

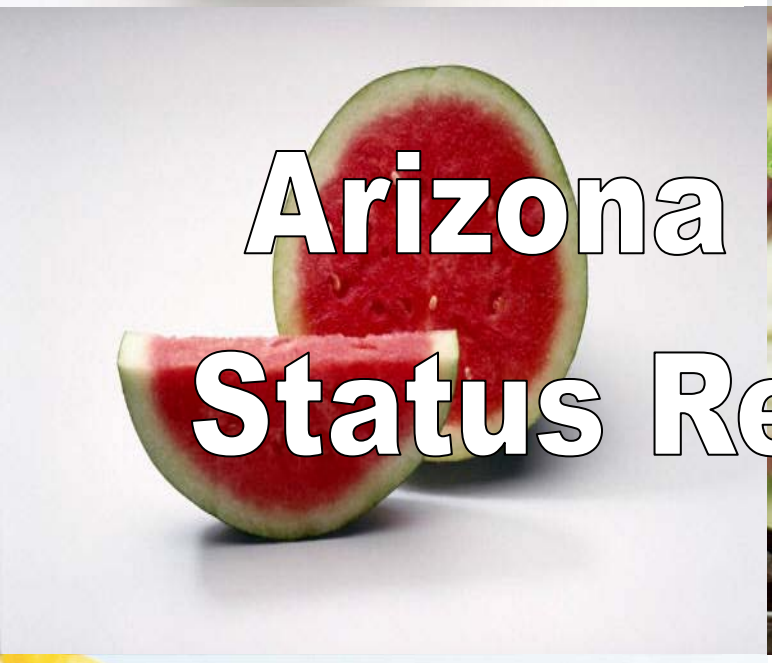


Arizona Nutrition Status Report 2008


Arizona Department of Health Services

JAN BREWER, GOVERNOR
STATE OF ARIZONA

WILL HUMBLE, INTERIM DIRECTOR
ARIZONA DEPARTMENT OF HEALTH SERVICES

BUREAU OF USDA NUTRITION PROGRAMS
ARIZONA DEPARTMENT OF HEALTH SERVICES
150 NORTH 18TH AVENUE, SUITE 310
PHOENIX, AZ 85007
602-542-1886; FAX 602-542-1890
WWW.AZDHS.GOV/PHS/BNP

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AUTHOR

Shelley Kuklish
Epidemiologist – Arizona Nutrition Network
Arizona Department of Health Services

REVIEWERS

Cynthia Melde, MS
Epidemiologist – WIC
Arizona Department of Health Services

Doug Ritenour, MPH
Epidemiologist – Maternal and Child Health
Arizona Department of Health Services

Kai-Ning Khor, MPH
Epidemiologist – Chronic Disease
Arizona Department of Health Services

Karen Sell, RD
Bureau Chief – USDA Nutrition Programs
Arizona Department of Health Services

Sharon Sass, RD
Nutrition Education Advisor – USDA Nutrition Programs
Arizona Department of Health Services

Richard Porter
Bureau Chief – Bureau of Public Health Statistics
Arizona Department of Health Services

Arizona Department of Health Services
Bureau of USDA Nutrition Programs

Vision

Inspiring Arizona to make healthy choices.

Mission

Improve health and well-being through nutrition education and promotion of physical activity along with passionate support for people and programs to reduce hunger, increase breastfeeding, and decrease obesity throughout Arizona.

Goals

Promote healthier eating habits and lifestyles.
Ensure access to nutritious food.
Improve nutrition assistance program management and customer service.

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EXECUTIVE SUMMARY

Arizona is the second fastest growing state in the country, with three-quarters of the population residing in Maricopa and Pima Counties. Over one-third of the population lives below 185% of the federal poverty level. Almost half of children under 18 years of age live in families with incomes below 185% of the poverty level. Hunger and food insecurity are most prevalent among poor children, the elderly and the homeless. An average of 11% of Arizona households were food insecure from 2004-2006. In 2005, Arizona's emergency food network served approximately 75,000 people in any given week, reaching a total of almost 500,000 unduplicated people.

In Arizona, over half of the deaths in 2006 were due to diseases for which diet and lack of physical activity are known to increase risk including heart disease, cancer, stroke and diabetes.

Components of a healthy diet include a diet rich in fruits, vegetables and calcium rich foods. In 2007, four out of five Arizona high school students, and two out of three Arizona adults did not meet recommendations for fruit and vegetable consumption. According to the Consumer Expenditure Survey, in Phoenix, families spent less than ten percent (9.4%) of their total food budget on fruits and vegetables. While almost 40 percent of high school principals report that students can purchase 1% or skim milk on school property, only 10% of Arizona high school students reported that they met recommendations for milk consumption.

Achieving and maintaining a healthy weight is an important factor in decreasing risk for heart disease, cancer, stroke and diabetes. Of children age two to five years enrolled in the Arizona WIC program, 13.5% were overweight (BMI-for-age >95th percentile). A study of early influences of childhood obesity in the Arizona WIC program indicated that mothers who were obese at the beginning of their pregnancy were 80% more likely to have a two to three year old child that was overweight or obese. Additionally, mothers who gained more weight than recommended during their pregnancy increased the risk of the two to three year old being overweight or obese by 20 percent. Among Arizona high school students, 14.2% were overweight, and 11.7% were obese. Among Arizona adults, 58.7% were overweight or obese.

Regular physical activity is associated with decreased death rates for people of all ages, and has been shown to decrease the risk of death from obesity related diseases such as heart disease, diabetes and colon cancer. Children from low income families in Arizona were less likely to have participated in physical activity on some or all of the days of the

week compared to children who were not in low income families. Over one-third (36%) of children age six to 17 watched TV, videos or played video games for two to three hours on the average school day. One-third (32%) of high school students reported being active for at least 60 minutes on five or more days of the past week in 2007. Almost as many (28.2%) high school students reported spending at least three hours watching television per day. One-third (35%) of adults reported participating in physical activity, but at levels insufficient to meet recommendations for moderate or vigorous physical activity. Adults with incomes less than 130% of the federal poverty level were less likely to have participated in any moderate or vigorous physical activity than adults not in poverty.

Birth defects are one of the leading causes of death for infants in the neonatal period. Folic acid, which can be found in dark leafy green vegetables, folic acid enriched cereals and breads, and vitamin supplements, can help prevent neural tube defects if taken before and during pregnancy. It is recommended that women of childbearing years (age 18 to 44) consume 0.4 milligrams of folic acid per day to prevent neural tube defects. Just under half (44.6%) of Arizona women age 18 to 44 reported taking multivitamins containing folic acid. Half (52.7%) of Arizona women age 18 to 44 reported knowing that folic acid supplementation is recommended to prevent birth defects in 2007.

Breastfeeding has benefits for both the mother and the baby. Research has shown that breastfeeding can reduce the incidence of diarrhea, ear infections and bacterial meningitis, as well as provide protection against obesity, asthma and sudden infant death syndrome. Arizona ranked tenth for the highest breastfeeding rates in the country according to the National Immunization Survey, with the rates for ever breastfed and exclusive breastfeeding remaining higher than national rates from 2004 to 2007.

Iron deficiency anemia is the most common form of nutritional deficiency and is the most common form of anemia. Iron deficiency anemia can be caused by a diet low in iron, blood loss from disease, injury, or during pregnancy. In Arizona, American Indians had the highest rate of births to mothers with anemia compared to other race/ethnic groups, followed by African Americans.

The *Arizona Nutrition Status Report 2008* provides information on a wide range of nutrition-related issues and includes a current summary of data to be used by health professionals, public health programs, and community groups in planning and implementing efforts to promote optimal health and well-being for all Arizonans.

This report includes information on health behaviors such as consumption of fruits and vegetables and levels of physical activity. The report will be particularly useful to programs providing services to people most impacted by the disparities in health outcomes that are seen among racial and ethnic groups, rural and urban residents and families with low socioeconomic status. This report provides data on a number of health objectives from *Healthy Arizona 2010: Collaborating for a Healthier Future*, which can be accessed at http://www.azdhs.gov/phs/healthyaz2010/focus.htm. The objectives included in this report are as follows:

- Increase the proportion of persons age two years and older who consume at least two daily servings of fruit and at least three servings of vegetables, with at least one-third being dark green or deep yellow vegetables.
- Increase food security among Arizona households, and in doing so, reduce hunger.
- Increase the proportion of children, adolescents and adults who are at a healthy weight.
- Increase the proportion of persons aged two years and older who meet dietary recommendations for calcium.
- Increase the proportion of children who participate in cumulative intermittent physical activity for 60 minutes per day.
- Increase the proportion of adolescents who engage in either moderate or vigorous physical activity.
- Increase the proportion of adults who engage regularly, preferably daily, in moderate or vigorous physical activity.
- Increase the proportion of pregnancies begun with an optimum folic acid level.
- Increase the proportion of mothers who breastfeed.
- Reduce iron deficiency anemia among infants, young children and females of childbearing age.

In 1968, the Arizona Department of Health Services published a landmark report, *The Nutritional Status Survey*, which was presented at the first White House Conference on Nutrition the following year. The report was used extensively throughout the state in initiating nutrition programs such as WIC and nutrition services in rural counties during the 1970's. These programs have grown to include WIC agencies – Navajo Nation, Inter Tribal Council of Arizona Inc., the Arizona WIC program, and the Arizona Nutrition Network, which provides nutrition education messages to food stamp populations.

The 1968 report focused primarily on issues related to hunger and lack of food. Since then, programs such as Food Stamps, WIC, Commodity Supplemental Food Program, Arizona Farmers' Market Nutrition Program and food bank efforts have been developed to serve clients throughout Arizona.

In 2002, the Department published the *Arizona Nutrition Status Report 2002* that provided new data and included more information relating to the burden of disease from over consumption of foods rather than nutrient deficiencies.

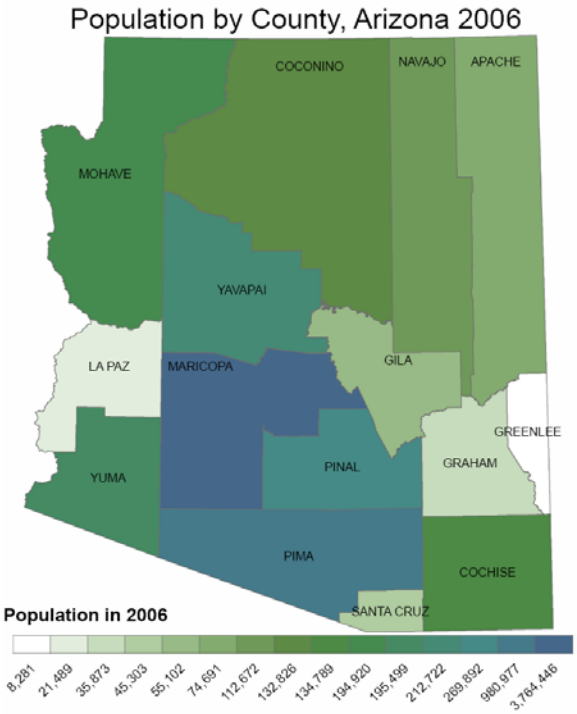
The *Arizona Nutrition Status Report 2008* includes not only updated information but an expanded number of data sources, increased local data, enhanced graphical representation of data, and detailed information useful to those working to reduce hunger, promote breastfeeding, and decrease obesity throughout Arizona.

While this report is the most current data available, nutrition-related concerns have been addressed by public health nutrition programs in Arizona for more than four decades. Five public health nutrition leaders have directed public health nutrition programs for the Arizona Department of Health Services including Anita Owen, Morissa Miller, Sheryl Lee, Margaret Tate, and Karen Sell. Special recognition is given to each of these leaders for providing opportunities to address nutrition issues in Arizona using innovative approaches. Clients served by public health nutrition programs have benefitted from their efforts and their accomplishments serve as a model for public health nutrition programs throughout the country.

OVERVIEW

The population within Arizona is comprised of a wide variety of ethnicities and cultural backgrounds. Additionally, the geographic composition of the state ranges from arrid desert, to rocky canyons, to lush forests. Economic conditions also vary throughout the state. Within the state, disparity among populations and geographic areas exist relating to economics and health outcomes. Rural and border counties such as Apache, Cochise, Graham, La Paz, Navajo, Santa Cruz and Yuma are often at greatest need and may have limited access to services compared to urban areas. With the largest populations located in just a few counties, identifying effective population-based behavior change strategies, that can be applied to a variety of populations, is essential to effective nutrition education for eligible populations.

Figure 1.



POPULATION

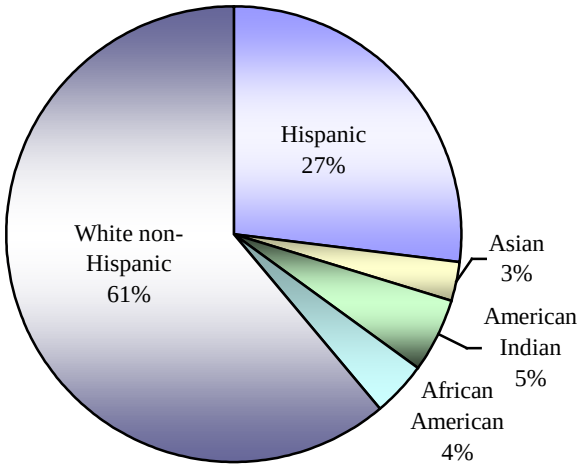
Arizona is the second fastest growing state in the country. Arizona ranked as the 16th largest state in the country, with an estimated 6.3 million people residing within its borders.[1] Phoenix ranked as the 5th largest city in the country, with an estimated 1.5 million people. This is an increase of 14.5% since 2000.[2] As seen in Figure 1, three-quarters (76%) of Arizona's population resides in either Maricopa or Pima County. The remaining one-quarter of the population, located in the other 13 counties, often reside in small towns, rural settings or on American Indian reservations.

DEMOGRAPHICS

Race/Ethnicity

A wide variety of cultures and backgrounds are represented in the population of Arizona. As demonstrated in Figure 2, over half (61%) of the population in Arizona is White non-Hispanic, and 27% are Hispanic. Arizona has 22 federally recognized tribes (each a sovereign nation) and thus has a significant population of American Indians, who comprise five percent of the total population in Arizona.

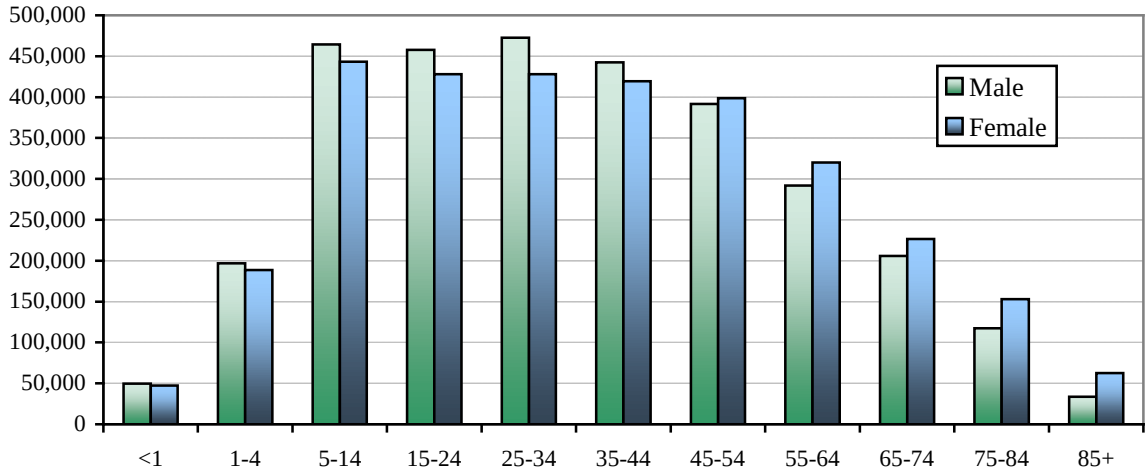
Figure 2. Percent of Population by Race/Ethnicity, Arizona 2006



Age/Gender

As demonstrated in Figure 3, almost two-thirds (64.7%) of the population residing in Arizona is less than 44 years of age. The gender ratio ranges from 1.05 males to one female in the youngest age group, to 0.5 males to one female in the oldest age group.

Figure 3. Population by Ten Year Age Groups and Gender, Arizona 2006



POVERTY

Many public programs use the federal poverty level to determine eligibility for program benefits. Table 1 demonstrates that just under one-third (30.7%) of the population in Arizona lives under 185% of the federal poverty level.[3] The percentage of the population living at that level of poverty varies from a low of 32.3% in Pima County to a high of 62.1% in Apache County. As Table 1 shows, rural counties such as Apache, Graham, La Paz, Navajo, Santa Cruz and Yuma Counties have over 40% of the population residing in the county that are living below 185% of the federal poverty level.

Table 1. Percentage of Population by Federal Poverty Level and County, Arizona 2000 Census

	<130% FPL	130%-184% FPL	185%+ FPL
Apache	49.3%	12.8%	37.9%
Cochise	24.4%	13.4%	62.2%
Coconino	25.1%	11.3%	63.6%
Gila	25.2%	14.1%	60.6%
Graham	32.0%	15.2%	52.9%
Greenlee	14.5%	10.8%	74.7%
La Paz	28.2%	16.6%	55.2%
Maricopa	16.7%	10.1%	73.3%
Mohave	20.8%	14.3%	64.8%
Navajo	38.1%	13.8%	48.0%
Pima	20.6%	11.7%	67.7%
Pinal	23.1%	12.9%	64.1%
Santa Cruz	34.7%	17.0%	48.3%
Yavapai	18.4%	12.3%	69.3%
Yuma	28.4%	15.0%	56.7%
Arizona	19.6%	11.1%	69.2%

Age

As demonstrated in Table 2, 30.7% of Arizona's population lives under 185% of the federal poverty level. Almost half (44.5%) of children under the age of five, and 39.5% of children age five to 17 are living in families below 185% of the federal poverty level.

Table 2. Percent of Population in Poverty, by Level and Age Group, Arizona 2000 Census

	<130% FPL	130-184% FPL	185%+ FPL
Under 5 years	29.6%	14.9%	55.4%
5-17 years	26.0%	13.5%	60.5%
18-64 years	17.7%	9.9%	72.4%
65+ years	13.4%	11.0%	75.6%
ALL AGES	19.6%	11.1%	69.2%

Table 3. Percentage of Food Stamp Recipients by Age and Race/Ethnicity, July 2006 – June 2007

	Age 0-19	Age 20+	All Ages
American Indian	13.2%	14.8%	13.9%
Black	8.1%	8.0%	8%
Hispanic	56.2%	33.8%	46.9%
White	21.4%	41.4%	29.7%
Other*	1.1%	2.1%	1.5%
* Other= Asian, Native Hawaiian and Unknown			

According to reports from the Arizona Department of Economic Security, for the period of July 2006 to June 2007, 58.5% of Arizona food stamp recipients were under age 20, and 41.5% were 20 or older.[4] Table 3 shows the breakdown of food stamp recipients by age and race/ethnicity for July 2006 through June 2007.

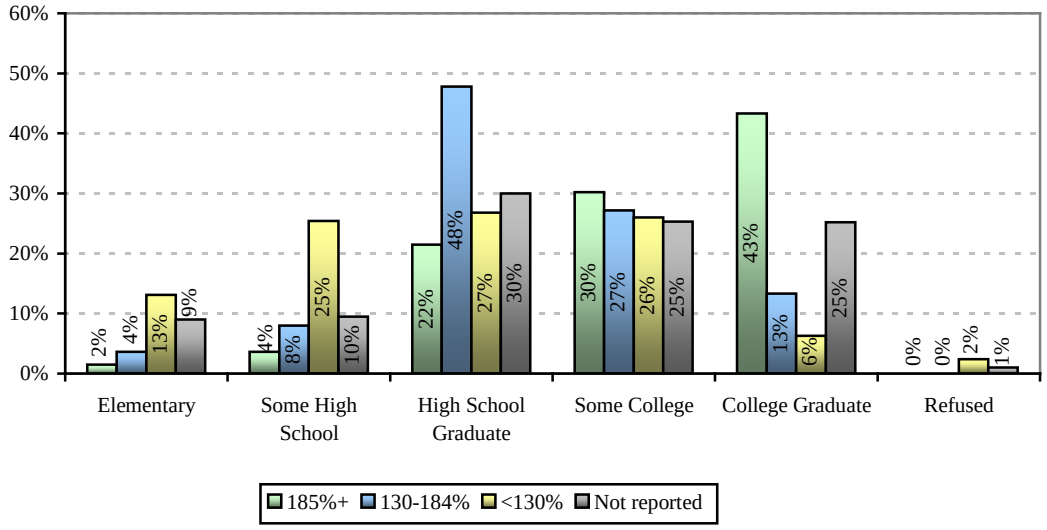
Gender

Half (50.1%) of food stamp recipients under the age of 20 years old were female, and half (49.9%) were male. For recipients over the age of 20, 65.2% were female and 34.8% were male.

Education

Results from the 2007 Arizona Behavior Risk Factor Surveillance System (BRFSS) indicate that over one-third (38%) of people with incomes at or below 130% of the federal poverty level had less than a high school education.[5] Almost half (48%) of people who had incomes between 130% and 185% of the federal poverty level had completed high school, just over one-quarter (27%) had completed some college, and 13% were college graduates. For people who were not in poverty (incomes 185% of the federal poverty level or higher), just under half (43%) had completed college, and almost one-third (30%) had completed at least some college. Figure 4 shows educational attainment by poverty level from the 2007 Arizona BRFSS.

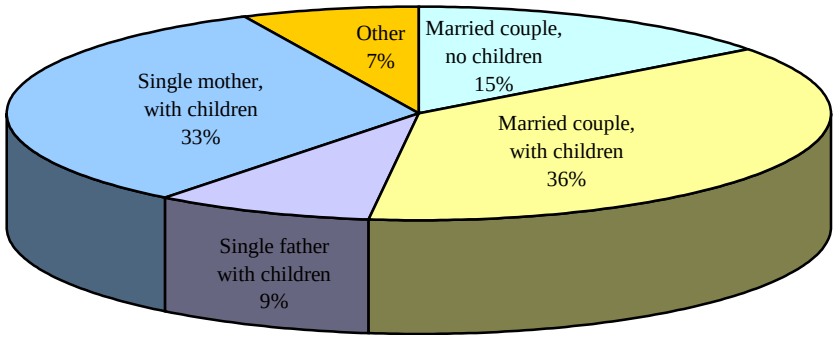
Figure 4. Educational Attainment by Poverty Level, Arizona BRFSS 2007



Family Composition

According to the 2000 Census, 23.9% of families in Arizona were living under 185% of the federal poverty level.[3] As demonstrated in Figure 5, single parent households were more likely to be living at or below 130% of the federal poverty level than married couple households. For families under 130% of the federal poverty level, 42% were single parents with children, and 36% were married couples with children.

Figure 5. Families <130% FPL by Family Type, Arizona 2000 Census



As demonstrated in the Figures 6 through 8, single parent households headed by a female were more likely to be under 130% of the federal poverty level than single father headed households and married couple households (41% compared to 27% and 15% respectively).

