

Maximizing Your Exercise Payoffs How much? How long? How often?

How much physical activity is actually needed to gain health benefits? How long, how often, and how hard do I have to work to gain or maintain health benefits? Will 5, 10, or 15 minutes of activity make a difference? These questions are still under investigation by researchers, but we do have some answers for you.

First, “the greatest health gains are attained by those who are least physically fit.”¹ A sedentary (inactive) and unfit way of life leads to increased risk for several chronic diseases, premature mortality (death), and functional limitations.² Those who are inactive can have the biggest impact on their health by starting to do even small amounts of physical activity.³ This applies to all ages – young and old.¹



This information brings us to our second point. “The effect of exercise is just as good for older people as for younger people, and the same recommendations apply [to older adults] as to other adults”¹ (see *Adult Physical Activity Recommendations* on page 2), while a more gradual approach to applying the physical activity recommendations seems wise.⁴ Physical activity in older adults improves their health through the reduction of disease risk factors and functional capacity.⁵

Third, physical activity also applies to all sizes – large and small. While we know that obesity puts us at higher risk for developing heart disease and diabetes, a recent study in London suggests that even slim people can have internal fat surrounding their organs that may put them at higher risk for heart disease and diabetes⁶ as well. In fact, “experts have long known that fat, active people can be healthier than their skinny, inactive counterparts. ‘Normal-weight persons who are sedentary and unfit are at much higher risk for mortality than obese persons who are active and fit.’”⁶ For example, “Sumo wrestlers probably have a better metabolic profile than some of their slim, sedentary spectators...because the wrestler’s fat is primarily stored under the skin, not streaking through their vital organs and muscles.”⁶ “The

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good news is that internal fat can be easily burned off through exercise or even by improving your diet. ‘Even if you don’t see it on your bathroom scale, caloric restriction and physical exercise have an aggressive effect on visceral [abdominal] fat.’”⁶ When it comes to being fit and healthy, exercise has to be an important component of your lifestyle.⁶

Fourth, “health gain seems primarily to be dependent on total energy expenditure and less on intensity.”⁷ This means that it is more important to simply expend (use) energy than to worry about how hard (vigorous) you do the activity. “There is no doubt that the middle-aged sedentary person benefits from physical activity regardless of type and intensity, and it may be easier to motivate a sedentary person to carry out moderate physical activity.”⁷ Activity of moderate intensity equivalent to a daily walk of about 30 minutes is the minimum “target dose” to yield health gains for those who have been physically inactive for a long time”¹ (see *Adult*

Physical Activity Recommendations on this page). “Moderate amounts and intensities of physical activity are associated with improved health and reduced morbidity and mortality [i.e., disease and death] when compared with low activity or fitness.”² Note: “Health benefits from physical activity can be achieved at lower intensities of exercise if

frequency [how often] and duration [how long] of training are increased appropriately.”⁴ “It does not matter what type of physical activity is

performed: sports, planned exercise, household or yard work, or occupational tasks are all beneficial. The key factor is total energy expenditure; if that is constant, improvements in fitness and health will be comparable.”⁸

Fifth, the activity can be divided into shorter intervals of physical activity during the course of the day, for instance intervals lasting 5-10 minutes – increases beyond this level will yield further health gains.¹ In fact, recent research of over 5,000 12-year-olds (Avon Longitudinal Study of Parents and Children) discovered that doing 15 minutes a day of moderate exercise (brisk walking) lowered a child’s chances of being obese approximately 40-50 percent (40 percent in girls; 50 percent in boys).^{9,10} Additionally, a higher activity level yielded a lower obesity risk. Another study, conducted among overweight women, found that “exercising in multiple short-bouts per day improved adherence to exercise....”¹¹ Thus, one could attain the recommended 30 minutes of physical activity per day in three short 10-minute

bouts. See *Fitting in Fitness* (from the American Cancer Society) for simple steps to add fitness to your day.

