

## **What are the specific benefits of exercise?**

### **Longevity and Aging**

Exercise, even after age 50, can add healthy and active years to one's life. Studies continue to show that it is never too late to start exercising and that even small improvements in physical fitness can significantly lower the risk of death. Simply walking regularly can prolong life in the elderly. Moderately fit people, even if they smoke or have high blood pressure, have a lower mortality rate than the least fit. Resistance training is important for the elderly, because it is the only form of exercise that can slow and even reverse the decline in muscle mass, bone density, and strength. Adding workouts that focus on speed and agility may be even more protective for older people. Flexibility exercises help reduce the stiffness and loss of balance that accompanies aging.

### **Cardiovascular Health (Heart Disease and Stroke)**

#### **General Guidelines**

Inactivity is one of the four major risk factors for heart disease, on par with smoking, unhealthy cholesterol, and even high blood pressure. Like all muscles, the heart becomes stronger and larger as a result of exercise so it can pump more blood through the body with every beat. Exercise does not increase the maximum heart rate, but a fit heart can pump more blood at this maximum level and can sustain it longer with less strain. The resting heart rate of those who exercise is also slower, because less effort is needed to pump blood. For preventing heart disease frequency of exercises may be more important than duration. Exercise even helps reverse some of the effects of smoking. Children should be especially encouraged to exercise every day to prevent heart disease later in life.

#### **Effect on Coronary Artery Disease and Cholesterol Levels**

People who maintain an active lifestyle have a 45% lower risk of developing coronary heart disease than do sedentary people. A recent study reported that moderate dietary changes improve cholesterol levels and so lower the risk for coronary artery disease only when an aerobic exercise program is also followed. Regular aerobic exercises -- brisk walking, jogging, swimming, biking, aerobic dance, and racquet sports -- are the best forms of exercise for lowering LDL and raising HDL cholesterol levels. It may take up to a year of sustained exercise for HDL levels to show significant improvement. Burning at least 250 calories a day (the equivalent of about 45 minutes of brisk walking or 25 minutes of jogging) seems to confer the greatest protection against coronary artery disease. Even moderate exercise, however, reduces the risk of heart attack, but in terms of raising HDL levels, more is better. Resistance (weight) training offers a complementary benefit by reducing LDL levels. Triglycerides, which rise after a high-fat meal, can be lowered either with a single, prolonged (about 90 minutes) aerobic session or by several shorter sessions during the day. One study indicates, however, that short-bursts of exercise actually increase LDL oxidation -- the process that makes LDL dangerous to the heart -- so individuals should always aim for a consistency in their exercise program. Before engaging in any strenuous exercise, it is advisable to consult a physician.

## High Blood Pressure

Studies indicate that regular exercise helps keep arteries elastic, even in older people, which in turn keeps blood flowing and blood pressure low. Sedentary people have a 35% greater risk of developing hypertension than athletes do. No person with high blood pressure should start an exercise program without consulting a physician. Studies have shown that high-intensity exercise may not lower blood pressure as effectively as moderate intensity exercise. In one study, for example, moderate exercise (jogging two miles a day) controlled hypertension so well that more than half the patients who had been taking drugs for high blood pressure were able to discontinue their medication. Studies have indicated that T'ai Chi, an ancient Chinese exercise involving slow, relaxing movements may lower blood pressure almost as well as moderate-intensity aerobic exercises. Before exercising, people with hypertension should avoid caffeinated beverages, which increase heart rate, the workload of the heart, and blood pressure during physical activity.

## Stroke

The benefits of exercise on stroke are uncertain. According to one analysis, a group of 11,000 men, men who burned between 2,000 and 3,000 calories a week (about an hour of brisk walking five days a week) cut their risk of stroke in half. Groups who burned between 1,000 and 2,000 calories or more than 3,000 calories per week also gained some protection against stroke but to a lesser degree. In the same study, exercise that involved recreation was more protective than exercise routines consisting simply of walking or climbing.

## Heart Failure

Traditionally, heart failure patients have been discouraged from exercising. Now, exercise is proving to be helpful for many of these patients and, when performed under medical supervision, does not pose a risk for a heart attack. In one study, patients between the ages of 61 and 91 increased their oxygen consumption by 20% after six months by engaging in supervised treadmill and stationary bicycle exercises. Performing daily hand grip exercises may improve blood flow through the arteries of patients with heart failure.

