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Figure 34: Obesity and Selected Physical Activity Indicators by Household Percent of Poverty Guideline Status, Alaska Adults ............................................................................................................. 44
I. Introduction

Overweight and obesity continue to be a serious health concern in Alaska. About 2 out of every 3 Alaska adults are now overweight or obese. Overweight and obesity affect individuals of all ages, from all areas of the state, of all racial and ethnic backgrounds, and with all levels of education and income. Both conditions increase the risk for a number of health problems, including chronic diseases, which can lead to reduced quality of life and premature death.¹

The causes for the rapid rise of overweight and obesity are multiple and varied, and no single strategy alone will reduce obesity and its associated health consequences. Meaningful reduction of obesity prevalence will only occur when a set of sustained, comprehensive prevention strategies are implemented by schools, the health care sector, private industry, NGOs, governmental agencies, and individual families. These strategies will need to address policy issues; alter the environment in which we live, play and eat; modify the systems to make the healthy choice the easy choice; and increase the knowledge and change the behaviors of families, children and adults.¹

In an effort to support obesity prevention efforts statewide, we have created this report as a way of succinctly communicating the most commonly requested data regarding obesity and overweight in Alaska. Data are presented on obesity prevalence as well as markers for physical activity and nutrition risk behaviors identified by the Centers for Disease Control and Prevention (CDC). Data also include information on behavior, attitudes and strategies that could support healthy living and help prevent obesity.

Those interested in more information are encouraged to access the Obesity Prevention and Control Program’s Publications and Resources webpage (http://www.hss.state.ak.us/dph/chronic/obesity/resources.htm) which houses additional data reports, fact sheets, contacts, and other resources.

Report Highlights

- Obesity costs Alaska $459 million each year for just the direct medical healthcare costs related to obesity. This financial burden will only increase as Alaska’s population ages and healthcare costs increase.

- Among Alaska adults:
  - Rates of obesity have more than doubled from 13% in 1991 to 28% in 2012
  - Currently 1% are underweight, 34% are at a healthy weight, 37% are overweight, and 28% are obese; 65% are either overweight or obese
  - 75% do not get the recommended amount of physical activity
  - 74% spend 2 or more hours in front of a screen each day
  - 89% are eating less than 2 daily servings of fruit and 3 daily servings of vegetables
  - 42% drink 1 or more sugary drinks each day
  - 95% of mothers initiate breastfeeding upon birth; 74% continue through 8 weeks postpartum
  - 45% of Alaska adults identify obesity and related risk factors as the most important health issue facing Alaska’s youth
  - A majority believe government has some responsibility for addressing obesity, and 77% support a government-funded obesity prevention media campaign
  - Alaska Natives and adults with less education are more likely to be obese and less likely to meet nutrition and physical activity recommendations for good health

- Among Alaska high school students:
  - Currently 12% are obese and 14% are overweight; about 3 in 10 high school students (26%) are either overweight or obese
  - Alaska Native youth are more likely to be obese (16%) than are White youth (10%)
  - Only 21% get the recommended 60 minutes of daily physical activity
  - 89% are eating less than the recommended daily servings of fruit and vegetables
  - 42% drink 1 or more sugary drinks per day

- Among Alaska 3-Year-Olds:
  - 25% are obese and 40% are either overweight or obese
  - 22% watch more than 2 hours of TV daily
  - Only 12% are drinking the recommended types of milk: 1% (low fat) or skim
Classifying Overweight and Obesity

For the purposes of this report, weight status is indicated by body mass index, or BMI. BMI correlates with amount of body fat and can be used to estimate risk of weight-related health problems. BMI is a useful measure because the calculation requires only height and weight, is easy to analyze, and provides a good approximation of obesity and overweight prevalence across the population.²

BMI is calculated using the formula: BMI = weight (in kg) / [height (in m)]². Classifications of underweight, healthy weight, overweight, and obese are determined by the following BMI levels for adults:

<table>
<thead>
<tr>
<th>BMI</th>
<th>Classification</th>
</tr>
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<tbody>
<tr>
<td>&lt; 18.5</td>
<td>Underweight</td>
</tr>
<tr>
<td>18.5 to less than 25.0</td>
<td>Healthy Weight</td>
</tr>
<tr>
<td>25.0 to less than 30.0</td>
<td>Overweight</td>
</tr>
<tr>
<td>≥ 30.0</td>
<td>Obese</td>
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</tbody>
</table>

Because children and adolescents are still growing, weight status is determined by referencing calculated BMI to age- and sex-specific growth charts. Percentiles are the most commonly used indicator to assess the size and growth patterns of individual children in the United States. The percentile indicates the relative position of the child’s BMI number among a standardized set of children of the same sex and age. For 2 to 20-year olds, the resulting percentile is used to identify weight status, according to the following:

<table>
<thead>
<tr>
<th>BMI for Age Percentile</th>
<th>Classification</th>
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</thead>
<tbody>
<tr>
<td>&lt; 5th</td>
<td>Underweight</td>
</tr>
<tr>
<td>5th to less than 85th</td>
<td>Healthy Weight</td>
</tr>
<tr>
<td>85th to less than 95th</td>
<td>Overweight</td>
</tr>
<tr>
<td>≥ 95th</td>
<td>Obese</td>
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</tbody>
</table>

² Additional information about BMI can be found at this site: http://www.cdc.gov/healthyweight/assessing/bmi/index.html
II. Economic Costs of Obesity

- It is currently estimated that Alaska spends $459 million each year on the direct medical healthcare costs related to obesity alone. This does not include the additional costs of lost productivity and other “indirect” costs of obesity.
- Among State of Alaska employees, an estimated $13.3 million is spent on the direct medical costs and total annual work loss cost attributable to overweight and obesity.
- These costs are only expected to increase. The following shows projections for Alaska Medicaid spending (both the Federal and State shares) attributable to obesity, based on increases in Medicaid coverage and healthcare costs in general, as well as an expected rise in obesity prevalence.

