



OREGON HEALTHY GROWTH SURVEY

2012 REPORT

Oregon
Health
Authority

PUBLIC HEALTH DIVISION
Center for Prevention and Health Promotion
Maternal and Child Health Section

To the people of Oregon:

Growth and development is a fundamental marker of child health. Young people who maintain a healthy weight, eat nutritious foods and get plenty of physical activity tend to have higher self-esteem, lower rates of depression and better school performance. Excessive weight gain among children and adolescents threatens lifelong weight control and increases the risk of chronic disease. Obesity is now a leading public health threat in Oregon. Obesity is the second leading cause of preventable death, preceded only by tobacco use. Obesity jeopardizes our state's health, work force and economy.

Obesity rates have more than doubled in children and tripled in adolescents in the past three decades. In Oregon, roughly one in four adolescents is overweight or obese. Childhood obesity presents a variety of health and psycho-social risk factors. Obese children are more likely to have risk factors for heart disease such as high blood pressure and high cholesterol; abnormal glucose tolerance; breathing problems such as sleep apnea and asthma; joint pain; as well as problems with low self-esteem, depression and discrimination. Children who are obese are more likely to become obese adults, putting them at greater risk for heart disease, diabetes, stroke and certain cancers. If current trends continue, projections indicate that the population health effects of obesity may cause today's children to have shorter life expectancies than their parents or grandparents.

This public health issue affects all Oregonians. Annually, Oregon spends approximately \$1.6 billion (\$339 million paid by Medicaid) in direct medical expenses for obesity-related chronic diseases, such as diabetes and heart disease. The annual medical cost is estimated to be \$1,429 higher for an obese person compared to someone who is not obese.

The Oregon Healthy Growth Survey provides an important opportunity to understand and address childhood obesity in Oregon, and identify populations at greatest risk. This survey is the first to present body mass index (BMI) assessments for first-, second- and third-grade students attending Oregon elementary schools. This information, collected during the 2011–2012 and 2012–2013 school years, will serve as a baseline and will be used to inform evidence-based prevention strategies designed to ensure healthy growth for all Oregon children.

Sincerely,



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Executive summary

The 2012 Oregon Healthy Growth Survey is Oregon's first state-level BMI assessment of elementary school-age children. It offered the first opportunity to provide accurate, standardized data on weight status for this age group.

The Oregon Healthy Growth Survey was conducted during the 2011–2012 and 2012–2013 school years. Trained screeners weighed and measured 5,258 children in first, second and third grades from a statewide representative sample of 82 Oregon elementary schools. Data are presented for the 5,196 children with biologically plausible values for height, weight and BMI.

Obesity/overweight: Nearly a third (30%) of Oregon's 6–9-year-old children were overweight (15%) or obese (15%).

Age: Older children (age 8–9 years) had a significantly higher rate of obesity than younger children (age 6–7 years).

Income: Children from lower-income households had a significantly higher rate of obesity than children from higher-income households.

Ethnicity: Hispanic children had a significantly higher rate of obesity than white children. (African American and Asian children did not have significantly different rates of obesity compared to white children.)

Region: There were no statistically significant differences in obesity rates by region.

Gender: There were no statistically significant differences in obesity rates between boys and girls.

The Oregon Health Authority Public Health Division has identified decreasing overweight and obesity as a priority. Besides the Healthy Growth Survey, BMI data are collected for adolescents and adults through statewide data collection systems. These include the Oregon Healthy Teens (OHT) Survey and the Behavior Risk Factors Surveillance System (BRFSS) Survey. OHT and BRFSS both rely on self-reported height and weight. The Oregon State WIC Program collects BMI data, with height and weight measured by trained staff. BMI data from the WIC Program specifically represent low-income infants and preschool-aged children served by the program.



Prevention is essential in reducing the number of children that are overweight and obese. Creating healthy environments that foster adequate physical activity and healthy eating is imperative. Strong collaboration exists between local, state and national partners to identify and implement evidence-based strategies to prevent and manage obesity. Obesity is a complex problem; data collection will continue to be critical to ensuring successful strategies.

