

Topic: HUMAN PHYSIOLOGY

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Blood Pressure

Blood pressure is the pressure exerted by the blood on the wall of an artery. It is measured by the use of **sphygmomanometer**. Systolic blood pressure is the force of blood recorded during ventricular contraction. Diastolic pressure is the force of blood recorded during ventricular relaxation. The average blood pressure is 120/80 mmHg. The blood pressure depends on four factors. They are:

1. cardiac output or the amount of blood pumped by the heart,
2. the peripheral resistance offered by the blood vessels,
3. the viscosity of the blood and
4. the fullness of the vascular systems.

The clinical measurement of the arterial blood pressure

The blood pressure is measured by using **sphygmomanometer**. It consists of a device for applying external pressure which is attached to a mercury manometer. A rubber bag 25cm by 10cm is enclosed in a silk or cotton bag with a long silk cuff which can be tied around the upper arm. The sounds are heard on the brachial artery. The rubber bag is connected by means of rubber tubes to a pump and the mercury manometer. The pump is used to drive in air to increase the pressure in the bag and compress the brachial artery. The manometer has a scale and a mercury reservoir incorporated within. Air is pumped into the bag and the pressure is raised rapidly well above the systolic level. This completely stops blood flow and consequently no sound will be heard. The pressure is decreased slowly and the first appearance of the sound is recorded as the systolic point. The

pressure is slowly released and the diastolic pressure is noted. The diastolic pressure cannot be detected by the palpatory method. The normal values of blood pressure are given as 120mm of mercury which is the systolic reading and 80mm of mercury as the diastolic level.

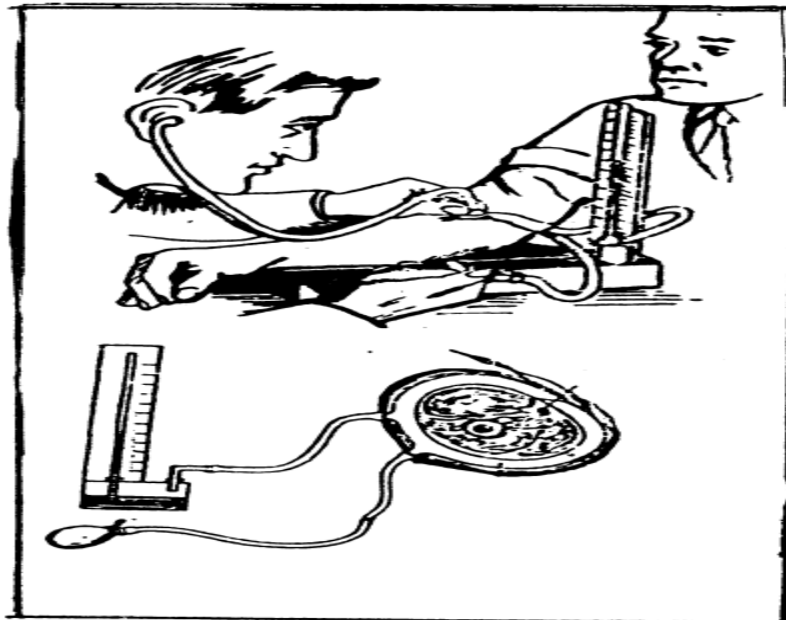


Fig.1- Sphygmomanometer

Electro Cardio-Gram (ECG)

A recording of the electrical changes that accompany the cardiac cycle is called an **electrocardiogram**. The instrument used to record the changes is Electro Cardio Graph. The ECG is invaluable in diagnosing abnormal cardiac rhythm and conduction patterns, detecting the presence of foetal life, determining the presence of several foetuses and following the course of recovery from a heart attack.

Angiogram

Recording of an image of arteries by X-ray revealed by the direct injection of dye is called **angiogram or arteriogram**. This technique is called **Angiography or arteriography**. Diagnosis is possible by means of this technique in the case of the heart disease called Atherosclerosis.

