



## SPARTANBURG COUNTY

# BODY MASS INDEX (BMI) REPORT

1<sup>st</sup>, 3<sup>rd</sup>, and 5<sup>th</sup> GRADE STUDENTS  
SCHOOL YEAR 2013 - 2014





# CHILDHOOD OBESITY TASK FORCE

## ADVISORY COMMITTEE PARTNERS



Spartanburg Regional  
Healthcare System



partners for  
active living



United Way  
of the Piedmont



MARY BLACK  
FOUNDATION



UPSTATE

University of South Carolina Upstate



PROMOTE PROTECT PROSPER  
South Carolina Department of Health  
and Environmental Control



SPARTANBURG  
COUNTY PARKS DEPARTMENT





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# PREFACE

## • Project Description

First implemented in 2011, the Spartanburg County Body Mass Index (BMI) project is a collaborative effort between Spartanburg County School Districts, DHEC Upstate Region, and the Spartanburg Childhood Obesity Task Force. This report details the third year of BMI measurement for all Spartanburg County 1<sup>st</sup>, 3<sup>rd</sup> and 5<sup>th</sup> grade students attending public school.

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

## • Project History

In an effort to address the obesity epidemic, a community task force was formed in 2008. The Spartanburg Childhood Obesity Task Force (SCOTF) is comprised of a diverse group of partners representing non-profit organizations, hospitals, public health, schools,



recreational organizations, foundations, institutes of higher learning, and community volunteers. The Task Force collectively crafted a goal with the objective of reversing the childhood obesity epidemic in Spartanburg County by the year 2018. The BMI project is a tool to monitor those efforts.

The SCOTF is supported by the South Carolina Eat Smart Move More Coalition, an organization that coordinates obesity prevention efforts across the state and leads the implementation of South Carolina's Obesity Prevention Plan.

*Good For You Spartanburg* is a campaign created by the Spartanburg Childhood Obesity Taskforce to capture the broad-based grassroots, nonprofit, institutional, and governmental support for the development of a healthy Spartanburg County.

It's an online guide for all things healthy that outlines the events, programs, destinations and resources available to become physically active and eat healthy while living or visiting Spartanburg County. This resource will work to improve health behaviors and prevent chronic diseases such as childhood obesity, diabetes, cancer and Stroke. For more information, please visit the website at [www.goodforyouspartanburg.org](http://www.goodforyouspartanburg.org).

## • **Problem Statement**

Childhood obesity threatens the health of our young people and their future potential. Today, more than 23.5 million children and adolescents in the United States - nearly one in three young people - are either obese or overweight, putting them at higher risk for serious, even life-threatening health problems. Today's youth are on course to being the first generation of Americans to live shorter, less healthy lives than their parents.

According to DHEC, in 2010, 67.4 percent of all adults in South Carolina were either overweight or obese, with 35.4 percent considered overweight and 32 percent considered obese. A 2009 Centers for Disease Control and Prevention (CDC) surveillance study reported that 28.9 percent of SC children enrolled in WIC between the ages of 2 and 5 years old were either overweight or obese. In 2011, DHEC cited that 29.6 percent of all South Carolina high school students were either overweight or obese.

Preventing obesity during childhood is critical, because habits that last into adulthood are frequently formed during youth. Research shows that an obese teenager has up to an 80 percent chance of becoming an obese adult. Overweight and obese children are at higher risk than their healthy-weight peers for a host of serious illnesses, including heart disease, stroke, asthma and certain types of cancer. Obese children are already being diagnosed with health problems previously considered to be adult illnesses, such as type 2 diabetes and high blood pressure.



## • **Causes of Childhood Obesity**

In the simplest terms, childhood obesity results from energy imbalance - children consuming more calories than they burn through physical activity and normal growth. Research also indicates that the environments in which we live directly impact the foods our children eat and how much activity they get. Where people live, work, and play affect their health.

Modern conditions have created an environment which makes unhealthy behavior the default, and childhood obesity a predictable and understandable consequence. This underscores the need for changes in the environment. Obesity problems cannot be solved solely through changing individuals' actions and health choices. Communities must work collectively to make healthy choices easy, acceptable, and supported.

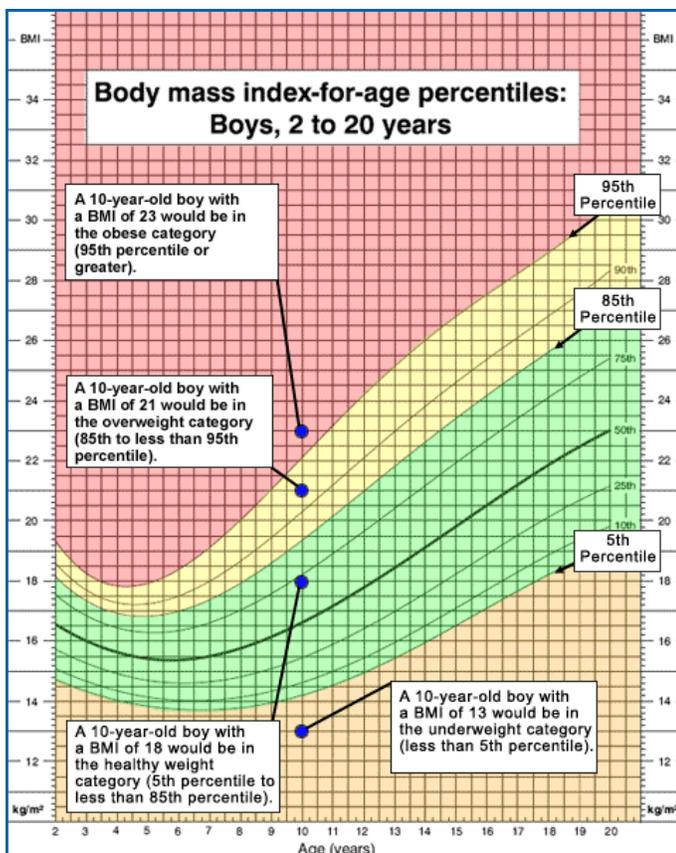
# METHODOLOGY

Students from all elementary/primary schools (1st, 3rd, and 5th grade) in Spartanburg County participated in the BMI study. DHEC provided high-precision electronic scales and staff measured the height/weight of each student. School personnel provided de-identified information regarding gender, date of birth, ethnicity, and free and reduced lunch status.

