

# Appendix A

## 2010 NSB Census: Community Health Profiles

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# Background

Recognizing that health is an important component of community life, the North Slope Borough (NSB) has added a new “Health” section to the questionnaire for the 2010 Economic Profile and Census Report. In collaboration with the 2010 NSB Census coordinator, Circumpolar Research Associates, and the Mayor’s Office, the NSB Health Department developed the new health questions in an effort to provide community health information where reliable data from other sources are not available, and to provide some basic measures of community health and health-related behaviors at the village level.

The health module in this year’s NSB Census is not intended to be a comprehensive examination of health in North Slope communities but was developed as a part of the NSB Health Department’s *Baseline Community Health Analysis* project. As part of this project, the development of the health questionnaire section and analysis of the new health data from the 2010 NSB Census was funded, in part, with National Petroleum Reserve—Alaska NPR-A grant funds made available through the Department of Commerce, Community, and Economic Development. The *NSB Baseline Community Health Analysis* report contains expanded discussions of the health topics included in the census as well as many other health topics, such as maternal-child health, injury, infectious disease, and cancer. It also examines the factors that influence health in the NSB as well as approaches to health promotion in the NSB.

In the NSB and village health profiles that follow, most results are analyzed by gender, age group, ethnic group, and community of residence. Where statistically significant relationships or differences are found, these will be noted (based on a chi-squared test, significance level  $p < 0.05$ ). In this report, the term “significant” refers to statistical significance, indicating that one can be quite sure (in this case 95% confident) that the differences seen between groups are not caused by chance alone, or the natural variation between different groups of people.

State and national comparison rates are provided as a general reference only. Interpretations of these comparisons must be made with caution because of differences in composition of populations as well as differences in survey methodologies and analysis. For example, many statewide and national estimates are based on the Behaviors Risk Factor Surveillance System survey (BRFSS), which is a telephone survey. Results from a telephone survey are not directly comparable to a door-to-door household survey like the NSB census for a variety of reasons. In general, face-to-face censuses such as this one provide more reliable data than telephone surveys.

Please see the “Technical Notes” section at the end of the NSB Community Health Profiles and the forthcoming 2010 Economic Profile and Census Report for further discussion of questionnaire development, survey methodology, and issues in data interpretation.

## NSB Health Profile

### Overview of the Results of the 2010 NSB Census Health Module

This overview represents a synthesis of the notable findings from the 2010 NSB Census health module. *For further discussion of topics as well as for relevant graphs and data tables, the reader should refer to the detailed profiles that follow for the NSB overall and for each of the individual NSB communities. Again, the discussion that follows is not intended to be a comprehensive examination of health in the region. For an expanded analysis of community health in the NSB, please refer to the NSB Baseline Community Health Analysis.*

A large majority of NSB residents had “good” to “excellent” reported general health status, a testament to the ability to adapt to a harsh physical environment as well as to extraordinary social, cultural, and economic changes. The overall good health of NSB residents also likely reflects substantial investments in public health and other health and social services, education, water and sanitation, and in supporting cultural values and subsistence activities. The findings from this census with regard to general health status are fairly consistent with estimates of self-reported general health in the NSB from the Alaska BRFSS. The BRFSS survey has been conducted in Alaska since the early 1990s and has shown a decline

in self-reported health status both in the NSB and statewide during this time. Please see the *NSB Baseline Community Health Analysis* for further discussion of trends in general health status in the NSB.

Adults of all age groups in the NSB were less likely to report very good or excellent health than were adults statewide. Moreover, reported health status among Iñupiat adults was considerably worse than that of Caucasians and those of other ethnic groups in the North Slope. This inequality, or “health disparity,” between general health status of Iñupiat and non-Iñupiat residents is similar to that seen statewide between Alaska Natives and non-Natives. Reported general health status among Iñupiat adults was similar to that of Alaska Natives statewide. Significant differences in general health status were also seen between Barrow and the other North Slope villages, with general health status being worse in the villages other than Barrow. These differences were observed both in adults and children and persisted when comparing Iñupiat residents only.

Children in the NSB also had considerably worse reported general health than children statewide. Moreover, Iñupiat children in the NSB were less likely to be reported to have very good to excellent health than were Caucasian children. Other than demonstrating a very high prevalence of frequent or chronic ear infections among NSB children, the health data gathered in this census did not explain the observed disparities in children’s general health in the NSB. For an expanded discussion of children’s health in the NSB, please refer to the *NSB Baseline Community Health Analysis*.

The considerable differences in reported health status between Iñupiat and non-Iñupiat residents, between NSB residents and their counterparts statewide, and between residents of Barrow and those in other villages (seen in both Iñupiat and all ethnicities) did not appear to be explained by differences in the prevalence of the chronic health conditions examined in this census. Other serious health problems not examined in this census, such as cancer, infectious diseases, and mental health conditions, may be contributing to health disparities. These observed disparities in overall health status are likely attributable to a complex interaction of socioeconomic, environmental, behavioral, and biological factors. Many of these factors were explored in the 2010 NSB Census. These so-called “health determinants” are discussed further in the *NSB Baseline Community Health Analysis*.

All the sections of the NSB Census report contain information about factors that can have profound effects on health. These sections shed light on some of the differences seen between groups—for example, education, housing, income, subsistence participation and food use, and social connectedness. Multivariate analyses that look at how these other factors are related to health in the NSB have not yet been carried out. Moreover, a single survey such as this cannot be used to draw conclusions about causes of health problems in a population. For further discussion of these so-called “determinants of health,” please refer to the *NSB Baseline Community Health Analysis*. Several findings from the new health module may help explain some part of these disparities in health status, however.

- **Food insecurity:** Iñupiat household heads were significantly more likely than non-Iñupiat in the NSB to report difficulty getting enough food—both subsistence and market foods—to sustain a healthy lifestyle for household members. This so-called “food insecurity” has been associated with a number of measures of poor health among both adults and children and may be a significant factor behind the poorer reported health among Iñupiat residents as well as in the NSB overall compared to the state as a whole. Iñupiat household heads in outlying villages were significantly more likely to report problems with food security than were Iñupiat household heads in Barrow, and they were also more likely to report not being able to get enough subsistence foods. Overall, food insecurity appeared to be more common in the NSB than in the state overall.
- **Tobacco:** NSB adults were more than twice as likely as adults statewide to report smoking tobacco. Iñupiat adults in the NSB were almost three times as likely to report smoking as Caucasian adults in the NSB and also 37% more likely to smoke than were Alaska Natives statewide. Tobacco smoking and second-hand smoke exposure has been linked to a myriad of health problems among both adults and children and may be contributing to the observed disparities in health status. Smoking rates were significantly lower in Barrow than in the other villages overall, looking at all ethnicities together and at Iñupiat residents only. These differences were seen in adults but were particularly striking in teens. Among household heads who smoked, those living in Barrow were significantly less likely than those living in other villages to report smoking at least one pack per day. These findings are particularly notable, given Barrow’s municipal tobacco tax and indoor air ordinance.
- **Impacts of alcohol and drugs:** Iñupiat household heads were three times as likely to report that a household member had been hurt by the effects of alcohol or drugs as were Caucasian household

heads and twice as likely as those in other ethnic groups. This finding is notable, given that data from other surveys suggests that binge-drinking rates among NSB teens and adults are not significantly different from statewide rates. Alcohol and drugs can have wide-reaching health effects, including Fetal Alcohol Spectrum Disorder in offspring of mothers drinking during pregnancy, increased rates of traumatic accidents, interpersonal violence, and suicide, and physical problems such as stomach ulcers, liver failure, and brain damage.

- Soda and sugared beverage consumption: NSB Iñupiat household heads reported significantly higher consumption of sodas and other sugar-sweetened beverages than household heads in other ethnic groups, and consumption was higher than among adults statewide. Iñupiat household heads living in villages other than Barrow also reported higher levels of consumption than did those living in Barrow.
- **Safety/injury prevention practices:** Helmet use on offroad vehicles was very low compared with statewide estimates and was significantly lower among NSB Iñupiat household heads than among those in other ethnic groups. Helmet use was the lowest in the outlying North Slope villages.

Of note, some health measures were significantly better in the outlying villages, compared to Barrow:

- Adult diabetes rates were lower in outlying villages than in Barrow (all ethnicities and Iñupiat only).
- Frequency of moderate physical activity was higher among household heads in other villages (all ethnicities and Iñupiat only), compared to those living in Barrow.
- Prevalence of frequent/chronic ear infections among children was higher in Barrow than in other villages (all ethnicities and Iñupiat only).
- Iñupiat household heads in other villages were less likely than their counterparts in Barrow to believe that a household member had been hurt by alcohol or drugs and less likely to believe that the health of the community was “often” hurt by alcohol or drugs in the last year.

Lack of health insurance has been linked to worse general health status. A large majority of North Slope household heads had some type of health insurance coverage—a higher percentage than among Alaska adults overall. NSB residents face a number of serious issues with healthcare access, however, including chronic provider and staff shortages and lack of continuity because of high turnover; the inconvenience, logistical difficulty, and costs associated with travelling long distances for care; and the difficulty navigating a complex and often fragmented healthcare system both within the NSB and when seeking care off-Slope.

Obesity has been described as a national epidemic, among both adults and children, and has serious health implications throughout the life span. BRFSS surveys have suggested that NSB adult obesity rates have been on the rise and may be among the highest in the state. Results from the 2010 NSB Census confirm that overweight and obesity are extremely common across the North Slope, with more than 70% of household heads estimated to be overweight or obese, based on standard definitions of these weight categories. Unlike at the state and national level, no significant differences were found among household heads in different ethnic groups. Obesity rates did vary widely across North Slope villages. NSB household heads were slightly less likely than adults statewide to be overweight but more likely to be obese.

NSB household heads are, overall, a fairly physically active group, with 44% reporting that they get at least 5 days a week of moderate physical activity lasting at least 30 minutes. Although it suggests that fewer than half of household heads are achieving the recommended level of moderate-intensity physical activity, this percentage is similar to statewide estimates for adults. Data were not collected on vigorous-intensity exercise or muscle-strengthening exercise, for which there are additional recommendations.

Based on previous NSB censuses as well as other surveys, there is no evidence that smoking rates are decreasing in the NSB despite statewide and national tobacco control campaigns that have reduced smoking rates in other populations. A large majority of household heads who smoked in 2010 were interested in quitting, and a majority had tried to quit in the last year, although apparently with little success. Compared with the 2003 NSB Census, in 2010, household heads in Barrow and several other communities were less likely to report smoking one pack per day or more, however, possibly reflecting a response to the local tobacco tax and indoor air ordinance imposed in Barrow since the 2003 Census. Most smokers and almost all non-smokers ban smoking in the house, although a significant minority of smokers still permit smoking in the house. A comparison of teen smoking rate estimates based on household heads' reports to previous anonymous surveys of middle and high school students in the NSB suggests that parents and other adults may often be unaware of tobacco smoking among adolescents in the household.

