

Spartanburg County

# 2017 Body Mass Index (BMI) Report

First-, Third-, and Fifth-Grade Students





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ADMINISTRATION



# Preface

## Project Description

The Spartanburg County Body Mass Index (BMI) Project began as a collaborative effort between Spartanburg County School Districts 1 - 7, the S.C. Department of Health and Environmental Control (DHEC) Upstate Region and Partners for Active Living. The BMI reports (2011 - 2017) have spurred important conversations and created significant momentum.

Since its inception in 2009, the Spartanburg Childhood Obesity Taskforce, led by Partners for Active Living, has brought together community partners to address epidemic levels of obesity in children in Spartanburg County. Recently the taskforce transitioned to an Eat Smart Move More South Carolina chapter, becoming the Eat Smart Move More Spartanburg Coalition.

The coalition is involved in several local obesity prevention efforts, including the Way to Wellville Initiative, the Early Childhood and Schools Initiatives of the Mary Black Foundation, and the Road to Better Health Obesity Task Force. A primary objective of the coalition is to work collectively to reverse the childhood obesity epidemic in Spartanburg County by promoting and supporting systemic and policy level changes at organizations that serve children and their families. The ongoing BMI project will monitor these efforts.

This report details the seventh consecutive year of BMI measurement for all Spartanburg County first-, third- and fifth-grade students attending public school. Consistent participation over the last seven years is significant. Comparing seven data points allows for the establishment of trend data, which is a useful metric in measuring differences and changes over time.

The data collected for this study is strictly for surveillance and is not used as a screening tool. Surveillance data helps schools and policymakers make informed decisions about how to address the problem of childhood obesity.

BMI data is not available for all South Carolina counties; DHEC's Upstate Region Health Department facilitates BMI studies in Spartanburg, Cherokee and Union counties.

## Problem Statement

The latest national data from the federal Centers for Disease Control and Prevention's National Health and Nutrition Examination Survey (NHANES), shows that the percentage of children ages 2 to 19 who are obese increased from 14 percent in 1999 to 18.5 percent in 2015 and 2016. The NHANES survey is one of the federal government's main measures of childhood obesity.

Of further concern is the trend of widening racial and/or ethnic disparities in obesity rates. The rate of obesity among Hispanic and non-Hispanic African American children has consistently been higher than that of non-Hispanic white children. In addition, both groups are less likely to return to normal weight levels, raising concern that they will become adults with obesity and develop serious obesity-related health problems.

Some reports have indicated that the epidemic might be declining in some parts of the country; unfortunately, the latest NHANES analysis indicates that this doesn't seem to be the case. Clearly, childhood obesity remains a problem.

South Carolina has the 12th highest adult obesity rate in the nation (32.3%), according to The State of Obesity: Better Policies for a Healthier America (August

2017). Furthermore, the same report cites a combined overweight and obesity rate of 32.9% among 10 – 17 year olds; the 17th highest rank in the nation.

The most recent BMI rates (2017) among first-, third- and fifth-grade students in Spartanburg County reveal that 33.2 percent of measured students are either overweight or obese. This is a decrease compared to last year's rate of 34.8 percent.

## **Causes of Childhood Obesity**

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 causes of excess weight gain in young people are similar to those in adults, including factors such as a person's behavior and genetics. Behaviors that influence excess weight gain include eating and drinking high-calorie, low-nutrient foods and beverages, not getting enough physical activity, sedentary activities such as watching television or other screen devices, medication use, and sleep routines.

Childhood obesity also is influenced by a person's community. The places where families live, learn, work and play all have a major impact on the choices they are able to make. It can be difficult for children and parents to make healthy food choices and get enough physical activity when they are exposed to environments that do not support healthy habits.

For example, inexpensive processed foods are widely available, while healthy foods are often more expensive and scarce in some neighborhoods. Safe, accessible places to be physically active are not always available.

Reversing the obesity epidemic will require collaboration among individuals, families, schools, communities, businesses and government – all sectors working together to make healthier choices easier for all communities.

# Methodology

Students from 45 of 46 elementary/primary schools (first-, third- and fifth-graders) in Spartanburg County participated in the BMI study. School staff measured the height/weight of each student and provided de-identified information regarding gender, date of birth, ethnicity, and free and reduced lunch status. A census rather than a sample method of data collection was used, making the results very reliable.

