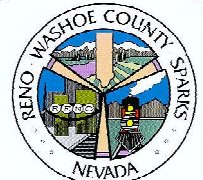


Chronic Disease in Washoe County

*A Summary Report of Primary Risk Factors and
Select Chronic Health Conditions*

**Chronic Disease Prevention Program
Washoe County Health District
Reno, Nevada
January 2009**

DISTRICT HEALTH



DEPARTMENT



About the Washoe County Health District



The Washoe County Health District was established by the Nevada State Legislature in 1969 as the official local public health authority for Washoe County, including Incline Village and the cities of Reno, and Sparks. Through this mandate, the Health District is responsible for disease prevention and health promotion for all Washoe County residents, and it does so by providing air quality, environmental health, epidemiology and public health preparedness, and community and clinical health services. The Health District is governed by a seven-person policy-making District Board of Health that includes representatives of city and county government as well as local health care providers and other experts. The Health District has conducted chronic disease prevention activities for over 10 years and focuses on the primary risk factors of tobacco use and exposure, physical inactivity, and poor nutrition.

Note from the District Health Officer



Dear Residents of Reno, Sparks and Washoe County,

I am pleased to provide the following report *Chronic Disease in Washoe County* for your information. As you will see, chronic diseases are a major health concern for our community and do not begin only when you reach the age of 60. They often develop as a result of habits that we adopt as early as childhood and adolescence such as smoking, eating excessive amounts of sweets, overindulging in fatty foods, and avoiding physical activity. Such habits have a long-lasting effect on both individuals and our entire society.

The increasing cost of healthcare is a central problem that we face in our economy. In spite of spending over \$2 trillion per year on healthcare, we do not enjoy being the healthiest nation. In fact, although we spend more than any other country on healthcare, we do not enjoy “top ten” ranking in any of the major health indicators. In the U.S., we spend only 3 percent of our health budget on prevention activities.

Each person holds the keys to prevention in their own hands. I strongly encourage everyone living in Washoe County to promote healthy habits in themselves and future generations. Each individual’s effort can slow, if not in some cases, eliminate the development of chronic disease. Encourage everyone in your life to avoid all tobacco, eat well by including fresh fruits and vegetables in daily meals, and take part in a calorie-burning, fitness enhancing activity.


Thank you for taking the time to read this report.

Sincerely,

A handwritten signature in black ink that reads "M. A. Anderson". The signature is written in a cursive style with a long horizontal flourish at the end.

Mary Anderson, MD, MPH
District Health Officer
Washoe County Health District

Introduction to the Report Card



A chronic disease is an illness that is prolonged, does not resolve spontaneously, and is rarely cured completely, such as heart disease, cancer, and diabetes. Almost all of the leading causes of death and disability in Washoe County are due to chronic diseases that relate to one or more risk factors including poor nutrition, physical inactivity, and tobacco use and exposure. According to the CDC, chronic diseases account for 70 percent of all deaths nationwide and cause major limitations in daily living for almost 1 out of 10 Americans or about 25 million people. This means that practically every American is directly or indirectly affected by chronic disease.

Although chronic diseases are among the most common and costly health problems, they are also among the most preventable. Adopting healthy behaviors such as eating healthy foods, being physically active and avoiding tobacco can significantly reduce the risk of developing a chronic illness. In many cases, these lifestyle changes can also help prevent additional complications for individuals already living with a chronic disease.

At the Washoe County Health District, chronic diseases have been a priority for over a decade. Since 1998, the Health District has been supporting initiatives that address chronic diseases and their risk factors. Today, these efforts are organized within the Chronic Disease Prevention Program, which serves as an umbrella for all of the Health District's work to improve nutrition, physical activity, and tobacco avoidance, and to ultimately reduce the burden of chronic disease in our community. Included in these efforts are activities to collect and analyze data on chronic diseases and their risk factors in Washoe County.

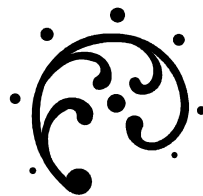
The 2009 *Chronic Disease in Washoe County* is a compilation of data, organized according to the leading health indicators for chronic disease. The data contained in this report represent the most current and available information about chronic diseases and their risk factors for Washoe County as well as comparable data for Nevada and the United States, where available. Data for the report come from both surveillance and behavioral self-reporting sources. Therefore, some limitations to the data exist. For example, population-wide data can often be delayed by several years, and changes in the population may have occurred in the interim. In addition, self-reported health conditions may be inaccurate as there is no opportunity to validate the answers that survey participants supply. Also, local data and national comparison data may come from different data sources. With these limitations in mind, the data contained in this report are valuable in a variety of ways. Analysis of specific chronic diseases by demographic variables such as gender, age, or ethnicity is useful for identifying segments of the population that may be at greater risk of disease. Such information allows public health programs to focus prevention measures in ways that will have maximum impact. In addition, analysis of surveillance data can aid in the determination of disease priorities, which allows communities to allocate resources to combating those illnesses that are taking the greatest toll on their members.

The intent of this report is to provide a summary of chronic diseases and their risk factors in Washoe County and to serve as a source of currently-available chronic disease data. It is also intended to provide local health care providers, chronic disease practitioners, and other interested persons and programs with data they may use in their work to improve the health of Washoe County.

Table of Contents



About the Washoe County Health District	2
Note from the District Health Officer	3
Introduction to the Report Card	4
Table of Contents	5
Highlights.....	6
Population Health Indicators.....	8
Chronic Disease Risk Factors	12
I. Physical Activity and Nutrition	12
II. Overweight and Obesity	15
III. Tobacco Use and Exposure.....	20
IV. Alcohol Use	24
Specific Chronic Health Conditions	27
I. Arthritis.....	27
II. Cancer	27
III. Chronic Liver and Kidney Diseases	33
IV. Diabetes	34
V. Heart Disease and Stroke.....	36
VI. Respiratory Diseases.....	39
Economics of Preventing Chronic Diseases	41
Data Sources	42
Acknowledgments.....	42



Highlights

Chronic diseases are of significant concern because they are the primary causes of death for Americans. The same is true for Nevadans and Washoe County residents. In fact, 8 of the top 15 leading causes of death in Washoe County are a chronic disease.

Not only are chronic diseases the leading causes of death, but they can also affect the quality of life for people living with them. In this report, indicators of chronic diseases will be examined by looking at risk factors as well as morbidity and mortality.

Washoe County is the second largest county in the state, it is growing rapidly and becoming increasingly diverse. The most recent estimate from the Nevada State Demographer's Office places the County's current population at 418,061, compared to 341,935 in 2000, a 22.3 percent increase in seven years. In addition, the proportion of residents who identify as a racial or ethnic minority has increased, as has the proportion of low income residents and residents without health insurance.

Select demographic trends, Washoe County, NV

	2000	2007 (estimate)
Total population *	341,935	418,061
% identifying as racial/ethnic minority *	25.4	30.5
% Hispanic *	17.0	20.5
% with income below \$35,001 **	27.7	44.6
% with no health insurance **	14.6	16.6

Data source: * Nevada State Demographer's Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

** Behavioral Risk Factor Surveillance System (BRFSS)

Cardiovascular disease, stroke, cancer, and chronic respiratory disease, in particular, have been the top four causes of death in Washoe County from 2000 – 2004. Other chronic conditions, including diabetes, chronic liver disease, and chronic kidney disease, have remained in the top 15 causes of death each year as well. In the following table, causes of death related to a chronic disease are highlighted.

Age-adjusted mortality rates per 100,000 population for the leading causes of death in Washoe County and Nevada; 2000 - 2004

Causes of Death	2000		2002		2004	
	Washoe County	Nevada	Washoe County	Nevada	Washoe County	Nevada
1. Diseases of the Heart	264.0	246.41	258.2	238.22	238.54	233.82
2. Malignant Neoplasms (Cancer)	211.2	204.51	194.1	193.46	185.2	186.27
3. Chronic Lower Respiratory Disease	62.7	59.12	77.4	63.88	75.42	55.54
4. Cerebrovascular diseases (Stroke)	55.8	54.02	57.0	55.64	57.41	52.59
5. Accidents	40.5	35.67	34.2	38.77	33.26	41.88
6. Atherosclerosis	15.1	6.55	24.6	7.14	22.68	7.10
7. Intentional Self-Harm (Suicide)	19.6	19.29	19.9	18.86	18.97	18.24
8. Influenza & Pneumonia	15.3	21.21	19.2	22.02	17.31	20.86
9. Septicemia	9.3	19.57	13.9	17.82	16.43	18.73
10. Chronic Liver Disease and Cirrhosis	14.8	14.17	14.2	11.89	15.91	11.51
11. Diabetes Mellitus	12.3	14.52	22.7	17.03	15.33	13.70
12. Alzheimer's Disease	17.2	13.77	22.0	16.77	13.97	17.35
13. Nephritis, Nephrotic	10.6	20.68	13.1	20.44	12.54	21.13
14. Assault (Homicide) & Legal Intervention	3.4	6.27	3.0	7.98	4.19	7.77
15. HIV Disease	2.8	4.18	2.7	3.32	2.32	3.27

Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer's Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

Another key issue related to chronic disease is Washoe County's prevalence of overweight and obesity. Currently, the prevalence of obesity in Washoe County (defined as a body mass index or BMI > 30) is lower than in the state and the nation; however, Washoe County's prevalence of overweight (defined as a BMI between 25 and 30) is higher than the nation and comparable to the U.S.

Percent obese and overweight, Washoe County, Nevada, and U.S., 2007

	Washoe County	Nevada	U.S.
Obese	17.9	24.6	26.3
Overweight	38.6	38.4	36.7

Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Population Health Indicators

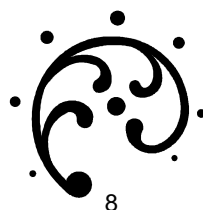
Demographics

Demographics, such as age, income, race/ethnicity, and gender can influence health status, including chronic diseases. Demographic information can also be used to predict the level of chronic diseases that a population might experience and can help target prevention efforts.

Total population estimates, Washoe County; 2000-2007

	2000	2002	2,004	2006 Estimate	2007 Estimate
Total	341,935	357,776	378,790	409,085	418,061
Male	173,321	180,961	192,120	207,602	212,157
Female	168,614	176,814	186,670	201,483	205,904
Total	341,935	357,775	378,790	409,085	418,061
Gender					
White, non-Hispanic	255,077	259,414	268,592	284,280	290,518
Black, non-Hispanic	6,947	7,870	8,430	8,967	9,164
Native American, non-Hispanic	5,346	6,729	7,205	7,842	8,014
Asian, non-Hispanic	16,280	19,242	21,357	24,200	24,731
Hispanic	58,285	64,521	73,206	83,796	85,635
Total	341,935	357,776	378,790	409,085	418,062
Age group					
<1	4,701	5,318	4,909	6,118	6,252
1-4	19,088	19,159	20,141	22,691	23,189
5-14	48,085	46,384	52,258	55,815	57,040
15-24	46,661	45,573	56,856	62,517	63,888
25-34	49,442	52,345	53,647	57,674	58,939
35-44	56,444	59,440	57,475	60,604	61,934
45-54	50,239	54,043	55,404	59,170	60,468
55-64	31,220	36,648	38,747	42,313	43,242
65-74	20,353	21,957	22,283	23,956	24,481
75-84	12,178	13,056	13,273	14,091	14,400
85+	3,524	3,855	3,798	4,137	4,228
Total	341,935	357,778	378,791	409,086	418,061

Data source: Nevada State Demographer. Population breakdown for 2006 and 2007 are estimates done by Washoe County Health District based on the proportion of 2005 final population



Socioeconomic Status

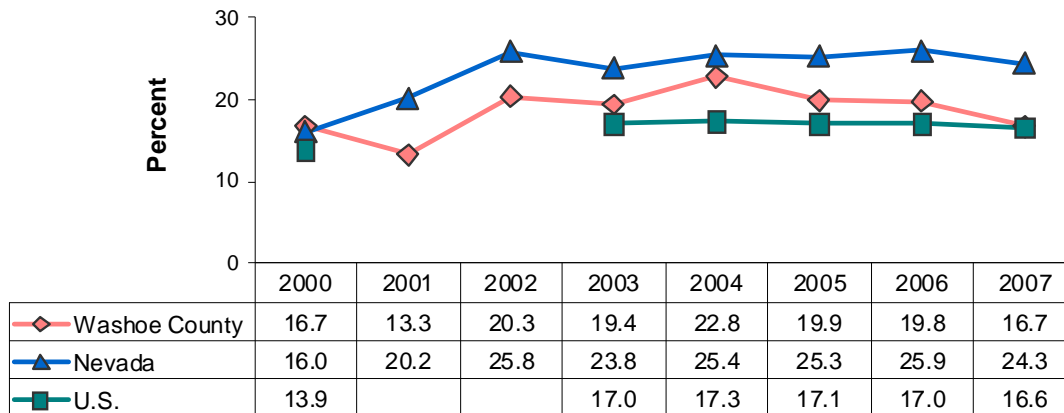
Socioeconomic status has been associated with to chronic disease and there are racial and ethnic disparities in the chronic disease data. Socioeconomic status indicators include income, education, and health insurance. According to the 2006 BRFSS, 41 percent of Washoe County residents earned less than \$35,000 a year, and/or have less than a high school education, and/or do not have health insurance.

