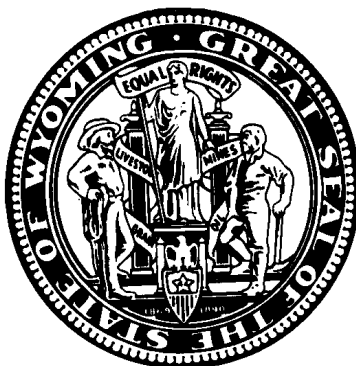


# State of Wyoming



## Department of Health

### **Older Adult Health in Wyoming** Results from the 2003 Wyoming Behavioral Risk Factor Surveillance System

Deborah K. Fleming, Ph.D., Director

October 2004



# **State of Wyoming Department of Health**

## **Older Adult Health in Wyoming**

### **Results from the 2003 Wyoming Behavioral Risk Factor Surveillance System**

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

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## Executive Summary

*Older Adult Health in Wyoming: Results from the 2003 BRFSS* includes findings from the 2003 Behavioral Risk Factor Surveillance System (BRFSS) on health issues that disproportionately affect older adults. Older adults were defined as those ages 60 and older, representing 81,500 persons in Wyoming. The BRFSS telephone surveys include only non-institutionalized adults, and thus exclude the nursing home population. Six conditions were included: arthritis; high blood pressure; high cholesterol; diabetes; osteoporosis; and asthma. Treatment for each of these conditions frequently involves long term drug therapy, ongoing disease management, or regular monitoring. Associations of each condition with each other, with disability (limited in any way, in any activities, because of physical, mental or emotional problems), having had a recent fall, and measures of physical and mental health status are also included. Note that the self-reported results in this report are specific to the questions asked on the BRFSS survey and may differ from data based on other criteria.

### Key findings:

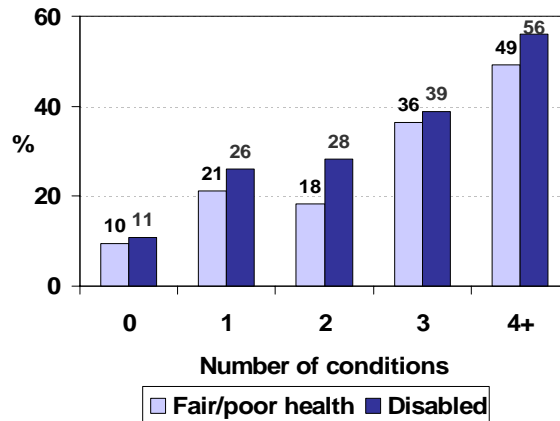
#### Health Conditions among Wyoming Older Adults (age 60+) BRFSS 2003

	Prevalence	Est. Number
Arthritis	55.2%	45,000
High Blood Pressure	50.2%	40,900
High Cholesterol	46.7%	38,100
Diabetes	13.9%	11,300
Osteoporosis	15.0%	12,200
Asthma	9.7%	7,900

- Nearly nine of every ten older adults (87.2%) in Wyoming reported one or more of these six conditions, 60.8% reported two or more, 30.9% reported three or more, and 8.6% reported four or more. Compared with older men, older women tended to report more conditions, perhaps because women also tended to be older.
- The association of these conditions with general health and disability status was striking. Among older adults with none of these conditions, 9.5% reported fair or poor health and 10.7% reported being disabled. These figures rose to 49.3% reporting fair or poor health among older adults reporting 4 or more of these conditions, and 56% for disability among this group. (See figure below).
- Recent falls, reported by 14.2% of older adults, were also associated with these conditions; 6.2% of older adults with none of the conditions reported a recent fall, compared with 26.0% of those with 4 or more conditions.
- Among older adults, the following subgroups reported more of these six conditions: women, adults 70 and older, persons with less education or in lower income households, the out of work (unemployed or unable to work; not including the retired), homemakers, and the obese.

- Excess body weight was the factor most consistently found to be associated with each of the conditions examined separately; osteoporosis was the distinct exception, where lower body weight was associated with the condition.

### Health & Disability by No. of Conditions\* Adults age 60+, 2003 WY BRFSS



\* Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis

Risk reduction strategies to lessen the chance of developing these conditions include weight reduction, smoking cessation, exercise, diet modification, limiting alcohol consumption, and avoidance of environmental tobacco smoke. For older adults with these conditions, the same strategies may prove beneficial as one component of proper management of the condition over the long term. Drug therapy, self-management courses, and regular monitoring by health care professionals are also key strategies to minimize adverse effects and avoid disability. Although older adults are not traditionally targeted for public health programs, the projected increase in the number of older adults and the potential for success in these areas suggests that this group should be included when setting public health priorities.

## I. Introduction

The United States is aging. The median age of Americans has increased from 28 years in 1970 to 35 years in 2002 and is expected to rise to 37 years by 2010. This is due in part to the maturation of the baby boom generation (persons born between 1946 and 1964), and also to increases in life expectancy for both men and women. The aging effect is being felt even more strongly in Wyoming, most likely influenced by the energy boom of the 1970s which brought many young adults into the state who are now reaching their 50's and 60's. The median age in Wyoming has increased from 27 years in 1980 to 36 years in 2000 and is expected to reach 39 years by 2010.<sup>1</sup>

These changes have important implications for public health, as mortality and morbidity tend to increase with age. This is especially true for many chronic diseases and conditions associated with disability, such as arthritis and diabetes. Compared with younger persons, older adults use more health care resources, including hospital and nursing home services, medical supplies, prescription and over-the-counter medications, and home care. The number and proportion of older persons with chronic conditions will be a crucial issue for public health professionals in the coming years. In many cases, interventions can reduce the burden of chronic conditions through lifestyle changes, use of preventive services such as influenza and pneumonia immunizations, and appropriate management of existing disease. In addition to improving the health status of affected older adults, such interventions can reduce the burden on family members responsible for their care.

This report addresses several conditions that are key issues for older adults, based on data from the 2003 Wyoming Behavioral Risk Factor Surveillance System (BRFSS). The conditions were chosen because their prevalence rates are very age-dependent, with relatively high rates among older adults in Wyoming. The conditions are arthritis, high blood pressure, high blood cholesterol, diabetes, osteoporosis, and asthma. In addition, falls, disability, and physical and mental health status were examined as they relate to the other six conditions. All six conditions have important public health implications either because of the burden they impose, or their association with other chronic conditions, such as heart disease or stroke. The availability of data was also a factor in the selection of these conditions; exclusion from this report does not mean an issue is not a concern for older adults.

The definition of *older adult* used in this report includes adults who are 60 years of age and older. This age was chosen because it is the eligibility standard for almost all of the federal programs authorized and funded under the Older Americans Act. Within this group of older adults, data are presented for ages 60-69 and ages 70 and older. A total of 81,500 Wyoming residents were age 60 and older in 2003.<sup>1</sup>

## II. Methods

The Behavioral Risk Factor Surveillance Survey (BRFSS) collects data from non-institutionalized adults, ages 18 and older, through monthly random digit dialed telephone surveys. The BRFSS is coordinated and partially funded by the Centers for Disease Control and Prevention (CDC) and is conducted in all 50 states. Wyoming conducted 4,004 telephone interviews in 2003, with 1,106 of those among adults age 60 and older. Raw data were adjusted to account for different probabilities of selection and to be representative of the Wyoming adult population by age and sex.

Prevalence estimates and 95% confidence intervals were determined with Stata version 8, which takes into account the complex sample design of the BRFSS. The *95% confidence intervals*, or margin of error, define 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. With the exception of overweight and income measures, this usually had little effect on the results. Unless otherwise noted, results highlighted in the findings (e.g. “high” or “more likely than”) indicate a statistically significant association based on a Chi square test with a P value <0.05. Confidence intervals and P values are presented in the Supplemental Tables S-1 through S-4 on pages 34-37 of the report.

As with all survey data, there are several limitations of these results that should be taken into consideration. First of all, the data are self-reported and in many cases the validity of the measure on the BRFSS has not been measured. Households without telephones (or only cell phones) were not included. 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). Because the sample frame excludes institutions, older adults who were temporary or permanent residents of nursing homes were not included. An estimated 5% of the U.S. population age 65 and older, and 20% of those ages 85 and older, are in nursing homes.<sup>2</sup> 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. Potential error (or bias) results if the adults not surveyed differ appreciably from those that do participate. However, the BRFSS data have been shown to be comparable to other surveys with higher response rates.<sup>3</sup> While many 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 the sampling error and provides an indication of the precision of the survey results.

### III. Results

#### A. Demographics

Compared to all Wyoming adults, adults age 60 and older were more likely to be female, retired, insured, lower income, less educated, and live in rural counties (Table 1).

Table 1  
Demographics of Wyoming Adults  
2003 BRFS

Group	Age 60+		All Adults	
	Weighted Percent	Unweighted Number	Weighted Percent	Unweighted Number
<b>Sex</b>				
Male	46.4	438	50.0	1,657
Female	53.7	668	50.0	2,347
<b>Age</b>				
60-69	48.4	559	----	----
70+	51.6	547	----	----
<b>Race/ethnicity</b>				
White (non-Hispanic)	92.3	1,018	90.2	3,626
Hispanic	3.5	33	5.3	173
Other (non-Hispanic)	4.3	46	4.5	170
<b>Employment status</b>				
Employed	24.9	282	69.4	2,568
Not working	7.3	76	7.1	288
Homemaker	9.3	101	8.6	336
Retired	58.5	641	14.9	699
<b>Household income</b>				
<\$25,000	41.6	421	27.0	1,040
\$25-\$49,999	38.5	338	36.6	1,301
\$50-\$74,999	10.5	93	20.0	701
\$75,000+	9.4	83	16.4	588
<b>Education</b>				
<HS	11.5	130	7.5	276
HS Graduate	36.4	398	33.8	1,310
Some college	27.7	310	33.0	1,303
College graduate	24.7	265	25.8	1,109
<b>Marital Status</b>				
Married	63.7	573	64.9	2,382
Not married	36.3	531	35.1	1,615
<b>Insurance status</b>				
Insured	93.3	1,027	82.9	3,379
Uninsured	6.7	72	17.1	610
<b>Population Density</b>				
Counties >50,000	31.4	345	30.4	1,179
Counties 10K-50K	31.1	340	40.7	1,562
Counties <10,000	37.6	390	28.9	1,166

## **B. Health Conditions Affecting Older Adults**

### **1. Arthritis**

Measure: The 2003 BRFSS limited the case definition of arthritis to persons who had been told by a doctor or other health professional that they had some form of arthritis. Other definitions, especially those based on different questions (including those from the BRFSS prior to 2003), will produce different estimates of the prevalence of the condition.

