State of Wyoming

Department of Health

Cardiovascular Disease Risk Factors in Wyoming

Results from the 2003 Wyoming Behavioral Risk Factor Surveillance System

Deborah K. Fleming, Ph.D., Director

July 2004

State of Wyoming
Department of Health

Cardiovascular Disease Risk Factors in Wyoming

Results from the 2003 Wyoming Behavioral Risk Factor Surveillance System

Cardiovascular Disease Risk Factors in Wyoming is published by the
Preventive Health and Safety Division
Karl Musgrave, D.V.M., M.P.H., Administrator

Additional information and copies may be obtained from:
Menlo Futa
BRFSS Coordinator
Wyoming Department of Health
Hathaway Building, 4th Floor
Cheyenne, WY 82002
307-777-6012
307-777-5402 (Fax)
mfuta@state.wy.us

Funded by the Centers for Disease Control and Prevention
Cooperative Agreement No. U58/CCU822796-01-1

This document is available in alternative format upon request.

Acknowledgements

Cardiovascular Disease Risk Factors in Wyoming
was written under contract by:

Mary L. Adams, M.P.H.
On Target Health Data LLC
247 North Stone Street
West Suffield, CT 06093

The assistance of the Wyoming residents who participated
in the survey is gratefully acknowledged.

For more information about the Behavioral Risk Factor Surveillance System (BRFSS),
visit the CDC website at www.cdc.gov/brfss.

Table of Contents

Executive Summary

All six major potentially modifiable risk factors for cardiovascular disease (CVD) - smoking, high blood pressure, elevated cholesterol, overweight, physical inactivity, and diabetes – were included on the Wyoming Behavioral Risk Factor Surveillance System (BRFSS) in 2003. This report summarizes those results by addressing each risk factor separately, and addressing persons reporting any of the six factors, or three or more of the six. In addition, workplace exposure to environmental tobacco smoke for non-smokers is considered as a separate risk factor. Associations among risk factors and between risk factors and measures of current health status are also included in the report. Finally, smoking cessation and weight loss attempts are included as strategies to reduce CVD risk.

A total of 4,004 randomly selected non-institutionalized adults 18 years and older were surveyed by telephone in the Wyoming BRFSS during 2003. Results were adjusted for different probabilities of selection and further adjusted to represent the adult population in Wyoming by age and gender. Data were analyzed by sex, age group, race/ethnicity, educational attainment, household income, marital status, population density group, employment, and health insurance status. Over 85% of all respondents, or an estimated 323,000 Wyoming adults, reported one or more of the six potentially modifiable risk factors for CVD, and over one fourth reported three or more. Results showed considerable variation among groups, as noted in the table below.

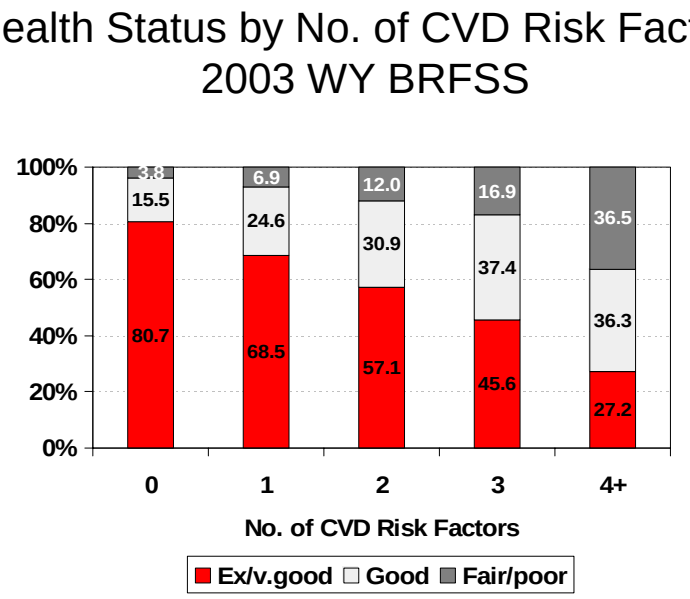
Summary of Results
Wyoming BRFSS 2003

Risk Factor	Prevalence % (CI)	Range of Prevalence Rates (%) and Group			
		Low	Group	High	Group
Smoking (current)	24.6 (23.1-26.2)	10.5	Coll. grads	43.6	<HS grads
Overweight (BMI≥25)	57.1 (55.3-58.9)	42.5	Students	67.8	Age 55-64
High blood pressure	23.8 (22.4-25.3)	5.4	Students	52.8	Age 65+
High cholesterol*	27.1 (25.6-28.6)	4.1	Students	46.1	Age 55-64
Physical inactivity**	44.6 (42.8-46.4)	23.9	Students	59.5	Age 65+
Diabetes	5.8 (5.1-6.6)	0	Age 18-24	16.3	Out of work
Any CVD risk factor	85.1 (83.8-86.4)	68.1	Students	94.3	Out of work
3 or more risk factors	26.8 (25.3-28.3)	5.5	Students	46.1	Retired

* Among all respondents ** Did not meet recommendation for vigorous or moderate exercise

Prevalence rates tended to be lower among younger adults, students, and those with higher levels of education and income. Rates were higher for men, older adults, the retired, out of work, and uninsured adults. After examining risk factors that tended to appear together, overweight adults or those with diabetes, high blood pressure, or high cholesterol were also identified as high-risk groups.

Although smoking, overweight, high blood pressure, high cholesterol, physical inactivity, and diabetes are often addressed because they have been shown to increase future risk for CVD, the results also showed a correlation between these risk factors and current quality of life. For example, the more risk factors respondents reported, the more likely they were to report fair or poor health, and the less likely to report excellent or very good health, as shown below. Other measures of current quality of life that were associated with one or more risk factors included being disabled or out of work. These results suggest that both long-range and immediate rewards may be reaped by successful behavior modification.



I. Introduction

Cardiovascular disease (CVD) is the leading cause of death in Wyoming, accounting for 32% of all deaths in 2002.[1] In addition, over half of the cost of hospital discharges in the state is CVD-related.[2] CVD includes a wide range of diseases affecting the circulatory system, including coronary heart disease, congestive heart failure, high blood pressure, cerebrovascular disease (stroke), and rheumatic heart disease. CVD mortality rates have been declining in recent years in the U.S., with the improvement attributed to both medical advances and improved lifestyles. Despite the decrease in mortality rates, the estimated cost of CVD remains staggering. For 2002, the estimated economic cost of CVD in the U.S. was $329 billion, or about $1,150 per person per year.[3] These figures include direct costs for nursing home care, hospitalizations, surgery, doctor visits, drugs, medical equipment, and home health care, and indirect costs, such as lost productivity due to illness and premature death from CVD. Wyoming's share of these expenditures was estimated to be about $573 million, assuming similar disease rates and charges.

Several factors have been identified which increase the risk of developing CVD.[4] These factors are frequently referred to as *risk factors*, and include both inherent and modifiable categories. Inherent risk factors that cannot be changed include race, sex, age, and family history. For example, men are more likely than women to develop CVD, and risk increases with age for both sexes. Potentially modifiable risk factors for CVD include high blood pressure, elevated blood cholesterol, smoking, diabetes, obesity, and physical inactivity. Most of these modifiable risk factors approximately double the *relative risk* of developing CVD. Relative risk is the ratio of the risk of disease (or death) in two groups, usually one with a risk factor and one without. The first four are considered by some to be the "major risk factors" because they have slightly higher relative risks than obesity or inactivity, while others consider all six major risk factors. This report discusses all six.

Relative risk data are obtained from epidemiologic studies of large populations. For example, such studies have found that smokers are about twice as likely to develop CVD as non-smokers. This does not mean that all smokers will develop CVD, or that non-smokers will not. It simply means that the chances of developing CVD are increased among smokers. Using the relative risk and the prevalence of the risk factor in the population, it is possible to estimate the proportion of death or disease in the population attributable to each risk factor. Table 1 shows the attributable risk for coronary heart disease, a major component of CVD, for the United States. For example, approximately 40 percent of coronary heart disease has been estimated to be attributed to high cholesterol and 22 percent to smoking. The estimate is higher for high cholesterol because there are more adults with elevated cholesterol than there are smokers. Attributable risk estimates total greater than 100% because of interactions between risk factors.

Primary prevention seeks to reduce the incidence of CVD by addressing risk factors. Comparisons of attributable risk can be used by health departments or program managers to prioritize programs. Common primary prevention strategies include exercise programs, smoking cessation, and weight control.

Table 1
Proportion of Coronary Heart Disease Attributed to Various Risk Factors, U.S.[4]

Risk Factor	**Best estimate (%)**	**Range (%)**
Cholesterol ≥200 mg/dL	43	39-47
Physical inactivity	35	23-46
Blood pressure≥140/90	25	20-29
Cigarette smoking	22	17-25
Obesity *	17	7-32
Diabetes	8	1-15

* Based on body mass index >27.8 kg/m^2 for men and >27.3 kg/m^2 for women.

This report discusses each of the six CVD risk factors, the presence of one or more, or three or more of these risk factors, and associations among the risk factors. Associations between each of these risk factors and selected measures of quality of life are also included. In addition, the percent of non-smoking indoor workers who were exposed to secondhand tobacco smoke at work is addressed. The report also includes a section on the risk reduction strategies of smoking cessation and weight control.

II. Methods

The Behavioral Risk Factor Surveillance System (BRFSS) collects data from randomly selected non-institutionalized adults age 18 and older, through monthly telephone surveys. All 50 states currently conduct the survey, with the collaboration and support of the federal Centers for Disease Control and Prevention (CDC). In 2003, Wyoming conducted 4,004 surveys, using the established BRFSS protocol. Following data collection, the results were adjusted by the CDC to account for different probabilities of selection, and further adjusted to be representative of the total adult population of Wyoming by age and gender. Demographics of the sample are shown in Table 2. Note that the sample of respondents under-represents younger adults and males, compared with the weighted percentages which have been adjusted to match the actual population.

Prevalence estimates and confidence intervals were determined with Stata version 8, which takes into account the complex sample design of the BRFSS. The *95% confidence interval,* or margin of error, defines the range of values within which the true population prevalence rate would fall in 95 out of 100 samples taken from the population. Respondents with missing values were excluded from analysis of that variable, unless otherwise noted. With the exception of overweight and income measures, this usually had little effect on the results. Confidence intervals are presented in the Supplemental Tables S-1 through S-12 on pages 27-32 of the report. When comparisons such as "more likely" or "higher than" are made in the findings presented in the report, these results were statistically significant based on Chi square tests of association, noted in the Supplemental Tables with P values <0.05.

