

# CHAPTER 5: RISK FACTORS FOR CHRONIC DISEASE AND INJURY

This chapter discusses some of the factors that are associated with increased risk for developing chronic diseases and suffering an injury. The most important risk factors for chronic diseases include cigarette smoking, alcohol misuse, hypertension, obesity, physical inactivity, high blood cholesterol, and high fat/low fiber diet. These factors are associated with the leading causes of death: heart disease, cancer, stroke, and many other illnesses. In addition, firearms increase the risk of death and injury from homicide, suicide, and accidents; not wearing a seat belt increases the risk of death and injury from motor vehicle crashes.

Although many of the risk factors can often be reduced by modification in individual lifestyles, the behaviors of individuals are also influenced by norms of society and availability of social resources to help an individual resist these factors and adapt healthy choices. For example, poverty may limit people in making healthy personal choices because of diffi-

culty in accessing nutritious food or help with smoking cessation; lack of health insurance is a major barrier for controlling high blood pressure. Therefore, developing community programs, public policies and legislation are also important for promoting individual changes to reduce behavioral risk factors.

Results presented in this chapter on behavioral risk factors are based on data from the Washington State Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is a telephone interview survey of non-institutionalized adults age 18 and older. The survey has been conducted in Washington State since 1987. The 1995 Teen Health Risk Survey conducted among Seattle high school and grade 8 students is also cited to supplement information on the prevalence of behavioral risk factors among Seattle youth. The prevalence rates of the behavioral risk factors are summarized in Table 5-1.

**Table 5-1:  
The Prevalence of the Behavioral Risk Factors Among Adults Age 18 and Older  
King County, Washington State, and the United States\***

|  | King County | WA State | U.S. Median 1995 |
|--|-------------|----------|------------------|
| Current Smoking (1996)                       | 20.1%       | 23.3%    | 22.4%            |
| Chronic Alcohol Drinking (1995)              | 2.0%        | 2.8%     | 2.8%             |
| Drinking And Driving (1995)                  | 2.1%        | 2.1%     | 2.3%             |
| Binge Drinking (1995)                        | 14.5%       | 13.4%    | 13.9%            |
| Hypertension (1995)                          | 18.8%       | 20.9%    | 22.0%            |
| Overweight,** BMI, Old Guideline (1996)      | 23.7%       | 25.9%    | 28.6%            |
| Overweight,** BMI, New Guideline (1996)      | 49.7%       | 51.4%    | N/A              |
| Sedentary Lifestyle (1996)                   | 42.4%       | 46.9%    | N/A              |
| No Leisure-Time Physical Activity (1996)     | 15.0%       | 19.1%    | 28.8%            |
| Told They Have High Blood Cholesterol (1995) | 22.6%       | 21.2%    | 19.4%            |
| Always Wears A Safety Belt (1995)            | 81.6%       | 77.5%    | 66.0%            |

\* Some of the questions on risk factors are only asked every other year in the BRFSS. The data reported for King County and Washington State in this chapter are based on the year(s) in which the questions were included.

\*\* Please see the Overweight Section in this chapter on page 38, for the definition of overweight.

In general, compared to Washington State and U.S. data, King County residents were more likely to practice healthy behaviors. Nevertheless, data presented in this chapter also indicated that:

- ◆ The prevalence of risk factors were higher among low income King County residents;
- ◆ High rates of smoking continued among youth and young adults;
- ◆ The rate of overweight continued to increase among King County adults and the prevalence of

sedentary lifestyle remained high;

- ◆ The rate of cholesterol screening was high, but one quarter of King County adults had not received a blood cholesterol screening within five years;
- ◆ Most King County residents did not eat enough fruits and vegetables; and
- ◆ The rate of seat belt use increased significantly over the last decade, but almost 20 percent of King County adults still did not always use a seat belt.

## SMOKING

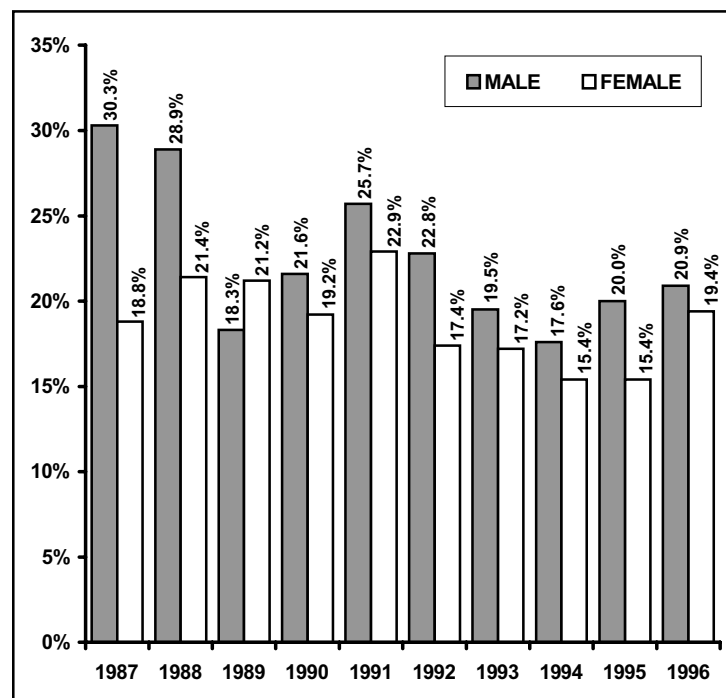
Cigarette smoking is a major risk factor for a variety of diseases such as heart disease, lung cancer, and many respiratory conditions. It is estimated that

19 percent of all deaths, 21 percent of the deaths from coronary heart disease, 87 percent of the deaths from lung cancer, and 30 percent of all cancer deaths are attributable to cigarette smoking.<sup>1</sup>

## Smoking Among King County Adults

- ◆ In 1996, 20 percent of King County adults were current smokers.
- ◆ 1.6 percent of King County adults were using smokeless tobacco (chewing tobacco or snuff).
- ◆ Of the 11,748 deaths in 1996, 2,228 (19 percent) were attributable to cigarette smoking.<sup>2</sup>
- ◆ The smoking prevalence rate among males declined significantly between 1987 and 1994, but then the rate increased slightly in the most recent two years. Between 1987 and 1996, there was no significant change in the smoking prevalence rate among females (Figure 5-1).
- ◆ The smoking prevalence rate was highest

**Figure 5-1:  
Time Trend of Current Smoking  
Among King County Adults  
1987-1996**



Source: BRFES; WA State Department of Health, Center for Health Statistics.

