



EPI - NEWS

Page 1 of 3

In This Issue:

- ◆ Childhood Overweight and Obesity in Washoe County – 2009

September 4, 2009

Vol. 29, No.11

Telephone (775) 328-2447

Fax (775) 328-3764

epicenter@washoecounty.us

WASHOE COUNTY DISTRICT HEALTH DEPARTMENT • P.O. BOX 11130 • RENO, NEVADA • 89520-0027 • (775) 328-2447

CHILDHOOD OVERWEIGHT AND OBESITY IN WASHOE COUNTY – 2009

Across the nation, childhood overweight and obesity has become a growing concern as local, statewide and national rates increase at drastic levels. Of greatest concern are the health problems that plague overweight children and their increased risk of life long health problems.

Overweight and obese children are more likely to have risk factors associated with cardiovascular disease, including high blood pressure, high cholesterol, and Type 2 diabetes.¹ Overweight and obese children also are more likely to be obese as adults.²

Methods

For the past two school years height and weight were collected on samples of Nevada's 4th, 7th, and 10th 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 the 2005-06 school year. The process randomly selected 16 elementary schools, four middle schools, and four high schools. These schools remained consistent from the 2007-08 to the 2008-09 school year and this data can be generalized to all Washoe County school-age children.

The Body Mass Index (BMI) and BMI percentile were calculated using the CDC provided children's BMI tool for schools. This tool did not calculate BMI or percentile for three students since the height and/or weight data were extremely unlikely and they were omitted for the analysis. See the table below for how weight status categories are defined.

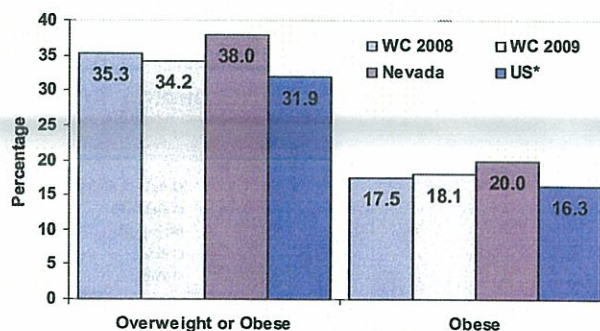
Weight Status	Percentile Range
Underweight	< 5th percentile
Healthy Weight	5th to < 85th percentile
Overweight	85th to < 95th percentile
Obese	=> than 95th percentile

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

For the simplicity of graphs, the following reported values are point estimates. The 95% confidence intervals are not presented in this report.

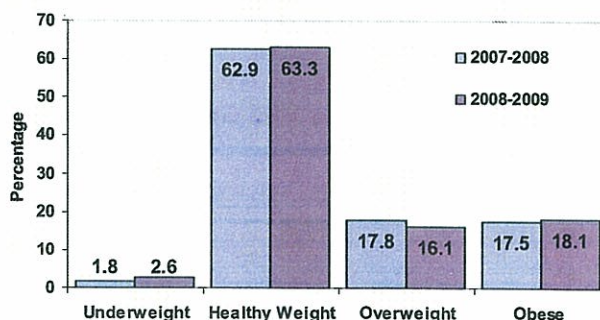
Figure 1. Washoe County BMI Grouping (2007-08 & 2008-09) Compared to NV (2007-08) & US (2003-2006).



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

Washoe County students continue to have a higher prevalence of overweight and obesity compared to students nationally, and a lower prevalence compared to all Nevada students. A significant decrease was seen in our rate of overall "Overweight or Obese" at $p < .001$.

Figure 2. BMI Grouping by Year, Washoe County, 2007-08 and 2008-09.



Comparing the two years of Washoe County BMI youth data (2007-08, 2008-09) there is a difference in the BMI groupings ($p=.024$). There was a non-significant decrease in overweight children; however, there was a significant increase in obese children ($p=.001$) and in underweight children ($p = .016$).