Obesity is defined as excess body fat and there are various ways that fat can be estimated. The most commonly used screening tool is the calculation of body mass index (BMI) from the weight and height of an individual.

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

For children and youth, defining overweight or obesity based on BMI is more difficult because height and weight are age dependent and change throughout development. For children age 2 to 20 years old, the CDC has developed a definition based on the 2000 CDC growth charts for 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

# KEY FINDINGS

A census rather than sample method of data collection was used, making results very reliable. Of the **total population** of 1st, 3rd and 5th graders, **83.9%** were measured (7,882 of 9,390) A breakdown for each grade follows:

<b>1st Grade</b>	90.1% were measured (3,343 of 3,709)
	<b>31.5%</b> were either overweight or obese
<b>3rd Grade</b>	90.2% were measured (3,064 of 3,397)
	<b>34.4%</b> were either overweight or obese
<b>5th Grade</b>	89.0% were measured (3,142 of 3,531)
	<b>37.8%</b> were either overweight or obese

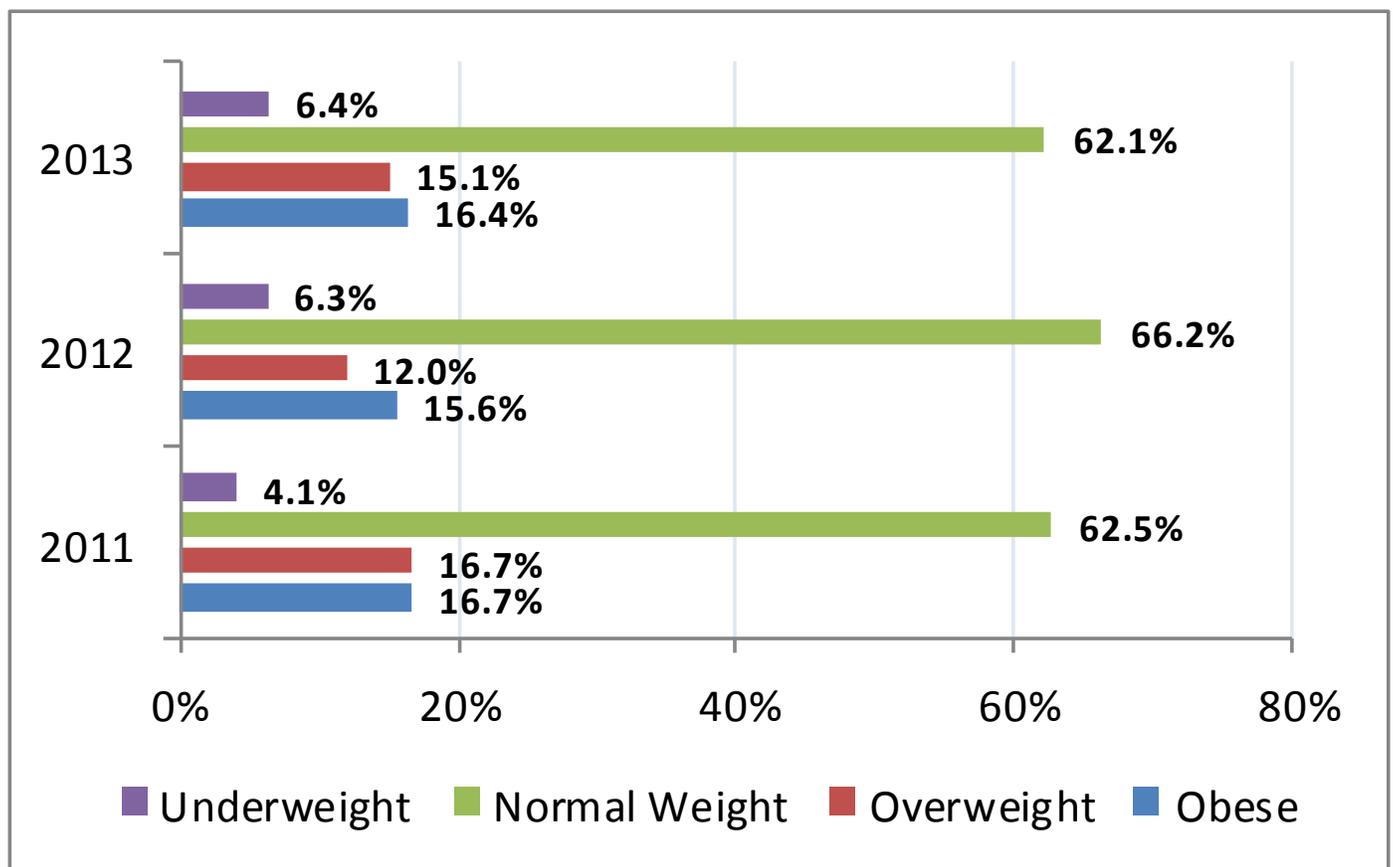
In considering the **total population** of 1st, 3rd and 5th graders that were either overweight or obese, the following observations can be made:

<b>Gender</b>	<ul style="list-style-type: none"> <li><b>Differences/disparities exist between male and female genders.</b> (34.1% vs. 34.3%)</li> </ul>
<b>Socioeconomic Status</b>	<ul style="list-style-type: none"> <li><b>Difference between children from low socioeconomic households and children from high socioeconomic households.</b> (36.7% vs. 31.4%) (Note: socioeconomic status based on free and reduced lunch eligibility)</li> </ul>
<b>Race/Ethnicity</b>	<ul style="list-style-type: none"> <li><b>Differences/disparities exist between African American, Hispanic and White children.</b> (38.0% vs. 41.4% vs. 32.4%) (Note: for statistical reasons, race/ethnic groups comprising less than 5% of the data were not included)</li> </ul>

# 3 YEAR COMPARATIVE DATA

Data has been collected for three consecutive years (2011, 2012, 2013). While rates of childhood overweight and obesity are still considered to be high in Spartanburg County, the majority of the data indicates a positive trend in this third year. Most notably, a higher percentage of 3rd and 5th graders fall within the normal/healthy weight range. Comparative data charts follow.

