



Blood pressure

2 stage

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Definitions

➤ Blood pressure means the pressure applied by blood against the lateral walls of blood vessels as it passes through them.

- Unit of Measurement-----mmHg
- Normal BP
 - Systolic-----120 (100—140mmHg)
 - Diastolic-----80 (60— 90mmHg)

Definitions

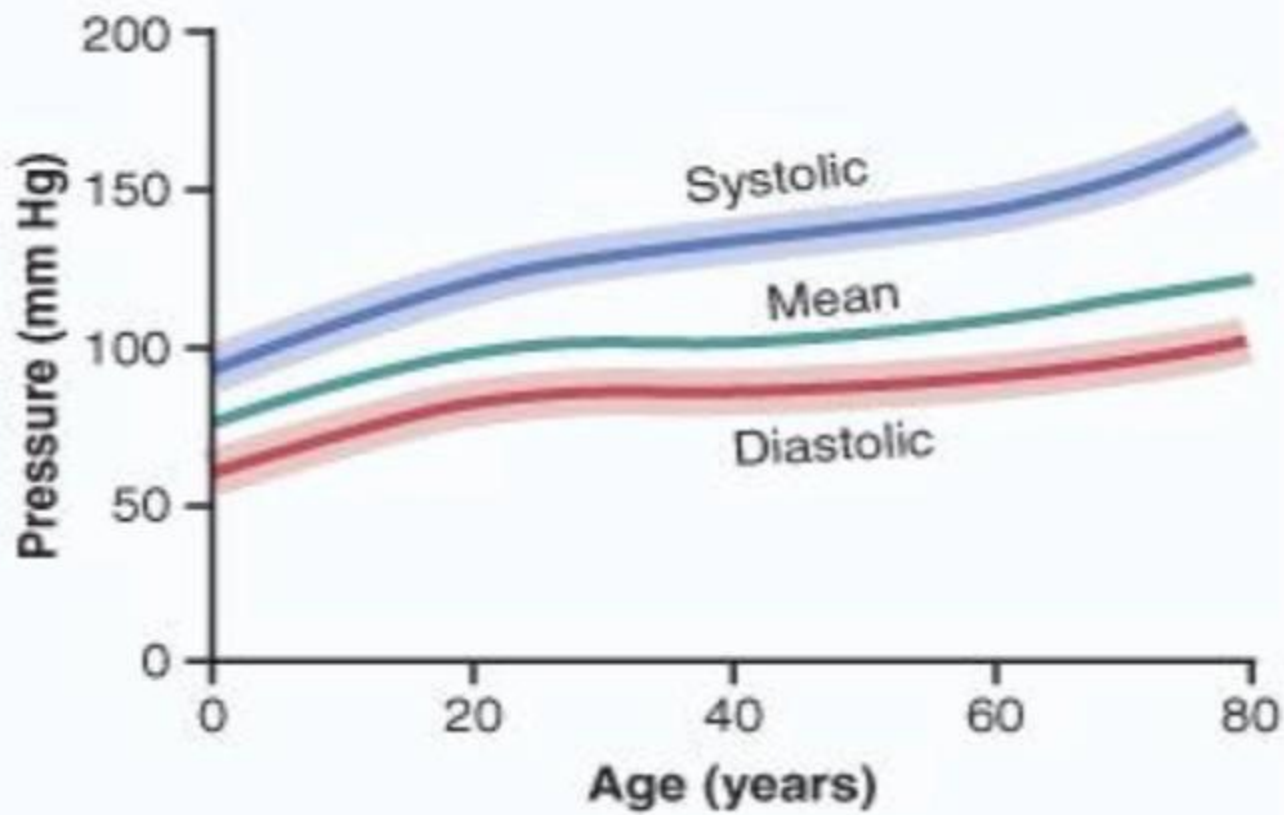
- What is pulse pressure ?
 - It is the difference between systolic and diastolic blood pressure.
- Normal Range-----30 to 60 mmHg

Definitions

- What is Mean Arterial Blood Pressure ?
 - It is the average pressure which drives the blood forward in the tissues (through blood vessels) throughout the cardiac cycle.

Factors affecting BP

- Age, Sex
- Posture
- Exercise
- Anxiety or Stress
- Gravity
- Sleep
- Pregnancy



PRACTICAL

BLOOD PRESSURE MEASUREMENT

- Normal BP < 120/80 mmHg (In Adults)
- Range:
 - Systolic –100-120mmHg
 - Diastolic—60-80mmHg
- Equipment
 - Stethoscope
 - Sphygmomanometer

- **Core steps:**


1. introduce your self to the patient and check the identity.
2. Explain the procedure and take consent.
3. Check your equipment.
 - a) Make sure the apparatus is working and set to zero.
 - b) Choose the correct cuff size.
 - The cuff should cover more than 40% of the circumference of the arm.

Methods of Measurements

- Palpitory
- Auscultatory

Palpitory Method


- 1) Localize the radial & brachial pulses.
- 2) Before you start, please ask the following questions:
 - a) Have you ever get your blood pressure checked?
If so, what is your blood pressure usually?
 - b) Are you in any medication for BP?
 - c) Did you do any exercise in the last half hour?
 - d) Did you have any tea, coffee or a cigarette in the last half hour?



3) Support the arm horizontal at heart (mid-sternal) level

4) Inflate the BP cuff until a level which is about 20-30 mmHg above the point at which the pulse is no longer palpable.