<sup>1</sup> U.S. Department of Health and Human Services. Healthy People 2000. 1991. (PHS) 91-50212. P136.

<sup>2</sup> Estimated using SAMMEC 3.0 (Smoking-Attributable Mortality, Morbidity, and Economic Costs), a software developed by the Centers for Disease Control. The program uses the smoking attributable risk for a number of health conditions for the calculation. The smoking attributable risk, defined as the proportion of deaths of a disease caused by cigarette smoking, is based on research findings. The 1996 estimate is based on the 1996 BRFES age specific smoking prevalence rates and the 1996 cause-specific death counts for King County.

**Table 5-2:  
Prevalence of Current Smoking  
Among King County Adults  
1994-1996 Averages**

|                                 | Sample Size | Percent | (95% C.I.)    |
|---------------------------------|-------------|---------|---------------|
| <b>Age:</b>                     |             |         |               |
| 18-24                           | 275         | 25.8    | (20.1 - 31.6) |
| 25-44                           | 1,432       | 20.3    | (18.1 - 22.5) |
| 45-64                           | 800         | 15.0    | (12.3 - 17.7) |
| 65+                             | 432         | 10.9    | ( 7.9 - 13.9) |
| <b>Sex:</b>                     |             |         |               |
| Male                            | 1,328       | 19.5    | (17.2 - 21.8) |
| Female                          | 1,611       | 16.7    | (14.8 - 18.7) |
| <b>Race/Ethnicity:</b>          |             |         |               |
| White                           | 2,548       | 17.9    | (16.3 - 19.5) |
| African American                | 119         | 23.7    | (15.1 - 32.4) |
| Asian                           | 180         | 12.5    | ( 7.3 - 17.8) |
| Hispanic                        | 124         | 17.1    | (10.2 - 24.1) |
| <b>Annual Household Income:</b> |             |         |               |
| <\$10,000                       | 165         | 31.0    | (23.0 - 38.9) |
| \$10,000 - 24,999               | 609         | 27.0    | (23.0 - 30.9) |
| \$25,000 - 34,999               | 410         | 20.5    | (16.3 - 24.8) |
| \$35,000 - 49,999               | 561         | 18.3    | (14.8 - 21.8) |
| \$50,000+                       | 851         | 12.6    | (10.1 - 15.0) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

- among young adults age 18 to 24.
- ◆ Males were slightly more likely to be current smokers than females.
- ◆ African Americans had a higher smoking rate than whites but the difference was not statistically significant.
- ◆ The higher the household income level, the lower the smoking rate.

## Smoking Among Youth<sup>3</sup>

Cigarette smoking and nicotine addiction usually begins during adolescence. Therefore, preventing smoking among young people is critical to ending the epidemic of tobacco use in the United States.<sup>4</sup> Both national and local data indicate that smoking among youth remains a major public health problem.

- ◆ In Seattle 1995, 31 percent of high school and 29 percent of grade 8 students smoked cigarettes in the previous month.
- ◆ Twenty-five percent of high school and 20 percent of grade 8 students smoked cigarettes every day.
- ◆ The prevalence of cigarette smoking among youth had been increasing. Among high school students, the proportion who reported smoking during the previous month increased significantly from 26 percent in 1993 to 31 percent in 1995.

<sup>3</sup> Seattle Public Schools. 1995 Teen Health Risk Survey. April, 1996.

<sup>4</sup> CDC. Preventing Tobacco Use Among Young People. A Report of the Surgeon General. Executive Summary. MMWR. 1994. 43 (RR-4).

## ALCOHOL MISUSE

Alcohol misuse increases the risk of heart disease, high blood pressure, motor vehicle crashes, chronic liver disease, sexually transmitted disease, and domestic violence. Alcohol-related motor vehicle crashes are a leading cause of death among young adults and teenagers. Nationally, alcohol is implicated in 4 of 10

deaths caused by motor vehicle crashes, and half of fatal intentional injuries such as suicides and homicides. The use of alcohol and other drugs among adolescents is related to higher rates of school failure and unintended pregnancy. Alcohol misuse is also the principal cause of deaths from cirrhosis of the liver.

### Alcohol Misuse Among King County Adults

- ◆ In 1995, 2 percent of King County adults were chronic alcohol drinkers.<sup>5</sup>
- ◆ Two percent had driven at least once when they “have had perhaps too much to drink” (drunk driving) during the previous month.
- ◆ Fifteen percent had engaged in binge drinking<sup>6</sup> at least once during the previous month.
- ◆ Younger and male adults were more likely to engage in drunk driving and binge drinking.