Figure 6. Percentage of Married Couples with Children Under 18 by Poverty Level, Arizona 2000 Census

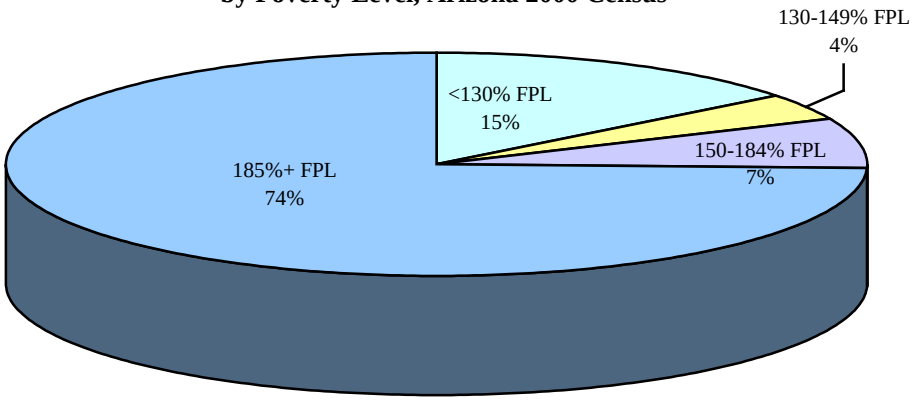


Figure 7. Percentage of Single Fathers with Children Under 18 by Poverty Level, Arizona 2000 Census

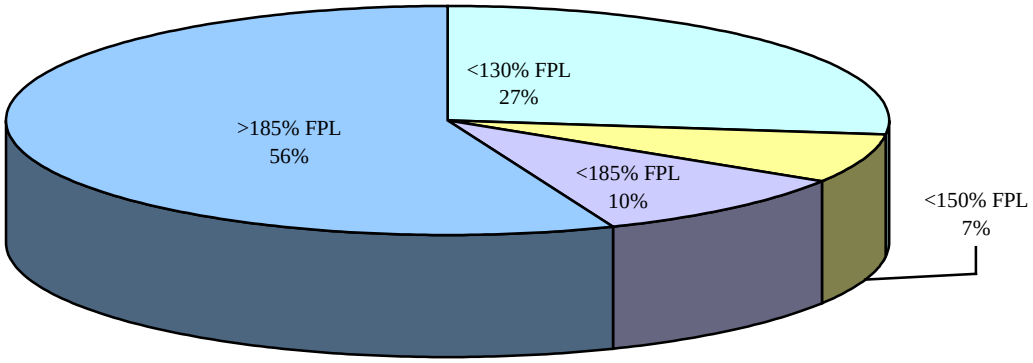
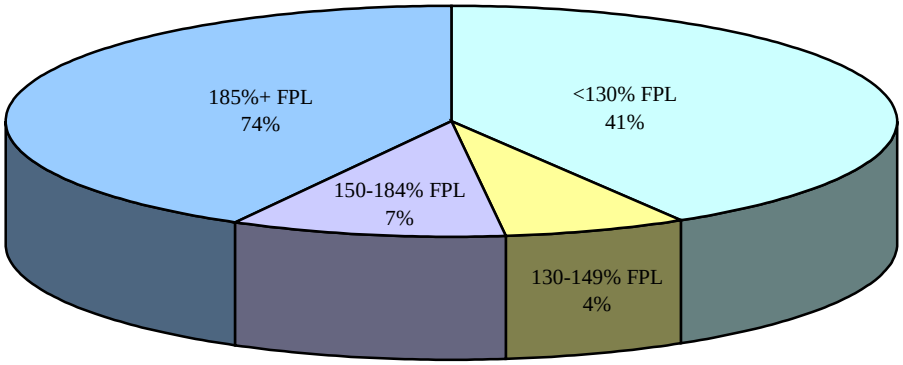


Figure 8. Percentage of Single Mothers with Children Under 18 by Poverty Level, Arizona 2000 Census



Free and Reduced Lunch

The Federal National School Lunch Program and School Breakfast Program provide nutritious meals to all school children at little or no cost to the families. It is mandatory to offer the program to students for all elementary, middle and junior high schools that have a minimum of 100 students; however participation by the families is voluntary.

Table 4. Percentage of Schools With at Least 50% of Students Eligible for the Free and Reduced Lunch Program by County, October 2007

County	Percentage
Apache	90.6%
Cochise	56.9%
Coconino	60.0%
Gila	73.1%
Graham	63.2%
Greenlee	40.0%
La Paz	100.0%
Maricopa	52.2%
Mohave	73.9%
Navajo	76.5%
Pima	70.8%
Pinal	59.5%
Santa Cruz	90.9%
Yavapai	50.9%
Yuma	91.2%
Total	61.5%

As of October 2007, 61.5% of schools in Arizona had at least half of their students eligible for the free and reduced lunch program. Table 4 shows the percentage of schools in each county who had at least half of their students eligible for the free and reduced lunch program in 2007. As Table 4 demonstrates, Apache, La Paz, Santa Cruz, and Yuma Counties had the highest percentage of schools with over 90% of schools having at least half of students eligible for the Free and Reduced Lunch Program. Greenlee County had the lowest percentage, with 40% of schools having at least half of students eligible for the Free and Reduced Lunch Program.[6]

In October 2007 almost half of students in Arizona were eligible for the Free and Reduced Lunch Program. This translates to 528,721 students. Table 5 shows the number and percentage of students who were eligible for a free or reduced lunch by county. The percentage of students who qualified for a free or reduced cost lunch ranged from a low of 31.0% in Greenlee County to a high of 84.9% in La Paz County. Detailed information regarding Arizona school participation the Free and Reduced Lunch Program can be accessed at http://www.ade.az.gov/health-safety/cnp/frpercentages/ .

Table 5. Number and Percentage of Students Who Are Eligible for the Free and Reduced Lunch Program by County, October 2007

County	Number	Percentage
Apache	13,712	73.8%
Cochise	10,870	52.1%
Coconino	12,004	49.7%
Gila	4,933	54.1%
Graham	3,272	52.0%
Greenlee	571	31.0%
La Paz	4,098	84.9%
Maricopa	302,628	45.9%
Mohave	14,321	55.3%
Navajo	14,990	62.7%
Pima	74,383	52.6%
Pinal	24,921	50.9%
Santa Cruz	8,284	71.6%
Yavapai	11,434	45.5%
Yuma	27,338	70.9%
Total	528,721	49.8%

According to United States Department of Agriculture, for fiscal year (FY) 2007, there was an average of 210,085 students participating in the free and reduced breakfast program per month in Arizona.[7] The federal reimbursement for school breakfasts was $45,122,560. For the free and reduced lunch program, there was an average of 633,312 students participating per month. The federal reimbursement for school lunch was $174,276,521.

EMPLOYMENT

In January 2007, the minimum wage in Arizona was $6.75 per hour. In January 2008, the minimum wage was raised to $6.90 per hour, and will be raised annually with the increase in the cost of living to abide by the Arizona Minimum Wage Act.[8] As of February 2008, the unemployment rate for Arizona was 4.0% compared to 4.8% for the United States overall, increasing to 6.3% for Arizona and 6.7% for the United States by November 2008. Table 6 to the right demonstrates the unemployment rates for each county as of November 2008.[9] As Table 6 demonstrates, Yuma County had the highest rate of unemployment compared to the other counties, with 19.8% compared to 6.3% for the state.

Table 6. Unemployment Rates by County, Arizona, November 2008

County	Percentage
Apache	13.0%
Cochise	6.2%
Coconino	5.9%
Gila	7.0%
Graham	7.7%
Greenlee	6.6%
La Paz	8.4%
Maricopa	5.6%
Mohave	8.4%
Navajo	11.0%
Pima	5.9%
Pinal	8.1%
Santa Cruz	11.9%
Yavapai	6.5%
Yuma	19.8%
Arizona	6.3%
United States	6.7%

Per-capita income is commonly used to assess the wealth of a population. This measure gives an estimate of the average income of each person if income was equally distributed across a population. The per-capita personal income in Arizona was $31,936 in 2006. This ranged from a high of $35,046 in Maricopa County to a low of $19,505 in Navajo County. For comparison, the per-capita personal income for the United States was $36,714.[10]

CHRONIC DISEASE

Chronic diseases are the leading cause of death in the United States. These diseases, such as heart disease, cancer and diabetes, account for 70 percent of the deaths that occur in the United States each year. Although chronic diseases are the main cause of death in the United States, they are largely preventable. Healthy behaviors such as proper nutrition and physical activity can reduce a person's risk of developing disease and can lessen the severity of the disease.

In 2006, more than half (51.7%) of the deaths in Arizona were from diseases for which diet and lack of physical activity are known to increase risk including heart disease (22.8%), cancer (21.5%), stroke (4.8%), and diabetes (2.6%).[11]

Cancer

Cancer was the second leading cause of death in the United States in 2004. A person's risk of developing cancer can be reduced by adopting healthy behaviors such as improving nutrition and physical activity, achieving an optimal weight, avoiding tobacco products, and limiting sun exposure.[12]

Incidence

According to the Arizona Cancer Registry report, which reviewed cancer incidence and mortality from 2002-2004, an average of 22,755 new cases of cancer are reported each year, representing a rate of 406.4 new cases per 100,000 population.[13] Lung cancer was the most common type of cancer reported for males and females combined. Prostate cancer was the most common type of cancer diagnosed in males, and breast cancer was the most common type of cancer diagnosed in females. The incidence rate for cancer has remained relatively constant throughout the years in Arizona, with incidence rates slightly lower than national rates.

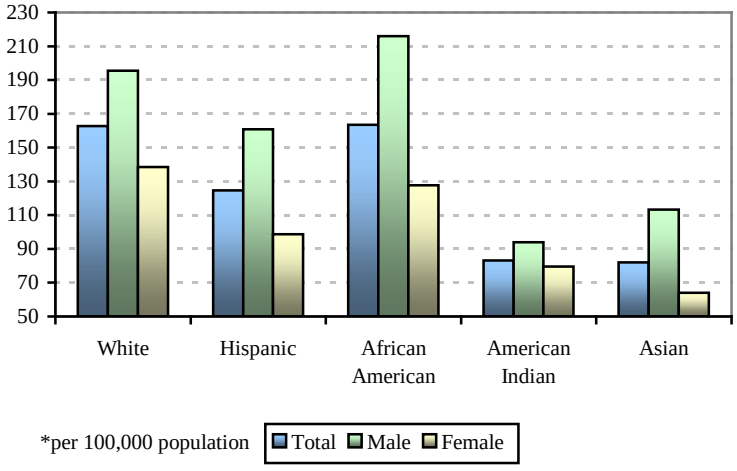
Prevalence

Arizona does not collect prevalence data for cancer.

Mortality

Cancer was the second leading cause of death in Arizona in 2006. The age-adjusted mortality rate for cancer was 154.7 deaths per 100,000 population in 2006. As Figure 9 shows, the age-adjusted mortality rate for cancer varied widely between race and ethnic groups, with African Americans having the highest mortality rate due to cancer, with 163.5 compared to 82.0 for Asians. Males had higher rates of cancer than females across all race/ethnic groups (187.0 compared to 131.0). Lung cancer was the most common type of cancer, and continues to be the deadliest, with almost as many deaths per year as new reported cases.

Figure 9. Age-Adjusted Mortality Rates* for Cancer, Arizona 2006



Cardiovascular Disease

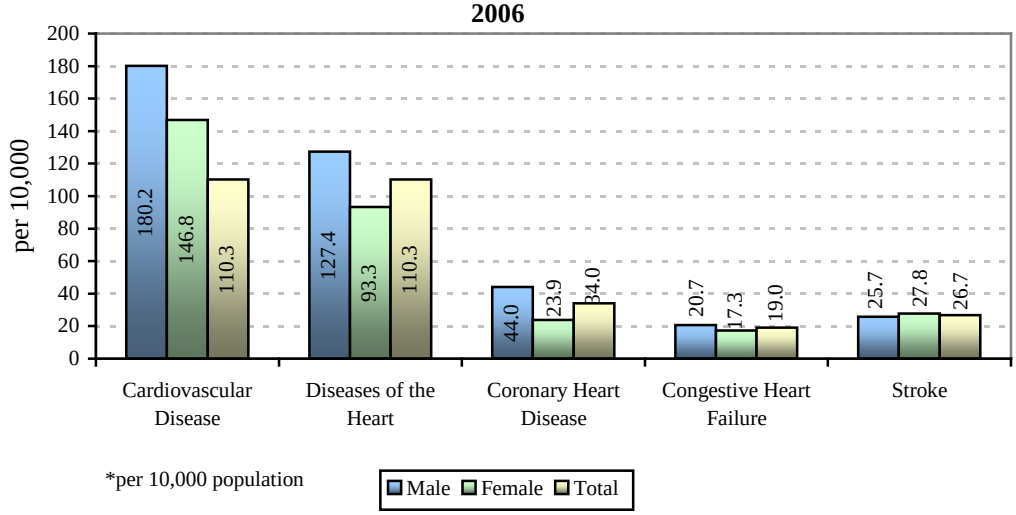
Cardiovascular disease is the leading cause of death, both nationally and in Arizona. Cardiovascular disease includes coronary heart disease, congestive heart failure and stroke. Age is one of the primary risk factors for developing cardiovascular disease. It is estimated that approximately 14% of the Arizona population was age 65 and older in 2007. Other risk factors for cardiovascular disease that cannot be controlled include

gender and heredity. Preventable and/or controllable risk factors for heart disease include: tobacco use, high cholesterol, high blood pressure, physical inactivity, obesity and diabetes.[14]

Incidence

In 2006, there were 102,038 hospitalizations for cardiovascular disease, representing a rate of 163.5 per 10,000 population. As Figure 10 shows, the rates of cardiovascular disease were higher overall for males than females; however, the rate for stroke was slightly higher for females than males.

Figure 10. Discharge Rate* by First-Listed Diagnosis and Gender, Arizona 2006



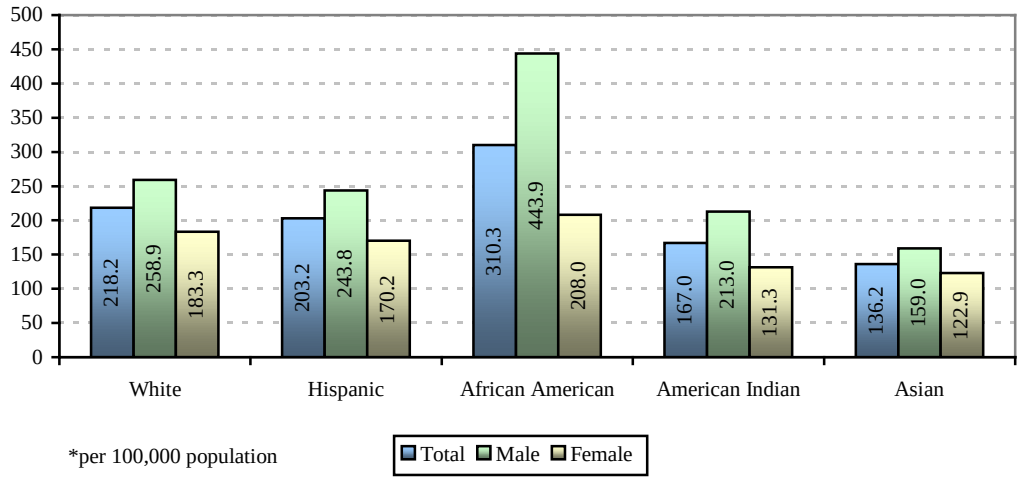
Prevalence

According to self-reported data from the 2007 BRFSS, 4.6% of Arizonans reported having a heart attack, 4.9% reported having angina or heart disease, and 2.9% have had a stroke. Males were more likely to have had a heart attack (5.6%, 3.6%) or angina (6.0%, 3.8%) than females. The percentage of people who had a stroke was similar for males and females (2.7%, 3.0%).

Mortality

Approximately one million Americans die of cardiovascular disease in the United States each year, with more than 13,000 Arizonans dying from cardiovascular disease each year. In Arizona, the age-adjusted mortality rate for cardiovascular disease was 216.4 per 100,000 population for 2006. As demonstrated in Figure 11, African Americans had the highest mortality rate for cardiovascular disease compared to all other race/ethnic groups. Additionally, males had much higher mortality rates (258.3 per 100,000 population) than females (181.0 per 100,000 population). In Arizona, 20% of cardiovascular disease related deaths were due to congestive heart failure, six percent of deaths were due to stroke and 14% were due to other diseases of the heart such as heart failure.[15]

Figure 11. Age-Adjusted Mortality Rates* for Cardiovascular Disease, Arizona 2006



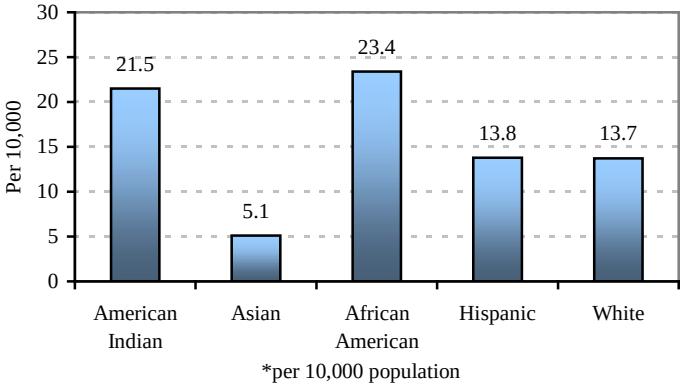
Diabetes

Diabetes is the sixth leading cause of death in the United States. Diabetes mellitus is characterized by hyperglycemia resulting from defects in insulin secretion or action. Elevated blood glucose levels can have negative effects throughout the body, including psycho-social problems, acute glycemic complications (hypoglycemic coma and insulin shock), periodontal disease, eye disease, neuropathy, kidney disease, cardiovascular disease, stroke, and foot problems.[16] It is possible to prevent or delay type 2 diabetes from developing by reducing risk factors for developing the disease including being overweight, high cholesterol levels, smoking, high blood glucose, high blood pressure, and physical inactivity.[17]

Incidence

In 2000, it was estimated that approximately 13 million Americans had been diagnosed with diabetes, and another 5.2 million are estimated to have diabetes but are not aware of their condition. Each year, 1.3 million people age 20 and older are newly diagnosed with diabetes in the United States.[18] In Arizona, there were 9,166 hospitalizations for diabetes mellitus, representing a rate of 14.7 per 10,000 population in 2006. Males had higher hospitalization rates than females, with a rate of 16.1 per 10,000 compared to 13.2 per 10,000. As Figure 12 demonstrates, African Americans and

Figure 12. Discharge Rate* for Diabetes Mellitus by Race/Ethnicity, Arizona 2006

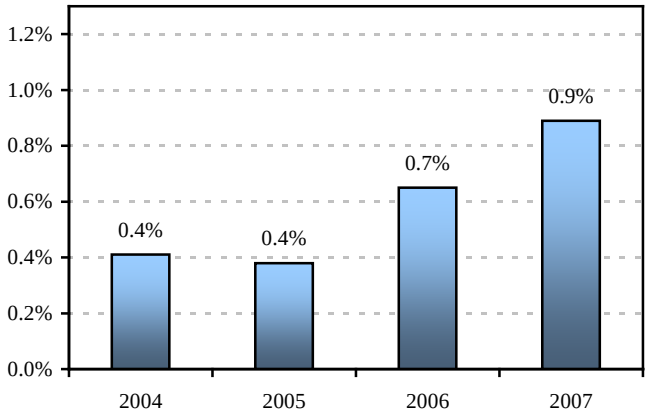


American Indians had the highest hospitalization rates of all race/ethnic groups, with 23.4 hospitalizations due to diabetes per 10,000 population.

Prevalence

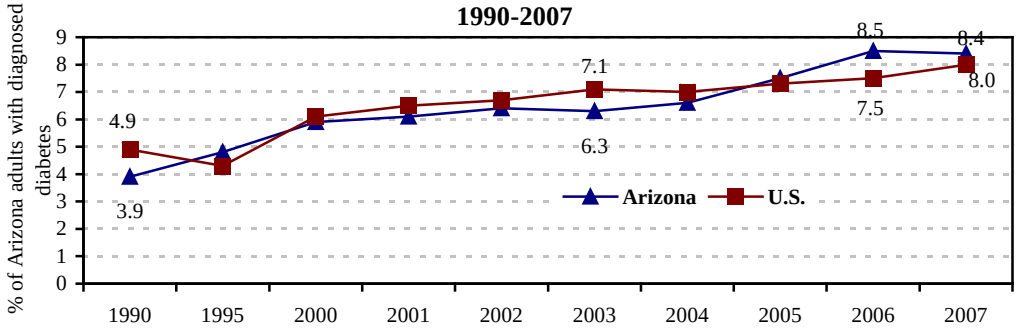
It is estimated that approximately 54 million people in the United States have pre-diabetes.[17] Pre-diabetes is a condition in which the blood sugar levels are not normal, but not high enough to be classified as type 2 diabetes. Figure 13 shows the percentage of adults in Arizona that have pre-diabetes, for 2004 to 2007.

Figure 13. Prevalence of Pre-Diabetes Among Adults in Arizona, 2004-2007



As Figure 14 demonstrates, the percentage of adults diagnosed with diabetes in both Arizona and nationally has been steadily increasing over time, from a low of 3.9% of Arizona adults in 1990 to a high of 8.4% of Arizona adults in 2007.[5]

Figure 14. Prevalence of Diabetes Among Adults in Arizona and US, 1990-2007

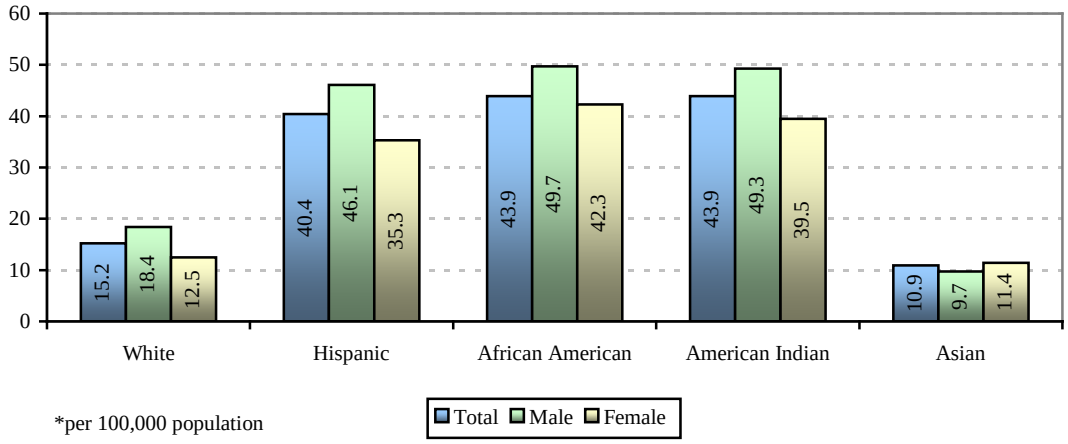


Source: Behavior Risk Factor Surveillance System, CDC, 1990 – 2007.

Mortality

Diabetes was the seventh leading cause of death in Arizona in 2006. During that time, there were 1,188 deaths due to diabetes, representing an age-adjusted rate of 18.9 deaths per 100,000 population. As Figure 15 demonstrates, Hispanics, African Americans and American Indians have much higher mortality rates than White non-Hispanics and Asians. Males had higher mortality rates for diabetes than females for most race/ethnic groups, however for Asians, females had slightly higher mortality rates than males.

Figure 15. Age-Adjusted Mortality Rates* for Diabetes by Race/Ethnicity and Gender, Arizona 2006

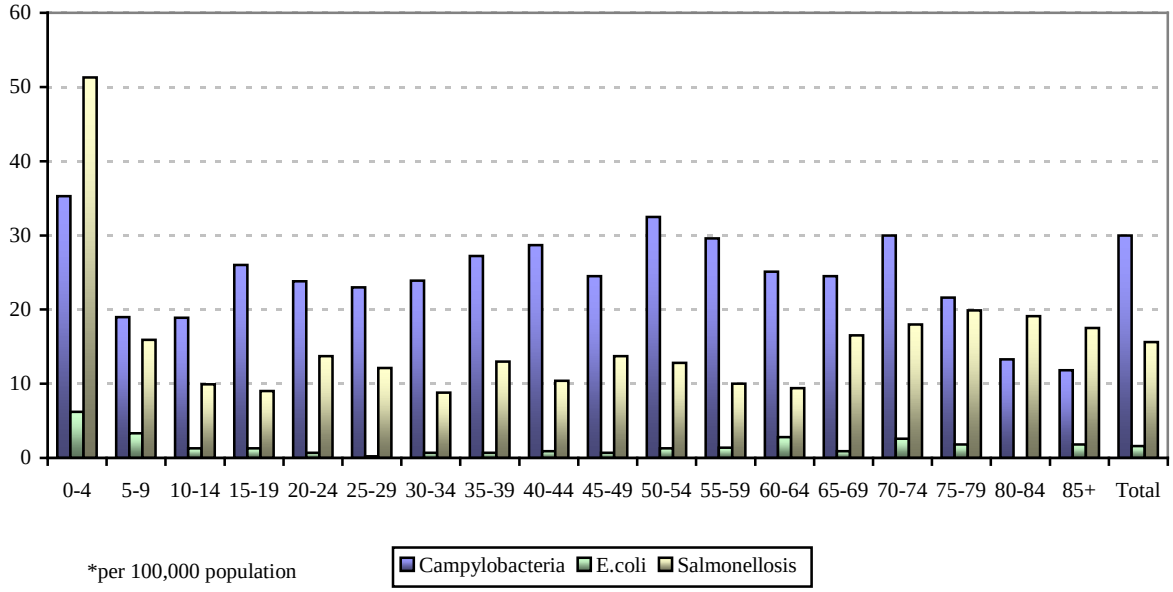


*per 100,000 population

FOOD BORNE ILLNESS

The number of reported food borne illnesses in Arizona during 2007 included 2,622 cases, including 997 salmonella cases (rate = 15.5 per 100,000), 962 campylobacteriosis cases (rate = 15.0 per 100,000), 106 E. coli 0157:H7 cases (rate = 1.6 per 100,000), and 12 listeriosis cases (rate = 0.2 per 100,000).[19] Figure 16 shows the number of food borne illness cases per 100,000 people by age group in Arizona for 2007.

Figure 16. Rate of Food Borne Illness* by Age Group, Arizona 2007



*per 100,000 population

One-fifth (20.7%) of the reported cases of salmonella in Arizona in 2007 occurred in children under the age of five, with the rate of 41.5 cases per 100,000. This compares to an overall case rate of 15.6 cases per 100,000 for the general population of Arizona. Elderly individuals experienced rates of salmonella at 19.9 cases per 100,000 for

individuals aged 75 to 79 years, 19.1 cases per 100,000 for individuals aged 80 to 84 years, and 17.5 cases per 100,000 for individuals over 85 years of age.