Indicators for Washoe County, Nevada and the U.S.; 2006

	Washoe County	Nevada	United States
Economic Indicators, ACS* 2006			
Median Household Income	52,297	52,998	48,451
Poverty Rate - All Individuals	11.1	10.3	13.3
Average Unemployment Rate (%)	4.6	5.2	6.4
Homeownership Rate	59.3	60.9	68.8
Other Indicators, ACS* 2006			
Percent Foreign Born	15.8	19.1	12.5
Percent High School Graduates, age 25+	26.5	31.7	30.2
Percent Speaking Language other than English at home, age 5+	21.8	26.9	19.7

Data source: American Community Survey

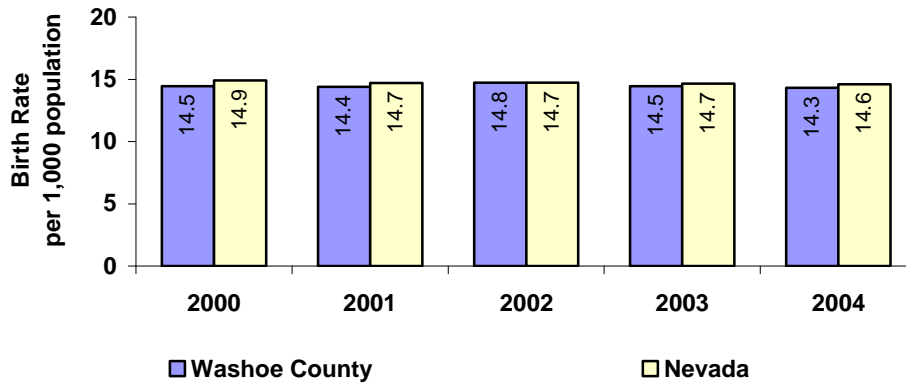
Prevalence of 18-64 years with no current health insurance, Washoe County, Nevada and the U.S.; 2000-2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS). No U.S. data available for 2001 and 2002

Birth and Death Rates

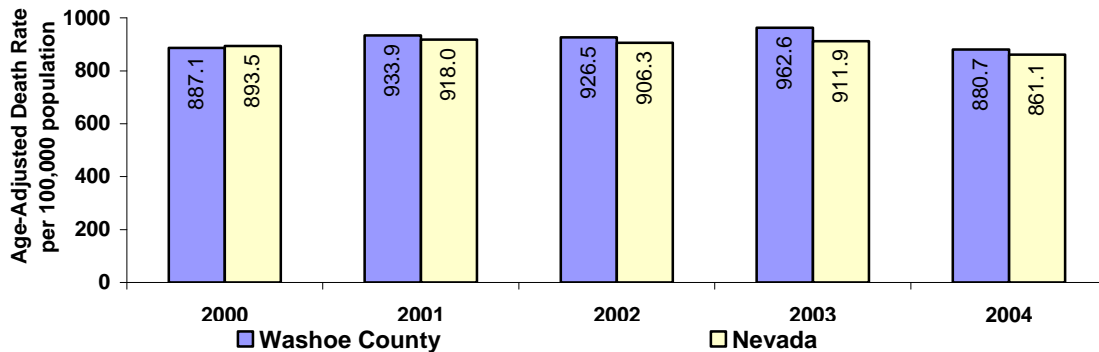
Birth rates for Washoe County and Nevada; 2000-2004



Data Source: Vital Statistics - Birth Certificates

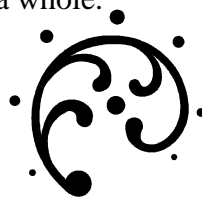
The average birth rate for Washoe County during the four-year time period (2000-2004) was 14.5 per 1,000. The average birth rate for Washoe County is consistent with the average birth rate for the State of Nevada.

Age-adjusted death rate per 100,000 in Washoe County and Nevada; 2000 - 2004



Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

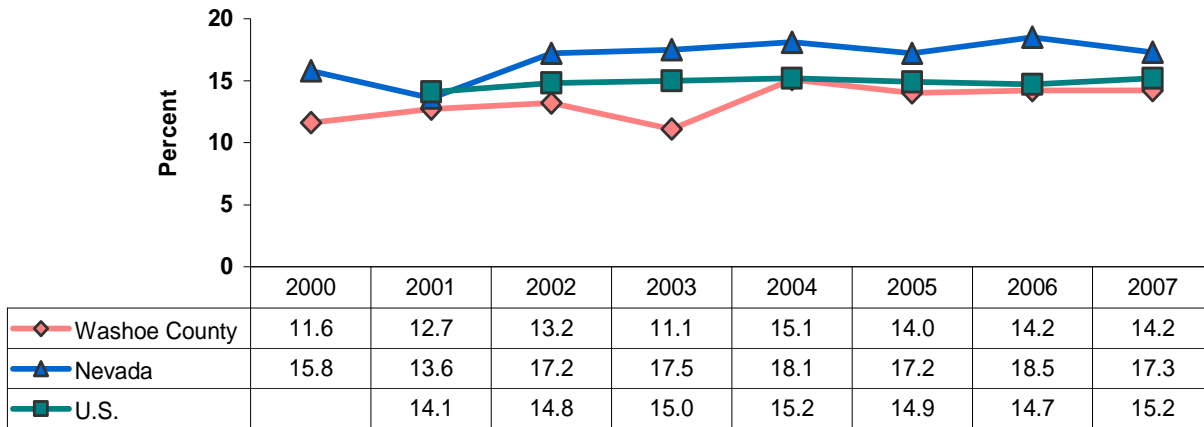
After adjusting for age, the average death rate was 918.2 per 100,000 in Washoe County for the five year time period between 2000 and 2004. The average death rate for Washoe County was similar to that for the State of Nevada as a whole.



Overall Health Status

The Behavioral Risk Factor Surveillance System (BRFSS) asks individuals to describe their current health status as either excellent, very good, good, fair, or poor. The percentage of Washoe County adults age 18 and over who described their health status as only fair or poor has increased nearly three percent from 11.6 percent to 14.2 percent between 2001 and 2007. However, this has consistently remained lower than the State of Nevada and U.S. averages.

Prevalence of adults 18 years of age or older, who self-report fair or poor health status in Washoe County, Nevada and the U.S.; 2001 - 2007



Data Source: Behavioral Risk Factor Surveillance System (BRFSS). Data for U.S. not available for 2000



Chronic Disease Risk Factors

I. Physical Activity and Nutrition

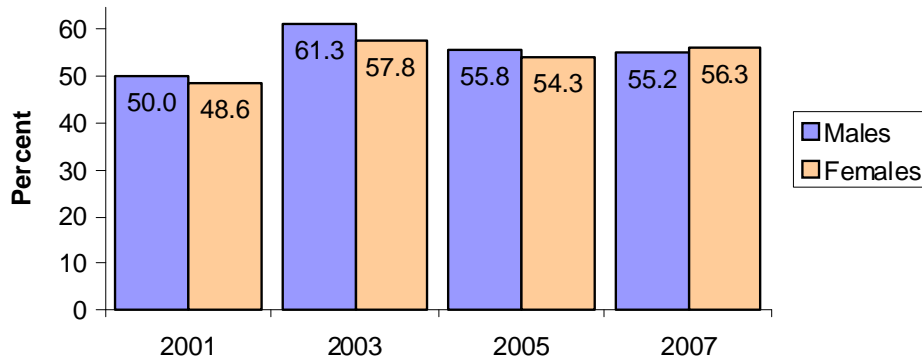
Physical Activity Among Adults

Adopting healthy behaviors such as eating nutritious foods and being physically active can prevent or control the devastating effects of chronic diseases. Physical activity for an adult includes activities that raise your heart rate, like walking quickly, and activities that increase strength, like lifting weights. There are different levels of physical activity, with moderate-intensity referring to a brisk walk, gardening or playing catch and throw with a baseball, and vigorous-intensity activity referring to jogging, jumping rope, or sports with lots of running like basketball.

The recommended amount of activity that an adult (ages 18-64) needs is two and a half hours a week of moderate-intensity, or one hour, fifteen minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate and vigorous-intensity aerobic physical activity. Muscle-strengthening activities that involve all major muscle groups are recommended two or more days per week. In the following two tables, the question posed to respondents referred to moderate physical activity for 30 minutes or more 5 or more times a week or vigorous physical activity for 20 minutes or more 3 or more times a week.

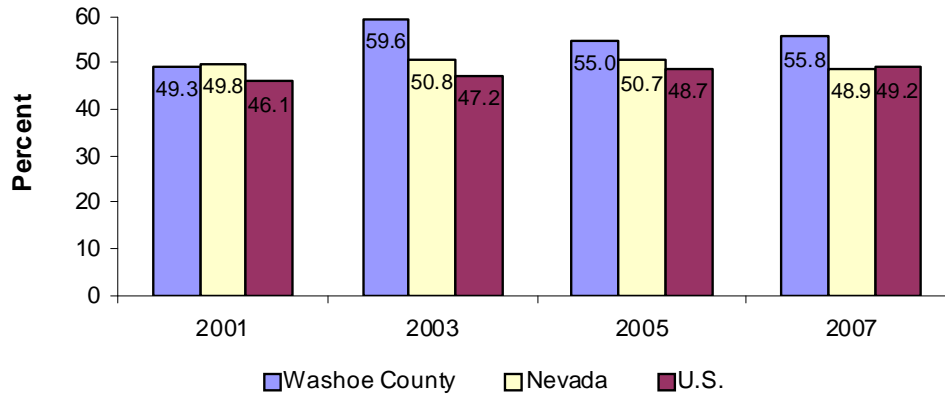
Children, seniors, those with disabilities or pregnant women may have different activity needs.

Prevalence of adults, by gender, who report regular physical activity, Washoe County; 2001-2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)
Physical activity questions asked only in odd years

Percent of adults reporting regular physical activity, Washoe County, Nevada and the U.S.; 2001 - 2007



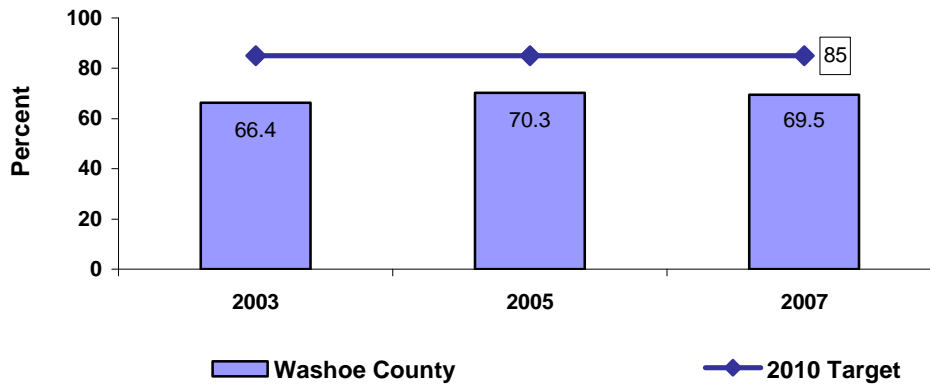
Data source: Behavioral Risk Factor Surveillance System (BRFSS)
Physical activity questions asked only in odd years

While adults in Washoe County have higher rates of physical activity than adults in Nevada and the U.S., over 40 percent of Washoe County adults are not getting the recommended amount of physical activity, which increases their risk for chronic diseases.

