

Alaska Student Weight Status Surveillance System (SWSSS)

The data source for student weight status is the Alaska Student Weight Status Surveillance System (SWSSS). SWSSS is comprised of Alaska student weight status data obtained voluntarily from partner school districts that have contributed their data as a means of monitoring obesity trends. Participating school districts provide DHSS de-identified student data (i.e., measured height and weight, age, and sex). DHSS conducts the analysis to generate body mass index (BMI), BMI percentile, and the associated weight status classifications of underweight, healthy weight, overweight and obese, as described below.

Classifying Overweight and Obesity

Body mass index correlates with amount of body fat and can be used to estimate risk of weight-related health problems. BMI is a useful surveillance measure because the calculation requires only height and weight, is easy to analyze, is inexpensive to conduct, and provides a good approximation of obesity and overweight prevalence across the population.¹

Body mass index is calculated using the formula: $BMI = \text{weight (in kg)} / [\text{height (in m)}]^2$. Because children and adolescents are still growing, their weight status is determined by referencing calculated BMI to age- and sex-specific [growth charts](#). Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. The percentile indicates the relative position of the child's BMI number among a standardized set of children of the same sex and age. For 2- to 20-year olds, the resulting percentile is used to identify weight status, according to the following:

Table 1: Weight Classification for 2- to 20-Year Olds

BMI for Age Percentile	Weight Status Classification
< 5 th	Underweight
5 th to less than 85 th	Healthy Weight
85 th to less than 95 th	Overweight
≥ 95 th	Obese

School District Participation

School districts across the state vary in the grades for which they routinely collect height and weight data. Some districts aim to measure and weigh every student, every year, while other districts target only students in Kindergarten, 1st, 3rd, 5th and 7th grades.

As of June 2015, the following school districts have participated in SWSSS and are available on Instant Atlas: Anchorage, Kenai Peninsula Borough, Ketchikan Gateway Borough, Kodiak Island Borough, Matanuska-Susitna Borough, Nome, North Slope Borough, Petersburg, and Sitka. Additional districts have participated; however, their results are not representative of their entire respective districts. For this reason, these results are not displayed in Instant Atlas.²

¹ Additional information about BMI can be found at this site: <http://www.cdc.gov/healthyweight/assessing/bmi/index.html>

² Instant Atlas can be accessed at: <http://dhss.alaska.gov/dph/InfoCenter/Pages/ia/default.aspx>

Instant Atlas Results/Reports

To standardize the results displayed in Instant Atlas, SWSSS is limited to Kindergarten, 1st, 3rd, 5th, and 7th grade measurements, labeled “K-8 combined” on the individual district reports. Each participating district’s data are weighted to district enrollment levels.³ Overweight and obesity prevalence for grades K-8 are comparable to two of the Healthy Alaskans 2020 [Statewide Leading Health Indicators](#) (childhood overweight and obesity).

Individual School District Weight Status Reports

To provide districts with as much information as possible, DHSS also publishes individual school district weight status reports that provide additional details not found in Instant Atlas. These reports include overweight and obesity prevalence by grade or grade grouping, race/ethnicity reflective of the district enrollment, and, when available, socioeconomic status. These reports include data from grades outside of the K-8 combined indicator so may not match the Instant Atlas results exactly. Individual school district weight status reports are available at <http://dhss.alaska.gov/dph/Chronic/Pages/Obesity/weightstatus.aspx>

Limitations

One limitation of SWSSS is that height and weight measurements are not collected through a sampling procedure, but are obtained as part of the routine school health screening process. There is variation across school district, grade, and school years in the percentage of enrolled students who contribute to SWSSS. However, because in most school districts efforts are made to screen all students in grades K, 1, 3, 5, 7, it is unlikely that the prevalence of overweight and obesity is subject to a bias that would result in the disproportionate selection of more obese students. Also we take steps to minimize bias by weighting the data to district enrollment by race, sex and grade.

There is also considerable variation in the measurement procedures implemented across districts. There are not enough trained professionals such as a school nurses to collect all height and weight measurements in all schools, in all districts. Teachers and other school staff may be called upon to help perform this task. However, at each district a professional such as a school nurse or a public health nurse has *oversight* of the measurements, and DHSS offers a free online training in measurement protocol to all districts, located at <http://anthc.adobeconnect.com/p3bundbielk/>.

A third limitation is related to measurement equipment. Both within and across districts, schools use different types of measurement equipment. School districts were required to use approved equipment if using obesity prevention program support to purchase measurement equipment. While the variations in procedure and equipment likely result in some degree of random error, it is unlikely the variations would be responsible for systematic under- or over-estimate of weight status.

Another limitation is that historically, Anchorage’s students have been over-represented in SWSSS. During the 2013-2014 school year Anchorage represented 37% of all students statewide and 59% of the students in SWSSS. It is important to note the surveillance system is still in development and will continue to grow as additional school districts participate. This means that SWSSS will become increasingly representative of students statewide; however, it also means that any analysis involving a trend component will need to be interpreted with caution.

Participating school districts also vary in the exact methods they use to extract health record data. To minimize this variation, district contacts are provided a detailed list of required and optional data elements, as noted in Table 2 below.

³ Weighting corrects for differences in the number of students in each grade who participated in height and weight screening and the total number of students enrolled in each grade. Weighting makes the total number of cases in each grade, race/ethnicity, and gender category equal to the total enrolled population.

Table 2: Variables Provided by School Districts for DHSS Analysis

Essential Data Variables		
Name	Description	Details
School ID	School identifier	Six-digit code used by SOA Department of Education & Early Development
StudentID	Unique individual student identifier ** NOT THE STUDENT'S ACTUAL ID	Random ID that cannot be traced back to the student
Height	Measured student height	In inches, to the 1/8 th inch
Weight	Measured student weight	In pounds, to the 1/4 th pound
School_year	Academic year	Numeric: "2013" designates 2013-2014
ExamDate	Date of height & weight measurement	MM/DD/YYYY
Age in Months	Student age at date of measurement ** NOT THE STUDENT'S BIRTHDATE	Numerical, 2 decimal points
Grade	Student grade at measurement	-1=Preschool, 0=Kindergarten, 1=1 st , 2=2 nd ...
Sex	"M"/"F"	Text format
Ethnicity	Student race/ethnicity category (1-8)	1=White / 2=Black / 3=Hispanic or Latino / 4=Asian / 5=American Indian / 6=Alaska Native / 7=Multi-Ethnic (non-Hispanic) / 8=Native Hawaiian or Pacific Islander
Optional Data Variables		
FR_student	Free/reduced-price meal - individual student eligibility indicator	Text format, Yes/No
GPA	Individual student GPA	Numerical, one decimal point
Geography	Regional or rural / urban	identifiers of interest to district
Other (district added)	TBD--attendance, priority target school, etc...	Upon agreement with OPCP--district added variables to assist with their program.