

# **SJSU** | DEPARTMENT OF KINESIOLOGY

**ACTIVITY PROGRAM  
PHYSICAL ACTIVITY  
INFORMATION HANDBOOK**

**2008-09**

**San José State University  
College of Applied Sciences and Arts**

## Table of Contents

Surgeon General Report	2
Adopt a Physically Active Lifestyle	4
Daily Physical Activity Classes	6
Exercise and Younger DNA	7
Physical Activity is the focus of Kinesiology Majors	8
Historical Background and Evolution of Physical Activity Recommendations	9
How Physical Activity Impacts Health	10
Obesity and Physical Activity	11
Exercise & Aging	15
The Effects of Physical Activity on Diseases	17
New Physical Activity Guidelines for Americans	18
Physical Activity and Health For Adolescents and Young Adults	19
Physical Activity and Health for Women	21
Physical Activity and Health for Persons with Disabilities	23
Importance of Quality Physical Activity Instructional Programs in Higher Education	24
Reasons to Practice Yoga	25
The Health Benefits of Physical Activity	26
Physical Activity and Cardiovascular Health Fact Sheet	28
Surgeon General's Healthy Weight Advice for Consumers	29

National Center for Chronic Disease Prevention and Health Promotion  
**Physical Activity and Health** A REPORT OF THE  
SURGEON GENERAL

**Message from Donna E. Shalala**

*Secretary of Health and Human Services*

The United States has led the world in understanding and promoting the benefits of physical activity. In the 1950s, we launched the first national effort to encourage young Americans to be physically active, with a strong emphasis on participation in team sports. In the 1970s, we embarked on a national effort to educate Americans about the cardiovascular benefits of vigorous activity, such as running and playing basketball. And in the 1980s and 1990s, we made breakthrough findings about the health benefits of moderate-intensity activities, such as walking, gardening, and dancing.

Now, with the publication of this first Surgeon General's report on physical activity and health, which I commissioned in 1994, we are poised to take another bold step forward. This landmark review of the research on physical activity and health - the most comprehensive ever - has the potential to catalyze a new physical activity and fitness movement in the United States. It is a work of real significance, on par with the Surgeon General's historic first report on smoking and health published in 1964.

This report is a passport to good health for all Americans. Its key finding is that people of all ages can improve the quality of their lives through a lifelong practice of moderate physical activity. You don't have to be training for the Boston Marathon to derive real health benefits from physical activity. A regular, preferably daily regimen of at least 30-45 minutes of brisk walking, bicycling, or even working around the house or yard will reduce your risks of developing coronary heart disease, hypertension, colon cancer, and diabetes. And if you're already doing that, you should consider picking up the pace: this report says that people who are already physically active will benefit even more by increasing the intensity or duration of their activity.

This watershed report comes not a moment too soon. We have found that 60 percent - well over half - of Americans are not

regularly active. Worse yet, 25 percent of Americans are not active at all. For young people - the future of our country - physical activity declines dramatically during adolescence. These are dangerous trends. We need to turn them around quickly, for the health of our citizens and our country.

We will do so only with a massive national commitment - beginning now, on the eve of the Centennial Olympic Games, with a true fitness Dream Team drawing on the many forms of leadership that make up our great democratic society. Families need to weave physical activity into the fabric of their daily lives. Health professionals, in addition to being role models for healthy behaviors, need to encourage their patients to get out of their chairs and start fitness programs tailored to their individual needs. Businesses need to learn from what has worked in the past and promote worksite fitness, an easy option for workers. Community leaders need to reexamine whether enough resources have been devoted to the maintenance of parks, playgrounds, community centers, and physical education. Schools and universities need to reintroduce daily, quality physical activity as a key component of a comprehensive education. And the media and entertainment industries need to use their vast creative abilities to show all Americans that physical activity is healthful and fun - in other words, that it is attractive, maybe even glamorous!

We Americans always find the will to change when change is needed. I believe we can team up to create a new physical activity movement in this country. In doing so, we will save precious resources, precious futures, and precious lives. The time for action - and activity - is now.

Links

[United States Department of Health and Human Services](#)  
[Centers for Disease Control and Prevention](#)  
[National Center for Chronic Disease Prevention and Health Promotion](#)  
[Division of Nutrition and Physical Activity](#)

## Adopt a Physically Active Lifestyle

**Adults:** Engage in at least moderate activity for 30 minutes or more on 5 or more days of the week; 45 minutes or more of moderate to vigorous activity on 5 or more days per week may further reduce the risk of breast and colon cancer.