**Table 5-3:**  
**Prevalence of Alcohol Misuse In King County**  
**1993, 1995 Average**

|                                 | Sample Size | Chronic Drinking |             | Drunk Driving |             | Binge Drinking |               |
|---------------------------------|-------------|------------------|-------------|---------------|-------------|----------------|---------------|
|                                 |             | Percent          | (95% C.I.)  | Percent       | (95% C.I.)  | Percent        | (95% C.I.)    |
| <b>Age:</b>                     |             |                  |             |               |             |                |               |
| 18-24                           | 158         | 1.9              | (0.0 - 4.6) | 3.7           | (0.4 - 7.1) | 29.5           | (21.5 - 37.4) |
| 25-44                           | 933         | 1.9              | (1.0 - 2.9) | 3.0           | (1.9 - 4.2) | 15.5           | (13.1 - 18.0) |
| 45-64                           | 460         | 3.0              | (1.2 - 4.9) | 1.0           | (0.2 - 1.9) | 10.1           | ( 7.0 - 13.2) |
| 65+                             | 229         | 0.7              | (0.0 - 1.8) | 0.7           | (0.0 - 2.0) | 2.8            | ( 0.0 - 5.8)  |
| <b>Sex:</b>                     |             |                  |             |               |             |                |               |
| Male                            | 816         | 3.8              | (2.2 - 5.2) | 3.7           | (2.3 - 5.1) | 20.7           | (17.6 - 23.8) |
| Female                          | 964         | 0.4              | (0.0 - 0.8) | 0.8           | (0.3 - 1.4) | 7.2            | ( 5.5 - 9.0)  |
| <b>Race/Ethnicity:</b>          |             |                  |             |               |             |                |               |
| White                           | 1,542       | 2.1              | (1.3 - 2.9) | 2.3           | (1.5 - 3.2) | 14.0           | (12.1 - 16.0) |
| African American                | 77          | 2.9              | (0.0 - 7.4) | 0.0           | (0.0 - 3.9) | 9.9            | ( 2.8 - 17.0) |
| Asian                           | 107         | 0.0              | (0.0 - 2.8) | 1.6           | (0.0 - 3.6) | 8.6            | ( 2.0 - 15.2) |
| Hispanic                        | 73          | 2.2              | (0.0 - 5.5) | 3.6           | (0.0 - 7.8) | 21.8           | (11.8 - 31.7) |
| <b>Annual Household Income:</b> |             |                  |             |               |             |                |               |
| <\$10,000                       | 103         | 0.0              | (0.0 - 2.9) | 0.8           | (0.0 - 2.3) | 13.4           | ( 6.8 - 19.9) |
| \$10,000 - 24,999               | 372         | 1.8              | (0.5 - 3.1) | 2.7           | (1.0 - 4.4) | 13.0           | ( 9.2 - 16.7) |
| \$25,000 - 34,999               | 257         | 3.0              | (0.5 - 5.5) | 3.1           | (0.6 - 5.5) | 13.8           | ( 9.4 - 18.2) |
| \$35,000 - 49,999               | 357         | 1.5              | (0.4 - 2.7) | 3.4           | (1.4 - 5.4) | 17.0           | (12.6 - 21.5) |
| \$50,000+                       | 520         | 2.6              | (0.9 - 4.3) | 1.6           | (0.4 - 2.8) | 13.8           | (10.4 - 17.2) |

Source: BRFSS; WA State Department of Health, Center for Health Statistics.

<sup>5</sup> Chronic drinkers are defined as people who on the average have two or more drinks per day and 60 or more drinks per month.

<sup>6</sup> Binge drinking is defined as having five or more drinks on one occasion.

## Alcohol Use Among Youth

Alcohol is a major risk factor for the three leading causes of death among adolescents: motor vehicle crashes, suicide, and homicide. Among adolescents, alcohol is also related to sexually transmitted diseases and low academic achievement.

- ◆ In Seattle during 1995, 42 percent of high school and 32 percent of grade 8 students used alcohol during the previous month.
  - ◆ Six percent of high school and grade 8 students used alcohol 10 or more times during the previous month.
  - ◆ Twenty-two percent of high school and 17 percent grade 8 students binge drank at least once during the previous month.
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## HYPERTENSION (HIGH BLOOD PRESSURE)

Hypertension refers to elevation of the blood pressure. Hypertension significantly increases the risk of coronary heart disease, stroke, and kidney failure. Factors such as alcohol misuse, high salt diet, physical inactivity, obesity, age, sex, heredity, and race are associated with increased risk of hypertension. African American males, for example, have an increased risk for hypertension.

◆ In 1995, 19 percent of King County adults had

been told that they have high blood pressure by a health professional (hypertension awareness).

- ◆ The prevalence rate of hypertension (awareness) increased with age from about 10 percent in the 18 to 24 age group, to 46 percent in the 65 and older age group.
- ◆ Persons of lower income levels had higher prevalence of hypertension (awareness) than persons in higher income levels.

