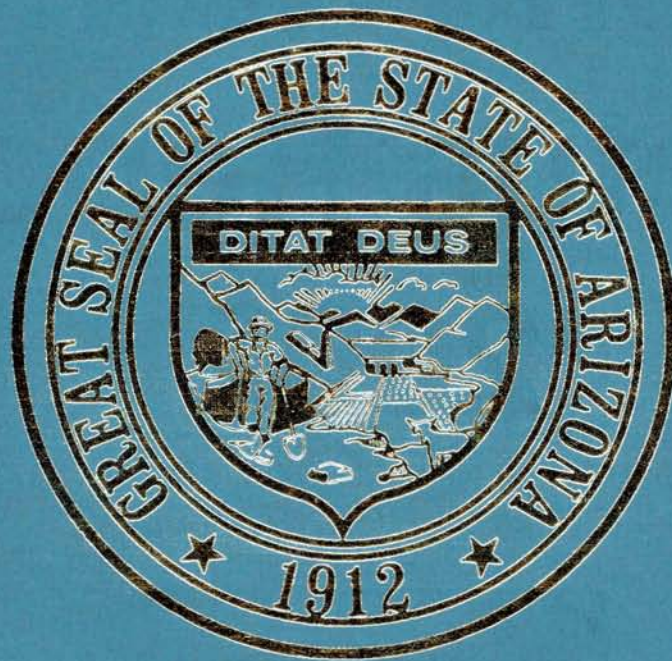


Arizona Nutrition Status Report 2002



Arizona Department of Health Services
Division of Public Health Services
Bureau of Community and Family Health Services
Office of Nutrition and Chronic Disease Prevention Services



Janet Napolitano, Governor
State of Arizona

Catherine R. Eden, Director
Arizona Department of Health Services

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Office of Nutrition and Chronic Disease Prevention Services

2927 North 35th Avenue, Suite 400
Phoenix, Arizona 85017
Phone (602) 542-1886

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**ARIZONA NUTRITION STATUS
REPORT 2002**

**ARIZONA DEPARTMENT OF HEALTH SERVICES
BUREAU OF COMMUNITY AND FAMILY HEALTH SERVICES**

CO-AUTHORS:

Judith Nowak, MPH
Research and Analysis Team, Manager
Office of Nutrition and Chronic Disease Prevention Services

Sharon Sass, RD
Community Nutrition Services Team, Manager
Office of Nutrition and Chronic Disease Prevention Services

Mary Ellen Rivero, MS, RD
Training Team, Leader
Office of Nutrition and Chronic Disease Prevention Services

Lee Renda, BS
MCH/WIC Team, Manager
Office of Nutrition and Chronic Disease Prevention Services

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The *Arizona Nutrition Status, Report 2002* has been a collective endeavor completed over some length of time. It is not possible to mention all who have provided input, guidance and support for the project. Appreciation is expressed to all who assisted and participated, particularly the public health nutritionists in county health departments and community health centers and the partners from the Arizona Nutrition Network who recognized the value and importance of preparing a report on factors impacting the nutrition status of people living in Arizona.

While this report reflects trend data from 1990-2000, the information reflects a variety of nutrition-related concerns that have been addressed by public health nutrition programs in Arizona for more than three decades. The focus on these nutrition concerns has been led by four visionary public health professionals who have directed nutrition programs for the Arizona Department of Health Services over the years. These leaders and the years that they directed nutrition services for the Department include:

- Anita Owen, M.A., R.D., 1966 – 1976
- Morissa White Miller, M.P.H., 1976 - 1978
- Sheryl Lee, M.P.H., R.D., 1978 - 1998
- Margaret Tate, M.S., R.D., 1999 - Present

Special thanks and acknowledgment is given to each of these leaders for providing the opportunities for innovative approaches to address nutrition issues throughout our state. Public health nutritionists in Arizona and the United States as well as clients served by public health nutrition programs have benefitted from their efforts. Their leadership provided the foundation for the comprehensive approaches to nutrition and chronic disease prevention services found in the Arizona Department of Health Services today.

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Executive Summary

Highlights from the Arizona Nutrition Status Report 2002:

- Between 1994-2000, survey results show an average of 48.1% of Arizonans are considered overweight with a Body Mass Index greater than 25.0.
- In 2000, 36.9% of Arizona residents reported that they eat 5 or more fruits and vegetables per day.
- In 1995, 58% of Arizona adults reported having a high fat diet.
- In 1995, nearly one third (29.8%) of Arizona adults report having a high sodium diet.
- In 1998, only 13.3% of Arizonans reported receiving diet counseling from their physician.
- In 1998, 49.9% of people with diabetes reported that they had a physician office visit which included diet counseling.
- In 1995, survey results showed that only 22.5% of Arizona adults consume an adequate amount of calcium each day.
- In a 1999 Arizona report, it was estimated that 13.8% of Arizona households are food insecure.
- Between 1994-2000, an average of 27.5% of Arizona adults reported that they had high cholesterol.
- In 2000, 59 out of every 1000 Arizona adults reported that they had diabetes. This is more than double the *Healthy People 2010* Objective 5-3 target of 25 per 1000 persons.
- Between 1990 and 2000 there has been an upward trend of breastfeeding in Arizona from 67.1% in 1990 to 78.6% in 2000.
- In 2000, 34.1% of Arizonans reported that they do not engage in any leisure-time activity.

Introduction

This document provides information on a wide range of nutrition-related issues and provides 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 quality of life for all Arizonans.

This report provides data on a number of health objectives from *Healthy People 2010*. The report reflects themes identified in *Healthy Arizona 2010: Collaborating for a Healthier Future* indicating that people improve health through their behaviors and that disparities in health status are not acceptable. The report includes information on health behaviors such as consumption of fruits and vegetables and amounts 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.

In 1968, the Arizona Department of Health published a landmark report, *The Nutritional Status Survey*, the report was presented at the first White House Conference on Nutrition the following year and 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 three state WIC agencies – Navajo Nation, InterTribal Council of Arizona, Inc., and Arizona WIC Program – and the state-funded Community Nutrition Program that provides nutrition education to low income elementary school children in rural areas.

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. This report includes more information relating to the burden of disease from over consumption of foods rather than nutrient deficiencies.

Poor diet and physical inactivity together were identified as the second leading actual cause of preventable death in 1993, accounting for nearly as many deaths as tobacco each year. With accelerating rates of obesity and diabetes, it is likely that poor diet and physical inactivity may now exceed tobacco as the Nation's leading preventable cause of death.

In Arizona, the three leading causes of death are diet-related diseases: heart disease, cancer, and cerebrovascular disease. The 15 leading causes of death in our state include the additional diet-related diseases of diabetes (8th), liver disease (10th), renal disease (11th) and hypertension (15th). In 2000, these diet-related diseases caused 24,545 or nearly two thirds (61%) of all the deaths in Arizona.

To decrease the burden of diet-related diseases in Arizona, significant changes in food consumption will be needed. In *Healthy Arizona 2010: Collaborating for a Healthier Future*, nutrition was selected as one of 12 focus areas. Eight objectives in *Healthy Arizona 2010* address critical areas

that represent the most significant nutrition-related concerns in Arizona. These objectives include:

- Healthy Weight
- Fruit and vegetable intake
- Calcium
- Folate
- Breastfeeding
- Iron Deficiency Anemia
- Food Security
- Food Safety

To improve nutrition to decrease disease and improve health in Arizona, new approaches to dietary change are needed. Some of these include: improving nutrition information and education, increasing access to medical nutrition therapy, increasing the availability of healthy foods in a variety of settings, focusing on prevention of chronic disease beginning in childhood, maintaining a sound science base for dietary recommendations and effective interventions, strengthening state and community data systems for nutrition indicators and building community-based efforts by public and private sector partners to improve dietary habits in Arizona.

Methodology

Sources of data and statistics

Many datasets and reports were used to generate this report. The data and statistics used were collected from the following sources:

The Arizona Behavioral Risk Factors Survey, Bureau of Public Health Statistics, Office of Epidemiology and Statistics, 1994 through 2000.

Dietary Profile, University of Arizona Prevention Center, 1995.

The Centers for Disease Control and Prevention, National Center for Health Statistics, 1998.

The Arizona Health Status and Vital Statistics Report, Bureau of Public Health Statistics, Office of Epidemiology and Statistics, 1997 and 2000 Reports.

The (Special Supplemental Nutrition Program for Women, Infant, and Children) Pediatric Nutrition Surveillance Dataset, Bureau of Community and Family Health Services, Office of Nutrition Services, 2000.

The (Special Supplemental Nutrition Program for Women, Infant, and Children) Pregnancy Nutrition Surveillance Dataset, Bureau of Community and Family Health Services, Office of Nutrition Services, 2000.

The Building Better Bones Evaluation Report, Bureau of Community and Family Health Services, Office of Nutrition Services, FY2001.

The Community Nutrition Program Dataset, Bureau of Community and Family Health Services, Office of Nutrition Services, FY1999 and FY2001.

The Arizona Promoting Lifestyle Activity for Youth (PLAY) Report, Bureau of Community and Family Health Services, Office of Prevention and Health Promotion, FY1999.

Mothers' Survey, Ross Products Division, Abbott Laboratories, Inc., Columbus, Ohio, 1990-2000.

Each of these datasets has specific data collection processes, sampling designs, quality control mechanisms and analysis techniques employed to produce the final source used for this report. The reader should refer to the individual methodology of the source for a detailed explanation of its derivation.

Data analysis

Analyses were performed using SAS vs. 8.0. All percentages presented are based on cell counts of at least eight cases. Every effort was made to present information consistently, throughout this report by race/ethnicity, sex, age group, and for Arizona Counties. With the exception of the *Healthy People 2010* target values, all mortality rates are age-adjusted to the 2000 U.S. population.

SECTION 1

OVERWEIGHT AND OBESITY - ESTABLISHING HEALTHY WEIGHTS

Achieving healthy weights among Arizonans has become increasingly difficult as observed by the increasing number of overweight persons. A healthy weight is considered to be a BMI of between 18.5 and 24.9 according to the National Heart, Lung and Blood Institute (NHLBI).^{1:1} It is important to maintain a healthy weight because persons who deviate from this weight range are at higher risk for developing many chronic diseases.^{1:2} The *Healthy People 2010* objectives for this section focus on healthy weights and decreasing overweight and obesity in adults and adolescents.

19-1 Increase the proportion of adults who are at a healthy weight. Target: 60%

Weight classifications have recently been defined by NHLBI to include ranges for underweight, normal weight, and overweight and obesity. Normal weight or healthy weight has been associated with the lowest risk for developing chronic disease.^{1:2}

Data collected on adults which shows the prevalence of persons at a healthy weight by race/ethnicity, sex and age group is presented in Table 1-1 and Table 1-2. Most subgroups in Arizona indicate a greater percentage of adults within the ideal weight range as compared with information nationwide. Highest percentages of normal weight individuals are among Asian, Pacific Islanders and persons 18 to 24 years of age. Lowest percentage of individuals within the normal weight range are American Indian, Alaska Natives and Hispanics. Finally, weight range percentages by Arizona County shown in Table 1-3 indicates that La Paz County and Apache County have the highest prevalence of overweight adults.

**Table 1-1. Distribution of Weight Ranges for Arizonans by Race and Ethnicity
From the Behavioral Risk Factors Survey (BRFS) 1994-2000**

Characteristics	Weight Ranges (Percent)		
	BMI of less than 18.5	BMI of 18.5 - 24.9	BMI of 25.0 or greater
White	5.5	47.2	47.2
Black	5.4	41.8	52.8
Asian, Pacific Islander	12.2	56.6	31.2
American Indian, Alaska Native	2.5	33.3	64.2
Hispanic	10.6	34.0	55.4
Non-Hispanic	5.7	47.8	46.5
Total (5 year average)	6.7	45.3	48.1

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey (BRFS). This file contains data from 1994 - 2000. N=14021.

Table 1-2. Distribution of Weight Ranges for Arizonans by Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Weight Ranges (Percent)		
	BMI of less than 18.5	BMI of 18.5 - 24.9	BMI of 25.0 or greater
Male	3.4	37.3	59.4
Female	9.8	52.8	37.4
Ages 18 - 24 years	10.4	59.4	30.1
Ages 25 - 34 years	6.8	46.5	46.8
Ages 35 - 44 years	5.8	41.4	52.8
Ages 45 - 54 years	6.5	41.1	52.5
Ages 55 - 64 years	5.0	40.3	54.7
Ages 65 years and older	5.3	45.8	49.0
Total (5 year average)	6.7	45.3	48.1

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. N=14021.

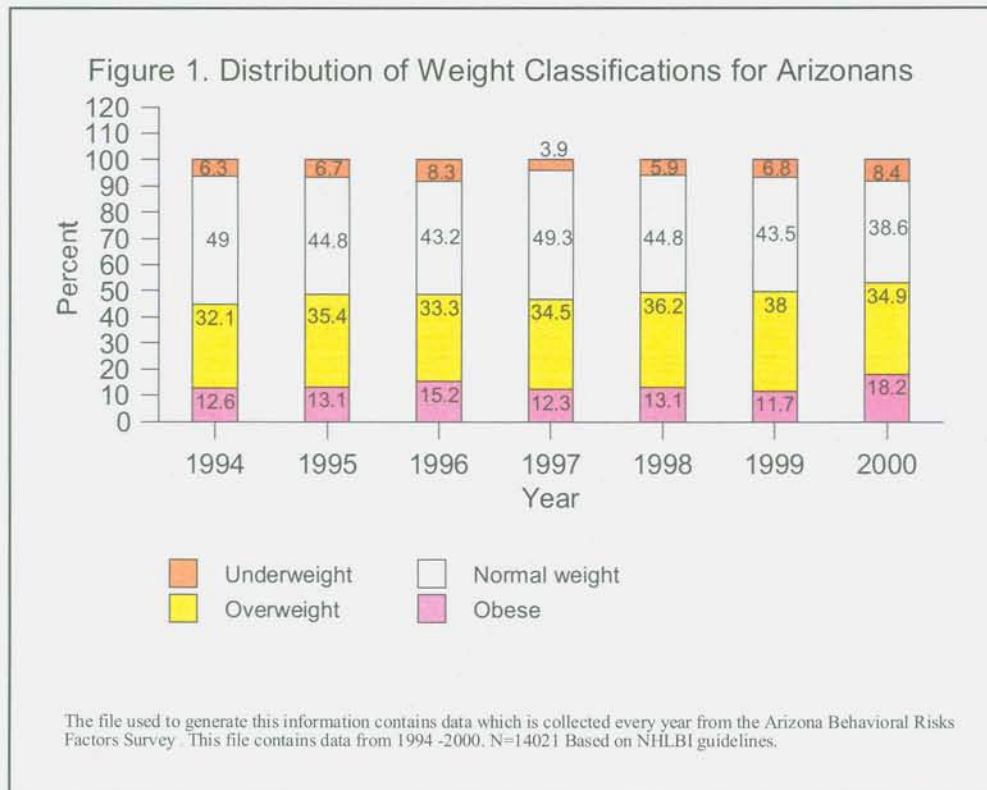
Table 1-3. Distribution of Weight Ranges for Arizonans by County From the Behavioral Risk Factors Survey 1994-2000

Arizona County	Weight Ranges (Percent)		
	BMI of less than 18.5	BMI of 18.5 - 24.9	BMI of 25.0 or greater
Apache	1.9	35.7	62.4
Cochise	8.4	43.8	47.8
Coconino	7.4	52.9	39.8
Gila	4.7	40.9	54.4
Graham	2.5	43.3	54.3
Greenlee	11.0	35.7	53.3
La Paz	2.5	36.6	61.0
Maricopa	7.0	45.5	47.4
Mohave	5.2	41.7	53.1
Navajo	4.1	40.6	55.3
Pima	5.5	47.2	47.3
Pinal	5.0	41.9	53.2
Santa Cruz	6.7	47.1	46.2
Yavapai	6.5	47.2	46.4
Yuma	5.3	39.1	55.5
Total (5 year average)	6.7	45.3	48.1

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. N=14021.