Responses to health-related questions varied widely across the North Slope communities. For example, the percent of adults reported to have very good to excellent general health ranged from only 21% in Atkasuk to 52% and 53% in Point Lay and Barrow, respectively. A similar pattern was seen for reported general health of children. The explanation for these wide disparities is not entirely clear. Responses to many of the other health-related questions also varied significantly among individual North Slope communities, and these findings are discussed in the sections later in this section.

## Improving Health in North Slope Borough Communities

The results of the 2010 NSB Census health module suggest some obvious targets for improving community health. Programs such as the NSB Healthy Communities Initiative that support a healthy subsistence way of life, Iñupiaq values, and cultural activities have great potential to improve general health status and decrease health disparities by promoting community pride, self-esteem, and social networks. This and other programs that promote and facilitate physical activity and use of nutritious traditional foods may also combat obesity and other related chronic health problems. Based on 2010 NSB Census findings, other specific areas that could benefit from expanded North Slope-wide health promotion efforts include

- controlling and preventing tobacco use,
- working to reduce consumption of sodas and other sugar-sweetened beverages,
- increasing the use of helmets and other offroad vehicle safety practices,
- programs to improve food security that address access to both subsistence and market foods.

Continuing to invest in culturally-affirming educational and training opportunities and building the local health services workforce are also likely to reduce health disparities and improve the health of North Slope communities. The observed health differences across North Slope can also help guide local, culturally-tailored prevention and health promotion activities across the region.

The disparities seen in children's health status warrant considerable attention. A growing body of research suggests that early childhood health and environment have lifelong physical and mental health effects. Moreover, health-related behaviors such as smoking, diet, and safety practices are often established during childhood and adolescence. Support of young families and maternal-child and adolescent health promotion efforts founded in the Iñupiaq value system are investments likely to benefit the community for generations to come.

The most effective community health promotion programs operate at multiple levels and involve collaboration and partnerships between multiple sectors of a community, many of which are not traditionally considered part of the public health team. Leadership both within and outside the health department is crucial, drawing on community strengths and Iñupiaq values and traditions to meet the health challenges each community faces. The NSB Health Department is actively seeking community input and partnerships with tribal leadership, educational institutions, and others to work toward creating communities that maximally support the health and well-being of all infants, children, adolescents, adults, and elders in the North Slope. For further discussion of health promotion in the NSB, please refer to the *NSB Baseline Community Health Analysis*.

## Results of the 2010 NSB Census Health Questions

### General Health

*“Would you say that in general this household member’s health is poor, fair, good, very good, or excellent?”*

Self-reported health has been shown to be one of the strongest predictors of illness, premature death, healthcare utilization, and hospitalization. Although perceptions and definitions of health can vary among individuals and across cultures, self-reported health is a useful way to compare overall health status across different populations and time periods.

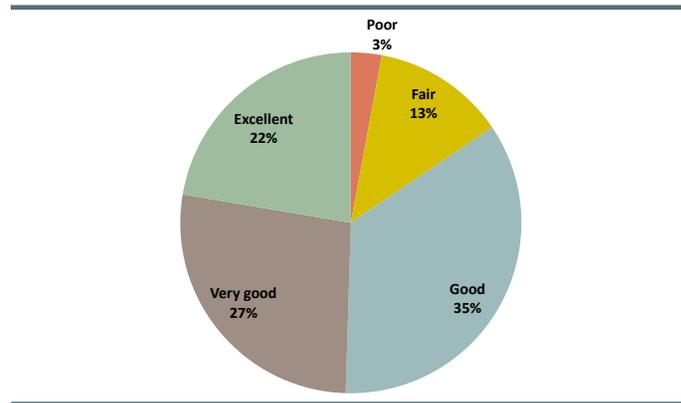
### General Health Status Among Adults

In the NSB census, household heads were asked to rate their own general health as well as that of other household members. Overall, a large majority of NSB adults (including household heads) reported being or were reported to be in good, very good, or excellent health. Reported general health status was similar among household heads and other adult household members, except in the 44- to 54-year-old

age group, where household heads were more likely to have “fair” to “poor” reported health than were other adult household members (25% vs. 16%, respectively). In all age groups, household heads and other adult household members were roughly equally likely to have very good to excellent reported health in all age groups.

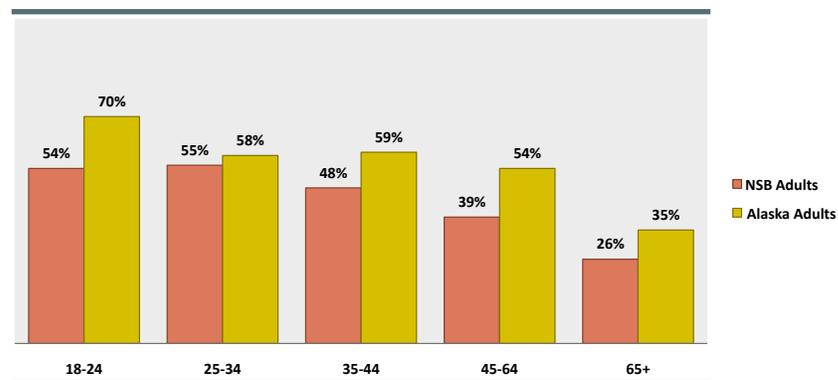
\*Unless otherwise specified, in the figures, tables and discussions that follow, “Alaska Adults” refers to estimates for Alaska residents of all ethnicities aged 18 years and older, and “NSB Adults” refers to household members (including the household head) of all ethnicities aged 18 years and older.

**Figure A.1: Reported General Health Status: NSB Adults**



Reported general health among adults did not vary significantly by gender but was highly associated with age throughout the North Slope. In all age groups, NSB adults were less likely to have reported very good to excellent health than were Alaskan adults.<sup>1</sup>

**Figure A.2: General Health Status Among Adults, by Age Group:**  
*Percent with reported very good to excellent general health*



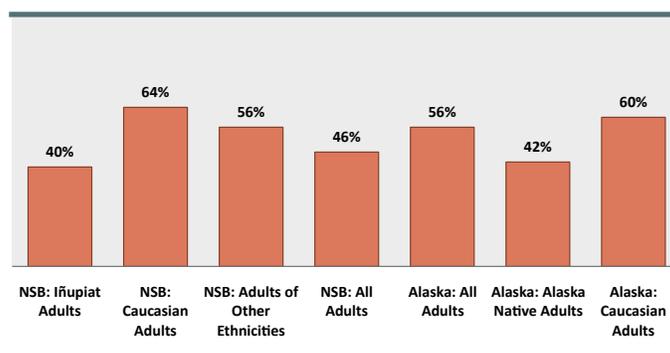
Alaska data source: 2008 Alaska BRFSS.

Reported general health among NSB adults varied significantly by ethnic group. NSB Iñupiat adults in all age groups were less likely than Caucasians and those in other ethnic groups to report very good or excellent health and more likely to report fair or poor general health. Many factors may be contributing to this observed disparity, including differences in socioeconomic status, genetics, early childhood environment, health-related behaviors such as smoking and diet, and access to healthcare. Demographic factors may play a role as well; for example, differences in patterns of migration in and out of the region for employment, health, and other reasons. For a full discussion of the determinants of general health in the NSB, please refer to the *NSB Baseline Community Health Analysis*.

- Reported general health status among adults in the NSB was worse than for Alaskan adults overall, despite the fact the NSB adults are, as a group, younger than Alaskan adults.
- Reported general health status among NSB Iñupiat adults was similar to that of Alaska Native adults statewide, however, and health status among NSB Caucasian adults was similar to that of Caucasian adults statewide.

- The disparity between general health status among Alaska Natives and Caucasians statewide was similar to that seen among Iñupiat and Caucasians in the NSB.

**Figure A.3: General Health Status Among Adults:**  
Percent with reported very good to excellent general health



Alaska data source: 2008 Alaska BRFSS.

In the NSB, the relationship between reported general health status and community of residence was statistically significant. Reported very good to excellent health status among NSB adults ranged from 21% in Atqasuk to 53% in Barrow. Atqasuk adults were also significantly more likely than those living in other North Slope villages to have fair to poor reported health. The reasons for this wide range of reported health status among the North Slope villages, and in particular, for the poor reported health status among Atqasuk residents, are not entirely clear and warrant further inquiry. Reported general health status was significantly better in Barrow than in the other North Slope villages as a whole, both in all ethnicities combined and among Iñupiat adults only.

**Table A.1: Reported General Health Status of Adults in NSB Villages**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
Very Good to Excellent	32%	21%	53%	38%	39%	36%	52%	35%	46%
Fair to Poor	**	34%	13%	19%	22%	21%	10%	21%	16%

**Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat only	All	Iñupiat only
Very Good to Excellent	50%	42%	35%	30%
Fair to Poor	17%	22%	24%	27%

\*\*Cell count less than 5.

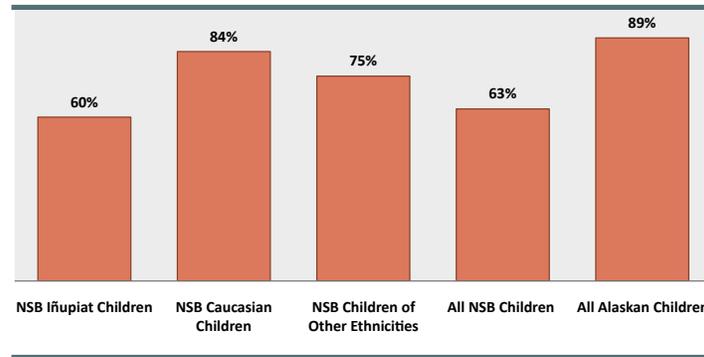
### General Health Status Among Children

The NSB is one of the youngest regions in Alaska, with children making up the largest portion of the population. Health status in early life can have lifelong effects, and health-related behaviors such as tobacco use are often established during childhood and the teenage years as well. The health of children is profoundly affected by the social and physical environment at home, at school, and in the community.

In the 2010 NSB Census, household heads were asked about the general health status of children in the household. It is worth noting that health information for children was provided 74% of the time by parents, 12% by grandparents, and 11% by another relative who was identified as the household head. Proxy data, usually from parents or guardians, is also the standard for children's health measures in national surveys.

- Within the NSB, reported general health status of Iñupiat children was significantly worse than that of Caucasian children and those in other ethnic groups.
- Children in the NSB were considerably less likely than Alaskan children overall to be reported to have very good or excellent general health.<sup>2</sup>

**Figure A.4: General Health Status of Children, by Ethnic Group:**  
*Percent of children (<18 years) reported to have very good to excellent general health*



Alaska data source: National Survey of Children's Health 2007.