**Table 5-4:**  
**High Blood Pressure Awareness Among King County Adults**  
**1993, 1995 Average**

|                                 | Sample Size | Have Been Told They Have High Blood Pressure |                | BP Checked Within Two Years |               |
|---------------------------------|-------------|--|----------------|-----------------------------|---------------|
|                                 |             | Percent                                      | (95% C.I.)     | Percent                     | (95% C.I.)    |
| <b>Age:</b>                     |             |  |                |                             |               |
| 18-24                           | 158         | 10.3   | ( 4.8 - 15.7)  | 95.0                        | (91.6 - 98.5) |
| 25-44                           | 933         | 11.5   | ( 9.3 - 13.7)  | 90.9                        | (88.9 - 92.9) |
| 45-64                           | 460         | 26.7   | (22.2 - 31.1)  | 94.7                        | (92.7 - 96.7) |
| 65+                             | 229         | 45.7   | (38.3 - 53.1)  | 98.0                        | (96.4 - 99.6) |
| <b>Sex:</b>                     |             |  |                |                             |               |
| Male                            | 816         | 22.2   | (19.1 - 25.4)  | 90.4                        | (88.3 - 92.5) |
| Female                          | 964         | 18.3   | (15.5 - 21.0)  | 96.2                        | (95.0 - 97.4) |
| <b>Race/Ethnicity:</b>          |             |  |                |                             |               |
| White                           | 1,542       | 19.9   | (17.7 - 22.2)  | 93.0                        | (91.6 - 94.3) |
| African American                | 77          | 21.1   | (11.3 - 31.0)  | 93.4                        | (87.0 - 99.8) |
| Asian                           | 107         | 24.0   | ( 14.4 - 33.7) | 97.6                        | (95.2-100.0)  |
| Hispanic                        | 73          | 26.6   | (15.1 - 38.0)  | 96.4                        | (92.2-100.0)  |
| <b>Annual Household Income:</b> |             |  |                |                             |               |
| <\$10,000                       | 108         | 31.9   | (20.9 - 42.8)  | 89.1                        | (82.7 - 95.4) |
| \$10,000 - 24,999               | 372         | 23.4   | (18.4 - 28.4)  | 93.5                        | (90.9 - 96.1) |
| \$25,000 - 34,999               | 257         | 17.1   | (12.1 - 22.1)  | 93.7                        | (90.6 - 96.7) |
| \$35,000 - 49,999               | 357         | 20.8   | (15.9 - 25.6)  | 92.4                        | (89.4 - 95.3) |
| \$50,000+                       | 526         | 17.0   | (13.5 - 20.5)  | 95.5                        | (93.8 - 97.3) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

## Prevention and Early Detection

In addition to primary prevention measures to reduce life-style risk factors for hypertension, early detection and treatment of hypertension are also important for preventing hypertension-related complications and deaths. Adults should have a blood pressure measurement at least once every two years, and more frequently if previous measurements have detected pressure above 130/85.

- ◆ In 1995, 93 percent of King County adults had received a blood pressure measurement within the previous two years.
  - ◆ In addition to having a higher prevalence of hypertension, males and low income persons were also less likely to receive regular blood pressure measurements.
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## OVERWEIGHT

Overweight is usually the result of excessive body fat. Overweight and obesity increase the risk of coronary heart disease, stroke, hypertension, diabetes, gallbladder disease, osteoarthritis, sleep apnea and respiratory problems, and endometrial, breast, prostate, and colon cancers. After cigarette smoking, obesity is the second leading cause of preventable death in the United States.

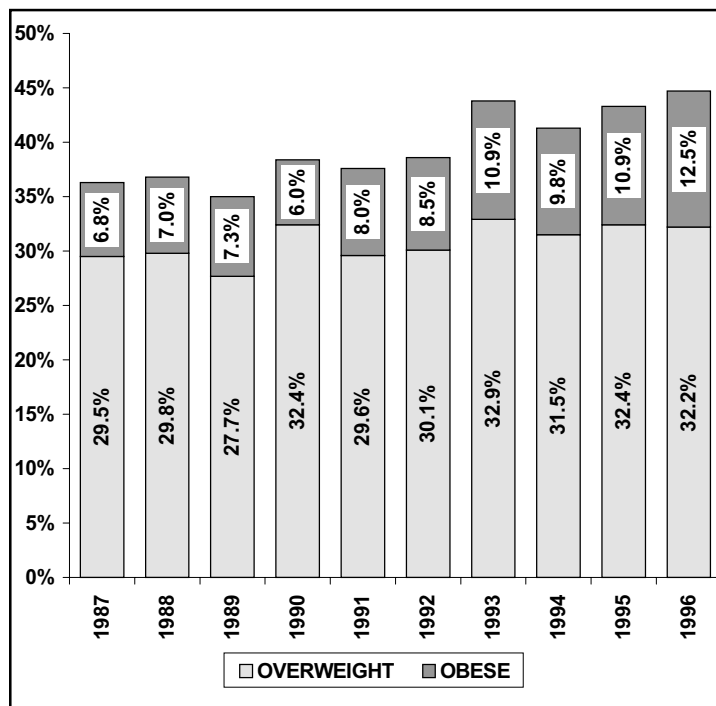
Overweight is often defined by the use of the body mass index (BMI), a ratio of weight to height (weight in kg / (height in m<sup>2</sup>) or 704.5 x [pounds /

(height in inches<sup>2</sup>)]. Prior to the release of the obesity clinical guideline by the National Institute of Health (NIH) on June 17, 1998, a BMI of 27.8 or greater in male adults and a BMI of 27.3 or greater in female adults are considered overweight (old guideline).<sup>1</sup>

The new NIH guideline, however, defines overweight as a BMI of 25 to 29.9 and obesity as a BMI of 30 and above for all men and women age 18 and over.<sup>2</sup>

Overweight and obesity are not mutually exclusive since obese persons are also overweight. The new guideline is based on scientific evidences that relate body mass index to risk of death and illnesses.

**Figure 5-2:  
Time Trend of Overweight (BMI = 25-29.9) and  
Obesity (BMI ≥ 30) Among King County Adults  
1987-1996**



Source: BRFSS: WA State Department of Health, Center for Health Statistics.

- ◆ Using the old BMI definition, 24% of King County adults in 1996 were overweight (including people who were obese). With the new guideline, however, 45% were overweight.
- ◆ Between 1987 and 1996, the prevalence of overweight increased from 36.3% to 44.7%, mainly due to an increase in the prevalence of obesity, from 6.8% to 12.5%.
- ◆ The increase in the prevalence of overweight occurred among both men and women and among all age groups. The changes in the prevalence of overweight (BMI ≥ 25) between the 1987-1989 average and the 1994-1996 average were from 44.2% to 52.7% for men and 28.0% to 33.3% for women. By age groups, the changes were 15.2% to 27.7% for those age 18-24, 34.4% to 39.8% for those age 25-44, 48.8% to 54.3% for those age 45-64, and 40.4% to 44.4% for those age 65 and over.
- ◆ Income level was not significantly associated with the prevalence of being overweight.

