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High Blood Pressure

What Is High Blood Pressure?

Blood pressure is the force in the arteries when the heart beats (systolic pressure) and when the heart is at rest (diastolic pressure). It's measured in millimeters of mercury (mm Hg). High blood pressure (or hypertension) is defined in an adult as a blood pressure greater than or equal to 140 mm Hg systolic pressure or greater than or equal to 90 mm Hg diastolic pressure.

High blood pressure directly increases the risk of coronary heart disease (which leads to heart attack) and stroke, especially when it's present with other risk factors.

High blood pressure can occur in children or adults, but it's more common among people over age 35. It's particularly prevalent in African Americans, middle-aged and elderly people, obese people, heavy drinkers and women taking birth control pills. It may run in families, but many people with a strong family history of high blood pressure never have it. People with diabetes mellitus, gout or kidney disease are more likely to have high blood pressure, too.

American Heart Association recommended blood pressure levels

Blood Pressure Category	Systolic (mm Hg)		Diastolic (mm Hg)
Normal	less than 120	and	less than 80
Prehypertension	120–139	or	80–89
High			
Stage 1	140–159	or	90–99
Stage 2	160 or higher	or	100 or higher

*Your doctor should evaluate unusually low readings.

Causes of High Blood Pressure

What Causes High Blood Pressure?

In 90 to 95 percent of high blood pressure cases, the cause is unknown. In fact, you can have high blood pressure for years without knowing it. That's why it's the "silent killer" — it creeps up on you. When the cause is unknown, you have what's called essential or primary hypertension. Factors that may lead to high blood pressure in the remaining 5–10 percent of cases, which are known as secondary hypertension, include:

- Kidney abnormality

- A structural abnormality of the aorta (large blood vessel leaving the heart) existing since birth
- Narrowing of certain arteries

These problems can usually be corrected. For example, doctors can repair a narrowed artery that supplies blood to a kidney. Most of these problems can be ruled out by a careful history, a physical examination and a few tests. Special tests are sometimes needed, but you don't usually have to stay in the hospital.

How does high blood pressure develop?

Your heart pumps blood through the body's arteries. The large arteries that leave your heart taper into smaller arteries called **arterioles**. The arterioles then taper into smaller vessels called capillaries, which supply oxygen and nutrients to all the organs of your body. The blood then returns to your heart through the veins.

Certain nerve impulses cause your arteries to dilate (become larger) or contract (become smaller). If these vessels are wide open, blood can flow through easily. If they're narrow, it's harder for the blood to flow through them, and the pressure inside them increases. Then high blood pressure may occur. When this happens, your heart becomes strained and blood vessels may become damaged. Changes in the vessels that supply blood to your kidneys and brain may cause these organs to be affected.

Your heart, brain and kidneys can handle increased pressure for a long time. That's why you can live for years without any symptoms or ill effects. But that doesn't mean it's not hurting you. **High blood pressure is a major risk factor for stroke, heart attack, heart failure and kidney failure.**

Effect of High Blood Pressure

What does high blood pressure do to your body?

High blood pressure adds to the workload of your heart and arteries. Your heart must pump harder, and the arteries carry blood that's moving under greater pressure. If high blood pressure continues for a long time, your heart and arteries may not work as well as they should. Other body organs may also be affected. There is increased risk of stroke, congestive heart failure, kidney failure and heart attack. When high blood pressure exists with obesity, smoking, high blood cholesterol or diabetes, the risk of heart attack or stroke increases several times.

What about low blood pressure?

Within certain limits, the lower your blood pressure reading is, the better. In most people, blood pressure isn't too low until it produces symptoms, such as lightheadedness or fainting. In certain disease states, it's possible for blood pressure to be too low. Examples include:

- Certain nerve or endocrine disorders
- Prolonged bed rest
- Decreases in blood volume due to severe bleeding (hemorrhage) or dehydration

Blood pressure less than 120/80 mm Hg is generally considered ideal. Levels higher than this increase your risk for cardiovascular disease. If you have unusually [low blood pressure](#), have it evaluated.

Home Monitoring

Is there an advantage to monitoring my blood pressure at home?

Research has shown that home measurement of blood pressure can be helpful IN ADDITION to regular monitoring in a doctor's office. The study shows that although people who take their own blood pressure at home may end up needing less high blood pressure medication, self-measurement does *not* improve blood pressure control. The study concluded that self-measurement and conventional office measurement could complement to one another in helping control high blood pressure.

The main value of the study was in identifying patients with "white-coat hypertension" — a condition where the anxiety of being in the doctor's office raises their blood pressure. This sometimes leads to the over-diagnosis or misdiagnosis of high blood pressure. According to the study, about 30 percent of patients with high blood pressure in the physician's office actually have lower measurement when they take their blood pressure at home.

Self-measurement at home is good to confirm that your blood pressure reading in the doctor's office is correct. It should not, however, be a substitute for regular visits to your physician. If you're taking medication to lower your blood pressure, don't stop taking it without talking to your doctor, even if your blood pressure readings are lower at home.