Reported general health status among children varied widely throughout the North Slope villages. The percentage of children reported to have very good to excellent health ranged from 38% in Atkasuk to 70% in Point Lay.

For an expanded discussion of children's health and the determinants of maternal and child health, please refer to the *NSB Baseline Community Health Analysis*. Maternal and child health has been identified as a major area of health disparity in the NSB. The NSB Health Department is currently working with community partners on the development of the NSB Healthy Kids Initiative to address many of the health issues affecting infants, children, and teens in the NSB.

**Table A.2: Reported General Health Status of Children (0–17 Years) in NSB Villages**

	AKP	Atkasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB Children
Very Good to Excellent	41%	38%	68%	66%	55%	66%	70%	54%	63%

**Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat only	All	Iñupiat only
Very Good to Excellent	68%	64%	57%	56%

## Chronic Health Conditions

Chronic diseases are the leading cause of death and disability in the United States, and they are also among the most preventable. Chronic health problems also account for a high proportion of healthcare utilization and costs. Diabetes, in particular, has been of concern in Alaska, with rates increasing among Alaska Natives at a higher pace than in other groups. Please see the *NSB Baseline Community Health Analysis* for an expanded discussion of chronic health problems in Alaska and the NSB.

Household heads in the NSB were asked whether they or the other members of their households have experienced any of the following common chronic health problems:

*“Has this household member ever been told by a health professional that he/she has*

- *thyroid problems*
- *diabetes*
- *high blood pressure*
- *high cholesterol*
- *heart disease?”*

*“In the past 12 months, has this household member experienced*

- *frequent (three or more) or chronic ear infections*
- *daily or frequent pain, that may be because of such problems as arthritis, back problems, or injury, that limits their activities or requires prescription pain medication*
- *breathing problems such as asthma, emphysema, or a chronic cough that doesn’t go away?”*

Certain health conditions—for example, thyroid problems, diabetes, high blood pressure, and high cholesterol—may not have symptoms until the problem is quite advanced. It is estimated that up to one-third of high blood pressure and diabetes cases, for example, are undiagnosed. Thus, the estimated prevalence of these health problems from survey data such as these (without any measurements or testing) reflects only known diagnoses and is thus influenced by the availability and use of primary care and other preventive health services. In communities where primary and preventive healthcare services are less available or less fully utilized, underdiagnosis of these health problems may be significant. Differences in prevalence among different groups can also reflect differing levels of awareness or understanding of health problems as well as varying screening practices in different healthcare settings.

## **Chronic Health Problems in Adults**

### *NSB Household Heads vs. Other Adult Household Members*

For household members other than the household heads, information was obtained by proxy from the household head (survey respondent). Overall, self-reported rates of chronic health problems were higher among household heads, a somewhat older group, than among other adult household members (mean age 45 vs. 37 years, respectively). Moreover, within individual age groups, the reported prevalence of most of the chronic health problems was significantly higher among household heads than among other adults in the household. This observed difference may reflect a true difference in the disease prevalence between these two groups, but it may also have occurred, in part, as a result of lack of full knowledge on the part of the household head regarding health problems in other household members. Prevalence estimates among household heads are likely to be based on the most accurate health information, while looking at all adult household members provides a larger sample of the NSB adult population but is likely to contain some inaccuracies, primarily in the form of underreported health problems. In this section, both groupings will be discussed.

### *Comparison With State and/or National Prevalence*

Again, state and/or national disease rates are provided as a general reference and to provide a context for the results obtained in the NSB census. Interpretations of these comparisons must be made with caution because of differences in composition of populations as well as differences in definitions, survey methodologies, and data analysis.

Because the prevalence of most chronic diseases increases with age, the overall frequency with which NSB adults are reported to have chronic health problems would be expected to be slightly lower than the statewide average and the overall prevalence among NSB household heads slightly higher simply based on the age distribution of the groups. Unless otherwise noted, the prevalence estimates in this section are not adjusted for the differences in age composition of the population/samples.

- Reported thyroid disease among NSB adults was slightly lower than the estimate for adults nationwide, but again, this difference may, in part, reflect a difference in screening practices. State and national estimates for the prevalence of thyroid disease among specific age groups are not readily available.
- Reported diabetes prevalence among NSB adults was similar to statewide estimates for adults in all age groups. This finding is similar to results from the annual BRFSS survey conducted in the NSB and statewide. The overall adult diabetes prevalence in the NSB is slightly lower than the national estimate, but when analyzed by individual age groups, the differences are marginal.
- When reported high blood pressure was analyzed by age group, the NSB estimates were not significantly different from statewide estimates. This finding is also similar to those based on BRFSS survey estimates.
- Reported high cholesterol diagnoses among both household heads and among all adult household members were lower than the statewide estimate for adults in 2008, and these differences persisted when analyzed by individual age group. The estimated prevalence of high cholesterol among NSB adults here was considerably lower than from annual BRFSS surveys. The reason for this discrepancy is not clear.

- The prevalence of heart disease (including coronary artery disease or heart attack, congestive heart failure, rhythm, valve, or other problems) among both household heads and all adults in the NSB was lower than the national estimate for adults. Comparing individual age groups, the reported prevalence of heart disease remained lower than national estimates for adults although, again these comparisons must be made with caution.
- As is seen among NSB adults, arthritis and other types of chronic pain are common in Alaska and nationwide. In Alaska, 23% of adults surveyed reported doctor-diagnosed arthritis, 40% of whom report limitations of activity. An additional 19% of Alaskan adults report chronic joint symptoms possibly consistent with arthritis. Directly comparable statewide prevalence estimates for chronic pain, which may include other types of pain such as chronic headaches, back pain, and other musculoskeletal problems, are not available for comparison to NSB estimates.
- Although data are not truly comparable, the estimated prevalence of chronic respiratory problems among NSB adults appeared similar to state and national estimates. Based on estimates from other sources, this finding may represent a combination of a lower prevalence of asthma and a higher prevalence of emphysema in the NSB, compared with state and national estimates.

**Table A.3: Chronic Health Problems: Adults**

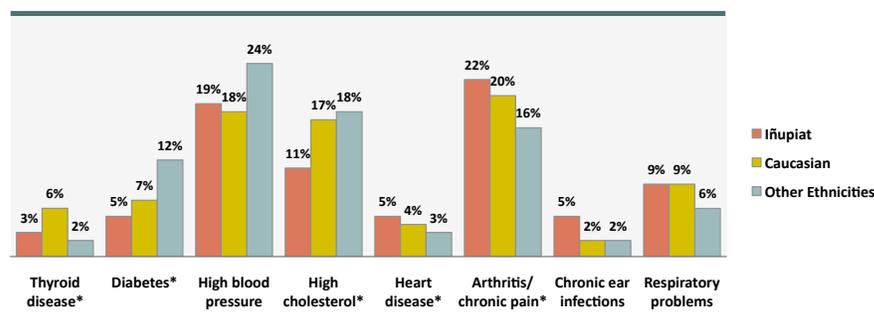
	NSB Household Heads Only	All NSB Adults (including household heads)	Alaska/U.S. Adults
<i>Ever told by a health professional have:</i>			
Thyroid problem	6%	4%	9% (U.S.) <sup>3</sup>
Diabetes	7%	6%	6% (Alaska) <sup>1</sup> 9% (U.S.) <sup>4</sup>
High blood pressure	28%	20%	25% (Alaska) <sup>5</sup> 24% (U.S.) <sup>4</sup>
High cholesterol	19%	13%	38% (Alaska) <sup>5</sup>
Heart disease	7%	5%	12% (U.S.) <sup>4</sup>
<i>In the past 12 months, experienced:</i>			
Daily pain or arthritis that limits activities or requires prescription pain medicine	29%	21%	( see ref) <sup>6</sup>
Frequent/chronic ear infections	5%	4%	N/A
Chronic breathing problems (such as asthma, emphysema, or a chronic cough that won't go away)	13%	8%	(see ref) <sup>7</sup>

\*Rates in this chart reflect crude rates, and are not adjusted for the different age compositions of the populations

### *Age, Gender, and Ethnic Group Differences in Chronic Health Problems*

As noted previously, all of the chronic health problems, with the exception of chronic ear infections, increased in prevalence with increasing age. Thyroid disease, diabetes, high blood pressure, cholesterol, and arthritis/chronic pain had statistically significant associations with ethnic group. Unlike general health status, the prevalence of chronic health problems was not consistently higher in one ethnic group or another, and the overall prevalence of chronic health problems did not appear to account for the significant disparity in general health status between Iñupiat and other ethnic groups.

**Figure A.5: Percent of NSB Adults Reported to Have Chronic Health Problems, by Ethnic Group**



\*P<0.05, indicating that relationship between individual chronic health problem and ethnic group was statistically significant, or statistically unlikely to occur by chance alone.

**Thyroid Problems:** Among NSB adults, thyroid problems were reported more frequently among women than men (which is expected). Caucasian household heads aged 65 years and older reported a diagnosis of thyroid disease more frequently than those in other ethnic groups.

**Diabetes:** In the NSB, adults in ethnic groups other than Iñupiat or Caucasian were more likely have been diagnosed with diabetes than were Iñupiat or Caucasians. This difference was statistically significant in the 40- to 64-year-old and 65 and older age groups. Statewide, reported diabetes prevalence did not vary significantly by race,<sup>1</sup> although nationwide, diabetes is more prevalent among certain non-white groups including African Americans, Latinos, and American Indians. Reported diabetes did not vary significantly by gender in the NSB.

**High Blood Pressure:** The prevalence of high blood pressure was not significantly associated with ethnic group except in the 40- to 64-year-old age group, where adults of other ethnicities were more likely to have been diagnosed with high blood pressure than Iñupiat or Caucasian adults. Statewide, the prevalence of reported high blood pressure was similar among Alaska Natives and non-Natives. In the NSB, male household heads were slightly more likely than female household heads to report high blood pressure.

**High Cholesterol:** Caucasians and those of other ethnic groups were significantly more likely to have been diagnosed with high cholesterol than were Iñupiat adults. Statewide, the prevalence of reported high cholesterol was similar among Alaska Natives and non-Natives. Reported high cholesterol among NSB adults did not vary significantly by gender.

**Heart Disease:** Reported heart disease (which includes coronary artery disease, heart failure, valve problems, heart rhythm problems, etc.) was slightly more prevalent among Iñupiat adults than among other ethnic groups in the 40- to 64-year-old and 65 and older age groups, although these differences were not quite statistically significant. Male household heads were significantly more likely than female household heads to report a diagnosis of heart disease (9% vs. 5%, respectively).