19-2 Reduce the proportion of adults who are obese. Target: 15%

According to 2000 national BRFSS statistics distributed by the Centers for Disease Control and Prevention, Arizona ranks eighteenth out of fifty-two states and provinces in underweight/normal weight.^{1,3} Arizona's ranking continues to be better than the national average. With more than half of Arizona's adult population exceeding a BMI of 25.0, though, overweight and obesity is still a major public health concern.



Even though 8% of Arizona adults are currently considered underweight, the greatest number of Arizona's adults do not meet an ideal weight status and are considered overweight. The percentage of overweight persons has gradually been increasing, with a steady decrease of individuals in the normal weight range of BMI 18.0 to 24.9. Those who are obese to extremely obese (BMI 30.0 or over) have remained relatively stable over the last 6 years, but in 2000 jumped to an alarming 18.2% of Arizonans. Given the current BMI information, we have not met the *Healthy People 2010* Objective 19-2 target of 15% or the Objective 19-1 target at 60%. BRFSS data from 1994-2000 reveal that the greatest efforts should be directed towards American Indian who show an overweight/obesity prevalence of 62.4%, and Hispanics who show an overweight/obesity prevalence of 55.4%.

**19-3 Reduce the proportion of children and adolescents who are overweight or obese.
Target: For ages 6 to 19 years - 5%**

Overweight and obesity also are an increasing problem among children and adolescents nationwide. ^{1:4 to 1:6} Data on school age children and adolescents in Arizona is not available. Review of selected studies on the prevalence of overweight and obesity in American Indian children indicate that overweight is much more prevalent in these children than in other children in the United States. According to the Arizona population statistics for 1998, 8.2% of Arizona's population 6 to 19 year of age is American Indian. A study of Navajo youth including younger children (ages 5-17) indicates the prevalence of overweight or obesity for males at 12.5% and 11.2% for females. ^{1:7 to 1:8} This lends support to the importance of primary prevention programs for youth in Arizona. A recent report on the feasibility phase for Pathways, a randomized intervention trial for the prevention of obesity in American Indian children, confirms the high prevalence of excess body fatness in school-age American Indian children. Four of the six tribes participating in the Pathways study are in Arizona - White Mountain Apache, Pima, Tohono O'Odham and Navajo. ^{1:9}

Table 1-4. WIC Participants and Program Characteristics Report

Year 1998	Number of Clients	Percent Overweight
State of Arizona WIC Program	157,536	10.1% (>95 th percentile)
InterTribal Council of Arizona WIC Program	5,378	26.9% (>90 th percentile)
Navajo WIC Program	11,655	21.1% (>90 th percentile)

For Navajo Nation Program: Data from the Navajo Nation may include some children living in New Mexico.

Overweight and obesity also are an increasing problem among children and adolescents. ^{1:4 to 1:6} Data on school age children and adolescents in Arizona is not available. Pre-school children who are overweight is an indicator defined as those children age one through age four with weight for height > 90th percentile (ITCA and Navajo Nation) or > 95th percentile (Arizona) based on standards developed by the National Center for Health Statistics (NCHS). These data, in Table 1-4, only include low-income children participating in the WIC programs conducted by the State of Arizona, the Inter Tribal Council of Arizona, or Navajo Nation. ^{1:10}

References:

- 1:1. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. National Heart, Lung and Blood Institute, 1998.
- 1:2. Department of Agriculture, Department of Health and Human Services. Nutrition and your health: dietary guidelines for Americans. 4th ed. Home and garden bulletin no. 232. Washington, D.C.: Government Printing Office, 1995.
- 1:3. Centers for Disease Control and Prevention, Department of Health and Human Services. Chronic Diseases and Their Risk Factors: The Nation's Leading Causes of Death., 1999.
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SECTION 2 HEALTHY EATING PATTERNS

Healthy eating patterns are fundamental for proper human development and well-being. Ideally, healthy eating patterns should be established early in life in order to minimize risk for development of chronic diseases such as cancer, stroke, coronary heart disease, diabetes and osteoporosis.^{2:1} The *Healthy People 2010* objectives for this section focus on healthy eating patterns based on the consumption of a healthy diet low in fat and sodium and high in fruit, vegetable, and grain products. In addition, information on key food safety practices and school health education is reviewed.

19-5 Increase the proportion of persons aged 2 years and older who consume at least two daily servings of fruit. Target: 75%

19-6 Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or deep yellow vegetables. Target: 50%

Important components of a healthy eating pattern are fruits and vegetables. Fruits and vegetables, consumed in proper proportions, can reduce the risk of developing some types of cancers. In addition, fruits and vegetables are high in vitamins, minerals and fiber.^{2:2}

Traditionally, data in Arizona on fruit and vegetable consumption has been presented as an index of consumption of 5 or more fruits and vegetables per day among adults 18 years of age or older. The following data from the Behavioral Risk Factors Survey and the University of Arizona Prevention Center Dietary Profile from 1995 will be presented using this index as a baseline indicator for Healthy People 2010 Objectives 19-5 and 19-6.

Table 2-1. Percent of Arizona Diets with 5 or More Fruits and Vegetables Per Day by Race/Ethnicity

Characteristics	Arizona Diets (Percent)	
	UAPC Dietary Profile: ≥5 Fruits and Vegetables per day	BRFS: ≥5 Fruits and Vegetables per day
White	25.8	23.0
Black	18.8	21.8
Asian, Pacific Islander	23.8	22.8
American Indian, Alaska Native	9.3	21.9
Hispanic	14.6	26.6
Other	5.8	38.0
Total	23.0	24.5

UAPC = University of Arizona Prevention Center. Diet assessments were conducted using telephone interview 24-hour recall, N=3600. BRFS = Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

Table 2-2. Percent of Arizona Diets with 5 or More Fruits and Vegetables Per Day by Sex and Age Group

Characteristics	Arizona Diets (Percent)	
	UAPC Dietary Profile: ≥5 Fruits and Vegetables per day	BRFS: ≥5 Fruits and Vegetables per day
Male	20.8	21.5
Female	25.0	27.4
Ages 18 - 24 years	11.0	20.7
Ages 25 - 34 years	14.7	21.7
Ages 35 - 44 years	17.7	22.4
Ages 45 - 54 years	27.0	21.7
Ages 55 - 64 years	33.5	26.6
Ages 65 years and older	36.1	33.1

UAPC = University of Arizona Prevention Center. Diet assessments were conducted using telephone interview 24-hour recall, N=3600. BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

Information on adults which shows the prevalence of persons who eat 5 or more fruits and vegetables per day by race/ethnicity, sex and age group is presented in Table 2-1 and Table 2-2. The lowest percentages of persons who consume 5 or more fruits and vegetables per day are observed consistently among the American Indians, Alaska Native group (9.3 to 21.9%), males (20.8 to 21.5%) and younger persons particularly in the 18-24 years of age group(11.0 to 20.7%).

In Table 2-3, the analyses by Arizona County shows that only 15.4 to 25.6% of Pinal County residents and 19.2 to 24.2% of Graham County residents consume 5 or more fruits and vegetables per day. These are among the counties with the lowest prevalence in Arizona. Percentages of Arizonans who consume 5 or more fruits and vegetables per day by year is presented in Figure 2. These results show that, with the exception of results from 1997 and 1998, there appears to be a gradual increase over time in the percentage of adults who consume 5 or more fruits and vegetables per day.

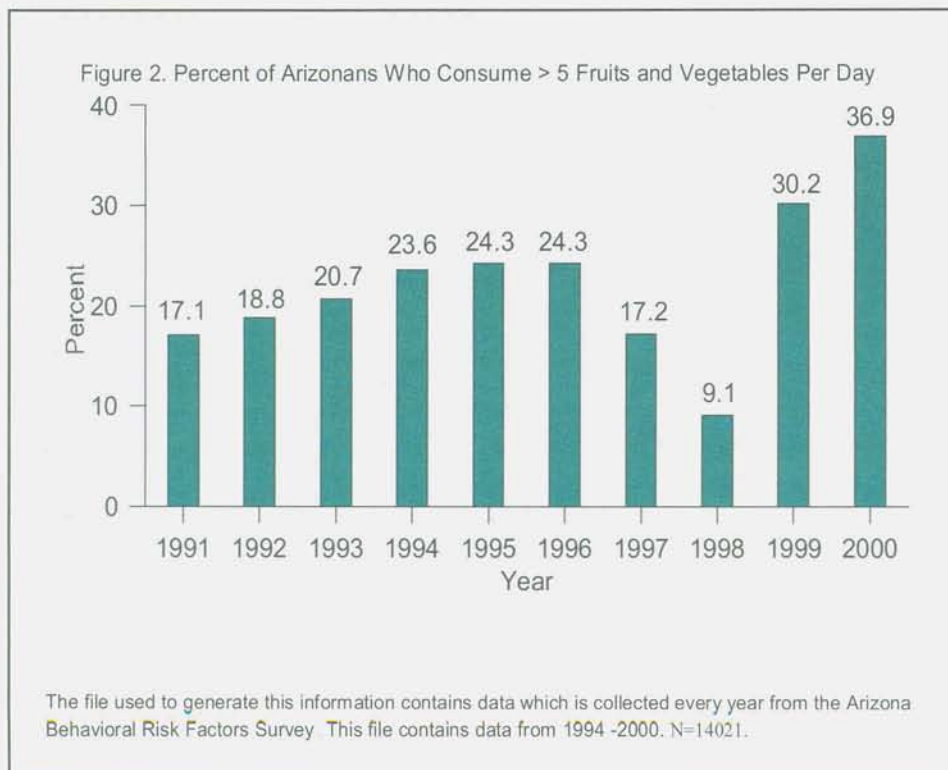
In addition to information collected on adults, the Arizona Community Nutrition Program has been providing funding to 12 County Agencies to provide community and school-based nutrition services to low income children and their families since 1998. In 1999, the Office of Nutrition Services began an evaluation of the data from these school-based programs to determine if the school-based programs demonstrated an improvement in knowledge among students between the pre-test and post-test assessments.

The FY2001 results from this program show a statistically significant increase in the number of students who could identify that they should be eating at least 5 fruits and vegetables each day (pre-test = 51.9% vs. post-test = 93.7%). There was also a significant increase in the number of students who stated that they had eaten a fruit that day or the previous day (pre-test = 81.1% vs. post-test = 87.4%) and also a significant increase among those who stated that they had eaten a vegetable that day or the previous day (pre-test = 67.6% vs. post-test = 76.1%).

Table 2-3. Percent of Arizona Diets with 5 or More Fruits and Vegetables Per Day by County

Arizona County	Arizona Diets (Percent)	
	UAPC Dietary Profile: ≥5 Fruits and Vegetables per day	BRFS: ≥5 Fruits and Vegetables per day
Apache, Gila and La Paz	23.6	28.5
Cochise	23.5	26.3
Coconino	23.6	27.0
Graham	19.2	24.2
Greenlee	16.9	34.1
Maricopa	21.5	23.3
Mohave	23.7	24.6
Navajo	18.2	23.8
Pima	30.0	26.0
Pinal	15.4	25.6
Santa Cruz	21.1	35.0
Yavapai	22.7	29.7
Yuma	21.6	25.6
Total	23.0	24.5

UAPC = University of Arizona Prevention Center. Diet assessments were conducted using telephone interview 24-hour recall, N=3600. BRFS = Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.



The *Healthy People 2010* Objectives 19-5 and 19-6 have set targets at 50% and 75% for the percentage of persons who consume 5 or more fruits and vegetables per day. Although the current information from Arizona is not presented separately to measure fruit and vegetable consumption uniquely, the information presented demonstrates that Objectives 19-5 and 19-6 have not yet been met. Some segments of the population achieve better prevalence than others presenting specific opportunities for intervention.

19-8 Increase the proportion of persons aged 2 years and older who consume less than 10% of calories from saturated fat. Target: 75%
19-9 Increase the proportion of persons aged 2 years and older who consume no more than 30% calories from fat. Target: 75%

A diet high in fat has been documented as a major contributor to chronic disease. Saturated fat is among the most harmful types of fat that is typically consumed and has been associated with an increased risk for heart disease.^{2,3} Tables 2-4 and 2-5 show the prevalence of persons 18 years of age and older with a diet that contain less than 10% of its calories from saturated fat and less than 30% of its calories from total fat. The age group which has the highest percentage of persons who consume low fat diets are persons 65 years and older. Percentages from this group show 49.4% who consume diets low in saturated fat and 49.0% who consume diets low in total fat diet.

**Table 2-4. Percent of Arizona Diets Low in Saturated and Total Fat by Race/Ethnicity
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)	
	Saturated fat <10%	Total fat <30%
White	41.8	43.9
Black	26.6	21.6
Asian, Pacific Islander	30.8	36.7
American Indian, Alaska Native	41.8	39.8
Hispanic	36.1	39.3
Other	24.1	17.1
Total	40.1	42.0

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

Information presented by Arizona County in Table 2-6 shows that the largest percentage of persons with a low fat diet reside in Maricopa County with 42.4% who consume diets low in saturated fat and 43.6% who consume diets low in total fat diet. From the baseline information presented, much effort will be needed to effect a decrease in fat consumption among all Arizonans in order to achieved the Healthy People 2010 Objective targets of 75%.

Table 2-5. Percent of Arizona Diets Low in Saturated and Total Fat by Sex and Age Group From the University of Arizona Prevention Center Dietary Profile 1995

Characteristics	Arizona Diets (Percent)	
	Saturated fat <10%	Total fat <30%
Male	36.4	36.7
Female	43.6	47.2
Ages 18 - 24 years	33.4	39.6
Ages 25 - 34 years	39.1	46.3
Ages 35 - 44 years	34.0	33.0
Ages 45 - 54 years	40.3	37.6
Ages 55 - 64 years	44.1	47.1
Ages 65 years and older	49.4	49.0

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

Table 2-6. Percent of Arizona Diets Low in Saturated and Total Fat by County From the University of Arizona Prevention Center Dietary Profile 1995

Arizona County	Arizona Diets (Percent)	
	Saturated fat <10%	Total fat <30%
Apache, Gila and La Paz	32.0	36.6
Cochise	33.3	39.4
Coconino	35.8	40.5
Graham	31.5	30.7
Greenlee	26.1	32.6
Maricopa	42.4	43.6
Mohave	34.1	35.1
Navajo	31.3	33.2
Pima	39.5	41.4
Pinal	39.5	37.4
Santa Cruz	36.6	41.3
Yavapai	41.0	43.3
Yuma	38.3	42.9
Total	40.1	42.0

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

19-10 Increase the proportion of persons aged 2 years and older who consume 2,400 mg or less of sodium daily. Target: 65%.

Currently, studies show that there is a positive association between sodium intake and blood pressure. Persons with high blood pressure are at increased risk for heart disease and stroke.^{2:4} Data also shows that diets high in sodium may cause loss of calcium, precipitating the need for additional calcium intake.^{2:5} Accordingly, *Healthy People 2010* Objective 19-10 is an objective based on recommendations that promote a diet low in sodium.^{2:6}

**Table 2-7. Percent of Arizona Diets by Sodium Intake and Race/Ethnicity
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)	
	<3000mg of Sodium	≥3000mg of Sodium
White	70.5	29.5
Black	65.1	34.9
Asian, Pacific Islander	81.2	18.8
American Indian, Alaska Native	37.0	63.0
Hispanic	71.9	28.1
Other	92.9	7.1
Total	70.2	29.8

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

The Arizona data used in Tables 2-7 through 2-9 are from the University of Arizona Prevention Center Dietary Profile 1995. The statistics from this report are currently not available for sodium intake groups at 2400mg. The baseline information presented will be for groups who consume less than 3000mg of sodium per day and 3000mg or more sodium per day.

