

Fit Facts™

FROM THE AMERICAN COUNCIL ON EXERCISE®

Exercise and Hypertension

by Brad A. Roy

NEARLY 50 MILLION AMERICANS have a resting blood pressure that is high enough to endanger their health and longevity. This elevated pressure, termed hypertension, has been referred to as the 'silent killer' because it is not recognized by a given set of symptoms or subjective feelings. As such, hypertension may be even greater as many individuals choose not to have regular physical exams and/or blood pressure checks. The incidence is higher among African Americans, Mexican-Americans, Puerto Ricans, Native Americans and Cuban-Americans as well as individuals with lower educational and economic backgrounds.

Defined as a chronically elevated blood pressure greater than 140/90 mmHg, hypertension is diagnosed by taking non-invasive measurements of the resting blood pressure on two or more occasions. Hypertension is a serious medical problem and when left untreated, the risk of developing coronary artery disease and stroke increases by three- and seven-fold respectively.

Gauging Blood Pressure

Normal resting blood pressure in apparently healthy individuals averages 120/80 mmHg. The first number, 120, represents the pressure against the artery walls when the heart contracts (systolic blood pressure). The second number, 80, is the pressure against the artery walls during the resting phase (between heart beats) and is termed diastolic blood pressure. The difference between these two pressures, the Mean Arterial Pressure, or MAP, represents the average blood pressure throughout the arterial system.

Specialized pressure sensors throughout the body regulate blood pressure and ensure it

doesn't fall too low, thus compromising adequate flow to tissues; or doesn't rise too high, thus increasing the work of the heart and stressing vessels. Generally, blood pressure is regulated in such a way that it rises and falls consistently with the demands of the body. Occasionally, blood pressure control mechanisms malfunction or are unable to compensate for the demand placed on the body. One of the resulting conditions is hypertension.

Exercise and hypertension

While the current research base is not strong enough to draw a firm conclusion, studies published to date suggest that moderate-intensity activity (40 to 75 percent of the maximum oxygen uptake) may be most effective in lowering blood pressure. The current intensity recommendation for hypertensive individuals is to use low to moderate intensity exercise.

Regular physical activity has also been shown to be effective in reducing the relative risk of developing hypertension by 19 to 30 percent. Similarly, a low cardio-respiratory fitness in middle age is associated with a 50 percent greater risk of developing hypertension. Results have been similar in both men and women.

Prior to starting a new exercise program, individuals with known hypertension should obtain clearance from their primary care physician. It is important to remember that the key to a successful exercise program is consistency over time. Don't try to conquer the world the first time out. Be patient, start slowly and gradually increase frequency and duration. During the planning phase carefully consider what barriers might stand in the way of consistency; then develop strategies and accountabilities to assist in eliminating these barriers.

Endurance activities such as walking, swimming, cycling and low-impact aerobics should be the core of the exercise program. Exercises that include an intense isometric component that can cause extreme and adverse fluctuations in blood pressure should be avoided. As aerobic conditioning improves, add low resistance, high repetition weight training. Circuit training is preferred over free weights. During weight training, holding one's breath should be avoided because it can result in large fluctuations in blood pressure and increase the potential of passing out or, in some individuals, possibly result in life threatening events such as abnormal heart rhythms.

Ideally, hypertensive individuals should exercise five to six times per week depending on their initial fitness level. However, improvement can be achieved with as little as three sessions per week. The total exercise duration should be in the range of 30 to 60 minutes per session. People with lower levels of fitness should start with shorter durations (10 to 15 minutes) and gradually (5 minute increments every 2 to 4 weeks) increase to the 30- to 60- minute goal.

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