

Spartanburg County

# 2016 Body Mass Index (BMI) Report

First-, Third-, and Fifth-Grade Students





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# 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 the Spartanburg Childhood Obesity Taskforce. The BMI reports (2011 - 2016) have spurred important conversations and created significant momentum.

Since its inception in 2009, the Spartanburg Childhood Obesity Taskforce 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. A primary objective of the newly named coalition is to work collectively to reverse the childhood obesity epidemic in Spartanburg County by the year 2018. The ongoing BMI project will monitor these efforts.

This report details the sixth consecutive year of BMI measurement for all Spartanburg County first-, third- and fifth-grade students attending public school. Consistent participation over the last six years is significant. Comparing six 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

Today, about one in three American kids and teens is overweight or obese, nearly triple the rate in 1963. Among children today, obesity is causing a broad range of health problems that previously weren't seen until adulthood. These include high blood pressure, type 2 diabetes and elevated blood cholesterol levels. There are also psychological effects: Obese children are more prone to low self-esteem, negative body image and depression. And excess weight at young ages has been linked to higher and earlier death rates in adulthood.

Throughout the United States, the number of people identified as being overweight or obese has increased in all ethnic groups, all ages and both genders. This is not an isolated threat to health, nor one limited to a particular population group. However, among some racial, ethnic and socioeconomic groups, and within

certain geographic regions, the prevalence of obesity and many obesity-related risk factors is especially high.

The Robert Wood Johnson Foundation's 2016 State of Obesity Report states that South Carolina is the 13th most obese state in the country. Furthermore, South Carolina's 10- to 17-year-olds have the second highest obesity prevalence in the U.S.

There have been significant reductions in Spartanburg County's BMI rates for first-, third- and fifth-grade students; however, rates are still alarmingly high as demonstrated by this report.

## 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 all 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.

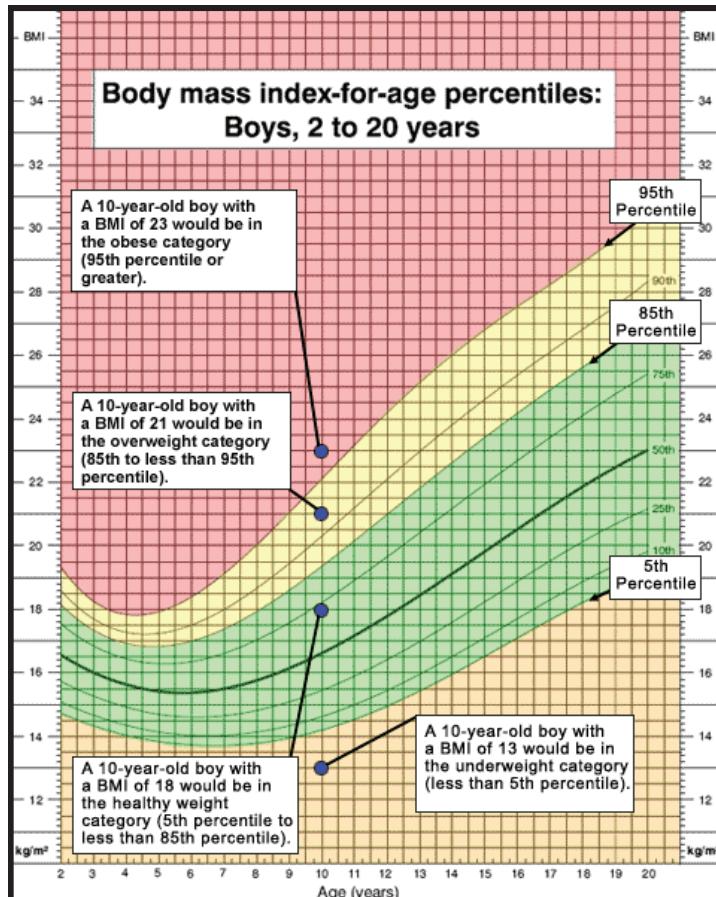
Obesity is defined as excess body fat, and there are various ways to estimate fat. One of the most commonly used screening tools is the calculation of body mass index (BMI) from the weight and height of an individual.

