

Table of Contents

Introduction	3
Obesity in West Virginia.....	3
Adults	3
Figure 1: Prevalence of Obesity and Overweight among West Virginia Adults	4
Children.....	4
Table 1: Percentage of Obese and Overweight among High School Students in West Virginia and Select Indicators.....	5
West Virginia Costs for Obesity	5
Table 2: Obesity-Attributable Healthcare Spending in West Virginia (\$/Adult).....	5
Table 3: Obesity-Attributable Healthcare Spending in West Virginia (millions of dollars)	6
Risk for Obesity	6
Table 4: Prevalence and Ranking of Obesity and Related Risk Factors Among West Virginia Adults	6
Figure 2: Prevalence of No Leisure Physical Activity among West Virginia Adults	7
Figure 3: Prevalence of Consuming 5 or More Servings of Fruits and Vegetables among West Virginia Adults.....	7
Figure 4: Prevalence of Risk Factors for Obesity among West Virginia High School Students .	8
Social Determinants	8
Table 5: Social Determinants: West Virginia and United States.....	8
Behavior	9
Preventing Obesity.....	9
Breastfeeding.....	9
Table 6: Breastfeeding	9
Community Environment.....	9
Access to Healthy Foods	9
Early Care and Education	10
Schools	10
Morbidity	10
Table 7: Prevalence of Chronic Diseases and Conditions among West Virginia Adults	11
Physical Activity	11
Poor Nutrition	11
Prediabetes	11
Type 2 Diabetes.....	12

Hypertension.....	12
Cardiovascular Disease	12
Obesity-Related Cancers.....	12
Mortality	12
Table 8: Causes of Death Related to Obesity.....	12
Partnerships	13
Goal #1: Decrease the Prevalence of Obesity.....	13
Objectives for Adults.....	13
Objectives for Youth	13
Goal #2: Improve Key Chronic Disease Indicators	14
Objectives for Adults.....	14
Public Health Policies	14
Strategies Supporting Public Health Policies	14
Communities.....	15
Strategies Supporting Prevention and Health Promotion Efforts	15
Healthcare Systems.....	16
Strategies Supporting Access to Comprehensive, Integrated Healthcare.....	16
References	18

Addressing Obesity and Related Chronic Diseases

Introduction

The World Health Organization calls obesity “one of the greatest public health challenges of the 21st century.” Obesity affects nearly every person, every family, every male and every female regardless of age, education and income level. This disease imposes a huge burden on the quality of life of individuals and their families, creating a tremendous financial burden for individuals, families, employers, insurers and the healthcare system as a whole.

When a person has a body mass index (BMI) greater than 30, it means they are classified as obese. Obesity is a serious concern because it may be associated with adverse mental health outcomes, reduced quality of life, and West Virginia’s leading causes of death, including diabetes, heart disease, stroke, and some types of cancer.¹

According to the 2014 Behavioral Risk Factor Surveillance System² (BRFSS), West Virginia has the second highest rate of obesity in the United States at 35.7%. Twenty-two states have adult obesity rates above 30%, 45 states have rates above 25%, and every state is above 20%.

Addressing Obesity and Related Chronic Diseases focuses on reducing obesity in West Virginia by increasing physical activity, improving fruit and vegetable consumption and strengthening environments and policies that encourage healthy living. This includes implementing practice protocols within health systems to prevent and manage obesity and related chronic conditions. These interventions will help manage and prevent diabetes, hypertension and cardiovascular disease.

Change requires an increased understanding that decisions are not made in a vacuum. Healthy, affordable foods are often more expensive and scarce in many neighborhoods, while cheap processed foods are widely available. Finding safe, accessible places to be physically active can be a challenge for many. Obstacles are often higher for people with lower incomes and less education, and for racial and ethnic minorities. Where families live, learn, work and play all have a major impact on the choices they are able to make.³

Reversing the obesity epidemic will require individuals, families, schools, communities, businesses, government and every other sector of society to reduce barriers to healthy eating and active living — to foster a culture of health that makes healthy choices easier for all West Virginians.