**Figure 1: Alaska Medicaid Spending Projection Attributable to Obesity (in Millions), Assuming Increase in Obesity Prevalence**

<table>
<thead>
<tr>
<th>Year</th>
<th>State Contribution</th>
<th>Federal Contribution</th>
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<tbody>
<tr>
<td>2010</td>
<td>$144</td>
<td>$46</td>
</tr>
<tr>
<td>2015</td>
<td>$233</td>
<td>$134</td>
</tr>
<tr>
<td>2020</td>
<td>$381</td>
<td>$217</td>
</tr>
<tr>
<td>2025</td>
<td>$516</td>
<td>$293</td>
</tr>
<tr>
<td>2030</td>
<td>$684</td>
<td>$387</td>
</tr>
</tbody>
</table>

Source: AK Division of Public Health; *Per United Health Foundation et al. projections

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III. Adults

A. Adult Weight Status

Figure 2: Trend in Prevalence of Overweight/Obesity (BMI ≥ 25.0), by Sex, Alaska Adults, 1991-2012

- The percentage of Alaska adults who are either overweight or obese increased significantly from 49% in 1991 to 65% in 2012. The Healthy Alaskans 2020 target is 63%.
- This increase occurred in both genders, with consistently higher prevalence among men.
- The increasing trend is largely due to a significant increase in obesity among both men (14%→28%) and women (13%→28%) between 1991 and 2012.
- The rate of overweight has increased slightly among women over the last two decades, though men have remained consistently more likely to be overweight. Between 1991 and 2012, the prevalence of overweight changed:
  - from 25% to 31% among women
  - from 44% to 43% among men
  - from 35% to 37% among all adults
The percentage of Alaska adults who are obese has more than doubled from 13% in 1991 to 28% in 2012.

The prevalence of obesity has been similar for Alaska men and women since 1991.

Obesity prevalence has increased among Alaska adults of all ages, from all areas of the state, across race groups, and all levels of education and income.

Between 1991 and 2012, adult obesity prevalence increased:

- from 9% to 23% among adults with a college degree or more education
- from 11% to 30% among those with some college or technical school training
- from 17% to 30% among those with a high school degree or less education
- from 17% to 30% among adults in rural Alaska
- from 14% to 28% among adults in Anchorage
- from 16% to 35% among Alaska Native adults
- from 14% to 28% among White adults

Class III obesity (BMI ≥ 40.0) increased from 1.4% in 1991 to 3.3% in 2012.

Source: AK BRFSS.
Estimates for 2007 and later use a new weighting method; see Section IX p 45 for more information.
Currently 1% of Alaska adults are underweight, 34% are at a healthy weight, 37% are overweight, and 28% are obese.

Women are significantly more likely than men to be of healthy weight (39% versus 29%, respectively) and less likely than men to be overweight (31% versus 43%, respectively); there are no significant sex differences in prevalence of obesity or underweight.

Obesity prevalence is significantly lower among Whites (27%) than among Alaska Natives (35%).

There are no significant differences in either obesity or overweight and obesity (combined) by region of residence.
B. Adult Physical Inactivity

Figure 5: Prevalence of Not Meeting Physical Activity Recommendations, by Sex, Alaska Adults, 2011

- For substantial health benefits, the US Department of Health & Human Services recommends that, each week, adults need at least:
  - 150 minutes of moderate-intensity aerobic activity, or 75 minutes of vigorous-intensity aerobic activity, or an equivalent combination of the two; **AND**
  - Muscle-strengthening activities on 2 or more days

- Approximately 1 in 4 Alaska adults meets both recommendations.

- Alaska Natives (48%) and other races (57%) are more at risk than Whites (39%) of **not meeting** the aerobic activity recommendation; there are no significant differences by gender or region.

- Women (71%), Alaska Natives (74%), and residents of the southeast (75%) and rural (73%) regions\(^7\) are significantly more at risk of **not meeting** the muscle strengthening recommendation (67% overall).

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\(^7\) Regions as defined by the Behavioral Risk factor Surveillance System (BRFSS; see Data Sources section for region definitions).
Figure 6: Number of Hours of Screen Time* Per Day, Alaska Adults, 2011

Source: AK BRFSS. Sum may not equal 100% due to rounding
* Screen time for adults is defined as the number of hours per day outside of work spent using a computer or watching television, videos, or DVDs.

- Approximately three-quarters (74%) of adult Alaskans spend 2 or more hours in front of a screen per day, a significant increase since 2005 (62%).

- Alaska Natives are significantly more likely than Whites to spend 3 or more hours in front of a screen per day (59% vs. 43%, respectively).

- Adults with 2 or more hours of screen time per day are:
  - significantly more likely to be obese (32%) than adults with less screen time (18%)
  - significantly less likely to meet both physical activity guidelines (22%) than adults with less screen time (33%)
C. Adult Nutrition

Figure 7: Prevalence of Consuming Less Than 2 Fruit Servings and 3 Vegetable Servings Daily, Alaska Adults, 2011

Source: AK BRFSS.

- Approximately 9 in 10 (89%) Alaska adults do not consume the recommended daily servings of fruit (two a day) and vegetables (three a day), and the prevalence of not meeting this nutritional recommendation has remained near this level over the past 20 years.