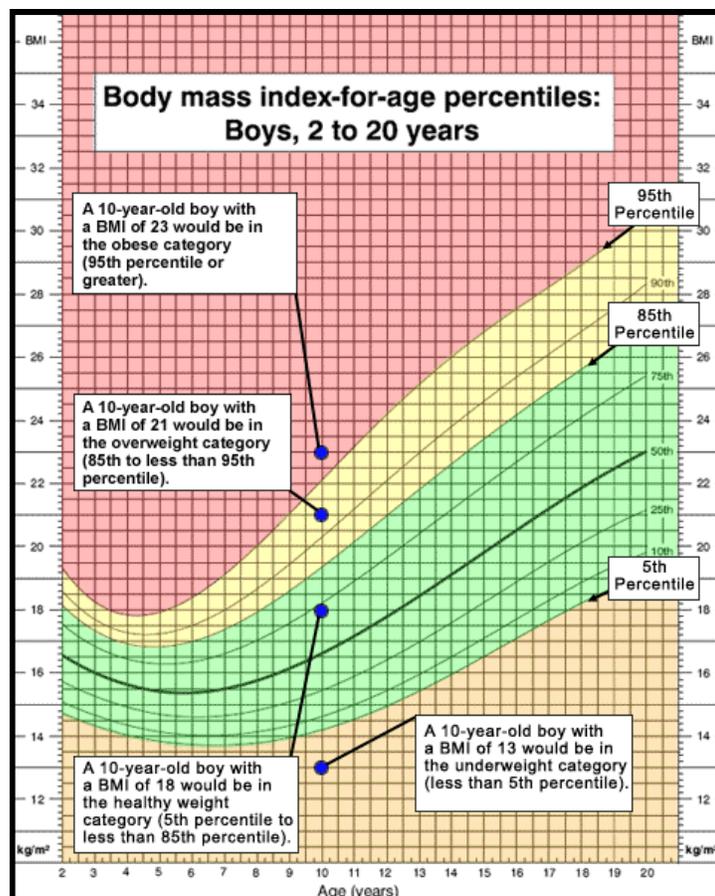
Obesity is defined as excess body fat, and there are various ways to estimate fat. One of the most commonly used screening tools is the calculation of body mass index (BMI) from the weight and height of an individual.

The formula follows:

$$\text{BMI} = 703 \times (\text{weight (pounds)} / \text{height}^2 (\text{inches}^2))$$

Age- and sex-specific growth charts are used to calculate BMI in children and teens (ages 2–20) using a child's weight and height, then matching their BMI to the corresponding BMI-for-age percentile for their age and sex. The percentile shows how a child's weight compares to that of other children of the same age and gender. For example, a BMI-for-age percentile of 65 means that the child's weight is greater than that of 65 percent of other children of the same age and sex.

The BMI categories used for this report are listed below.



Weight Status Category and Percentile Range
<b>Underweight</b> Less than the 5 <sup>th</sup> percentile
<b>Normal Weight</b> 5 <sup>th</sup> percentile to less than the 85 <sup>th</sup> percentile
<b>Overweight</b> 85 <sup>th</sup> percentile to less than the 95 <sup>th</sup> percentile
<b>Obese</b> Equal to or greater than the 95 <sup>th</sup> percentile

# 2017 Key Findings

Of the total of first-, third- and fifth-graders, 84.2 percent were measured (9,295 of 11,042), and 33.2 percent were either overweight or obese. A breakdown for each grade follows:

## FIRST GRADE

87.8 percent were measured. (3,021 of 3,442)

**24.6%**

were either overweight or obese.

## THIRD GRADE

80.1 percent were measured. (3,092 of 3,859)

**33.8%**

were either overweight or obese.

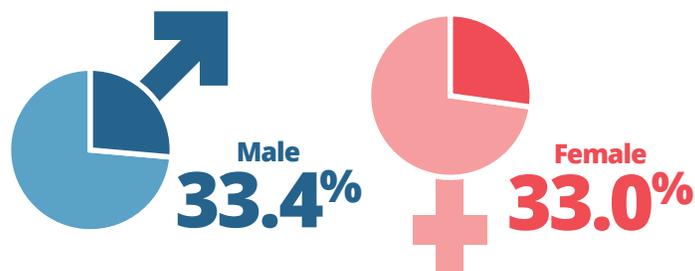
## FIFTH GRADE

85.1 percent were measured. (3,182 of 3,741)

**40.9%**

were either overweight or obese.

