



## 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



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- **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)**