- Men are more likely than women to not meet the fruit (72% vs. 63%) and vegetable (85% vs. 78%) recommendations.

- Residents of the rural region of state are significantly more likely to not meet the fruit (75%) and vegetable (88%) recommendations than are residents of other regions (65-68% for fruit, 80-85% for vegetables).

- Research supports a connection between access to healthy food and increased consumption of fruits and vegetables. Among adults who say they do not eat enough fruits and vegetables, 58% agree that expense is a reason, 36% agree that lack of availability is a reason, and 27% agree that inconvenience is a reason (2009 AK BRFSS).

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8 CDC. Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables. Atlanta: DHSS; 2011.
Figure 8: Non-Diet, Sugary Drinks:
Number of Drinks (Cans/Glasses) Consumed Per Day, Alaska Adults, 2011

- Sugary drinks, such as non-diet soda and sugar-sweetened fruit or energy drinks, are typically high in calories. Overall, 42% of Alaska adults consume 1 or more sugary drinks daily; 15% consume 3 or more daily.

- Men are significantly more likely than women to consume at least 1 sugary drink each day (47% versus 37%, respectively), and to consume 3 or more sugary drinks each day (18% versus 13%, respectively).

- Alaska Natives are over twice as likely (34%) as Whites (12%) or adults of other races (15%) to consume 3 or more sugary drinks daily.

- Alaska Natives living in the BRFSS rural region of the state are significantly more likely to consume 3 or more sugary drinks each day (51%) than are Alaska Natives living in other regions (19%-33%).

Source: AK BRFSS. Sum may not equal 100% due to rounding
Figure 9: Prevalence of Engagement in “Local Foods,” Alaska Adults, 2011

Access to local foods from local gardens or farms can increase consumption of fruits and vegetables.\(^9\) In addition, consuming more traditional Alaska foods (such as fish, wild game, plants and berries) is associated with better health outcomes.\(^{10}\)

Each year, about half (50%) of Alaska adults purchase produce from a farmer’s market or community-supported agriculture (CSA), one-third (34%) eat produce from their own garden, and two-thirds (65%) hunt, fish, or gather wild food.

Residents of the BRFSS-defined rural region are:
- Less likely (32%) than other regions (35%-63%) to buy from a farmer’s market
- Less likely (20%) than other regions (25%-51%) to garden and eat produce
- More likely (84%) than other regions (55%-81%) to gather, hunt, or fish wild food

Similarly, Alaska Natives are:
- Less likely (35%) than Whites (53%) to buy produce from a farmer’s market/CSA
- Less likely (19%) than Whites (40%) to eat produce from their own garden
- More likely (73%) than Whites (68%) to gather, hunt, or fish wild food

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\(^9\) CDC. Recommended Community Strategies and Measurements to Prevent Obesity in the United States. MMWR 2009:58(No.RR-7).

D. Healthcare Provider Advice

Figure 10: Percentage of Alaska Adults Advised by Healthcare Provider about Their Diet, Alaska Adults, 2010

Source: AK BRFSS. Sum may not equal 100% due to rounding

- Less than half of all Alaska adults (43%) report ever being given advice about their eating habits by a healthcare provider; 23% were given such advice in the past 12 months.

- Alaska Natives are less likely to report having received dietary advice in the past year (15%) compared to Whites (24%) or those of other races (31%).

- Alaska adults living in the BRFSS-defined rural (15%) and Matanuska-Susitna (16%) regions are less likely to report having received diet advice in the past year than are adults living in other regions (23%-27%).

- Obese adults are more likely (34%) than non-obese adults (19%) to report being given dietary advice from a healthcare provider in the past year.
Figure 11: Percentage of Alaska Adults Advised by Healthcare Provider about Their Physical Activity, Alaska Adults, 2010

- Just over half of all Alaska adults (52%) report ever being given advice by a healthcare provider about being more physically active; nearly one-third (31%) were given such advice in the past 12 months.

- Women are more likely (34%) than men (28%) to have been given advice about physical activity in the past year.

- Alaska Natives are less likely to report having received physical activity advice in the past year (23%) compared to Whites (33%) or those of other races (34%).

- Alaska adults living in the BRFSS-defined rural region of the state are less likely to report having received physical activity advice in the past year (23%) than adults in other regions (29%-34%).

- Obese adults are more likely (43%) than are those who are not obese (26%) to report being given physical activity advice from a healthcare provider in the last year.

Source: AK BRFSS. Sum may not equal 100% due to rounding
IV. Children and Adolescents

A. Weight Status of Children and Adolescents

Figure 12: Weight Status, Alaska High School Students, 2013

- Underweight: 3%
- Obese: 12%
- Overweight: 14%
- Healthy Weight: 71%

Source: AK YRBS. Sum may not equal 100% due to rounding

- Currently, 26% of Alaska high school students are either overweight or obese; this prevalence has remained fairly constant over the 10-year period during which it has been measured, with a low of 25% in 2003 and a high of 27% in 2007.

- High school boys (13%) are more likely than girls (11%) to be obese.

- 3% of Alaska high school students qualify as “severely obese,” defined for adolescents as a BMI over 120% of the 95th percentile.

- Alaska Native youth are significantly more likely to be obese (16%) than are White youth (10%).
Figure 13: Prevalence of Early Childhood Obesity (BMI ≥ 95th Percentile) and Overweight/Obesity (BMI ≥ 85th Percentile), Alaska Children, Select Programs/Surveys, 2010-2011

Sources: AK DHSS, WIC Program records; AK CUBS; AK DHSS Oral Health Survey.¹¹

Statewide representative weight status data for children younger than high school age is only available for 3-year-olds. Several different programs in the state maintain or collect height and weight records for children in target populations. The data in the chart above provide the best available estimates of early childhood overweight and obesity in Alaska.

