King Saud University College of Medicine
Year 1 Foundation Block
Clinical Skills Student Manual

Department of Medical Education
Clinical Skills and Simulation Center
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The blood pressure (BP)

Measurment of the arterial blood pressure is an essential part of the examination of almost any patient. Usually, indirect measurment of the systolic and diastolic pressures are obtained with a sphygmomanometer. systolic blood pressure is the peak pressure that occurs in the artery following ventricular systole, and the diastolic blood pressure is the level to which the arterial blood pressure falls duiring ventricular diastole.[10]

To measure blood pressure accurately, you must carefully choose a cuff of appropriate size.

An adult cuff showing size

A cuff for children

The sphygmomanometer may be either the aneroid (with indicator) or the mercury type. Because an aneroid instrument often becomes inaccurate with repeated use, it should be recalibrated regularly.

A free-standing aneroid model.

Portable mercury sphygmomanometer

A classification of blood pressure readings*		
Category	**Systolic (mmHg)**	**Diastolic (mmHg)**
Optimal	< 120	< 80
Normal	120 - 129	80 - 84
High Normal	130 - 139	85 - 89
Mild hypertension (grade 1)	140 - 159	90 - 99
Moderate hypertension (grade 2)	160 - 179	100 - 109
Severe hypertension (grade 3)	> 180	> 110

** The cardiovascular system. In: Talley NJ, O'Connor S., A systematic guide to physical diagnosis: Clinical Examination. Australia: Elsevier, 2010;p.56.*

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Measuring Blood Pressure (BP)

OBJECTIVE: To accurately measure the blood pressure using the manual sphygmomanometer.
MATERIALS: Stethoscope and a manual sphygmomanometer.

***D**: Appropriately done **PD**: Partially done **ND**: Not done/Incorrectly done*

	STEP/TASK	D	PD	ND
	Preparation			
1.	Introduce yourself to the patient.			
2.	Confirm patient's ID.			
3.	Explain the procedure and reassure the patient.			
4.	Get patient's consent.			
5.	Wash hands.			
6.	Prepare the necessary materials.			
If the patient is anxious, irritable or has been a physically active or if he/she has smoked, drunk stimulant drinks *(tea, coffee, energy drinks etc.)* in the last 30 minutes, give him/her 10 minutes to rest before measuring the BP.				
7.	Position the patient in a sitting position and uncover one of his/her arms. *(Make sure the patient is relaxed and comfortable).*			
	Procedure			
8.	Turn on the mercury valve *(if it is mercury sphygmomanometer).*			
9.	Select an appropriately sized cuff and apply it to the upper arm ensuring that it fits securely. *(The centre of the cuff bladder must be over brachial artery **[the bladder should cover 80% of the circumference of the upper arm]** and lower edge 2.5 cm above the ante-cubital fossa).*			
10.	Palpate the brachial or radial artery while inflating the cuff till the point where pulsation disappears and keep inflating the cuff 20-30 mmHg more.			
11.	Slowly deflate the cuff, noting the pressure at which the pulse reappears. *(This is the approximate level of the systolic blood pressure).*			
12.	Deflate the cuff completely.			
13.	Place the stethoscope over the brachial artery pulse, ensuring that it does not touch the cuff *(bell is better than diaphragm to pickup low pitched Korotkoff sounds).*			
14.	Re-inflate cuff to 20-30 mmHg above palpated systolic pressure.			
15.	Slowly deflate the cuff at a rate of 2-3 mmHg/second. *(Note where the beats appears in relation to the number on the gauge).*			
16.	The first sound indicates the systolic blood pressure *(continue deflation).*			
17.	The muffling and disappearance of the sound indicate the diastolic blood pressure.			
18.	Deflate the cuff completely.			
19.	Turn off the mercury valve *(if it is mercury sphygmomanometer).*			
	After the Procedure			
20.	Ensure that the patient is comfortable.			
21.	Make explanations to the patient, answer his/her questions.			
22.	Wash hands.			
23.	Document the procedure.			