



The Basics of Hypertension

- What is blood pressure?
- What is high blood pressure (also called hypertension)?
- What do the blood pressure numbers mean?
- What causes hypertension?
- Can hypertension be cured?
- What are the consequences of hypertension?
- How is hypertension treated?
- How to ensure good control of hypertension?

What is blood pressure?

Blood pressure is the pressure created by the heart as it pumps blood through the arteries and circulatory system. Your blood pressure gives you information about how well your heart is working and what condition your arteries are in. Blood pressure measurements tell you how well your heart is pumping the blood into your body and how flexible or stiff your arteries are. For example, when the amount of blood your heart pumps out increases or your arteries become stiff, your blood pressure increases.

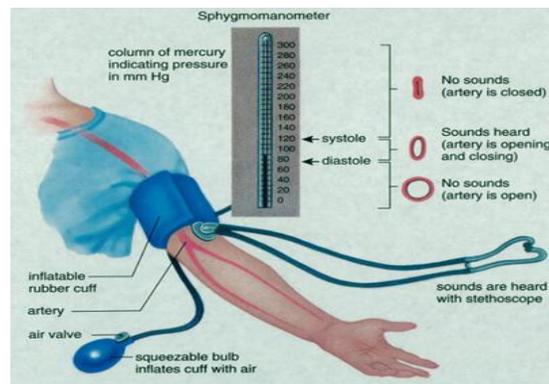
Your blood pressure is never the same, nor should it be. Your blood pressure will change with the changing needs of your body. Your blood pressure also varies during the day, with your blood pressure being the highest in the morning and lowest at night when you are asleep.

What is high blood pressure (also called hypertension)?

If your health care provider tells you that your blood pressure is high, then you have hypertension. For most people, a blood pressure above 140/90 is considered as hypertension. If you have diabetes or kidney disease, your blood pressure should be below 130/80. Ask your provider for guidance on what your blood pressure goal is. The vast majority of people do not have any physical symptoms when their blood pressure is too high, so routine monitoring of your blood pressure is necessary.

What do the blood pressure numbers mean?

Blood pressure is recorded in mm Hg. Blood pressure is measured with a sphygmomanometer.



Blood pressure is reported as two numbers. The upper number, the *systolic* pressure, is the highest pressure in the arteries when the heart beats and fills the arteries. The lower number, the *diastolic* pressure, is the lowest number in the arteries when the heart relaxes between beats.

As part of aging, blood vessels usually become stiff or rigid, so that they are less able to dilate when blood enters from the heart. Therefore the systolic pressure usually increases with age.

When your blood pressure is consistently greater than 140/90, your heart and blood vessels can become damaged from this additional pressure. Over time, this damage to your heart and blood vessels increases your chances of having a heart attack, stroke and/or kidney problems.

What causes hypertension?

In most patients, no specific cause for hypertension can be found. In about 10%, a specific cause can be found and often relieved by either medical or surgical treatment. Your health care provider will determine if you have a treatable cause for your high blood pressure.

The term used for the usual type of hypertension has been “essential” hypertension. These factors are involved:

- Hereditary

- Obesity
- High sodium intake
- Psychological stress

In addition, a number of other factors sometimes play a role, including:

- Excessive alcohol drinking (more than two to three portions a day)
- Smoking
- Sleep apnea
- Herbal remedies
- Diet pills and other stimulants, such as ephedra
- Physical inactivity

Can hypertension be cured?

Not usually. Some people who lose considerable excess weight, reduce a high intake of sodium (or alcohol), and relieve stress may have a return of elevated blood pressure to a normal level.

What are the consequences of hypertension?

By placing a burden on the heart and blood vessels, hypertension in concert with other risk factors includes heart attack, heart failure, strokes, and kidney damage. The other important cardiovascular risk factors are:

- Smoking
- Abnormal blood lipids (an elevated LDL cholesterol or a low HDL cholesterol)
- Diabetes

How is hypertension treated?

Treatment should always include an improvement in all the unhealthy lifestyle habits, including:

- Stopping smoking
- Losing excess weight
- Increasing physical activity
- Reducing sodium intake (easiest accomplished by reading labels on processed foods and avoiding any with more than 300 mg of sodium per portion)
- Drinking no more than a healthy quantity of alcohol:
 - One drink per day for women, two for men. The portions are 12 ounces of beer, 4 ounces of wine, and 1.5 ounces of whiskey

In addition, antihypertensive drugs are usually needed. These include three major types:

- Diuretics, which remove some of the excess sodium and fluid from circulation
- Beta-blockers, which decrease the rate and strength of heart contraction
- Vasodilators, which open blood vessels
 - This group includes angiotensin-converting enzyme inhibitors, angiotensin blockers, and calcium channel blockers

All of these medications may cause side effects, and your health care provider should be contacted if you feel unwell after starting one or more drugs. The action of most drugs can be reduced by weight gain, excessive sodium or alcohol and certain drugs such as nonsteroid anti-inflammatories (ibuprofen, Naprosyn, Celebrex, etc). Inform your provider about all over-the-counter or prescription drugs you take. Take your pills every day at the same time.

How to ensure good control of hypertension?

In the past, only occasional readings in the physician's office were used to determine the degree of hypertension. Increasingly, home measurements with a battery-operated, semi-automatic device are being used to ensure adequate but not excessive treatment. With such a device, you can monitor your blood pressure, particularly when changes in the type or doses of medications are made.

Guidelines for home blood pressure monitoring

Equipment

The device should be checked against the manometer in the provider's office to ensure its accuracy. The cuff should be large enough to encircle the upper arm. For most adults, a "large adult cuff" should be used. If the device comes with a smaller cuff, a larger one can be substituted.

Procedure

Do not smoke or drink coffee for 30 minutes before. Sit with the back and arm supported, the arm at the level of the heart (middle of chest). After 3 to 5 minutes of quiet sitting, take two readings, a minute apart. If the two readings differ by more than 10 mm (points), take additional readings each minute until they are within 10 mm Hg.

Records the readings in this manner: (and remember to take your diary with you on your next appointment)

| DATE | TIME | FIRST READING | SECOND READING | CIRCUMSTANCE |
|-------|------|---------------|----------------|----------------------|
| May 3 | 7am | 150/95 | 145/90 | Before breakfast |
| May 5 | 6pm | 135/85 | 130/80 | After exercise |
| May 7 | 8am | 110/70 | 105/60 | Dizzy after standing |