**Children and adolescents:** Engage in at least 60 minutes per day of moderate-to-vigorous physical activity for at least 5 days per week.

### Examples of Moderate and Vigorous Physical Activities

	Moderate Activities	Vigorous Activities
Exercise and Leisure	Walking, dancing, leisurely bicycling, ice-skating or roller-skating, horseback riding, canoeing, yoga	Jogging or running, fast bicycling, circuit weight training, aerobic dance, martial arts, jump rope, swimming
Sports	Volleyball, golfing, softball, baseball, badminton, doubles tennis, downhill skiing	Soccer, field hockey or ice hockey, lacrosse, singles tennis, racquetball, basketball, cross-country skiing
Home Activities	Mowing the lawn, general lawn and garden maintenance	Digging, carrying and hauling, masonry, carpentry
Occupational Activity	Walking and lifting as part of the job (custodial work, farming, auto or machine repair)	Heavy manual labor (forestry, construction, fire fighting)

### Helpful Ways to Be More Active

- Use stairs rather than an elevator.
- If you can, walk or bike to your destination.
- Exercise at lunch with your workmates, family, or friends.
- Take a 10-minute exercise break at work to stretch or take a quick walk.
- Walk to visit co-workers instead of sending an email.
- Go dancing with your spouse or friends.
- Plan active vacations rather than only driving trips.
- Wear a pedometer every day and watch your daily steps increase.
- Join a sports team.
- Use a stationary bicycle while watching TV.
- Plan your exercise routine to gradually increase the days per week and minutes per session.

**Source:** [American Cancer Society Website](#)

## The Benefits of Daily Physical Activity



*Learn and Live*™ 2006

- Reduces the risk of heart disease by improving blood circulation throughout the body
- Keeps weight under control
- Improves blood cholesterol levels
- Prevents and manages high blood pressure
- Prevents bone loss
- Boosts energy level
- Helps manage stress
- Releases tension
- Improves the ability to fall asleep quickly and sleep well
- Improves self-image
- Counters anxiety and depression and increases enthusiasm and optimism
- Increases muscle strength, increasing the ability to do other physical activities
- Provides a way to share an activity with family and friends
- Establishes good heart-healthy habits in children and counters the conditions (obesity, high blood pressure, poor cholesterol levels, poor lifestyle habits, etc.) that lead to heart attack and stroke later in life
- In older people, helps delay or prevent chronic illnesses and diseases associated with aging and maintains quality of life and independence longer

## **Exercise Creates Younger DNA**

By: Dr. Montgomery, 2008

Do you need proof that exercise helps to keep you young?

A stunning study published in the Archives of Internal Medicine (January 28, 2008) showed that individuals who exercised regularly have telomeres in the DNA of their white blood cells that are longer than those who do not. It is generally believed that white blood cell telomeres shorten over time and serve as an indicator of an individual's biological age. The study analyzed a British database containing more than 2,401 sets of twins. The most significant finding came from 67 pairs of twins in which one exercised significantly more than the other.

The twin who exercised vigorously an average of 199 minutes per week showed evidence of DNA that was 10 years younger than the twin who exercised an average of 16 minutes per week. Vigorous exercise was defined as running, cycling, lifting weights or similar types of movement.

While more research needs to be done, it would appear that this is one more compelling reason to participate in a regular habit of vigorous physical activity.

## **Physical Activity is the Focus of Kinesiology Majors**

American Kinesiology Association 2008

The American Kinesiology Association believes that undergraduate majors in Kinesiology should share a common core of knowledge. The common core establishes broad knowledge categories that can be used by faculty in Kinesiology to examine and refine current educational expectations, policies and practices.

The undergraduate degree in Kinesiology includes principles and experiences focused on Physical Activity across the lifespan.

These include:

- Physical activity in health, wellness and quality of life
- Scientific foundations of physical activity
- Cultural, historical and philosophical context of physical activity
- The practice of physical activity

## Historical Background and Evolution of Physical Activity Recommendations

A report of the Surgeon General

1. Physical activity for better health and well-being has been an important theme throughout much of western history.
2. 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.
3. 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.
4. 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.
5. 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.

**Source:**

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>

## HOW PHYSICAL ACTIVITY IMPACTS HEALTH

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 prematurely 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.

Source:

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>



## **Overweight and Obesity: What You Can Do**

*Being Physically Active Can Help You Attain or Maintain a Healthy Weight*

### **OVERWEIGHT AND OBESITY**

- 61% of adults in the United States were overweight or obese in 1999.
- Approximately 300,000 deaths each year in the United States may be attributable to obesity.
- Overweight and obesity are associated with heart disease, certain types of cancer, type 2 diabetes, stroke, arthritis, breathing problems, and psychological disorders, such as depression.