<sup>1</sup> U.S. Department of Health and Human Services Public Health Service. Healthy People 2000. Page 114. DHHS Publication No. (PHS) 91-50212.

<sup>2</sup> NHLBI Obesity Education Initiative Expert Panel. Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults. The Evidence Report. June 1998.



**Table 5-5:  
Prevalence of Overweight (BMI ≥ 25)  
Among King County Adults  
1994-1996 Average**

|                                 | Sample Size | Percent | (95% C.I.)    |
|---------------------------------|-------------|---------|---------------|
| <b>Age:</b>                     |             |         |               |
| 18-24                           | 275         | 27.7    | (21.7 - 33.7) |
| 25-44                           | 1,432       | 39.8    | (36.9 - 42.6) |
| 45-64                           | 800         | 54.3    | (50.5 - 58.2) |
| 65+                             | 432         | 44.4    | (39.1 - 49.7) |
| <b>Sex:</b>                     |             |         |               |
| Male                            | 1,328       | 52.7    | (49.7 - 55.7) |
| Female                          | 1,611       | 33.3    | (30.7 - 35.9) |
| <b>Race/Ethnicity:</b>          |             |         |               |
| White                           | 2,548       | 43.9    | (41.8 - 46.1) |
| African American                | 119         | 54.3    | (44.1 - 64.5) |
| Asian                           | 180         | 27.7    | (20.0 - 35.5) |
| Hispanic                        | 124         | 44.6    | (33.2 - 54.0) |
| <b>Annual Household Income:</b> |             |         |               |
| <\$10,000                       | 165         | 43.3    | (34.1 - 52.4) |
| \$10,000 - 24,999               | 609         | 45.2    | (40.7 - 50.0) |
| \$25,000 - 34,999               | 410         | 45.5    | (40.2 - 50.9) |
| \$35,000 - 49,999               | 561         | 44.0    | (39.5 - 48.5) |
| \$50,000+                       | 851         | 40.6    | (37.2 - 44.0) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

## Weight Control

While the prevalence of overweight has been increasing, many King County residents have been trying to lose weight.

- ◆ In 1996, 34 percent of King County adults were trying to lose weight while 36 percent were trying to maintain their current weight.
- ◆ Of those who were trying to lose weight, 92 percent were eating fewer calories or less fat and 72

percent were using physical activity or exercise.

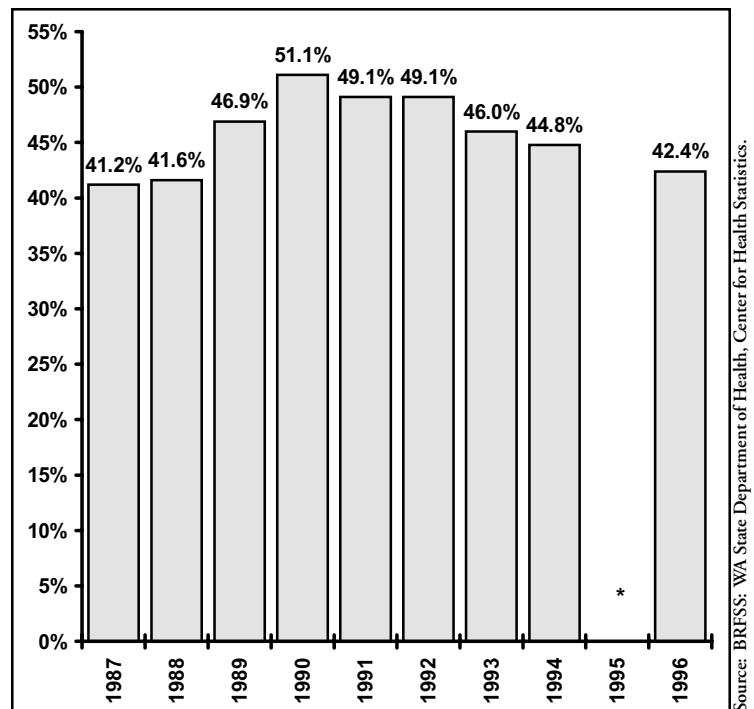
- ◆ Of those who were trying to maintain their current weight, 68 percent were eating few calories or less fat and 59 percent were using physical activity or exercise.
- ◆ Of the persons who were overweight (BMI ≥ 25), 54 percent were trying to lose weight, compared to 16 percent among persons who had normal weight.

## PHYSICAL INACTIVITY

Physical inactivity increases the risk of coronary heart disease, hypertension, obesity, diabetes, and many other illnesses. In BRFS, there are two undesirable physical activity levels: 1) no leisure time physi-

cal activity, and 2) irregular activity, which is defined as having physical activity less than 20 minutes per time and less than three time per week. A person in either of the two activity levels is also defined as having a sedentary lifestyle.

**Figure 5-3:  
Time Trend of Sedentary Lifestyle  
Among King County Adults  
1987-1996**



\* This question was not asked on the 1995 BRFS.

- ◆ In 1996, 42 percent of King County adults lived a sedentary lifestyle with either no leisure time physical activity (15 percent) or had only “irregular activity” (27 percent).
- ◆ Between 1987 and 1996, there was no significant change in the prevalence of sedentary lifestyle.
- ◆ Hispanics were significantly more likely to have a sedentary lifestyle than whites.
- ◆ The lower the household income level, the higher the rate of sedentary lifestyle.
- ◆ Persons with higher levels of physical activity were less likely to be obese.
- ◆ The most popular forms of physical activity include walking, gardening, running, aerobics classes, hiking, health club exercise, and lap swimming.