Ask your doctor for advice in buying a device to monitor your blood pressure at home and have the device checked out at the doctor's office when it's new and once a year to make sure you can trust the readings. If you're monitoring blood pressure at home, make sure you record the readings,

time of day, etc. to take with you on your next doctor's visit. Your doctor will advise you if home monitoring is good for your situation.

Low Blood Pressure

Is low blood pressure dangerous? How low is too low?

Blood pressure lower than 120/80 mm Hg is considered "normal," and the term "low blood pressure" is relative. (Note: Your blood pressure is usually lowest at night and rises sharply upon waking.) Low blood pressure is generally considered dangerous when it drops suddenly or is accompanied by symptoms, such as dizziness or fainting. Severely low blood pressure can indicate serious heart, endocrine or neurological disorders and can deprive the brain and other vital organs of oxygen and nutrients, leading to shock, which can be a life-threatening condition.

Symptoms of low blood pressure to watch for include:

- Dizziness or lightheadedness
- Fainting (called syncope)
- Lack of concentration
- Blurred vision
- Nausea
- Cold, clammy, pale skin
- Rapid, shallow breathing
- Fatigue
- Depression
- Unusual thirst

There is no specific number at which blood pressure is considered to be too low. Most doctors consider chronically low blood pressure dangerous only if it causes noticeable signs and symptoms. However, a sudden fall in blood pressure can be dangerous — even a change of just 20 mm Hg can cause dizziness or fainting. Some rapid falls in blood pressure indicate a deeper underlying problem such as uncontrolled bleeding, severe infections or allergic reaction.

Factors that can contribute to low blood pressure

Pregnancy. During the first 24 weeks of pregnancy, it's common for blood pressure to drop.

Medications. A number of drugs can cause low blood pressure, including diuretics and other drugs that treat hypertension; heart medications such as beta blockers; drugs for Parkinson's disease; tricyclic antidepressants; Viagra®, particularly in combination with nitroglycerine; narcotics and alcohol.

Other prescription and over-the-counter medications may cause low blood pressure when taken in combination with high blood pressure drugs.

Heart problems. Among the heart conditions that can lead to low blood pressure are an abnormally low heart rate (bradycardia), problems with heart valves, heart attack and heart failure. These are conditions in which your heart may not be able to circulate enough blood to meet your body's needs.

Endocrine problems. These include an underactive or overactive thyroid (hypothyroidism and hyperthyroidism), adrenal insufficiency (Addison's disease), low blood sugar and, in some cases, diabetes.

Dehydration. Fever, vomiting, severe diarrhea, overuse of diuretics and strenuous exercise can all lead to dehydration, a potentially serious condition in which your body loses more water than you take in. Even mild dehydration, a loss of as little as 1 percent to 2 percent of body weight, can cause weakness, dizziness and fatigue.

Blood loss. A significant loss of blood from major trauma or severe internal bleeding reduces blood volume, leading to a severe drop in blood pressure.

Severe infection (septic shock). Septic shock can occur when bacteria leave the original site of an infection — most often in the lungs, abdomen or urinary tract — and enter the bloodstream. The bacteria then produce toxins that affect your blood vessels, leading to a profound and life-threatening decline in blood pressure.

Allergic reaction (anaphylaxis). Anaphylactic shock is a sometimes-fatal allergic reaction that can occur in people who are highly sensitive to drugs such as penicillin, to certain foods such as peanuts, or to bee or wasp stings. This type of shock is characterized by breathing problems, hives, itching, a swollen throat and a sudden, dramatic fall in blood pressure.

Postural (orthostatic) hypotension. In some people, blood pressure drops rapidly when standing from a sitting or prone position, causing dizziness, lightheadedness, blurred vision and even fainting. Causes can include dehydration, prolonged bed rest, diabetes, heart problems and excessive heat. Medications like diuretics, beta blockers, calcium channel blockers, ACE inhibitors, antipsychotics, antidepressants and drugs for

Parkinson's disease can also cause this condition. In some cases, sitting for long periods of time with legs crossed or squatting can be the cause.

Postprandial hypotension. A sudden drop in blood pressure after a meal usually affects older adults with high blood pressure or autonomic nervous system disorders such as Parkinson's disease. Lowering the dose of blood-pressure-lowering medication and eating small, low-carbohydrate meals may help reduce symptoms.

Neurally mediated hypotension. Unlike orthostatic hypotension, this disorder causes blood pressure to drop after standing for long periods, leading to symptoms such as dizziness, nausea and fainting. This condition primarily affects young people and occurs because of a miscommunication between the heart and the brain.

Nutritional deficiencies. A lack of the essential vitamins B-12 and folic acid can cause anemia, which in turn can lead to low blood pressure.

When to see the doctor

If you experience any dizziness or lightheadedness, you may want to see your doctor. If you have gotten dehydrated, have low blood sugar or spent too much time in the sun or a hot tub, it's more important how quickly your blood pressure drops than how low it drops. Keep a record of your symptoms and your activities at the time your symptoms occurred.