

# A Report on Body Mass Index (BMI) of Missoula County Third Graders



## Body Mass Index:

- What is it?
- Why is it important to measure?
- How is the data being used?
- How do Missoula 3rd graders measure up compared to others?
- How will this data be used?

# 2009 Body Mass Index Measurements

## What is Body Mass Index?

Body Mass Index(BMI)is a ratio of weight and height, and is a better assessment of obesity than weight alone. Since boys and girls grow and develop at different rates, the Centers for Disease Control and Prevention (CDC) recommend that a BMI percentile is calculated individually for each boy and girl based on his or her gender, age, height and weight. BMI percentiles are then used to categorize children as underweight, healthy weight, overweight or obese. A higher BMI indicates greater risk for having or developing obesity-related health problems. Health care professionals group BMI percentiles as follows:

**Underweight:** BMI-for-age less than 5th percentile

**Healthy weight:** BMI-for-age between 5th and less than 85th percentile

**Overweight:** BMI-for-age between 85th percentile and less than 95th percentile

**Obese:** BMI-for-age greater than or equal to 95th percentile

## Why the concern with children's weight?

From 1980 to 2004, the national percentage of youth who were obese **tripled** from 7% to 19% in children (6-11years) and 5% to 17% in adolescents(12-19 years). This epidemic is concerning because being overweight impacts a child's current and future health. Overweight children and adolescents have the tendency to display more cardiovascular risk factors. These risk factors include high blood pressure, high cholesterol, and Type 2 diabetes. **Sixty percent** of 5-to 10-year-old children who are overweight have at least one biochemical or clinical risk factor for cardiovascular disease and 20% had two or more risk factors. These children are also more likely to be obese as adults.



## Who conducted the BMI study?

The Missoula City-County Health Department in partnership with Montana State University College of Nursing completed the measurements and compiled the data. Seventeen schools participated in the data collection.

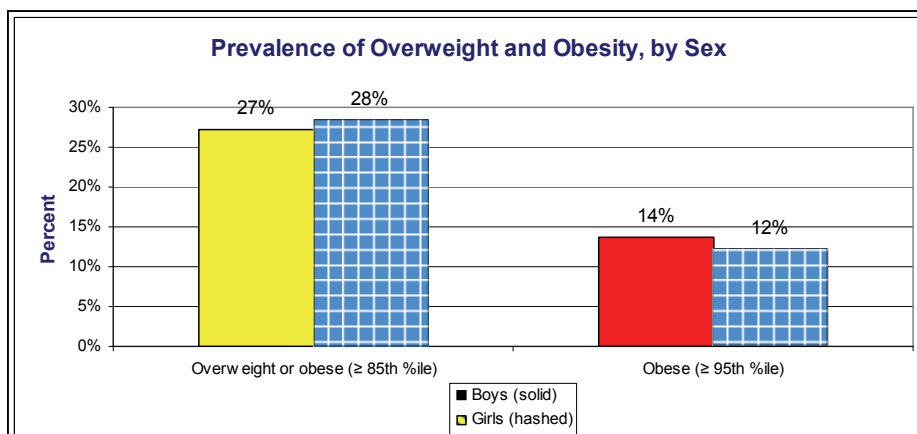
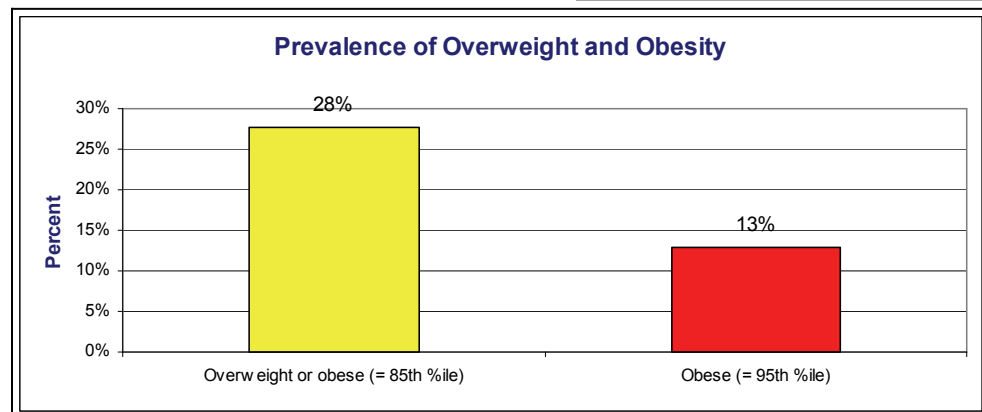
# of Missoula County Third Graders