**Table 5-6:  
Prevalence of Sedentary Lifestyle  
Among King County Adults  
1994, 1996 Average**

|                                 | Sample Size | Percent | (95% C.I.)    |
|---------------------------------|-------------|---------|---------------|
| <b>Age:</b>                     |             |         |               |
| 18-24                           | 191         | 29.2    | (22.3 - 36.1) |
| 25-44                           | 947         | 45.9    | (42.5 - 49.4) |
| 45-64                           | 530         | 43.2    | (38.5 - 47.9) |
| 65+                             | 290         | 47.1    | (40.9 - 53.3) |
| <b>Sex:</b>                     |             |         |               |
| Male                            | 875         | 42.4    | (38.9 - 46.0) |
| Female                          | 1,083       | 44.6    | (41.4 - 47.9) |
| <b>Race/Ethnicity:</b>          |             |         |               |
| White                           | 1,713       | 42.7    | (40.1 - 45.2) |
| African American                | 70          | 47.5    | (34.5 - 60.4) |
| Asian                           | 121         | 53.3    | (43.4 - 63.2) |
| Hispanic                        | 78          | 57.2    | (45.4 - 69.0) |
| <b>Annual Household Income:</b> |             |         |               |
| <\$10,000                       | 109         | 53.2    | (42.9 - 63.4) |
| \$10,000 - 24,999               | 420         | 49.1    | (43.8 - 54.4) |
| \$25,000 - 34,999               | 276         | 44.0    | (37.7 - 50.3) |
| \$35,000 - 49,999               | 371         | 43.4    | (37.9 - 48.9) |
| \$50,000+                       | 541         | 37.9    | (33.5 - 42.3) |

Source: BRFSS; WA State Department of Health, Center for Health Statistics.

One of the Healthy People 2000 goals is to have at least 30 percent of the population age 6 and older engage in regularly and sustained physical activity, which is defined as having light or moderate physical activity for at least 30 minutes per day and 5 days per week. In 1996, 28.4 percent of King County adult residents engaged in regular and sustained physical activity.

## HIGH BLOOD CHOLESTEROL

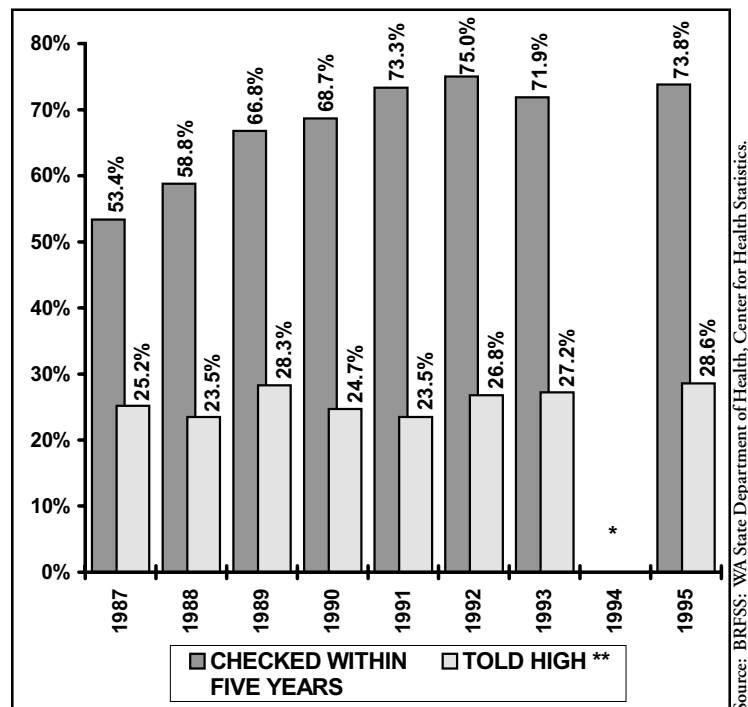
Elevated blood cholesterol increases the risk of coronary heart disease and stroke. The most important behavioral risk factor for high blood cholesterol is excess consumption of dietary fat, especially saturated fat. For the general population, decreased fat consumption helps to maintain a normal level of blood cholesterol.

A blood cholesterol level of 200 to 239 mg/dL is considered borderline-high and a level of 240 mg/dL or higher is considered high. Routine screening of blood cholesterol at least once every five years is recommended for all adults. The following is the

screening schedule recommended by the National Cholesterol Education Program:

- ◆ *Total cholesterol <200 mg/dL: Repeat screening within 5 years.*
- ◆ *Total cholesterol 200 to 239 mg/dL: See a physician immediately if a history of coronary heart disease (CHD) is present or if two or more CHD risk factors are identified. Otherwise, repeat cholesterol screening within 1 year.*
- ◆ *Total cholesterol  $\geq$  240 mg/dL: See a physician for additional tests.*

**Figure 5-4:**  
**Time Trends of High Blood Cholesterol Prevalence and the Rate of Screening Among King County Adults 1987-1995**



- ◆ In 1995, 23 percent of King County adults had been told by a physician at least once that they have high blood cholesterol. Among persons who have been tested, the rate was 29 percent overall and 45 percent for elderly age 65 and older.
- ◆ In 1995, 74 percent of King County adults had their blood cholesterol checked within five years.
- ◆ Between 1987 and 1995, among persons who had been tested, the proportion of being told to have high cholesterol were relatively stable. The rate of cholesterol screening increased significantly between 1987 and 1992.
- ◆ Older persons were more likely to have been tested for blood cholesterol than younger people.
- ◆ Females were more likely to have had a blood cholesterol test than males.

\* This question was not asked on the 1994 BRFSS.

\*\* Told cholesterol level high among persons who have been tested.

