

The Burden of  
**Overweight & Obesity**  
in Alaska



State of Alaska  
Department of Health and Social Services  
February 2010



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## Executive Summary

Overweight and obesity are on the rise in Alaska, affecting individuals of all ages, from all areas of the state, of all racial and ethnic backgrounds, and with all levels of education and income. This relatively rapid increase in obesity rates will have lasting impacts on the health and quality of life of Alaskans, as well as on the healthcare system long into the future. Two out of 3 Alaska adults are overweight or obese, and many of these adults are already or will soon be dealing with obesity-related health issues, such as diabetes, heart disease, cancer and high blood pressure. Alaska's youth are affected by obesity as well, and they too will be facing significant obesity-related chronic diseases in their future.

*The Burden of Overweight and Obesity in Alaska* provides a comprehensive review of existing data that describe the extent of overweight and obesity in Alaska, and related nutrition and physical activity factors. The following are key findings from the report.

- Between 1991 and 2007, the percentage of adults above a normal weight (i.e., overweight or obese) went from about half (49%) to nearly two-thirds (66%) of the adult population. During this time obesity rates doubled (from 13% to 27%); rates of overweight remained relatively flat.
- 27% of high school youth are above a normal weight, with 11% obese.
- 36% of K-12 students in the largest school district in Alaska are above a normal weight, including 33% of Kindergartners and first graders.
- Overweight and obesity are seen in all demographic subgroups in Alaska; however, disparities do exist. Adults with the highest rates of obesity are:
  - American Indians/Alaska Natives (31%) compared to White Alaskans (25%)
  - Older Alaskans (e.g., 55- to 64-year-olds (33%) compared to 18- to 24-year-olds (13%))
  - Women with low household incomes (less than \$15,000 annually; 39%) compared to women with incomes over \$75,000 (22%)
  - Women with little educational attainment (less than high school; 33%) compared to women who have graduated from college (22%)
  - Alaskans living in rural Alaska (30%) compared to all other regions (25%-26%)
- Obesity is associated with a number of poor health outcomes among Alaska adults. For example, compared to those who are normal weight or underweight, obese Alaskans are:
  - twice as likely to report their health status as fair or poor (21% vs.10%)

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- more than twice as likely to have high blood pressure (37% vs. 15%)
- 6 times more likely to have diabetes (13% vs. 2%)
- Obesity and its contributors are linked to poor academic performance among Alaska high school youth. For example, 72% of normal weight students report getting mostly A's and B's, compared to only 56% of obese students.
- 27% of Alaska adults are not getting the recommended levels of physical activity. There are many disparities associated with meeting these recommendations, and the most common reason cited for not getting more physical activity is “not enough time.”
- Only 19% of high school students are getting the recommended 60 minutes of physical activity daily. Almost half (46%) of boys and 61% of girls reported having no PE class in the previous week.
- One-third of adults and half of high school students have 3 or more hours of screen time (television time plus computer time not for work or school) daily.
- 75% of adults and 84% of high school students eat less than the recommended amounts of fruits and vegetables daily.
- 22% of high school youth drink 1 or more non-diet soda per day; American Indian/Alaska Native girls are significantly more likely to do so (35%) than are White girls (11%). Consumption of soda and other sugar-sweetened beverages is even common among 2-year-olds—29% of toddlers statewide and 58% in the northern and southwest parts of Alaska consumed some in the previous day.
- Awareness of the recommendations regarding fruit and vegetable consumption is associated with sex, race, income, education, and region of the state.
- Access to healthy food in local stores is judged to be difficult or impossible for 15% of Alaska adults; 30% rate access to healthy food in local restaurants as difficult or impossible.
- Breastfeeding initiation and duration have increased significantly in Alaska over the past 15 years.
- Many adults have an inaccurate perception of their weight status. For example, 55% of those who are overweight identify themselves as such, and only 20% of those who are obese see themselves that way.
- Most adults (75%) and high school youth (63%) are trying to lose weight or maintain their current weight. Exercise is the most commonly reported strategy for weight

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management among both adults (76%) and youth (81%), followed closely by changes to diet (adults, 69%; youth, 53%).

- Over 90% of adults believe that parents and individuals have some or a lot of responsibility for addressing obesity; 62% believe government has some responsibility.
- A majority of Alaska adults support school policies that would limit the availability of unhealthy foods in schools. In addition, 79% of Alaska adults support or strongly support a government-funded obesity prevention media campaign, and 55% support a law requiring restaurants to include nutrition information on their menus.

Reversing the increasing trend of obesity will require time and a comprehensive obesity prevention program model that combines educational, clinical, environmental, and social strategies. This is the only approach that will help Alaskans address the many factors that contribute to overweight and obesity, chronic illness and even premature death. Intervention efforts must help children, adolescents and adults develop lifelong healthy habits and also ensure that the environments in which they live, attend school, work and play support healthy activity and eating choices.

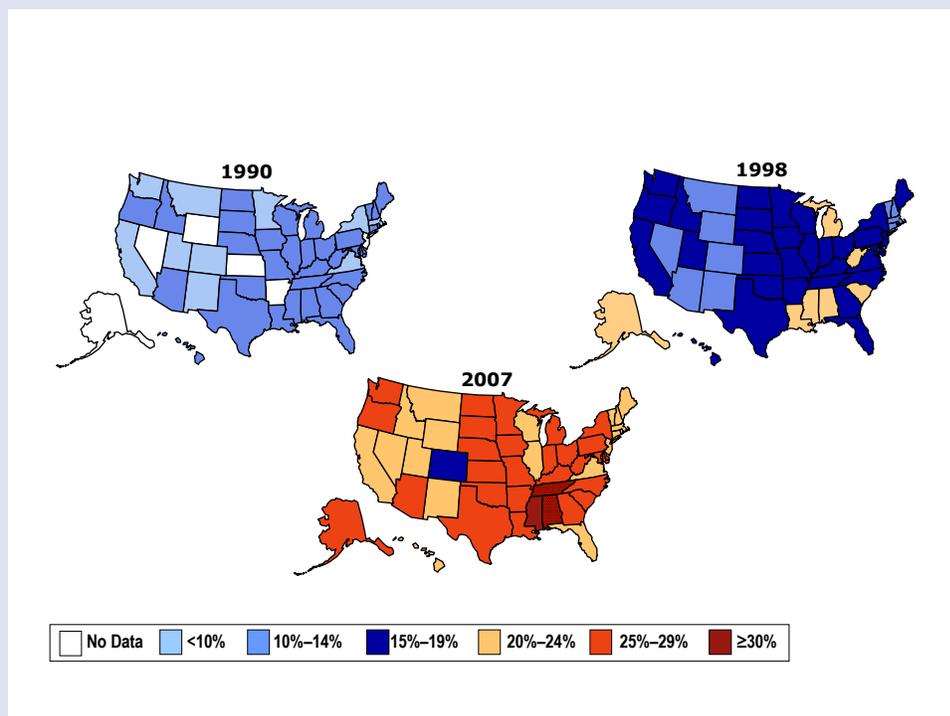
## Introduction

In the United States, the increase in overweight and obesity has been so substantial and dramatic that it is commonly described as epidemic.<sup>1</sup> The epidemic has spread through all 50 states, within all racial and ethnic subgroups, and among all socioeconomic and age groups. According to the Institute of Medicine, "...we have learned that excess weight has significant and troublesome health consequences", yet "we nevertheless see our population, in general, and our children, in particular, gaining weight to a dangerous degree and at an alarming rate."<sup>2</sup>

As is the case nationally, overweight and obesity are on the rise in Alaska, affecting individuals of all ages, from all areas of the state, of all racial and ethnic backgrounds, and with all levels of education and income. Increases in obesity have occurred rapidly, and the changes in weight that have occurred over the past 15 years will have lasting impacts on the health of individuals and of the healthcare system for decades to come.

Nationally, between 1980 and 2002, obesity prevalence doubled in adults aged 20 years or older and overweight prevalence tripled in children and adolescents aged 6 to 19 years.<sup>3,4</sup> Recent prevalence estimates show that rates of obesity remain high but may be leveling off.<sup>5,6</sup>

**Figure 1. Obesity Trends\* Among U.S. Adults,<sup>7</sup> BRFSS, 1990, 1998, 2007**



*Source: US BRFSS; \*BMI  $\geq 30$ , or about 30 lbs. overweight for 5'4" person*

## Introduction

### Health Consequences of Overweight and Obesity

Adults who are overweight or obese have a higher risk of premature death than those with a normal weight. Obesity and overweight are also associated with an increased risk of coronary heart disease, type 2 diabetes, musculoskeletal disorders, sleep apnea, asthma, and psychological disorders, as well as cancer of the endometrium, colon, kidney, gallbladder, and breast (postmenopausal).<sup>1</sup> Children and adolescents who are overweight are more likely to be overweight or obese as adults, while high blood pressure, high cholesterol, orthopedic disorders, type 2 diabetes, and psychosocial disorders are more common among overweight youth than among those with a healthy body weight.<sup>1</sup>

### Economic Consequences of Overweight and Obesity

The economic costs of treating the medical conditions associated with overweight and obesity are substantial. Direct medical expenditures alone for obesity are estimated to total \$147 billion each year in the United States, or roughly 9% of total spending on health care.<sup>8</sup> Applying this fraction to total health care costs in Alaska<sup>9</sup> yields an estimate of \$477 million spent annually in Alaska for direct medical expenditures related to obesity (Eric Finkelstein, personal communication, 7/9/2009). This is surely an underestimate of the true economic costs of obesity in Alaska, as obesity also contributes to reduced life-expectancy, lost productivity, and reduced earning potential, each of which have significant economic ramifications beyond just direct medical costs.

### Causes of Overweight and Obesity

Individual body weight is determined by a variety of inter-related genetic, physiological, behavioral, cultural, environmental, and socioeconomic factors.<sup>1</sup> An imbalance between energy (caloric) intake and energy expenditure is the underlying cause of overweight and obesity in most individuals.

On a societal level, poor diet and physical inactivity accounted for approximately 365,000 U.S. deaths in 2000, up from 300,000 in 1990.<sup>10</sup> If this trend continues, physical inactivity and poor diet are likely to overtake tobacco as the leading causes of preventable death in the United States.<sup>10</sup>

### Purpose and Organization of Report

*The Burden of Overweight & Obesity in Alaska* report is a comprehensive collection of existing data from a variety of sources that provides the best estimates we have currently of the burden of overweight and obesity in the state. This report contains data on the extent of overweight and obesity in children, adolescents and adults, as well as the impact overweight and obesity has in Alaska. Data are presented on key physical activity and nutrition behaviors identified by the Centers for Disease Control and Prevention (CDC) that contribute to obesity, such as sugar-sweetened beverage consumption, energy-dense foods consumption, and screen

## Introduction

(television and computer) time; and behaviors that contribute to obesity prevention, such as breastfeeding, fruit and vegetable consumption, and physical activity.<sup>11,12</sup> A companion brief report, *The Burden of Overweight and Obesity in Alaska: Summary Report*, can be found at: [http://www.hss.state.ak.us/dph/chronic/obesity/pubs/obesityburden\\_2009.pdf](http://www.hss.state.ak.us/dph/chronic/obesity/pubs/obesityburden_2009.pdf).

### Measuring Overweight, Obesity, Contributing Factors and Consequences

The body mass index (BMI) is used to estimate a person's risk of weight-related health problems and is calculated using weight and height ( $BMI = \text{weight [kg]} / \text{height [m]}^2$ ).<sup>13</sup> Although BMI does not measure body fat directly, research has shown that BMI is correlated with directly measured body fat.<sup>13</sup> The BMI is used as a screening tool to identify possible weight problems for adults, but it is important to remember that BMI is only one factor related to risk for disease. Body mass index surveillance data are a reliable tool used to describe trends in weight status over time among populations and subpopulations. The BMI is the most widely used measure because it is relatively easy, inexpensive, noninvasive, and quick to obtain.

**Table 1. BMI Classification for Adults 20 Years of Age and Older<sup>13</sup>**

BMI	Weight Status
Below 18.5	Underweight
18.5 – 24.9	Normal Weight
25.0 – 29.9	Overweight
30.0 and Above	Obese

Because children and adolescents, ages 2 to 20 years, are still growing and have differences in body composition, their BMI is compared to the BMI's of other youth of the same sex and age in a reference population. The BMI's for children and adolescents are plotted by age on a sex-specific growth chart<sup>14</sup> to find percentile for sex and age.<sup>15</sup> It is important to note that BMI should not be used alone to diagnose an individual child as overweight or obese. Rather, BMI should be used to identify children and adolescents who need to be

examined further by a medical care provider to obtain an informed diagnosis.<sup>16</sup>

## Introduction

**Table 2. BMI Classification for Children 2-20 Years Old**

<b>BMI for Age Percentiles</b>	<b>Former Terminology</b>	<b>Recommended Terminology<sup>16</sup></b>
<5 <sup>th</sup> percentile	Underweight	Underweight
5 <sup>th</sup> to <85 <sup>th</sup> percentile	Normal Weight	Normal Weight
85 <sup>th</sup> to <95 <sup>th</sup> percentile	At-Risk for Overweight	Overweight
≥95 <sup>th</sup> percentile	Overweight	Obese

In March 2007, the Expert Committee on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity recommended the use of the terms “overweight” and “obese” in place of the terms “at-risk for overweight” and “overweight” used for children and adolescents (Table 2).<sup>16</sup> The cutoff points remain the same; however, the committee changed the terms to reflect more appropriate clinical descriptions, provide continuity

with adult definitions, and avoid the vagueness of “at-risk for overweight.” The new terminology, “overweight” and “obese,” is used for consistency in this report.

For the purposes of this report, adult BMI data are derived from self-reported height and weight measurements taken from the Behavioral Risk Factor Surveillance System (BRFSS). Alaska BRFSS also provides data on demographics, consequences of obesity—such as chronic disease prevalence, and the factors that contribute to overweight and obesity among Alaska adults. Details on this data source are included in the appendix.

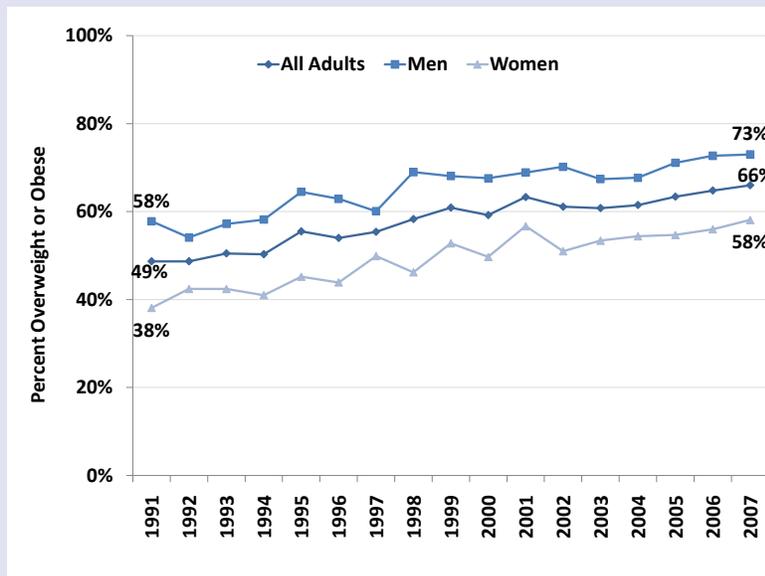
Data on youth BMI are derived from multiple sources, including self-reported height and weight data from the Alaska Youth Risk Behavior Survey (YRBS), and objectively measured height and weight data from school district, patient encounter, and other assistance program records. The Alaska YRBS also provides data on demographics and factors that contribute to overweight and obesity among Alaskan youth. Details on these data sources are included in the appendix.

# Weight Status in Alaska

## Adults

### Trends

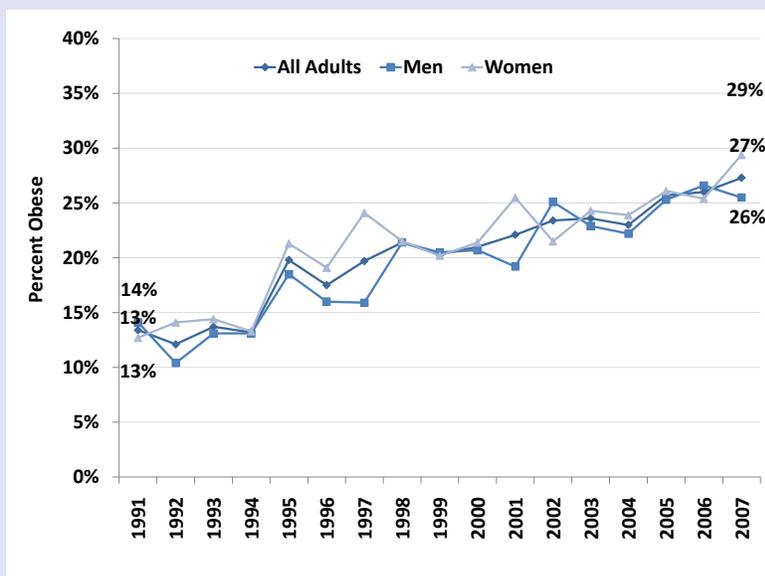
**Figure 2. Trend in Prevalence of Overweight/Obesity (BMI  $\geq$  25.0), by Sex, Alaska Adults, 1991-2007**



Source: AK BRFSS

Since 1991, the prevalence of overweight and obesity among Alaska adults has increased steadily, as shown in Figure 2

**Figure 3. Trend in Prevalence of Obesity (BMI  $\geq$  30.0), by Sex, Alaska Adults, 1991-2007**

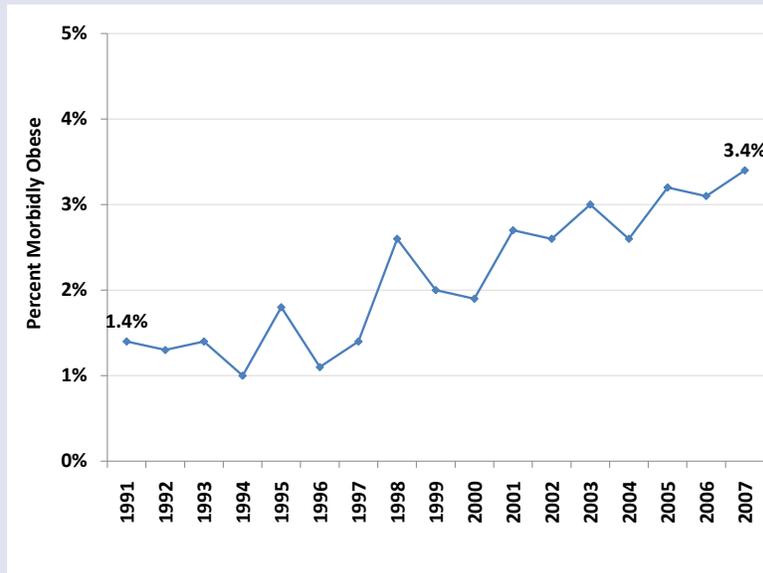


Source: AK BRFSS

The upward trend in weight has been driven primarily by an increase in obesity, which more than doubled between 1991 and 2007.

## Weight Status in Alaska

**Figure 4. Trend in Prevalence of Morbid Obesity (BMI  $\geq$  40.0), Alaska Adults, 1991-2007**



Morbid obesity, or BMI greater than 40.0, also more than doubled during this time period.

Source: AK BRFSS

## Weight Status in Alaska

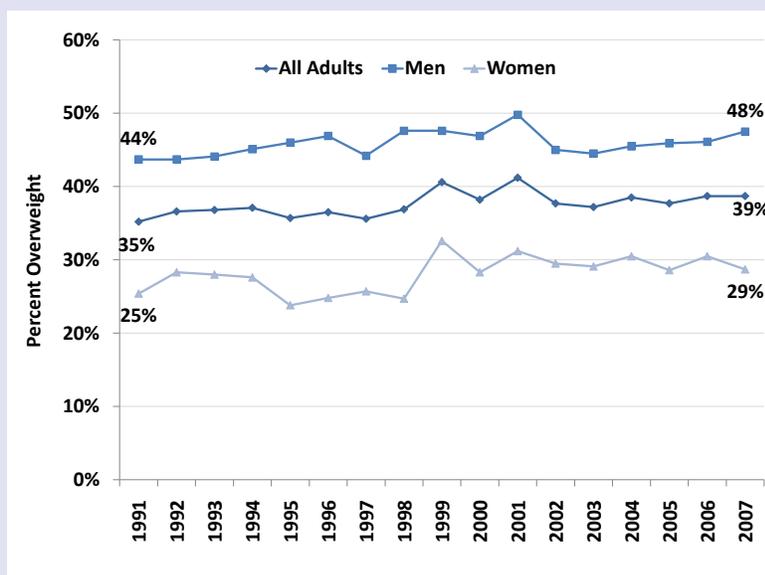
**Table 3. Prevalence of Obesity (BMI  $\geq$  30.0), by Population Subgroup, Alaska Adults 1991 and 2007**

	1991			2007		
	Percent	LCL	UCL	Percent	LCL	UCL
<b>Age</b>						
18-34	10.7	7.4	15.3	20.1	15.6	25.5
35-64	15.6	12.3	19.5	32.1	28.7	35.6
65 and older	17.0	10.7	26.0	33.4	26.6	40.9
<b>Race</b>						
White	13.6	10.9	16.9	27.3	24.3	30.6
Alaska Native	15.5	11.7	20.2	34.8	28.3	42.0
Other Race	8.6	3.3	20.8	24.7	16.7	34.9
<b>Annual Household Income</b>						
Less than \$25,000	14.5	9.6	21.3	30.4	24.0	37.8
\$25,000 or more	12.0	8.6	16.5	28.7	25.6	32.0
<b>Education Level</b>						
High school or less	19.4	12.1	29.8	29.6	25.5	34.1
At least some college	12.8	10.4	15.6	27.5	24.1	31.1
<b>Region of Residence</b>						
Anchorage/Fairbanks	13.3	10.0	17.5	27.0	23.4	30.9
Gulf Coast	12.8	9.6	17.0	29.8	25.4	34.6
Southeast	15.2	11.7	19.4	28.8	24.5	33.7
Rural	13.1	10.0	17.0	34.5	29.4	39.9

Obesity prevalence has increased among individuals of all ages, education levels, income brackets, racial and ethnic backgrounds, and regions. Table 3 shows obesity prevalence for all major population subgroups in 1991 and in 2007.

Source: AK BRFSS

**Figure 5. Trend in Prevalence of Overweight ( $25.0 \leq$  BMI  $<$  30.0), by Sex, Alaska Adults, 1991-2007**



Rates of overweight have remained relatively constant since 1991, as shown in Figure 5.

Source: AK BRFSS

## Weight Status in Alaska

**Table 4. Prevalence of Overweight ( $25.0 \leq \text{BMI} < 30.0$ ), by Population Subgroup, Alaska Adults, 1991 and 2007**

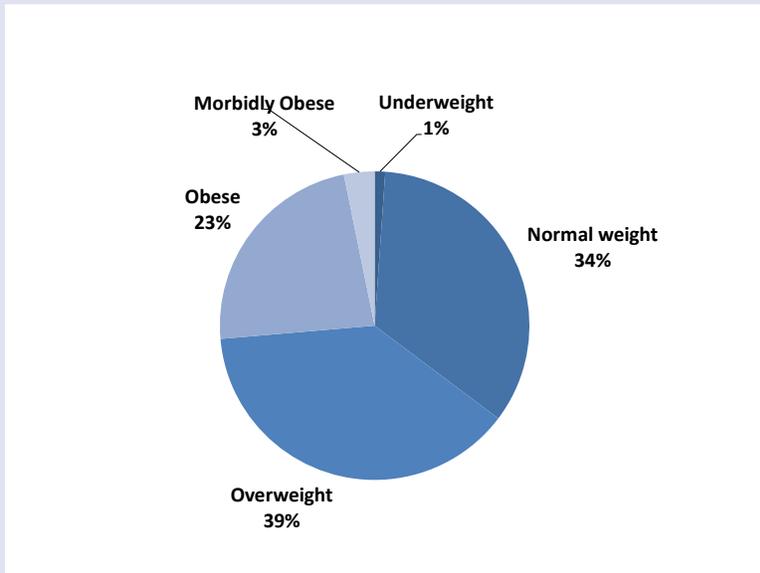
	1991			2007			
	Percent	LCL	UCL	Percent	LCL	UCL	
<b>Age</b>							The prevalence of overweight did not change substantially between 1991 and 2007 for any population subgroup. Table 4 lists rates of overweight for all major population subgroups in 1991 and 2007.
18-34	27.1	22.4	32.5	33.0	26.7	39.9	
35-64	42.1	37.2	47.1	39.5	35.8	43.3	
65 and older	41.3	29.6	54.1	35.4	28.6	42.7	
<b>Race</b>							
White	35.8	31.8	39.9	37.1	33.6	40.7	
Alaska Native	36.1	29.7	43.1	36.1	28.0	45.0	
Other Race	29.6	18.5	43.7	36.2	26.7	47.0	
<b>Annual Household Income</b>							
Less than \$25,000	35.2	27.9	43.3	36.9	28.4	46.3	
\$25,000 or more	34.0	28.3	40.2	39.0	35.5	42.7	
<b>Education Level</b>							
High school or less	29.6	21.1	39.8	33.2	28.1	38.8	
At least some college	35.9	32.2	39.7	39.1	35.3	43.0	
<b>Region of Residence</b>							
Anchorage/Fairbanks	34.5	29.6	39.8	38.1	33.8	42.6	
Gulf Coast	35.1	30.1	40.6	32.6	28.0	37.5	
Southeast	36.5	31.2	42.1	36.6	31.8	41.6	
Rural	37.9	31.9	44.4	34.4	29.5	39.7	

Source: AK BRFSS

# Weight Status in Alaska

## Current Status

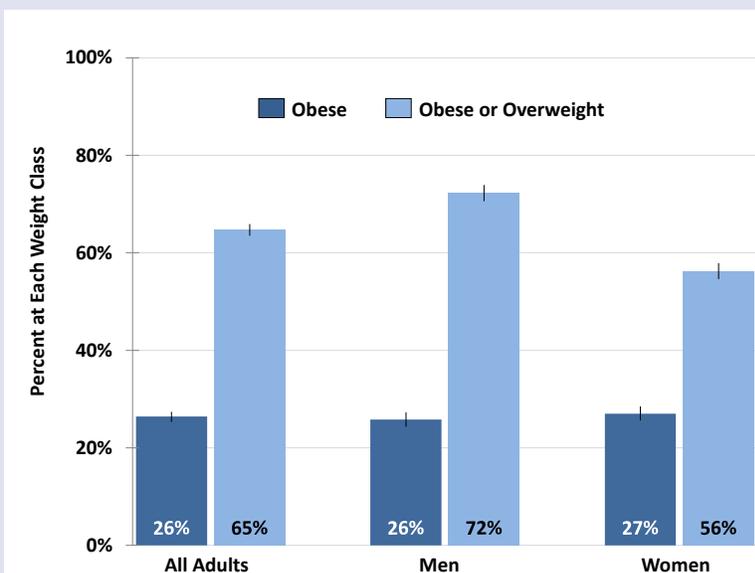
**Figure 6. Weight Status, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

The percentage of Alaska adults in each weight category for 2005-2007 is given in Figure 6. Sixty-five percent of adults are above a normal weight, a percentage that is similar to the United States during 2006, where 62% of adults were above a normal weight.

**Figure 7. Prevalence of Obesity (BMI  $\geq$  30.0) and Overweight/Obesity (BMI  $\geq$  25.0), by Sex, Alaska Adults, 2005-2007 (combined)**

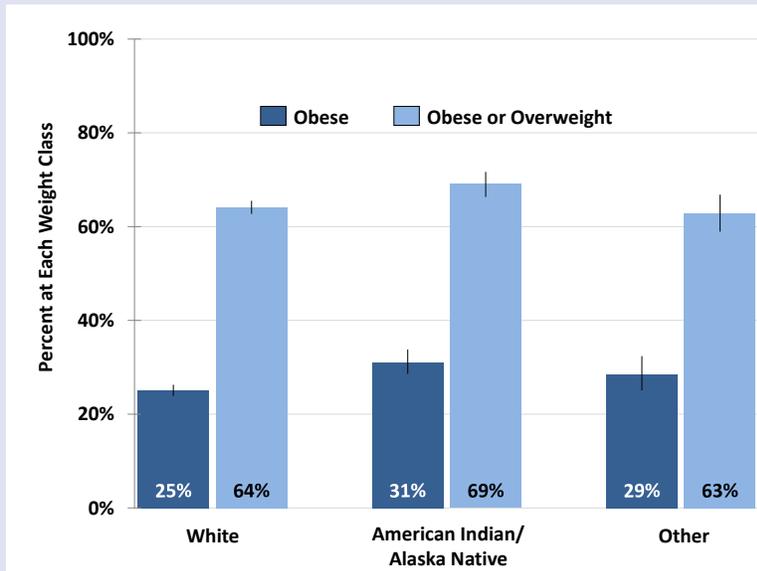


Source: AK BRFSS

Seventy-two percent of men and 56% of women are above a normal weight. Men are significantly more likely to be above a normal weight than women. The difference in weight status results from higher rates of overweight among men; rates of obesity are similar for men (26%) and women (27%).

## Weight Status in Alaska

**Figure 8. Prevalence of Obesity (BMI  $\geq 30.0$ ) and Overweight/Obesity (BMI  $\geq 25.0$ ), by Race, Alaska Adults, 2005-2007 (combined)**



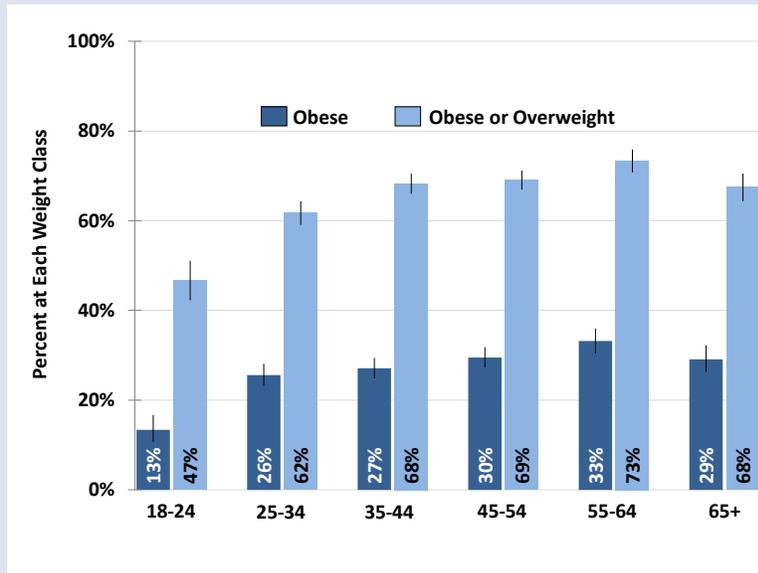
Source: AK BRFSS

In the United States more men than women were above a normal weight as well, with 69% of men and 54% of women having a BMI of 25 or more. As is the case in Alaska, men are more likely to be overweight (44%) than are women (30%); obesity rates are similar among the two groups. In 2006, 26% of men in the United States were obese, compared to 25% of women.<sup>17</sup>

American Indian/Alaska Native adults are significantly more likely to be both obese and above a normal weight compared to White Alaskans. Alaskans of other race groups are not significantly different than either White or American Indian/Alaska Natives in terms of obesity or overweight.

## Weight Status in Alaska

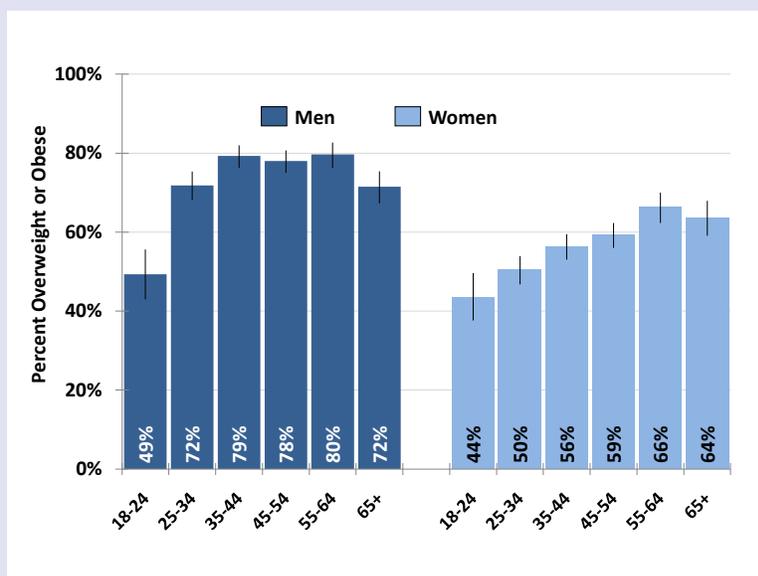
**Figure 9. Prevalence of Obesity (BMI  $\geq 30.0$ ) and Overweight/Obesity (BMI  $\geq 25.0$ ), by Age, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

Adults ages 35 and above are significantly more likely to be above a normal weight (overweight or obese) than adults under age 35. Obesity rates are significantly higher among adults above age 24 than those in the 18-24 age category.

**Figure 10. Prevalence of Overweight/Obesity (BMI  $\geq 25.0$ ), by Age and Sex, Alaska Adults, 2005-2007 (combined)**

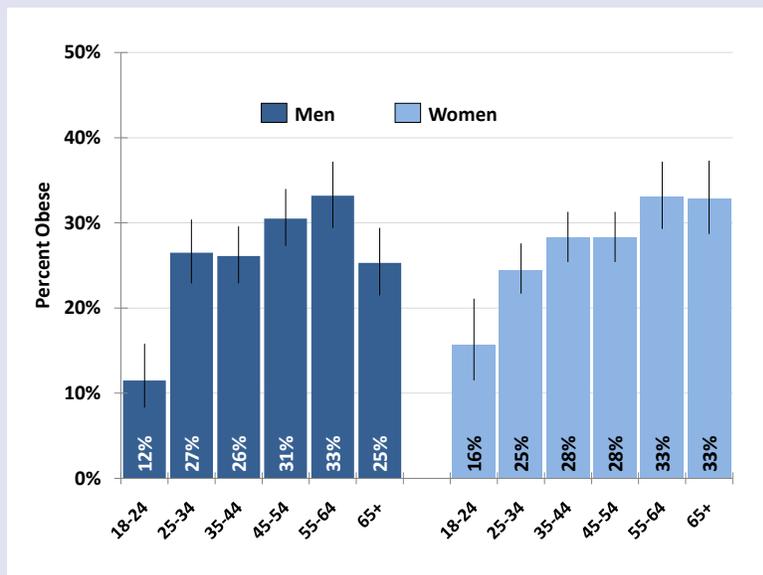


Source: AK BRFSS

At least half of the men and women in all age categories over 25 years are above a normal weight, and combined rates of overweight and obesity reach 80% in some age ranges. Men of all ages are more likely to be above a normal weight than women, with significant differences in some age groups. Only men younger than 25 have rates of overweight/obesity below that of women in any age group.

## Weight Status in Alaska

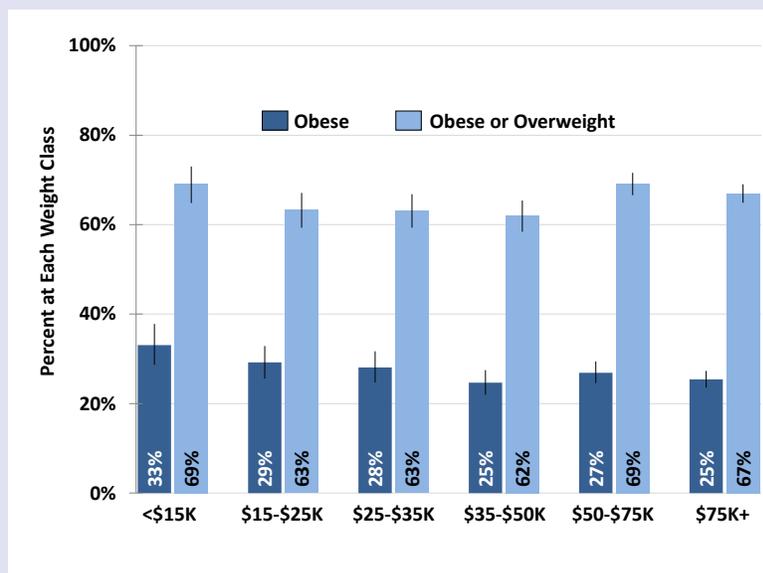
**Figure 11. Prevalence of Obesity (BMI  $\geq$  30.0), by Age and Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

As is the case with overall combined rates of overweight and obesity, men in each age group are more likely to be overweight than women (data not shown), while obesity rates are not significantly different by sex in any age category.