Table 2
Demographics of Sample
Wyoming BRFSS 2003
Adults aged 18 and older

	Unweighted Respondents		Weighted Population		Unweighted Respondents		Weighted Population
	N	%	%*		N	%	%*
Total	4,004	100	100	**Education**			
				<HS	276	6.9	7.5
Sex				HS grad	1,310	32.8	33.8
Male	1,657	41.4	50.0	Some coll.	1,303	32.6	33.0
Female	2,347	58.6	50.0	College grad	1,109	27.7	25.8
Race/Ethnicity				**Population density**			
White	3,626	91.4	90.2	Ctys >50K**	1,179	30.2	30.4
Hispanic	173	4.4	5.3	Ctys 10K-50K	1,562	40.0	40.7
Other	170	4.3	4.5	Ctys <10,000	1,166	29.8	28.9
Age				**Insurance status**			
18-24	286	7.2	14.7	Insured	3,379	84.7	82.9
25-34	560	14.1	15.7	Uninsured	610	15.3	17.1
35-44	712	17.9	18.8				
45-54	942	23.7	20.8	**Marital status**			
55-64	674	16.9	13.6	Married	2,382	59.6	64.9
65+	804	20.2	16.4	Not married	1,615	40.4	35.1
Income				**Employment**			
<$15,000	382	9.5	8.8	Employed	2,568	64.3	66.0
$15-<$25,000	658	16.4	15.8	Out of work	288	7.2	6.7
$25-<$50,000	1,301	32.5	33.2	Homemaker	336	8.4	8.2
$50-<$75,00	701	17.5	18.1	Student	106	2.7	4.9
$75,000+	588	14.7	14.9	Retired	699	17.5	14.2
Unknown	374	9.3	9.2				

*WY population, approximate, from weighted data. ** >50K = Laramie and Natrona counties; 10K-50K = Albany, Campbell, Fremont, Sheridan, Sweetwater, Teton, and Uinta counties. Totals may not add to 100% (or 4,004) due to rounding (or missing values).

All estimates derived from survey data are subject to errors from several sources. Measurement error may occur from survey inconsistencies, such as different interviewers reading a question in a slightly different manner. Data entry errors are also possible, although methods are in place to minimize such errors. Non-response error is introduced when respondents refuse to answer, and recall error occurs when their memory of past events is inaccurate. There is also potential error involved in self-reporting information that the respondent may recognize as socially undesirable, such as smoking. Studies have shown that errors in self-reporting height and weight do exist on surveys such as the BRFSS, with women tending to under-report their weight, and men to overestimate their height.[5] While these types of errors cannot easily be measured for a particular survey, the sampling error, which results because only a fraction of the target population answers the questions, can be estimated. The confidence interval, described above, estimates sampling error and provides an indication of the precision of the survey results.

Another limitation is that these data are from a phone survey, and thus the homeless, persons in households without phones (or with only cell phones), and certain disabled persons are not represented. In Wyoming, the rate of phone coverage is about 96% and generally is not a problem overall. Phone coverage may be an issue for deriving accurate estimates among lower income persons, certain demographic groups, or when the item of interest is likely to be much higher among those with no phones (such as lack of health insurance). College students living in dormitories, incarcerated persons, and adults in nursing homes are also not included in the sample. Declining response rates for telephone surveys are another concern. BRFSS response rates in general have declined from about 70% ten years ago to about 50% or less in recent years.

III. Results

A. Risk Factors for Cardiovascular Disease

Cigarette Smoking

Measure: Current cigarette smoking is defined as smoking 100 cigarettes in a person's lifetime and currently smoking every day or some days. Regular smokers are current smokers who smoke every day, while irregular smokers smoke only on some days.

Smoking is the single most preventable cause of death in the U.S., responsible for nearly one in every five deaths, or about 435,000 per year.[6] Smoking increases the risk of heart disease and stroke in addition to increasing the risk of many types of cancer.

Findings:

- About one in every four Wyoming respondents (24.6%) reported current cigarette smoking, representing about 93,500 persons.
- Among all adults, 19.9% smoke every day, 4.8% smoke on some days, and 26.3% are former smokers. In addition, 49.1% never smoked cigarettes. (Totals may not add to 100% due to rounding).
- Highest current smoking rates were found for those with less than a high school education (44%), the uninsured (43%), and those reporting a race or ethnicity other than white or Hispanic (42.4%).
- Smoking rates were also high among adults who were out of work because they were either unemployed or unable to work (41.3%).
- Young adults (Figure 1), those in households with incomes below $25,000, and those who were not married all had current smoking rates above 30%.
- Persons living in the two largest counties were more likely to smoke than those in counties of 10,000 -50,000 population or the smallest counties (<10,000 population) (28.6%, 23.3%, and 21.7% respectively).
- Older persons (Figure 1), those who were retired, college graduates, and persons in households with incomes greater than $75,000 were least likely to smoke, with current smoking rates below 15%.
- Smoking rates were similar for men and women.
- Smokers were more likely than non-smokers to report fair or poor health (17.4% vs. 10.7%), being disabled (22.1% vs. 17.9%) and out of work (11.3% vs. 5.3%) (Figure 2).

Figure 1.

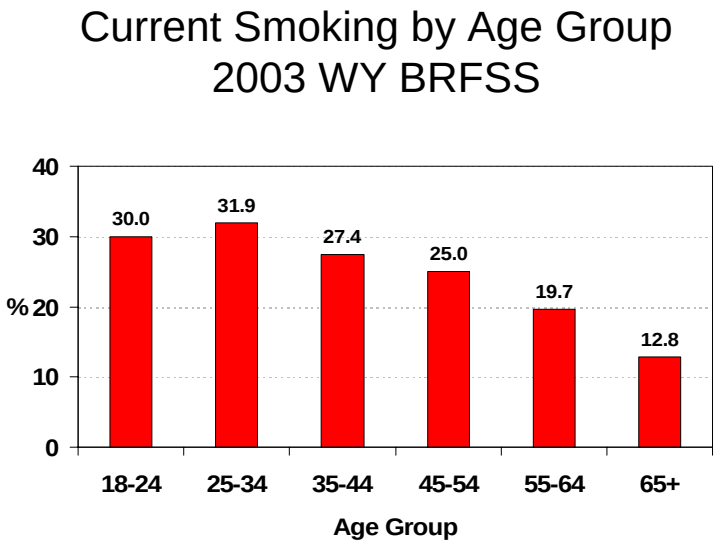
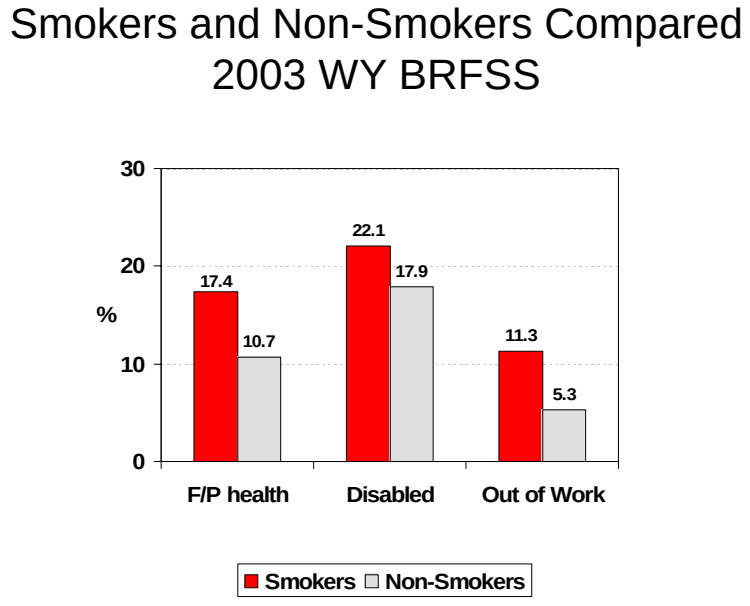


Figure 2.



Overweight

Measure: The definition of overweight was based on Body Mass Index (BMI), which is calculated from the following formula: BMI = body weight (in kilograms)/ height (in meters^2) Persons with BMI≥30 are considered *obese* and those with BMI 25-29.9 are *overweight (but not obese).* In this report, unless otherwise noted, *overweight* refers to persons that are overweight or obese, having a BMI of 25 or above based on self-reported height and weight. Results from self-reports may differ from actual measurements because it has been found that women tend to under-report their weight and all persons tend to exaggerate their height.[5,7]

Obesity is associated with heart disease, while the association between overweight and CVD is less clear. At the least, overweight appears to contribute to CVD risk by raising the probability of developing associated risk factors such as high blood pressure and diabetes.[4]

Findings:

- Over half of all Wyoming respondents (57.1%) were overweight based on their self-reported height and weight, representing nearly 217,000 persons.
- One in five adults (20.1%) was obese, placing them at higher risk of developing CVD.
- The prevalence of overweight was at least 42%, or over 2 in every 5 adults, in every demographic group studied. Rates ranged from 42.5% for students and 42.6% for 18-24 year olds to 67.8% for 55-64 year olds (Figure 3).
- Other demographic groups with higher rates of overweight included men (66.3%), 45-54 year olds (62.7%), those out of work (62.3%), high school graduates (61.7%), and the retired (60.3%).
- Married adults were significantly more likely than the unmarried (which includes divorced and widowed persons) to be overweight (59.8% vs. 52.3%).
- While Hispanics and persons of race/ethnicities other than white or Hispanic appeared to have higher rates for overweight, these rates were not significantly higher than rates for non-Hispanic white adults.
- Overweight persons were more likely than those with BMI < 25 to report that their current health was fair or poor (13.5% vs. 10.6%) or to be disabled (19.8% vs. 17.1%), but not to be out of work (Figure 4).

Figure 3.

