

What you need to know about the ... Surgeon General's Report on Physical Activity and Health

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Note: Portions of this material, including the conclusions, have been taken from the *Surgeon General's Report on Physical Activity and Health*.

HIGHLIGHT

“By making the relatively small change from an inactive lifestyle to one that includes moderate but regular physical activity, even the most sedentary Americans can prevent disease and premature death and improve their quality of life.”

Florence Griffith Joyner and Tom McMillen,
Co-Chairs, President's Council on Physical Fitness & Sports

WHAT IS THE SURGEON GENERAL'S REPORT ON PHYSICAL ACTIVITY AND HEALTH?

In 1964, the Surgeon General began alerting the nation to the hazards of smoking. Subsequently, several other reports addressing tobacco's effects on health were released. In 1988, the *Surgeon General's Report on Nutrition and Health* was released. These reports have had a great impact on the behaviors of American citizens. The reports on tobacco did much to change the social norm concerning smoking. Similarly, the report on nutrition and health focused national attention on the need for sound nutrition. Now, under the leadership of Department of Health and Human Services Secretary Donna E. Shalala, the Office of the Surgeon General has released a report on physical activity and health. **The main purpose of the *Surgeon General's Report on Physical Activity and Health* is to summarize existing research showing the benefits of physical activity in preventing disease and to draw conclusions that can be useful to Americans who are interested in improving their health.** This hallmark report will provide impetus for an active lifestyle just as other health-related behaviors were encouraged through previous Surgeon Generals' reports.

WHY WAS THE REPORT DONE NOW?

In recent years, scientific evidence linking physical activity and health and organizational statements supporting the value of regular physical activity have increased. The American Heart Association (AHA) in 1992 identified physical inactivity as a major risk factor for coronary heart disease. The 1995 National Institutes of Health (NIH) Consensus Development Conference on Physical Activity and Cardiovascular Health confirmed the importance of physical activity for cardiovascular health. In 1995, the American College of Sports Medicine (ACSM) and the Centers for Disease Control and Prevention (CDC) recommended that all Americans accumulate at least 30 minutes of moderate-intensity physical activity on most, preferably all, days of the week. These actions and others like them are based on a growing body of research showing the health benefits of regular physical activity.

“This landmark review of the research on physical activity—the most comprehensive ever—has the potential to catalyze a new physical activity and fitness movement in the United States.”

Donna E. Shalala,
Secretary of Health and
Human Services

WHO PREPARED THE REPORT?

In July 1994, the Office of the Surgeon General authorized the CDC to serve as lead agency in preparing the first *Surgeon General’s Report on Physical Activity and Health*. The CDC was joined in this effort by the President’s Council on Physical Fitness and Sports (PCPFS) as a collaborative partner representing the Office of the Surgeon General. Because of the wide interest in the health effects of physical activity, the report was planned collaboratively with representatives from the Office of the Surgeon General, the Office of Public Health and Science (Office of the Secretary), the NIH, and many other government agencies. CDC’s nonfederal partners—including the American Alliance for Health, Physical Education, Recreation, and Dance; the ACSM; and the AHA—provided consultation throughout the developmental process. Dr. Steven Blair served as the Senior Scientific Editor, and Dr. Adele Franks served as Scientific Editor. Each chapter was written and reviewed by top scholars in exercise science.

WHAT DOES THE REPORT INCLUDE?

The report’s main purpose is to summarize existing literature on the role of physical activity in preventing disease and on the status of attempts to increase physical activity among Americans of all ages. Any report on a topic this broad must restrict its scope to keep the message clear. The report concentrates on endurance-type physical activity (activity involving repeated use of large muscles, such as walking or bicycling) because the health benefits of this type of activity have been studied extensively. While the report acknowledges the importance of other types of activities (strength training, activities for special populations), it does not emphasize these. The content is presented as follows:

1. Introduction, Summary, and Chapter Conclusions

2. Historical Background and Evolution of Physical Activity Recommendations
3. Physiologic Responses and Long-Term Adaptations to Exercise
4. The Effects of Physical Activity on Health and Disease
5. Patterns and Trends in Physical Activity
6. Understanding and Promoting Physical Activity

WHAT DOES THE REPORT CONCLUDE? (*Chapter 1*)

The main message is that Americans can substantially improve their health and quality of life by including moderate amounts of physical activity in their daily lives. The report emphasizes that most Americans can achieve health benefits from physical activity even if they dislike vigorous exercise or previously were discouraged because of the difficulty in adhering to a program of vigorous exercise.

