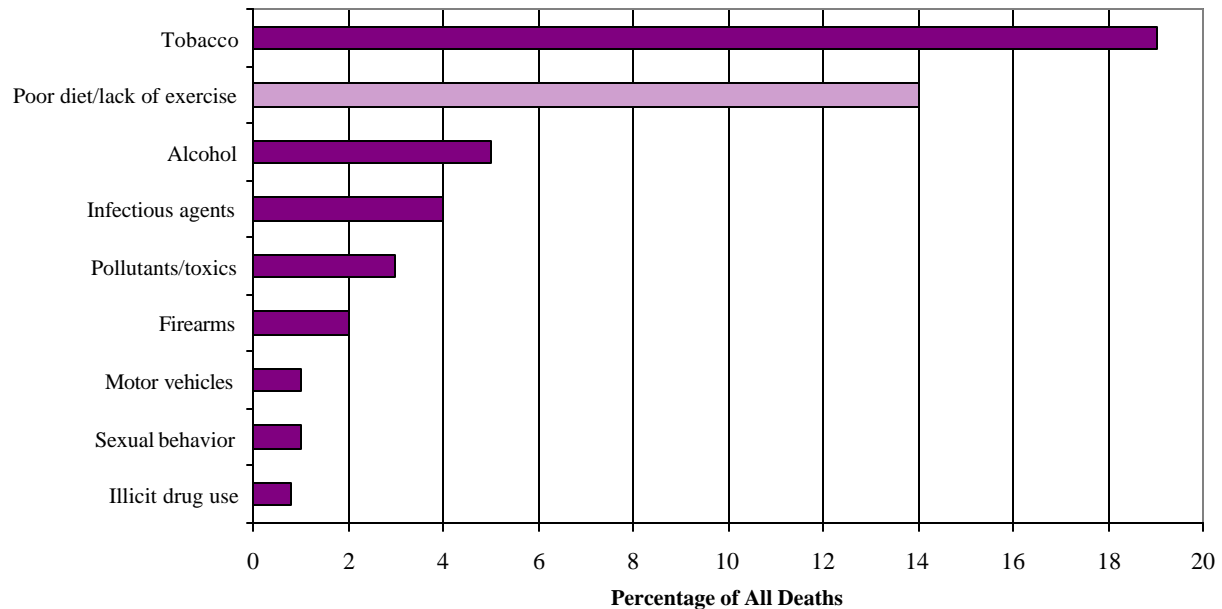


## PHYSICAL ACTIVITY IN MINNESOTA

Figure 1: Actual Causes of Death, United States in 1990



Source: McGinnis JM, Foege WH. Actual Causes of death in the United States. JAMA 1993; 270:2207-12.

### Background

Regular physical activity throughout life is important to maintaining a healthy body, enhancing psychological well-being and preventing premature death<sup>1</sup>. It has been estimated that at least 200,000 deaths per year in the United States, or approximately one-quarter of chronic disease deaths, are attributable to a lack of regular physical activity<sup>2,3</sup>. In fact, poor diet and lack of exercise rank second only to tobacco use in actual causes of death<sup>4</sup> (Figure 1). Regular physical activity is also economically beneficial to society. The economic burden of physical inactivity, defined conservatively as the absence of leisure time physical activity, has been estimated at 24 billion dollars (1995 dollars) for direct health care delivery costs or 2.4% of U.S. health care expenditures<sup>5</sup>.