The formula follows:

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

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

### Underweight

Less than the 5<sup>th</sup> percentile

### Normal Weight

5<sup>th</sup> percentile to less than the 85<sup>th</sup> percentile

### Overweight

85<sup>th</sup> percentile to less than the 95<sup>th</sup> percentile

### Obese

Equal to or greater than the 95<sup>th</sup> percentile

# 2016 Key Findings

Of the total of first-, third- and fifth-graders, 80.8 percent were measured (8,660 of 10,716). A breakdown for each grade follows:

## FIRST GRADE

80.4 percent were measured. (2,765 of 3,440)

**28.2%**

were either overweight or obese.

## THIRD GRADE

75.6 percent were measured. (2,754 of 3,644)

**35.2%**

were either overweight or obese.

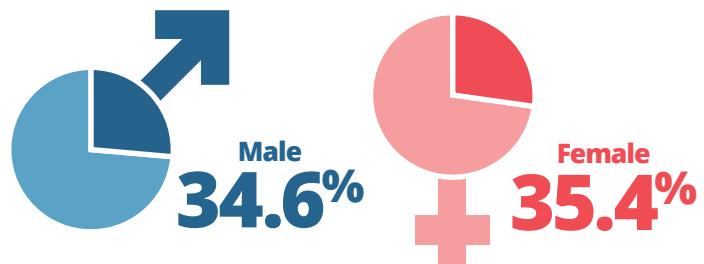
## FIFTH GRADE

86.5 percent were measured. (3,141 of 3,632)

**41.0%**

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.



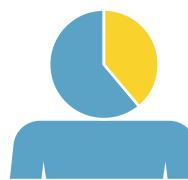
Higher SES  
**30.3%**



Low SES  
**38.4%**

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

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



African American  
**39.0%**



Hispanic  
**49.1%**



White  
**31.4%**

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

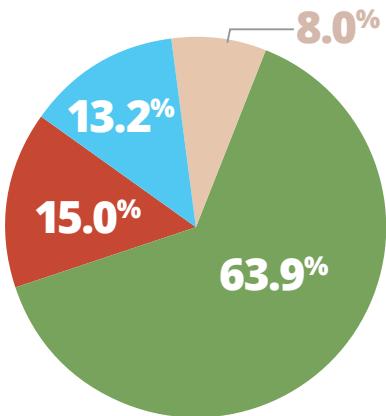
Note: For statistical reasons, racial/ethnic groups comprising less than 5 percent of the data were not included.



# First Grade Report

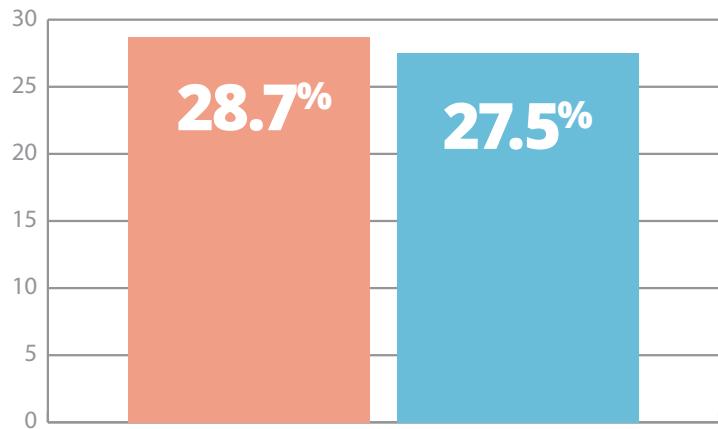


# OVERVIEW



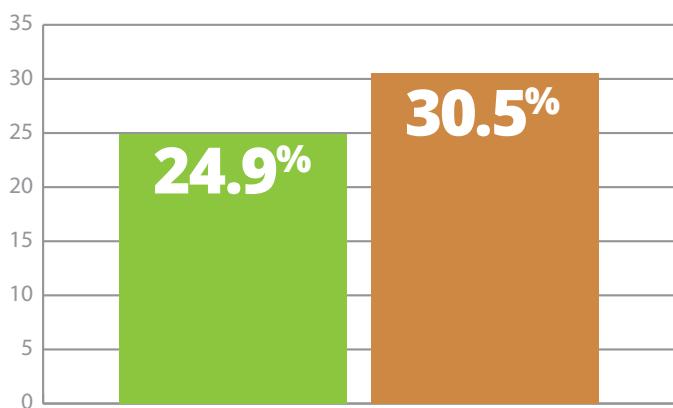
**Percent of children by weight status**  
Spartanburg County • First Grade • 2,765 Students