**Figure 12. Prevalence of Obesity (BMI  $\geq$  30.0) and Overweight/Obesity (BMI  $\geq$  25.0), by Income Level, Alaska Adults, 2005-2007 (combined)**

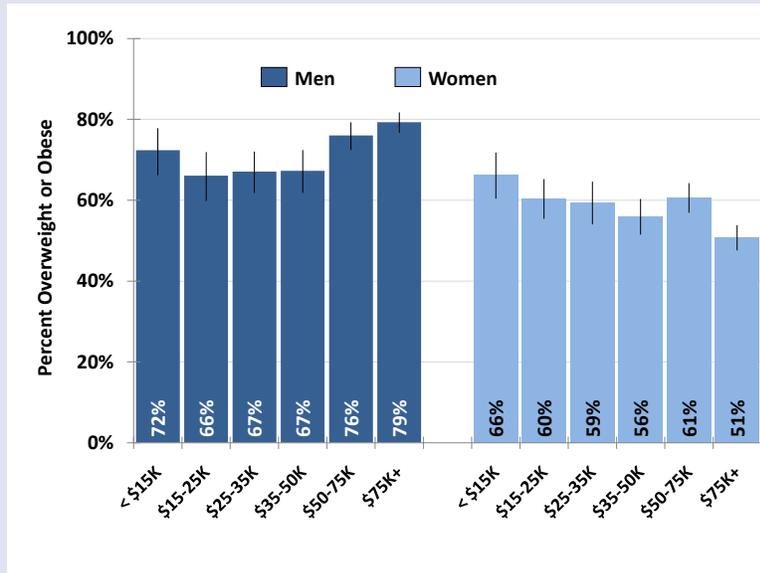


Source: AK BRFSS

Statewide, the percentage of adults above a normal weight (BMI  $\geq$  25.0) varies little by income category.

## Weight Status in Alaska

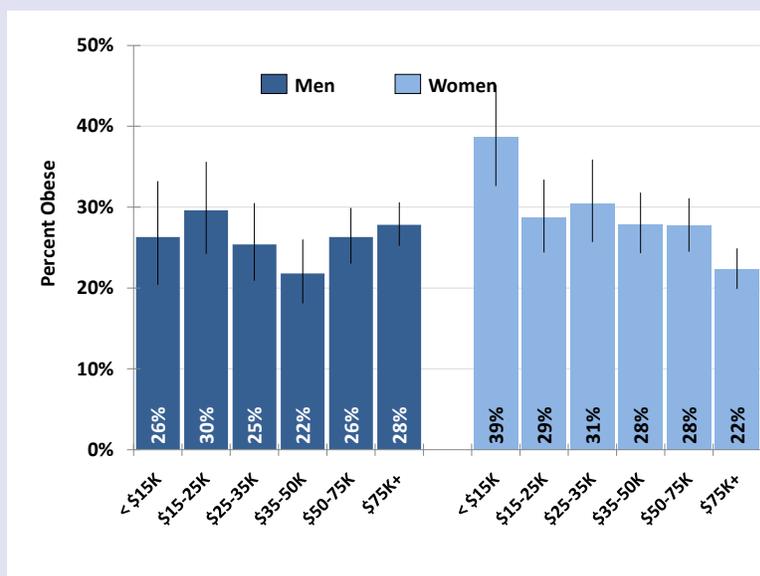
**Figure 13. Prevalence of Overweight/Obesity (BMI  $\geq$  25.0), by Income Level and Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

Patterns in overweight and obesity emerge across income groups when men and women are looked at separately, however. Women are less likely to be above a normal weight as household income level increases. Among men, those in the highest income brackets (over \$50,000 per year) are the most likely to be above a normal weight.

**Figure 14. Prevalence of Obesity (BMI  $\geq$  30.0), by Income Level and Sex, Alaska Adults, 2005-2007 (combined)**

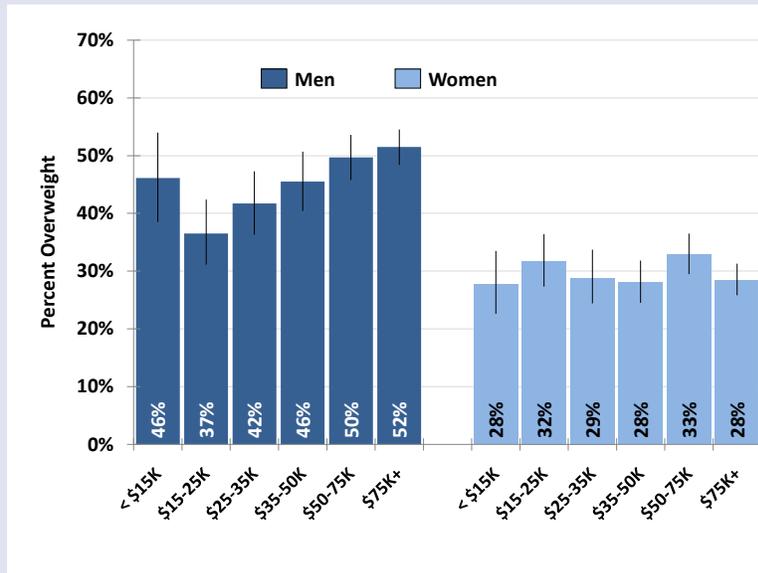


Source: AK BRFSS

When overweight and obesity are examined separately, different patterns also emerge among men and women. Among women, the prevalence of obesity appears to decrease as income increases, although the difference is not significant between all age categories. No significant differences in obesity appear among men of different income categories.

## Weight Status in Alaska

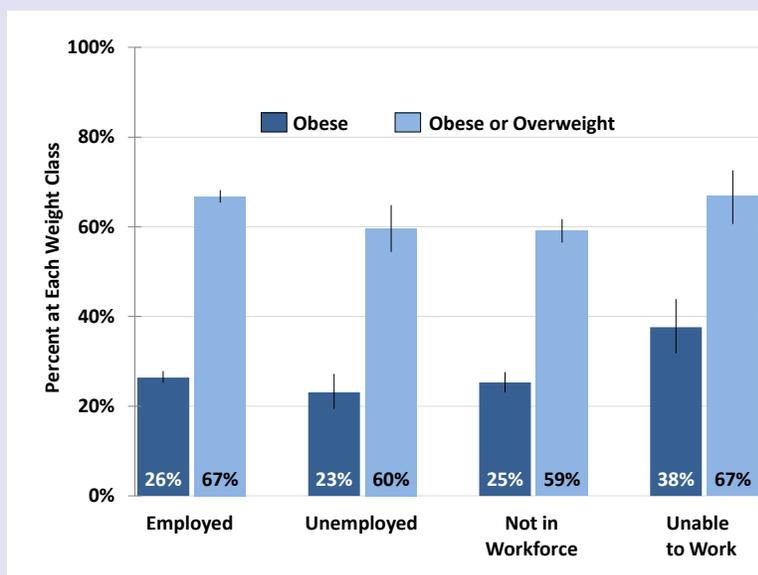
**Figure 15. Prevalence of Overweight (25.0 ≤ BMI < 30.0), by Income Level and Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

In contrast, level of overweight appears unrelated to income among women, whereas among men, overweight appears largely to increase as income increases, with the exception of the under \$15,000 category.

**Figure 16. Prevalence of Obesity (BMI ≥ 30.0) and Overweight/Obesity (BMI ≥ 25.0), by Employment Status, Alaska Adults, 2005-2007 (combined)**

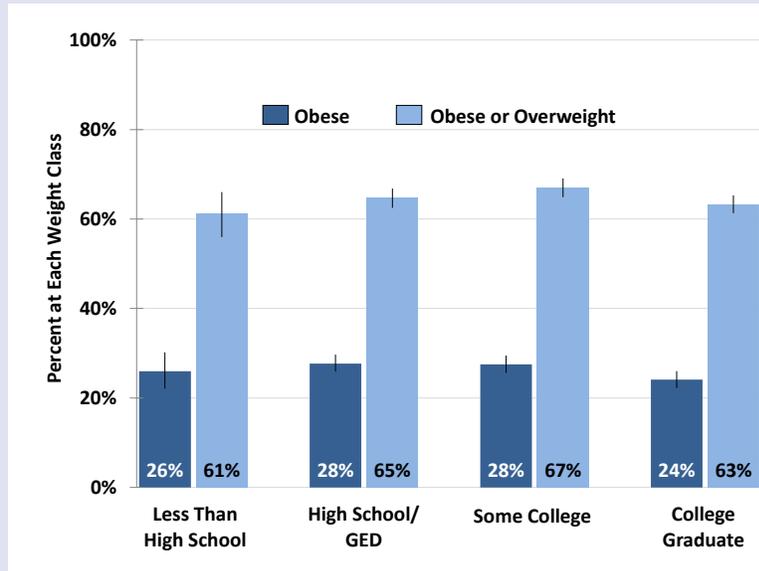


Source: AK BRFSS

Adults who report that they are unable to work are significantly more likely to be obese than employed adults. Employed adults have significantly higher levels of combined overweight and obesity compared to those unemployed or not in the workforce.

## Weight Status in Alaska

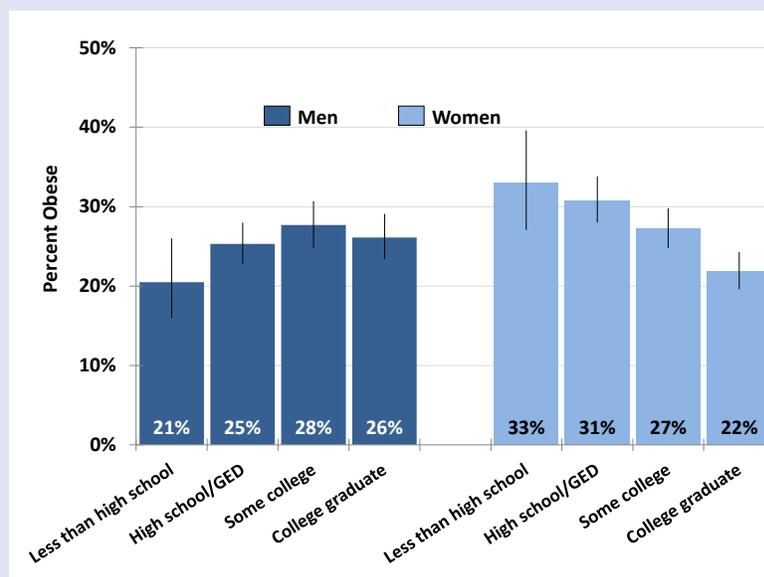
**Figure 17. Prevalence of Obesity (BMI  $\geq$  30.0) and Overweight/Obesity (BMI  $\geq$  25.0), by Education Level, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

As is the case with income, overall the percentage of all adults above a normal weight does not vary by level of educational attainment.

**Figure 18. Prevalence of Obesity (BMI  $\geq$  30.0), by Education Level and Sex, Alaska Adults, 2005-2007 (combined)**

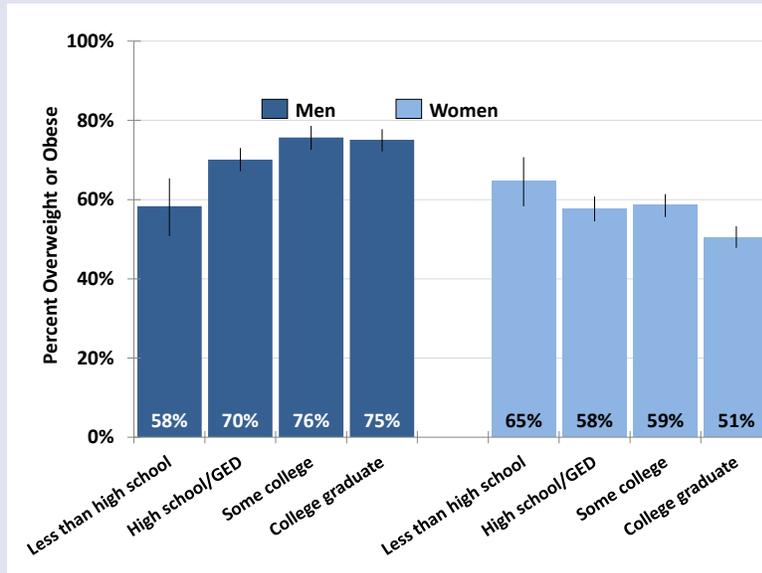


Source: AK BRFSS

Among just women, however, obesity prevalence decreases with increasing levels of education. The pattern among men is less clear.

## Weight Status in Alaska

**Figure 19. Prevalence of Overweight/Obesity (BMI  $\geq$  25.0), by Education Level and Sex, Alaska Adults, 2005-2007 (combined)**

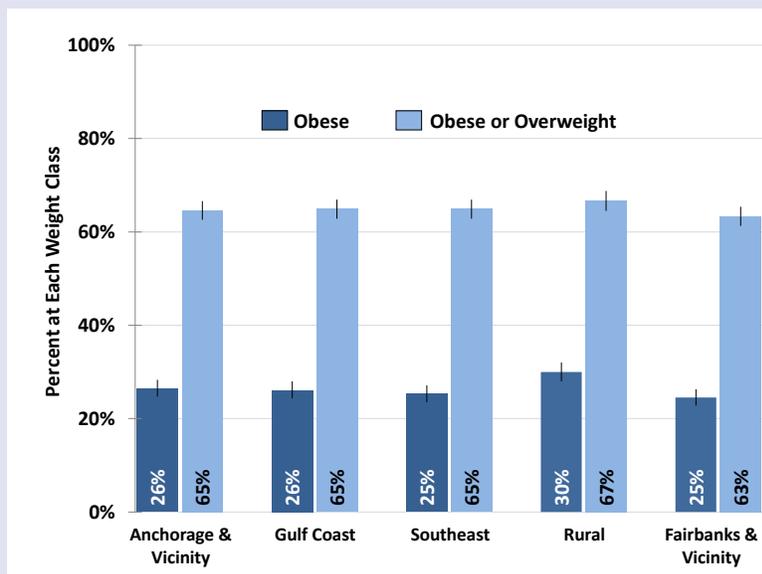


A different pattern appears for overweight and obesity combined. Men are more likely to be above a normal weight as educational attainment increases, whereas women are less likely to be above a normal weight as education increases.

Source: AK BRFSS

The Alaska BRFSS provides data in 5 regional aggregations, as well as statewide. The BRFSS regions are: (1) Anchorage and vicinity, (2) Gulf Coast, (3) Southeast, (4) Fairbanks and vicinity, and (5) all other parts of the state, or “Rural.”

**Figure 20. Prevalence of Obesity (BMI  $\geq$  30.0) and Overweight/Obesity (BMI  $\geq$  25.0), by Race, Alaska Adults, 2005-2007 (combined)**



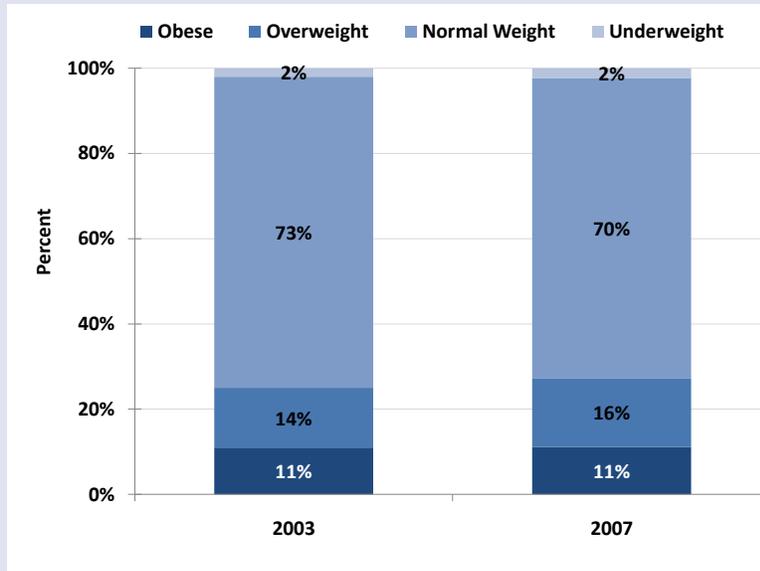
As shown in Figure 20, although the prevalence of adult overweight and obesity combined is similar in all geographic regions in Alaska, the rate of obesity in the rural region of the state is significantly higher than rates in the Fairbanks or Southeast regions, and marginally higher than rates in the Anchorage or Gulf Coast regions.

Source: AK BRFSS

# Weight Status in Alaska

## Youth - High School Students

### Trends



Source: AK YRBS; Percentages may not sum to 100% due to rounding

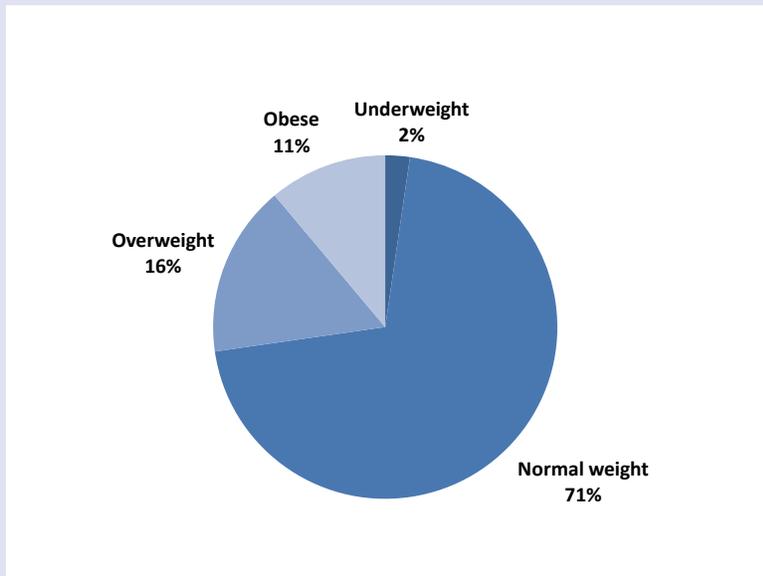
**Figure 21. Weight Status, Alaska High School Youth, 2003 & 2007**

Statewide representative data on weight status of high school students come from the Youth Risk Behavior Survey (YRBS), and are available for 2003 and 2007 only. Between 2003 and 2007, the prevalence of obesity and overweight/obesity among high school youth did not change. No significant trends in overweight or obesity were found when examined by sex, grade, or race group.

# Weight Status in Alaska

## Current Status

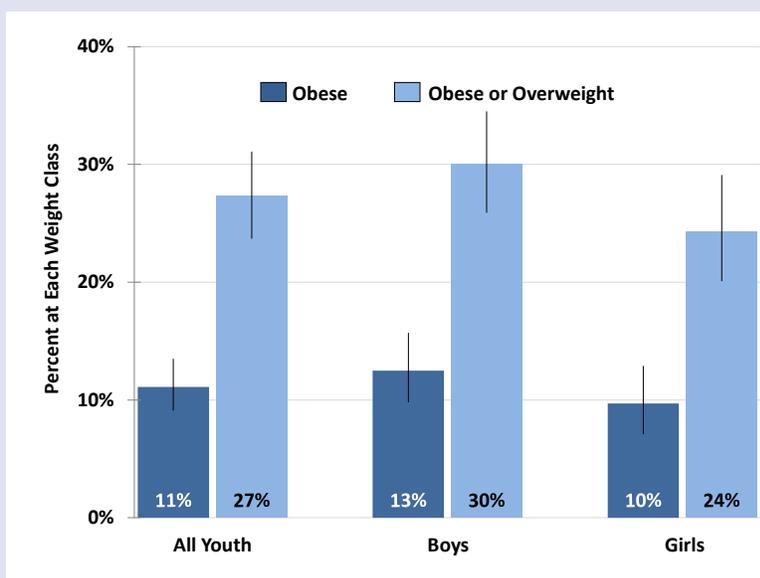
Figure 22. Weight Status, Alaska High School Youth, 2007



Source: AK YRBS

The most recent YRBS data show that 27% of students are above a normal weight. Sixteen percent are overweight and an additional 11% are classified as obese.

Figure 23. Prevalence of Obesity (BMI  $\geq$  95<sup>th</sup> percentile) and Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), by Sex, Alaska High School Youth, 2007

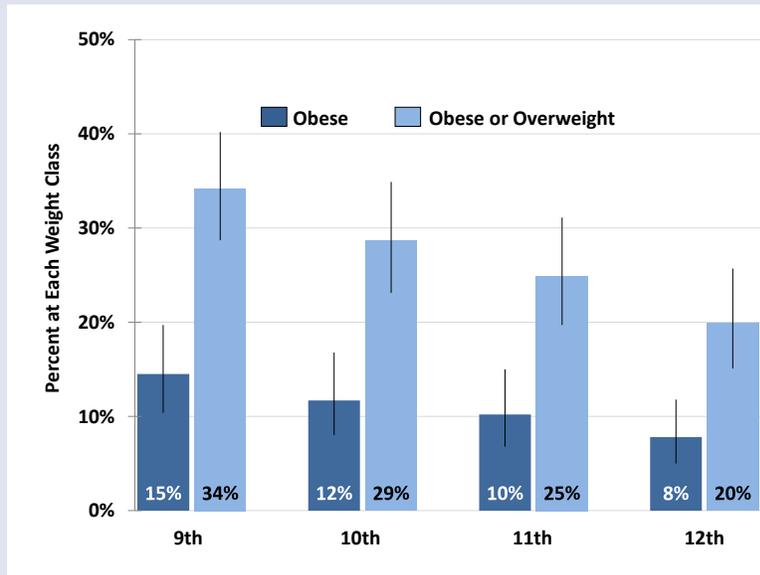


Source: AK YRBS

Although boys appear to be slightly more likely to be overweight and obese than girls, this difference is not significant; 30% of boys are either overweight or obese compared to 24% among girls.

## Weight Status in Alaska

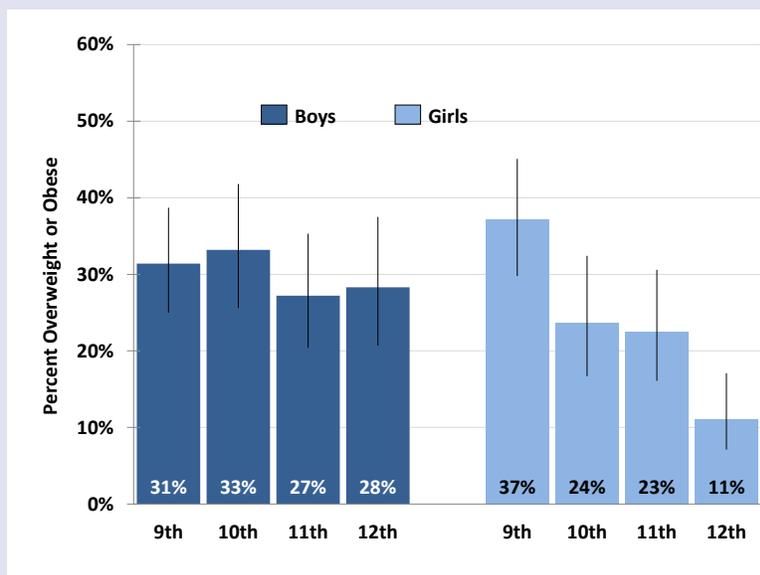
**Figure 24. Prevalence of Obesity (BMI  $\geq$  95<sup>th</sup> percentile) and Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), by Grade, Alaska High School Youth, 2007**



Source: AK YRBS

The prevalence of overweight and obesity combined decreases slightly in higher grade levels; significantly more 9<sup>th</sup> graders (34%) than 12<sup>th</sup> graders (20%) are either overweight or obese.

**Figure 25. Prevalence of Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), by Grade and Sex, Alaska High School Youth, 2007**

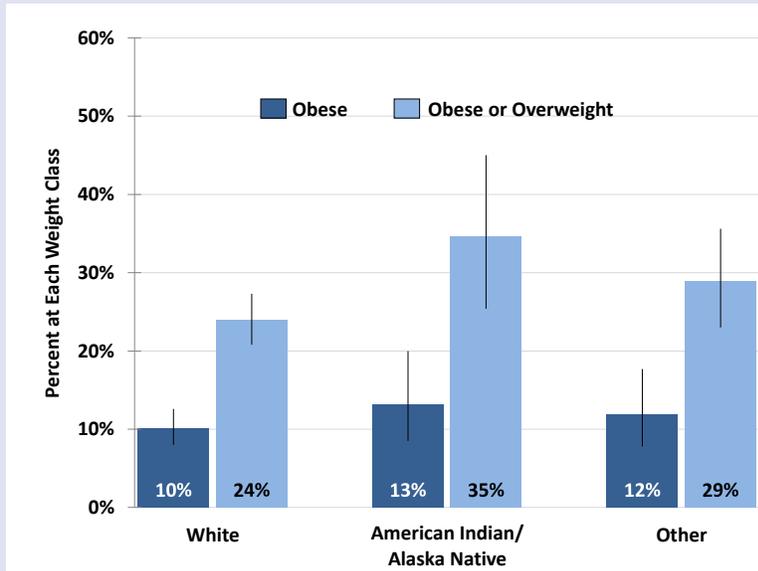


Source: AK YRBS

This association is largely driven by the steep decline in overweight and obesity seen among girls as they reach higher grades.

## Weight Status in Alaska

**Figure 26. Prevalence of Obesity (BMI  $\geq$  95<sup>th</sup> percentile) and Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), by Race, Alaska High School Youth, 2007**



Source: AK YRBS

There are no statistically significant differences in the prevalence of overweight or obesity and obesity combined by racial group.

# Weight Status in Alaska

## Other Youth Populations

The YRBS provides statewide, representative data for the high school population. Statewide, representative data for children younger than high school age are not available, as there is no survey or data collection system for these younger populations. However, several different programs or organizations in the state maintain or collect height and weight records for children served by their programs. Data from many of these programs were analyzed and the results are presented according to data source.

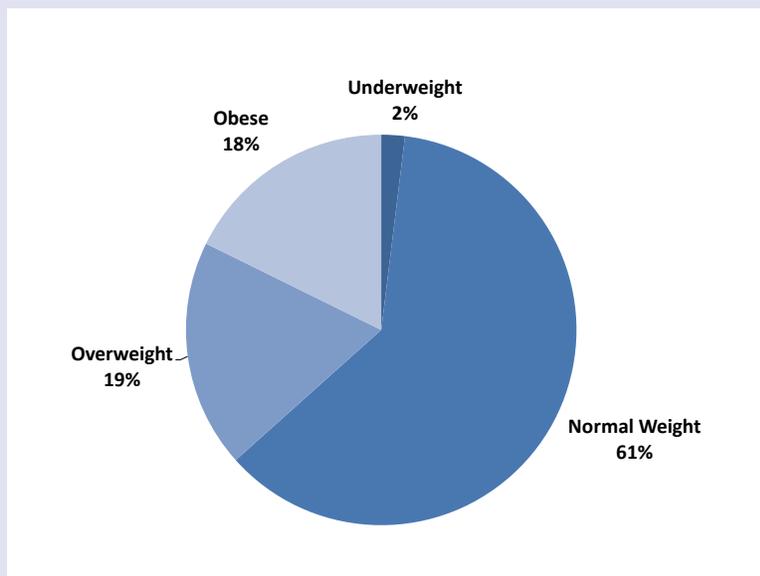
### Women, Infant, and Children's Program (WIC)

One source of height and weight information is the Women, Infants, and Children (WIC) Program, a supplemental food and nutrition program for pregnant and breastfeeding women and their children from birth to age 5. Records for Federal fiscal year 2007 (10/2006 - 9/2007) show that 22% of children ages 2 to 4 enrolled in WIC are obese.<sup>18</sup> Rates of obesity are similar for boys and girls, and across age. The Alaska WIC program does not monitor youth overweight.

### Resource Patient Management System (RPMS)

An additional data source that maintains height and weight records for youth is the Resource Patient Management System (RPMS).<sup>19</sup> Data in this system come from medical records of children who visit public health centers, regional Alaska Native hospitals, community health centers, and village clinics. Height and weight data for children ages 3 to 19 in 2008 were analyzed for inclusion in this report.

**Figure 27. Weight Status, Alaska Youth (3 to 19 Years), 2008**

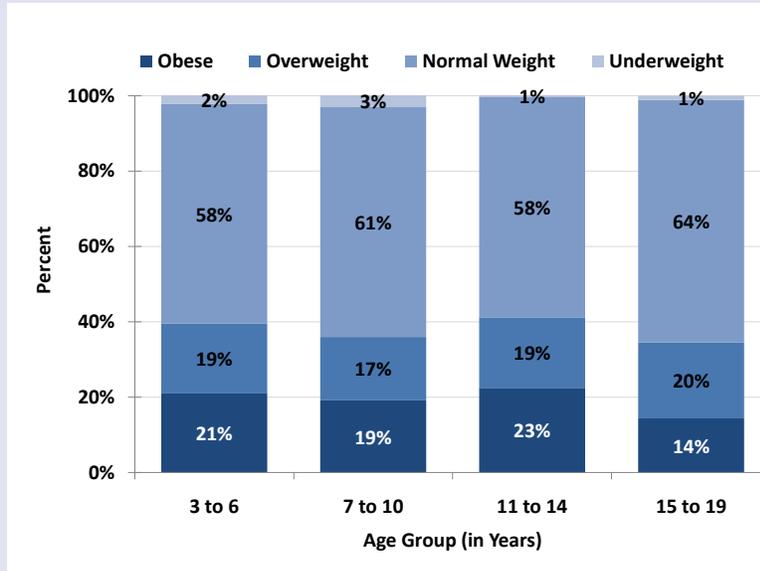


Source: AK RPMS

Analyzed data show that 61% of all children 3 to 19 years of age are at a normal weight. Thirty-seven percent of children are above a normal weight, with 19% considered overweight and an additional 18% considered obese.

## Weight Status in Alaska

**Figure 28. Weight Status, by Age, Alaska Youth (3 to 19 Years), 2008**



Source: AK RPMS; Percentages may not sum to 100% due to rounding

Rates of overweight are similar among boys and girls. Twenty percent of girls and 17% of boys are overweight; 16% of girls and 22% of boys are obese.

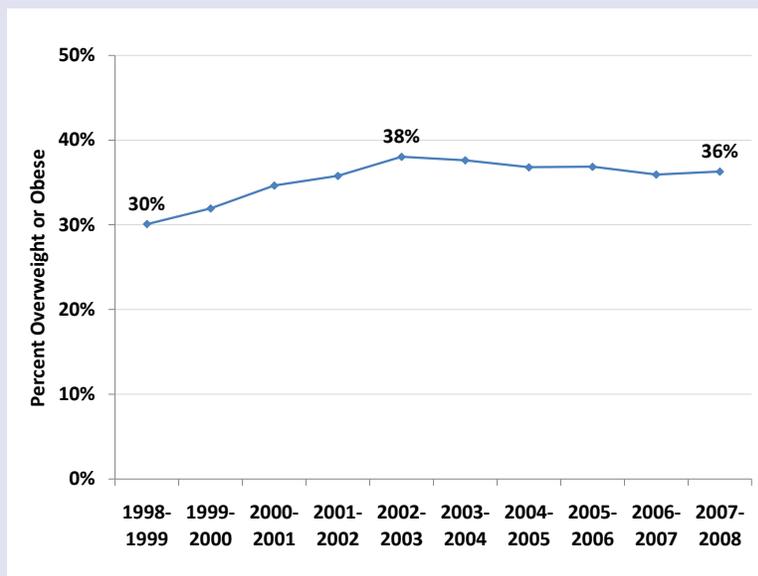
The percentage of students who are above a normal weight is consistent across age categories as well.

# Weight Status in Alaska

## Anchorage School District

The Anchorage School District (ASD) collects height and weight measurements from students as part of the school health screening process. Health information, including height and weight measurements, is recorded in an electronic database. In 2003, the ASD began a collaborative project with the State of Alaska Division of Public Health to analyze height and weight data and monitor trends in the weight status of the student population.<sup>20</sup> The most recent analysis of height and weight data included measurements representing 46,658 students over the ten-year period from 1998-1999 to 2007-2008.<sup>21</sup>

**Figure 29. Prevalence of Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), Anchorage School District Students, 1998-1999 to 2007-2008**

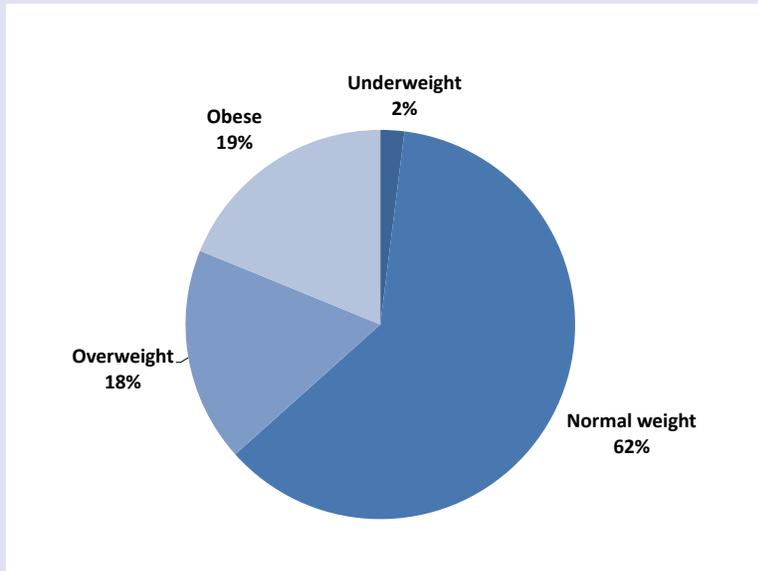


Source: Anchorage School District health records

As Figure 29 shows, the percentage of students that were above a normal weight increased from 30% to 38% through 2002-2003 then leveled off.

## Weight Status in Alaska

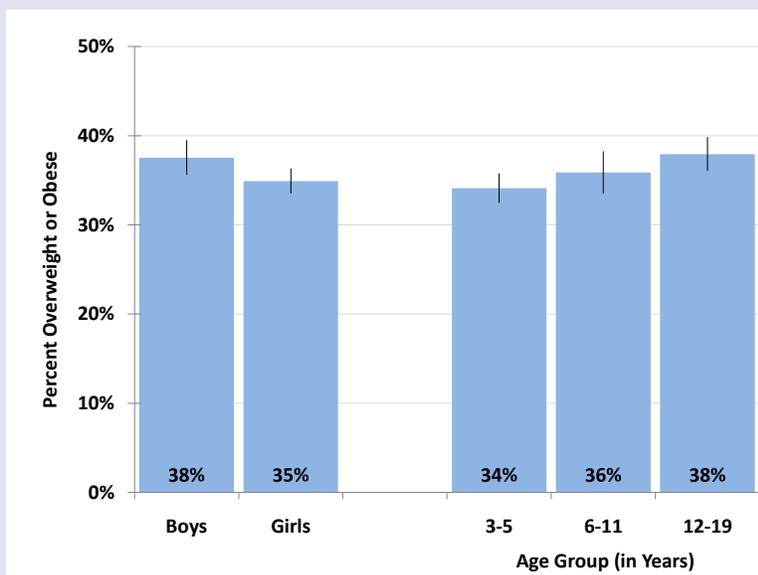
**Figure 30. Weight Status, Anchorage School District Students (All Grades), 2007-2008**



Source: Anchorage School District health records

In 2007-2008, 2% of students were underweight, 62% were at a normal weight, 18% were overweight, and 19% were obese.

**Figure 31. Prevalence of Overweight/Obesity (BMI  $\geq$  85<sup>th</sup> percentile), by Sex and Age, Anchorage School District Students, 2007-2008**

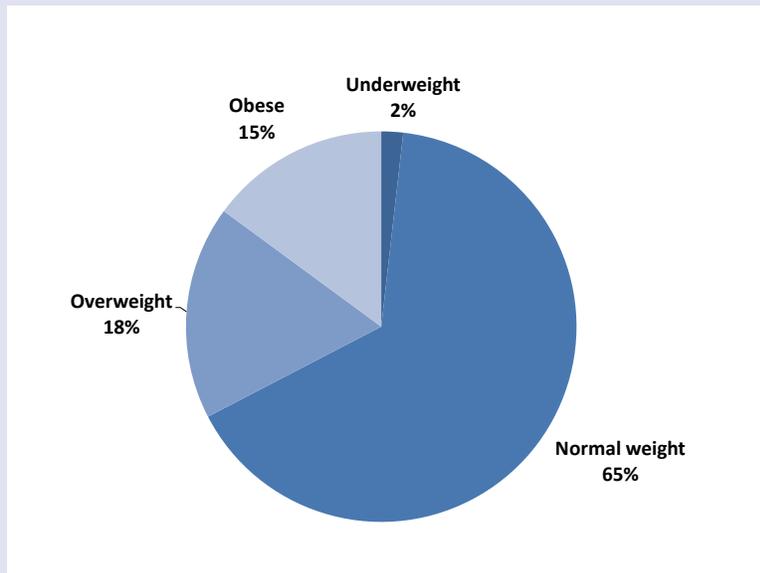


Source: Anchorage School District health records

Students 12 and older were significantly more likely than those under 6 years of age to be above a normal weight.

## Weight Status in Alaska

**Figure 32. Weight Status, Anchorage School District Kindergarten and First Grade Students, 2007-2008**



*Source: Anchorage School District health records*

However, one-third of children entering kindergarten or first grade were above a normal weight, with 18% considered overweight and 15% obese.

