



### In This Issue:

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## CHILDHOOD OVERWEIGHT AND OBESITY IN WASHOE COUNTY – 2008

### INTRODUCTION

Overweight is a significant health concern for children under the age of 18, and puts them at risk for health problems throughout their life. Overweight children are more likely to have risk factors associated with cardiovascular disease, such as high blood pressure, high cholesterol, and Type 2 diabetes.<sup>1</sup> Overweight children are more likely to become obese as adults,<sup>2</sup> and, if overweight begins before the age of eight, obesity in adulthood is likely to be more severe.<sup>3</sup>

Overweight is caused primarily by an imbalance between calories consumed and calories used. This imbalance can result from the influences of a number of factors including genetic, behavioral, and environmental conditions. Although genetics may increase an individual's susceptibility to becoming overweight, it is not considered a primary factor in the increase in childhood overweight. Behavioral and environmental factors such as nutritional intake and physical activity levels are considered to be the primary contributing factors to increasing overweight.

According to the Centers for Disease Control and Prevention (CDC), regular physical activity by children improves strength and endurance, helps build healthy bones and muscles, helps control weight, reduces anxiety and stress, increases self-esteem, and may improve blood pressure and cholesterol levels.<sup>4</sup> Positive experiences with physical activity at a young age may help lay the foundation for being active throughout life.<sup>4</sup> The U.S. Department of Health and Human Services recommends that youth (ages 6–17) participate in at least 60 minutes of physical activity daily.<sup>5</sup>

Evidence is limited on specific foods or dietary patterns that contribute to excessive caloric intake in children. However, large portion sizes, eating meals away from home, frequent snacking on high calorie foods and consuming beverages with added sugar are often believed to contribute to excess calorie intake.<sup>6</sup>

### METHODS

In response to Nevada state legislative direction (2007 Assembly Bill No. 354), height and weight were collected on samples of Nevada's 4<sup>th</sup>, 7<sup>th</sup>, and 10<sup>th</sup> graders. The Center for Health Data and Research with the Nevada State Health Division randomly selected the schools using school enrollment for Washoe County School District for 2005-2006. The process randomly selected

16 elementary schools, 4 middle schools, and 4 high schools, which involved 4,134 students including 1,328 4<sup>th</sup> graders, 1,477 7<sup>th</sup> graders, and 1,329 10<sup>th</sup> graders. The sample size and sampling method allow these data to be generalized to all Washoe County school-age children. This report includes these data as well as additional self reported data from the 2007 Youth Risk Behavior Survey (YRBS). This report represents only Washoe County, providing a local assessment of childhood overweight in our community.

The Body Mass Index (BMI) was calculated for each student using the CDC's formula:  $BMI = \frac{\text{weight (lb)}}{\text{height (in)}^2} \times 703$ . Calculating age was a challenge since the date of data collection was missing. To calculate age, we used the date of birth provided and March 30, 2008 for date of data collection since we knew all measurements were collected between February and May, 2008. In addition, one student's data set was removed from the data analysis (a recorded height of 93 inches).

Using BMI-for-age percentiles for boys and girls 2 to 20 years and the calculated BMI, the BMI percentile was calculated for each student. The table below explains how weight status categories were defined.

| Weight Status  | Percentile Range          |
|----------------|---------------------------|
| Underweight    | < 5th percentile          |
| Healthy Weight | 5th to < 85th percentile  |
| Overweight     | 85th to < 95th percentile |
| Obese          | => than 95th percentile   |

Although BMI is used only as a screening tool to identify possible weight problems for children and is not a diagnostic tool, it is currently the best assessment available to determine weight classifications.

### RESULTS & DISCUSSION

Figure 1. BMI Grouping, Washoe County, 2008.

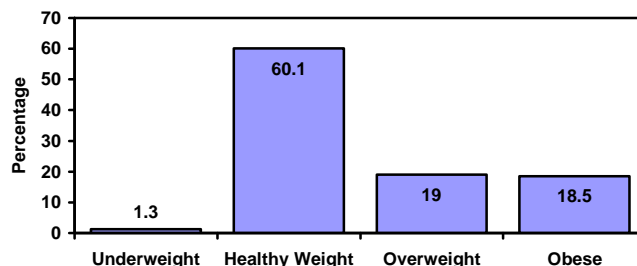
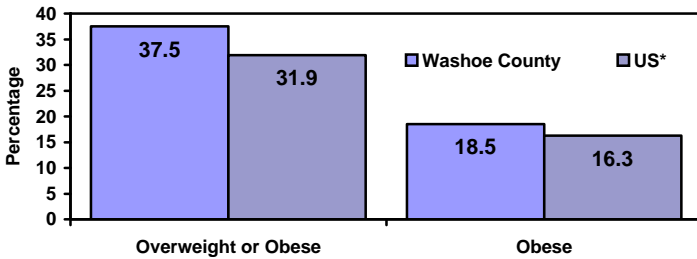