Underweight	Normal Weight
Overweight	Obese



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

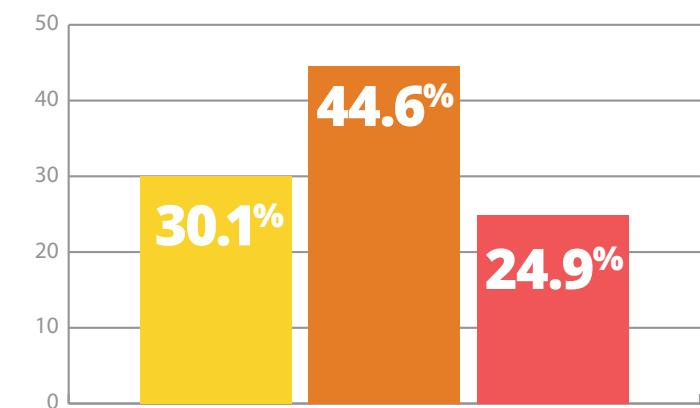
Female	Male
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**Percent of children who were obese or overweight by SES\***  
Spartanburg County • First Grade

Higher SES	Low SES
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\*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

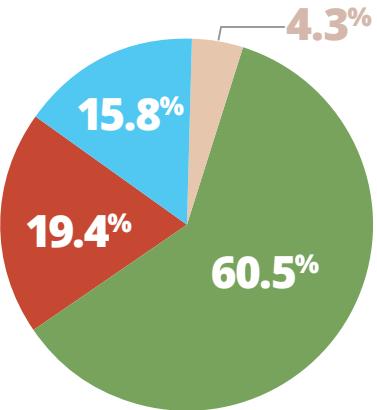
African American	Hispanic	White
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\* For statistical reasons, racial/ethnic groups comprising < 5 percent of the data were not included. These groups/individuals are included in all other parts of the report



# Third Grade Report

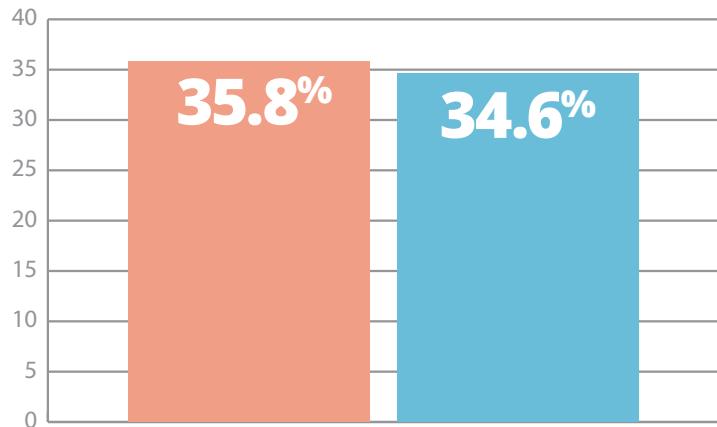
# OVERVIEW



## Percent of children by weight status

Spartanburg County • Third Grade • 2,754 Students

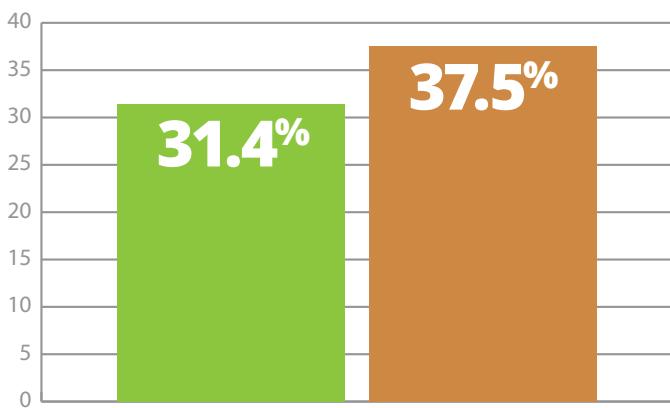
<span style="background-color: #c8a28e; border: 1px solid black; padding: 2px 5px;"></span>	Underweight
<span style="background-color: #6aa84f; border: 1px solid black; padding: 2px 5px;"></span>	Normal Weight
<span style="background-color: #1e9e9e; border: 1px solid black; padding: 2px 5px;"></span>	Overweight
<span style="background-color: #c0392b; border: 1px solid black; padding: 2px 5px;"></span>	Obese