### Other Youth Populations: Summary

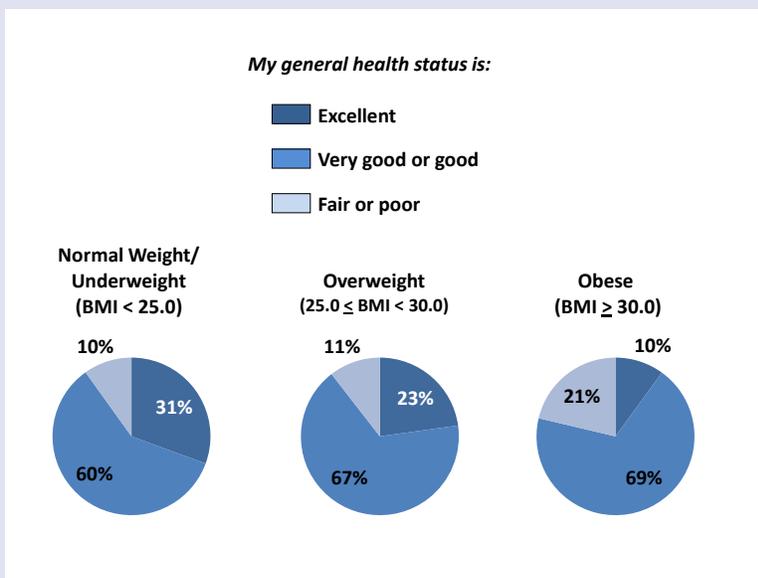
Although statewide, representative data for children younger than high school age are not available, existing data on a variety of youth populations indicate that there is reason to be concerned about overweight among young children. In 2007-2008, one-third of children in the Anchorage School District, the largest district in the state, entered school above a normal weight. More than 1 in 5 (22%) young children enrolled in WIC in 2007 were obese, and 37% of children seen by a public health nurse during visits to public health centers, regional Alaska Native hospitals, community health centers, or village clinics in 2008 were either overweight or obese. Trends in these data should be monitored closely, and efforts should be made to obtain statewide representative data for young children.

# The Impact of Obesity

## Health Status

Obesity is an important health concern because it increases the risk of numerous debilitating health conditions. BRFSS data indicate that adults who are overweight and/or obese are also more likely to report an array of other health problems than are adults who are at a normal weight.

**Figure 33. Ratings of General Health Status, by Weight Class, Alaska Adults, 2005-2007 (Combined)**

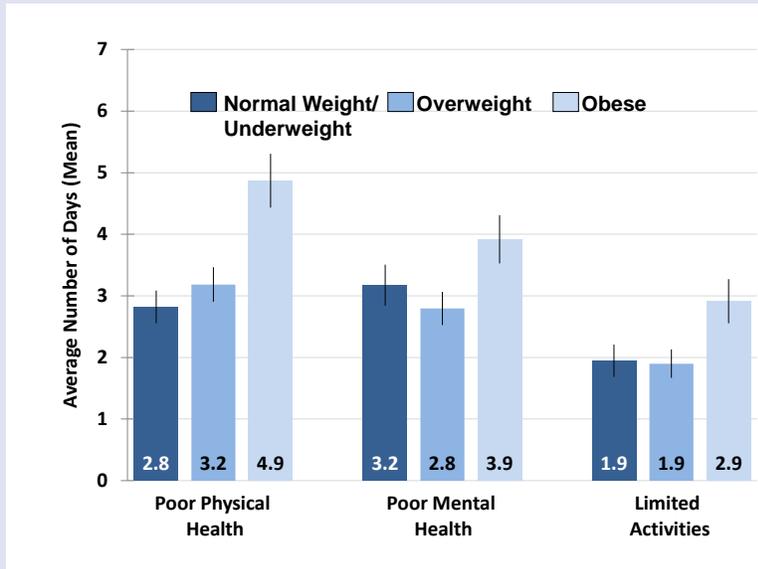


Source: AK BRFSS

Compared to normal weight adults, obese adults are twice as likely to report their health status as fair or poor, but only one-third as likely to report being in excellent health.

## The Impact of Obesity

**Figure 34. Mean Number of Days of Poor Physical Health, Mental Health, and Limited Activities in Past 30 Days, by Weight Class, Alaska Adults, 2005-2007 (combined)**

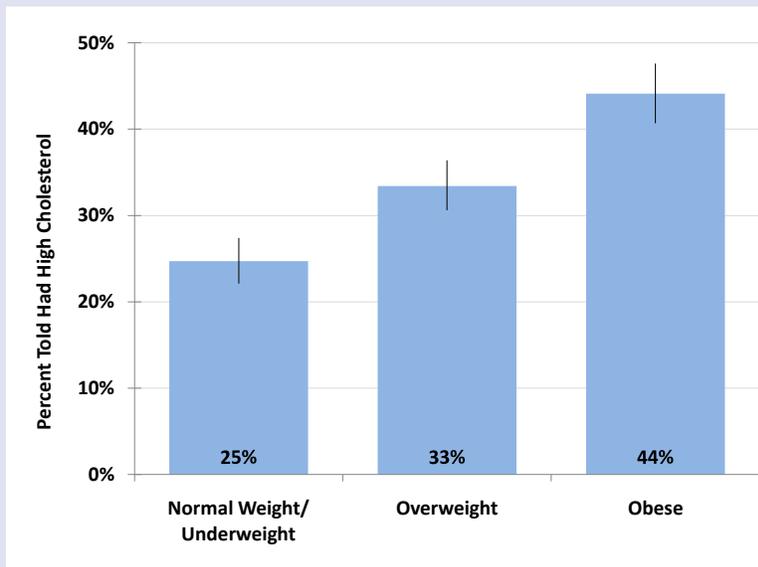


Source: AK BRFSS

Obese adults report significantly more days of poor physical or mental health than do normal or overweight adults. Adults who are obese also report having approximately 50% more days in which their activities are limited by their health compared to normal and overweight adults.

In addition to reporting lower levels of overall health, overweight and obese adults are more likely to report diagnoses with specific health problems.

**Figure 35. Prevalence of High Cholesterol, by Weight Class, Alaska Adults, 2005 and 2007 (combined)**

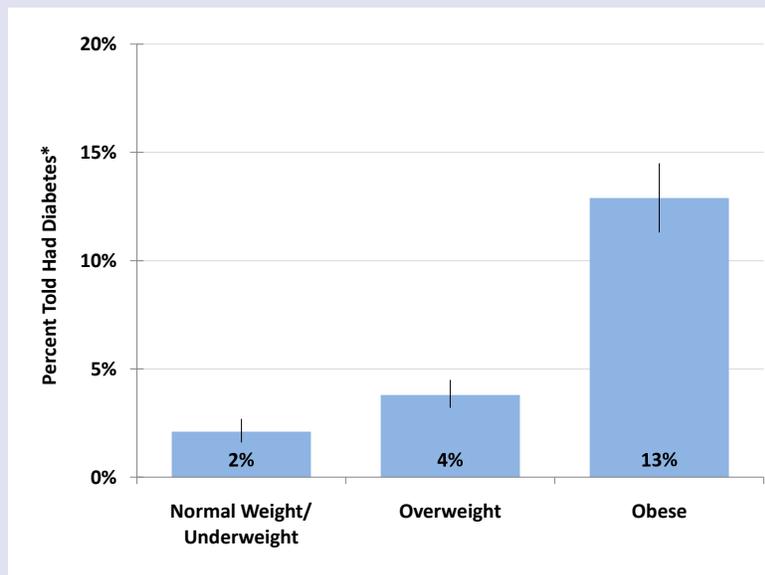


Source: AK BRFSS

Obese adults are nearly twice as likely to have high cholesterol and 6 times more likely to have diabetes than adults of a normal weight. They are significantly more likely to have either diabetes or high cholesterol than are overweight adults. Overweight adults, in turn, are significantly more likely to have high cholesterol or diabetes than adults with normal weights.

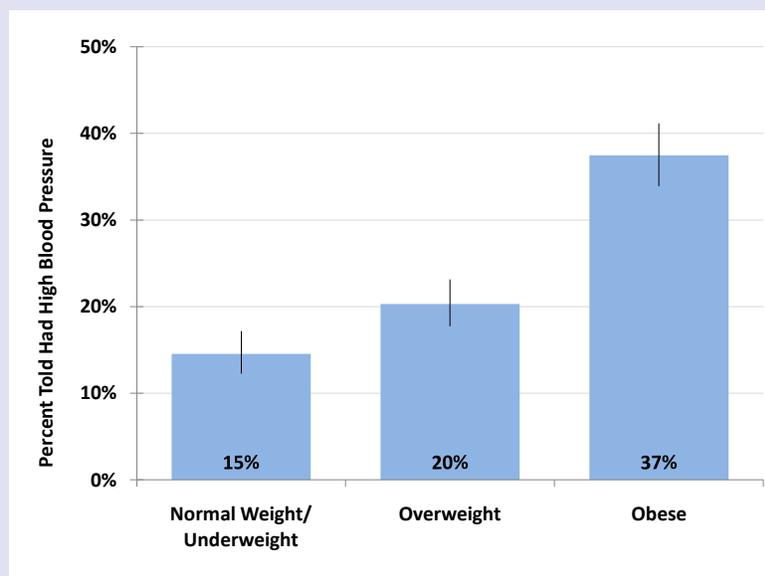
## The Impact of Obesity

**Figure 36. Prevalence of Non-Gestational Diabetes, by Weight Class, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

**Figure 37. Prevalence of High Blood Pressure, by Weight Class, Alaska Adults, 2005-2007 (combined)**

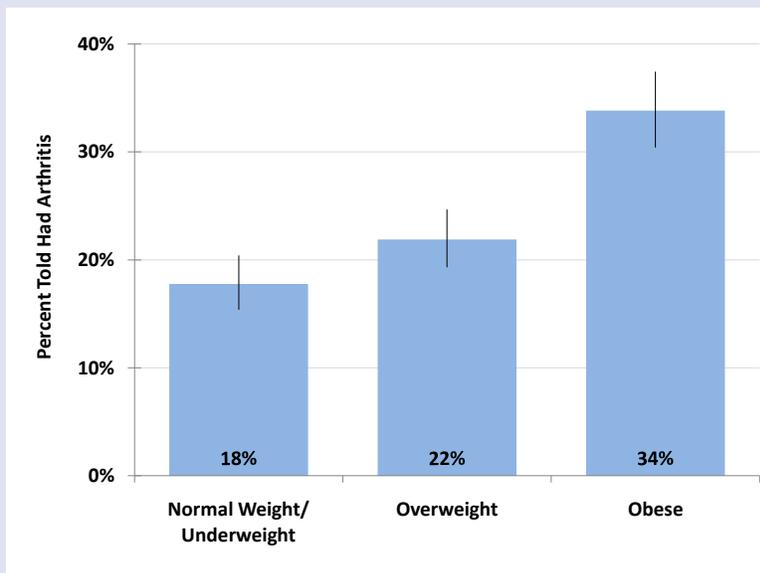


Source: AK BRFSS

Obese Alaskans are nearly twice as likely as overweight adults to report being diagnosed with high blood pressure; overweight adults, in turn, are more likely than normal weight adults to have had such a diagnosis.

## The Impact of Obesity

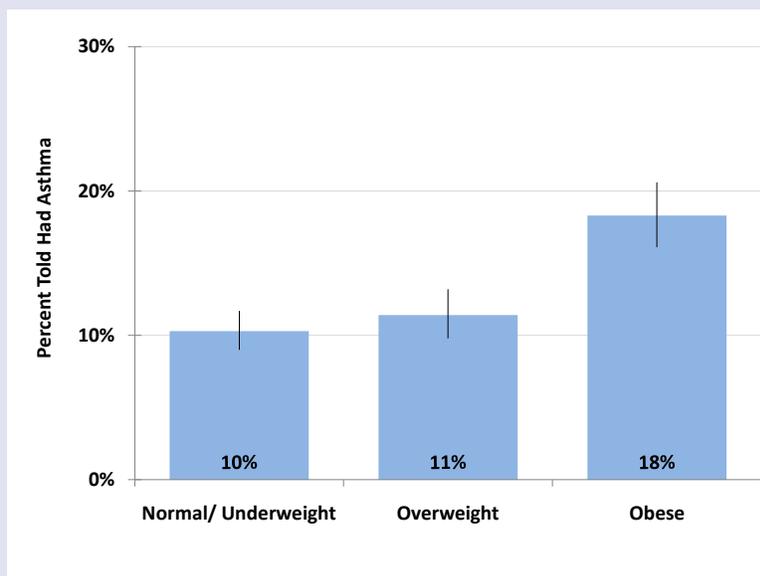
**Figure 38. Prevalence of Arthritis, by Weight Class, Alaska Adults, 2005 and 2007 (combined)**



Source: AK BRFSS

The prevalence of both arthritis and asthma appear to increase as weight increases, although the differences in prevalence are significant only between obese adults and those who are not obese (i.e., normal weight and overweight adults).

**Figure 39. Prevalence of Asthma, by Weight Class, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

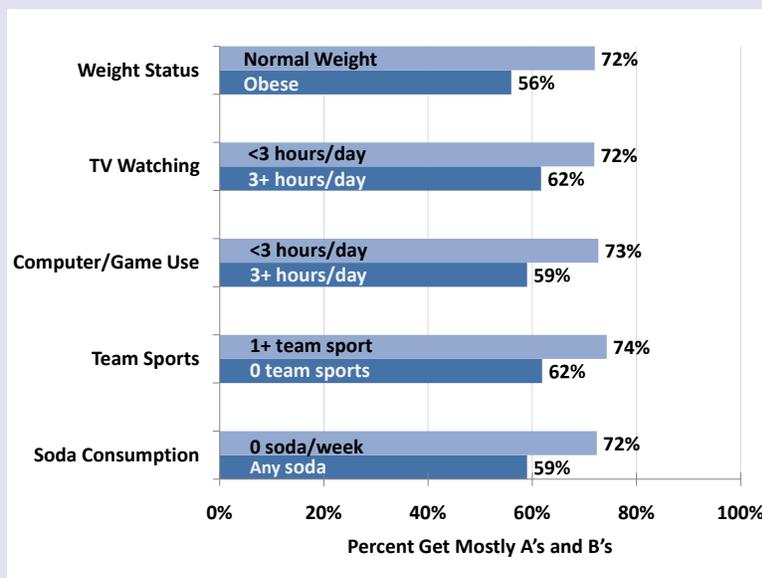
And the association between obesity and health is well understood by Alaskans. In the 2005 BRFSS respondents were asked whether overweight and obesity were linked with a series of health outcomes. The vast majority correctly indicated that diabetes (85%), heart disease (88%), high blood pressure (90%), and premature death (84%) were associated with overweight and obesity.

# The Impact of Obesity

## Academic Performance

Student nutrition and physical activity have a direct link with academic performance, as evidenced by increased academic test scores, improved daily attendance and better class participation.<sup>22-24</sup> Research also suggests an association between obesity and lower academic abilities, lower teacher ratings of social-emotional well-being, and increased absenteeism.<sup>25,26</sup>

**Figure 40. Prevalence of Getting Mostly A's or B's, by Select Risk Factor Groups, Alaska High School Youth, 2007**



Source: AK YRBS

Data from the 2007 Alaska YRBS show that, compared to their normal weight peers, obese students are significantly less likely to report receiving mostly A's and B's. Higher grades are reported by students who watch fewer than 3 hours of TV, spend fewer than 3 hours on the computer or playing video games, play on at least 1 team sport, and do not drink soda. While these associations do not prove causation, the data do suggest an important link between healthy behaviors and academic achievement.

## Contributing Factors

Although individual weight status is determined by many factors, the primary causes of overweight and obesity in most individuals is an imbalance between nutrition and physical activity.<sup>1</sup> The Centers for Disease Control and Prevention (CDC), Division of Nutrition, Physical Activity and Obesity recommends that efforts to prevent and control obesity target the following areas based on the best available evidence:<sup>11,12</sup>

- increase physical activity
- decrease television viewing
- increase the consumption of fruits and vegetables
- decrease the consumption of sugar-sweetened beverages
- reduce the consumption of high energy-dense foods (high calorie foods)
- increase breastfeeding initiation, duration and exclusivity

Each person's physical activity and nutrition behaviors are influenced by a variety of personal, social and environmental factors. An individual's food choices, for example, are shaped by a) personal preference, b) family, cultural, and community norms, c) cost, d) knowledge and concern about nutritional content, and e) what is available in grocery stores, restaurants, worksite cafeterias, or vending machines. Similar factors affect individual decisions about physical activity.

The BRFSS and YRBS surveys collect information on adult and high school student nutrition and physical activity behaviors, while the BRFSS provides information on some of the social and environmental factors that contribute to physical inactivity and poor nutrition.

## Contributing Factors

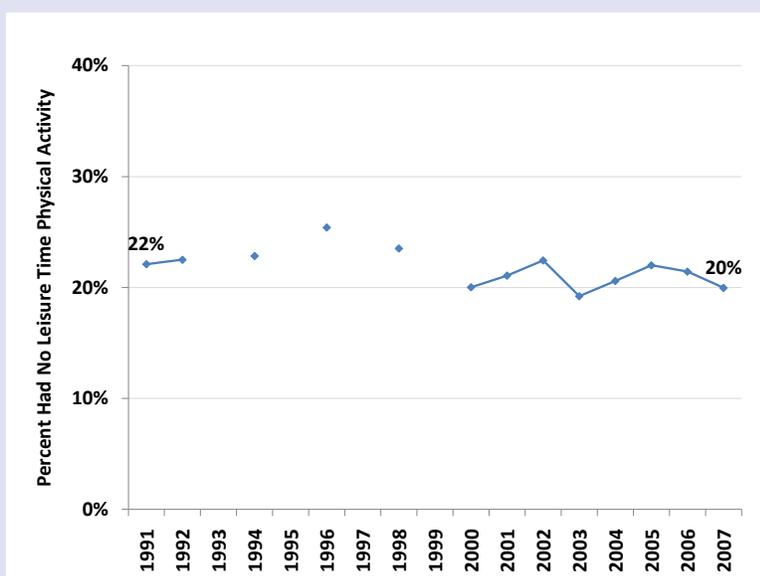
### Physical Inactivity

#### Adults

On the BRFSS survey, adults are asked whether they participate in leisure time physical activity, as well as a series of questions about the duration and intensity of physical activity they participate in.

#### *No Leisure Time Physical Activity*

**Figure 41. Trend in Prevalence of No Leisure Time Physical Activity, Alaska Adults, 1991-2007 (for years available)**

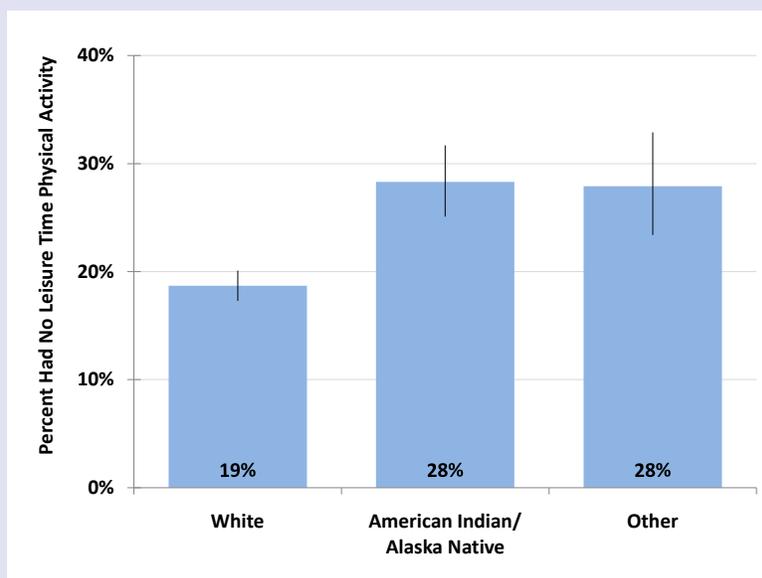


Source: AK BRFSS

Although data are not available for all years since the BRFSS began in 1991, throughout the years in which data have been collected on this question, consistently one-fifth of adults have reported that they participate in no physical activity in their spare time.

## Contributing Factors

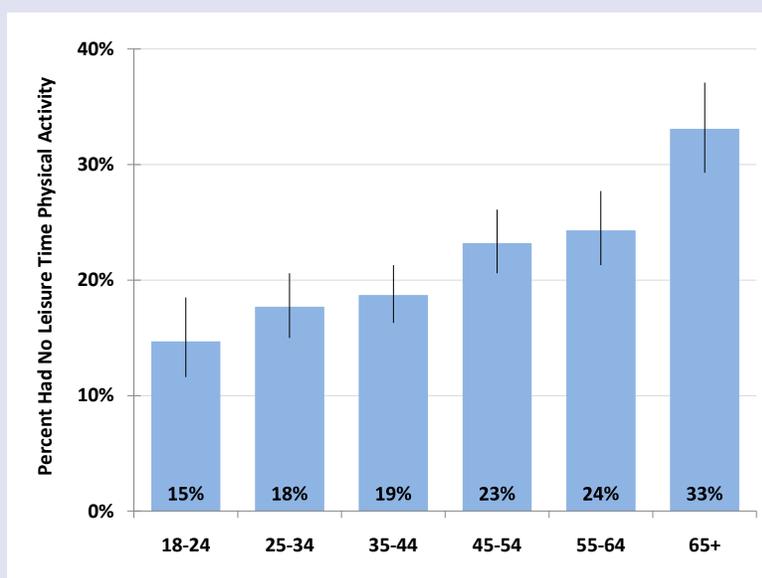
**Figure 42. Prevalence of No Leisure Time Physical Activity, by Race, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

American Indian/Alaska Native adults are significantly more likely to participate in no leisure time physical activity than are White adults; there is no sex difference in prevalence of inactivity.

**Figure 43. Prevalence of No Leisure Time Physical Activity, by Age, Alaska Adults, 2005-2007 (combined)**

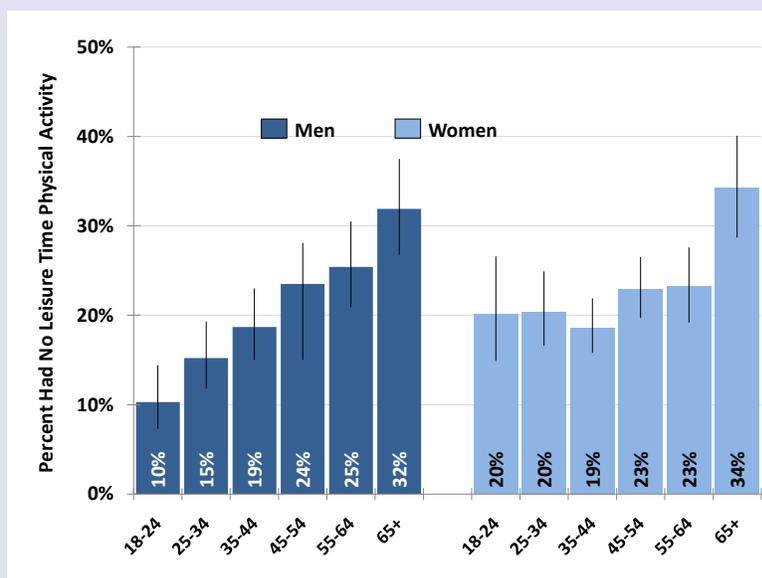


Source: AK BRFSS

Physical inactivity is associated with age. The percentage of adults who do not participate in any leisure time physical activity increases from the youngest to oldest age categories.

## Contributing Factors

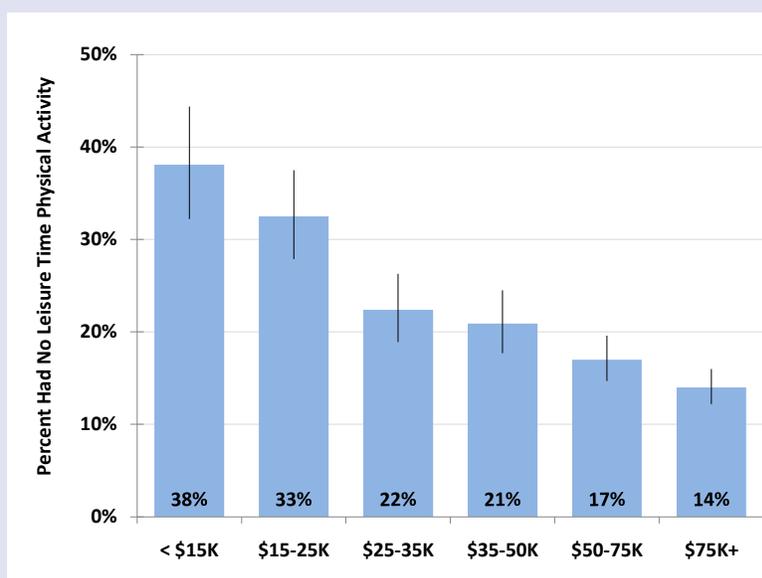
**Figure 44. Prevalence of No Leisure Time Physical Activity, by Age and Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

Among women, levels of inactivity are similar in all age groups with the exception of the 65 and older group, which sees a big increase in inactivity. In contrast, among men inactivity increases with age in a more linear fashion.

**Figure 45. Prevalence of No Leisure Time Physical Activity, by Income Level, Alaska Adults, 2005-2007 (combined)**

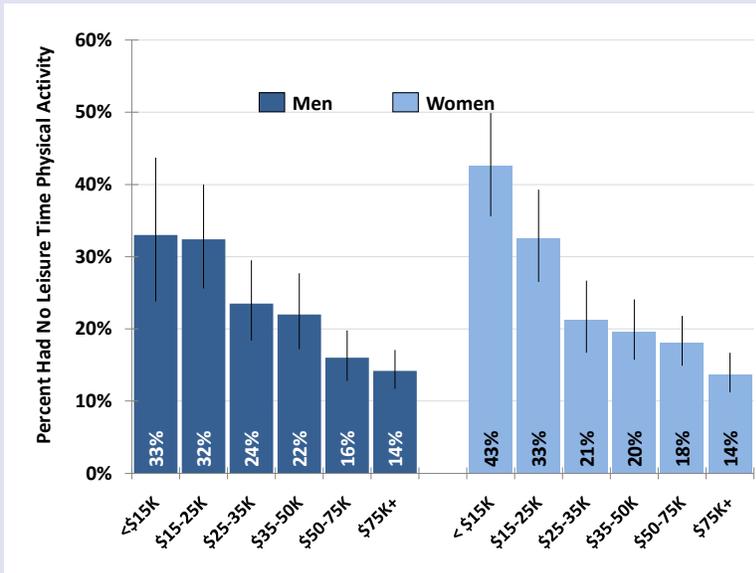


Source: AK BRFSS

Physical activity levels also vary among individuals in different income groups. As household income decreases, the prevalence of physical inactivity increases. Adults with a household income of less than \$25,000 per year are significantly more likely to be physically inactive than those making over \$25,000.

## Contributing Factors

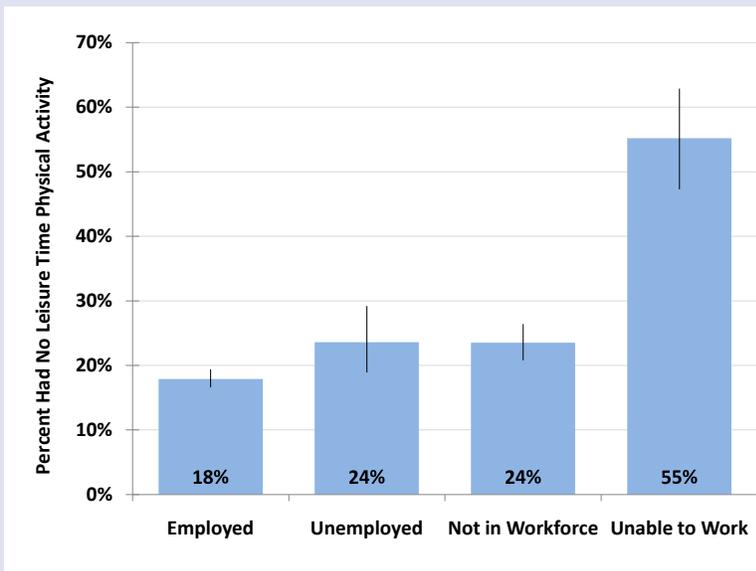
**Figure 46. Prevalence of No Leisure Time Physical Activity, by Income Level and Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

The relationship between income and leisure time physical activity is seen in both men and women.

**Figure 47. Prevalence of No Leisure Time Physical Activity, by Employment Status, Alaska Adults, 2005-2007 (combined)**

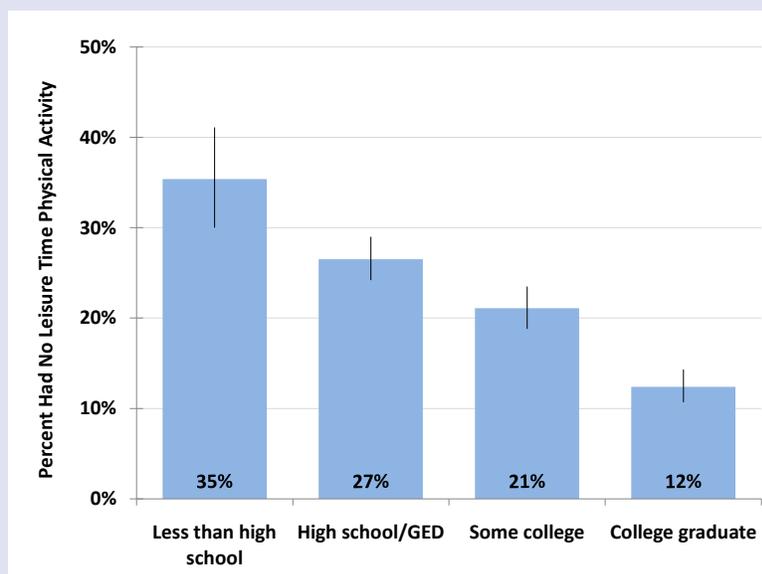


Source: AK BRFSS

Levels of leisure time physical activity are also related to employment status. Adults who are unable to work are more than twice as likely to be inactive as employed or unemployed adults, or those not in the workforce (e.g., students, homemakers, retired Alaskans). Eighty-five percent of those in the “unable to work” category are disabled, that is, report having a condition that limits their daily activities or causes them to rely upon special equipment (data not shown).

## Contributing Factors

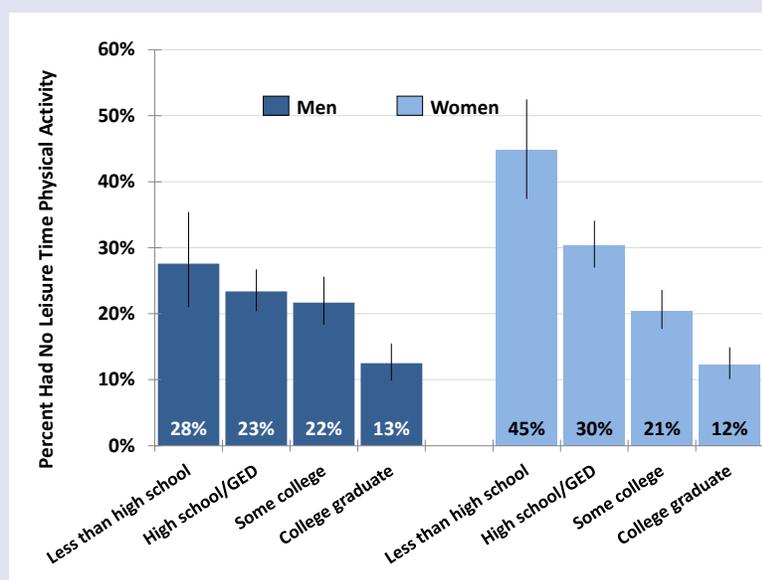
**Figure 48. Prevalence of No Leisure Time Physical Activity, by Education Level, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

Physical inactivity increases as education level decreases. Adults who have less than a high school education are about 3 times as likely to be physically inactive as adults who have completed college.

**Figure 49. Prevalence of No Leisure Time Physical Activity, by Education Level and Sex, Alaska Adults, 2005-2007 (combined)**

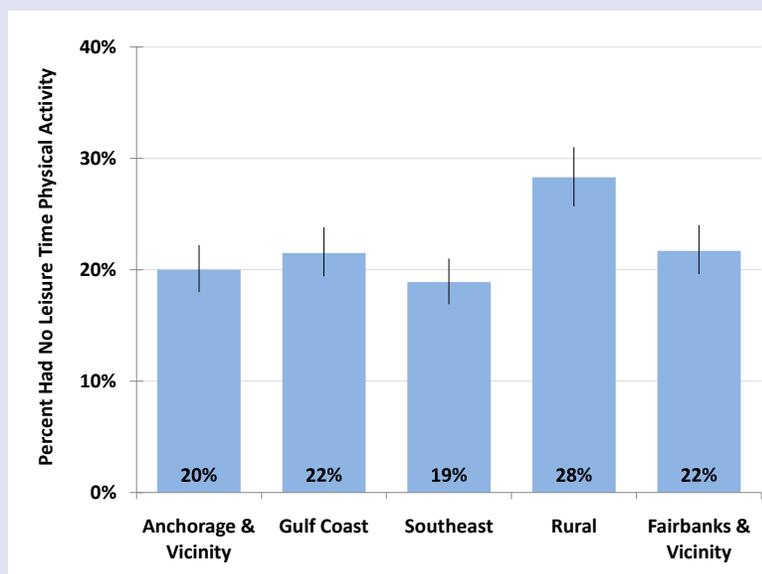


Source: AK BRFSS

The pattern of education and physical activity is slightly more pronounced among women compared to men: nearly half of women who did not graduate high school are physically inactive.

## Contributing Factors

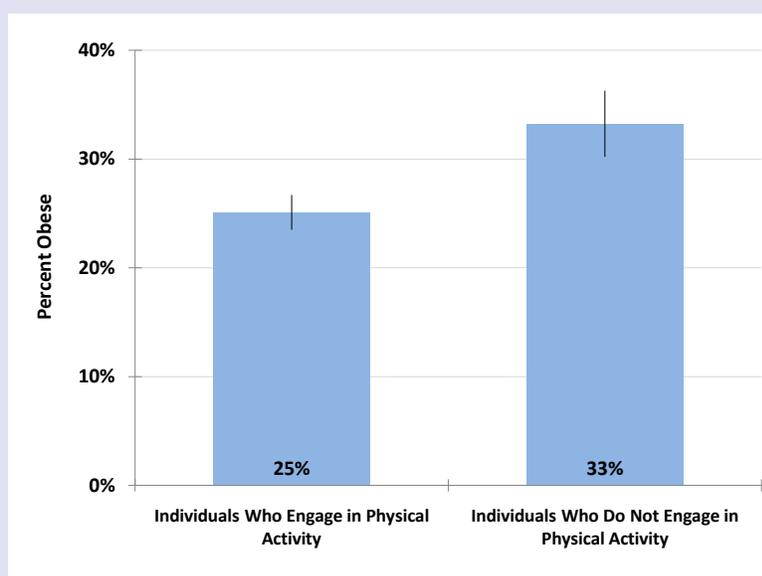
**Figure 50. Prevalence of No Leisure Time Physical Activity, by Region, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

Levels of leisure time physical activity vary by region. Alaska adults who live in rural areas are significantly more likely to be physically inactive in their spare time than adults in all other regions of the state.

**Figure 51. Prevalence of Obesity (BMI  $\geq$  30.0), Among Alaskans Who Do and Do Not Engage in Leisure Time Physical Activity, Alaska Adults, 2005-2007 (combined)**

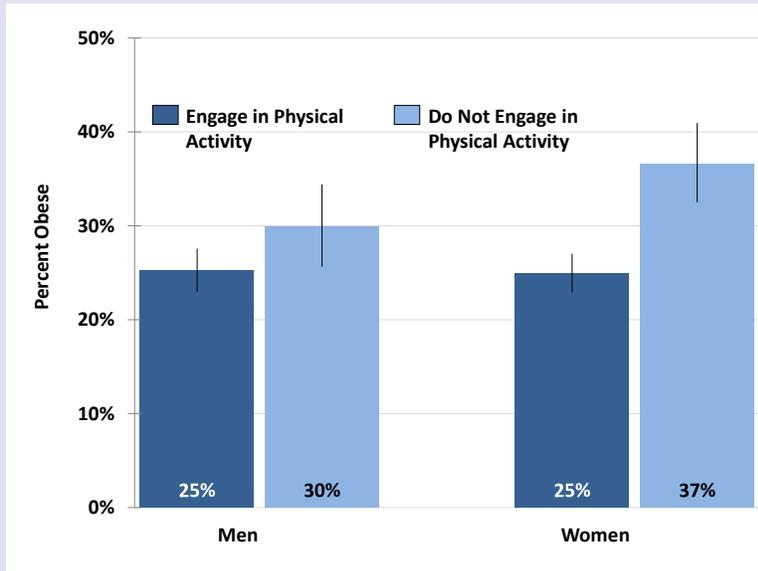


Source: AK BRFSS

Not surprisingly, leisure-time physical activity is associated with weight status. Overall, adults who do not engage in physical activity are significantly more likely to be obese than adults who do engage in physical activity.

