

Summary Report of the Surgeon General United States Department of Health and Human Services

For the entire report, go to <http://www.cdc.gov/nccdphp/sgr/ataglan.htm>

The benefits of physical activity have been extolled throughout western history, but it was not until the second half of this century that scientific evidence supporting these beliefs began to accumulate. By the 1970s, enough information was available about the beneficial effects of vigorous exercise on cardio respiratory fitness that the American College of Sports Medicine (ACSM), the American Heart Association (AHA), and other national organizations began issuing physical activity recommendations to the public. These recommendations generally focused on cardio respiratory endurance and specified sustained periods of vigorous physical activity involving large muscle groups and lasting at least 20 minutes on 3 or more days per week. As understanding of the benefits of less vigorous activity grew, recommendations followed suit. During the past few years, the ACSM, the CDC, the AHA, the PCPFS, and the NIH have all recommended regular, moderate-intensity physical activity as an option for those who get little or no exercise. The Healthy People 2000 goals for the nation's health have recognized the importance of physical activity and have included physical activity goals. The 1995 Dietary Guidelines for Americans, the basis of the federal government's nutrition-related programs, included physical activity guidance to maintain and improve weight - 30 minutes or more of moderate-intensity physical activity on all, or most, days of the week.

Underpinning such recommendations is a growing understanding of how physical activity affects physiologic function. The body responds to physical activity in ways that have important positive effects on musculoskeletal, cardiovascular, respiratory, and endocrine systems. These changes are consistent with a number of health benefits, including a reduced risk of premature mortality and reduced risks of coronary heart disease, hypertension, colon cancer, and diabetes mellitus. Regular participation in physical activity also appears to reduce depression and anxiety, improve mood, and enhance ability to perform daily tasks throughout the life span.

The risks associated with physical activity must also be considered. The most common health problems that have been associated with physical activity are musculoskeletal injuries, which can occur with excessive amounts of activity or with suddenly beginning an activity for which the body is not conditioned. Much more serious associated health problems (i.e., myocardial infarction, sudden death) are also much rarer, occurring primarily among sedentary people with advanced atherosclerotic disease who engage in strenuous activity to which they are unaccustomed. Sedentary people, especially those with preexisting health conditions, who wish to increase their physical activity, should therefore gradually build up to the desired level of activity. Even among people who are regularly active, the risk of myocardial infarction or sudden death is somewhat increased during physical exertion, but their overall risk of these outcomes is lower than that among people who are sedentary.

Research on physical activity continues to evolve. This report includes both well-established findings and newer research results that await replication and amplification. Interest has been developing in ways to differentiate between the various characteristics of physical activity that improve health. It remains to be determined how the interrelated characteristics of amount, intensity, duration, frequency, type, and pattern of physical activity are related to specific health or disease outcomes.

Attention has been drawn recently to findings from three studies showing that cardio respiratory fitness gains are similar when physical activity occurs in several short sessions (e.g., 10 minutes) as when the same total amount and intensity of activity occurs in one longer session (e.g., 30 minutes). Although, strictly speaking, the health benefits of such intermittent activity have not yet been demonstrated, it is reasonable to expect them to be similar to those of continuous activity. Moreover, for people who are unable to set aside 30 minutes for physical activity, shorter episodes are clearly better than none. Indeed, one study has shown greater adherence to a walking program among those walking several times per day than among those walking once per day, when the total amount of walking time was kept the same. Accumulating physical activity over the course of the day has been included in recent recommendations from the CDC and ACSM, as well as from the NIH Consensus Development Conference on Physical Activity and Cardiovascular Health.

Despite common knowledge that exercise is healthful, more than 60 percent of American adults are not regularly active, and 25 percent of the adult population are not active at all. Moreover, although many people have enthusiastically embarked on vigorous exercise programs at one time or another, most do not sustain their participation. Clearly, the processes of developing and maintaining healthier habits are as important to study as the health effects of these habits.

The effort to understand how to promote more active lifestyles is of great importance to the health of this nation. Although the study of physical activity determinants and interventions is at an early stage, effective programs to increase physical activity have been carried out in a variety of settings, such as schools, physicians' offices, and worksites. Determining the most effective and cost-effective intervention approaches is a challenge for the future. Fortunately, the United States has skilled leadership and institutions to support efforts to encourage and assist Americans to become more physically active. Schools, community agencies, parks, recreational facilities, and health clubs are available in most communities and can be more effectively used in these efforts.

School-based interventions for youth are particularly promising, not only for their potential scope - almost all young people between the ages of 6 and 16 years attend school - but also for their potential impact. Nearly half of young people 12-21 years of age are not vigorously active; moreover, physical activity sharply declines during adolescence. Childhood and adolescence may thus be pivotal times for preventing sedentary behavior among adults by maintaining the habit of physical activity throughout the school years. School-based interventions have been shown to be successful in increasing physical activity levels. With evidence that success in this arena is possible, every effort should be made to encourage schools to require daily physical education in each grade and to promote physical activities that can be enjoyed throughout life.

Outside the school, physical activity programs and initiatives face the challenge of a highly technological society that makes it increasingly convenient to remain sedentary and that discourages physical activity in both obvious and subtle ways. To increase physical activity in the general population, it may be necessary to go beyond traditional efforts. This report highlights some concepts from community initiatives that are being implemented around the country. It is hoped that these examples will spark new public policies and programs in other places as well. Special efforts will also be required to meet the needs of special populations, such as people with disabilities, racial and ethnic minorities, people with low income, and the elderly. Much more information about these important groups will be necessary to develop a truly comprehensive national initiative for better health through physical activity. Challenges for

the future include identifying key determinants of physically active lifestyles among the diverse populations that characterize the United States (including special populations, women, and young people) and using this information to design and disseminate effective programs.