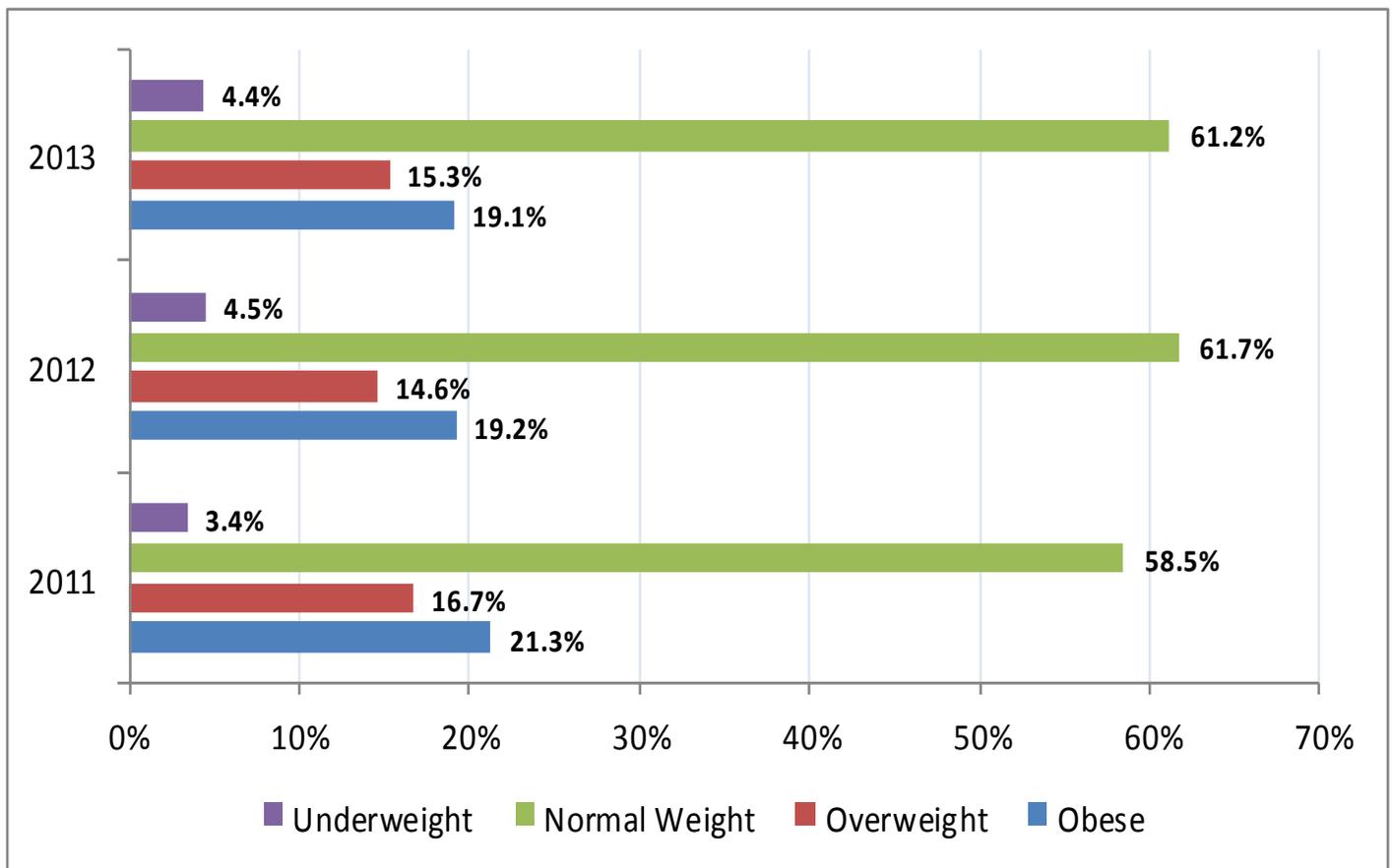
## Spartanburg County 1st Grade



- Over a 3 year period, normal weight decreased by 0.4 percentage points.
- Over a 3 year period, underweight increased by 2.3 percentage points.
- Over a 3 year period, overweight decreased by 1.6 percentage point.
- Over a 3 year period, obesity decreased by 0.3 percentage points.