Campylobacteriosis is not a nationally notifiable disease, and surveillance is limited. The Centers for Disease Control and Prevention indicate that the national incidence is approximately 20 cases per 100,000 population. In Arizona, the incidence rate for campylobacteriosis was 30.0 cases per 100,000 population in 2007. Children under the age of five had the highest incidence rate (35.3 per 100,000 population) of all age groups.

Table 7 shows the rate of reported cases of food borne illnesses by county. As Table 7 shows, Graham County had the highest rate of salmonellosis cases with 44.1 cases per 100,000 population, compared to the state average of 15.5 cases per 100,000 population. Apache, Coconino, and Navajo Counties had the highest rates of campylobacteriosis, with over 30 cases per 100,000 population, compared to the state average of 15.0 cases per 100,000 population. Mohave County had the highest rate of E.coli, with 3.5 cases per 100,000 compared to the state average of 1.6 per 100,000.

Table 7. Rate of Reported Cases of Food Borne Illnesses per 100,000 Population by County, Arizona 2007

County	Salmonellosis	Campylobacteriosis	E.coli
Apache	22.5	31.7	2.6
Cochise	26.1	12.3	0.7
Coconino	19.2	31.8	0.7
Gila	26.9	12.6	1.8
Graham	44.1	13.8	0.0
Greenlee	24.2	24.2	0.0
La Paz	9.2	4.6	0.0
Maricopa	12.8	15.4	1.5
Mohave	11.4	5.5	3.5
Navajo	19.9	31.2	2.6
Pima	21.7	15.1	1.9
Pinal	16.7	7.8	2.0
Santa Cruz	17.2	19.3	2.1
Yavapai	10.4	8.2	2.3
Yuma	21.8	8.4	1.0
Arizona	15.5	15.0	1.6

INCREASE THE PROPORTION OF PERSONS AGED TWO YEARS AND OLDER WHO CONSUME AT LEAST TWO DAILY SERVINGS OF FRUIT AND AT LEAST THREE DAILY SERVINGS OF VEGETABLES, WITH AT LEAST ONE-THIRD BEING DARK GREEN OR DEEP YELLOW VEGETABLES.

DESCRIPTION OF INDICATOR:

In 2005 the United States Department of Agriculture changed its recommendations regarding the consumption of fruits and vegetables. These recommendations take into account a person's gender, age, and physical activity level and recommends the number of cups of fruits and vegetables a person should eat based on this criteria.[20] Detailed tables showing these recommendations are available in Appendix A.[21] Currently only surveillance data on servings of vegetables is collected and is provided in this report.

WHY IS IT IMPORTANT?

There is a growing body of research showing that fruits and vegetables are vital to promoting good health. Fruits and vegetables contain essential vitamins, minerals, and fiber. Consuming a diet high in fruits and vegetables can help reduce the risk of chronic diseases including cardiovascular disease and cancer. A diet high in fruits and vegetables can also help a person achieve and maintain a healthy weight. [21]

HOW IS ARIZONA DOING?

From 1999 to 2008, the Arizona Department of Health Services (ADHS) Community Nutrition Program (CNP) provided funding to local agencies to provide community and school-based nutrition education to low-income children and their families. The goal of the CNP program was to teach the benefits of eating five servings of fruits and vegetables per day. The program was taught in first through fourth grade classrooms in low-income schools throughout Arizona.

An average of 7,788 students participated in the CNP program each year, reaching an estimated 70,096 students in low-income schools over the nine years that the program was funded. Results from the pre-/post-tests show that students participating in the CNP program have consistently increased their knowledge and behaviors regarding fruits and vegetables. Figures 17 and 18 show that after completion of the program, students were more likely to report that they had eaten a fruit today or yesterday, and were also more likely to report that they had eaten a vegetable today or yesterday ($p<0.0001$).

Figure 17. Percentage of Students Who Reported Eating a Fruit Yesterday or Today, Arizona Community Nutrition Program 1999-2008

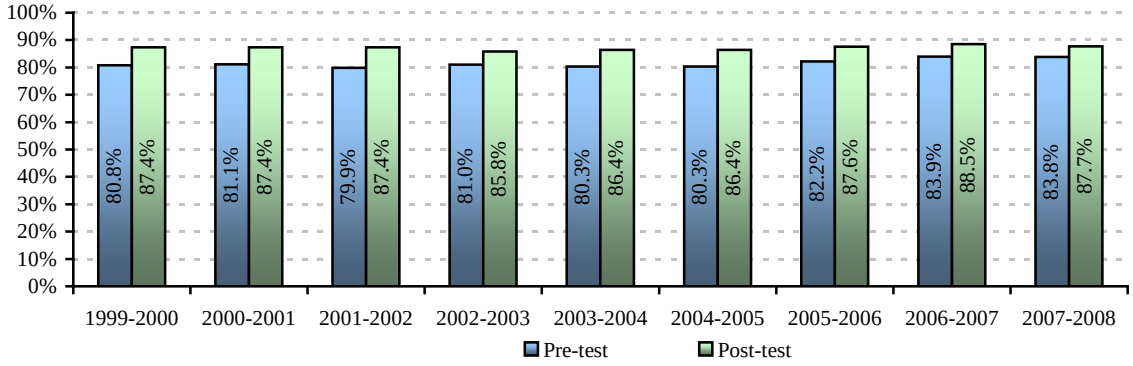


Figure 18. Percentage of Students Who Reported Eating a Vegetable Yesterday or Today, Arizona Community Nutrition Program 1999-2008

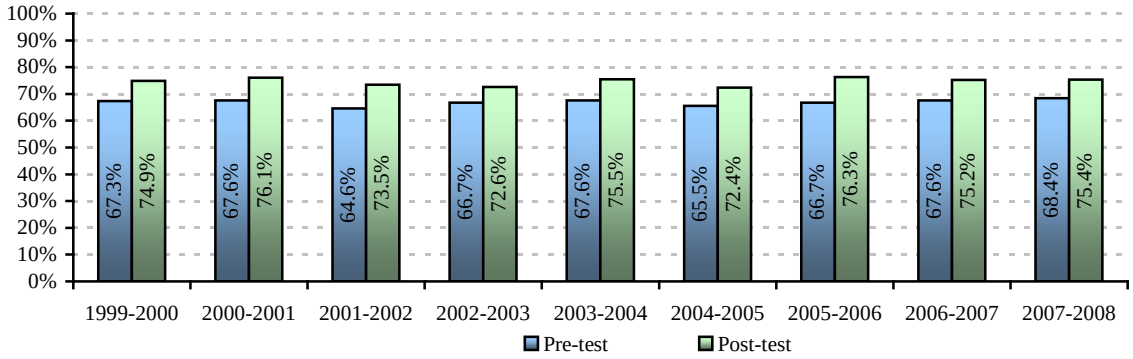
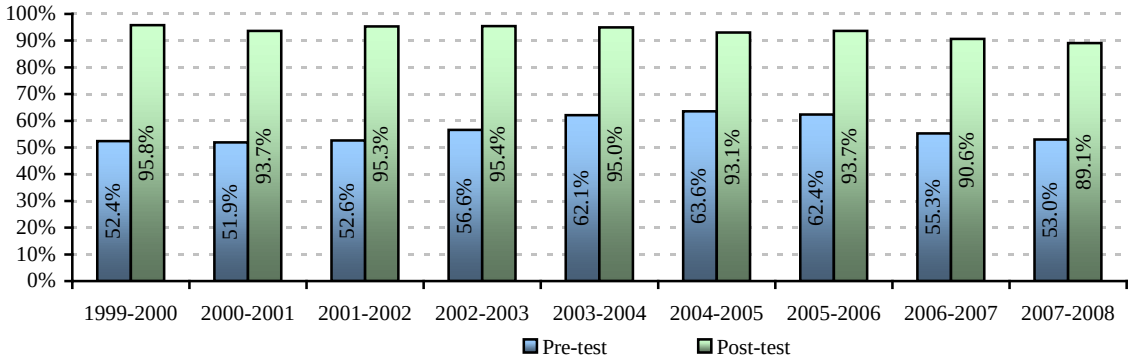


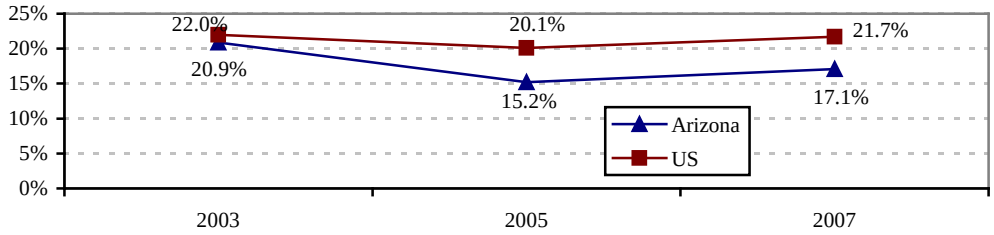
Figure 19 shows that students were consistently more likely to know that '5-A-Day' was the recommended amount of fruits and vegetables to eat each day after completion of the CNP program ($p<0.0001$).

Figure 19. Percentage of Students Who Knew '5-A-Day' was the Recommended Amount of Fruits and Vegetables to Eat Each Day, Arizona Community Nutrition Program, 1999-2008



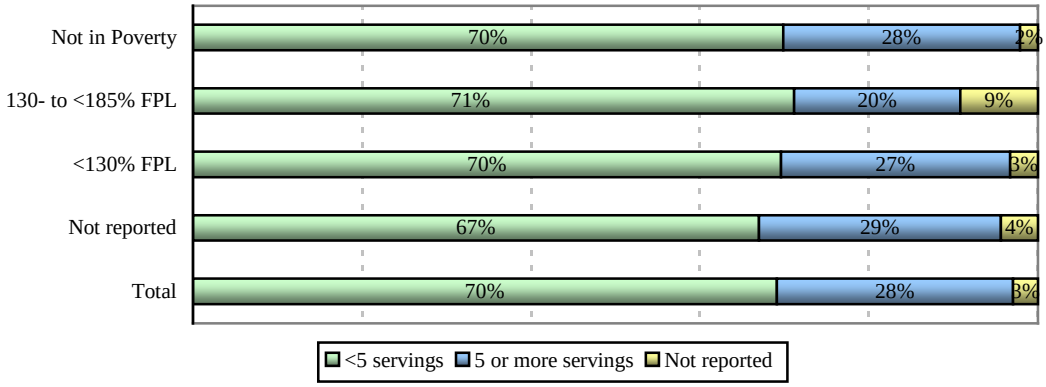
Among high school students in Arizona, the Youth Risk Behavior Survey (YRBS) 2007 results show that approximately one in five students (17.1%), report eating five or more servings of fruits and vegetables each day.[22] The prevalence of meeting recommendations for fruit and vegetable consumption varied by race/ethnicity, with American Indian students being much more likely than other race/ethnicities to have eaten the recommended servings of fruits and vegetables (32.0% compared to 14.8% for African Americans, 16.5% for Hispanics, and 16.0% for Whites). Figure 20 shows the percentage of high school students meeting the recommended consumption levels of fruits and vegetables for 2003 to 2007.

Figure 20. Percentage of High School Students Who Consumed 5+ Servings of Fruits and Vegetables Per Day, YRBS 2003-2007



Arizona is the third largest producer of fresh market vegetables in the United States, yet more than two-thirds (70%) of Arizona adults fall short of consuming the recommended five or more servings of vegetables and fruits each day.[5] The Behavioral Risk Factor Surveillance System in Arizona includes a fruit and vegetable module annually to assess changes in fruit and vegetable consumption among adults living in Arizona. The percentage of Arizona adults who consumed five or more servings of fruits and vegetables per day ranged from a high of 28% of adults not in poverty to low of 20% of adults with incomes between 130% and 185% of the federal poverty level. Adults in the lowest income group (<130% of the federal poverty level), had similar consumption patterns as adults not in poverty, with 27% reporting eating five or more fruits and vegetables per day. Figure 21 shows fruit and vegetable consumption of Arizona adults by poverty level in 2007.

Figure 21. Fruit and Vegetable Consumption by Poverty Level, Arizona BRFSS 2007



A seven-year summary of BRFSS data (2001 to 2007, n=28,702) of fruit and vegetable consumption by county indicates that consumption of at least five servings of fruits and vegetables a day by those below 130% of the federal poverty level was higher in Apache, Coconino, Yavapai and Yuma counties than the state average of 25.7% (Table 8). The remaining counties had lower consumption of five or more fruits and vegetables per day for persons below 130% of the federal poverty level than the state average. Navajo County had the lowest prevalence of persons below 130% of the federal poverty level eating five or more fruits and vegetables per day, with just 18.5%.

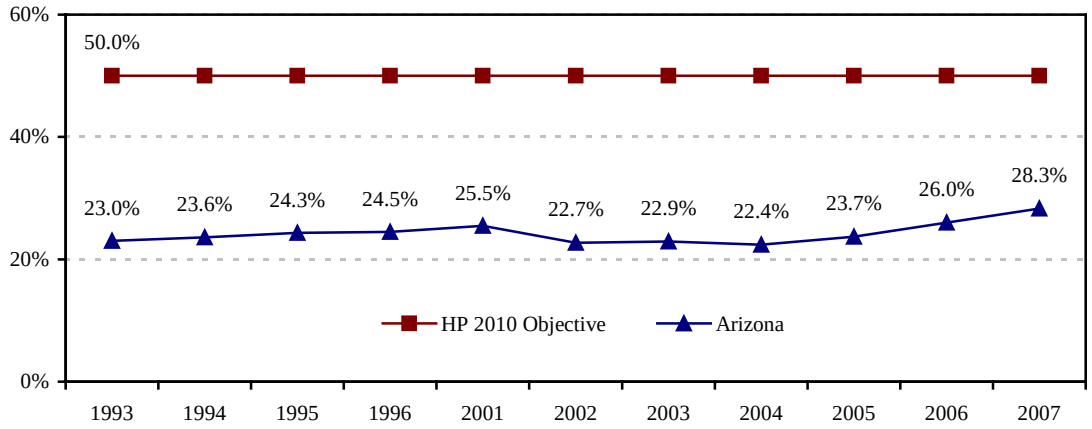
Table 8. Percentage of Arizona Adults Eating '5-A-Day' by County, BRFSS 2001-2007

	<130% FPL	130-184% FPL	185%+ FPL	All Incomes
Apache	42.0%	34.3%	27.2%	31.9%
Cochise	25.4%	24.8%	24.0%	24.8%
Coconino	37.2%	22.5%	26.1%	27.9%
Gila	*	*	22.0%	23.6%
Graham	*	*	27.6%	19.6%
Greenlee	*	*	*	22.4%
La Paz	*	*	*	13.1%**
Maricopa	23.2%	23.0%	23.3%	23.2%
Mohave	23.5%	21.3%	21.2%	21.8%
Navajo	18.5%	19.7%	23.2%	22.0%
Pima	23.8%	26.0%	27.8%	27.0%
Pinal	22.0%	34.1%	22.6%	23.4%
Santa Cruz	21.5%	*	24.3%	23.9%
Yavapai	31.2%	29.4%	26.9%	27.2%
Yuma	26.1%	23.1%	24.5%	24.7%
Arizona	25.7%	25.7%	24.3%	24.0%

*Less than 25 cases **n=24
The file used to generate this information contains data from BRFSS for survey years 2001-2007(n=28,702)

The Healthy People 2010 objective for fruit and vegetable consumption is 50% or more of the population consuming five or more servings of fruits and vegetables per day. As Figure 22 shows, the percentage of Arizona adults consuming five or more servings of fruits and vegetables per day has remained well below the Healthy People 2010 objective, with approximately one-quarter of adults eating five or more servings per day. While the trend has been gradually increasing from 23.6% in 1994 to 28.3% in 2007, Arizona is still well below the goal of 50% or more.

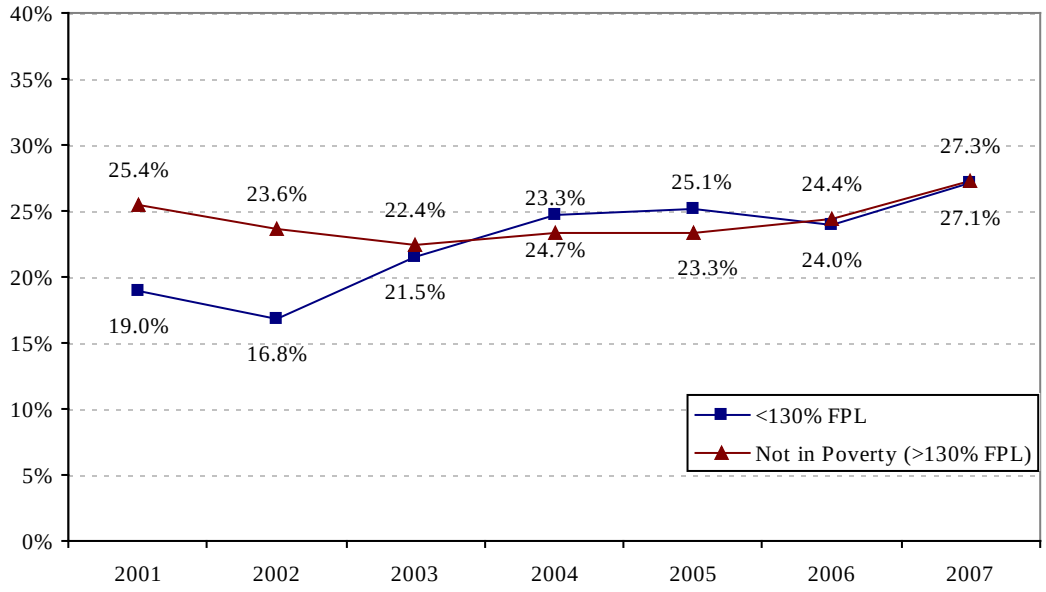
Figure 22. Percentage of Arizona Adults Eating '5-A-Day,' BRFSS 1994-2007



Note: Data points for 1997 through 2000 are not shown as the data quality for these years is not consistent.

Trend data from the BRFSS for 2001 to 2007 shows that among adults of higher incomes (≥130% Federal Poverty Level) an increase has been reported in the number of people that report eating five or more servings of fruits and vegetables a day (2001-25.4% to 2007-27.3%). Among adults with incomes less than 130% federal poverty level, a larger increase in fruit and vegetable consumption has been reported with low-income individuals now reporting intake nearing that of adults with higher incomes (2001-19.0% to 2007-27.1%). Figure 23 shows the percentage of adults consuming five or more servings of vegetables per day by income level for 2001 to 2007.

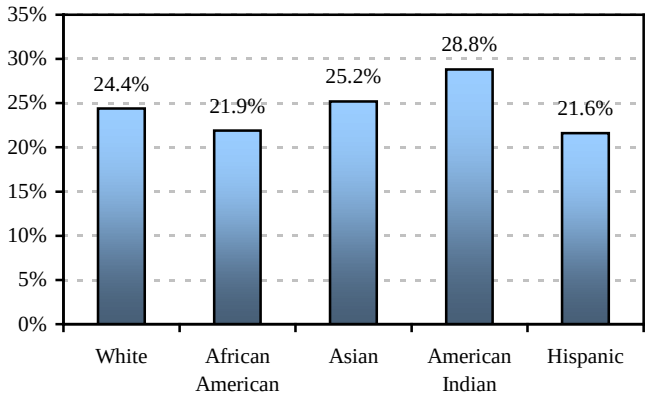
Figure 23. Percentage of Arizona Adults Eating '5-A-Day' by Poverty Level, BRFSS 2001-2007



2001: <130% FPL n=349 >130%=2,371 2007: <130% FPL n=608 >130% FPL n=3,413

The seven-year summary of BRFSS data (2001 to 2007, n= 28,702) of fruit and vegetable consumption by race and ethnicity indicates that American Indians had the highest percentage of adults eating five or more servings of fruits and vegetables per day at 28.8%, while African Americans and Hispanics had the lowest percentage, with just over 21%. Figure 24 shows the percentage of Arizona adults who consumed five or more servings of fruits and vegetables per day by race/ethnicity. For historical comparison to the 2002 Nutrition Status Report's seven-year summary of BRFSS data (1994 to 2000, n=14,021), Hispanics had the highest percentage of adults eating five or more servings per day at 26.6%, while American Indians and African Americans had the lowest percentage, with just over 21%.

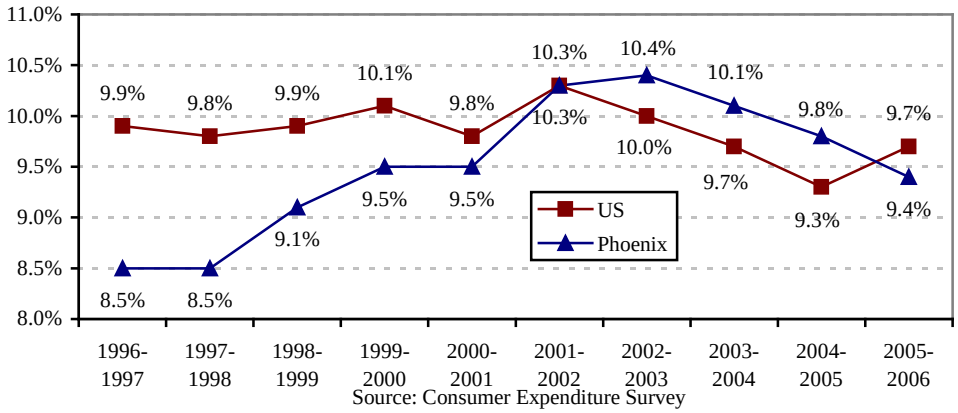
Figure 24. Percentage of Arizona Adults Eating '5-A-Day' By Race/Ethnicity, BRFSS 2001-2007



According to the United States Department of Labor's Consumer Expenditure Survey, food accounted for 13.4% of total expenditures in the Phoenix area for 2005-2006.[23] Additionally, consumer units (families and single consumers) in Phoenix spent 46.8% of their total food budget on food prepared away from home, such as restaurant meals, carry-out, board at school, and catered affairs.

Figure 25 illustrates that while the proportion of the food budget that is spent on fruits and vegetables has remained relatively constant (between eight and 11%) for the nation, in Phoenix there has been a steady increase in fruit and vegetable purchases from 1996 through 2003. The last three years have shown a slight decrease in the portion of food budget that is spent on fruits and vegetables in Phoenix, which mirrored the United States proportion until 2005 to 2006, when the proportion in Phoenix dropped below the national average.

Figure 25. Percentage of Food Budget Expended on Fruits and Vegetables in Phoenix and the US, 1996-2006



Source: Consumer Expenditure Survey

INCREASE FOOD SECURITY AMONG ARIZONA HOUSEHOLDS, AND IN DOING SO, REDUCE HUNGER.

DESCRIPTION OF INDICATOR:

Food security means that all people at all times have access to enough food for an active, healthy life. This includes at a minimum, the availability of nutritionally adequate and safe foods, and the assured ability to acquire acceptable foods in socially acceptable ways.

WHY IS IT IMPORTANT?

Nationwide, research shows that children from food insecure homes have poorer overall health status: they are sick more often, much more likely to have ear infections, have higher rates of iron deficiency anemia, and are hospitalized more frequently. As a result, these children miss more days of school and are less prepared to learn when they are able to attend, making the relationship between hunger, health, and learning, of far greater importance than previously realized.

In 2006, it was estimated that 10.9% of the United States population lived in households that experienced some level of food insecurity. Approximately one-third of food insecure households had very low security, meaning that one or more adults in the household had reduced their intake of food due to a lack of resources to provide enough food. A typical food secure household spends 31% more on food than a food insecure household. Additionally, just over half of food insecure households participated in a food assistance program. [24]

HOW IS ARIZONA DOING?

In Arizona, hunger and food insecurity are the most prevalent among poor children, the elderly, and the homeless. The United States Department of Agriculture's report entitled "Household Food Security in the United States, 2006" estimated that from 2004 through 2006, an average of 11.3% of Arizona households were food insecure without experiencing hunger and 3.9% were food insecure and experienced hunger.[24]

The Arizona Nutrition Network's evaluation survey conducted in 2006 and 2007 at sites serving low-income people estimates that of the 339 surveyed, 40% were food insecure, of which 6.2% reported having experienced moderate to severe hunger.