Several school districts across the state have also been monitoring the weight status of their student populations:

- In the Anchorage School District, 36% of kindergarten through 12th grade students were overweight or obese in 2010-2011.\textsuperscript{12}

- In the Matanuska-Susitna Borough School District, 26% of kindergarten, first, third, fifth and seventh grade students were overweight or obese in 2009-2010.\textsuperscript{13}

- In the combined Anchorage and Matanuska-Susitna Borough school districts, 16% of kindergarten, first, third, fifth and seventh grade students were obese in 2010-2011.\textsuperscript{14}

- In the Kenai Peninsula Borough School District, 36% of pre-kindergarten through 12th grade students were overweight or obese in 2011-2012.\textsuperscript{15}


B. Physical Inactivity among Children and Adolescents

Figure 14: Prevalence of Not Meeting Physical Activity Recommendations (60 Minutes Daily), by Sex, Alaska High School Students, 2013

- 79% of Alaska high school students are getting less than the recommended 60 minutes of physical activity every day; this means that only 21% are meeting this recommendation.

- High school girls are more at risk (86%) than are boys (72%) of not meeting the daily physical activity recommendation.

- The percentage of Alaska high school students attending daily PE has declined significantly over time, from 26% in 1995 to 16% in 2013.

- High school boys are more likely to attend PE daily (20%) than are girls (12%).

- Although 83% of Alaska high schools require physical education for ninth-graders, under half (44%) require physical education through the twelfth grade. (2012 AK School Health Profiles).

Source: AK YRBS.
The American Academy of Pediatrics (AAP) recommends limiting children’s total media time to no more than 1 to 2 hours of quality programming per day.\textsuperscript{16}

- 22% of Alaska 3-year-olds watch more than 2 hours of TV daily; 9% watch more than 3 hours per day.

When reporting screen time for high school students, the term refers to time spent watching TV and videos, as well as time spent on the computer not doing school work.

- More than half (54%) of Alaska high school students report 3 or more hours of screen time on an average school day. (2013 AK YRBS)

- Among Alaska high school students, boys (57%) are more likely to report more than 3 hours of screen time than are girls (51%). (2013 AK YRBS)

- Over half (58%) of Alaska children ages 12-17 have a TV, computer, or access to electronic devices in their bedrooms. (2011-12 AK NSCH)

C. Nutrition among Children and Adolescents

Figure 16: Prevalence of Consuming Less Than 2 Fruit Servings and 3 Vegetable Servings Daily, Alaska High School Students, 2013

- Nine out of ten (89%) high school students in Alaska eat less than the recommended number of servings of fruit and vegetables each day.

- The percentages of high school students who eat the recommended daily servings of fruit (29%) and vegetables (16%) have each increased slightly but significantly over the past decade (from 26% and 11%, respectively).

- There are no significant differences by race or sex in the prevalence of meeting these nutritional recommendations.

- 40% of Alaska high schools offer fruit for sale to students through vending machines or school snack stores; 29% offer vegetables. (2012 AK School Health Profiles)
The Youth Risk Behavior Survey (YRBS) collects information from high school students on the amount of soda or pop (not including diet soda) and other sugar-sweetened drinks such as sports drinks, energy drinks, Snapple, fruit punch, Kool-Aid, Tang or Capri-Sun.

- 42% of Alaska high school students drink 1 or more sugary drinks each day.
- Among Alaska high school students:
  - Boys (47%) are significantly more likely than girls (36%) to consume at least 1 sugary drink each day
  - Alaska Native students (58%) are significantly more likely than White students (34%) and those of other races (42%) to consume at least 1 sugary drink a day
- 39% of Alaska high schools do not prohibit in-school advertising for soft drinks, candy, and fast food; 7% distribute products promoting candy, fast food, or soft drinks to students. (2012 AK School Health Profiles)
The Childhood Understanding Behaviors Survey (CUBS) asks mothers of 3-year-olds about how many cups of soda, such as Coke or Sprite, or sweetened or fruit drinks, such as Kool-Aid, Tang or Capri-Sun their child consumed on a given day.

- 3-year olds living in the Northern (47%) and Southwest (43%) regions of the state are significantly more likely than those living in other regions (14%-17%) to drink any soda on a given day.

- Similarly, 3-year olds living in the Northern (75%) and Southwest (73%) regions of the state are significantly more likely than those living in other regions (21%-32%) to drink any amount of sweetened (non-soda) drinks on a given day.

17 See Data Sources section of this report for definition of this region.
Figure 19: Usual Type of Milk Drank, Alaska 3-Year-Olds, 2010-2011

Source: AK CUBS. Sum may not equal 100% due to rounding.

The 2010 Dietary Guidelines for Americans recommend all individuals older than age 2 drink only low fat (1%) or fat free (skim) milk.

- Only a minority of 3-year-olds in Alaska (14%) meets this recommendation; most (74%) drink reduced fat or whole milk.
V. Breastfeeding

Figure 20: Trend in Prevalence of Breastfeeding Initiation and Duration at 4-Weeks and 8-Weeks Postpartum, Alaska Women Delivering a Live Birth, 1991-2011

Source: AK PRAMS.

- Studies have established an association between breastfeeding and reduced risk of childhood obesity. The American Academy of Pediatrics recommends that mothers breastfeed their infants for at least 12 months, and exclusively for the first 6 months.

- Over the past 2 decades, initiation and duration of 4- and 8-week postpartum breastfeeding (that is, maintaining breastfeeding through 4 and 8 weeks postpartum, respectively) have increased significantly in Alaska.