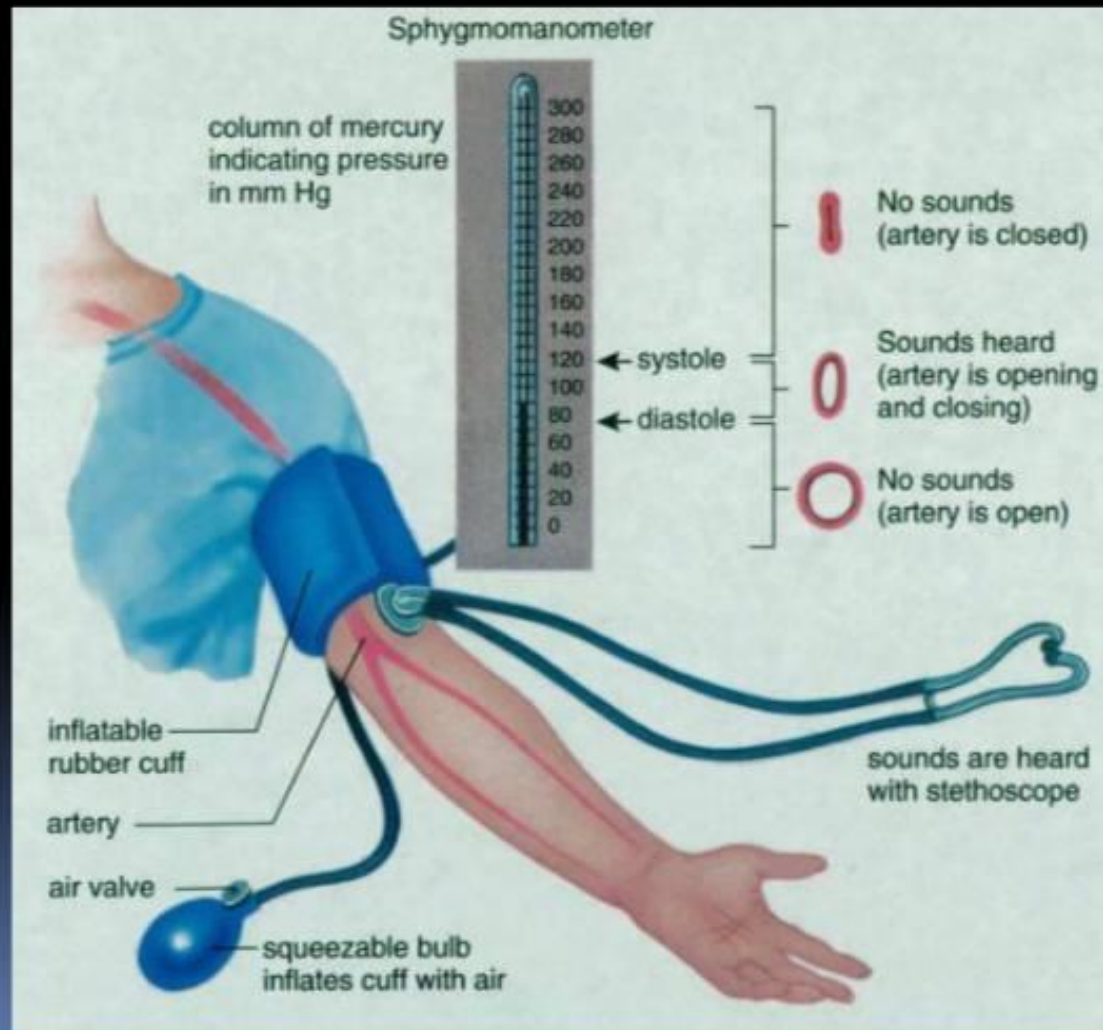
5) Now slowly deflate the cuff 2mm/sec until the pulse is palpable again.

- **This is the systolic BP.**
 - In this method only the systolic pressure can be measured, while the **diastolic pressure cannot be measured.**
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Auscultatory Method

- 1) The cuff pressure is inflated quickly to a pressure about 30 mm Hg higher than the systolic pressure determined by the Palpitory method.
- 2) Then the air is let out of the cuff slowly.
- 3) At some point the person listening with the stethoscope will begin to hear sounds with each heartbeat. **This point marks the systolic pressure.**
- 4) Continue to deflate until the point at which they disappear. **This point marks the diastolic pressure.**
- 5) Repeat the procedure if you are unsure of the blood pressure.
 - The sounds are called **Korotkoff** sounds.

Methods of Measurements



Blood pressure during exercise

- BP changes with exercise.
 - Conditions Blood pressure
 - Before exercise 120/80 mmHg
 - After mild exercise 140/80 mmHg
 - After heavy exercise 160/60 mmHg
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- after mild exercise, systolic blood pressure increases while diastolic blood pressure remains more or less the same.
 - Following heavy exercise, the systolic pressure increases tremendously and the diastolic pressure drops.

Hypertension:

BP category	Systolic BP		Diastolic BP
Normal	<120mmHg	and	<80mmHg
Elevated	120-129mmHg	and	<80mmHg
Hypertension stage 1	130-139mmHg	or	80-89mmHg
Hypertension stage 2	≥ 140mmHg	or	≥ 90mmHg
Hypertensive urgency	> 180mmHg	and/or	> 120mmHg
Hypertensive emergency	> 180mmHg + target organ damage	and/or	> 120mmHg + target organ damage