

OREGON PUBLIC HEALTH DIVISION • OREGON HEALTH AUTHORITY

HEALTHY GROWTH - YOUNG OBESITY

Suspecting and knowing are not the same.*

— *Rick Riordan, The Lightning Thief*

Until recently, data on weight status for children in elementary school have been limited. We thought we had some idea what was going on for this group in Oregon, given data from national sources such as the National Health and Nutrition Examination Surveys (NHANES) and the National Survey of Children's Health (NSCH). But prior to 2012, no Oregon-specific body mass index (BMI) data on children were available. This *CD Summary* explores the findings of the 2012 Healthy Growth Survey, our first-ever assessment of body mass index (BMI) among 6- to 9-year-olds in Oregon.

SURVEY

The BMI assessment for the Healthy Growth Survey was conducted in combination with an oral health assessment done as part of the 2012 Smile Survey. Children in 1st, 2nd, and 3rd grades in randomly selected schools in specific regions of the state were weighed and measured. BMI was calculated and used to assess overweight and obesity rates in this population.

During the past few years, at least nine states implemented combined school-based oral health and BMI assessment to gather data mainly on third grade students. Oregon is unique in having gathered height and weight data on students in 1st to 3rd grade.

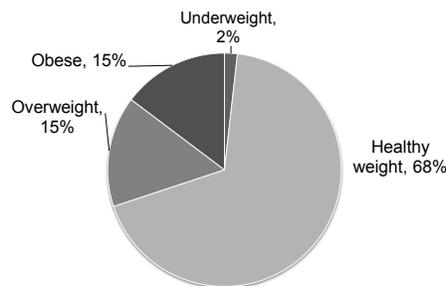
RESULTS

Third graders (8- to 9-year-olds): Because surveys from other parts of the country focus on third graders (8- to 9-year-olds), we have to specifically look at that age group to assess how Oregon compares to other states. Rates of overweight and obesity among Oregon third graders fall in the middle of the national range. Among Oregon

third graders in our 2012 survey, 17% were overweight, and 18% were obese. In the nine states that have done similar assessments, the prevalence of overweight among third graders was 15%–18% and obesity was 13%–24%.¹

All first- to-third-graders (6- to 9-year-olds). Overall, nearly one-third of all 6- to 9-year-olds were overweight or obese: 15% were overweight, 15% were obese, 68% were within a healthy weight range and 2% were underweight (Figure 1).

Figure 1. Weight status* of 6–9 year-old children, Oregon, 2012

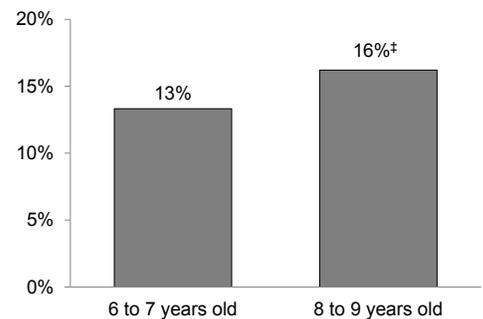


* Per CDC BMI-for-age growth chart: 85th to <95th percentile: overweight;

While these data help give us a sense of the distribution of weight status among 6- to 9-year-old children in Oregon, the remainder of this *CD Summary* focuses specifically on obesity among this group. Obesity among children this age is associated with known health risks and increased chances of being obese as an adult.

Obesity and Age: We found that older children (age 8–9 years) had a significantly higher rate of obesity than younger children (age 6–7 years) (Figure 2). This finding is consistent with data from previous studies that have assessed children of various ages and consistently found that older children have higher rates of obesity than younger children.²⁻⁵ In particular, data from one longitudinal study found third graders to have higher rates of obesity than first graders, with

Figure 2. Obesity by age, Oregon, 2012



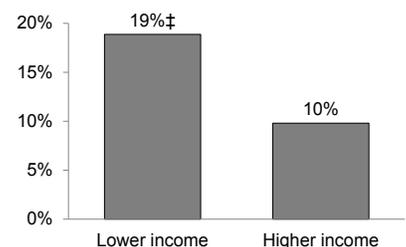
† Statistically significant difference

the largest gains in BMI occurring between first and third grades.^{2,5}

Obesity and Household Income:

We found that children from lower-income households had a significantly higher rate of obesity than children from higher-income households (Figure 3). Other studies had similar findings, although the age ranges studied were different (between age 2 years to 19 years, depending on the study).^{4,6,7}

Figure 3. Obesity by household income†, 6–9 year old children, Oregon, 2012



† Children eligible for free and reduced price meals in the National School Lunch Program are characterized as being from lower income households.

‡ Statistically significant difference

Obesity and Race/Ethnicity: We found that only Hispanic children had a significantly higher rate of obesity than white children (Figure 4, verso). African American and Asian children did not have significantly different rates of obesity compared to white children. These findings are slightly different from those of other national studies, which found higher rates of

* www.goodreads.com/quotes/59990-suspecting-and-knowing-are-not-the-same

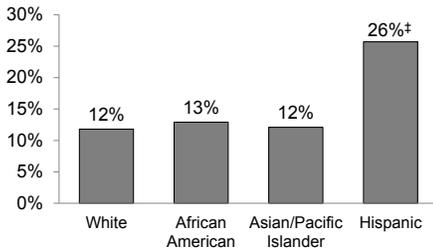


If you need this material in an alternate format, call us at 971-673-1111.

