

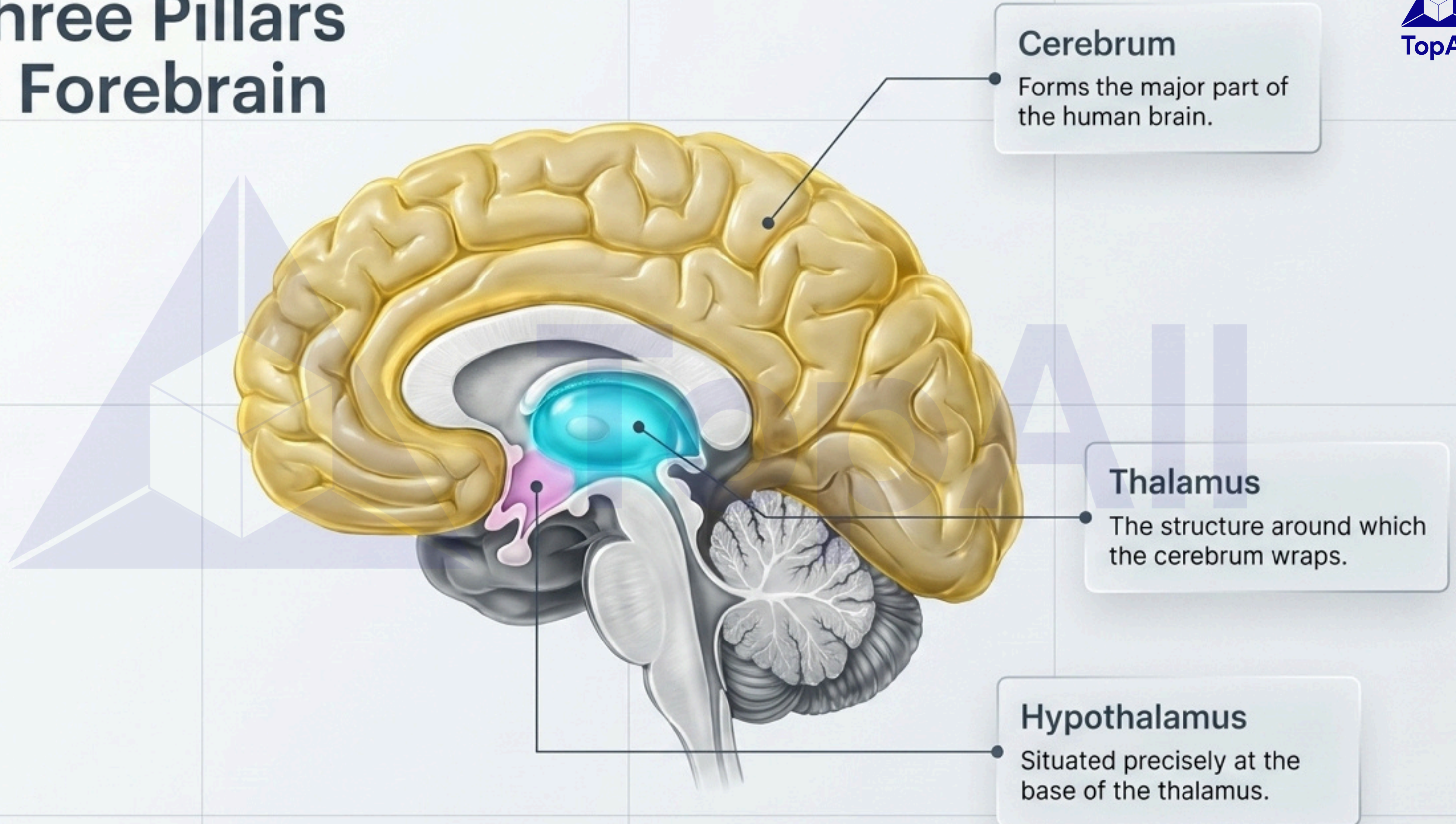
Thinking, Memory, Emotion and Control

An Anatomical Map of
the Human Forebrain



The central processing architecture
for higher-order cognitive, sensory,
and emotional functions.