## Percent of children who were obese or overweight by gender

Spartanburg County • Third Grade

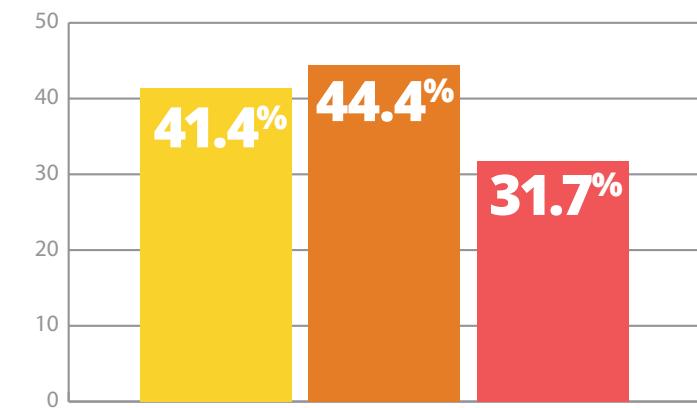
<span style="background-color: #c8a28e; border: 1px solid black; padding: 2px 5px;"></span>	Female
<span style="background-color: #1e9e9e; border: 1px solid black; padding: 2px 5px;"></span>	Male



## Percent of children who were obese or overweight by SES\*

Spartanburg County • Third Grade

<span style="background-color: #6aa84f; border: 1px solid black; padding: 2px 5px;"></span>	Higher SES
<span style="background-color: #c8a28e; border: 1px solid black; padding: 2px 5px;"></span>	Low SES



## Percent of children who were obese or overweight by race/ethnicity\*

Spartanburg County • Third Grade

<span style="background-color: #ffd700; border: 1px solid black; padding: 2px 5px;"></span>	African American
<span style="background-color: #c8a28e; border: 1px solid black; padding: 2px 5px;"></span>	Hispanic
<span style="background-color: #ff0000; border: 1px solid black; padding: 2px 5px;"></span>	White

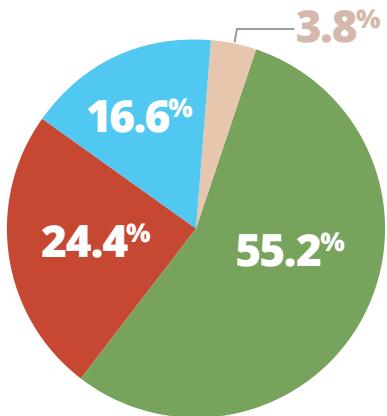
\*Socioeconomic status based on free and reduced school lunch eligibility.

\* 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

# Fifth Grade Report

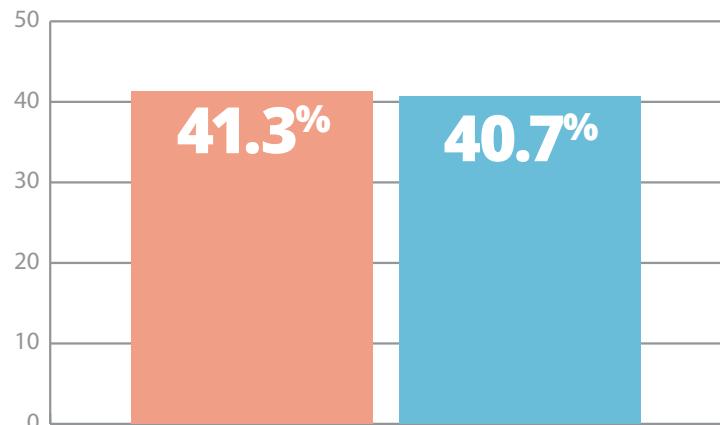


# OVERVIEW



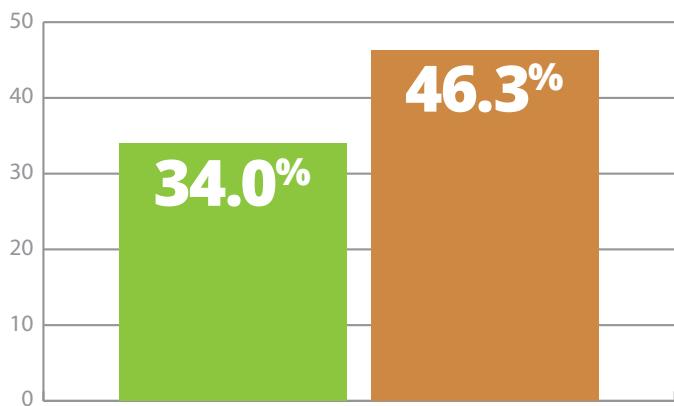
**Percent of children by weight status**  
Spartanburg County • Fifth Grade • 3,141 Students