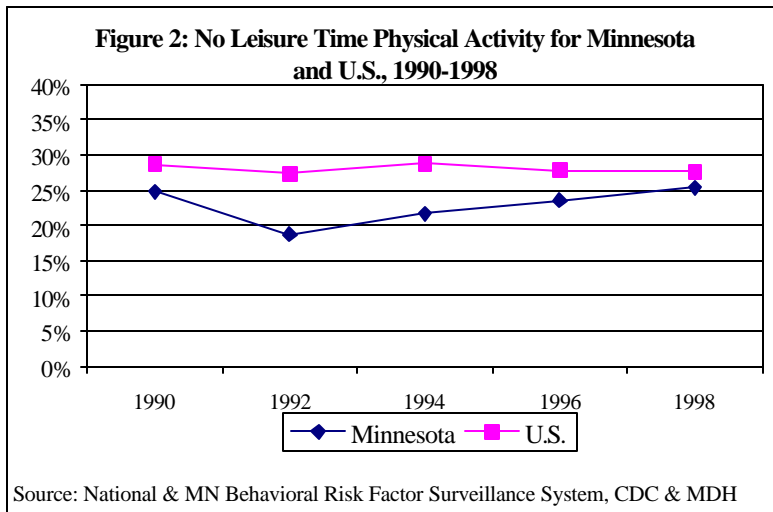
### Benefits to Physical Activity

- Increases muscle and bone strength
- Increases lean muscle mass and decreases body fat
- Aids in weight control
- Enhances psychological well-being
- Decreases risk of cardiovascular disease, diabetes and osteoporosis
- Assists in the prevention and management of diabetes, osteoarthritis and hypertension
- Essential for normal growth and development

This issue of the *Population Health Assessment Quarterly* will review the current status of physical activity in Minnesota, as well as the benefits of and barriers to physical activity.

## Physical Activity - Adults

It is recommended that adults engage in moderate physical activity at least 30 minutes on most, or preferably all, days of the week<sup>6</sup>. 1998 Behavioral Risk Factor Surveillance System (BRFSS) data indicate that only 25.4% of U.S. adults aged 18 and over performed the recommended amount of physical activity<sup>7</sup>. More than one quarter of U.S. adults were not physically active outside of their occupation.

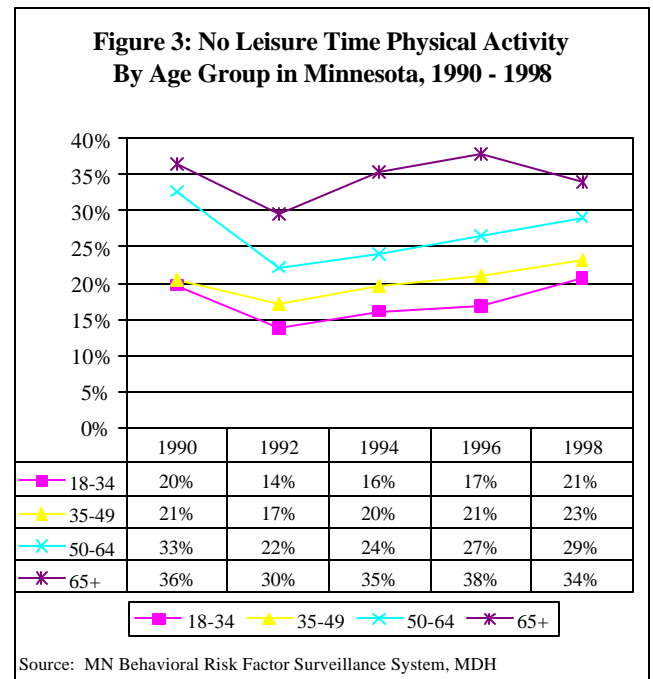


In 1998, approximately 22% of Minnesotans aged 18 and over reported exercising five or more times per week for 30 minutes or more per session, regardless of intensity. Similar to the U.S. overall, about one-quarter of Minnesotans aged 18 and over reported no leisure time physical activity in the past month. The prevalence of U.S. and Minnesota adults who report no leisure time activity has remained fairly constant (Figure 2).