### **PHYSICAL ACTIVITY: WEIGHT CONTROL AND OTHER BENEFITS**

- Physical activity contributes to weight loss, especially when it is combined with calorie reduction.
- Regular physical activity is extremely helpful for the prevention of overweight and obesity.
- Regular physical activity is very important in maintaining weight loss.
- In addition to weight control, physical activity helps prevent heart disease, helps control cholesterol levels and diabetes, slows bone loss associated with advancing age, lowers the risk of certain cancers, and helps reduce anxiety and depression.

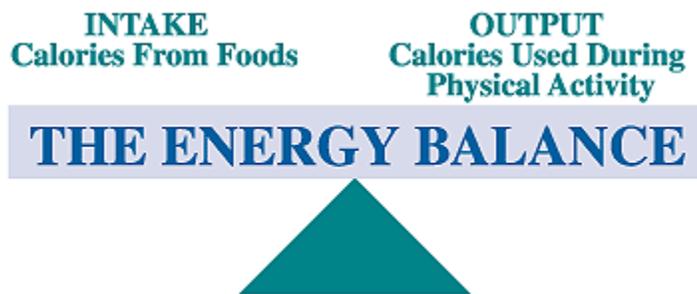
### **PHYSICAL ACTIVITY IN THE UNITED STATES**

- Many people live sedentary lives; in fact, 40% of adults in the United States do not participate in any leisure-time physical activity.
- Less than 1/3 of adults engage in the recommended amounts of physical activity (at least 30 minutes most days).

### **YOU CAN ACTIVATE YOURSELF**

- You don't need special skills or training to be physically active. Walking is a great way to be active.

- Physical activity should be initiated slowly, and the intensity should be increased gradually (e.g., start with a 10-minute walk three times a week and work your way up to 30 minutes of brisk walking or other form of moderate activity five times a week).
- Activities can be split into several short periods (e.g., 10 minutes 3 times a day) instead of one longer period (e.g., 30 minutes once a day).
- You should select activities that you **ENJOY** and can fit into your daily life.
- It may take time to incorporate more activity into your daily life. Don't get discouraged if at first you miss a day or two; just keep trying and do your best to make it a regular part of your life. You will soon realize how good it feels to be physically active and fit.
- Ask for support from friends and family; likewise, support the people in your life who are trying to be physically active.
- Many forms of physical activity can be social, allowing you to converse and spend time with family or friends or to develop new relationships.
- Make fitness a priority?b>COMMIT TO IT.



\* Consult with your health care provider before starting a vigorous exercise program if you have ever had heart trouble or high blood pressure or suffer from chest pains, dizziness or fainting, arthritis, or if you are over age 40 (men) or 50 (women).

- To maintain your weight, your intake of calories must equal your energy output.
- To lose weight, you must use more energy than you take in.
- A difference of one 12-oz. soda (150 calories) or 30 minutes of brisk walking most days can add or subtract approximately 10 pounds to your weight each year.

#### **TILT THE BALANCE WITH PHYSICAL ACTIVITY**

- Adding moderate amounts of physical activity five or more times a week to your routine uses 150 calories of energy on each day of activity, which can be equivalent to approximately 5 pounds in 6 months or 10 pounds in 1 year.
- You can choose any combination of type of activity at the length of time specified from the following table to burn approximately 150 calories:

Examples of moderate amounts of physical activity		
<b>Common Chores</b> Washing and waxing a car for 45-60 minutes Washing windows or floors for 45-60 minutes Gardening for 30-45 minutes Wheeling self in wheelchair 30-40 minutes Pushing a stroller 1?miles in 30 minutes Raking leaves for 30 minutes Walking 2 miles in 30 minutes (15min/mile) Shoveling snow for 15 minutes Stairwalking for 15 minutes	<b>Sporting Activities</b> Playing volleyball for 45-60 minutes Playing touch football for 45 minutes Walking 1?miles in 35 minutes (20min/mile) Basketball (shooting baskets) 30 minutes Bicycling 5 miles in 30 minutes Dancing fast (social) for 30 minutes Water aerobics for 30 minutes Swimming laps for 20 minutes Basketball (playing game) for 15-20 minutes Bicycling 4 miles in 15 minutes Jumping rope for 15 minutes Running 1?miles in 15 min. (10min/mile)	<b>Less Vigorous, More Time</b>  <b>More Vigorous, Less Time</b>

- 
- Reducing your calorie intake by 150 calories a day, along with participating in moderate activity, could double your weight loss and is equivalent to approximately 10 pounds in 6 months and 20 pounds in 1 year.