At-A-Glance

A NEW VIEW OF PHYSICAL ACTIVITY:

This report brings together, for the first time, what has been learned about physical activity and health from decades of research. Among its major findings:

People who are usually inactive can improve their health and well-being by becoming even moderately active on a regular basis.

Physical activity need not be strenuous to achieve health benefits.

Greater health benefits can be achieved by increasing the amount (duration, frequency, or intensity) of physical activity.

THE BENEFITS OF REGULAR PHYSICAL ACTIVITY:

Regular physical activity that is performed on most days of the week reduces the risk of developing or dying from some of the leading causes of illness and death in the United States. Regular physical activity improves health in the following ways:

- Reduces the risk of dying prematurely.
- Reduces the risk of dying from heart disease.
- Reduces the risk of developing diabetes.
- Reduces the risk of developing high blood pressure.
- Helps reduce blood pressure in people who already have high blood pressure.
- Reduces the risk of developing colon cancer.
- Reduces feelings of depression and anxiety.
- Helps control weight.
- Helps build and maintain healthy bones, muscles, and joints.
- Helps older adults become stronger and better able to move about without falling.
- Promotes psychological well-being.

A MAJOR PUBLIC HEALTH CONCERN:

Given the numerous health benefits of physical activity, the hazards of being inactive are clear. Physical inactivity is a serious, nationwide problem. Its scope poses a public health challenge for reducing the national burden of unnecessary illness and premature death.

WHAT IS A MODERATE AMOUNT OF PHYSICAL ACTIVITY?

As the examples listed in the box show, a moderate amount of physical activity* can be achieved in a variety of ways. People can select activities that they enjoy and that fit into their daily lives. Because amount of activity is a function of duration, intensity, and frequency, the

same amount of activity can be obtained in longer sessions of moderately intense activities (such as brisk walking) as in shorter sessions of more strenuous activities (such as running):

EXAMPLES OF MODERATE AMOUNTS OF ACTIVITY:

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 1 3/4 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 1 1/2 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 1 1/2 miles in 15 minutes (10 min/mile)
Shoveling snow for 15 minutes
Stair walking for 15 minutes

More Vigorous, Less Time

* A moderate amount of physical activity is roughly equivalent to physical activity that uses approximately 150 Calories (kcal) of energy per day, or 1,000 Calories per week. Some activities can be performed at various intensities; the suggested durations correspond to expected intensity of effort.

PRECAUTIONS FOR A HEALTHY START:

To avoid soreness and injury, individuals contemplating an increase in physical activity should start out slowly and gradually build up to the desired amount to give the body time to adjust. People with chronic health problems, such as heart disease, diabetes, or obesity, or who are at high risk for these problems should first consult a physician before beginning a new program of physical activity. Also, men over age 40 and women over age 50 who plan to begin a new vigorous physical activity program should consult a physician first to be sure they do not have heart disease or other health problems.

STATUS OF THE NATION - A NEED FOR CHANGE:

Adults

More than 60 percent of adults do not achieve the recommended amount of regular physical activity. In fact, 25 percent of all adults are not active at all. Inactivity increases with age and is more common among women than men and among those with lower income and less education than among those with higher income or education

Adolescents and Young Adults

Nearly half of young people aged 12-21 are not vigorously active on a regular basis. Physical activity declines dramatically with age during adolescence. Female adolescents are much less physically active than male adolescents.

High School Students

In high school, enrollment in daily physical education classes dropped from 42 percent in 1991 to 25 percent in 1995. Only 19 percent of all high school students are physically active for 20 minutes or more in physical education classes every day during the school week.

IDEAS FOR IMPROVEMENT:

This report identifies promising ways to help people include more physical activity in their daily lives.

Well-designed programs in schools to increase physical activity in physical education classes have been shown to be effective.

Carefully planned counseling by health care providers and worksite activity programs can increase individuals' physical activity levels.

Promising approaches being tried in some communities around the nation include opening school buildings and shopping malls for walking before or after regular hours, as well as building bicycle and walking paths separated from automobile traffic. Revising building codes to require accessible stairwells is another idea that has been suggested

SPECIAL MESSAGES FOR SPECIAL POPULATIONS:

Older Adults

No one is too old to enjoy the benefits of regular physical activity. Of special interest to older adults is evidence that muscle-strengthening exercises can reduce the risk of falling and fracturing bones and can improve the ability to live independently.

Parents

Parents can help their children maintain a physically active lifestyle by providing encouragement and opportunities for physical activity. Family events can include opportunities for everyone in the family to be active.

Teenagers

Regular physical activity improves strength, builds lean muscle, and decreases body fat. It can build stronger bones to last a lifetime.

Dieters

Regular physical activity burns Calories and preserves lean muscle mass. It is a key component of any weight loss effort and is important for controlling weight.

People with High Blood Pressure

Regular physical activity helps lower blood pressure.

People Feeling Anxious, Depressed, or Moody

Regular physical activity improves mood, helps relieve depression, and increases feelings of well-being.

People with Arthritis

Regular physical activity can help control joint swelling and pain. Physical activity of the type and amount recommended for health has not been shown to cause arthritis.

People with Disabilities

Regular physical activity can help people with chronic, disabling conditions improve their stamina and muscle strength and can improve psychological well-being and quality of life by increasing the ability to perform activities of daily life.

FOR MORE INFORMATION CONTACT:

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