



What is blood pressure?

- Blood pressure is the pressure of the blood in the arteries as it is pumped around the body by the heart.
- Blood pressure does not stay the same all the time.
- It changes to meet your body's needs.
- It is affected by various factors including
 - body position
 - breathing
 - emotional state
 - exercise and sleep.

1. Classification of Hypertension (JNC-7)

BP Classification	SBP mm Hg*	DBP mm Hg*
Normal	<120	<80
Prehypertensive	120–139	80–89
Stage 1 hypertension	140–159	90–99
Stage 2 hypertension	≥160	1≥100

Accurate Blood Pressure Measurement for Patients

The 5 R's

- 1 **Rest** for 5 minutes before blood pressure reading
- 2 **Refrain** (avoid) talking while resting and during blood pressure reading
- 3 **Remove** upper arm clothing
- 4 **Rest** arm on supported surface with cuff at heart level
- 5 **Rest** feet flat on floor in seated position

➤ TAKE 2 BLOOD PRESSURE READINGS 1 MINUTE APART
 ➤ GOAL BLOOD PRESSURE IS LESS THAN 130/80



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Title of the lab 6& lab 7:- Blood pressure



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Methods of blood measurement

- A.** Auscultatory method
- B.** Palpatory method

How to measure blood pressure?

- ❖ Arterial pressure is most commonly measured via a sphygmomanometer, which historically used the height of a column of mercury to reflect the circulating pressure. Blood pressure values are generally reported in millimeters of mercury (mm Hg)
- ❖ Measured by wrapping an inflatable pressure cuff around patient's upper arm. This cuff is part of a machine called a sphygmomanometer. It is best to measure blood pressure when you are relaxed and sitting.

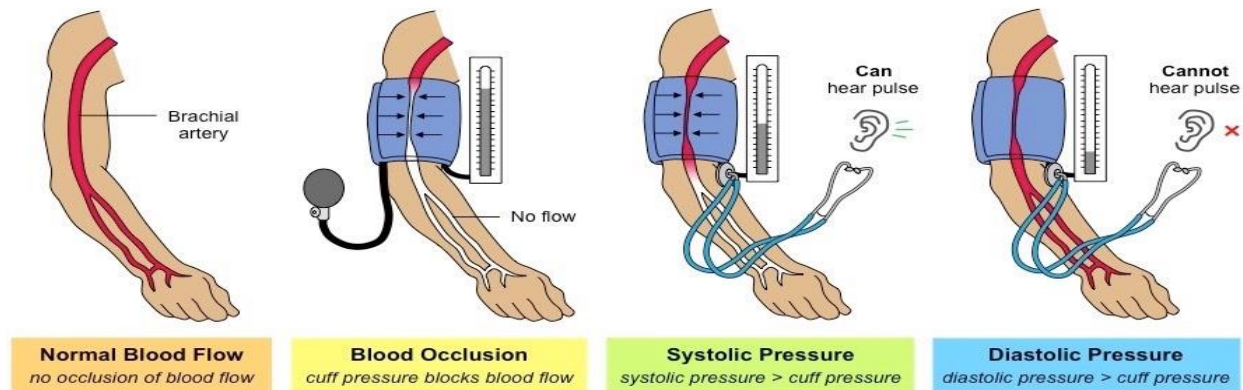
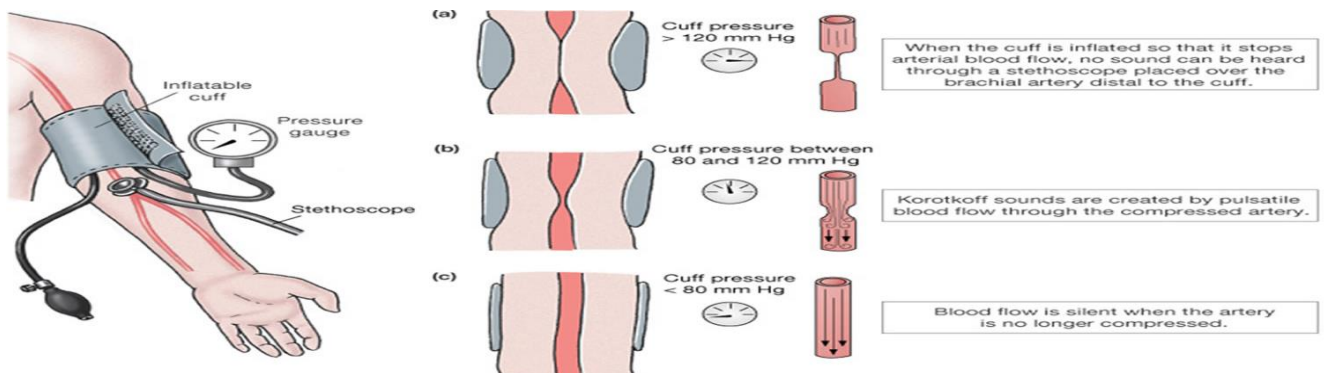
A-AUSCULTATORY METHOD