**Chronic Ear Infections:** Chronic ear infections were more prevalent among Iñupiat adults than among other ethnic groups, although this difference was only statistically significant in the 40- to 64-year-old age group. Female household heads were slightly more likely to report chronic ear infections than were male household heads, and this difference was statistically significant.

**Arthritis and/or Chronic Pain:** Arthritis and chronic pain were reported more frequently among Iñupiat adults than among other ethnic groups, although this difference was only statistically significant in the 40- to 64-year-old age group. Female household heads were significantly more likely to report arthritis/chronic pain than male household heads (32% vs. 25%, respectively). A similar gender difference in reported arthritis exists at the state level as well.

**Respiratory Problems:** The prevalence of respiratory problems among NSB adults did not vary significantly by ethnicity or gender.

**Community of Residence:** Comparing villages with respect to the prevalence of individual chronic diseases is difficult because of the small number of individuals with these health problems in each village. Looking at all ethnicities combined, the prevalence of diabetes among adults was significantly associated with community of residence, with Barrow having the highest proportion of residents reported to have diabetes and

Nuiqsut and Point Lay having the lowest. The prevalence of high blood pressure was also associated with community of residence, with Atkasuk and Point Hope having the highest rates among adults and Point Lay having the lowest rate. High cholesterol was significantly associated with community of residence, with Atkasuk and Anaktuvuk Pass having the highest rates and Point Lay the lowest. The prevalence of chronic and/or frequent ear infections among adults was significantly associated with community of residence, with Point Lay and Nuiqsut having the highest estimated rates. None of the other reported chronic health problems had a statistically significant association with village of residence among adults.

Looking at Iñupiat residents only, the prevalence of reported individual chronic health problems was not significantly associated with community of residence for either household heads or all adults, except for high cholesterol, in which the relationship to community of residence was marginally statistically significant. Reported prevalence of high cholesterol among Iñupiat household heads was highest in Anaktuvuk Pass and lowest in Point Lay. Of note, residents of Anaktuvuk Pass generally get their primary healthcare in Fairbanks rather than in Barrow, and it is possible that this difference reflects varying screening or treatment practices in these two healthcare settings. It may also reflect differences in diet or other factors.

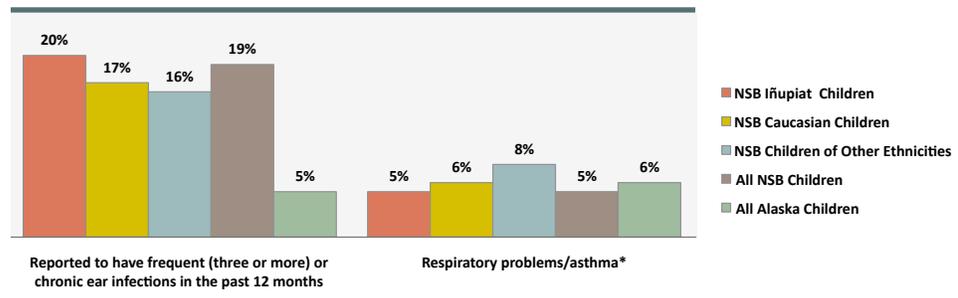
Comparing Barrow with the other North Slope villages, the prevalence of chronic health problems among both household heads and other adults was similar. Only one health condition, diabetes, was significantly different. The reported prevalence of diabetes in adults was significantly lower in the outlying villages than in Barrow, looking both at all ethnic groups combined and Iñupiat only.

### Chronic Health Problems Among Children

The NSB census gathered limited data on chronic health problems among children. For further discussion of children’s health issues, please refer to the *NSB Baseline Community Health Analysis*. Of the chronic health problems examined in the census, only two were prevalent among household members under age 18 years: frequent and/or chronic ear infections and respiratory problems and/or asthma. For all other morbidities, the overall estimated prevalence among NSB children was less than 1%. The prevalence was not significantly different among ethnic groups for either chronic ear infections or respiratory problems, except in the 10- to 17-year-old age group, in which children of other ethnicities were more likely to be reported to have breathing problems than were Iñupiat or Caucasian children.

The overall prevalence of frequent/chronic ear infections among NSB children was almost four times the statewide estimate, while the prevalence of respiratory problems such as asthma was roughly the same as statewide estimates.<sup>8</sup>

**Figure A.6: Chronic Health Problems Among NSB Children (Ages 0–17 Years)**



\*Alaska estimate for child respiratory problems is for current asthma diagnosis only, as reported by a parent.  
Alaska data source: Asthma: National Survey of Children’s Health 2007.

**Community of Residence:** The reported prevalence of chronic ear infections among children was significantly related to community of residence, ranging from 10% in Kaktovik to 23% in Barrow. The prevalence of respiratory problems did not vary significantly by community of residence.

**Table A.4: Chronic Health Problems Among Children (ages 0–17 years) in NSB Villages**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
<i>In the past 12 months has child had:</i>									
Frequent (three or more) or chronic ear infections	20%	14%	23%	10%	18%	12%	15%	17%	19%
Breathing problems (such as asthma, emphysema, or a chronic cough that won't go away)	5%	7%	6%	7%	8%	5%	*	*	5%

\*Cell count less than five.

The prevalence of frequent or chronic ear infections in children was significantly higher in Barrow than in the other North Slope villages overall, both in all ethnic groups combined (23% vs. 15%, respectively), and in Iñupiat children only (25% vs. 15%, respectively).

## Health Insurance

*“Other than the eligible use of Indian Health Service, do you have health insurance?”*

NSB household heads were more likely to have some form of health insurance (including the eligible use of Indian Health Service for those in Alaska Native or American Indian ethnic groups) than adults statewide.<sup>1</sup>

**Table A.5: Health Insurance**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB	All Alaska
Have health insurance, including IHS eligibility	97%	100%	97%	90%	97%	99%	100%	99%	97%	82% <sup>1</sup>
Have health insurance, other than IHS eligibility	58%	70%	72%	38%	42%	52%	45%	59%	64%	

## Tobacco Smoking

Tobacco smoking is associated with numerous health problems, including many cancers, emphysema, heart disease and stroke, poor birth outcomes and childhood infections, and even impotence. Tobacco smoking is one of the most important modifiable behaviors influencing overall health and widely recognized as a top public health concern. Tobacco was introduced to Alaska Natives in the 1700s, when it was used as an article of trade, and it quickly became pervasive in rural Alaska. Today, rates of tobacco use among Alaska Natives are nearly twice as high as in non-Natives. Particularly high smoking rates have been noted in Inuit and Iñupiat regions across northern Alaska and Canada. Alaska Native youth also smoke at more than twice the rate of non-Native youth and have not experienced the decline in smoking rates seen in their non-Native counterparts. Previous surveys have suggested that the NSB has one of the highest smoking rates in Alaska, almost twice the statewide rate. Death rates in the NSB from lung cancer and chronic lung disease are considerably higher than statewide rates, and a number of maternal and child health problems associated with tobacco exposure are disproportionately high in the NSB.

Results from the 2010 Census, described in this section, demonstrate persistently high rates of tobacco smoking in the NSB and particularly among Iñupiat residents. For an expanded discussion of tobacco in the NSB, please refer to the *NSB Baseline Community Health Analysis*.

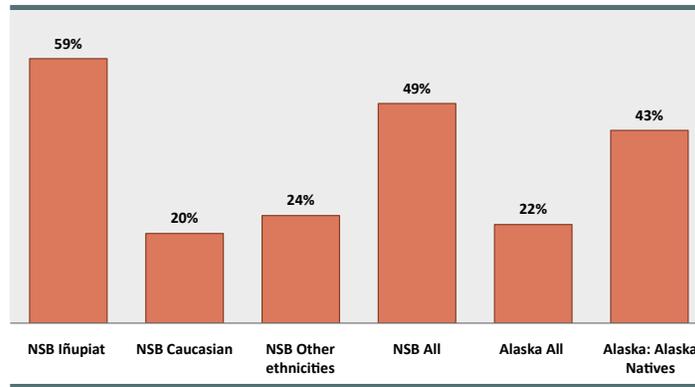
### Estimated Smoking Rates

*“Does this household member smoke tobacco (in any form)?”*

#### *Adult Tobacco Smoking*

NSB adults (49%) were more than twice as likely to report smoking tobacco as adults statewide (22%). Iñupiat adults in the NSB were almost three times as likely to report smoking as Caucasian adults in the NSB and also 37% more likely to smoke than were Alaska Natives statewide.<sup>1</sup>

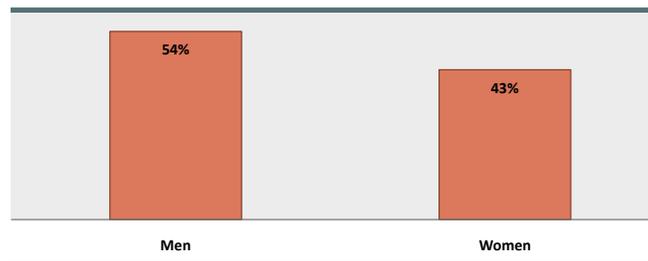
**Figure A.7: Current Tobacco Use: Percent of Adults Who Report Smoking Tobacco (in Any Form), by Ethnic Group**



Alaska data source: 2008 Alaska BRFSS.

**Gender:** Male adults were significantly more likely to smoke than were female adults in the NSB.

**Figure A.8: Reported Current Tobacco Smoking Among NSB Adults, by Gender**



**Age:** Among household heads, reported tobacco smoking varied by age, with reported smoking dropping to 34% in the 65 and older age group from roughly 50% in the other age groups.

**Community of Residence:** Among household heads, smoking rate was significantly associated with village of residence, with Barrow household heads the least likely to report smoking tobacco. Among Iñupiat household heads, the prevalence of tobacco smoking was also significantly related to village of residence, with slightly more than half (54%) of Point Hope household heads reporting smoking tobacco, and more than 70% of Iñupiat household heads reporting smoking in Kaktovik, Atkasuk, Point Lay, Nuiqsut, and Anaktuvuk Pass. Smoking rates were significantly lower in Barrow than in the other villages overall, looking at all ethnicities together and at Iñupiat residents only. These differences were seen in adults but were particularly striking in teens. Among household heads who smoked, those living in Barrow were significantly less likely than those living in other villages to report smoking at least one pack per day.

