A Report on Body Mass Index (BMI) of Missoula County Third Graders 2010

Childhood Obesity & Body Mass Index

- What do we know about the childhood obesity epidemic?
- What is BMI & how does it relate to obesity?
- How does this class measure up with the third grade class of 2009?
- How can we use this information to help our children?

It's good Public Health.

Missoula City-County Health Department

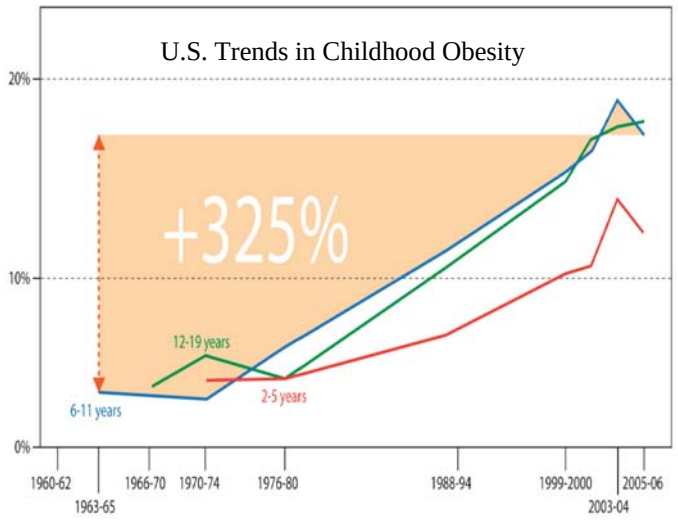
CHILDHOOD OBESITY

Childhood obesity is the imbalance between the calories a child consumes and the calories a child uses to support normal growth and development, metabolism, and physical activity. The more complicated and complete picture of childhood obesity is that **genetic**, **behavioral** and **environmental** factors interact between calories consumed and calories used. It is the interactions among these factors, rather than any single factor, that is thought to cause obesity.

Studies show that certain **genetic** characteristics may increase an individual's susceptibility to excess body weight. However, the rapid rise in childhood obesity cannot be attributed solely to genetic factors.

Some of the **behavioral** factors that have been identified as contributing to energy imbalance are:

- large portion sizes of food and beverages
- eating meals away from home
- frequent snacking on energy dense foods
- consuming beverages with added sugar
- less time engaged in physical activity during school
- sedentary behavior mostly in front of "screens" which decrease physical activity and increase excessive snacking and unhealthy food choices



Environmental factors within the home, child care and schools are all believed to influence children's behaviors related to food intake and physical activity. Children have little control over food choices or physical activity opportunities. The stage must be set for them to succeed in these areas. The same can be said of the environmental factors within communities. Sidewalks, safe bike paths, and parks in neighborhoods can all encourage children to engage in physical activity. Additionally, lack of access to affordable, healthy food choices in neighborhood food markets can be a barrier to purchasing healthy foods.

Childhood obesity is definitely on the rise among children. The chart to the left plots the national rates for 2-5 year olds, 6-11 year olds and 12-19 year olds since 1960.

Source: Centers for Disease Control and Prevention

What is Body Mass Index and How Does It Relate to Obesity

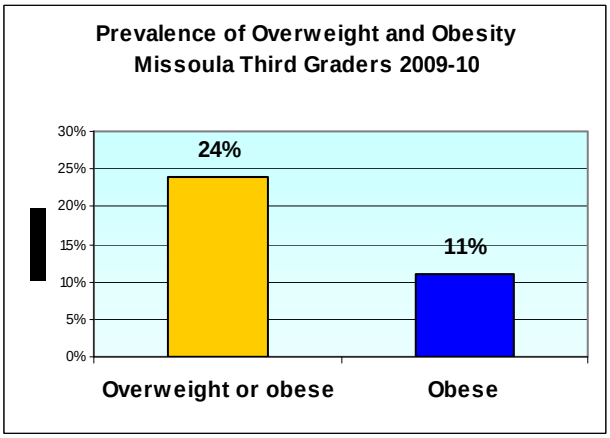
Body Mass Index (BMI) is a ratio of weight and height, and is a better assessment of obesity than weight alone. Since boys and girls grow and develop at different rates, the Centers for Disease Control and Prevention (CDC) recommend that a BMI percentile is calculated individually for each boy and girl 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.