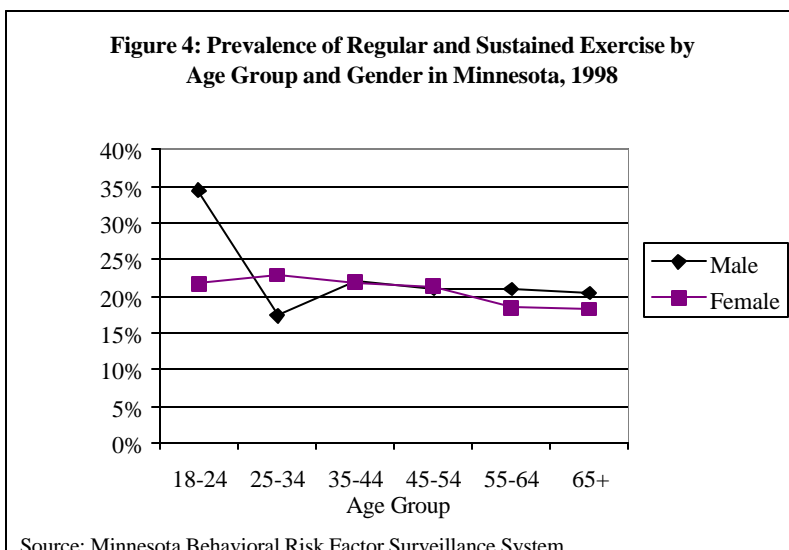
## Gender and Age

In the United States and Minnesota, the percent of adults who are inactive increases with age. From 1990 to 1998, 18-34 year olds were the most likely to be physically active, followed closely by 35-49 year olds. People who were 65 years and older were the least active. In Minnesota, the percent of those aged 65 and older who reported no leisure time physical activity has been fairly steady over time while all other age groups have experienced gradual increases (Figure 3).

National BRFSS figures indicate a slight difference in physical activity between males and females. In 1998 approximately 26% of men and 30% of women reported no leisure time physical activity in the past month. In Minnesota, there was no reported difference between men (25.8%) and women (25.1%) who reported no leisure time physical activity.



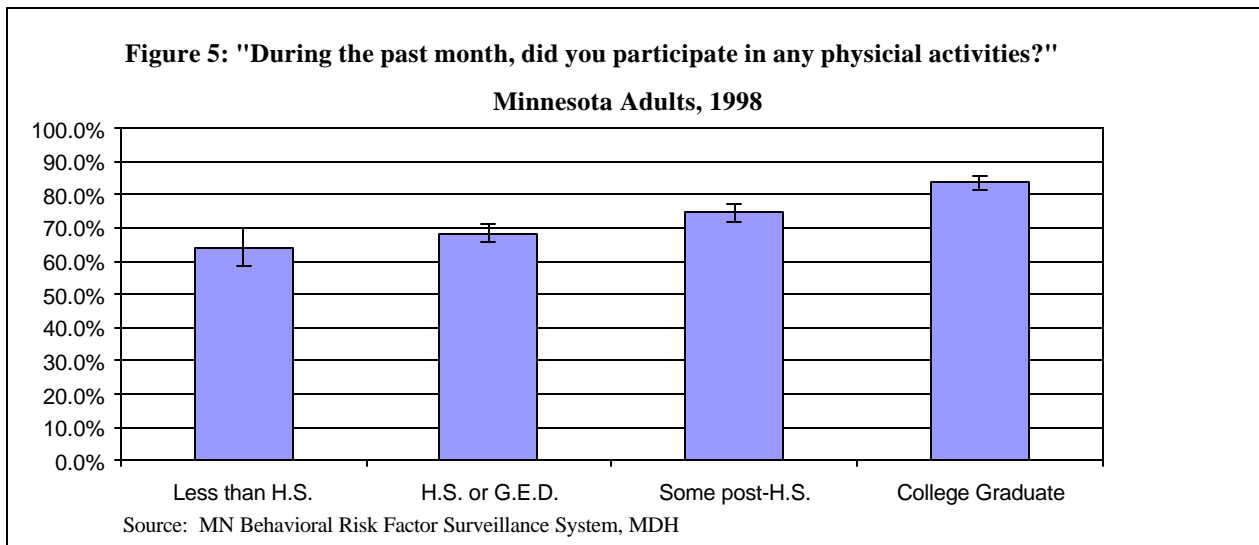
There are some differences when physical activity is broken down by both age and gender (Figure 4). When comparing males to females by age, the age group in which the difference between the genders is marked is the 18 - 24 year olds. For this age group, men are more likely to report exercising than females. When comparing age groups by gender, the percent of males who exercised regularly decreased from 34% for 18-24 year olds to 17% for 25-34 year olds. The decrease in physical activity between the age groups may be attributed to change in the demands of employment<sup>8</sup>. For females, the percent



who exercise regularly decreased slightly by age group. For females, 22% of the 18 –24 year olds report exercising regularly compared to 18% of women aged 65 years and older.