- The disparity between Alaska Native and non-Native women in rate of breastfeeding initiation has largely closed over the past 2 decades (Alaska Native 73% → 94%; non-Native 81% → 95%).

- 22% of Alaska newborns are fed breast milk exclusively until 6 months of age (2010-11 AK NSCH); commonly cited reasons for stopping breastfeeding include not producing enough milk and babies being unsatisfied with only breast milk (2007-2008 AK PRAMS).


VI. Attitudes and Opinions

Figure 21: Opinions on the #1 Health Issue for Alaska’s Children, Alaska Adults, 2012

Source: AK BRFSS. Sum may not equal 100% due to rounding.

- When asked to identify the most important health issue facing Alaska’s youth, 45% of Alaska adults identified either obesity or the factors that contribute to obesity, such as physical inactivity and poor diet.
  - The “Behavioral Health” category includes concerns such as suicide, depression, and substance use and abuse.
  - The “Health Care Access” category includes concerns such as inability to find a doctor or to receive preventative services.
  - The “Chronic Disease” category includes concerns such as diabetes, heart disease, and asthma.
Alaska adults recognize that the responsibility for addressing obesity rests not only with individuals but also with the education, healthcare, and business sectors.

- Over half (58%) of all adults in Alaska agree that government has some responsibility for addressing obesity.

- 97% of adults in Alaska support age-appropriate nutrition and dietary behavior health education in schools. (2008-2009 AK BRFSS)
A majority of Alaska adults support the idea of taxes on junk food (55%) or soda (61%) as an obesity prevention strategy, as long as the funding generated would be used to fund obesity prevention efforts.

The percentages of Alaska adults who support taxes on junk food (42%) and soda (40%) regardless of funding usage have each significantly increased since 2010 (from 34% and 28%, respectively).

In addition:

- 65% support requiring restaurants to provide nutritional information on their menus
- 77% support government-funded media campaigns that promote eating right and exercising
- 61% believe schools should not be able to sell soda and other sugar-sweetened beverages on campus
- 68% believe that schools should not be able to sell junk food (such as candy, salty snacks, cookies, or cakes) on campus

Source: AK BRFSS.
VII. School-Based Strategies/Interventions

Figure 24: Trend in Percentage of Schools in Which Students Could Purchase Candy or Salty Snacks, Alaska Secondary Schools, 2002-2010

- Between 2002 and 2010 there were significant declines in the availability of candy and high-fat, salty snacks within Alaska secondary schools.

- Similar declines were seen in the availability of sugary drinks. Between 2006 and 2010:
  - Availability of soda and “fruit drinks” (excluding 100% fruit juice) declined from 50% to 26%
  - Availability of sports drinks declined from 53% to 38%

Source: CDC School Health Profiles.
*Excluding low fat snacks.
VIII. Disparities in Obesity, Nutrition, and Physical Activity

While the overall rate of obesity in Alaska has remained relatively stable in recent years, differences remain among various populations of Alaskans. Disparities in key indicators related to obesity are prevalent across race groups and markers of socioeconomic status like education. Adults with lower education levels and Alaska Native adults are disproportionately at risk for obesity and are less likely to meet nutrition and physical activity guidelines, even after adjusting for differences in gender, age, region, and other demographic characteristics (including race and education).

In this section, we present data on disparities among adults and high school youth by race group, and among adults by education status and household percent of poverty guideline.

Race

Although we reported some information by Alaska Native or White race in previous sections of this report, in this section we report by three race groups where possible. “Alaska Native” includes respondents who reported belonging to multiple race groups, and “White” includes those who reported White as their only race group. “All Other Races” includes respondents who reported being African American, Asian, Hawaiian/Pacific Islander, or Other (and not Alaska Native), because respondent numbers are generally too low for stable estimates to be reported by individual race groups (other than White and Alaska Native).

Markers of Socio-economic Status

In the AK BRFSS data, formal education level is strongly associated with risks for obesity, but there is a mixed association for obesity and household percent of Federal Poverty Guideline (PGL). Additional information about the poverty guideline status measure is included in Section IX Data Sources, p 46. Although there are some limitations in using this particular measure as a primary marker for socioeconomic status, we include household percent of poverty guideline in this report because it is used in determining financial eligibility for certain federal and state assistance programs. The cutpoint of 185% PGL is used in Alaska for WIC and some parts of Medicaid. Working with these assistance and health programs can provide opportunities to address risks associated with obesity and thus help address the burden of obesity more effectively among people of lower socioeconomic status.

There are also correlations between race, formal education status, and poverty guideline status. Among Alaska adults with a college degree or higher, 85% are White, whereas 6% are Alaska Native and 12% are of Other Races. Among those with a high school degree or less, 57% are White, 26% are Alaska Native, and 17% are of Other Races. Among Alaska adults in the <185% PGL group, 52% are White, 29% are Alaska Native, and 19% are of Other Races. In the >=185% PGL group, 79% are White, 10% are Alaska Native, and 11% are of Other Races.
A. Disparities by Race Groups

Figure 25: Trend in Prevalence of Obesity (BMI ≥ 30.0), by Race, Alaska Adults, 1991-2012

- Obesity prevalence has increased significantly among Alaska adults in all race groups—Alaska Natives, Whites and Other Races.
- Obesity prevalence is disproportionately higher among Alaska Native adults than White adults, and the trend generally shows that this pattern of disparity is not new.
- Within the Other Races group combined-year (2011 and 2012) obesity prevalence is higher among Black (40%) and Hawaiian/Pacific Islander adults (39%) than among White adults (26%). In addition, obesity prevalence is lower among Asian adults (12%) than among any other race group.\(^{20}\)

Source: AK BRFSS.
Other Races data not shown in graph due to small numbers and unstable estimates in some earlier years. Estimates for 2007 and later use a new weighting method; see Section IX p 45 for more information.