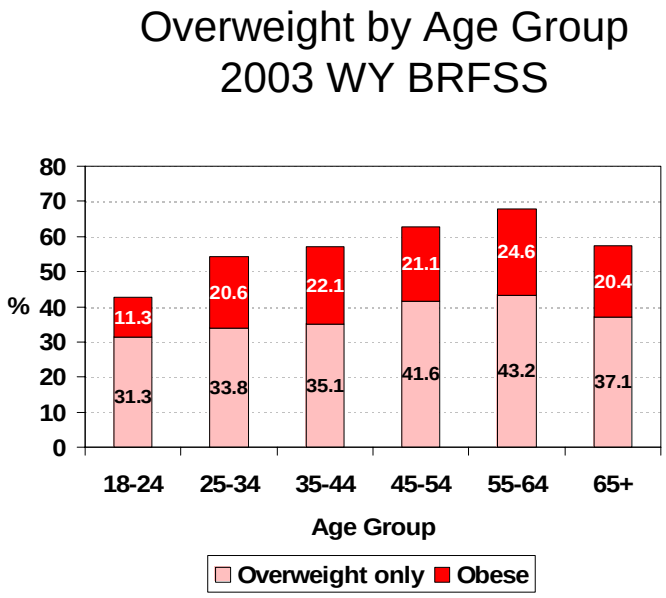
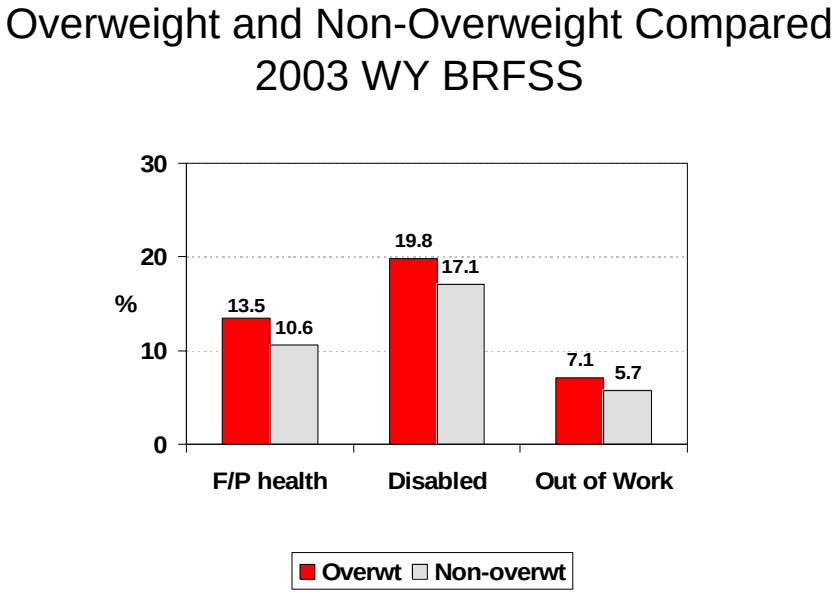


Figure 4.



High Blood Pressure

Measure: Respondents who were ever told by doctor, nurse or other health professional that they had high blood pressure (HBP) were considered to have high blood pressure, unless they were women who were only told during pregnancy.

High blood pressure increases the risk of developing coronary heart disease, stroke, and other forms of CVD. The current definition of high blood pressure is a systolic reading of 140 mm Hg or higher, or a diastolic reading of 90 mm Hg or higher, or taking medication. [4]

Findings:

- Nearly one in every four respondents (23.8%) reported that they had been told they had HBP, representing over 90,000 Wyoming adults.
- High blood pressure prevalence increased greatly with age, from 5.6% for 18-24 year olds to 52.8% for adults age 65 and older (Figure 5).
- High blood pressure rates were lowest for students (5.4%), who tend to be younger, and high for retired persons (51.5%), who tend to be older.
- High blood pressure rates were similar for married and unmarried persons, and for different race and ethic groups. Rates were slightly higher for men than for women (25.3% vs. 22.4%).
- Over one third of persons who were out of work (unemployed or unable to work) reported HBP (33.6%).
- Adults living in the least densely populated counties (those with population < 10,000) were more likely than those in more densely populated counties to report HBP (28.0% for the counties <10,000 vs. 23.1% for the largest counties and 21.2% for mid-sized counties.)
- High blood pressure and body mass index were associated; 39.9% of obese adults and 25.8% of those overweight but not obese reported HBP compared with 14.0% of those who were neither obese nor overweight.
- Compared with persons without HBP, those with high blood pressure were much more likely to report fair or poor health status (8.7% and 24.0% respectively), disability (15.4% vs. 30.2%), and being out of work (5.9% vs. 9.5%; Figure 6).
- Over 70% of all persons with HBP reported taking medication for their high blood pressure, representing 16.9% of all Wyoming adults (data not shown).
- Among adults age 65 and older, 88.9% of those with HBP were taking medication, representing nearly half of all seniors (46.8% of persons age 65+).

Figure 5.

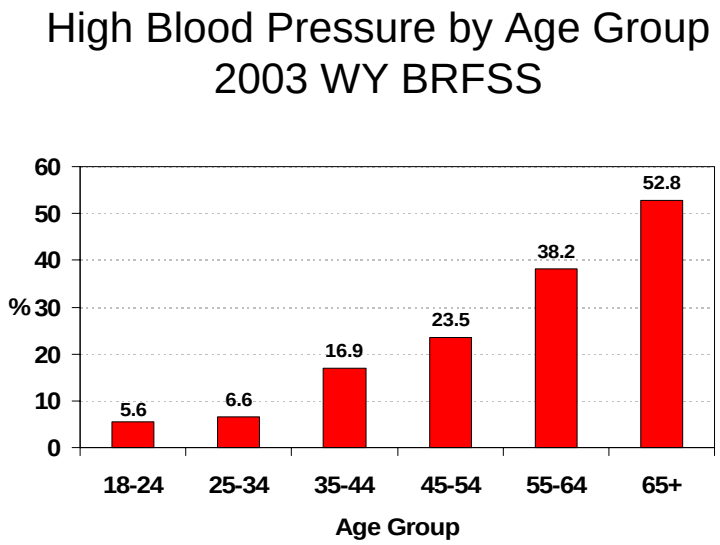
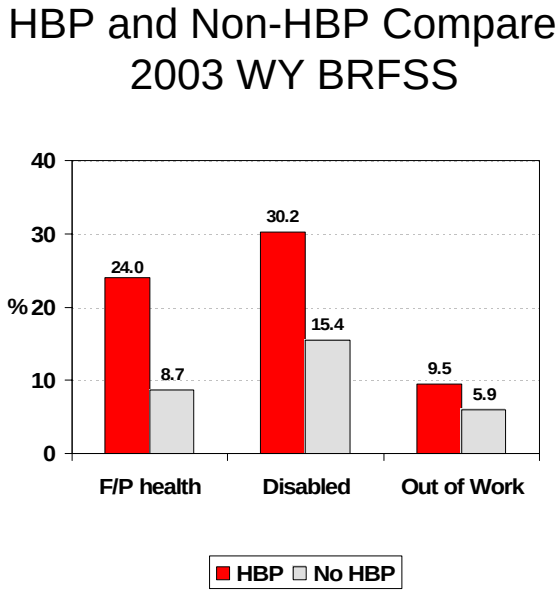


Figure 6.



High Cholesterol

Measure: Respondents were asked if they ever had their cholesterol tested, and if so, they were asked if they had ever been told by a doctor, nurse, or other health professional that their cholesterol was high. The denominator for this measure includes persons who never had their cholesterol checked, and thus is the percent of all adults in Wyoming who have been told their cholesterol was high.

The risk of CVD increases with increasing level of blood cholesterol, over an acceptable level of 200 mg/dL. Levels between 200 and 239 mg/dL are considered borderline-high, and levels of 240 mg/dL and above are considered high. High total cholesterol levels of 240 mg/dL and above can about double the risk of CVD.[4]

Findings:

- Overall, 27.1% of Wyoming respondents reported that they had been told their cholesterol was high, representing over 100,000 persons.
- Over one in every five adults (22.3%) had never had their cholesterol checked and were included with those who were not told their level was high (data not shown).
- High cholesterol increased with age, from 4.8% for 18-24 year olds to 46.1% for adults 55-64 and 44.9% for adults age 65 and older (Figure 7).
- Persons living in the least densely populated counties were more likely than those in other counties to report high cholesterol (30.9% for smallest counties, 26.1% for largest counties, and 25.0% for those in-between).
- Married persons (30.0%) and those who were out of work (32.9%) or retired (45.0%) reported high rates for high cholesterol.
- High cholesterol was not associated with gender, race/ethnicity, education, or household income.
- Over one in ten adults (11.5%) reported both high blood pressure and high cholesterol, including over one fourth of all adults age 65 and older (25.3%; data not shown).
- Persons with high cholesterol were more likely than those without high cholesterol to report fair or poor health (18.8% vs. 9.8%), being disabled (24.8% vs. 16.8%) and being out of work (8.0% vs. 6.1%; Figure 8).

Figure 7.

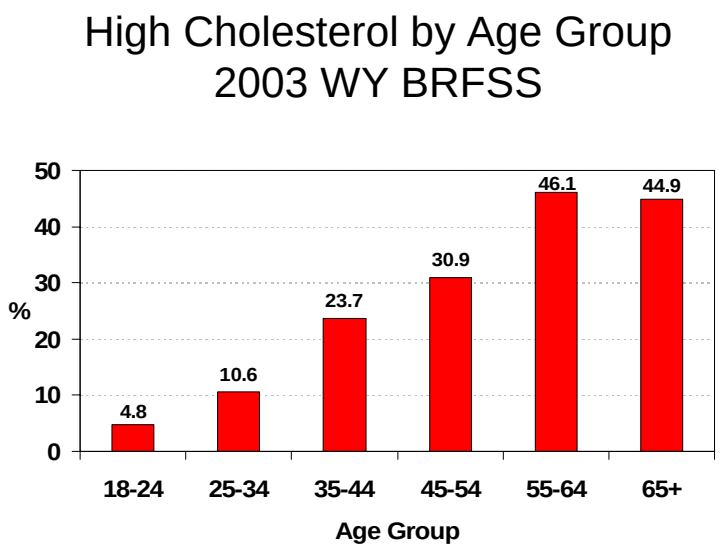
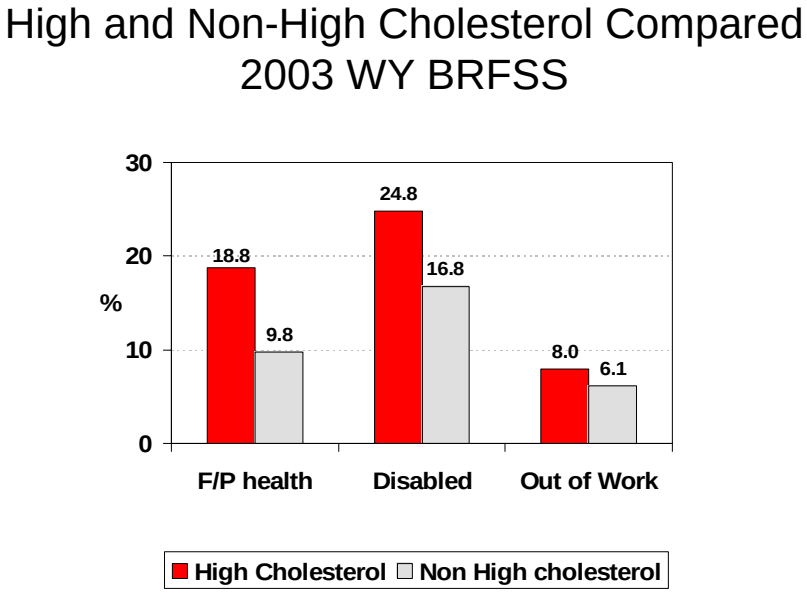


Figure 8.