## Income and Education

National data indicate that of the demographic factors assessed in the BRFSS, education is most closely associated with participation in physical activity<sup>8</sup>. Similar to national BRFSS data, there is a positive relationship between education level and physical activity in Minnesota. Eighty-four percent of Minnesotans who were college graduates reported participating in physical activities during the past month, while 64% of those with less than a high school education reported the same (Figure 5). Like education, physical activity generally increases with income. In 1998, approximately 80% of adults in Minnesota who reported their income to be \$50,000 or more per year participated in physical activity compared to 69% of those earning less than \$15,000 per year. It should be noted that these data focus on assessing leisure time physical activity and do not adequately address occupational activity, so there is likely to be some misclassification of persons with physically demanding jobs as inactive<sup>8</sup>.

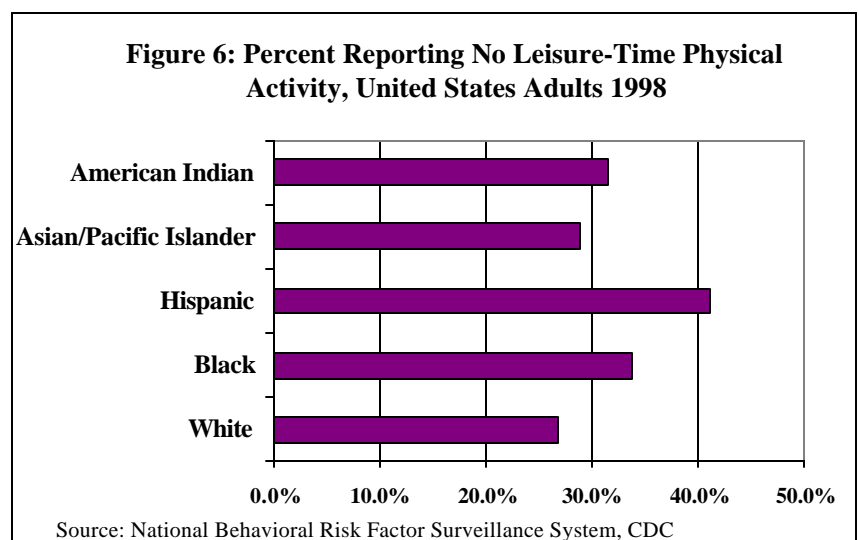


## Race and Ethnicity

National surveys of physical activity consistently show large differences in participation in physical activity by race and ethnicity<sup>8</sup>. Figure 6 depicts physical activity levels by race/ethnicity for the U.S. overall. In 1998, 34% of blacks and 41% of Hispanics reported no leisure time physical activity compared to 27% of whites reporting the same. Asian and American Indian inactivity levels were 29% and 31%, respectively.

## Body Weight

Body Mass Index (BMI)<sup>\*</sup> is used to measure weight status in the United States. Over the last decade, the prevalence of obesity has increased in the United States and Minnesota. In Minnesota, the percent of adults who are obese has increased over time



<sup>\*</sup> BMI is weight (kilograms)/height(meters)<sup>2</sup>. A BMI of 25 to 29.9 is considered overweight and a BMI of 30 and over is obese.

from 10% in 1990 to 16% in 1999, as indicated by BRFSS data. In 1999, over one-third of Minnesotans were overweight (Figure 7).

