marketing campaigns to promote healthy behaviors.

● Interventions in the six communities in the program included activities, such as working with restaurants to provide healthier children's menu options and efforts in local parks and recreation centers to increase children's active participation in park programs. This included helping families connect with ongoing community childhood obesity prevention efforts and bolstering the work of community coalitions.

● Programs were used to support families with children who are overweight or obese — including through referrals to behavioral therapists, registered dietitians, nurses, doctors, community health workers or group education sessions.

EXAMPLES OF CMS OBESITY PREVENTION PILOTS AND PROGRAMS

• National Diabetes Prevention Program

(DPP): CDC leads the National Diabetes Prevention Program, an evidence-based program for preventing type 2 diabetes. More than 625 organizations offer the program nationally.⁵⁸⁰ The year-long program helps participants combine medical care with health educator coaches and group counseling sessions to support lifestyle changes, such as eating healthier, incorporating physical activity into their daily lives, adherence to medications and improving problem-solving and coping skills. Sessions are weekly for six months and then monthly for six months. Evidence shows DPP has cut participants' risk for developing type 2 diabetes by 58 percent.

CMS supports a DPP-demonstration program among 10,000 Medicare beneficiaries with prediabetes. The National Council of Young Men's Christian Associations of the United States of America (YMCA USA), local YMCA affiliates and the Diabetes Prevention and Control Alliance (a subsidiary of United Health Group) are working in 17 communities in eight states (Arizona, Delaware, Florida, Indiana, Minnesota, New York, Ohio and Texas) to examine the effectiveness of the program on improving health and reducing healthcare costs. The demonstration program runs through 2016.

NATIONAL
**DIABETES
PREVENTION
PROGRAM**

WORKING
TOGETHER
TO PREVENT
TYPE 2 DIABETES



THE GROWING THREAT OF PREDIABETES

Prediabetes is identified when your blood sugar level is higher than normal but not high enough yet to be diagnosed as type 2 diabetes

86

MILLION adults have prediabetes



9

OUT OF 10 people with prediabetes don't know they have it



Without weight loss and moderate physical activity

15–30% of people with prediabetes will develop type 2 diabetes within 5 years

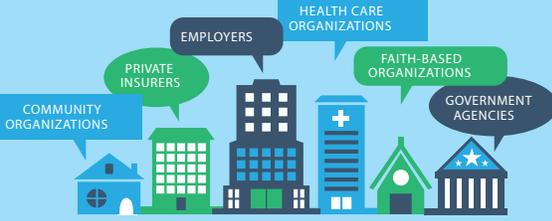


REDUCING THE IMPACT OF DIABETES



Congress authorized CDC to establish the NATIONAL DIABETES PREVENTION PROGRAM (National DPP)—a public-private initiative to offer evidence-based, cost effective interventions in communities across the United States to prevent type 2 diabetes

It brings together:



to achieve a greater impact on reducing type 2 diabetes

Research shows structured lifestyle interventions can cut the risk of type 2 diabetes in

HALF



Source: CDC

Hospitals Supporting Local Health Improvement Efforts: Including through Nonprofit Community Benefit Programs

Seventy percent of nonprofit hospitals report that obesity is a top health priority in the communities they serve.⁵⁸¹ In addition, 58 percent report nutrition and physical activity, 44 percent report diabetes and 57 percent report heart disease and hypertension as top concerns. [The survey included members of the American Association of Medical Colleges]

Nonprofit hospitals are required to conduct community health needs assessments in coordination with local partners and develop an implementation strategy to address pressing issues in their communities.

All nonprofit hospitals in the United States (around 2,900 or 60 percent of hospitals) are required to maintain community benefit programs to help improve the health of the communities they serve and to qualify for exemption from federal income taxes. These hospitals reported spending \$62.4 billion on community benefit, as of 2011.^{582, 583}

These programs provide opportunities for hospitals to partner with state and local health departments, local employers and businesses and community groups to increase their understanding of the needs of their

community and to strategically work together and help leverage resources toward common objectives.

In many areas, community benefit investments are an important source of funding for community health improvement efforts. In addition, the percentage of resources devoted to community-based health improvement programs, services and initiatives is expected to increase, as hospitals are evaluating newly required community health needs assessments and the number of uninsured and underinsured patients continues to drop.