Physical Inactivity

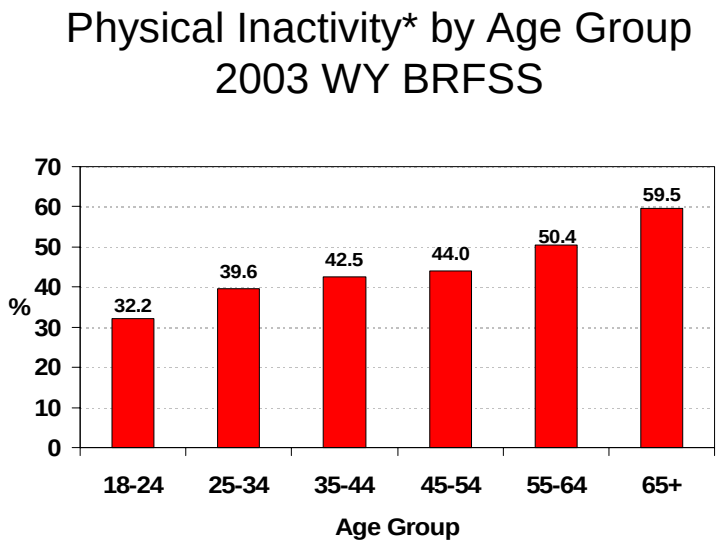
Measure: Several questions were asked about the frequency and duration of both moderate and vigorous activities that persons engaged in while not at work. Results were combined to determine the percent of respondents that met the recommendations to engage in moderate activities for 30 minutes a day at least 5 times a week or vigorous activities for 20 minutes a day at least 3 times a week. Those that did not meet either of these recommendations were considered to be physically inactive or "at risk".

Physical inactivity affects the risk of CVD both directly and indirectly, although the direct effects are not well understood. Exercise affects other CVD risk factors, including high blood pressure, high cholesterol, overweight, and diabetes. When all other effects are ruled out, physical inactivity increases the relative risk of CVD about 1.9 times, or about doubles the risk.[4]

Findings:

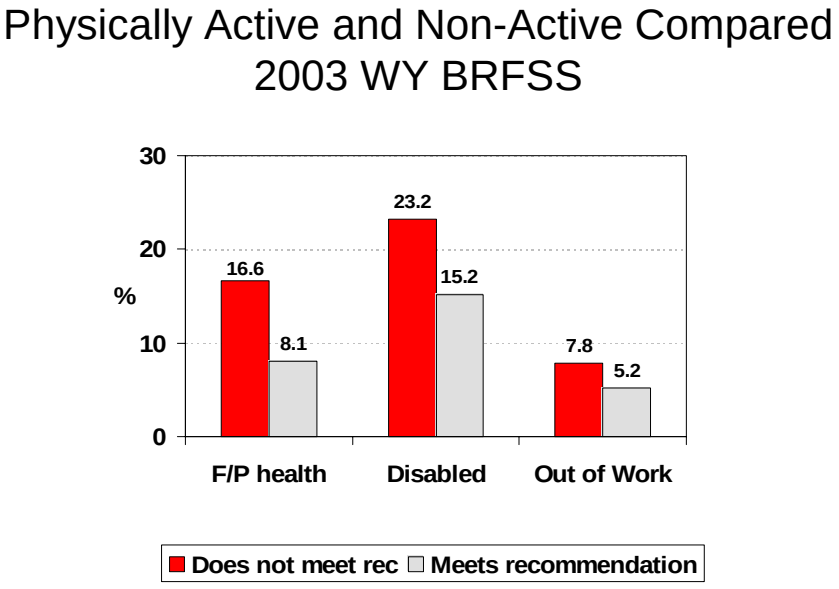
- Over two in every five Wyoming respondents (44.6%) were not meeting the recommendations for physical activity, representing an estimated 169,500 persons.
- Adults who were least likely to be exercising adequately included persons age 65 and older (59.5%) (Figure 9), the retired (58.4%), the obese (55.3%), the out of work (54.8%), those with less than a high school education (53.2%), those from low income households (>50%), and 55-64 year olds (50.4%).
- Students were the least likely to be at risk for physical inactivity, with 23.9% not meeting the recommendations.
- Young adults age 18-24 or 25-34 years of age (Figure 9) or adults from households with incomes of $75,000 or more were also more likely to be exercising (with 32.2%, 39.6%, and 35.7% respectively *not* meeting the recommendations).
- Physical inactivity was not associated with gender, marital status, race/ethnicity, or insurance status, and was only weakly associated with population density.
- About one fourth of those who did not meet the exercise recommendation engaged in no activity at all (10.5% of all respondents). Significant reductions in CVD risk could be gained by encouraging this group to initiate at least some physical activity.
- Persons who did not meet the exercise recommendations were twice as likely to report fair or poor health as those that exercised regularly (16.6% vs. 8.1%) and were also more likely to report being disabled (23.2% vs. 15.2%) and out of work (7.8% vs. 5.2%) (Figure 10).

Figure 9.



* Does not meet recommendation for vigorous or moderate exercise

Figure 10.



Diabetes

Measure: Respondents were asked if they had ever been told by a doctor that they had diabetes. Women who had only been told they had diabetes during pregnancy were not included as having had diabetes. No distinction was made between other types of diabetes.

Diabetes is a significant health problem itself, but also increases the risk for coronary heart disease 2-4 times. About 68% of people with diabetes die from CVD.[4]

Findings:

- The prevalence of diabetes among Wyoming adults was 5.8%, representing an estimated 22,000 persons.
- Diabetes was extremely age-dependent, increasing from 0% among 18-24 year olds to 12.1% for 55-64 year olds and 13.3% for adults age 65 and older (Figure 11).
- Demographic groups with high diabetes rates included those with less than a high school education (10.0%), and those in households with less than $25,000 income (9.4%).
- High diabetes rates were also found among the out of work (16.3%), the retired (13.1%), and the obese (12.6%).
- Similar diabetes rates were found for men and women, for different race and ethnic groups, by marital and insurance status, and for counties with varying population density.
- Persons with diabetes were four times as likely as those without diabetes to report fair or poor health (43.5% vs. 10.4%), over twice as likely to report being disabled (41.7% vs. 17.5%) and three times as likely to report being out of work (19.0% vs. 6.0%; Figure 12).

Figure 11.

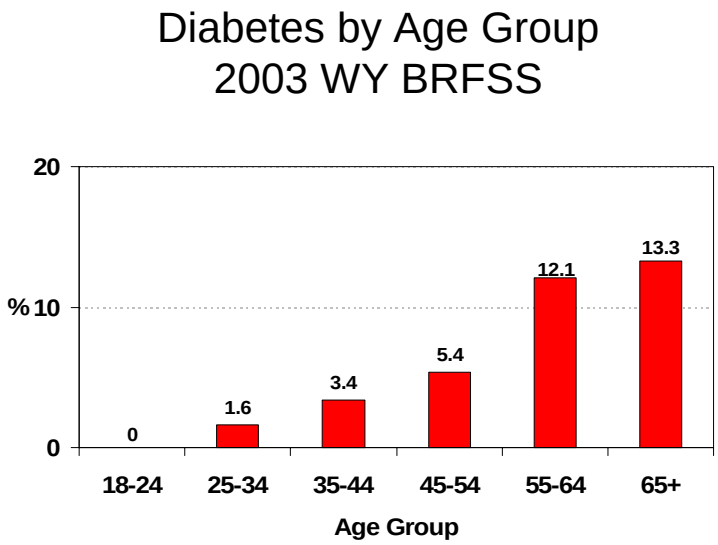
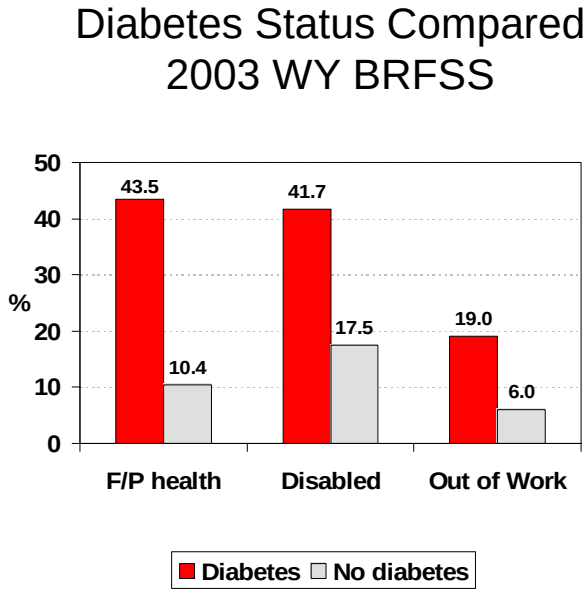


Figure 12.



Exposure to Workplace Environmental Tobacco Smoke (ETS)

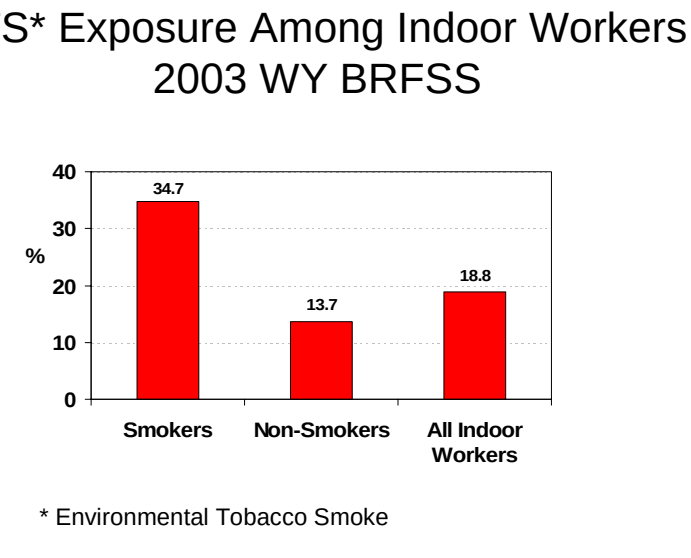
Measure: Employed or self-employed persons who worked indoors most of the time were asked a state-added question about how often they were exposed to secondhand cigarette smoke at work. Persons who were frequently or sometimes exposed were considered to be at risk. Those who were exposed seldom or never were considered not at risk, although they could be exposed to ETS at home or other places. Unless otherwise noted, this measure is only reported for non-smokers who worked mostly indoors because smokers already have considerable elevated risk of CVD due to their smoking and exposure to their own secondhand smoke. In addition to the usual demographics, this measure was also analyzed by region. Counties were grouped into the following five regions: **Southeast** (Albany, Goshen, Laramie, Platte), **Southwest** (Carbon, Lincoln, Sweetwater, Sublette, Uinta), **Northwest** (Big Horn, Hot Springs, Park, Teton, Washakie), **Northeast** (Campbell, Crook, Johnson, Sheridan, Weston), and **Central** (Converse, Fremont, Natrona, Niobrara).