## Contributing Factors

**Figure 52. Prevalence of Obesity (BMI  $\geq$  30.0), Among Alaskans Who Do and Do Not Engage in Leisure Time Physical Activity, by Sex, Alaska Adults, 2005-2007 (combined)**



Source: AK BRFSS

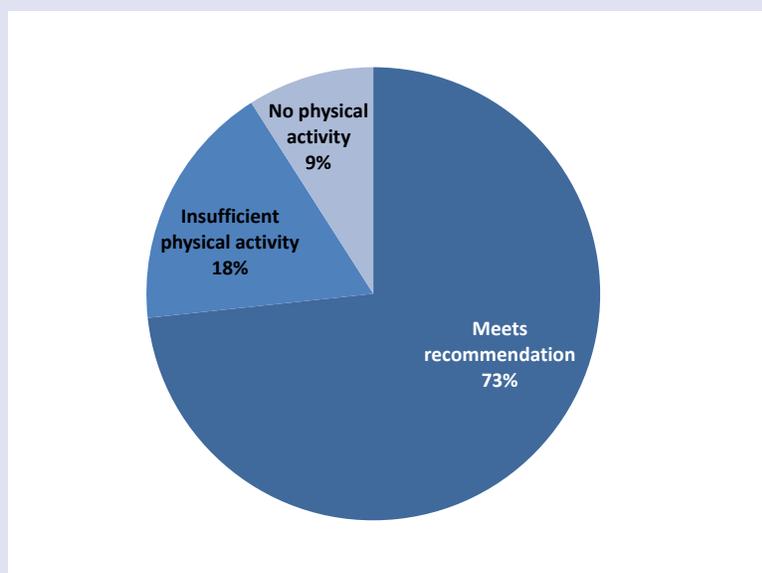
This association is significant only among women.

## Contributing Factors

### *Not Meeting Physical Activity Recommendations*

In October 2008, the US Department of Health and Human Services released the first comprehensive physical activity recommendations published by the federal government.<sup>27</sup> The 2008 Physical Activity Guidelines for Americans recommends adults ages 18-64 get either 150 minutes per week of moderate intensity activity, or 75 minutes per week of vigorous activity, or a combination of the two, to receive substantial health benefits.

**Figure 53. Prevalence of Physical Activity per 2008 USDHHS Physical Activity Recommendations, Alaska Adults, 2005 & 2007 (combined)**

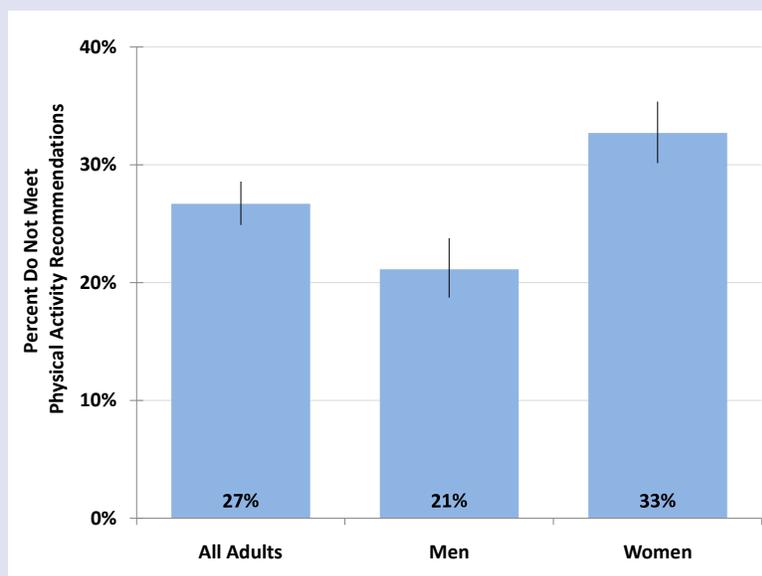


Source: AK BRFSS

In Alaska, 73% of adults meet these new physical activity recommendations; 27% do not—including 9% who are virtually inactive. Note that this does not correspond directly to the percentage of Alaska adults who report no leisure time physical activity (20% in 2007). This is likely due to differences in the wording of the two sets of questions.

## Contributing Factors

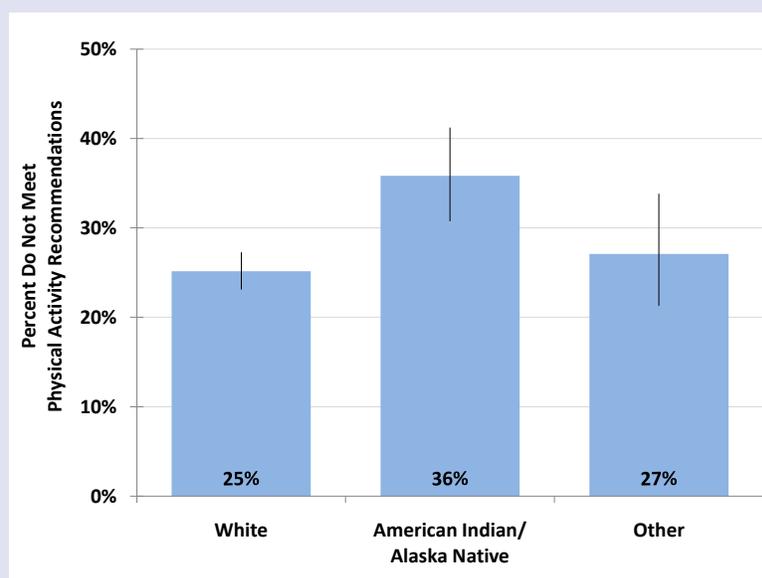
**Figure 54. Prevalence of Not Meeting Physical Activity Recommendations, by Sex, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

Women are significantly more likely than men to not get enough physical activity to meet these recommendations.

**Figure 55. Prevalence of Not Meeting Physical Activity Recommendations, by Race, Alaska Adults, 2005 & 2007 (combined)**

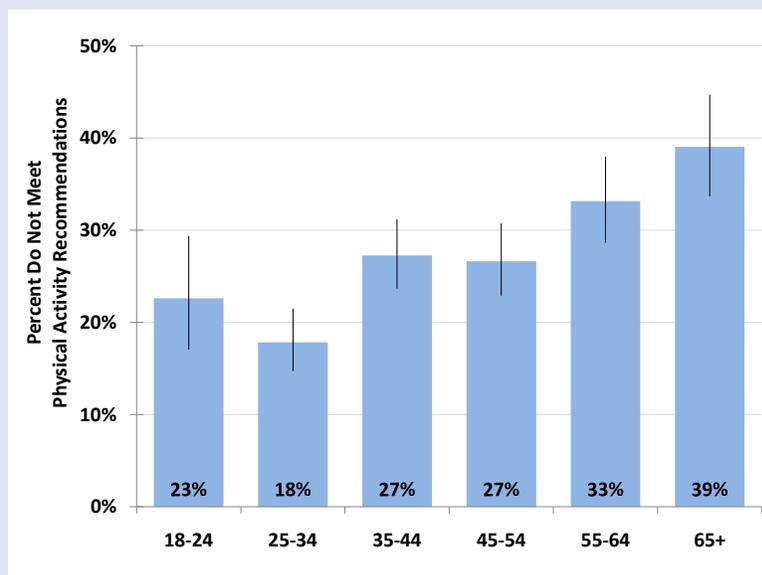


Source: AK BRFSS

American Indian/Alaska Native adults are significantly more likely to fail to meet the recommendations than White adults.

## Contributing Factors

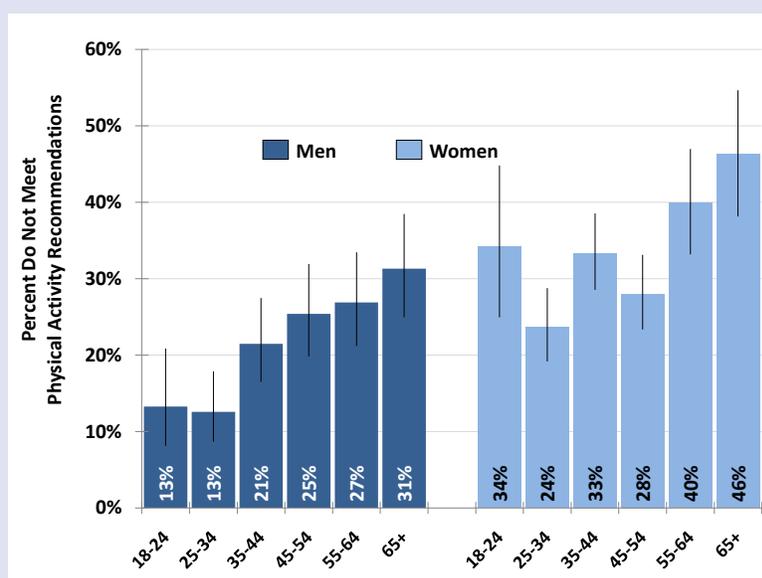
**Figure 56. Prevalence of Not Meeting Physical Activity Recommendations, by Age, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

As is the case with leisure time physical inactivity, the percentage of adults who fail to meet physical activity recommendations appears to increase with age.

**Figure 57. Prevalence of Not Meeting Physical Activity Recommendations, by Age and Sex, Alaska Adults, 2005 & 2007 (combined)**

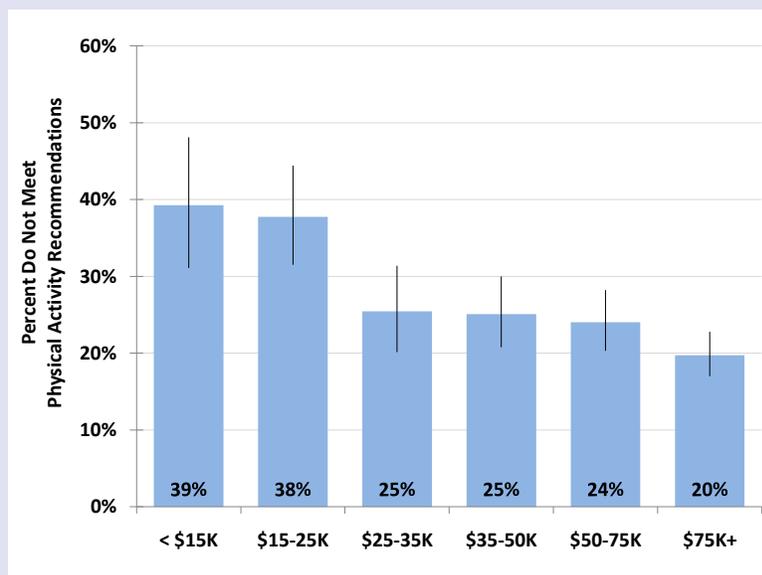


Source: AK BRFSS

This pattern is much clearer among men than among women: men over 64 are twice as likely as men under 25 to not get the recommended level of physical activity.

## Contributing Factors

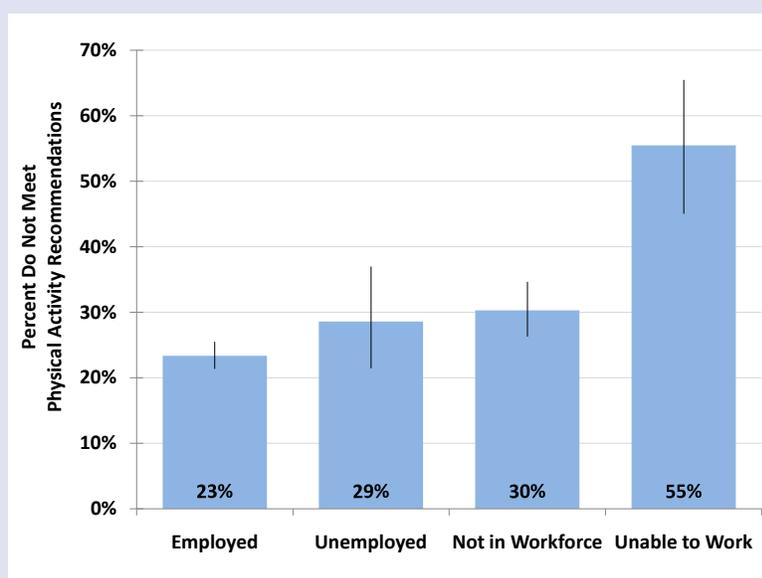
**Figure 58. Prevalence of Not Meeting Physical Activity Recommendations, by Income Level, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

The percentage of adults who fail to meet physical activity recommendations appears to decrease with income.

**Figure 59. Prevalence of Not Meeting Physical Activity Recommendations, by Employment Status, Alaska Adults, 2005 & 2007 (combined)**

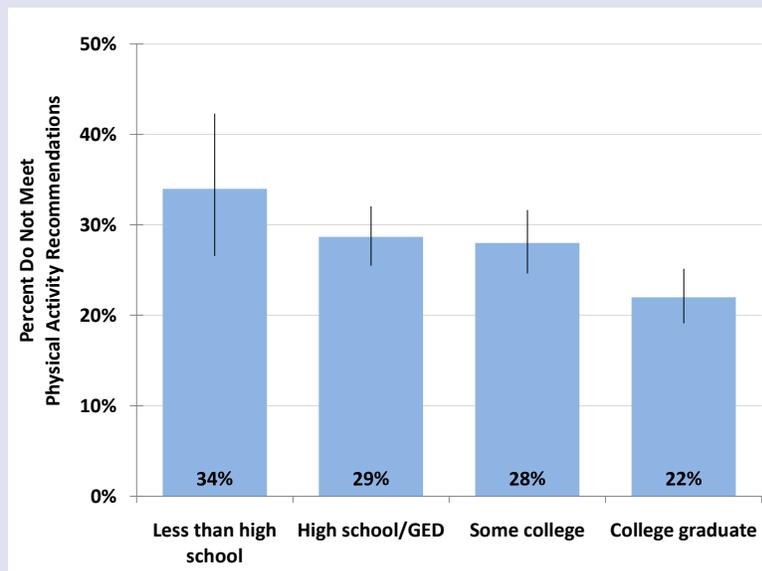


Source: AK BRFSS

Compared to those in other employment status categories, Alaska adults who are unable to work are not only more likely to be inactive in their leisure time, but are also more likely to not meet the physical activity recommendations overall.

## Contributing Factors

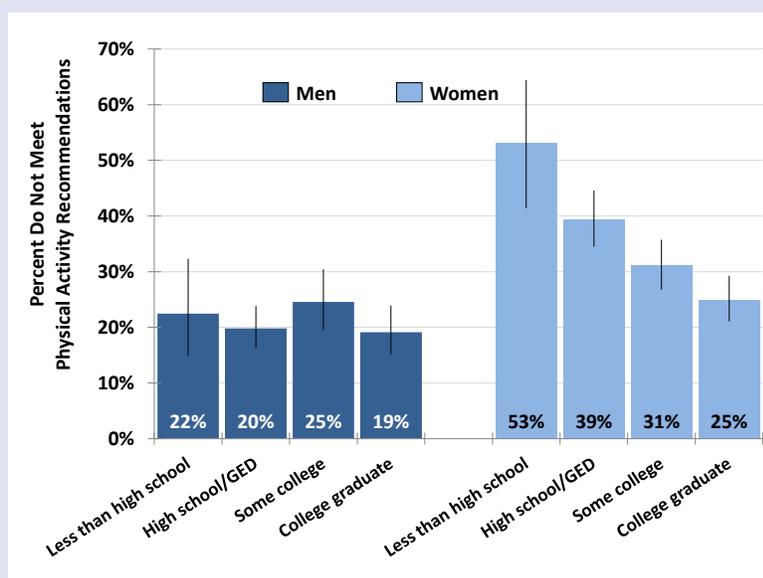
**Figure 60. Prevalence of Not Meeting Physical Activity Recommendations, by Education Level, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

There is some association between educational attainment and meeting physical activity recommendations among adults overall, but drilling down it is clear that this association holds among women only.

**Figure 61. Prevalence of Not Meeting Physical Activity Recommendations, by Education Level and Sex, Alaska Adults, 2005 & 2007 (combined)**

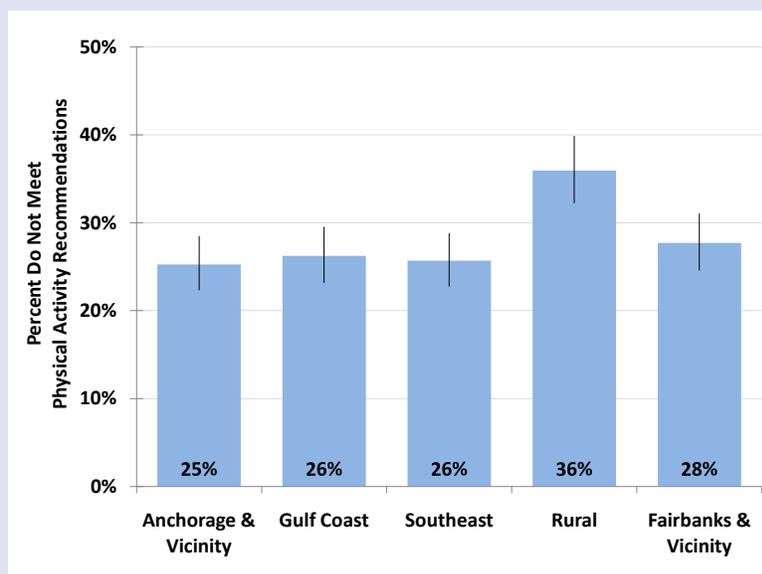


Source: AK BRFSS

Women who have less than a high school education are more than twice as likely compared to those who have attended at least some college to fail to meet physical activity recommendations.

## Contributing Factors

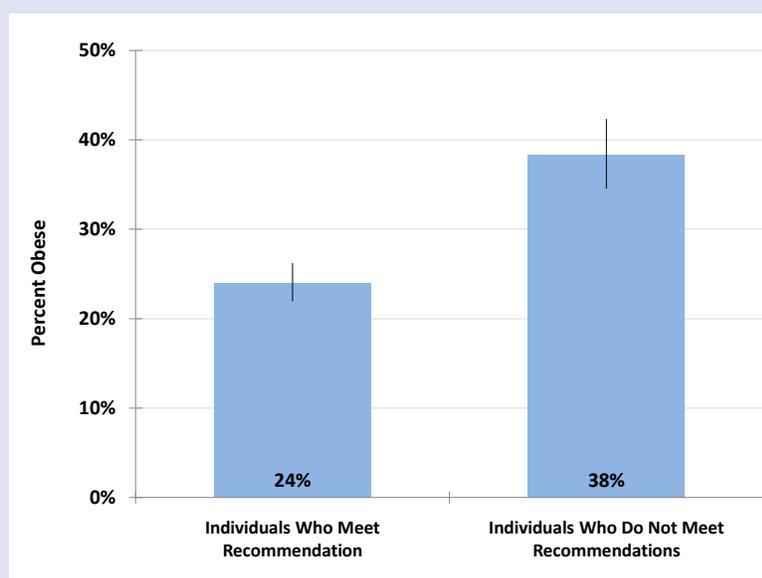
**Figure 62. Prevalence of Not Meeting Physical Activity Recommendations, by Region, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

The percentage of adults who meet physical activity recommendations also varies by region. Adults who live in rural Alaska are significantly more likely than adults in all other regions of Alaska to fail to meet physical activity recommendations.

**Figure 63. Prevalence of Obesity (BMI  $\geq$  30.0), Among Those Who Do and Do Not Meet Physical Activity Recommendations, Alaska Adults, 2005 & 2007 (combined)**

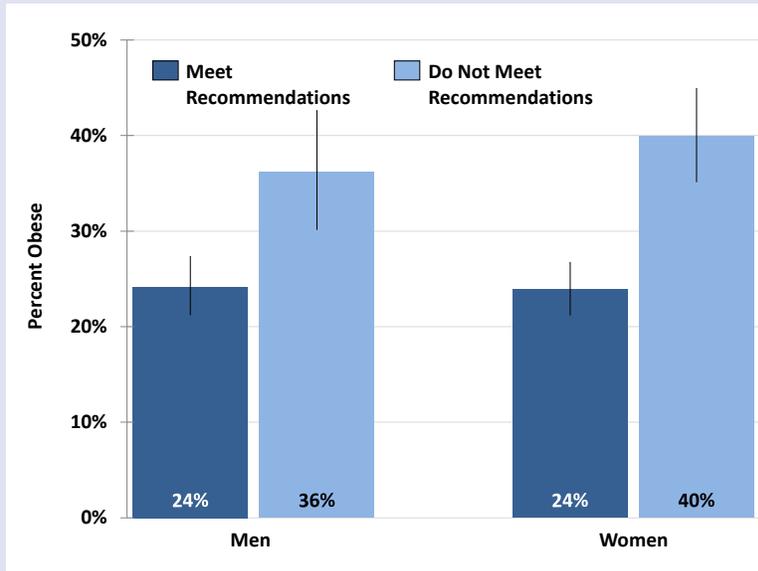


Source: AK BRFSS

Adults who do not meet physical activity recommendations are significantly more likely to be obese than adults who do meet the recommendations

## Contributing Factors

**Figure 64. Prevalence of Obesity (BMI  $\geq$  30.0), Among Those Who Do and Do Not Meet Physical Activity Recommendations, by Sex, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

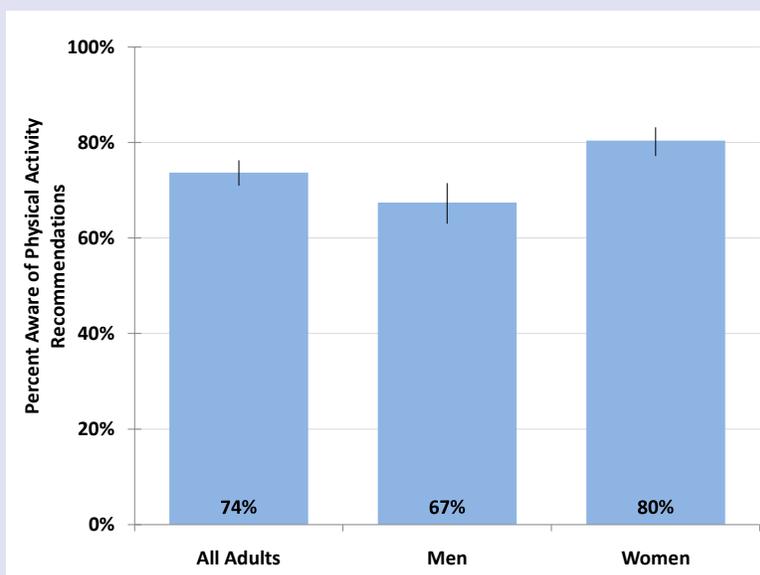
This association exists among both men and women.

## Contributing Factors

### *Awareness of Physical Activity Recommendations*

In 2005 the BRFSS asked adults if they are aware of recommendations on how much physical activity they should get.

**Figure 65. Prevalence of Being Aware of Physical Activity Recommendations, by Sex, Alaska Adults, 2005**



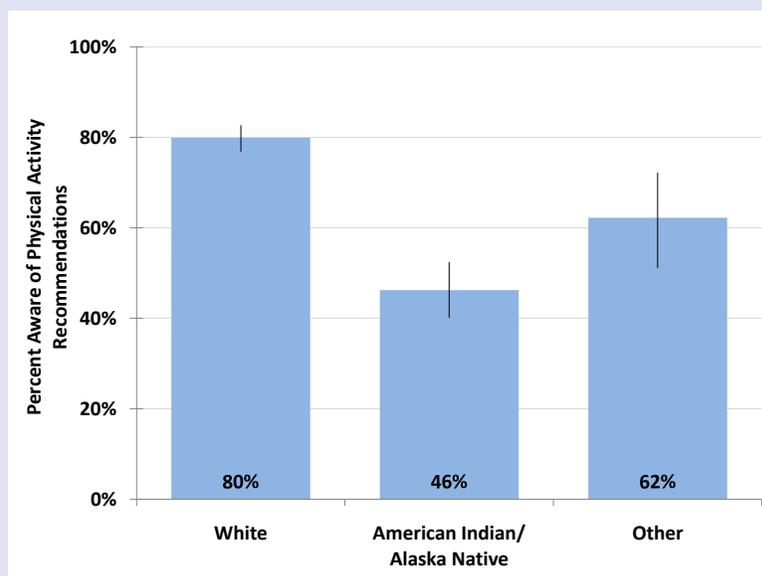
Source: AK BRFSS

Nearly three-quarters of adults say they are aware of physical activity recommendations.<sup>i</sup> Women are significantly more likely to be aware of recommendations than men are.

<sup>i</sup> As these data were collected only in 2005, they reflect awareness with the prior set of physical activity recommendations, not those released in 2008.

## Contributing Factors

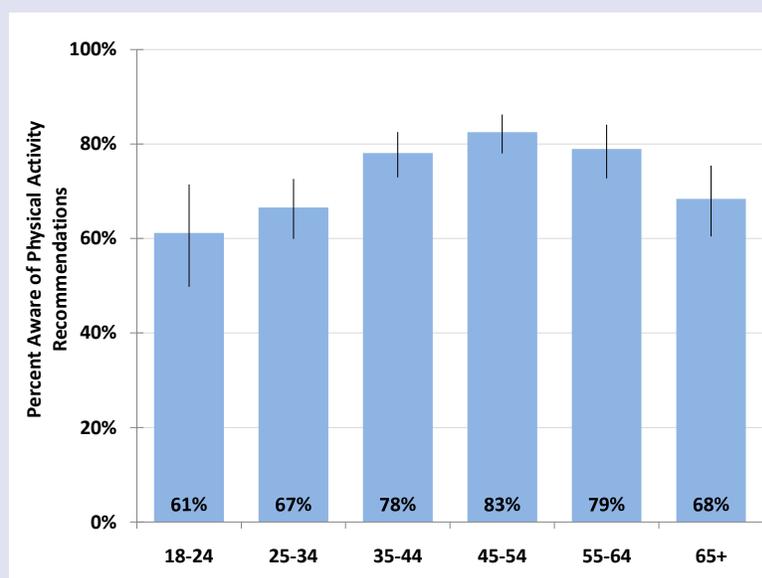
**Figure 66. Prevalence of Being Aware of Physical Activity Recommendations, by Race, Alaska Adults, 2005**



Source: AK BRFSS

White adults are significantly more likely to report awareness of recommendations than non-White adults, with lowest levels of awareness among American Indian/Alaska Natives.

**Figure 67. Prevalence of Being Aware of Physical Activity Recommendations, by Age, Alaska Adults, 2005**

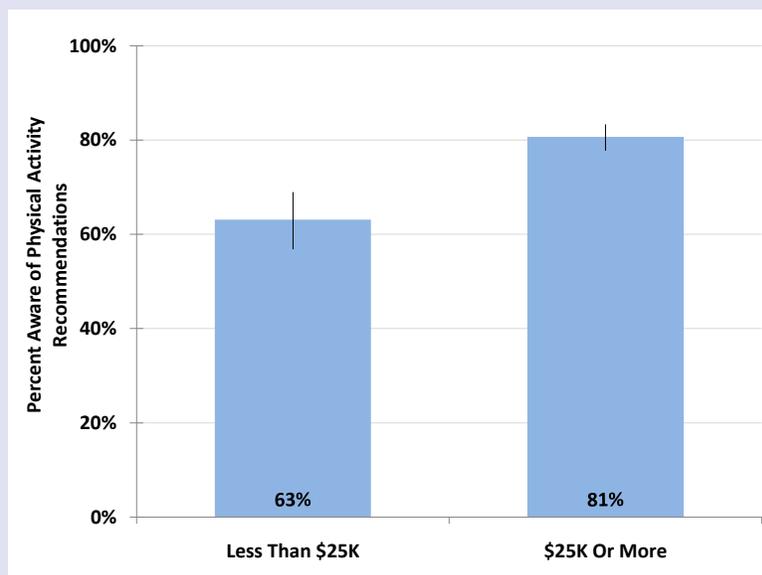


Source: AK BRFSS

Alaskans between ages 35 and 64 are most likely to report being aware of the physical activity recommendations.

## Contributing Factors

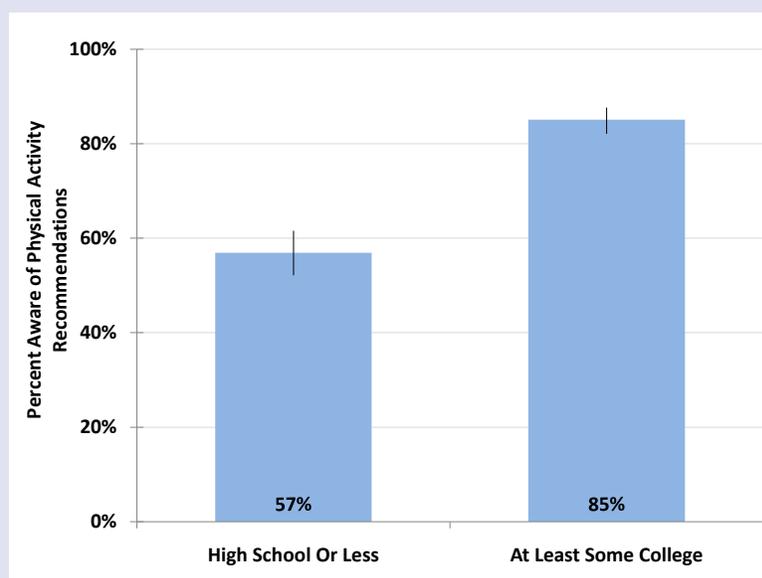
**Figure 68. Prevalence of Being Aware of Physical Activity Recommendations, by Income Level, Alaska Adults, 2005**



Source: AK BRFSS

Individuals with higher levels of income and education are also more likely to report that they are aware of physical activity recommendations. As shown in Figures 68 and 69, adults who make more than \$25,000 per year or have completed at least some college are more likely to report that they are aware of physical activity recommendations than those who make less than \$25,000 or have a high school education or less, respectively.

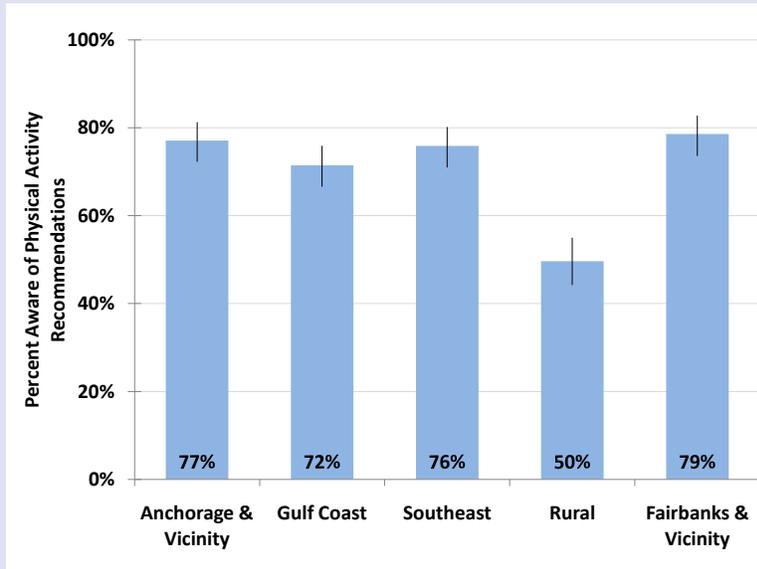
**Figure 69. Prevalence of Being Aware of Physical Activity Recommendations, by Education Level, Alaska Adults, 2005**



Source: AK BRFSS

## Contributing Factors

**Figure 70. Prevalence of Being Aware of Physical Activity Recommendations, by Region, Alaska Adults, 2005**



Source: AK BRFSS

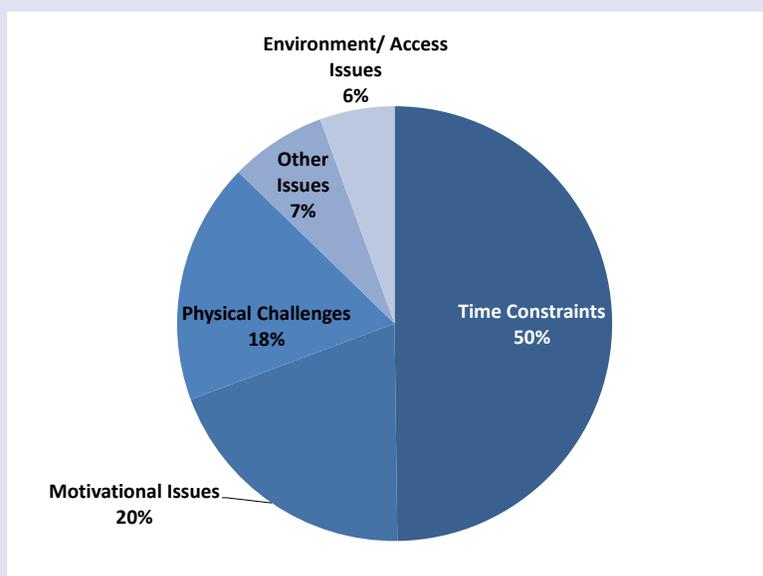
Adults who live in rural areas are significantly less likely to report being aware of physical activity recommendations than adults in all other regions of the state. Awareness of physical activity recommendations is not associated with whether adults meet the recommendations.

## Contributing Factors

### Reasons for Physical Inactivity

In 2005 the Alaska BRFSS gathered information on the reasons adults do not participate in more physical activity. When asked why they are not more physically active, 19% of adults said that they exercise enough already.

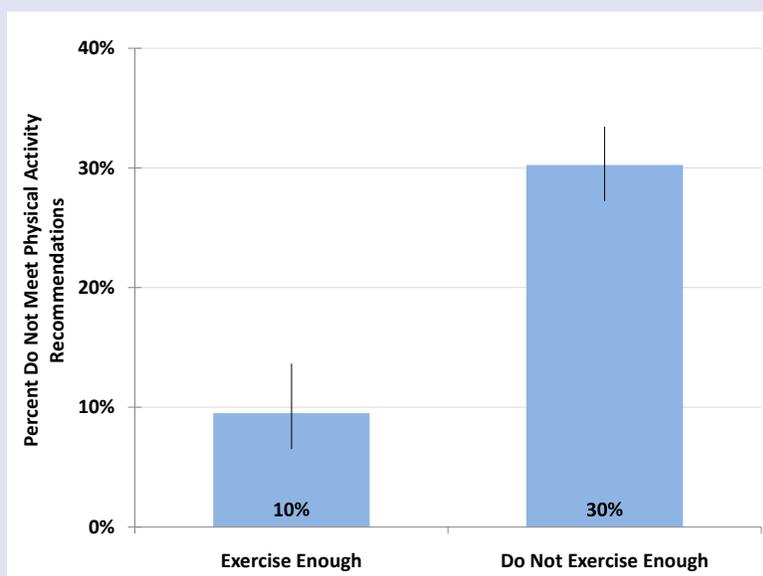
**Figure 71. Reasons for Not Being More Physically Active, Alaska Adults\*, 2005**



Among just those who do not feel they get enough exercise, half cite time constraints as their main reason for not being more physically active, 18% reported physical challenges (including illness or medical condition and older age) that keep them from being physically active, and 20% lack the motivation to engage in more physical activity. Only 6% report that environmental or access concerns prevent them from being more physically active.

Source: AK BRFSS; \*Excluding those who say they already exercise enough

**Figure 72. Prevalence of Not Meeting Physical Activity Recommendations by Belief that “I do/do not exercise enough already”, Alaska Adults, 2005**



Adults who report that they do not get enough physical activity are significantly more likely to fail to meet physical activity recommendations than adults who think that they already get enough physical activity.

Source: AK BRFSS

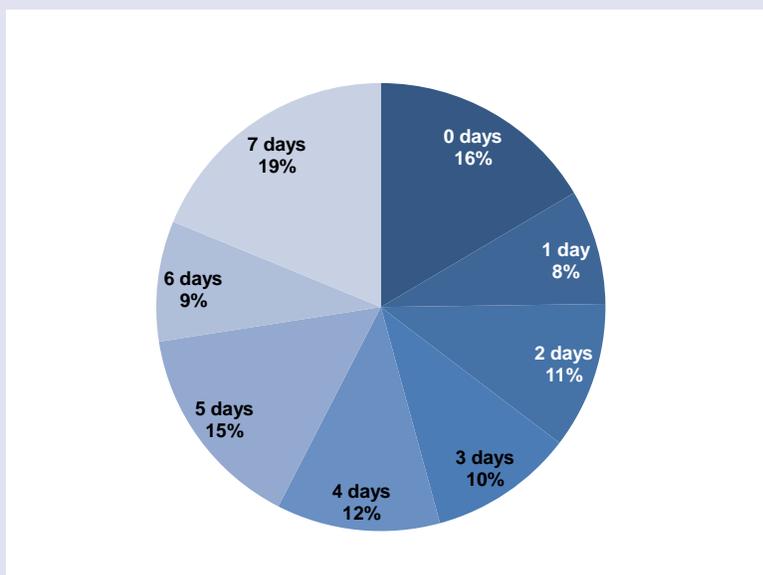
## Contributing Factors

### High School Youth

#### *Not Meeting Physical Activity Recommendations*

According to the US DHSS 2008 Physical Activity Guidelines for Americans, children and adolescents (6 to 17 years old) are recommended to get 60 or more minutes of moderate to vigorous activity every day, with vigorous activity at least 3 days per week to promote a healthy body weight and achieve overall health benefits. Data on the physical activity levels of Alaska high school youth are available from the 2007 YRBS.

