

Arterial blood pressure

Arterial blood pressure is one of the essential parameter in cardiovascular physiology, it is considered as one of the vital signs during examination of any patient, and the blood pressure is usually recorded as :systolic pressure/diastolic pressure.

Systolic pressure: the highest arterial pressure during each cardiac cycle. it is measured after the heart contract and blood ejected into the arterial system.*normal range*
100-140mmHg

Diastolic pressure: lowest arterial pressure during each cardiac cycle. It is measured when the heart relaxed.

normal range 60-100mmHg

Method of measuring blood pressure:

- 1.direct method: not used in practice, it is an invasive method, by using canula into the artery.**
- 2.indirect method: used In practice by using sphygmomanometer and stethoscope.**

Procedure:

Before measuring the blood pressure we have to check the proper size of air bag within the cuff which should extend for at least $2/3$ of the circumstances of the arm.

-Clothing must be removed from the arm and arm supported at the heart level with the level sphygmomanometer.

-Person laying or sitting relaxed.

-Right or left arm.

-Warp the cuff of sphygmomanometer should be around the arm well above the cubital fossa by 2.5cm, wrapping should be neither tight nor loose.

We have 2 methods for measuring arterial blood pressure indirectly:

***Palpatory method: measuring systolic blood pressure only.**

***Auscultatory method: measuring systolic and diastolic blood pressure by using stethoscope.**

-Raise the pressure to above the expected systolic pressure, when the artery is occluded by the cuff no sound heard,
-the pressure in the cuff then is lowered slowly , at the point which trapping sound is heard with each heart beat this sound represent the systolic pressure,
-as the cuff pressure is lowered further the sound become louder then become muffled and finally it disappear this represent diastolic pressure .

The sound which heard called Korotkoff sounds. The exact cause of korotkoff sounds is still debated, but they are believed to be caused by blood jetting through the partly occluded vessel. The jet cause turbulence in the open vessel beyond the cuff, and this sets up the vibrations heard by the stethoscope.