About 35,000 non-smokers are estimated to die each year from heart disease brought on by exposure to tobacco smoke. [8]

Findings:

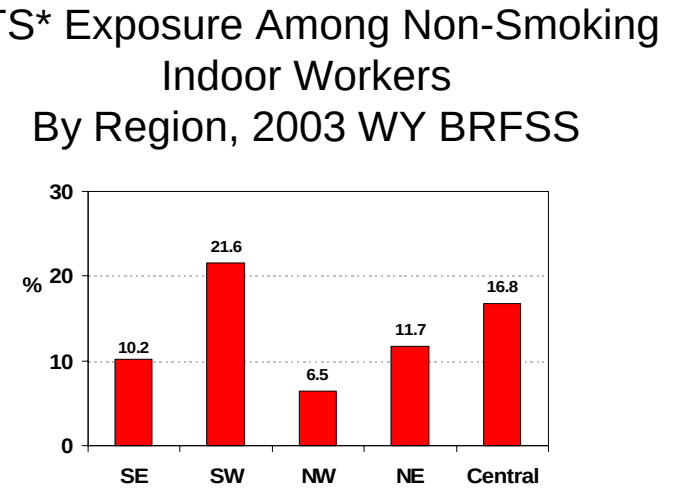
- Among all 1,788 respondents who worked indoors most of the time, 18.8% (representing approximately 31,000 workers) reported being exposed to secondhand tobacco smoke at work. Smokers were much more likely than non-smokers to be exposed (Figure 13).
- Over half (55%) of these exposed employees were non-smokers, representing about 17,000 non-smoking workers exposed to ETS.
- Considering only the 1,357 *non-smokers* who worked indoors, 13.7% of these non-smokers who worked indoors reported they were exposed to ETS at work.
- Non-smoking high school graduates who worked indoors and residents of the Southwest Region (Figure 14) had highest rates of exposure to ETS (20.8% and 21.6% respectively).
- College graduates (5.2%), residents of the Northwest Region (6.5%; Figure 14) and adults age 65 and older (8.7%) were among the non-smokers less likely to be exposed to environmental tobacco smoke at work.
- The rate of non-smoker exposure to ETS among all non-smokers who were employed was 9.7%, or nearly one in every ten employed non-smokers.
- Uninsured non-smokers were also more likely than insured non-smokers to report exposure to ETS at work (20.5% vs. 12.8% for the insured).
- A total of 29.7% of all respondents either smoked or were non-smokers exposed to ETS at work.
- No differences were noted between non-smokers who were exposed and those not exposed to ETS at work for health or disability status.

Figure 13.



* Environmental Tobacco Smoke

Figure 14.



* Environmental Tobacco Smoke

Multiple Risk Factors

Measure: The number of potentially modifiable CVD risk factors reported by each respondent was tallied and could be anywhere from zero to six. Persons with missing values were included in the denominator and thus were assumed to not have the risk factor. Non-smoker exposure to workplace ETS was not included in this measure. Analyses were done comparing persons reporting no risk factors with those reporting any, and those with fewer than three CVD risk factors with those who reported three or more.

Findings:

- Only about 15% of respondents reported none of the CVD risk factors, with 85.1% reporting at least one, representing an estimated 323,000 Wyoming adults.
- Men were more likely than women to report any of the potentially modifiable CVD risks (88.6% vs. 81.7%).
- Thirty percent of all respondents reported one risk factor, 28.3% reported two, 17.8% reported three, 7.0% reported four, and about 2% reported five or all six. Results differed for men and women as shown in Figure 15. Men reported an average of 1.90 risk factors compared with 1.66 for women.
- Over one fourth (26.8%) of all Wyoming adults reported three or more CVD risk factors.
- Older adults, those with less education, those having lower household incomes, and the disabled were more likely than other persons to report three or more risk factors, which is consistent with results for the separate risk factors.
- The number of CVD risk factors was strongly associated with self-reported general health status as shown in Figure 16. The more risk factors reported, the more likely the respondent was to report fair or poor health.
- Persons with more CVD risk factors were also more likely to report being disabled and out of work. For example, 10.1% of persons with no risk factors were disabled, compared with 20.5% with one or more, and 29.0% with three or more. Only 2.6% of adults with no risk factors were out of work, compared with 7.5% with one or more, and 10.6% with three or more.

Figure 15.

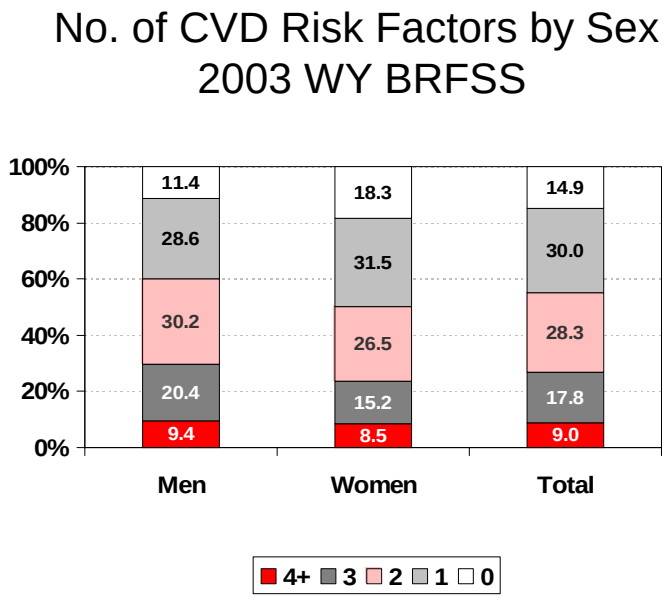
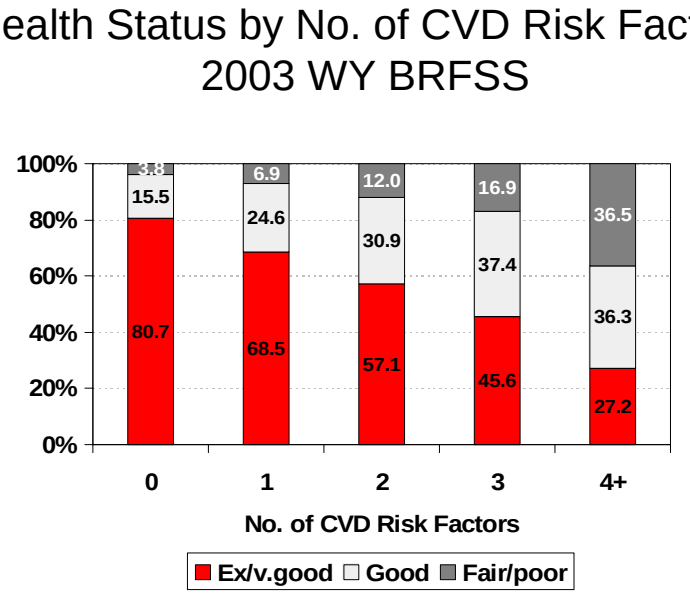


Figure 16.



Risk Factor Associations

Many of the CVD risk factors were associated; that is, they tended to occur together in the same person. Table 3 illustrates these associations, with those that were significantly more likely to occur together indicated in pink. Risk factors were negatively associated, or occurred together less often than expected, are indicated in light gray. Note that each risk factor was either positively or negatively associated with at least four of the other five risk factors.

Table 3
Associations between Risk Factors

	Prevalence of this risk factor					
Of those in this risk group:	Overwt.	HBP	High Chol. As % of all	Diabetes	Does Not Meet PA recomm. *	Current Smoking
All adults	57.1	23.8	27.1	5.8	44.6	24.6
Overweight						
Yes		30.8	33.4	8.2	47.4	22.0
No		14.0	18.7	2.6	40.4	28.0
High Blood Pressure						
(HBP) Yes	74.6		48.3	15.5	52.6	19.8
No	51.7		20.4	2.8	42.1	26.1
High Cholesterol						
Yes	70.6	42.4		12.1	51.1	18.7
No	52.3	16.8		3.4	41.7	26.5
Diabetes						
Yes	80.9	63.6	56.5		60.6	18.2
No	55.7	21.3	25.3		43.6	25.0
PA recomm.*						
Doesn't meet	61.3	27.9	31.3	7.9		25.4
Does meet	54.4	20.2	23.7	4.1		23.7
Current Smoking						
Yes	51.1	19.2	20.8	4.3	46.3	
No	59.1	25.3	29.1	6.3	44.1	

* PA: physical activity; recommendation is for moderate or vigorous activity.

Guide to reading table: Select a risk factor from the left hand column and compare those with the risk factor (yes), to those without the risk factor (no). Example: 30.8% of overweight persons had high blood pressure, compared with 14.0% of those who were not overweight. Risk factors that were associated ($p<0.05$) are indicated by shading. Negative associations, where persons were *less* likely to report the risk factor, are indicated by lighter shading (e.g. Smoking and various other risk factors).

While the data in these tables and charts were not adjusted for differences in the age or sex of the respondents, additional analyses were done to determine if these associations still held when controlling for sex, age, and the other risk factors. Most results remained unchanged, although a few were apparently affected (confounded) by other factors. The negative associations between smoking and diabetes, and smoking and high blood pressure were no longer found when the analysis was controlled for these other factors. In addition, the exercise risk factor was no longer associated with high blood pressure or high cholesterol when controlled for sex, age, and the other risk factors.

Associations between the risk factors and measures of current quality of life are shown in Table 4. These data were reported in the findings for each risk factor but are summarized here for convenience.

Table 4
Associations of CVD Risk Factors with
Selected Measures of Health and Health Status

	Prevalence of this factor		
Of those in this risk group:	F/P Health	Disabled	Out of Work
All adults	12.3	18.9	6.7
High BP			
Yes	24.0	30.2	9.5
No	8.7	15.4	5.9
BMI≥25			
Yes	13.5	19.8	7.1
No	10.6	17.1	5.7
High Cholesterol			
Yes	18.8	24.8	8.0
No	9.8	16.8	6.1
Diabetes			
Yes	43.5	41.7	19.0
No	10.4	17.5	6.0
PA recommendation*			
Doesn't meet	16.6	23.2	7.8
Does meet	8.1	15.2	5.2
Current Smoking			
Yes	17.4	22.1	11.3
No	10.7	17.9	5.3
1+ CVD risks			
Yes	13.8	20.5	7.5
No	3.8	10.1	2.6
3+ CVD risks			
Yes	23.5	29.0	10.6
No	8.2	15.2	5.3

* PA: physical activity; recommendation is for either moderate or vigorous exercise
Out of work = those unemployed or unable to work, compared with ALL others, including the retired, self-employed, homemakers, etc.