- ✓ The brachial pulse is palpated just above the angle of the elbow (the "antecubital fossa").
- ✓ The diaphragm is placed over the brachial artery in the space between the bottom of the cuff and the crease of the elbow. At this point no sounds should be heard Source.
- ✓ The cuff pressure is inflated quickly to a pressure about 30 mm Hg higher than the systolic pressure determined by the method of palpation. Then the air is let out of the cuff at a rate such that cuff pressure falls at a rate of about 5 mm Hg/sec.
- ✓ At some point the personnel listening with the stethoscope will begin to hear sounds with each heartbeat. This point marks the systolic pressure. • The sounds are called "Korotkoff" sounds.
- ✓ As the pressure is lowered further, the character of the Korotkoff sounds should change. At some point, the sounds will disappear.
- ✓ The pressure reading at this point gives the diastolic pressure.



Korotkoff sounds

- Korotkoff sounds are the **sounds** that medical personnel listen for when they are taking blood pressure using a non-invasive procedure.
- Its generated **when a blood pressure cuff changes the flow of blood through the artery.**
- These sounds are heard through either a stethoscope or a Doppler that is placed distal to the blood pressure cuff.
- Swishing sounds as the blood flows through blood vessels as the cuff is deflated





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MERCURY Sphygmomanometer

- Elegant Look
- Purity of Mercury 99.99%
- Special Control Valve
- Best Quality Cuff for Getting Excellent Grip

MCP
BLOOD PRESSURE MONITORS



Electronic Blood Pressure Monitor

6pcs Cuff (each size 1pc)



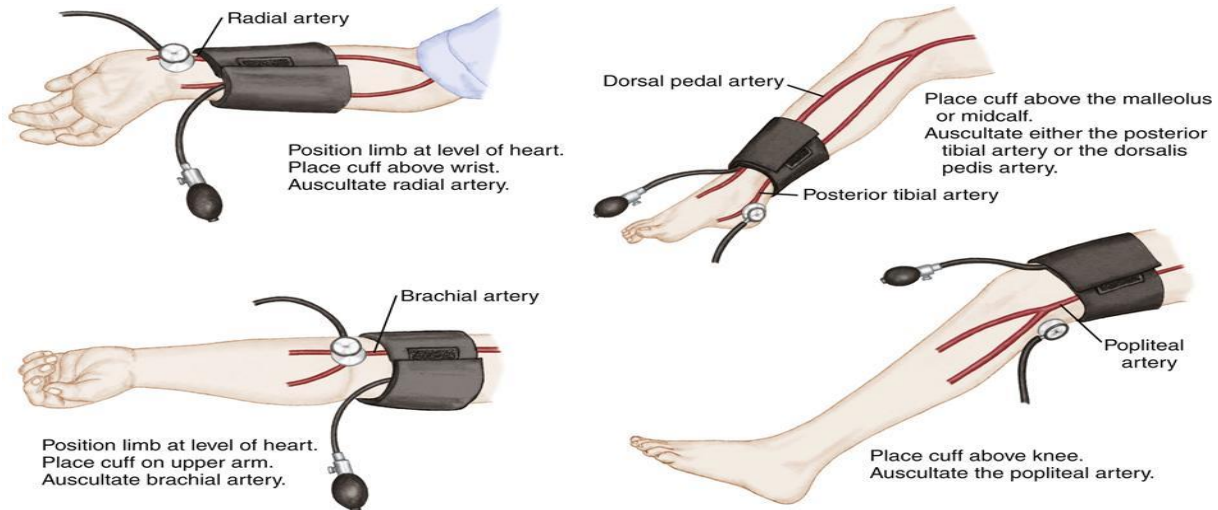
- Leg (Thigh) : (46-66cm)**
- Adult Large: (33-47cm)**
- Adult : (25 - 35cm)**
- Pediatric: (18-26cm)**
- Infant: (12-19cm)**
- Neonate: (7-13cm)**



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B- PALPATORY METHOD

- The cuff of the sphygmomanometer is wrapped firmly around the right arm above the elbow. The lower arm should be resting on a table- top or bench.
- The radial pulse (the pulse at the radial artery in the wrist) is palpated with the fingers of the left hand. The number of beats in 30 seconds is counted, and the heart rate in beats per minute is recorded.
- The valve on the inflating bulb of the sphygmomanometer is turned fully closed. The cuff is inflated slowly (10 mm Hg/sec) by pumping the inflating bulb until the radial pulse is no longer felt. The cuff is inflated further until the pressure is about 30 mm Hg higher
- The valve on the inflating bulb is opened slightly by turning it in the counterclockwise direction, allowing the pressure to drop slowly by about 5 mm Hg/sec. At some point, one will be able to feel the radial pulse once again.
- The pressure indicated on the gauge when the pulse reappears is noted. This is the systolic pressure.
- Now the pressure in the cuff is quickly released, so as not to cause undue discomfort to the patient.



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