There is increasing agreement from the ACSM/ CDC statement, the NIH Consensus Conference, and now the *Surgeon General's Report* concerning what physical activity should be recommended to enhance health and fitness. It is a two-level recommendation. First, *sedentary* individuals can realize major health gains by including regular, moderate activity in their lives. Next, individuals who already include moderate activity in their daily lives can see additional health and fitness improvement if they increase the duration of their moderate activity and/or include vigorous activities 3–5 days per week.

Major Conclusions of the Surgeon General's Report

- People of all ages, both male and female, benefit from regular physical activity.
- Significant health benefits can be obtained by including a moderate amount of physical activity (e.g., 30 minutes of brisk walking or raking leaves, 15 minutes of running, or 45 minutes of playing volleyball) on most, if not all, days of the week. Through a modest increase in daily activity, most Americans can improve their health and quality of life.
- Additional health benefits can be gained through greater amounts of physical activity. People who can maintain a regular regimen of activity that is of longer duration or of more vigorous intensity are likely to derive the greater benefit.
- Physical activity reduces the risk of premature mortality in general and of coronary heart disease, hypertension, colon cancer, and diabetes mellitus, in particular. Physical activity also improves mental health and is important for the health of muscles, bones, and joints.
- More than 60% of American adults are not regularly physically active. In fact, 25% of all adults are not active at all.
- Nearly half of American youths 12–21 years of age are not vigorously active on a regular basis. Moreover, physical activity declines dramatically during adolescence.
- Daily enrollment in physical education classes has declined among high school students from 42% in 1991 to 25% in 1995.

- Research on understanding and promoting physical activity is at an early stage, but some interventions to promote physical activity through schools, worksites, and health care settings have been evaluated and found to be successful.

WHAT DOES THE REPORT SAY ABOUT THE EVOLUTION OF THE STUDY OF PHYSICAL ACTIVITY AS IT RELATES TO HEALTH? (*Chapter 2*)

Chapter 2 offers a historical perspective tracing the importance of physical health from Greco-Roman times to the present, including the role of physical activity in Eastern countries. From the 16th century to the early 1900s, concepts were developed in Europe that formed the basis for early American beliefs about exercise and health. Postwar research by prominent physical educators and physicians led to the current epidemiological, descriptive, and experimental research that provides the foundation for this report. This chapter defines terms, describes measurement techniques, and summarizes previous recommendations on physical activity and health.

Conclusions of Chapter 2: Historical Background and Evolution of Physical Activity Recommendations

- Physical activity for better health and well-being has been an important theme throughout much of Western history.
- Public health recommendations have evolved from emphasizing vigorous activity for cardiorespiratory fitness to including the option of moderate levels of activity for numerous health benefits.
- Recommendations from experts agree that for better health, physical activity should be performed regularly. The most recent recommendations advise people of all ages to include a minimum of 30 minutes of physical activity of moderate intensity (such as brisk walking) on most, if not all, days of the week. It is also acknowledged that for most people, greater health benefits can be obtained by engaging in physical activity of more vigorous intensity or of longer duration.
- Experts advise previously sedentary people embarking on a physical activity program to start with short durations of moderate-intensity activity and gradually increase the duration or intensity until the goal is reached.
- Experts advise consulting with a physician before beginning a new physical activity program for people with chronic diseases, such as cardiovascular disease and diabetes mellitus, or for those who are at high risk for these diseases. Experts also advise men over age 40 and women over age 50 to consult a physician before they begin a vigorous activity program.

- Recent recommendations from experts also suggest that cardiorespiratory endurance activity should be supplemented with strength-developing exercises at least twice per week for adults, in order to improve musculoskeletal health, maintain independence in performing the activities of daily life, and reduce the risk of falling.

WHAT DOES THE REPORT SAY ABOUT HOW THE BODY RESPONDS TO PHYSICAL ACTIVITY, BOTH OVER THE SHORT AND THE LONG TERM? (*Chapter 3*)

This chapter provides an overview of how the body responds to an episode of exercise and adapts to exercise training and detraining. The discussion focuses on aerobic or cardiorespiratory endurance exercise (e.g., walking, jogging, running, cycling, swimming, dancing, and in-line skating) and resistance exercise (e.g., strength-developing exercises). It does not address training for speed, agility, or flexibility. In discussing the multiple effects of exercise, this overview orients the reader to the physiologic basis for the relationship between physical activity and health.