Of the total number of first-, third- and fifth-graders that were overweight/obese, the following observations can be made:



Significant disparities did not exist between male and female genders.



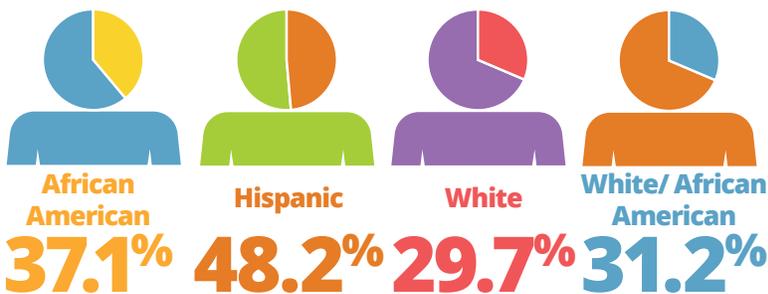
Higher SES  
**30.4%**



Low SES  
**35.0%**

Disparities exist between children from low-socioeconomic households and children from high-socioeconomic households.

Note: Socioeconomic status based on free and reduced lunch eligibility.



Disparities exist between African American, Hispanic American and White children.

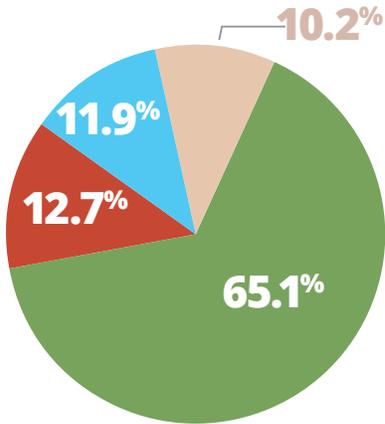
Note: For statistical reasons, racial/ethnic groups comprising less than 5 percent of the data were not included.