# 3 YEAR COMPARATIVE DATA

## Spartanburg County 3rd Grade

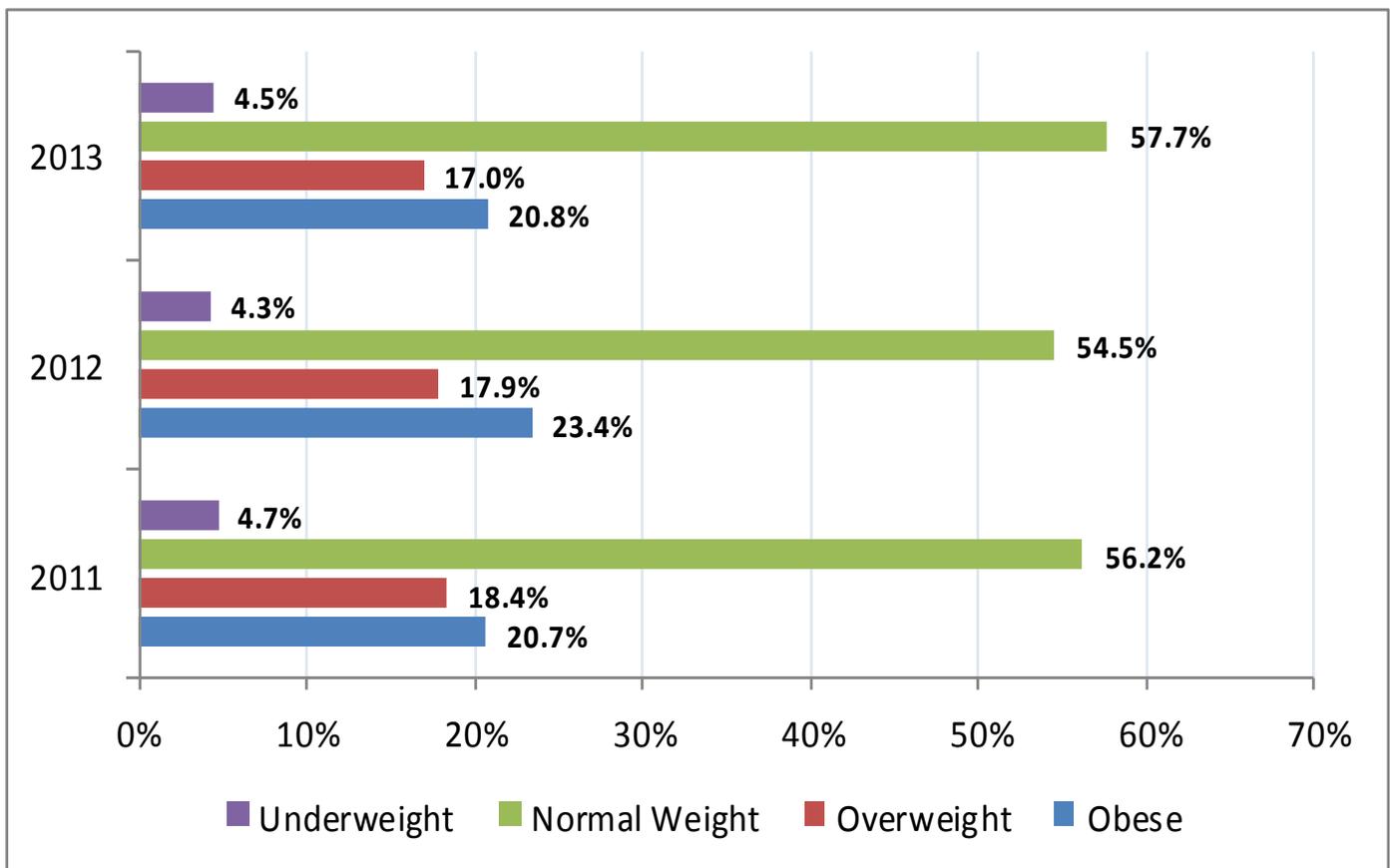


- Over a 3 year period, normal weight increased by 2.7 percentage points.
- Over a 3 year period, underweight increased by 1.0 percentage point.
- Over a 3 year period, overweight decreased by 1.4 percentage points.
- Over a 3 year period, obesity increased by 2.2 percentage points.



# 3 YEAR COMPARATIVE DATA

## Spartanburg County 5th Grade



- Over a 3 year period, normal weight increased by 1.5 percentage points.
- Over a 3 year period, underweight decreased by 0.2 percentage points.
- Over a 3 year period, overweight decreased by 1.4 percentage point.
- Over a 3 year period, obesity increased by 0.1 percentage points.



# 1ST GRADE REPORT

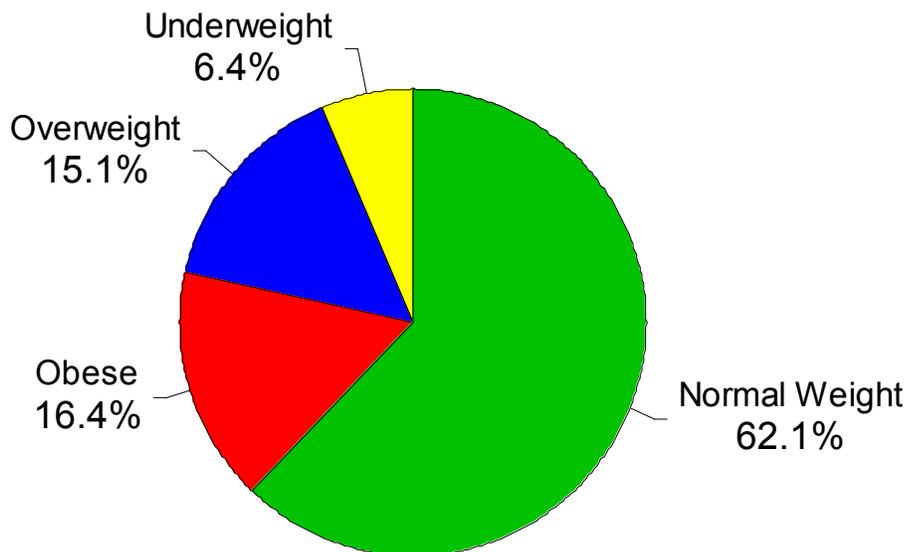


# 1st Grade Report

## Spartanburg County School District 2013-2014

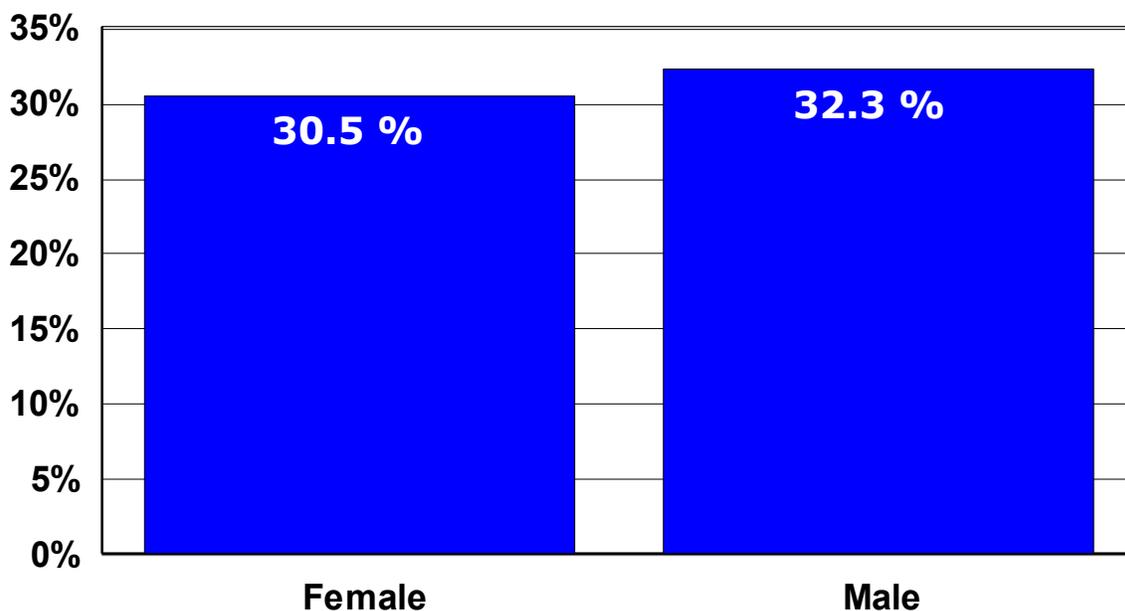
### Percent of children by weight status

