

## chapter

## 4



# Physical Activity

## OVERVIEW

Americans tend to be relatively inactive. In 2002, 25 percent of adult Americans did not participate in any leisure time physical activities in the past month<sup>9</sup> and in 2003, 38 percent of students in grades 9 to 12 viewed television 3 or more hours per day.<sup>10</sup> Regular physical activity and physical fitness make important contributions to one's health, sense of well-being, and maintenance of a healthy body weight. Physical activity is defined as any bodily movement produced by skeletal muscles resulting in energy expenditure (<http://www.cdc.gov/nccdphp/dnpa/physical/terms/index.htm>). In contrast, physical fitness is

a multi-component trait related to the ability to perform physical activity. Maintenance of good physical fitness enables one to meet the physical demands of work and leisure comfortably. People with higher levels of physical fitness are also at lower risk of developing chronic disease. Conversely, a sedentary lifestyle increases risk for overweight and obesity and many chronic diseases, including coronary artery disease, hypertension, type 2 diabetes, osteoporosis, and certain types of cancer. Overall, mortality rates from all causes of death are lower in physically active people than in sedentary people. Also, physical activity can aid in managing mild to moderate depression and anxiety.

<sup>9</sup> Behavioral Risk Factor Surveillance System, Surveillance for Certain Health Behaviors Among Selected Local Areas—United States, Behavioral Risk Factor Surveillance System, 2002, *Morbidity and Mortality Weekly Report (MMWR)*, 53, No SS-05. <http://www.cdc.gov/brfss/>.

<sup>10</sup> Youth Risk Behavior Surveillance System, Youth Risk Behavior Surveillance—United States, 2003 *MMWR* 53(SS-2):1–29, 2004. <http://www.cdc.gov/healthyyouth/yrbs/>.



## DISCUSSION

Regular physical activity has been shown to reduce the risk of certain chronic diseases, including high blood pressure, stroke, coronary artery disease, type 2 diabetes, colon cancer and osteoporosis. Therefore, to reduce the risk of chronic disease, it is recommended that adults engage in at least 30 minutes of moderate-intensity physical activity on most, preferably all, days of the week. For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or of longer duration. In addition, physical activity appears to promote psychological well-being and reduce feelings of mild to moderate depression and anxiety.

Regular physical activity is also a key factor in achieving and maintaining a healthy body weight for adults and children. To prevent the gradual accumulation of excess weight in adulthood, up to 30 additional minutes per day may be required over the 30 minutes for reduction of chronic disease risk and other health benefits. That is, approximately 60 minutes of moderate- to vigorous-intensity physical activity on most days of the week may be needed to prevent unhealthy weight gain (see table 4 for some examples of moderate- and vigorous-intensity physical activities). While moderate-intensity physical activity can achieve the desired goal, vigorous-intensity physical activity generally provides more benefits than moderate-intensity physical activity. Control of caloric intake is also advisable. However, to sustain weight loss for previously overweight/obese people, about 60 to 90 minutes of moderate-intensity physical activity per day is recommended.

Most adults do not need to see their healthcare provider before starting a moderate-intensity physical activity program. However, men older than 40 years and women older than 50 years who plan a vigorous program or who have either chronic disease or risk factors for chronic disease should consult their physician to design a safe, effective program. It is also important during leisure time to limit sedentary behaviors, such as television watching and video viewing, and replace them with activities requiring more movement. Reducing these sedentary activities appears to be helpful in treating and preventing overweight among children and adolescents.

## KEY RECOMMENDATIONS

- Engage in regular physical activity and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
  - To reduce the risk of chronic disease in adulthood: Engage in at least 30 minutes of moderate-intensity physical activity, above usual activity, at work or home on most days of the week.
  - For most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or longer duration.
  - To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood: Engage in approximately 60 minutes of moderate- to vigorous-intensity activity on most days of the week while not exceeding caloric intake requirements.
  - To sustain weight loss in adulthood: Participate in at least 60 to 90 minutes of daily moderate-intensity physical activity while not exceeding caloric intake requirements. Some people may need to consult with a healthcare provider before participating in this level of activity.
- Achieve physical fitness by including cardiovascular conditioning, stretching exercises for flexibility, and resistance exercises or calisthenics for muscle strength and endurance.

### Key Recommendations for Specific Population Groups

- *Children and adolescents.* Engage in at least 60 minutes of physical activity on most, preferably all, days of the week.
- *Pregnant women.* In the absence of medical or obstetric complications, incorporate 30 minutes or more of moderate-intensity physical activity on most, if not all, days of the week. Avoid activities with a high risk of falling or abdominal trauma.
- *Breastfeeding women.* Be aware that neither acute nor regular exercise adversely affects the mother's ability to successfully breastfeed.
- *Older adults.* Participate in regular physical activity to reduce functional declines associated with aging and to achieve the other benefits of physical activity identified for all adults.



Different intensities and types of exercise confer different benefits. Vigorous physical activity (e.g., jogging or other aerobic exercise) provides greater benefits for physical fitness than does moderate physical activity and burns more calories per unit of time. Resistance exercise (such as weight training, using weight machines, and resistance band workouts) increases muscular strength and endurance and maintains or increases muscle mass. These benefits are seen in adolescents, adults, and older adults who perform resistance exercises on 2 or more days per week. Also, weight-bearing exercise has the potential to reduce the risk of osteoporosis by increasing peak bone mass during growth, maintaining peak bone mass during adulthood, and reducing the rate of bone loss during aging. In addition, regular exercise can help prevent falls, which is of particular importance for older adults.

The barrier often given for a failure to be physically active is lack of time. Setting aside 30 to 60 consecutive minutes each day for planned exercise is one way to obtain physical activity, but it is not the only way. Physical activity may include short bouts (e.g., 10-minute bouts) of moderate-intensity activity. The accumulated total is what is important—both for health and for burning calories. Physical activity can be accumulated through three to six 10-minute bouts over the course of a day.

Elevating the level of daily physical activity may also provide indirect nutritional benefits. A sedentary lifestyle limits the number of calories that can be consumed without gaining weight. The higher a person's physical activity level, the higher his or her energy requirement and the easier it is to plan a daily food intake pattern that meets recommended nutrient requirements.

Proper hydration is important when participating in physical activity. Two steps that help avoid dehydration during prolonged physical activity or when it is hot include: (1) consuming fluid regularly during the activity and (2) drinking several glasses of water or other fluid after the physical activity is completed (see chs. 2 and 8).

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Regular physical activity and physical fitness make important contributions to one's health, sense of well-being, and maintenance of a healthy body weight.

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