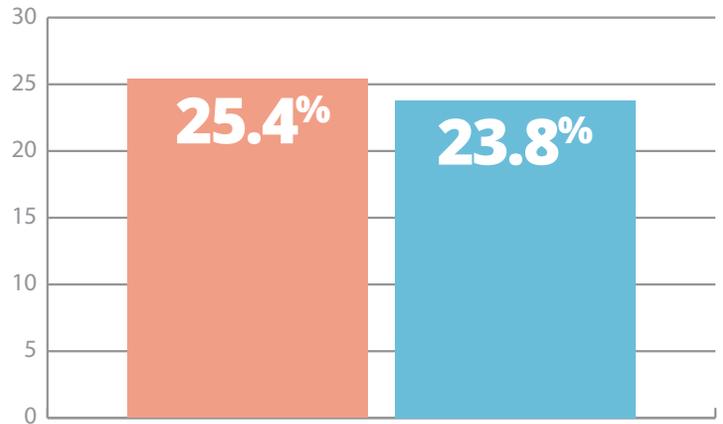
# First Grade Report



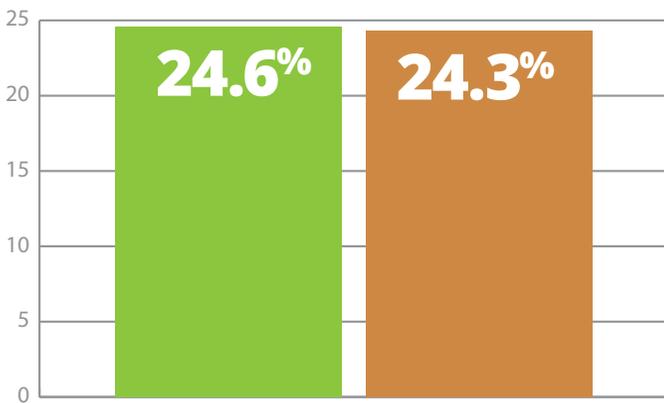
# OVERVIEW



**Percent of children by weight status**  
Spartanburg County • First Grade • 3,021 Students



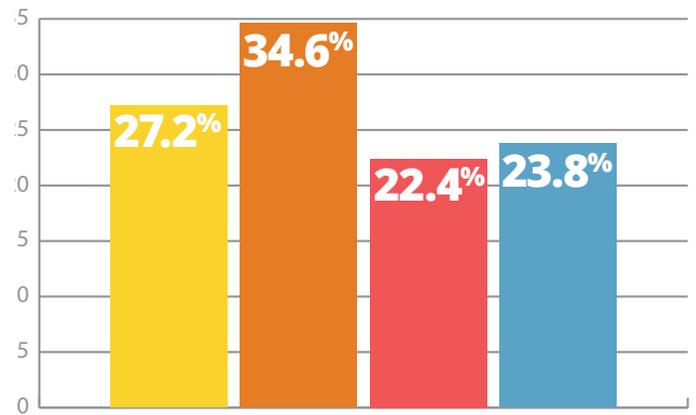
**Percent of children who were obese or overweight by gender**  
Spartanburg County • First Grade



**Percent of children who were obese or overweight by SES\***  
Spartanburg County • First Grade



\*Socioeconomic status based on free and reduced school lunch eligibility.



**Percent of children who were obese or overweight by race/ethnicity\***  
Spartanburg County • First Grade

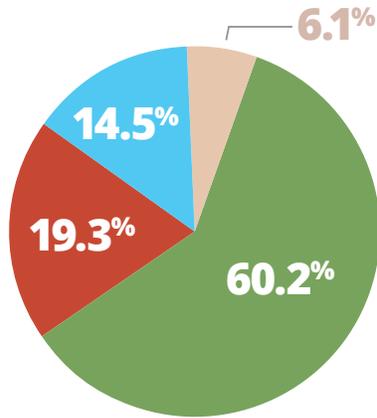


\* For statistical reasons, racial/ethnic groups comprising < 5 percent of the data were not included. These groups/individuals are included in all other parts of the report

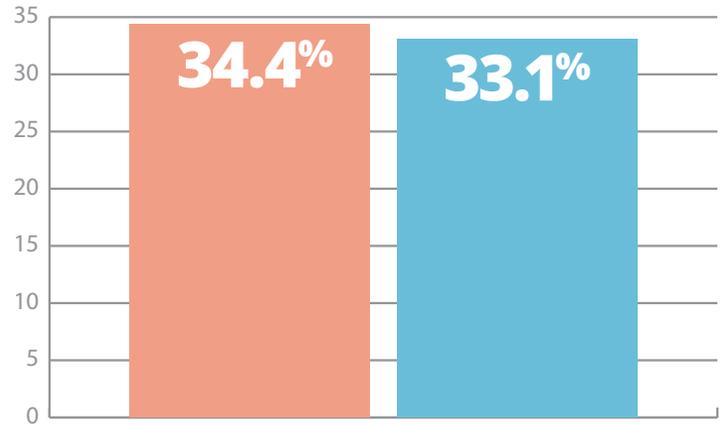
# Third Grade Report



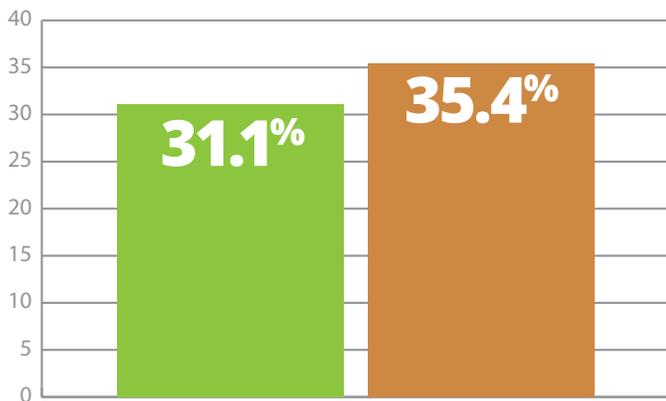
# OVERVIEW



**Percent of children by weight status**  
Spartanburg County • Third Grade • 3092 Students



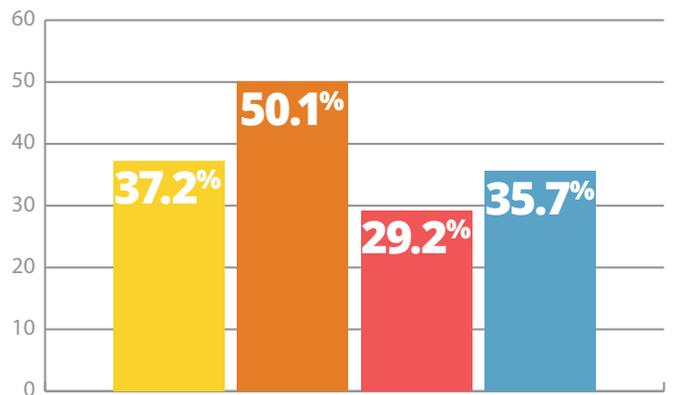
**Percent of children who were obese or overweight by gender**  
Spartanburg County • Third Grade



**Percent of children who were obese or overweight by SES\***  
Spartanburg County • Third Grade



\*Socioeconomic status based on free and reduced school lunch eligibility.