## How do Missoula Third Graders Fare?

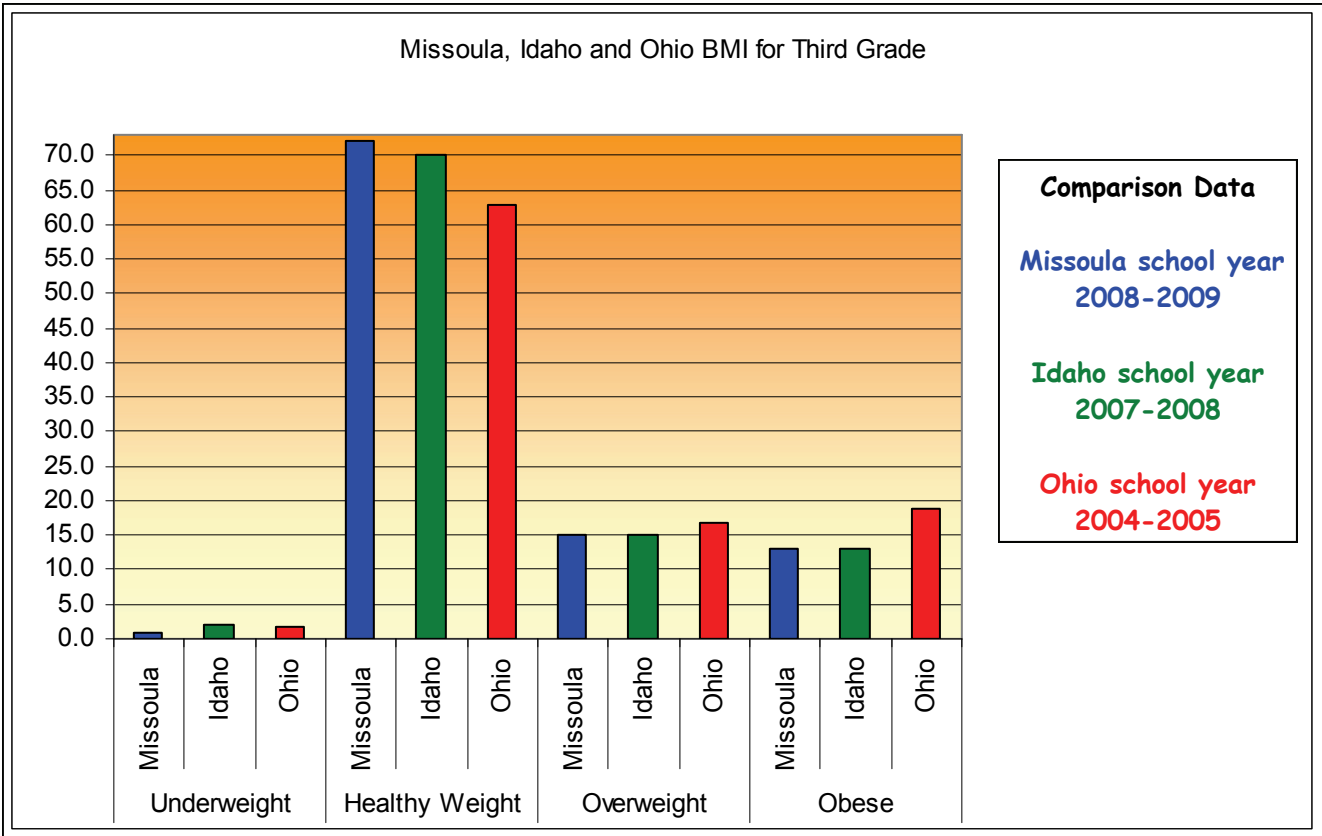
Of the approximately 1,100 third grade students in Missoula County, 864 participated in the study. The participants came from 16 of the 21 public schools and one of the nine private schools that have third grades. The Missoula data analysis shows similar trends of childhood obesity as compared to other communities. Although BMI measurements are not collected in all communities, the CDC estimates that 1/3 of U.S. children ages 6-11 are overweight or obese. Given that parameter we are slightly under the national average with 28% of Missoula 3rd graders being overweight or obese. [The chart and graphs below show the Missoula data collected in this BMI study.](#)

	Boys	Girls	Total
Number of children assessed	437	427	864
Underweight (< 5th %ile)	1%	1%	1%
Normal BMI (5th - 85th %ile)	72%	71%	72
Overweight or obese ( $\geq$ 85th %ile)*	27%	28%	28
<i>Obese (<math>\geq</math> 95th %ile)</i>	<i>14%</i>	<i>12%</i>	<i>13%</i>

As can be expected not all schools have the same percentiles. There is a wide range from 16% to 45% of overweight or obese students in any one school. However, given the small numbers at the majority of schools, we cannot compare one school with another. Several students opted out of the measurements and several were absent or unavailable making comparisons between schools invalid.



There did not appear to be any major difference between girls and boys. Slightly more girls were overweight, while slightly more boys were obese.



### WHY MEASURE MISSOULA KIDS?

It is difficult to address any problem before the problem has been defined. The Missoula City-County Health Department determined that **surveillance data** was needed to both track changes in healthy weight development and to use the data to develop policies that address childhood obesity. It is important to note that the MCCHD/MSU College of Nursing collaborative BMI data collection was not used as a screening tool. No child received feedback on the measurements and no parents or schools were given individual information. The purpose of the study was to create an aggregate community indicator. Surveillance data helps schools, programs and policy makers make informed decisions about how to address the problem of childhood obesity. The Missoula City-County Health Department and the MSU College of Nursing will continue this collaboration for school year 2009-2010 and will once again measure Missoula County third graders in order to continue the surveillance.

### THANK YOU TO THESE PARTICIPATING SCHOOLS

Bonner Chief Charlo Clinton Cold Springs DeSmet Franklin Frenchtown  
Hawthorne Hellgate Elementary Lewis & Clark Lolo Lowell Paxson  
Rattlesnake Russell St. Joseph Target Range