Conclusions of Chapter 3: Physiologic Responses and Long-Term Adaptations to Exercise

- Physical activity has numerous beneficial physiologic effects. Most widely appreciated are its effects on the cardiovascular and musculoskeletal systems, but benefits on the functioning of metabolic, endocrine, and immune systems are also considerable.
- Many of the beneficial effects of exercise training—from both endurance and resistance activities—diminish within two weeks if physical activity is substantially reduced, and effects disappear within two to eight months if physical activity is not resumed.
- People of all ages, both male and female, undergo beneficial physiologic adaptations to physical activity.

WHAT DOES THE REPORT SAY ABOUT THE EFFECTS OF PHYSICAL ACTIVITY ON SPECIFIC HEALTH CONCERNS? (*Chapter 4*)

This chapter examines how physical activity and cardiorespiratory fitness relate to a variety of health problems. The primary focus is on diseases and conditions for which sufficient data exist to evaluate an association with physical activity, the strength of such relationships, and their potential biologic mechanisms. Much of the research summarized is based on studies that had only white men as participants. It remains to be clarified whether the relationships described here are the same for women, racial and ethnic minorities, and people with disabilities.

The findings are based on studies comparing activity levels of people who have or develop diseases and those who do not; studies that follow populations forward in time to observe how physical activity habits affect disease occurrence or death; case-control studies that compare groups of people who have a disease with those who do not; cross-sectional studies that assess the association between physical activity and disease at the same point in time; and clinical trials that attempt to alter physical activity patterns and assess whether disease occurrence is modified as a result.

Many of these topics are discussed in other papers in this book including health benefits of activity related to children, adolescents and women, obesity and weight control, low back function, cancer, and osteoporosis, to name a few.

Conclusions of Chapter 4: The Effects of Physical Activity on Health and Disease

Overall Mortality

1. Higher levels of regular physical activity are associated with lower mortality rates for both older and younger adults.
2. Even those who are moderately active on a regular basis have lower mortality rates than those who are least active.

Cardiovascular Diseases

1. Regular physical activity or cardiorespiratory fitness decreases the risk of cardiovascular disease mortality in general and of coronary heart disease mortality in particular. Existing data are not conclusive regarding a relationship between physical activity and stroke.
2. The level of decreased risk of coronary heart disease attributable to regular physical activity is similar to that of other lifestyle factors, such as keeping free from cigarette smoking.
3. Regular physical activity prevents or delays the development of high blood pressure, and exercise reduces blood pressure in people with hypertension.

Cancer

1. Regular physical activity is associated with a decreased risk of colon cancer.
2. There is no association between physical activity and rectal cancer. Data are too sparse to draw conclusions regarding a relationship between physical activity and endometrial, ovarian, or testicular cancers.
3. Despite numerous studies on the subject, existing data are inconsistent regarding an association between physical activity and breast or prostate cancers.

Non-Insulin-Dependent Diabetes Mellitus

1. Regular physical activity lowers the risk of developing non-insulin-dependent diabetes mellitus.

Osteoarthritis

1. Regular physical activity is necessary for maintaining normal muscle strength, joint structure, and joint function. In the range recommended for health, physical activity is not associated with joint damage or development of osteoarthritis and may be beneficial for many people with arthritis.

2. Competitive athletics may be associated with the development of osteoarthritis later in life, but sports-related injuries are the likely cause.

Osteoporosis

1. Weight-bearing physical activity is essential for normal skeletal development during childhood and adolescence and for achieving and maintaining peak bone mass in young adults.
2. It is unclear whether resistance- or endurance-type physical activity can reduce the accelerated rate of bone loss in postmenopausal women in the absence of estrogen replacement therapy.

Falling

1. There is promising evidence that strength training and other forms of exercise in older adults preserve the ability to maintain independent living status and reduce the risk of falling.

Obesity

1. Low levels of activity, resulting in fewer kilocalories used than consumed, contribute to the high prevalence of obesity in the United States.
2. Physical activity may favorably affect body fat distribution.

Mental Health

1. Physical activity appears to relieve symptoms of depression and anxiety and improve mood.
2. Regular physical activity may reduce the risk of developing depression, although further research is needed on this topic.

Health-Related Quality of Life

1. Physical activity appears to improve health-related quality of life by enhancing psychological well-being and by improving physical functioning in persons compromised by poor health.

Adverse Effects

1. Most musculoskeletal injuries related to physical activity are believed to be preventable by gradually working up to a desired level of activity and by avoiding excessive amounts of activity.
2. Serious cardiovascular events can occur with physical exertion, but the net effect of regular physical activity is a lower risk of mortality from cardiovascular disease.

“Because physical activity is so directly related to preventing disease and premature death and to maintaining a high quality of life, we must accord it the same level of attention that we give other public health practices that affect the entire nation.”