According to the "Hunger in America 2006" report conducted for America's Second Harvest Network, Arizona's emergency food network served approximately 77,500 people served in any given week, with a total of 479,000 unduplicated people in 2005. Just over half (55%) of those people used pantries, 28% used kitchens, and 17% used shelters. Of the 1,400 people interviewed, almost three-quarters (71.4%) were classified as food insecure, with over one-third (37.6%) classified as food insecure with hunger. In households with children, almost three-quarters (73%) were food insecure, and one-third (34%) were food insecure with hunger. Just under one-quarter (22%) of clients

interviewed received food stamps, but it was estimated that many more were eligible. Over half (52%) of clients interviewed who had children age three and younger were also participating in the State Supplemental Nutrition Program for Women, Infants and Children (WIC).[25]

Table 9 shows selected food security indicators by county. As Table 9 demonstrates, while counties might have similar numbers of people receiving food stamps, the number of pounds of food distributed within those counties varies widely. For example, Apache County had more people receiving food stamps in 2008 than Cochise and Coconino counties, yet the number of pounds of food that was distributed by food banks in those counties exceeded the amount distributed by food banks in Apache County by over 25 percent.[26]

Table 9. Food Security Indicators by County, Arizona

	Number of People Receiving Food Stamps (2008)*	Number of People <130% FPL (2000)**	Number of Emergency Food Assistance Agencies (2006-2007)***	Number of Pounds of Food Distributed by Food Banks (2006-2007)***
Apache	20,281	33,657	15	1,183,870
Cochise	18,035	27,279	27	4,558,400
Coconino	18,045	28,375	36	5,319,156
Gila	9,367	12,684	12	642,302
Graham	4,784	9,665	4	491,311
Greenlee	488	1,226	2	294,876
La Paz	3,233	5,459	5	140,219
Maricopa	371,907	504,194	583	48,261,144
Mohave	28,757	31,874	26	1,232,271
Navajo	29,458	36,266	45	2,668,401
Pima	118,060	169,838	231	12,659,493
Pinal	38,982	37,935	55	4,076,216
Santa Cruz	8,978	13,257	111	2,717,452
Yavapai	18,274	30,079	50	2,143,207
Yuma	32,669	43,749	47	5,138,992
Arizona	721,318	985,537	1,252	134,191,295

*Arizona Department of Economic Security, Statistical Bulletin, Nov 2008
**US Census, 2000
***Association of Arizona Food Banks Hunger Profiles

INCREASE THE PROPORTION OF CHILDREN, ADOLESCENTS AND ADULTS WHO ARE AT A HEALTHY WEIGHT.

DESCRIPTION OF INDICATOR:

There are separate measures of overweight and obesity for children and adults. A healthy weight for children and adolescents is defined as a Body Mass Index (BMI) for age below the 85th percentile based on the Centers for Disease Control and Prevention's (CDC) BMI-for-age growth charts. A healthy weight for adults is a BMI between 18.5 and 24.9. The BMI is a measure of body fatness calculated from a person's height and weight. The calculation does not measure body fat directly, but research has shown that it correlates to direct measures of body fat such as underwater weighing. The BMI can be used as a screening tool to identify possible weight problems for adults.[27] Table 10 shows the weight classifications for children, adolescents and adults. Gender specific BMI-for-age growth charts for children and adolescents from the CDC, are available for reference in Appendix B.

Table 10. BMI Classifications for Children, Adolescents and Adults

	Children and Adolescents	Adults
	Percentile	BMI
Underweight	Less than the 5th percentile	Below 18.5
Healthy Weight	5th percentile to less than the 85th percentile	18.5 – 24.9
Overweight	85th to less than the 95th percentile	25.0 – 29.9
Obese	Equal to or greater than the 95th percentile	30.0 and Above

Source: Centers for Disease Control and Prevention

WHY IS IT IMPORTANT?

Over the last 30 years, the prevalence of childhood obesity in the United States has doubled. Nearly one-third of children and adolescents in the United States are either overweight or obese, placing them at increased risk for heart disease, type 2 diabetes and other serious health problems. Overweight and obese people are at greater risk for developing a variety of diseases and health conditions including hypertension, coronary heart disease, some cancers (endometrial, breast and colon), dyslipidemia (cholesterol and/or triglycerides), type 2 diabetes, stroke, gallbladder disease, osteoarthritis, sleep apnea, and respiratory problems. A reduction of just 10% of an overweight or obese person's weight can significantly decrease the risk of developing obesity related diseases. Improved nutrition and increased physical activity can help in achieving and maintaining a healthy weight.

According to the National Health and Nutrition Examination Survey (NHANES), the percentage of children nationally who are overweight has been increasing steadily since 1971.[28] For children two to five years of age, the percentage who are overweight has

increased from just 5% in 1972-1974 to 14% in 2003-2004. For children six to 11 years of age, the percentage who are overweight has increased dramatically from 4% in 1971-1974 to 19% in 2003-2004. Figures 26 and 27 show the percentage of children who were overweight in the United States by survey year and age.

Figure 26. Prevalence of Childhood Overweight in the US, Ages 2 to 5 Years, NHANES 1971-2004

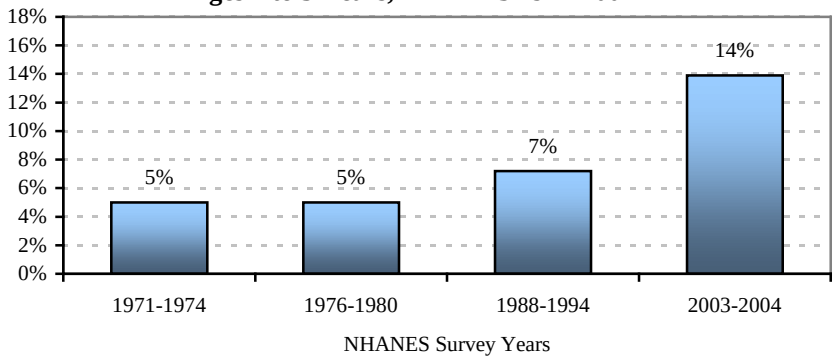
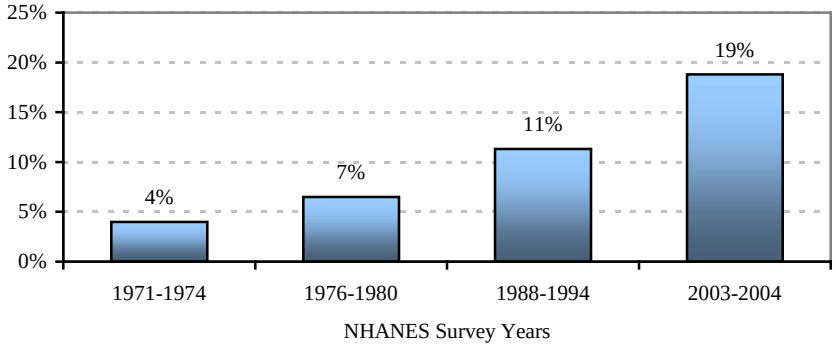
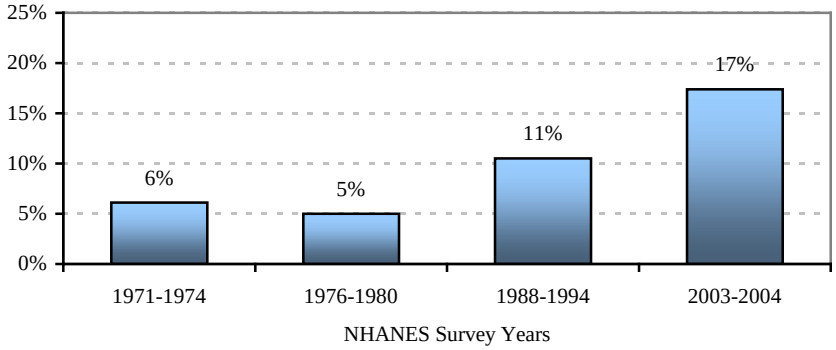


Figure 27. Prevalence of Childhood Overweight in the US, Ages 6 to 11 Years, NHANES 1971-2004



Nationally, there has been a dramatic increase of adolescents who are overweight. Figure 28 shows that the percentage of adolescents who are overweight has increased from just 6% in 1971-1974 to 17% in 2003-2004.

Figure 28. Prevalence of Adolescents Overweight in the US, Ages 12 to 19 Years, NHANES 1971-2004

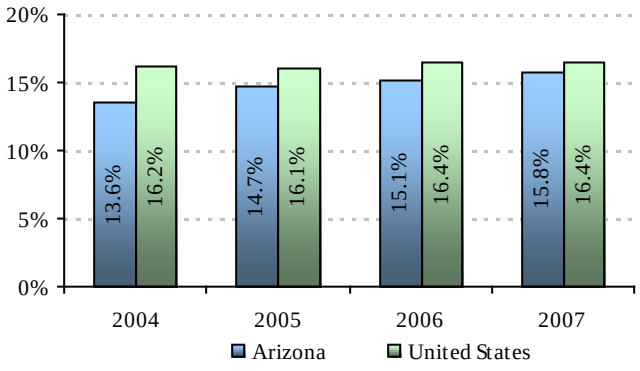


How is Arizona Doing?

The Centers for Disease Control and Prevention's Pediatric Nutrition Surveillance (PedNSS) 2006 report indicates that in the Arizona WIC program, 13.5% of enrolled children age two to five are overweight (BMI-for-age ≥ 95th percentile). In the Inter Tribal Council of Arizona WIC program, 24.1% of children age two to five were overweight; and in the Navajo WIC program, 16.3% were overweight. In comparison to the 2002 Nutrition Status Report, 10.1% of children in the Arizona WIC program, 26.9% of children in the Inter Tribal Council of Arizona WIC program, and 21.1% of children in the Navajo WIC program were overweight in 1998.

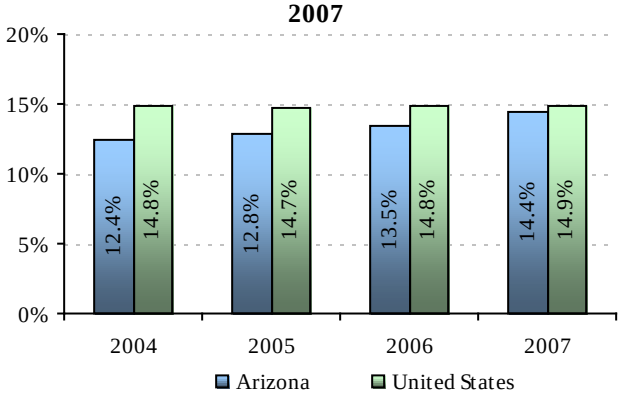
Figure 29 shows that the percentage of children age two to five who are at risk for overweight in Arizona has increased from 2004 to 2007, while the percentage of children who are at risk for overweight in the United States has remained constant. Arizona however, still remains slightly lower than the national average, with 15.8% at risk for overweight compared to 16.4% nationally. Figure 30 shows the percentage of children who were overweight in Arizona and the United States from 2004 to 2007. As with at-risk for overweight, the percentage of children who were overweight in Arizona has increased slightly from 2004 to 2007, but still remains below the United States average with 14.4% compared to 14.9%.[29]

Figure 29. At-Risk of Overweight Status of Children (Age 2 - 5) Based on BMI-for-age, PedNSS* 2004 - 2007



*Does not include Navajo or ITCA WIC

Figure 30. Overweight Status of Children (Age 2 - 5) Based on BMI-for-age, PedNSS* 2004 - 2007



*Does not include Navajo or ITCA WIC

Previous research has indicated that being overweight or obese at age two through five is a strong predictor to later childhood obesity.[30] With approximately 30% of two to five year olds enrolled in the Arizona WIC Program considered to be overweight or obese (BMI for age percentile of 85 or higher), a study was designed to investigate early influences of childhood obesity. The purpose of the study was to examine potential prenatal influences of overweight and obesity in two to three year old children. Results indicate that mothers who were obese (BMI ≥ 29.0) at the beginning of their pregnancy were 80% more likely to have a two to three year old child that was overweight or obese. In addition, mothers who gained more weight during their pregnancy than was recommended by the Institutes of Medicine increased the risk of the two to three year old being overweight or obese by 20 percent. In contrast, breastfeeding for six months or

longer decreased the risk of the two to three year old child being overweight or obese by 20 to 30 percent, respectively. Figure 31 summarizes the results of this study.

Figure 31. Predicting BMI Percentiles in 2 to 3 Year Old Children Enrolled in The Arizona WIC Program

Less likely to have a child ≥ 85th percentile:

Maternal Characteristics

- Ideal weight prior to pregnancy
- Gain less than ideal weight during pregnancy
- Non-Hispanic
- Single
- Maternal Age 20-34

Infant Characteristics

- Low Birth weight
- Female
- Breastfed 6 months or longer

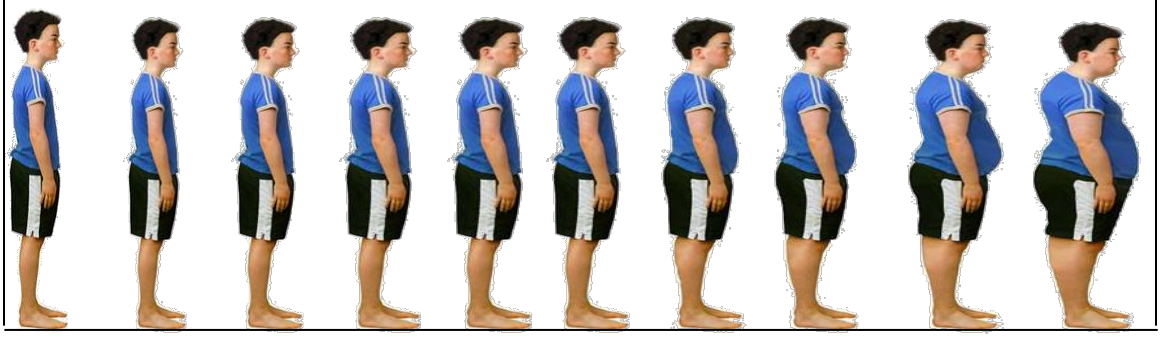
More likely to have a child ≥ 85th percentile:

Maternal Characteristics

- Overweight or Obese prior to pregnancy
- Gain more than ideal weight during pregnancy
- Hispanic
- Married
- Maternal Age <20 or ≥35

Infant Characteristics

- High Birth Weight
- Male
- Not Breastfed



The 2007 Arizona YRBS results show that 14.2% of high school students were overweight (BMI ≥ 85th percentile but < 95th percentile for body mass index, by age and sex) and 11.7% were obese (BMI ≥ 95th percentile for body mass index, by age and sex).[22] The percentage of high school students in Arizona who were overweight or obese has remained relatively constant from 2003 to 2007, with approximately 14% of high school students who were overweight, and approximately 11% who were obese. Figure 32 shows the trend of overweight high school students from 2003 to 2007 in Arizona and the United States. As Figure 32 shows, the percentage of high school student who were overweight is similar to the national average.

Figure 32. Percentage of High School Students Who Were Overweight, Arizona and US, YRBS 2003-2007

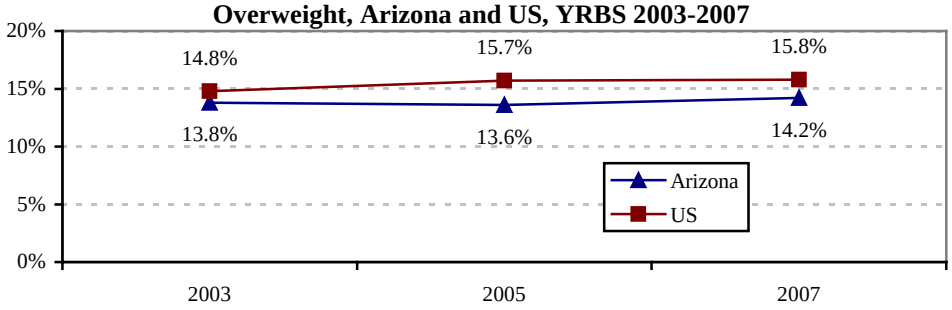
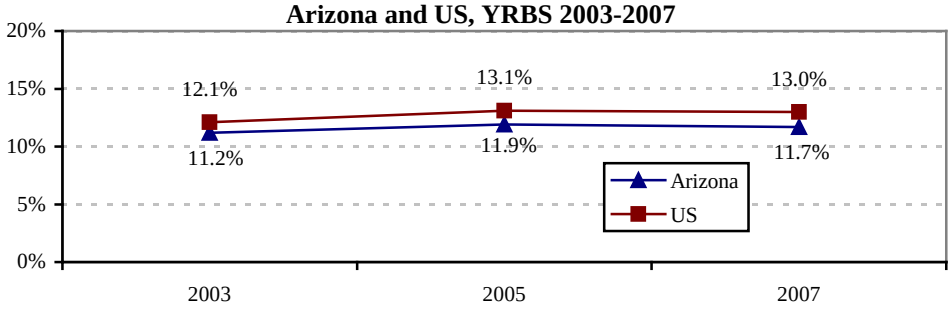


Figure 33 shows the percentage of high school students who were obese from 2003 to 2007 in Arizona and the United States. As Figure 33 shows, similar to overweight, the percentage of high school students in Arizona who were obese is similar to the national average.

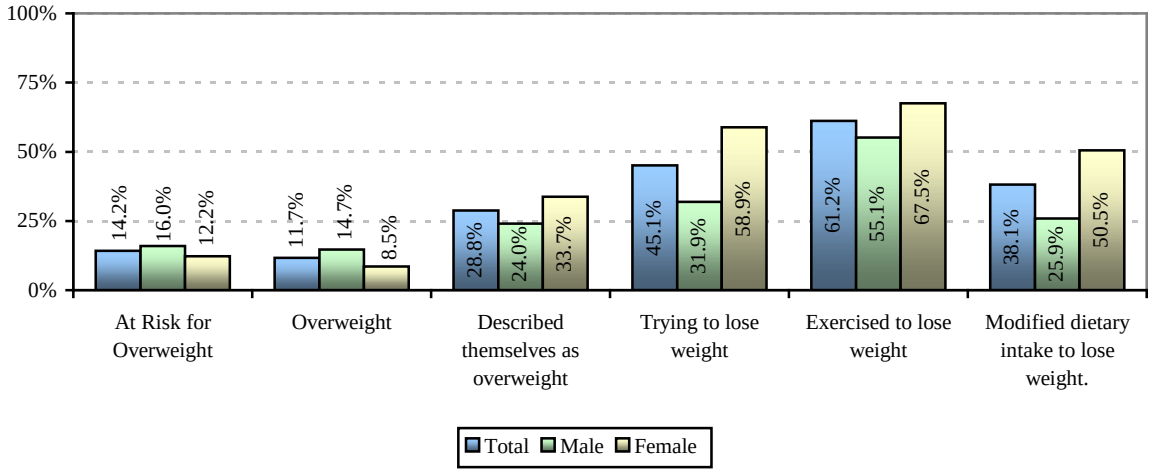
Figure 33. Percentage of High School Students Who Were Obese, Arizona and US, YRBS 2003-2007



The prevalence of overweight and obesity in high school students varied by race/ethnicity, as African Americans (29%) and Hispanics (19%) were more likely to be overweight compared to Whites (10%). American Indians were slightly more likely to be overweight (13%), but this was not statistically significant. American Indians (20%) and Hispanics (17%) were more likely to be obese compared to Whites (7%). African Americans were slightly more likely to be obese (12%) than Whites, but this was not statistically significant.

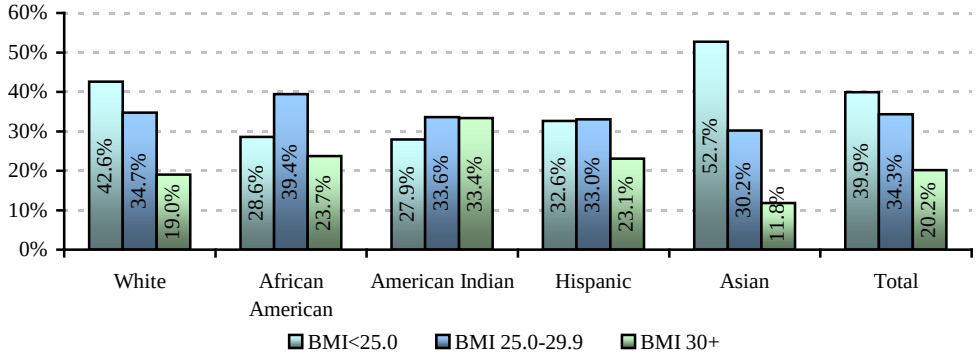
Figure 34 shows the weight control practices of high school students in Arizona by gender. As Figure 34 shows, over one-quarter (28.8%) of high school students described themselves as slightly or very overweight. Females were more likely to report themselves a slightly or very overweight than males (33.7% compared to 24.0%). Just under half (45.1%) of high school students reported that they were trying to lose weight. Females were much more likely to report that they were trying to lose weight than males (58.9% compared to 31.9% of males). Well over half (61.2%) of high school students reported exercising to lose weight or to keep from gaining weight in the past 30 days. Females were much more likely to have exercised to lose weight than males (67.5% compared to 55.1%). Additionally, females were much more likely to have reported eating less food, fewer calories, or foods low in fat to lose weight than males (50.5% compared to 25.9%).

Figure 34. Weight Control Practices of High School Students, Arizona YRBS 2007



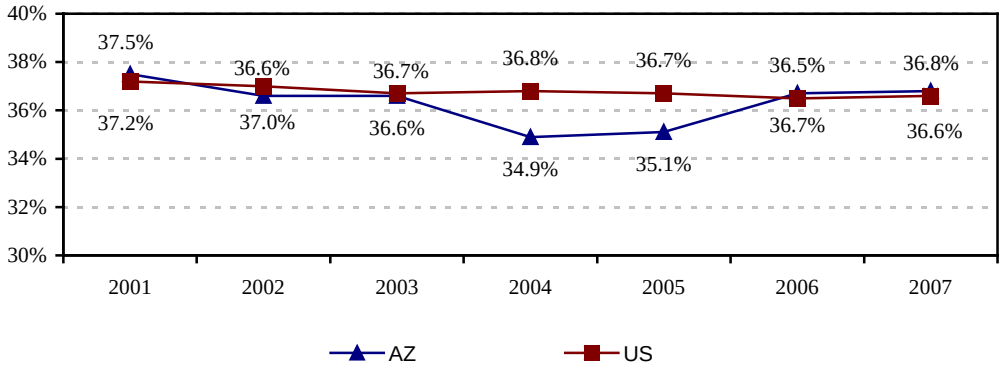
In Arizona the number of overweight (BMI >25 kg/m^2 – 29.9 kg/m^2) or obese (BMI >30 kg/m^2) adults has increased from 44.7% in 1994 to 58.7% in 2007 which is similar to national trends. A seven-year summary of BRFSS data (2001 to 2007, n= 28,702) of weight ranges by race and ethnicity indicates that the highest levels of overweight and obesity are seen in American Indian (67.0%) and African American (63.1%) individuals. Figure 35 shows the percentage of Arizona adults by BMI category and race/ethnicity.

Figure 35. Percentage of Arizona Adults by BMI Category and Race/Ethnicity, BRFSS 2001-2007



As indicated in the 2002 Nutrition Status Report, the percentage of Arizona adults who were overweight remained relatively stable from 1994 at 32.1% to 34.9% in 2000.[31] Figure 36 shows that the percentage of adults in Arizona who are overweight has increased from the last report, but has remained relatively constant at approximately 37% from 2001 to 2007. This is similar to the national average.

Figure 36. Percentage of Overweight Adults, Arizona and US, BRFSS 2001-2007



As indicated in the 2002 Nutrition Status Report, from 1994 to 2000, the percentage of adults who were obese increased from 12.6% to 18.2%. Figure 37 shows that the percentage of adults in Arizona who were obese has continued increasing from 18.5% in 2001 to 25.8% in 2007. This increase is similar to the national average, with 20.9% in 2001 increasing to 26.3% in 2007.

Figure 37. Percentage of Obese Adults, Arizona and US, BRFSS 2001-2007

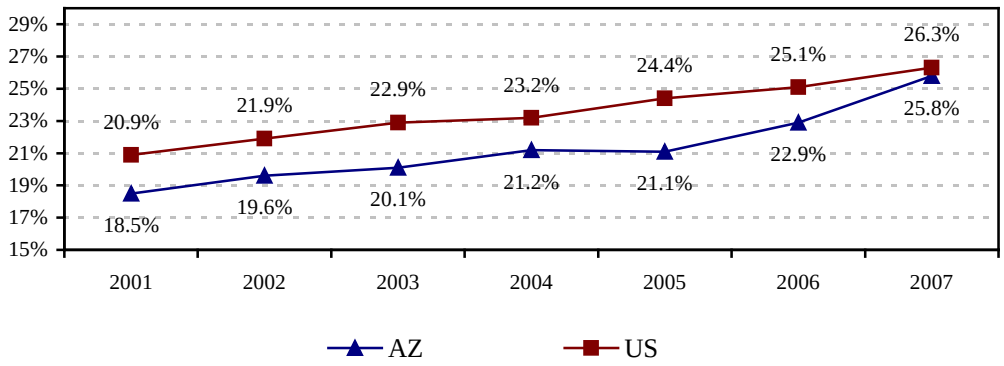


Figure 38 shows the percentage of adults in Arizona with incomes below 130% of the federal poverty level who are overweight or obese. As Figure 38 shows, while the percentage of people with incomes below 130% of the federal poverty level who were overweight seems to be decreasing, the percentage of adults who are obese is increasing.

