رقم التجربة No.10 & 11

اسم التجربة : Blood Pressure

الغرض من التجربة:

To measure blood pressure using sphygmomanometers and stethoscope

الأجهزة والمعدات:-

Materials required: (Auscultatory Method)

1. A device called sphygmomanometer for measuring BP and it consists of the followings:
   - Inflatable rubber bag (Cuff)
   - Rubber bulb for introducing air into the Cuff
   - Mercury manometer for the measurement of the pressure in the Cuff
2. A stethoscope

طريقة العمل :

Experimental Procedure:

A. Auscultatory Method:

It is called that way because blood pressure is recorded by the detection of sounds. The procedure is as follows:

1. Have the subject seated with her/his arm rested on the table. Wrap the pressure Cuff around the bare upper arm, making sure that the inflatable bag within the Cuff is placed

over the inside of the arm where it can exert pressure on the brachial artery.

2. Wrap the end of the Cuff around the arm and tuck it into the last turn. Close the valve of the bulb.
3. Place the stethoscope bell below the Cuff and over the brachial artery where it branches into the radial and ulnar arteries.
4. Place the stethoscope ear piece in your ears. With no air in the Cuff sounds can be heard.
5. Inflate the Cuff so the pressure is above diastolic (80 – 90 mmHg) and you will be able to hear the spurting of blood through the partially occluded artery. Increase the Cuff pressure to around 160 mmHg; this pressure should be above the systolic pressure so that the artery is completely collapsed and no sounds are heard
6. Open the valve and begin slowly to lower the pressure in the Cuff. As the pressure decreases you will be able to hear four phases of sound changes; **these were first reported by Korotkoff in 1905 and are called korotkoff sounds, which are:**

   1) **Phase 1:** appearance of **fairly sharp thudding sound** that increase in intensity in the next 10 mmHg of drop in pressure. **The pressure when the sound first appears is the systolic pressure.**
   2) **Phase 2:**the sound become a **softer murmur** during the next 10 – 15 mmHg of drop in pressure
   3) **Phase 3:** the sounds become **louder again and have a sharper thudding quality** during the next 10 – 15 mmHg of drop in pressure
   4) **Phase 4:**the sound suddenly becomes **muffled and reduced in intensity.The pressure at this point is**

termed diastolic pressure. This muffled sound continues for another drop in pressure for 5 mmHg, after which all sounds disappears. The point where the sound ceases completely is called the end of diastolic pressure.

النتائج القياسية :-

Systolic Blood Pressure: is the highest pressure in the artery produced by the contraction phase (systole) of the heart. The normal value for a 20 year old man is 120 mmHg.

Diastolic Blood Pressure: is the lowest pressure in the artery produced by the relaxation phase (diastole) of the heart. The normal value for a 20 year old man is 80 mmHg

المناقشة والإستنتاجات: -

-This experiment introduces the student to the basic knowledge regarding measuring blood pressure . The relation between the physiological function and equipment used to assess the functions.

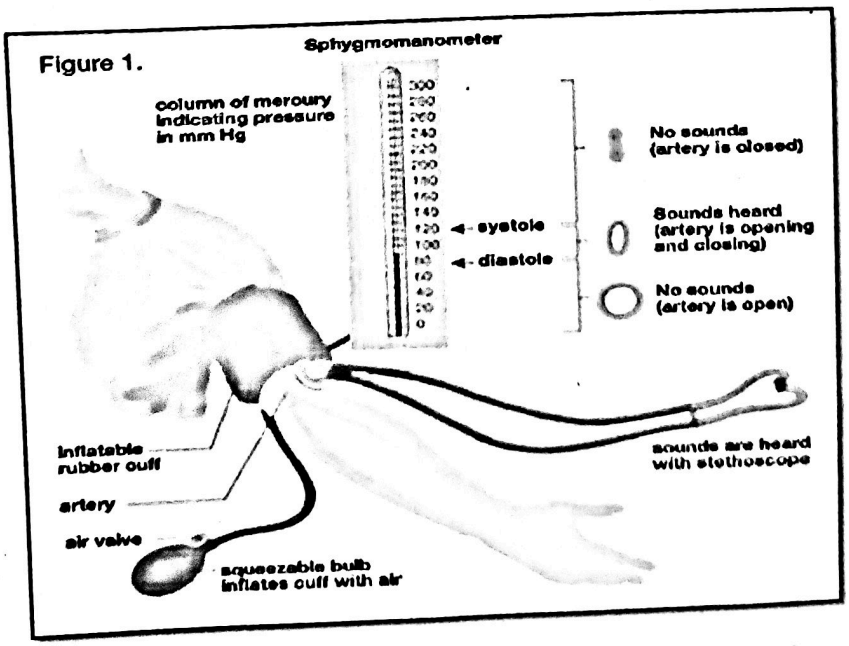

Figure 1.