Audrey F. Manley, Surgeon General (Acting)

WHAT DOES THE REPORT SAY ABOUT PATTERNS AND TRENDS IN ACTIVITY AMONG AMERICANS?

(Chapter 5)

This chapter documents patterns and trends of reported leisure-time physical activity of adults and adolescents in the United States and compares the findings to the goals set by *Healthy People 2000*, the national goals for disease prevention and health promotion. The information is based on cross-sectional data from national- and state-based surveillance systems sponsored by CDC that track health behaviors, including leisure-time physical activity.

Conclusions of Chapter 5: Patterns and Trends in Physical Activity

Adults

1. Approximately 15% of U.S. adults engage regularly (3 times a week for at least 20 minutes) in vigorous physical activity during leisure time.
2. Approximately 22% of adults engage regularly (5 times a week for at least 30 minutes) in sustained physical activity of any intensity during leisure time.
3. About 25% of adults report no physical activity at all in their leisure time.
4. Physical inactivity is more prevalent among women than men, among blacks and Hispanics than whites, among older than younger adults, and among the less affluent than the more affluent.
5. The most popular leisure-time physical activities among adults are walking and gardening or yardwork.

Adolescents and Young Adults

1. Only about one-half of U.S. young people (ages 12–21 years) regularly participate in vigorous physical activity. One-fourth report no vigorous physical activity.
2. Approximately one-fourth of young people walk or bicycle (i.e., engage in light to moderate activity) nearly every day.
3. About 14% of young people report no recent vigorous or light-to-moderate physical activity. This indicator of inactivity is higher among females than males and among black females than white females.
4. Males are more likely than females to participate in vigorous physical activity, strengthening activities, and walking or bicycling.
5. Participation in all types of physical activity declines strikingly as age or grade in school increases.
6. Among high school students, enrollment in physical education remained unchanged during the first half of the 1990s. However, daily attendance in physical education declined from approximately 42% to 25%.
7. The percentage of high school students who were enrolled in physical education and who reported being physically active for at least 20 minutes in physical education classes declined from approximately 81% to 70% during the first half of this decade.

8. Only 19% of all high school students report being physically active for 20 minutes or more in daily physical education classes.

WHAT DOES THE REPORT SAY ABOUT PROMOTING PHYSICAL ACTIVITY AND UNDERSTANDING WHY PEOPLE ARE ACTIVE OR SEDENTARY? (*Chapter 6*)

As the benefits of moderate, regular physical activity have become more widely recognized, the need to find ways to promote this healthful behavior has become increasingly important. Because theories and models of human behavior can guide the development and refinement of intervention efforts, various behavioral and social science theories and models that have been used to guide much of the research on physical activity are described. This chapter reviews factors influencing physical activity and describes research methods to improve participation in regular physical activity among children, adolescents, and adults. To put in perspective the difficulty of increasing individual participation in physical activity, the chapter examines societal barriers to engaging in physical activities and describes existing resources that can increase opportunities for activity.

The *Surgeon General's Report* clearly states that a moderate amount of physical activity on a regular basis can improve one's health and quality of life. A moderate amount of physical activity is roughly equivalent to physical activity that uses approximately 150 calories of energy per day or 1,000 calories per week.

Fortunately, as the following table shows, moderate physical activity can be achieved in a variety of ways. Individuals can select activities that they can fit into their daily routine and enjoy throughout their lives.

Conclusions of Chapter 6: Understanding and Promoting Physical Activity

1. Consistent influences on physical activity patterns among adults and young people include confidence in one's ability to engage in regular physical activity (e.g., self-efficacy), enjoyment of physical activity, support from others, positive beliefs concerning the benefits of physical activity, and lack of perceived barriers to being physically active.
2. For adults, some interventions have been successful in increasing physical activity in communities, worksites, and health care settings, and at home.
3. Interventions targeting physical education in elementary school can substantially increase the amount of time students spend being physically active in physical education class.