**Figure 73. Number of Days in Past Week Engaged Physical Activity for at Least 60 Minutes, Alaska High School Youth, 2007**

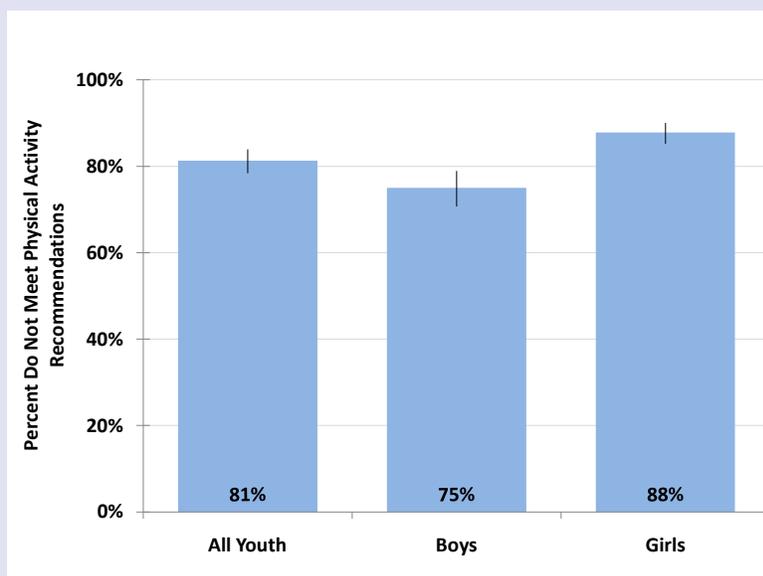


Source: AK YRBS

Eighty-one percent of Alaskan high school students failed to meet the new guideline of 60 or more minutes every day, with 16% reporting not a single day in the past week when they were active for at least 60 minutes.

## Contributing Factors

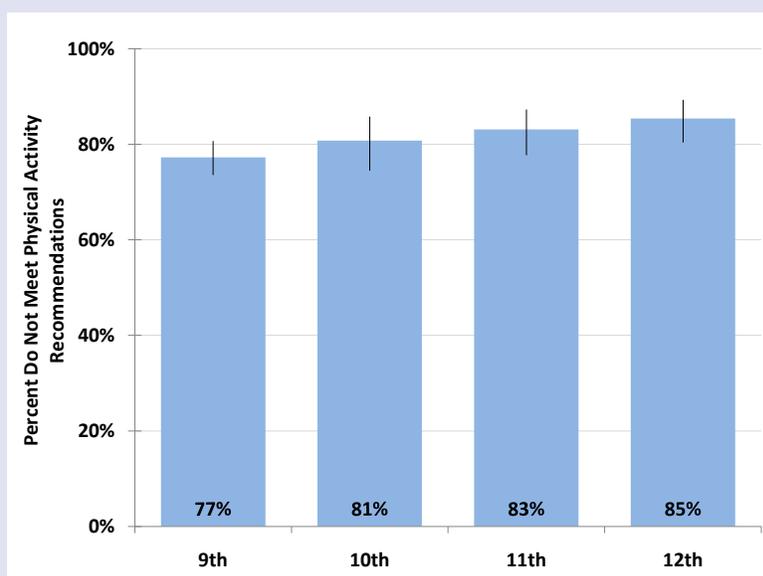
**Figure 74. Prevalence of Not Meeting Physical Activity Recommendations (60 minutes daily), by Sex, Alaska High School Youth, 2007**



Source: AK YRBS

Girls (88%) are significantly more likely to fail to meet the recommendation than are boys (75%).

**Figure 75. Prevalence of Not Meeting Physical Activity Recommendations (60 minutes daily), by Grade, Alaska High School Youth, 2007**

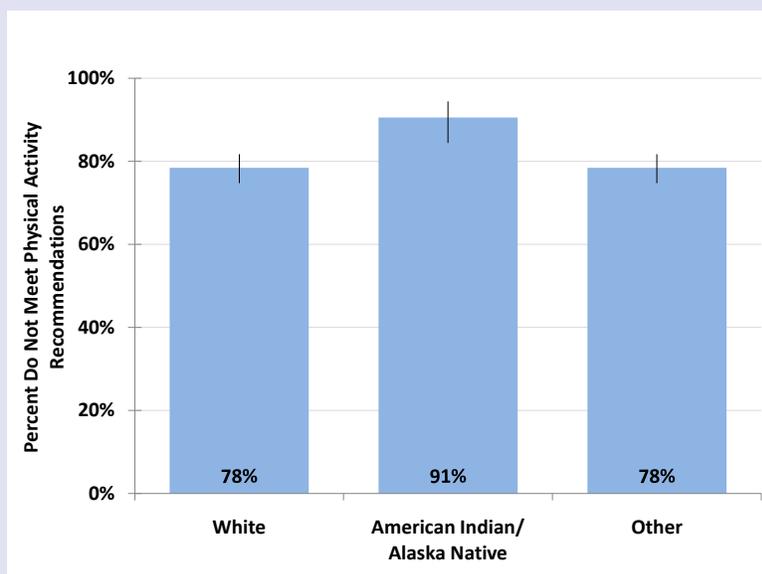


Source: AK YRBS

The percentage of high school students who do not meet the physical activity recommendations increases slightly as grade level increases.

## Contributing Factors

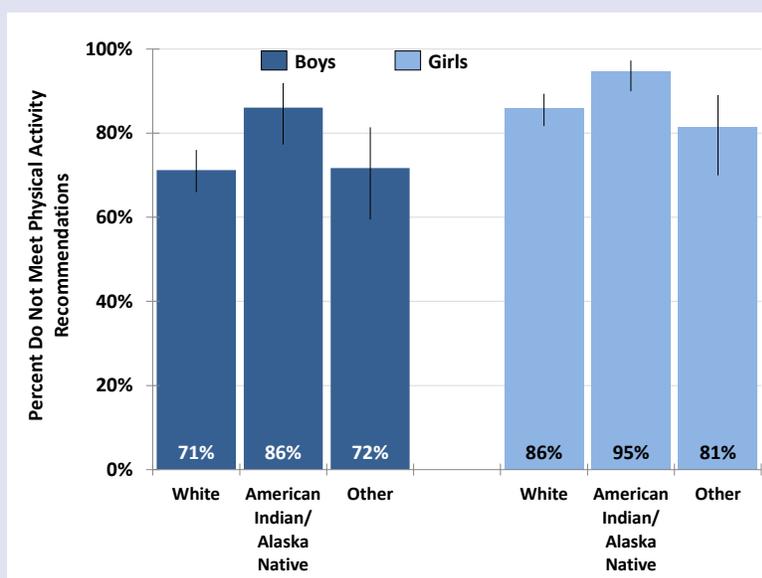
**Figure 76. Prevalence of Not Meeting Physical Activity Recommendations (60 minutes daily), by Race, Alaska High School Youth, 2007**



Source: AK YRBS

American Indian/Alaska Native students are significantly more likely than their peers to fail to meet physical activity recommendations.

**Figure 77. Prevalence of Not Meeting Physical Activity Recommendations (60 minutes daily), by Race and Sex, Alaska High School Youth, 2007**



Source: AK YRBS

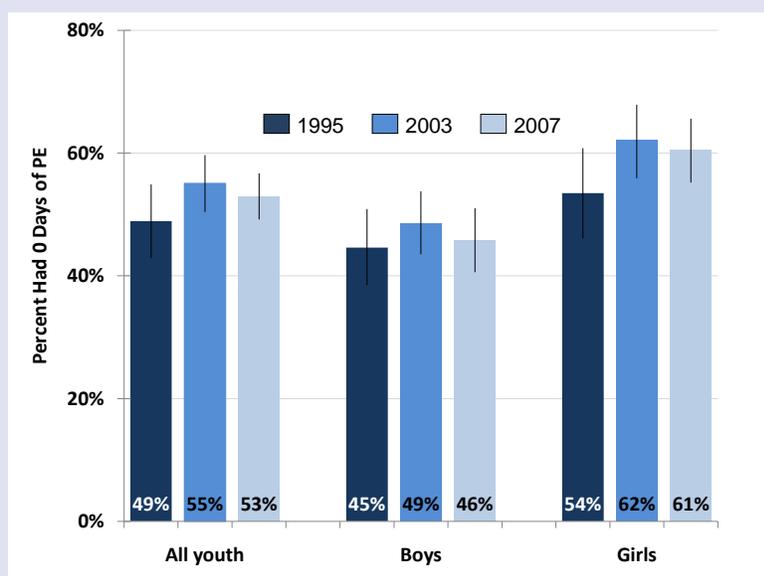
This disparity, compounded by the sex difference already noted, translates to very little physical activity among American Indian/Alaska Native girls; only 5% of American Indian/Alaska Native girls are active at the recommended levels.

## Contributing Factors

### No Physical Education

Physical education class, or PE, not only provides an opportunity for students to be physically active during the school day, it also gives students the tools they need to become individuals who incorporate physical activity into their lives, throughout their lifespan. The CDC recommends implementing programs that increase the length of, or activity levels in, school-based physical education classes based on strong evidence of their effectiveness in improving both physical activity levels and physical fitness among school-aged children and adolescents.<sup>28</sup> The YRBS assesses how many days per week high school students participate in PE class, as well as how many “active minutes” they have while in those classes.

**Figure 78. Prevalence of Participating in 0 Days of Physical Education Class in the Past Week, by Sex, Alaska High School Youth, 1995, 2003 & 2007**

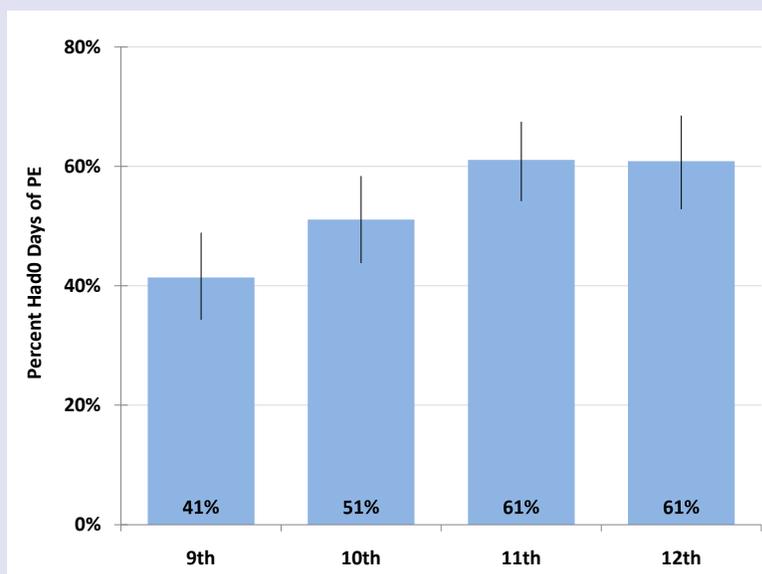


Source: AK YRBS

Consistently over the past 12-year period for which data are available, about half of Alaska high school students report having not participated in any PE in the past week. Girls are significantly more likely than boys to have no PE. In fact, boys (23%) are twice as likely as girls (12%) to report having daily PE (data not shown, 2007 Alaska YRBS).

## Contributing Factors

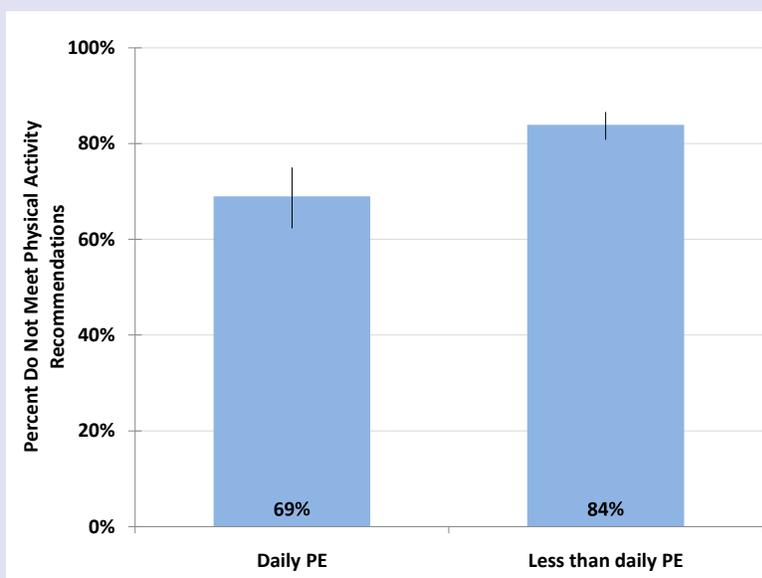
**Figure 79. Prevalence of Participating in 0 Days of Physical Education Class in the Past Week, by Grade, Alaska High School Youth, 2007**



Source: AK YRBS

Similar to the pattern seen with not meeting physical activity recommendations, students in older grades are the most likely to have not participated in PE in the past week. There are no differences by race, either overall or by sex.

**Figure 80. Prevalence of Not Meeting Physical Activity Recommendations\*, by Participation in Daily Physical Education Class in the Past Week, Alaska High School Youth, 2007**



Source: AK YRBS \*60 minutes/7 days per week

Students who do not participate in daily PE are more likely than those who have do to fail to meet the recommendations for physical activity.

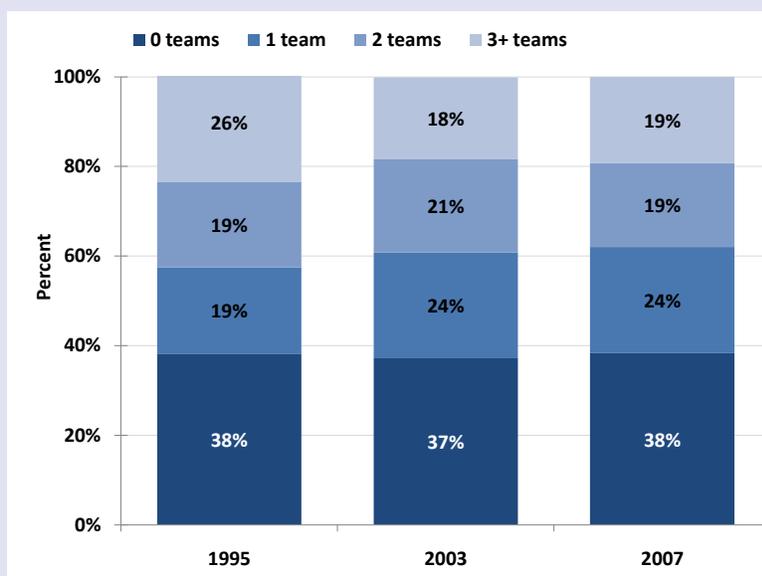
Overall, 87% of high school students who participate in PE for 1 or more days per week say they are active for at least 20 minutes during each PE class. Sample size precludes analysis by sex, race, or grade level.

## Contributing Factors

### No Sports Teams

Participation in team sports provides another opportunity for students to be physically active during the school day. There is evidence that physical education and extracurricular physical activities during adolescence may contribute to the prevention of adulthood overweight.<sup>29</sup> Since 1995, the Alaska YRBS has collected data on student participation in team sports.

**Figure 81. Number of Sports Teams Involved with in Past Year, Alaska High School Youth, 1995, 2003 & 2007**

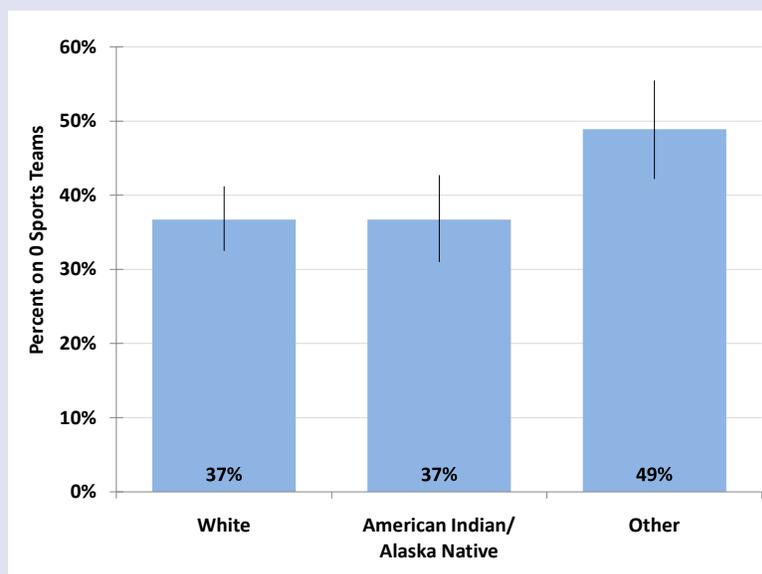


Source: AK YRBS

Between 1995 and 2007 there has been little change in Alaska high school students' involvement in team sports; consistently around 38% are not involved in any team sports.

## Contributing Factors

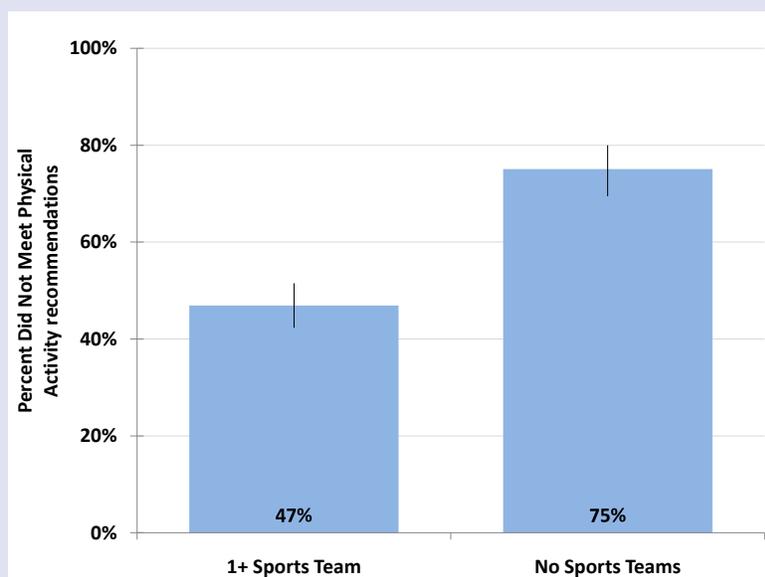
**Figure 82. Prevalence of No Involvement in Sports Teams During the Past Year, by Race, Alaska High School Youth, 2007**



Source: AK YRBS

There are no significant sex or grade level differences in sports team participation; however, non-White, non-American Indian/Alaska Native students are significantly more likely than White students to have no involvement in sports teams in the prior year.

**Figure 83. Prevalence of Not Meeting Physical Activity Recommendations\*, by Participation in 1 or More Sports Teams During the Past Year, Alaska High School Youth, 2007**

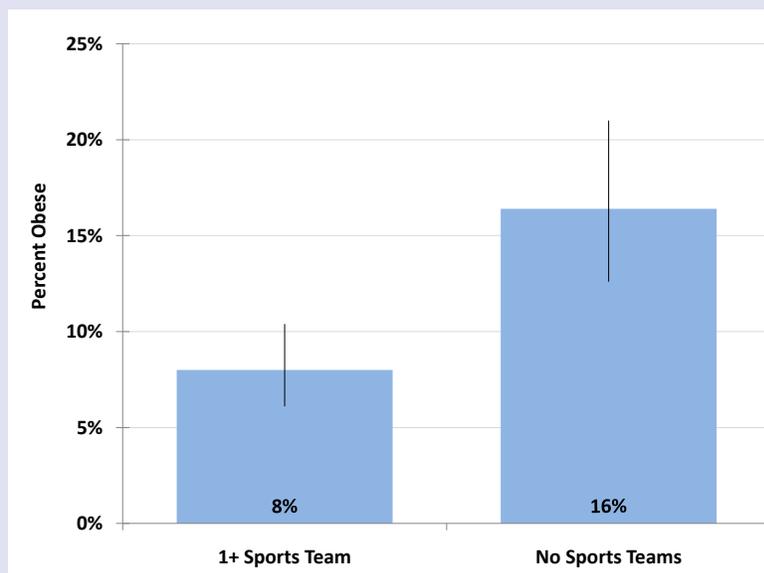


Source: AK YRBS

Alaska high school students who have no involvement in sports teams are more likely than their peers to both (a) fail to meet physical activity recommendations (Figure 83) and (b) be obese (Figure 84).

## Contributing Factors

**Figure 84. Prevalence of Obesity (BMI  $\geq$  95th percentile), by Participation in Team Sports, Alaska High School Youth, 2007**



Source: AK YRBS

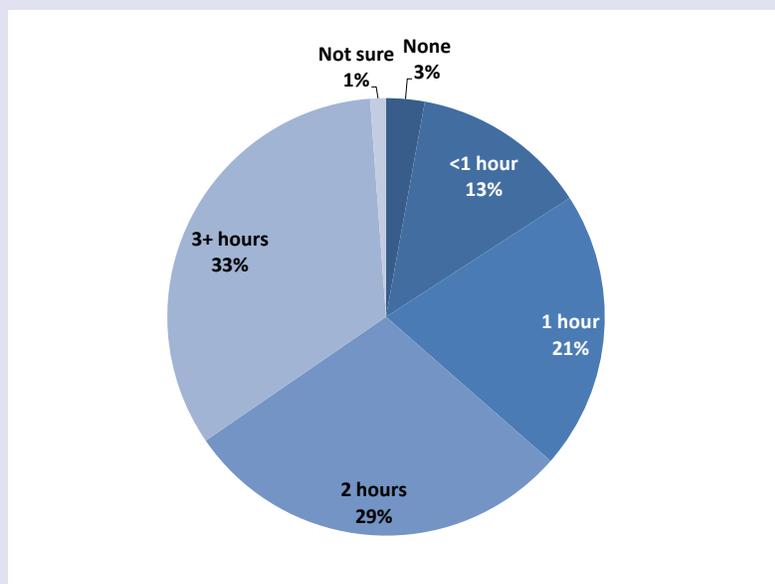
## Contributing Factors

### TV and Screen Time

Television viewing and computer/video game playing (i.e., “screen time”) have been identified as a contributor to obesity, particularly among children.<sup>30</sup> The American Academy of Pediatrics recommends limiting television and other screen time to no more than 2 hours per day for children ages 2 to 18.<sup>31</sup> Both the BRFSS and YRBS provide information on the amount of time adults and high school students spend watching television and DVDs, and also using the computer for purposes other than work (for adults) and school work (for youth). The BRFSS uses a single question to assess screen time, whereas the YRBS has separate questions for TV viewing and non-academic computer use.

### Adults

**Figure 85. Number of Hours of Screen Time per Day, Alaska Adults, 2005**

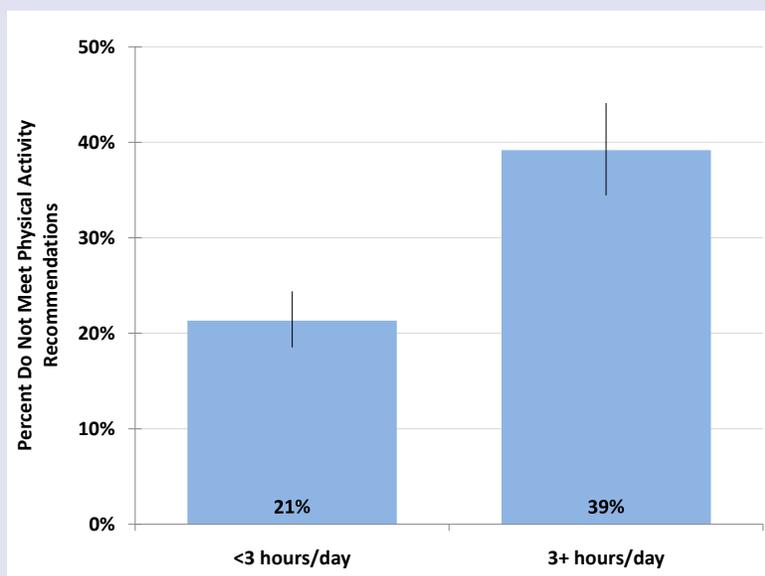


Source: AK BRFSS

Over 80% of Alaskan adults spend at least 1 hour each day on screen time. Over 60% spend two or more hours each day, and one-third of adults spend 3 or more hours on screen time each day.

## Contributing Factors

**Figure 86. Prevalence of Not Meeting Physical Activity Recommendations, by TV/Screen Time, Alaska Adults, 2005**



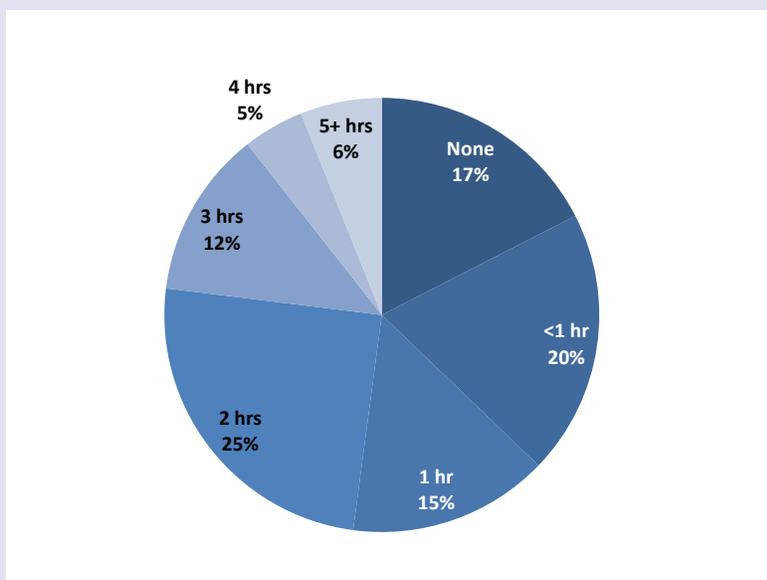
Source: AK BRFSS

One of the pathways by which screen time is thought to contribute to obesity is by acting as a replacement for physical activity. Television viewing is a sedentary activity and the time spent watching TV could otherwise be used for physical activity. In Alaska, adults who have 3 or more hours of screen time each day are significantly more likely to fail to meet physical activity recommendations than those who have less screen time.

## Contributing Factors

### High School Youth

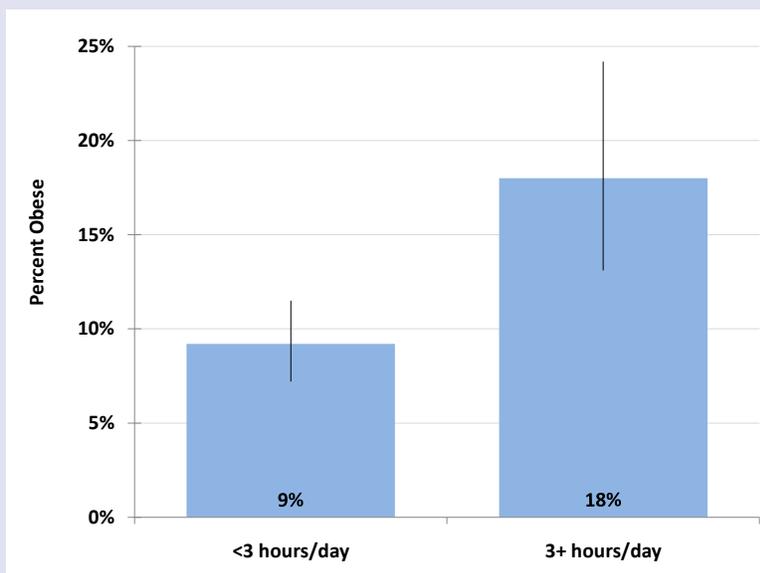
**Figure 87. Number of Hours of TV Watched during Average School Day, Among High School Youth, Alaska (2007)**



Source: AK BRFSS

Nearly two-thirds (63%) of high school students watch an hour or more of TV on an average school day. Nearly 1 in 4 high school students (23%) watch 3 or more hours, and 6% watch 5 or more hours of television per school day. There are no significant sex, racial, or grade level differences in the prevalence of watching 3 or more hours of TV per day.

**Figure 88. Prevalence of Obesity (BMI  $\geq$  95<sup>th</sup> percentile), by Amount of TV Viewing, Alaska High School Youth, 2007**

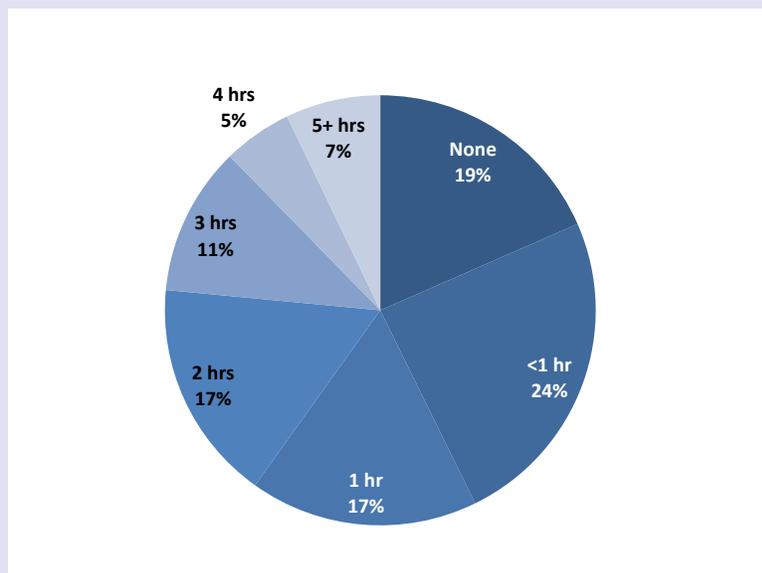


Source: AK YRBS

Those students who watch 3 or more hours of television per day are twice as likely as those who watch less TV to be obese (18% and 9%, respectively).

## Contributing Factors

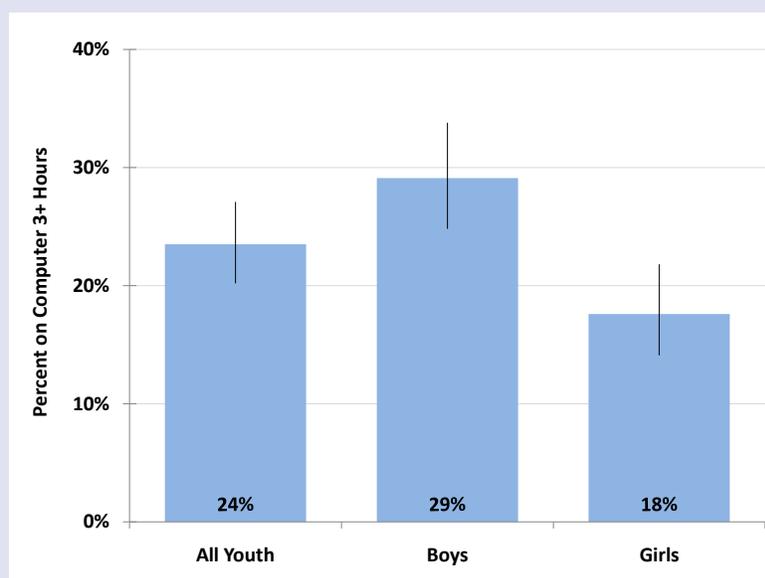
**Figure 89. Number of Hours Used a Computer (Not for School Work) during Average School Day, Alaska High School Youth, 2007**



Source: AK YRBS

In addition to watching television, a significant amount of sedentary time is spent by youth playing computer games and doing other non-academic work on the computer. Fifty-seven percent of Alaska high school students spend an hour or more on the computer in an average day, over and above any time intended to meet academic needs.

**Figure 90. Prevalence of Using a Computer for 3 or More Hours During the Average School Day\*, by Sex, Alaska High School Youth, 2007**

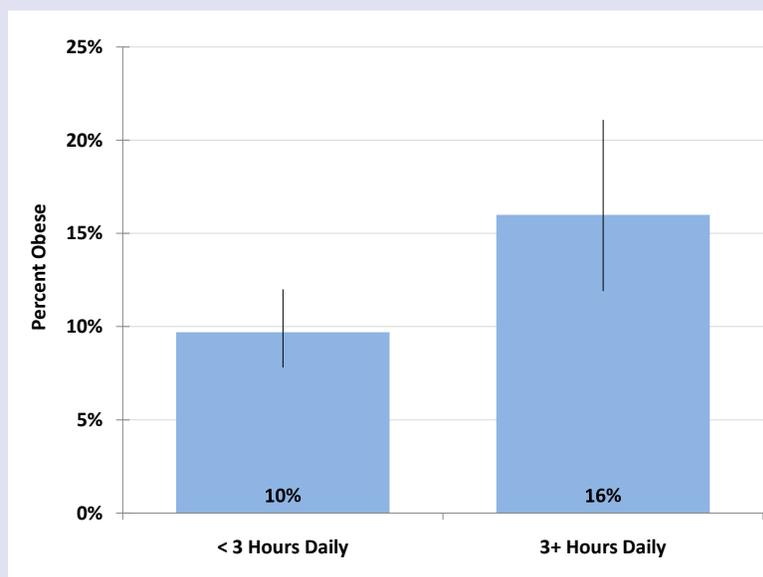


Source: AK YRBS; \*Not for school work

Boys (29%) are significantly more likely than girls (18%) to spend 3 or more hours on the computer.

## Contributing Factors

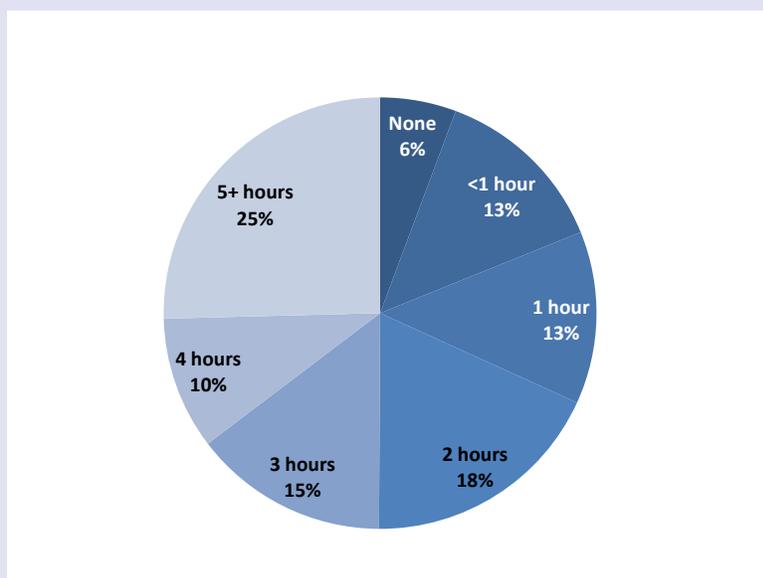
**Figure 91. Prevalence of Obesity (BMI  $\geq$  95th percentile), by Amount of Computer Usage,\* Alaska High School Youth, 2007**



Source: AK YRBS; \*Not for school work

As with television viewing, there is an association between hours of computer usage and obesity among youth, though it is only marginally significant. High school students who play video games or otherwise use a computer for non-academic work for 3 or more hours a day are more likely than their peers to be obese (16% compared to 10%, respectively).

**Figure 92. Number of Hours of “Screen Time” (Watched TV or Used a Computer, Not for School Work) during Average School Day, Alaska High School Youth, 2007**



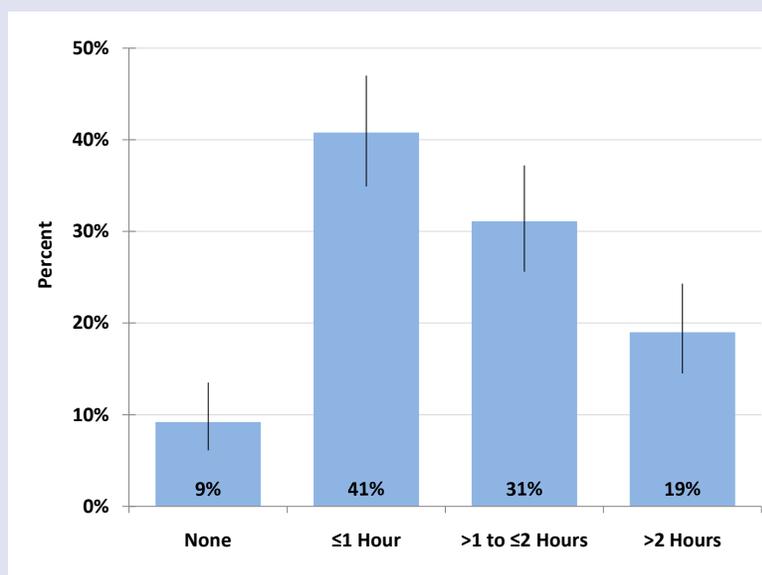
Source: AK YRBS

When time spent watching television and using a computer (for non-academic work) are combined, it becomes clear that many of Alaska’s youth are spending considerable time each school day in sedentary behavior. One out of every 2 high school students is watching TV or on the computer for 3 or more hours daily; 1 out of 4 are doing so for 5 or more hours per day.