The Three Pillars of the Forebrain



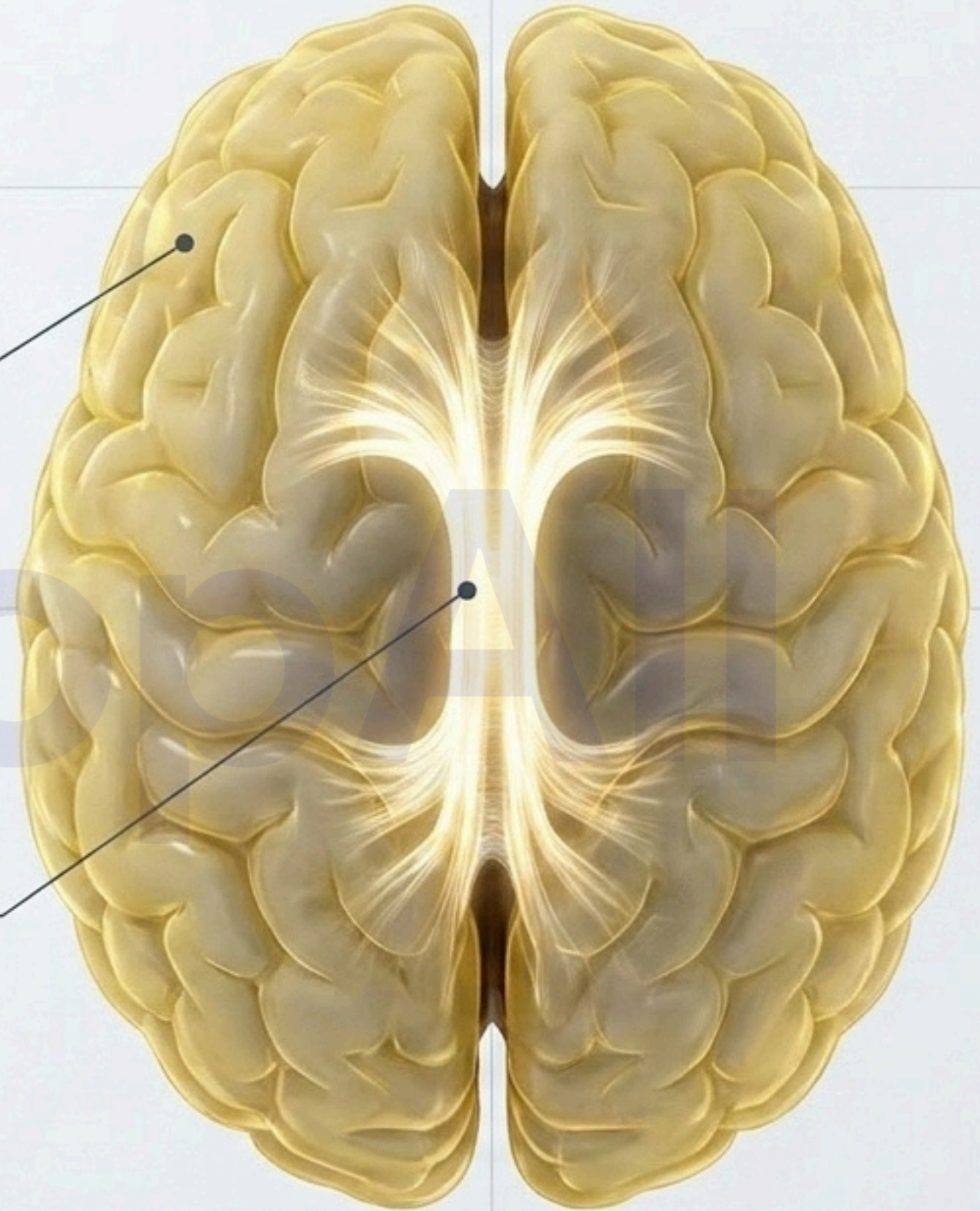
Dual Hemispheres and the Neural Bridge

Cerebral Hemispheres

The deep longitudinal cleft divides the cerebrum evenly into left and right halves.

Corpus Callosum

A dense tract of nerve fibers acting as the critical communication bridge connecting the two hemispheres.





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Cerebral Cortex: The “Grey Matter”



Motor Areas

Drive voluntary movement.

Sensory Areas

Process incoming stimuli.

Association Areas

Complex regions (neither clearly sensory nor motor) responsible for intersensory associations, memory, and communication.