### **BALANCE YOUR FOOD INTAKE AND YOUR ACTIVITY**

- One small chocolate chip cookie (50 calories) is equivalent to walking briskly for 10 minutes.
- The difference between a large gourmet chocolate chip cookie and a small chocolate chip cookie could be about 40 minutes of raking leaves (200 calories).
- One hour of walking at a moderate pace (20 min/mile) uses about the same amount of energy that is in one jelly filled doughnut (300 calories).

A fast food "meal" containing a double patty cheeseburger, extra-large fries and a 24 oz. soft drink is equal to running 2?hours at a 10 min/mile pace (1500 calories).

## Experts sing its praises. New research shows us why

by Donna Rae Siegfried

In fact, exercise can reduce the inflammation of arthritis and related conditions, reduce the risk of other chronic diseases and ease pain. Four recent studies provide yet more proof of how exercise can improve your health.

1. **Exercise keeps you young.** Researchers don't know yet exactly what causes aging, but inflammation certainly is involved. A study of healthy men aged 65 to 74 concluded that the more physically active you are, the fewer inflammatory chemicals your cells produce. Researchers from the Human Performance Laboratory at Ball State University in Muncie, Ind., suggest that because exercise controls inflammatory chemicals, it may help reduce the decline in function associated with aging.
2. **Exercise improves endurance and heart health.** Inflammatory conditions such as arthritis are associated with an increased risk of heart disease, because inflammation that affects joints affects arteries too, increasing blood pressure. Movement gets your blood flowing, increasing endurance and improving cardiovascular health. You can reap benefits even if you're not doing high-intensity aerobics. University of Pennsylvania researchers found that moving enough to increase blood flow stimulates an anti-inflammatory response in the cells of blood vessels, helping to keep arteries open.
3. **Exercise helps arthritis and diabetes.** The same inflammatory chemicals associated with rheumatoid arthritis (RA) and lupus can block insulin receptors, making cells resist the beneficial effects of insulin. This condition of insulin resistance can progress to diabetes. A recent study shows exercise not only decreases levels of inflammatory chemicals but also increases the amount of insulin and glucose the body uses rather than stores by 16 percent. Reducing inflammation, as through exercising, may reduce your pain, as well as your risk of developing diabetes.
4. **Exercise, not just counting calories, counts.** Cutting calories can help you lose weight, but it also can slow down your metabolism. Increasing your activity level along with cutting calories is a smart way to lose weight. Some people try only cutting calories, but a study of obese postmenopausal women by researchers at Wake Forest University in Winston-Salem, N.C., showed that while diet alone for six months decreased the total amount of abdominal fat, it did not decrease the levels of inflammatory compounds like exercise did. To decrease inflammation and boost metabolism, you need the two-pronged approach of exercise and diet.

**Source: American Arthritis Association website**

## **The Effects of Physical Activity on Diseases**

### **A report of Surgeon General**

#### **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 required 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.

**Source:**

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>

## **New Physical Activity Guidelines for Americans**

**U.S. Department of Health and Human Services**

**OCT. 7, 2008**

Adults gain substantial health benefits from two and a half hours a week of moderate aerobic physical activity, and children benefit from an hour or more of physical activity a day, according to the new Physical Activity Guidelines for Americans. The comprehensive set of recommendations for people of all ages and physical conditions was released today by the.

“It’s important for all Americans to be active, and the guidelines are a roadmap to include physical activity in their daily routine,” HHS Secretary Mike Leavitt said. “The evidence is clear -- regular physical activity over months and years produces long-term health benefits and reduces the risk of many diseases. The more physically active you are, the more health benefits you gain.” Regular physical activity reduces the risk in adults of early death; coronary heart disease, stroke, high blood pressure, type 2 diabetes, colon and breast cancer, and depression. It can improve thinking ability in older adults and the ability to engage in activities needed for daily living. The recommended amount of physical activity in children and adolescents improves cardiorespiratory and muscular fitness as well as bone health, and contributes to favorable body composition.

The Physical Activity Guidelines for Americans are the most comprehensive of their kind. They are based on the first thorough review of scientific research about physical activity and health in more than a decade. A 13-member advisory committee appointed in April 2007 by Secretary Leavitt reviewed research and produced an extensive report.