**Table 5-7:  
Prevalence of High Blood Cholesterol and the Rate of Screening  
Among King County Adults  
1993, 1995 Average**

|                                 | Among Those Tested:<br>Have Been Told That They<br>Have High Cholesterol |         |               | Cholesterol Checked<br>Within Five Years |         |               |
|---------------------------------|--|---------|---------------|--|---------|---------------|
|                                 | Sample<br>Size   | Percent | (95% C.I.)    | Sample<br>Size                           | Percent | (95% C.I.)    |
| <b>Age:</b>                     |  |         |               |  |         |               |
| 18-24                           | 70   | 16.5    | (6.3 - 26.7)  | 158                                      | 44.2    | (35.1 - 53.2) |
| 25-44                           | 660  | 19.8    | (16.5 - 23.1) | 933                                      | 66.0    | (62.6 - 69.3) |
| 45-64                           | 400  | 32.7    | (27.6 - 37.8) | 460                                      | 85.3    | (81.6 - 88.9) |
| 65+                             | 206  | 45.0    | (37.1 - 52.9) | 229                                      | 94.3    | (91.2 - 97.5) |
| <b>Sex:</b>                     |  |         |               |  |         |               |
| Male                            | 563  | 31.1    | (26.8 - 35.4) | 816                                      | 67.7    | (64.1 - 71.3) |
| Female                          | 773  | 25.3    | (21.9 - 28.7) | 964                                      | 77.8    | (74.8 - 80.8) |
| <b>Race/Ethnicity:</b>          |  |         |               |  |         |               |
| White                           | 1,176  | 28.1    | (25.2 - 30.9) | 1,542                                    | 73.3    | (70.8 - 75.8) |
| African American                | 56   | 13.9    | ( 5.1 - 22.7) | 77                                       | 69.6    | (57.6 - 81.6) |
| Asian                           | 67   | 34.1    | (20.7 - 47.6) | 107                                      | 70.3    | (60.8 - 79.7) |
| Hispanic                        | 53   | 36.2    | (21.9 - 50.5) | 73                                       | 74.7    | (64.1 - 85.3) |
| <b>Annual Household Income:</b> |  |         |               |  |         |               |
| <\$10,000                       | 70   | 44.6    | (30.1 - 59.1) | 103                                      | 70.0    | (59.8 - 80.2) |
| \$10,000 - 24,999               | 255  | 30.7    | (24.2 - 37.2) | 372                                      | 66.0    | (60.4 - 71.6) |
| \$25,000 - 34,999               | 191  | 26.3    | (19.2 - 33.4) | 257                                      | 73.8    | (68.0 - 79.7) |
| \$35,000 - 49,999               | 269  | 26.6    | (20.4 - 32.8) | 357                                      | 72.8    | (67.7 - 77.9) |
| \$50,000+                       | 438  | 26.3    | (21.9 - 30.6) | 520                                      | 76.7    | (72.5 - 80.8) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

## CONSUMPTION OF FRUITS AND VEGETABLES

**Table 5-8:**  
**Percent Having Fruits and Vegetables**  
**At Least “Five A Day” Among King County Adults**  
**1994, 1996 Average**

A diet that is rich in vegetables, fruits, and grains, and low in saturated fat reduces the risk of coronary heart disease, and certain cancers such as colon cancer. One of the U.S. Year 2000 objectives is to increase fiber-containing foods in the diets of adults, including to have 5 or more servings (1/2 cup) of vegetables and fruits per day.

- ◆ In 1996, 26 percent of King County adults ate 5 or more fruits and vegetables per day.
- ◆ Older persons and women ate more fruits and vegetables than younger adults and men.

|                                 | Sample Size | Percent | (95% C.I.)    |
|---------------------------------|-------------|---------|---------------|
| <b>Age:</b>                     |             |         |               |
| 18-24                           | 191         | 22.1    | (15.4 - 28.7) |
| 25-44                           | 947         | 21.7    | (18.9 - 24.6) |
| 45-64                           | 530         | 28.4    | (24.2 - 32.6) |
| 65+                             | 290         | 31.8    | (26.1 - 37.5) |
| <b>Sex:</b>                     |             |         |               |
| Male                            | 875         | 20.2    | (17.3 - 23.1) |
| Female                          | 1,083       | 29.7    | (26.7 - 32.6) |
| <b>Race/Ethnicity:</b>          |             |         |               |
| White                           | 1,713       | 24.7    | (22.5 - 26.9) |
| African American                | 70          | 29.9    | (17.8 - 41.9) |
| Asian                           | 121         | 24.5    | (16.0 - 33.1) |
| Hispanic                        | 78          | 18.5    | ( 9.5 - 27.5) |
| <b>Annual Household Income:</b> |             |         |               |
| <\$10,000                       | 109         | 24.1    | (14.9 - 33.2) |
| \$10,000 - 24,999               | 420         | 22.8    | (18.4 - 27.2) |
| \$25,000 - 34,999               | 276         | 26.1    | (20.5 - 31.6) |
| \$35,000 - 49,999               | 371         | 22.8    | (18.1 - 27.5) |
| \$50,000+                       | 541         | 27.8    | (23.7 - 31.9) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