Spartanburg County First Grade - 3343 Students



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

Spartanburg County - First Grade

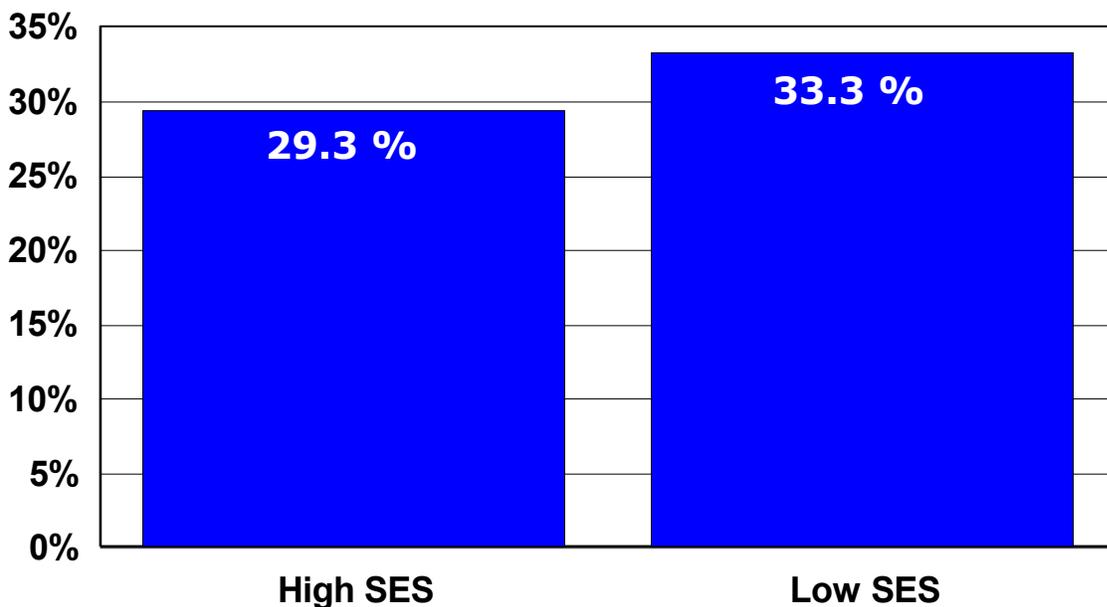


- Underweight: < 5th percentile
- Overweight: ≥ 85th percentile to < 95th percentile
- Normal weight: ≥ 5th percentile to < 85th percentile
- Obese: ≥ 95th percentile

# 1st Grade Report

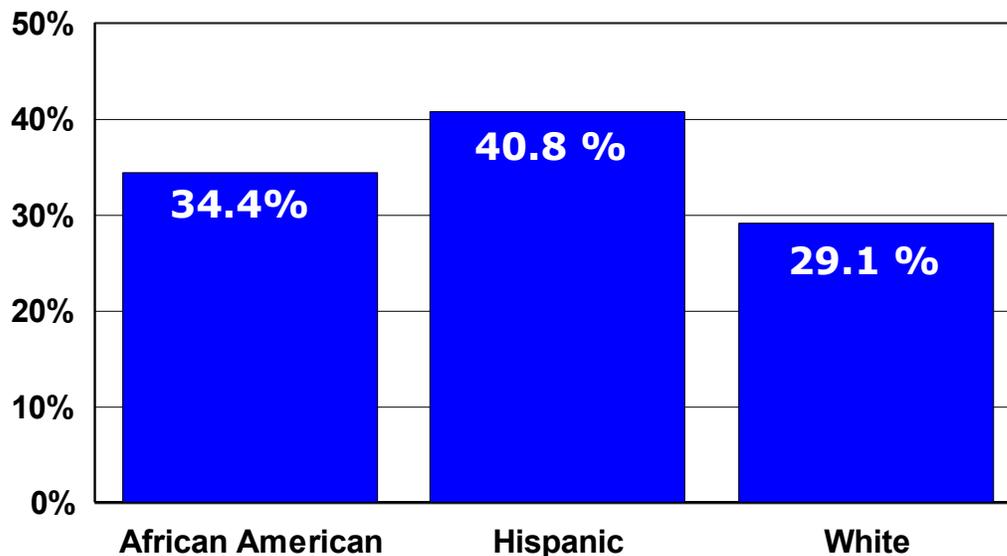
## Spartanburg County School District 2013-2014

Percent of children who were obese or overweight by SES  
Spartanburg County - First Grade



\*Socioeconomic status based on Free and Reduced School Lunch Program eligibility.

Percent of children who were obese or overweight by Race/Ethnicity  
Spartanburg County - First Grade