Sixth, and finally, more is better. Although there is likely “an upper threshold of fitness” above which no further improvement in risk factors for coronary heart disease or other diseases is found, most people – particularly middle-aged

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people – have fitness levels below this threshold.⁷ “The majority of U.S. adults are not active at levels associated with the promotion and maintenance of health.”¹² Thus, for most people, doing more physical activity (either more often, more vigorously, or for a longer time at each exercise session) will yield a higher level of fitness – reducing their risk for chronic diseases, helping with issues of weight maintenance and/or weight loss, and increasing functional capacity and psychological well-being.

Adult Physical Activity Recommendations

Targets for achieving and maintaining health benefits

“Physical activity is associated with a range of health benefits, and its absence can have harmful effects on health and well-being, increasing the risk for coronary heart disease, diabetes, certain cancers, obesity, and hypertension. CDC [Centers for Disease Control] and the American College of Sports Medicine recommend that adults engage in at least 30 minutes of moderate-intensity physical

activity on most days, preferably all days, to have a beneficial effect on their health.”¹³ While “current public health recommendations for physical activity are for 30 minutes of moderate-intensity activity each day, which provides substantial benefits across a broad range of health outcomes for sedentary adults, this dose of exercise may be insufficient to prevent unhealthful weight gain for some persons who may need additional exercise or caloric restriction to minimize the likelihood of further weight gain. Persons who get 30 minutes of moderate-intensity exercise per day are likely to achieve additional health benefits if they exercise more. In addition to aerobic exercise, people should engage in resistance training and flexibility exercises at least twice a week, which will promote the maintenance of lean body mass, improvements in muscular strength and endurance, and preservation of function, all of which enable long-term participation in regular physical activity and promote quality of life.”¹⁴

Physical activity guidelines for adults from the *Dietary Guidelines for Americans 2005*¹⁵ include the following key recommendations:

- Engage in regular physical activity, and reduce sedentary activities to promote health, psychological well-being, and a healthy body weight.
 - To reduce the risk of chronic disease in adulthood: Engage in at least 30 minutes of moderate-intensity physical activity, above usual activity, at work or home on most days of the week.
 - For most people, greater health benefits can be obtained by engaging in physical activity of more

vigorous intensity or longer duration.

- To help manage body weight and prevent gradual, unhealthy body weight gain in adulthood: Engage in approximately 60 minutes of moderate- to vigorous-intensity activity on most days of the week while not exceeding caloric intake requirements.
- To sustain weight loss in adulthood: Participate in at least 60–90 minutes of daily moderate-intensity physical activity while not exceeding caloric intake requirements. Some people may need to consult with a healthcare provider before participating in this level of activity.¹⁵

Note: “Different intensities and types of exercise confer different benefits. Vigorous physical activity (e.g., jogging or other aerobic exercise) provides greater benefits for physical fitness than does moderate physical activity and burns more calories per unit of time.”¹⁵ Still, for most of us, it is more important to simply begin moving and not focus initially on the intensity of our activity. As discussed earlier, any type of exercise is good for your health, even in short bouts. Total energy expenditure (use) should be your initial goal, increasing how often (frequency), how much (duration – time spent at each exercise session), and how hard (vigorous) you work out as you progress can increase your health benefits.

- Achieve physical fitness by including cardiovascular conditioning, stretching exercises for flexibility,

and resistance exercises or calisthenics for muscle strength and endurance.¹⁵

Note: In addition to aerobic-type exercises, “resistance exercise (such as weight training, using weight machines, and resistance band workouts) increases muscular strength and endurance and maintains or increases muscle mass. These benefits are seen in adolescents, adults, and older adults who perform resistance exercises on two or more days per week. Also, weight-bearing exercise has the potential to reduce the risk of osteoporosis by increasing peak bone mass during growth, maintaining peak bone mass during adulthood, and reducing the rate of bone loss during aging. In addition, regular exercise can help prevent falls, which is of particular importance for older adults.”¹⁵

Key recommendations for specific population groups include:

- *Pregnant women.* In the absence of medical or obstetric complications, incorporate 30 minutes or more of moderate-intensity physical activity on most, if not all, days of the week. Avoid activities with a high risk of falling or abdominal trauma.
- *Breastfeeding women.* Be aware that neither acute nor regular exercise adversely affects the mother’s ability to successfully breastfeed.
- *Older adults.* Participate in regular physical activity to reduce functional declines associated with aging and to achieve the other benefits of physical activity identified for all adults.¹⁵