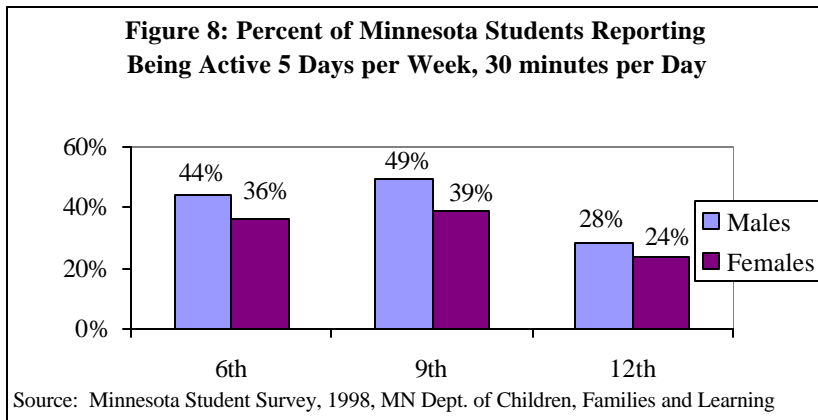
According to the 1996 Surgeon General's Report on Physical Activity, low levels of physical activity have contributed to the high prevalence of obesity in the United States<sup>9</sup>. On the other hand, recent findings have indicated that an obese or overweight person can have good cardiovascular health as long as he/she remains active and possesses a reasonable level of fitness<sup>10</sup>.

### Physical Activity – Youth

Children and adolescents need weight-bearing exercise for normal skeletal development, and young adults need such exercise to achieve and maintain peak bone mass<sup>1</sup>. The International Consensus Conference on Physical Activity Guidelines for Adolescents recommends that adolescents should be physically active daily, or nearly every day. Adolescents should also engage in three or more sessions per week of activities that last 20 minutes or more at a time and that require moderate to vigorous levels of exertion<sup>11</sup>. The National Association for Sport and Physical Education recommends that elementary school-aged children should accumulate at least 30 to 60 minutes of age and developmentally appropriate physical activity on all, or most, days of the week<sup>12</sup>.

### Physical Activity among Minnesota Youth

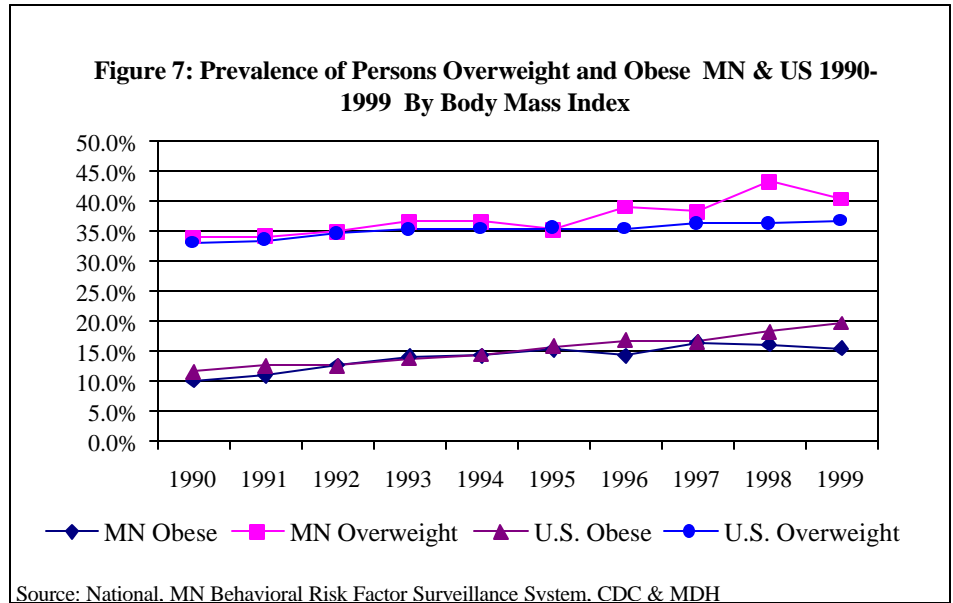
Available data indicate that children are among the most active of all segments of the population, but physical activity levels begin to decline as children approach their teenage years and continue to decline through adolescence<sup>13</sup>. In 1998,



while the percent of Minnesota students who were physically active increased slightly from 6<sup>th</sup> to 9<sup>th</sup> grade, there was dramatic decrease from 9<sup>th</sup> to 12<sup>th</sup> grade. Minnesota boys are more active than girls, which reflect national trends. Forty-nine percent of 9<sup>th</sup> grade boys in Minnesota report being physically active 5 days per week compared to 39% of 9<sup>th</sup> grade girls (Figure 8).

