**Basics of Blood Pressure**

**Blood pressure (BP)** is the force exerted by circulating blood against the walls of blood vessels. It is essential for delivering oxygen and nutrients to organs and tissues.

**1. Blood Pressure Readings**

Blood pressure is measured in **millimeters of mercury (mmHg)** and recorded as:

**Systolic BP / Diastolic BP**

* **Systolic Pressure** (upper number): The pressure when the heart **contracts** and pumps blood.
* **Diastolic Pressure** (lower number): The pressure when the heart **relaxes** between beats.

Example: **120/80 mmHg** (Normal BP)

**2. Blood Pressure Categories (According to American Heart Association - AHA)**

| **Category** | **Systolic (mmHg)** | **Diastolic (mmHg)** |
| --- | --- | --- |
| Normal | **<120** | **<80** |
| Elevated | **120-129** | **<80** |
| Hypertension Stage 1 | **130-139** | **80-89** |
| Hypertension Stage 2 | **≥140** | **≥90** |
| Hypertensive Crisis | **>180** | **>120** |

**3. Factors Affecting Blood Pressure**

* **Heart Health**: A strong heart pumps blood more efficiently.
* **Blood Volume**: More blood in circulation increases pressure.
* **Blood Vessel Condition**: Narrowed or stiff arteries raise BP.
* **Hormones & Kidney Function**: The kidneys regulate blood pressure through fluid balance and hormones like **renin** and **aldosterone**.

**4. How Blood Pressure is Measured**

Using a **sphygmomanometer (BP monitor)**, blood pressure is usually checked on the upper arm. Readings can vary based on:

* **Posture**: Sitting vs. standing affects BP.
* **Time of Day**: Morning BP tends to be higher.
* **Activity Level**: Exercise temporarily raises BP, but lowers it long-term.

**5. Importance of Maintaining Healthy BP**

Uncontrolled high blood pressure can lead to:

* **Heart attack & stroke**
* **Kidney damage**
* **Vision loss**
* **Cognitive decline (dementia risk)**