Methods

The 2012 Oregon Healthy Growth Survey was conducted during the 2011–2012 and 2012–2013 school years. Trained screeners weighed and measured 5,258 children in first-, second- and third-grade classes from a statewide representative sample of 82 Oregon elementary schools. Height and weight were measured using the metric system on standardized, calibrated equipment. Height was measured using a portable stadiometer (seca 213) and recorded in centimeters (cm) to the nearest millimeter (mm). Weight was measured using a portable digital scale (seca 869), and recorded in kilograms (kg) to the nearest tenth. Body mass index (BMI) was calculated from each child’s height and weight. BMI was then compared to the Centers for Disease Control and Prevention (CDC) BMI-for-age growth charts. Each child’s BMI was assigned a percentile based on the CDC growth charts. The percentile indicates how the child’s BMI compares to those of children of the same age and gender.

Child and adolescent BMI

Body mass index (BMI) is a number calculated from a child’s weight and height. BMI does not measure body fat directly, but it is a reasonable indicator of body fatness for most children. BMI is useful for screening individuals and for tracking weight status trends in populations.

Adult and child BMI are interpreted differently. Because children and adolescents are growing, and the amount of body fat varies by gender and age, the BMI for children and adolescents (between 2 and 20 years old) are plotted on the Centers for Disease Control and Prevention (CDC) BMI-for-age growth charts to determine a BMI percentile. The percentile designates the relative position of the child’s BMI, compared to children of the same age and gender. Growth charts can be found separately for boys at www.cdc.gov/growthcharts/data/set1clinical/cj41c023.pdf and for girls at www.cdc.gov/growthcharts/data/set1clinical/cj41c024.pdf.

Centers for Disease Control and Prevention BMI-for-age growth chart

Percentile ranking	Weight status
Less than 5th percentile	Underweight
5th percentile to less than 85th percentile	Healthy weight
85th percentile to less than 95th percentile	Overweight
Equal to or greater than the 95th percentile	Obese

Information on grade, age and gender were obtained from the school or from the children. Race and ethnicity were assessed by the screeners, if not provided by the school. (The screening form included the following race/ethnicity options: white, African American, Hispanic, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, unable to determine.) Anyone characterized as Hispanic ethnicity was not included in any race category. Information on eligibility for free and reduced price meals in the National School Lunch program was obtained from the school. A total of 5,258 students participated in the survey. Data for 62 children were excluded, either because data were missing, or because height, weight and BMI data were not within biologically plausible limits. Data for the remaining 5,196 children are included in this report. Data collected for the Oregon Healthy Growth Survey are representative of Oregon and specific predetermined regions. Data represent the regional and statewide prevalence of childhood overweight and obesity among 6–9-year-old children.

Following the weight and height assessment, students participated in a brief visual oral health assessment for the 2012 Oregon Smile Survey. The oral health data have been reported separately in the 2012 Oregon Smile Survey Report.

A complete description of the survey methods and sampling is available in Appendix 1.



Results

The 2012 Oregon Healthy Growth Survey found that nearly one-third of Oregon's 6–9-year-old children were overweight or obese: 15% of children were overweight, 15% were obese, 68% were within a healthy weight range and 2% were underweight (Figure 1).

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).

Income: We found that children from lower-income households had a significantly higher rate of obesity than children from higher-income households (Figure 3).

Race/ethnicity: Only Hispanic children had a significantly higher rate of obesity than white children. (African American and Asian children did not have significantly different rates of obesity compared to white children) (Figure 4).

Region: There were no statistically significant differences in weight status among the state's regions (Figure 5).

Gender: There was no significant difference in weight status between boys and girls (Figure 6).

The analysis was restricted to the 5,196 children with biologically plausible values for height, weight and BMI. Detailed data tables can be found in Appendix 2 of this report.

Overweight and obesity

Per Figure 1, among Oregon 6–9-year-old children:

- 15% fall within the obese category (BMI is equal to or above the 95th percentile).
- 15% fall within the overweight category (BMI is between the 85th and 95th percentile).
- 68% fall within the healthy weight category (BMI is between the 5th and 85th percentile).
- 2% fall within the underweight category (BMI is below the 5th percentile).



The remainder of this report focuses on obesity among 6–9-year-old children in Oregon. Obesity among children this age is associated with known health risks and increased chances of being obese as an adult. More remains to be learned about the effects of overweight for this age group.