Arthritis is the leading cause of disability in the United States and one of the most prevalent conditions, affecting nearly 43 million Americans. This number is expected to increase to 60 million by 2020 with the maturation of the baby boomers. The term arthritis includes more than 100 diseases and conditions that affect the joints and surrounding tissue, including osteoarthritis, rheumatoid arthritis, fibromyalgia, lupus, gout, Lyme Disease arthritis, and bursitis. Arthritis has been estimated to cost the U.S. nearly \$65 billion each year.<sup>4</sup>

#### **Findings:**

- Over half (55.2%) of all older adults surveyed in Wyoming reported they had been told they had arthritis, representing 45,000 persons in the state.
- Arthritis prevalence increased almost linearly from 9.3% among 18-29 year olds to 60.4% for persons age 70 and older (Figure 1).
- Among older adults, women were more likely than men to report arthritis (58.5% vs. 51.3%).
- Arthritis among older adults was associated with education level and household income. Rates ranged from 39.3% for older adults with incomes above \$75,000 and 44.4% for those with college degrees, to 57.1% for older adults with incomes below \$25,000 and 58.9% for those without a high school diploma.
- Highest arthritis rates were found among obese older adults (Body Mass Index or BMI  $\geq 30$ ), 64.8% of whom had arthritis. This rate compared with 55.2% for older adults who were overweight but not obese (BMI 25-29.99) and 49.6% for those with BMI  $< 25$  (Figure 2).
- Arthritis among older adults was not associated with race/ethnicity, employment, or population density, and only weakly associated with marital status (59.3% for unmarried older adults compared with 52.9% for married older adults).
- Among adults age 60 and older with diagnosed arthritis, 72% had chronic joint pain and 34% said arthritis limited their usual activities.

Figure 1.

### Arthritis (Diagnosed) by Age Group 2003 WY BRFSS

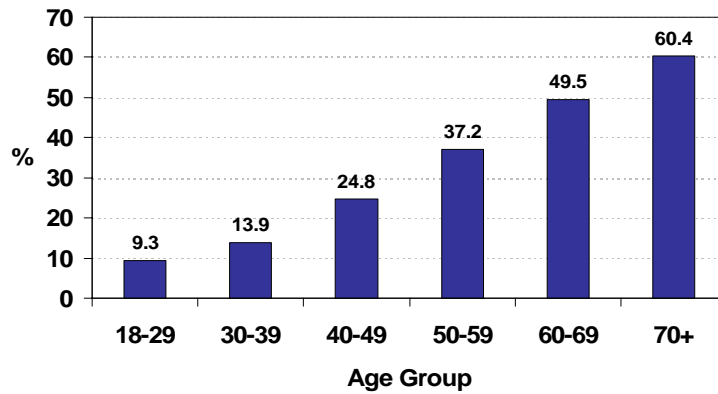
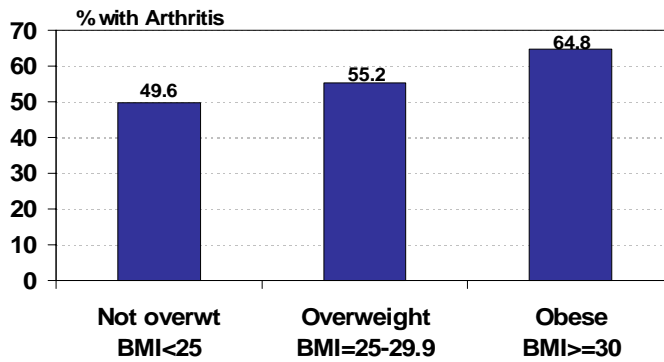


Figure 2.

### Arthritis by Overweight Status Adults Age 60+, 2003 WY BRFSS



## 2. High Blood Pressure

Measure: Respondents who reported they had ever been told by a doctor, nurse, or other health professional they had high blood pressure (HBP) were considered to have high blood pressure, although normally a diagnosis of high blood pressure is only made after two or more elevated readings over time.

High blood pressure or hypertension (blood pressure  $\geq 140/90$  mm Hg) is a risk factor for heart disease, a major risk factor for stroke, and a cause of death itself. U.S. healthcare expenses attributed to hypertension were estimated to be \$108.8 billion in 1998.<sup>5</sup> Hypertension usually causes no symptoms and can only be detected by a simple blood pressure measurement.

### Findings:

- Over half (50.2%) of all Wyoming older adults reported they had high blood pressure, representing about 41,000 persons in the state.
- High blood pressure prevalence increased from 5.5% among 18-29 year olds to 54.1% for persons age 70 and older (Figure 3).
- High blood pressure rates were highest among obese older adults; two thirds of all obese older adults (66.4%) reported HBP, compared with 36.3% of older adults who were not overweight or obese (Figure 4).
- HBP was associated with education level and household income, two common measures of socioeconomic status. HBP rates were highest among older adults without a high school diploma (57.2%) and incomes below \$25,000 (55.1%), and lowest for those with incomes above \$75,000 (29.4%).
- High blood pressure prevalence among older Wyoming adults was not associated with gender, race/ethnicity, employment status, marital status, or population density.
- Among older adults with HBP, the vast majority (87.6%) were taking medication for their HBP, representing 43.9% of all older adults in Wyoming.

Figure 3.

### High Blood Pressure by Age Group 2003 WY BRFSS

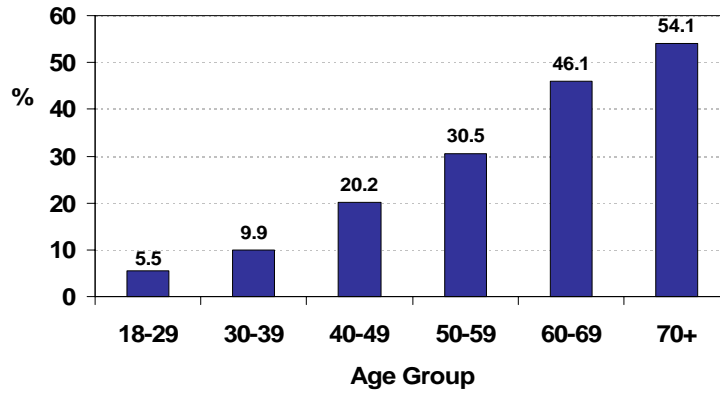
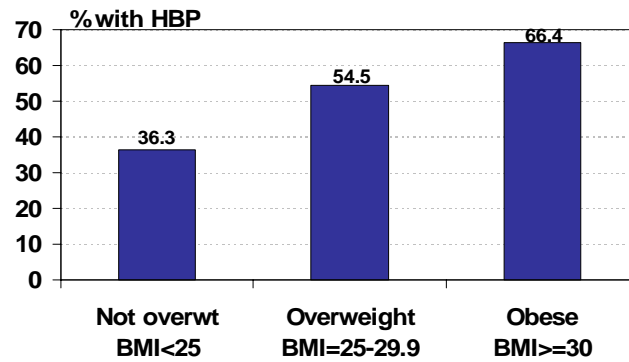


Figure 4.

### High Blood Pressure by Overweight Status Adults Age 60+, 2003 WY BRFSS



### 3. High Blood Cholesterol

Measure: Respondents who reported they had been told by a doctor, nurse, or other health professional that their blood cholesterol was high were considered to have high cholesterol. High cholesterol is reported as a percentage of all adults, not just those who have been tested. In 2003, 93.7% of older adults in Wyoming reported they had their cholesterol tested and 90.9% had it tested within the past 5 years.

Cholesterol is a waxy substance produced in the liver or obtained from outside sources through consumption of animal products such as meat, fish, or cheese. Cholesterol levels fall into three groups: high for readings of 240 mg/dL and over, borderline high for 200-239 mg/dL, and desirable for readings less than 200 mg/dL. High blood cholesterol levels increase the risk of heart attack and stroke.

#### Findings:

- Nearly half (46.7%) of all older adults reported they had high cholesterol, representing about 38,000 Wyoming older adults.
- High cholesterol rates ranged from 6.0% among 18-29 year olds to 50.7% for 60-69 year olds and then decreased slightly to 42.8% for adults age 70 and older (Figure 5).
- As was the case for arthritis and HBP, rates were highest among obese older adults in the state; 57.6% of all obese older adults reported they had high cholesterol, compared with 40.9% of older adults who were not overweight or obese (Figure 6).
- Married older persons were more likely to report high cholesterol than those who were divorced, widowed, separated, or never married (50.6% vs. 39.9%).
- High cholesterol among older Wyoming adults was not associated with gender, race/ethnicity, education, household income, employment status, or population density.
- Over one fourth (26.1%) of all older Wyoming adults reported both HBP and high cholesterol.

Figure 5.