Guide to reading table: Select a risk factor from the left hand column and compare those with the risk factor (yes), to those without the risk factor (no). Risk factors that were associated ($p<0.05$) are indicated in pink.

B. Risk Reduction

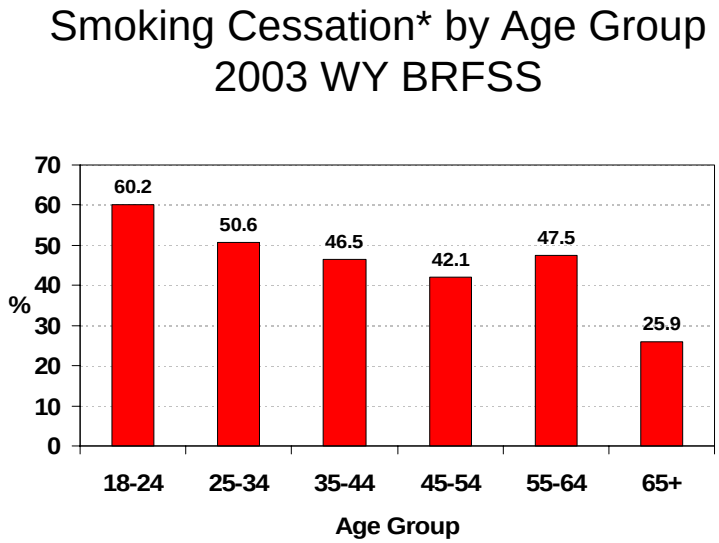
Smoking Cessation

Measure: Smokers were asked if they had stopped smoking for a day or longer in the past year because they were trying to quit. Only persons who smoked every day were included in this measure.

Findings:

- Nearly half of all daily smokers (47.1%) stopped smoking for at least one day in the previous year because they were trying to quit, representing about 35,000 smokers.
- Younger smokers were the most likely to try to stop smoking, with 60.2% of 18-24 year old and 50.6% of 25-34 year old daily smokers reporting they stopped one day or more (Figure 17).
- Older smokers were the least likely to report stopping smoking for a day or more (25.9% of smokers age 65 and older; Figure 17).
- There were no statistically significant differences noted among the other demographic groups examined.
- Over half of all adults in Wyoming who ever smoked have quit smoking and are considered former smokers, representing 26.3% of all adults (data not shown).

Figure 17.



* Daily smokers who quit for 1 or more days in past year

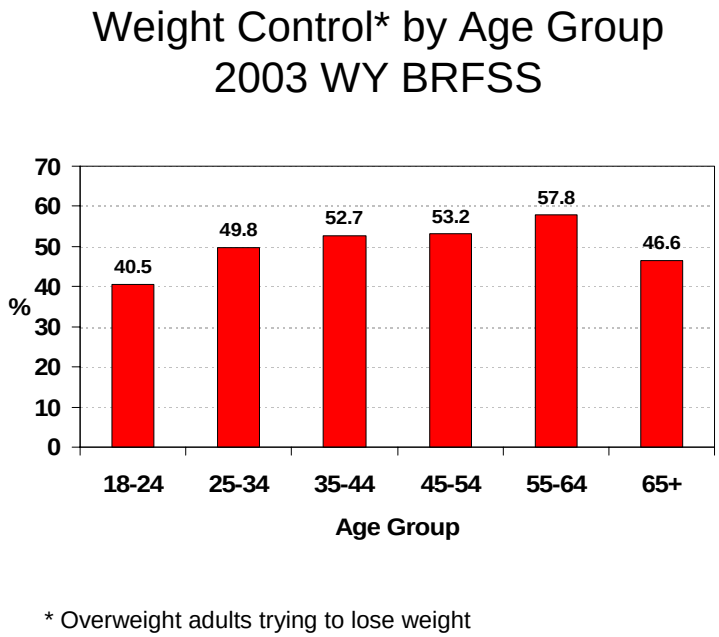
Weight Control

Measure: All respondents were asked if they were trying to lose weight. This measure, however, looks only at those respondents who were overweight and trying to lose weight.

Findings:

- Over half (50.8%) of all overweight adults reported they were trying to lose weight.
- Overweight women were more likely than overweight men to report trying to lose weight (64.3% vs. 41.5%).
- Persons between 35 and 64 years old were more likely than younger or older persons to be trying to lose weight (Figure 18).
- Married persons were more likely than the non-married to be trying to lose weight (52.9% vs. 46.5%).
- Overweight students were least likely to be trying to lose weight, with only 21.5% so reporting.
- Among the overweight who were trying to lose weight, over half (53.2%) reported a desired weight that would still place them in the overweight category (data not shown).

Figure 18.



* Overweight adults trying to lose weight

IV. Summary

The results presented in this report indicate that in 2003, 85.1% of all Wyoming adults, or an estimated 323,000 persons, had one or more of the six potentially modifiable risk factors related to cardiovascular disease. Or, conversely, only about 15% of all adults appear to be practicing lifestyles that were not increasing their risk of CVD. Over one fourth of all adults reported three or more risk factors for CVD. There was a wide range of results for different demographic groups, as summarized in Table 5 below.

Table 5
Summary of Results
Wyoming BRFSS 2003

Risk Factor	Prevalence % (CI)	Range of Prevalence Rates (%) and Group			
		Low	Group	High	Group
Smoking (current)	24.6 (23.1-26.2)	10.5	Coll. grads	43.6	<HS grads
Overweight (BMI≥25)	57.1 (55.3-58.9)	42.5	Students	67.8	Age 55-64
High blood pressure	23.8 (22.4-25.3)	5.4	Students	52.8	Age 65+
High cholesterol*	27.1 (25.6-28.6)	4.1	Students	46.1	Age 55-64
Physical inactivity **	44.6 (42.8-46.4)	23.9	Students	59.5	Age 65+
Diabetes	5.8 (5.1-6.6)	0	Age 18-24	16.3	Out of work
Any CVD risk factor	85.1 (83.8-86.4)	68.1	Students	94.3	Out of work
3 or more risk factors	26.8 (25.3-28.3)	5.5	Students	46.1	Retired

* Among all respondents **Did not meet recommendation for vigorous or moderate exercise

Prevalence rates tended to be lower among younger adults, students, and those with higher levels of education and income. Rates were higher among men, older adults, the retired, out of work, and uninsured adults. After examining risk factors that tended to appear together, overweight persons and those with diabetes, high blood pressure, or high cholesterol were also identified as high-risk groups. The range of results shown in Table 5 suggests that improvement is possible. Results also indicate that about half of smokers and half of the overweight were trying to improve.

Although smoking, overweight, high blood pressure, high cholesterol, physical inactivity, and diabetes are often addressed because they have been shown to increase future risk for CVD, the results also showed a correlation between these risk factors and current quality of life. For example, the more risk factors respondents reported, the more likely they were to report fair or poor health, and the less likely to report excellent or very good health. Persons reporting CVD risk factors were also more likely to report being disabled or out of work. These results suggest that both long-range and immediate rewards may be reaped by successful behavior modification.

Table S-1: Current Smoking

Population Group	Weighted Percent	Confidence Interval
Total	24.6	23.1-26.2
Gender		
Male	25.1	22.8-27.6
Female	24.1	22.2-26.2
	P=0.552	
Age Group		
18-24	30.4	25.0-36.5
25-34	31.9	27.7-36.4
35-44	27.4	23.9-31.2
45-54	25.0	22.1-28.2
55-64	19.7	16.6-23.2
65+	12.8	10.5-15.6
	P<0.001	
Race		
White, non-Hispanic	23.4	21.8-25.0
Hispanic	30.1	22.6-38.9
Other race	42.4	33.9-51.3
	P<0.001	
Education		
< High School grad	43.6	36.7-50.8
High School grad	31.1	28.3-34.1
Some college	24.8	22.2-27.6
College grad	10.5	8.7-12.7
	P<0.001	
Household Income		
<$15,000	32.0	26.6-37.9
$15K-$24,999	31.3	27.2-35.8
$25K-$49,999	26.2	23.5-29.1
$50K-$74,999	20.4	17.3-24.0
$75,000+	14.3	11.4-17.9
Unknown	25.1	20.0-31.0
	P<0.001	
Marital Status		
Married	20.9	19.2-22.8
Not married	31.5	28.6-34.4
	P<0.001	
Population Density		
Counties >50,000	28.6	25.6-31.8
Counties 10,000-50,000	23.3	20.9-25.8
Counties <10,000	21.7	19.2-24.5
	P=0.002	
Employment		
Employed	26.2	24.2-28.2
Out of work	41.3	34.7-48.1
Homemaker	20.8	15.9-26.8
Student	17.1	10.9-25.8
Retired	14.6	12.0-17.6
	P<0.001	
Insurance status		
Insured	21.0	19.5-22.6
Uninsured	43.0	38.4-47.7
	P<0.001	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-2: Overweight (BMI ≥25)

Population Group	Weighted Percent	Confidence Interval
Total	57.1	55.3-58.9
Gender		
Male	66.3	63.6-68.9
Female	47.6	45.3-50.0
	P<0.001	
Age Group		
18-24	42.6	36.4-49.0
25-34	54.4	49.8-58.9
35-44	57.2	53.2-61.2
45-54	62.7	59.3-66.0
55-64	67.8	63.8-71.6
65+	57.5	53.7-61.2
	P<0.001	
Race		
White, non-Hispanic	56.5	54.6-58.3
Hispanic	63.5	54.6-71.5
Other race	64.1	55.4-72.0
	P=0.086	
Education		
< High School grad	51.1	44.1-58.0
High School grad	61.7	58.6-64.7
Some college	55.7	52.5-58.9
College grad	55.1	51.7-58.3
	P=0.004	
Household Income		
<$15,000	57.2	50.8-63.3
$15K-$24,999	58.5	53.8-62.9
$25K-$49,999	57.9	54.8-60.9
$50K-$74,999	57.7	53.6-61.8
$75,000+	57.7	53.2-62.1
Unknown	49.9	43.6-56.2
	P=0.298	
Marital Status		
Married	59.8	57.7-61.9
Not married	52.3	49.1-55.4
	P<0.001	
Population Density		
Counties >50,000	55.3	51.9-58.6
Counties 10,000-50,000	57.8	55.0-60.7
Counties <10,000	58.3	55.0-61.5
	P=0.379	
Employment		
Employed	57.9	55.7-60.1
Out of work	62.3	55.4-68.8
Homemaker	50.4	44.4-56.5
Student	42.5	32.0-53.8
Retired	60.3	56.3-64.1
	P=0.001	
Insurance status		
Insured	57.5	55.5-59.4
Uninsured	56.5	51.7-61.1
	P=0.708	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-3: High Blood Pressure