**Table A.6: Tobacco Smoking Among NSB Household Heads**

Smoke tobacco in any form:	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
All household heads	65%	61%	44%	65%	62%	49%	58%	53%	50%
Iñupiat household heads	71%	73%	61%	75%	71%	54%	72%	59%	63%

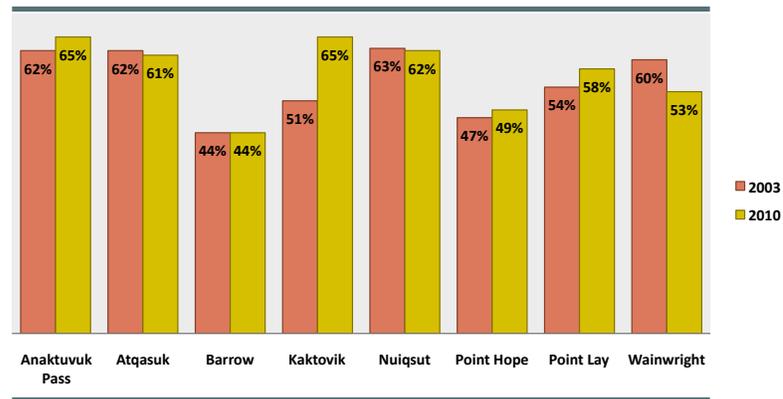
**Tobacco Smoking: Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat Only	All	Iñupiat only
Adults: Smoke tobacco in any form	42%	56%	57%	62%
Among household heads who smoke, percent who smoke one or more packs per day	22%	21%	29%	29%

AKP=Anaktuvuk Pass

**Change in Smoking Rates Over Time:** Among household heads, overall adult smoking rates do not appear to have changed since the 2003 census.

**Figure A.9: Tobacco Smoking Among NSB Household Heads in 2003 and 2010, by Village**

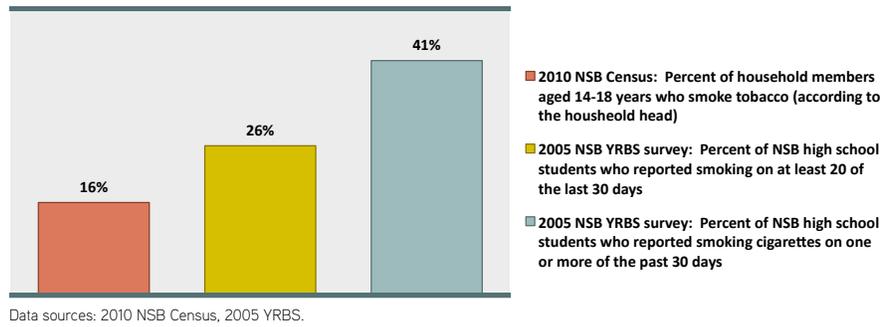


Data sources: 2003 NSB Economic and Census Profile and 2010 NSB Census.

### *Tobacco Smoking Among Teens*

The 2010 NSB Census did collect proxy data on child and/or teen tobacco smoking from household heads. A previous anonymous survey of high school students, the Youth Risk Behavior Surveillance (YRBS) survey,<sup>9</sup> yielded a far higher smoking rate among NSB teens than the results of the NSB census estimate, however, suggesting that proxy information from household heads likely considerably underestimates the number of adolescent and teen smokers in the NSB. Moreover, the 2005 YRBS survey did not include students in alternative high schools, which typically have even higher smoking rates. Based on the YRBS survey data, estimated smoking rates among NSB high school students are roughly double statewide and national estimates. For further discussion of teen smoking, please refer to the *NSB Baseline Community Health Analysis*.

**Figure A.10: NSB Teen Smoking Rate Estimates**



In the 2010 NSB Census, gender was not significantly associated with teen smoking rates. Ethnic group, however, was associated with smoking. Iñupiat teens were significantly more likely to be reported to smoke than were Caucasian teens (18% vs. 12%, respectively). Reported teen smoking rates also varied widely across North Slope communities, with Nuiqsut having the highest reported tobacco smoking rate among teens and Barrow the lowest. Both among all ethnic groups combined and among Iñupiat teens only, reported smoking rates were significantly higher in Barrow than in the other North Slope villages overall.

**Table A.7: Teen Tobacco Smoking, by Community of Residence**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	NSB
Percent of Teens (ages 14–18 years) who smoke tobacco in any form*	32%	**	8%	26%	43%	12%	15%	31%	16%

Barrow vs. Other North Slope Villages				
	Barrow		Other North Slope Villages	
	All	Iñupiat Only	All	Iñupiat only
Percent of Teens (aged 14–18 years) who smoke tobacco in any form*	8%	11%	25%	24%

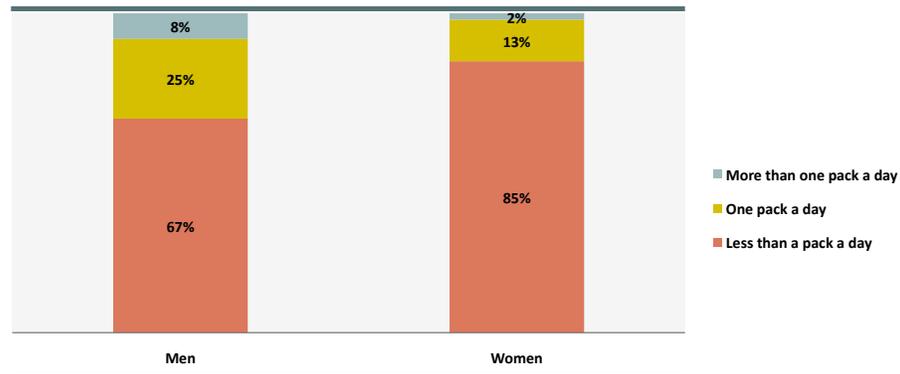
\*According to the household head  
 \*\*Cell count less than five.  
 AKP=Anaktuvuk Pass

### Amount Smoked (Adults)

*“If you smoke, how much do you smoke?”*

Among smokers, there was no statistically significant relationship between ethnicity and amount smoked each day. Male household heads were significantly more likely to smoke at least one pack per day than were female household heads.

**Figure A.11: Among NSB Household Heads Who Smoke Tobacco, Amount Smoked, by Gender**



Among household heads who smoked, amount smoked was significantly related to village of residence, with Kaktovik household heads most likely to smoke at least one pack per day. Both in all ethnic groups combined and among Iñupiat only, household heads in Barrow were significantly less likely to smoke at least one pack per day than were their counterparts in the other North Slope villages overall.

**Table A.8: Amount Smoked, by Community of Residence**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	NSB
Percent who report smoking one or more packs per day	31%	26%	21%	44%	31%	23%	25%	23%	24%

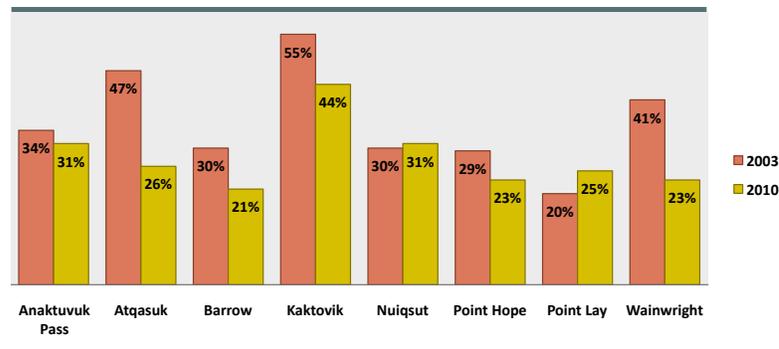
**Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat Only	All	Iñupiat only
Among household heads who smoke, percent who smoke one or more packs per day	22%	21%	29%	29%

AKP=Anaktuvuk Pass.

**Change in Amount Smoked Between 2003 and 2010:** Smokers in several NSB communities do appear to be smoking fewer cigarettes per day in 2010 than in 2003.

**Figure A.12: Of NSB Household Heads Who Smoked, Percent that Smoked at Least One Pack of Cigarettes per Day in 2003 and 2010**



Data source: 2003 Economic and Census Profile and 2010 NSB Census.

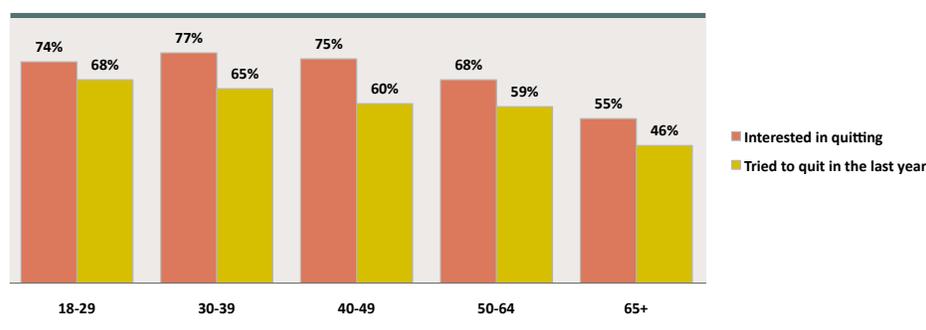
### Interest in Quitting and/or Attempts to Quit

*“If you smoke or chew tobacco, are you interested in quitting?”*

*“During the last 12 months have you stopped smoking for one day or longer because you were trying to quit smoking?”*

Interest in quitting was high throughout the NSB. Overall, 71% of household heads who smoked stated that they were interested in quitting, and this did not vary significantly by gender, ethnicity, or village of residence. Of all smokers, 62% had tried to quit in the last year, and female smokers were more likely to have tried quitting than male smokers. Interest in quitting and attempts to quit decreased with age.

**Figure A.13: Tobacco Cessation Interest and Attempts to Quit Among NSB Household Heads, by Age Group**



## Smoking in the House

*“In the past month, how many hours per day was someone smoking in your house?”*

Household tobacco smoke is a major source of indoor air pollution and is associated with a variety of health problems among non-smokers in the household. Infants and children are particularly vulnerable to tobacco smoke exposure, which is associated with increased rates of preterm birth and low birth weight, Sudden Infant Death Syndrome (SIDS), ear infections, and a variety of respiratory infections.

Previous NSB censuses have demonstrated that a vast majority of household heads are aware of the dangers of second-hand smoke. In 2010, 66% percent of NSB household heads who smoked and 95% of non-smokers did not permit smoking in the house, and this did not vary by ethnic group. Female and younger household heads were less likely to permit smoking in the house. Among smokers, permitting smoking in the house was significantly associated with village of residence, with Kaktovik household heads most likely to permit smoking in the house and Wainwright household heads least likely to permit it. Looking at Barrow compared with the other villages combined, there was not a significant difference in the proportion of household heads who permitted smoking in the house.