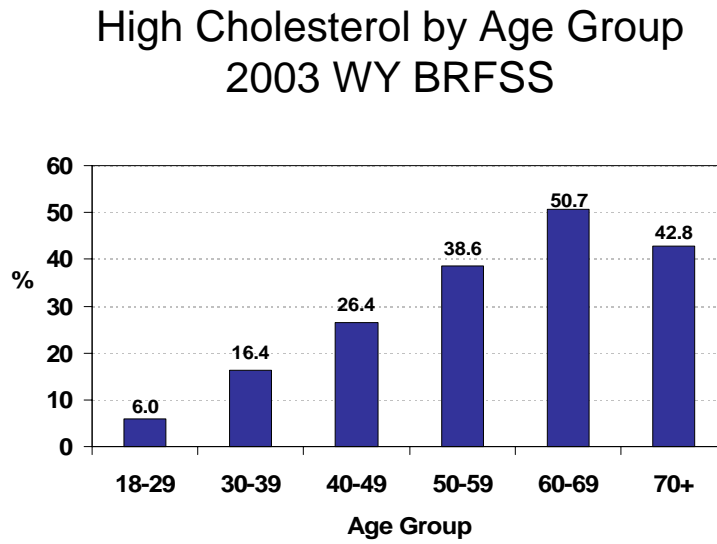
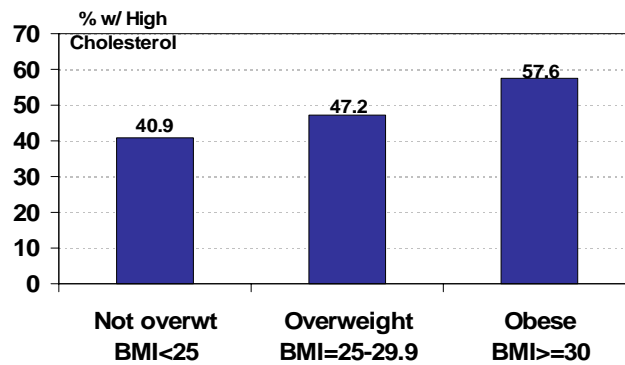


Figure 6.

### High Cholesterol by Overweight Status Adults Age 60+, 2003 WY BRFSS



## 4. 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. The self-reported results from the BRFSS may underestimate the true prevalence of the disease, since it has been estimated that about one third of the people with diabetes don't know they have it.

Diabetes occurs when the body is unable to produce enough insulin, or is unable to use it, to convert glucose into energy. When that happens, glucose accumulates in the blood, which provides a diagnostic test for the disease. Complications of diabetes include heart disease, stroke, blindness, renal failure, and circulatory problems that can lead to amputations. The cost of diabetes in the U.S. was estimated to be \$132 million in 2002, which includes direct medical costs plus indirect costs due to lost productivity, disability, and premature mortality.<sup>6</sup> The American Diabetes Association classifies diabetes as type 1 and type 2, with the latter by far the more prevalent form.

### Findings:

- The self-reported prevalence of diabetes among older adults was 13.9%, which represents over 11,000 Wyoming older adults with known diabetes.
- Diabetes rates ranged from 0.2% among 18-29 year olds to 16.0% for 60-69 year olds and then decreased slightly to 11.9% for adults age 70 and older (Figure 7).
- Diabetes rates were highest among obese older adults, one-fourth of whom (25.0%) reported they had diabetes. Only 6.7% of older adults who were not overweight or obese and 14.2% of those that were overweight but not obese had diabetes (Figure 8).
- Older adults who were not working because they were either unable to work or unemployed also had high diabetes rates (24.6%).
- Lowest diabetes rates were found among older adults with household incomes of \$50,000-\$74,999 (4.4%) and \$75,000 and above (9.5%).
- Diabetes rates for older Wyoming adults were not associated with gender, age group, race/ethnicity, education, marital status, or population density.

Figure 7.

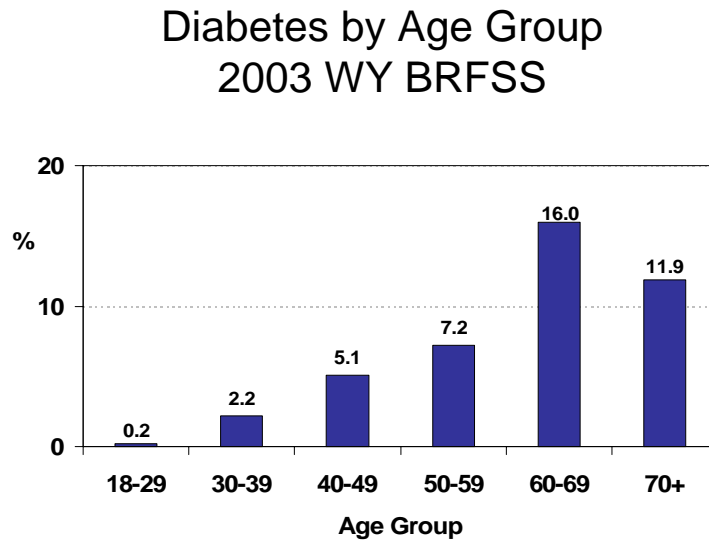
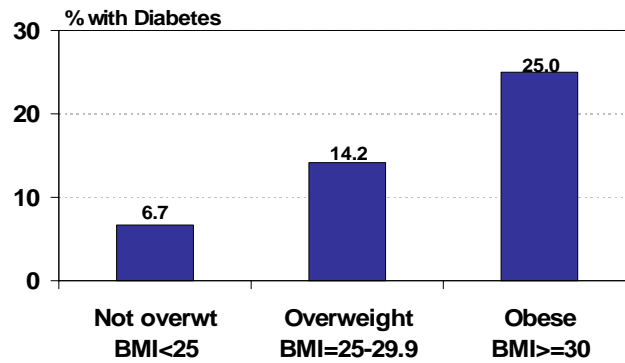


Figure 8.

### Diabetes by Overweight Status Adults Age 60+, 2003 WY BRFSS



## 5. Osteoporosis

Measure: Wyoming included a state added question in 2003 which asked if respondents had ever been told by a doctor or other health professional that they had osteoporosis.

Osteoporosis is a reduction in bone mass to the extent that the risk of fractures, especially in the hips, is greatly increased. An estimated 20 million Americans currently have osteoporosis. There are 250,000 hip fractures in the U.S. each year, accounting for 19% of all broken bones.<sup>7</sup> The disease is diagnosed by a bone density test, which is a non-invasive measure of bone mass.

### Findings:

- Over 12,000 Wyoming older adults were estimated to have osteoporosis, based on a self-reported prevalence of 15.0%.
- Osteoporosis rates were extremely age dependent, increasing from rates below 1% for adults ages 18-29 and 30-39 to 20.3% for adults ages 70 and older (Figure 9).
- Among older Wyoming adults, women (24.0%), homemakers (27.5%), and the unmarried (21.7%) reported the highest rates of osteoporosis.
- In contrast to other results among older adults, osteoporosis rates were lower among the obese (9.4%) and higher among those who were neither overweight nor obese (20.3%; Figure 10). This is in agreement with recognized risk factors for the disease, which include having a thin body build.<sup>7</sup>
- Osteoporosis rates were associated with population density, with the highest rates for residents of Natrona and Laramie Counties (18.5%) and the lowest for residents of counties with populations less than 10,000 (11.4%).
- Low rates of osteoporosis were also reported by older men (4.6%), and older Wyoming adults with a college degree (9.7%).
- Osteoporosis rates were not associated with race/ethnicity or household income.

Figure 9.

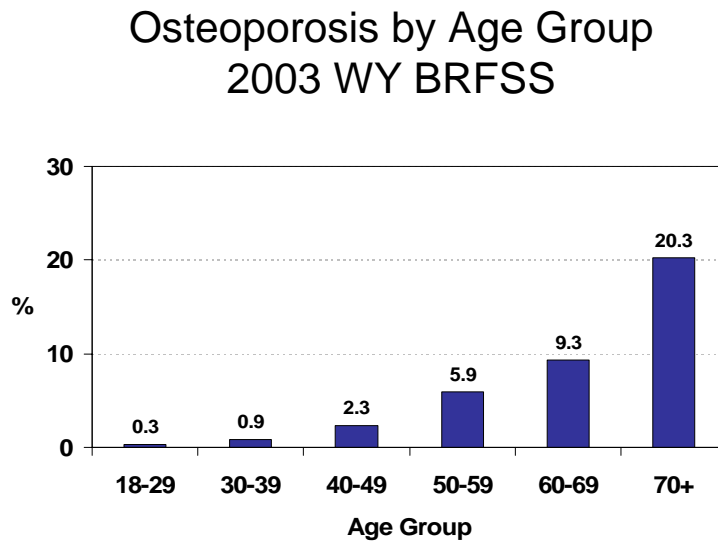
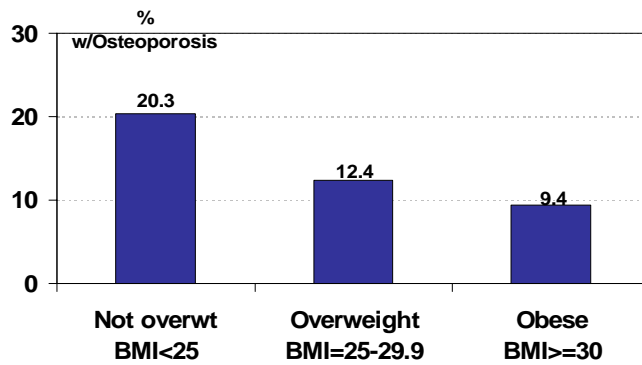


Figure 10.

### Osteoporosis by Overweight Status Adults Age 60+, 2003 WY BRFSS



## 6. Asthma

Measure: Respondents were asked if they had ever been told by a doctor or other health professional that they had asthma, and if so, did they still have asthma. Only current asthma was included in this measure, which was determined as a percent of all older adults.

Asthma is a chronic inflammation of the airways that causes episodes of wheezing, coughing, and difficulty in breathing. It is among the most common diseases in the U.S., affecting an estimated 15 million people, and it is estimated to cost the nation about \$12.7 billion each year.<sup>8</sup> The disease often begins in childhood and is one of the leading causes of school absence, missed workdays, emergency room visits, and hospitalizations.

### Findings:

- Approximately one in ten (9.7%) older respondents reported they currently had asthma, representing an estimated 7,900 older Wyoming adults.
- Asthma rates were a relatively constant 6-8% across most age ranges, only increasing to 11.8% among adults age 70 and older (Figure 11).
- Asthma rates were highest among older adults who were unemployed or unable to work (23.6%).
- Asthma rates among older Wyoming adults were not significantly associated with gender, race/ethnicity, household income, education, marital status, or population density.
- Although asthma rates were not significantly associated with overweight status when grouped in three categories (Figure 12), rates were significantly higher among obese older adults (14.0%) when compared with all older persons who were not obese (8.6%; data not shown).