- Historically, the majority of community benefit spending (85 percent in 2009 and up to 92 percent in 2011) has been used to support direct patient care, such as charity care or to cover uncompensated costs.^{584, 585} However, uncompensated care has decreased as the number of insured patients has increased — dropping by \$7.4 billion from 2013 to 2014 alone. An in-depth analysis in *Health Affairs* found that on a national basis, nonprofit hospitals devoted on average 9.7 percent of their operating expenditures to community benefits (up from 7.5 percent in 2009), but the amount varied widely among hospitals.⁵⁸⁶

REVIEW OF COMMUNITY BENEFIT AND CHILDHOOD OBESITY EFFORTS BY THE CATHOLIC HEALTH ASSOCIATION OF THE UNITED STATES⁵⁸⁷

In the review of 203 member organizations' community health needs assessments, more than half listed childhood obesity as a need or sub-need, and 75 of these hospitals included childhood obesity in their implementation strategies.

The Catholic Health Association evaluated how 54 hospital members planned to prevent, manage and treat childhood obesity in their communities. The 54 implementation strategies represented 26 states and 20 system affiliations. Twenty-three hospitals ran their own, independent programs; others collaborated with or supported outside programs or coalitions to address childhood obesity. Most strategies concentrated on improving nutrition, improving physical activity, working with schools and creating public awareness and education campaigns.

• Nutrition Programs

Improvements in nutrition focused on increasing access to healthy foods through community gardens, farmers' market(s), food banks and vendors that accept SNAP benefits; advocating for healthier corner stores, supermarkets and vending machines; increasing nutritional education; providing nutritional counseling; and offering cooking classes.

St. Mary's Hospital (in Waterbury, Connecticut) stood out in the area of nutritional improvement. Currently, the facility offers inpatient and outpatient nutritional counseling; funds the Early Childhood Obesity Prevention program to collect data on childhood obesity and develop interventions; and provides lunch and snacks to impoverished children through a state grant. In the hospital, St. Mary's food service supplier offers a Mindful

Meal program that includes low-calorie and low-fat food options.

St. Francis Hospital (in Evanston, Illinois), a member of Presence Health, hopes to increase fruit and vegetable consumption by holding taste-testing events in the community and demonstrating how to adapt ethnic recipes to make them healthier. These events supplement other hospital outreach efforts, such as nutritional education for children and families; partnerships with farmers' markets; and helping enhance community gardens.

• Physical Fitness Programs

Programs intended to improve physical activity centered on providing physical activity education, offering fitness programs in community settings and improving access to formal physical activity programs in the community.

St. Francis Medical Center (in Trenton, New Jersey) is helping to re-establish collaboration among public departments and agencies including Trenton Police Department, City of Trenton Recreation Department and schools to ensure that public parks and community centers are regularly available for physical fitness activities. This Trinity Health facility also is working to expand security at parks, recreational facilities and in corridors to and from schools to increase access to activity outlets.

St. John Medical Center (in Longview, Washington), a PeaceHealth facility, has implemented a plan to integrate exercise promotion and nutritional counseling into standard primary and preventative care.

• School-Based Programs

Collaboration with schools primarily revolved around improving schools' wellness policies, organizing school health teams, encouraging schools not to use food as a reward or incentive, hosting nutrition- and physical activity-based camps, promoting physical activity during recess and lunch breaks, offering school-based obesity screenings and facilitating coordination among clinical nutritionists, teachers and athletic trainers.

St. Mary's Regional Medical Center in Lewiston, Maine, a Covenant Health facility, has partnered with a local elementary school to establish a cooking club, implement cafeteria menu changes and create a youth gardener program that fosters leadership and agricultural skills.

Providence St. Vincent Medical Center in Portland, Oregon, has extended its services beyond the typical nine-month school year to offer a summer food program so students have access to adequate nutrition and exercise while school is out.

• Public Awareness

Hospitals' public awareness campaigns bear witness to the complexity of childhood obesity as an issue. Some campaigns plan to take a broad approach, such as trying to increase awareness about the importance of physical activity and nutrition education. Other hospitals plan to employ more specific campaigns, targeting such topics as resources for accessible and affordable healthy food, the dangers of high-calorie beverages, reducing screen time for children or promoting hospital-run programs. Hospitals reported that these sources of information will be posted in outdoor advertising space and public buildings or disseminated through popular media.