Key guidelines by group are:

**Children and Adolescents** -- One hour or more of moderate or vigorous aerobic physical activity a day, including vigorous intensity physical activity at least three days a week. Examples of moderate intensity aerobic activities include hiking, skateboarding, bicycle riding and brisk walking. Vigorous intensity aerobic activities include bicycle riding, jumping rope, running and sports such as soccer, basketball and ice or field hockey. Children and adolescents should incorporate muscle-strengthening activities, such as rope climbing, sit-ups, and tug-of war, three days a week. Bone-strengthening activities, such as jumping rope, running and skipping, are recommended three days a week.

- More -

- 2 -

**Adults** -- Adults gain substantial health benefits from two and one half hours a week of moderate intensity aerobic physical activity, or one hour and 15 minutes of vigorous physical activity. Walking briskly, water aerobics, ballroom dancing and general gardening are examples of moderate intensity aerobic activities. Vigorous intensity aerobic activities include racewalking, jogging or running, swimming laps, jumping rope and hiking uphill or with a heavy backpack. Aerobic activity should be performed in episodes of at least 10 minutes. For more extensive health benefits, adults should increase their aerobic physical activity to five hours a week moderate-intensity or two and one half hours a week of vigorous-intensity aerobic physical activity. Adults should incorporate muscle strengthening activities, such as weight training, push-ups, sit-ups and carrying heavy loads or heavy gardening, at least two days a week.

**Older adults** -- Older adults should follow the guidelines for other adults when it is within their physical capacity. If a chronic condition prohibits their ability to follow those guidelines, they should be as physically active as their abilities and conditions allow. If they are at risk of falling, they should also do exercises that maintain or improve balance.

**Women during pregnancy** -- Healthy women should get at least two and one half hours of moderate-intensity aerobic activity a week during pregnancy and the time after delivery, preferably spread through the week. Pregnant women who habitually engage in vigorous aerobic activity or who are highly active can continue during pregnancy and the time after delivery, provided they remain healthy and discuss with their health care provider how and when activity should be adjusted over time.

**Adults with disabilities** -- Those who are able should get at least two and one half hours of moderate aerobic activity a week, or one hour and 15 minutes of vigorous aerobic activity a week. They should incorporate muscle-strengthening activities involving all major muscle groups two or more days a week. When they are not able to meet the guidelines, they should engage in regular physical activity according to their abilities and should avoid inactivity.

**People with chronic medical conditions** -- Adults with chronic conditions get important health benefits from regular physical activity. They should do so with the guidance of a health care provider.

For more information about the "Physical Activity Guidelines for Americans," visit [www.hhs.gov](http://www.hhs.gov) or [www.health.gov/paguidelines](http://www.health.gov/paguidelines).

## Physical Activity and Health For Adolescents and Young Adults

A report of the Surgeon General

### KEY MESSAGES

- Adolescents and young adults, both male and female, benefit from physical activity.
- Physical activity need not be strenuous to be beneficial.
- Moderate amounts of daily physical activity are recommended for people of all ages. This amount can be obtained in longer sessions of moderately intense activities, such as brisk walking for 30 minutes, or in shorter sessions of more intense activities, such as jogging or playing basketball for 15-20 minutes.
- Greater amounts of physical activity are even more beneficial, up to a point. Excessive amounts of physical activity can lead to injuries, menstrual abnormalities, and bone weakening.

### FACTS

- Nearly half of American youths aged 12-21 years are not vigorously active on a regular basis.
- About 14 percent of young people report no recent physical activity. Inactivity is more common among females (14%) than males (7%) and among black females (21%) than white females (12%).
- Participation in all types of physical activity declines strikingly as age or grade in school increases.

### Source:

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>

## Physical Activity and Health for Women

A report of the Surgeon General

### KEY MESSAGES

- Physical activity need not be strenuous to achieve health benefits.
- Women of all ages benefit from a moderate amount of physical activity, preferably daily. The same moderate amount of activity can be obtained in longer sessions of moderately intense activities (such as 30 minutes of brisk walking) as in shorter sessions of more strenuous activities (such as 15-20 minutes of jogging).
- Additional health benefits can be gained through greater amounts of physical activity. Women who can maintain a regular routine of physical activity that is of longer duration or of greater intensity are likely to derive greater benefit. However, excessive amounts of activity should be avoided, because risk of injury increases with greater amounts of activity, as does the risk of menstrual abnormalities and bone weakening.
- Previously sedentary women who begin physical activity programs should start with short intervals (5-10 minutes) of physical activity and gradually build up to the desired level of activity.
- Women with chronic health problems, such as heart disease, diabetes, or obesity, or who are at high risk for these conditions should first consult a physician before beginning a new program of physical activity. Women over age 50 who plan to begin a new program of **vigorous** physical activity should first consult a physician to be sure they do not have heart disease or other health problems.
- The emphasis on moderate amounts of physical activity makes it possible to vary activities to meet individual needs, preferences, and life circumstances.