Figure 11.

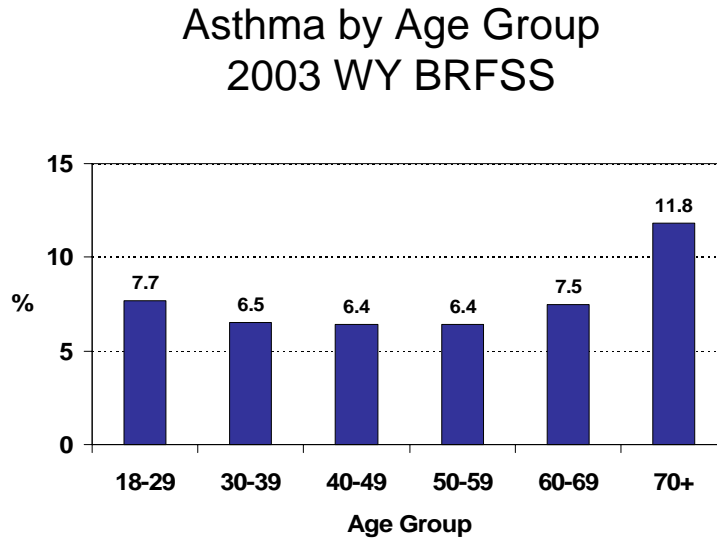
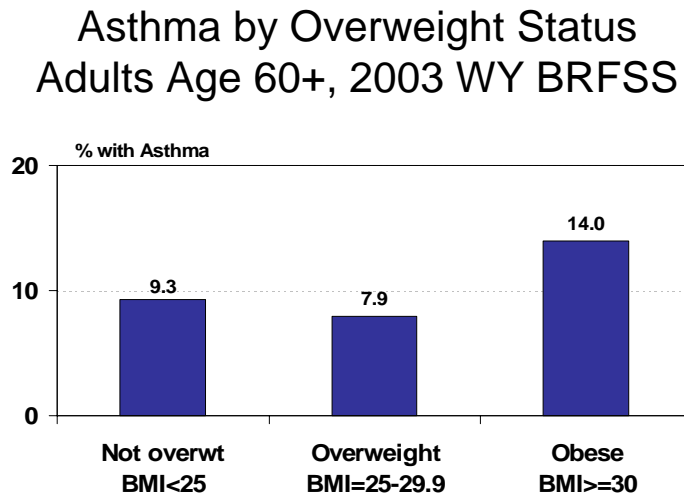


Figure 12.



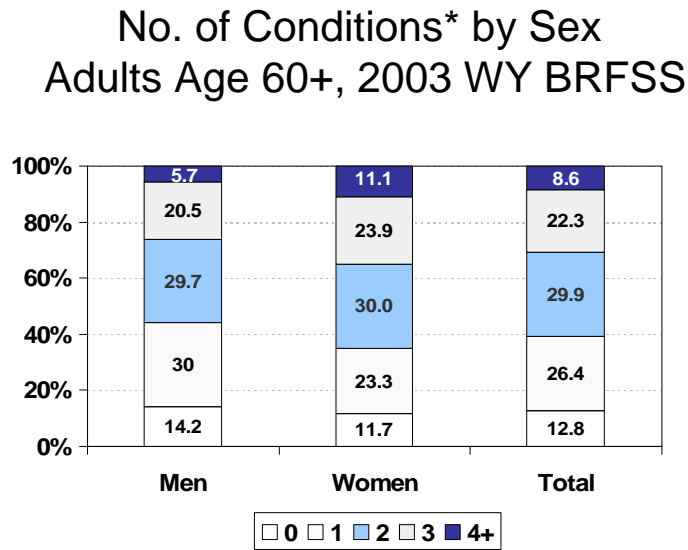
## 7. Multiple Conditions

Measure: The number of conditions reported by each older adult 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 condition. Analyses were done comparing persons reporting none of the conditions with those reporting one or more, and those reporting three or more to those reporting less than three.

### Findings:

- Nearly nine of every ten older adults (87.2%) reported one or more of these six conditions, 60.8% reported two or more, 30.9% reported three or more, and 8.6% reported four or more.
- Compared with older men, older women tended to report more of these health conditions (Figure 13).
- Among older adults, the number of health conditions was also positively associated with older age group, lower household income, less education, and increased body mass index (Figure 14). Results for reporting three or more of the six health conditions were similar.
- Only household income, employment and overweight status were associated with reporting any versus none of the six health conditions. Among older adults who were not working, 93.8% reported one or more of these conditions and 95.9% of obese older adults reported one or more.
- Older adults with household income above \$75,000, were the most likely to report none of the six conditions (25.7%), with 74.3% reporting one or more of these conditions. Obese older adults were least likely to report none of these six conditions (4.1%).
- Highest rates of reporting three or more health conditions were found for older adults who were not working (41.3%), were obese (40.0%), had household income less than \$25,000 (38.6%), had only a high school education (36.8%), were homemakers (36.1%), and women (35.0%).

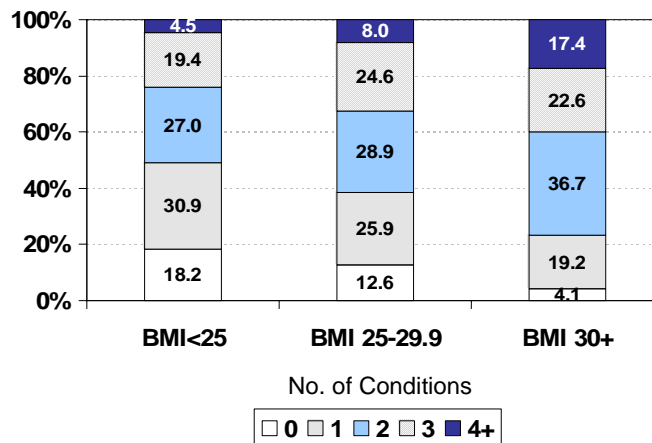
Figure 13.



\*Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis.

Figure 14.

### Overweight Status by No. of Conditions\* Adults Age 60+, 2003 WY BRFSS



\* Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis.

## C. Other Issues for Older Adults

### 1. Falls

Measure: Respondents age 45 and older were asked about recent falls, defined as when a person unintentionally comes to rest on the ground or another lower level. The time period addressed was falls occurring in the past 3 months. Respondents who reported a recent fall were also asked if they were injured.

#### Findings:

- About one in every seven older Wyoming adults (14.2%) reported that they had a fall in the previous 3 months, representing 11,500 older adults.
- Unlike the previous conditions, falls were not associated with increasing age.
- The most striking association was between falls and overweight status. Older adults who were obese were the most likely to report a recent fall (21.0%) compared with older adults who were overweight but not obese (13.7%) or neither overweight nor obese (10.7%) (Figure 15).
- Falls were also associated with educational attainment, with highest rates among older adults that didn't finish high school (19.6%) and lowest rates for college graduates (11.2%).
- Falls among older adults were not associated with age, gender, household income, race/ethnicity, marital status, or population density.
- Over one third (37.1%) of older adults who reported a recent fall had been injured in the fall, representing 5.2% of all older adults (data not shown)
- Falls were associated with an increasing *number* of health conditions among older adults (Figure 16).

Figure 15.

### Fall in Past 3 Mo. by Overweight Status Adults Age 60+, 2003 WY BRFSS

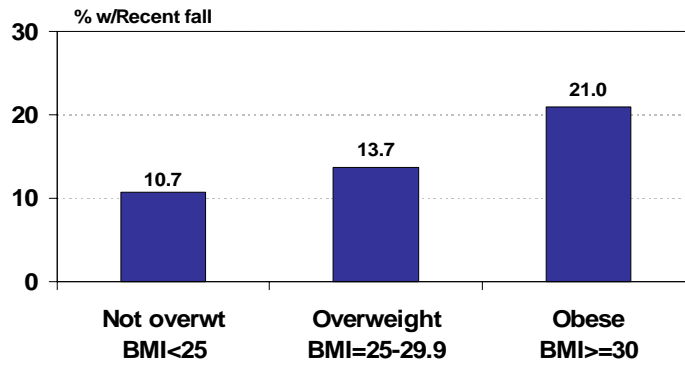
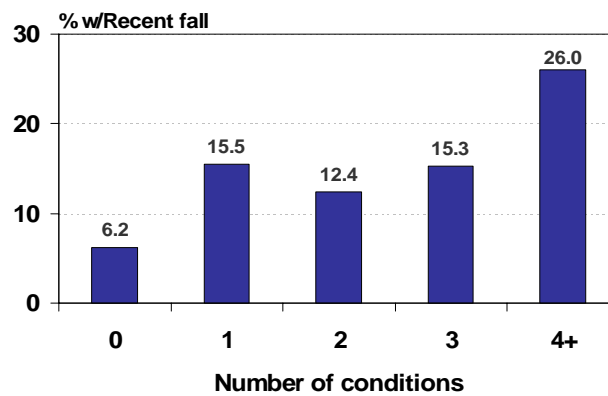


Figure 16.

### Fall in Past 3 Mo. by No. of Conditions\* Adults Age 60+, 2003 WY BRFSS



\* Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis

## 2. Disability

Measure: Respondents who reported they were limited in any way, in any activities, because of physical, mental or emotional problems were classified as disabled. The single question used in this determination may not include persons with certain disabilities such as cognitive impairment or hearing loss who were unable to complete the survey.