Obesity in West Virginia

Adults

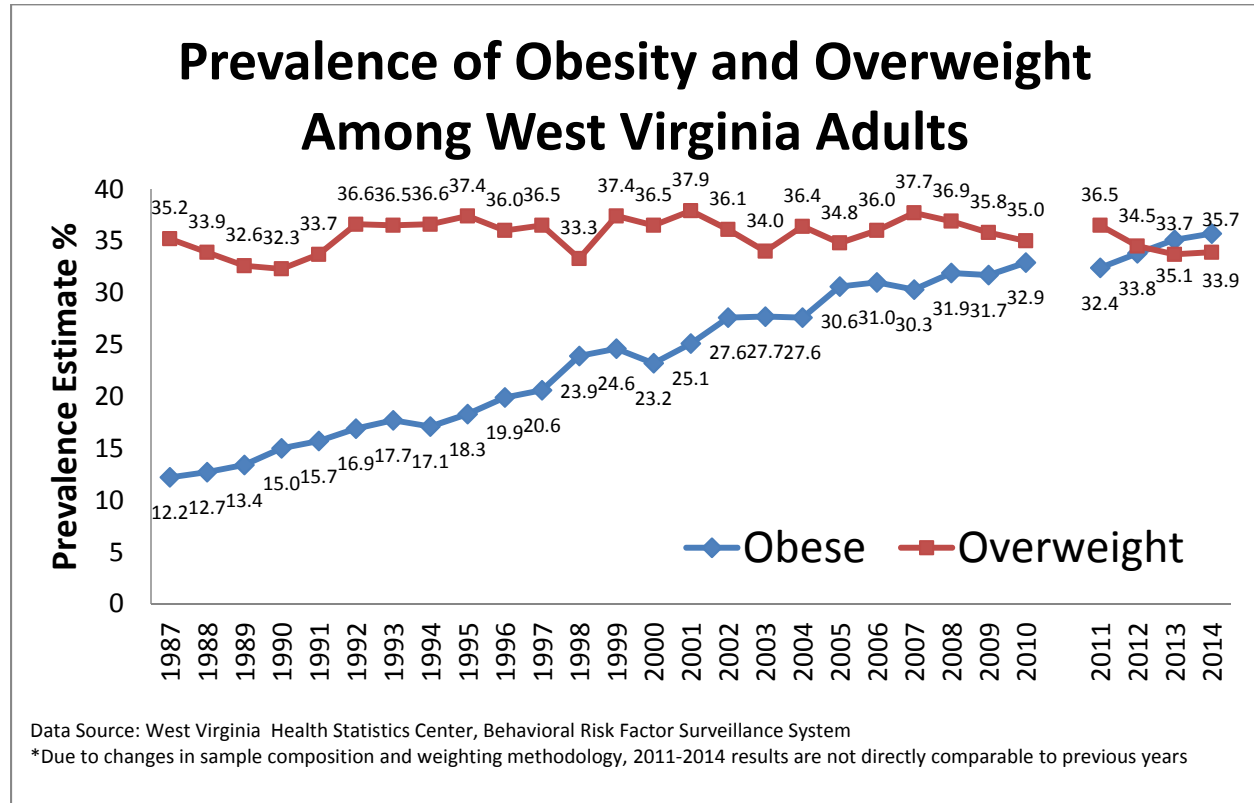
West Virginia has one of the highest adult obesity prevalence rates nationally, with 35% of West Virginia adults who are obese. Genetics, slowing metabolism, sedentary lifestyles, poor nutrition, and environments can cause weight gain as adults, with those same factors making it harder to lose weight. In West Virginia, older adults (age 65 and over) have a lower prevalence of obesity than all adults except those in the 18-24 year old age range.²

Older adults are frequently diagnosed with chronic diseases associated with excess body weight, such as diabetes, hypertension and cardiovascular disease. There is ample evidence that adults with these illnesses or who are at risk for developing these diseases can benefit from increased

physical activity and good nutrition. Figure 1 below shows the prevalence of obesity and overweight among adult West Virginians from 1987 through 2014, however, due to changes in sample composition and weighting methodology, 2011-2014 results are not directly comparable to previous years.

- Adults with a BMI of 25-29 are considered overweight. In 2014, West Virginia’s adult prevalence for overweight was 33.9%.
- Adults with a BMI greater than 30 are classified as obese. In 2014, West Virginia’s adult obesity prevalence was 35.7%.
- Approximately two-thirds (69.6%) were overweight or obese.

Figure 1: Prevalence of Obesity and Overweight among West Virginia Adults



Children

Childhood obesity is a complex health issue. It occurs when a child is well above the normal or healthy weight for his or her age and height. The main causes of excess weight in youth are similar to those in adults, including individual behavior and genetics. Behaviors can include dietary patterns, physical activity, inactivity, medication use, and other exposures. Additional contributing factors in our society include the food and physical activity environment, education and skills, and food marketing and promotion.⁴

The National Center for Biotechnology Information reports increasing numbers of children and adolescents are developing type 2 diabetes. Symptoms of this condition include obesity, a sedentary lifestyle, insulin resistance and hypertension. Type 2 diabetes is more common in girls and families with a positive history of the disease. Diagnosis is often delayed which may identify the presence of chronic complications.

The Youth Behavioral Risk Factor Surveillance System Report, 2013, ranks West Virginia as seventh in the nation for prevalence of obesity among high school students (West Virginia--15.6%; United States--13.7%) as shown in the table below.⁵

Table 1: Percentage of Obese and Overweight among High School Students in West Virginia and Select Indicators	
Percentage of Obese High School Students	15.6%
Percentage of Overweight High School Students	15.5%
Percentage Of High School Students Who Were Not Physically Active On All 7 Days Before Survey	69%
Data Source: West Virginia Department of Education 2013 Youth Risk Behavior Surveillance System	

West Virginia Costs for Obesity

With obesity comes tremendous additional costs. According to the American Journal of Public Health Research, *Obesity in West Virginia: Control and Costs*, healthcare costs due to obesity will reach an estimated \$2.4 billion annually by 2018.⁶

With better health, adults are more productive and at work more days. Preventing disease increases productivity. Asthma, high blood pressure, smoking and obesity each reduce annual productivity by between \$200 and \$440 per person.⁶

According to *The State of Obesity*, obesity among adults in West Virginia:³

- Results in \$1.4 – \$1.8 billion in preventable direct medical costs
- Half of these preventable costs are for Medicare and Medicaid
- Estimated indirect costs = another \$5 billion
- Obese adults spend 42% more on direct healthcare costs; morbidly obese costs are 81% greater than for normal weight adults
- Obesity is associated with lower productivity while at work costing employers \$506 per obese worker per year
- Medical claims cost \$7,503 for healthy weight workers in contrast to \$51,091 for obese workers

Table 2: Obesity-Attributable Healthcare Spending in West Virginia (\$/Adult) (Midpoint, lower and upper estimates) ⁷		
This number reflects costs to each adult, not only those with obesity.		
2008	2013	2018
\$479 (\$417-\$541)	\$764 (\$592-\$935)	\$1,736 (\$1,133-\$2,339)

2008	2013	2018
\$668 (\$581-\$754)	\$1,076 (\$835-\$1,318)	\$2,384 (\$1,556-\$3,212)

Risk for Obesity

“Efforts to prevent and reduce obesity over the past decade have made a difference. Stabilizing rates is an accomplishment. However, given the continued high rates, it isn’t time to celebrate. We’ve learned that if we invest in effective programs, we can see signs of progress. But, we still haven’t invested enough to really tip the scales yet.”