**Percent of children who were obese or overweight by race/ethnicity\***  
Spartanburg County • Third Grade

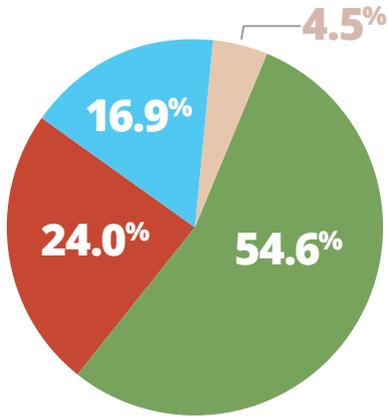


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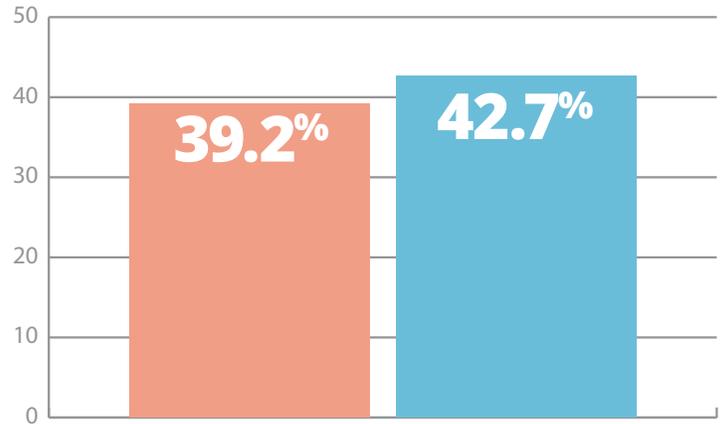
# Fifth Grade Report



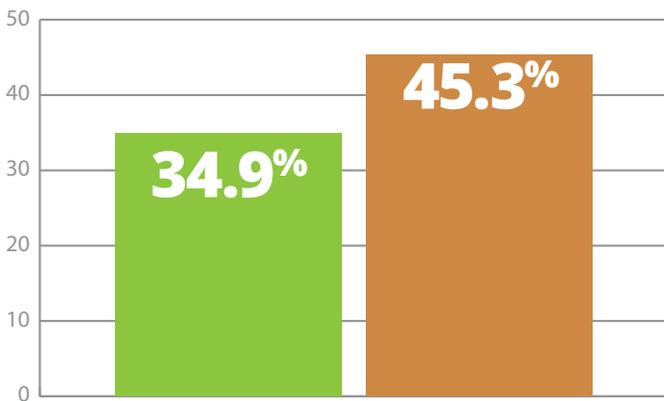
# OVERVIEW



**Percent of children by weight status**  
Spartanburg County • Fifth Grade • 3,182 Students



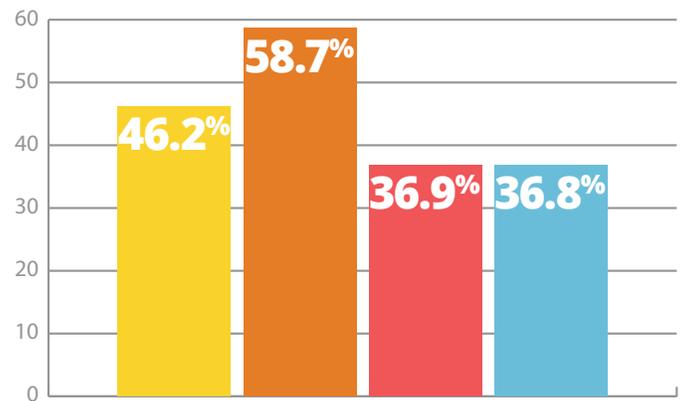
**Percent of children who were obese or overweight by gender**  
Spartanburg County • Fifth Grade



**Percent of children who were obese or overweight by SES\***  
Spartanburg County • Fifth Grade



\*Socioeconomic status based on free and reduced school lunch eligibility.