Figure 1 shows that the majority of Washoe County children are considered to be at a healthy weight. For the simplicity of graphs, 95% confidence intervals are not presented in this report.

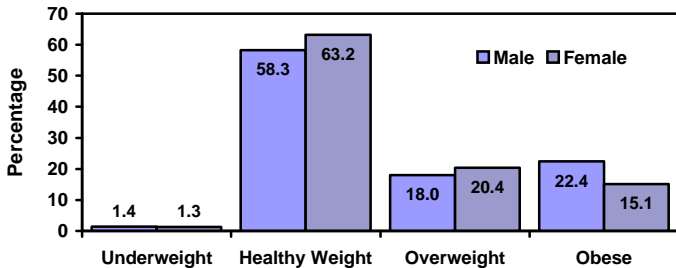
**Figure 2. Washoe County BMI Grouping 2008 Compared to US 2003-2006.**



\*Data source: JAMA, Vol 299 No.20, May 28, 2008

Washoe County children are overweight or obese in greater rates than the nation. However, other reports show that Washoe County adults are less likely to be overweight or obese than the nation.<sup>7</sup> Statistical tests cannot be performed as raw data from the national study are not available.

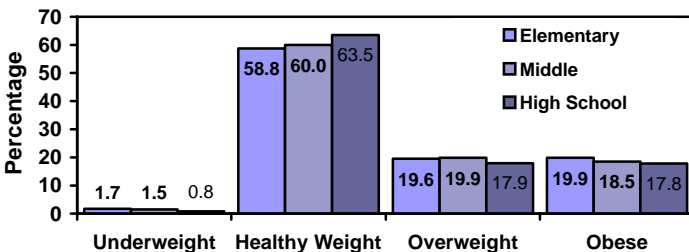
**Figure 3. Washoe County BMI Grouping By Gender, 2008.**



Chi-Square significant at  $p < .0000$

Boys are more likely than girls to be obese, and girls are more likely to be overweight. This trend is consistent among all grade levels measured.

**Figure 4. Washoe County BMI Grouping By School, 2008.**

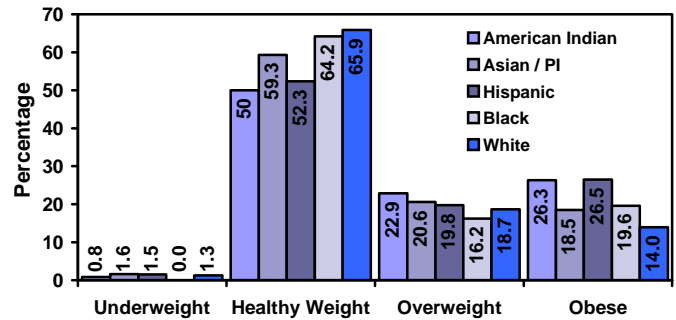


Chi-Square not significant at  $p=.05$

All grade levels measured follow similar trends in BMI categories with a slightly higher rate of obesity among

elementary school. Data will need to be collected regularly to determine if this elevated rate will continue as these students age.

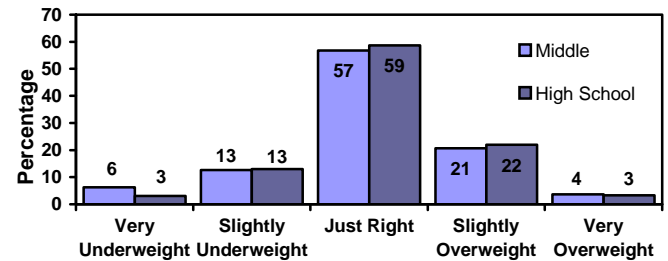
**Figure 5. Washoe County BMI Grouping By Race, 2007.**



Chi-Square significant at  $p < .0000$

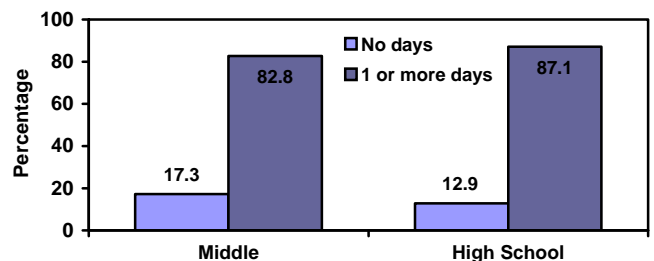
Minority children are generally more likely to be overweight or obese. This is consistent with national data.

