

Blood Pressure Measurement

Blood pressure is the force exerted by blood against the walls of arteries and veins. It is created by the pumping action of the heart. Blood pressure is measured in millimeters of mercury (mm Hg) and is expressed by two numbers—120/80, for example. The higher number is systolic blood pressure, the maximum pressure that occurs when the heart contracts. The lower number is diastolic blood pressure, the pressure when the heart is relaxed between contractions.

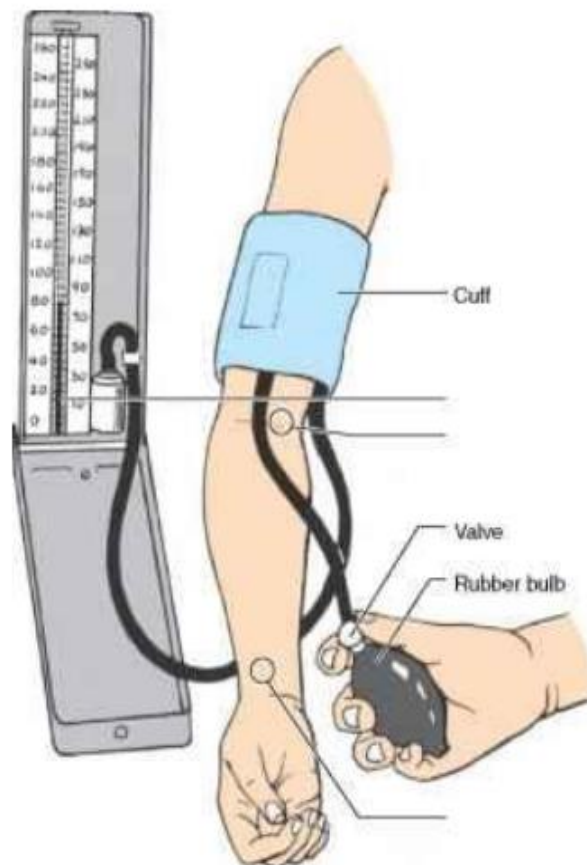
Equipment

1. Sphygmomanometer (A sphygmomanometer consists of an inflatable bag inside a covering called a cuff, an inflating bulb, a manometer from which blood pressure can be read, and a valve that is used for deflation.)
2. Stethoscope
3. Chair
4. Table or other surface to support arm

Preparation

For the person being tested:

- 1- Wear clothing that allows your upper arm to be bare.
- 2- Avoid heavy exercise or eating prior to the test.
- 3- Don't smoke or ingest caffeine for at least 30–60 minutes before being tested.
- 4- Sit quietly for several minutes before the test begins.



Instructions

1. The subject should sit comfortably, with the arm slightly flexed, palm up, and the forearm supported at heart level on a table or other smooth surface.
2. Place the cuff on the upper arm, with the lower edge of the cuff about 1 inch above the inner elbow crease. The inflatable bag should rest on the brachial artery, which is on the inner part of the upper arm.
3. Apply the stethoscope lightly to the arm, just at the inner elbow crease.
4. While watching the manometer and listening for pulse sounds through the stethoscope, inflate the bag about 30 mm Hg above the point at which pulse sounds disappear.
5. Slowly deflate the bag at a rate of about 3 mm Hg per second . As you release the pressure, pulse sounds will become audible, go through several changes and then disappear again.

note You must listen carefully to the pulse sounds while you watch the readings on the manometer.

- **Systolic pressure** is the point at which pulse sounds first become audible. You should hear faint but clear tapping sounds.
- **Diastolic pressure** is the point at which the pulse sounds disappear.

BLOOD PRESSURE CATEGORY	SYSTOLIC (mm Hg)	DIASTOLIC (mm Hg)
Healthy	less than 120	and less than 80
Elevated	120–129	and less than 80
Stage 1 hypertension	130–139	or 80–89
Stage 2 hypertension	140 or higher	or 90 or higher
Hypertension crisis	over 180	or over 120