\(^{20}\) Race categories reported here include Hispanic as well as non-Hispanic, but obesity prevalence among Hispanics in Alaska is not significantly different from non-Hispanics (27% versus 28% respectively, AK BRFSS 2011-2012).
Figure 26: Obesity and Selected Nutrition Indicators by Race, Alaska Adults

- There are no significant differences by race for meeting fruit and vegetable guidelines.

- Alaska Native adults are more likely to drink 1 or more sugary drinks each day than White or Other Race adults.

- Among adults who believe that they do not get enough fruits or vegetables daily, 51% of Alaska Natives reported that availability was a barrier, compared to 34% of Whites and 32% of Other Races. (2009 AK BRFSS; not shown in graph)

- There was no disparity among race groups in reporting cost as a barrier to eating enough fruits or vegetables, but roughly 3 out of 5 adults in all groups reported that cost was a barrier. (2009 AK BRFSS; not shown in graph)
• Alaska Native youth are significantly more likely to be obese (16%) than are White youth (10%). The apparent difference between White and Other Race youth is not significant.

• Differences by race for meeting fruit and vegetable guidelines are not statistically significant. Risk is high across race groups.

• Alaska Native youth are more likely to drink 1 or more non-diet sugary drinks daily than White or Other Race youth. Among White youth, boys are significantly more likely than girls to drink 1 or more sugary drinks daily (43% versus 23%), but among Alaska Native and Other Race youth, boys and girls are equally likely to drink 1 or more daily. (AK YRBS, data by gender not shown in graph above)
Both Alaska Native and Other Race adults are at greater risk than White adults for low aerobic activity. Nearly half of Alaska Native adults (48%) and 3 out of 5 Other Race adults (57%) get less than the recommended amount of aerobic exercise.\(^{21}\)

There are no significant differences by race for meeting recommendations for muscle strength training, or combined physical activity guidelines.

Alaska Native adults are disproportionately more likely to spend 2 or more hours of daily screen time (81%) than White adults (71%). In addition, 3 out of 5 Alaska Native adults (59%) report average screen time of 3 or more hours daily, compared to about 2 out of 5 White (43%) or Other Race adults (44%).

\(^{21}\) National guidelines recommend at least 150 minutes of moderate-intensity aerobic activity, or 75 minutes of vigorous-intensity aerobic activity, or an equivalent combination of the two on a weekly basis.
Most Alaska youth are not getting enough physical activity to meet recommendations for good health and there are no significant differences by race.

Both Alaska Native and Other Race youth are significantly more likely to report 3 or more hours of daily screen time (60% and 64%, respectively) than are White youth (48%).

Screen time was higher among Alaska Native girls (57%) and Other Race girls (63%) than among White girls (43%).

Screen time was higher among Alaska Native boys (64%) and Other Race boys (66%) than among White boys (52%).
B. Disparities by Socioeconomic Factors

Figure 30: Obesity by Education and Percent of Poverty Guideline (PGL), Alaska Adults, 2012

Source: AK BRFSS.
Note: Figure 30 (above) shows expanded categories for education and household percent of federal poverty guideline (PGL), but information in Figures 31 through 34 is reported by 3 categories for education and 2 categories for percent PGL because multiple health indicators are included in those graphs. The bar colors used above correspond to the collapsed categories used in subsequent figures.

- Obesity is significantly higher among Alaska adults with some college (30%) and those with a high school degree or GED (32%) compared to college graduates (23%).

- Although obesity prevalence among Alaska adults with less than a high school education is not significantly different from college graduates in the graph above, adults with less than a high school degree (or GED) are more likely to be obese than college graduates when adjusted for age and other demographic factors.

- There are no significant differences in obesity by poverty guideline (PGL) status, shown here in four groups.
Figure 31: Obesity and Selected Nutrition Indicators by Education Status, Alaska Adults

- As noted previously, adults with a formal education level of college degree or higher are significantly less likely than other groups to be obese.

- Alaska adults with a high school degree or less are significantly less likely to consume the recommended 2 or more servings of fruit per day (73%) than are adults with some college (66%) or a college degree (62%).

- Alaska adults with a high school degree or less are significantly less likely to consume the recommended 3 or more servings of vegetables per day (85%), than are adults with a college degree (76%).

- Daily consumption of 1 or more sugary drinks is highest among adults with the lowest education level, and lowest among adults with the highest education level. Differences between each group are significant.

Source: AK BRFSS. Obesity from 2012, nutrition items from 2011.
Figure 32: Obesity and Selected Nutrition Indicators by Household Percent of Poverty Guideline Status, Alaska Adults

- Obese
  - <185% PGL: 28%
  - >=185% PGL: 29%

- Fruit: <2 servings per day
  - <185% PGL: 66%
  - >=185% PGL: 72%

- Veggies: <3 servings per day
  - <185% PGL: 80%
  - >=185% PGL: 82%

- Sugary Beverages: 1+ drinks per day
  - <185% PGL: 49%
  - >=185% PGL: 35%

Source: AK BRFSS. Obesity from 2012, nutrition items from 2011.

- There are no disparities by poverty guideline status for obesity or not getting the recommended levels of fruits and vegetables.

- Alaska adults in the <185% PGL group are disproportionately more likely to drink 1 or more sugary drinks per day than those with greater household income.