Figure 1

Weight status* of 6- to 9-year-old children, Oregon, 2012

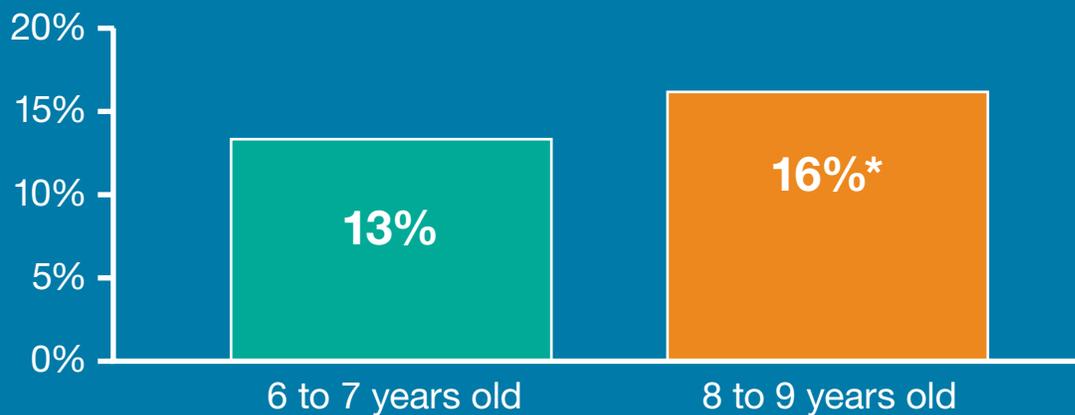


Obesity by age

We found that the rate of obesity was higher among 8–9-year-old children (16%) than among 6–7-year-old children (16% vs. 13%). (See Figure 2.) The difference was statistically significant.

Figure 2

Obesity by age, 6-to 9-year-old children, Oregon, 2012



*t-test: 2.6; p=0.01

Note: This report includes BMI information collected for 5,196 children. The only 5-year-old student was counted with the 6–7-year-old children. The 28 students who were 10 years old were counted with the 8–9-year-old children.

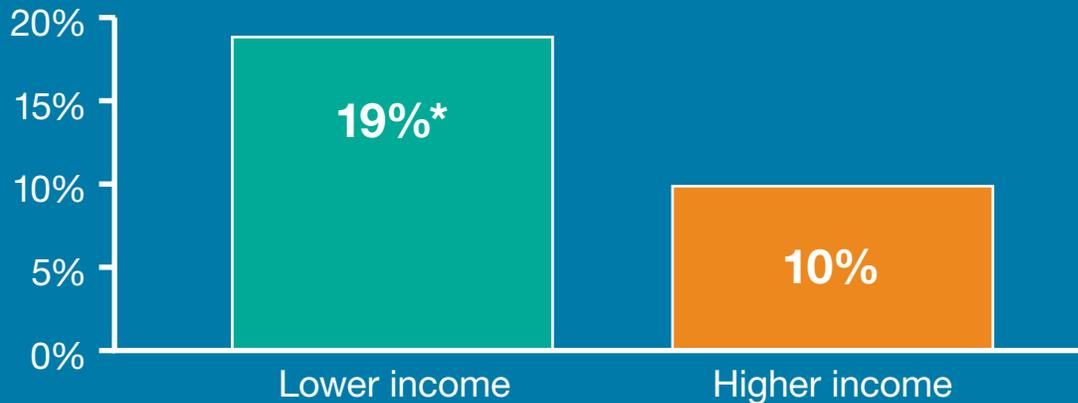
For precise numbers and 95% confidence intervals, see appendix 2, Table 2.

Obesity by household income

We found that the rate of obesity was higher among children from lower-income households than among children from higher-income households (19% vs. 10%) (See Figure 3.) The difference was statistically significant.

Figure 3

Obesity by household income^{†‡}, 6-to 9-year-old children, Oregon, 2012



* t-test: 7.43; $p < 0.001$

† Information on household income was not collected for this survey. A proxy for household income was used instead based on eligibility for free and reduced price meals in the National School Lunch Program. Children eligible for free and reduced price meals are characterized as being from lower income households for this report.

‡ Eligibility for free and reduced-price meals in the National School Lunch Program (NSLP) is a household income at or below 130% of the federal poverty level (FPL) for free meals and between 130% and 185% of the FPL for reduced-price meals.