Jeffrey Levi, PhD, Executive Director of Trust for America’s Health, September 2015

Obesity is a complex health issue to address. Obesity results from a combination of causes and contributing factors, including genetics, individual behavior and environment. Behaviors can include dietary patterns, physical activity, inactivity, medication use, and other exposures. Additional contributing factors in our society include the food and physical activity environment, education and skills, and food marketing and promotion.⁸

The following table shows prevalence rates for several risk behaviors. Figures 2 and 3 chart the leisure-time activity and consuming five or more fruits and vegetables daily among West Virginia adults from 1987 through 2014. However, due to changes in sample composition and weighting methodology, 2011-2014 results are not directly comparable to previous years.

Risk Factor	West Virginia Prevalence		United States Prevalence		West Virginia Ranking*	
	2013	2014	2013	2014	2013	2014
Obesity	35.1	35.7	28.2	28.9	1	2
Consumption of less than 5 servings of fruits and vegetables daily**	90.2	--	82.9	--	3	--
Daily consumption of sugar-sweetened beverages	40.1	--	NA	NA	NA	NA
No leisure time exercise**	31.4	28.7	26.6	23.9	9	5
Did not meet physical activity recommendations of 150 minutes of aerobic activity and 2 days of muscle strengthening activity	87.3	--	80.6	--	3	--
Inadequate sleep**	40.0	37.4	35.6	34.8	5	11

Data Source: West Virginia Health Statistics Center, Behavioral Risk Factor Surveillance System
 *among 50 states, D.C., and territories
 ** West Virginia significantly higher than US
 -- data not collected in “even” years

Figure 2: Prevalence of No Leisure Physical Activity among West Virginia Adults

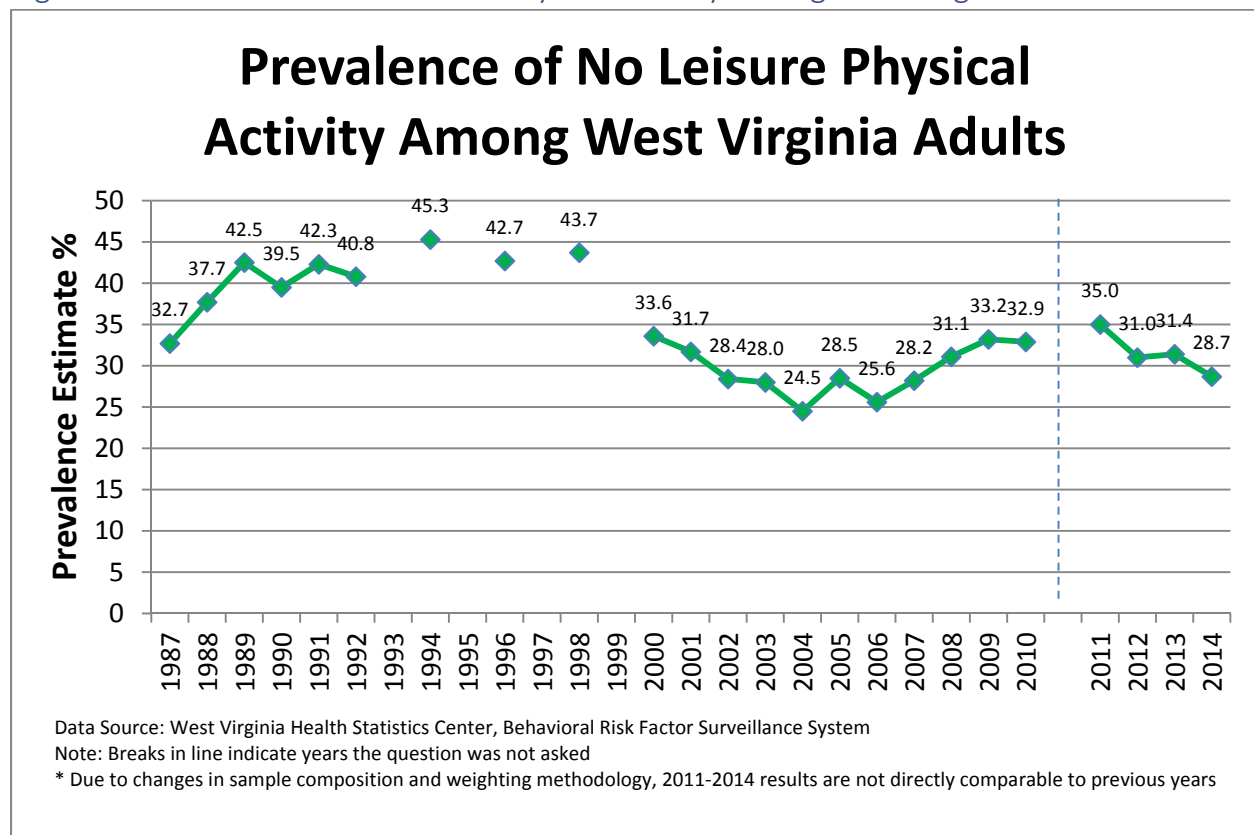


Figure 3: Prevalence of Consuming 5 or More Servings of Fruits and Vegetables among West Virginia Adults