The results from Tables 2-7 and 2-8 show that the lowest percentage of diets low in sodium are among American Indian, Alaska Natives (37.0%), males (59.3%) and persons 18 to 24 years of age (62.4%). In Table 2-9, 59.7% of persons from Graham County responded that they consume a diet containing less than 3000mg of sodium. It is not possible to determine if Arizona currently meets the *Healthy People 2010* Objective 19-10 target of 65% given the information presented at a cutoff of 3000mg of sodium. Future sodium intake assessments in relation to the presence of high blood pressure should be conducted to determine the sodium intake education needs of Arizonans.

**Table 2-8. Percent of Arizona Diets by Sodium Intake, Sex and Age Group
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)	
	<3000mg of Sodium	≥3000mg of Sodium
Male	59.3	40.7
Female	80.9	19.1
Ages 18 - 24 years	62.4	37.6
Ages 25 - 34 years	65.2	34.8
Ages 35 - 44 years	66.9	33.1
Ages 45 - 54 years	73.0	27.0
Ages 55 - 64 years	80.5	19.5
Ages 65 years and older	77.5	22.5

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

Table 2-9. Percent of Arizona Diets by Sodium Intake and County From the University of Arizona Prevention Center Dietary Profile 1995

Arizona County	Arizona Diets (Percent)	
	<3000mg of Sodium	≥3000mg of Sodium
Apache, Gila and La Paz	69.3	30.7
Cochise	76.8	23.2
Coconino	65.5	34.5
Graham	59.7	40.3
Greenlee	69.2	30.8
Maricopa	69.9	30.1
Mohave	67.3	32.7
Navajo	69.1	30.9
Pima	71.6	28.4
Pinal	70.0	30.0
Santa Cruz	74.0	26.0
Yavapai	72.7	27.3
Yuma	70.6	29.4
Total	70.2	29.8

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

19-7 Increase the proportion of persons aged 2 years and older who consume at least six daily servings of grain products, with at least three being whole grains. Target: 50%

Grain products are rich in carbohydrate which provide a major source of energy in diets throughout the world. Grain products are generally low in fat, except when fat is added in food processing. Whole grains provide higher levels of dietary fiber which may be protective against which may decrease risk of cancer including pancreatic, colorectal and breast cancers.^{2,6} Diets that follow the Dietary Guidelines recommendations for fruits, vegetables and grains (including at least 3 servings of whole grains daily) will include 25-30 grams of fiber.

Table 2-10. Percent of Arizona Diets by Fiber Intake and Race/Ethnicity From the University of Arizona Prevention Center Dietary Profile 1995

Characteristics	Arizona Diets (Percent)
	< 30grams of Fiber
White	96.4
Black	98.3
Asian, Pacific Islander	92.6
American Indian, Alaska Native	100.0
Hispanic	95.3
Other	100.0

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

**Table 2-11. Percent of Arizona Diets by Fiber Intake, Sex and Age Group
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)
	< 30grams of Fiber
Male	95.5
Female	97.2
Ages 18 - 24 years	97.4
Ages 25 - 34 years	97.0
Ages 35 - 44 years	96.9
Ages 45 - 54 years	95.5
Ages 55 - 64 years	96.7
Ages 65 years and older	94.7

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

In Arizona, few (3.7%) of the adults participating in the University of Arizona Dietary Practices survey reported food intake that reached a recommended level of 30 grams of fiber a day. Fiber intake of less than 30 grams per day generally reflects dietary habits that include fewer than the recommended number of servings of grains, vegetables and fruit each day. These results did not differ by gender, age or county of residence.

**Table 2-12. Percent of Arizona Diets by Fiber Intake and County From
the University of Arizona Prevention Center Dietary Profile 1995**

Arizona County	Arizona Diets (Percent)
	< 30grams of Fiber
Apache, Gila and La Paz	95.8
Cochise	96.1
Coconino	94.4
Graham	94.5
Greenlee	94.6
Maricopa	96.5
Mohave	95.3
Navajo	96.0
Pima	96.3
Pinal	100.0
Santa Cruz	97.9
Yavapai	95.1
Yuma	94.4
Total	96.3

Diet assessments were conducted using telephone interview 24-hour recall. N=3600

19-11 Increase the proportion of persons aged 2 years and older who meet dietary recommendations for calcium. Target:75%

A diet high in calcium is essential for the development and maintenance of strong bones. In combination with regular physical activity, a high calcium diet reduces the risk for developing osteoporosis later in life.

The current recommended daily intakes of calcium are 500mg for children ages 1-3 years, 800mg for children ages 4-8 years, 1,300mg for adolescents ages 9-18 years, 1,000mg for adults ages 19-50 years, and 1,200mg for adults over 50 years of age.^{2,7} Baseline percentages of Arizona residents 18 years of age and older who consume 100% of the Recommended Daily Amount (RDA) of calcium are presented in Tables 2-13 to 2-15. These results show that 24.2% of Whites, 26.6% of males, 26.0% of persons ages 25-34 years, and 26.7% of Cochise County residents consume $\geq 100\%$ RDA of calcium per day.

**Table 2-13. Percent of Arizona Diets by Calcium Intake and Race/Ethnicity
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)	
	<100% RDA of calcium	$\geq 100\%$ RDA of calcium
White	75.8	24.2
Black	76.7	23.3
Asian, Pacific Islander	85.2	14.8
American Indian, Alaska Native	94.5	5.5
Hispanic	82.2	17.8
Other	100.0	0.0
Total	77.5	22.5

Diet assessments were conducted using telephone interview 24-hour recall. Recommended Dietary Allowance of 100% of calcium is 800mg for adults. N=3600

**Table 2-14. Percent of Arizona Diets by Calcium Intake, Sex and Age Group
From the University of Arizona Prevention Center Dietary Profile 1995**

Characteristics	Arizona Diets (Percent)	
	<100% RDA of calcium	$\geq 100\%$ RDA of calcium
Male	73.4	26.6
Female	81.4	18.6
Ages 18 - 24 years	81.3	18.7
Ages 25 - 34 years	74.0	26.0
Ages 35 - 44 years	77.3	22.7
Ages 45 - 54 years	77.0	23.0
Ages 55 - 64 years	78.6	21.4
Ages 65 years and older	78.0	22.0

Diet assessments were conducted using telephone interview 24-hour recall. Recommended Dietary Allowance of 100% of calcium is 800mg for adults. N=3600

**Table 2-15. Percent of Arizona Diets by Calcium Intake and County
From the University of Arizona Prevention Center Dietary Profile 1995**

Arizona County	Arizona Diets (Percent)	
	<100% RDA of calcium	≥100% RDA of calcium
Apache, Gila and La Paz	73.7	26.3
Cochise	73.3	26.7
Coconino	73.5	26.5
Graham	72.8	27.2
Greenlee	75.4	24.6
Maricopa	77.5	22.5
Mohave	74.6	25.4
Navajo	80.0	20.0
Pima	79.5	20.5
Pinal	76.9	23.1
Santa Cruz	83.6	16.4
Yavapai	77.3	22.7
Yuma	76.1	23.9

Diet assessments were conducted using telephone interview 24-hour recall. Recommended Dietary Allowance of 100% of calcium is 800mg for adults. N=3600

Arizona has recently implemented programs designed to educate health care professionals regarding osteoporosis and oral health, educate adults and training health care providers on osteoporosis, and educate grammar school children on the importance of calcium consumption. A total of 2,500 Arizona grammar school children receive the Building Better Bones program intervention each year. The curriculum focuses on those behaviors that help to build and maintain bone mass. This set of three classes is designed to deliver the osteoporosis prevention messages through interactive, age-appropriate methods. Students are given a pre-survey before the first class and a post-survey following the completion of the series in order to measure changes in awareness, knowledge and behavior.

The FY2001 results from this program show a statistically significant increase in the number of students who could identify the Daily Value for calcium needed each day (pre-survey = 21.9% vs. post-survey = 84.5%). Statistically significant increases were also demonstrated for the number of students who knew what osteoporosis was (pre-survey = 42.0% vs. post-survey = 85.7%). Most importantly, there was a significant number of students who increased their number of daily servings from the milk group (pre-survey = 22.6% vs. post-survey = 36.0%).

From the baseline information presented, much effort will be needed to effect an increase in calcium consumption among all Arizonans in order to achieved the *Healthy People 2010* Objective targets of 75% for persons 18 years of age and older. Impact of these grammar school programs may help to increase the percentage of persons who meet the dietary recommendations for calcium.

10-5 Increase the proportion of consumers who follow key food safety practices. Target: 79%.

Improper food handling increases the risk of foodborne illnesses. FightBAC!™ campaign messages target proper sanitation techniques, avoiding cross contamination, proper cooking temperatures, and refrigeration practices. The key food safety practices highlighted in FightBAC!™ are:

- 1) clean: wash hands and surfaces often
- 2) separate: don't cross-contaminate
- 3) cook: cook to proper temperatures
- 4) chill: refrigerate promptly.

Information in Table 2-16 and Table 2-17 shows the prevalence of Arizona residents who practice key food safety habits. These key food safety practices are:

- 1) Wash hands with soap and water after handling raw meat or chicken.
- 2) Wash cutting board with soap or bleach and water after cutting raw meat or chicken.
- 3) Refrigerate leftover food immediately.
- 4) Never consume undercooked eggs.

Table 2-16. Percent of Arizonans who Follow Key Food Safety Practices by Race/Ethnicity From the Behavioral Risk Factors Survey 1997

Characteristics	Arizonans who follow key food safety practices (%)			
	Wash hands with soap and water after handling raw meat or chicken	Wash cutting board with soap or bleach and water after cutting raw meat or chicken	Refrigerate leftover food immediately	Never consume undercooked eggs
White	73.7	83.1	42.8	58.8
Black	73.6	75.5	25.2	50.3
Asian, Pacific Islander	85.1	98.7	40.0	71.0
American Indian, Alaska Native	54.3	75.0	16.2	68.9
Hispanic	58.7	72.6	22.6	48.5
Other	42.4	38.9	17.8	26.1
Total	71.6	81.1	40.4	57.3

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1997, N=1904.

Table 2-17. Percent of Arizonans who Follow Key Food Safety Practices by Age Group and Sex From the Behavioral Risk Factors Survey 1997

Characteristics	Arizonans who follow key food safety practices (Percent)			
	Wash hands with soap and water after handling raw meat or chicken	Wash cutting board with soap or bleach and water after cutting raw meat or chicken	Refrigerate leftover food immediately	Never consume undercooked eggs
Male	64.6	79.5	37.3	57.5
Female	78.2	82.5	43.3	57.2
Ages 18 - 24 years	61.8	67.8	30.5	62.8
Ages 25 - 34 years	71.1	85.2	35.9	55.8
Ages 35 - 44 years	74.9	83.3	34.9	59.7
Ages 45 - 54 years	74.3	83.5	41.4	58.0
Ages 55 - 64 years	75.7	84.0	49.7	50.8
Ages 65 years and older	69.8	77.4	51.4	56.0

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1997, N=1904.

Table 2-18. Percent of Arizonans who Follow Key Food Safety Practices by County From the Behavioral Risk Factors Survey 1997

Arizona County	Arizonans who follow key food safety practices (Percent)			
	Wash hands with soap and water after handling raw meat or chicken	Wash cutting board with soap or bleach and water after cutting raw meat or chicken	Refrigerate leftover food immediately	Never consume undercooked eggs
Apache	59.8	79.6	23.3	52.9
Cochise	80.3	87.3	51.3	60.7
Coconino	72.7	84.6	39.5	63.7
Gila	76.7	79.3	44.4	54.4
Graham	73.5	75.1	44.0	53.2
Greenlee	-	-	-	-
La Paz	75.9	86.9	-	83.9
Maricopa	71.4	79.5	40.2	55.9
Mohave	78.4	89.4	44.3	59.4
Navajo	68.0	82.3	35.0	62.1
Pima	70.0	83.9	42.6	63.3
Pinal	76.5	85.2	20.2	64.1
Santa Cruz	-	100.0	-	-
Yavapai	70.6	86.3	49.6	50.4
Yuma	84.5	97.5	29.1	67.7
Total	71.6	81.1	40.4	57.3

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1997, N=1904.

In general, most Arizonans follow food safety practices. From Table 2-18, the behavior utilized most often is "Wash cutting board with soap or bleach and water after cutting raw meat or chicken" (81.1%). The behavior least practiced is "Refrigerate leftover food immediately" (40.4%). Surprisingly, more Arizona residents answered that they would "Let leftover food cool to room temperature and then put in refrigerator" (47.9%) than would "Refrigerate leftover food immediately". Information reported by Arizona County showed that the most common practices of food safety behavior was not consistent between Counties. Rather, Yuma County residents practice "Wash hands with soap and water after handling raw meat or chicken" most often (84.5%), 100% of surveyed Santa Cruz County residents reported that they "Wash cutting board with soap or bleach and water after cutting raw meat or chicken", 51.3% of Cochise County residents reported that they "Refrigerate leftover food immediately", and 83.9% of La Paz County residents said that they "Never consume undercooked eggs".

Overall, the indicators presented above show that, in general, most Arizonans follow key food safety practices. These percentages do not, however, indicate that Arizonans have met the *Healthy People 2010* Objective 10-5 target of 79%. Arizona residents still need to improve their ability to follow key food safety practices for FightBAC!TM: clean, chill, and cook.

19-15 (Developmental) Increase the proportion of children and adolescents aged 6 to 19 years whose intake of meals and snacks at schools contributes proportionally to good overall dietary quality.

The Arizona Department of Education reports that in October 2001, 786,626 school children attending public and charter schools, participated in the National School Lunch and Breakfast programs. Of these children 366,792 (47%) were eligible for free and reduced lunch and breakfast. A total of 433,496 children participate in the school lunch or breakfast program.^{2,8}

The Arizona Department Education conducts reviews of one third of school districts. Data collected in 2001 indicated that 65% of school districts met all of the USDA nutrition guidelines for school lunch and breakfast programs in the initial review. The Department of Education worked with remaining districts that fail to meet the nutrition guidelines until all districts met USDA guidelines for the 2001 fiscal year.^{2,9}

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- 2:8 Free/Reduced Eligible as Percentage of Total Eligible, Claim Month of October, 2001
- 2:9 Personal Communication with Rick Hall, School Lunch and Breakfast Program Team Leader, Arizona Department of Education, September 4, 2002

SECTION 3 CHRONIC DISEASE

An unhealthy diet is one of the major contributors towards an increased risk for chronic disease. Diet related chronic diseases include: osteoporosis, coronary heart disease, stroke (cerebral vascular disease), high blood pressure, cancer, and diabetes. The *Healthy People 2010* Objectives for this section focus on diet counseling for persons with chronic disease, chronic disease morbidity, and chronic disease mortality.^{3-1 to 3-2}

19-17 Increase the proportion of physician office visits made by patients with a diagnosis of cardiovascular disease, diabetes, or hyperlipidemia that include counseling or education related to diet and nutrition. Target: 75%

An ideal environment to convey effective diet counseling is a physician's office. Under these circumstances health care professionals evaluate chronic disease status of individuals. It simply is appropriate to combine this physical assessment with diet counseling.

The focus of *Healthy People 2010* Objective 19-17 is to ensure that individuals with specific chronic diseases receive diet counseling. Currently, in Arizona, 1998 Behavioral Risk Factors Survey data on diet counseling received at a physicians office visit is available for all Arizona residents and those who have diabetes. Data from Table 3-1 and Table 3-2 show 19.7% of American Indians/Alaska Natives received diet counseling at a physicians office visit within the last 12 months. In addition, 49.9% of Arizona diabetics and 17.6% of persons 55-64 years of age received diet counseling at a physicians office visit within the last 12 months. Results, reported by Arizona County in Table 3-3 indicate that, of the Counties in which enough data was available to report a finding, 17.1% of Yuma County residents received diet counseling at a physicians office visit within the last 12 months.

