



Pressure CAN Kill

Does this sound familiar? You go to the doctor's office for a routine check-up. A nurse wraps a blood pressure cuff around your arm, inflates it and slowly lets it deflate while listening intently to your arm through a stethoscope. She reports that your blood pressure is 120 over 80 and you ask, "Is that good?" She says "Yes" and that's the end of it. Meanwhile you're left to wonder what those numbers actually mean, and what makes yours "good".

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The Good, the Bad: Blood Pressure Explained.

Blood pressure is just what it says: the pressure of the blood within the arteries. It is measured both when the heart contracts and when it is at rest and that measurement is described in millimeters of mercury (mm Hg) since the standard measuring device was a column of mercury sealed within a glass tube. It is stated verbally as "120 over 80" and written as "120/80". Why is it measured at all? Because the amount of pressure within the arteries as the heart contracts and rests can be an early indicator of a number of serious health conditions.

The first and higher number - the systolic pressure - signifies the pressure in the arteries immediately following the contraction of the heart muscle (systole), which pushes the blood through the arteries. The second number, or diastolic pressure, is the pressure while the heart relaxes and refills with blood and thus is the lowest pressure during the cardiac cycle.

In terms of these measurement numbers, "good" simply means normal and consequently "bad" means abnormally high. (There are also conditions where the pressure may be abnormally low called hypotension, which is a completely different problem.) The American College Of Sports Medicine (ACSM) Blood Pressure Classification System is listed below:

[Note: < means "less than"; > means "greater than"]

Category	Systolic (mm Hg)	Diastolic (mm Hg)
Normal	<130	<85
High Normal	130-139	85-89
Hypertension (Stage 1 -mild)	140-159	90-99
Hypertension (Stage 2 -moderate)	160-179	100-109
Hypertension (Stage 3 -severe)	180-209	110-119
Hypertension (Stage 4 -very severe)	>210	>120

Very recently a new category has been added to this classification system. It is based upon some research done by the National Heart, Lung, and Blood Institute (or NHLBI, part of the U.S. National Institutes of Health). As you can see in the chart above, in the past high blood pressure, or hypertension, has been classified as 140/90 mm Hg or above. The new category in the classification system, called prehypertension, describes systolic blood pressure of 120-139 mm Hg or diastolic blood pressure of 80-89 mm Hg.

Previously readings in that range were considered normal. However, the NHLBI reports that the risk of developing coronary artery disease can begin at blood pressures little

higher than 115/75 mm Hg, and the risk doubles with each 20/10 mm Hg increment increase. The new category refers to people who do not yet have hypertension, or do not take blood pressure medication, but who are considered to be at risk for coronary artery disease and stroke.

Hypertension Can Lead To Serious Problems

According to the ACSM more than 50 Million Americans are hypertensive. Why all the concern about developing hypertension? Because it is one of the seven risk factors for coronary artery disease. They are: 1. family history, 2. cigarette smoking, 3. hypertension, 4. high cholesterol, 5. diabetes, 6. obesity, and 7. sedentary lifestyle. The more risk factors you have, the greater the chance you will develop the disease.

If left unchecked, hypertension can develop into serious, possibly deadly, medical problems. The ACSM has stated that people with blood pressures exceeding 160/95 mm Hg have a 150-300% higher rate of incidence for coronary artery disease (CAD), congestive heart failure, stroke and intermittent claudication (pain in the legs when walking) than people with normal blood pressure levels.

Whether you have already been diagnosed as hypertensive, fall in the prehypertension category, or have normal pressure but want to prevent future problems, the ACSM recommendations are straightforward:

- lose weight if you are overweight,
- limit alcohol intake,
- increase aerobic exercise to 30-45 minutes most days of wk,
- quit smoking,
- reduce salt intake,
- maintain adequate potassium intake,
- reduce the intake of saturated fat and cholesterol as parts of a synergistic approach to lowering your blood pressure.

These are just general guidelines; consult with your physician for individualized recommendations and guidance in meetings these goals.

Getting Fit For Life

[Note: It is highly recommended that everyone consult their physician before starting any exercise program. However, if you have any health problems or are currently taking any prescribed medications, such as blood pressure lowering drugs, ace inhibitors, or beta-blockers, you must consult your doctor first.]

There is no doubt lack of physical activity is a contributing factor high blood pressure and heart disease. The key is to get active and stay active by immersing yourself in physical activities that you enjoy and that you can do for the rest of your life. Buy a bike, go for a walk, swim, take up snow shoeing, ski, go hiking, join an exercise class, go kayaking, speed walk in the mall -- just do something!