## Contributing Factors

The Childhood Understanding Behaviors Survey (CUBS) surveyed mothers of 2-year-old children born in Alaska in 2004 and still living in Alaska in 2006.<sup>32</sup> The mothers were asked about the number of hours of television “screen time” their toddlers had on the day prior to the interview.

**Figure 93. Number of Hours of Television “Screen Time” (Including Videos and DVDs), Alaska 2-Year- Olds, 2006**



Source: AK CUBS; \*Computer use not included

The reports indicate that only 9% of toddlers did not watch any TV or videos that day. Most watched an hour or less, but 19% had more than 2 hours of “screen time”.

## Contributing Factors

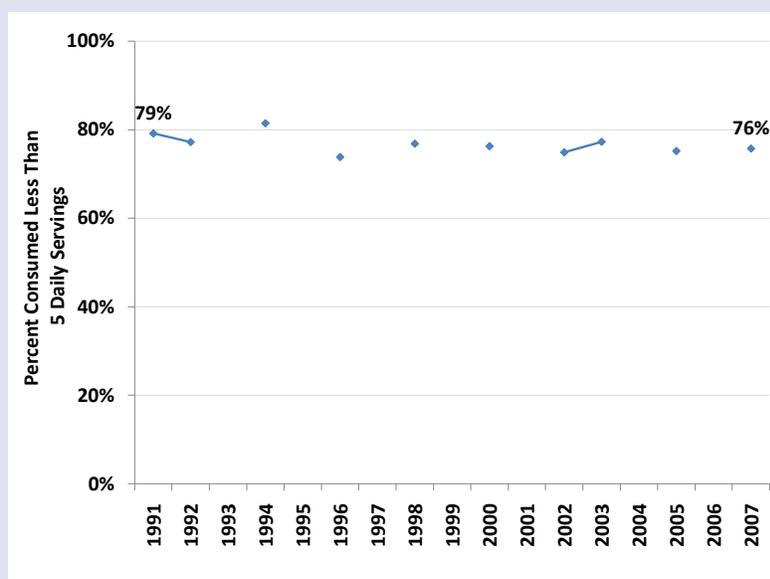
### Nutrition

#### Fruit and Vegetable Consumption

##### Adults

The primary measure of adult nutrition status is fruit and vegetable consumption. Fruits and vegetables are promoted for the prevention of obesity because of their high water and fiber content, low fat content and low energy density, all effectively reducing energy (caloric) intake.<sup>33</sup> The Dietary Guidelines for Americans, 2005 recommends at least 5 servings of fruits and vegetables each day.<sup>34</sup>

**Figure 94. Trend in Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, Alaska Adults, 1991-2007 (for years available)**

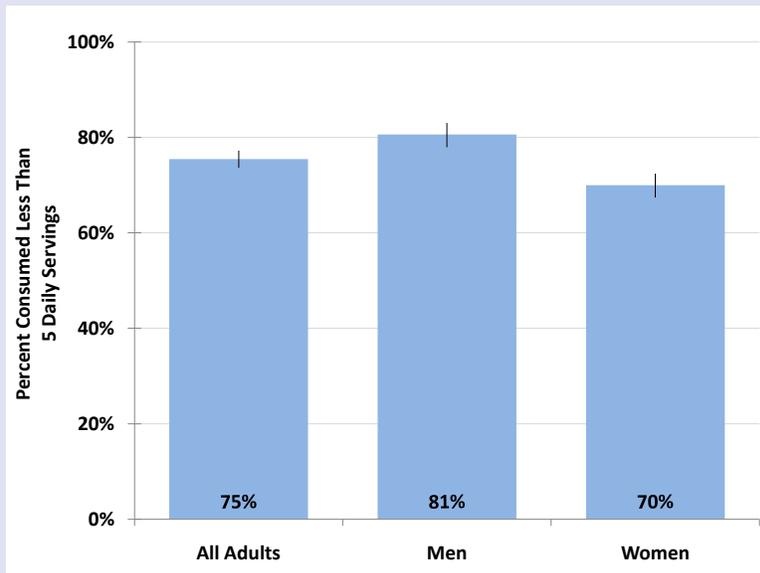


Source: AK BRFSS

In Alaska, however, 3 of every 4 adults eats less than the recommended 5 or more servings of fruits and vegetables per day; this percentage has varied little over the past 17 years.

## Contributing Factors

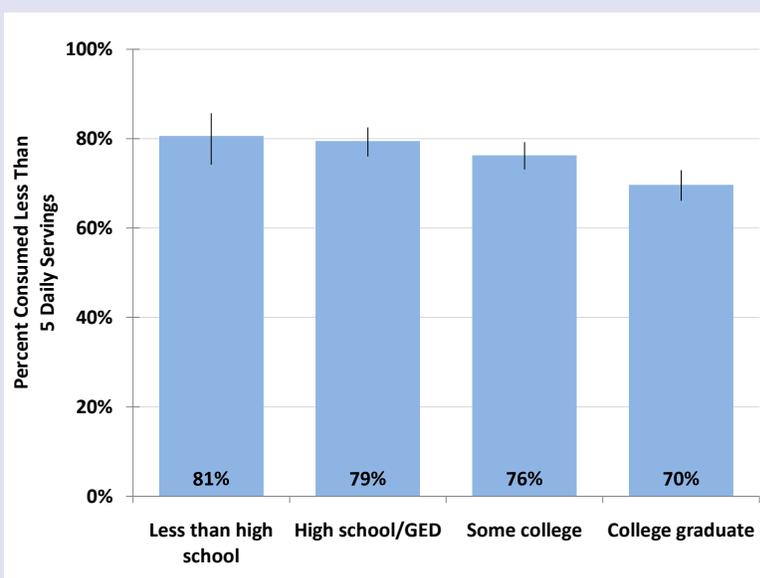
**Figure 95. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Sex, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

Men are more likely than women to fail to meet this nutritional recommendation.

**Figure 96. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Education Level, Alaska Adults, 2005 & 2007 (combined)**

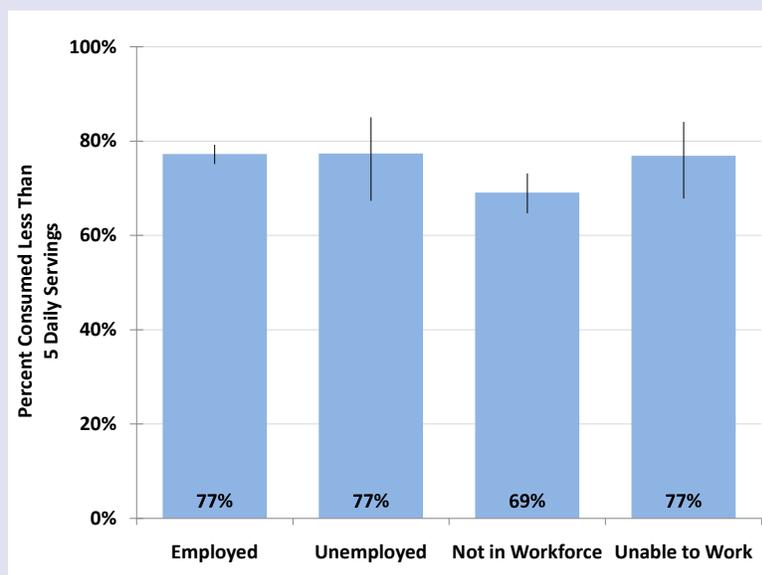


Source: AK BRFSS

Fruit and vegetable consumption does not differ significantly by age, income, or race and ethnicity; slight differences are seen by education level and employment status, however. Alaska adults with less than a college degree are the most likely to fail to meet the nutrition recommendations.

## Contributing Factors

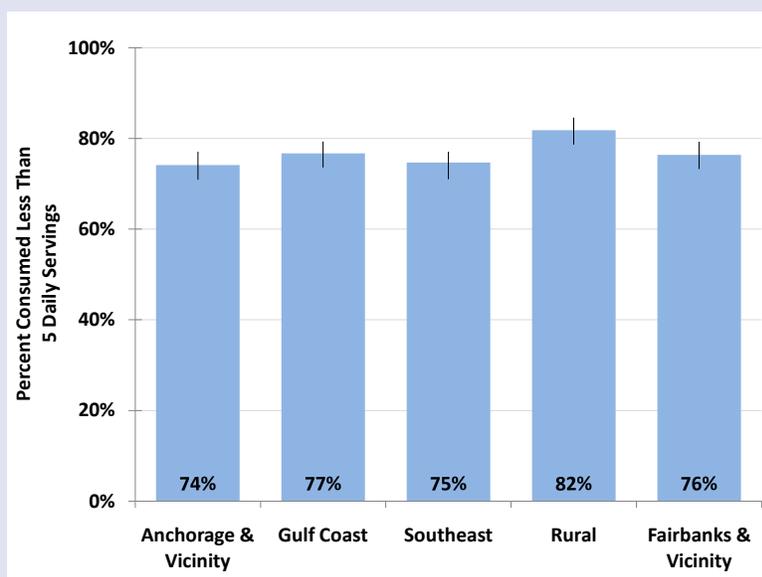
**Figure 97. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Employment Status, Alaska Adults, 2005 & 2007 (combined)**



Source: AK BRFSS

Employed adults are also significantly more likely to eat less than the recommended levels of fruits and vegetables compared to those not in the workforce.

**Figure 98. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Region, Alaska Adults, 2005 & 2007 (combined)**



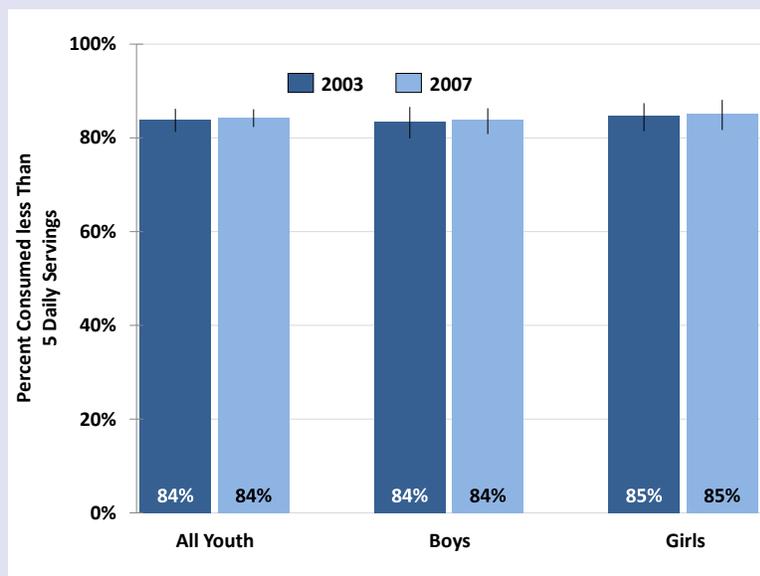
Source: AK BRFSS

Adults in rural Alaska are significantly more likely than those in Anchorage or Southeast Alaska to consume less than 5 daily servings of fruits and vegetables. No other regional differences in fruit and vegetable consumption are significant.

## Contributing Factors

### High School Youth

**Figure 99. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Sex, Alaska High School Youth, 2003 & 2007**



Source: AK YRBS

Fruit and vegetable consumption is also low among high school students. As evidenced by YRBS data from both 2003 and 2007, only 16% of high school students eat 5 or more servings of fruits and vegetables per day. Fruit and vegetable consumption does not differ significantly by grade, age, gender, or race/ethnicity.

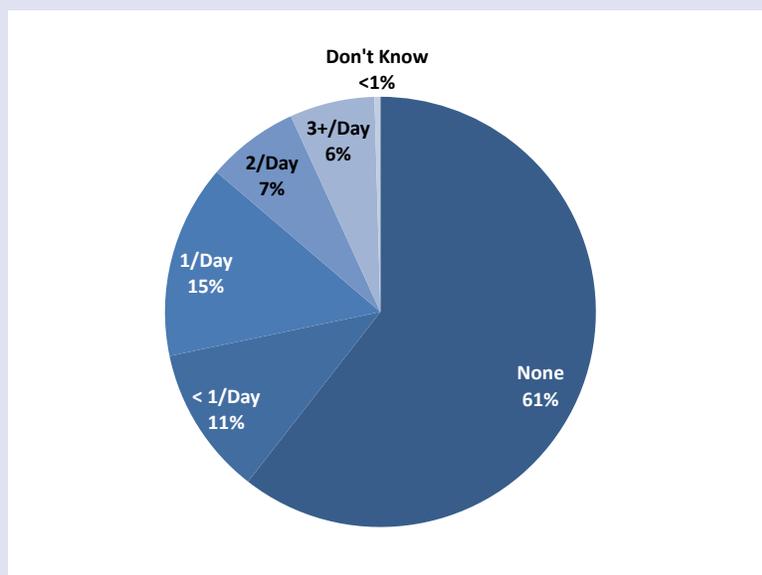
## Contributing Factors

### Sugar-Sweetened Beverage Consumption

#### Adults

Beverage consumption is also an indication of nutrition behavior. Sugar-sweetened beverages (carbonated and non-carbonated beverages sweetened with sugar, high-fructose corn syrup or other caloric sweeteners) are now a significant source of added sugars and calories in the diet of Americans.<sup>35</sup> Soda consumption has recently been identified as a contributing factor to weight gain.<sup>35</sup> The 2005 BRFSS survey asked adults how many cans or glasses of soda they consume each day.

**Figure 100. Number of Cans/Glasses of Soda (Excluding Diet) Consumed Per Day, Alaska Adults, 2005**

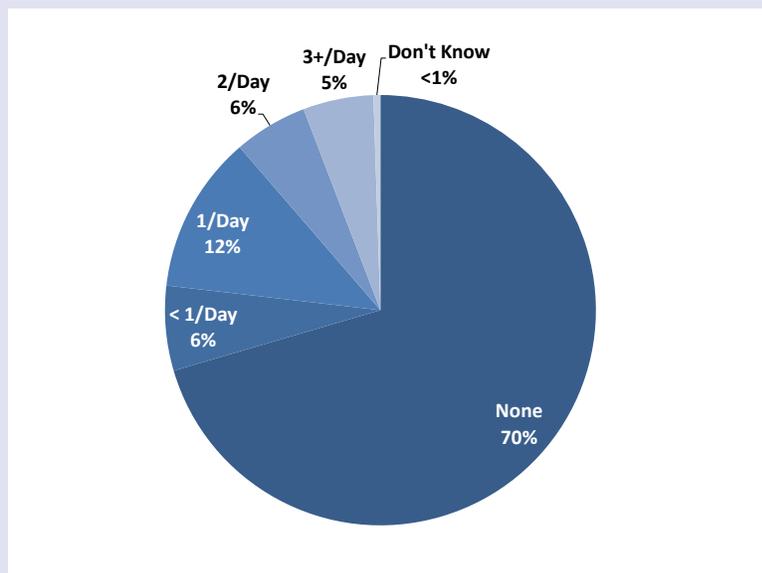


Source: AK BRFSS

Nearly one-third (29%) of adults report drinking 1 or more cans of regular soda each day, with 14% of adults drinking 2 or more cans.

## Contributing Factors

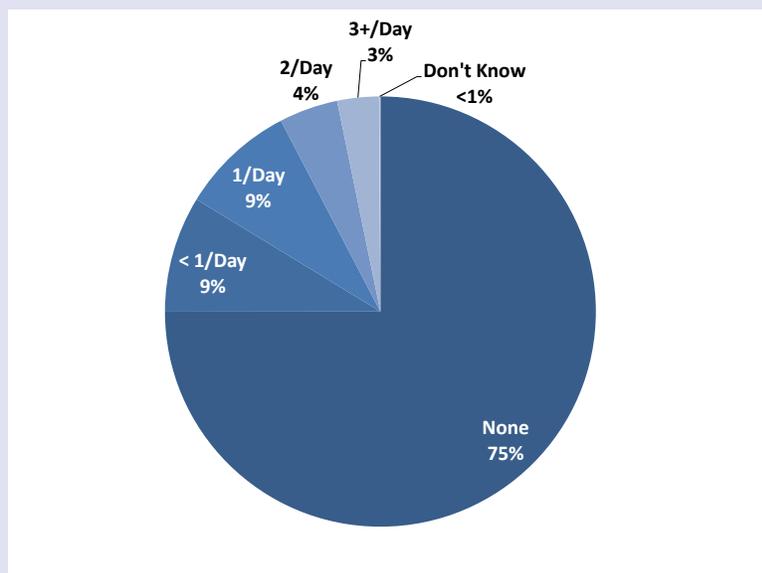
**Figure 101. Number of Cans/Glasses of Sugar-Sweetened, Non-Carbonated Beverages Consumed Per Day, Alaska Adults, 2005**



Source: AK BRFSS

The percentage of adults who consume sweetened non-carbonated beverages (e.g., sports drinks, powdered drinks, or sugar-sweetened fruit drinks) is similar to the percentage that consume regular soda. Twenty-four percent of adults drink 1 or more can or glass of a sweetened beverage each day, with 12% consuming 2 or more cans or glasses each day.

**Figure 102. Number of Cans/Glasses of Diet Soda Consumed Per Day, Alaska Adults, 2005**

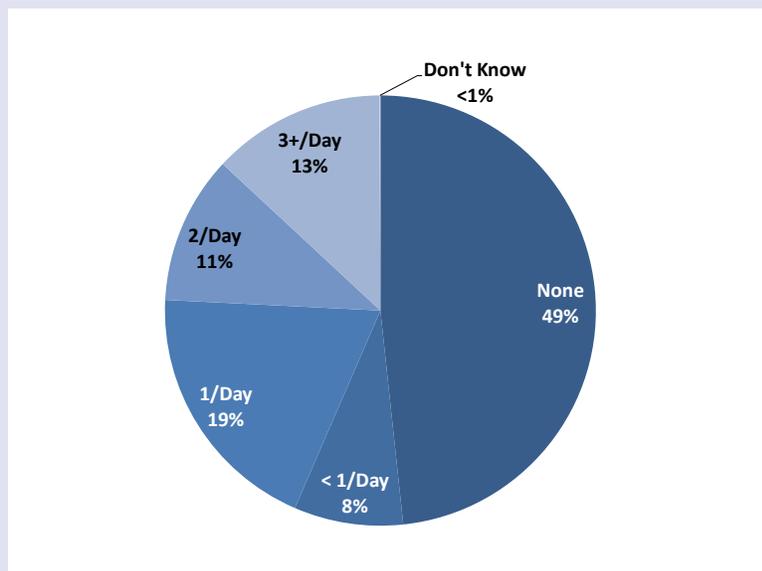


Source: AK BRFSS

Consumption of diet drinks is lower than that of sweetened beverages; with 16% of adults drinking more than 1 diet soda each day. Seven percent drink 2 or more diet sodas each day.

## Contributing Factors

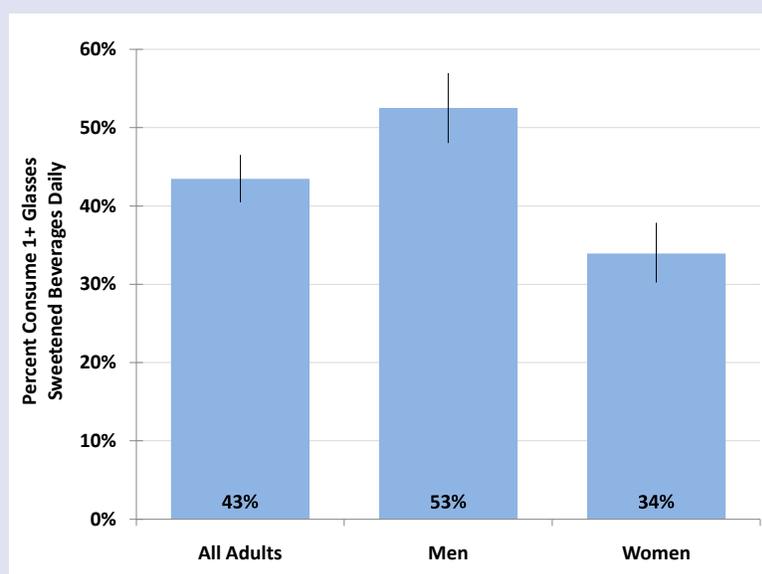
**Figure 103. Number of Cans/Glasses of Non-Diet, Sugar-Sweetened\* Beverages Consumed Per Day, Alaska Adults, 2005**



Source: AK BRFSS; \*Non-Diet Soda and sweetened, non-carbonated beverages

If carbonated (i.e., soda) and non-carbonated sugar-sweetened beverages are considered together, we see that nearly half (44%) of adults drink at least 1 can or glass of a non-diet sweetened beverage each day, with a quarter consuming 2 or more cans or glasses.

**Figure 104. Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Sex, Alaska Adults, 2005**

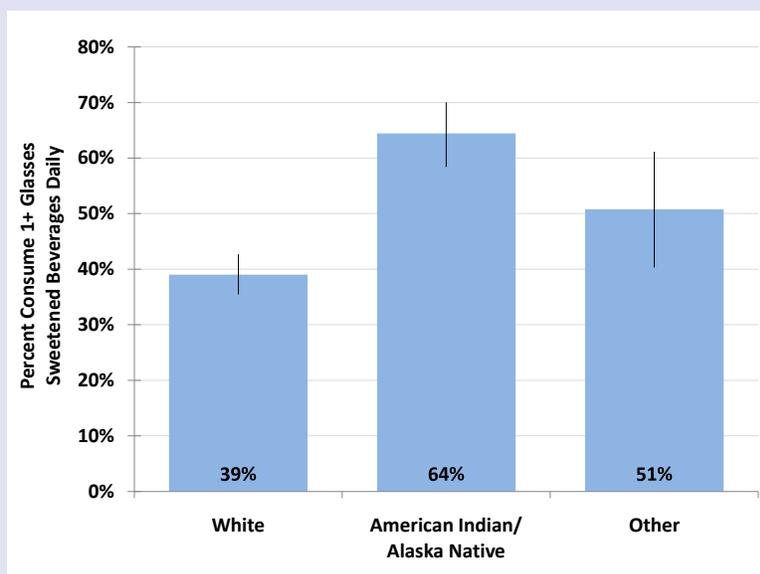


Source: AK BRFSS

Men, American Indian/Alaska Natives, adults living in rural parts of the state, and adults under the age of 25 are those most likely to consume at least 1 sugar-sweetened beverage per day.

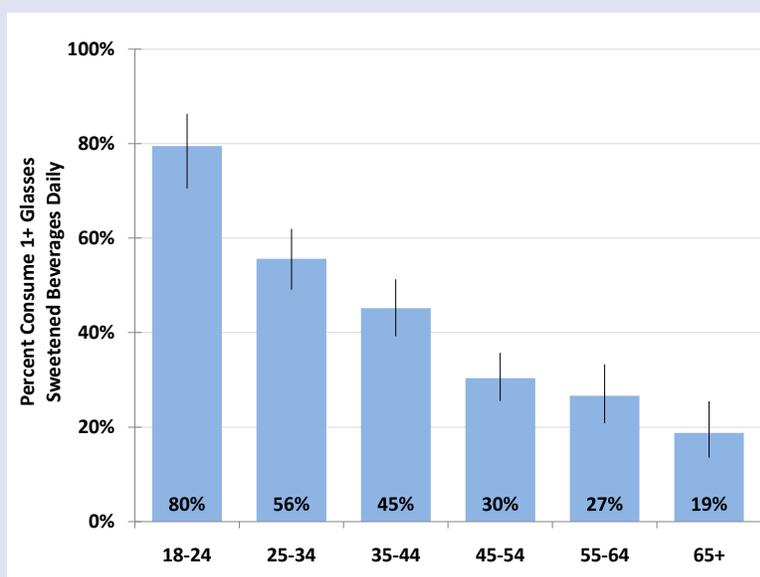
## Contributing Factors

**Figure 105. Prevalence of Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Race, Alaska Adults, 2005**



Source: AK BRFSS

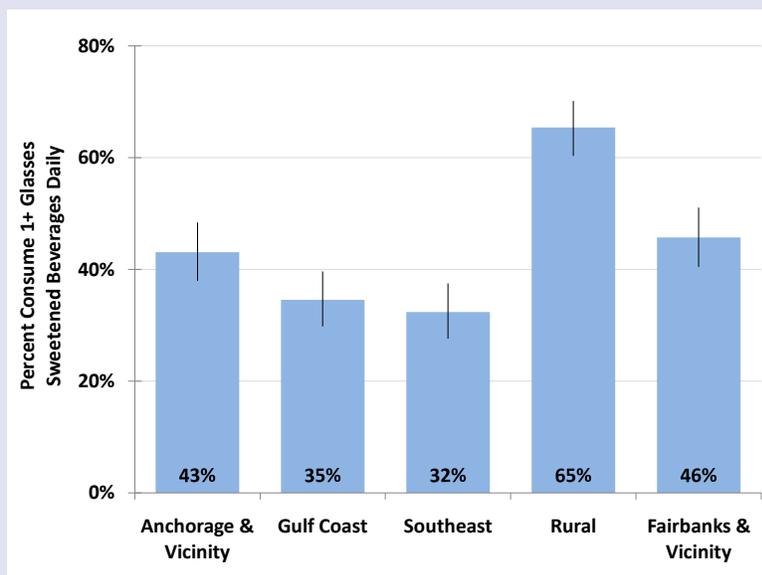
**Figure 106. Prevalence of Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Age, Alaska Adults, 2005**



Source: AK BRFSS

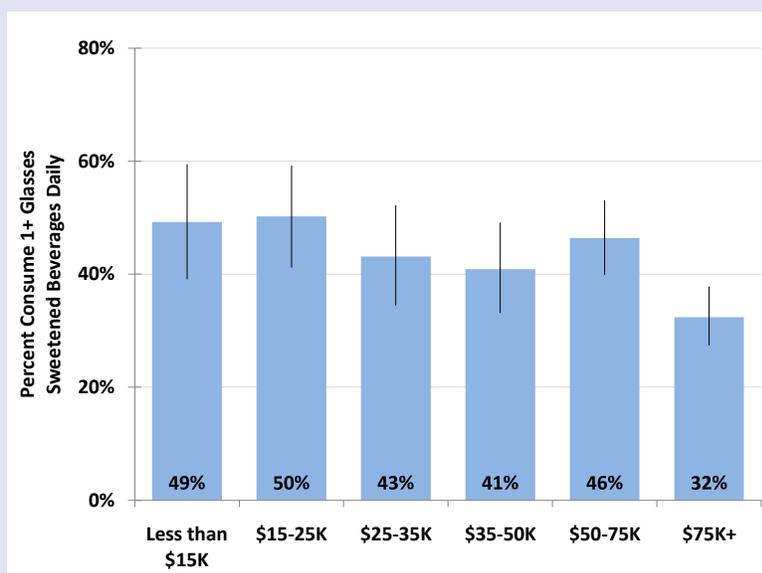
## Contributing Factors

**Figure 107. Prevalence of Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Region, Alaska Adults, 2005**



Source: AK BRFSS

**Figure 108. Prevalence of Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Income Level, Alaska Adults, 2005**

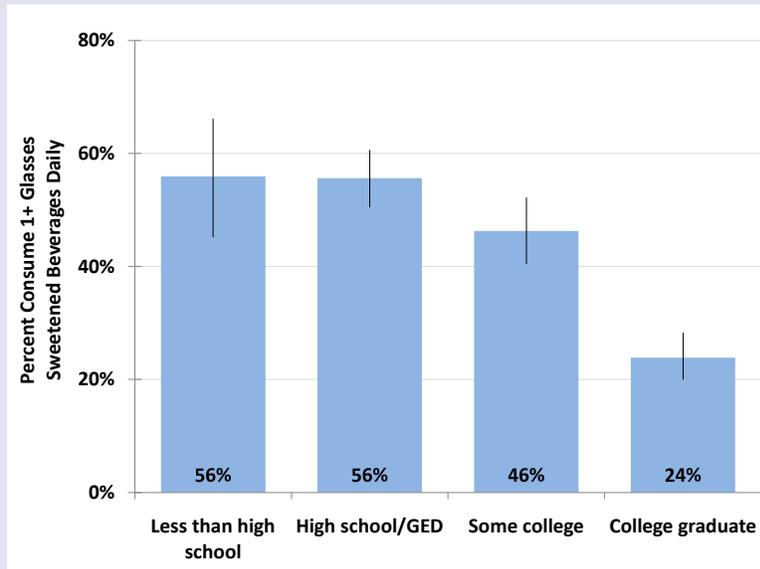


Source: AK BRFSS

Adults with household incomes of \$75,000 or more and those who graduated from college are among those with the lowest prevalence of daily sugar-sweetened beverage consumption.

## Contributing Factors

**Figure 109. Prevalence of Drinking 1 or More Cans/Glasses of Non-Diet, Sugar-Sweetened Beverages Daily, by Education Level, Alaska Adults, 2005**



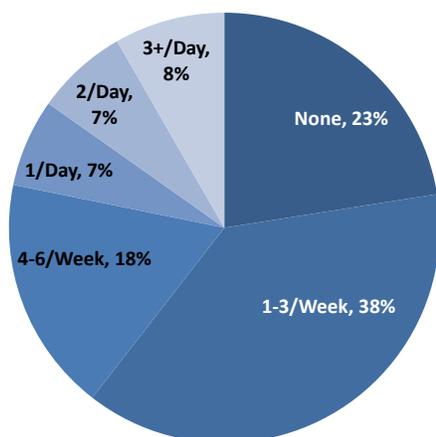
Source: AK BRFSS

## Contributing Factors

### Youth

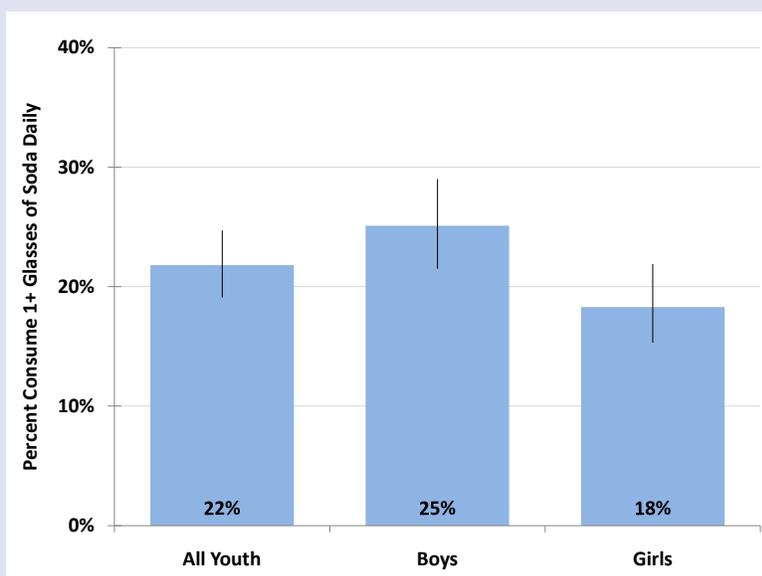
**Figure 110. Number of Cans/Glasses Consumed by Youth per day, Alaska 2007**

The 2007 YRBS included a question about consumption of soda, excluding diet soda. Those data show that more than 3 in 4 students (78%) had at least 1 soda in the previous week; 15% had 2 or more sodas every single day in the past week. It should be noted that these data underestimate the total amount of sugar-sweetened beverage consumption by youth as it excludes non-carbonated beverages (e.g., sports drinks, sweetened powdered drinks and sugar-sweetened fruit drinks) and other sweetened carbonated beverages (e.g., energy drinks and carbonated fruit drinks).



Source: AK YRBS

**Figure 111. Prevalence of Drinking 1 or More Cans/Glasses of Soda (Excluding Diet) Daily, by Sex, Alaska High School Youth, 2007**

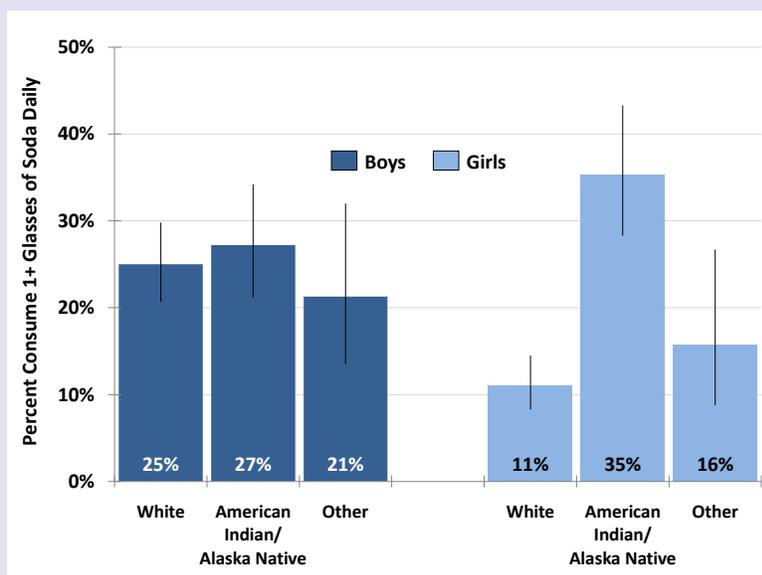


Source: AK YRBS

Boys are marginally more likely than girls to drink 1 or more sodas per day.

## Contributing Factors

**Figure 112. Prevalence of Drinking 1 or More Cans/Glasses of Soda (Excluding Diet) Daily, by Race and Sex, Alaska High School Youth, 2007**

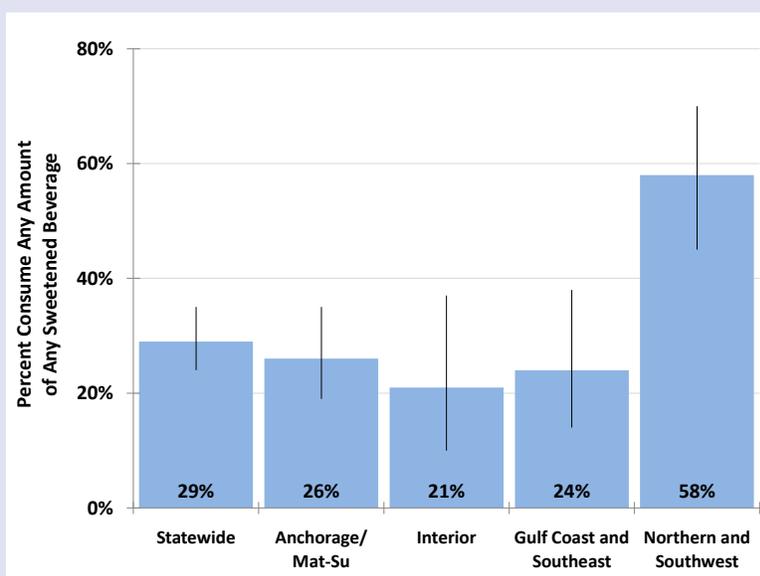


Source: AK YRBS

American Indian/Alaska Native girls are more than 3 times as likely as White girls to consume at least 1 soda daily; there is no significant difference among boys.

The CUBS also surveyed mothers of 2-year-olds about their child's consumption of soda. According to these mothers' reports, 15% of toddlers consumed 1 or more cups of soda or other sweetened beverages the day prior to the interview.

**Figure 113. Prevalence of Drinking Any Soda or Sweetened Beverages, by Region, Alaska 2-Year-Olds, 2006**



Source: AK CUBS

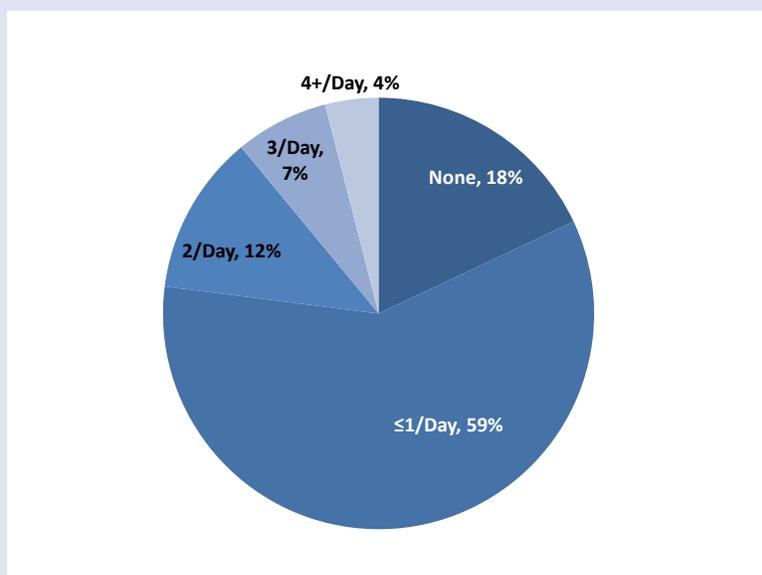
Prevalence of any soda consumption among toddlers is highest in the Northern and Southwest regions of Alaska, with over half (58%) of the 2-year-olds in those regions consuming some amount (versus none) of a sweetened beverage on an average day compared to 21%-26% of toddlers living in other regions of the state.