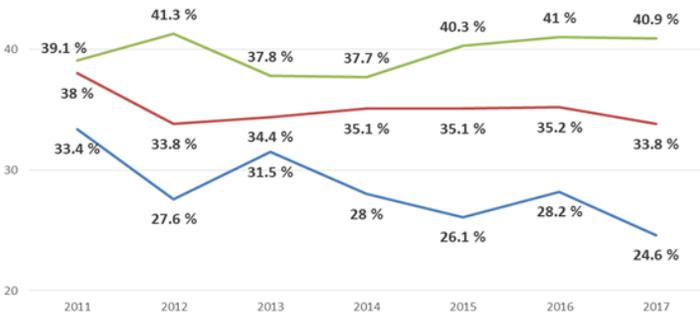
**Percent of children who were obese or overweight by race/ethnicity\***  
Spartanburg County • Fifth Grade



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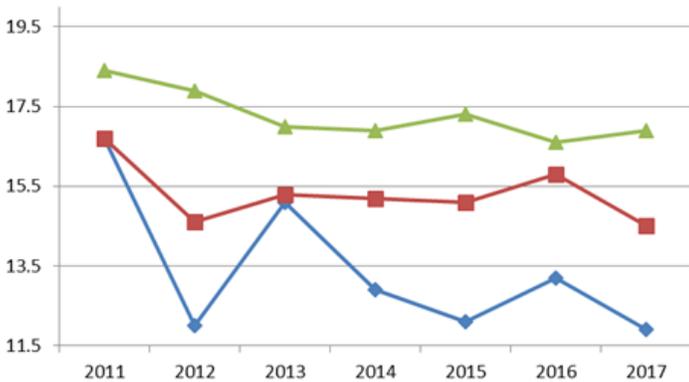
# Seven-Year Comparative Data

Data has been collected for seven consecutive years (2011- 2017). The seven-year trend data below illustrates some impressive reductions in BMI rates; however, more work is needed to bring childhood obesity rates in Spartanburg County down to healthier levels. Following are comparative data charts for the last seven years.



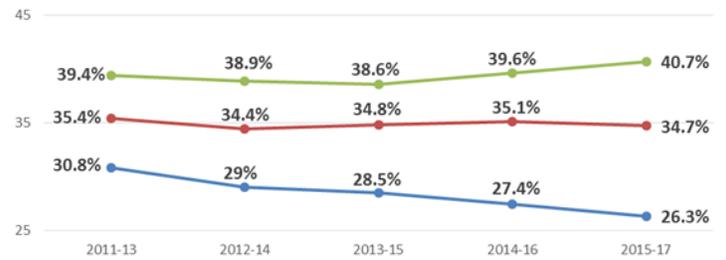
**Spartanburg County 7 Year Trend Data: Percentage of Overweight & Obese Children**

◆ First Grade    ■ Third Grade    ▲ Fifth Grade



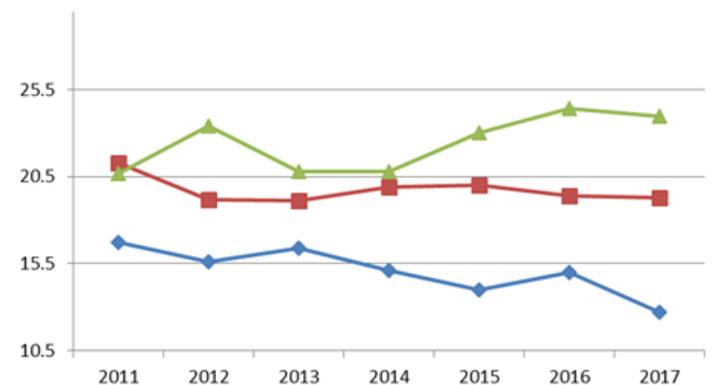
**Spartanburg County 7 Year Trend Data: Percentage of Overweight Children**