An estimated 20% of the U.S. population currently lives with disabilities, and the number is increasing.<sup>9</sup> Disabilities often coexist with other health conditions. The annual medical costs associated with disability are estimated to be over \$300 billion, which includes direct medical costs and lost productivity.<sup>9</sup>

### Findings:

- Nearly one third (30.2%) of all older adults reported their activities were limited in some way, representing nearly 25,000 disabled older Wyoming adults.
- Disability increased with increasing age group from 8.6% for 18-29 year olds to 32.5% for adults age 70 and older (data not shown).
- Notably, highest rates of disability were among older adults who were out of work, two thirds of whom (66.2%) reported that their activities were limited.
- High rates of disability were also found among obese older adults (44.1%; Figure 17), those with household incomes less than \$25,000 (36.1%), and unmarried persons (35.5%).
- Lowest disability rates were among employed older adults (20.9%) and those in households with incomes above \$75,000 (18.4%).
- Among older adults, there was no association between disability and gender, age group, race/ethnicity, education, or population density.
- Disabled older adults were nearly twice as likely as those not disabled to report a fall (21.2% vs. 11.3%) and nearly four times as likely to report fair or poor health (51.0% vs. 13.4%; data not shown).
- Disability was associated with an increasing number of conditions among older adults (Figure 18).

Figure 17.

### Disability by Overweight Status Adults Age 60+, 2003 WY BRFSS

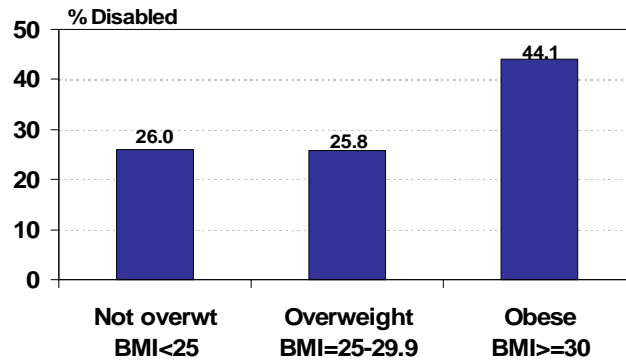
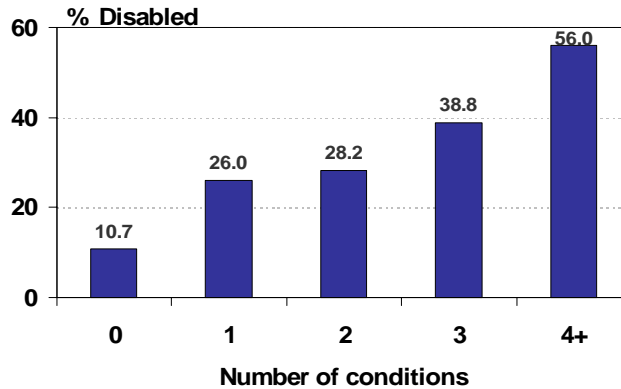


Figure 18.

### Disability by No. of Conditions\* Adults age 60+, 2003 WY BRFSS



\* Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis

### 3. Physical and Mental Health

Measures: All respondents were asked if their general health was excellent, very good, good, fair, or poor. Responses were either divided into three groups of 1) excellent and very good, 2) good, and 3) fair or poor, or were divided into 2 groups: those who reported fair or poor health, and those who reported any of the other three categories. Missing values were excluded. Respondents were also asked how many days in the past month was their mental health not good, where mental health was explained as including stress, depression, and problems with emotions. Respondents who reported 14 or more days of poor mental health in the past month were considered to have “frequent mental distress”.

#### Findings:

- Nearly one fourth of all older adults (24.7%) reported fair or poor health, representing about 20,000 persons.
- Health status was dramatically and significantly associated with age, as shown in Figure 19.
- Older adults who didn't work because they were unemployed or unable to work were in the worst health, with 66.7% reporting fair or poor health status.
- Other older adult demographic groups that were more likely to report fair or poor health included those who did not finish high school (41.5%), those with household incomes less than \$25,000 (35.4%), unmarried older adults (30.7%), and adults age 70 and older (29.8%).
- Lowest reported rates of fair or poor health status among older adults were found for those with incomes greater than \$75,000 (5.9%), the employed (11.8%), and college graduates (15.8%).
- Among older Wyoming adults, fair or poor health status was not related to gender, race/ethnicity, or population density. Although the association between health status and overweight status was not significant, obese older adults had higher rates of fair or poor health (30.3%) when compared with all older adults who were not obese (22.7%; data not shown).
- Older adults in fair or poor health were three times as likely as those in better health to be disabled (62.2% vs. 19.6% respectively), but rates of recent falls were similar.
- Poorer health status was associated with an increasing number of reported health conditions among older adults as shown in Figure 20.
- Only 7.2% of all older adults reported frequent mental distress, a rate significantly less than the 9.6% reported by adults younger than age 60. Arthritis and disability were the only conditions that were associated with frequent mental distress among older adults, with rates of 8.7% and 15.1% respectively (data not shown).

Figure 19.

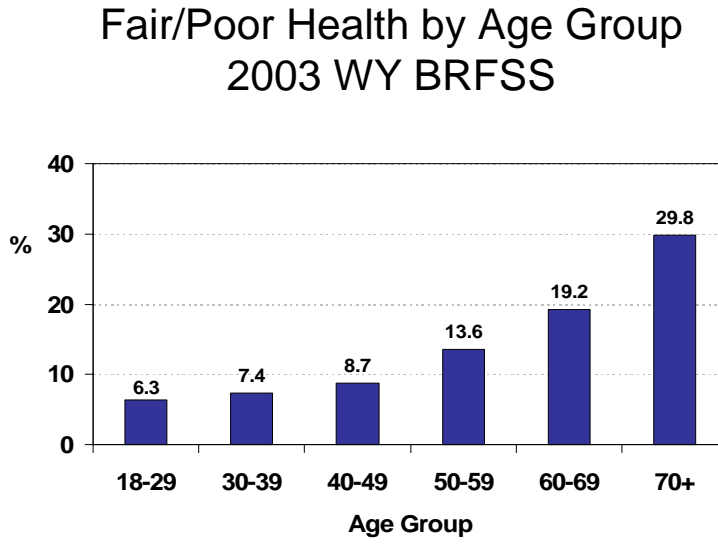
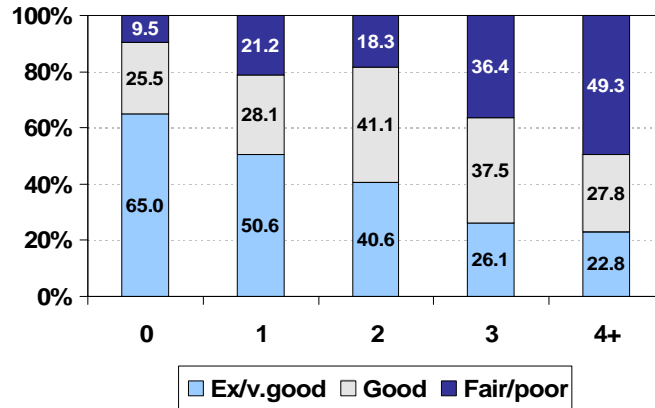


Figure 20.

### Health Status by No. of Conditions\* Adults Age 60+, 2003 WY BRFSS



\* Arthritis, asthma, diabetes, high blood pressure, high cholesterol, & osteoporosis.

#### **4. Associations between Health Conditions and Other Issues**

Associations between the each of the six selected health conditions affecting older adults and falls, disability and fair or poor health are shown in Figures 21-26. They are shown on the same page and scale for ease of comparison.

Highlights of associations between health conditions and these other issues affecting older adults:

- Compared with older adults without the condition, those with arthritis, high blood pressure, diabetes, and asthma were more likely to report a recent fall.
- With the exception of high cholesterol, older adults with each of the other five conditions were much more likely than those without the condition to report being disabled.
- Similar results were found for fair or poor health status, where the rate for those with the condition was sometimes double the rate for those without the condition (e.g. diabetes, asthma,).
- Compared with the other four conditions, asthma and diabetes appeared to have the greatest adverse affect on the health of older adults.
- These results are consistent with the results shown in Figures 16, 18, and 20 which indicate that increasing *numbers* of these conditions among older adults are associated with the adverse outcomes of recent falls, disability and fair or poor health status.

Figure 21.

Arthritis and Other Conditions  
Adults Age 60+, 2003 WY BRFSS

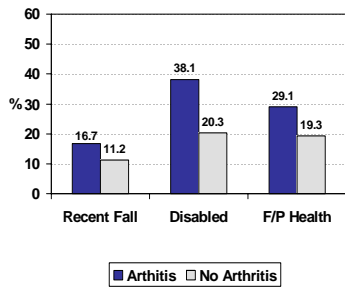


Figure 24.

Diabetes and Other Conditions  
Adults Age 60+, 2003 WY BRFSS

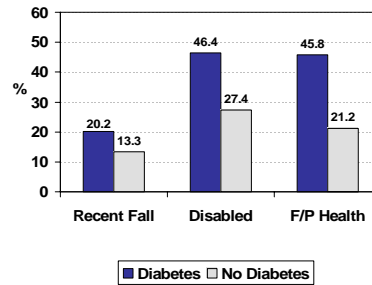


Figure 22.

HBP and Other Conditions  
Adults Age 60+, 2003 WY BRFSS

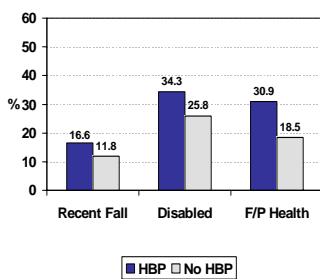


Figure 25.

Osteoporosis and Other Conditions  
Adults Age 60+, 2003 WY BRFSS

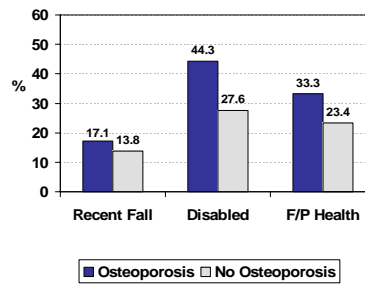


Figure 23.