Physical Activity Among Youth

Physical activity for children and adolescents (ages 6-17) is important for current and future health. It is recommended that children and adolescents participate in at least 60 minutes of moderate-intensity physical activity every day, with muscle and bone strengthening activity at least three days a week.

Reported physical activity of youth in Washoe County (grades 9-12) compared to Healthy People 2010 recommended levels of vigorous physical activity for youth; 2003-2007



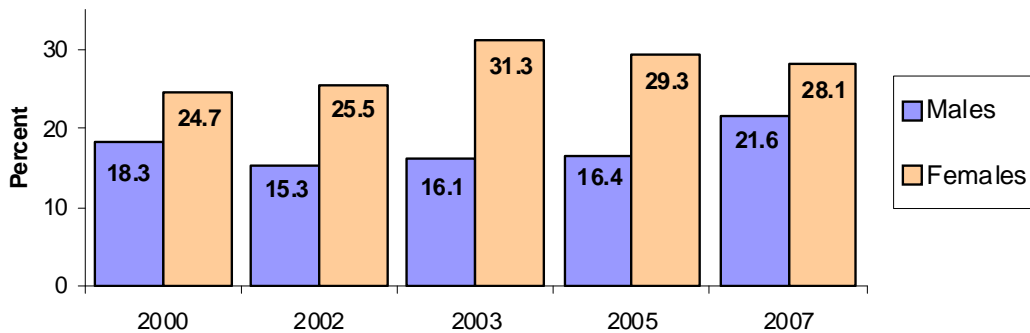
Data source: Youth Risk Behavior Survey (YRBS) High School

Fruit and Vegetable Consumption Among Adults

Eating healthfully includes consuming a variety of foods from the four food groups daily. These groups include dairy, protein, grains, and fruits/vegetables. Healthful eating also means limiting the amount of foods that are high in processed sugars and fats.

While there are many recommendations on the amount and kind of foods we eat, a standard measure of a healthy diet for both adults and youth is consuming five servings of fruits or vegetables a day.

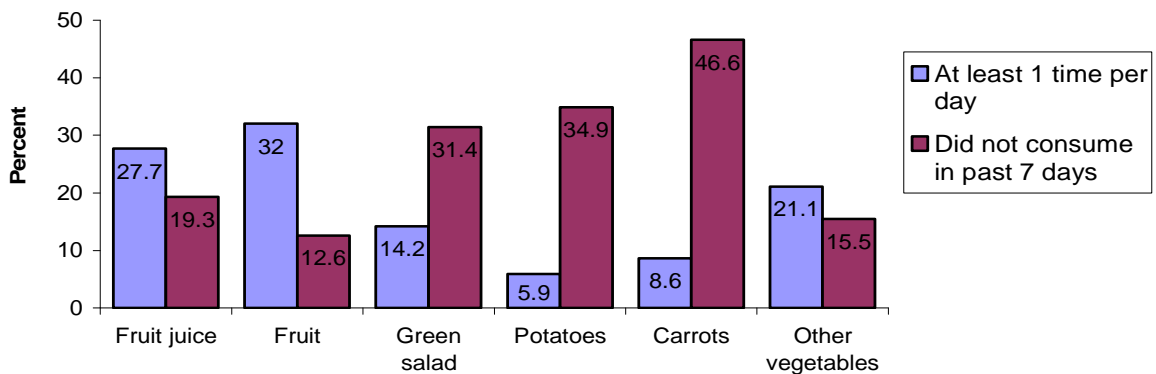
Prevalence of Washoe County adults, by gender, who report eating five or more servings of fruits and vegetables each day; 2000-2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Fruit and Vegetable Consumption Among Youth

Prevalence of Washoe County high school students who report consuming specific kinds of fruits and vegetables; 2007



Data source: Youth Risk Behavior Survey (YRBS) High School

II. Overweight and Obesity

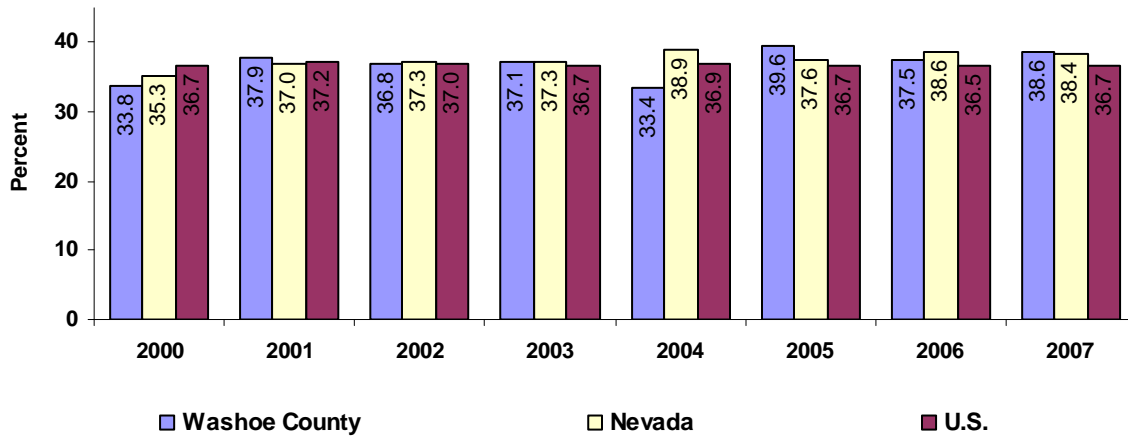
Overweight and obesity are both labels for ranges of weight that are greater than what is generally considered healthy for a given height. Body mass index (BMI) is a measure of body fat based on height and weight. BMI categories are as follows:

- Underweight = BMI under 18.5
- Normal weight = 18.5-24.9
- Overweight = 25-29.9
- Obesity = BMI of 30 or greater

The prevalence of overweight and obesity is a health concern for adults, children, and adolescents in the U.S. Obesity is of concern because of its implications for the health of Americans. Obesity increases the risk of many diseases and health conditions including high blood pressure, type II diabetes, stroke, and cancer.

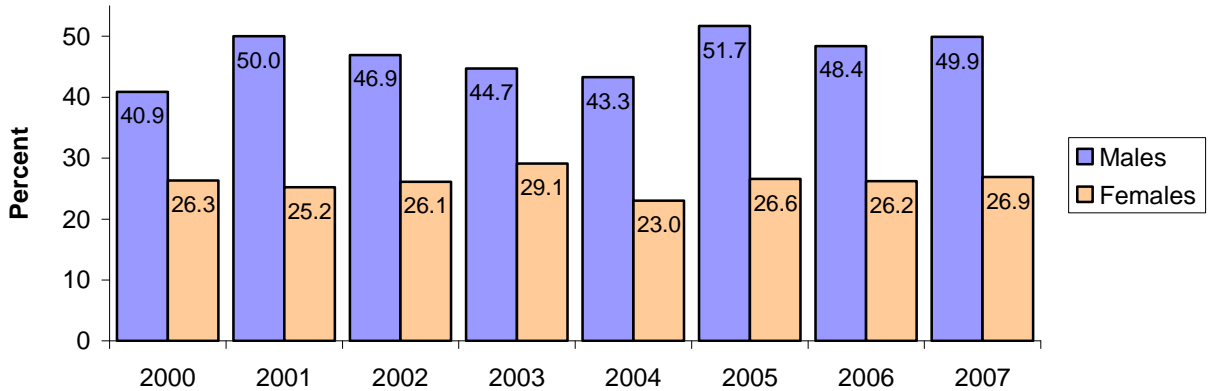
Overweight and Obesity Among Adults

Prevalence of adults reporting heights and weights that place them in the overweight category (BMI = 25-29.9) Washoe County, Nevada and the U.S.; 2001 – 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

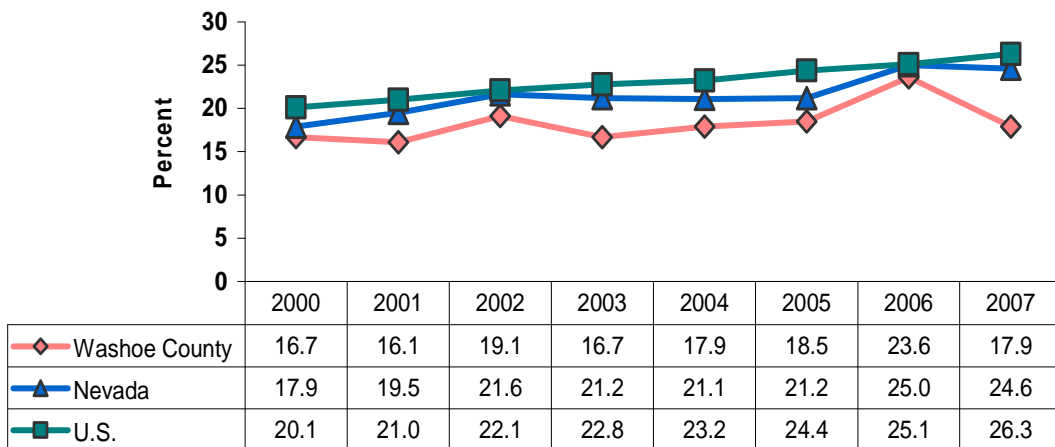
Prevalence of overweight adults, by gender, in Washoe County, as defined by a BMI = 25-29.9; 2000 – 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

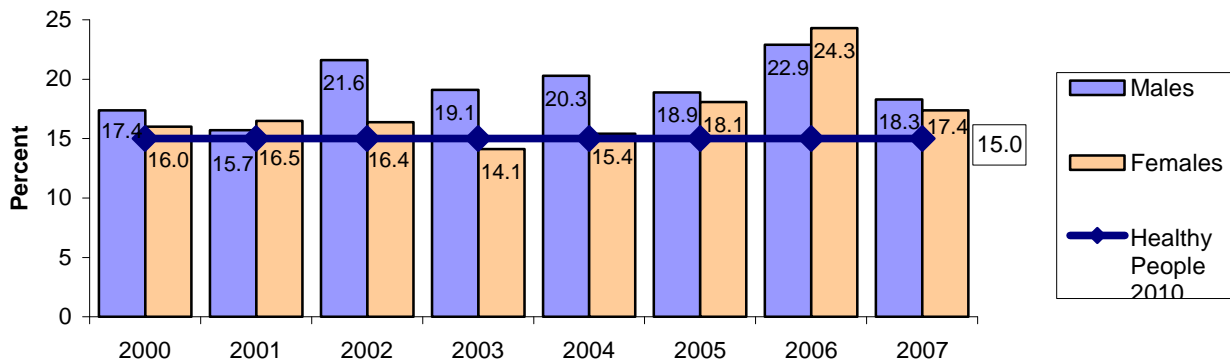
Data collected by the BRFSS on BMI is done so by self reported weight and height. As the graphs above depict, rates of overweight adults in Washoe County and Nevada have increased from 2000 to 2007 while rates in the U.S. have remained stable. What is striking about overweight adults in Washoe County is that when looking at gender differences, males are overweight at nearly twice the rate as females.

Prevalence of adults reporting heights and weights that place them in the obese category (BMI ≥ 30) Washoe County, Nevada and the U.S.; 2001 – 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of obesity among adults, by gender, in Washoe County as defined by a BMI \geq 30; 2000 – 2006; with comparison to Healthy People 2010 objective



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

When looking at obesity, the percentage of adults who are obese has risen steadily in the U.S. from about one in five in 2000 to more than one in four in 2007. During this same period of time, Nevada and Washoe County data have also risen but have remained lower than U.S. data. An exception to this increasing rate is a drop in 2007 for Washoe County. Gender differences in obese adults in Washoe County are also not as prominent as the gender differences in overweight adults.