**Table A.8: Among Household Heads Who Smoke, Percent Who Permit Smoking in the House**

AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
40%	42%	31%	63%	35%	30%	35%	21%	33%

## Support for Tobacco Tax

*“Do you support a local tax on tobacco products to help fund a tobacco prevention or quitting program?”*

Local tobacco taxes have been shown to discourage smoking in communities and can provide a source of revenue for a variety of programs that promote health. Barrow instituted a \$1 per pack city tobacco tax in 2007. Overall, a slim majority (53%) of NSB household heads support a tobacco tax to support tobacco prevention and cessation programs. Non-smokers were more likely than smokers to support the tobacco tax. Caucasian non-smokers were the group most likely to support the tax (77%), and smokers of other ethnicities were the least likely to support the tax (36%). Support of a tobacco tax among household heads was significantly associated with village of residence, with the lowest level of support among household heads in Point Lay and and the highest in Atqasuk (70%).

**Table A.9: Among NSB Household Heads, Percent Who Support a Tobacco Tax to Fund Tobacco Prevention Programs**

AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
48%	70%	58%	48%	43%	46%	34%	35%	53%

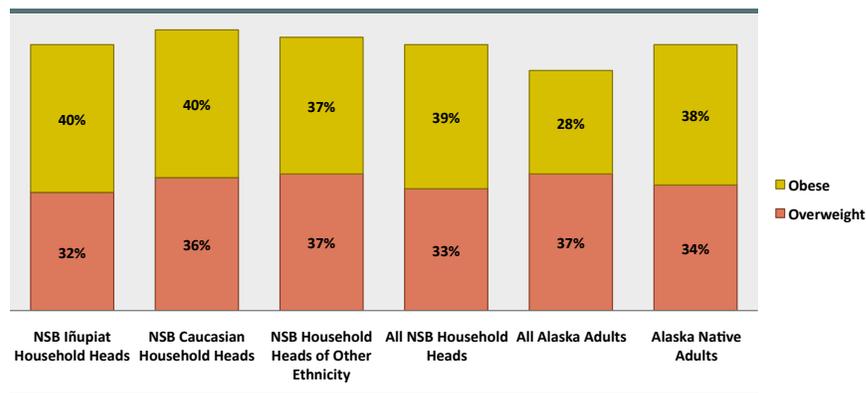
## Overweight and Obesity

Obesity and being overweight are the most common chronic health problem in the country, together affecting roughly two-thirds of Americans. Obesity and being overweight are associated with a number of other chronic health problems, including high blood pressure, heart disease, diabetes, arthritis, certain cancers, and some types of respiratory problems. The prevalence of obesity has risen dramatically nationwide among both adults and children over the past three decades. Obesity rates have also risen statewide during this time period.<sup>1</sup> Nationally, obesity is an area of socioeconomic and racial health disparity—those with lower levels of income and education and those in racial minorities (except Asian) are more likely to be obese—and in Alaska, obesity is more common among Alaska Natives than non-Natives.<sup>1</sup> In the NSB census, household heads were asked to report only their own height and weight, so data on childhood obesity are not available from this census. For discussion of childhood obesity in the NSB, please refer to the *NSB Baseline Community Health Analysis*.

Body mass index (BMI) is a ratio of height to weight and is a common way to estimate the prevalence of being overweight and obese in a population. Estimated BMI was calculated for each household head based on his or her self-reported height and weight. Then, based on nationally set standard categories for BMI, each household head was categorized as “underweight” (BMI <18.5 kg/m<sup>2</sup>), “healthy weight” (BMI 18.5–24.9 kg/m<sup>2</sup>), “overweight” (BMI 25–29.9 kg/m<sup>2</sup>), or “obese” (BMI 30 or higher kg/m<sup>2</sup>).

Among NSB household heads, being overweight and obese were common. Fewer than one-third of household heads were at a healthy weight. The prevalence of being overweight and obese did not vary significantly by ethnic group, unlike at the state and national level. The ethnic disparities in the NSB in reported general health status do not appear to be explained by differences in obesity rates. NSB household heads were slightly less likely to be overweight but more likely to be obese than were adults statewide,<sup>1</sup> similar to the pattern seen in Alaska Natives statewide.<sup>1</sup>

**Figure A.14: Overweight and Obesity Among Adults, by Ethnic Group**

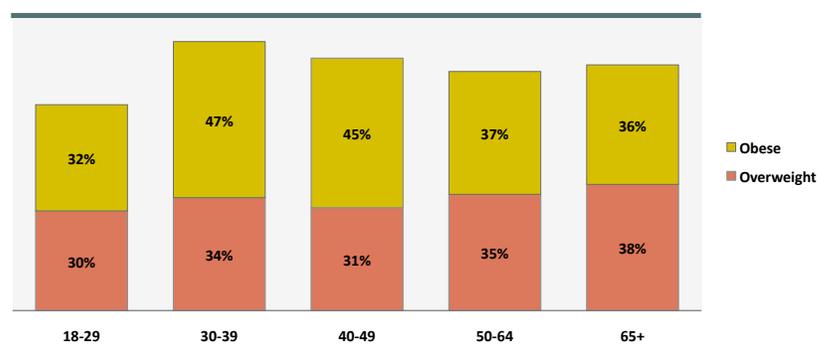


Alaska data source: 2008 BRFSS.

Overweight is defined as BMI  $\geq 25$  and  $< 30$ , and obesity is defined as BMI  $\geq 30$ .

Household heads aged 30–39 years were most likely to be overweight or obese, and women were more likely to be obese than men (45% vs. 34%, respectively).

**Figure A.15: Overweight and Obesity Among NSB Household Heads, by Age Group**



**Community of Residence:** The likelihood of obesity was significantly associated with village of residence. Estimated obesity rates ranged from a low of 23% in Anaktuvuk Pass to a high of 48% in Point Hope. Anaktuvuk Pass household heads were the most likely to be within the healthy weight range (45%), whereas Wainwright household heads were least likely (23%) to be of a healthy weight. Looking at Barrow compared with the other North Slope villages combined, there were no significant differences in the prevalence of being overweight and obese.

**Table A.10: Overweight and Obesity Among NSB Household Heads**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
Overweight (BMI 25–29.9 kg/m <sup>2</sup> )*	32%	26%	34%	34%	38%	29%	17%	36%	33%
Obese (BMI 30 kg/m <sup>2</sup> or higher)*	23%	38%	40%	32%	33%	48%	46%	41%	39%

## Physical Activity

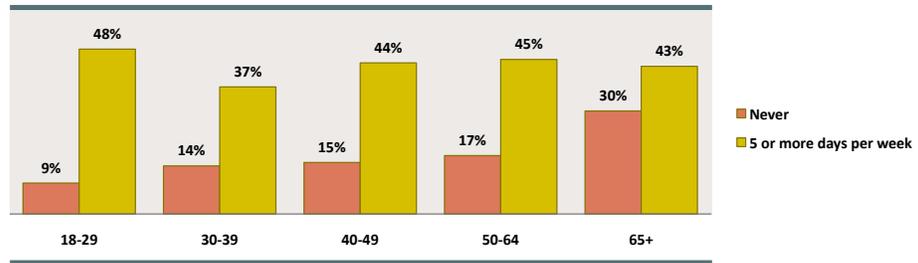
*“On average, how many days per week do you participate for at least 30 minutes in moderate exercise such as outdoor work, brisk walking, basketball, calisthenics, strenuous housework, or anything else that caused some increase in breathing or heart rate?”*

Like a healthy diet, physical activity has many health benefits, both mental and physical. Regular exercise lowers the risk of diabetes, heart disease, and cancer and can also improve mood and concentration and help problems like back pain. Many factors influence the amount of exercise a person gets, including chronic health problems, social norms, educational and income level, occupation, leisure time, recreational opportunities and interest, and physical environment.

National guidelines recommend that adults get at least 150 minutes of moderate-intensity aerobic physical activity per week or 75 minutes of vigorous-intensity aerobic activity, as well as at least 2 days of muscle-strengthening activities. More time spent being physically active conveys even greater health benefits. In this census, household heads were asked about the frequency with which they engage in moderate physical activity.

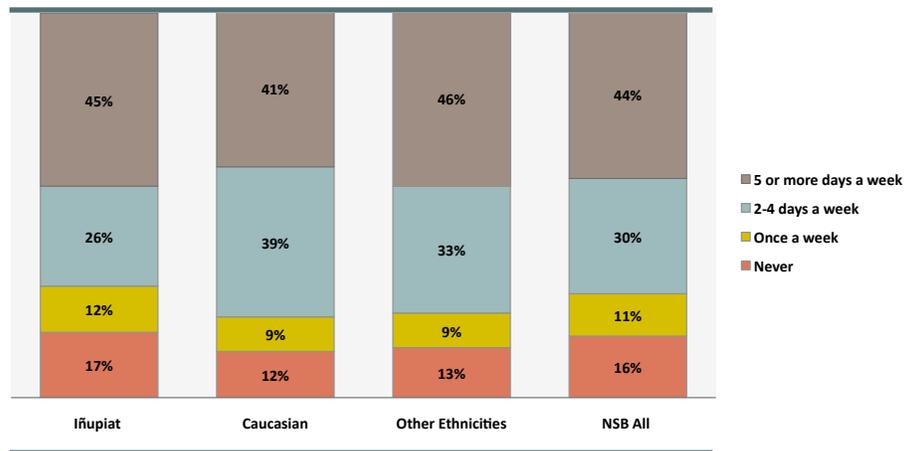
Frequency of moderate physical activity was highly associated with age, with an increasing percentage of household heads in older age groups reporting never exercising for 30 minutes in a day on average. A substantial proportion of in older age groups still reported exercising for at least 30 minutes 5 or more days per week, however.

**Figure A.16: Exercise Among NSB Household Heads: Number of days per week get 30 minutes of moderate physical activity, by age group**



Overall, Caucasians were more likely to report 30 minutes of moderate exercise 2–4 days per week, compared with other ethnic groups, but this difference was only statistically significant in the 30- to 39-year-old age group, where Iñupiat household heads were more likely than Caucasians to report either once a week or less or 5 days a week or more.

**Figure A.17: Exercise Among NSB Household Heads: Number of days per week get 30 minutes of moderate physical activity, by ethnic group**



**Community of Residence:** Reported frequency of physical activity was significantly associated with community of residence among household heads. Residents of Atkasuk were most likely to report getting, on average, no moderate exercise of 30 minutes duration per week and least likely to report 5 days or more per week (31%). Household heads in Point Lay and Wainwright reported the highest levels of exercise, with 59% reporting getting at least 30 minutes of moderate exercise 5 or more days per week.

Compared with their counterparts in Barrow, Iñupiat household heads in the other villages overall reported a significantly higher frequency of moderate physical activity.