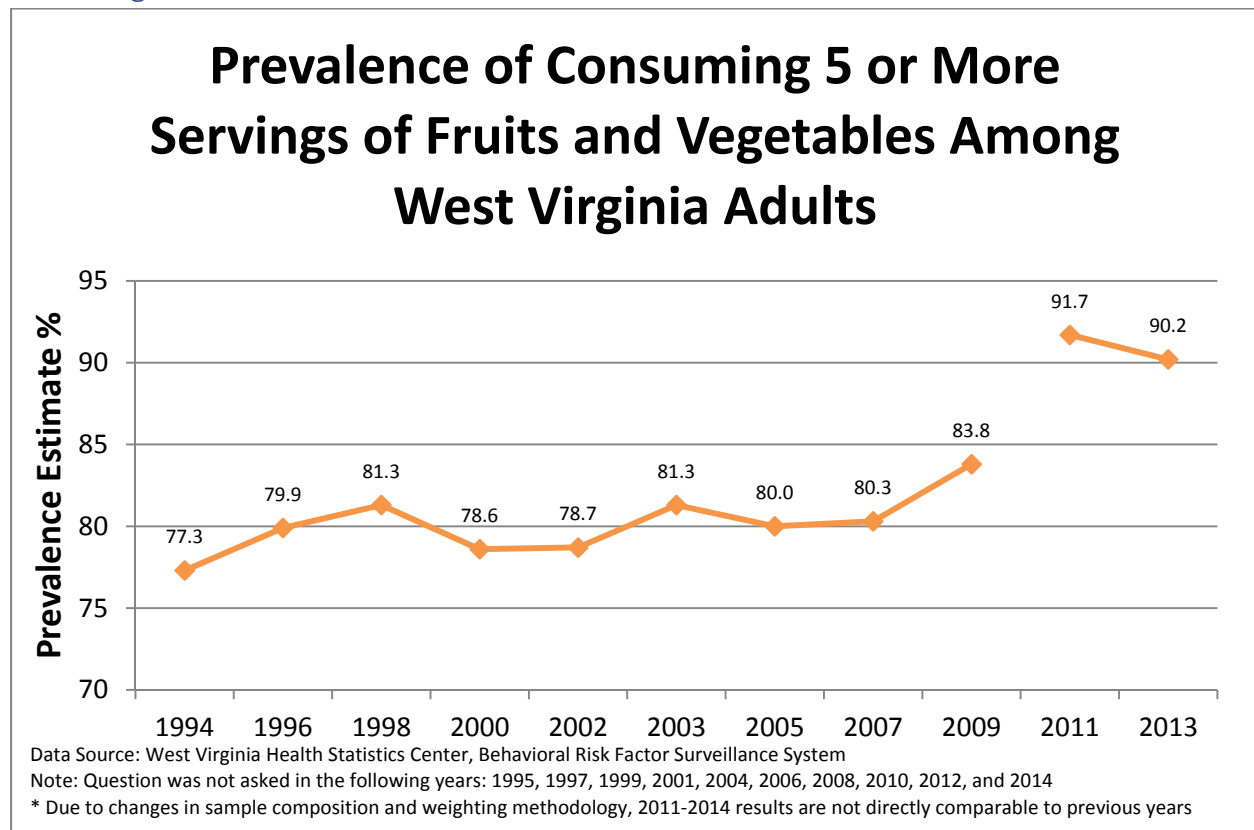
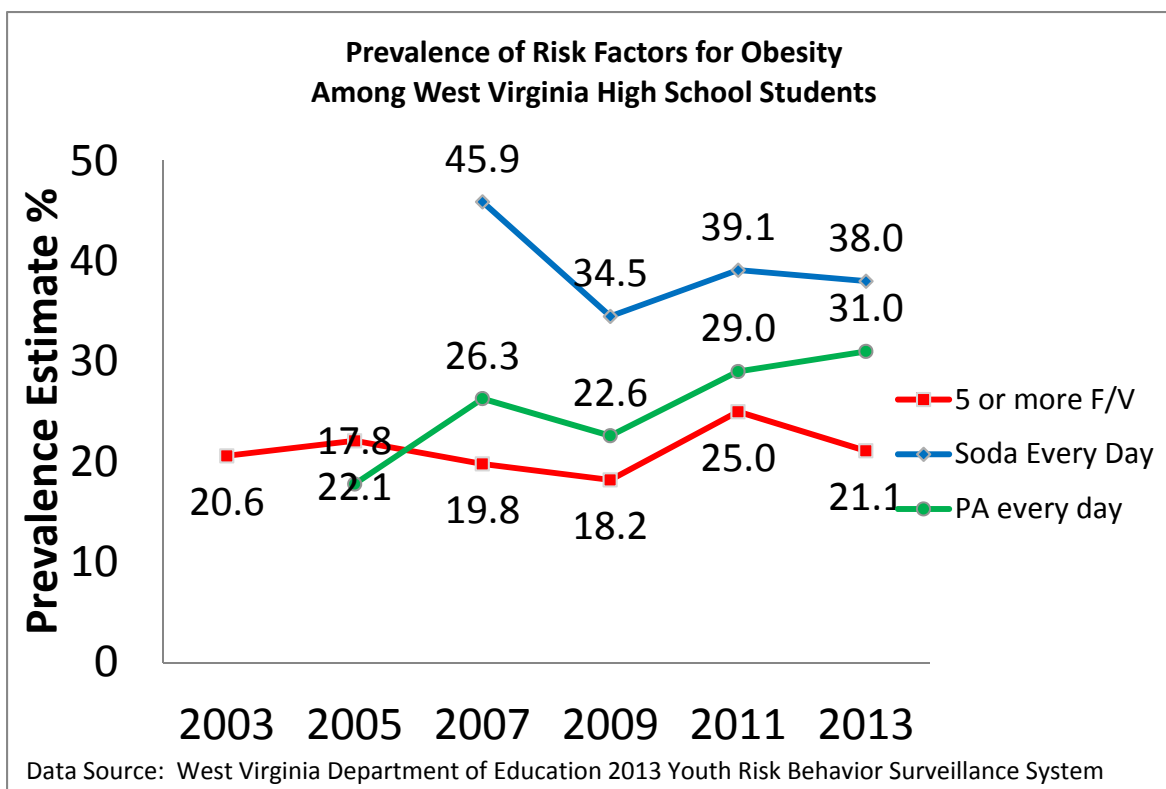


Figure 4 from the Youth Behavioral Risk Factor Survey charts obesity risk factors for youth from 2003 through 2013.