Overweight and Obesity Among Children

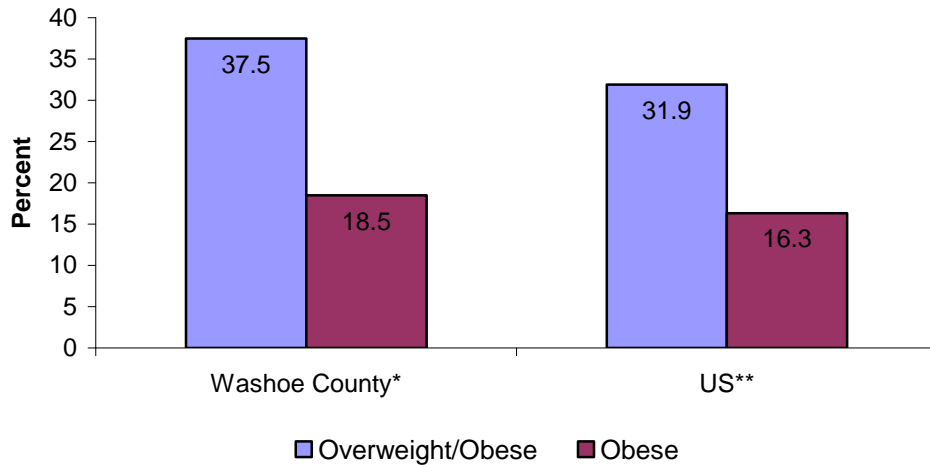
Overweight is a significant health concern for children under the age of 18, as it puts them at risk for health problems throughout their life. Overweight children are more likely to have risk factors associated with cardiovascular disease, such as high blood pressure, high cholesterol, and type 2 diabetes. Overweight children are more likely to become obese as adults, and, if overweight begins before the age of eight, obesity in adulthood is likely to be more severe.

Overweight is caused primarily by an imbalance between calories consumed and calories used. This imbalance can result from the influences of a number of factors including genetic, behavioral, and environmental conditions. Although genetics may increase an individual's susceptibility to becoming overweight, it is not considered a primary factor in the increase in childhood overweight. Behavioral and environmental factors such as increased nutritional intake and decreased physical activity levels are considered to be the primary contributing factors to increasing overweight.

As the following three graphs show, the majority of Washoe County children are considered to be at a healthy weight, although based on BMI, over one third fall into the overweight and obese categories. When Washoe County children are overweight or obese, they are significantly more so than the rest of the nation. Given that obesity among adults in Washoe County has historically lagged behind national levels it is alarming that the percentage of overweight and obese children in Washoe County is higher than national levels. Also, in Washoe County boys are more likely

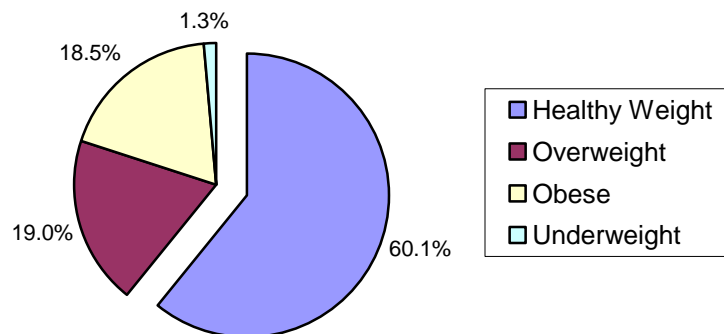
than girls to be obese and girls are more likely to be overweight. This trend was consistent among all grade levels measured.

Prevalence of overweight and obese children in Washoe County and the U.S.; 2008



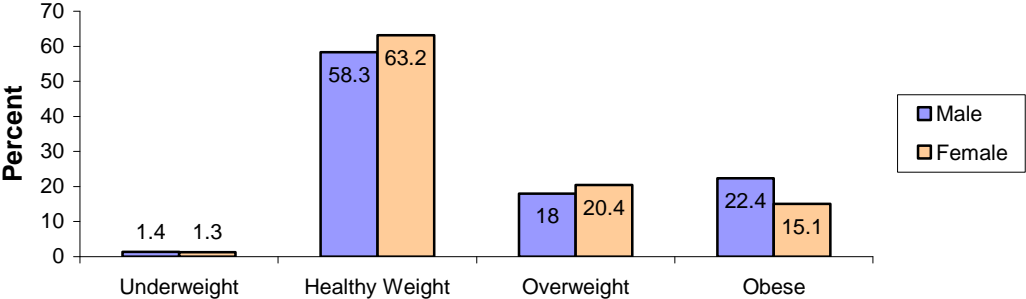
Data source: *2008 BMI collection of sample of Washoe County School District students (grades 4, 7 and 10)
 ** JAMA, Vol 299 No.20, May 28, 2008

Children’s BMI grouping, Washoe County; 2008



Data source: 2008 BMI collection of sample of Washoe County School District students (grades 4, 7 and 10)

Children's BMI grouping, by gender, Washoe County; 2008



Data source: 2008 BMI collection of sample of Washoe County School District students (grades 4, 7 and 10)

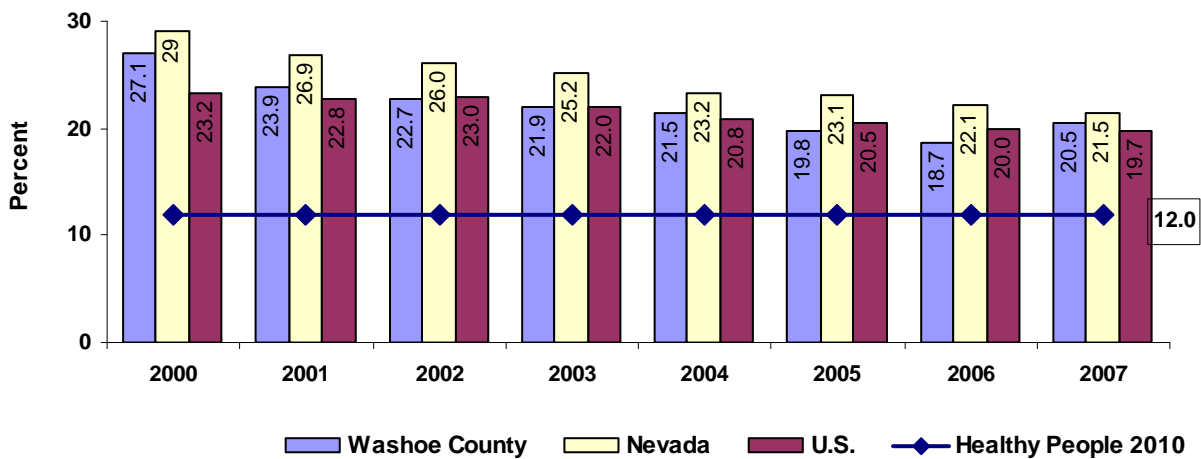
III. Tobacco Use and Exposure

Prevalence of Smoking Among Adults

Smoking is the number one leading cause of preventable death in the world and is a primary risk factor for most chronic diseases. Fortunately, smoking prevention and cessation efforts are working in Washoe County as the smoking rate has dropped almost 7 percent (from 27.1% to 20.5%) since 2000. However, Washoe County and Nevada are both far from reaching the Center for Disease Control's (CDC) 2010 goal of 12 percent.

In 2007, the smoking rate did increase slightly in Washoe County. Further research and data will need to be analyzed to determine the cause of this increase.

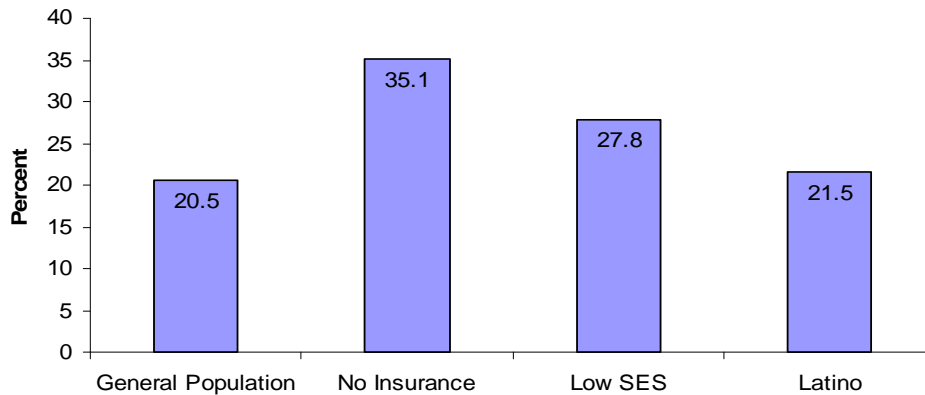
Prevalence of smoking among adults in Washoe County, Nevada and the U.S.; 2000 - 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

In Washoe County, smoking rates are still higher for disparate groups, including those without insurance, those classified as low socioeconomic status (SES), and Latinos.

Prevalence of smoking among disparate populations in Washoe County; 2007

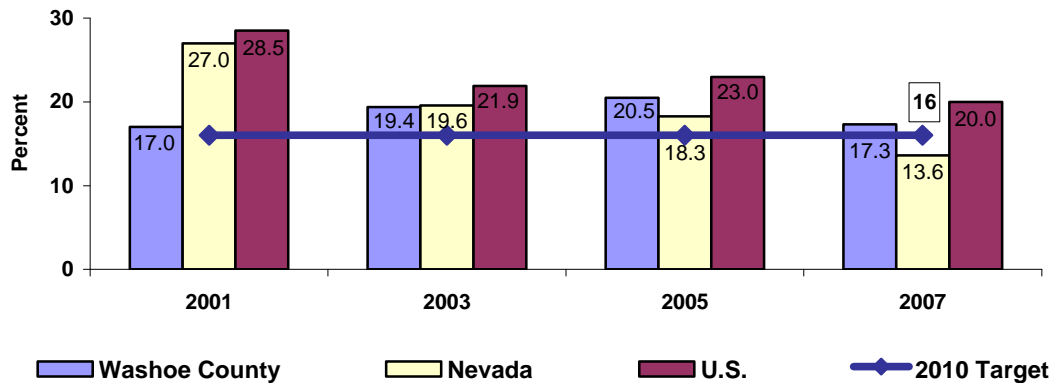


Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of Smoking Among Youth

Ninety percent of all adult smokers report starting smoking while in their teens, or earlier, and two-thirds become regular, daily smokers before they reach the age of 19. CDC estimates that one-third of all youth smokers will die from a smoking related illness. Washoe County trends just below the national average for youth smoking rates.

Prevalence of smoking among youth in Washoe County, Nevada and the U.S.; 2001 - 2007



Data source: Youth Risk Behavior Survey (YRBS) High School

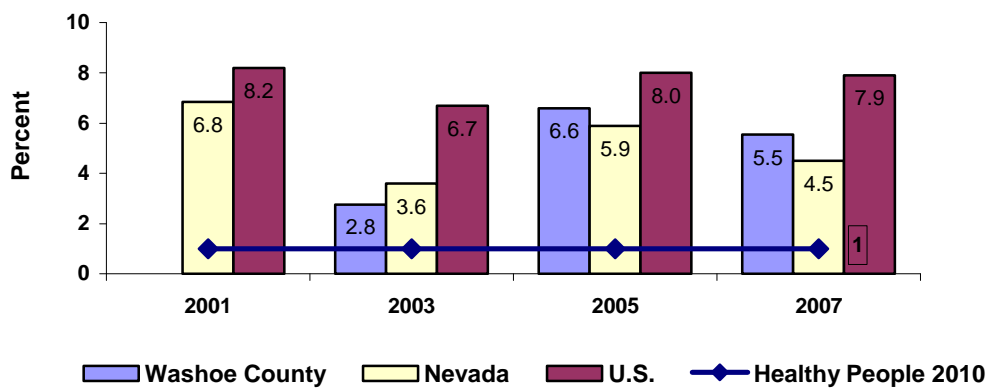
Both the U.S. and Nevada have seen a steady decline in the percentage of youth smokers based on the Youth Risk Behavior Survey (YRBS). Although Washoe County had a much lower rate in

2001, it experienced a gradual rise in reported youth smoking over much of this time period with a fall back to approximately 2001 levels in 2007.

Prevalence of Smokeless Tobacco Use Among Youth

Smokeless tobacco use (chew, spit, etc.) is on the rise nationally among adults. Fortunately, rates of smokeless tobacco use among youth in Washoe County have not yet followed the same trends as adults. Smokeless tobacco is just as harmful as cigarettes and research shows that youth who chew are more likely to smoke in the near future.