- Among adults who believe that they do not get enough fruits or vegetables daily, 3 out of 4 adults in the <185% PGL group (76%) reported that cost was a barrier, compared to half (52%) of those with greater household income. (2009 AK BRFSS)
Among all groups, a majority of adults do not get enough aerobic activity and muscle strength training to meet recommendations for good health, but the risk of not getting recommended amounts of exercise increases as education level decreases.

Half of Alaska adults with a high school degree or less (50%) get less than the recommended amount of aerobic exercise, compared to 40% of those with some college and 34% of those with a college degree or higher.

Nearly 3 out of 4 Alaska adults with a high school degree or less (74%) get less than the recommended amount of muscle strength training, compared to 64% of those with some college and 58% of those with a college degree or higher.

Alaska adults with a high school degree or less are disproportionately more likely to spend 2 or more hours daily in front of the screen (79%) than those with a college degree (62%). More than half of those with a high school degree or less (55%) report average screen time of 3 or more hours daily, compared to about 1 out of 3 adults with a college degree or higher (31%).
Figure 34: Obesity and Selected Physical Activity Indicators by Household Percent of Poverty Guideline Status, Alaska Adults

- The risk of not getting recommended amounts of exercise is significantly higher for those in the <185% PGL group than those with greater household income.

- Half of Alaska adults in the <185% PGL group (50%) get less than the recommended amount of aerobic exercise compared to 40% of those in the higher income group.

- Nearly 3 out of 4 Alaska adults in the <185% PGL group (73%) get less than the recommended amount of muscle strength training compared to about 2 out of 3 adults (65%) in the higher income group.

- There is no significant difference by poverty guideline status for spending 2 or more hours in front of the screen. However, more than half of Alaska adults in the <185% PGL group (55%) report an average screen time of 3 or more hours daily, compared to about 41% of adults in the higher income group.

Source: AK BRFSS. Obesity from 2012, physical activity items from 2011.
IX. Data Sources

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.

How BRFSS Survey Participants are Selected

The BRFSS uses a probability (or random) sample in which all Alaska households with landline telephones have a known, nonzero chance of selection. Respondents are randomly selected from among the adult members of each household reached through a series of random telephone calls. Historically, those living in institutional housing (i.e., nursing homes, barracks, and dormitories) are not surveyed. The sample is stratified into regions, with roughly equal numbers of interviews conducted in each region. This method deliberately over-samples rural areas of the state. The sample was stratified into six geographic regions in 2011 (as shown in

Source: State of Alaska, DHSS, DPH, Section of Chronic Disease Prevention and Health Promotion
map above), and seven geographic regions in 2012, for which the Rural region was split into Southwest and Northwest/Interior.

In addition, the sampling frame has been expanded to include cell phones as well as landline or household phones. This step was important because the proportion of households served only by cell phones has increased rapidly. By June 2010, about 20% of Alaska households were cell-only. In 2011, Alaska’s cell phone sample was large enough to include it in weighting and reporting of data.

Interviews are conducted by trained interviewers during weekdays, evenings, and weekends throughout the year. The BRFSS questionnaire covers such topics as general health status, health care access, nutrition, physical activity, tobacco use, alcohol use, women’s health, injury prevention, and chronic health conditions like diabetes and asthma. There are also questions about demographic characteristics of respondents.

Alaska presently conducts two BRFSS surveys: the standard (CDC) BRFSS and a supplemental BRFSS (since 2004). Both surveys are conducted throughout the year, using separate samples drawn using the same methodology. The 2012 standard BRFSS includes 4,345 participants total—808 were reached by cell phone and 3,537 respondents were reached by their residential landline phone. The 2012 supplemental BRFSS includes 4,007 participants total—517 were reached by cell phone and 3,490 respondents were reached by their residential landline phone. Where sample size is too small to report key health indicators for some subpopulations of interest, data from 2011 and 2012 have been combined.

**Data Weighting and Methods Issues**

BRFSS data are weighted to adjust the distribution of the sample data so that it reflects the total population of the sampled area, and to compensate for the over-representation or under-representation of persons in various subgroups.

Changes in both the weighting and sampling methods are reflected in the estimates reported in this update of Obesity Facts. These changes help ensure that the BRFSS can continue to be a valuable source of information for health planning and improvement. The first change is a new weighting method known as iterative proportional fitting, or raking. Raking allows for the inclusion of several key demographic factors in adjusting survey data to the adult population totals. To provide additional context for interpretation about changes in prevalence estimates over time, raking was applied to data from 2007 forward, and therefore the estimates listed for 2007 through 2010 may be slightly different from estimates reported in earlier publications.
As noted above, starting in 2011 survey participants include people who only have cell phones, in addition to those who have a traditional landline phone. Therefore, 2011 and future data will reflect the population of cell-only Alaska adults as well as those who have landline only or landline and cell phones. More information about the changes in BRFSS methods can be found in the January 2013 issue of Chronicles: http://dhss.alaska.gov/dph/Chronic/Documents/Publications/assets/ChroniclesV5-1.pdf.

Both the standard and supplemental BRFSS are weighted (separately) for analysis of items that occur only in one version. In addition, a combined dataset (standard plus supplemental) is created and weighted for analysis of questions that occur in both versions. In 2011, the combined sample included 6,126 respondents and in 2012 the combined sample was 8,352, but prior years included fewer respondents. Between 1996 and 2003 annual sample size ranged from 1,536 to 2,875 respondents, and from 2004 to 2010, the annual combined sample size averaged about 4,750 respondents. The larger sample sizes allow for more precision in the estimates for obesity. Most other indicators for adult physical activity and nutrition measures came from questions asked only on one version of the questionnaire, for which sample sizes were about half of the combined total.