Figure 4: Prevalence of Risk Factors for Obesity among West Virginia High School Students



Social Determinants

Chronic disease has been disproportionately associated with socioeconomic factors such as low levels of education, income, and unemployment as well as poor access to healthcare. These determinants affect the development and progression of disease. The following table shows West Virginia’s social determinants that affect health.⁹

Determinant	West Virginia	United States
Education		
Adults aged 25 and over who have not completed high school	15%	13.3%
Adults with bachelor’s degree or higher	19.2%	29.8%
Income		
Household median income West Virginia ranks 49 th in the nation	\$41,751	\$53,889
Living below poverty level	17.9%	13.5%
Unemployment		
Lack of health insurance among those adults aged 18 – 64	19.5%	15.8%

Data Source: U.S. Census Bureau, 2011-2015 estimates

Behavior

Healthy behaviors include a healthy diet pattern and regular physical activity. A healthy diet pattern follows the *Dietary Guidelines for Americans* which emphasizes eating whole grains, fruits, vegetables, lean protein, and low-fat, fat-free dairy products and drinking water.¹⁰ The *Physical Activity Guidelines for Americans* recommends adults do at least 150 minutes of moderate intensity activity or 75 minutes of vigorous intensity activity, or a combination of both, along with two days of strength training per week.¹¹

Having a healthy diet pattern and regular physical activity is also important for long-term health benefits and management and prevention of chronic diseases such as type 2 diabetes and heart disease.¹⁰

Preventing Obesity

Breastfeeding

The beneficial effects of breastfeeding infants are well known. An important benefit is prevention of obesity. Breast milk provides the baby with nutritious food that is easy to digest, and the child helps decide how much to eat and when to eat it. Both the breast milk itself and the way the baby feeds help the baby develop healthy eating patterns. Breastfed babies seem to be better able to regulate their food intake and are at lower risk for obesity.¹²

Policy changes and interventions to promote breastfeeding should be implemented to increase rates of breastfeeding, especially in groups with lower rates.¹²

Infants ever breastfed	59.3%
Breastfed at 6 months	29.3%
Breastfed at 12 months	15.9%
Exclusively breastfed at 6 months	12.2%
Data Source: National Center for Immunizations and Respiratory Diseases. 2011 National Immunization Survey.	

Community Environment

People and families may make decisions based on their environment or community. For example, a person may choose not to walk or bike to the store or to work because of a lack of sidewalks or safety issues such as poor lighting. Community, home, child care, school, healthcare, and workplace settings can all influence people's daily behaviors.

The availability of fruits and vegetables may also be a barrier. According to data from the US Department of Agriculture (USDA), about 15 percent of all West Virginians, or about one in seven, is "food insecure," which means they have a hard time at some point throughout the year putting food on the table for lack of money, access, or resources in general.¹³

Access to Healthy Foods

Currently, in West Virginia, parts of more than 40 counties are considered food deserts.¹⁴ The USDA defines a food desert as a part of the country where people don't have access to fresh fruit,

vegetables, and other healthful whole foods. Instead of supermarkets and grocery stores, these communities may have no food access or are only served by fast food restaurants and convenience stores. Therefore, it is important to create environments in these locations that make it easier to engage in physical activity and eat a healthy diet.

Early Care and Education

Research has shown that early childhood is an important time for developing dietary and physical activity behaviors that support health and well-being, and may help prevent obesity. Given the disproportionately high rates of obesity-related morbidity among low-income youth and adults, obesity prevention in this population is critical. Early Care and Education (ECE) is an important setting to implement childhood obesity prevention strategies. A comprehensive approach that improves the food and physical activity policies, practices, and environments in ECE programs has potential to impact childhood obesity in the West Virginia.¹⁵

Approximately 75% of children younger than six years of age participate in some form of organized child care outside the home, such as family child care homes, child care centers, or Head Start. Many children spend several hours per day in ECE programs and may consume much of their calories there. These programs also may provide opportunities for children to engage in structured and unstructured physical activity throughout the day.¹⁵

Schools

The foundation for good health begins in childhood. This means schools are in a unique position to influence healthy behaviors that combat obesity, now and for the future. Schools cannot solve the obesity epidemic on their own, but it is unlikely to be halted without strong school-based policies and programs.¹⁶

Morbidity

Obesity can be a comorbid health condition—the presence of more than one health condition or risk factors at the same time. Research consistently shows that obesity increases the risk for many other conditions including cardiovascular disease, hypertension or diabetes. In addition, obesity causes pregnancy-related complications, menstrual irregularities, psychological disorders, memory loss and dementia later in life, and surgical complications. Social discrimination against obese people has a strong negative effect on their quality of life.¹⁷

The following table lists select chronic diseases associated with obesity that are measured by the Behavioral Risk Factor Surveillance System. The consequences of West Virginia’s high obesity rate are reflected in the table’s statistics. In 2013, of the 53 BRFSS participants, West Virginia ranked highest in obesity, heart attack, and arthritis, and second highest for coronary heart disease and hypertension.