High Cholesterol and Other Conditions  
Adults Age 60+, 2003 WY BRFSS

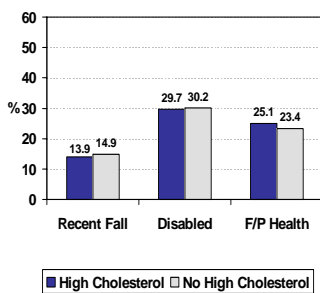
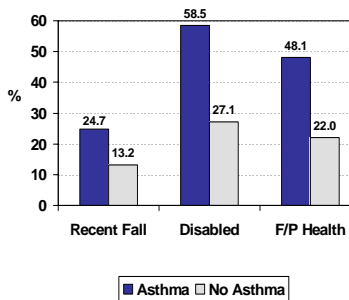


Figure 26.

Asthma and Other Conditions  
Adults Age 60+, 2003 WY BRFSS



Many of the conditions affecting older adults were also associated with each other; that is, they tended to occur together in the same person. Table 2 illustrates these associations, with those that were significantly more likely to occur together indicated by blue shading. Note that each condition was associated with at least two of the other five conditions. For example, diabetes, high blood pressure and high cholesterol tended to be positively associated with each other, as were arthritis, osteoporosis, and asthma. Such information can be useful in planning programs that address multiple health issues.

Table 2  
Associations between Conditions among Older Adults (Age 60+)

Of those in this risk group:	Prevalence of this condition					
	Arthritis	HBP	High Chol.	Diabetes	Osteoporosis	Asthma
All older adults	55.2	50.2	46.7	13.9	15.0	9.7
Arthritis						
Yes		54.8	49.0	13.7	20.2	12.2
No		44.4	43.8	14.0	8.6	6.8
High Blood Pressure (HBP)						
Yes	60.3		52.6	20.0	14.9	11.0
No	50.0		40.7	7.5	15.0	8.4
High cholesterol						
Yes	58.1	56.1		16.7	15.1	10.2
No	53.0	44.1		10.9	14.9	9.0
Diabetes						
Yes	54.6	72.8	57.4		11.1	12.1
No	55.2	46.6	45.0		15.7	9.4
Osteoporosis						
Yes	74.5	50.3	47.5	10.1		15.3
No	52.2	50.5	47.1	14.4		9.0
Asthma						
Yes	68.7	56.8	49.7	17.2	23.2	
No	53.4	49.5	46.3	13.6	14.1	

**Guide to reading table:** Select a condition from the left hand column and compare those with the condition (yes), to those without the condition (no). Example: 54.8% of older adults with arthritis had high blood pressure, compared with 44.4% of those who did not have arthritis. Conditions that were associated ( $p < 0.05$ ) are indicated by blue shading.

## D. Health Promotion/Risk Factors

Although the associations of these six conditions with disability, falls, and poor health status presented in the previous section do not establish cause and effect, it should be clear that older adults are better off if they can avoid these conditions. While each of these conditions disproportionately affects older adults, the fact that 12.8% of older adults reported none of these conditions indicates that they are not a certain result of aging. As is the case with many conditions that develop over time, there are modifiable risk factors associated with each of these conditions. Reducing the prevalence of the risk factors may help prevent the development of these conditions among older adults. In addition, once the condition has developed, there are behavior modifications that have been shown to be beneficial in reducing negative consequences of the condition, improving quality of life, or reducing the chance of further complication. The six conditions and their associated factors are shown in Table 3, with risk factors indicated by “RF”. Factors that were not measured on the 2003 BRFSS are excluded from the table. Factors indicated as “B” indicate a benefit might be achieved by modifying behavior to reduce or eliminate the risk factor.

Table 3  
Six Conditions and Related Risk Factors

<b>Risk Factor</b>	<b>Arthritis</b>	<b>HBP</b>	<b>High cholesterol</b>	<b>Diabetes</b>	<b>Osteoporosis</b>	<b>Asthma</b>
Overweight	RF	RF, B	RF, B	RF, B		
Physical inactivity	B	B	RF, B	RF	RF, B	
Smoking		B	B	B	RF	B
Inadequate fruit & vegetable consumption			RF, B	B		
Underweight					RF	
HBP		-----		B		
Heavy alcohol use		RF			RF	
Environmental tobacco smoke						RF, B

RF=risk factor

B=benefit if behavior is modified so that RF is reduced or no longer exists

Prevalence of the risk factors among the older adult population and among those younger than age 60 are shown in Table 4. Risk factors that were significantly more prevalent among older adults are shown in blue; those that were significantly less prevalent among older adults are shown in gray. Compared to their younger counterparts, older Wyoming adults were less likely to report current smoking or any tobacco use, heavy drinking, and eating fruits and vegetables fewer than 5 times daily. Adults age 60 and older were more likely to report high blood pressure, to have ever smoked cigarettes, and to be physically inactive. No differences between the two groups were noted for being overweight, underweight, or obese or for ETS exposure in the workplace.

Table 4  
Health Promotion  
Risk Factors Age 60+ and Age <60 Compared  
Wyoming BRFSS, 2003

	Age <60 years		Age 60+ years		P value for difference
	Prevalence (%)	Confidence Interval	Prevalence (%)	Confidence Interval	
<b>Overweight status</b>					
Overweight	36.7	34.7-38.8	38.5	35.3-41.7	ns
Obese	19.6	18.0-21.3	22.0	19.4-24.8	ns
Underweight	1.6	1.1-2.2	2.0	1.3-3.2	ns
<b>Physical activity</b>					
Does not meet recommendation	41.0	38.9-43.1	57.3	54.0-60.6	<0.001
No activity	7.0	6.0-8.1	22.6	19.9-25.6	<0.001
<b>Smoking</b>					
Current smoking	27.5	25.6-29.4	14.8	12.6-17.2	<0.001
Ever smoked	49.0	46.9-51.1	57.6	54.4-60.7	<0.001
Any tobacco use	36.5	34.5-38.6	19.4	16.9-22.1	<0.001
Eat f/v <5 X/day	80.1	78.4-81.7	70.4	67.4-73.3	<0.001
HBP	16.1	14.7-17.7	50.2	47.7-53.4	<0.001
Heavy drinking	7.5	6.4-8.7	3.5	2.5-4.9	<0.001
ETS exposure (non-smokers who work indoors)	14.0	11.9-16.5	9.3	5.2-16.2	ns

## E. Access to Health Care

All six of the conditions addressed in this report are likely to require continued monitoring and treatment by a health care provider, and may involve long term drug therapy. Thus health care access issues are of particular importance to older adults with any of these conditions.

Measure: Uninsured: Older Wyoming adults with no health insurance.

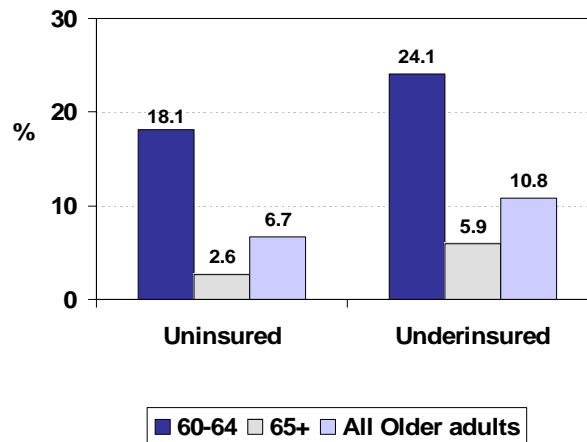
Measure: Underinsured: Older adults who were either uninsured or were insured but reported there was a time in the past year when they needed medical care but could not get it due to cost.

### Findings:

- Among all older adults, 6.7% reported they had no health insurance. Because of Medicare, only 2.6% of adults age 65 and older were without health insurance (Figure 27).
- One in ten (10.8%) older Wyoming adults was underinsured, according to this definition (Figure 27).
- Although only about 27% of older adults were age 60-64, 72% of the uninsured, and 60% of the underinsured older adults were in that age group (data not shown).
- Older adults with these six health conditions were no more likely than those without the conditions to report being uninsured or underinsured, although this still represents approximately 1,300 underinsured Wyoming older adults with asthma, 1,300 with osteoporosis, another 1,300 with diabetes, 3,900 with high cholesterol, 4,000 with high blood pressure, and 4,500 with arthritis.

Figure 27.

### Health Care Access Adults Age 60+, 2003 WY BRFSS



Measure: Older adults who said there was a time in the past year when they needed medical care but could not get it due to cost.

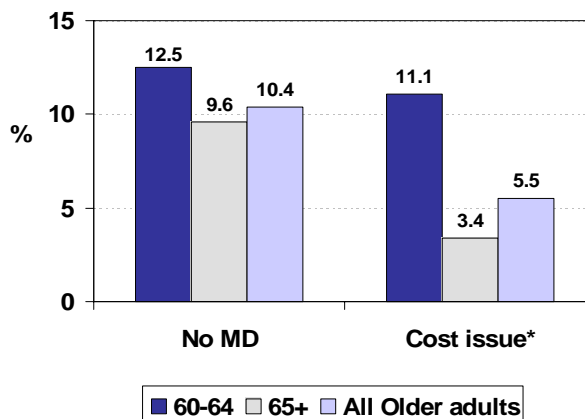
Measure: Older adults who reported that they did not have one person (or more than one) that they thought of as their personal doctor or health care provider.

### Findings:

- Despite Medicare, over one in every twenty older adults (5.5%) indicated that there was a time in the past year when they needed medical care but didn't get it due to cost (Figure 28). This rate was about three times as high for 60-64 year olds than for those 65+ (11.1% vs. 3.4%).
- Over half (54%) of all older adults that reported not getting needed health care were ages 60-64.
- One in ten older adults (10.4%) did not have at least one personal doctor (Figure 28).
- Results for having a doctor were similar for adults age 65 and older and those 60-64 years.
- Asthma was the only condition where older adults with the condition were more likely to report a cost issue, representing about 1,000 older asthmatic adults who were unable to get needed care in the past year due to the cost (12.1% for those with asthma vs. 4.8% for older adults without asthma)
- With the exception of high cholesterol (where there was no difference), older adults with the other conditions were *more* likely to report having a personal doctor than those without the condition.

Figure 28.