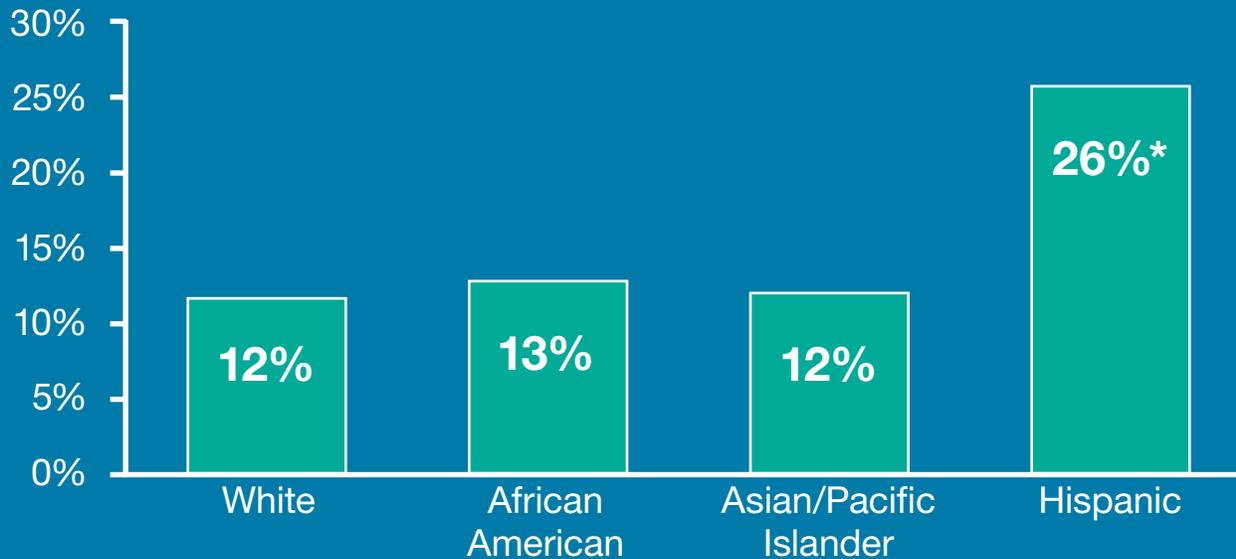
For precise numbers and 95% confidence intervals, see appendix 2, Table 3.

Obesity by race/ethnicity

We found that the rate of obesity was higher among Hispanic children than among white children (26% vs. 12%). (See Figure 4.) The difference was statistically significant.

Figure 4

Obesity by race/ethnicity, 6-to 9-year-old children, Oregon, 2012



*t-test: 8.88; $p < 0.001$

Note: Data for other race/ethnicities are not presented because of small sample sizes.

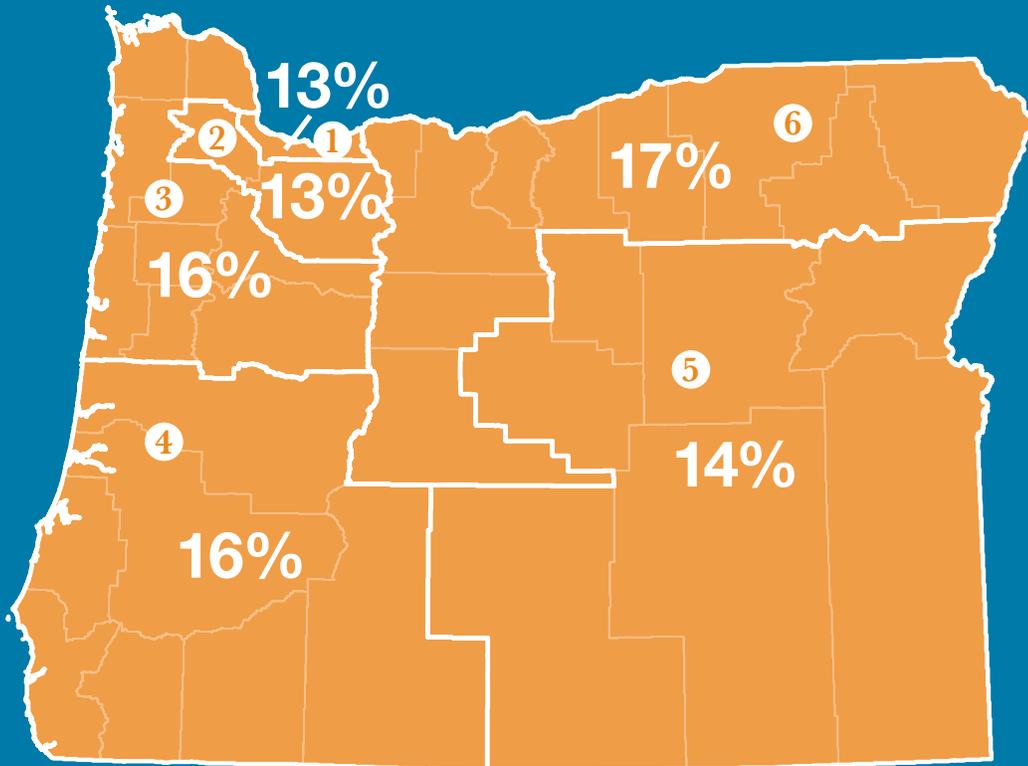
For precise numbers and 95% confidence intervals, see appendix 2, Table 4.