### FACTS

- More than 60 percent of U.S. women do not engage in the recommended amount of physical activity.
- More than 25 percent of U.S. women are not active at all.
- Physical inactivity is more common among women than men.
- Social support from family and friends has been consistently and positively related to regular physical activity.

### BENEFITS OF PHYSICAL ACTIVITY

- Reduces the risk of dying from coronary heart disease and of developing high blood pressure, colon cancer, and diabetes.
- Helps maintain healthy bones, muscles, and joints.

- Helps control weight, build lean muscle, and reduce body fat.
- Helps control joint swelling and pain associated with arthritis.
- May enhance the effect of estrogen replacement therapy in decreasing bone loss after menopause.
- Reduces symptoms of anxiety and depression and fosters improvements in mood and feelings of well-being.
- Can help reduce blood pressure in some women with hypertension.

**Source:**

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>

## Physical Activity and Health for Persons with Disabilities

### KEY MESSAGES

- Physical activity need not be strenuous to achieve health benefits.
- Significant health benefits can be obtained with a moderate amount of physical activity, preferably daily. The same moderate amount of activity can be obtained in longer sessions of moderately intense activities (such as 30-40 minutes of wheeling oneself in a wheelchair) or in shorter sessions of more strenuous activities (such as 20 minutes of wheelchair basketball).
- Additional health benefits can be gained through greater amounts of physical activity. People who can maintain a regular routine of physical activity that is of longer duration or of greater intensity are likely to derive greater benefit.
- Previously sedentary people who begin physical activity programs should start with short intervals of physical activity (5-10 minutes) and gradually build up to the desired level of activity.
- People with disabilities should first consult a physician before beginning a program of physical activity to which they are unaccustomed.
- The emphasis on moderate amounts of physical activity makes it possible to vary activities to meet individual needs, preferences, and life circumstances.

### FACTS

- People with disabilities are less likely to engage in regular moderate physical activity than people without disabilities, yet they have similar needs to promote their health and prevent unnecessary disease.
- Social support from family and friends has been consistently and positively related to regular physical activity.

### BENEFITS OF PHYSICAL ACTIVITY

- Reduces the risk of dying from coronary heart disease and of developing high blood pressure, colon cancer, and diabetes.
- Can help people with chronic, disabling conditions improve their stamina and muscle strength.
- Reduces symptoms of anxiety and depression, improves mood, and promotes general feelings of well-being.
- Helps control joint swelling and pain associated with arthritis.
- Can help reduce blood pressure in some people with hypertension.

#### Source:

National Center for Chronic Disease Prevention and Health Promotion  
Centers for Disease Control and Prevention  
<http://www.cdc.gov>

### **Importance of quality physical activity instructional programs in higher education**

The National Association for Sport and Physical Education (NASPE), along with the Surgeon General's Report and Healthy People 2010, supports the national strategy for the improvement of health in the United States in recommending 30 minutes of moderate activity on most days of the week and/or 20 minutes of vigorous physical activity 3 days per week for college-aged students.

**Quality instruction in physical education incorporates the best practices, derived from both research and teaching experiences, into a pattern of instruction that maximizes opportunities for learning and success for all students. Instructors regularly assess student progress and adjust lessons accordingly. The outcome of a developmentally and instructionally appropriate program is a physically educated individual who has the knowledge, skills, and confidence to become and remain physically active for a lifetime.**

**Source:**

2008 Guidelines for Instructional Physical Activity Programs in Higher Education.  
A Position Statement of the National Association for Sport and Physical Education.

## Reasons to Practice Yoga

Susan Caughlan, university yoga instructor

2008

**Flexibility-**Yoga helps improve flexibility, mobility and range of motion. You gain awareness of and improve your ability to use the correct muscles when making your movements. Over time the ligaments, tendons and muscles are gradually lengthened and elasticity is increased.

**Strength-** Yoga asanas use every muscle in the body bringing in a deep balanced strength while relieving muscular tension.

**Breath-** Yoga teaches you to breath in a slower, deeper way with more awareness. This helps to improve lung function and increase the amount of oxygen available to all of the cells in the body. You will increase the relaxation response and diminish the stress response.