◆ First Grade    ■ Third Grade    ▲ Fifth Grade



**Spartanburg County Rolling Average 2011 - 2017 Percentage of Overweight/ Obese Children**

◆ First Grade    ■ Third Grade    ▲ Fifth Grade

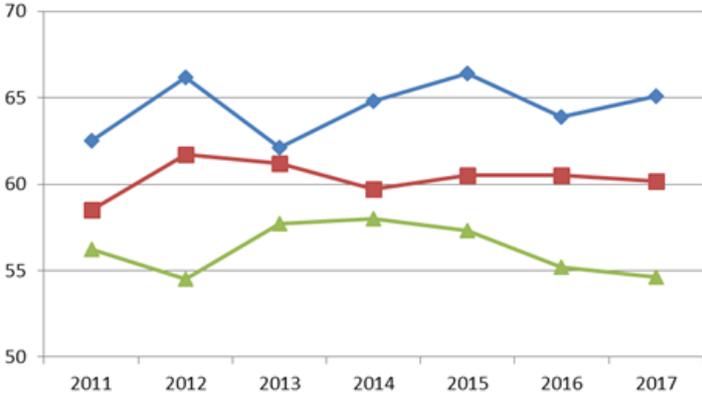


**Spartanburg County 7 Year Trend Data: Percentage of Obese Children**

◆ First Grade    ■ Third Grade    ▲ Fifth Grade

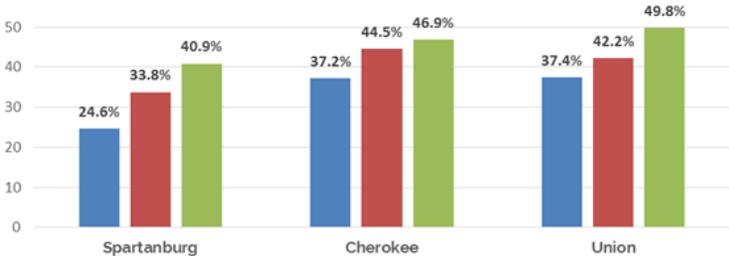
### Spartanburg County 7 Year Trend Data Percentage of Children in Normal Weight Range

◆ First Grade    ■ Third Grade    ▲ Fifth Grade



### 2017 Spartanburg, Cherokee and Union Counties Percentage of Overweight/Obese Children

◆ First Grade    ■ Third Grade    ▲ Fifth Grade



# Recommended Strategies to Combat Childhood Obesity

According to the National School Boards Association, “Research shows that when school districts and schools have effective policies and practices that support the health of their students and staff, student and staff absenteeism decreases, student concentration improves, student behavior problems are reduced, and children and adolescents establish lifelong health promoting behaviors.” Additionally, a recent study published by the Centers for Disease Control and Prevention found that the more that schools are engaged with evidence-based strategies that promote healthy eating and physical activity, the greater reductions they saw in their obesity rates.

Many experts believe schools are a key setting for efforts to prevent childhood obesity. Research indicates that children with obesity miss more days of school compared to students with normal weights. Missed days of school, whether due to illness or to avoid weight-based bullying, can make it hard to keep up academically. Studies now show that a comprehensive school-based approach is effective at preventing obesity.

Implementing comprehensive and freely available programs such as the Alliance for a Healthier Generation’s Healthy Schools program help impact student health outcomes through policy and systems changes. Administrative support, parent and community engagement, and professional development create sustainable wellness mindsets and promote cultures of health in the greater school community.

There are a variety of evidence-based strategies that promote healthy lifestyle choices in the school setting:

- Adopt and promote district wellness policies that include the SC Department of Education best practices recommendations.
- Increase access to and promotion of fresh fruits and vegetables for children.
- Increase access to physical activity opportunities for children before, during and after school.
- Increase the number of South Carolina out-of-school time providers implementing healthy eating and physical activity standards.
- Develop health care professionals-school partnerships to promote healthy eating and active living activities in South Carolina schools.
- Make health education in schools a focal point for obesity prevention by integrating health messaging into the curriculum for all grade levels as well as providing recommended health education classes.



## Acknowledgment

This assessment would not be possible without the willingness and cooperation of the Spartanburg County School Districts and Partners for Active Living.

The incremental decreases in BMI rates compared to last year in Spartanburg County are encouraging, yet childhood obesity continues to be a significant concern.

Current interventions should continue and expand to reach more children and effect more positive change.

DHEC sincerely appreciates the commitment to this project, and commends all partners for taking a major step in a community-wide effort to address childhood obesity in Spartanburg County.



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