Figure 38. Percentage of Arizona Adults With Incomes <130% FPL by Who Were Overweight or Obese, BRFSS 2001-2007

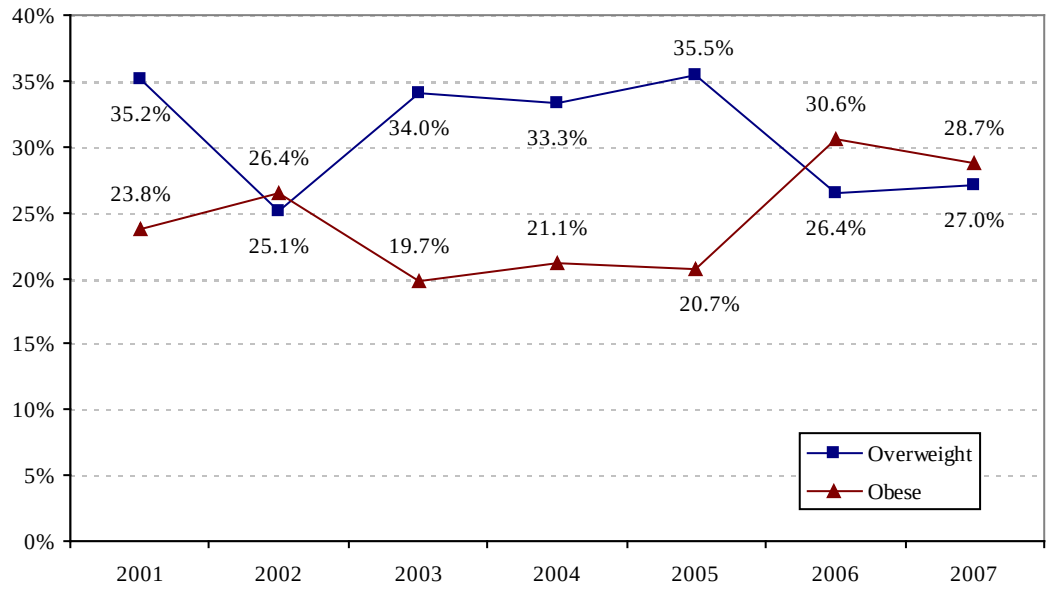


Figure 39 shows the percentage of adults in Arizona with incomes equal to or greater than 130% of the federal poverty level who were overweight or obese. As Figure 39 shows, while the percentage of people with incomes equal to or greater than 130% of the federal poverty level who were overweight has remained relatively constant at approximately 36%, the percentage of adults who were obese has increased from 18.2% in 2001 to 23.9% in 2007.

Figure 39. Percentage of Arizona Adults With Incomes 130% + FPL Who Were Overweight or Obese, BRFSS 2001-2007

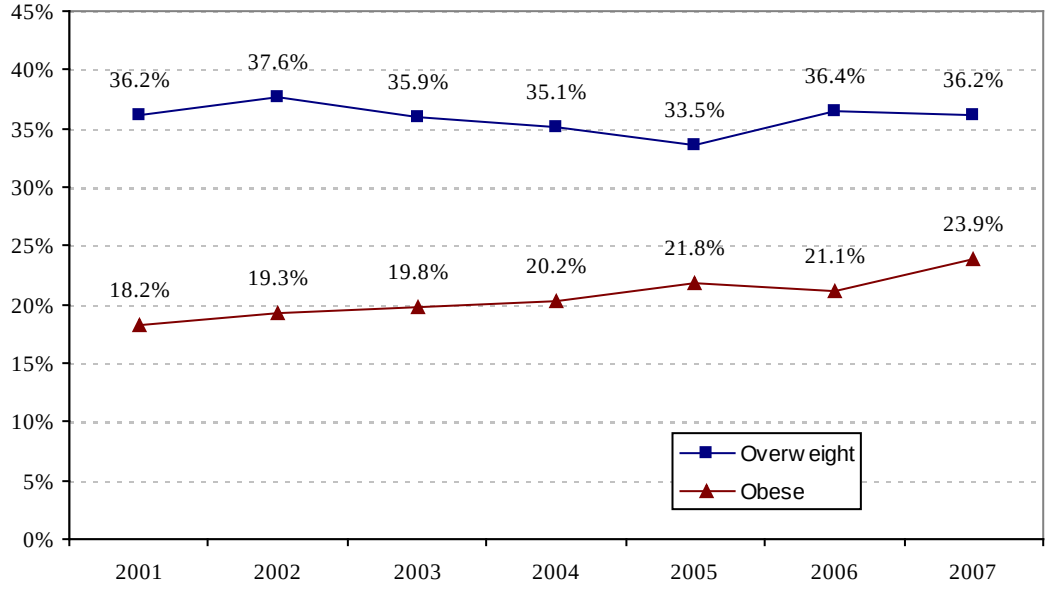


Figure 40 shows the percentage of Arizona adults who were overweight or obese by poverty level. As Figure 40 shows, the percentage of adults in poverty who were overweight or obese has increased from 51.5% in 2002 to 55.7% in 2007. Similar trends are seen for adults not in poverty, with the percentage of adults who were overweight or obese increasing from 56.9% in 2002 to 60.1% in 2007.

Figure 40. Percentage of Arizona Adults Who Were Overweight or Obese by Poverty Level, BRFSS 2001-2007

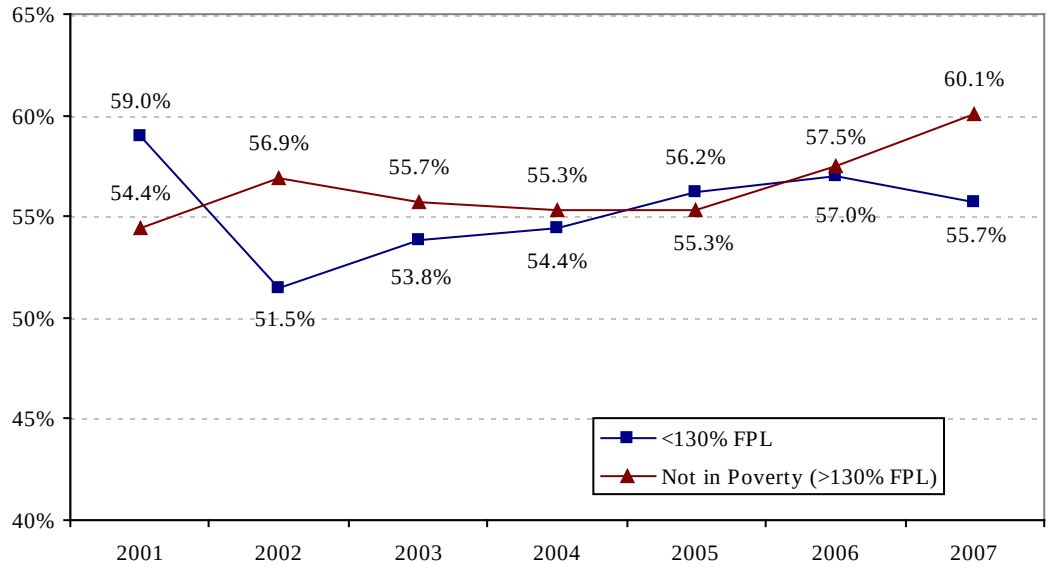


Figure 41 shows the percentage of adults by BMI category and county of residence from the seven year summary of BRFSS data for 2001 to 2007. As Figure 41 shows, rural and border counties such as Apache, Cochise, Graham, La Paz, Navajo, Santa Cruz and Yuma tended to have higher rates of overweight and obesity than urban counties.

Figure 41. Percentage of Arizona Adults Who Are Overweight or Obese by County, BRFSS 2001-2007

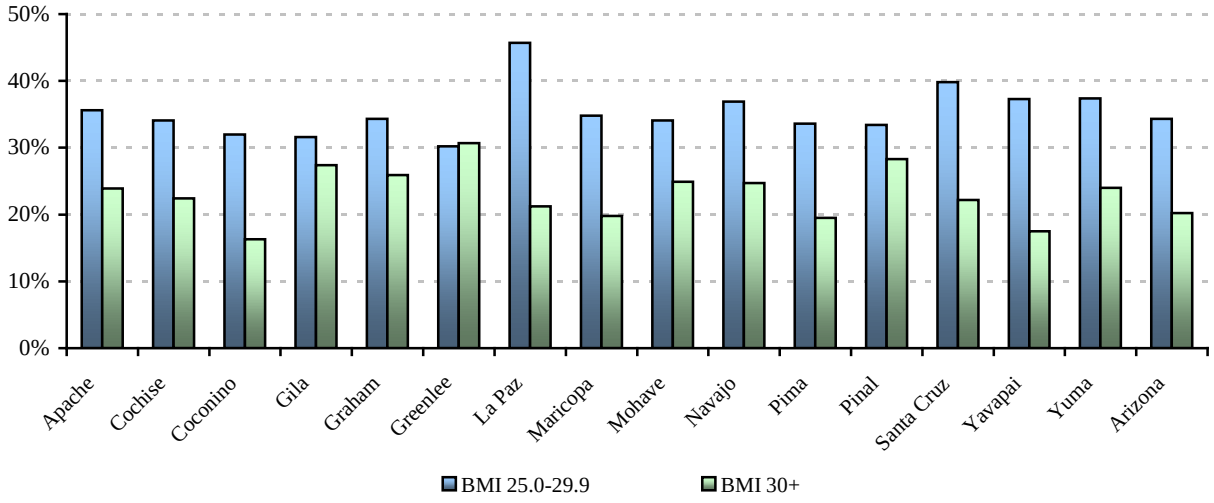


Table 11 shows the percentage of Arizona adults by BMI category, income level and county of residence from the seven year summary of BRFSS data for 2001 to 2007.

Table 11. Percentage of Arizona Adults by BMI, Poverty Level and County, BRFSS 2001-2007

	BMI <25.0				BMI 25.0-29.9 (Overweight)				BMI 30.0+ (Obese)			
	<130%	130-184%	185%+	All Incomes	<130%	130-184%	185%+	All Incomes	<130%	130-184%	185+%	All Incomes
Apache	27.3%	*	43.4%	35.1%	37.5%	*	29.9%	35.6%	27.9%	*	23.7%	23.9%
Cochise	35.2%	37.5%	36.9%	37.8%	28.8%	27.3%	38.8%	34.1%	29.3%	23.9%	21.7%	22.4%
Coconino	49.3%	50.7%	46.8%	47.5%	32.7%	28.2%	33.9%	32.0%	15.5%	17.2%	16.8%	16.3%
Gila	26.5%	*	42.1%	37.6%	32.6%	*	32.2%	31.6%	39.1%	*	20.8%	27.4%
Graham	31.2%	*	34.9%	35.3%	37.0%	*	35.9%	34.3%	30.4%	*	24.3%	25.9%
Greenlee	*	*	*	32.1%	*	*	35.6%	30.2%	*	*	33.9%	30.7%
La Paz	*	*	*	29.7%	*	*	*	45.7%	*	*	*	21.2%
Maricopa	33.5%	41.4%	40.5%	40.2%	33.1%	33.5%	36.4%	34.8%	22.1%	20.0%	20.5%	19.8%
Mohave	36.4%	36.0%	34.4%	36.3%	34.9%	27.3%	36.9%	34.1%	25.1%	33.2%	25.1%	24.9%
Navajo	38.0%	34.1%	34.0%	34.8%	27.5%	35.9%	41.4%	36.9%	30.6%	29.3%	21.6%	24.7%
Pima	38.5%	41.9%	42.9%	42.6%	31.5%	32.5%	35.2%	33.6%	25.2%	20.8%	19.2%	19.5%
Pinal	30.2%	22.6%	36.2%	33.7%	30.3%	37.9%	33.2%	33.4%	33.7%	35.4%	27.5%	28.3%
Santa Cruz	22.9%	22.3%	37.7%	30.5%	41.2%	39.7%	41.6%	39.8%	29.3%	23.7%	16.6%	22.2%
Yavapai	32.7%	40.3%	43.5%	41.5%	37.5%	32.8%	39.2%	37.3%	23.1%	22.4%	15.3%	17.5%
Yuma	27.9%	30.2%	33.0%	32.1%	34.2%	37.9%	40.0%	37.4%	27.8%	27.9%	23.6%	24.0%
Arizona	35.0%	39.5%	40.3%	39.9%	31.8%	33.7%	36.3%	34.3%	23.7%	21.3%	20.5%	20.2%

*Less than 25 cases. The file used to generate this information contains data from BRFSS for survey years 2001-2007(n=28,702)

INCREASE THE PROPORTION OF PERSONS AGED TWO YEARS AND OLDER WHO MEET DIETARY RECOMMENDATIONS FOR CALCIUM.

DESCRIPTION OF INDICATOR:

The United States Department of Agriculture recommends that children age two to eight years of age should consume two cups of low fat or fat free milk products per day. Children over eight years of age and adults should consume three or more cups of low fat or fat free milk products per day.[20]

WHY IS IT IMPORTANT?

Consuming adequate amounts of calcium and vitamin D are important for bone health. Dairy products provide nine essential nutrients including calcium, potassium, phosphorous, protein, vitamin A, D and B-12, riboflavin, and niacin.[32] Research has also shown that including low fat and fat free dairy in a person's diet can reduce the risk of developing heart disease by helping to control blood pressure. The Dietary Approaches to Stop Hypertension (DASH) study has shown that a diet high in fruits and vegetables and three cups of low fat dairy products per day can help reduce a person's blood pressure.[33]

There were an estimated 44 million Americans, including 800,000 Arizonans with osteoporosis in 2002. Each year in the United States an estimated 1.5 million people will suffer bone fractures attributed to osteoporosis, leading to over 500,000 hospitalizations, 800,000 emergency room visits, and 180,000 placements into nursing homes.[34] As a person ages, the risk of fracture increases. By 2020, it is estimated that half of Americans over the age of 50 will be at risk of developing osteoporosis. Groups at higher risk for osteoporosis include White and Asian women, followed by Hispanic women. It is estimated that in the United States, direct expenditures for osteoporosis range from $12.2 to $17.9 billion per year (2002 dollars). The costs of osteoporotic fractures are borne primarily by taxpayers, through Medicare and Medicaid. In Arizona, total hospitalization charges for osteoporosis related hip fractures was over $25.4 million dollars, with at least 68% paid by Medicare or Medicaid in 2005.

HOW IS ARIZONA DOING?

According to the Arizona Department of Education's 2006 School Health Profiles Report, 42% of middle school and 36% of high school principals report that students can purchase 1% low fat or fat free milk from vending machines or at the school store, canteen or snack bar. Additionally, 38% of middle school and 42% of high school principals report that students can purchase 2% reduced fat milk or whole milk from vending machines or at the school store, canteen or snack bar.[35]

The Building Better Bones (BBB) program is taught to students in 5th and 6th grade classrooms in low-income schools throughout Arizona. The goal of the program is to increase awareness that osteoporosis is a preventable disease by practicing a healthy

lifestyle including a healthy diet high in calcium, and engaging in weight bearing physical activities. The BBB program reaches an average of 3,798 students each year, reaching a total of 34,186 students from 1999 to 2008. As Figure 42 shows, students participating in the BBB program consistently showed an increase in knowledge that '3-A-Day' is recommended number of servings of dairy products to consume each day after completion of the BBB program ($p<0.0001$).

Figure 42. Percentage of Students Who Knew That '3-A-Day' Was The Recommended Number of Servings to Consume Each Day, Arizona BBB Program 2000-2008

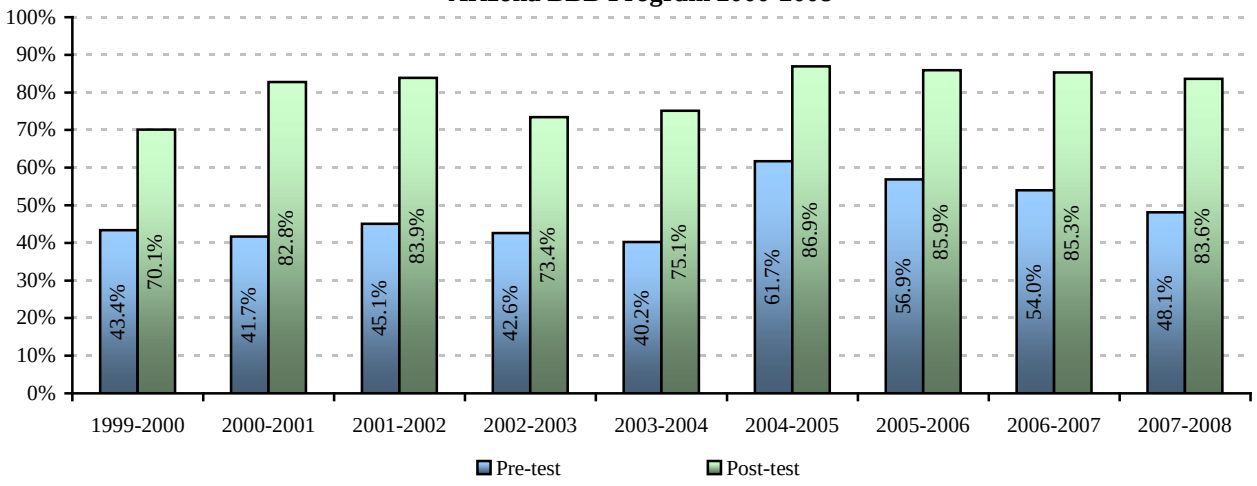
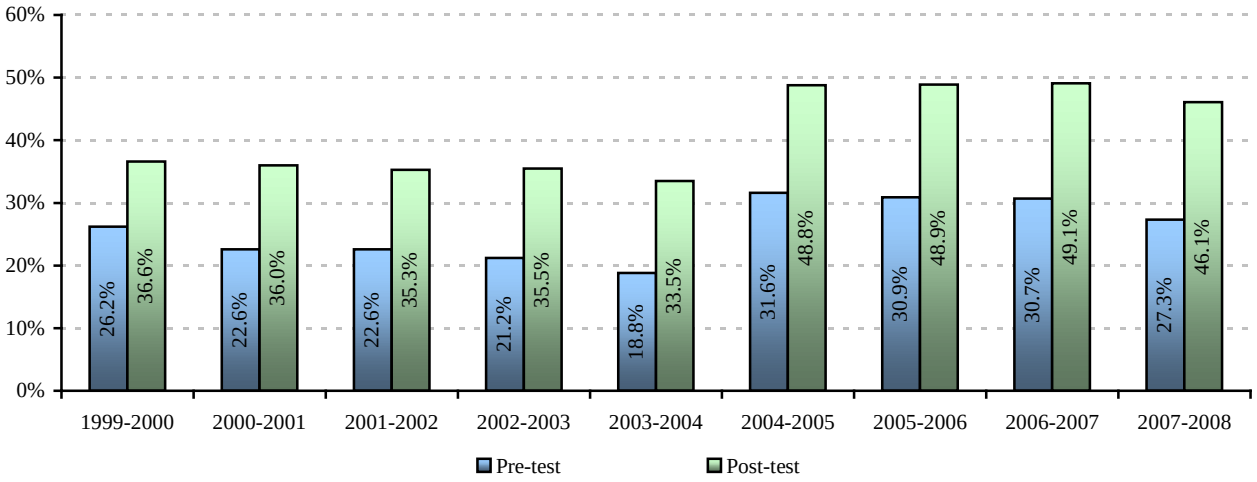


Figure 43 shows the percentage of students who consumed three or more servings from the milk group yesterday. As Figure 43 shows, students were consistently more likely to report that they consumed three or more servings from the milk group yesterday after completion of the BBB program ($p<0.0001$).

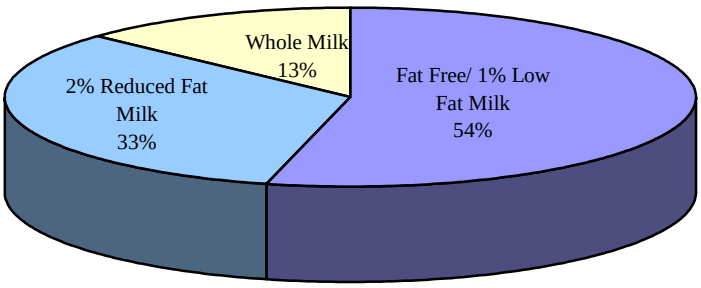
Figure 43. Percentage of Students Who Consumed 3+ Servings Per Day From The Milk Group Yesterday, Arizona BBB Program 2000-2008



According to the 2007 Arizona YRBS only 10.2% of high school students reported consuming three or more servings of milk per day in the past week. This compares to 14.1% nationally.[22]

The State Supplemental Nutrition Program for Women, Infants and Children (WIC) in Arizona provides over 300,000 gallons of milk each month to low income pregnant and post-partum women and children. Over half of the milk purchased with WIC vouchers for women and children two years or older was fat free or low fat milk (Figure 44).

Figure 44. Milk Purchased* with WIC Vouchers for Women and Children Age 2 Years and Older in the Arizona WIC Program, 2008



*Three-month average

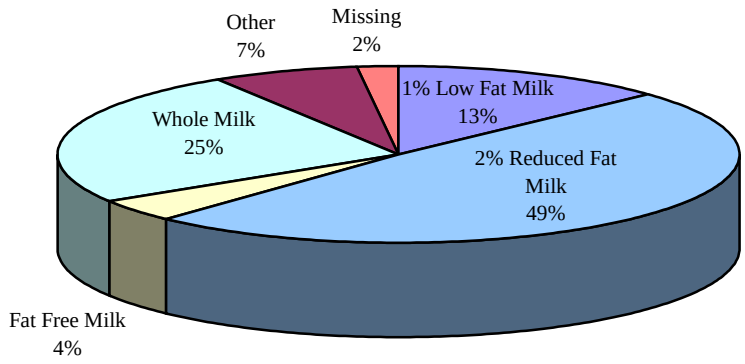
The Arizona Nutrition Network conducted milk taste tests in 2008 to see if people were able to taste the difference between whole, 2% reduced fat, 1% low fat and fat free milk, and to see if people like the taste of 1% low fat and fat free milk when they are unaware of what they are drinking.[36] Participants were given four samples of milk, were asked to identify the type of milk, and if they liked the sample.

Participants reported that they liked the 1% low fat milk more than any of the other samples. As age increased, participants were more likely to report liking the 1% low fat sample. Additionally, as the age of the participant increased, they were less likely to have correctly identified the fat free milk sample, but more likely to have reported liking the sample.

Participants were asked if 1% low fat and fat free milk had the same amount of vitamins and minerals as whole milk. Almost two-thirds (61%) of respondents correctly reported that 1% low fat and fat free milk have the same amount of vitamins and minerals as whole milk.

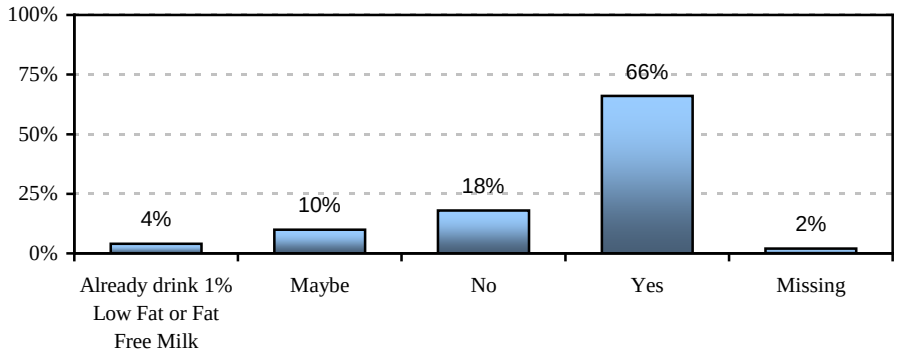
Respondents were also asked to indicate the type of milk they usually drink or use. As Figure 45 shows, half (49%) of respondents reported using 2% reduced fat milk, one-quarter (25%) reported using whole milk, and 17 percent of respondents reported using 1% low fat or fat free milk. The majority of participants (79%) reported that they drank milk daily, with an average of 1.95 cups per day.

Figure 45. Type of Milk Participants Usually Drink, AzNN Milk Taste Tests 2008



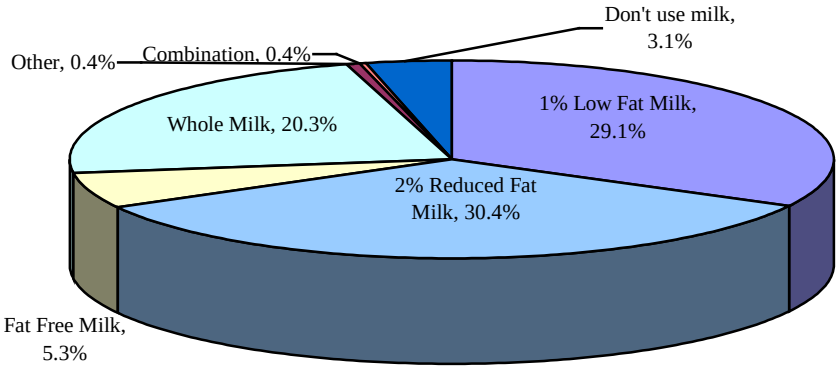
After completing the taste test, participants were asked if they would be willing to switch to 1% low fat or fat free milk. Two-thirds (66%) of participants reported that they would be willing to switch to 1% low fat or fat free milk after completion of the taste test, and 4% of participants reported that they already drank 1% low fat or fat free milk (Figure 46).

Figure 46. Willingness to Switch to 1% Low Fat or Fat Free Milk, AzNN Milk Taste Tests 2008



Arizona Nutrition Network Evaluation results for FY 2006 showed that of the 227 people surveyed, 34.4% reported drinking 1% low fat or fat free milk.[37] Figure 47 shows the percentage of respondents by the type of milk they usually drink.