In 2014, West Virginia ranked highest in heart attack and arthritis, and second in obesity, diabetes, and coronary heart disease.²

Table 7: Prevalence of Chronic Diseases and Conditions among West Virginia Adults

Risk Factor	West Virginia Prevalence (%)		US Prevalence (%)		West Virginia Ranking*	
	2013	2014	2013	2014	2013	2014
Obesity	35.1	35.7	28.3	28.9	1	2
Diabetes	13.0	14.1	10.3	10.5	4	2
Hypertension	41.0	--	32.5	--	2	--
High cholesterol	42.9	--	38.6	--	3	--
Ever had a stroke	3.9	4.6	2.9	2.9	7	3
Have coronary heart disease	7.5	7.8	4.2	4.4	2	2
Ever had a heart attack	7.8	7.4	4.4	4.4	1	1
Arthritis	36.2	40	25	25.6	1	1
Cancer	13.0	13.7	11.1	11	10	5

Data Source: West Virginia Health Statistics Center, Behavioral Risk Factor Surveillance System
 *among 50 states, D.C., and territories
 -- data not collected in "even" years

Physical Activity

Being physically active helps control weight. In 2014, approximately 12.3% of West Virginia adults reported both obese and no exercise risk factors.² The Centers for Disease Control and Prevention recommends the following guidelines for adults to maintain health and to reduce the risk of chronic disease: Do moderately intense physical activity 30 minutes a day or five days a week or vigorous intense physical activity 20 minutes a day for three days a week and do eight to 10 strength-training exercises, with to 12 repetitions of each exercise twice a week. In 2013, only 12.7% of West Virginia adults met the physical activity guidelines. According to President's Council on Fitness, Sports & Nutrition, 60 minutes of physical aerobic activity daily for children ages 6-17 and 30 minutes daily for adults ages 18-64 promotes healthy weight.¹⁰ This includes lifestyle physical activity such as walking a pet, yard work, and household chores.¹⁰

Poor Nutrition

Nutrition plays a key role in controlling and maintaining a healthy weight. A healthy diet consisting of more fruits and vegetables can reduce the risk for obesity, type 2 diabetes, and heart disease.¹¹ Poor nutrition and an overconsumption of unhealthy food and/or sugary beverages like sodas and juices can lead to weight gain.¹⁸ In 2013, only 9.8% of West Virginia adults consumed five or more servings of fruits and vegetables daily, and 40.1% drank at least one sugar-sweetened beverage per day.^{2,18}

Prediabetes

Prediabetes is a condition in which a person's insulin levels are high, but not yet high enough to be classified as type 2 diabetes. People who are overweight or obese have a much higher chance of developing prediabetes. In 2014, 9.8% of adults in West Virginia had prediabetes.² If left untreated, prediabetes can develop into type 2 diabetes.¹⁹

Developing type 2 diabetes can be prevented or delayed by increasing physical activity, losing 5-10% of body weight and eating a healthy diet.¹⁹

Type 2 Diabetes

Type 2 diabetes is correlated with obesity. When poor nutrition and physical inactivity are coupled with obesity, the chances of developing type 2 diabetes increases. Research suggests weight loss and regular physical activity can prevent or delay type 2 diabetes.¹⁹

Hypertension

With the significant rise in obesity over the last decade comes an increase in the prevalence of hypertension. Obesity has been consistently associated with hypertension and increased cardiovascular risk. In 2013, West Virginia had the second highest prevalence of hypertension in the nation (41.0%).²

Cardiovascular Disease

Being obese can impact heart health and increase chances of developing high blood pressure or cardiovascular disease. In 2014, West Virginia had the highest prevalence of cardiovascular disease in the nation (14.1%).²

Obesity-Related Cancers

An estimated one out of every three cancer deaths in the United States is linked to excess body weight, poor nutrition, and/or physical inactivity.²⁰ These factors are all related and may all contribute to cancer risk, but body weight seems to have the strongest evidence linking it to cancer. Excess body weight contributes to as many as one in five of all cancer-related deaths.

Mortality

According to a study published by Flegel, et.al., in the Journal of the American Medical Association in 2007, obesity has been linked with a significantly increased risk of mortality from all causes.²⁰

Researchers found that in the U.S., obesity was associated with over 112,000 excess deaths due to cardiovascular disease and 14,000 excess deaths due to obesity-related cancers. Table 8 compares the rates of death related to obesity in West Virginia and the United States.²¹

Cause of Death	West Virginia Rate	U.S. Rate	Rank
Obesity	4.4	1.9	1
Diabetes mellitus	45.3	21.2	1
Hypertension	15.1	8.5	4
Stroke	53.2	36.2	11
Heart attack	47.9	32.4	16
Diseases of the heart	251.8	169.8	12
Cancer	254.2	163.2	3

Age adjusted rates are calculated per 100,000 based on 2013 U.S. Census Bureau estimates
Data Source: West Virginia Health Statics Center, Vital Statistics System, Preliminary 2013
U.S. Data: CDC Wonder, Center for Disease Control and Prevention, National Center for Health Statistics, 2013.

Goals to Prevent Obesity and Related Chronic Disease

Partnerships

West Virginians will need to work together to make the greatest impact on improving health outcomes. Each of us can model and promote healthy behaviors and advocate for healthy environments where we live, work, play and pray. All organizations have a role in promoting healthy environments that change the context for health. Working comprehensively together will help enhance a culture of health. The objectives listed below use a population health approach to address obesity and related chronic diseases.