Exercise is simply a medium for caring for ourselves. Consider for a moment the benefits of an active lifestyle. Now, think of the alternative. Ask yourself, "If I keep living this way, where will I be one year from now?" "What state of health will I be in if I don't make some changes?" The choice is yours, and yours alone.

We tend to think of stress as harmful and it certainly can be. Exercise, while also a form of stress to the body, is one that if applied in the appropriate manner improves cardiovascular function, strength levels, and body composition. "The appropriate manner" simply means at an optimal level for the individual. If the stress is insufficient there is no benefit; if it is excessive it could cause injury. Even normal stresses applied to an abnormal body (i.e., having a congenital deformity, medical condition, or a current injury) could cause harm, hence the need for a physician's approval and ongoing supervision of any type of exercise plan.

READY: Perform a 2-8 minute progressive warm-up - light walking or a similar low-intensity cardiovascular exercise. Start slow and gradually increase throughout the warm-up. Keep it short.

SET: Progress to a dynamic warm-up/stretching routine - use activities directly related to, or similar to, that of the activity (or sport) of light to moderate intensity, duration, and range of motion. Example: Light twisting or rotational exercise prior to playing golf or performing some light barbell presses before heavier sets of bench pressing.

GO: I- Perform Resistance Training routine 2-3 days/week, not on consecutive days. For hypertensive individuals, the ACSM recommends a "circuit format" in order to maximize endurance and cardiovascular benefits. (One exercise after another, 10-15 repetitions each, mild-moderate intensity, with short rest periods.) Start slowly with each exercise and gradually increase. Pay attention to proper body mechanics, sound exercise technique, speed of movement, posture, proper rest periods, and proper breathing sequences.

II- Perform Aerobic Exercise routine 3-5 days/week. Perform after, or separate from, Resistance Training routine to maximize benefits. Your heart and cardiovascular system does not know the difference between an inside machine or walking outside, kayaking, etc., so perform your aerobic exercise routine in whatever manner you like. Begin with low intensity, gradually increasing. Aim for 20-60 minutes duration but follow a reasonable progression. You may have to start with 10-12 minutes and gradually increase the duration by 2-5 minutes each time as your body adapts to the stress. New research states that 3 ten-minute bouts of exercise are just as beneficial as one 30-minute session and that cardiovascular exercise has a cumulative effect.

III- Perform a 2-8 minute cool-down of light walking or a similar low-intensity continuous exercise, gradually decreasing intensity and speed. It is very important to perform a gradual cool-down in order to avoid postexertion hypotension (excessively low blood pressure following exercise).

IV- Perform a static stretching routine for all of the muscles trained in your workout of the day and those that are sore from previous workouts. Hold each stretch at a point of mild discomfort (not pain!) for 15-30 seconds; repeat each stretch 3 times. Stretching does not necessarily have to be performed immediately after your workout. It can be done later in the day but be sure to warm-up again by doing some light cardio because you are able to achieve more productive stretching when the muscles are warm. Hot showers can help passively increase muscle temperature to enhance stretching sessions.

The Important Finale: Restore, Refresh, Renew

It has been said that exercise is only beneficial if you can recover from it. After finishing your exercise you can either let your body passively recover or you could actively assist the process in ways that provide additional benefits. Some examples of such restoration work are adequate post-exercise nutrition (seek the guidance of a registered dietician); ice massage (fill some paper cups with water, freeze them, and after the resistance training workout peel off the paper cup and massage the muscles with long parallel strokes); professional massage or myofascial release; aromatherapy; and meditation. All these can help with improving recovery times. Since lowering stress levels is an important part of the entire process, have fun along the way and choose activities that are enjoyable for you. ■

Sample Resistance Training Routine

Chest Press (DB)



Triceps Kickbacks (DB) (Right and Left Arm)



Calf Raises on Steps



Upright Rows (DB)



Bentover Rows (DB)



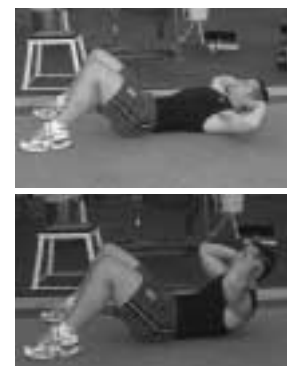
Biceps Curls (DB)



Step-Ups with Left and Right Leg



Floor Crunches



Rest for 30 - 60 seconds and repeat 1-2 more times