Prevalence of smokeless tobacco use among youth in Washoe County, Nevada and the U.S.; 2001 – 2007



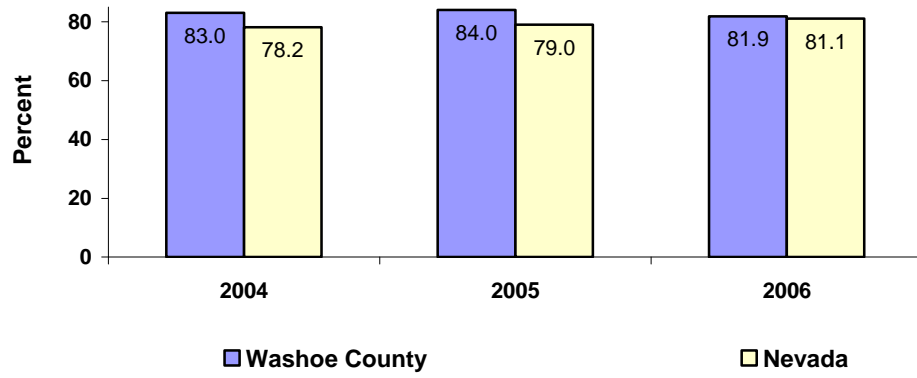
Data source: Youth Risk Behavior Survey (YRBS) High School. No Washoe County data available for 2001

Over the 2001-2007 time period, use of smokeless tobacco by Washoe County youth has risen and fallen, in similar trends to the state. Both Washoe County and Nevada rates are lower than the U.S., but all are higher than the 2010 Health People goal.

Smoke Free Workplaces and Homes

In the fall of 2006, voters passed the Nevada Clean Indoor Air Act that banned smoking in almost all indoor public places and places of employment. However, it did exempt some of the largest employers in Nevada, such as casinos. In addition, the Act did not address smoking in individual homes. According to the 2006 BRFSS the majority of Washoe County homes (81.9%) have a smoke free policy, yet, there is still room for improvement. The majority of children that are exposed to secondhand smoke are exposed in the home. Opening a window or going to another room does not eliminate the risks associated with secondhand smoke exposure.

**Prevalence of homes reporting a smoke free home policy,
Washoe County and Nevada; 2004 - 2006**



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

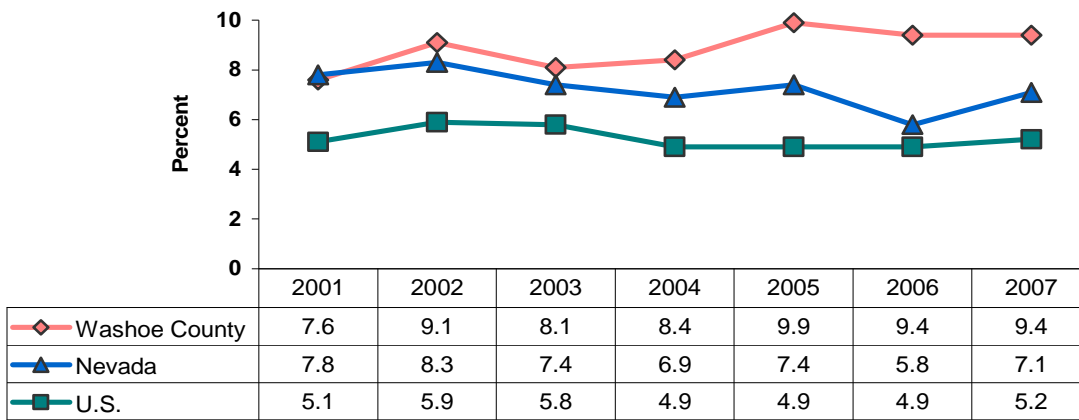
IV. Alcohol Use

Excessive alcohol use increases the risk of developing chronic diseases such as liver cirrhosis, pancreatitis, and various cancers, including liver, mouth, throat, larynx, and esophagus. It also increases the risk of high blood pressure and psychological disorders, and is associated with poor nutrition and increased prevalence of smoking.

Alcohol Use Among Adults

Heavy drinking is typically defined as consuming more than two drinks per day on average for males 18 years of age and older or more than one drink per day on average for women 18 years of age and older. The prevalence of heavy drinking among adults living in Washoe County has consistently remained higher than both state and national prevalence rates and was ranked first in the nation by the Centers for Disease Control (CDC).

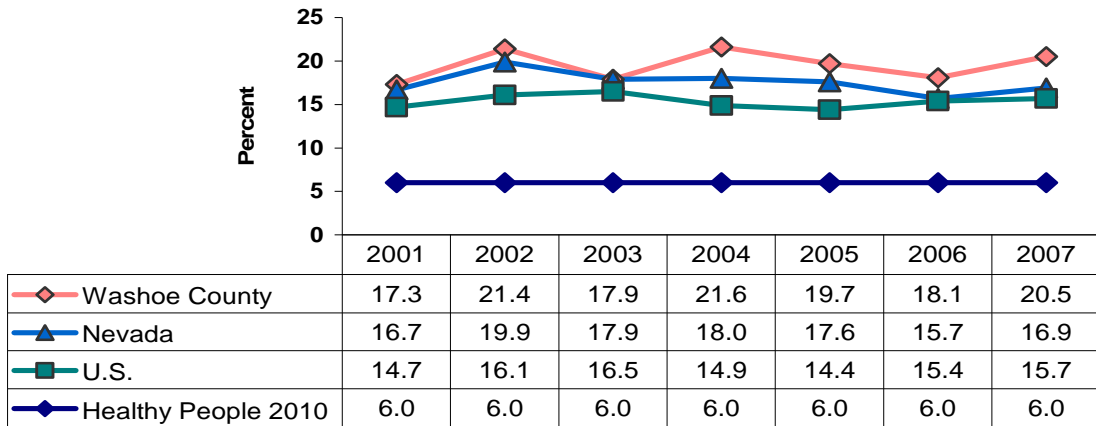
Prevalence of heavy drinking among adults in Washoe County, Nevada and the U.S.; 2001 - 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Binge drinking is defined as consuming five or more drinks during a single occasion for men or four or more drinks during a single occasion for women. Washoe County's binge drinking rate among adults has consistently remained higher than both the state and national binge drinking rates. Also, the reported rate of binge drinking exceeds that for heavy drinking.

Prevalence of binge drinking among adults in Washoe County, Nevada and the U.S.; 2001 – 2007



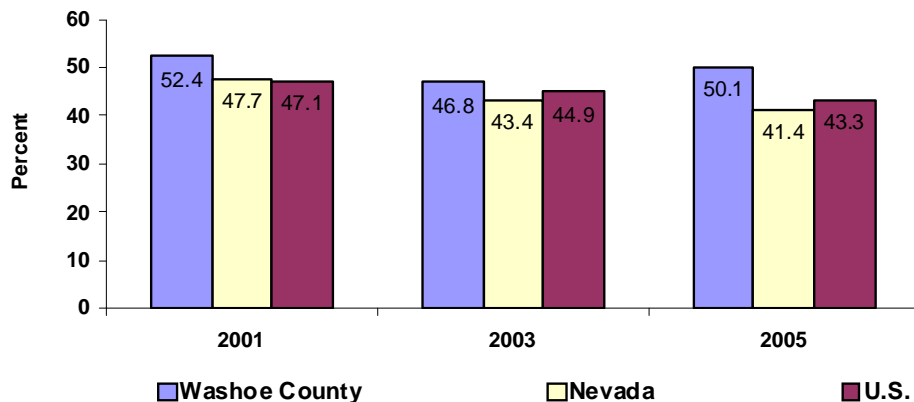
Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Alcohol Use Among Youth

Research has shown that youth who use alcohol before age 15 are five times more likely to become alcohol-dependent than adults who begin drinking at age 21. Other consequences of youth alcohol use include increased risky sexual behaviors, poor school performance, and increased risk of suicide and homicide.

Youth Risk Behavior Survey (YRBS) participants in Washoe County high schools reported a higher prevalence of alcohol consumption of one or more drinks in the previous 30 days compared to state and national respondents.

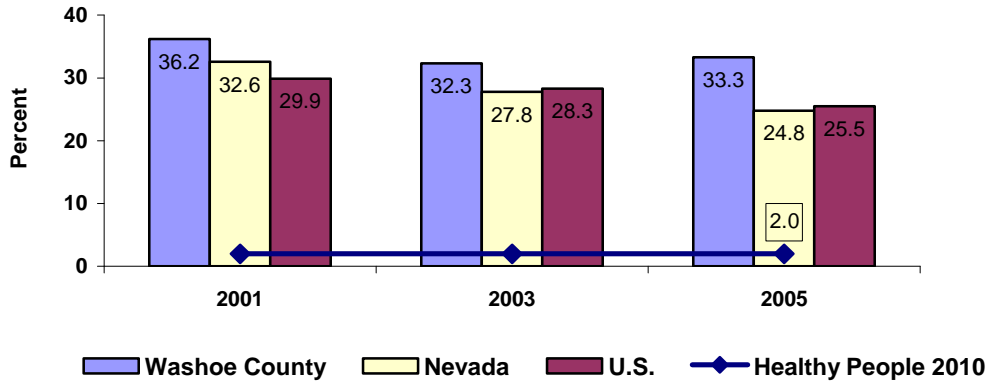
Prevalence of alcohol consumption among youth in Washoe County, Nevada and the U.S.; 2001 - 2005



Data source: Youth Risk Behavior Survey (YRBS) High School

YRBS participants in Washoe County high schools also reported a higher prevalence of binge drinking, which is defined as consumption of five or more drinks in the previous 30 days compared with state and national participants.

Prevalence of binge drinking among youth in Washoe County, Nevada and the U.S.; 2001 - 2005



Data source: Youth Risk Behavior Survey (YRBS) High School



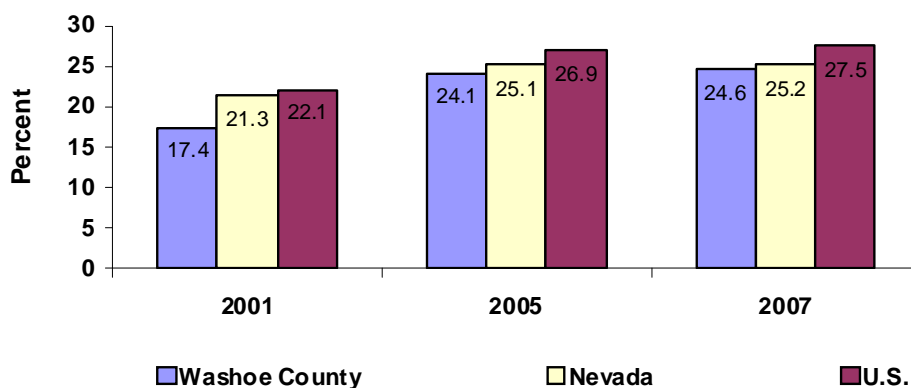
Specific Chronic Health Conditions

The following sections provide a summary of specific chronic diseases in Washoe County. These conditions can be reduced or in some cases prevented by increased positive healthy behaviors such as increased physical exercise, increased proper nutrition, and eliminating tobacco use and exposure.

I. Arthritis

Arthritis affects the joints, which is where two or more bones meet. Arthritis-related joint problems include pain, stiffness, inflammation and damage to joint cartilage and surrounding structures. There are many different forms of arthritis. While the most common form of arthritis, osteoarthritis, is most common in people over age 60, other forms of arthritis can affect all ages. The prevalence of arthritis in Washoe County has been on the rise; however it is still lower than state and national rates.

Prevalence of arthritis in adults (18 and older) in Washoe County, Nevada and the U.S.; 2001 - 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

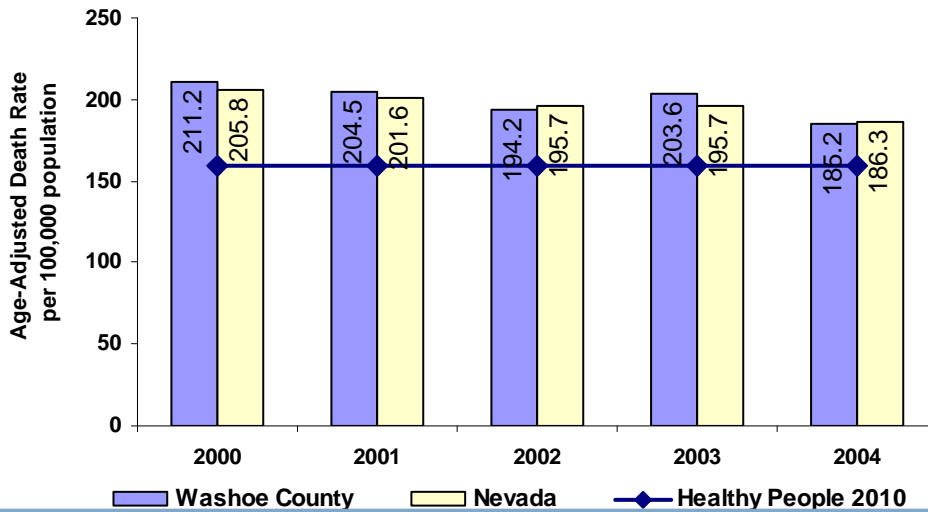
II. Cancer

Cancer is a group of diseases characterized by uncontrolled growth and spread of abnormal cells. If cancer is not controlled, it can result in death.

