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Department: Radiology 2nd

Section: A

Subject: human physiology

Q1: (A) What is blood pressure? Explain systolic, diastolic, Normal and Abnormal Blood pressure.

Ans:-Blood pressure:- The force of circulating blood on the walls of the arteries. Blood pressure is taken using two measurements: systolic (measured when the heart beats, when blood pressure is at its highest) and diastolic (measured between heart beats, when blood pressure is at its lowest).

Systolic pressure:- Systolic pressure is the pressure of the blood in the arteries when the heart pumps. It is the higher of two blood pressure measurements;

Example: if the blood pressure is 120/80, then 120 is the systolic pressure.

Diastolic pressure:- Diastolic pressure is the pressure of the blood in the arteries when the heart is filling. It is the lower of two blood pressure measurements;

Example: if the blood pressure is 120/80, then 80 is the diastolic pressure.

Normal and abnormal blood pressure:- A blood pressure reading has a top number (systolic) and bottom number (diastolic). Normal blood pressure is less than 120 over 80 (120/80).

People whose blood pressure is above the normal range should ask their doctor how to lower it.

- The primary way that high blood pressure causes harm is by increasing the workload of the heart and blood vessels — making them work harder and less efficiently.
- Over time, the force and friction of high blood pressure damages the delicate tissues inside the arteries. In turn, LDL (bad) cholesterol forms plaque along tiny tears in the artery walls, signifying the start of atherosclerosis.
- The more the plaque and damage increases, the narrower (smaller) the insides of the arteries become — raising blood pressure and starting a vicious circle that further harms your arteries, heart and the rest of your body. This can ultimately lead to other conditions ranging from arrhythmia to heart attack and stroke.

Blood Pressure Stages

Blood Pressure Category	Systolic mm Hg (upper #)		Diastolic mm Hg (lower #)
Normal	less than 120	and	less than 80
Elevated	120-129	and	less than 80
High Blood Pressure (Hypertension) Stage 1	130-139	or	80-89
High Blood Pressure (Hypertension) Stage 2	140 or higher	or	90 or higher
Hypertensive Crisis (Seek Emergency Care)	higher than 180	and/or	higher than 120

(B) How will you measure Blood pressure?

Ans:- Blood pressure is measured by sphygmomanometers in units of millimetres of mercury (mmHg). The readings are always given in pairs, with the upper (systolic) value first, followed by the lower (diastolic) value.

So someone who has a reading of 132/88 mmHg (often spoken "132 over 88") has a

systolic blood pressure of 132 mmHg, and a

diastolic blood pressure of 88 mmHg.

It's important to measure blood pressure more than once because it fluctuates over the course of the day. It can also change due to things like physical exertion, stress, pain, or extreme heat or cold. But this kind of increase in blood pressure is only temporary and it soon returns to normal.

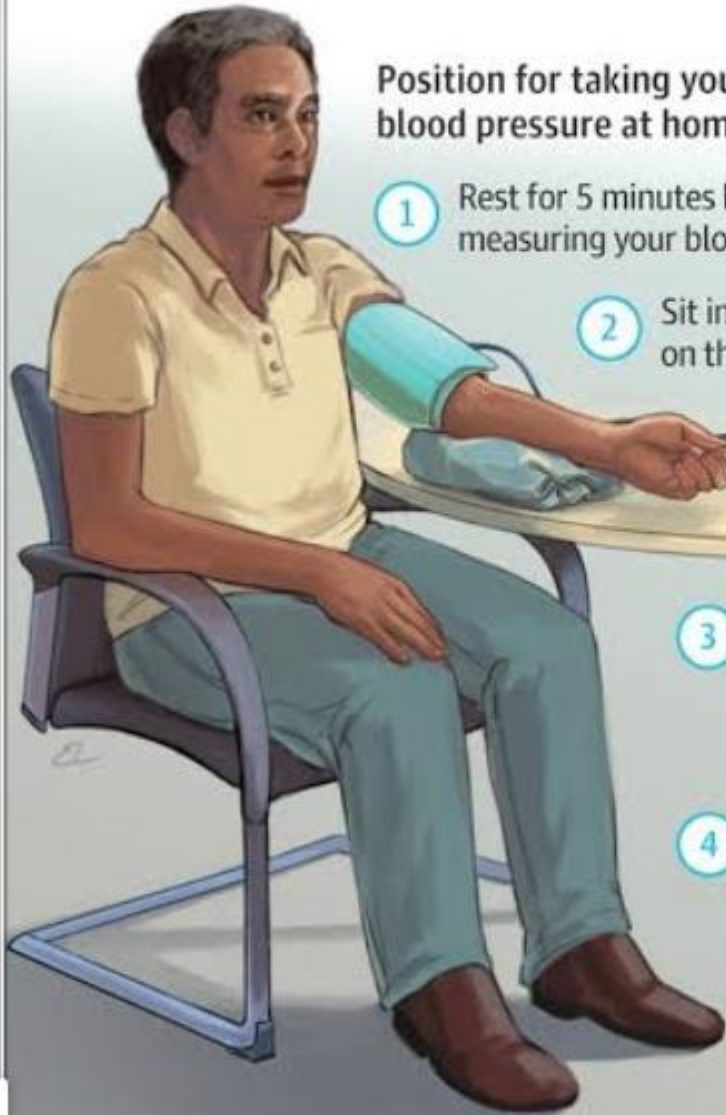
So, if blood pressure is measured just once and found to be high, it doesn't necessarily mean that it's always too high. A blood pressure reading taken at the doctor's office can also be misleading: Going to the doctor makes some people so nervous that their blood pressure goes up.

Choosing the correct blood pressure cuff size

Measure the circumference of your upper arm with a cloth measuring tape midway between the elbow and shoulder. Choose a cuff size that includes this measurement.



Position for taking your blood pressure at home



- 1 Rest for 5 minutes before measuring your blood pressure.
- 2 Sit in a chair with both feet flat on the ground and back straight.
- 3 Place your arm at the level of your heart or chest.
- 4 Stay still and do not talk as your blood pressure machine operates.