## Contributing Factors

### Milk Consumption

There is concern that sugar-sweetened beverages are replacing milk as the main beverage for children, thereby reducing their intake of important nutrients, such as calcium, vitamin A and vitamin D.<sup>36</sup> Some evidence suggests that lower intakes of dairy products and/or calcium are associated with obesity in children.<sup>37</sup>

**Figure 114. Number of Glasses of Milk Consumed in Past Week, Alaska High School Youth, 2007**

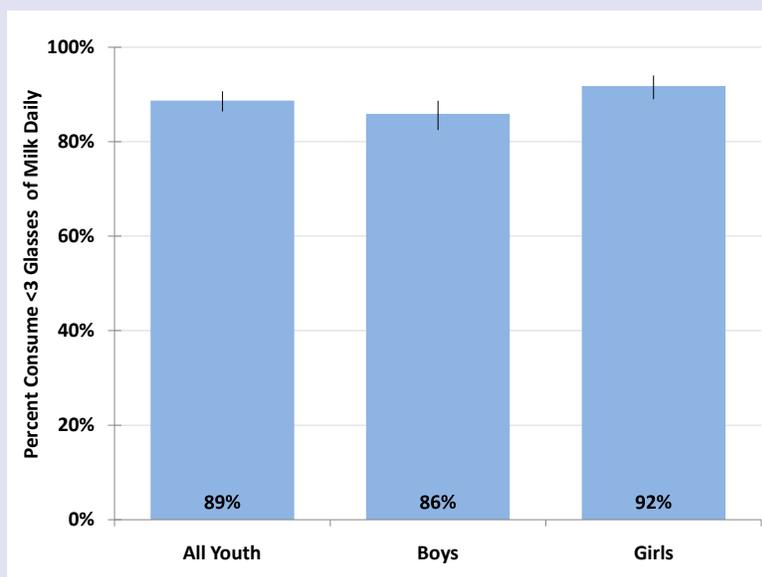


According to the 2003 and 2007 YRBS, reported levels of milk consumption have remained stable over that 5-year time period (data not shown). In 2007, 18% of students report that they have not consumed any milk in the past week; the overwhelming majority (89%) report drinking fewer than the 3 or more glasses per day that would allow them to meet the recommended 3 daily servings of dairy.

Source: AK YRBS

## Contributing Factors

**Figure 115. Prevalence of Drinking Fewer Than 3 Glasses of Milk Daily, by Sex, Alaska High School Youth, 2007**

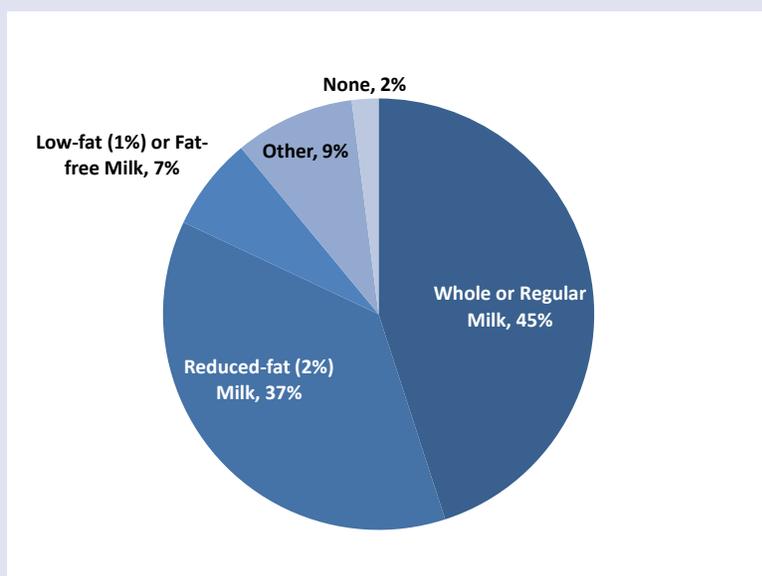


Source: AK YRBS

Girls are more likely than boys to drink fewer than 3 glasses of milk a day; milk consumption does not vary by grade level or race.

The CUBS survey includes questions that assess milk consumption among 2-year-olds. The *Dietary Guidelines for Americans, 2005* recommends 2 cups of fat-free or low-fat (1%) milk, or equivalent milk products, every day for children ages 2 to 8.<sup>34</sup> Fat-free or low-fat milk is recommended to reduce calorie and saturated fat intake.

**Figure 116. Usual Type of Milk Consumed, Alaska 2-Year-Olds, 2006**



Source: AK CUBS

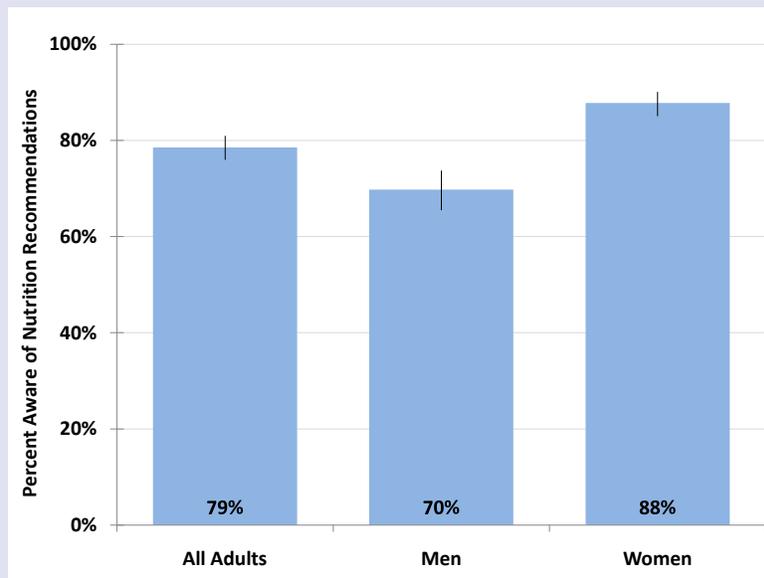
According to the CUBS survey, 80% of Alaska toddlers drink 2 or more cups of milk daily; however, only usually 7% drink fat-free or low-fat milk and 45% drink whole milk.

## Contributing Factors

### Nutrition Knowledge - Adults

One reason that so many people fail to meet nutrition recommendations may be that they are unaware of those recommendations. To examine this, we included a question on the 2005 BRFSS regarding recommendation awareness.

**Figure 117. Prevalence of Being Aware of Nutrition Recommendations, by Sex, Alaska Adults, 2005**

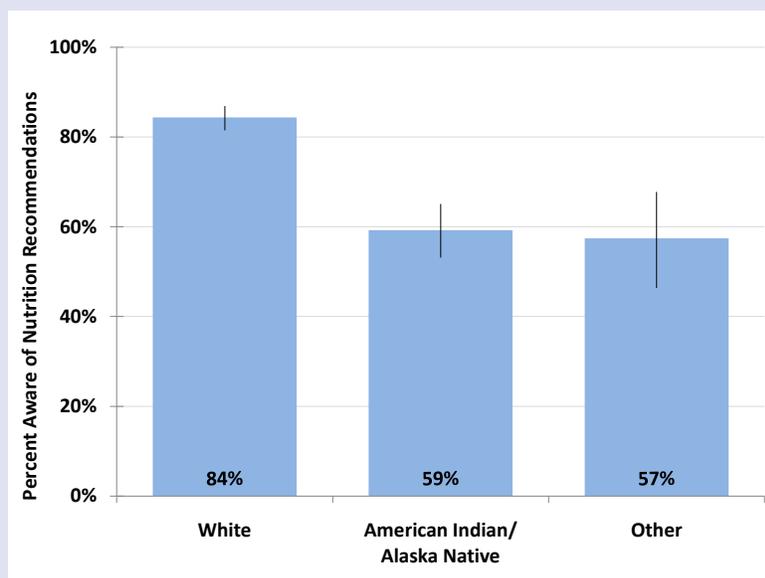


Source: AK BRFSS

Nearly 80% of adults say that they are aware of recommendations, with women significantly more likely than men to report awareness.

## Contributing Factors

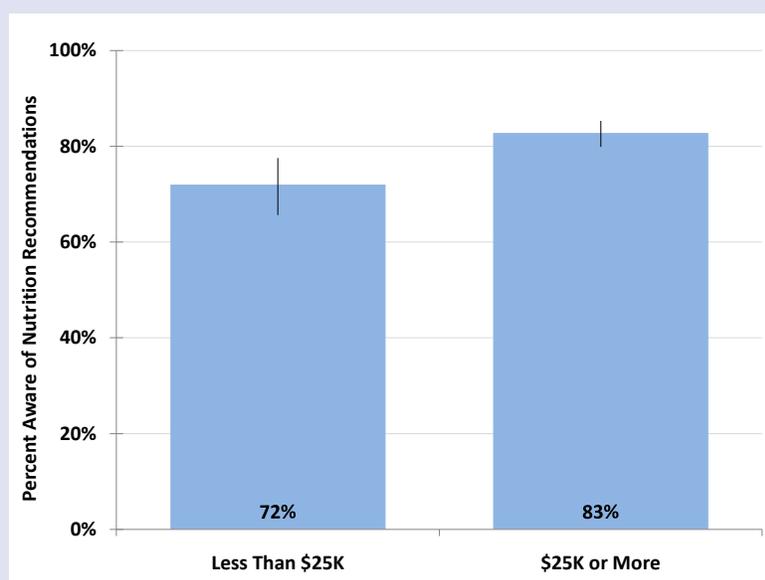
**Figure 118. Prevalence of Being Aware of Nutrition Recommendations, by Race, Alaska Adults, 2005**



Source: AK BRFSS

White adults are significantly more likely to report awareness of nutrition recommendations than adults of other racial and ethnic groups.

**Figure 119. Prevalence of Being Aware of Nutrition Recommendations, by Income Level, Alaska Adults, 2005**

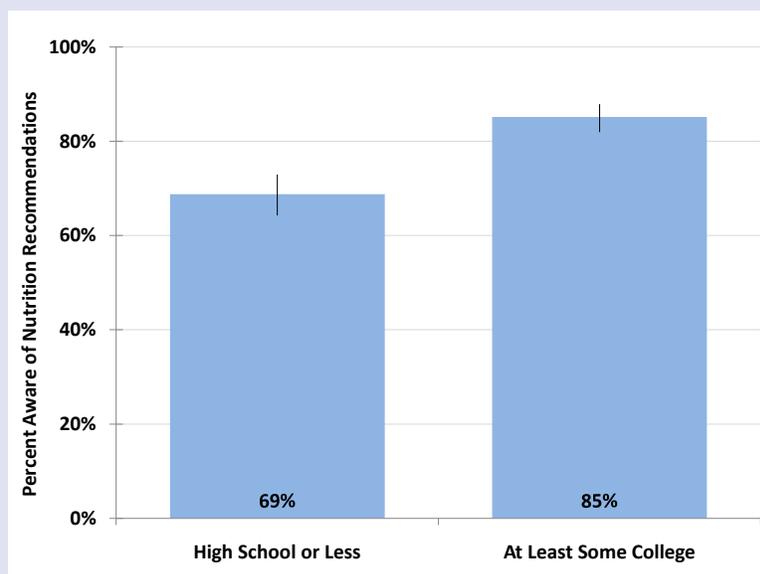


Source: AK BRFSS

Adults with household incomes of \$25,000 or more per year are significantly more likely to report awareness of nutrition recommendations than those making less than that amount.

## Contributing Factors

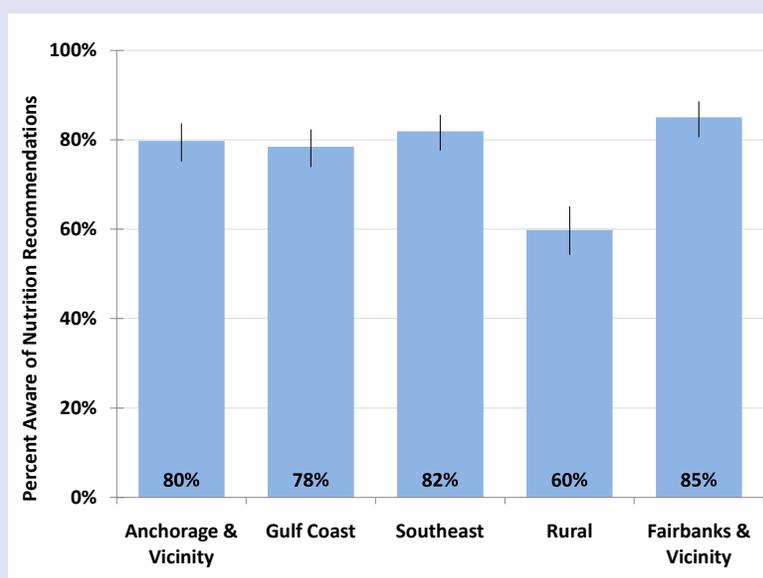
**Figure 120. Prevalence of Being Aware of Nutrition Recommendations, by Education Level, Alaska Adults, 2005**



Source: AK BRFSS

Adults who have completed at least some college are also significantly more likely to report awareness of nutrition recommendations than those with a high school education or less.

**Figure 121. Prevalence of Being Aware of Nutrition Recommendations, by Region, Alaska Adults, 2005**

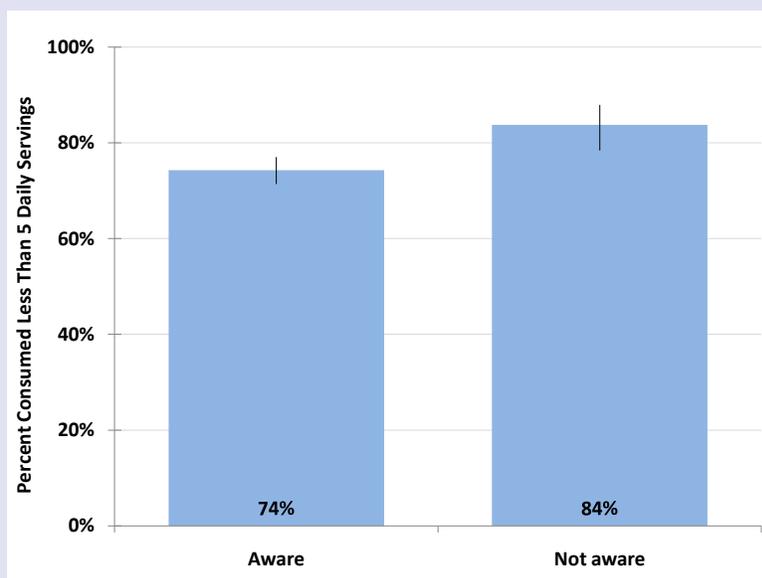


Source: AK BRFSS

Adults in rural Alaska are significantly less likely to report awareness of nutrition recommendations than adults in other regions of the state.

## Contributing Factors

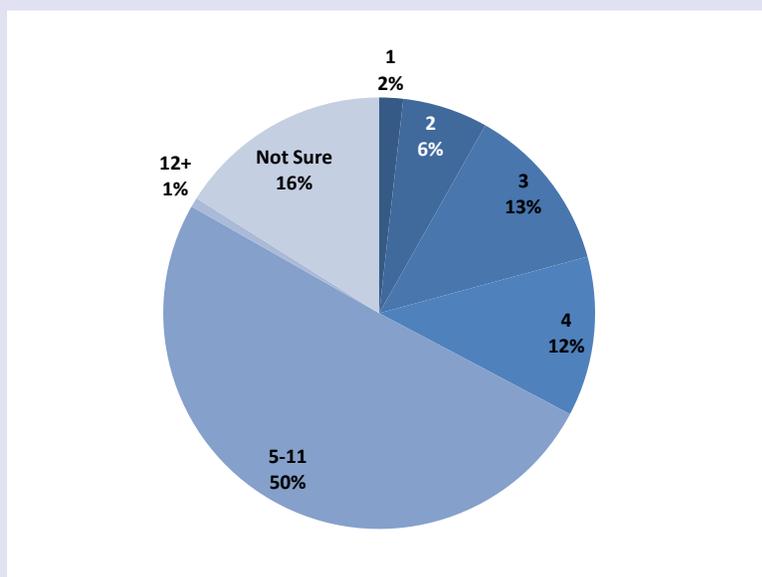
**Figure 122. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Awareness of Nutrition Recommendations, Alaska Adults, 2005**



Source: AK BRFSS

Adults who are not aware of nutrition recommendations are significantly more likely than those who are aware of them to fail to meet recommended fruit and vegetable consumption levels.

**Figure 123. Perceived Level of Fruit and Vegetable Consumption Needed to Meet Recommendations, Alaska Adults, 2005**



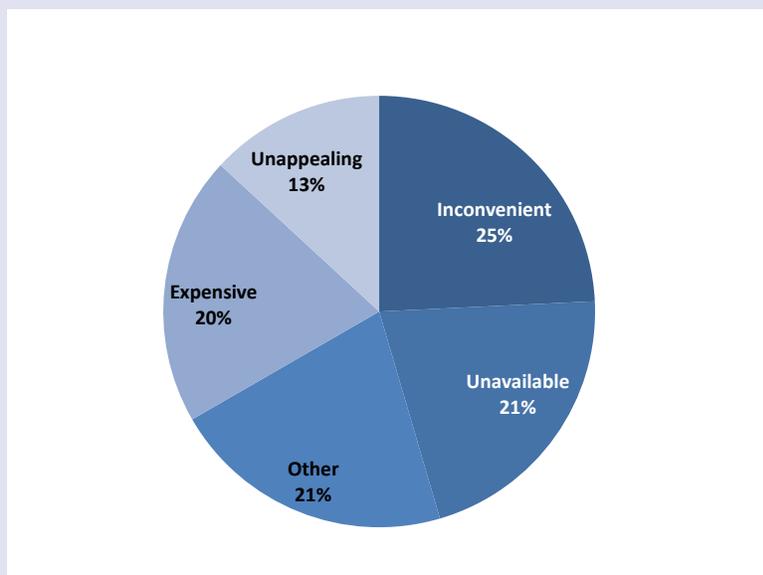
Source: AK BRFSS

When adults who report being aware of nutrition recommendations are asked how many servings of fruits and vegetables should be consumed each day, half of them correctly report that 5 or more servings are recommended.

## Contributing Factors

The 2005 BRFSS also asked adults to identify issues that keep them from eating more fruits and vegetables. Over one-fifth (22%) say that they eat enough fruits and vegetables already.

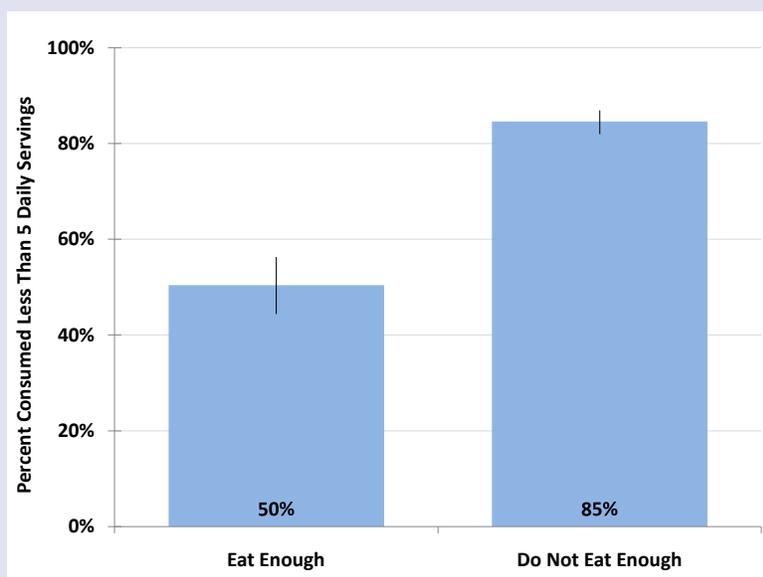
**Figure 124. Main Reason Do Not Eat More Fruits and Vegetables, Alaska Adults\*, 2005**



Of those who responded with a reason for not eating fruits and vegetables, many Alaska adults cited either inconvenience in obtaining or preparing fruits and vegetables (25%), lack of availability (21%), or cost (20%) as their main reason.

*Source: AK BRFSS; \*Excluding those who say they already eat enough fruits and vegetables. Percentages may not sum to 100% due to rounding.*

**Figure 125. Prevalence of Consuming Less Than 5 Daily Servings of Fruits and Vegetables, by Belief that “I do/do not eat enough already”, Alaska Adults, 2005**



Adults who report that they believe they eat enough fruits and vegetables already are less likely to fail to meet the nutrition recommendations (50%; according to their self-reported daily fruit and vegetable consumption) compared to their peers (85%).

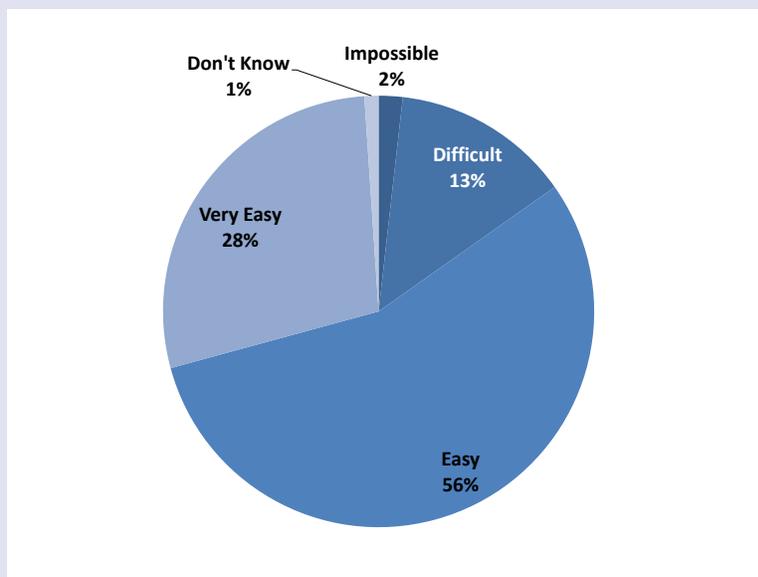
*Source: AK BRFSS*

## Contributing Factors

### Nutrition Environment

Lack of access to local grocery stores and full-services restaurants (as opposed to fast-food restaurants) contributes to poor dietary patterns and obesity. Disparities in food access are greatest in lower income, minority, urbanized neighborhoods, as well as less populated rural areas.<sup>38</sup> The BRFSS includes a series of questions asking adults to rate how easy or difficult it is to obtain healthy food in various places within their communities.

**Figure 126. Ratings of Access to Healthy Food in Local Stores, Alaska Adults, 2005**

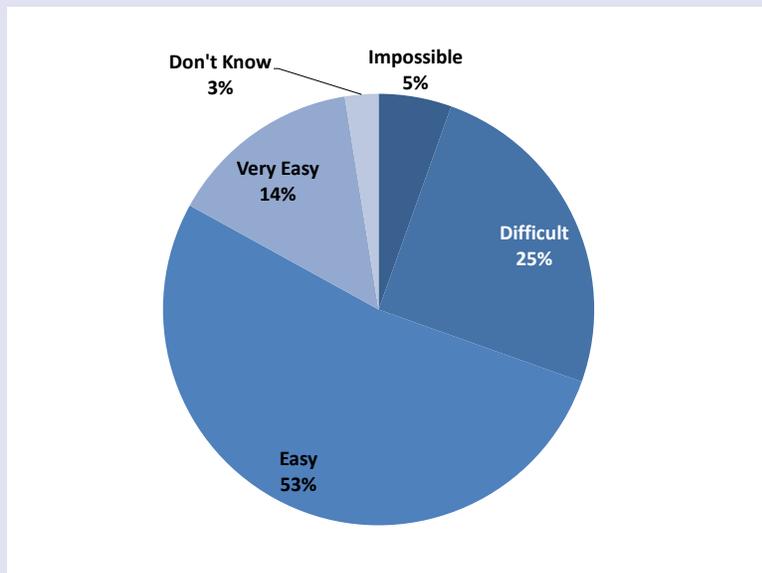


Source: AK BRFSS

Over 80% report that it is easy to obtain healthy foods in local grocery stores, while only 13% say that it is difficult to find healthy foods in their local stores.

## Contributing Factors

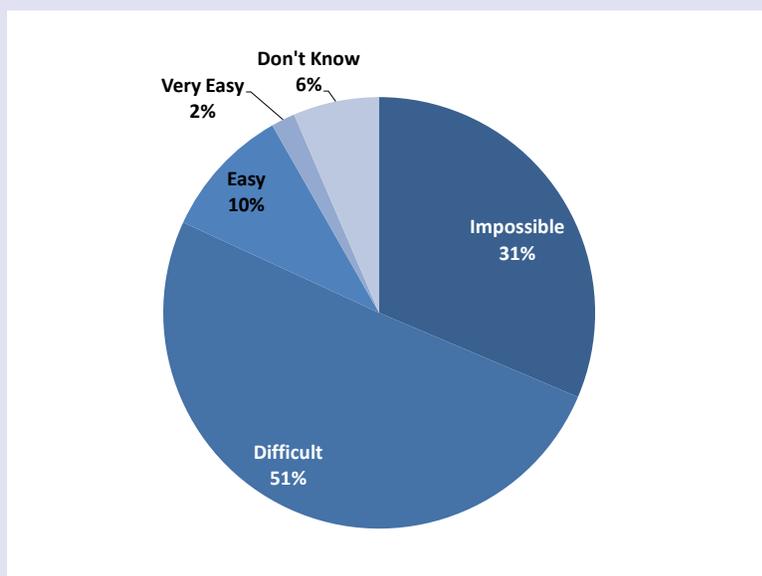
**Figure 127. Ratings of Access to Healthy Food in Local Restaurants, Alaska Adults, 2005**



Source: AK BRFSS

Adults are less likely to report that healthy food is easy to access in local restaurants, however. Nearly one-third (30%) say that it is difficult or impossible to access healthy food in local restaurants.

**Figure 128. Ratings of Access to Healthy Food in Local Vending Machines, Alaska Adults, 2005**



Source: AK BRFSS

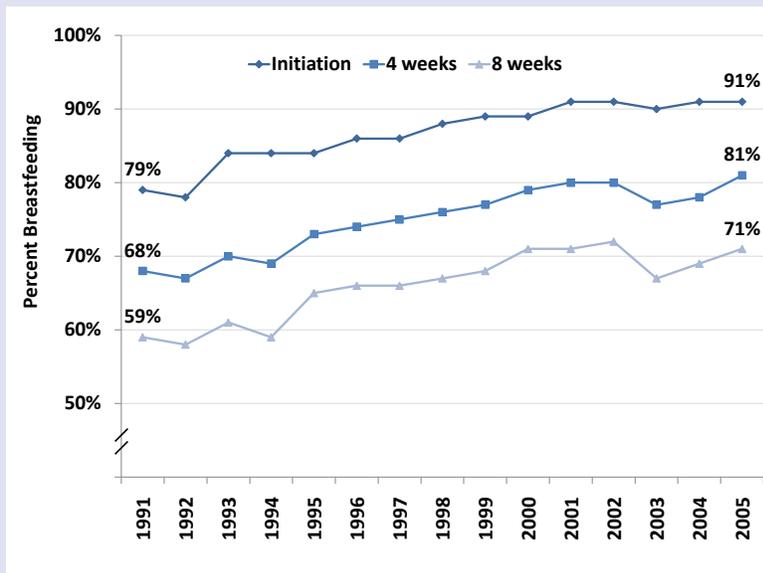
Access to healthy food in vending machines is even more challenging, with over 80% of adults reporting that it is difficult or impossible to access healthy food in vending machines.

## Contributing Factors

### Breastfeeding

Breastfeeding has many documented benefits for mothers and babies, including evidence to suggest that any breastfeeding and breastfeeding for longer durations may protect against obesity in childhood.<sup>39</sup> The American Academy of Pediatrics recommends breastfeeding for obesity prevention.<sup>40</sup> Alaska currently has higher breastfeeding initiation and duration rates than the nation.<sup>41</sup> The Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing population-based survey that collects self-reported information on maternal attitudes and experiences before, during, and after delivery of a liveborn infant.<sup>42</sup>

**Figure 129. Trends in Breastfeeding Initiation, at 4 Weeks Postpartum and at 8 Weeks Postpartum, Women Delivering in Alaska, 1991-2005**

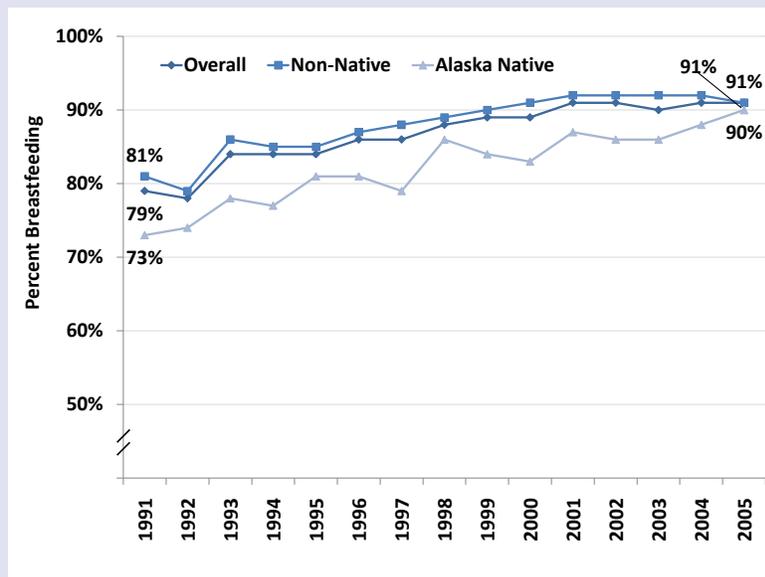


Source: AK PRAMS

PRAMS data from 1991 through 2005 show increases in the prevalences of breastfeeding initiation and duration.

## Contributing Factors

**Figure 130. Trends in Breastfeeding Initiation by Race, Women Delivering in Alaska, 1991-2005**



Source: AK PRAMS

Non-Native mothers have traditionally been significantly more likely than American Indian/Alaska Native mothers to initiate and continue to breastfeed. In recent years this disparity has diminished, and during 2005 there was no racial disparity in the prevalence of women who initiated breastfeeding.

## Strategies to Reduce Obesity

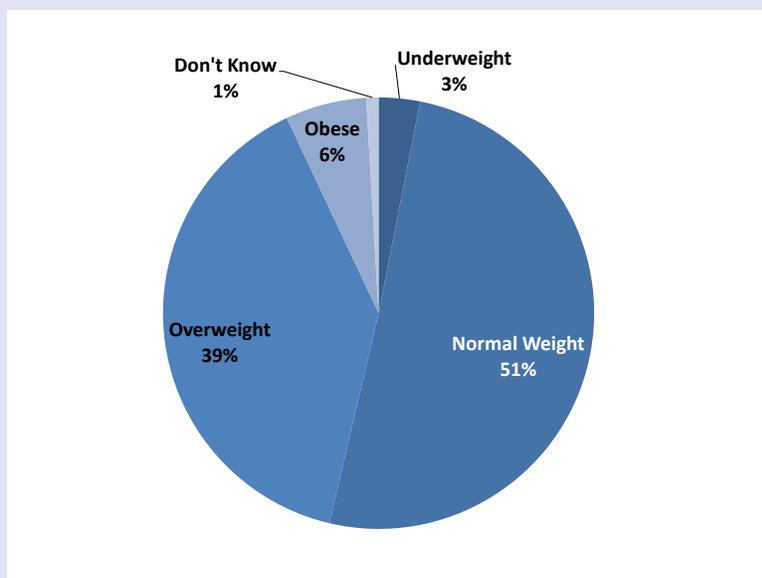
The epidemic of obesity in Alaska must be addressed. When asked to name the number one health issue facing Alaskans today, obesity was the number one response (26% of Alaska adults; 2005 BRFSS). When responses for lack of exercise and poor diet are added in, that figure increases to 40%.

As noted by the Surgeon General, the Institute of Medicine, and other prominent health and science organizations, reducing obesity will require action on the part of individuals, organizations, and policy-makers in a wide variety of settings.<sup>1,31</sup> *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* states that “successful efforts [to prevent overweight and obesity], must focus not only on individual behavioral change, but also on group influences, institutional and community influences, and public policy.”<sup>1</sup> The BRFSS and YRBS collect information on what individuals are doing to manage their own weight, and also on support for more broad-based strategies.

### Individual Strategies: Weight Management

#### Adults

Figure 131. Perceived Weight Status, Alaska Adults, 2007

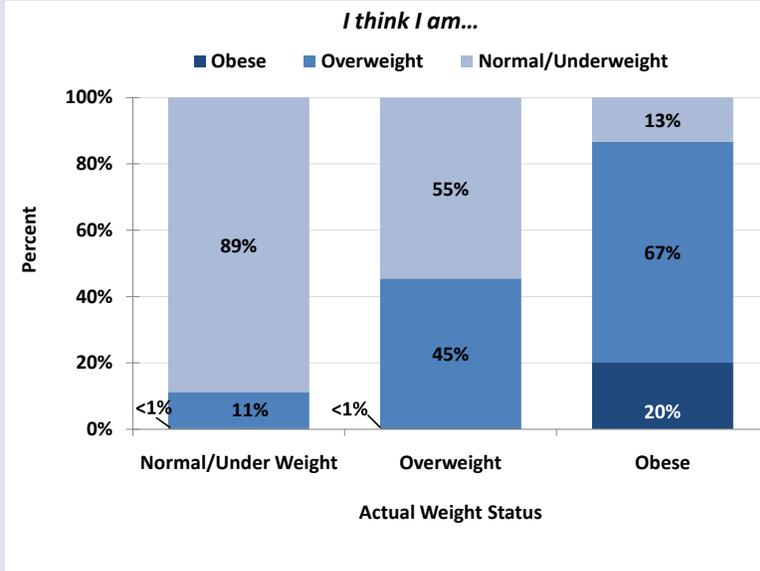


Source: AK BRFSS

On the 2007 BRFSS, adults were asked to report their perceptions of their own weight. Just over half of adults in Alaska (51%) believe they are of a normal weight—neither under nor overweight. Forty-five percent say they are overweight or obese.

## Strategies to Reduce Obesity

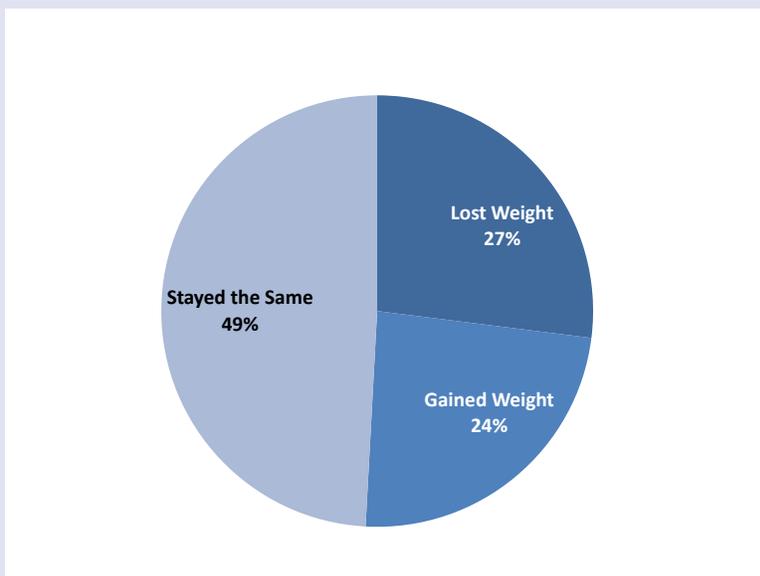
**Figure 132. Perceived Weight Status, By Actual Weight Status, Alaska Adults, 2005**



Source: AK BRFSS

Although perceived weight and actual weight status based on self-reported height and weight are associated, this association is not perfect. The vast majority of Alaskans (89%) whose BMI puts them in the “normal or underweight” category view themselves as normal or underweight. In contrast, only 20% of Alaskans classified as “obese” based on their BMI report that they consider themselves obese.

**Figure 133. Weight Change from Last Year, Alaska Adults, 2007**

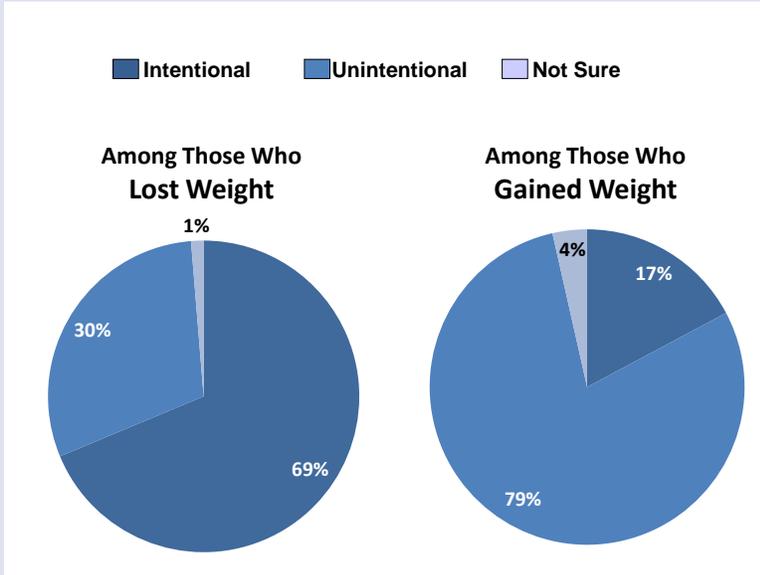


Source: AK BRFSS

About half of Alaska adults (49%) report that their weight is unchanged from one year ago; the remainder is evenly split between those who report having lost or gained weight in the past year.