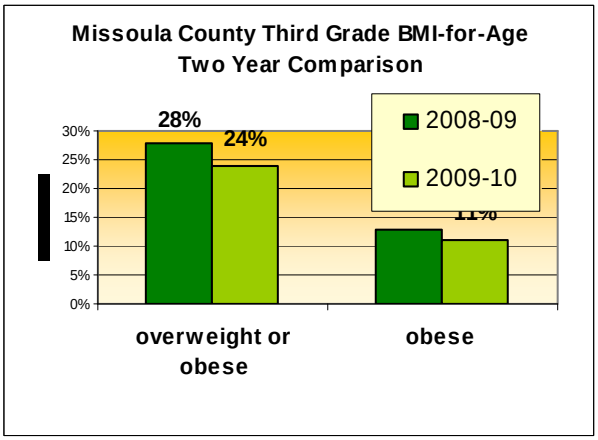
A higher BMI indicates greater risk for having or developing obesity-related health problems. During their youth, obese children are more likely to have risk factors associated with cardiovascular disease (such as high blood pressure, high cholesterol, and Type 2 diabetes) than other children. Obese children are more likely to become obese as adults. One study found that approximately 80% of children who were overweight at aged 10–15 years were obese adults at age 25 years.[3] Another found that if overweight begins before 8 years of age, obesity in adulthood is likely to be more severe.

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

Comparison of Two Years of Measurements

What do we know about the prevalence or childhood obesity in Missoula County? This unanswered question was the foundation of launching the BMI surveillance study begun in 2008 by the Missoula City-County Health Department in partnership with MSU college of nursing and area elementary schools. Understanding the baseline prevalence of any public health concern is the first step in making informed decisions about possible solutions and evaluating interventions. The graph to the right is the current data from school year 2009-10. This is the second year of data collection by the Missoula City-County Health Department and similar to the 2008-09 collection this was a **surveillance** project and 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 and begin to observe trends. As can be seen by the graph below this year's third graders measured somewhat leaner than in 2008-09. Another interesting difference in the two years was the gender switch. In 2008-09 there were more boys both overweight and obese. For 2009-10 the exact opposite was true: more girls were overweight and obese.

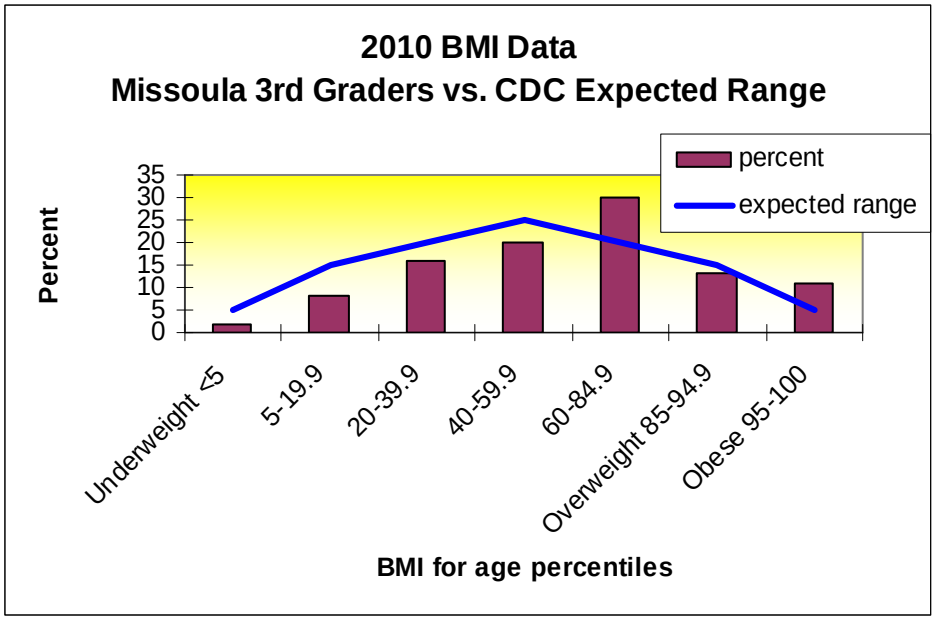




2009-10	Total
Number measured	911
Underweight	2%
Normal BMI	74%
Overweight or obese	24%
Obese	*11%*

BMI measurements are not completed in all communities or states. However, from data it collects CDC estimates that 1/3 of U.S. children ages 6-11 are overweight or obese. Given that parameter we are under the national average with 24% of Missoula 3rd graders being overweight or obese. For a clearer picture of how Missoula is doing we need more data from other similar communities with similar demographics.

