**LAB ASSIGMENT OF PHYSIOLOGY**

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**BS RADIOLOGY 2ND SEMESTER SECTION A**

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**Q1. WHAT IS BLOOD PRESSURE? EXPLAIN SYSTOLIC, DIASTOLIC, NORMAL AND ABNORMAL BLOOD PRESSURE.**

**Ans) BLOOD PRESSURE:** Blood pressure is the measurement of force applied to artery walls.

* The pressure that your blood exerts against your arteries as it is pumped through your body by the heart.
* The pressure in the arteries increases when the heart beats and decreases while it is resting.

**SYSTOLIC:** It measures the force of blood against the arteries when the heart pushes the blood to the rest of the body parts.

**EXPLANATION:**

* Systolic pressure refers to the maximum arterial pressure during the contraction of the left ventricle of the heart.
* Its normal range is 90 – 120 mm of Hg in adults.
* It is a maximum blood pressure inside the arteries.
* It occurs when the left ventricle is contracted.
* It undergoes considerable fluctuations.
* It increases with age.

**DIASTOLIC:** It measures the force of blood as the heart relaxes between the beats.

**EXPLANATION:**

* Diastolic pressure refers to the minimum arterial pressure during the relaxation of the left ventricle of the heart.
* Its normal range 60 – 80 mm of Hg in adults.
* It is a minimum blood pressure inside the arteries.
* It occurs when the left ventricle is relaxed.
* It undergoes few fluctuations.
* It decreases with age.

**NORMAL BLOOD PRESSURE:** A normal blood pressure is a systolic blood pressure that is less than 120 mm of Hg and a diastolic blood pressure that is less than 80 mm Hg.

**ABNORMAL BLOOD PRESSURE:** Abnormal blood pressure is considered to be the blood pressure 140/190 mm of Hg or higher, low blood pressure is considered to be 90/60 mm of Hg.

**HYPOTENSION:**

* Low blood pressure called hypotension.
* Hypotension is defined as a systolic blood pressure that is less than 90 mm of Hg.

**SYMPTOMS:**

* Low blood pressure is generally not worrisome unless a person has symptoms from it, such as lightheadedness, dizziness or fainting.
* Other potential symptoms of low blood pressure are nausea, blur vision, thirst and fatigue.

**HYPERTENSION:**

* High blood pressure or hypertension occurs when your blood pressure increases to unhealthy levels.
* Narrow arteries increase resistance.
* Hypertension is generally a silent condition.

**CAUSE:** There are two types of hypertensions.

* **PRIMARY HYPERTENSION:** It is also called essential hypertension. Most people have this type of high blood pressure. It develops over time with no identifiable cause.
* **FACTORS:**
* This may be from gene mutations or genetic abnormalities inherited from parents.
* If something in a body changes, it is because of change in kidney function due to ageing may upset the body’s natural balance of salt and fluids.
* Hypertension is also caused due to unhealthy lifestyle choices like lack of physical activity and poor diet.
* **SECONDARY HYPERTENSION:**
* Secondary hypertension often occurs quickly and can become more severe hypertension.
* **FACTORS:** Several conditions that may cause secondary hypertension include, kidney disease, problems with thyroid, side effects of medications, certain endocrine tumors.

**Q2.** **HOW WILL YOU MEASURE BLOOD PRESSURE?**

**Ans) MEASUREMENT OF BLOOD PRESSURE:**

* Blood pressure is measured in units of millimeters of mercury.
* The readings are always given in pairs, with the upper systolic value first, followed by the lower diastolic value.
* **EXAMPLE:** A normal blood pressure would be recorded as something under 120/180 mm of Hg.
* It is important to measure blood pressure more than once because it fluctuate over the course of the day.
* A blood pressure is measured by using a digital blood pressure monitor for automated readings or an instrument called a sphygmomanometer for manual readings.
* Digital blood pressures monitors are often used on the wrist.
* A sphygmomanometer has three types.
* **CUFF:** A cuff that can be inflated with air.
* **MANOMETER:** A pressure meter for measuring air pressure in the cuff.
* **STETHOSCOPE:** It is for listening to the blood makes as it flows through the brachial artery.
* **MEASURING BLOOD PRESSURE BY USING THE SPHYGMOMANOMETER:**
* First a cuff is placed around the arm and inflated with a pump until the circulation is cut off.
* A small valve slowly deflates the cuff and the doctor measuring blood pressure uses a stethoscope, placed or the arm, to listen for the sound of blood pulsing through the arteries.
* That first sound of rushing blood refers to the systolic blood pressure.
* Once the sound fades, the second number indicates the diastolic pressure, the pressure of the heart at rest.

**THE END**