The **CD Summary** (ISSN 0744-7035) is published fortnightly free of charge and is now delivered by e-mail. To sign-up, zap your request to cd.summary@state.or.us. Please include your full name and mailing address (not just your e-mail address)

EARN FREE CME CREDIT. CME credits will be available shortly. See http://healthoregon.org/cd_summary for more information.

Figure 4. Obesity by race/ethnicity, 6–9 year old children, Oregon, 2012



† Statistically significant difference compared to white children

obesity in black and American Indian children, in addition to Hispanic children.^{4,7} Again, the age ranges studied were different (2–19 years in one study, 10–17 years in the other).

Obesity and Region: Although not statistically significant, the data suggest that the metro area (Regions 1 and 2) may have a slightly lower rate of obesity among 6- to 9-year-olds than other parts of the state (Figure 5). In all regions, obesity rates were similar to the state average of 15%.

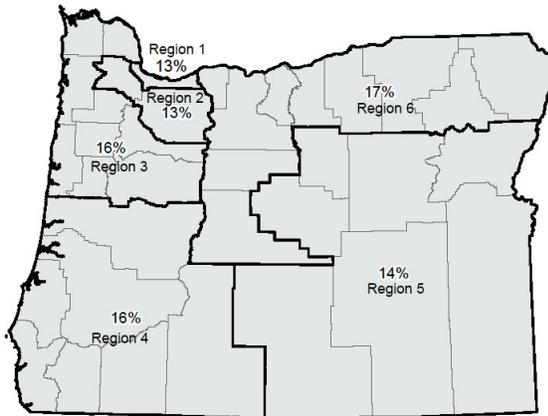
Obesity and Gender: We did not find any statistically significant difference in obesity rates between boys and girls. Two similar studies were identified and neither showed a statistically significant difference in obesity prevalence between boys and girls aged 2 to 19 years, although one did show that boys had higher rates of BMI ≥99th percentile.^{3,4}

WHAT CAN WE DO?

Data from longitudinal studies tell us a few important things:

- BMI and obesity rates increase as kids get older;^{2,5}
- Kids who are overweight in kindergarten are more likely to be obese later in childhood. However, most

Figure 5. Obesity by region, 6–9 year old children, Oregon, 2012



Region by county

1. Multnomah
2. Clackamas, Washington
3. Benton, Clatsop, Columbia, Lincoln, Linn, Marion, Polk, Tillamook, Yamhill
4. Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lane
5. Baker, Crook, Grant, Harney, Lake, Malheur, Wheeler
6. Deschutes, Gilliam, Hood River, Jefferson, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco

kids who are obese in 8th grade were not overweight when they were in kindergarten;^{2,5}

- Overweight or obese children are more likely to be obese adults, particularly if they are overweight or obese by the time they are ≥10 years of age.^{8,9}

These findings show the need for establishing environments that support healthy growth and development throughout childhood and into adulthood.

RESOURCE

The document, 'Promoting healthy growth and development in early childhood' (see <http://public.health.oregon.gov/HealthyPeopleFamilies/Children/Promoting-HealthyWeight/Documents/childhood-obesity.pdf>) includes strategies for addressing the many issues that contribute to childhood obesity.

REFERENCES

1. Oza-Frank R, Siegal MD. Body mass index measurement in schools: Partnering with oral health. *J Public Health Dent* 2011; 71:301–7.

2. Cunningham SA, Kramer MR, Narayan KM. Incidence of childhood obesity in the United States. *N Engl J Med* 2014;370:403–11.
3. Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in U.S. children and adolescents, 2007–2008. *J Amer Med Assoc* 2010;303:242–9.
4. Skelton JA, Cook, SR, Auinger P, Klein JD, Barlow SE. Prevalence and trends of severe obesity among U.S. children and adolescents. *Acad Pediatr* 2009;9:322–9.
5. Datar A, Shier V, Sturm R. Changes in body mass during elementary and middle school in a national cohort of kindergarteners. *Pediatrics* 2011;128:e1411–7.
6. Wang Y, Beydoun MA. The obesity epidemic in the United States – gender, age, socioeconomic, racial/ethnic, and geographic characteristics: A systematic review and meta-regression analysis. *Epidemiol Rev* 2007;29:6–28.
7. Singh GK, Siahpush M, Kogan MD. Rising social inequalities in U.S. childhood obesity, 2003–2007. *Ann Epidemiol* 2010;20:40–52.
8. Whitaker RC et al. Predicting obesity in young adulthood from childhood and parental obesity. *N Engl J Med* 1997;337: 869–73.
9. Guo SS et al. Predicting overweight and obesity in adulthood from body mass index values in childhood and adolescence. *Am J Clin Nutr* 2002;76:653–8.