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



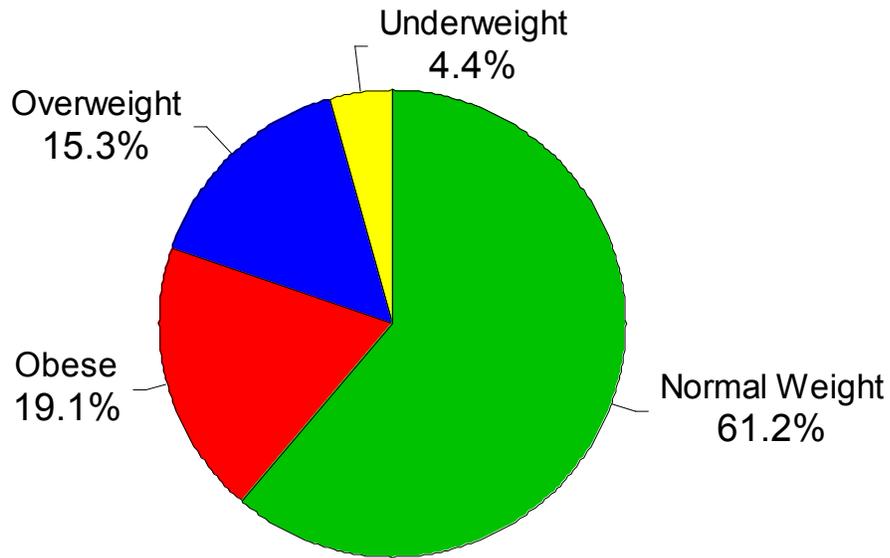
# 3RD GRADE REPORT



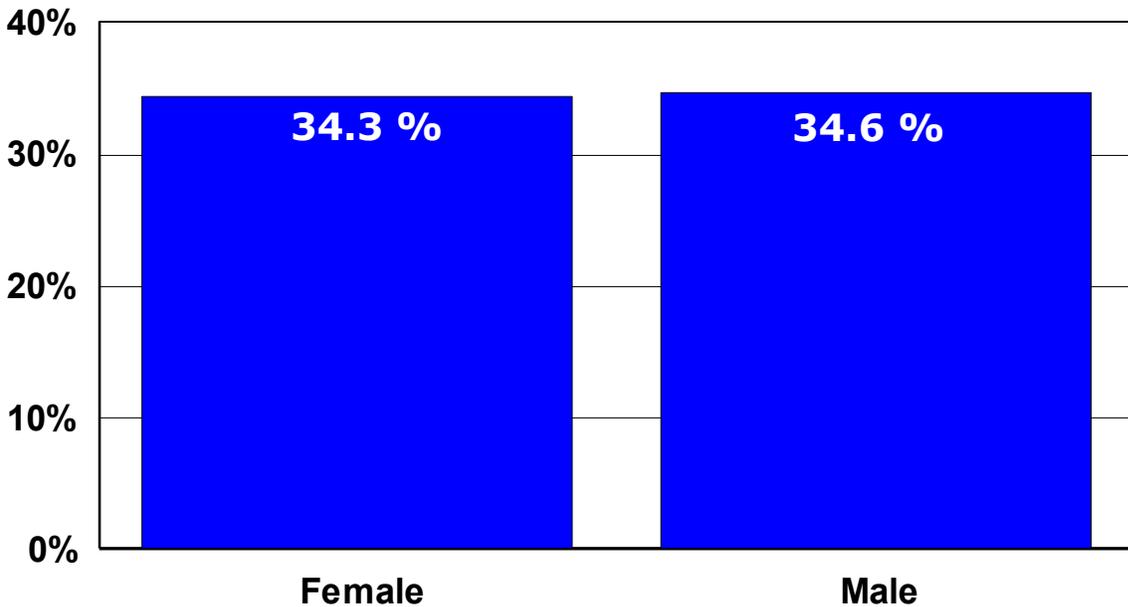
# 3rd Grade Report

## Spartanburg County School District 2013 -2014

**Percent of children by weight status**  
**Spartanburg County Third Grade - 3064 Students**



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

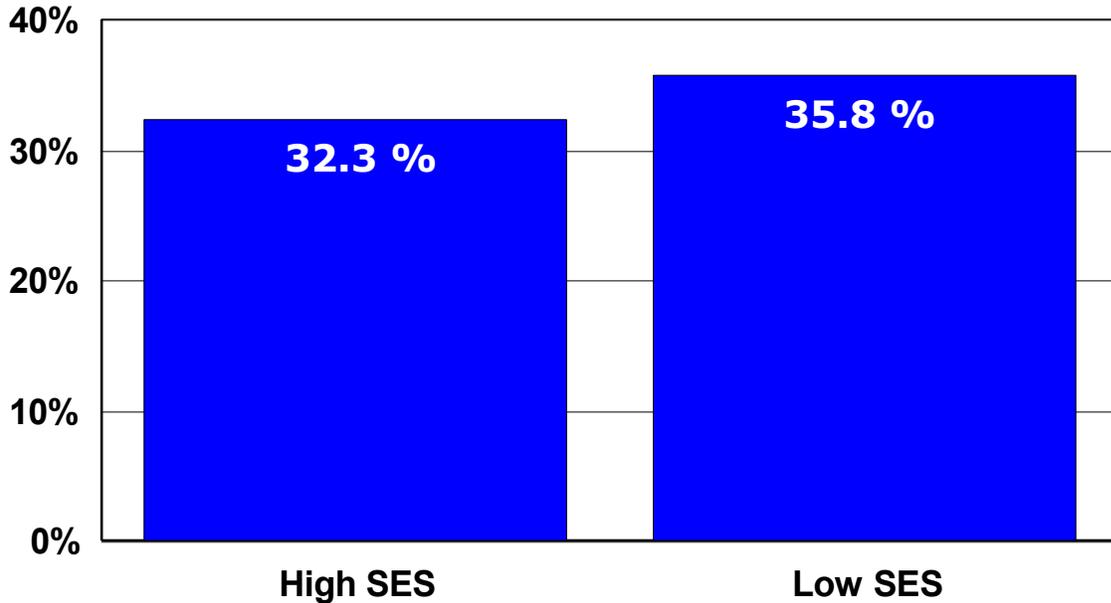


- Underweight: < 5th percentile
- Overweight: ≥ 85th percentile to < 95th percentile
- Normal weight: ≥ 5th percentile to < 85th percentile
- Obese: ≥ 95th percentile

# 3rd Grade Report

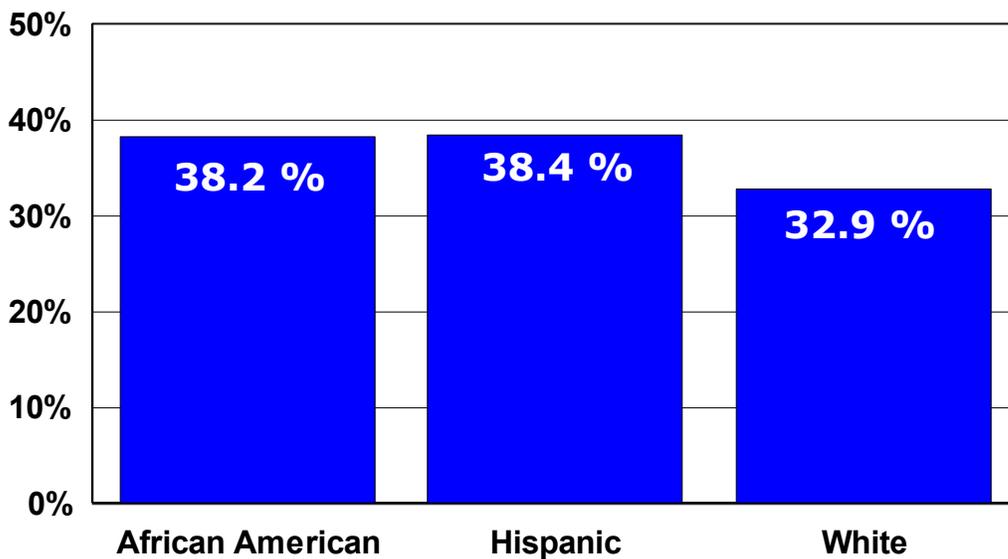
## Spartanburg County School District 2013 -2014

Percent of children who were obese or overweight by SES  
Spartanburg County - Third Grade



\*Socioeconomic status based on Free and Reduced School Lunch Program eligibility.

