

Blood pressure (BP)

The blood pressure define as **the pressure of the blood against the inner walls of the blood vessels**, varying in different parts of the body during different phases of contraction of the heart and under different conditions of health, 1733 - Reverend Stephen Hales first to measure BP measured the height of a column of blood after cannulating the carotid artery in a horse with a brass pipe . Blood is carried to all parts of the body in vessels called arteries Each time the heart beats (about 60-70 times a minute at rest), it pumps out blood into the arteries. When blood pressure stays elevated over a long period of time it is called high blood pressure or hypertension which **called (Systolic pressure 120 mml/Hg)** High blood pressure is dangerous because it makes the heart work too hard and contributes to hardening of the arteries (atherosclerosis). while when blood pressure decreased is called hypotension **called (Diastolic pressure 80 mml/Hg)**

Blood pressure changes all the time It decreases when sleep, or at rest It increases when we are active, excited, practicing sports, stressed and nervous.

Normal	Less than 120	Less than 80
Prehypertension	120-----139	80-- --89
Hypertension Stage 1	140-159	90 ---- 99
Hypertension Stage 2	160 or higher	100 or higher

condition or also called a High blood pressure has no symptoms. It is considered a silent killer .

Factors affecting blood pressure:

1/ **Cardiac output C.O. = stroke volume x heart rate and that equal C.O = 70 x 70 = 4900 ml/mint**

that mean the heart push 4900 ml of blood per mint in vessel

2/ Sympathetic stimulation- causes an increase in heart rate, and in force of contraction. which caused hypertension .

3/ Parasympathetic stimulation- mainly decreases the heart rate and slight decrease in force which caused hypotension .

4/ Peripheral resistance-

5// Blood volume- a sufficient amount is required to overfill the arterial system. which included

- 1- hemorrhage - decrease in blood pressure 2- salt/fluid - increase in blood pressure
3- polycythemia - increase in blood viscosity 4- RBC anemia - decrease in blood viscosity

6/ Viscosity- Blood is five times more viscous than water.

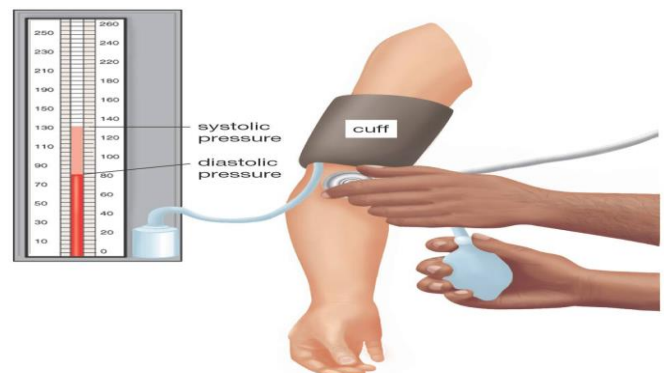
7- Elasticity of the arterial walls- 8-Kidney failure . 9-A family history of high blood pressure .

10-Age - The incidence of high blood pressure rises in men after age 35 and in women after age 45 .

11-Gender - Men are more likely to have high blood pressure than women

Procedure

The apparatus involves a Stethoscope to listen to sounds and a sphygmomanometer consisting of an inflatable cuff , a mercury manometer to measure pressure, a small rubber hand pump with valve to increase or decrease pressure. Subjects sit on a comfortable chair with either their left or right arm resting on a flat surface. After removal of any restraining clothes, a cuff of appropriate size is wrapped around the upper arm. The cuff is inflated to a pressure of 150-160 mmHg. After placing the stethoscope drum on the Brachial artery, the pressure in the cuff is released gradually, after a while sounds can be heard until the first heart sound is heard (this is the systolic pressure), pressure drop is allowed to continue when further sounds can be heard. The disappearance of the last sound determines the .diastolic pressure



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