Underweight	Normal Weight
Overweight	Obese



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

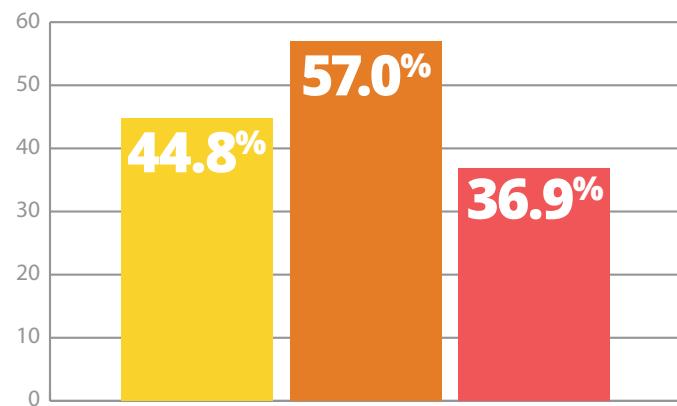
Female	Male
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**Percent of children who were obese or overweight by SES\***  
Spartanburg County • Fifth Grade

Higher SES	Low SES
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\* 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

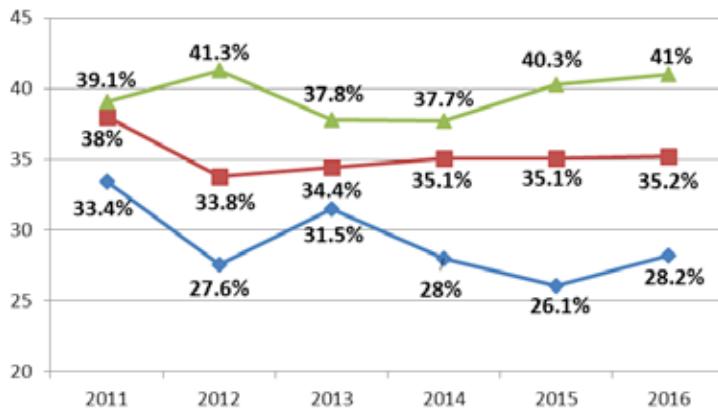
African American	Hispanic	White
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\* For statistical reasons, racial/ethnic groups comprising < 5 percent of the data were not included. These groups/individuals are included in all other parts of the report.



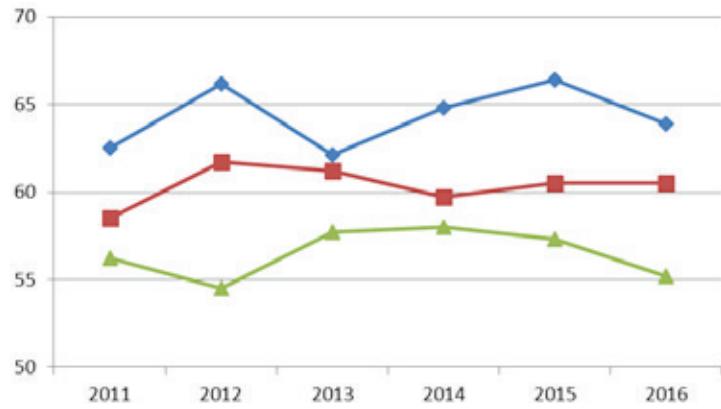
# Six-Year Comparative Data

Data has been collected for six consecutive years (2011- 2016). The six-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 six years.