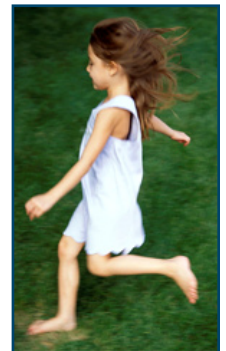
Youth Physical Activity Recommendations

Start young – stay active

For children and adolescents, key recommendations for physical activity from the National Association for Sport and Physical Education¹⁶ with comments adapted from University of Missouri Extension’s¹⁷ interpretation of the guidelines are as follows:

- Children should accumulate **at least 60 minutes, and up to several hours**, of age-appropriate physical activity on all, or most, days of the week.¹⁶

Comment: “Sixty minutes is the minimum amount of daily activity recommended for children. To attain optimal benefits, children need to accumulate more than 60 minutes per day. Physical activity minutes accumulated each day should include some moderate activity equal in intensity to brisk walking and some vigorous activity of greater intensity than brisk walking. Most physical activity accumulated throughout the day will come in intermittent activity bursts ranging from a few seconds to several minutes in length alternated with rest periods. Continuous vigorous physical activity of several minutes in length **should not** be expected for most children, nor should it be a condition for meeting the guidelines.”¹⁷



- Children should participate in **several bouts of physical activity lasting 15 minutes or more** each day.¹⁶

Comment: “Much of a child’s daily activity will be in short bursts and accumulated throughout the waking hours. However, if optimal benefits are to accrue, as many as 50 percent of the accumulated minutes should be in bouts of 15 minutes or more. More of the activity bout should be in activity than inactivity. Examples of physical activity bouts are recess, physical education, play periods, and sport’s practices. Typically, most bouts of activity include both physical activity and time for rest and recovery. For example, in a 15-minute recess, a child might accumulate 10 minutes of activity in several activity bursts of several minutes and accumulate 5 minutes of rest in several inactive periods of several seconds to several minutes in length.”¹⁷

- Children should participate each day in a **variety of age-appropriate physical activities** designed to achieve optimal health, wellness, fitness, and performance benefits.¹⁶

Comment: Examples of age-appropriate intermittent and continuous activities can be found in the table below.

- **Extended periods (periods of two hours or more) of inactivity are discouraged** for children, especially during the daytime hours.¹⁶

Comment: “Research suggests that people (including children) who watch excessive amounts of television, play computer games, work on computers for extended periods of time, or engage in other low-energy expenditure activities will likely fail to meet [the recommendations above]. In general, extended periods (two hours or more in length) of sedentary behavior (in and out of school) are discouraged. Because many positive things can happen during times of relative inactivity (homework, studying, learning to read, write and think, and family time), some periods of relative inactivity may be necessary in a typical day. It is the accumulation of

excessive inactivity (lack of activity accumulation) that is of concern. It is important that children be active when opportunities to be active are available such as before and after school, at appropriate times during school, and on weekends.”¹⁷

Six Points to Remember Maximize the health payoffs of exercise...

1. The greatest gains are made by those who are the least active.¹
2. The effect of exercise is just as good for older people as for younger people...and it is essential for all.¹
3. Physical activity is important for people of all sizes – large or small.
4. Health gains seem more dependent on total energy expenditure (use) and less on intensity.¹
5. Activity can be done in several short intervals or “bouts” during the course of the day.
6. More is better. Exercising longer, harder, or more often will likely yield more health gains. Start slowly with short bouts of activity, working your way toward longer periods of exercise more often to maximize health payoffs.

This document is meant for educational purposes only and is not intended to replace the advice of your doctor or other health care provider.

Examples of Appropriate Intermittent and Continuous Physical Activity for Children¹⁷

Activity Type	Intermittent	Continuous
Moderate Activities	- low-intensity games such as hop scotch and four square - playing low activity positions in sports such as playing goalie in soccer or the outfield in softball - some chores and yard work	- walking to school - bike riding - some chores and yard work
Vigorous Activities	- active games involving running, chasing, etc. - playing sports	- self-selected activities such as jogging

To view the references used in this newsletter, go to:
<http://fcs.tamu.edu/health/healthhints/2007jun/ref.php>