Percent of children who were obese or overweight by Race/Ethnicity  
Spartanburg County - Third Grade



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



# 5TH GRADE REPORT

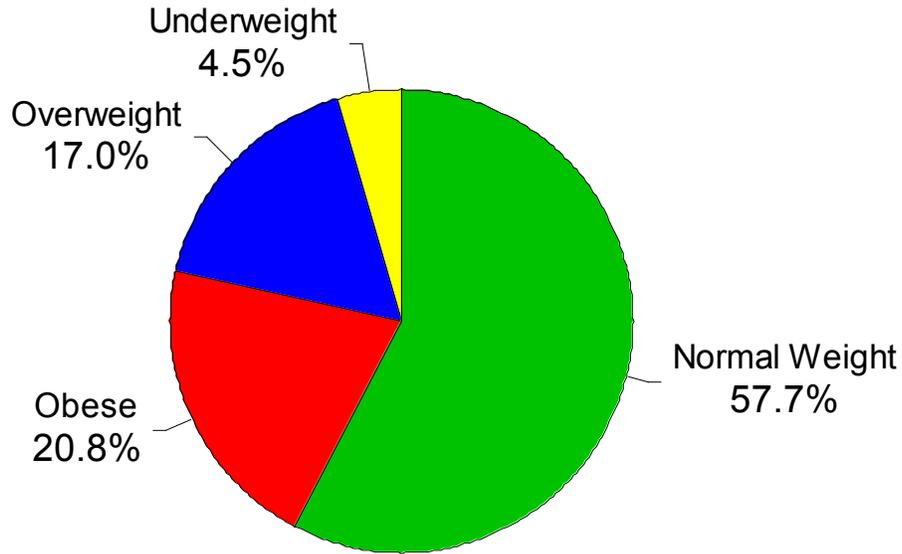


# 5th Grade Report

## Spartanburg County School District 2013 -2014

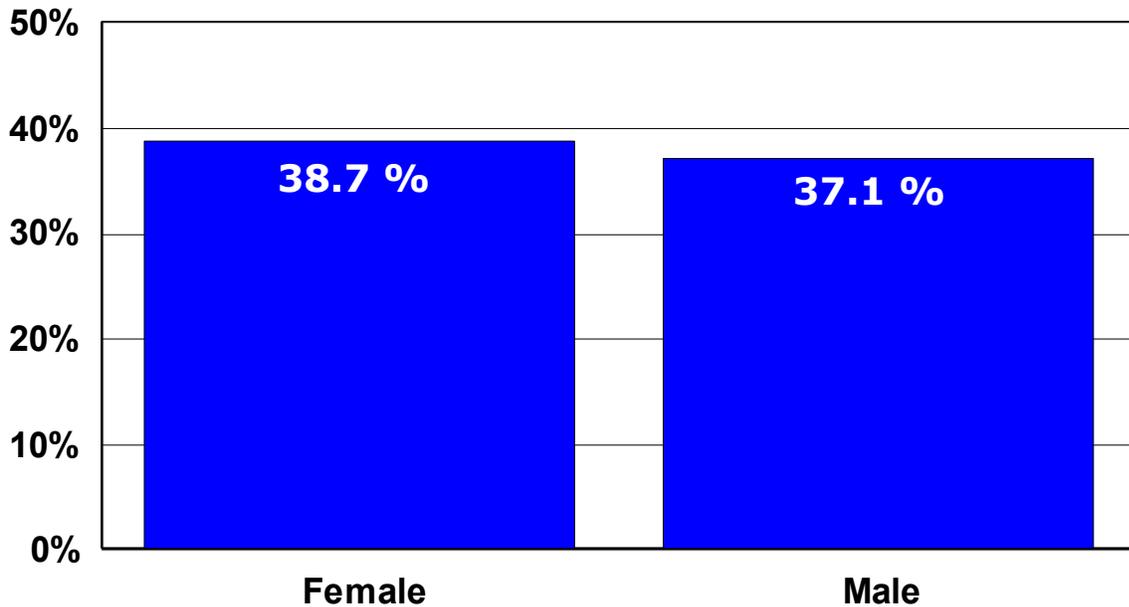
### Percent of children by weight status

Spartanburg County Fifth Grade - 3142 Students



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

Spartanburg County - Fifth Grade

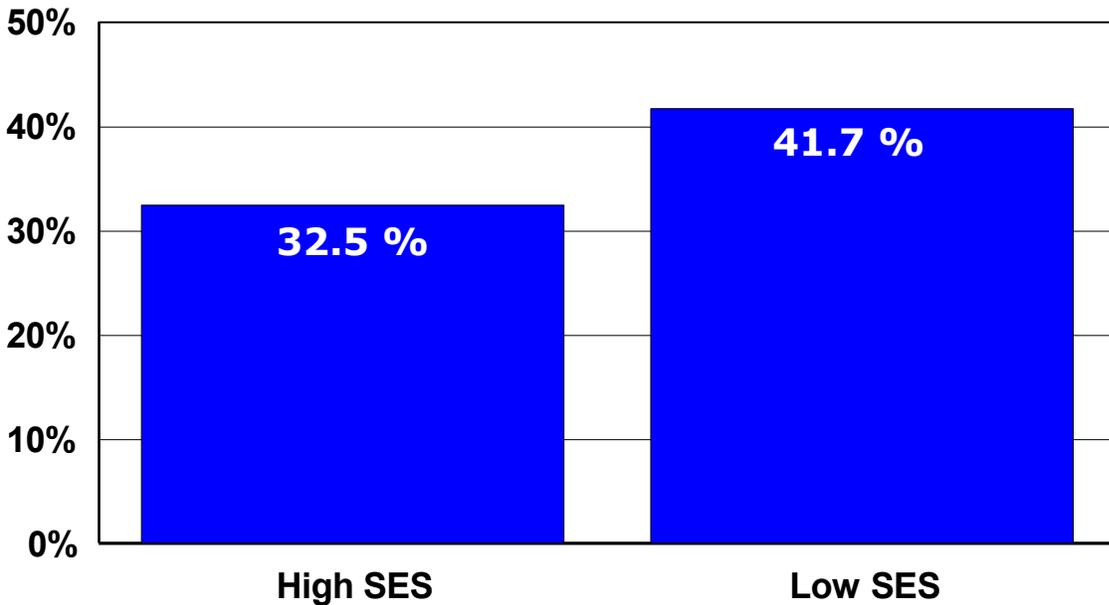


- Underweight: < 5th percentile
- Overweight: ≥ 85th percentile to < 95th percentile
- Normal weight: ≥ 5th percentile to < 85th percentile
- Obese: ≥ 95th percentile