Table 3-1. Distribution of Arizonans who had a Physician Office Visit Which Included Diet Counseling by Race and Ethnicity From the Behavioral Risk Factors Survey 1998

Characteristics	Arizonans who had a physician office visit which included diet counseling (Percent)		
	Within the last 1-12 months	Within the last 1-3 years	More than 3 years ago
White	10.0	6.7	3.6
Black	-	-	-
Asian, Pacific Islander	-	-	-
American Indian, Alaska Native	19.7	-	-
Hispanic	12.2	7.9	5.6
Other	13.0	7.0	-
Total	13.3	6.9	4.6

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1998, N=1916. - = percent based on a count too small to present.

Table 3-2. Distribution of Arizonans who had a Physician Office Visit Which Included Diet Counseling by Age Group, Diabetics, and Sex From the Behavioral Risk Factors Survey 1998

Characteristics	Arizonans who had a physician office visit which included diet counseling (Percent)		
	Within the last 1-12 months	Within the last 1-3 years	More than 3 years ago
Persons with diabetes	49.9	-	-
Male	10.9	5.8	5.0
Female	10.6	8.0	3.2
Ages 18 - 24 years	5.8	-	-
Ages 25 - 34 years	8.2	2.2	-
Ages 35 - 44 years	10.0	8.1	4.2
Ages 45 - 54 years	12.7	6.6	5.0
Ages 55 - 64 years	17.6	12.8	4.1
Ages 65 years and older	12.0	8.7	7.8

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1998, N=1916. - = percent based on a count too small to present.

Table 3-3. Distribution of Arizonans who had a Physician Office Visit Which Included Diet Counseling by County From the Behavioral Risk Factors Survey 1998

Arizona County	Arizonans who had a physician office visit which included diet counseling (Percent)		
	Within the last 1-12 months	Within the last 1-3 years	More than 3 years ago
Apache	8.7	-	-
Cochise	16.5	-	-
Coconino	14.9	6.3	-
Gila	-	-	-
Graham	-	-	-
Greenlee	-	-	-
La Paz	-	-	-
Maricopa	8.3	7.4	4.2
Mohave	9.6	-	-
Navajo	15.8	-	-
Pima	15.6	7.5	5.2
Pinal	12.4	11.7	-
Santa Cruz	-	-	-
Yavapai	9.1	5.9	3.8
Yuma	17.1	-	-
Total	13.3	6.9	4.6

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1998, N=1916. - = percent based on a count too small to present.

The *Healthy People 2010* Objective 19-17 has a target of 75%. Currently, the data from Arizona shows that the target has not been met. The best indicator for measuring progress toward this target is among Arizona diabetics. Even using data for this indicator shows Arizona is still 25.1% below the percentage needed to achieve this Objective.

Diseases of the Circulatory System

Among the most common diet related diseases of the circulatory system are heart disease, high cholesterol, stroke (cerebrovascular disease), and high blood pressure. The following *Healthy People 2010* objectives target reduction of circulatory system diseases'. Diets low in saturated fat can help lower the risk of developing these diseases.^{3:3}

12-7 Reduce stroke deaths. Target: 48/100,000

Strokes or major cerebrovascular events result in about 166,028 U.S. deaths each year. Deaths from stroke have declined over the past 30 years. The overall decline is due mainly to improvements in

Table 3-4. 1990 and 2000 Age-Adjusted Cerebrovascular Disease Mortality Rates by Sex and Race/Ethnicity From the Arizona Health Status and Vital Statistics Report

Characteristics	Age-Adjusted Rates		
	1990 Arizona rate	2000 Arizona rate	2000 U.S. rate
Male	54.6	50.8	NA
Female	54.1	51.8	NA
White	55.0	50.8	NA
Black	76.6	82.4	NA
Asian	44.7	46.1	NA
American Indian	48.8	55.3	NA
Hispanic	45.2	51.2	NA
Total	54.6	51.7	60.2

Rate are per 100,000 persons. Arizona data is age-adjusted to the 2000 Arizona population and U.S. data is age-adjusted to the 2000 U.S. population . NA = Not available.

the detection and control of high blood pressure. Information in Table 3-4 show that the age-adjusted mortality rates for stroke in Arizona are below the national rates, overall. Mortality rates for 2000, as shown in Table 3-5, present several Arizona counties that are already below the *Healthy People 2010* Objective 12-7 target of 48/100,000 and one county above the current national age-adjusted rate. Yuma County (36.3) and La Paz County (27.2) have current rates well below Objective 12-7. Alternatively, Greenlee County (72.2) poses a potential focus for future efforts to lower their rate of cerebrovascular mortality.

Table 3-5. 2000 Age-Adjusted Cerebrovascular Disease Mortality Rates by County From the Arizona Health Status and Vital Statistics Report

Arizona County	2000 Arizona rate
Apache	49.4
Cochise	51.3
Coconino	44.4
Gila	51.9
Graham	58.7
Greenlee	72.2
La Paz	27.2
Maricopa	51.0
Mohave	46.9
Navajo	53.1
Pima	57.1
Pinal	45.0
Santa Cruz	45.7
Yavapai	59.1
Yuma	36.3
Total	51.7

Rate are per 100,000 persons. Data is age-adjusted to the 2000 Arizona population.

12-9 Reduce the proportion of adults with high blood pressure. Target: 16%

12-11 Increase the proportion of adults with high blood pressure who are taking action (losing weight, increasing physical activity, and reducing sodium intake) to help control their blood pressure. Target: 95%

High blood pressure or the "silent killer" is a major risk factor for coronary heart disease (CHD) and stroke. Blood pressure that is high is considered to be a systolic measurement of 140mmHg or greater over a diastolic measurement of 90mmHg or greater. Commonly a disease which affects older persons, high blood pressure occurs among 50 million Americans. Many of these persons are not aware that they have high blood pressure. ^{3:5 to 3:6}

Table 3-6. Percent of Arizonans told they had High Blood Pressure by Race/Ethnicity From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizonans told they had High Blood Pressure
White	17.3
Black	26.6
Asian, Pacific Islander	13.0
American Indian, Alaska Native	23.6
Hispanic	9.9
Other	8.42
Total	16.8

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

**Table 3-7. Percent of Arizonans told they had Have High Blood Pressure
by County From the Behavioral Risk Factors Survey 1994-2000**

Arizona County	Arizonans told they had High Blood Pressure
Apache	22.1
Cochise	20.1
Coconino	12.2
Gila	15.9
Graham	12.3
Greenlee	-
La Paz	-
Maricopa	16.3
Mohave	19.3
Navajo	17.1
Pima	17.3
Pinal	14.9
Santa Cruz	10.5
Yavapai	21.0
Yuma	17.3
Total	16.8

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021. - = percent based on a count too small to present. Unknowns are not included.

Information on Arizona residents reporting that they were told they have high blood pressure is presented in Table 3-6 through Table 3-8. The highest prevalence persons aware that they have high blood is among Non-Hispanics (15.2%), females (18.2%) and persons ages 65 years and older (37.2%). By Arizona County, Table 3-7 shows highest awareness among persons with high blood pressure reside in Yavapai (22.1%)and Apache(21.0%) Counties.

**Table 3-8. Percent of Arizonans told they had Have High Blood Pressure by
Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000**

Characteristics	Arizonans told they had High Blood Pressure
Male	15.2
Female	18.2
Ages 18 - 24 years	3.8
Ages 25 - 34 years	5.1
Ages 35 - 44 years	10.6
Ages 45 - 54 years	19.1
Ages 55 - 64 years	25.7
Ages 65 years and older	37.2

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021. Unknowns are not included.

Healthy People 2010 Objective 12-11 addresses control of high blood pressure. Of the 12.4% of Arizonans who reported that they have high blood pressure, Table 3-9 shows that most of these persons are exercising (65.0%) and most are taking aspirin (87.8%) to reduce their risk of stroke. Overall, in 1999, only 22.8% of persons with high blood pressure reported that they eat five or more fruits and vegetables per day.

Table 3-9. Percent of Arizonans who Take Action to Help Control their High Blood Pressure by Sex, Ethnicity, and Age Group From the Behavioral Risk Factors Survey 1999

Characteristics of persons with high blood pressure	Action Taken to help control high blood pressure (Percent)		
	Exercising more to reduce your risk for having a stroke	Eat 5 or more fruits and vegetables each day	Take aspirin to reduce the risk for having a stroke
Male	70.0	18.1	88.6
Female	59.8	27.0	78.0
Hispanic	59.5	-	-
Non-Hispanic	65.4	23.1	82.8
Ages 18 - 24 years	-	-	-
Ages 25 - 34 years	-	-	-
Ages 35 - 44 years	64.4	-	-
Ages 45 - 54 years	61.3	-	92.6
Ages 55 - 64 years	56.2	-	98.3
Ages 65 years and older	70.8	26.5	78.5
Total	65.0	22.4	87.8

BRFS= Arizona Behavioral Risk Factors Survey. This file contains data from 1999, N=1744. - = percent based on a count too small to present. Unknowns are not included.

The target for *Healthy People 2010* Objective 12-9 is 16%. Arizona data indicate an overall prevalence rate for persons with high blood pressure at 16.8% between 1994-2000. Alternatively, *Healthy People 2010* Objective 12-11 has a target set at 95%. Accordingly, although it appears Arizonans have almost met the *Healthy People 2010* Objective 12-9 of 16%, not all persons with this disorder are taking action to help minimize their risk for heart disease and stroke.

12-14 Reduce the proportion of adults with high total blood cholesterol levels. Target: 17%

High cholesterol is a major risk factor for heart disease. As one of the more correctable risk factors, high cholesterol is a problem for more than 90 million Americans. Some of the most effective methods for controlling this risk factor are eating a diet low in saturated fat and cholesterol, participating in physical activity and maintaining a healthy weight.^{3,3}

Table 3-10. Percent of Arizonans Who Report Having a High Cholesterol Level by Race/Ethnicity From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)
	Persons who responded that they were told their cholesterol level was high
White	28.8
Black	31.5
Asian, Pacific Islander	24.6
American Indian, Alaska Native	25.5
Hispanic	18.9
Other	12.5
Total	27.5

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

The prevalence of Arizona residents who reported that they were told their cholesterol level was high is presented in Tables 3-10 to 3-12. The highest percentages of persons having high cholesterol were White (28.8%), females (29.0%), persons ages 55-64 years (40.6%) and Graham County residents (37.7%).

The *Healthy People 2010* Objective 12-14 target is 17%. For some Arizona subgroups like younger persons under 35 years of age this objective has been met. For other groups such as persons over 34 years of age, White persons and women with percentages of persons above the target of 17%, the aforementioned lifestyle changes to manage and lower high cholesterol could be beneficial.

Table 3-11. Percent of Arizonans Who Report Having a High Cholesterol Level by Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)
	Persons who responded that they were told their cholesterol level was high
Male	25.9
Female	29.0
Ages 18 - 24 years	9.5
Ages 25 - 34 years	14.8
Ages 35 - 44 years	22.4
Ages 45 - 54 years	30.9
Ages 55 - 64 years	40.6
Ages 65 years and older	36.8

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

Table 3-12. Percent of Arizonans Who Report Having a High Cholesterol Level by County From the Behavioral Risk Factors Survey 1994-2000

Arizona County	Arizona Residents (percent)
	Persons who responded that they were told their cholesterol level was high
Apache	29.4
Cochise	31.5
Coconino	30.1
Gila	30.6
Graham	37.7
Greenlee	-
La Paz	24.9
Maricopa	28.1
Mohave	28.9
Navajo	28.4
Pima	25.8
Pinal	21.5
Santa Cruz	15.3
Yavapai	25.3
Yuma	22.8
Total	27.5

BRFS= Arizona Behavioral Risk Factors Survey. The file used to generate this information contains data which is collected every year from the BRFS. This file contains data from 1994 -2000, N=14021.

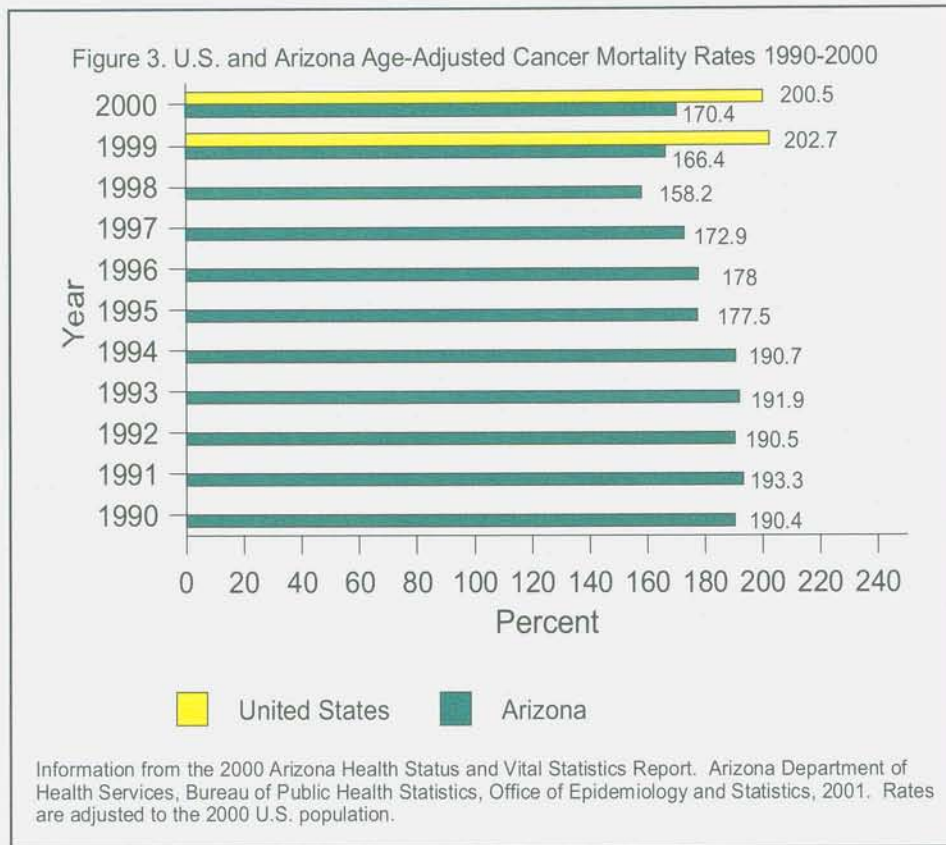
Cancer

Cancer is the second leading cause of death in the United States.^{3:7} Studies indicate that approximately half of all cancer can be prevented by avoiding tobacco use and practicing healthy eating habits with a diet high in fruits and vegetables and low in fat.^{3:8 to 3:9} The *Healthy People 2010* objectives for cancer target reduction of cancer deaths and new cases of cancer.

3-1 Reduce the overall cancer death rate. Target: 158.7/100,000
--

In 1999, 1.2 million persons in the U.S. were diagnosed with cancer. Many of these persons will die from this disease.^{3:7} Although the current cancer mortality trend has shown a gradual decrease in the rate, between 1973 and 1990 there had been a gradual increasing trend in this mortality rate.

Figure 3, Table 3-13 and Table 3-14 describe the Arizona and U.S. trends in cancer mortality as well as comparisons by characteristics and county. The age-adjusted cancer mortality rates in Figure 3 show that Arizona currently has a lower overall cancer mortality rate than the U.S.. Mortality rates presented in Table 3-13 show Arizona subgroups with generally lower cancer mortality rates than the U.S. for 2000 except for Arizona Blacks (216.1) and Arizona males (204.0). Age adjusted cancer rates presented in Table 3-14 for 2000 show that the highest age-adjusted rate is among residents of Greenlee County (240.1).



The *Healthy People 2010* Objective 3-1 target is 158.7/100,000. The Arizona and U.S. mortality rates are currently well above the target of 158.7/100,000. Although, Arizona consistently appears to be closer to achieving Objective 3-1 than the U.S. in general.

Table 3-13. 2000 Age-Adjusted Cancer Mortality Rates by Sex and Race/Ethnicity From the Arizona Health Status and Vital Statistics Report

Characteristics	Age Adjusted Mortality Rates	
	2000 Arizona rate	2000 U.S. rate
Male	204.0	NA
Female	145.8	NA
White	174.8	NA
Black	216.1	NA
Asian	103.4	NA
American Indian	123.0	NA
Hispanic	156.9	NA
Total	170.4	200.5

Rate are per 100,000 persons. Data is age-adjusted to the 2000 U.S. population. NA = Not available.