Figure 47. Type of Milk Participants Usually Drink, AzNN Evaluation 2006



Over half of participants reported inadequate daily calcium intake (58.9%) (less than three servings of milk, cheese, or yogurt). Hispanics (41.5%) were just as likely to consume three or more servings of milk, cheese or yogurt as non-Hispanics (40.7%). In addition, a large percentage of participants (63.9%) had inadequate fruit and vegetable intake as well as inadequate calcium intake. Table 12 shows comparisons between participants who had adequate daily consumption of calcium (three or more servings of milk, cheese or yogurt) versus inadequate daily calcium intake (less than three servings of milk, cheese, or yogurt).

Table 12. Comparison of Participant Groups by Ethnicity, Consumption of Fruits and Vegetables and Milk, Cheese and Yogurt Consumption (n=227), AzNN Evaluation 2006

	Eat < 3 servings of milk, cheese or yogurt/day	Eat ≥ 3 servings of milk, cheese or yogurt/day
Hispanic	58.5%	41.5%
Non-Hispanic	59.3%	40.7%
Eat < 5 Fruits and Vegetables/Day	63.9%	36.1%
Eat ≥ 5 Fruits and Vegetables/Day	55.6%	44.4%
Use whole milk	76.7%	23.3%
Use 2% reduced fat milk	82.6%	17.4%
Use 1% low fat or skim milk	62.8%	37.2%
All Participants	58.9%	41.1%

Further analysis was conducted for use of milk as shown in Table 13. About one-fifth of the Hispanics (18.9%) interviewed reported drinking whole milk. However, over one-third of Hispanics interviewed reported drinking 1% low fat or fat free milk (35.4%). About as many non-Hispanics as Hispanics reported drinking 1% low fat or fat free milk. Finally, of the persons who consumed five or more fruits and vegetables per day, a greater number of people drank 1% low fat or fat free milk (33.8%) than 2% reduced fat milk (29.4%) or whole milk (24.3%).

Table 13. Comparison of Participant Groups by Ethnicity, Consumption of Fruits and Vegetables and Milk Use (n=227), AzNN Evaluation 2006

	Use Whole Milk	Use 2% Reduced Fat Milk	Use 1% Low Fat or Fat Free Milk
Hispanic	18.9%	29.9%	35.4%
Non-Hispanic	22.0%	31.0%	33.0%
Index < 5 Fruits and Vegetables/Day	15.1%	32.6%	34.9%
Index ≥ 5 Fruits and Vegetables/Day	24.3%	29.4%	33.8%
All Participants	20.3%	30.4%	34.4%

INCREASE THE PROPORTION OF CHILDREN WHO PARTICIPATE IN CUMULATIVE INTERMITTENT PHYSICAL ACTIVITY FOR 60 MINUTES PER DAY.

DESCRIPTION OF INDICATOR:

The United States Department of Health and Human Services (HHS) recommends that children and adolescents participate in at least 60 minutes of moderate physical activity each day.[39] In 2008 new recommendations on physical activity were released indicating that children and adolescents (age six to 17) should accumulate 60 minutes of physical activity per day, with most of the 60 minutes being moderate or vigorous physical activity. In addition, as part of their daily physical activity, children and adolescents should do vigorous-intensity activity on at least three days per week. They also should do muscle-strengthening and bone-strengthening activity on at least three days per week. A table detailing the new recommendations can be found in Appendix C.

WHY IS IT IMPORTANT?

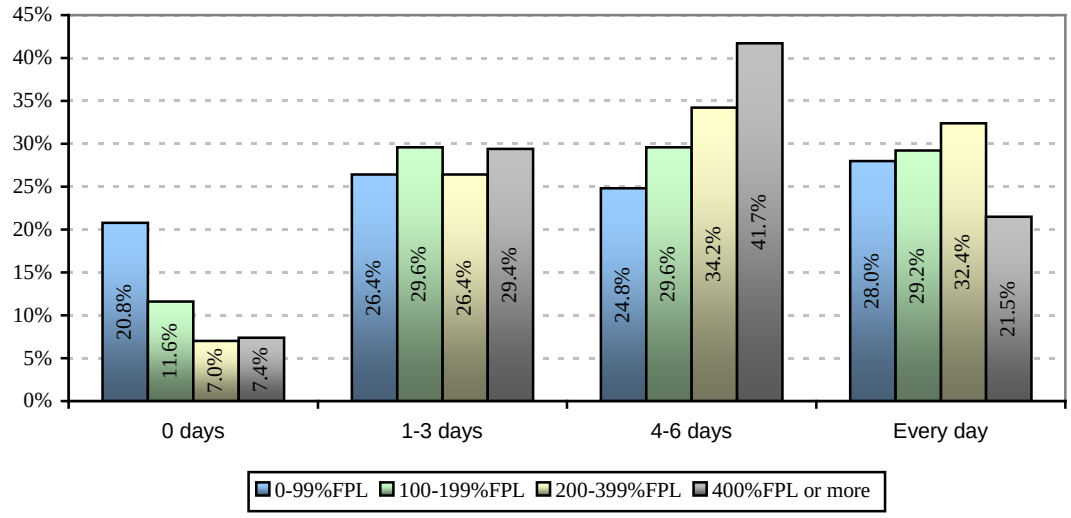
Regular physical activity is associated with decreased death rates for people of all ages. It decreases the risk of death from obesity related diseases, such as heart disease, diabetes, and colon cancer. It has also been shown to prevent or reduce high blood pressure, increase muscle and bone strength, increase lean muscle, aid in weight control and decrease body fat, and increase psychological well-being (including decreasing the risk of developing depression). Children and adolescents require weight-bearing exercise to build healthy bones, and adolescents require this exercise to maintain peak bone density.

HOW IS ARIZONA DOING?

No national or state level data is available to report for participation in 60 minutes or more of physical activity. The 2003 National Survey of Children's Health (NSCH) results indicate that just over one-quarter (28.1%) of children age six to 17 in Arizona participated in physical activity at least 20 minutes per day every day of the week.[40] This is similar to the national average (26%). The percentage of children age six to 17 who participated in physical activity at least 20 minutes a day everyday varied by poverty level. As Figure 48 demonstrates, children in low-income families (less than 200% of the federal poverty level) were less likely to have participated in physical activity on some or all days of the week compared to children who were not in low-income families. Due to

limitations of the data source, the poverty levels provided below is the only poverty level detail available.

Figure 48. Percentage of Arizona Children (Age 6-17) Who Engage in Physical Activity by Poverty Level and Number of Days, NSCH 2003



In addition to the lack of adequate physical activity, over one-third (36.3%) of children age six to 17 watched television, videos or played video games for two to three hours on an average school day. This is comparable to the national average of 37.7%. Almost ten percent (8.3%) of children watched television, videos or played video games four or more hours on an average school day. A table showing the percentage of children who engaged in physical activity by number of days and poverty level and along with the 95% confidence intervals for the percentages is provided in Appendix D.

INCREASE THE PROPORTION OF ADOLESCENTS WHO ENGAGE IN EITHER MODERATE OR VIGOROUS PHYSICAL ACTIVITY.

(Adolescents = ages 12-18, grades 7-12)

DESCRIPTION OF INDICATOR:

The United States Department of Health and Human Services (HHS) recommends that children and adolescents participate in at least 60 minutes of moderate physical activity each day.[39] In 2008 new recommendations on physical activity were released indicating that children and adolescents (age six to 17) should accumulate 60 minutes of physical activity per day, with most of the 60 minutes being moderate or vigorous physical activity. In addition, as part of their daily physical activity, children and adolescents should participate in vigorous-intensity activity on at least three days per week. They also should do muscle-strengthening and bone-strengthening activity on at least three days per week. A table detailing the new recommendations can be found in Appendix C.

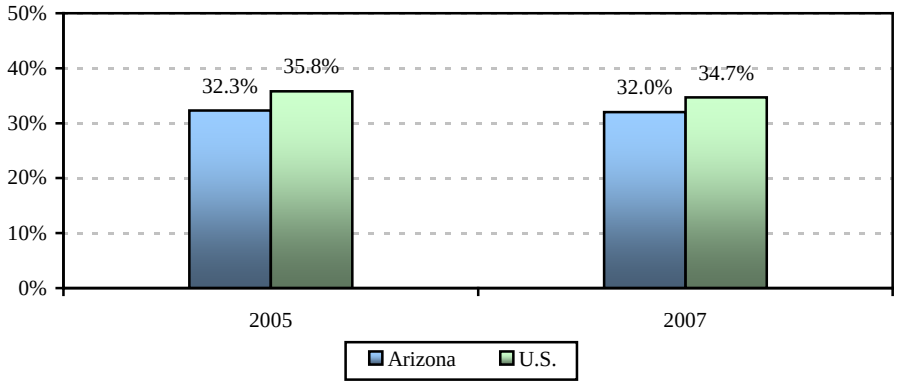
WHY IS IT IMPORTANT?

Regular physical activity is associated with decreased death rates for people of all ages. It decreases the risk of death from obesity related diseases, such as heart disease, diabetes, and colon cancer. It has also been shown to prevent or reduce high blood pressure, increase muscle and bone strength, increase lean muscle, aid in weight control, decrease body fat, and increase psychological well-being (including decreasing the risk of developing depression). Children and adolescents require weight-bearing exercise to build healthy bones, and adolescents require this exercise to maintain peak bone density.

HOW IS ARIZONA DOING?

The Arizona Youth Risk Behavior Survey (YRBS) 2007 data indicates that 32% of high school students reported being active for at least 60 minutes on five or more days of the week.[22] Almost as many students (28.2%) reported spending at least three hours watching television per day. Additionally, 21.4% of students reported spending at least three hours playing computer or video games. Less than ten percent (9.2%) of students report participating in no physical activity in the past week. The prevalence of physical activity varies by race/ethnicity. African Americans were more likely to have engaged in the recommended level of physical activity in the past week (however, not statistically significant), with 41% of students, compared to approximately 30% for the other race/ethnic groups. Figure 49 shows the percentage of students who reported participating in physical activity 60 minutes or more per day on five or more of the past seven days in Arizona and the United States for 2005 and 2007.

Figure 49. Percentage of Arizona High School Students (Grades 9-12) Who Participated in Physical Activity 60+ Minutes Per Day on 5 or More Days During the Past 7 Days, YRBS 2005-2007



According to the Arizona Department of Education's (ADE) 2006 School Health Profiles Report, 87% of middle school teachers and 100% of high school teachers reported teaching the physical, psychological or social benefits of physical activity in a required health education course.[35] The majority of teachers also report teaching the subjects of overcoming barriers to physical activity (66% of middle school teachers, 78% of high school teachers), decreasing sedentary activities (85% of middle school teachers, 97% of high school teachers), and opportunities for physical activity in the community (66% of middle school teachers, 84% of high school teachers) in their health education courses. The majority of school principals report that their schools offer students opportunities to participate in intramural activities or physical activity clubs (79% of middle school principals, 63% of high school principals). Table 14 shows the percentage of middle schools that taught a required physical education course by grade.

Table 14. Percentage of Arizona Schools That Teach a Required Physical Education Course by Grade, ADE School Health Profiles 2006

Grade	Percent
6th	98%
7th	98%
8th	92%
9th	97%
10th	51%
11th	47%
12th	44%

INCREASE THE PROPORTION OF ADULTS WHO ENGAGE REGULARLY, PREFERABLY DAILY, IN MODERATE OR VIGOROUS PHYSICAL ACTIVITY.

DESCRIPTION OF INDICATOR:

The United States Department of Health and Human Services recommends that adults participate in at least 30 minutes of moderate physical activity on most, or preferably, all days of the week.[39] In 2008 new recommendations on physical activity were released indicating that adults should participate in two hours and 30 minutes of moderate physical activity, or one hour and 15 minutes of vigorous activity, or an equivalent combination of both types of activity per week. It is also recommended that adults participate in muscle strengthening activity on at least two days per week. A table detailing the new recommendations can be found in Appendix C.

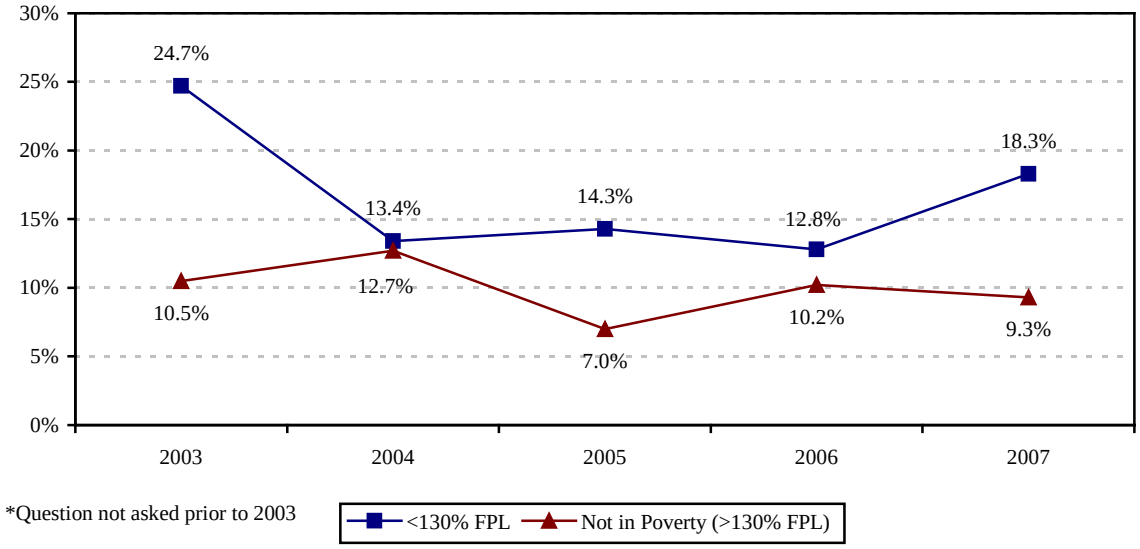
WHY IS IT IMPORTANT?

Regular physical activity is associated with decreased death rates for people of all ages, by decreasing the risk of death from obesity related diseases, such as heart disease, diabetes, and colon cancer. It has also been shown to prevent or reduce high blood pressure, increase muscle and bone strength, increase lean muscle, aid in weight control, decrease body fat, and increase psychological well-being (including decreasing the risk of developing depression). Young adults require weight-bearing exercise in order to achieve and maintain peak bone mass. Older adults can improve strength and flexibility with regular physical activity, which can help reduce the risk of falling. Regular physical activity can increase the ability of people with certain chronic diseases to perform activities of daily living.

HOW IS ARIZONA DOING?

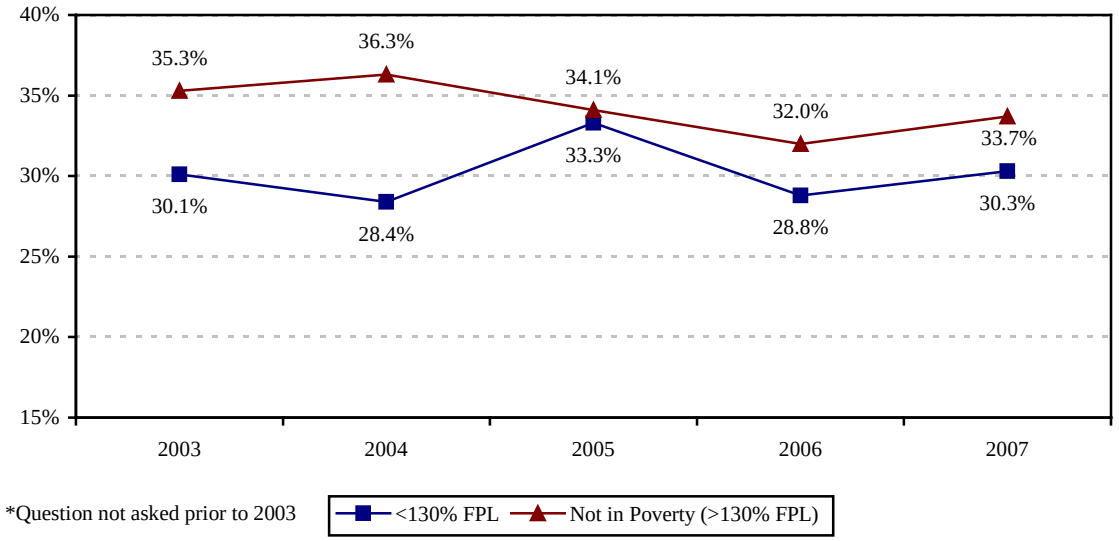
The percentage of adults in Arizona who did not participate in any moderate or vigorous physical activity in the past 30 days has remained relatively constant at approximately 14% from 2003 to 2007.[5] Low-income individuals (<130% FPL) were more likely to have reported not participating in any moderate or vigorous activity than individuals not in poverty. Figure 50 shows the percentage of Arizona adults who reported not participating in any moderate or vigorous physical activity in the past 30 days by poverty level for 2003 to 2007.

Figure 50. Percentage of Arizona Adults Who Did Not Participate in Any Moderate or Vigorous Physical Activity by Poverty Level, BRFSS 2003-2007



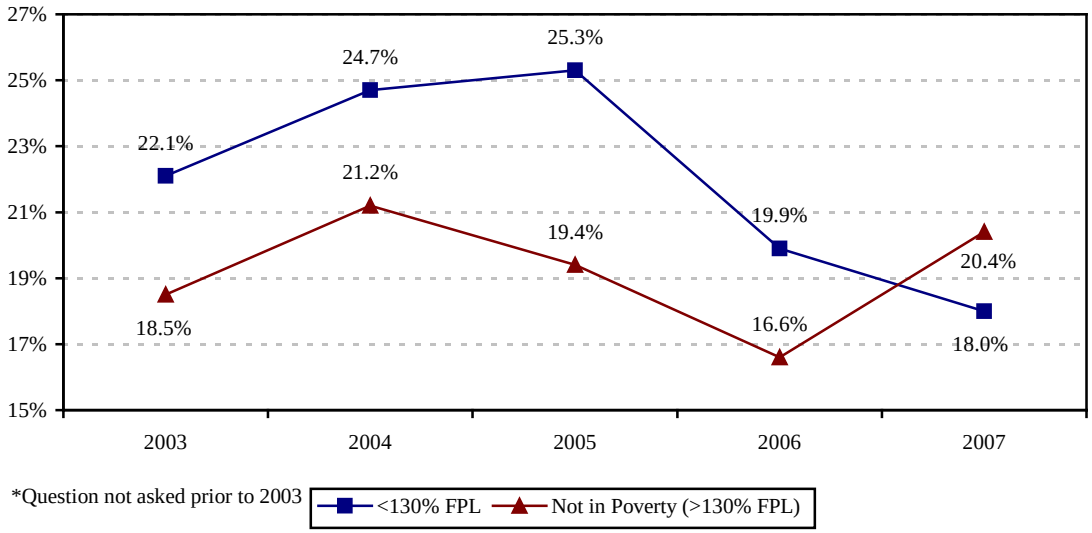
The percentage of adults who reported insufficient levels of physical activity to meet recommendations for moderate or vigorous physical activity has increased slightly from 33.6% in 2003 to 35% in 2007. Low-income individuals were less likely to have reported that they participated in moderate or vigorous physical activity, but at levels insufficient to meet recommendations than adults not in poverty. Figure 51 shows the percentage of Arizona adults who participated in moderate or vigorous physical activity, but at levels insufficient to meet the recommendations by poverty level for 2003 to 2007.

Figure 51. Percentage of Arizona Adults Who Participated in Insufficient Physical Activity to Meet Moderate or Vigorous Recommendations by Poverty Level, BRFSS 2003-2007



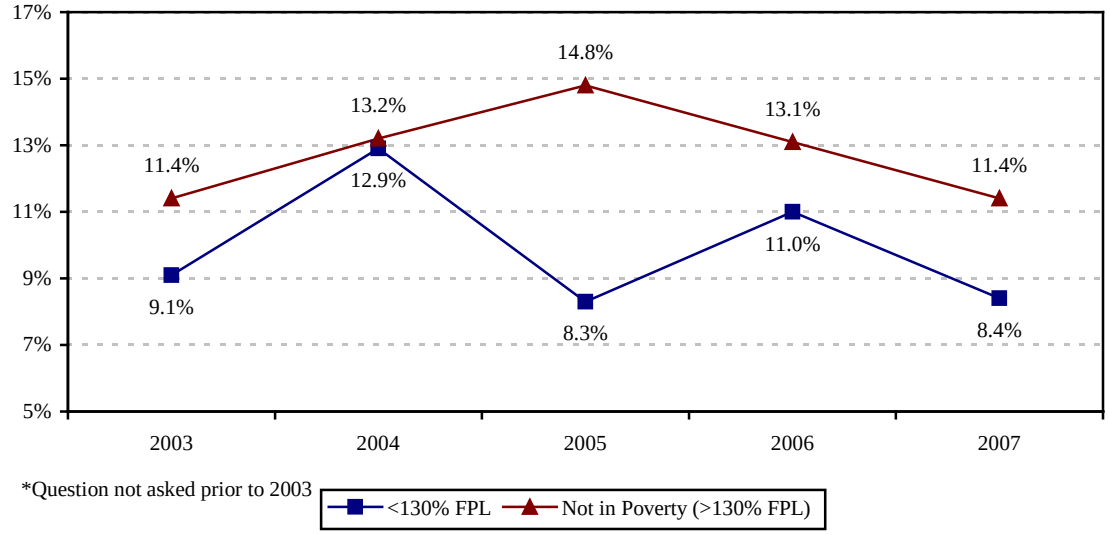
The percentage of Arizona adults who met recommendations for moderate physical activity increased slightly from 19.0% in 2003 to 21.5% in 2007. From 2003 to 2006, low-income individuals were more likely to have participated in sufficient physical activity to meet recommendations for moderate physical activity than individuals not in poverty. In 2007 the percentage of individuals not in poverty who met recommendations for moderate physical activity surpassed the percentage of low-income individuals that met moderate physical activity recommendations. Figure 52 shows the percentage of Arizona adults who met recommendations for moderate physical activity by poverty level from 2003 to 2007.

Figure 52. Percentage of Arizona Adults Who Participated in Sufficient Physical Activity to Meet Moderate Recommendations Only by Poverty Level, BRFSS 2003-2007



The percentage of Arizona adults who met recommendations for vigorous physical activity has remained relatively constant at approximately 11% from 2003 to 2007. Individuals not in poverty were more likely to have met recommendations for vigorous physical activity than low-income individuals. Figure 53 shows the percentage of Arizona adults who met recommendations for vigorous physical activity by poverty level for 2003 to 2007.

Figure 53. Percentage of Arizona Adults Who Participated in Sufficient Physical Activity to Meet Vigorous Recommendations Only by Poverty Level, BRFSS 2003-2007



The percentage of adults who met recommendations for both moderate and vigorous physical activity remained relatively constant from 2003 to 2007 with approximately 17%. Individuals not in poverty were more likely to have met recommendations for both vigorous and moderate physical activity than low-income individuals. Figure 54 shows the percentage of Arizona adults who met recommendations for both moderate and vigorous physical activity from 2003 to 2007.

Figure 54. Percentage of Arizona Adults Who Participated in Sufficient Physical Activity to Meet Both Vigorous and Moderate Recommendations by Poverty Level, BRFSS 2003-2007

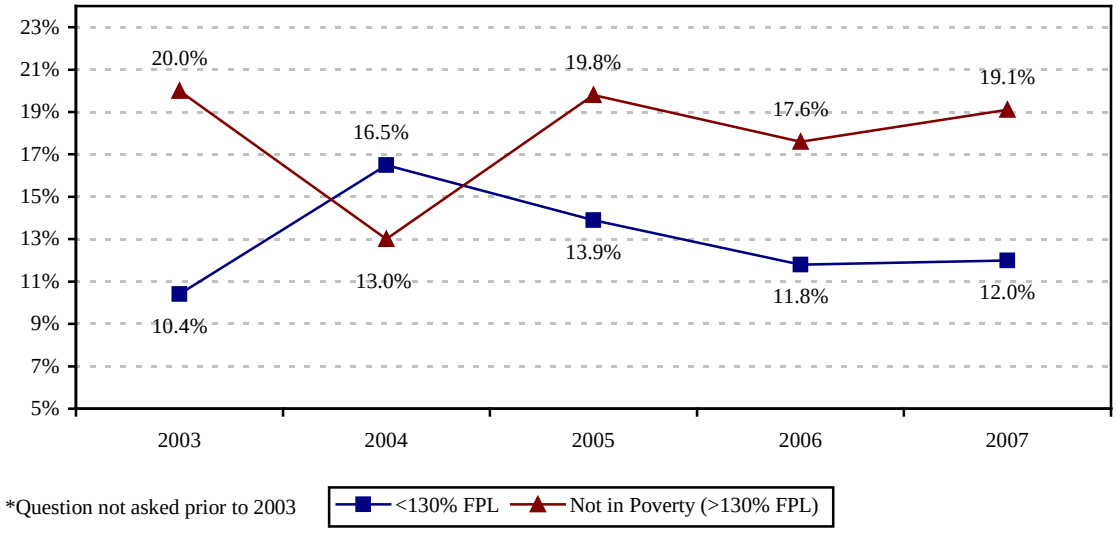


Table 15 shows the percentage of Arizona adults engaging in various levels of physical activity by county from the five year summary of BRFSS data for 2003 to 2007. Detailed tables on physical activity by county and poverty level are provided in Appendix D.