Obesity by region

We did not find any statistically significant differences in obesity rates by region. (See Figure 5.)

Figure 5

Obesity by region, 6-to 9-year-old children, Oregon, 2012



Region	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.

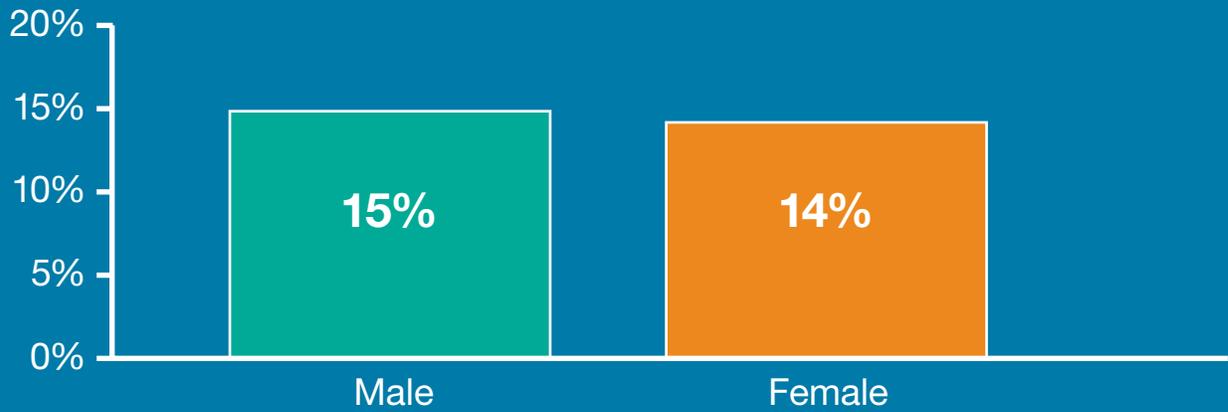
For precise numbers and 95% confidence intervals, see appendix 2, Table 5.

Obesity by gender

We did not find any statistically significant difference in obesity rates between boys and girls. (See Figure 6.)

Figure 6

Obesity by gender, 6-to 9-year-old children, Oregon, 2012



t-test: 1.05; p=0.30

For precise numbers and 95% confidence intervals, see appendix 2, Table 6.



Discussion

Until recently, BMI data for children have been limited. National childhood obesity data are generally obtained from the 1976–2010 National Health and Nutrition Examination Surveys (NHANES) and the National Survey of Children’s Health (NSCH).

In the past few years, at least nine states implemented combined school-based oral health (Smile)/BMI assessment to gather data mainly on third-grade students. Oregon is unique in having gathered height and weight data on first-, second- and third-grade students. However, Oregon can only use third-grade data to compare to other states. The rate of obesity among Oregon third-grade children in our study (18%) was in the middle of the national range; the prevalence of obesity among third-graders in the other nine states ranged from 13% to 24% (1).

Age: The Oregon Healthy Growth Survey found that older children (age 8–9 years) had a significantly higher rate of obesity than younger children (age 6–7 years). This finding is consistent with data from previous studies. The Early Childhood Longitudinal Study, which followed children prospectively for nine years beginning in kindergarten, found that third-graders (mean age 9.1 years) had significantly higher rates of obesity than first-graders (mean age 7.1 years) (5). Similarly, two NHANES-based studies found that 6–11-year-olds had higher rates of obesity (BMI \geq 95th percentile) than 2–5-year-olds (3,4). Another assessment of Early Childhood Longitudinal Study data further found that the proportion of children with BMI in the top quartile increased significantly during the elementary school years, with the largest gains in BMI occurring between first and third grades (2).



Income: This survey found that children from lower-income households had a significantly higher rate of obesity than children from higher-income households. Other studies found similar results but none were specific to 6–9-year-olds. Skelton, et al., using data from NHANES, found that obesity was greater among children (2–19 years old) from low-income families compared to children from high-income families (4). A review by Wang et al. that included NHANES data from 1971–2002 showed that children aged 2–17 years from low-socioeconomic-status groups had higher rates of obesity than children from high-socioeconomic-status groups (6). Singh et al. found that 10–17-year-olds from low-income and low-education households had higher rates of obesity than children from higher-income and higher-education households (7).