**Table 3-14. 2000 Age-Adjusted Cancer Mortality Rates by County
From the Arizona Health Status and Vital Statistics Report**

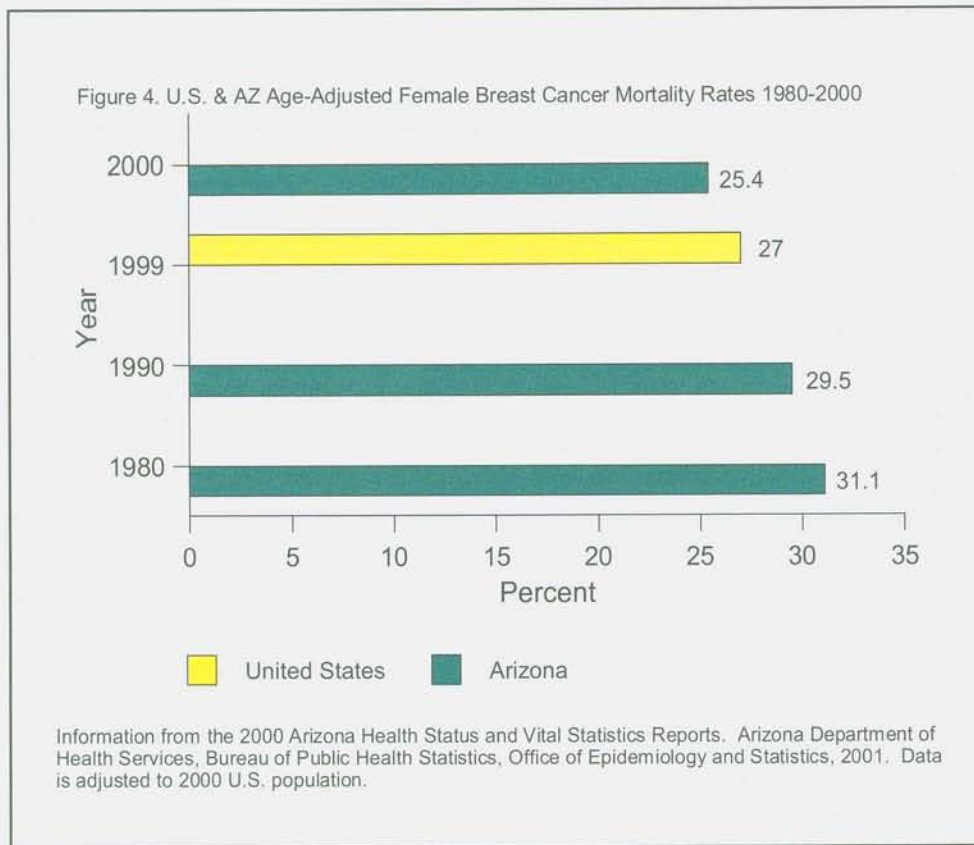
Arizona County	2000 Arizona Mortality rate
Apache	133.4
Cochise	180.4
Coconino	145.1
Gila	201.4
Graham	188.8
Greenlee	240.1
La Paz	112.0
Maricopa	180.2
Mohave	200.8
Navajo	174.1
Pima	173.8
Pinal	187.0
Santa Cruz	140.7
Yavapai	175.4
Yuma	126.6
Total	170.4

Rate are per 100,000 persons. Data is age-adjusted to the 2000 U.S. population.

3-3 Reduce the breast cancer death rate. Target: 22.2/100,000

Among women, breast cancer is the most common type of cancer in the United States. Breast cancer accounts for 16.5% of cancer deaths in women. Some of the major risk factors for this disease that can not be altered by persons at risk include age, family history of breast cancer, previous breast disease, and reproductive history. The one changeable major risk factor is weight. Post-menopausal women who are overweight are at greater risk for breast cancer than those who are at a healthy weight.^{3:10 to 3:11}

Information on breast cancer mortality in the U.S. and Arizona is presented in Figure 4, Table 3-15 and Table 3-16. Figure 4 shows age-adjusted breast cancer mortality rates for women in Arizona are currently similar to the U.S. . In addition, Table 3-15 shows that the 1999 and 2000 breast cancer mortality rate for Black women in Arizona (29.5) is higher than the national rate (27.0). In Table 3-16, the age-adjusted breast cancer mortality rate among women in Greenlee County (51.7) is highest for 2000.



The *Healthy People 2010* Objective 3-3 target is 22.2/100,000. The current overall Arizona mortality rate for female breast cancer of 25.4 is still below this target. Breast cancer prevention efforts among Arizona Black women may help Arizona to meet this target by 2010.

Table 3-15. 1999 and 2000 Age-Adjusted Breast Cancer Mortality Rates by Sex and Race/Ethnicity From the Arizona Health Status and Vital Statistics Report

Characteristics	Age-Adjusted Mortality Rates	
	2000 Arizona rate	1999 U.S. rate
Male	NA	NA
Female	25.4	27.0
White (Female)	26.2	NA
Black (Female)	29.5	NA
Asian (Female)	12.8	NA
American Indian (Female)	12.1	NA
Hispanic (Female)	20.7	NA
Total	NA	NA

Rate are per 100,000 persons. Arizona data is age-adjusted to the 2000 U.S. population . NA = Not available

Table 3-16. 2000 Age-Adjusted Female Breast Cancer Mortality Rates by County From the Arizona Health Status and Vital Statistics Report

Arizona County	2000 Arizona rate
Apache	18.6
Cochise	27.1
Coconino	20.8
Gila	25.6
Graham	27.1
Greenlee	51.7
La Paz	5.9
Maricopa	26.4
Mohave	30.5
Navajo	31.9
Pima	25.9
Pinal	40.7
Santa Cruz	10.2
Yavapai	19.3
Yuma	20.3
Total	25.4

Rate are per 100,000 females. Data is age-adjusted to the 2000 U.S. population.

3-5 Reduce the colorectal cancer death rate. Target: 13.9/100,000

Colorectal cancer is the second leading cause of cancer death among all genders of Americans. This type of cancer death is only exceeded by lung cancer deaths and breast cancer among women and prostate cancer among men. Some of the risk factors for developing colorectal cancer include age, family history of polyps or colorectal cancer, physical inactivity, obesity, alcohol use and an unhealthy diet.^{3:12}

Table 3-17. 2000 Age-Adjusted Colorectal Cancer Mortality Rates by Sex and Race/Ethnicity From the Arizona Health Status and Vital Statistics Report

Characteristics	Age-Adjusted Mortality Rates	
	2000 Arizona rate	2000 U.S. rate
Male	20.5	NA
Female	14.1	NA
White	17.4	NA
Black	16.3	NA
Asian	6.6	NA
American Indian	8.2	NA
Hispanic	16.4	NA
Total	17.0	20.8

Rate are per 100,000 persons. Data is age-adjusted to the 2000 U.S. population.

**Table 3-18. 2000 Age-Adjusted Colorectal Cancer Mortality Rates by County
From the Arizona Health Status and Vital Statistics Report**

Arizona County	2000 Arizona Mortality rate
Apache	13.2
Cochise	15.8
Coconino	11.8
Gila	20.3
Graham	42.4
Greenlee	-
La Paz	15.8
Maricopa	17.9
Mohave	21.1
Navajo	8.1
Pima	15.8
Pinal	16.8
Santa Cruz	5.7
Yavapai	13.8
Yuma	12.5
Total	17.0

Rate are per 100,000 persons. Data is age-adjusted to the 2000 U.S. population.

Information on colorectal cancer mortality in the U.S. and Arizona is presented in Table 3-17 and Table 3-18. Table 3-17 shows that the 2000 colorectal cancer mortality rate for Arizona subgroups is lower than the current national rate of 20.5. In Table 3-18, the age-adjusted colorectal cancer mortality rate among residents in Graham County (42.4) is highest for 2000 and well above the national average.

The target for *Healthy People 2010* Objective 3-5 is 13.9/100,000. Current Arizona mortality rates show that some subgroups such as Arizona Asians and American Indians are well below the national target rate while other groups such as Arizona males and Greenlee County residents still need to find ways to lower their rates of colorectal cancer.

Diabetes

There are approximately 10.5 million diagnosed diabetics nationwide and 148,000 diabetics in Arizona.^{3:13} The majority are Type 2 diabetics. In addition to self management training, treatment for Type 2 diabetics includes physical activity, proper nutrition, oral tablets and insulin. Improper management of diabetes can lead to other health problems such kidney disease, CVD, stroke, eye disease, and foot problems. The *Healthy People 2010* objectives for diabetes target reduction in diabetes morbidity and mortality as well as improvement in the quality of life for diabetic persons.

5-3 Reduce the overall rate of diabetes that is clinically diagnosed. Target: 25/1,000

The number of persons developing diabetes is expected to increase, primarily due to the increasing percentage of older persons who are at increased risk. The prevalence of diabetes in Arizona from 1992-1999 is presented in Figure 5. This information shows no definite increase or decrease in the prevalence of diabetic persons over time.

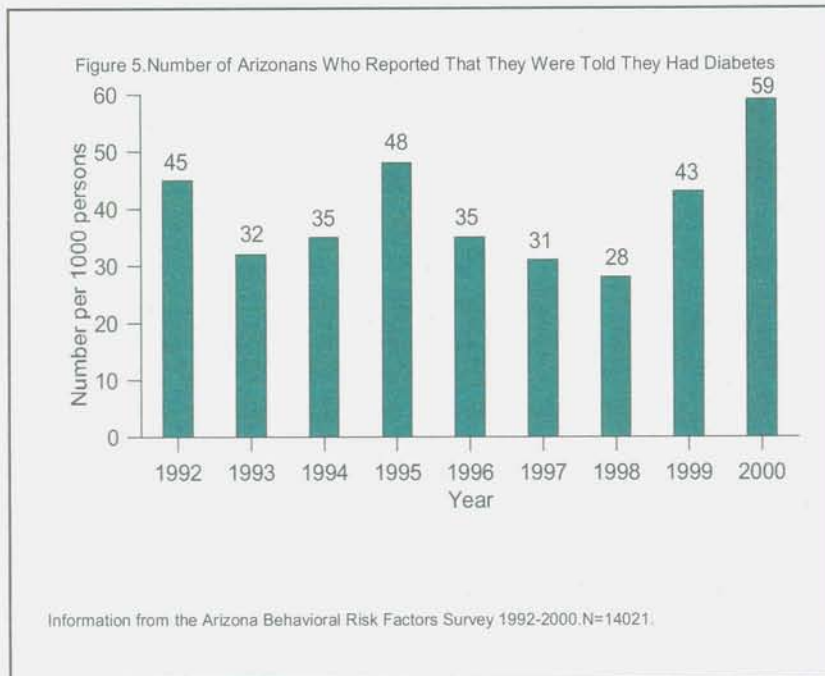


Table 3-19. Percent of Arizonans Who Reporting Having Diabetes by Race/Ethnicity From the Behavioral Risk Factors Survey 1994 - 2000

Characteristics	Arizona Residents (number per 1000 persons)
	Persons who responded that they were told they had diabetes
White	37
Black	66
Asian, Pacific Islander	-
American Indian, Alaska Native	71
Hispanic	59
Other	53
Total	40

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. - = percent based on a count too small to present. N=14021.

Further assessments of Arizona residents presented in Table 3-19 and Table 3-20 show the highest prevalence of diabetics within American Indian/Alaska Native population (71 per 1000) and among persons ages 55-64 (85 per 1000). Among Arizona Counties, figures presented in Table 3-21 show the highest percent of diabetics within Yuma County (59 per 1000). Overall, Arizona's prevalence rate for diabetes between 1994 and 2000 is 40 per 1000 persons.

Table 3-20. Percent of Arizonans Who Reporting Having Diabetes by Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (number per 1000 persons)
	Persons who responded that they were told they had diabetes
Male	43
Female	37
Ages 18 - 24 years	-
Ages 25 - 34 years	8
Ages 35 - 44 years	22
Ages 45 - 54 years	62
Ages 55 - 64 years	85
Ages 65 years and older	74

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. - = percent based on a count too small to present. N=14021.

Table 3-21. Percent of Arizonans Who Reporting Having Diabetes by County From the Behavioral Risk Factors Survey 1994-2000

Arizona County	Arizona Residents (number per 1000 persons)
	Persons who responded that they were told they had diabetes
Apache	47
Cochise	38
Coconino	32
Gila	46
Graham	-
Greenlee	-
La Paz	-
Maricopa	36
Mohave	58
Navajo	41
Pima	41
Pinal	55
Santa Cruz	45
Yavapai	29
Yuma	59
Total	40

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. - = percent based on a count too small to present. N=14021.

The *Healthy People 2010* Objective 5-3 target is 25/1000 persons. As shown in Figure 5., the rate of diabetes in Arizona has dramatically increased within the past few years. With the predicted continued increase in the prevalence of diabetic persons, considerable effort will be needed to lower the current prevalence of 40 per 1000 to 25 per 1000 persons especially among the American Indian population.

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SECTION 4 MATERNAL, INFANT AND CHILD HEALTH

This focus area addresses certain health indicators for women, infants and children. In this section we will look at the health status of pregnant women, infants and children specifically as it relates to iron deficiency in children and pregnant women, prenatal weight gain, infant birth weight and breastfeeding.

**19-12 Reduce iron deficiency among young children and females of childbearing age.
Children aged 1 to 2 years target: 5%, Children aged 3 to 4 years target: 1%**

Anemia is defined by a hemoglobin concentration below the 5th percentile of the distribution of hemoglobin of healthy, well nourished individuals of the same sex, age and stage of life. Iron deficiency anemia refers to an anemia that is associated with additional laboratory evidence of iron depletion as a result of one or more of the following tests: low serum ferritin concentration, low transferrin saturation, or an elevation in the erythrocyte protoporphyrin level.^{4:1} Iron deficiency affects children's growth and development. Damage caused by iron deficiency may not be fully reversible. The data we will present to discuss this objective has been obtained through hemoglobin screenings in WIC clinics using Hemocue® machines and capillary blood sampling. This method of screening allows us to determine if persons present with a low hemoglobin concentration at the time of their visit to the WIC clinic. It does not allow us to determine if there is iron depletion as would be determined using the additional tests outlined above.

Data analyzed from the 2000 Centers for Disease Control and Prevention Pediatric Nutrition Surveillance System (PedNSS) reported 26.9% of 0 - 4 year olds in the Arizona WIC Program were at risk for anemia, compared to 16.4% reported nationally. A further breakdown of these figures by age shows 25.5% of children aged 6 - 11 months, 26.4% of children 12 - 23 months and 30.5% of children 24 - 35 months at risk for anemia, as compared to 14.9% of children aged 6 - 11 months, 13.6% of children 12 - 23 months and 13.0% of children 24 - 35 months nationally. The Arizona figures are considerably higher than the targets of 5% for 12-23 month olds and 1% for 36-48 month olds. Table 4-1 compares the yearly prevalence of anemia for the Arizona WIC pediatric population (0 - 4 years) to the prevalence of anemia reported for all states and territories that participated in the Pediatric Nutrition Surveillance System from 2000.

Table 4-1. Percent of Low Hemoglobin Among WIC Pediatric Population

Participants	Year (Percent)										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arizona	23.1	23.8	25.8	27.9	29.5	32.6	34.6	38.0	35.7	27.5	26.9
All*	23.4	21.6	20.5	20.4	19.8	19.6	18.5	17.5	17.0	16.5	16.4

CDC PedNSS 1999, Table 11. * = All Participating States and Territories.

19-13 Reduce anemia among low-income pregnant females in their third trimester.

Target: 20%

19-14 (Developmental) Reduce iron deficiency among pregnant females.