Cancer Incidence and Mortality

Although the overall age-adjusted mortality rate due to cancer in Washoe County appears to be decreasing, cancer remains the second leading cause of death in Washoe County.

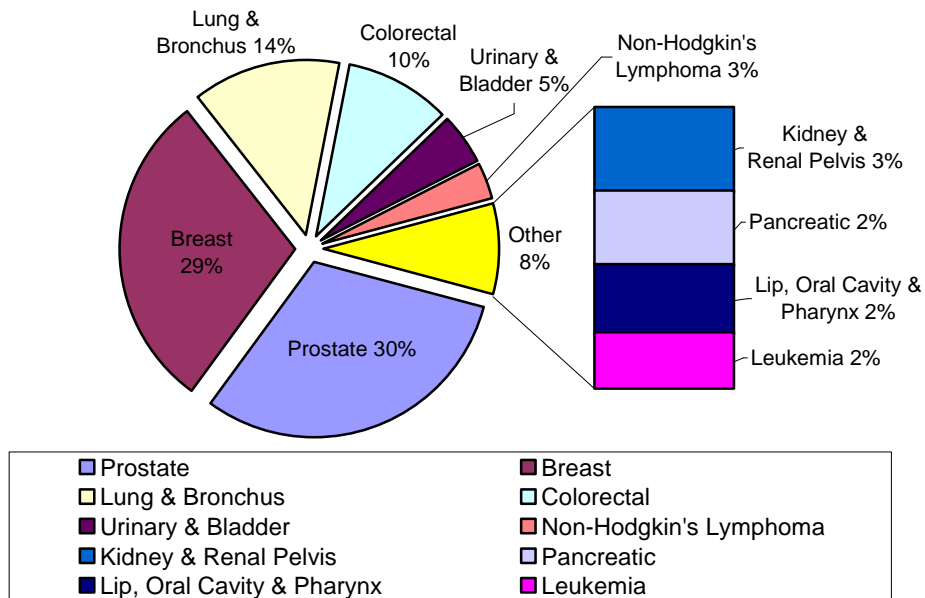
Cancer mortality rate per 100,000 population in Washoe County and Nevada; 2000 – 2005



Data source: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

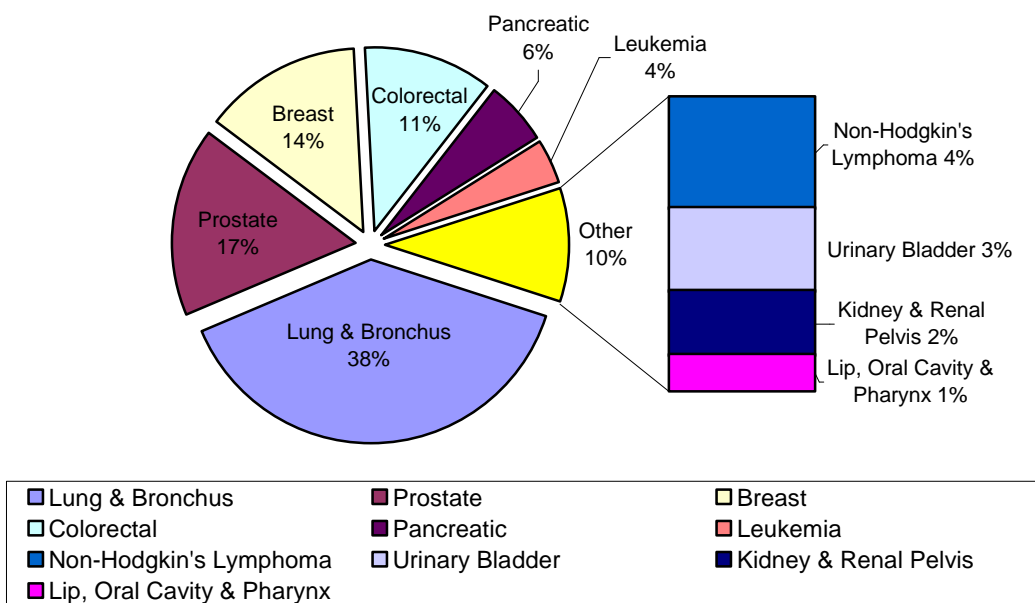
Cancer of the prostate, breast and lung/bronchus made up nearly three quarter of the newly diagnosed cancer rates between 2000 and 2004. Cancer of the lung and bronchus is the leading cause of cancer-related death.

Washoe County incidence of cancer, by site; 2000-2004



Data source: Nevada Cancer Registry

Washoe County mortality from cancer, by site; 2000-2004



Data source: Vital Statistics – Death Certificates

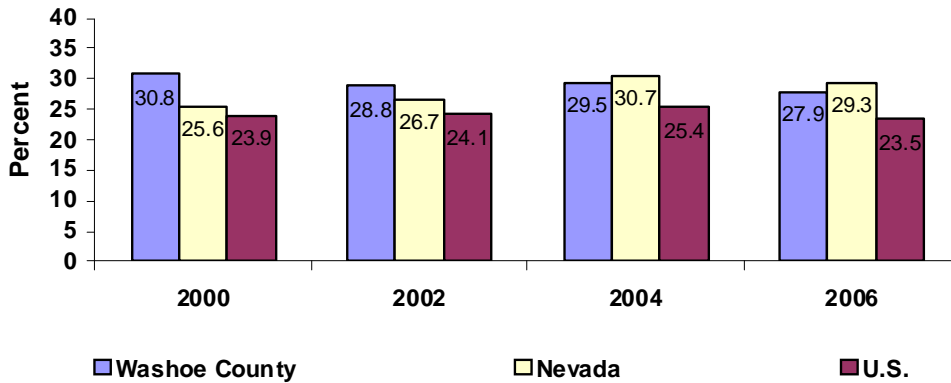
The number of new cases of cancer and cancer deaths can be reduced by increasing positive healthy behaviors such as increased physical exercise, increased nutrition, and reducing tobacco use and exposure.

Cancer screenings are effective methods for detecting cancers at early and treatable stages. Cancer screening includes: mammograms, clinical breast exams, pap smears, and a variety of tests that may indicate colon cancer (fecal occult blood, sigmoidoscopy and colonoscopy). Below are charts showing the prevalence of different cancer screenings in Washoe County.

Risk Reduction Behaviors: Recommended Screenings

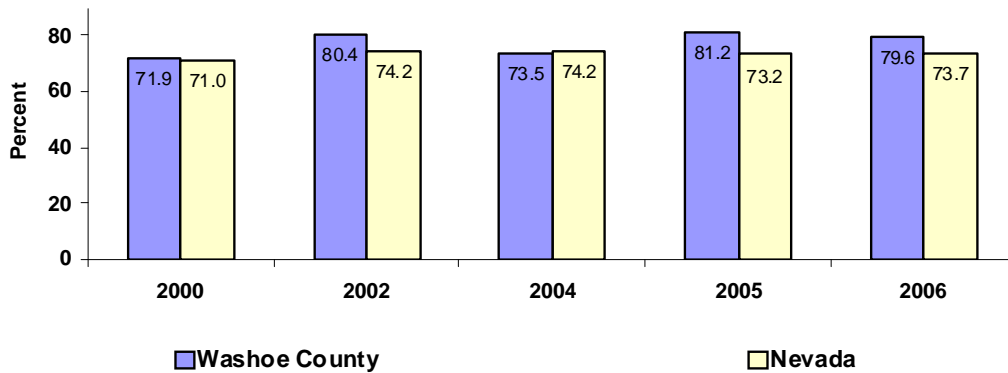
The following series of charts show the degree to which Washoe County, Nevada (and U.S. when available) residents have recommended screenings.

Prevalence of women \geq 40 having a mamogram in Washoe County, Nevada, and the U.S.; 2000 - 2006



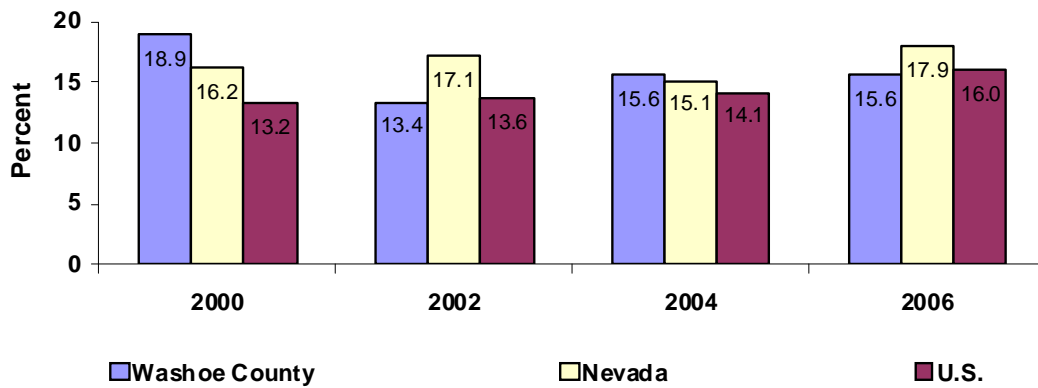
Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of women \geq 40 having a clinical breast exam in Washoe County, Nevada, and the U.S.; 2000 - 2006



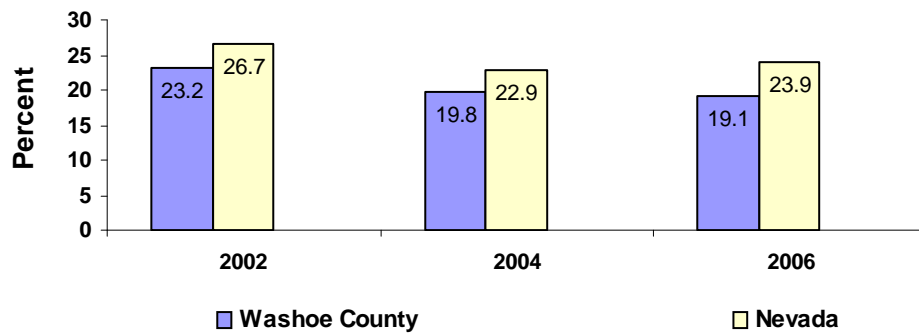
Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of women ≥ 18 having a Pap smear in Washoe County, Nevada, and the U.S.; 2000 - 2006



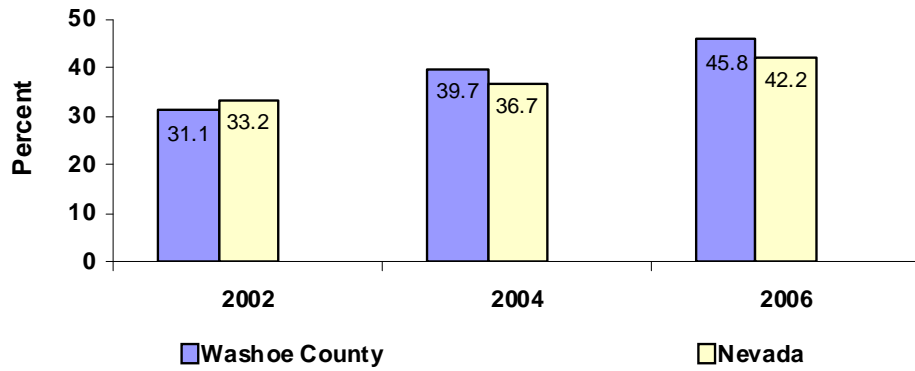
Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of adults ≥ 50 undergoing a fecal occult blood test in Washoe County, Nevada, and the U.S.; 2002 - 2006



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Prevalence of adults ≥ 50 undergoing a sigmoidoscopy/colonoscopy in Washoe County, and Nevada; 2002 - 2006



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

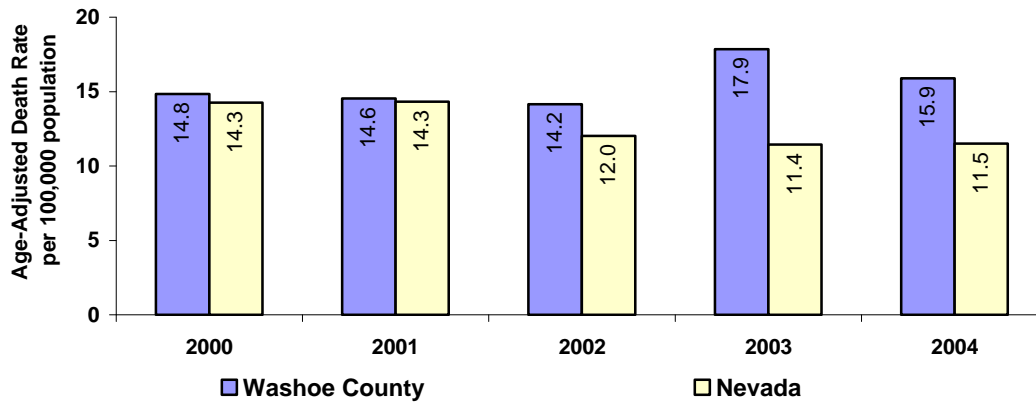
III. Chronic Liver and Kidney Diseases

Liver Disease

Liver disease refers to any disorder of the liver. There are many different types of liver disease including alcohol-induced liver disease and hepatitis. One of the most common types of liver disease is fatty liver disease, which is caused by poor nutrition and being overweight.