• Other Efforts

A few hospitals employed strategies based on less conventional efforts, including policy and advocacy initiatives. For example, various hospitals plan to advocate for the formation of food policy councils in the community, the development of workplace and school wellness policies, and the adoption of policies that promote healthy eating, active living and improved access to healthy food options.

St. Joseph Health (in Petaluma, California) galvanized community-level support for its advocacy agenda related to healthy food and physical activity. The hospital's "neighborhood care" staff engaged low-income residents in activities targeting environmental and policy changes through leadership training, community education, outreach, and relationship building with local officials.

Some implementation strategies targeting childhood obesity included breast-feeding initiatives involving prenatal education on breast-feeding and child development, or attempts to increase breast-feeding support in work, hospital and public settings.

• Family Involvement

A few recurring patterns appeared within the spectrum of hospital-run and hospital-sponsored programs. Many hospitals organized educational programming geared at children and their families, too. Children and parents take part in sessions on healthy eating plans, physical fitness, weight management, medical education and stress reduction, and they receive behavioral tools, as well. At Ascension Health Mount St. Mary's Hospital and Health Center in Lewiston, New York, parents receive homework assignments and all family members are offered weigh-in opportunities.

Some hospitals pointed to the importance of family-based programming among minority

populations. For example, Daughters of Charity St. Francis Medical Center (in Lynwood, California) reported, "Because the traditional Latino cultural values prioritize the well-being of the family over the well-being of the individual, the [Vida Sana/Healthy Life Community Wellness] Program focuses on the participation of the entire family," and therefore offers family health screenings and regular fitness activities that accommodate individuals of all ages.

Similarly, Bon Secours Mary Immaculate Hospital (in Newport News, Virginia) implemented the Let's Get Real program, designed to address the specific needs of the African-American community. The program encompasses a "Cookin' Light" class that teaches parents how to reduce the amounts of sodium and fat in their meals, and a "Tree of Life" class that educates participants on the associations between family culture, heredity and cardiovascular disease.

Avera St. Mary's Hospital (in Pierre, South Dakota) is partnering with the local Department of Parks and Recreation and other groups to develop family trails complete with various "learning structures" to encourage walking and playing, as well as to restore bike trails in the community.

• Comprehensive Programs

A few hospital-run programs were multifaceted and attempted to target childhood obesity from various angles. SSM Health Cardinal Glennon Children's Hospital (in St. Louis) organizes a "Head to Toe" program twice a year for children with a pediatrician's written recommendation to join in. The comprehensive program involves an exercise specialist, registered dietician, social worker and health promotion professionals who offer participating children 12 intensive group sessions on nutrition, physical activity and emotional health.

The State of Obesity: *Obesity Policy Series*

State of Obesity Policy Recommendations

A. Invest in Obesity Prevention

- Centers for Disease Control & Prevention: Providing adequate funding for the CDC's National Center for Chronic Disease Prevention and Health Promotion/Division of Nutrition, Physical Activity, and Obesity would permit CDC to increase support to additional state and local health departments to carry out interventions focused specifically on improving nutrition and promoting physical activity.
- Prevention and Public Health Fund: The Prevention and Public Health Fund should be fully allocated to support evidence-based and innovative approaches to improving the public health system and reducing disease rates. Future increases to the Prevention Fund should be directed toward innovative public health programs, not used to supplant the CDC budget.

B. Early Child Policies and Programs

- Every Student Succeeds Act: The Department of Education should release guidance to support the use of Title I funding for quality early childhood education services that encourage healthier meals, opportunities for physical activity, limiting screen time and connecting families to community resources promoting overall health and wellness.
- Head Start: HHS should issue final performance standards that ensure meals and snacks meet USDA's requirements for the National School Lunch Program, the School Breakfast Program or the Child and Adult Care Feeding Program, include nutrition and physical activity in community

assessments and include physical activity and screen time related performance standards.

- Child and Adult Care Food Program: Participants in CACFP — including child care centers, day care homes, afterschool care centers, adult day care centers and emergency shelters — should be provided with the resources necessary for full, timely implementation of updated nutrition standards.