The CDC reference criteria for anemia during pregnancy are as follows: first trimester, Hgb <11.0 g/dL or Hct <33%; second trimester, Hgb <10.5 g/dL or Hct <32%; third trimester, Hgb <11.0 g/dL or Hct <33%.^{4,2} In data analyzed from the 2000 Centers for Disease Control and Prevention Pregnancy Nutrition Surveillance System (PNSS), 9.5% and 12.4% of Arizona women had anemia in the first and second trimesters, respectively. In contrast, 30.5% of Arizona women had anemia in their third trimester which was substantially higher than the *Healthy People* target of 20%. Nationally, it was reported that 6.9% and 10.9% of women had anemia in the first and second trimesters respectively and 32.3% had anemia in the third trimester. Table 4-2 shows that by race, prenatal black women continue to have the highest percent of low hemoglobin in each trimester. Low hemoglobin percentages among low-income third trimester females in Arizona continue to be higher than the *Healthy People 2010* Objective 19-13 Target of 20%. Hopefully, opportunities for appropriate interventions, especially through the WIC program, will help decrease the percent of pregnant women with low hemoglobin.

Table 4-2. Percent of WIC Prenatal Women with Low Hemoglobin by Age and Ethnic Group

Characteristics	1 st Trimester		2 nd Trimester		3 rd Trimester	
	All*	Arizona	All	Arizona	All	Arizona
Mother's Age						
Less Than 16 Years	8.4	4.6	13.7	12.3	40.9	42.1
16 - 19 Years	6.7	8.4	11.5	11.5	34.7	30.7
20 - 29 Years	6.5	9.4	10.2	12.4	31.7	30.7
30 - 39 Years	8.0	11.8	12.0	13.5	30.6	27.7
40 - 49 Years	9.6	13.0	14.7	16.2	32.5	26.7
50 Years or Older	-	0.0	-	0.0	-	0.0
Unknown	0.0	0.0	-	0.0	-	0.0
Ethnic Composition						
White, Not Hispanic	4.3	6.3	7.3	8.8	26.2	24.3
Black, Not Hispanic	14.6	20.7	18.6	24.3	46.2	42.8
Hispanic	6.7	10.8	9.8	13.1	29.0	31.8
American Indian/Alaskan Native	7.6	8.0	11.8	13.5	32.1	35.3
Asian or Pacific Islander	6.4	9.2	9.9	8.9	28.1	27.5
Other	9.2	0.0	12.8	0.0	28.2	0.0
Not Specified	7.1	0.0	17.5	0.0	34.5	0.0
Percent of Total Records	6.9	9.5	10.9	12.4	32.3	30.5

CDC PNSS Table 5A, 2000. * = All Participating States. - = percent based on a count too small to present. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

**16-10 Reduce low birth weight and very low birth weight. LBW target: 5%
VLBW target: 0.9%**

Infant birth weight can be divided into four categories: very low birth weight (<1500 grams); low birth weight (1501 - 2499 grams); normal birth weight (2500 - 3999 grams); and, high birth weight (4000 - 5999 grams). Low birth weight accounted for just over one half (51.0%) of all infant deaths in 1998.^{4.3}

Data in Table 4-3, from the Arizona Health Statistics and Vital Statistics for 2000, show that 7.2% of live births were low birth weight (LBW) and 1.3% were very low birth weight (VLBW). This data indicates that Arizona is not far from meeting the *Healthy People* Objectives for 2010 of no more than 5% LBW and 0.9% VLBW. Nationwide, the LBW percent has remained constant at 7.6% from 1998 - 2000. The proportion of LBW births has risen slowly from the low of 6.7% reported in 1984 and is currently at levels as high as those reported in the early 1970's.^{4.4}

Table 4-3. Percent Low Birth Weight and Very Low Birth Weight Among all Arizona Infants

Indicator	Year (Percent)												
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arizona													
Low Birth Weight	6.3	6.4	6.5	6.7	6.5	6.7	6.8	6.8	6.8	6.9	6.8	7.0	7.2
Very Low Birth Weight	1.0	1.0	1.3	1.4	1.1	1.2	1.0	1.2	1.2	1.2	1.1	1.2	1.3
United States													
Low Birth Weight	6.9	7.0	7.0	7.1	7.1	7.2	7.3	7.3	7.4	7.5	7.6	7.6	7.6
Very Low Birth Weight	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.45	1.43

Arizona Health Status and Vital Statistics 2000, Table 1B-2. CDC National Vital Statistics Report, 2000, Table 44. Excludes IHS hospitals.

Surveillance data gathered from clients in the Arizona WIC program reported 8.5% of WIC infants as LBW and 1.1% as VLBW. Of infants born to mothers in all states participating in the system, 9.5% were LBW. Table 4-4 exhibits the percent of LBW births to low income mothers participating in the Arizona WIC program compared to the same population nationally for 1990-2000. The Arizona WIC program has done better than the national average for LBW in this population for the last ten years.

Table 4-4. Percent Low Birth Weight WIC Infants

Participants	Year (Percent)										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arizona	9.0	8.9	8.8	8.5	8.4	8.5	8.3	8.3	8.3	8.3	8.5
All *	9.7	9.5	9.4	9.2	9.2	9.2	9.1	9.2	9.4	9.4	9.5

CDC PedNSS 2000, Table 11. * = All Participating States and Territories.

The Arizona WIC population is served by 18 Local Agencies in rural and metropolitan areas throughout the state. Table 4-5 displays data for each Local Agency showing their very low birth weight, low birth weight and normal birth weight percents. Of the 18 Local Agencies serving the Arizona WIC population, 7 met the targeted 5% for low birth weight (Cochise, Pinal, Yuma, Cocopah, Marana, Clinica Adelante, and Mariposa). Among these Local Agencies, seven do meet or exceed the *Healthy People 2010* objective target for very low birth weight of 0.9%.

Table 4-5. 2001 Arizona WIC Birth Weight by County

County	Percent of Births by Grams of Weight		
	VLBW <1500	LBW 1500-2500	Normal/High*
Apache	0.8	7.2	92.0
Cochise	1.8	4.9	92.9
Coconino	1.3	6.4	92.3
Gila	0.7	7.9	91.4
Graham	0.1	6.3	93.0
Greenlee	0	0	100
Maricopa	1.1	6.3	92.2
Mojave	0.7	8.0	91.3
Navajo	0.4	11.3	88.3
Pima	0.8	5.5	93.7
Pinal	1.2	3.9	94.4
Yavapai	1.0	5.9	93.0
Yuma	0.7	4.3	94.8
Cocopah	0	2.9	97.1
Marana	1.1	3.5	95.4
Clinica Adelente	0.6	3.8	95.0
El Rio	0.5	7.3	91.7
Mariposa	1.4	3.7	94.9
State Total	1.0	5.9	92.8

CDC PedNSS System, 2001 N = 64,204. * = Includes normal and high birth weight rate for the local agency.

16-12 (Developmental) Increase the proportion of mothers who achieve a recommended weight gain during their pregnancies.

Women who gain less than ideal weight during pregnancy are at increased risk for premature birth and delivery of a LBW infant; women who gain more than ideal weight are at increased risk for delivery of a high birth weight infant. Women who gain excess weight may also have a difficult delivery and difficulty returning to their pre-pregnancy weight after delivery.^{4,5} Data reported from the 2000 PNSS and exhibited below in Table 4-6 shows, of the pregnant women who participated in the Arizona WIC Program 4.1% were very underweight, 10.1% were underweight, 49.6% were normal weight, 14.8% were overweight and 21.4% were very overweight. In comparison, national figures for this pregnant population reported 4.2% very underweight, 9.5% underweight, 45.9% normal weight, 14.0% overweight and 26.4% very overweight. The number of Asian/Pacific Island women reported to be underweight and very underweight was considerably higher than any other racial group in Arizona and nationally. The percent of women reported as very overweight was higher nationally in all age groups.

Table 4-6. Arizona WIC Pre-Pregnancy Weight Status By Mother's Age and Ethnic Group

Characteristic	Prepregnancy Weight Status by Percent									
	Very Underweight		Underweight		Normal Weight		Overweight		Very Overweight	
	All*	AZ	All	AZ	All	AZ	All	AZ	All	AZ
Mother's Age										
Less than 16 Years	7.1	8.9	16.8	18.7	58.2	58.6	9.0	7.4	8.8	6.3
16-19 Years	6.6	6.7	14.0	15.1	52.3	56.0	11.4	11.1	15.7	11.1
20-29 Years	3.9	3.6	8.7	9.2	44.5	48.5	14.4	15.4	28.5	23.4
30-39 Years	2.1	1.5	5.7	5.1	41.3	43.8	16.6	18.8	34.3	30.7
40-49 Years	2.0	1.4	4.9	5.0	39.8	41.2	18.2	21.7	35.2	30.6
50-years or Older	0	0	20.8	0	50.0	0	8.3	0	20.8	0
Unknown	15.4	0	7.7	0	38.5	0	15.4	0	23.1	0
Ethnic Composition										
White, Not Hispanic	5.3	6.2	10.9	13.6	45.2	47.5	12.5	11.8	26.1	20.9
Black, Not Hispanic	3.1	4.2	7.9	11.9	42.0	46.4	14.9	12.8	32.1	24.7
Hispanic	2.5	3.0	7.2	8.2	51.9	50.9	16.9	16.4	21.5	21.4
American Indian/Alaskan Native	2.6	3.3	6.4	7.9	38.2	45.1	15.9	16.8	36.9	26.8
Asian/Pacific Islander	7.5	9.1	15.9	16.8	51.3	52.8	10.6	11.5	14.7	9.7
Other	4.0	0	10.2	0	51.9	0	15.2	0	18.8	0
Not Specified	3.7	0	10.1	0	49.3	0	14.2	0	22.7	0
PERCENT OF TOTAL RECORDS	4.2	4.1	9.5	10.1	45.9	49.6	14.0	14.8	26.4	21.4

CDC PNSS 2000, Table 6. * = All Participating States and Territories. Arizona N = 35,990 All Participants N =687,111. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

Very Underweight = BMI Less than 18.0 Overweight = BMI of 26.1 - 29.0
Underweight = BMI of 18.0 -19.7 Very Overweight = BMI of 29.1 +
Normal Weight = BMI of 19.8 - 26.0

Table 4-7 describes birth weight of infants delivered to pregnant women participating in the WIC program in Arizona and nationally who gained the ideal amount of weight recommended during their pregnancy. In Arizona, 5.2% of births to women who gained the ideal recommended weight during their pregnancies resulted in low birth weight, 86.1 % were normal weight and 8.6% were high birth weight. Arizona data is consistent with national data for this population which reported birth outcomes at 6.2% low birth weight, 84.9% normal weight and 8.9% high birth weight in the ideal prenatal weight gain category. In comparing overall weight gain data for this population we find 44.2% of women enrolled in the Arizona WIC program did gain the ideal amount of weight recommended during their pregnancy which is just slightly higher than the national overall percent of 43.4%. American Indian/Alaskan Native women who achieved ideal weight gain during their pregnancies reported a much higher percent of high birth weight nationally in comparison to all other races. Mothers over the age of 40 years old reported a higher LBW percent in Arizona and nationally than the LBW percent for all other age groups who achieved ideal weight gain.

Table 4-7. Arizona WIC Infant Birth Weight for Women With Ideal Weight Gain by Mother's Age and Ethnic Group

Characteristics	% Low Birth Weight		% Normal Birth Weight		% High Birth Weight	
	All*	Arizona	All	Arizona	All	Arizona
Mother's Age						
Less than 16 Years	8.9	8.3	88.0	87.8	3.1	4.0
16 - 19 Years	7.2	6.1	87.3	88.2	5.5	5.6
20 - 29 Years	5.6	4.7	85.3	86.7	9.1	8.6
30 - 39 Years	6.8	5.3	80.8	82.1	12.4	12.6
40 - 49 Years	10.1	9.5	77.6	74.6	12.4	15.9
50 Years or Older	0	0	100.0	0	0	0
Unknown	25.0	0	75.0	0	0	0
Ethnic Composition						
White, Not Hispanic	5.7	6.5	84.3	84.8	10.0	8.7
Black, Not Hispanic	8.8	8.4	85.1	86.7	6.1	4.9
Hispanic	4.8	4.6	85.8	86.5	9.4	8.9
American Indian/Alaskan Native	5.2	5.0	81.5	87.3	13.2	7.7
Asian or Pacific Islander	6.0	3.9	87.9	91.2	6.0	4.9
Other	6.0	0	85.4	0	8.6	0
Not Specified	6.3	0	85.2	0	8.5	0
Percent of Total Records	6.2	5.2	84.9	86.1	8.9	8.6

CDC PNSS 2000, Table 17A. Arizona N = 11,869 Total N = 222,104; * = All Participating States. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

Table 4-8 describes birth weight of infants delivered to pregnant women participating in the WIC program in Arizona and nationally who gained less than the ideal weight recommended during their pregnancy in 2000. In Arizona, 9.4% of deliveries to women who did not gain the recommended amount of weight resulted in low birth weight infants, 87.0% were normal weight and 3.7% were high birth weight. National data for this population reports 11.6% low birth weight deliveries, 83.7% normal weight deliveries and 4.7% high birth weight deliveries. Women with less than ideal weight gain in Arizona, as well as nationally, had a LBW percent almost twice that of pregnant women who achieved the ideal weight gain recommended during their pregnancy. Also, black female WIC participants in Arizona and nationally who gained less than the ideal weight had a considerably higher LBW percent. Overall, 23.7% of women enrolled in the Arizona WIC program gained less than the recommended amount of weight during their pregnancy compared to a higher national rate for this population of 25.1%.

Table 4-8. Arizona WIC Infant Birth Weight for Women with Less Than Ideal Weight Gain by Mother's Age and Ethnic Group

Characteristics	Less Than Ideal Weight Gain					
	% Low Birth Weight		% Normal Birth Weight		% High Birth Weight	
	ALL*	Arizona	ALL	Arizona	ALL	Arizona
Mother's Age						
Less than 16 Years	18.5	17.2	79.3	82.8	2.2	0
16 - 19 Years	14.4	11.5	83.0	86.8	2.6	1.7
20 - 29 Years	10.5	8.3	84.7	87.8	4.8	3.9
30 - 39 Years	11.5	8.5	81.9	85.4	6.6	6.1
40 - 49 Years	15.7	15.1	78.4	80.8	5.9	4.1
50 Years or Older	33.3	0	66.7	0	0	0
Unknown	0	0	100.0	0	0	0
Ethnic Composition						
White, Not Hispanic	11.0	10.9	83.3	85.9	5.7	3.2
Black, Not Hispanic	15.6	16.3	81.3	81.3	3.1	2.4
Hispanic	8.4	8.4	87.0	87.7	4.6	3.9
American Indian/Alaskan Native	8.6	6.7	84.5	89.1	6.9	4.2
Asian or Pacific Islander	11.1	12.3	86.4	83.6	2.4	4.1
Other	10.6	0	84.5	0	4.9	0
Not Specified	10.9	0	82.2	0	6.9	0
Percent of Records Accepted	11.6	9.4	83.7	87.0	4.7	3.7

CDC PNSS 2000, Table 17B. Arizona N = 6,375 Total N = 128,173. * = All Participating States. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

Table 4-9 describes birth weight of infants delivered to pregnant women participating in the WIC program in Arizona and nationally who gained more than the ideal weight recommended during their pregnancy in 2000. In Arizona, 3.4% of births to women who gained more than the ideal recommended weight during their pregnancy resulted in low birth weight, 86.5% were normal weight and 10.1% resulted in high birth weight. A look at national data shows that Arizona birth weight rates for this category of prenatal weight gain are consistent with nationwide birth weight rates. Nationally, 4.1% were low birth weight, 85.3% were normal weight deliveries and 10.5% resulted in high birth weight deliveries. White or American Indian/Alaskan Natives women in Arizona and nationally who gained more than the ideal weight recommended, reported a somewhat higher percentage of high weight births other ethnic/racial groups. Overall, 32.0% of women enrolled in the Arizona WIC program gained more than the recommended amount of weight during their pregnancy which is somewhat higher than the national prevalence of 31.4%.