### Health Care Access Adults Age 60+, 2003 WY BRFSS



\* Needed health care in past year but did not get due to cost

## IV. Summary and Conclusions

Summary statistics for the six health conditions among older adults in Wyoming are shown in Table 5.

Table 5  
Summary of Health Conditions among Older Adults (age 60+)  
Wyoming BRFSS, 2003

	Prevalence	Estimated No.
Arthritis	55.2	45,000
High Blood Pressure	50.2	41,000
High Cholesterol	46.7	38,000
Diabetes	13.9	11,300
Osteoporosis	15.0	12,000
Asthma	9.7	7,900

More than eight in ten older adults (87.2%), representing 71,000 older adults, reported one or more of the following conditions: arthritis, high blood pressure, high cholesterol, diabetes, osteoporosis and asthma. These six conditions are usually chronic once they develop and are likely to require continuing health care services, long term medication, and/or ongoing monitoring. Over three-fifths of all older adults (60.8%) reported two or more of these conditions, 30.9% reported three or more, and 8.6% reported four or more (Table 6).

Table 6  
Number of Health Conditions\* Reported by Older Adults  
Wyoming BRFSS 2003

No. of Conditions	Percent	Estimated Number of Persons
None	12.8	10,400
One	26.4	21,500
Two	29.9	24,400
Three	22.3	18,200
Four or more	8.6	7,000

\*Arthritis, high blood pressure, high cholesterol, diabetes, osteoporosis, asthma.

Other significant highlights of the findings:

- Among adults of all ages, prevalence of each of the six conditions was higher among older adults, with prevalence rates usually increasing steadily across age groups.
- Conditions were often associated with one another; that is, they appeared together in the same older adult.
- With the exception of osteoporosis, all conditions were consistently associated with obesity and to a lesser extent, with overweight.
- Several conditions were associated with low income, less education, older age, and being out of work.
- With the exception of high cholesterol, the other five conditions were consistently associated with measures of quality of life, including recent falls, fair or poor health status, and disability.
- Recent falls, fair or poor health status, and disability were all significantly associated with an increasing *number* of these six conditions among older adults.
- Despite Medicare, older adults still have some health care access issues, especially among 60-64 year olds. In general, the situation does not appear worse for older adults with these health conditions.
- Some surprises in these results: asthma is not normally more prevalent among older adults, as was found here; for Wyoming in 2003, recent falls were not associated with age, gender, income, or with osteoporosis.

The six conditions discussed in this report do not represent all the chronic conditions affecting persons age 60 and older, but they do indicate that the impact of chronic conditions on older adults in Wyoming is considerable. Nearly nine in ten older adults reported one or more of these six conditions, and the association of most of the conditions with poorer quality of life, as measured by recent falls, fair or poor health, or disability, was quite clear. For example, among older adults with four or more of these conditions, over half were disabled, nearly half reported fair or poor health, and one quarter reported a recent fall. In addition, these data represent only persons who live at home, not those in nursing homes, so the results probably underestimate the burden.

Yet growing old does not necessarily lead to developing one of these conditions or becoming disabled. Over two-thirds of Wyoming older adults are not disabled, and about 10,000 do not report any of these chronic conditions. But there is a clear association between these conditions and functional health status, and a key objective for all adults should be to avoid developing chronic conditions that might lead to disability.

The economic costs associated with health care for older adults with chronic conditions are high and they are expected to rise. Although much of these costs is associated with nursing homes, home health care expenses for persons age 65 and older were estimated to be \$27.2 billion in 1996. For the 13% of the elderly who incurred such costs, the average annual expense was \$6,041. While Medicare and other insurance covered much of the cost, \$876 of the total was paid out of pocket.<sup>10</sup> The key factor associated with the need for home health care was found to be difficulty in bathing, dressing, eating or using the toilet.<sup>11</sup> Such costs could be an issue for the estimated 1,900 disabled older adults in Wyoming without health insurance, and the 2,800 who were unable to get needed medical care in the past year because of the cost.

Certain risk reduction strategies, as noted in the section on Health Promotion, can reduce the chance of an older adult becoming disabled and, in turn, aid in keeping down health care costs. Adoption of a healthy lifestyle that avoids tobacco and includes a nutritious diet and regular exercise can reduce the risk of chronic conditions. Immunizations can help prevent influenza and pneumonia, which can be a risk for older adults with some of these health conditions. Regular health screenings can identify problems at a stage when they can be successfully treated. In addition to keeping down health care costs, these strategies can result in more years of healthy life.

For adults age 60 and older who already have one of these conditions, proper management is a major factor in avoiding disability. Self-management programs can help older adults maintain or improve their functional ability. For example, a Chronic Disease Self-Management Program (CDSMP) that teaches patients how to better manage their symptoms and take their medications properly has been shown to maintain functional ability and reduce health care costs over a 2-year period.<sup>12</sup> Although older adults have not traditionally been targeted for public health programs, the projected increases in population size and longevity, coupled with the success of self-management and risk reduction programs, make it imperative to address this group when setting public health priorities.

**Table S-1**  
**Summary of Health Condition Prevalence Rates and Confidence Intervals**  
**Adults age 60 +, Wyoming BRFSS, 2003**

	<b>Arthritis</b>		<b>High Blood Pressure</b>		<b>High Cholesterol</b>	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval
<b>Total</b>	55.2	51.9-58.3	50.2	47.0-53.4	46.7	43.4-49.9
<b>Sex</b>						
Male	51.3	46.3-56.3	50.0	45.0-55.0	47.8	42.8-52.9
Female	58.5	54.4-62.5	50.5	46.3-54.6	45.7	41.6-49.9
P-value	0.028		0.882		0.532	
<b>Age</b>						
60-69	49.5	45.0-54.1	46.1	41.7-50.7	50.7	46.2-55.2
70+	60.4	55.8-64.8	54.1	49.5-58.6	42.8	38.3-47.4
P-value	0.001		0.016		0.017	
<b>Race/Ethnicity</b>						
White	55.1	51.8-58.4	49.7	46.4-53.1	46.1	42.7-49.4
Hispanic	44.8	26.2-65.1	59.3	39.8-76.2	51.5	31.6-70.9
Other	60.9	45.2-74.5	48.4	33.6-63.4	54.3	38.7-69.1
P-value	0.449		0.586		0.572	
<b>Employment status</b>						
Employed	48.8	42.3-55.4	43.7	37.3-50.3	49.0	42.5-55.5
Not working	64.5	51.4-75.8	53.4	40.6-65.7	41.3	29.3-54.4
Homemaker	61.1	50.6-70.6	53.7	43.2-63.8	51.3	40.9-61.6
Retired	56.0	51.8-60.1	52.2	48.0-56.3	45.6	41.5-49.9
P-value	0.069		0.162		0.548	
<b>Household income</b>						
<\$25,000	57.1	51.8-62.3	55.1	49.7-60.3	47.1	41.7-52.5
\$25-\$49,999	58.5	52.7-64.0	49.4	43.7-55.1	46.4	40.8-52.2
\$50-\$74,999	47.0	36.4-57.8	51.0	40.3-61.6	55.3	44.4-65.7
\$75,000+	39.3	28.7-51.1	29.4	20.2-40.6	44.4	33.4-56.0
P-value	0.010		0.001		0.490	
<b>Education</b>						
<HS	58.9	49.1-68.1	57.2	47.5-66.4	51.1	41.3-60.8
HS Graduate	59.3	53.9-64.4	53.7	48.3-59.0	45.8	40.5-51.3
Some college	58.1	52.0-63.9	42.8	37.0-48.9	45.4	39.5-51.5
College grad	44.4	38.1-50.9	49.1	42.7-55.6	47.0	40.6-53.5
P-value	0.003		0.026		0.792	
<b>Marital Status</b>						
Married	52.9	48.6-57.2	49.1	44.8-53.4	50.6	46.3-55.0
Not married	59.3	54.7-63.8	52.2	47.6-56.8	39.9	35.5-44.5
P-value	0.047		0.332		<0.001	
<b>Population Density</b>						
Ctys>50,000	56.3	50.6-62.0	49.6	43.8-55.3	43.6	38.0-49.4
Ctys 10K-50K	51.7	45.9-57.6	49.3	43.4-55.1	44.4	38.6-50.3
Ctys <10,000	57.1	51.7-62.3	51.6	46.2-56.9	51.3	45.9-56.7
P-value	0.368		0.821		0.106	
<b>Overwt status</b>						
Not overwt	49.6	44.4-54.8	36.3	31.5-41.4	40.9	35.9-46.1
Overwt	55.2	49.9-60.4	54.5	49.2-59.7	47.2	42.0-52.6
Obese	64.8	58.0-71.1	66.4	59.6-72.5	57.6	50.7-64.3
P-value	0.003		<0.001		<0.001	

**Table S-2**  
**Summary of Health Condition Prevalence Rates and Confidence Intervals**  
**Adults age 60 +, Wyoming BRFSS, 2003**