Race/ethnicity: The Oregon Healthy Growth Survey found that only Hispanic children had a significantly higher rate of obesity than white children. Among children aged 2–19 years, Skelton et al. found significantly higher rates of BMI $\geq 97\%$ for black and Mexican American children compared to white non-Hispanic children (4). Singh et al. found higher rates of obesity among Hispanic, black and American Indian adolescents (7). Data from the Early Childhood Longitudinal Study found that, for both first- and third-graders, Hispanic children had higher rates of obesity than non-Hispanic black children who, in turn, had higher rates of obesity than non-Hispanic white children (5).

Region: This survey did not find differences in weight status for 6–9-year-old children among the regions of Oregon. We did not find any studies comparing childhood obesity in urban versus rural communities.

Gender: The Oregon Healthy Growth Survey did not find any statistically significant difference in obesity rates between boys and girls. Two similar studies were identified that included NHANES data from 1999–2004 (4) and 2007–2008 (5) for children aged 2–19 years. Neither study showed a statistically significant difference in obesity prevalence between boys and girls aged 2 to 19 years.



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Appendix 1: Methods

The 2012 Oregon Healthy Growth Survey was conducted during the 2011–2012 and 2012–2013 school years, in conjunction with the 2012 Oregon Smile Survey. In Oregon, 5,258 children in first, second and third grades were screened from a statewide representative sample of 82 elementary schools. Specially trained screeners and dental hygienists collected and recorded the height and weight of each child for a body mass index (BMI) calculation, and performed a brief, simple visual screening of each child’s mouth. The oral health assessment data were reported separately in the 2012 Smile Survey Report.

The sampling frame for this survey was all public schools with 15 or more students in third grade. The sampling frame was stratified by geographic region. Schools within each region were sorted by the percentage of students eligible for free and reduced-price meals in the National School Lunch Program. A systematic sampling method was used to originally select 84 elementary schools with third-grade children. Three of the schools had closed, leaving 81 schools in the sample. Two of the elementary schools selected did not have first- or second-grade students, so the appropriate “feeder” schools were added to the sample, for a total of 83 schools. After contacting the sample schools for participation, 70 replacement schools were randomly selected to replace the schools that declined to participate. Replacement schools matched the schools they replaced. From a total of 151 schools contacted, 81 schools with third grades plus one “feeder” school participated in the Healthy Growth Survey, for a total of 82 schools. For each randomly selected school, children were screened in one first-, one second-, and one third-grade classroom. One classroom from each grade level was randomly selected to participate in schools with more than one classroom per grade level.

Student participation was achieved using a passive consent approach. Parents received letters in English, Spanish, Russian, Vietnamese or any other requested language. The letter explained the survey’s purpose and that all information would be confidential unless an urgent dental need was identified during the oral health assessment. Parents were instructed to return a signed form only if they did not want their children screened. In each randomly selected school, all children enrolled in the selected classrooms and present on the screening day were assessed, unless a parent/guardian returned the consent form specifically requesting that the child not take part in the survey.



Prior to the beginning of data collection (screening), the Oregon Public Health Division Oral Health Program contracted with registered dental hygienists from the state school-based dental sealant program. The hygienists attended a one-day training to learn how to provide the dental screenings for the Smile Survey. The hygienists and three nutrition and public health masters-level student interns were also trained to collect height and weight measurements using a standardized protocol. Height and weight were measured using the metric system on standardized, calibrated equipment. Height was measured using a portable stadiometer (seca 213) and recorded in centimeters (cm) to the nearest millimeter (mm). Weight was measured using a portable digital scale (seca 869), and recorded in kilograms (kg) to the nearest tenth.



On the screening day for each school, children were screened for height, weight and oral health status. Information on grade, age and gender was obtained from the school or the children. Screeners assessed race and ethnicity if the school did not provide those data. The school provided information on the students' federal free and reduced-price meals eligibility status. Data were recorded using scanable forms.