Table 4-9. Arizona WIC Infant Birth Weight for Women with Greater Than Ideal Weight Gain by Mother's Age and Ethnic Group

Characteristics	Greater than Ideal Weight Gain					
	% Low Birth Weight		% Normal Birth Weight		% High Birth Weight	
	All*	Arizona	All	Arizona	All	Arizona
Mother's Age						
Less than 16 Years	5.1	4.2	88.8	92.0	6.1	3.8
16 - 19 Years	4.2	3.6	87.6	88.7	8.3	7.7
20 - 29 Years	3.9	3.1	85.0	86.5	11.1	10.5
30 - 39 Years	4.7	4.7	81.9	80.9	13.5	15.4
40 - 49 Years	6.5	4.7	79.5	85.9	14.0	9.4
50 Years or Older	0	0	66.7	0	33.3	0
Unknown	0	0	80.0	0	20.0	0
Ethnic Composition						
White, Not Hispanic	3.6	3.5	84.7	85.8	11.7	10.7
Black, Not Hispanic	6.3	7.5	86.8	84.3	6.9	8.2
Hispanic	3.3	2.9	85.6	87.2	11.1	9.9
American Indian/Alaskan Native	3.1	5.5	83.0	79.5	13.9	15.1
Asian or Pacific Islander	4.2	3.0	86.6	86.6	9.2	10.4
Other	3.6	0	85.6	0	10.8	0
Not Specified	2.5	0	86.1	0	11.4	0
Percent of Records Accepted	4.1	3.4	85.3	86.5	10.5	10.1

CDC PNSS 2000, Table 17C. Arizona N = 8,592 Total N = 160,494. * = All Participating States. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

16-16 Increase the proportion of pregnancies begun with an optimum folic acid level

The neural tube of a fetus is the structure that develops into the brain and spinal cord by the 29th day of conception. When the neural tube does not close completely, the baby has a neural tube defect (NTD). The two most common NTD's are spinal bifida and anencephaly. Each year in the United States, 2,500 to 3,000 infants are born with spina bifida or anencephaly. An established 1,500 pregnancies are stillborn or miscarriages because of these defects. In Arizona, about 70 infants are born with spina bifida each year.

By consuming 400 micrograms of a B vitamin, Folic Acid (Folate) prior to conception, women of child bearing age can reduce the risk of having a baby with NTDs by approximately 40 percent. The Center for Disease Control (CDC) recommends women of child bearing age eat a diet rich in folate and enriched foods and take a multivitamin containing 400 micrograms of folic acid. Most women consume appropriately 200 micrograms of folate from their diets. Foods that are natural in folic acid are orange juice, leafy green vegetables, beans, peanuts, broccoli, asparagus, peas, lentils, and whole grain products. The Food and Drug Administration has required the addition of 140 micrograms of folic acid per 100 grams of grain to cereals, breads, pastas and other foods labeled enriched. The synthetic form of folic acid provided in enriched foods and vitamins is more easily absorbed by the body than the natural form.^{4-6 to 4-8}

According to the 2000 Arizona Behavior Risk Factor Survey (BRFS), 48.7% of the women of child bearing ages 18-44 were current vitamin users. Of the total number of current vitamin users, 7.9% were ages 18-24, 14.0% were ages 25-34, and 21.1% were ages 35-44. 85.9% of the Total Current Vitamin Users take a multi vitamin.

Just over 35 % of the total respondents of the BRFS knew that the reason to take folic acid was to prevent birth defects. Of the total respondents whose income was between \$50,000 and \$75,000, 29.5% knew the reason to take folic acid. Of the total respondents whose income above \$75,000, 42.1% knew the reason to take folic acid. 31.1% of the total respondents of the BRFS did answered that they did not know a reason to take folic acid. Of the total respondents whose income was between \$50,000 and \$75,000, 36.1% answered that they did not know a reason to take folic acid. Of the total respondents whose income was less than \$10,000, 62.2% responded that they did not know a reason to take folic acid. Of the total respondents whose income was between \$35,000 and \$49,999, 42.9% answered that they did not know a reason to take folic acid.

16-19 Increase the proportion of mothers who breastfeed their babies. In the early postpartum period to the target of 75%, for 6 months to 50%, and for 1 year to 25%

The Office of the Surgeon General highlighted the public health importance of breastfeeding 15 years ago through numerous workshops and publications. A growing body of scientific evidence suggests that breastfeeding provides a range of benefits for an infant's growth, immunity and development. In addition, breastfeeding has also been shown to improve maternal health.

Table 4-10. Percent of Infants Breastfed in Arizona and Nationwide from 1990 to 2000

Year	Infants Breastfed in Hospital				Infants Breastfed at 6 mos.			
	Arizona		National		Arizona		National	
	All	WIC	All	WIC	All	WIC	All	WIC
1990	67.1%	54.9%	51.5%	33.7%	24.8%	15.0%	17.6%	8.2%
1991	68.5%	57.6%	53.3%	36.9%	24.2%	13.5%	18.2%	9.0%
1992	68.5%	58.8%	54.2%	38.8%	24.3%	14.6%	18.9%	10.1%
1993	70.6%	61.8%	55.9%	41.6%	25.1%	16.2%	18.0%	10.8%
1994	70.4%	61.5%	57.4%	44.3%	25.5%	16.9%	19.7%	11.6%
1995	73.1%	64.4%	59.7%	46.6%	26.3%	17.1%	21.6%	12.7%
1996	70.0%	61.5%	59.2%	46.6%	27.6%	18.4%	21.7%	12.9%
1997	74.5%	67.4%	62.4%	50.4%	29.3%	18.7%	26.0%	16.5%
1998	76.8%	69.9%	64.3%	52.6%	33.1%	23.0%	28.6%	18.9%
1999	77.7%	69.7%	67.2%	56.1%	34.8%	22.4%	30.7%	19.9%
2000	78.6%	70.1%	68.4%	56.8%	36.4%	24.2%	31.7%	20.1%

Source: Mothers' Survey, Ross Products Division, Abbott Laboratories, Inc.. All = All survey participants.

Table 4-10 shows the upward trend of breastfeeding in Arizona from 67.1% in 1990 to 78.6% in 2000. Arizona's rates have always led the nation's by more than 10% which is consistent with higher rates in the Western United States. As of 1998 the general population of Arizona met the 2010 target for the early postpartum period. This improvement has been the result of an increased awareness of the health benefits to mother and baby. Local health programs such as Healthy Mothers/Healthy Babies (HMHB), WIC, and MCH have instituted strategies similar to those recommended by the October 2000 Blueprint for Action.^{4,9} These include education, training, awareness, support and research. Public Health programs have ensured "that health care professionals who provide maternal and child care are trained on the basics of lactation and breastfeeding counseling" including the HMHB's Model Hospital Policy and the Central Arizona Certified Breastfeeding Counselor course. Further, they ensure "that social support and information resources be established for women such as hotlines and peer counseling" (The Pregnancy and Breastfeeding Hotline is over 10 years old.), and "that research be conducted on issues surrounding breastfeeding." (The Arizona Breastfeeding Coalition is conducting focus groups on barriers and support to working women who breastfeed.)

On the other hand, Arizona rates remain 13.6% below the target rate of 50% for 6 months duration. More resources and awareness are needed to encourage and support exclusive and prolonged breastfeeding. The recently published study by Tom Ball and Ann Wright^{4,10} shows that direct savings to HMO's in Tucson for each infant breastfed exclusively for at least 3 months is \$425 during his first year of life. This confirms similar results reported in Colorado for Medicaid savings of breastfed WIC infants.

Table 4-11. Infants/Children at Initial WIC Visit That Ever Breastfed by Ethnicity

Percent of Children Breastfed		
Ethnicity	Arizona	Total States
White, Not Hispanic	62.5	51.9
Black, Not Hispanic	50.9	36.6
Hispanic	63.2	66.3
American Native and Native Alaskan	66.7	60.7
Asian or Pacific Islander	54.0	63.1
Other	-	56.7
Unknown	-	74.6
Total All Ethnic Groups	62.3	51.2

CDC PedNSS, Table 12B, 01/01/2000 TO 12/31/2000, 08/06/2001, p.3. - = percent based on a count too small to present.

Table 4-10 and Table 4-11 illustrate the differences between the general and WIC populations. Arizona percentages are consistently lower than the general population by about 6-10%. "Low breastfeeding rates documented in the Blueprint for Action are a serious public health challenge, particularly in certain minority communities," said David Satcher, M.D., U.S. Surgeon General and Assistant Secretary for Health. "With scientific evidence indicating that breastfeeding can play an important role in an infant's health, the time has come for us to work together to promote optimal breastfeeding practices. Each of us, at all levels of the public and private sectors, must now turn these recommendations into programs that best suit the needs of our own communities." Neither CDC nor Ross Mother's Survey tracks breastfeeding for one year. However, Arizona WIC collects data since 1998 which shows that 14.2% of breastfed infants are nursing at one year of life.

"The *Healthy People* objectives will be realized only when we work together to put in place culturally appropriate strategies to promote breastfeeding, with particular emphasis on education and support from health care professionals, employers and family members, especially fathers and grandmothers," said Wanda Jones, Dr.P.H., Deputy Assistant Secretary for Health (Women's Health) and director of the Office on Women's Health. Arizona must promote long term, exclusive breastfeeding to low income and minority woman, particularly women of Hispanic origin parallel to the Blueprint recommendations.

19-4 Reduce growth retardation among low-income children under age 5 years. Target: 5%

Healthy People 2010 defines growth retardation as height for age below the fifth percentile of children in the population. By definition, approximately 5% of healthy children are expected to be below the fifth percentile of height for age due to normal biologic variation. If more than 5% of a population group is below the fifth percentile, this suggests that full growth potential is not being reached by some children in that group.^{4:11} It can also be a health indicator that reflects the health and nutritional history of a child.

Table 4-12. Percent Growth Retardation of WIC Pediatric Population 1990-1999

Participants	Year (Percent)										
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Arizona	10.5	10.4	10.6	10.2	9.0	11.5	8.4	11.3	8.3	8.0	8.3
All*	9.3	8.9	8.7	8.4	8.4	8.3	7.9	7.8	7.8	7.7	8.2

CDC PedNSS, 2000, Table 11. * = All Participating States. Arizona statistics do not include information from the WIC Navajo Nation and WIC ITCA programs.

Table 4-12 is a comparison of the prevalence of growth retardation or stunting from 1990-2000 for Arizona versus all participating states in the Pediatric Nutrition Surveillance System. In 2000, the Arizona PedNSS showed 8.3% of low income WIC participants suffered growth retardation which is higher than the national *Healthy People 2010* objective of 5%, but not much higher than the national figure of 8.2% growth retardation.

Table 4-13. Percent Low Height for Age for WIC Children Under Age Five Years Old

Ethnic Composition	All*	Arizona
White, Not Hispanic		
< 1YR	10.8	13.2
1YR	9.0	9.9
2-4YR	5.4	5.7
Black, Not Hispanic		
< 1YR	15.6	19.0
1YR	9.9	11.6
2-4YR	4.0	3.9
Hispanic		
< 1YR	8.8	12.0
1YR	9.0	8.9
2-4YR	5.0	5.1
American Indian/Alaskan Native		
< 1YR	10.2	14.4
1YR	7.6	8.8
2-4YR	3.9	4.2
Asian or Pacific Islander		
< 1YR	9.9	8.7
1YR	10.2	11.1
2-4YR	6.4	6.4
Other		
< 1YR	9.0	N/A
1YR	8.5	N/A
2-4YR	5.2	N/A
Not Specified		
< 1YR	8.9	N/A
1YR	8.8	N/A
2-4YR	5.2	N/A
All Pediatric Participants		
< 1YR	11.3	12.3
1YR	9.2	9.3
2-4YR	5.0	4.9

CDC PedNSS, 2000, Table 10. * = All Participating States. Arizona N = 129,086 All = 6,354,846. N/A = Arizona does not provide an Other or Not Specified option for ethnicity. **N does not include figures for 5-17 year old participants screened in the WIC program for Arizona or all participating states. Does not include information from the WIC Navajo Nation and WIC ITCA programs.

Table 4-13 provides a closer look at growth retardation (low height for age) by age and ethnicity for low income children under five years of age. This table compares national figures for growth retardation to reported growth retardation in Arizona pediatric WIC participants. In comparison to national figures, Arizona WIC reported, overall, higher percentages of growth retardation in children between the age of 0-4 years. Specifically, White-Non-Hispanic and American Indian/Alaska Native growth retardation in children is more prevalent in Arizona than nationally .

References

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SECTION 5 HUNGER AND FOOD INSECURITY

Hunger and food security are growing health concerns in the U.S. and worldwide. In Arizona, hunger and food insecurity are most prevalent among the poor, children, elderly and homeless. It is estimated that 13.8% of Arizona households are food insecure. Not even the working poor are exempt from the likelihood of needing emergency food assistance. ^{5:1}

The state of hunger is related to, but not necessarily the same as being food insecure. Food insecurity is the “Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.” Hunger, on the other hand, is “The uneasy or painful sensation caused by a lack of food or the recurrent and involuntary lack of access to food. Hunger may produce malnutrition over time... Hunger...is a potential, although not necessary, consequence of food insecurity.” ^{5:2} The *Healthy People 2010* Objective 19-18 for this section focus on food security and hunger.

**19-18 Increase food security among U.S. households and in so doing reduce hunger.
Target: 94%**

In Arizona, food security has been measured among the general population and within some WIC (Special Supplemental Nutrition Program for Women, Infant, and Children) clinics. Responses from BRFS among Arizona residents are presented in Tables 5-1 through 5-3. These Tables show that 14.5% of persons ages 35 - 44 years and 14.2% of Coconino County residents reported that they

Table 5-1. Percent of Arizonans Who Were Concerned about Having Enough Food in the Past 30 Day by Sex and Age Group From the Behavioral Risk Factors Survey 1997

Characteristics	Arizona Residents (percent)
	Persons who were concerned about having enough food in the past 30 days
Male	8.9
Female	13.1
Ages 18 - 24 years	13.0
Ages 25 - 34 years	15.6
Ages 35 - 44 years	14.5
Ages 45 - 54 years	9.8
Ages 55 - 64 years	2.9
Ages 65 years and older	6.9
Total	11.1

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1997. N=1898.

were concerned about having enough food within the past 30 days. Interesting, many Arizona minority populations, shown in Table 5-3, have greater than 20% prevalence of persons who were concerned about having enough food within the past 30 days.

Nationwide, the 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, they 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 we previously realized.^{5:3}

Table 5-2. Percent of Arizonans Who Were Concerned about Having Enough Food in the Past 30 Day by County From the Behavioral Risk Factors Survey 1997

Arizona County	Arizona Residents (percent)
	Persons who were concerned about having enough food in the past 30 days
Apache	-
Cochise	-
Coconino	14.2
Gila	-
Graham	-
Greenlee	-
La Paz	-
Maricopa	11.4
Mohave	8.3
Navajo	9.6
Pima	11.8
Pinal	-
Santa Cruz	-
Yavapai	6.2
Yuma	-

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey. This file contains data from 1997. - = percent based on a count too small to present. N=1898.

Table 5-3. Percent of Arizonans Who Were Concerned about Having Enough Food in the Past 30 Day by Race/Ethnicity From the Behavioral Risk Factors Survey 1997

Characteristics	Arizona Residents (percent)
	Persons who were concerned about having enough food in the past 30 days
White	9.5
Black	29.0
Asian, Pacific Islander	-
American Indian, Alaska Native	24.4
Hispanic	22.1
Other	40.8

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey. This file contains data from 1997. N=1898.