## Strategies to Reduce Obesity

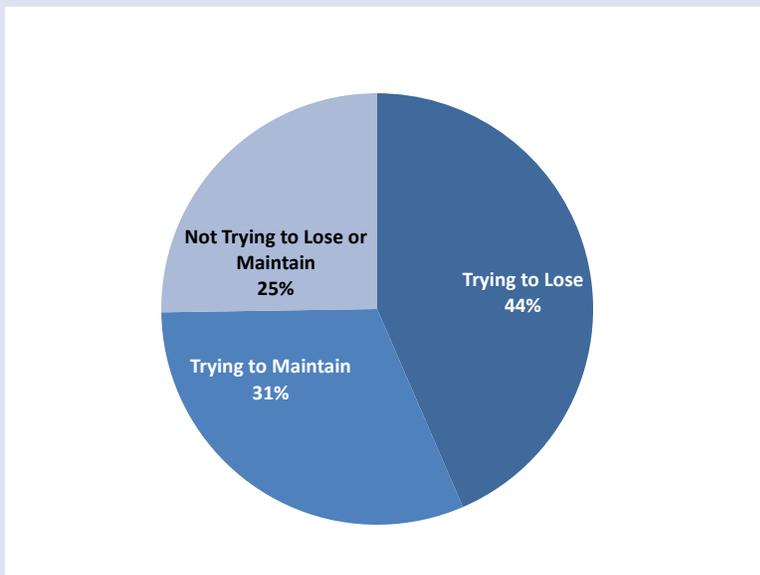
**Figure 134. Intentionality of Weight Change from Last Year, by Direction of Change, Alaska Adults, 2007**



Source: AK BRFSS

Just over two-thirds of those who say they lost weight in the past year report doing so intentionally; in contrast only 17% of those who gained weight said this weight change had been intended.

**Figure 135. Weight Management Efforts, Alaska Adults, 2003 & 2007 (combined)**

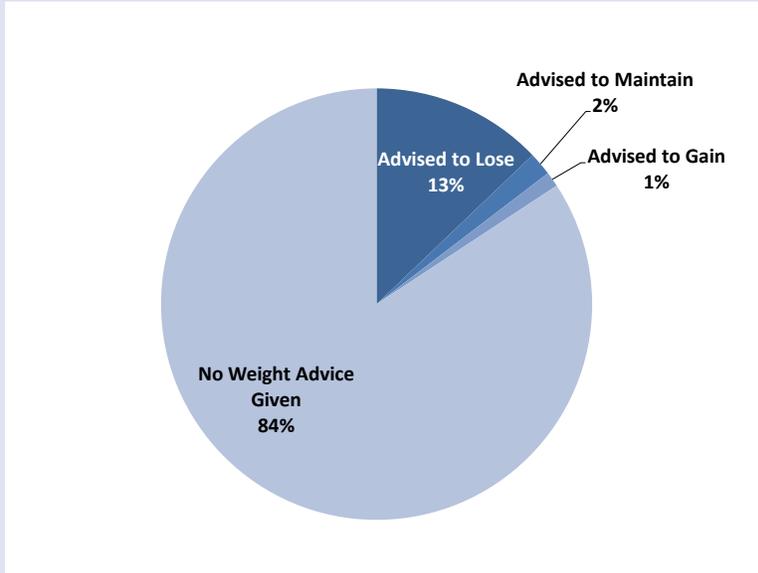


Source: AK BRFSS

In 2003 and 2007 combined, three-quarters of Alaska adults were trying to either lose weight or maintain their current weight.

## Strategies to Reduce Obesity

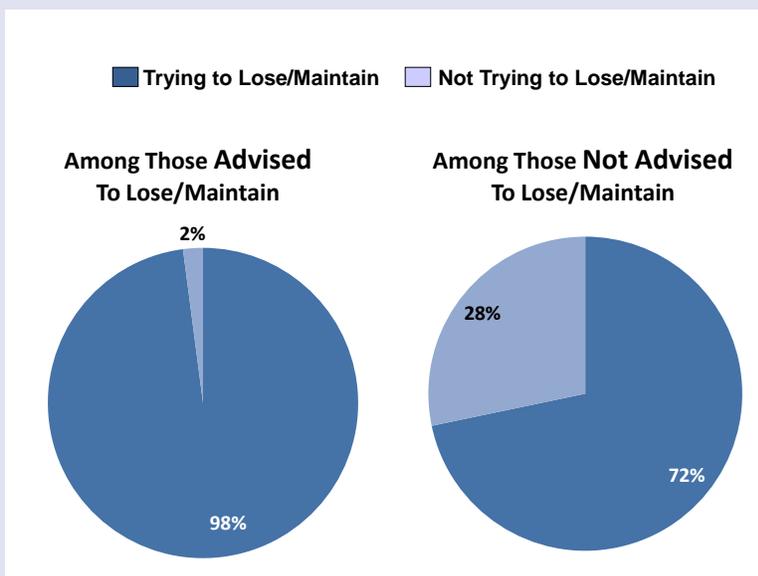
**Figure 136. Health Professional Advice in Past 12 Months Regarding Weight, Alaska Adults, 2003 & 2007 (combined)**



Source: AK BRFSS

Only 15% of Alaska adults report that a health care provider advised them to lose or maintain their weight during the past 12 months.

**Figure 137. Weight Management Efforts, by Health Professional Advice, Alaska Adults, 2003 & 2007 (combined)**

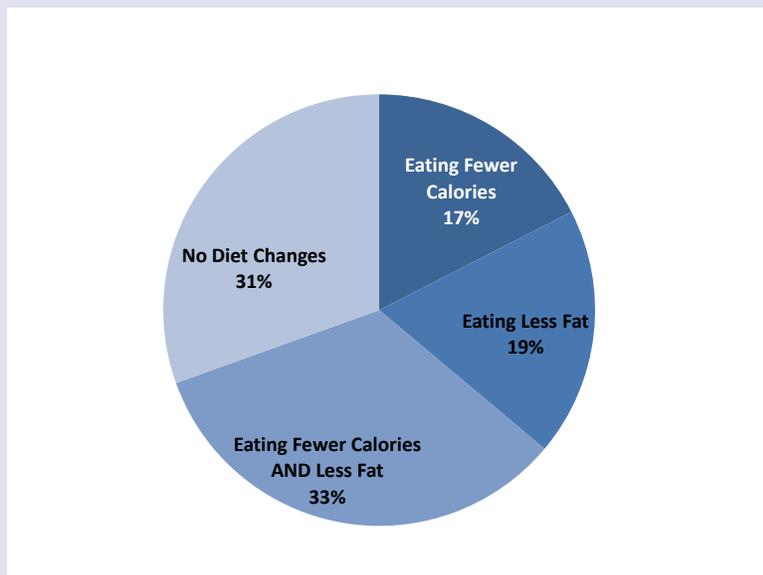


Source: AK BRFSS

Those who reported receiving such advice were much more likely than those who did not to report trying to lose or maintain their weight.

## Strategies to Reduce Obesity

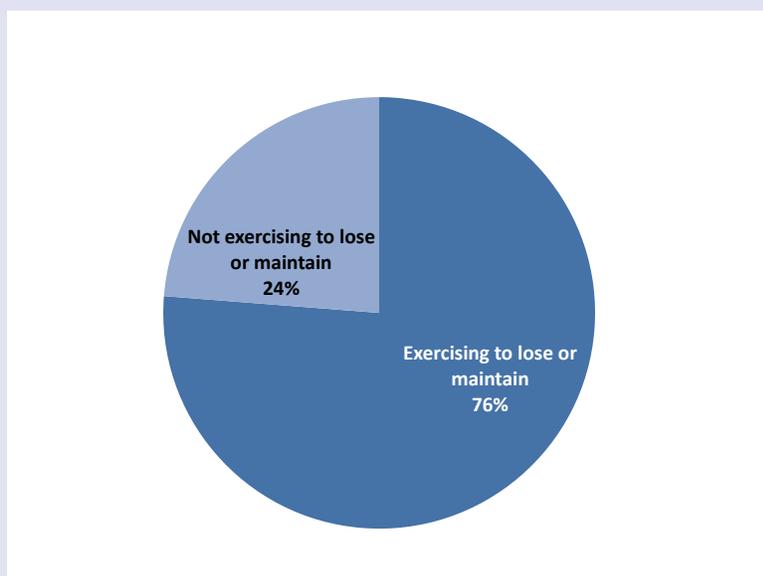
**Figure 138. Use of Diet-Related Weight Management Strategies, Alaska Adults Trying to Lose or Maintain Their Weight, 2003 & 2007 (combined)**



Source: AK BRFSS

Adult Alaskans report using a variety of strategies to either lose or maintain their weight. Among Alaska adults who say they are trying to either lose weight or maintain their current weight, more than two-thirds say they are doing so, at least in part, through changes to their diet.

**Figure 139. Use of Exercise as a Weight Management Strategy, Alaska Adults Trying to Lose or Maintain Their Weight, 2003 & 2007 (combined)**



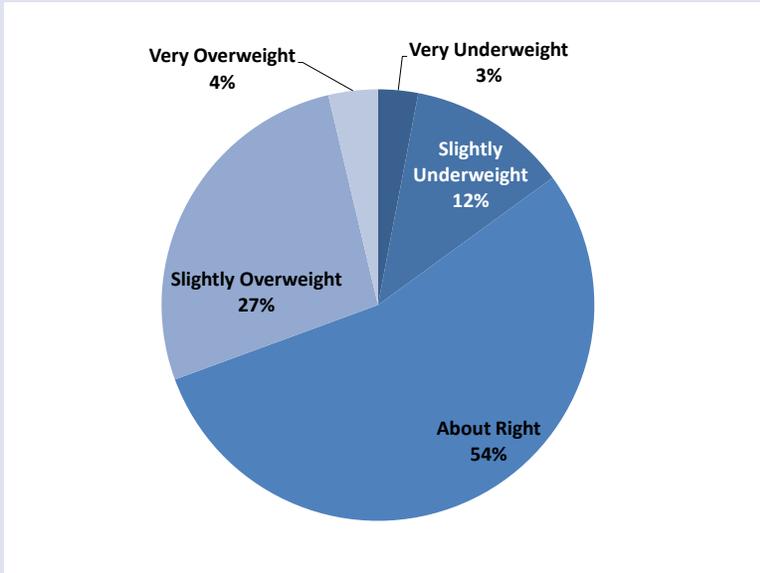
Source: AK BRFSS

Three-quarters of adults report increasing their level of physical activity as a way to lose or maintain weight.

# Strategies to Reduce Obesity

## High School Youth

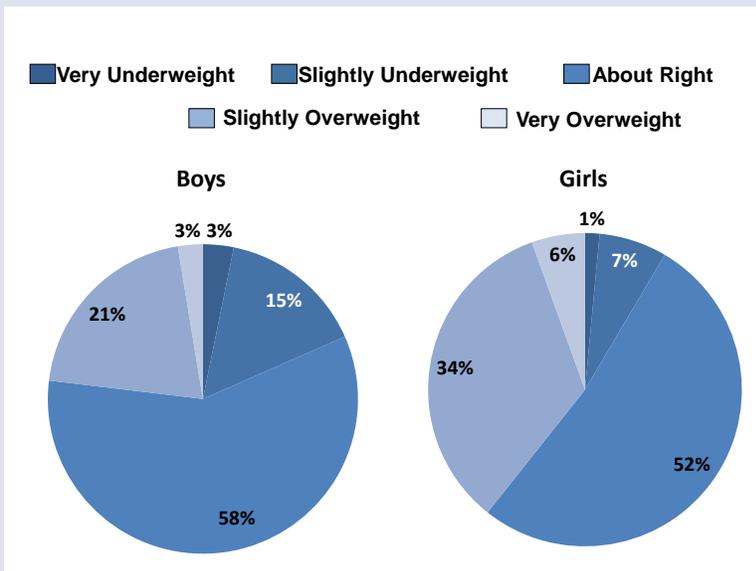
**Figure 140. Perceived Weight Status, Alaska High School Youth, 2007**



Source: AK YRBS

In the 2007 YRBS, high school students were asked to report their perceptions of their own weight status. Just over half (54%) believe their weight is “about right”; over one-quarter (27%) believe they are “slightly overweight” and an additional 4% say they are “very overweight”.

**Figure 141. Perceived Weight Status, by Sex, Alaska High School Youth, 2007**

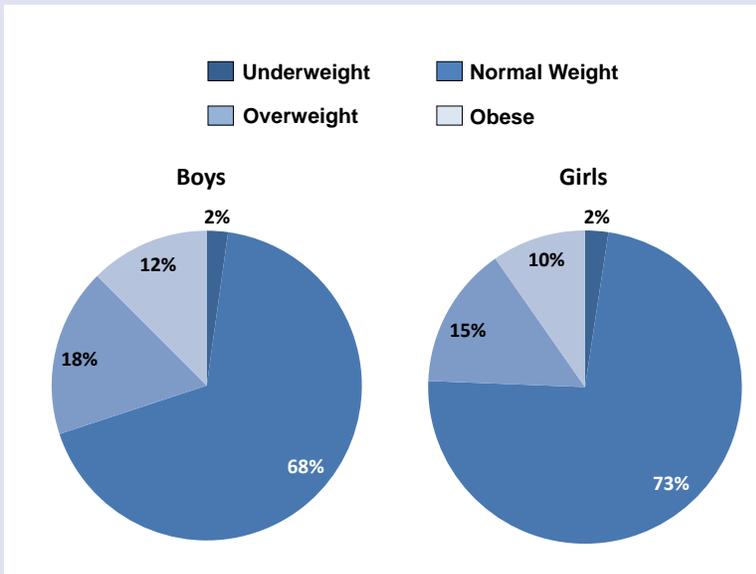


Source: AK YRBS

As might be expected, girls are less likely than boys to view themselves as either “underweight” or “about right”, and more likely than boys to view themselves as “overweight”.

## Strategies to Reduce Obesity

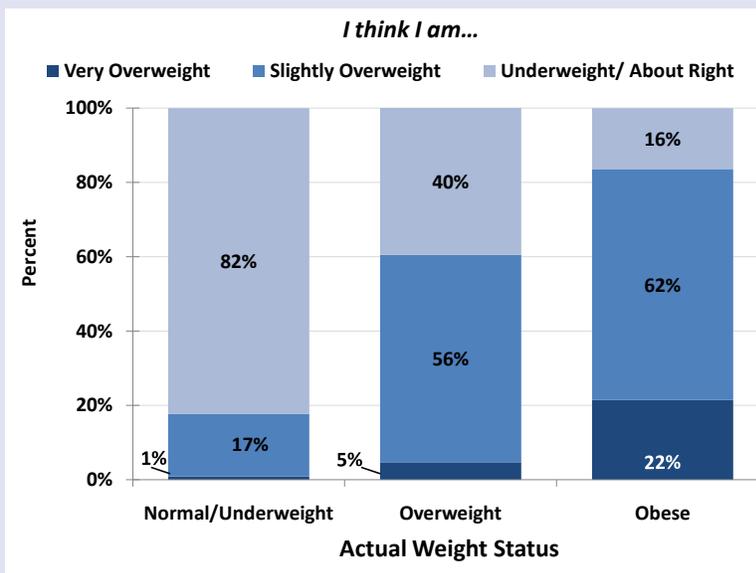
**Figure 142. Weight Status, by Sex, Alaska High School Youth, 2007**



Source: AK YRBS

For comparison, note that the sex differences in actual weight status (albeit based on self-report) are relatively minor.

**Figure 143. Perceived Weight Status, By Actual Weight Status, Alaska High School Youth, 2003 & 2007 (combined)**

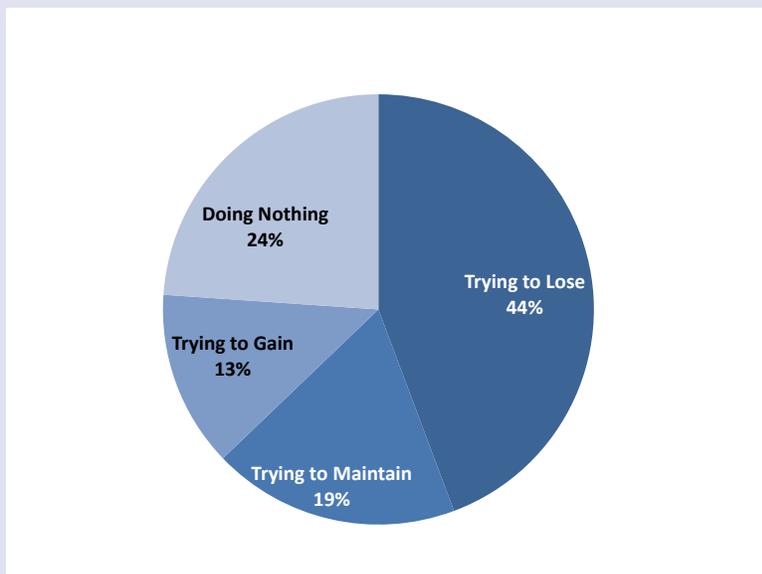


Source: AK YRBS

Although perceived and actual weight status are not identical, they are associated. As Figure 143 shows, the majority (66%) of normal weight youth view themselves as being “about right” in terms of weight; conversely, the majority (84%) of obese youth identify themselves as being either “slightly” or “very overweight”. Small numbers preclude an analysis by sex.

## Strategies to Reduce Obesity

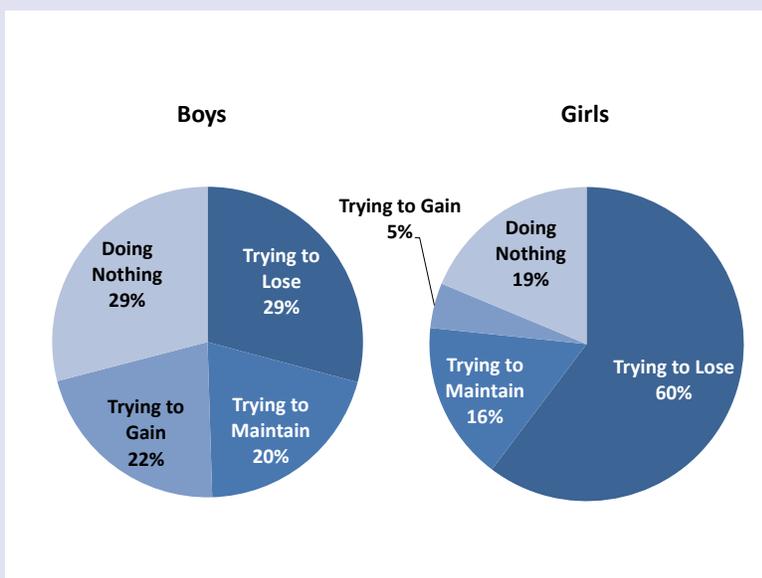
**Figure 144. Weight Management Efforts, Alaska High School Youth, 2007**



Source: AK YRBS

Over half of Alaska high school students (63%) say they are trying to either lose or maintain their weight.

**Figure 145. Weight Management Efforts, by Sex, Alaska High School Youth, 2007**

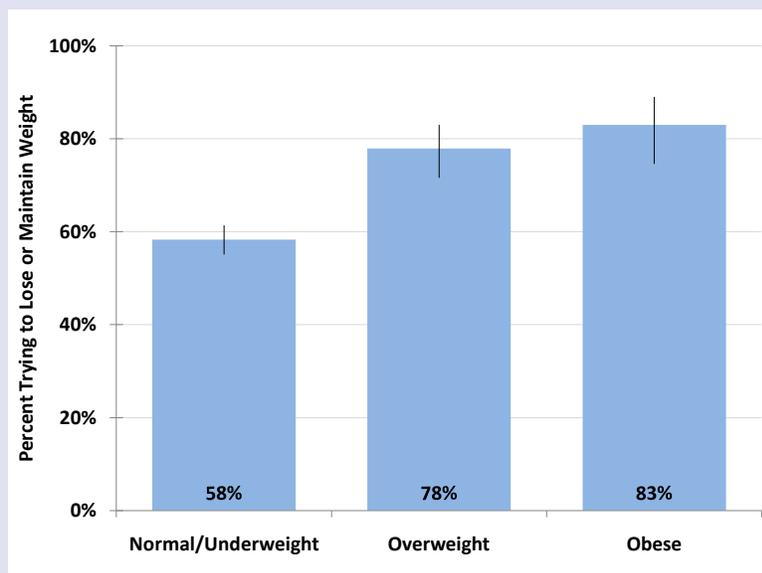


Source: AK YRBS

Girls are twice as likely as boys to report trying to lose weight (60% and 29%, respectively), and boys are 4 times as likely as girls to report trying to gain weight.

## Strategies to Reduce Obesity

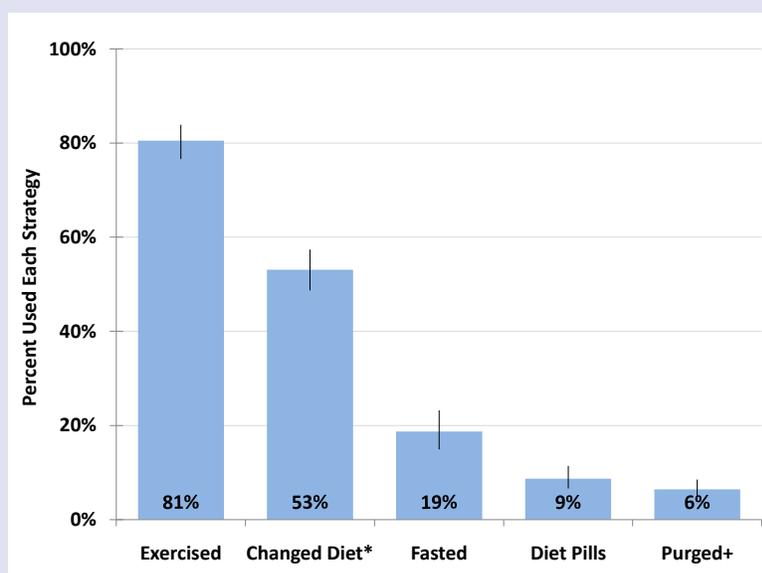
**Figure 146. Prevalence of Trying to Lose or Maintain Weight, by Weight Class, Alaska High School Youth, 2007**



Source: AK YRBS

Prevalence of trying to lose or maintain weight is unrelated to race or grade level, but is associated with weight status. Overweight and obese youth are significantly more likely to report trying to lose or maintain their weight than youth in the normal weight category.

**Figure 147. Prevalence of Various Weight Management Strategies Used in the Past 30 Days, Alaska High School Youth Reporting Trying to Lose or Maintain their Weight, 2007**



Source: AK YRBS; \*ate less food or food lower in calories or fat; +vomited or used laxatives

Alaska's high school students are significantly more likely to use exercise to manage their weight than any other strategy, including dietary changes. Unhealthy weight loss strategies are not as common as exercise or positive dietary changes, but some students report using behaviors symptomatic of eating disorders to manage their weight.

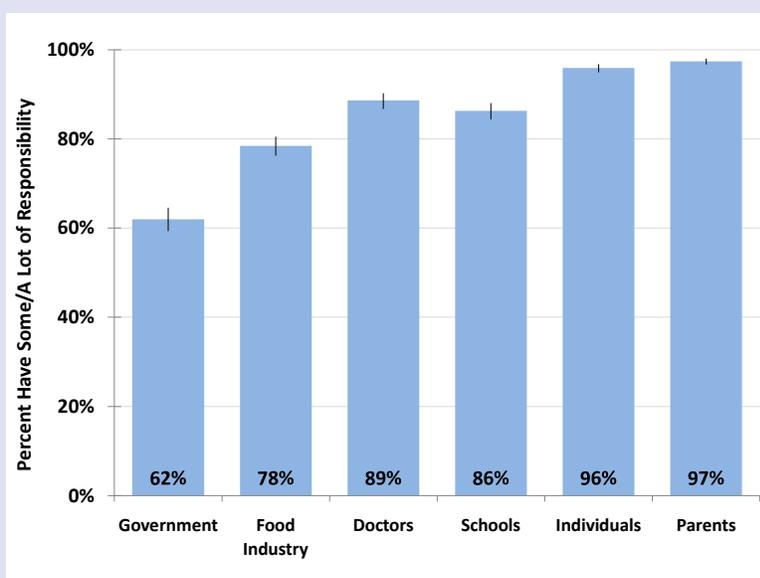
## Strategies to Reduce Obesity

### Policy and Systems Strategies

Numerous organizations and individuals will need to play a role in addressing obesity, and a series of BRFSS questions asks adults to identify how much responsibility they believe various segments of society have for addressing obesity in the United States.

**Figure 148. Percentage Who Believe Each Source Has Some or A Lot of Responsibility for Addressing Obesity in the US, Alaska Adults, 2005**

Obesity and weight management are commonly portrayed as issues to be dealt with by

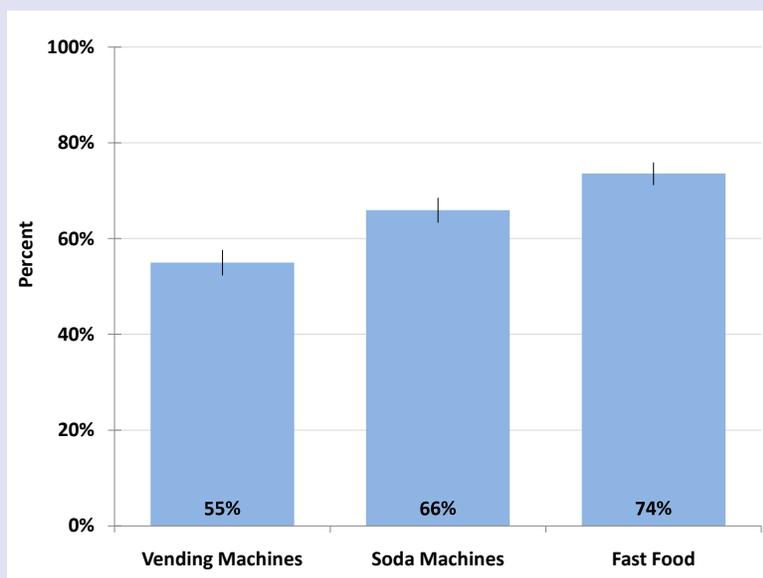


Source: AK BRFSS

individuals<sup>1</sup>, and that perception is common in Alaska as well, with over 90% of adults stating that parents and individuals have some or a lot of responsibility for addressing obesity. Recognition that other entities have a role to play in addressing obesity is also high, however, with well over half of adults reporting that government, the food industry, doctors, and schools had some or a lot of responsibility for addressing obesity.

## Strategies to Reduce Obesity

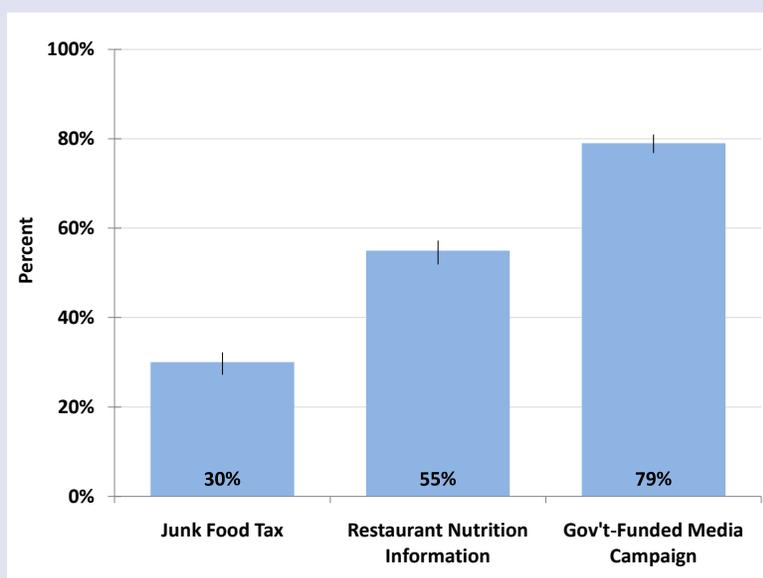
**Figure 149. Percentage Who Say Vending Machines, Soda Machines, and Fast Food Should Not Be Allowed in Schools, Alaska Adults, 2005**



Source: AK BRFSS

As far as support for specific strategies, a majority of Alaskans support school policies that would limit the availability of unhealthy foods in schools.

**Figure 150. Percentage Who Support or Strongly Support Each Policy, Alaska Adults, 2005**



Source: AK BRFSS

In addition, 79% of Alaska adults support or strongly support a government-funded obesity prevention media campaign, and 55% support a law requiring restaurants to include nutrition information on their menus.

## Recommendations

In Alaska overall, 1 in 3 adults is obese and more than 1 in 4 adolescents is above a normal weight; however, not every Alaskan is equally likely to be obese or to engage in obesity-related risk behaviors. The information presented in this report reveals disparities related to sex, age, region, race, and socioeconomic status. The high and increasing rate of obesity in Alaska, coupled with alarming data on disparities, calls for a comprehensive obesity prevention approach containing both population-wide and more targeted components.

Obesity is a public health problem. To address it effectively, local and statewide public and private partners must collaboratively implement public health strategies, such as:

- Monitor the status of obesity through data collection and community health assessments. Identify populations who are the most at-risk for developing obesity.
  - Direct resources to increase qualitative and quantitative data collection, interpretation and evaluation of obesity and obesity risk behaviors in disparate populations, and for those population subgroups (i.e., school-aged children) for whom representative data are scarce.
- Inform, educate, and empower people about obesity issues.
  - Design and implement culturally appropriate educational campaigns based on the social marketing model to include multiple components, such as community events, health screenings and mass media, to raise individual and community awareness and knowledge among disparate populations.
- Mobilize community partnerships to identify and address obesity issues through local organizations, systems and networks.
  - Partner with and support disparate communities to develop, implement, and maintain effective programs to prevent and reduce obesity.
  - Strengthen and increase partnerships in multiple settings (school, healthcare systems, workplace, governments), organizations not usually associated with health (faith-based organizations, labor unions), all age groups (youth, adults, and seniors), and non-traditional partner organizations to maximize the impact of stakeholder efforts to prevent and reduce obesity and obesity risk behaviors in disparate populations.
- Develop policies and plans based on current best practices that support individual and community efforts to address obesity. Identify and provide funding for communities to organize, develop and implement their plans.
  - Secure funding that will adequately address obesity disparities within a comprehensive obesity prevention plan.

## Recommendations

- Advocate for state and local policy and environmental change strategies that promote good nutrition and increased physical activity.
  - Engage disparate populations to promote obesity prevention policy, environmental, and systems change.
- Link people to needed obesity prevention and control services and assure the provision of health care when otherwise unavailable.
- Assure a competent public health and personal health workforce that is trained in the current prevention, diagnosis and treatment of obesity.
- Evaluate effectiveness of intervention efforts, including within disparate populations, to determine what works and merits further resources and efforts.
- Conduct and/or support research on new evidence-based obesity prevention interventions and innovative solutions to obesity.

Numerous obesity prevention strategies for worksites, schools, healthcare, and communities can be found in *Alaska in Action: Statewide Physical Activity and Nutrition Plan*<sup>43</sup>, which was developed by a statewide coalition of state, municipal, educational, tribal and community health organizations concerned about Alaska's growing obesity crisis.

To achieve the desired population-wide impact and reduce disparities, Alaskans must work together to address the many factors that contribute to overweight and obesity. These efforts must help children, adolescents and adults develop lifelong healthy habits and also ensure that the environments in which they live, attend school, work and play support healthy activity and eating choices.

## Appendix

### Description of Data Sources

#### Anchorage School District (ASD)

The Anchorage School District and the Alaska Division of Public Health collaborated to assess the prevalence of overweight among children in the Anchorage School District. Height and weight measurements are routinely collected by school nurses for students in grades K-12. The data were used to classify student weight status using BMI-for-age values within each gender according to categories defined by the National Center for Health Statistics. These data were summarized in a jointly released State of Alaska Epidemiology Bulletin in 2004 entitled, "Prevalence of Overweight Among Anchorage Children: A Study of Anchorage School District Data: 1998-2003." These data were augmented by measurements through the 2005-2006 academic year.

#### Behavioral Risk Factor Surveillance System (BRFSS)

The BRFSS is an anonymous telephone survey conducted by the Alaska Division of Public Health in cooperation with the Centers for Disease Control and Prevention (CDC). It aims to estimate the prevalence of behavioral risk factors in the general population that are known to be associated with the leading causes of morbidity and mortality in adults. The BRFSS has operated continuously in Alaska since it began in 1991.

The BRFSS uses a probability (or random) sample in which all Alaska households have a known, nonzero chance of selection. The sample is stratified into 5 geographic regions, with roughly equal numbers of interviews conducted in each region. This method deliberately oversamples rural areas of the state. Respondents are randomly selected from among the adult (age 18 and older) members of each household reached through a series of random telephone calls. Those living in institutions (i.e., nursing homes, dormitories) are not surveyed. The BRFSS questionnaire covers such topics as general health status, health care access, nutrition, physical activity, tobacco use, diabetes, alcohol use, women's health, injury prevention, HIV/AIDS awareness. There are also questions on the demographic characteristics of respondents.

Alaska presently conducts 2 BRFSS surveys: the standard BRFSS (sponsored by the CDC) and a modified BRFSS (sponsored by the State of Alaska). Both surveys are conducted throughout the year, using separate samples drawn using the same methodology. Both the standard and modified BRFSS are weighted (separately) to compensate for the over-representation or under-representation of persons in various subgroups. The data are further weighted to adjust the distribution of the sample data so that it reflects the total population of the sampled area.

## Appendix

### **Childhood Understanding Behaviors Survey (CUBS)**

The CUBS provides population-based data on preschool aged children in Alaska. During 2006, data were collected on 2-year-olds (however starting in 2008, data collection switched to focus on 3-year-olds). The CUBS uses the methodology of re-interviewing mothers who responded to the Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) survey soon after their child was born. Although PRAMS is conducted in almost 37 states, Alaska is 1 of only 4 states that have a follow-up survey to PRAMS. The purpose of CUBS is to provide information on health conditions, health care utilization, child development and other health-related behaviors of young children and to evaluate the association between prenatal and immediate postnatal factors with early childhood health and welfare. The CUBS asks questions about both the mother and her child. About 115 mothers are sent a CUBS survey in the mail every month. In 2006, the response rate was 2006.

### **Pregnancy Risk Assessment Monitoring System (PRAMS)**

The PRAMS is a population-based survey of Alaska women who have recently delivered a live-born infant. Administered since 1990 by the Alaska Division of Public Health, PRAMS is conducted in collaboration with the CDC in 37 states to gather information on the health risk behaviors and circumstances of pregnant and postpartum women. A systematic stratified sample is drawn each month from the state's live birth records for infants between 2 and 6 months of age. Sampled mothers receive a series of mailed questionnaires, and since 1997 telephone follow-up has been initiated among those who do not respond to the third mailed request. The PRAMS questionnaire addresses such topics as access to prenatal care, obstetric history, maternal use of alcohol, maternal tobacco use, nutrition, economic status, maternal stress, and early infant development and health status. Survey responses are weighted so that reported prevalences accurately describe Alaska women delivering a live-born infant during the year of the survey. In recent years the survey has had a response rate of approximately 77%.

### **Resource and Patient Management System (RPMS)**

The RPMS is the statewide information system used by the Section of Public Health Nursing, Alaska Division of Public Health for patient services data. This is a medical database of selected patient visit information originating from visits to public health centers, regional Alaska Native hospitals, community health centers, and village clinics. Management information taken from the data can be used for program planning and evaluation. Height and weight are measured and recorded during clinic visits. The system includes demographic and patient health encounter data. The RPMS is located at 23 public health nursing sites and is shared by the Indian Health Service.

## Appendix

### Youth Risk Behavior Survey (YRBS)

The YRBS is a systematic survey of high school students investigating behaviors related to the leading causes of mortality, morbidity and social problems among youth. The Centers for Disease Control and Prevention sponsors national and state surveys every 2 years in odd years. Alaska first participated in the YRBS in 1995. The statewide survey obtained a statistically valid, representative sample in 1995, 1999, 2003, and 2007. Alaska was unsuccessful in its attempt to obtain a statewide representative sample in 2001 and 2005. The Alaska YRBS is conducted using a 2-stage sampling design. Schools are selected first with a probability of inclusion proportional to the size of their enrollment. Once a school is chosen, classes are selected, with each student having an equal opportunity for inclusion. Since 2003, active parental consent was required for each student participating in the YRBS. On the appointed survey day students completed written questionnaires and returned them in class in unmarked, sealed envelopes. Data were weighted to reflect the true distribution of Alaska high school students by sex and grade level. Following CDC guidelines for YRBS data reporting, data are suppressed in subgroup analyses for which the actual number of respondents is fewer than 100.

### Women, Infants, and Children (WIC) Nutrition Program

WIC is a supplemental food and nutrition program for pregnant and breastfeeding women and their children from birth to age 5. Alaska WIC provides nutrition information, counseling, breastfeeding support, and periodic health screening, along with supplemental food vouchers for infant formula and healthy foods. Children's height and weight are measured and recorded at clinics as part of the application and renewal process.

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