Table 15. Percentage of Arizona Adults Engaging in Various Levels of Physical Activity by County, BRFSS 2003-2007

	Sufficient activity to meet recommendations for vigorous and moderate physical activity	Sufficient activity to meet recommendations for vigorous physical activity only	Sufficient activity to meet recommendations for moderate physical activity only	Insufficient activity to meet recommendations for vigorous or moderate physical activity	No moderate or vigorous physical activity
Apache	21.7%	13.0%	17.2%	24.5%	14.1%
Cochise	19.5%	10.4%	21.0%	30.1%	12.5%
Coconino	23.5%	12.7%	20.8%	30.7%	7.4%
Gila	19.6%	9.7%	15.7%	25.8%	15.8%
Graham	16.0%	11.8%	24.5%	29.7%	11.5%
Greenlee	*	*	*	45.0%	*
La Paz	*	*	*	36.0%	*
Maricopa	16.9%	11.8%	18.8%	33.7%	12.1%
Mohave	14.1%	8.2%	23.4%	33.6%	12.8%
Navajo	18.2%	11.4%	21.1%	32.3%	9.6%
Pima	16.6%	11.8%	22.1%	32.1%	11.4%
Pinal	15.4%	11.1%	19.8%	33.4%	13.3%
Santa Cruz	15.1%	11.1%	22.6%	30.8%	12.5%
Yavapai	13.0%	11.7%	22.6%	32.9%	12.7%
Yuma	13.7%	12.4%	20.7%	29.4%	15.0%
Arizona	16.4%	11.4%	20.1%	32.8%	12.1%

* Less than 25 cases.
The file used to generate this information contains data from BRFSS for survey years 2003-2007 n=22,211
These physical activity questions were not asked prior to 2003.

INCREASE THE PROPORTION OF PREGNANCIES BEGUN WITH AN OPTIMUM FOLIC ACID LEVEL.

(CONSUMPTION OF AT LEAST 400 MCG OF FOLIC ACID EACH DAY FROM FORTIFIED FOODS OR DIETARY SUPPLEMENTS BY NON-PREGNANT WOMEN AGED 15 TO 44 YEARS)

DESCRIPTION OF INDICATOR:

The United States Public Health Service (USPHS) published recommendations in 1992 that women of childbearing years should consume 0.4 milligrams (400 micrograms) of folic acid per day to prevent neural tube defects. Folic acid can be found in dark leafy green vegetables (such as spinach, turnip greens and some lettuces), folic acid enriched products (such as breads and cereals), and in vitamin supplements.[41]

WHY IS IT IMPORTANT?

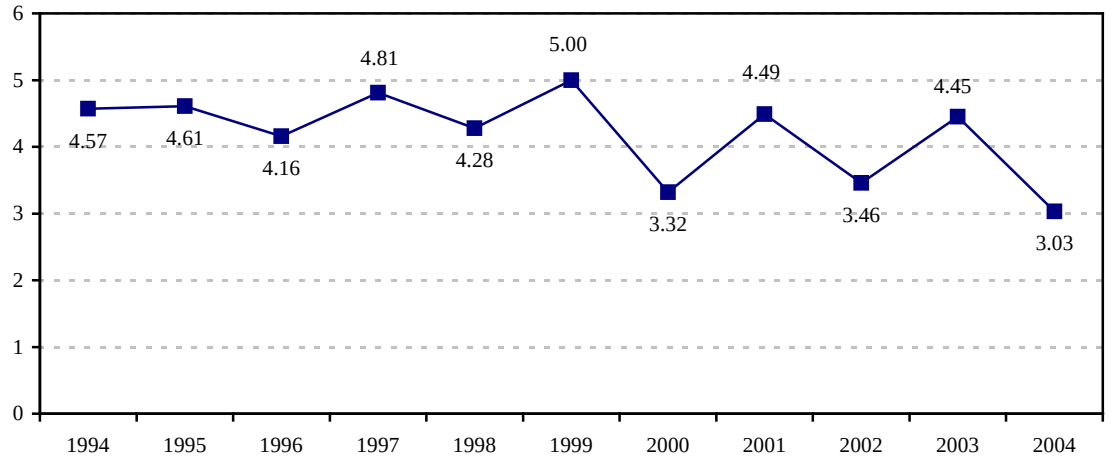
Birth defects are one of the leading causes of death for infants in the neonatal period. While some birth defects can not be prevented, spina bifida and other neural tube defects are preventable. Each year, approximately 2,500 infants are born in the United States with a neural tube defect, and another estimated 1,500 pregnancies are still born or terminated due to these defects. Infants born with anencephaly die before or shortly after birth, while infants born with spina bifida can survive to adulthood with varying levels of disability or paralysis. Annual estimates for medical care for people with spina bifida exceed $200 million.[42]

The risk for developing one of these preventable birth defects can be greatly reduced by consuming the recommended level of folic acid each day, prior to and during pregnancy. The Centers for Disease Control and Prevention (CDC) estimate that one-quarter to one-half of neural tube defects could be prevented by following these recommendations early in pregnancy. Because these defects happen early in pregnancy (week three to four of gestation), and half of pregnancies are unplanned, it is recommended that all women of childbearing years should consume 0.4 milligrams of folic acid per day.[43]

HOW IS ARIZONA DOING?

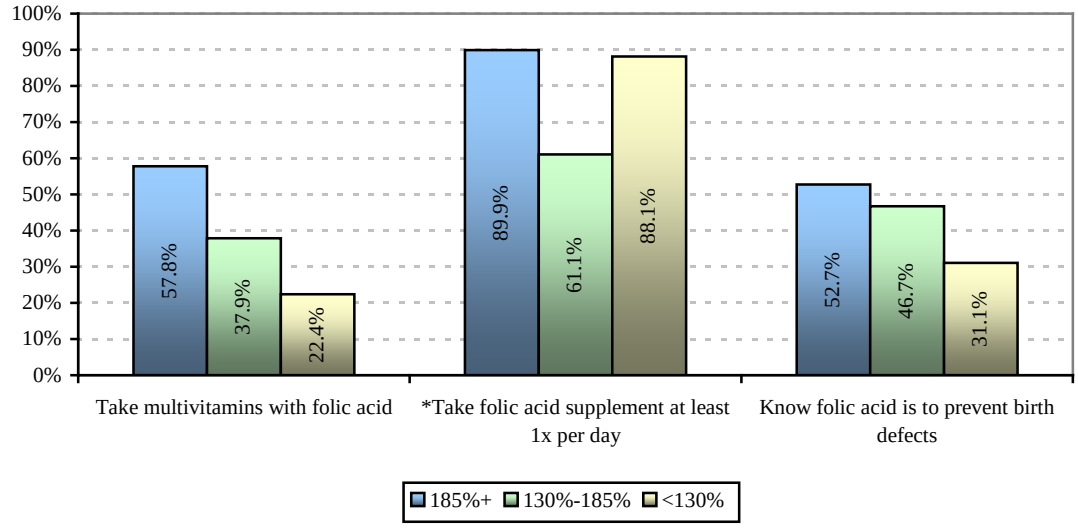
According to the Arizona Birth Defects Monitoring program, there are approximately 34 infants born with spina bifida each year in Arizona. The average rate for spina bifida decreased from October 1998 to December 2003, which follows closely with the folic acid fortification of many cereal products. Figure 55 shows the rate of spina bifida for 1994 to 2004 for live and still born infants.[44]

Figure 55. Rate (Live and Still Born) of Spina Bifida per 10,000 Live Births, Arizona Birth Defects Monitoring Program, 1994-2004



According to the 2007 Behavior Risk Factor Surveillance System, just under half (44.6%) of women age 18 to 44 reported taking multivitamins containing folic acid, and 86.5% report taking these supplements at least once per day.[5] Just over half (52.7%) of women age 18 to 44 reported that they knew that folic acid was recommended to prevent birth defects. As Figure 56 demonstrates, women age 18 to 44 with incomes below 130% of the federal poverty level were less likely to be taking a multivitamin with folic acid than women of childbearing age with incomes above 130% of the federal poverty level. However, out of the 22.4% who reported taking a multivitamin with folic acid the majority (88.1%) took the supplement daily. Additionally, women of childbearing age with incomes less than 130% of the federal poverty level were less likely to report knowing that the reason folic acid supplementation was recommended was to prevent birth defects. County level folic acid data by poverty level from the BRFSS is provided in Appendix E.

Figure 56. Folic Acid Supplementation Among Arizona Women Age 18-44, BRFSS 2007



*Of those women reporting currently taking a multivitamin containing folic acid.

Figure 57 shows the percentage of women of childbearing age who reported taking a multivitamin or supplement containing folic acid by poverty level for 2005 to 2007. As Figure 57 shows, women with incomes below 130% of the federal poverty level were consistently less likely than women with incomes above 130% of the federal poverty level to have reported taking a multivitamin or supplement containing folic acid.

Figure 57. Percentage of Arizona Women Age 18-44 Who Report Taking a Multivitamin or Supplement Containing Folic Acid by Poverty Level, BRFSS 2005-2007

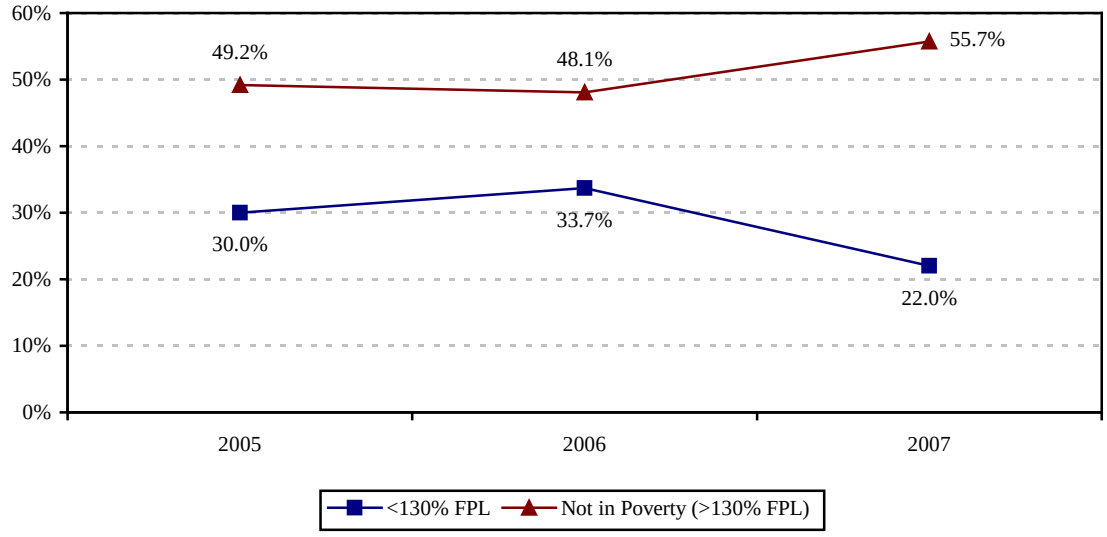
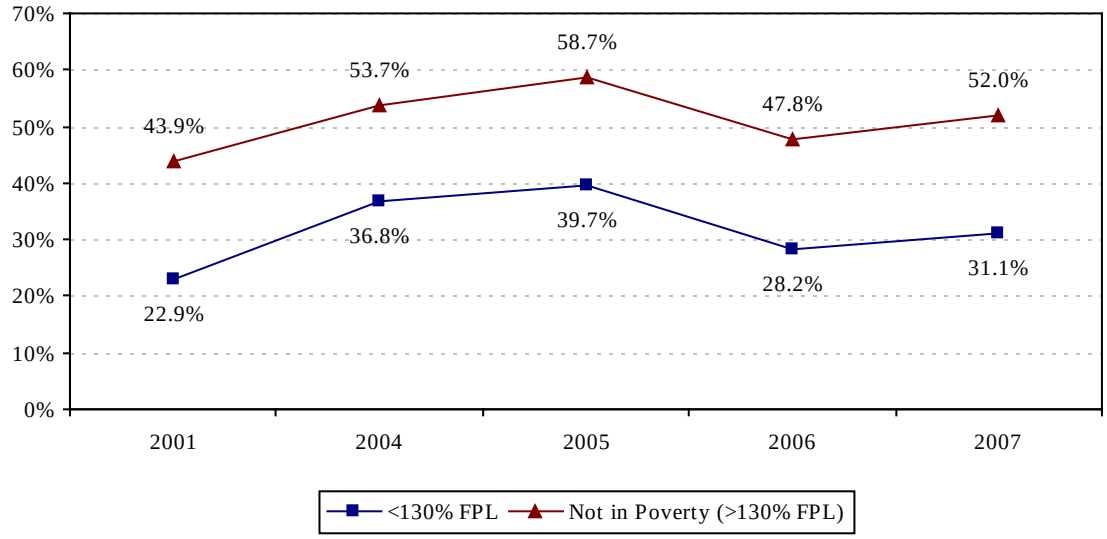


Figure 58 shows the percentage of women age 18 to 44 years who knew that folic acid supplementation is recommended to prevent birth defects by poverty level from 2001 to 2007. As Figure 58 shows, low-income women were consistently less likely to know that folic acid is used to prevent birth defects than women with incomes above 130% of the federal poverty level.

Figure 58. Percentage of Arizona Women Age 18-44 Who Knew That Folic Acid Is Used To Prevent Birth Defects by Poverty Level, BRFSS 2001-2007



*Question was not asked in 2002. Data not available by income level for 2003.

INCREASE THE PROPORTION OF MOTHERS WHO BREASTFEED.

DESCRIPTION OF INDICATOR:

The American Academy of Pediatrics recommends that all infants (in whom breastfeeding is not specifically contraindicated) are breastfeed exclusively for at least the first six months of life.[45]

WHY IS IT IMPORTANT?

Breastfeeding has benefits for both the infant and the mother. Studies have shown that breastfeeding can reduce incidence and severity of diarrhea, ear infections and bacterial meningitis, as well as provide protection against obesity, asthma and sudden infant death syndrome. Studies have also shown that breastfeeding can reduce a mother's risk of certain medical conditions such as ovarian and breast cancer, and even hip fractures and osteoporosis during the post-menopausal period.

Research has also shown that breastfeeding has the potential to decrease annual health costs by approximately $3.6 billion, by decreasing absenteeism from work, environmental and energy burden due to the production of formula and disposal of its resulting waste products.

While national breastfeeding initiation rates have increased since the 1990's, exclusive breastfeeding rates continue to decrease substantially by six months.[46]

HOW IS ARIZONA DOING?

The National Immunization Survey (NIS) collects breastfeeding rates among children in the United States.[47] Table 16 shows the percentage of infants who were exclusively or partially breastfed in Arizona and the United States. As Table 16 shows, Arizona rates were statistically higher than national rates for infants that were ever breastfed. Arizona ranked 10th for the highest breastfeeding initiation rates in the country.

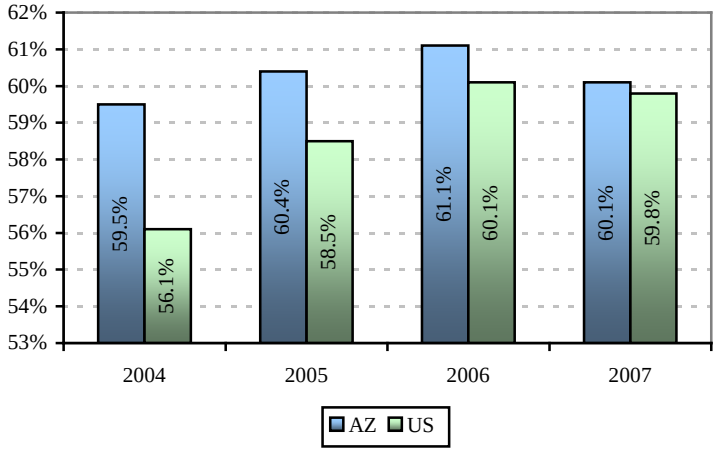
Table 16. Geographic-Specific Breastfeeding Rates Among Children Born in 2004 (NIS)

	Percentage of Infants and 95% Confidence Intervals	
	Arizona	US
Breastfeeding		
Ever	81.5% ± 3.9*	73.1% ± 0.8
At 6 months	43.7% ± 4.5	42.1% ± 0.9
At 12 months	22.2% ± 3.7	21.4% ± 0.8
Exclusive Breastfeeding		
At 3 months	36.6%± 4.7	31.5% ± 0.9
At 6 months	13.7% ± 3.8	12.1% ± 0.7
* Statistically significant difference between AZ and US average		

The Pediatric Nutrition Surveillance System (PedNSS) monitors the breastfeeding status of low-income children in the United States who participate in federally funded maternal and child health and nutrition programs. As Figure 59 shows, Arizona's PedNSS population exceeded national breastfeeding initiation rates over the last four years by one

to three percent.[29] There has been a steady increase in breastfeeding initiation over the past four years with a four percent increase between 2004 and 2007. Among mothers who initiated breastfeeding, five percent discontinued within the first week. Hispanic mothers had the highest initiation rates and Black, non-Hispanic mothers had the lowest rates, with 62.8% compared 50.6% respectively.

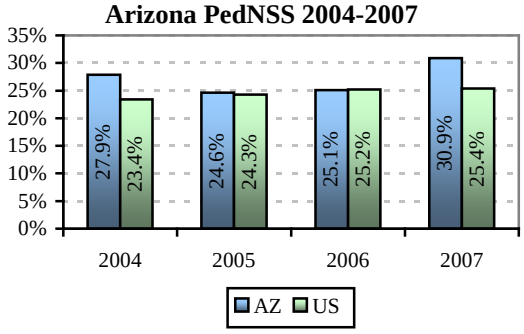
Figure 59. Breastfeeding Initiation
Arizona PedNSS 2004-2007



*Does not include Navajo or ITCA WIC

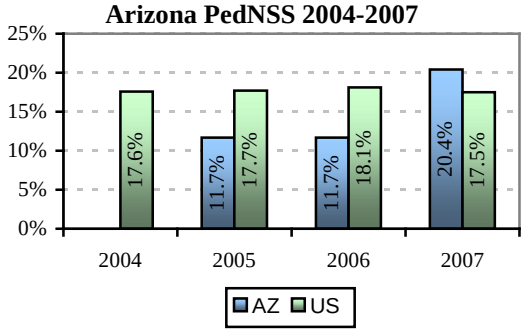
Between 2006 and 2007, there was a 19% increase among infants breastfed at least six months and a 43% increase among those breastfed at least 12 months (Figures 60 and 61). Hispanic mothers had the highest breastfeeding duration rates with 32.4% of infants continuing to breastfeed at least six months and 21.0% continuing at least 12 months. Black, not Hispanic mothers had the lowest duration rates with 25.7 % and 17.9% of infants continuing to breastfeed at six and 12 months, respectively. Although breastfeeding initiation and duration continue to increase, breastfeeding rates among the Arizona PedNSS population remains below the Healthy People 2010 goals of 75% at initiation, 50% at six months, and 25% at 12 months.

Figure 60. Breastfed At Least 6 Months,
Arizona PedNSS 2004-2007



*Does not include Navajo or ITCA WIC

Figure 61. Breastfed At Least 12 Months,
Arizona PedNSS 2004-2007



*Does not include Navajo or ITCA WIC

As shown in Table 17, two counties, Coconino and Yavapai, have met the Healthy People 2010 goals for breastfeeding initiation. Just one county, Coconino, has met the Healthy People 2010 goals for breastfeeding at six and 12 months.

Table 17. Percentage of Infants Breastfed at Various Ages by County, Arizona PedNSS 2007

	Breastfeeding			Exclusive Breastfeeding	
County	% Ever Breastfed	% Breastfed at 6 Months	% Breastfed At Least 12 Months	% Breastfed at 3 Months	% Breastfed at 6 Months
Apache	57.8	34.3	19.4	*	*
Cochise	66.5	26.6	17.2	15.4	3.7
Coconino	89.3	57.5	32.9	33.7	10.1
Gila	63.4	18.4	14.2	*	*
Graham	67.7	37.3	25.2	*	2.5
Greenlee	*	*	*	*	*
Maricopa	57.2	30.7	20.0	4.8	1.7
Mohave	67.8	26.0	16.5	9.2	1.8
Navajo	58.1	39.0	27.7	19.9	10.2
Pima	73.7	31.1	22.4	4.5	1.2
Pinal	62.6	25.3	17.3	8.1	2.9
Santa Cruz	71.4	20.5	10.8	3.2	1.2
Yavapai	82.6	39.4	24.4	17.3	7.8
Yuma	55.1	26.2	18.7	4.7	1.4
Arizona	**60.1**	**30.9**	**20.4**	**6.9**	**2.4**
HP 2010 Goal	**75.0**	**50.0**	**25.0**		

Source: CDC Pediatric Nutrition Surveillance System, 2007
* Percentages are not calculated if < 100 records are available for analysis.

REDUCE IRON DEFICIENCY ANEMIA AMONG INFANTS, YOUNG CHILDREN AND FEMALES OF CHILDBEARING AGE.

DESCRIPTION OF INDICATOR:

The Centers for Disease Control and Prevention (CDC) recommend that providers counsel individuals and families about including iron rich foods during early childhood and iron supplementation during pregnancy. The CDC recommends periodic screening for iron deficiency anemia among those at risk for developing the condition, and treatment and follow up should be provided for those with the condition.[48] Iron rich foods include animal proteins (such as red meat, poultry and fish), beans, lentils, spinach and enriched grain products (such as bread and cereals).[49] Iron can also be found in dietary supplements.

WHY IS IT IMPORTANT?

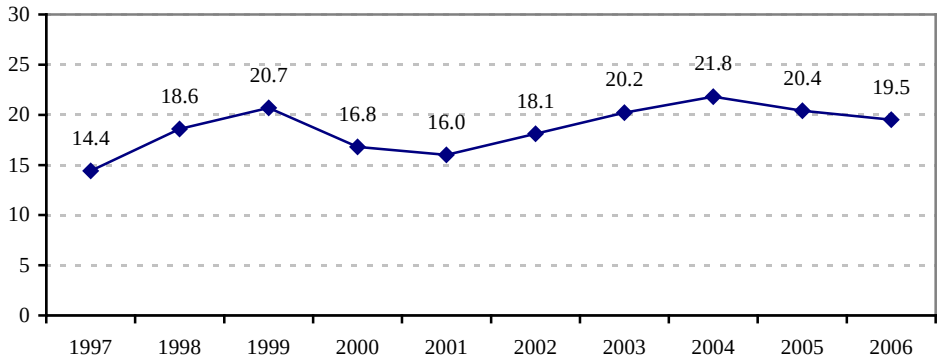
Iron deficiency anemia is the most common form of nutritional deficiency and is the most common form of anemia. It is a condition in which a person's body does not have adequate iron to form enough hemoglobin. Hemoglobin is the substance that carries oxygen throughout the body. Iron deficiency anemia can be caused by a diet low in iron, blood loss from disease or injury, or during pregnancy. Populations at greatest risk for developing iron deficiency anemia include young children, pregnant women and women of childbearing age.

In the United States, iron deficiency anemia affected 7.8 million women of childbearing age (age 15 to 44) and 700,000 young children (age one to two) in 1997.[50] The most common symptoms of iron deficiency anemia are weakness and fatigue; however, severe cases of iron deficiency anemia can affect the heart, causing heart murmurs and delays in growth and development in young children, and can also increase the risk for preterm delivery and low birth weight infants in pregnant women. Iron deficiency anemia can be successfully treated by increasing iron in the diet or giving iron supplements. Additionally, eating a diet rich in iron can help prevent iron deficiency anemia.[51]

How is Arizona Doing?

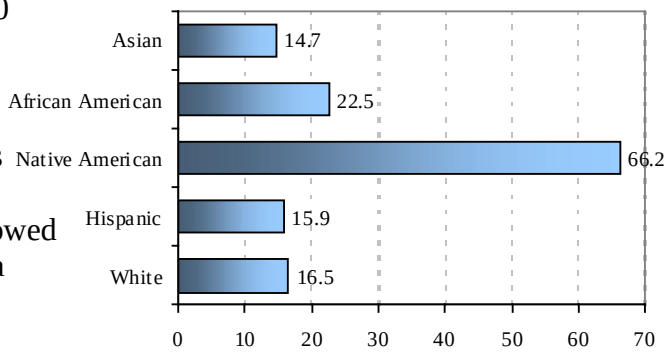
There are approximately 20 infants born to women with anemia per 1,000 live births each year in Arizona.[11] As Figure 62 shows, the number of births per 1,000 live births to women with anemia has increased from 1997 to 2006.