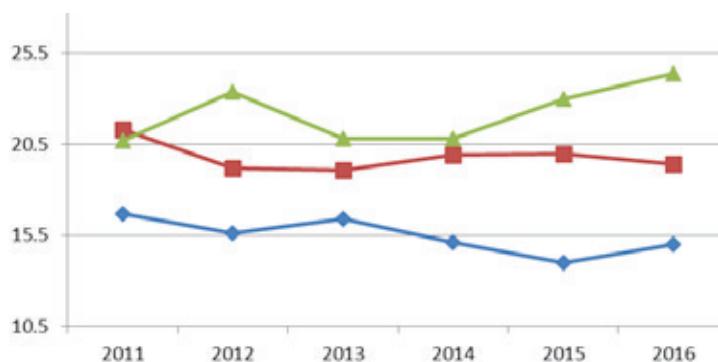
**Spartanburg County Six-Year Trend Data:  
Percentage of Overweight &  
Obese Children**

◆ First Grade      ■ Third Grade      ▲ Fifth Grade



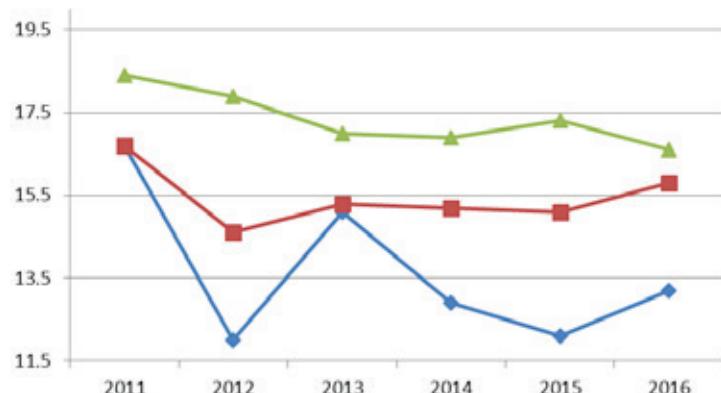
**Spartanburg County Six-Year Trend Data:  
Percentage of Normal Weight Children**

◆ First Grade      ■ Third Grade      ▲ Fifth Grade



**Spartanburg County Six-Year Trend Data:  
Percentage of Obese Children**

◆ First Grade      ■ Third Grade      ▲ Fifth Grade



**Spartanburg County Six-Year Trend Data:  
Percentage of Overweight Children**

◆ First Grade      ■ Third Grade      ▲ Fifth Grade

# Recommended Strategies to Combat Childhood Obesity

The SCale Down initiative is a statewide movement that promotes increasing healthy eating and active living in the places where South Carolinians live, work, play and learn. The project is guided by the South Carolina Obesity Council. The council is composed of a diverse range of business, health care, non-profit and educational leaders who are committed to utilizing best practices to reduce South Carolina's obesity rates.

SCale Down focuses on both long- and short-term strategies that can be implemented to begin reducing the rate of obesity in the Palmetto State. To assist the state in meeting its goals, the plan promotes comprehensive actions to stimulate across-the-board changes at the environmental, policy and system level.

The plan features action items in four major categories: Communities, Worksites, Health Care and Schools/Child Care. Broadly defined, the overarching goals follow:

- Improve the community environment to increase access to affordable fruits and vegetables, education about healthy eating and physical activity and provide more opportunities for safe physical activity.
- Improve employees' health by implementing evidence-based worksite wellness strategies that reduce obesity risk factors and prevalence.
- Improve patient care by enhancing the health care system's ability to effectively diagnose, counsel and refer patients to needed obesity treatment, nutritional counseling and support services.
- **Improve children's health through the use of evidence-based strategies that promote healthy eating and physical activity.**

The following strategies are recommended in the school and child care setting:

- Increase access to fresh fruits and vegetables for children.
- Increase access to physical activity opportunities for children.

- Increase the number of South Carolina out-of-school time providers implementing the National AfterSchool Association's 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.
- Increase the number of early care and education systems that integrate nutrition and physical activity best practices.

Locally, the Mary Black Foundation is funding a four-year Healthy Schools initiative in nine Spartanburg County schools. Chosen via a grant application process, the schools will receive intensive technical assistance, as well as robust funding to assist in implementing the evidence-based Healthy Schools Program (HSP) offered by the Alliance for a Healthier Generation.

The HSP provides a framework to increasing healthy eating and active living education and opportunities in the school setting. The interventions at each location are tracked in detail and an in-depth evaluation component will measure the effects annually. A focus on wellness policies at the district and school level is also addressed in the HSP.

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 engaged with the Healthy Schools Program, the greater reductions they saw in their obesity rates.



## Acknowledgment

This assessment would not be possible without the willingness and cooperation of the Spartanburg County School Districts. DHEC sincerely appreciates the

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



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