Factors that may contribute to low levels of physical activity among youth include increased time watching television, playing video games or using computers, decreased time riding bikes

or walking, and reduced time spent in physical education classes<sup>14,15</sup>. Nationally, 42.8% of students watch television more than two hours during an average day<sup>16</sup>. That could equal more than 14 hours of television per week. In Minnesota, about half of all 6<sup>th</sup>, 9<sup>th</sup> and 12<sup>th</sup> grade students report getting at least two and a half hours of physical activity per week (30 minutes or more five or more days per week) (Table 1). Also, Minnesota Student Survey data show that over 75% of male students and over 60% of female students watch television more than 3-4 hours per week.



## Weight Status

Nationally, the proportion of adolescents aged 12 to 19 that is overweight has nearly doubled since the 1970s<sup>17</sup>. Though relationship between weight status and physical activity is not fully understood, carrying extra weight makes exercise more difficult, causing a tendency to avoid physical activity, which in turn, results in increases in body fat and diminished physical fitness<sup>18</sup>.

Adolescents should practice healthy eating behaviors and participate in regular physical activity to achieve and maintain healthy weight<sup>19</sup>.

**Table 1: Percent of Minnesota Students Reporting Participating in Physical Activities or Watching Television Three or More Hours per Week**

|                                 | Males (%)       |                 |                  | Females (%)     |                 |                  |
|---------------------------------|-----------------|-----------------|------------------|-----------------|-----------------|------------------|
|                                 | 6 <sup>th</sup> | 9 <sup>th</sup> | 12 <sup>th</sup> | 6 <sup>th</sup> | 9 <sup>th</sup> | 12 <sup>th</sup> |
| Playing Sports on a School Team | 31              | 48              | 42               | 23              | 48              | 34               |
| Other Physical Activities       | 53              | 58              | 55               | 42              | 43              | 43               |
| Watching Television             | 75              | 80              | 75               | 65              | 60              | 64               |

Source: Minnesota Student Survey, 1998, MN Dept. of Children, Families and Learning

## Community and Environmental Design

Ecological models indicate that creating environments supportive of physical activity is as important as individual behavioral change<sup>20</sup>. Examples of environmental changes include: improving hiking and biking trails; encouraging physical activity at work and school; and creating safer, more accessible places for physical activity in the community. However, transportation and technological developments in our society have made it easier to be sedentary and inconvenient to be active<sup>13</sup>. Due, in part, to these developments, our nation has moved away from using biking and walking for transportation. Data from the Nationwide Personal Transportation Survey revealed that in 1995, of all trips made, 5% were by walking and less than 1% were by biking<sup>14</sup>.

## Barriers to Physical Activity

Many obstacles impede an individual's ability to be physically active. Lack of time is the most commonly cited barrier to physical activity, especially for women<sup>6</sup>. Self-efficacy or lack of confidence has also been noted as a barrier to physical activity<sup>9</sup>.

Environmental factors also influence one's ability to be physically active. The lack of convenient and accessible exercise facilities is perceived as a barrier to physical activity. In a national survey, 51% of adults agreed that greater availability of exercise facilities would help them be more active<sup>21</sup>.

### Barriers to Physical Activity

- Lack of time
- Inconvenient and inaccessible facilities
- Lack of self-efficacy
- Poor health
- Physician lack of emphasis
- Unsafe neighborhood

Neighborhood safety may also be a barrier to physical activity. A report on selected states suggests that higher levels of perceived neighborhood safety were associated with lower levels of physical inactivity for people aged 65 and over and for racial and ethnic minorities<sup>22</sup>.

## Conclusion

Public health programs need to occur at all levels, from the individual to the environment, to increase physical activity. Efforts are in place in Minnesota to increase physical activity and, thus, improve the quality of life of Minnesotans. For more information on physical activity programs in Minnesota, contact the MDH Physical Activity Promotion Program at 651/281-9875 or the MDH Nutrition and Physical Activity Unit at 651/281-9831.

Another resource for physical activity is the spring issue of the *Healthy Minnesotans Update*. For a copy of this report, visit the Minnesota Department of Health website, [www.health.state.mn.us/divs/chs/hsd/update.htm](http://www.health.state.mn.us/divs/chs/hsd/update.htm), or call 651/296-9661.



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