

# Overweight and Physical Inactivity among Rural Children Aged 10-17: A National and State Portrait



 *South Carolina*  
Rural Health  
Research Center

*At the Heart of Public Health Policy*

**Overweight and Physical Inactivity among Rural Children Aged 10-17:  
A National and State Portrait**

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## Executive Summary

The persisting epidemic of childhood obesity throughout the United States has led policymakers to rank it as a critical public health threat for the 21st century.<sup>1-3</sup> Recent studies have found that the tide of child obesity is rising faster in rural communities in several states, including Pennsylvania, New Mexico, Michigan, West Virginia, and North Carolina.<sup>4</sup> This pattern dispels a long-held belief that in farm communities and other rural towns, heavy chores, wide expanses of land and fresh air make leaner and stronger bodies. It is not clear whether the same epidemic has happened in rural towns across the nation.

Our report examines the presence of overweight and obesity among children in both rural and urban settings using the data from a recent national survey, the 2003 National Survey of Children's Health (NSCH). Using the 2000 CDC BMI charts as a reference, children whose gender- and age-specific BMI values were at or above the 95th percentile of the reference population were defined as *obese*. Those children with BMI at or above the 85th percentile of the CDC reference population were classified as being either *overweight or obese*. For simplicity, we used the term *overweight* to represent this group. Since parent-reported height and weight are not reliable for children less than 10 years old, the data presented are limited to children aged 10 to 17. Urban/Rural residence was defined at the county level using Urban Influence Codes (UICs), with "Rural" defined as an UIC of 3 through 12. If UIC values are 1 or 2, then the county was coded as "Urban". The key findings of the report are as follows:

### Overweight and obesity

- In 2003, 30.6% of children aged 10-17 years old were overweight, 14.8% of which were obese. Rural children (16.5%) were more likely to be obese than urban children (14.4%).
- Children living in rural areas adjacent to metropolitan areas (16.7%) and micropolitan rural areas (17.1%) were more likely to be obese than those living in small remote rural areas (14.3%).
- Minority children were more likely to be overweight than either urban or rural white children.
  - Black children (41.2%) were more likely to be overweight than Hispanic (38.0%) and white children (26.7%). A similar pattern was observed for obesity; nearly one in four black children was obese (23.6%) versus 19.0% for Hispanic children and 12.0% for white children.

- Rural blacks had the highest level of overweight (44.1%) and obesity (26.3%) than other race/ethnicity groups.
- As family income increased, the proportion of children who were overweight decreased significantly among both rural and urban residents.
- The proportion of children who were overweight ranged from 21.0% to 39.6% across the states, while the proportion of children who were obese ranged from 8.6% to 22.9%. At least 10% of children were obese in 48 of the states.
  - Children living in the South were most likely to be overweight or obese (33.1%), followed by the Midwest (30.2%), the Northeast (29.5%), and the West (28.1%).
  - Children living in the rural South had the highest likelihood of being overweight (34.5%) and obese (19.5%) in the country, while children living in the West had the lowest likelihood of overweight (27.1%) and obesity (12.4%).

#### Physical Activity

- More than one out of four children (28.6%) aged 10-17 years old failed to meet recommended physical activity levels; that is, not participating in moderate to vigorous exercises for at least 20 minutes three or more days per week.
- Fewer rural children (25.4%) failed to meet physical activity recommendations than urban children (29.3%).
- Older children (aged 15-17), girls, Hispanics, blacks, children from low income families, and children in poor health were less likely to meet physical activity recommendations.
- Across the states, between 22.7% to 38.5% of children failed to meet physical activity recommendations.
- Rural children living in the Midwest were more likely to be physically inactive (26.1%), followed by the South (26.0%), the Northeast (23.7%) and the West (23.5%).

#### Weight-Related Health Behaviors

- More than two out of five children (41.2% for all children; 40.7% for rural children and 41.3% for urban children) did not participate in any after school sport teams or lessons in 2003.
  - Rural black children (50.1%) and rural Hispanic children (48.6%) were more likely

- not to participate in after school sport teams or lessons than rural white children (38.9%) and urban white children (35.6%).
- The proportion of children not participating in any after school sport teams or lessons ranged from 25.9% in Vermont to 54.5% in South Carolina.
  - About half of the children (48.0% for rural and 47.0% for urban) aged 10-17 years spent at least two hours a day with electronic entertainment media (such as non-educational computer use, playing video games, and watching television).
    - Among rural children, high electronic media use was more common among blacks (63.7%), overweight children (54.0%), and obese children (54.8%).
    - The proportion of children spending at least two hours a day on electronic media ranged from 37.8% in Vermont to 57.6% in New Jersey.
  - About two out of five mothers (38.4% for rural and 39.8% for urban) reported being physically inactive in the past month (i.e., no moderate to vigorous exercise for 20 minutes or more on a routine basis).
    - Rural Hispanic (47.9%) and black children (43.9) were more likely to have inactive mothers than rural whites (36.8%).
    - The proportion of mothers who were physically inactive ranged from 30.8% in Vermont to 50.0% in Washington D.C.
  - Rural children (20.1%) were less likely to live in an environment perceived to be unsafe than urban children (25.7%).
    - Among rural children, black children (38.3%), Hispanic children (32.6%), and children from low income families (36.1%) were more likely to perceive unsafe environments.
    - Overweight children were more likely to feel unsafe, in both urban (28.9%) and rural environments (23.2%).
    - The proportion of children living in perceived unsafe environments ranged from 11.6% in Vermont to 50.0% in Washington D.C.
  - One in four children ate with their families three or fewer days per week. Urban children (25.3%) were more likely to have infrequent family meals than rural children (21.9%).

- Overweight (19.9%) and obese (19.4%) rural children were more likely to eat together as a family three or fewer days per week than other rural children.
- Urban black (31.4%) and white (25.2%) children were more likely to eat together as a family three or fewer days per week than their rural counterparts (25.9% and 21.5%).
- Among rural children, however, blacks were more likely to eat together as a family three or fewer days per week (25.9%) than whites (21.5%) or Hispanics (21.2%).
- The proportion of children who ate with their families three or fewer days per week ranged from 17.3% in Wyoming to 30.5% in Illinois.

This chartbook provides information about the proportion of US children aged 10-17 years who are overweight or obese, for the US as a whole, by region, and state by state. These findings indicate a level of disparity that exists for rural residents, minorities, and low income individuals. Other factors, such as family influences and the physical environment in which a child lives, also appear to play an important role in the development of overweight, in addition to the individual health behaviors (such as physical activity, sports participation, and sedentary electronic media use). Parents of children play an important role in modeling these behaviors by being active themselves and eating healthy meals together as a family. Finally, it is important for children to be in an environment that is conducive to physical activity, and provides safe opportunities for recreation and sports activities that are important for health weight maintenance and growth.