**Table A.11: Physical Activity Among Household Heads: Number of days per week, on average, get at least 30 minutes of moderate physical activity**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	All NSB
"Never"	18%	24%	16%	17%	19%	10%	8%	11%	16%
"Five days per week or more"	39%	29%	41%	50%	44%	49%	59%	59%	44%

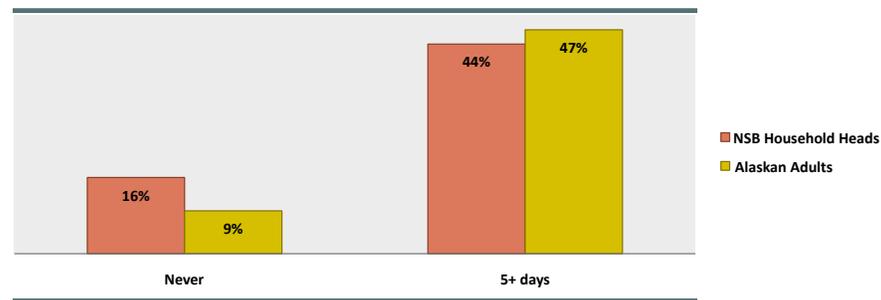
**Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat only	All	Iñupiat only
"Never"	16%	20%	15%	15%
"Five days per week or more"	41%	41%	48%	49%

AKP=Anaktuvuk Pass

**Statewide Comparison:** NSB household heads in all age groups were about as likely to report getting 5 or more days as adults statewide (44% vs. 47%).<sup>5</sup> NSB household heads were slightly more likely to report never getting 30 minutes or more of moderate physical activity than were Alaskan adults in the same age groups (16% vs. 9% overall).<sup>5</sup>

**Figure A.18: Physical Activity Among NSB and Alaska Adults:**  
Number of days per week with at least 30 minutes of moderate physical activity



Alaska data source: 2007 Alaska BRFSS.

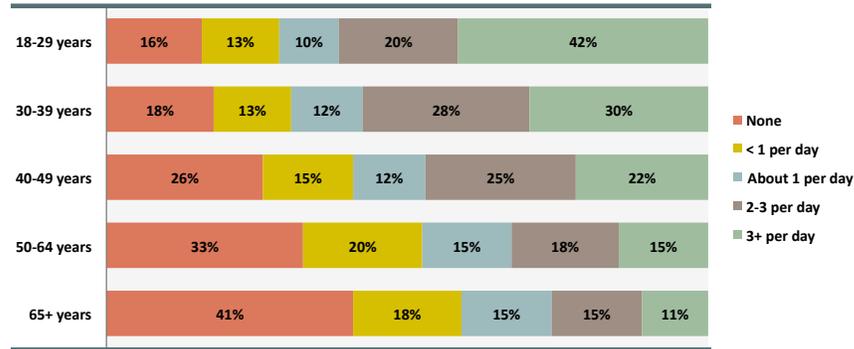
## Sodas and Other Sugar-Sweetened Beverages

*"During the past week, on average, how many sweetened beverages such as soda pop (not diet), Kool-Aid or Tang, sweetened fruit juices, or energy/sports drinks did you drink per day?"*

Sugar-sweetened beverages (SSBs) such as soda pop, fruit punch, sports and energy drinks, and sweetened milk, tea, and coffee drinks, are a major source of added sugar and calories in the U.S. and typically have very low nutrient value. High consumption of these beverages is associated with a number of health problems such as obesity, diabetes, cardiovascular disease, gout, and fatty liver disease, and tooth decay. Recent research also suggests a possible association between soda consumption and pancreatic cancer. Reducing the consumption of soda and other sugared beverages is one way to address the rising rates of obesity and related chronic diseases. In Alaska, rural residents have been found to drink considerably more soda per day than their urban counterparts. For further discussion of soda and other SSBs among both adults and children, please refer to the *NSB Baseline Community Health Analysis*.

Among NSB household heads, consumption of sodas and other SSBs was strongly associated with age. Younger age groups reported significantly higher levels of consumption than older groups. Household heads were asked only about their own consumption, thus data on children and teens are not available.

**Figure A.19: Average Number of Sodas and Other SSBs NSB Household Heads Report Drinking Each Day, by Age Group**



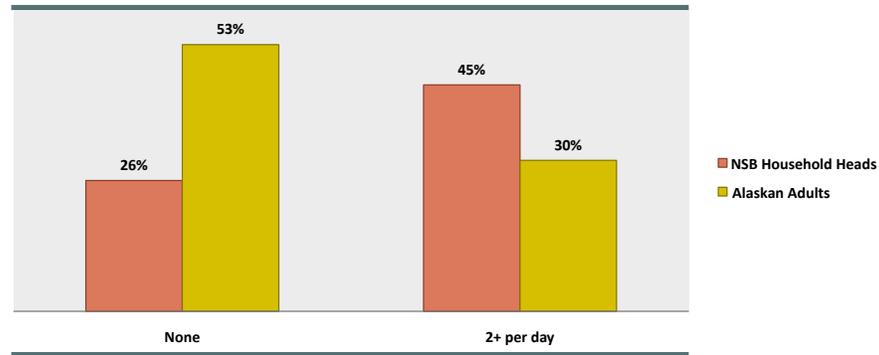
**Ethnic Group:** Iñupiat household heads in the NSB reported significantly higher levels of SSBs consumption than did Caucasians and those of other ethnicities. Iñupiat household heads were more than six times as likely as Caucasian household heads to report drinking more than three of these beverages per day (31% vs. 5%, respectively). The relationship between ethnic group and consumption of sodas and other sugar-sweetened beverages was statistically significant in all age groups.

**Figure A.20: Average Number of Sodas and Other SSBs NSB Household Heads Report Drinking Each Day, by Ethnic Group**



**Statewide Comparison:** NSB household heads were about half as likely to report drinking, on average, no sodas or other SSBs per day in the last week as adults statewide. NSB household heads were also more likely to report drinking two or more of these beverages per day than were adults statewide.<sup>10</sup>

**Figure A.21: Average Daily Number of Sodas and Other SSBs Consumed by NSB Household Heads and Alaskan Adults**



Alaska data source: 2009 Alaska BRFSS (Data cited in "Obesity Facts: Sugar-Sweetened Beverages in Alaska," State of Alaska Department of Health and Social Services, August, 2011).

**Community of Residence:** Consumption of sodas and SSBs was significantly associated with community of residence among Iñupiat household heads. Of all the villages, household heads in Anaktuvuk Pass and Atqasuk were least likely to report drinking two or more of these beverages per day (49% and 48%, respectively) and most likely to report drinking none (25% and 21%, respectively). Iñupiat household heads in Nuiqsut were least likely to report drinking, on average, no sodas or SSBs per day (11%). More than 60% of Iñupiat household heads in Nuiqsut, Point Hope, Kaktovik, Point Lay reported drinking two or more of these beverages per day. Household heads living in villages other than Barrow, on the whole, reported higher levels of consumption of these beverages than did their counterparts in Barrow. This was true when comparing only Iñupiat household heads as well.

**Table A.12: Soda and Sugar-Sweetened Beverage Consumption Among Iñupiat Household Heads**

Reported average daily consumption	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	NSB Iñupiat
None	25%	21%	16%	15%	11%	16%	18%	14%	16%
2 or More	49%	48%	53%	65%	68%	66%	63%	64%	58%

**Barrow vs. Other North Slope Villages**

	Barrow		Other North Slope Villages	
	All	Iñupiat only	All	Iñupiat only
None	29%	16%	21%	16%
2 or More	39%	53%	54%	62%

AKP=Anaktuvuk Pass

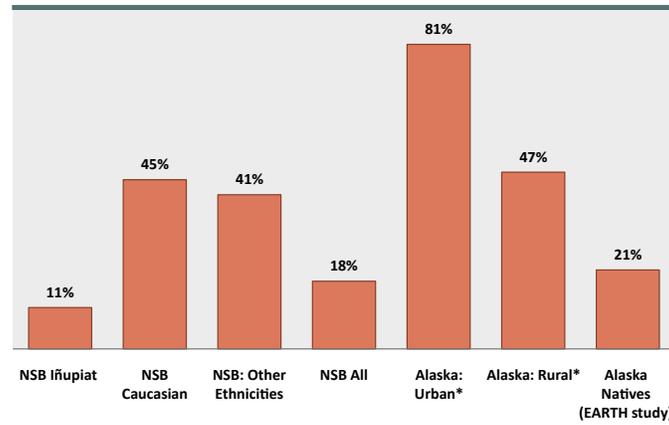
## Helmet Use

*“Do you wear a helmet when riding a snowmachine or four-wheeler?”*

Unintentional injuries are the leading cause of premature death in the NSB, and injury rates in the NSB are among the highest in the state. Accidents involving offroad motor vehicles are the leading cause of these injury deaths as well as the number one cause of traumatic brain injury. Helmets have been shown to prevent a significant percentage of these injuries and deaths. Please refer to the *NSB Baseline Community Health Analysis* for an expanded discussion of injury and particularly the role of alcohol in injuries.

A very low percentage of NSB household heads reported wearing a helmet when riding a snowmachine or four-wheeler (18%), compared with observed helmet use among adults statewide (57% use of snow-machine helmets).<sup>11</sup> Iñupiat household heads were significantly less likely to report helmet use than were Caucasians or those of other ethnicities, and this association was statistically significant in all age groups except for 65-year-olds and older, where the number of non-Iñupiat riders was very small.

**Figure 22: Percent of Adults Who Wear a Helmet When Riding a Snowmachine or Four-Wheeler**



\*Observed snowmachine helmet use.  
 Alaska data source: Alaska Department of Health and Social Services. Snow Machine Rider Helmet Observation Study. (2006).  
 Alaska Native data source: Redwood, D.G., K.D. Hagan, R.D. Perkins, H.B. Stafford, L. J. Orell, and A.P. Lanier. Safety behaviors among Alaska Native and American Indian people living in Alaska. *Injury Prevention* 15, no. 1 (2009): 30–35.

Reported helmet use was particularly low in villages other than Barrow. Looking at both all ethnic groups combined and at Iñupiat household heads only, Barrow residents were significantly more likely to wear helmets than those living in other villages.

**Table A.13: Helmet Use: Wear a helmet when riding a snowmachine or four-wheeler (of household heads who ride them)**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	Villages other than Barrow
All Household Heads	11%	*	30%	*	9%	4%	*	*	5%
Iñupiat Household Heads	9%	*	17%	*	9%	4%	*	*	5%

\*Cell count less than 5.

## Food Security

The term “food security” refers to the ability to procure enough food, at all times, for an active healthy life for all household members. Food insecurity is a major public health concern and, paradoxically, can contribute to obesity and chronic diseases like diabetes because people who do not have enough food tend to choose cheaper, high-calorie food with low nutrient value. Food insecurity is also linked to many health problems among children, including poor general health status, more frequent colds and ear infections, decreased school performance, and higher levels of anxiety and aggression. In Alaska, residents of rural areas are at highest risk for food insecurity, where unemployment is high and problems are compounded by the expense and logistical difficulty of transporting food. Although local, subsistence food sources remain a very important source of nutritious food in rural Alaska, one in five adults and more than one in four children in rural Alaska are estimated to be living in food insecure households.<sup>9</sup>

NSB household heads were asked several questions about their household’s ability to procure enough food to sustain a healthy life for all household members.