Whether a liver is infected with a virus, injured by chemicals, or under attack by a person's own immune system, liver disease can lead to death. Washoe County has a higher rate of death associated with liver disease in comparison to Nevada.

**Mortality rate per 100,000 population due to liver disease
in Washoe County and Nevada; 2000 - 2004**

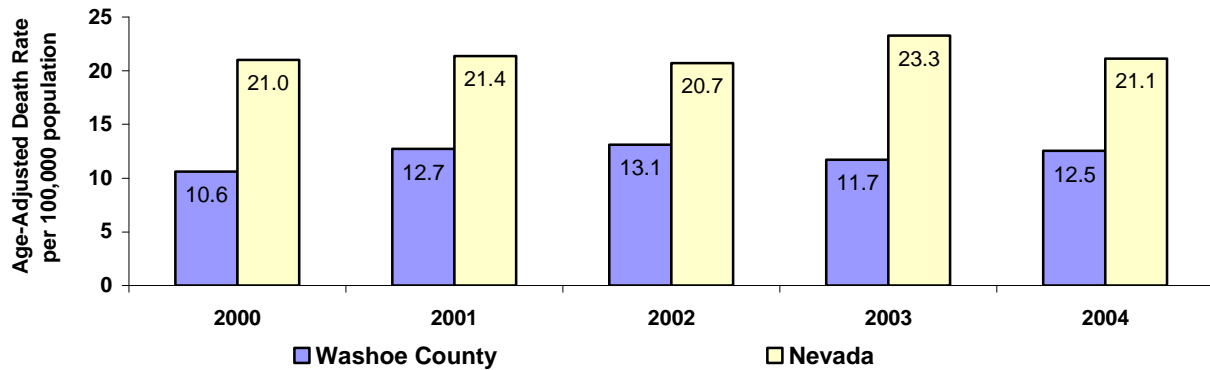


Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer's Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

Kidney Disease

Chronic kidney disease involves conditions that damage the kidneys and decrease their ability to keep the body healthy. The two main causes of chronic kidney disease are diabetes and high blood pressure. If left untreated, kidney disease will progress to kidney failure, which requires dialysis and/or a kidney transplant for survival. Washoe County's mortality rate from kidney failure is lower than Nevada's mortality rate from kidney failure.

**Mortality rate per 100,000 population due to kidney disease
in Washoe County and Nevada; 2000 – 2004**



Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

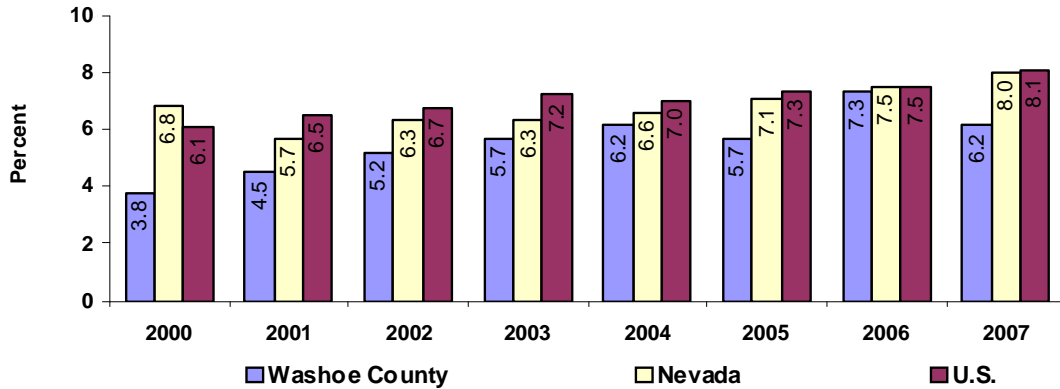
IV. Diabetes

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches, and other food into energy necessary for daily life. Lack of exercise, poor nutrition, obesity and genetics can be risk factors for developing diabetes.

Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower-extremity amputations. Diabetes is the sixth leading cause of death in the United States. In Washoe County, diabetes occurs less than in the state or nation overall; however, diabetes related mortality in Washoe County is higher.

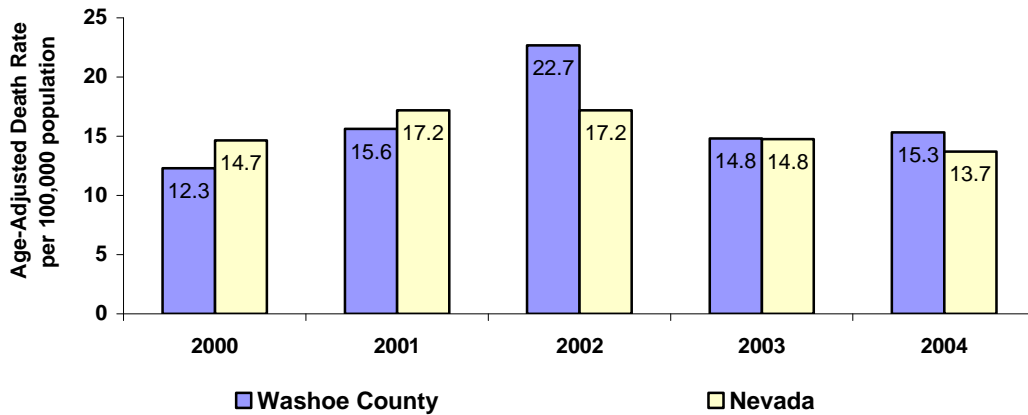
Washoe County residents have consistently reported less diabetes than the state and the nation. However, this gap has narrowed in recent years with a general increase.

Prevalence of adults reporting a diagnosis of diabetes in Washoe County, Nevada, and the U.S.; 2000 - 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Mortality rate per 100,000 population for diabetes in Washoe County and Nevada; 2000 - 2004



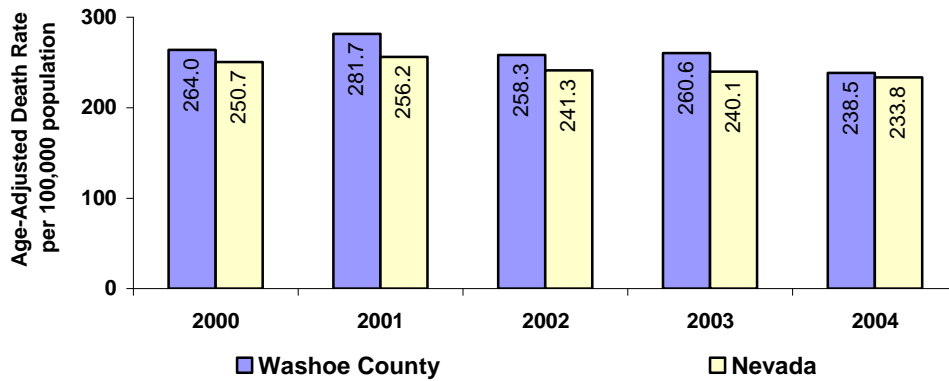
Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

V. Heart Disease and Stroke

Heart Disease

Heart disease is a term that refers to several specific heart conditions. The most common type of heart disease in the U.S. is coronary heart disease, which can lead to heart attacks. As depicted in the graph below, mortality due to heart disease has been consistently higher in Washoe County as compared to Nevada.

Mortality rate per 100,000 population for heart disease in Washoe County and Nevada; 2000 – 2004

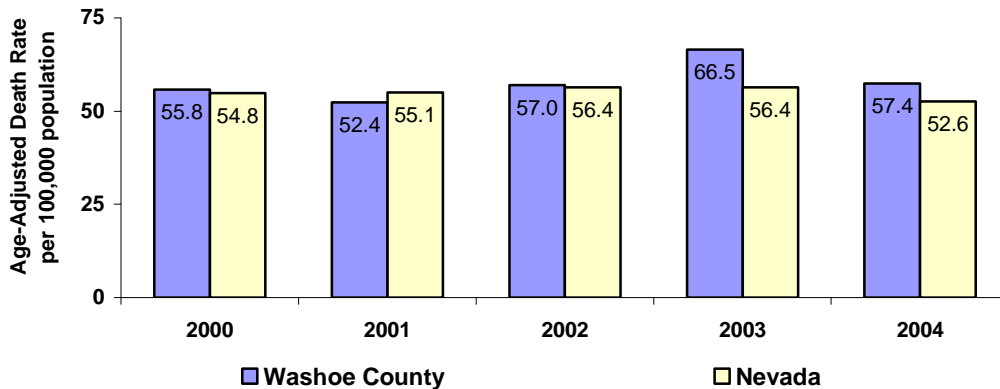


Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

Stroke

A stroke or "brain attack" occurs when a blood clot blocks an artery or a blood vessel breaks, interrupting blood flow to an area of the brain. Under either scenario, brain cells begin to die and brain damage occurs. In Washoe County the mortality rate from stroke is higher than for the state as a whole.

Mortality rate per 100,000 population for stroke in Washoe County and Nevada; 2000 - 2004

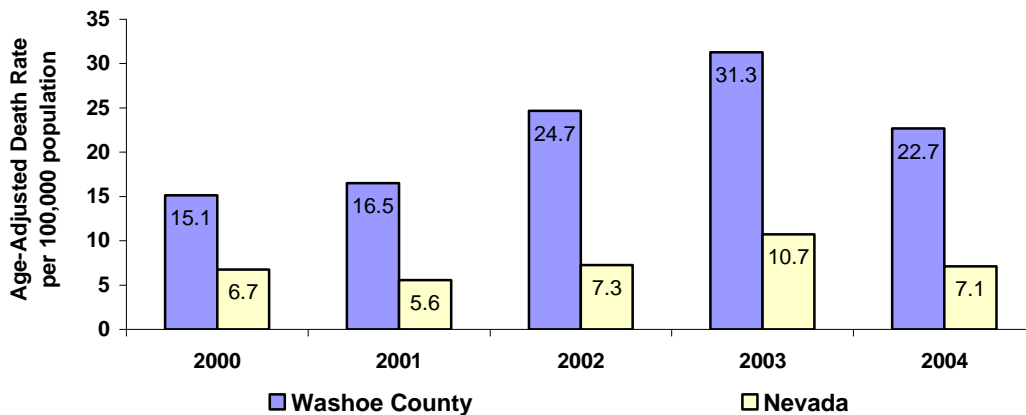


Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

Atherosclerosis

Atherosclerosis is a disorder of the arteries that occurs when fat, cholesterol, and other substances build up in the walls of arteries. This buildup is called plaque and over time the buildup can make the arteries narrow and less flexible. Plaque can build up enough to significantly reduce the blood's flow through an artery, but most of the damage occurs when pieces of plaque break apart and move through the bloodstream. This is a common cause of heart attack and stroke. If a piece of plaque blocks a blood vessel that feeds the heart, it causes a heart attack. If it blocks a blood vessel that feeds the brain, it causes a stroke. In Washoe County, the mortality rate from atherosclerosis is higher than for the state as a whole.