EXHIBIT V-1 HEALTH CARE

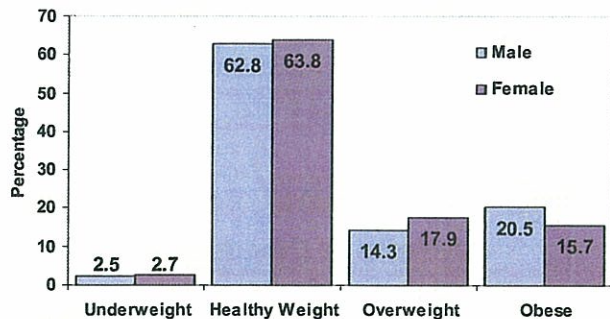
Meeting Date: 11-04-09

Document consists of 3 pages.

Entire Exhibit provided.

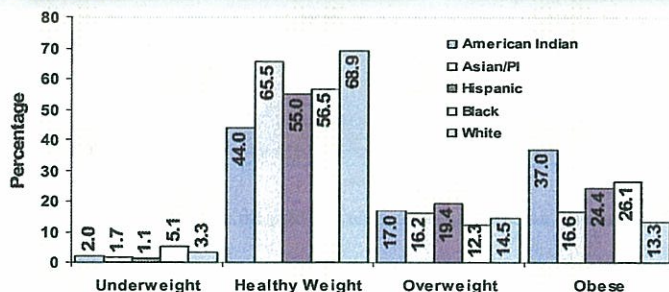
share this document with all physicians & staff in your facility/office.

Figure 3. Washoe County BMI Grouping By Gender, 2008-09.



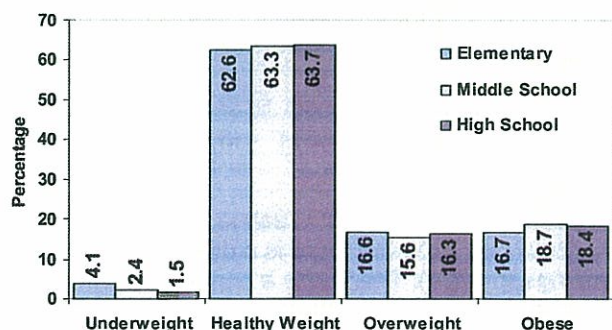
Girls are more likely than boys to be overweight, and boys are more likely than girls to be obese. Girls also have a slightly higher prevalence of being underweight than do their male peers. Gender differences within the categories overweight, obesity and underweight, are significant for elementary school ($p=.021$) and high school ($p=.007$) students.

Figure 4. Washoe County BMI Grouping By Race, 2008-09.



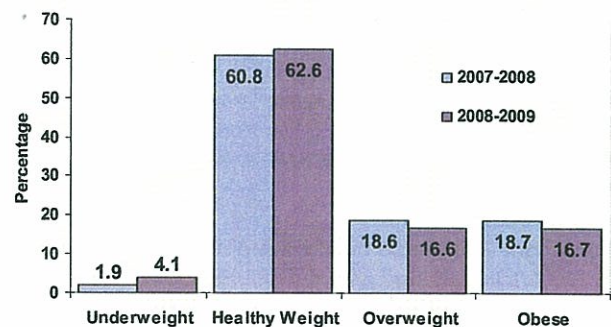
Due to small population sizes in some of the racial groups it is difficult to make race specific assumptions based solely on this data; however, overall, minority children tend to have a higher prevalence of overweight and obese ($p < .0001$), which is consistent with national data. Socioeconomic status is not available with this data set.

Figure 5. Washoe County BMI Grouping By Grade Level, 2008-09.



Middle and high school students experience a higher rate of obesity compared to elementary school students. Elementary school students have a higher prevalence of being underweight compared to middle and high school students ($p < .001$).

Figure 6. Washoe County BMI Grouping By Elementary School, 2007-08 & 2008-09.



Elementary schools saw a significant increase of underweight students in 2008-09 compared to 2007-08 ($p=.002$). This increase was not mirrored at the middle or high school levels. In addition, the 4.1% for Washoe County is higher than the national average for children ages 6 – 11, which is 2.7%.³

The rate for underweight for 12-19 year olds across the nation is 3.8%. Both the middle school and high school students are lower in this category. Other changes were not significant at $p = .05$ for middle or high school students.