## Diabetes

Diabetes, particularly type 2, is reaching epidemic proportions throughout the world as more and more cultures adopt Western dietary habits. Aerobic exercise is proving to have significant and particular benefits for people with both type 1 and type 2 diabetes; it increases sensitivity to insulin, lowers blood pressure, improves cholesterol levels, and decreases body fat. Regular exercise, even of moderate intensity, improves insulin sensitivity. In fact, studies of older people who engage in regular, moderate, aerobic exercise (e.g., brisk walking, biking) lower their risk for diabetes even if they don't lose weight. Anyone on insulin or who has complications from diabetes must take special precautions before embarking on a workout program (see, What Are the Hazards of Exercise?, below).

## Effects on Bones and Joints

### Osteoarthritis

Exercise helps to reduce pain and stiffness, and increases flexibility, muscle strength, endurance, and well being. Exercising also helps people reduce their weight and maintain weight loss. Osteoarthritis patients should avoid high-impact sports such as jogging, tennis, and racquetball. The three types of exercise that are best for people with arthritis are range of motion, strengthening (or resistance), and aerobic exercises. Strengthening exercises include isometric exercises (pushing or pulling against static resistance) and stretching exercises to build strength and flexibility without unduly stressing the joints. These exercises may be particularly important if leg muscle weakness turns out to be a cause of osteoarthritis, as some research suggests. Low-impact aerobics also help stabilize and support the joints and may even reduce inflammation in some joints. Cycling and walking are beneficial, and swimming or exercising in water is highly recommended for people with arthritis. One study compared a group of patients who embarked on an aerobic and resistance exercise program with a group that received patient education; the exercising group developed less disability and pain and showed a better ability to perform physical tasks. Patients should strive for short but frequent exercise sessions guided by physical therapists or certified instructors.

### Osteoporosis

Exercise is very important for slowing the progression of osteoporosis. Women should begin exercising before adolescence, since bone mass increases during puberty and reaches its peak between ages 20 and 30. Weight bearing exercise, which applies tension to muscle and bone, encourages the body to compensate for the added stress by increasing bone density by as much as 2% to 8% a year. High-impact weight-bearing exercises, such as step aerobics, are very protective for premenopausal women. These exercises, however, increase the risk for osteoporotic fractures in elderly patients, who would benefit most from regular, brisk, long walks. Even moderate exercise (as little as an hour a week) helps reduce the risk for fracture, but everyone who is in good health should aim for more. Careful weight training is beneficial as well for older women. Low-impact exercises that improve balance and strength, particularly yoga and T'ai Chi, have been found to decrease the risk of falling; in one study, T'ai Chi reduced the risk by almost half.

### Back problems

One of the most common complaints of modern men and women, lower-back pain, afflicts up to 80% of all Americans. Sedentary living, obesity, poor posture, badly designed furniture, and stress all contribute to back pain. An appropriate exercise program focusing on flexibility and strengthening the muscles in the abdomen may help prevent back problems. Yoga stretching is beneficial and can be incorporated into the warm-up and cool-down periods. The best exercises for athletes with bad backs include swimming, walking, and cross-country skiing. High-impact sports, including aerobic dance and downhill skiing, should be avoided. Exercises that strengthen the abdominal muscles such as partial sit-ups, which maintain the back's normal curve and help support the body's weight, can alleviate stress on the lower back. However, the classic

full sit-up (raising your head and shoulders off the floor up to your knees) may aggravate back pain and should be avoided by anyone at risk for lower back problems.

## **Lung disease**

Although exercise does not improve lung function (except for intense, regular aerobic exercise), training helps some patients with chronic lung disease by strengthening their limb muscles, thus improving endurance and reducing breathlessness.

## **Cancer**

A number of studies have indicated that regular, even moderate, exercise reduces the risk of colon cancer. Strenuous activity, in fact, adds only slight or no additional benefit. Moderate exercise may also help reduce the risk for prostate cancer and possibly for breast cancer. A recent study of 100,000 nurses, however, suggested that the benefits of exercise on breast health may be greater or lesser at different times in a woman's life, depending on her menstrual status and estrogen levels. For example, the study found no added protection against from exercise in young adulthood (when the disease is uncommon in any case).

## **Effects on colds and flu**

Although offering no evidence of improved immunity from exercise, one study reported that people who exercised as little as once a week in employee fitness programs averaged nearly five fewer sick days annually than those who did not participate in such programs. The immediate effect of exercise on the immune system is uncertain. High-intensity or endurance exercises might actually suppress the immune system while they are performed. Some highly trained athletes, for instance, report being susceptible to colds after strenuous events. A recent study suggested that in people who already have colds, exercise has no effect on the illness -- severity or duration of the infection. People should avoid strenuous physical activity when they have high fevers or widespread viral illnesses, however.