Population Group	Weighted Percent	Confidence Interval
Total	23.8	22.4-25.3
Gender		
Male	25.3	23.1-27.6
Female	22.4	20.6-24.2
	P=0.047	
Age Group		
18-24	5.6	3.1-9.8
25-34	6.6	4.4-9.7
35-44	16.9	14.0-20.2
45-54	23.5	20.7-26.6
55-64	38.2	34.3-42.3
65+	52.8	49.0-56.5
	P<0.001	
Race		
White, non-Hispanic	24.0	22.5-25.6
Hispanic	19.1	13.3-26.7
Other race	22.2	16.4-29.2
	P=0.338	
Education		
< High School grad	29.2	23.7-35.3
High School grad	26.8	24.3-29.5
Some college	19.9	17.6-22.4
College grad	22.9	20.4-25.7
	P=0.001	
Household Income		
<$15,000	26.9	22.2-32.2
$15K-$24,999	27.5	23.9-31.4
$25K-$49,999	23.3	20.9-25.8
$50K-$74,999	20.7	17.7-24.1
$75,000+	19.3	16.1-22.9
Unknown	29.8	24.5-35.7
	P=0.001	
Marital Status		
Married	24.5	22.8-26.4
Not married	22.5	20.2-24.9
	P=0.174	
Population Density		
Counties >50,000	23.1	20.7-25.8
Counties 10,000-50,000	21.2	19.0-23.6
Counties <10,000	28.0	25.2-30.8
	P=0.001	
Employment		
Employed	18.5	16.9-20.2
Out of work	33.6	27.9-39.9
Homemaker	21.6	17.2-26.8
Student	5.4	1.7-16.3
Retired	51.5	47.5-55.4
	P<0.001	
Insurance status		
Insured	25.3	23.7-26.9
Uninsured	17.1	14.0-20.8
	P<0.001	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-4: High Cholesterol

Population Group	Weighted Percent	Confidence Interval
Total	27.1	25.6-28.6
Gender		
Male	27.7	25.4-30.1
Female	26.5	24.6-28.5
	P=0.456	
Age Group		
18-24	4.8	2.7-8.5
25-34	10.6	7.9-14.1
35-44	23.7	20.3-27.3
45-54	30.9	27.7-34.3
55-64	46.1	42.0-50.3
65+	44.9	41.2-48.8
	P<0.001	
Race		
White, non-Hispanic	27.5	25.9-29.1
Hispanic	18.5	13.0-25.7
Other race	28.7	21.3-37.4
	P=0.058	
Education		
< High School grad	28.6	23.0-34.9
High School grad	26.4	23.9-29.1
Some college	24.9	22.4-27.6
College grad	30.1	27.3-33.2
	P=0.068	
Household Income		
<$15,000	24.6	19.9-29.8
$15K-$24,999	28.3	24.6-32.3
$25K-$49,999	26.1	23.6-28.8
$50K-$74,999	27.1	23.7-30.8
$75,000+	27.6	23.8-31.7
Unknown	30.3	25.1-36.1
	P=0.640	
Marital Status		
Married	30.0	28.1-32.0
Not married	21.6	19.4-24.0
	P<0.001	
Population Density		
Counties >50,000	26.1	23.4-28.9
Counties 10,000-50,000	25.0	22.7-27.5
Counties <10,000	30.9	28.1-33.9
	P=0.006	
Employment		
Employed	24.6	22.8-26.5
Out of work	32.9	27.0-39.5
Homemaker	24.5	19.8-29.9
Student	4.1	1.6-9.9
Retired	45.0	41.0-49.1
	P<0.001	
Insurance status		
Insured	29.0	27.3-30.7
Uninsured	18.3	15.0-22.1
	P<0.001	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-5: Physical Inactivity

Population Group	Weighted Percent	Confidence Interval
Total	44.6	42.8-46.4
Gender		
Male	43.4	40.6-46.1
Female	45.9	43.6-48.2
	P=0.170	
Age Group		
18-24	32.2	26.5-38.4
25-34	39.6	35.1-44.2
35-44	42.5	38.6-46.6
45-54	44.0	40.4-47.6
55-64	50.4	46.1-54.6
65+	59.5	55.6-63.3
	P<0.001	
Race		
White, non-Hispanic	44.8	42.9-46.7
Hispanic	45.7	37.2-54.5
Other race	39.5	31.3-48.3
	P=0.517	
Education		
< High School grad	53.2	45.9-60.4
High School grad	48.0	44.8-51.2
Some college	42.8	39.6-46.0
College grad	40.2	37.0-43.5
	P=0.001	
Household Income		
<$15,000	50.3	43.8-56.9
$15K-$24,999	51.5	46.9-56.1
$25K-$49,999	43.5	40.4-46.6
$50K-$74,999	42.4	38.3-46.5
$75,000+	35.7	31.5-40.0
Unknown	51.7	45.1-58.2
	P<0.001	
Marital Status		
Married	44.4	42.2-46.6
Not married	45.0	41.8-48.2
	P=0.780	
Population Density		
Counties >50,000	46.9	43.6-50.3
Counties 10,000-50,000	41.7	38.8-44.6
Counties <10,000	45.3	42.0-48.7
	P=0.049	
Employment		
Employed	42.4	40.2-44.7
Out of work	54.8	47.7-61.6
Homemaker	44.0	38.1-50.2
Student	23.9	16.2-33.9
Retired	58.4	54.3-62.4
	P<0.001	
Insurance status		
Insured	45.3	43.3-47.2
Uninsured	41.8	37.1-46.6
	P=0.187	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-6: Diabetes

Population Group	Weighted Percent	Confidence Interval
Total	5.8	5.1-6.6
Gender		
Male	6.2	5.1-7.4
Female	5.5	4.6-6.5
	P=0.369	
Age Group		
18-24	0	
25-34	1.6	0.8-3.2
35-44	3.4	2.1-5.3
45-54	5.4	3.9-7.4
55-64	12.1	9.7-15.1
65+	13.3	11.0-16.1
	P<0.001	
Race		
White, non-Hispanic	5.5	4.8-6.4
Hispanic	7.5	4.2-12.9
Other race	9.7	6.1-15.1
	P=0.069	
Education		
< High School grad	10.0	6.8-14.5
High School grad	5.8	4.7-7.2
Some college	6.1	4.8-7.7
College grad	4.3	3.3-5.8
	P=0.007	
Household Income		
<$15,000	9.4	6.6-13.3
$15K-$24,999	9.4	7.2-12.0
$25K-$49,999	6.4	5.1-7.9
$50K-$74,999	2.3	1.4-3.6
$75,000+	2.7	1.6-4.4
Unknown	6.4	4.3-9.6
	P<0.001	
Marital Status		
Married	6.1	5.2-7.2
Not married	5.3	4.3-6.5
	P=0.259	
Population Density		
Counties >50,000	5.6	4.3-7.1
Counties 10,000-50,000	5.2	4.2-6.4
Counties <10,000	7.2	5.7-9.0
	P=0.097	
Employment		
Employed	3.4	2.7-4.2
Out of work	16.3	12.1-21.6
Homemaker	6.6	4.3-9.9
Student	1.0	0.2-3.9
Retired	13.1	10.7-16.0
	P<0.001	
Insurance status		
Insured	6.2	5.4-7.1
Uninsured	4.3	3.0-6.3
	P=0.083	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-7: Non-Smokers Exposed to Secondhand Smoke
(N= 1,357 non-smokers who work mostly indoors)

Population Group	Weighted Percent	Confidence Interval
Total	13.7	11.7-16.0
Gender		
Male	18.1	14.5-22.3
Female	10.3	8.2-12.8
	P<0.001	
Age Group		
18-24	18.8	11.4-29.5
25-34	14.0	9.9-19.4
35-44	12.4	9.0-16.8
45-54	13.6	10.3-17.7
55-64	11.9	8.1-17.1
65+	8.7	3.2-21.5
	P=0.462	
Race		
White, non-Hispanic	13.6	11.6-16.0
Hispanic	17.1	8.8-30.8
Other race	---	----
	P=0.572	
Education		
< High School grad	---	----
High School grad	20.8	16.0-26.6
Some college	17.4	13.6-21.9
College grad	5.2	3.6-7.4
	P<0.001	
Household Income		
<$25,000	18.9	13.0-26.6
$25K-$49,999	16.1	12.6-20.3
$50K-$74,999	12.7	8.8-18.0
$75,000+	8.1	5.4-12.1
	P=0.011	
Marital Status		
Married	12.9	10.7-15.4
Not married	15.8	11.8-20.9
	P=0.239	
Population Density		
Counties >50,000	10.8	8.0-14.4
Counties 10,000-50,000	16.2	12.9-20.1
Counties <10,000	12.5	8.7-17.5
	P=0.086	
Insurance status		
Insured	12.8	10.8-15.2
Uninsured	20.5	14.1-28.9
	P=0.024	
Region		
Southeast	10.2	7.3-14.3
Southwest	21.6	16.1-28.4
Northwest	6.5	3.8-10.8
Northeast	11.7	7.3-18.3
Central	16.8	12.7-21.9
	P<0.001	

Values omitted if denominator <50.
Excludes missing values. P<0.05 indicates a statistically significant association