C. School-Based Policies and Programs

- Child Nutrition Act:
 - Building on progress made over the last two years, schools should continue implementation of the final "Smart Snacks" rule that updates nutrition standards for snack foods and beverages served and sold in schools.
 - The USDA and state education departments should encourage all eligible schools to participate in the Community Eligibility Provision, under which schools in high-poverty areas may serve free school meals to all students.
 - Schools should comply as quickly as possible with a provision in USDA's final rule updating local school wellness policy guidelines that all foods marketed in schools meet Smart Snacks nutrition standards.
- Every Student Succeeds Act: States and localities should prioritize evidence-based programs that enhance regular physical education and physical activity opportunities through the school day (Title I), and apply for physical education grants under the Student Support and Academic Enrichment Grants program (Title IV).



- Federal, state and local policymakers should identify opportunities to further integrate education and health so that indicators of student health are included in education accountability measures. Needs assessments should be supported to identify the best evidence-based strategies that match a local community's issues and concerns and leverage existing resources.

D. Community-Based Policies and Programs

- Menu labeling: Chain restaurants and similar food retail establishments covered under the FDA's menu labeling regulations should, to the extent possible, provide required information to consumers in advance of the final May 2017 implementation date, and FDA should develop and implement a strategy for enforcement, public awareness and education.
- State and municipal governments should prioritize health in transportation planning, including by using the limited available Transportation Alternative Program funds to help communities ensure that all residents have access to walking, biking, transit and other forms of active transportation that promote physical activity.
- States and localities should pursue strategies—including tax credits, zoning incentives, grants, low-interest loans and public-private partnerships—to increase access to healthy, affordable foods in communities.

E. Health, Healthcare and Obesity

- 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, a covered benefit, and evaluate its use and effectiveness.
- Health plans and health systems should seek innovative solutions for linking clinical treatment and counseling services with public health strategies to help people develop and maintain healthy diets and physically active lifestyles.
- Height and weight data from electronic health records should be used more routinely for child and adult obesity surveillance and the targeting and evaluation of clinical and public health interventions.

The State of Obesity: *Obesity Policy Series*

APPENDIX : Methodology for Behavioral Risk Factor Surveillance System for Obesity, Physical Activity and Fruit and Vegetable Consumption Rates

Methodology for Obesity and Other Rates Using BRFSS 2015 Data

ANNUAL DATA

Data for this analysis was obtained from the Behavioral Risk Factor Surveillance System dataset (publicly available on the web at www.cdc.gov/brfss). The data were reviewed and analyzed for TFAH and RWJF by Sarah Ketchen Lipson, PhD, Research Assistant Professor, University of Michigan Medical School, Department of Pediatrics, Child Health Evaluation and Research Unit.

BRFSS is an annual cross-sectional survey designed to measure behavioral risk factors in the adult population (18 years of age or older) living in households. Data are collected from a random sample of adults (one per household) through a telephone survey. The BRFSS currently includes data from 50 states, the District of Columbia, Puerto Rico, Guam and the Virgin Islands.

Variables of interest included BMI, physical inactivity, diabetes, hypertension and consumption of fruits and vegetables five or more times a day. BMI was calculated by dividing self-reported weight in kilograms by the square of self-reported height in meters. The variable ‘obesity’ is the percentage of all adults in a given state who were classified as obese (where obesity is defined as BMI greater than or equal to 30). Researchers also provide results broken down by race/

ethnicity — researchers report results for Whites, Blacks and Latinos — and gender. Another variable, ‘overweight’ was created to capture the percentage of adults in a given state who were either overweight or obese. An overweight adult was defined as one with a BMI greater than or equal to 25 but less than 30. For the physical inactivity variable, a binary indicator equal to one was created for adults who reported not engaging in physical activity or exercise during the previous thirty days other than their regular job. For diabetes, researchers created a binary variable equal to one if the respondent reported ever being told by a doctor that he/she had diabetes. Researchers excluded all cases of gestational and borderline diabetes as well as all cases where the individual was either unsure, or refused to answer.

To calculate prevalence rates for hypertension, researchers created a dummy variable equal to one if the respondent answered “Yes” to the following question: “Have you ever been told by a doctor, nurse or other health professional that you have high blood pressure?” This definition excludes respondents classified as borderline hypertensive and women who reported being diagnosed with hypertension while pregnant.

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1730 M Street, NW, Suite 900
Washington, DC 20036
(t) 202-223-9870
(f) 202-223-9871



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