# 5th Grade Report

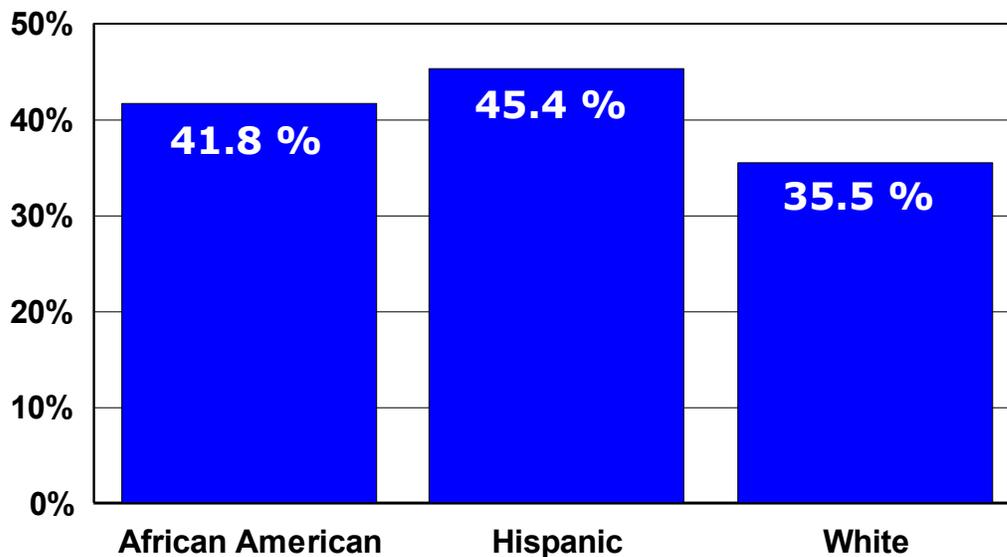
## Spartanburg County School District 2013 -2014

Percent of children who were obese or overweight by SES  
Spartanburg County - Fifth Grade



\*Socioeconomic status based on Free and Reduced School Lunch Program eligibility.

Percent of children who were obese or overweight by Race/Ethnicity  
Spartanburg County - Fifth Grade



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

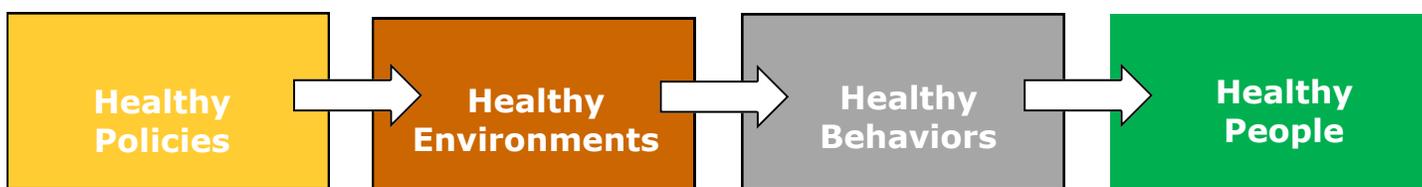
# FINAL RECOMMENDATIONS

Local policies and the physical environment influence daily choices that affect our health - and our weight. For example, children who live in unsafe neighborhoods may be restricted to watching television indoors instead of playing outside after school. Families living in neighborhoods that are zoned exclusively for residential use must drive to work and school because it is too far to walk. Communities that lack full-service grocery stores and neighborhood food markets have less access to fresh fruits and vegetables. Moreover, policies that establish physical activity requirements and nutrition standards in schools and daycare facilities can promote the health and well-being of children. These are just a few examples of how policies and the environment can affect what we eat and how we move, which in turn affects our health.



The following strategies were compiled by the Prevention Institute, a national non-profit organization that serves as a focal point for primary prevention practice - promoting policies, organizational practices, and collaborative efforts that improve health and quality of life. The strategies are grounded in evidence based research and are highlighted in a document entitled *Promising Strategies For Creating Healthy Eating and Active Living Environments*.<sup>\*</sup> Examples are provided for each strategy.

\* [www.preventioninstitute.org](http://www.preventioninstitute.org)



Strategies	Examples
<ul style="list-style-type: none"> <li>Safe neighborhoods and communities support physical activity as part of everyday life.</li> </ul>	Support the creation and upkeep of parks, playgrounds, trails and recreation facilities.
<ul style="list-style-type: none"> <li>Fresh, local and healthy food is available and affordable in all communities and neighborhoods.</li> </ul>	Encourage WIC and SNAP availability in small stores and farmers' markets in low income neighborhoods.
<ul style="list-style-type: none"> <li>Healthy foods and beverages are promoted in grocery and other food stores, restaurants and entertainment venues.</li> </ul>	Encourage restaurants to add healthy menu items and offer reasonably sized portions; place healthier food at eye level and in prominent places in grocery, convenience and small stores.
<ul style="list-style-type: none"> <li>Schools offer and promote only healthy foods and beverages to students.</li> </ul>	Provide fresh fruit and vegetable snacks; ensure policies that prohibit the use of foods as a reward or punishment, limiting nutrient-poor foods at school celebrations.
<ul style="list-style-type: none"> <li>Schools promote healthy physical activities and incorporate them throughout the day, including before and after school.</li> </ul>	Establish joint use agreements that allow use of school playgrounds by the public during non-school hours.
<ul style="list-style-type: none"> <li>Workplace and employers offer and promote access to healthy foods and beverages and opportunities for physical activity.</li> </ul>	Allow flexible work/break time for employees to easily engage in physical activity; ensure that healthy foods/beverages are available and promoted in cafeterias and vending machines.
<ul style="list-style-type: none"> <li>Government and the private sector support and promote healthy eating and active living environments.</li> </ul>	Adopt policies and provide funding to support active living/healthy eating strategies.
<ul style="list-style-type: none"> <li>Childcare organizations (including preschool, after-school, and early childhood settings) offer and promote only healthy foods and beverages to children, and provide sufficient opportunities for physical activity.</li> </ul>	Adopt nutrition and physical activity standards for childcare licensing; limit the use of television, video, video games, and computers for non-educational purposes.



# ACKNOWLEDGEMENTS

This assessment would not be possible without the willingness and cooperation of all seven Spartanburg County School Districts. DHEC sincerely appreciates their commitment to this project. Spartanburg School Superintendents are to be commended for taking a major step in a community-wide effort to address the issue of childhood obesity.