Goal #1: Decrease the Prevalence of Obesity

1. A. - Decrease the prevalence of obesity among West Virginia adults from 35.7% to 35.0% by 2020 (BRFSS 2014)

Objectives for Adults

1. A.1 Increase the consumption of five or more servings of fruits and vegetables daily among West Virginia adults from 9.8% to 10.3% by 2020 (BRFSS 2013)

1. A.2 Increase the average number of servings of fruits and vegetables per day among West Virginia adults from 2.9 to 3.5 by 2020 (BRFSS 2013)

1. A.3 Decrease the prevalence of daily consumption of sugar-sweetened beverages among West Virginia adults from 40.1% to 36.0% by 2020 (BRFSS 2013)

1. A.4 Increase the prevalence of leisure-time exercise among West Virginia adults from 71.3% to 75.0% by 2020 (BRFSS 2014)

1. A.5 Increase the prevalence of adults who meet the 2008 Physical Activity Guidelines for Americans from 12.7% to 14.0% by 2020 (BRFSS 2013)

Objectives for Youth

1.B. - Decrease the prevalence of obesity among West Virginia high school students from 15.6% to 14.0% by 2020 (YRBS 2013)

1.B.1 Increase the prevalence of consumption of five or more servings of fruits and vegetables per day among public high school students from 21.1% to 30.0% by 2019 (YRBS 2013)

1.B.2 Decrease the prevalence of daily consumption of soda or pop among West Virginia high school students from 38.0% to 30.0% by 2019 (YRBS 2013)

1.B.3 Increase the prevalence of daily physical activity for at least 60 minutes among public high school students from 31.0% to 45.0% by 2019 (YRBS 2013)

1.B.4 Increase the prevalence of participation in a daily physical education class among public high school students from 30.7% to 40.0% by 2019 (YRBS 2013)

1.B.5 Decrease the prevalence of obesity (BMI >95th percentile) among public high school students from 15.6% to 13.0% by 2019 (YRBS 2013)

1.B.6 Increase the prevalence of healthy weight among public high school students from 68.9% to 72.0% by 2019 (YRBS 2013)

1.B.7 Increase the percentage of infants ever breastfed from 59.3% to 64% by 2020 (NIS 2011)

1.B.8 Increase the percentage of infants breastfed exclusively at six months from 12.2% to 17% by 2020 (NIS 2011)

Goal #2: Improve Key Chronic Disease Indicators

Objectives for Adults

2.1 Decrease the prevalence of prediabetes in adults from 9.8% to 9.0% by 2020 (BRFSS 2014)

2.2 Decrease the prevalence of diabetes in adults from 14.1% to 13% by 2020 (BRFSS 2014)

2.5 Decrease the prevalence of high blood pressure in adults from 41.0% to 40% by 2020 (BRFSS 2013)

2.6 Decrease the prevalence of cardiovascular disease in adults from 14.1% to 13% by 2020 (BRFSS 2014)

Strategies to Achieve Goals to Prevent Obesity and Related Chronic Disease

Public Health Policies

Comprehensive policies based on supporting evidence and existing best practices can improve the overall health of a population. Policies such as those regarding transportation, housing, schools, early care and education, and other areas make it easier for people to have access to healthy foods and physical activity opportunities.

Strategies Supporting Public Health Policies

- Support regulations to promote breastfeeding
- Increase the number of statewide multi-level school physical education and physical activity policies adopted by the state
- Increase the number of state level school recess policies adopted by the state
- Support community food development systems (community food hubs, Farm to Table, Farm to School, Farmer's Markets, community gardens, etc.)
- Increase built environment/grassroots support to promote healthy behaviors and community policy changes

- Enact policies and regulations to support insurance coverage for patient counseling and self-management programs and CDC recognized lifestyle change programs (i.e., National Diabetes Prevention Program and others)
- Provide incentives for healthcare provider practices to implement evidence-based guidelines for chronic disease management and prevention
- Increase the number of Medicaid recipients with diabetes who have Diabetes Self-Management Education as a covered benefit
- Increase budgets that fund high-priority population health initiatives that implement obesity prevention and control strategies
- Support state tobacco policy initiatives

Communities

Prevention of disease starts in our communities and at home, not just in the doctor's office. For example, businesses and employers can adopt practices to encourage their workforce to increase physical activity and reduce pollution (e.g., workplace flexibility, rideshare incentives and telecommuting options).

Strategies Supporting Prevention and Health Promotion Efforts

- Support and promote breastfeeding
- Promote breastfeeding using evidence-based curriculums, especially during home visits
- Increase the number of Early Child Education centers that develop and/or adopt policies to increase physical activity
- Increase the number of Early Child Education centers that develop and/or adopt policies to implement food service guidelines/nutrition standards, including sodium (cafeterias, vending, snack bars)
- Provide evidence-based professional development/technical assistance to schools and administrators on physical education policies and physical activity
- Provide evidence-based professional development/technical assistance to schools and administrators on creating a healthy school nutrition environment
- Support and strengthen school nutrition environments
- Increase the number of worksites that develop and/or adopt policies to increase physical activity
- Increase the number of worksites that develop and/or adopt policies to implement food service guidelines, including sodium (cafeterias, vending, snack bars, etc.)
- Increase redemption rates for Farmer's Market Nutrition Program among WIC recipients
- Increase built environment/grassroots support to promote healthy behaviors and community policy changes
- Increase awareness of self-management programs (National Diabetes Prevention Program, Chronic Disease Self-Management Program, Everyone with Diabetes Counts, etc.)
- Increase the number of Diabetes Self-Management Education programs (American Diabetes Association, American Association of Diabetes Educators, Diabetes Self-Management Programs, Everyone with Diabetes Counts, etc.)
- Increase the number of persons with prediabetes who enroll in the National Diabetes Prevention Program

- Increase the number of persons enrolled in the National Diabetes Prevention Program who achieve 5-6% weight loss (CDC Diabetes Prevention Recognition Program)
- Increase the proportion the West Virginia adults who are watching or reducing sodium or salt intake
- Increase budgets that fund high-priority population health initiatives that implement obesity prevention and control strategies

Healthcare Systems

Obesity is one of the biggest drivers of preventable chronic diseases and healthcare costs in West Virginia. Currently, estimates for these costs range from \$1.4 – \$1.8 billion per year. It is predicted at current rates, by 2018, costs to West Virginia for healthcare due to obesity and related conditions will reach \$2.4 billion.

While healthcare systems bear many of the costs of obesity, these systems are in a unique position to help prevent obesity and influence health behaviors. Doctors and other members of team-based care (pharmacists, nurses, and self-management educators, etc.) offer personal, reliable and well-regarded sources of health information and are in a position to influence healthy behaviors.