	<b>Diabetes</b>		<b>Osteoporosis</b>		<b>Asthma</b>	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval
<b>Total</b>	13.9	11.8-16.2	15.0	12.9-17.4	9.7	7.9-11.8
<b>Sex</b>						
Male	15.3	12.1-19.2	4.6	2.9-7.1	7.7	5.4-10.7
Female	12.6	10.1-15.6	24.0	20.6-27.8	11.5	9.0-14.6
P-value	0.222		<0.001		0.056	
<b>Age</b>						
60-69	16.0	12.9-19.6	9.3	7.1-12.1	7.5	5.5-10.2
70+	11.9	9.2-15.2	20.3	16.9-24.2	11.8	9.0-15.2
P-value	0.074		<0.001		0.027	
<b>Race/Ethnicity</b>						
White	13.0	11.0-15.4	15.4	13.1-17.9	9.9	8.1-12.0
Hispanic	22.8	9.2-46.3	5.7	1.7-17.2	14.4	3.8-41.6
Other	25.1	14.4-40.0	16.2	7.6-31.2	3.7	0.9-13.9
P-value	0.074		0.262		0.408	
<b>Employment status</b>						
Employed	10.8	7.1-16.1	11.4	7.9-16.2	8.4	5.1-13.4
Not working	24.6	15.7-36.3	14.6	8.6-23.7	23.6	14.6-35.8
Homemaker	11.3	6.4-19.2	27.5	18.8-38.2	7.4	3.6-14.7
Retired	14.0	11.4-17.1	14.8	12.1-17.9	8.9	6.9-11.5
P-value	0.035		0.004		0.002	
<b>Household income</b>						
<\$25,000	17.4	13.6-21.9	18.1	14.4-22.5	12.2	9.2-16.0
\$25-\$49,999	14.3	10.9-18.6	12.3	9.0-16.4	8.5	5.9-12.2
\$50-\$74,999	4.4	1.7-11.3	12.0	6.8-20.3	15.3	8.6-25.7
\$75,000+	9.5	4.6-18.8	10.2	4.9-20.1	4.8	1.5-14.1
P-value	0.013		0.098		0.101	
<b>Education</b>						
<HS	15.4	9.1-24.8	15.6	9.8-24.0	13.0	7.4-21.9
HS Graduate	14.0	10.7-18.1	19.4	15.6-23.9	11.3	8.3-15.4
Some college	14.8	11.1-19.5	14.0	10.4-18.7	8.9	6.1-12.7
College grad	12.1	8.5-17.0	9.7	6.6-13.9	6.9	4.3-10.8
P-value	0.814		0.013		0.213	
<b>Marital Status</b>						
Married	14.5	11.7-17.8	11.3	8.9-14.3	8.4	6.2-11.2
Not married	12.8	10.1-16.1	21.7	18.1-25.9	12.1	9.4-15.4
P-value	0.447		<0.001		0.059	
<b>Population Density</b>						
Ctys>50,000	12.0	8.8-16.2	18.5	14.4-23.4	10.4	7.4-14.5
Ctys 10K-50K	15.7	11.9-20.5	15.6	11.8-20.3	10.2	7.0-14.5
Ctys <10,000	14.3	11.0-18.5	11.4	8.5-15.0	8.2	5.8-11.6
P-value	0.441		0.037		0.598	
<b>Overwt status</b>						
Not overwt	6.7	4.5-9.7	20.3	16.6-24.7	9.3	6.7-12.8
Overwt	14.2	10.9-18.2	12.4	9.3-16.3	7.9	5.6-10.0
Obese	25.0	19.4-31.5	9.4	6.1-14.0	14.0	9.6-20.0
P-value	<0.001		<0.001		0.067	

**Table S-3**  
**Summary of Health Condition Prevalence Rates and Confidence Intervals**  
**Adults age 60 +, Wyoming BRFSS, 2003**

	Any conditions		3+ conditions		None	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval
<b>Total</b>	87.2	84.9-89.2	30.9	28.0-34.0	12.8	10.9-15.1
<b>Sex</b>						
Male	85.8	82.0-89.0	26.1	22.0-30.7	14.2	11.1-18.0
Female	88.3	85.5-90.7	35.0	31.1-39.2	11.7	9.3-14.5
P-value	0.249		0.004		0.249	
<b>Age</b>						
60-69	85.4	82.0-88.2	25.7	21.9-29.9	14.6	11.8-18.0
70+	88.8	85.5-91.5	35.8	31.5-40.3	11.2	8.5-14.5
P-value	0.115		0.001		0.115	
<b>Race/Ethnicity</b>						
White	87.2	84.8-89.2	30.5	27.5-33.7	12.8	10.8-15.2
Hispanic	78.1	58.5-90.0	33.8	16.8-56.4	21.9	10.0-41.5
Other	91.9	78.4-97.2	37.0	23.8-52.4	8.1	2.8-21.6
P-value	0.242		0.699		0.242	
<b>Employment status</b>						
Employed	82.2	77.0-86.5	27.1	21.4-33.6	17.8	13.5-23.0
Not working	93.8	84.3-97.7	41.3	29.9-53.8	6.2	<b>2.3-15.7</b>
Homemaker	89.3	80.3-94.5	36.1	26.8-46.7	10.7	5.5-19.7
Retired	88.2	85.2-90.7	30.4	26.8-34.4	11.8	9.3-14.8
P-value	0.042		0.118		0.042	
<b>Household income</b>						
<\$25,000	87.4	83.5-90.4	38.6	33.6-44.0	12.6	9.6-16.5
\$25-\$49,999	89.3	85.2-92.4	28.8	24.0-34.1	10.7	7.6-14.9
\$50-\$74,999	92.3	85.4-96.1	23.3	15.2-33.9	7.7	3.9-14.6
\$75,000+	74.3	63.0-83.1	15.5	8.8-25.8	25.7	16.9-37.0
P-value	0.002		<0.001		0.002	
<b>Education</b>						
<HS	88.6	79.8-93.8	33.4	24.9-43.1	11.4	6.2-20.2
HS Graduate	88.9	85.2-91.7	36.8	31.7-42.2	11.1	8.3-14.8
Some college	87.2	82.6-90.6	29.1	24.0-34.8	12.9	9.4-17.4
College grad	83.8	78.5-88.0	23.7	18.6-29.6	16.2	12.0-21.5
P-value	0.359		0.008		0.359	
<b>Marital Status</b>						
Married	86.3	83.1-89.0	29.7	25.9-33.8	13.7	11.0-16.9
Not married	88.7	85.8-91.2	33.2	29.0-37.7	11.3	8.8-14.2
P-value	0.234		0.248		0.234	
<b>Population Density</b>						
Ctys>50,000	89.4	85.6-92.3	29.1	24.2-34.5	10.6	7.7-14.5
Ctys 10K-50K	85.3	80.7-88.9	30.3	25.1-36.0	14.7	11.1-19.3
Ctys <10,000	87.3	83.1-90.5	33.0	28.1-38.3	12.7	9.5-16.9
P-value	0.325		0.555		0.325	
<b>Overwt status</b>						
Not overwt	81.8	77.5-85.5	23.9	19.8-28.6	18.2	14.5-22.5
Overwt	87.4	83.5-90.4	32.6	27.8-37.7	12.6	9.6-16.5
Obese	95.9	92.3-97.9	40.0	33.4-47.0	4.1	2.1-7.7
P-value	<0.001		<0.001		<0.001	

**Table S-4**  
**Summary of Prevalence Rates and Confidence Intervals for Associated Issues**  
**Adults age 60 +, Wyoming BRFSS, 2003**

	<b>Falls</b>		<b>Disability</b>		<b>F/P Health</b>	
	Prevalence	Confidence Interval	Prevalence	Confidence Interval	Prevalence	Confidence Interval
<b>Total</b>	14.2	21.1-16.6	30.2	27.3-33.2	24.7	22.0-27.6
<b>Sex</b>						
Male	14.6	11.3-18.6	27.7	23.5-32.4	24.2	20.1-28.7
Female	13.9	11.4-16.9	32.2	28.4-36.3	25.1	21.6-28.9
P-value	0.781		0.143		0.759	
<b>Age</b>						
60-69	13.2	10.5-16.5	27.7	23.8-32.0	19.2	15.9-23.0
70+	15.2	12.1-18.8	32.5	28.3-36.9	29.8	25.7-34.2
P-value	0.398		0.118		<0.001	
<b>Race/Ethnicity</b>						
White	13.8	11.6-16.2	30.3	27.3-33.5	24.1	21.4-27.1
Hispanic	20.6	7.8-44.4	26.5	11.9-49.0	31.1	15.7-52.2
Other	19.9	10.5-34.5	30.9	18.9-46.0	33.7	21.3-48.8
P-value	0.416		0.905		0.326	
<b>Employment status</b>						
Employed	13.3	9.1-19.1	20.9	16.0-26.8	11.8	8.0-16.9
Not working	16.2	9.4-26.7	66.2	52.9-77.3	66.7	53.2-77.8
Homemaker	9.5	5.3-16.4	30.4	21.6-41.0	21.6	14.4-31.0
Retired	15.1	12.4-18.3	29.5	25.9-33.5	25.4	21.9-29.2
P-value	0.493		<0.001		<0.001	
<b>Household income</b>						
<\$25,000	15.0	11.6-19.2	36.1	31.1-41.4	35.4	330.4-40.7
\$25-\$49,999	16.2	12.3-21.0	28.8	23.8-34.2	17.3	13.5-22.2
\$50-\$74,999	14.9	8.7-24.4	24.1	16.2-34.2	17.0	10.1-27.1
\$75,000+	8.9	12.6-17.6	18.4	11.1-28.9	5.9	2.2-14.6
P-value	0.466		0.008		<0.001	
<b>Education</b>						
<HS	19.6	12.5-29.3	37.1	28.2-46.9	41.5	32.5-51.1
HS Graduate	12.0	9.2-15.6	25.7	21.2-30.7	25.2	20.7-30.4
Some college	17.9	13.5-23.2	33.4	28.0-39.3	25.3	20.4-30.8
College grad	11.2	7.8-15.7	30.4	24.8-36.8	15.8	11.7-21.1
P-value	0.043		0.081		<0.001	
<b>Marital Status</b>						
Married	12.8	10.1-16.1	27.2	23.5-31.3	21.2	17.9-25.0
Not married	16.8	13.7-20.5	35.5	31.1-40.1	30.7	26.5-35.3
P-value	0.082		0.007		<0.001	
<b>Population Density</b>						
Ctys>50,000	14.3	10.8-18.8	33.4	28.2-39.1	23.5	19.1-28.6
Ctys 10K-50K	13.7	10.0-18.6	30.8	25.6-36.6	26.7	21.8-32.2
Ctys <10,000	13.8	10.7-17.7	27.1	22.6-32.1	24.2	19.8-29.1
P-value	0.979		0.223		0.648	
<b>Overwt status</b>						
Not overwt	10.7	7.9-14.4	26.0	21.7-30.8	21.6	17.5-26.3
Overwt	13.7	10.5-17.8	25.8	21.4-30.8	23.9	19.6-28.7
Obese	21.0	15.8-27.3	44.1	37.3-51.1	30.3	24.5-36.8
P-value	0.004		<0.001		0.073	

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