Body mass index (BMI) was calculated from each child's weight and height. BMI does not measure body fat directly, but it is a reasonable indicator of body fatness for most children. Although not a diagnostic tool, BMI is useful for tracking weight status trends in populations. Adult and child BMI are interpreted differently. Because children and adolescents are growing, and the amount of body fat varies by gender and age, the BMI for children and adolescents (ages 2–20 years) are plotted on the Centers for Disease Control and Prevention (CDC) BMI-for-age growth charts (see: www.cdc.gov/growthcharts/). Each child's BMI was assigned a percentile based on the CDC growth charts. The percentile indicates how the child's BMI compares to those of children of the same age and gender.

An independent contractor supplied data analysis for height, weight and BMI using the survey analysis features of SAS 9.3 and the BMI-for-age analysis program developed by the CDC for their growth charts (see boys' growth chart at www.cdc.gov/growthcharts/data/set1clinical/cj41c023.pdf and girls' growth chart at www.cdc.gov/growthcharts/data/set1clinical/cj41c024.pdf). All results were adjusted for the complex sampling design. The survey design was based on grade rather than age; therefore, children between 6 and 9 years of age in grades other than first, second or third were not screened.

Data limitations:

- Data collected for the Oregon Healthy Growth Survey are representative of Oregon and specific regions of the state.
- Data from the Oregon Healthy Growth Survey represent the prevalence of overweight and obesity for Oregon's 6–9-year-old children; other age groups are not included in this survey.
- Of the 5,258 students participating in the survey, data for 5,196 were complete and considered to be within biologically plausible limits for height, weight and BMI.* The data in this report are from those 5,196 children.
- When schools did not provide data on race and ethnicity, screeners assessed this information.
- The Oregon Health Growth Survey does not include information about children who were being home-schooled or who were not in school on the survey days.
- Because of the survey's design, it was not possible to oversample racial and ethnic groups. The result is small numbers for minority groups, especially for American Indian, African American and Asian children.

Data cleaning:

- Each child's age, in months, was calculated in one of two ways. The preferred method was calculating age, in months, using the date of birth and the date of screening. Age, in years, was also used for this calculation if birth date was missing. Age, in months, was calculated from age, in years, for 170 children.
- One screener incorrectly recorded weight in pounds rather than kilograms at five schools. Weight at these schools was converted to kilograms ($\text{kg}=\text{pounds}/2.205$).

* The Centers for Disease Control and Prevention (CDC) recommends that states report obesity surveillance data with outliers excluded. Only data for children with biologically plausible values for height, weight and BMI were used for this report.

Data management and analysis: Data analysis for height, weight and BMI was completed using the survey analysis features of SAS 9.3, and the BMI-for-age analysis program developed by CDC for the CDC growth charts (www.cdc.gov/nccdphp/dnpao/growthcharts/resources/sas.htm). All results were adjusted for the complex sampling scheme.

Number of children with data:

Height and weight:	5,249 children
Height, weight and gender:	5,238 children
Height, weight and BMI within biologically plausible limits:	5,196 children

Number of children with outlier values (based on World Health Organization fixed exclusion ranges)

Variable	Too low	Normal range	Too high
Height	0	5,223	15
Weight	1	5,218	19
BMI	6	5,218	14
Height, weight and BMI		5,196	

NOTE: All analyses were restricted to the 5,196 6–9-year-old children with biologically plausible values for height, weight and BMI. The Centers for Disease Control and Prevention (CDC) recommends that states report obesity surveillance data with outliers excluded.

Appendix 2: Data tables

The following analyses were restricted to the 5,196 6-to 9-year-old children with biologically plausible values for height, weight and BMI. The Centers for Disease Control and Prevention (CDC) recommends that states report obesity surveillance data with outliers excluded.

Table 1: Height, weight and BMI stratified by gender

Variable	Males n=2,663		Females n=2,533		Total n=5,196	
Height (cm)						
Mean	128.8		127.7		128.3	
Standard error	0.25		0.23		0.21	
95% CL for Mean	128.3	129.3	127.3	128.2	127.8	128.7
Weight (kg)						
Mean	29.4		29.0		29.2	
Standard error	0.19		0.21		0.16	
95% CL for Mean	29.0	29.8	28.6	29.4	28.9	29.5
BMI						
Mean (se)	17.5		17.5		17.5	
Standard error	0.08		0.09		0.07	
95% CL for Mean	17.4	17.7	17.4	17.7	17.4	17.7

Table 2: BMI-for-age stratified by child's age

Variable	6–7-year-olds n= 2,598	8–9-year-olds n= 2,598
	Percent [95% CI]	Percent [95% CI]
Underweight < 5th percentile	1.6 [1.2–2.1]	2.0 [1.5–2.7]
Healthy weight 5th to < 85th percentile	70.9 [68.7–73.1]	65.2 [62.9–67.5]
Overweight 85th to < 95th percentile	14.2 [12.8–15.6]	16.6 [15.0–18.3]
Obese ≥ 95th percentile	13.3 [11.7–15.2]	16.2 [14.4–18.1]

Note: The one 5-year-old child was counted with the 6–7-year-old children.
The 28 children who were 10 years old were counted with the 8–9-year-old children.