In this report, we used chi-square tests in our comparisons between groups of Alaskans. Chi-square tests are tests of association between group and outcome variables (for example, meets physical activity recommendation [yes, no] and gender [male, female]). For trend analyses, we used logistic regression models that tested for a statistically significant linear change over time.

**Reporting by Demographic Characteristics related to Socio-Economic Status (SES)**

Household percent of Federal Poverty Guideline (as calculated by income and number of people in the household) and education are identified as indicators of socio-economic status (SES) in the BRFSS data. Formal education status is categorized in four groups—less than high school, high school degree or GED, some college (or less than 4-year program degree) and 4-year college degree or higher.

The poverty guidelines, issued each year in the Federal Register by the Department of Health and Human Services (HHS), are a simplified version of the federal poverty thresholds and are used for administrative purposes — for instance, determining financial eligibility for certain federal programs.\(^22\) The Alaska-specific guideline totals were used to create a cut-point of household incomes at or below the 185% poverty guideline\(^23\) for this report, because this

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\(^{22}\) More information about the poverty guideline can be found here: http://aspe.hhs.gov/poverty/faq.cfm

\(^{23}\) In Alaska in 2013, a family of three with a household income of $45,160 would be at 185% of the HHS poverty guideline.
percent corresponds with eligibility criteria for the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and some parts of Medicaid, among other programs.

It should be noted that there are some limitations in using income or percent of poverty guideline in the BRFSS. Income information is reported in range categories in the BRFSS, and therefore the correspondence to categories for percent of poverty guideline is sometimes approximate. In addition, household income is often missing, as many respondents either decline to answer the question or report that they do not know their household income level. In 2011 and 2012, about 14% of Alaska BRFSS respondents were missing information about income – about 8% reported that they did not know. Missings are higher among certain subgroups. For example, income information is missing for 19% of those with high school or less education, 19% of Alaska Native adults and 18% of those who report Other Race (not White or Alaska Native).

**Reporting by Race Group**

“Alaska Native (any)” includes all survey respondents who report being Alaska Native/American Indian (alone or in combination with another race). Comparison groups are those who report their race as “White only”, and “Other Races”, which includes those who report other races or multiple race groups (not including Alaska Native/American Indian). In general, reporting health indicators for specific race groups in the “Other” category was limited by relatively small numbers of BRFSS respondents who report their primary race group as something other than White or Alaska Native each year.

**Regional Reporting**

Regions reported here are the same as those used in the 2011 BRFSS sampling methodology, and are as follows:

1) Municipality of Anchorage
2) Matanuska-Susitna Borough
3) Gulf Coast – Kenai Peninsula Borough, Kodiak Island Borough, and Valdez-Cordova Census Area
4) Southeast – Haines Borough, Hoonah-Angoon Census Area, Juneau City and Borough, Ketchikan Gateway Borough, Petersburg Census Area, Prince of Wales-Hyder Census Area, Sitka City and Borough, Skagway Municipality, Wrangell City and Borough, and Yakutat City and Borough
5) Fairbanks North Star Borough
6) Rural Alaska – all other areas including Northern, Interior and Southwest Alaska
Childhood Understanding Behaviors Survey (CUBS)

The CUBS provides population-based data on preschool aged children in Alaska. 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. Survey responses are weighted so that reported prevalences accurately describe all mothers of 3-year old children born in Alaska in a single calendar year. Both the CUBS and PRAMS data (described below) can be presented regionally, using the 6 public health regions shown in the map for BRFSS (see page 44).

National Survey of Children’s Health (NSCH)

The National Survey of Children’s Health (NSCH) touches on multiple, intersecting aspects of children’s lives. The survey includes physical and mental health status, access to quality health care, as well as information on the child’s family, neighborhood and social context. The survey was conducted by telephone in English and Spanish for the first time in 2003-2004. A second survey was fielded in 2007-2008 and the third was conducted in 2011/12. The survey provides a broad range of information about children’s health and well-being collected in a manner that allows for comparisons between states and at the national level. Telephone numbers are called at random to identify households with one or more children under 18 years old. In each household, one child was randomly selected to be the subject of the interview. The survey results are weighted to represent the population of non-institutionalized children 0-17.
nationally and in each of the 50 states plus the District of Columbia. More information about the survey can be found at this website: [http://childhealthdata.org/learn/faq](http://childhealthdata.org/learn/faq).

**Oral Health Survey**

A variety of statewide oral health surveys of children have been conducted by the State of Alaska Oral Health Program since 2004. Visual assessments of the oral health of Alaskan third grade and kindergarten children were conducted in 2010-2011. The assessments evaluated dental decay experience, untreated decay, caries experience in primary maxillary anterior teeth and dental sealants and collected heights and weights. Calculations for BMI and BMI percentile for age were performed using the CDC’s BMI tool for schools.

**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 40 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 prevalence estimates accurately describe Alaska women delivering a live-born infant during the year of the survey. In recent years (2009-2011), the survey has had an average response rate of 66%.

**School Health Profiles**

The School Health Profiles (Profiles) is a system of surveys assessing school health policies and practices in states, territories, and large urban school districts. Profiles surveys are conducted biennially among representative samples of middle and high school principals and lead health education teachers. Profiles Reports can be found on the Alaska Department of Education and Early Development website: [http://www.eed.state.ak.us/tls/health/healthprofiles.html](http://www.eed.state.ak.us/tls/health/healthprofiles.html)
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, 2007, 2009, 2011 and 2013. 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 has been required for each student participating in the YRBS. On the appointed survey day students completed confidential 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. As with the BRFSS data, we used chi-square tests in our comparisons between groups of Alaska youth. 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.