***“Last year were there times when your household found it difficult to get the food needed to eat healthy meals?”***

Overall, 35% of NSB household heads reported having times last year when they found it difficult to get the food needed to make healthy meals.

***“If yes, did this happen because they couldn’t get enough subsistence and/or store foods?”***

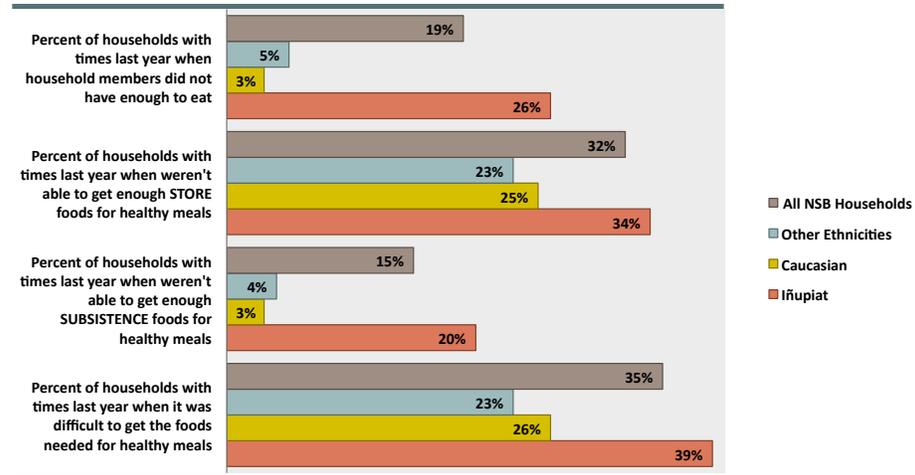
Of the household heads who reported difficulty getting the food needed to eat healthy meals, 43% overall and 51% of Iñupiat household heads reported that this was because they could not get enough subsistence

foods. The vast majority of household heads (90%) reporting difficulty getting food for healthy meals stated that it was because they couldn't get enough store foods.

**“Last year, were there times when members of your household did not have enough to eat?”**

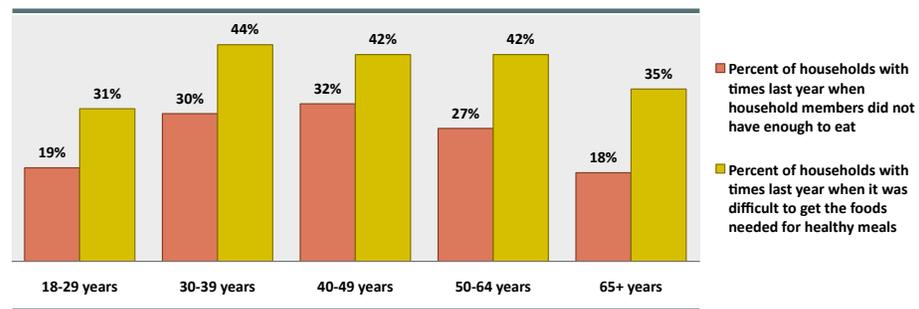
Overall, 26% of Iñupiat household heads reported times last year when household members did not have enough to eat.

**Figure A.22: Food Insecurity in the NSB, by Ethnic Group of Household Head**



**Age and Gender:** None of the measures of food insecurity were significantly associated with the gender of the household head. Iñupiat household heads in the middle age groups were most likely to report that at times, household members did not have enough to eat. There was a similar relationship between age group and difficulty getting foods for healthy meals. The associations between age of household head and both measures of food insecurity were statistically significant. Age group was not significantly associated with whether Iñupiat household heads reported difficulty getting enough subsistence or store foods.

**Figure A.23: Food Insecurity Among Inupiat Households, by Age Group of Household Head**



**Community of Residence:** Levels of reported food insecurity varied significantly across the North Slope. Iñupiat household heads living in villages other than Barrow were more likely than those living in Barrow to report food insecurity. They were more likely to report difficulty getting foods for healthy meals and also more likely to report difficulty getting enough subsistence foods, compared with Iñupiat household heads living in Barrow. They were also more likely to report household members who, at times, did not have enough to eat.

The significantly higher levels of food insecurity in villages other than Barrow persisted when looking only at Iñupiat household heads. Among Iñupiat household heads, those living in Anaktuvuk Pass were the most likely to report difficulty getting food for healthy meals, and a high proportion reported this difficulty to be caused by not being able to get enough subsistence foods. Almost one-half of Iñupiat household heads in Anaktuvuk Pass reported household members who, at times last year, did not have enough to eat.

**Table A.14: Food Insecurity in Households with Iñupiat Household Heads**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	Villages other than Barrow
Percent of households that, at times last year, found it difficult to get the foods they needed to eat healthy meals	62%	56%	33%	39%	38%	38%	50%	47%	46%
If yes, because not able to get enough subsistence foods	83%	41%	43%	58%	63%	64%	47%	41%	57%
If yes, because not able to get enough store foods	78%	100%	87%	84%	84%	85%	100%	94%	88%
Percent of households that, at times last year, had members who did not have enough to eat	49%	25%	22%	23%	28%	26%	26%	33%	30%

AKP=Anaktuvuk Pass

Statewide and national food insecurity data are not easily comparable with NSB census data because the state and national surveys did not ask about subsistence food security or take into account lack of availability of many foods in remote communities. For reference, 10.8% of Alaska household surveyed were found to have some degree of food insecurity, and 4.4% were found to have “very low food security,” with disrupted eating patterns or reduced food intake.<sup>12</sup> Although the NSB census data are not directly comparable with statewide estimates, the 2010 NSB Census results suggest that food insecurity is a serious problem across the North Slope and, like in other rural areas, exists at levels higher than statewide estimates.

## Impacts of Drugs and Alcohol

It has long been recognized that alcohol and drug use can have devastating impacts on individuals, families, and communities. Alcohol and drug use are significant factors in accidental injuries, suicide, and interpersonal violence, and are associated with a number of other health problems. Major efforts have been made in the NSB to combat the negative effects of drugs and alcohol in the community through policy and prevention programs and by actively supporting a strong Iñupiaq culture and value system. For further discussion of this topic, please refer to the *NSB Baseline Community Health Assessment*.

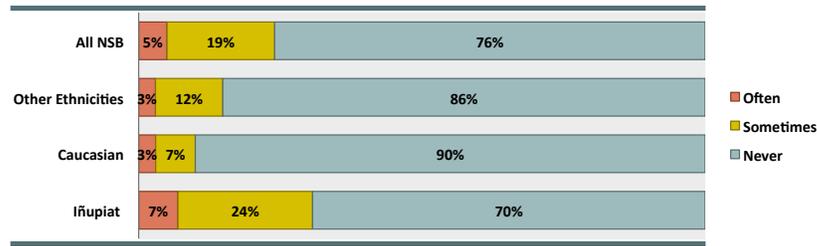
This year, all household heads were asked two questions about the effect of drugs and alcohol on the health of their household and community.

### Household Impacts

***“In the last 12 months, do you feel that anyone in your household has been hurt by alcohol or drugs?”***

A minority of household heads of all ethnic groups in the NSB thought that someone in their household had been hurt by alcohol or drugs in the past year. The response to this question did not vary significantly by age or gender. Iñupiat household heads were three times as likely as Caucasians and twice as likely as those in other ethnic groups to report a household member hurt by alcohol or drugs, however.

**Figure A.24: Household Impact of Drugs and Alcohol in the NSB, by Ethnic Group:** Percent of NSB household heads reporting that, in the past 12 months, a member of the household has been hurt by drugs or alcohol



**Community of Residence:** Response to this question varied significantly by the household head’s community of residence. Among Iñupiat household heads, those living in Kaktovik were most likely to report a household member being hurt by alcohol or drugs (44%) and those living in Wainwright and Point Lay were least likely to report this (15% and 16%, respectively).

As a whole, compared with their counterparts living in Barrow, Iñupiat household heads in other villages were significantly less likely to believe that a household member had been hurt by alcohol or drugs (35% vs. 25%, respectively).

**Table A.15: Iñupiat Household Heads: Household Impact of Drugs and Alcohol, by Village:** Percent who felt that, in the last year, a household member had been hurt by the effects of alcohol or drugs

AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	Villages other than Barrow
24%	31%	35%	44%	28%	24%	16%	15%	25%

AKP=Anaktuvuk Pass

## Community Impacts

*“In the last 12 months, do you feel that the health of your community has been hurt by the effects of alcohol or drugs?”*

A large majority of NSB household heads thought that drugs or alcohol had affected the health of their community in the last year. About one-half of Iñupiat household heads thought that the health of their community had been hurt often by alcohol or drugs in the past year, compared with almost three of four Caucasian household heads who thought this was true. Female household heads were more likely than male household heads to believe that drugs or alcohol had affected the health of their community, but the responses did not vary significantly by age.

**Figure A.25: Community Impact of Drugs and Alcohol in the NSB:** Percent of NSB household heads reporting that, in the past 12 months, the health of the community has been hurt by drugs or alcohol



Data source: 2010 NSB Census.

**Community of Residence:** Among Iñupiat household heads, the response to this question varied significantly across the North Slope villages. Those living in Atqasuk were least likely to think that their community’s health was “often” hurt by alcohol or drugs (33%) and those living in Barrow were most likely (57%) to believe that this was true. Those living in Anaktuvuk Pass and Nuiqsut were least likely to report thinking that the health of their communities were “never” hurt by alcohol or drugs (3% and 5%, respectively). Iñupiat household heads living in Atqasuk were most likely to report thinking that the health of their community was never hurt by alcohol or drugs (28%).

As a whole, those living in North Slope villages other than Barrow were significantly less likely than those living in Barrow to believe that the health of their community had often been hurt by alcohol or drugs in the past year.

**Table A.16: Iñupiat Household Heads: Community Impacted by Alcohol or Drugs: Percent who felt that, in the last year, the health of their community had been hurt by alcohol or drugs**

	AKP	Atqasuk	Barrow	Kaktovik	Nuiqsut	Point Hope	Point Lay	Wainwright	Villages other than Barrow
Never	3%	28%	8%	14%	5%	11%	11%	13%	12%
Sometimes	41%	39%	36%	45%	48%	44%	49%	39%	43%
Often	55%	33%	57%	41%	47%	45%	41%	49%	45%