Body regulation: brain signals and blood pressure

Match each brain region to its control role and read systolic/diastolic pressure

Neural control and circulation

Hypothalamus

- Located at the base of the forebrain, linking the nervous and endocrine systems.
- The hypothalamus helps regulate body temperature, hunger and thirst.
- Controls pituitary hormone release, sleep–wake rhythms and water–salt balance.

Other major brain regions

- Cerebrum (largest forebrain part) governs intelligence, memory, senses and voluntary acts.
- Cerebellum (hindbrain) coordinates precision of voluntary movements, posture and balance.
- Medulla oblongata (hindbrain) controls involuntary actions: breathing, heartbeat, reflexes.

Systolic and diastolic

- Arterial blood pressure is force per unit area exerted by blood on artery walls.
- Systolic pressure (~120 mm Hg): peak arterial pressure during ventricular contraction.
- Diastolic pressure (~80 mm Hg): lowest arterial pressure during ventricular relaxation.

Reading a pressure value

- Written as systolic / diastolic: 120 / 80 mm Hg (never inverted as 80 / 120 mm Hg).
- Measured in millimetres of mercury (mm Hg) over the brachial artery using a cuff.
- 120/80 mmHg is a conventional textbook reference; actual clinical interpretation depends on context.

REMEMBER Hypothalamus: temperature, hunger, thirst. Blood-pressure order: systolic / diastolic.

Sources & practice · OpenStax — Brain structure and function · OpenStax — Blood flow and blood pressure
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