**Figure 6. Washoe County YRBS Self-Described Weight by School Level, 2007.**



Youth are relatively accurate when describing their weight. However, almost 20% of middle school youth felt they were underweight when actual collection of height and weight showed that only 1.5% are underweight. Definitions for the self-described categories are not provided by YRBS.

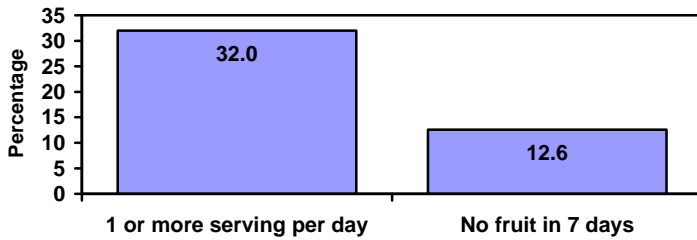
**Figure 7. Washoe County YRBS Exercise 60 Minutes in Past 7 days by School Level, 2007.**



The majority of youth report participating in at least 60 minutes of exercise at least once in the previous week. It is recommended that youth participate in 60 minutes of physical activity daily.

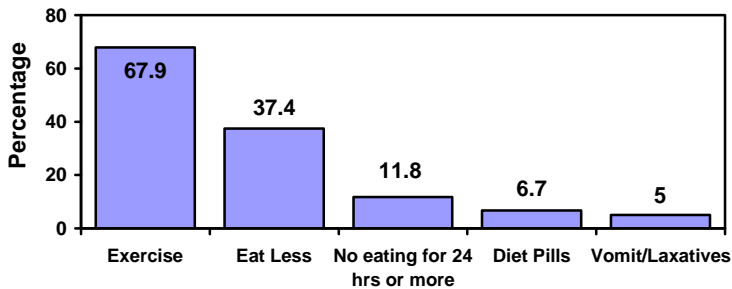
**Please share this document with all physicians & staff in your facility/office.**

**Figure 8. Washoe County YRBS Eating Fruits for High School, 2007.**



Fruit consumption is one indicator of a healthy diet. One in ten high school students reported not eating one fruit in the past 7 days. Less than a third ate fruit on a daily basis.

**Figure 9. Washoe County YRBS Ways to Lose Weight for High School, 2007.**



The majority of high school students report utilizing the healthy behaviors of exercise and calorie reduction to lose weight. However, a small percentage report using risky weight loss methods. Please note the percentage is not mutually exclusive.

## RECOMMENDATIONS

### Recommendations for health care professionals:

The American Academy of Pediatrics recommends the following actions to reduce overweight and obesity in children:<sup>8</sup>

- ◆ Plot BMI routinely for early recognition of overweight and obesity.
- ◆ Address increasing BMI percentile before it reaches 95% or higher.
- ◆ Identify “at risk” children.
  - Children whose parents are obese
  - Children with a sibling who is obese
  - Children from families with low income
  - Children with a chronic disease or disability that limits mobility
- ◆ Provide anticipatory guidance for nutrition and physical activity to parents and patients.

### Recommendations for all community members:

A number of groups, including the Surgeon General and the CDC, have recommendations for individuals and communities to effectively address overweight in children. Below is a collection of these recommendations:

- ◆ If you have children, encourage healthy eating and daily physical activity.
- ◆ Make sure that you are setting a good example by making healthy choices, including reducing sedentary time such as watching television.
- ◆ Ask for your children’s BMI to be calculated at every doctor’s visit. Reports show that most parents are not accurate in visually assessing their child’s BMI grouping.
- ◆ Support legislation to continue collection of height and weight of children. This is the most accurate way to determine if preventive efforts are effective.
- ◆ Support the construction of and safe access to parks, community centers, and other areas where children can play and be physically active.
- ◆ Support healthy food options in places frequented by children. (ie: ask for calorie content when dining out and chose the healthier option)

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