**Stress Relief-** Yoga reduces the effects of stress on the body and the mind. Yoga can help lower blood pressure and heart rate, improve digestion and support the immune system. Asana, meditation and breath practice help to encourage true deep relaxation and reduce levels of the stress hormone cortisol which is linked to osteoporosis and insulin resistance. You can also ease the symptoms of anxiety, depression, fatigue, asthma and insomnia.

**Alignment-** Yoga helps to improve body awareness and overall alignment of the body leading to better posture and aiding correct breathing habits. This will reduce muscular and joint pain. You will have a greater experience of natural balance and proprioception.

**Circulation-** Yoga helps to improve circulation and more efficiently oxygenate the blood and every cell of the body. There are cardiovascular benefits such as lowering the resting heart rate, increasing endurance and improving the oxygen uptake during exercise.

**Weight-** Yoga asanas burn calories, diminish stress levels and reduce cortisol levels. Excess cortisol leads to stress related eating and weight gain. Yoga also helps to encourage healthy eating habits, self esteem and well being.

**Concentration-** You can experience increased memory and depth and duration of concentration. Experienced yogis begin to control bodily functions which are normally autonomic such as heart rate and brain wave functions.

**Happiness-** You begin to experience a true sense of happiness and deep calmness which is coming from your higher self and does not depend on any outer circumstances. This state is very calming to the nervous system and to the mind. There is an increased depth and frequency of positive thoughts and compassionate actions. Step back from the drama of life

**Body/Mind/Spirit Connection-**Gain awareness of and control over the underlying and connecting energy flow of life and being (prana). Move away from ineffective and negative habits and into effective and positive habits through the use of affirmation.

## The Health Benefits of Physical Activity

Studies clearly demonstrate that participating in regular physical activity provides many health benefits. These benefits are summarized in the accompanying table. Many conditions affected by physical activity occur with increasing age, such as heart disease and cancer. Reducing risk of these conditions may require years of participation in regular physical activity. However, other benefits, such as increased **cardiorespiratory fitness**, increased muscular strength, and decreased depressive symptoms and blood pressure, require only a few weeks or months of participation in physical activity.

### *Health Benefits Associated With Regular Physical Activity*

#### **A. Children and Adolescents**

##### **Strong evidence**

- Improved cardiorespiratory and muscular fitness
- Improved bone health
- Improved cardiovascular and metabolic health biomarkers
- Favorable body composition

##### **Moderate evidence**

- Reduced symptoms of depression

#### **B. Adults and Older Adults**

##### **Strong evidence**

- Lower risk of early death
- Lower risk of coronary heart disease
- Lower risk of stroke
- Lower risk of high blood pressure
- Lower risk of adverse blood lipid profile
- Lower risk of type 2 diabetes
- Lower risk of metabolic syndrome
- Lower risk of colon cancer
- Lower risk of breast cancer
- Prevention of weight gain
- Weight loss, particularly when combined with reduced calorie intake
- Improved cardiorespiratory and muscular fitness

- Prevention of falls
- Reduced depression
- Better cognitive function (for older adults)

#### **Moderate to strong evidence**

- Better functional health (for older adults)
- Reduced abdominal obesity

#### **Moderate evidence**

- Lower risk of hip fracture
- Lower risk of lung cancer
- Lower risk of endometrial cancer
- Weight maintenance after weight loss
- Increased bone density
- Improved sleep quality

**Note:** The Advisory Committee rated the evidence of health benefits of physical activity as strong, moderate, or weak. To do so, the Committee considered the type, number, and quality of studies available, as well as consistency of findings across studies that addressed each outcome. The Committee also considered evidence for causality and **dose response** in assigning the strength-of-evidence rating.

Source: Physical Activity Guidelines for Americans  
U.S. Department of Health and Human Services  
October 2008