Examples of Activities Expending 150 Calories

LESS VIGOROUS, MORE TIME

Washing and waxing a car for 45–60 minutes
Washing windows or floors for 45–60 minutes
Playing volleyball for 45 minutes
Playing touch football for 30–45 minutes
Gardening for 30–45 minutes
Wheeling self in wheelchair for 30–40 minutes
Walking 1³/₄ miles in 35 minutes (20 min/mile)
Basketball (shooting baskets) for 30 minutes
Bicycling 5 miles in 30 minutes
Dancing fast (social) for 30 minutes
Pushing a stroller 1¹/₂ miles in 30 minutes
Raking leaves for 30 minutes
Walking 2 miles in 30 minutes (15 min/mile)
Water aerobics for 30 minutes
Swimming laps for 20 minutes
Wheelchair basketball for 20 minutes
Basketball (playing a game) for 15–20 minutes
Bicycling 4 miles in 15 minutes
Jumping rope for 15 minutes
Running 1¹/₂ miles in 15 minutes (10 min/mile)
Shoveling snow for 15 minutes
Stairwalking for 15 minutes

MORE VIGOROUS, LESS TIME

For people who are unable to set aside a block of time as listed with the activities above, shorter episodes are clearly better than no activity. Both the CDC/ACSM recommendation and the NIH Consensus Conference Statement encourage the accumulation of short bouts of activity throughout the day when longer bouts are not possible.

COMMENTS FROM THE PRESIDENT'S COUNCIL ON PHYSICAL FITNESS AND SPORTS

Since its establishment in 1956, the PCPFS has promoted physical activity, fitness, and sports for all Americans. The President's Council has held physical activity and fitness clinics, implemented programs that reach millions of individuals each year, conducted extensive public service advertising campaigns, and provided grassroots support for educators, parents, and community leaders. Based on this history and experience in helping our nation become more physically active, the PCPFS offers the following:

Parents. What children do when they are young greatly influences what they do when they grow older. Be active with your children. Be active yourself—children model what they see. Be involved in school and community programs that promote activity. Maintain your interest when your children become teens. Encourage children and teens to do active work around home, to walk more, and to be active as part of their normal lifestyle. Plan special family events that involve physical activity.

School boards and superintendents. Just as many employers now recognize the importance of corporate fitness and wellness programs, school officials are beginning to realize that *their* teachers, staff, and students all can benefit from physical activity. Schools need scheduled time in which employees and students can be active. As worksite programs have demonstrated, giving workers time off for physical activity results in fewer absences, increased productivity, and reduced health care costs. *Support daily, quality physical education in all schools.* Recess in elementary schools, physical activity breaks in schools, fitness facilities in schools, and activity opportunities before or after school are essential if lifetime activity is to become a reality. School administrators and school board officials must monitor programs to ensure quality programs.

Youth sport coaches and recreation workers. Youth sports provide children with regular activity and enjoyment. It is important for those who work in these programs to understand that how children are treated today can affect whether they will stay active later in life. Avoid using exercise as punishment—help young people to enjoy physical activity! Make participation fun—not a situation in which criticism is common. Enjoyment and personal success are the keys to a lifetime of activity. Many children drop out of sports in their teens because they lack success or do not enjoy the activities. Modify or create new programs to involve more teens.

Physical education teachers. Develop programs that focus on teaching lifetime activities and self-management skills necessary for an active lifestyle. Programs such as those outlined in the *Surgeon General's Report* are encouraged. Physical education classes should provide for lifetime activity needs for students and be guided by the following points:

1. education need not be a physical training class where students are forced to do regimented activities;
2. classes should encourage out-of-school as well as in-class activity, and
3. at the secondary level, physical education concepts should be taught in a classroom as well as in a gymnasium.

Employers. Worksite fitness and health programs provide benefits for employees and employers. It is to the employers' benefit to find ways they can help employees become more physically active. Quality personnel, activity options, accessibility, and social support are important aspects of motivation to begin and continue activity.

Public officials. There can never be too many public opportunities for physical activity. Biking trails, parks, fitness courses, sidewalks, and swimming pools are facilities that can be provided to promote active lifestyles. Support legislation to promote activity in schools and in the workplace and funding for preventive programs including research related to activity and health.

Physicians and health professionals. Physicians and allied health professionals can play a major role in encouraging patients to become more physically active. All health care givers are encouraged to make activity promotion a part of their regular practice.

Insurance companies. Insurance companies have a unique opportunity to play a major role in improving Americans' health by rewarding active behavior. Offer preventive programs that promote active behavior and consider reducing premiums for physically active individuals.

All Americans. Most of us know that physical activity is good for our health. But many may not know just *how* important regular physical activity is to preventing the development of chronic diseases and improving our quality of life. The *Surgeon General's Report on Physical Activity and Health* makes it clear that some physical activity is better than none—even if it is a moderate amount. We encourage each person to perform daily activity that expends about 150 calories of energy. Find an activity that you enjoy and make it part of your daily plan. If this is too much, start with less activity and do it each day or do the activity several days a week as a starter. *Remember—participating in some activity is better than doing nothing at all—and more is even better!*