Many Arizona programs strive to reduce hunger and food insecurity among high risk populations. These include: The National School Lunch Program/School Breakfast Program; Summer Food Service Program; Child and Adult Care Food Program; Special Supplemental Nutrition Program for Women, Infant, and Children; Commodity Supplemental Food Program/Food Plus; Home Delivered and

Congregate Meals; and Emergency Food Programs. Overall, only 11.1% of Arizonans report that they could be food insecure. However, among Arizona's minority populations, increasing food security needs to be a priority in order to meet the *Healthy People 2010* Objective 19-18 target of 94%.

References

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SECTION 6 PHYSICAL ACTIVITY

Studies have demonstrated that nearly all individuals can benefit from regular physical activity. In combination with healthy eating habits, moderate physical activity can substantially reduce the risk of developing or dying from heart disease, obesity, diabetes, colon cancer, and high blood pressure.^{6:1}
^{6:2} The *Healthy People 2010* Objectives for this section focus on physical activity habits among adults and adolescents.

22-1 Reduce the proportion of adults who engage in no leisure-time activity. Target: 20%

Leisure-time activity is considered the least amount of physical activity a person could engage in before being considered not physically active. Measuring no leisure-time activity is important because any physical activity is better than being physically inactive.

For years 1992 through 2000 the prevalence of persons who do not participate in any leisure time activity has been gradually increasing with a moderate drop in 2000. In Figure 7, the prevalence of no leisure-time activity was 23.7% in 1993 and by 1998 this percentage had climbed to 51.3%, making Arizona the most sedentary state in the U.S.. Information from Tables 6-1 to 6-3 show the highest prevalence of no leisure-time activity to be among persons ages 65 years and older (40.0%), Hispanic persons (52.4%), and Santa Cruz County residents (46.8%).

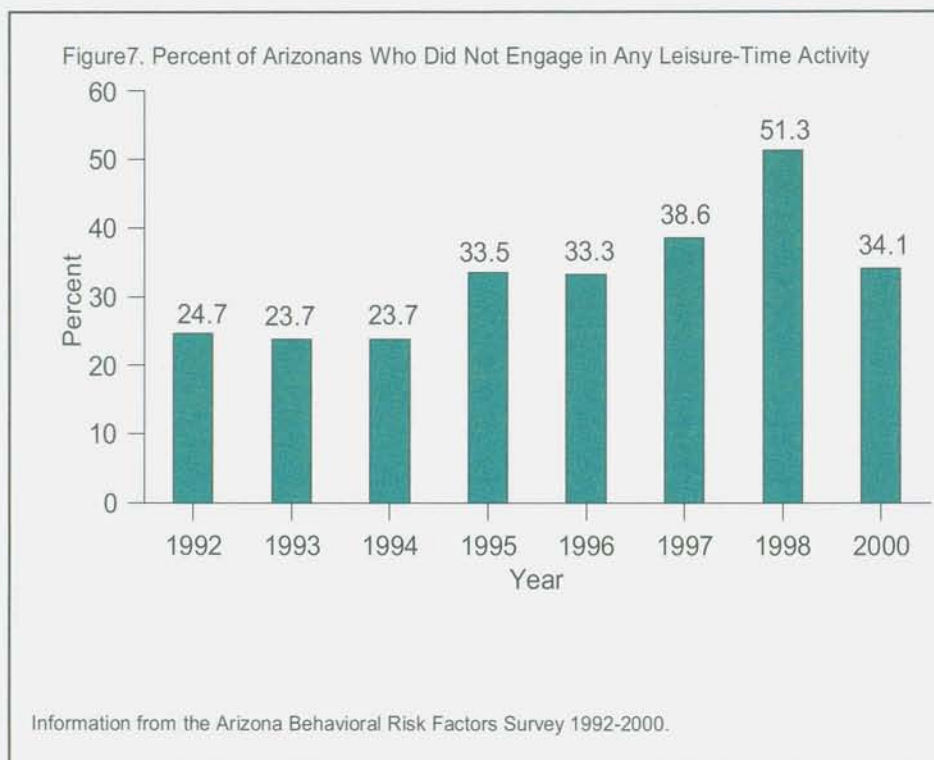


Table 6-1. Percent of Arizonans Who Did Not Engage in Any Leisure-Time Activity by Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)
	Persons who did not engage in any leisure-time activity
Male	34.7
Female	37.4
Ages 18 - 24 years	29.2
Ages 25 - 34 years	32.9
Ages 35 - 44 years	37.5
Ages 45 - 54 years	37.4
Ages 55 - 64 years	38.9
Ages 65 years and older	40.0
Total	36.1

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. N=14021.

The target for *Healthy People 2010* Objective 22-1 is 20%. It is uncertain whether the current decrease of the no-leisure time activity rate will continue to decrease with current public health efforts in place. Additional effort will should be considered to ensure that Arizona will meet the *Healthy People 2010* Objective 22-1.

Table 6-2. Percent of Arizonans Who Did Not Engage in Any Leisure-Time Activity by County From the Behavioral Risk Factors Survey 1994-2000

Arizona County	Arizona Residents (percent)
	Persons who did not engage in any leisure-time activity
Apache	33.7
Cochise	37.8
Coconino	25.9
Gila	43.5
Graham	38.9
Greenlee	31.1
La Paz	41.0
Maricopa	36.9
Mohave	39.7
Navajo	35.6
Pima	32.3
Pinal	39.7
Santa Cruz	46.8
Yavapai	32.4
Yuma	41.5

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. - = percent based on a count too small to present. N=14021.

Table 6-3. Percent of Arizonans Who Did Not Engage in Any Leisure-Time Activity by Race/Ethnicity From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)	
	Persons who did not engage in any leisure-time activity	
White	34.3	
Black	34.3	
Asian, Pacific Islander	28.1	
American Indian, Alaska Native	37.4	
Hispanic	52.4	
Other	56.3	

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey . This file contains data from 1994 - 2000. N=14021.

22-2 Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%

22-3 Increase the proportion of adults who engage in vigorous physical activity that promotes the development and maintenance of cardiorespiratory fitness, 3 or more days per week for 20 minutes per occasion. Target: 30%

Among the types of physical activity, the most beneficial are regular or sustained activity and vigorous activity. The multiple year Arizona BRFs dataset does not clearly distinguish between these forms of activity based on the type of activity. Rather, available data in Tables 6-4 to 6-6 is presented based

Table 6-4. Percent of Arizonans Who Engaged in Moderate or Vigorous Physical Activity by Sex and Age Group From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)		
	physical activity ≥ 20 minutes/ ≥ 3 days per week	physical activity ≥ 30 minutes/ ≥ 3 days per week	physical activity ≥ 30 minutes/ ≥ 5 days per week
Male	34.5	32.3	18.5
Female	37.7	34.0	18.6
Ages 18 - 24 years	37.7	35.6	18.7
Ages 25 - 34 years	36.4	34.4	18.4
Ages 35 - 44 years	34.2	32.2	17.5
Ages 45 - 54 years	35.5	32.2	17.4
Ages 55 - 64 years	34.5	31.7	18.1
Ages 65 years and older	38.5	33.2	21.1
Total	36.1	33.2	18.6

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey 1994-2000. N=14021.

Table 6-5. Percent of Arizonans Who Engaged in Moderate or Vigorous Physical Activity by Race/Ethnicity From the Behavioral Risk Factors Survey 1994-2000

Characteristics	Arizona Residents (percent)		
	physical activity ≥20 minutes/ ≥3 days per week	physical activity ≥30 minutes/ ≥3 days per week	physical activity ≥30 minutes/ ≥5 days per week
White	37.2	34.1	19.0
Black	39.8	36.1	21.3
Asian, Pacific Islander	34.4	30.4	18.9
American Indian, Alaska Native	33.7	30.5	17.0
Hispanic	25.7	24.2	12.8
Other	25.9	24.8	13.6

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey. This file contains data from 1994-2000. - = percent based on a count too small to present. N=14021.

on quantity of physical activity per week. From the information in these Tables, percentages of persons who exercise at least 20 minutes per day for at least 3 days per week differs only slight from percentages of persons who exercise at least 30 minutes per day for at least 3 days per week. In general a much smaller prevalence of persons exercise at least 30 minutes per day for at least 5 days per week.

Table 6-6. Percent of Arizonans Who Engaged in Moderate or Vigorous Physical Activity by County From the Behavioral Risk Factors Survey 1994-2000

Arizona County	Arizona Residents (percent)		
	physical activity ≥20 minutes/ ≥3 days per week	physical activity ≥30 minutes/ ≥3 days per week	physical activity ≥30 minutes/ ≥5 days per week
Apache	36.4	34.8	23.1
Cochise	33.6	30.5	16.7
Coconino	44.3	41.6	25.1
Gila	33.6	30.3	19.1
Graham	29.4	28.6	16.9
Greenlee	53.1	51.1	-
La Paz	40.1	36.4	25.9
Maricopa	35.2	32.3	17.1
Mohave	34.2	31.5	18.5
Navajo	34.3	31.5	17.6
Pima	40.2	36.8	22.0
Pinal	32.4	30.3	17.8
Santa Cruz	36.9	33.2	17.4
Yavapai	41.3	38.0	23.8
Yuma	31.5	29.9	19.5

The file used to generate this information contains data which is collected every year from the Arizona Behavioral Risks Factors Survey .This file contains data from 1994-2000. - = percent based on a count too small to present. N=14021.

The highest prevalence of exercisers is among persons ages 65 years of age and older of whom 38.5% say they exercise at least 20 minutes per day for at least 3 days per week. In addition, 53.1% of residents of Greenlee County also exercise at least 20 minutes per day for at least 3 days per week.

The current prevalence of physical activity based on present data suggests 18.6% - 36.1% of Arizonans engage in regular or vigorous exercise. The target for *Healthy People 2010* Objective 22-2 and also Objective 22-3 is 30%. Measuring regular and vigorous physical activity patterns annually among Arizonans is a necessary step to be able to determine whether we meet these *Healthy People 2010* Objectives.

22-6 Increase the proportion of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more of the previous 7 days. Target: 30%

22-7 Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion. Target: 85%

A physically active lifestyle established early in life carries health benefits such as good cardiorespiratory function and weight management. When developed, these physical activity habits tend to remain in children and can carry into adulthood. Alternatively, children as early as three years old who are less physical activity tend to remain less active.^{6,3}

Table 6-7. Percent of Time Children are Physically Active Each Weekend

Time	Amount of time each weekend that the child is active (percent)	
	According to the Child	According to the parent of the child
None	2.5	1.6
Less than 30 minutes	9.6	8.5
30 - 59 minutes	17.1	16.7
1 - 2 hours	21.7	22.7
More than 2 hours	49.2	50.5

Information is from the Arizona Promoting Lifestyle Activity for Youth (PLAY) report FY1999. N=29,535

Although data is not collected on moderate or vigorous physical activity in Arizona adolescents, the Arizona Department of Health Services implements a program designed to impact the physical activity habits of 4th through 8th grade students. The Promoting Lifestyle Activity for Youth (PLAY) program addresses the potential for physical activity decrease among these students which typically presents after 3rd grade. The results of an assessment of these children and their parents on the amount of time the children spend each weekend being physically active is presented in Table 7. This information shows that 49.2% to 50.5% are physically active for more than 2 hours each weekend.

The *Healthy People 2010* Objective 22-6 target is 30% and for Objective 22-7 is 85%. These Objectives can be met with the contribution of the Arizona PLAY program. Accomplishing these Objectives can not be determined, however, until Arizona has comparable data on moderate and vigorous physical activity in adolescents.

22-9 Increase the proportion of adolescents who participate in daily school physical education. Target: 50%

A significant portion of a child's time is spent in school. In addition, students can be educated, in school, on the importance of a healthy lifestyle. The Arizona Promoting Lifestyle Activity for Youth (PLAY) program is a way of establishing physical activity habits in children while they are in school.

Table 6-8. Percent of Time Children are Physically Active Each School Day

Time	Amount of time each school day that the child is active (percent)	
	According to the Child	According to the parent of the child
None	1.9	0.9
Less than 30 minutes	16.6	12.8
30 - 59 minutes	38.6	40.0
1 - 2 hours	22.5	28.2
More than 2 hours	20.5	18.1

Information is from the Arizona Promoting Lifestyle Activity for Youth (PLAY) report FY1999. N=29,535

Information in Table 8 shows the percentage of children (4th - 8th grade) by the amount of time in each school day that they are physically active according to the child and their parent. As many as 18.1% to 20.5% of children are physically active for more than 2 hours each school day.

The *Healthy People 2010* Objective 22-9 target is 50%. As with *Healthy People 2010* Objectives 22-6 and 22-7, Objective 22-9 can be met with the contribution of the Arizona PLAY program. Comparison can not be conducted until data on moderate and vigorous physical activity in Arizona adolescents is collected.

References

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Definitions

- blood pressure:** The force of the blood pushing against the walls of arteries. Blood pressure is given as two numbers that measure systolic pressure (the first number, which measures the pressure while the heart is contracting) and diastolic pressure (the second number, which measures the pressure when the heart is resting between beats). Blood pressure that is high is considered to be a systolic measurement of 140mmHg or greater over a diastolic measurement of 90mmHg or greater.
- body mass index:** The measurement of choice as an indicator of healthy weight, overweight, and obesity. A measurement calculated using height and weight: $(\text{pounds/inches}^2) \times 704.5$.
- cancer:** A term for diseases in which abnormal cells divide without control. Cancer cells can invade nearby tissue and can spread through the bloodstream and lymphatic system to other parts of the body. ICD-9 classification 140-208.
- cerebrovascular disease :** Affects the blood vessels supplying blood to the brain. Stroke occurs when a blood vessel bringing oxygen and nutrients to the brain bursts or is clogged by a blood clot. Because of this rupture or blockage, part of the brain does not get the flow of blood it needs and nerve cells in the affected area die. Small stroke-like events like transient ischemic attacks (ITAs), which resolve in a day or less, are symptoms of cerebrovascular disease. ICD-9 classification 430-438.
- cholesterol:** A waxy substance that circulates in the bloodstream. When the level of cholesterol in the blood is too high, some of the cholesterol is deposited in the walls of the blood vessels. Over time, these deposits can build up until they narrow the blood vessels, causing atherosclerosis, which reduces blood flow. The higher the blood cholesterol level, the greater the risk of getting heart disease. High cholesterol is also known as hyperlipidemia.
- diabetes:** A chronic disease due to either or both insulin deficiency and resistance to insulin action, and associated with hyperglycemia (elevated blood glucose levels). **Type 2 diabetes:** The most common form of diabetes, which results from insulin resistance and abnormal insulin action. Type 2 diabetes was previously referred to as non-insulin-dependent diabetes mellitus (NIDDM) and adult-onset diabetes. ICD-9 classification 250.
- food insecurity:** Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.
- hunger:** The uneasy or painful sensation caused by a lack of food.

obesity: A condition characterized by excessive body fat. Defined by NHLBI as having a Body Mass Index of 30 or greater.

osteoporosis: A bone disease characterized by a reduction in bone mass and a deterioration of the bone structure leading to bone fragility.

overweight: Excess body weight. Defined by NHLBI as having a Body Mass Index of 25 or greater.

physical activity: Bodily movement that is produced by the contraction of skeletal muscles and that substantially increases energy expenditure. **Moderate physical activity:** Activities that use large muscle groups and are at least equivalent to brisk walking. **Vigorous physical activity:** Rhythmic, repetitive physical activities that use large muscle groups at 70 percent or more of maximum heart rate for age.

prevention: Primary: stopping or delaying the onset of a disease. Secondary: early identification and stopping or delaying onset of complications. Tertiary: stopping disability from disease and its complications.

risk factor: Something that increases a person's chance of developing a disease.

saturated fatty acids: Fatty acids with no double bonds between carbon atoms. Levels of saturated fatty acids are especially high in meat and dairy products that contain fat. Saturated fatty acids are linked to increased blood cholesterol levels and a greater risk for heart disease.



Arizona Department of Health Services
Division of Public Health Services
Bureau of Community and Family Health Services
Office of Nutrition and Chronic Disease Prevention Services

2927 North 35th Avenue, Suite 400
Phoenix, Arizona 85017
Phone (602) 542-1886