Table 3: BMI-for-age stratified by eligibility for free/reduced price meals

Variable	Eligible for free/reduced price meals	
	No n= 2,276	Yes n= 2,658
	Percent [95% CI]	Percent [95% CI]
Underweight < 5th percentile	2.2 [1.7–2.9]	1.4 [0.9–2.1]
Healthy weight 5th to < 85th percentile	74.9 [72.6–77.1]	62.6 [60.7–64.4]
Overweight 85th to < 95th percentile	13.0 [11.6–14.7]	17.1 [15.6–18.6]
Obese ≥ 95th percentile	9.8 [8.5–11.4]	18.9 [17.2–20.8]

Note: Data on free/reduced price meals eligibility were missing for 262 children.

Table 4: BMI-for-age stratified by race/ethnicity

Variable	White n=3,730	African American n=167	Hispanic n=960	Asian/ Pacific Islander n=211
	Percent [95% CI]	Percent [95% CI]	Percent [95% CI]	Percent [95% CI]
Underweight < 5th percentile	2.0 [1.6–2.5]	1.1 [0.2–4.6]	0.4 [0.1–1.1]	4.1 [1.9–8.4]
Healthy weight 5th to < 85th percentile	72.2 [70.3–74.0]	67.9 [62.9–72.5]	53.7 [50.6–56.7]	71.0 [65.1–76.3]
Overweight 85th to < 95th percentile	14.0 [12.7–15.4]	18.1 [13.8–23.5]	20.2 [17.7–23.0]	12.8 [8.2–17.9]
Obese ≥ 95th percentile	11.8 [10.7–13.0]	12.9 [8.4–19.4]	25.7 [22.7–28.8]	12.1 [8.0–17.9]

NOTE: Data for other race/ethnicity categories are not presented because of small sample sizes.

Table 5: BMI-for-age stratified by region

Variable	Region 1 n=785	Region 2 n=1,243	Region 3 n=1,192	Region 4 n=1,138	Region 5 n=373	Region 6 n=465
	Percent [95% CI]					
Underweight < 5th percentile	1.6 [0.8–3.1]	1.7 [1.0–2.8]	2.0 [1.3–3.0]	2.0 [1.3–3.1]	1.9 [1.3–2.8]	1.4 [0.6–3.4]
Healthy weight 5th to < 85th percentile	70.2 [64.6–75.3]	70.3 [65.8–74.4]	66.9 [63.4–70.3]	66.1 [63.1–69.0]	67.6 [62.2–71.7]	66.0 [60.7–70.8]
Overweight 85th to < 95th percentile	15.0 [12.5–17.5]	14.8 [12.5–17.5]	15.5 [13.2–18.2]	15.8 [14.0–17.9]	16.0 [13.0–19.6]	16.0 [13.5–19.0]
Obese ≥ 95th percentile	13.2 [9.4–18.3]	13.2 [10.3–16.8]	15.5 [13.2–18.2]	16.1 [13.7–18.7]	14.4 [10.7–19.3]	16.7 [12.9–21.2]

Region 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.

Table 6: BMI-for-age stratified by gender

Variable	Males n=2,663	Females n=2,533	Total n=5,196
	Percent [95% CI]	Percent [95% CI]	Percent [95% CI]
Underweight < 5th percentile	1.6 [1.1–2.3]	2.0 [1.5–2.6]	1.8 [1.4–2.2]
Healthy weight 5th to < 85th percentile	67.0 [64.9–69.4]	69.3 [66.9–71.5]	68.1 [66.2–70.0]
Overweight 85th to < 95th percentile	16.2 [14.8–17.7]	14.5 [13.1–16.1]	15.4 [14.3–16.5]
Obese ≥ 95th percentile	15.2 [13.6–16.8]	14.2 [12.6–16.0]	14.7 [13.3–16.8]

OREGON HEALTHY GROWTH SURVEY

2012 REPORT



Oregon
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PUBLIC HEALTH DIVISION
Center for Prevention and Health Promotion
Maternal and Child Health Section

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