Table S-8: Any CVD Risk Factors

Population Group	Weighted Percent	Confidence Interval
Total	85.1	83.8-86.4
Gender		
Male	88.6	86.6-90.3
Female	81.7	79.8-83.4
	P<0.001	
Age Group		
18-24	73.7	67.7-78.8
25-34	81.1	77.4-84.3
35-44	82.6	79.4-85.5
45-54	87.7	85.4-89.7
55-64	92.2	89.9-94.0
65+	93.7	91.5-95.3
	P<0.001	
Race		
White, non-Hispanic	84.8	83.4-86.1
Hispanic	86.6	78.3-92.1
Other race	89.0	82.0-93.4
	P=0.466	
Education		
< High School grad	90.4	85.5-94.5
High School grad	89.3	87.1-91.1
Some college	83.3	80.6-85.7
College grad	80.5	77.7-83.0
	P<0.001	
Household Income		
<$15,000	85.1	79.1-89.6
$15K-$24,999	90.9	88.0-93.2
$25K-$49,999	87.0	84.8-89.0
$50K-$74,999	83.2	79.9-86.2
$75,000+	77.9	73.9-81.5
Unknown	83.9	78.7-88.1
	P<0.001	
Marital Status		
Married	85.6	84.1-87.1
Not married	84.3	81.6-86.6
	P=0.355	
Population Density		
Counties >50,000	85.7	83.0-88.1
Counties 10,000-50,000	84.3	82.1-86.3
Counties <10,000	85.4	82.9-87.6
	P=0.650	
Employment		
Employed	84.2	82.5-85.7
Out of work	94.3	89.9-96.9
Homemaker	81.5	76.6-85.5
Student	68.1	56.8-77.6
Retired	93.5	91.3-95.2
	P<0.001	
Insurance status		
Insured	84.6	83.1-86.0
Uninsured	88.5	85.3-91.0
	P=0.028	

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-9: Three or More CVD Risk Factors

Population Group	Weighted Percent	Confidence Interval
Total	26.8	25.3-28.3
Gender		
Male	29.8	27.5-32.3
Female	23.8	21.9-25.7
	P<0.001	
Age Group		
18-24	8.2	5.3-12.6
25-34	13.0	10.1-16.6
35-44	23.0	19.7-26.7
45-54	30.1	27.0-33.5
55-64	43.1	39.1-47.2
65+	43.6	39.9-47.4
	P<0.001	
Race		
White, non-Hispanic	26.4	24.8-28.0
Hispanic	29.6	22.5-37.9
Other race	33.1	25.5-41.7
	P=0.201	
Education		
< High School grad	34.3	28.3-40.8
High School grad	30.6	27.9-33.5
Some college	24.1	21.7-26.8
College grad	23.1	20.5-25.9
	P<0.001	
Household Income		
<$15,000	33.0	27.8-38.7
$15K-$24,999	31.9	28.0-36.0
$25K-$49,999	25.8	23.3-28.5
$50K-$74,999	24.7	21.4-28.4
$75,000+	21.1	17.7-24.9
Unknown	28.9	23.7-34.7
	P<0.001	
Marital Status		
Married	27.5	25.6-29.4
Not married	25.5	23.1-28.1
	P=0.233	
Population Density		
Counties >50,000	26.4	23.7-29.3
Counties 10,000-50,000	25.3	23.0-27.8
Counties <10,000	29.2	26.4-32.1
	P=0.129	
Employment		
Employed	23.3	21.5-25.2
Out of work	42.3	35.9-48.9
Homemaker	21.8	17.4-27.1
Student	5.5	2.4-12.1
Retired	46.1	42.1-50.1
	P<0.001	
Insurance status		
Insured	27.9	26.3-29.6
Uninsured	21.9	18.4-26.0
	P=0.008	

Table S-10: Comparisons
Each comparison has a P value <0.05 except *

Measure/comparison	Weighted Percent	Confidence Interval
Fair/poor health (total)	12.3	11.3-13.5
Smoke yes	17.4	14.8-20.4
Smoke no	10.7	9.6-11.9
Overweight	13.5	12.0-15.0
Not overweight	10.6	9.0-12.4
HBP yes	24.0	21.1-27.0
HBP no	8.7	7.7-9.9
High cholesterol yes	18.8	16.4-21.4
High cholesterol no	9.8	8.7-11.1
Phys inactive	16.6	14.8-18.6
Meets recommendation	8.1	6.9-9.5
Diabetes	43.5	37.0-50.1
No diabetes	10.4	9.3-11.5
Any CVD risks	13.8	12.6-15.2
No CVD risks	3.8	2.4-6.0
3+ CVD risks	23.5	20.9-26.3
<3 CVD risks	8.2	7.2-9.4
Disability (total)	18.9	17.6-20.3
Smoke yes	22.1	19.3-25.2
Smoke no	17.9	16.5-19.4
Overweight	19.8	18.1-21.7
Not overweight	17.1	15.1-19.2
HBP yes	30.2	27.2-33.4
HBP no	15.4	14.0-16.8
High cholesterol yes	24.8	22.1-27.6
High cholesterol no	16.8	15.3-18.4
Phys inactive	23.2	21.1-25.4
Meets recommendation	15.2	13.6-17.0
Diabetes	41.7	35.3-48.5
No diabetes	17.5	16.2-18.8
Any CVD risks	20.5	19.0-22.0
No CVD risks	10.1	7.6-13.2
3+ CVD risks	29.0	26.1-32.0
<3 CVD risks	15.2	13.9-16.7
Out of work (total)	6.7	5.9-7.7
Smoke yes	11.3	9.2-13.9
Smoke no	5.3	4.5-6.2
Overweight	7.1*	6.0-8.3
Not overweight	5.7*	4.5-7.1
HBP yes	9.5	7.8-11.6
HBP no	5.9	5.0-7.0
High cholesterol yes	8.0	6.4-9.9
High cholesterol no	6.1	5.1-7.1
Phys inactive	7.8	6.5-9.3
Meets recommendation	5.2	4.2-6.3
Diabetes	19.0	14.2-24.9
No diabetes	6.0	5.2-6.9
Any CVD risks	7.5	6.5-8.5
No CVD risks	2.6	1.4-4.7
3+ CVD risks	10.6	8.8-12.8
<3 CVD risks	5.3	4.4-6.4

Excludes missing values. P<0.05 indicates a statistically significant association

Table S-11: Smoking Cessation – Quit 1+ days past year (N=754 daily smokers)

Population Group	Weighted Percent	Confidence Interval
Total	47.1	42.9-51.2
Gender		
Male	45.8	39.7-52.1
Female	48.3	43.0-53.7
	P=0.549	
Age Group		
18-24	60.2	47.1-72.0
25-34	50.6	41.2-60.0
35-44	46.5	38.0-55.3
45-54	42.1	34.6-50.0
55-64	47.5	37.6-57.5
65+	25.9	16.6-38.0
	P=0.005	
Race		
White, non-Hispanic	48.4	44.0-52.8
Hispanic	---	----
Other race	---	----
	P=0.236	
Education		
< High School grad	47.4	35.6-59.5
High School grad	47.1	41.0-53.2
Some college	46.0	38.9-53.2
College grad	49.9	38.2-61.6
	P=0.965	
Household Income		
<$15,000	40.0	29.6-51.4
$15K-$24,999	51.5	42.3-60.6
$25K-$49,999	45.7	39.0-52.5
$50K-$74,999	49.7	39.1-60.4
$75,000+	54.9	40.5-68-5
Unknown	39.6	26.4-54.5
	P=0.431	
Marital Status		
Married	45.8	40.3-51.4
Not married	48.5	42.4-54.6
	P=0.528	
Population Density		
Counties >50,000	45.3	38.4-52.4
Counties 10,000-50,000	51.1	44.2-58.0
Counties <10,000	45.5	37.8-53.5
	P=0.429	
Employment		
Employed	49.4	44.5-54.4
Out of work	47.4	36.1-59.1
Homemaker	---	----
Student	---	----
Retired	27.2	18.7-37.9
	P=0.071	
Insurance status		
Insured	45.9	41.1-50.7
Uninsured	49.6	41.7-57.5
	P=0.431	

Values omitted if denominator <50.
Excludes missing values. P<0.05 indicates a statistically significant association

Table S-12: Weight Control: Overweight trying to lose weight (N=2,216 overweight respondents)

Population Group	Weighted Percent	Confidence Interval
Total	50.8	48.5-53.2
Gender		
Male	41.5	38.4-44.8
Female	64.3	61.1-67.4
	P<0.001	
Age Group		
18-24	40.5	31.4-50.2
25-34	49.8	43.4-56.2
35-44	52.7	47.2-58.1
45-54	53.2	48.6-57.7
55-64	57.8	52.7-62.8
65+	46.6	41.6-51.6
	P=0.009	
Race		
White, non-Hispanic	51.5	49.0-54.0
Hispanic	40.6	30.9-51.1
Other race	47.1	36.4-58.2
	P=0.109	
Education		
< High School grad	50.1	41.0-59.1
High School grad	48.6	44.6-52.7
Some college	53.2	48.9-57.4
College grad	51.4	46.9-55.9
	P=0.470	
Household Income		
<$15,000	49.1	40.7-57.5
$15K-$24,999	48.4	42.6-54.3
$25K-$49,999	51.5	47.4-55.5
$50K-$74,999	51.7	46.2-57.1
$75,000+	53.1	47.2-58.8
Unknown	48.4	39.9-57.1
	P=0.874	
Marital Status		
Married	52.9	50.0-55.7
Not married	46.5	42.4-50.7
	P=0.014	
Population Density		
Counties >50,000	52.4	48.0-56.7
Counties 10,000-50,000	50.8	46.9-54.6
Counties <10,000	49.4	45.1-53.6
	P=0.636	
Employment		
Employed	51.2	48.2-54.1
Out of work	59.4	50.6-67.6
Homemaker	62.9	53.9-71.1
Student	21.5	11.5-36.7
Retired	46.7	41.5-52.0
	P<0.001	
Insurance status		
Insured	51.3	48.8-53.9
Uninsured	48.9	42.7-55.1
	P=0.481	

Excludes missing values. P<0.05 indicates a statistically significant association

References

[1] Wyoming Department of Health. "2002 Data Tables." Wyoming Department of Health, Vital Records Services website, accessed at http://wdh.state.wy.us/vital_records/02DATA/2002tables.pdf on May 25, 2004.

[2] Wyoming Department of Health. The Burden of Cardiovascular Disease in Wyoming, Wyoming Department of Health, Cardiovascular Disease Program, September 2003, p.3.

[3] American Heart Association. 2002 Heart and Stroke Statistical Update. Dallas, TX, 2001. www.americanheart.org/presenter.jhtml?identifier=715, accessed May 28, 2004.

[4] Brownson, RC, Remington, PL, and Davis, JR. Chronic Disease Epidemiology and Control. Second Edition. Am. Public Health Assoc. 1998.

[5] Bowlin, SJ, Morrill, BD, Nafziger, AN, Jenkins, PL, Lewis, C., and Pearson, TA. Validity of cardiovascular disease risk factors assessed by telephone survey. The Behavioral Risk Factor Survey. J. Clinical Epidemiology 46: 561-571: 1993.

[6] Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. JAMA. 2004;291(10):1238-1245.

[7] Centers for Disease Control and Prevention. Update: Prevalence of overweight among children, adolescents, and adults – United States, 1988-94. MMWR 46: 199-202, 1997.

[8] American Heart Association. http://www.americanheart.org/presenter.jhtml?identifier=4545, accessed May 28, 2004