The major concern is both the rapid rate of obesity growth and how far Missoula County third graders are from the expected range for children defined by the Centers for Disease Control and Prevention. The graph below shows the expected BMI-for-age according to CDC rates of weight for children (blue line) and the current Missoula third grade population (purple bars). In this graph 5% of children should be underweight and 5% should be obese. Our data shows that only 2% are underweight and more than double expected, 11%, are obese. The graph clearly shows that Missoula third graders are leaning away from the normal weight to be expected and towards being overweight or obese. Data from other states confirms that as children age they are more likely to become heavier and less healthy. This would suggest that many of the children currently on the cusp of the normal weight (60-84.9 %)could easily tip into the overweight or obese categories.



What Can We Do to Change the Tide of Childhood Obesity?

Childhood obesity is not just a Missoula County problem. The rate of childhood obesity is a national concern. Not only are the lives of overweight and obese children being affected with health and social implications, but the cost of childhood obesity is immense and will only increase as obesity-related illnesses follow these children into adulthood. The current administration, under the leadership of First lady Michelle Obama, has taken on the challenge with the ***Let's Move!*** initiative, promising to solve the epidemic of childhood obesity within a generation.

In conjunction with this initiative, **Solving the Problem of Childhood Obesity within a Generation: White House Task Force on Childhood Obesity Report to the President,** May 2010, outlined recommended steps that parents, childcare providers, schools, local, state and federal leaders take to realize this vision. Many of the recommendations are currently being addressed in Missoula County by a wide range of involved citizens and agencies. The challenge is to continue work begun, solidify progress, build new partnerships and tackle areas that can be addressed at the local level. Education for individual change and policy for systemic change are both suggested recommendations. Some of the changes that can occur at the local level are:

Early Childhood

- Weight management during pregnancy
- Encouragement and policies to empower breastfeeding
- Decreased screen time in the home and childcare settings
- Increased nutrition and physical activities in the home and childcare settings
- BMI results shared with parents accompanied with pediatric advice regarding problems

Schools

- Adopt research-based curriculums for health and physical activity (e.g. CATHCH, SPARK)
- Active school wellness councils that create, post, and implement strong wellness policies
- School gardens to educate students about healthy eating
- Safe Routes to Schools should be continued and expanded
- Schools provide healthy meals that are attractive with no social consequences
- Food sold and available at school meet all U.S.D.A. Dietary Guidelines (eliminate unhealthy competitive foods)
- Increased physical education classes taught by certified PE teachers
- Active, positive recess for elementary students and physical activity breaks for older students
- After school programs adhere to strong physical activity guidelines and U.S.D.A. Dietary Guidelines

Community

- Joint use of community sites to increase children's access for indoor and outdoor recreation
- Communities are encouraged to consider the impacts of built environment policies on human health

There are also recommendations for the federal level and the report to the President is quite clear: this effort will take time and coordination among individuals, schools, city & county governments, state and federal legislatures. This BMI surveillance information is one piece of understanding the problem and measuring success as interventions are shaped both nationally and locally.

THANK YOU !

In order for this surveillance study to happen for the past two years the Missoula City-County has been fortunate to have a partnership with the Montana State University College of Nursing and local elementary schools. Each semester a team of two trained senior nursing students accompanied a Missoula City-County Health Department staff member to the schools for the measurements. This allowed for smooth and confidential measurements. Thank you to them and their supervisors. Thank you to principals, front office employees, school nurses and teachers and especially all 911 third graders who welcomed us into their schools to complete our project. Participating schools:
Bonner, Chief Charlo, Clinton, Cold Springs, DeSmet, Franklin, Frenchtown, Hawthorne, Hellgate Elementary, Lewis & Clark, Lolo, Lowell, Paxson, Seeley Lake, Rattlesnake, Russell, & Target Range.

If you have questions about this report contact Mary McCourt at 258-3895 or mccourtm@ho.missoula.mt.us

Move Missoula

Eat Smart, Move More