Figure 62. Number of Births per 1,000 Live Births to Women With Anemia, Arizona 1997 to 2006



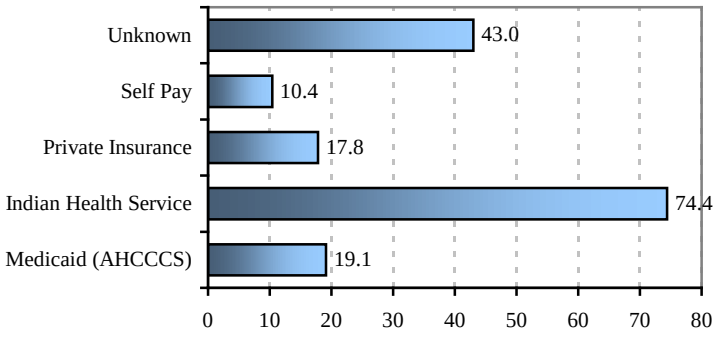
Health disparities are apparent with regards to anemia by geographic location as well as race and ethnicity. The rates for births to women with anemia were slightly higher for urban (19.4 per 1,000 live births) than rural (20.6 per 1,000 live births) residents. As Figure 63 to the right shows, American Indians had the highest rate of births to mothers with anemia compared to other race/ ethnic groups. African Americans followed with 22.5 births to mothers with anemia per 1,000 live births. Asians had the lowest rates of births to mothers with anemia, with 14.7 births per 1,000 live births.

Figure 63. Number of Births to Women with Anemia per 1,000 Live Births by Race/Ethnicity, Arizona 2006



As Figure 64 shows, the number of births to women with anemia per 1,000 live births varies by payer as well. The rate of births to women with anemia was highest for births with the Indian Health Service (IHS) listed as payer. The rate of births to women with anemia was lowest for women with self-pay listed as payer, but it should be noted that the number of births to

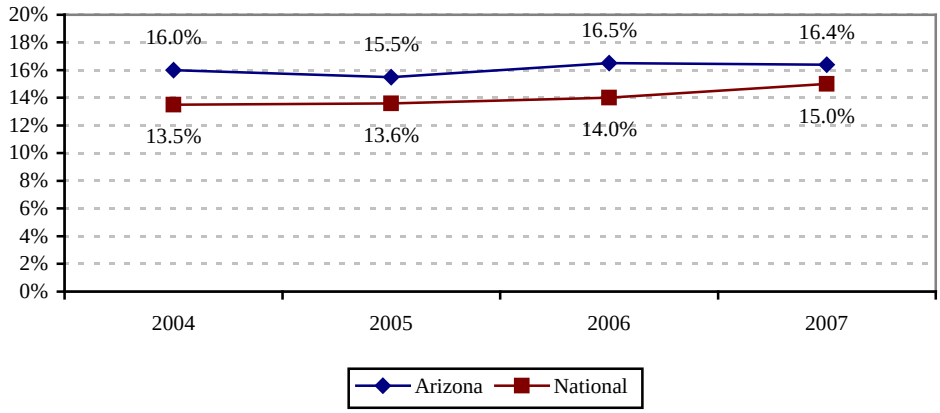
Figure 64. Number of Births to Women with Anemia per 1,000 Live Births by Payer, Arizona 2006



women in this category was very small (n=32/3,074).

Data analyzed from the 2007 Pediatric Nutrition Surveillance System (PedNSS) reported 16.4 % of children ages six months to four years were at risk for anemia, compared to 15.0% nationally. When these figures were broken down by age, 19.1 % of children aged one to two years and 10.2% of children aged three to four years were at risk for anemia. As shown in Figure 65, the percent of children at risk for anemia has grown, both in Arizona and nationally, since 2004.

Figure 65. Percent of Low Hemoglobin Among Arizona and National WIC* Children, PedNSS 2004-2007**



*Does not include Navajo or ITCA WIC
** Age 6 months and older included in the analysis.

Data analyzed from the Pregnancy Surveillance System for 2006 show that 27.8% of pregnant women are at risk for anemia during their third trimester and 21.7% of postpartum women are at risk for anemia. Younger mothers tend to have higher rates both during and after pregnancy. Pregnant and postpartum Black, non-Hispanic mothers have the highest risk for anemia both in Arizona and nationally. Table 18 on the following page shows the percentage of WIC women with low hemoglobin by age and race/ethnicity. For comparison to the 2002 Nutrition Status Report, 32.3% of pregnant women in their third trimester were at risk for anemia. Similar to current data, younger mothers and Black, non-Hispanic mothers were at the highest risk for anemia in 2000.

Table 18. Percent of Arizona WIC Women with Low Hemoglobin by Age and Race/Ethnicity, 2006				
Characteristics	3rd Trimester		Postpartum	
	Arizona[1] (%)	National[2] (%)	Arizona[1] (%)	National[2] (%)
Mother's Age				
Less than 15 years	*	43.9	*	36.3
15-17 years	30.0	37.0	27.3	38.8
18-19 years	30.1	34.7	25.1	36.2
20-29 years	27.7	31.6	21.4	32.8
30-39 years	25.1	29.2	18.7	32.4
40 years or older	27.0	31.1	15.8	34.3
Race/Ethnicity				
White, Not Hispanic	23.0	26.7	16.4	25.2
Black, Not Hispanic	39.6	45.1	33.3	49.0
Hispanic	28.7	28.9	23.2	35.5
American Indian/ Alaskan Native	30.5	31.9	31.5	36.3
Asian/ Pacific Islander	23.9	26.6	15.8	40.8
All Other/ Unknown	*	27.0	*	31.4
Total	**27.8**	**32.0**	**21.7**	**33.5**

Source: Arizona Pregnancy Surveillance System, 2006, Table 9.
[1]Arizona statistics do not include data from the WIC Navajo Nation and WIC ITCA Programs. [2]National statistics include data from all participating states. * Percentages are not calculated if < 100 records are available for analysis.

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Appendix A

Daily Fruit and Vegetable Consumption Recommendations by Gender, Age and Activity Level

Daily Fruit and Vegetable Consumption Recommendations by Gender, Age and Activity Level.[21]

Girls

	Age	Fruits	Vegetables
Less Active	2-3	1 cup	1 cup
	4-8	1 cup	1 ½ cups
	9-13	1 ½ cups	2 cups
	14-18	1 ½ cups	2 ½ cups
Moderately Active	2-3	1 cup	1 cup
	4-8	1 ½ cups	1 ½ cups
	9-13	1 ½ cups	2 cups
	14-18	2 cups	2 ½ cups
Active	2-3	1 cup	1 cup
	4-8	1 ½ cups	1 ½ cups
	9-13	1 ½ cups	2 ½ cups
	14-18	2 cups	3 cups

Boys

	Age	Fruits	Vegetables
Less Active	2-3	1 cup	1 cup
	4-8	1 ½ cups	1 ½ cups
	9-13	1 ½ cups	2 ½ cups
	14-18	2 cups	3 cups
Moderately Active	2-3	1 cup	1 cup
	4-8	1 ½ cups	1 ½ cups
	9-13	1 ½ cups	2 ½ cups
	14-18	2 cups	3 cups
Active	2-3	1 cup	1 cup
	4-8	1 ½ cups	2 cups
	9-13	2 cups	2 ½ cups
	14-18	2 ½ cups	3 ½ cups

Women

	Age	Fruits	Vegetables
Less Active	19-30	2 cups	2 ½ cups
	31-50	1 ½ cups	2 ½ cups
	51+	1 ½ cups	2 cups
Moderately Active	19-50	2 cups	2 ½ cups
	51+	1 ½ cups	2 ½ cups
Active	19-50	2 cups	3 cups
	51+	2 cups	2 ½ cups

Men

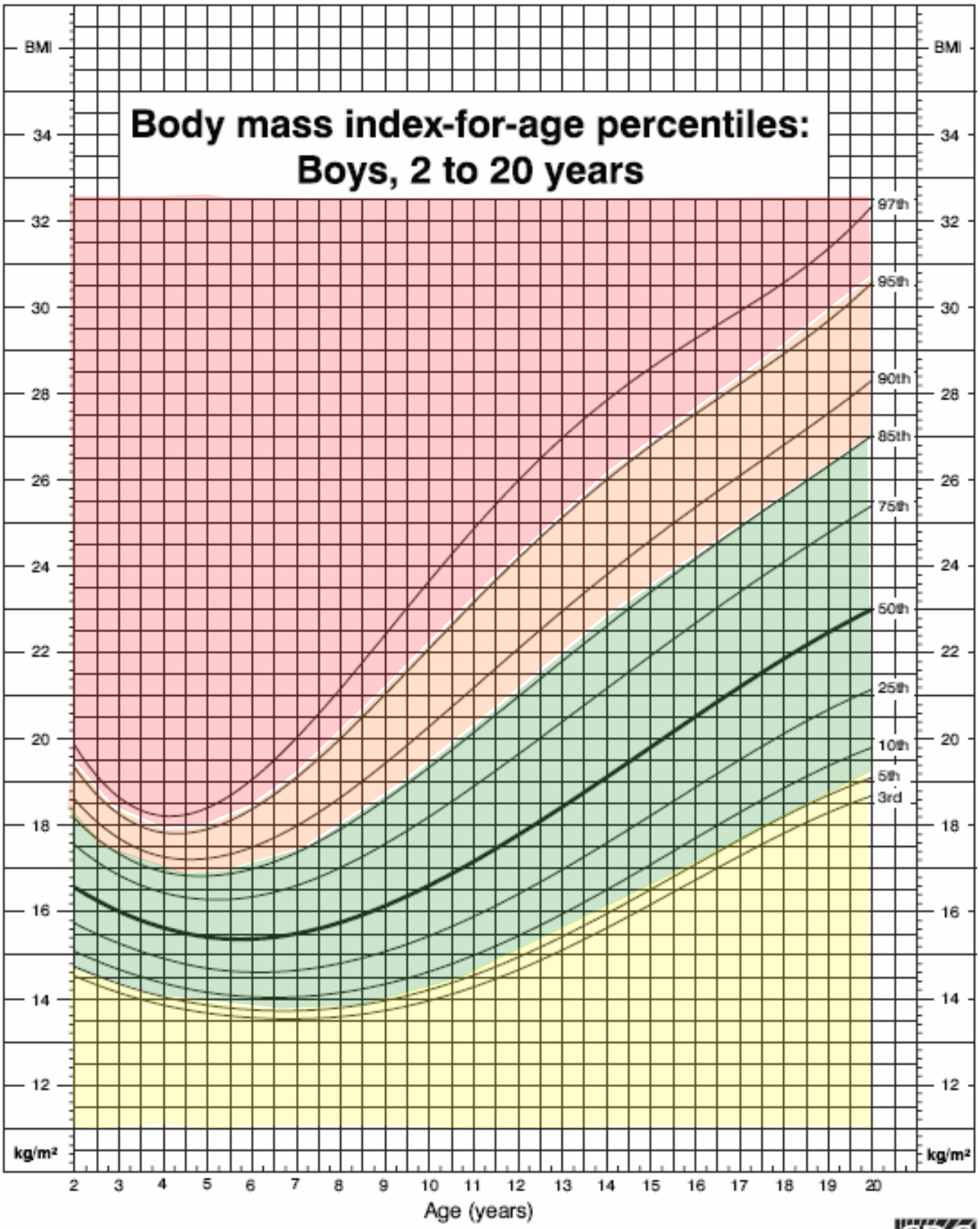
	Age	Fruits	Vegetables
Less Active	19-50	2 cups	3 cups
	51+	2 cups	2 ½ cups
Moderately Active	19-30	2 cups	3 ½ cups
	31+	2 cups	3 cups
Active	19-30	2 ½ cups	4 cups
	31-50	2 ½ cups	3 ½ cups
	51+	2 cups	3 cups

Less active: < 30 minutes of physical activity per day
Moderately active: 30-60 minutes of physical activity per day
Active: Over 60 minutes per day

Appendix B

Gender Specific BMI-for-Age Growth Charts

CDC Growth Charts: United States



Published May 30, 2000.

SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

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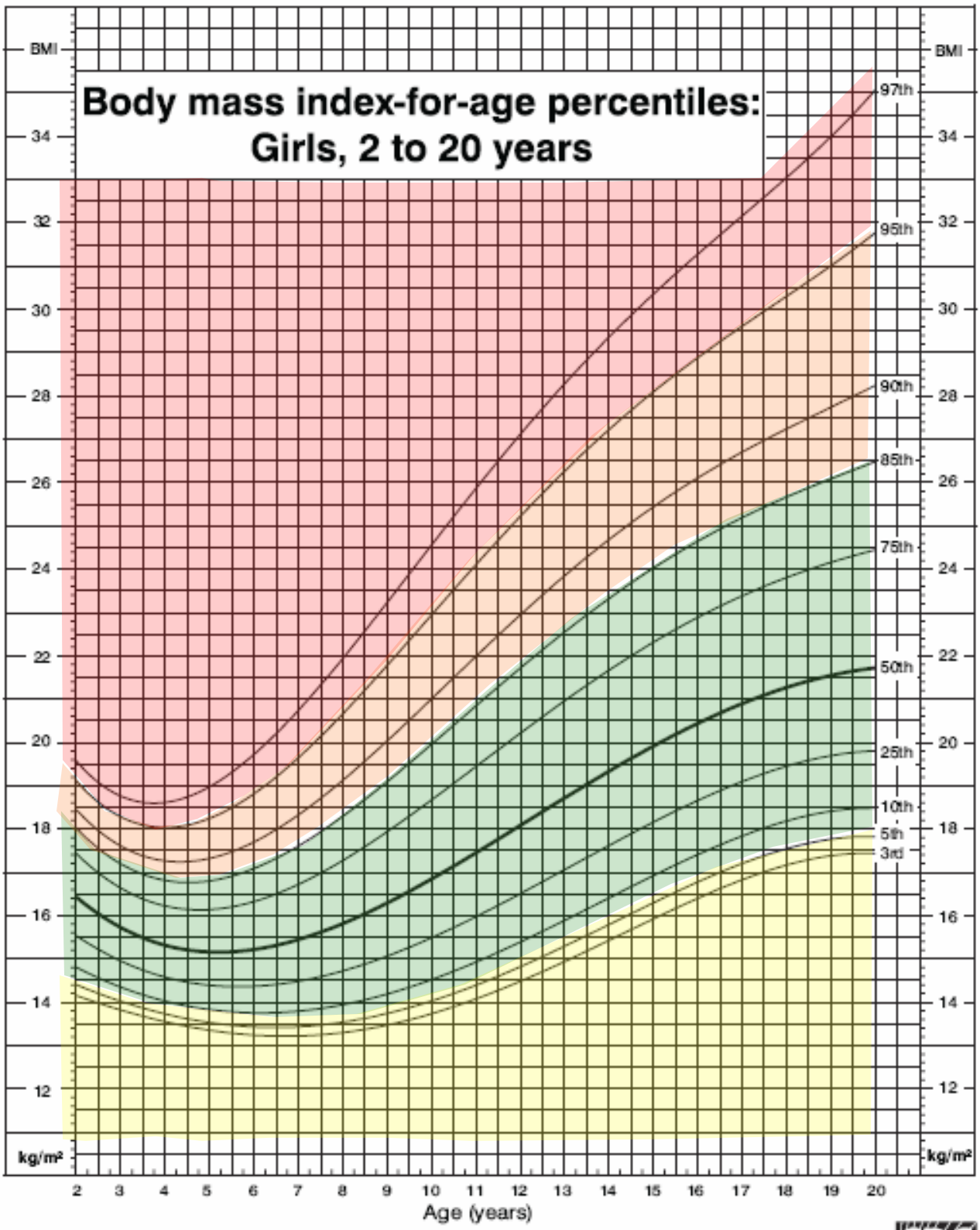
CDC Growth Charts: United States



Published May 30, 2000.
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

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Appendix C

2008 Physical Activity Recommendations By Age

Table. 2008 United States Department of Health and Human Services Recommendations for Physical Activity			
	Children and Adolescents (Age 6 to 17)	**Adults (Age 18 to 64)**	**Older Adults (Age 65 and older)**
Total Activity	60 minutes per day	Moderate or vigorous or an equivalent combination of moderate- and vigorous-intensity aerobic physical activity.	Follow the adult guidelines. If not possible, be as physically active as abilities allow.
Moderate Activity	Most physical activity should be moderate or vigorous	2 hours and 30 minutes a week	
Vigorous Activity	At least 3 days per week	1 hour and 15 minutes (75 minutes) a week	
Muscle Strengthening	At least 3 days per week	2 or more days per week	
Bone Strengthening	At least 3 days per week		
Other			Exercises that maintain or improve balance if at risk of falling.

Appendix D

Physical Activity Tables
by Poverty Level and County

Percentage of Children who Engage in Physical Activity by Poverty Level and Number of Days, with 95% Confidence Intervals, Arizona 2003 NSCH								
Poverty Level	No days		1-3 days		4-6 days		Every day	
	%	CI	%	CI	%	CI	%	CI
0-99% FPL	20.8*	13.7-28.0	26.4	19.5-33.3	24.8*	17.6-32.1	28.0	20.4-35.5
100-199% FPL	11.6*	7.1-16.0	29.6	22.4-36.8	29.6	23.1-36.2	29.2	22.5-36.0
200-399% FPL	7.0*	3.9-10.0	26.4	21.5-31.4	34.2	28.8-39.6	32.4	26.8-38.0
400%+ FPL	7.4*	4.1-10.7	29.4	23.4-35.5	41.7	35.5-47.9	21.5	16.4-26.6
*Sample size < 50, interpret with caution.								

Percentage of Adults Engaging in Various Levels of Physical Activity by County and Poverty Level, Arizona BRFSS 2003-2007								
	No Moderate or Vigorous PA				Insufficient PA to Meet Moderate or Vigorous Recommendations			
	<130%	130-184%	185%+	All Incomes	<130%	130-184%	185%+	All Incomes
Apache	23.4%	*	*	14.1%	15.9%	*	31.4%	24.5%
Cochise	20.7%	*	8.6%	12.5%	23.6%	29.1%	31.7%	30.1%
Coconino	*	*	5.2%	7.4%	28.9%	31.1%	32.1%	30.7%
Gila	*	*	*	15.8%	*	*	24.4%	25.8%
Graham	*	*	*	11.5%	*	*	31.9%	29.7%
Greenlee	*	*	*	*	*	*	*	45.0%
La Paz	*	*	*	*	*	*	*	36.0%
Maricopa	16.4%	16.7%	9.7%	12.1%	31.5%	35.8%	34.6%	33.7%
Mohave	13.6%	*	10.2%	12.8%	32.6%	43.5%	34.0%	33.6%
Navajo	12.4%*	*	7.8%	9.6%	33.6%	28.2%	36.1%	32.3%
Pima	16.1%	12.1%	8.6%	11.4%	32.6%	27.0%	33.8%	32.1%
Pinal	17.2%	11.1%	11.7%	13.3%	30.5%	27.5%	36.9%	33.4%
Santa Cruz	15.4%	7.5%	11.6%	12.5%	34.0%	24.0%	30.1%	30.8%
Yavapai	15.1%	*	8.6%	12.7%	35.4%	30.3%	33.7%	32.9%
Yuma	20.2%	16.7%	10.5%	15.0%	22.7%	34.1%	33.1%	29.4%
Arizona	25.0%	15.1%	9.4%	12.1%	31.0%	32.9%	34.5%	32.8%
*Less than 25 cases *The file used to generate this information contains data from BRFSS for survey years 2003-2007 n=22,211								

Percentage of Adults Engaging in Various Levels of Physical Activity by County and Poverty Level, Arizona BRFSS 2003-2007								
	Sufficient PA to Meet Moderate Recommendations Only				Sufficient PA to Meet Vigorous Recommendations Only			
	<130%	130-184%	185%+	All Incomes	<130%	130-184%	185%+	All Incomes
Apache	*	*	17.3%	17.2%	*	*	15.3%	13.0%
Cochise	25.5%	9.5%	23.1%	21.0%	11.4%	*	11.2%	10.4%
Coconino	20.7%	22.9%	21.1%	20.8%	*	*	12.4%	12.7%
Gila	*	*	15.0%	15.7%	*	*	*	9.7%
Graham	*	*	24.4%	24.5%	*	*	*	11.8%
Greenlee	*	*	*	*	*	*	*	*
La Paz	*	*	*	*	*	*	*	*
Maricopa	20.9%	20.2%	17.7%	18.8%	9.4%	10.5%	13.6%	11.8%
Mohave	21.6%	17.4%*	25.3%	23.4%	*	*	10.4%	8.2%
Navajo	21.6%	24.0%	18.8%	21.1%	*	*	11.0%	11.4%
Pima	23.1%	25.4%	21.0%	22.1%	9.5%	6.6%	13.5%	11.8%
Pinal	20.6%	27.5%	18.5%	19.8%	10.9	*	10.5%	11.1%
Santa Cruz	27.3%	16.7%	24.9%	22.6%	6.5%	22.9%	11.5%	11.1%
Yavapai	21.4%	20.2%*	24.1%	22.6%	*	*	12.1%	11.7%
Yuma	21.5%	20.6%	20.4%	20.7%	11.0%	*	14.6%	12.4%
Arizona	22.8%	20.9%	18.9%	20.1%	9.5%	9.2%	13.1%	11.4%

*Less than 25 cases
*The file used to generate this information contains data from BRFSS for survey years 2003-2007 n=22,211

Percentage of Adults Engaging in Various Levels of Physical Activity by County and Poverty Level, Arizona BRFSS 2003-2007				
	Sufficient PA to Meet Both Vigorous and Moderate Recommendations			
	<130%	130-184%	185%+	All Incomes
Apache	27.7%	*	23.7%	21.7%
Cochise	13.1%	33.3%	20.8%	19.5%
Coconino	23.6%	*	24.8%	23.5%
Gila	*	*	23.2%	19.6%
Graham	*	*	22.0%	16.0%
Greenlee	*	*	*	*
La Paz	*	*	*	*
Maricopa	14.5%	8.9%	18.7%	16.9%
Mohave	14.4%	*	14.7%	14.1%
Navajo	*	*	22.6%	18.2%
Pima	11.8%	20.1%	18.7%	16.6%
Pinal	10.2%	*	17.5%	15.4%
Santa Cruz	8.1%	20.6%	17.4%	15.1%
Yavapai	*	*	16.3%	13.0%
Yuma	14.0%	10.0%	14.5%	13.7%
Arizona	13.2%	12.4%	18.6%	16.4%

*Less than 25 cases
*The file used to generate this information contains data from BRFSS for survey years 2003-2007 n=22,211

Appendix E

Folic Acid Tables
by Poverty Level and County

Percentage of Women Age 18-44 Taking Supplements Containing Folic Acid by County and Poverty Level, Arizona BRFSS 2005-2007								
	Currently take a multivitamin containing folic acid				Take supplement containing folic acid at least once daily**			
	<130%	130-184%	185%+	All Incomes	<130%	130-184%	185%+	All Incomes
Apache	*	*	*	30.4%	*	*	*	*
Cochise	*	*	58.1%	49.5%	*	*	89.0%	82.1%
Coconino	*	*	56.9%	56.1%	*	*	67.7%	75.9%
Gila	*	*	*	*	*	*	*	*
Graham	*	*	*	53.5%	*	*	*	*
Greenlee	*	*	*	*	*	*	*	*
La Paz	*	*	*	*	*	*	*	*
Maricopa	23.6%	*	54.6%	43.8%	*	*	88.1%	85.1%
Mohave	*	*	*	46.4%	*	*	*	75.7%
Navajo	*	*	49.2%	43.6%	*	*	82.0%	81.1%
Pima	34.9%	*	51.6%	47.0%	95.1%	*	89.7%	91.6%
Pinal	*	*	53.7%	44.0%	*	*	85.1%	85.3%
Santa Cruz	53.8%	*	54.3%	47.2%	93.6%	*	90.2%	92.1%
Yavapai	*	*	56.8%	51.5%	*	*	*	79.3%
Yuma	36.1%	*	54.9%	42.9%	95.3%	*	78.6%	84.9%
Arizona	28.6%	37.6%	53.4%	43.3%	85.9%	71.7%	87.8%	85.8%

*Less than 25 cases. The file used to generate this information contains data from BRFSS for survey years 2005-2007(n=2,958). **Of those women who reported taking a multivitamin containing folic acid.

Percentage of Women Age 18-44 Who Reported Knowing That Folic Acid is Used To Prevent Birth Defects by County and Poverty Level, Arizona BRFSS 2001-2007				
	<130%	130-184%	185%+	All Incomes
Apache	*	*	*	18.9%
Cochise	*	*	42.5%	36.0%
Coconino		*	51.5%	45.7%
Gila	*	*	*	*
Graham	*	*	*	55.0%
Greenlee	*	*	*	*
La Paz	*	*	*	*
Maricopa	32.4%	44.9%	53.6%	46.4%
Mohave	*	*	48.0%	43.9%
Navajo	*	*	41.6%	35.6%
Pima	46.0%	43.7%	55.3%	49.5%
Pinal	35.1%	*	50.3%	45.7%
Santa Cruz	37.4%	*	48.4%	40.5%
Yavapai	*	*	50.7%	41.5%
Yuma	23.7%	34.7%	43.0%	36.3%
Arizona	33.0%	41.8%	52.3%	44.5%

*Less than 25 cases. The file used to generate this information contains data from BRFSS for survey years 2001-2007 (n=4,679). Sample size not large enough for estimates by poverty level by county.