While the prevalence of obesity and overweight children in Washoe County far surpass that of underweight children, it's important to continue collecting and analyzing youth BMI data to help identify trends surrounding underweight. This is particularly important given that underweight can be indicative of underlying health conditions, disordered eating, or food access issues.

Recommendations

Unhealthy weight 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. Following are recommendations to effectively combat the various influences on childhood obesity.

Recommendations for health care professionals:

The American Academy of Pediatrics recommends the following actions to reduce overweight and obesity in children:⁴

Assess:

1. Conduct a thorough history including family history, eating and physical activity with all patients (including screen time, sweetened beverages, eating out and fruits and vegetables).
2. Consider each patient's risk by virtue of family history, height and weight gain pattern, socioeconomic, ethnic, cultural, presence of co-morbidities and/ or environmental factors.
3. Beginning at age 2, calculate and plot BMI for all patients on a yearly basis.

Prevent and Treat:

1. Prevention is for all patients and should include promotion and support for breastfeeding, family meals, limited screen time, regular physical activity and yearly BMI monitoring.
2. Prevention Plus is for children between the 85th – 94th percentiles BMI. Specifically encourage 5 servings of fruits and vegetables/day, 2 hours or less of screen time, 1 hour or more of physical activity and 0 sugared drinks. Also discuss the importance of family meal time, limiting eating out, consuming a healthy breakfast, preparing your own foods, and promotion of breastfeeding.
3. Structured Weight Management is used if prevention plus has not been effective and BMI is between 95th – 98th percentiles. This approach combines more frequent follow-up with written diet and exercise plans.
4. Comprehensive Multidisciplinary Intervention is used when 3 - 6 months of structured weight management has failed to achieve targets. This approach combines more frequent visits with an MD and a dietician and could also include exercise and behavioral specialists.
5. Tertiary Care Intervention is for patients with a BMI in the 99th percentile or greater and with associated co-morbidities or for those for whom structured weight management and comprehensive multidisciplinary intervention were not effective. This approach consists of all that is contained in the previous delivered interventions plus consideration of more aggressive therapies including meal replacements, pharmacotherapy, and even bariatric surgery in selected adolescents.

Recommendations for all community members:

CDC recently published comprehensive recommendations for community strategies to reduce obesity prevalence in the United States.⁵ Many recommended strategies specifically address reducing overweight and obesity among youth. Those strategies include supporting or advocating for:

- ◆ enhanced infrastructure to support walking and biking to school,
- ◆ reduced screen time in venues such as licensed daycare facilities,
- ◆ improved access to outdoor recreational facilities,
- ◆ improved access to healthier food and beverage choices,
- ◆ physical education in schools,
- ◆ increased extracurricular physical activities, and
- ◆ decreased advertisements of less healthy foods and beverages.

References

1. Freedman DS, Mei Z, Srinivasan SR, Berenson GS, Dietz WH. Cardiovascular risk factors and excess adiposity among overweight children and adolescents: the Bogalusa Heart Study. *J Pediatr*. 2007 Jan;150(1):12–17.e2.
2. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. *N Engl J Med* 1997; 37(13):869–873.
3. Fryar, Cheryl, Cynthia Ogden. Prevalence of Underweight Among Children and Adolescents: United States, 2003-2006. *NCHS - Health E Stats*. July 2009.
4. American Academy of Pediatrics. Prevention and treatment of childhood overweight and obesity. Retrieved August 21, 2009 from http://www.aap.org/obesity/health_professionals.html?technology=0
5. Centers for Disease Control and Prevention. Recommended Community Strategies and Measurements to Prevent Obesity in the United States. *MMWR Recommendations and Reports* 2009; 55(RR07):1-26.



We would like to thank the Washoe County School District for their cooperation with this project by collecting and providing data. Due to their diligence and dedication to the health of Washoe County children, Washoe County is the only area in Nevada with a report of this kind utilizing local childhood height and weight data.