## Physical Activity and Cardiovascular Health Fact Sheet

American Heart Association

- Cardiovascular disease (CVD) is the No. 1 killer in America. About 910,000 Americans died last year of CVD, accounting for over 40 percent of all deaths.
- Lack of physical activity is a risk factor for coronary heart disease.
- About 300,000 deaths per year in the United States are due to poor diet and a lack of regular physical activity.
- The relative risk of coronary heart disease associated with physical inactivity ranges from 1.5 to 2.4, an increase in risk comparable with that observed for high cholesterol, high blood pressure and cigarette smoking.
- Surveys show that 24 percent of Americans 18 or older aren't active at all.
- People with lower incomes and less than a 12th grade education are more likely to be physically inactive.
- Daily enrollment in physical education (PE) classes has declined among high school students from 42 percent in 1991 to 29 percent in 1999.
- In 2003, 58.5 percent of male high school students and 52.87 percent of female high school students were enrolled in PE classes but only 30.5 percent of males and 26.4 percent of females attended classes daily.
- The 1997 National Health Interview Survey data show the following have a physically inactive lifestyle:
  - Among non-Hispanic whites, 18.4 percent of men and 21.6 percent of women
  - Among non-Hispanic blacks, 27 percent of men and 33.9 percent of women
  - Among Hispanics, 32.5 percent of men and 39.6 percent of women
  - Among Asian/Pacific Islanders, 20.4 percent of men and 24.0 percent of women
- Even low-to-moderate intensity activities, when done for as little as 30 minutes a day, bring benefits. These activities include pleasure walking, climbing stairs, gardening, yard work, moderate-to-heavy housework, dancing and home exercise.
- More vigorous aerobic activities, such as brisk walking, running, swimming, bicycling, roller skating and jumping rope are best for improving the fitness of the heart and lungs.

## Surgeon General's Healthy Weight Advice for Consumers

*"Choose a Healthy Weight for Life"*

### AIM FOR A HEALTHY WEIGHT

- Find your Body Mass Index (BMI) on the chart below.
- If you are overweight or obese, losing just 10% of your body weight can improve your health.
- If you need to lose weight, do so gradually-1/2 to 2 pounds per week.

### BE ACTIVE

- Keep physically active to balance the calories you consume.
- Be physically active for at least 30 minutes (adults) or 60 minutes (children) on most days of the week.
- Limit TV time to less than 2 hours per day.

### EAT WELL

- Select sensible portion sizes.
- Follow the Dietary Guidelines for Americans ([www.health.gov/dietaryguidelines](http://www.health.gov/dietaryguidelines)).

#### ARE YOU AT A HEALTHY WEIGHT? WHAT IS YOUR BODY MASS INDEX?

$$BMI = \left\{ \frac{\text{WEIGHT (pounds)}}{\text{HEIGHT (inches)}^2} \right\} \times 703$$



Note: This chart is for adults (aged 20 years and older).

### WHAT MEASURE IS USED?

- An expert panel, convened by the National Institutes of Health in 1998, recommended that Body Mass Index (BMI) be used to classify overweight and obesity.

### WHY IS BMI USED?

- BMI correlates with risk of disease and death; for example, heart disease increases with increasing BMI in all population groups.
- Calculating BMI is simple, rapid, and inexpensive.
- BMI correlates well with total body fat for the majority of people.

### DETERMINING BMI

- BMI is a measure of weight in relation to height:

$$\text{BMI} = \text{weight (kg)}/\text{height (m)}^2$$

or

$$\text{BMI} = (\text{weight (pounds)}/\text{height (inches)}^2) \times 703$$

- As an alternative to calculating BMI, tables to determine BMI are commonly available ([www.nhlbi.nih.gov/guidelines/obesity/bmi\\_tbl.htm](http://www.nhlbi.nih.gov/guidelines/obesity/bmi_tbl.htm)).

### CLASSIFICATION OF OVERWEIGHT AND OBESITY BY BMI

- In adults:
  - Healthy weight 18.5-24.9
  - Overweight 25.0-29.9
  - Obesity
    - Class I 30.0-34.9
    - Class II 35.0-39.9
    - Class III >40.0
- In children and adolescents aged 6 to 19 years, overweight has been defined as a sex- and age-specific BMI at or above the 95th percentile, based on revised Centers for Disease Control and Prevention growth charts ([www.cdc.gov/growthcharts](http://www.cdc.gov/growthcharts)).
- BMI has some limitations in that it can overestimate body fat in persons who are very muscular, and it can underestimate body fat in persons who have lost muscle mass, such as many elderly.
- An actual diagnosis of overweight or obesity should be made by a health professional.

### HEALTH CONSEQUENCES

- Overweight and obesity are associated with heart disease, certain types of cancer, type 2 diabetes, stroke, arthritis, breathing problems, and psychological disorders, such as depression.
- Solely having a BMI in the overweight or obese range does not necessarily indicate that a person is unhealthy. Other risk factors, such as high blood pressure, high cholesterol, smoking, diabetes, and personal and family medical history are important to consider when assessing overall health.
- The higher a person's BMI is above 25, the greater their weight-related health risks.