**Mortality rate per 100,000 population for atherosclerosis
in Washoe County and Nevada; 2000 - 2004**

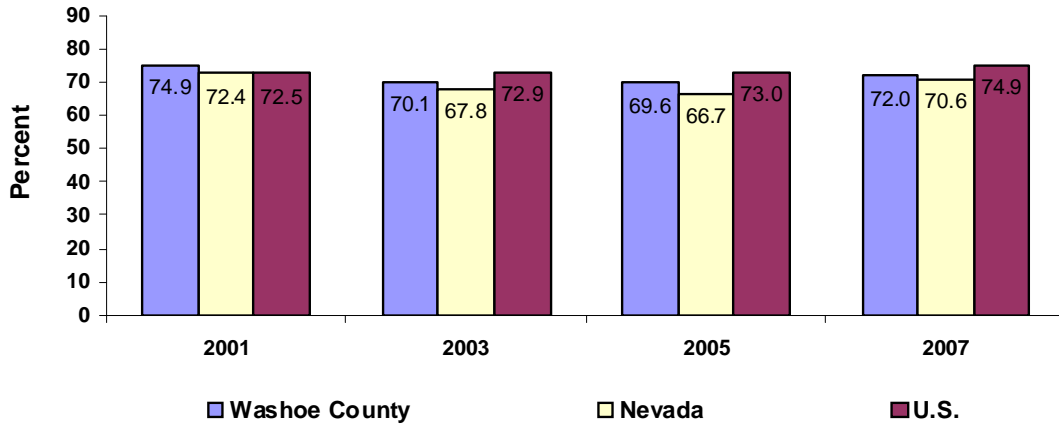


Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005

Cholesterol and Blood Pressure

High blood cholesterol is a major risk factor for heart disease. Preventing and treating high blood cholesterol includes eating a diet low in saturated fat and cholesterol and high in fiber, keeping a healthy weight, and getting regular exercise. Adults should have their cholesterol levels checked once every five years. In Washoe County the percent of adults who have met this recommendation is higher than the state but lower than the national average.

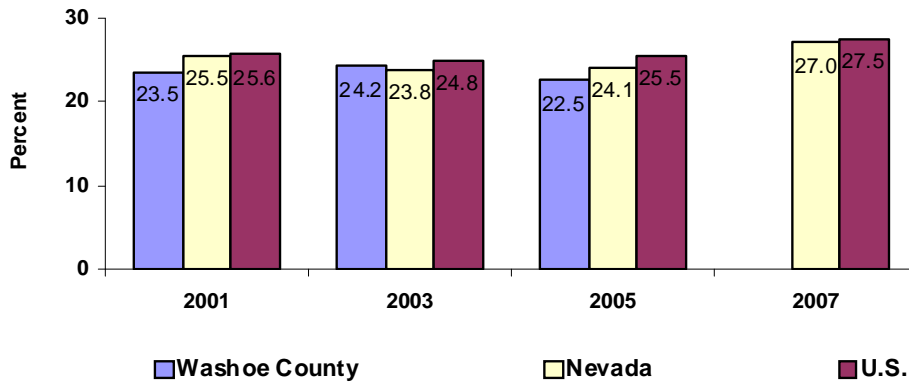
Prevalence of adults who report cholesterol screening within the previous five years in Washoe County, Nevada and the U.S.; 2001 - 2007



Data source: Behavioral Risk Factor Surveillance System (BRFSS)

"Blood pressure" is the force of blood pushing against the walls of the arteries as the heart pumps out blood. If this pressure rises and stays high over time, it can damage the body in many ways. High blood pressure is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems.

Prevalence of adults reporting that their health professional diagnosed high blood pressure in Washoe County, Nevada and the U.S.; 2001 - 2007



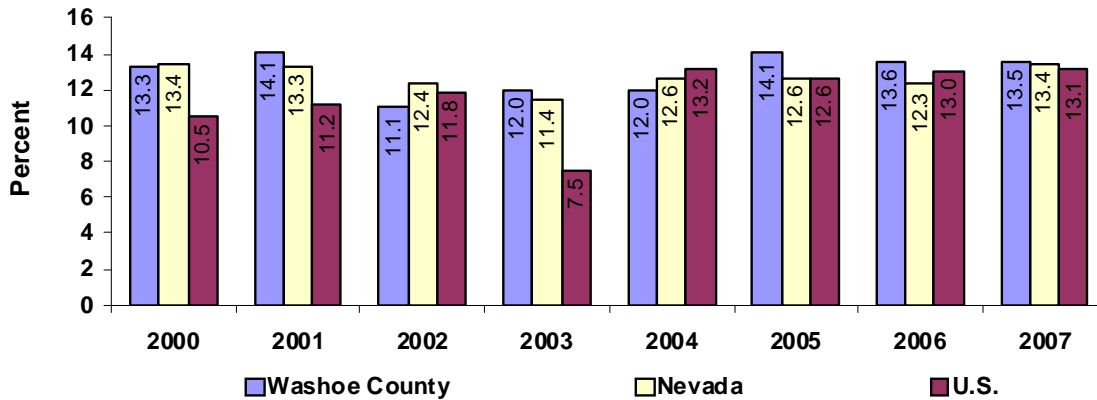
Data source: Behavioral Risk Factor Surveillance System (BRFSS)
Data for Washoe County. not available for 2007

VI. Respiratory Diseases

Asthma

Asthma is a chronic lung disease that inflames and narrows the airways. Asthma causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing. Asthma prevalence in Washoe County is slightly higher than the state and nation overall.

Prevalence of adults reporting that they have ever been diagnosed with asthma in Washoe County, Nevada, and the U.S.; 2000 - 2007

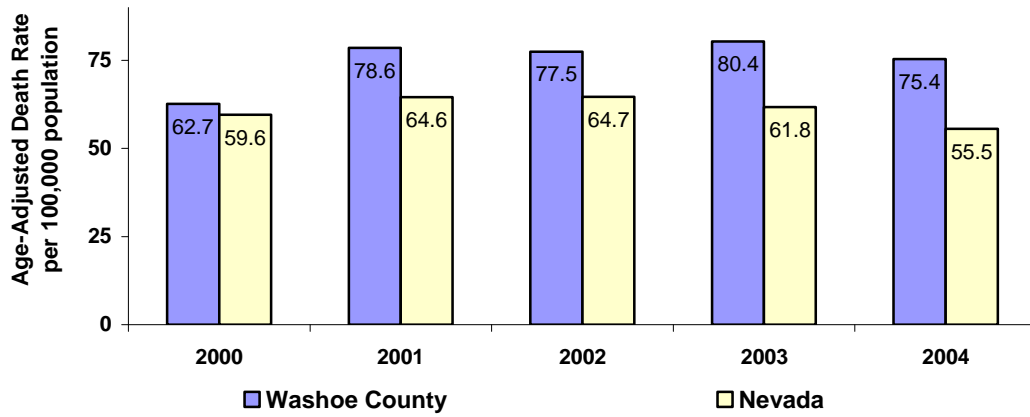


Data source: Behavioral Risk Factor Surveillance System (BRFSS)

Chronic Obstructive Pulmonary Disease

Chronic lower respiratory disease often referred to as chronic obstructive pulmonary disease (COPD) includes two lung diseases, chronic bronchitis and emphysema that obstruct airflow and make it hard to breath. Tobacco smoke is the primary cause of COPD and accounts for 80 to 90 percent of COPD deaths. Breathing in other kinds of lung irritants, like pollutants, dust, or chemicals, over a long period of time may also cause or contribute to COPD. In Washoe County the mortality rate for COPD is higher than the state as a whole.

Mortality rate per 100,000 population for COPD in Washoe County and Nevada; 2000 - 2004



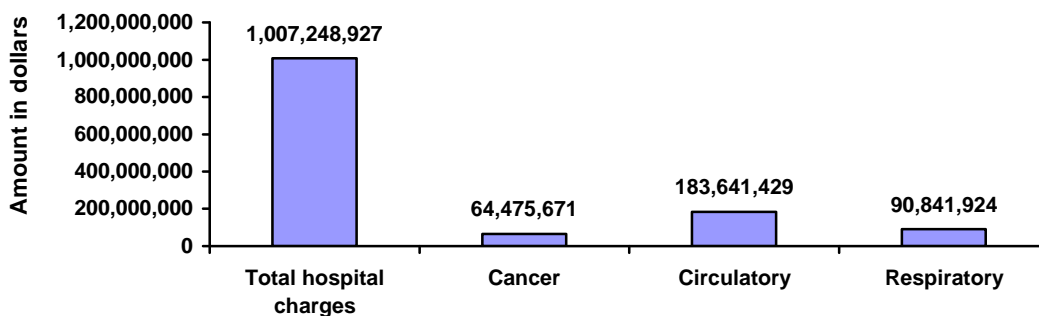
Data sources: 2000 U.S. Census; Vital Statistics – Death Certificates; Nevada State Demographer’s Office ASRHO Estimates and Projections June 2004 received on November 18, 2005



Economics of Preventing Chronic Diseases

According to the Partnership to Fight Chronic Disease, about 75 percent of healthcare spending is associated with chronically ill patients. Chronic disease accounts for the largest source of spending in the healthcare economy, and it is also the fastest growing, as increasing numbers of people are living with chronic illnesses. In Washoe County 33.7 percent of per capita health care spending is due to cancer, circulatory and respiratory illnesses.

Per capita health care spending in Washoe County; 2005



Data source: Hospital Discharge Data

The Trust for America's Health found that money invested in non-medical prevention strategies to increase physical activity, improve nutrition, and decrease tobacco use and exposure had a significant return on investment. The table below represents the potential annual net savings and return on investment for Nevada with a \$10 per person per year investment in strategic disease prevention programs.

Nevada			
Total Annual Intervention Costs (at \$10 per person): \$23,320,000			
Nevada Return on Investment of \$10 Per Person			
	1-2 Years	5 Years	10-20 Years
Total State Savings	\$41,200,000	\$139,000,000	\$152,600,000
State Net Savings (Net savings=Total savings minus intervention costs)	\$17,900,000	\$115,700,000	\$129,300,000
Return on Investment	0.77:1	4.96:1	5.55:1
* In 2004 dollars			

Data source: Prevention for a Healthier America; Trust for America's Health



Data Sources



2008 BMI Collection, Sample of Washoe County School District Students (grades 4, 7 and 10), pursuant to Nevada Assembly Bill 354

Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System (BRFSS), 2000 - 2007

Hospital Discharge Data, 2005

Journal of the American Medical Association (JAMA), Vol 299 No.20, May 28, 2008

Nevada Cancer Registry, 2000 - 2004

Nevada State Demographer, Age, Sex, Race and Hispanic Origin (ASRHO) Estimates and Projections, June 2004 received on November 18, 2005

Trust for America's Health, *Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities*, July 2008

U.S. Census; and American Community Survey, 2006

Vital Statistics, Birth Certificates and Death Certificates, 2000 - 2004

Youth Risk Behavior Survey (YRBS), 2001, 2003, 2005, and 2007

Acknowledgments



The Washoe County Health District would like to thank everyone who contributed to the development of the report *Chronic Disease in Washoe County*.

Report coordination: Kelli Seals, MPH, Health Educator II

Data coordination: Sharon Clodfelter, BS, Statistician

Narrative contribution: Nicole Alberti, MA, Health Educator I
Erin Dixon, MS, Program Coordinator
Jennifer Stoll-Hadayia, MPA, Public Health Program Manager
Michelle Washington, MPHc, Health Educator II

Special thanks to the following for their additional contributions to this report:

Mary A. Anderson, MD, MPH, District Health Officer
Mary-Ann Brown, RN, MSN, Community and Clinical Health Services Acting Division Director
Tracie Douglas, Public Information Officer
Leslie Elliott, PhD, Senior Epidemiologist
Randall L. Todd, DrPH, Epidemiology and Public Health Preparedness Division Director

Contact Information:

Kelli Seals, MPH
Washoe County Health District
P.O. Box 11130
Reno , NV 89520
(775) 325-8244
kseals@washoecounty.us

Suggested citation: Washoe County Health District, *Chronic Disease in Washoe County*, 2009.

For more information about local chronic disease prevention and healthy living visit:
GetHealthyWashoe.com