Strategies Supporting Access to Comprehensive, Integrated Healthcare

- Increase the number of baby-friendly hospitals
- Offer evidence-based healthcare provider training for breastfeeding
- Offer certified lactation training to healthcare providers
- Increase the number of healthcare practice policies to measure body mass index/waist hip circumference
- Increase the number of healthcare providers who advise/counsel patients on weight management and risk factors for obesity
- Increase the proportion of healthcare systems with practice policies to record physical activity as a vital sign
- Increase healthcare provider referrals for their patients to places to be physically active and places where access to fruits and vegetables are available
- Increase the number of persons enrolled in the National Diabetes Prevention Program who achieve 5-6% weight loss (CDC Diabetes Prevention Recognition Program)
- Increase healthcare provider referrals for their patients to participate in self-management programs such as American Diabetes Association; American Association of Diabetes Educators; Diabetes Self-Management Programs; Everyone with Diabetes Counts, etc.)
- Decrease the proportion of persons with diabetes with A1c >9
- Increase the number of patients who have been advised by their healthcare provider to reduce sodium consumption
- Increase the proportion the West Virginia adults who are watching or reducing sodium or salt intake
- Increase the proportion of patients with high blood pressure in adherence to medication regimens
- Increase proportion of patients with high blood pressure that have a self-management plan

- Increase proportion of adults with high blood pressure who have achieved control
- Increase the proportion of healthcare systems that utilize team-based care
- Offer evidence-based healthcare provider training on chronic disease management and prevention
- Offer evidence-based healthcare provider training on implementation of practice-based protocols to implement referral processes to community resources (physical activity venues, fruit and vegetable access, self-management programs, etc.)
- Create a centralized chronic disease registry
- Increase budgets that fund high-priority population health initiatives that implement obesity prevention and control strategies

For more information about obesity and related chronic diseases, please contact the Division of Health Promotion & Chronic Disease at (304) 356-4193 or visit our website: www.wvchronicdisease.org.

References

1. West Virginia Health Statistics Center. *West Virginia Vital Statistics 2011*.
2. West Virginia Health Statistics Center. *2013, 2014 Behavioral Risk Factor Surveillance System*.
3. Robert Wood Johnson Trust for America. *The State of Obesity Better Policy for a Healthier America 2015*. <http://www.rwjf.org/en/library/research/2014/09/the-state-of-obesity.html>.
4. Centers for Disease Control and Prevention. Childhood Obesity Causes & Consequences. <http://www.cdc.gov/obesity/childhood/causes.html>.
5. West Virginia Department of Education. *2013 Youth Behavioral Risk Factor Surveillance System*.
6. Herath, Janaranjana, and Cheryl Brown. "Obesity in West Virginia: Control and Costs." *American Journal of Public Health Research* 2013.
7. United Health Foundation, the American Public Health Association and Partnership for Prevention. *The Future Costs of Obesity: National and State Estimates of the Impact of Obesity on Direct Healthcare Expenses*. November 2009.
8. Centers for Disease Control and Prevention. *Adult Obesity Causes & Consequences*. <http://www.cdc.gov/obesity/adult/causes.html>.
9. United States Census Bureau. *2011-2015*. <https://www.census.gov/acs/www/data/data-tables-and-tools/data-profiles/>.
10. President's Council on Fitness, Sports & Nutrition. *Physical Activity Guidelines for America*. <http://www.fitness.gov/be-active/physical-activity-guidelines-for-americans/>. United States Department of Health and Human Services.
11. Office of Disease Prevention and Health Promotion. *2010 Dietary Guidelines*. <http://health.gov/dietaryguidelines/2010/>.
12. National Center for Chronic Disease Prevention and Health Promotion. Division of Nutrition and Physical Activity. *Does Breastfeeding Reduce the Risk of Pediatric Overweight?* Research to Practice Series, No. 4. July 2007.
13. U.S. Department of Agriculture. *Household Food Security in the United States in 2013*.
14. U.S. Department of Agriculture. *Food Deserts*. <https://apps.ams.usda.gov/fooddeserts/fooddeserts.aspx>.
15. National Center for Chronic Disease Prevention and Health Promotion. *Weight of the Nation Early Care and Education Policy Review*.
16. United States Surgeon General. National Prevention Council. *America's Plan for Better Health and Wellness 2010*.
17. West Virginia Department of Health and Human Resources. *Obesity and West Virginia 2011*.
18. Harvard University. Department of Nutrition at Harvard School of Public Health. *2013 Fact Sheet: Sugary Drink Supersizing and the Obesity Epidemic*. <https://cdn1.sph.harvard.edu/wp-content/uploads/sites/30/2012/10/sugary-drinks-and-obesity-fact-sheet-june-2012-the-nutrition-source.pdf>
19. Centers for Disease Control and Prevention. *Diabetes Basics*. <http://www.cdc.gov/diabetes/basics/index.html>.
20. Flegal KM, Graubard BI, Williamson DF. *Cause-Specific Excess Deaths Associated With Underweight, Overweight, and Obesity*. *Journal of the American Medical Association*. 2007; 298(17):2028–2037.

21. Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2014 on CDC WONDER Online Database, released 2015. Data are from the Multiple Cause of Death Files, 1999-2014, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on Dec 17, 2015 9:26:41 AM

Update July 21, 2017:

S:\FROM\DIVISION of HPCD\Obesity\Obesity Plan DHHR Final July 2017 Update Social Determ Updates

S:\FROM\DIVISION of HPCD\Obesity\Obesity Plan DHHR Final July 2016 Update jgw.docx

S:\FROM\DIVISION of HPCD\Obesity\WV Obesity State Plan DHHR Final-July 2016 Update.pdf