Practical physiology……1st semester

The blood pressure

Blood pressure is the force the blood exerts against the walls of the blood vessels, it is one of the "vital signs" that often measured, and indeed a normal blood pressure is essential to life (Filtration in capillaries depends upon blood pressure; filtration brings nutrients to tissues)

The pumping of the ventricles creates blood pressure, which is measured in mmHg (millimeters of mercury).

systemic blood pressure is two kinds: Systolic and diastolic pressure.

Systolic pressure is always the higher of the two and represents the blood pressure when the left ventricle is contracting. diastolic pressure, represents the blood pressure when the left ventricle is relaxed and does not exert force. The pressure in young adult human rises to a peak value (systolic pressure) & fall to a minimum value (diastolic pressure) during each heart cycle.

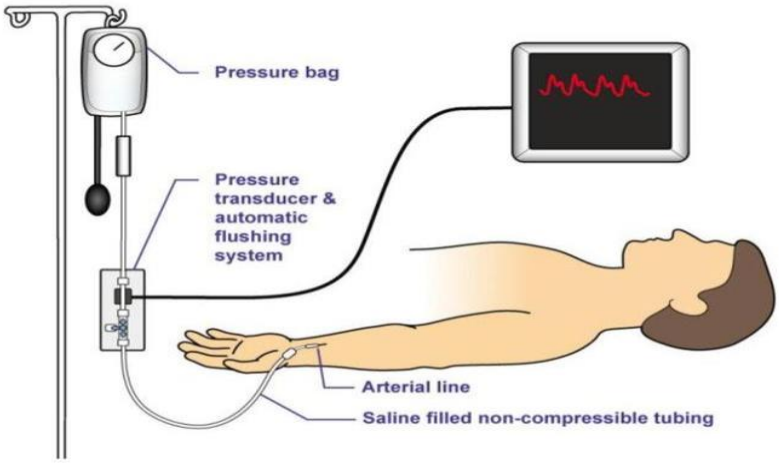
$$\text{The blood pressure} = \frac{\text{Systolic pressure}}{\text{Diastolic pressure}} = \frac{120 - 130}{70 - 80} \text{ mm. Hg}$$

* Increase in B.P is called ((Hypertension))
* Decrease in B.P is called ((Hypotension))
* The blood pressure decreases at altitudes, while increase in aged men.

Methods of measuring of the blood pressure:

A. Direct method: by insertion of a catheter needle directly into the artery which attached to the sensitive manometer & oscillograph.

- The most direct (exact) method for measuring blood pressure is to insert a catheter directly into the blood vessel lumen (arterial line, Swan-Ganz, Central Venous Pressure line).



B. Indirect methods (Auscultator's method): by using:

- Stethoscope
- Sphygmomanometer: inflatable cuff attached to the mercury manometer.