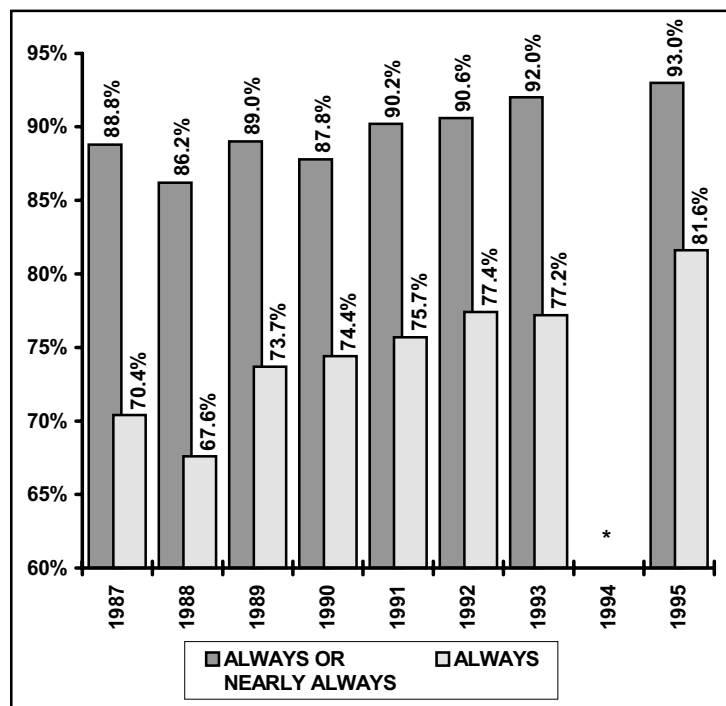
## SEAT BELT AND HELMET USE

Wearing a seat belt in an automobile or wearing a helmet while riding a bicycle or motorcycle can prevent injury in an accident or mitigate injury severity. Washington State law requires seat belt use for both drivers and passengers.

- ◆ In 1995, 82 percent of King County adults always used a seat belt while driving or riding in a car and 93 percent always or nearly always used a seat belt.

- ◆ The rate of seat belt use (always) has increased from 70 percent in 1987 to 82 percent in 1995.
- ◆ Females were more likely to use a seat belt than males.
- ◆ The higher the income level, the higher the rate of seat belt use.
- ◆ In 1996, of the 143 deaths from motor vehicle accidents investigated by the King County Medical Examiner's Office, 53 (37 percent) used a seat belt, 46 (32 percent) did not use a seat belt, and seat belt use status was unknown for 44 cases (31 percent).

**Figure 5-5:**  
Time Trend of Seat Belt Use Among King County Adults  
1987-1995



\* This question was not asked on the 1994 BRFSS.

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

**Table 5-9:**  
Rate of Seat Belt Use (Always)  
Among King County Adults  
1993, 1995 Average

|                                 | Sample Size | Percent | (95% C.I.)    |
|---------------------------------|-------------|---------|---------------|
| <b>Age:</b>                     |             |         |               |
| 18-24                           | 158         | 79.1    | (72.5 - 85.7) |
| 25-44                           | 933         | 77.8    | (74.8 - 80.7) |
| 45-64                           | 460         | 81.0    | (76.9 - 85.1) |
| 65+                             | 229         | 82.2    | (76.7 - 87.7) |
| <b>Sex:</b>                     |             |         |               |
| Male                            | 816         | 72.6    | (69.3 - 76.0) |
| Female                          | 964         | 85.8    | (83.4 - 88.2) |
| <b>Race/Ethnicity:</b>          |             |         |               |
| White                           | 1,542       | 78.5    | (76.2 - 80.8) |
| African American                | 77          | 78.5    | (68.5 - 88.5) |
| Asian                           | 107         | 87.9    | (81.7 - 94.1) |
| Hispanic                        | 73          | 74.1    | (63.4 - 84.9) |
| <b>Annual Household Income:</b> |             |         |               |
| <\$10,000                       | 103         | 72.2    | (62.4 - 82.0) |
| \$10,000 - 24,999               | 372         | 74.5    | (69.6 - 79.4) |
| \$25,000 - 34,999               | 257         | 77.7    | (72.2 - 83.3) |
| \$35,000 - 49,999               | 357         | 81.2    | (76.7 - 85.6) |
| \$50,000+                       | 520         | 82.2    | (78.5 - 85.9) |

Source: BRFSS: WA State Department of Health, Center for Health Statistics.

- ◆ Of households with a child under the age of 16 in 1995, 92 percent of the children always used a seat belt or a safety seat when they rode in a car (according to their parents).
- ◆ Of children who rode a bicycle, 64 percent always wore a bicycle helmet when riding. The rate of always or nearly always use of bicycle helmets was 83 percent.
- ◆ According to the 1995 Seattle Teen Health Risk Survey (reported by the students), however, high school and grade 8 students were much less likely to always wear a seat belt. Only 70 percent of high school students and 62 percent of grade 8 students always or nearly always used a seat belt while driving or riding in a car.

## FIREARMS KEPT IN THE HOME

Firearms contribute to deaths and injuries in suicide, homicide, assault, and accident. Between 1994 and 1996, 493 King County residents were killed by firearms. A firearm was the cause in 59 percent of the homicides and 51 percent of the suicides. Handguns were the most frequently-used firearms in these incidents.

Many King County households contain guns. According to the 1996 BRFS, 25 percent of King County adults reported that they kept one or more

guns in or around the home. Persons of higher income levels were more likely to keep a gun in or around the home. Among the gun owners, 60 percent had one or more handguns and 42 percent had one or more rifles or shotguns. The main reasons given for having a firearm around the home were for hunting or sport (53 percent), protection (25 percent), work related (1 percent), and other reasons (21 percent). Furthermore, 4 percent of King County adults reported having both loaded and unlocked firearms in or around their homes.

**Table 5-10:**  
**Firearm Kept In or Around the Home by Household Income**  
**Among King County Residents**  
**1996**

| Annual Household Income: | Sample Size | Percent | (95% CI)      |
|--------------------------|-------------|---------|---------------|
| <\$10,000                | 47          | 14.9    | ( 6.9 - 22.9) |
| \$10,000 - 24,999        | 211         | 15.8    | (11.7 - 19.8) |
| \$25,000 - 34,999        | 127         | 23.3    | (17.3 - 29.3) |
| \$35,000 - 49,000        | 197         | 32.4    | (27.0 - 37.9) |
| \$50,000+                | 297         | 33.3    | (29.2 - 37.5) |

Source: BRFS: WA State Dept. of Health, Center for Health Statistics.