## **Central nervous system diseases**

People with multiple sclerosis, Parkinson's disease, and Alzheimer's disease should be encouraged to exercise. Specialized exercise programs that improve mobility are particularly valuable for Parkinson's patients. Patients with neurological disorders who exercise experience less spasticity as well as reduction in -- and even reversal of -- muscle atrophy. In addition, the psychological benefits of exercise are extremely important in managing these disorders. Exercise machines, aquatic exercises, and walking are particularly useful.

## **Pregnancy**

Healthy women with normal pregnancies should exercise at least three times a week, being careful to warm up, cool down, and drink plenty of liquids. Many prenatal calisthenics programs are available. Experts advise, in general, that when exercising, the expectant mother's pulse rate should not exceed 70% to 75% of the maximum heart rate or more than 150 beats per minute. Fit women who have exercised regularly before

pregnancy, however, may work out more intensively as long as no discomfort occurs. According to a new study, vigorous exercise may improve the chances for a timely delivery. Overly strenuous exercise during pregnancy is not advocated, however, for women who did not exercise intensely before becoming pregnant. And all pregnant women should avoid high-impact, jerky, and jarring exercises, such as aerobic dancing, which can weaken the pelvic floor muscles that support the uterus. During exercise, women should monitor their temperature to avoid overheating -- a side effect that can damage the fetus. (No pregnant women should use hot tubs or steam baths, which can cause fetal damage and miscarriage.)

Swimming may be the best option for most pregnant women. It involves no impact, overheating is unlikely, and swimming face down promotes optimum blood flow to the uterus. Walking is also highly beneficial. To strengthen pelvic muscles, women should perform Kegel exercises at least 6 times a day, which involve contracting the muscles around the vagina and urethra for 3 seconds 12 to 15 times in a row.

### **Gastrointestinal problems**

Older people who exercise moderately may have a lower risk for severe gastrointestinal bleeding. Experts suggest that moderate exercise might even reduce the risk for some intestinal disorders, including ulcers, irritable bowel syndrome, indigestion, and diverticulosis.

### **Leg cramps**

Exercise can even improve pain from clogged arteries in the legs, a condition called intermittent claudication. The best approach in such cases is to walk until pain develops; then rest until pain resolves before resuming walking. In six-month studies, people had tripled the amount of time they could walk before the onset of pain.

### **Weight loss**

Exercise burns calories and can help individuals fight obesity. If caloric intake remains constant, regular workouts lead to weight loss. Be forewarned, however, that the pounds won't melt off magically. It takes 35 miles of walking or jogging to consume the calories in one pound of fat. Effective weight loss means a long-term commitment to a regular program of vigorous exercise. One recent study indicated that for obese patients, a few daily sessions for as short as 10 minutes each was effective in helping the patients adhere to an exercise program. Abdominal crunches may help replace abdominal fat with muscle. To perform this exercise, the individual lies on the back with the head and shoulders raised; he or she contracts the stomach muscles, curling the torso slightly forward. Abdominal fat is a particular danger to the heart, although it is unknown whether doing crunches will specifically protect against heart disease. Swimming is less effective than walking or cycling in reducing body fat, but overall regular aerobic exercise is a good way to shed pounds. Contrary to popular belief, exercise does not increase appetite in people who want to lose weight; oddly enough, however, exercise improves appetite in people who are already lean.

People should be warned that without dieting, weight loss may be minimal with exercise alone, because dense muscle mass replaces fat as the body gets more fit. Nonetheless, a fit body will look more toned and be healthier.

## **Psychological and emotional benefits**

Aerobic exercise is linked with improved mental vigor, including reaction time, acuity, and math skills. Exercising may even enhance creativity and imagination. According to one study, older people who are physically fit respond to mental challenges just as quickly as unfit young adults. (Stretching and weight training appear to have no such effects.) Both aerobic and nonaerobic workouts have been shown to reduce depression. According to one study, exercise was as effective for improving mood in people with clinical depression as some common forms of psychotherapy. Either brief periods of intense training or prolonged aerobic workouts can raise levels of important chemicals in the brain, such as endorphins, adrenaline, serotonin, and dopamine that produce feelings of pleasure, causing the so-called runner's high. One study found that teenagers who were active in sports have a much better sense of well being than their sedentary peers; the more vigorously they exercised, the better was their emotional health. In one study, regular brisk walking cut in half the incidence of sleep disturbances in people who suffer from them. It should be noted that exercise in the evening, however, can cause sleep disturbances. Rhythmic aerobic and yoga exercises may be particularly helpful for combating stress, anxiety, and sleeplessness.

**Source** [www.wholefitness.com](http://www.wholefitness.com)