Neuron Cell Bodies

Inner Tracts: The “White Matter”



Myelin Sheath

Structure

Composed of the inner tracts of nerve fibers.

Appearance

Opaque and white, derived from the protective myelin sheath covering the fibers.

Function

The high-speed communication wiring beneath the computing surface of the cortex.

Thalamus: The Core Coordinating Hub

Motor Signals

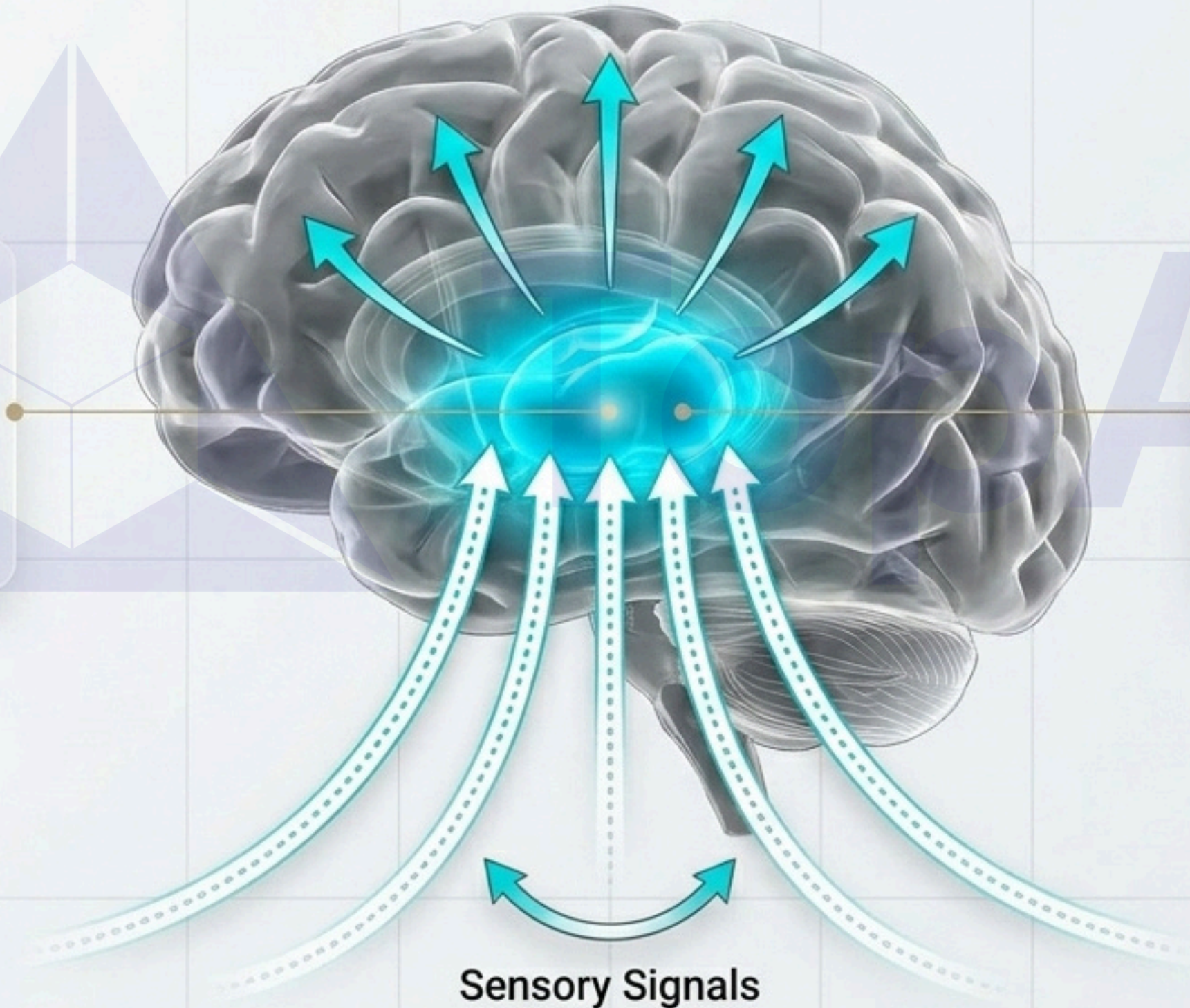
Anatomical Context

The massive cerebrum completely wraps around this central processing core.

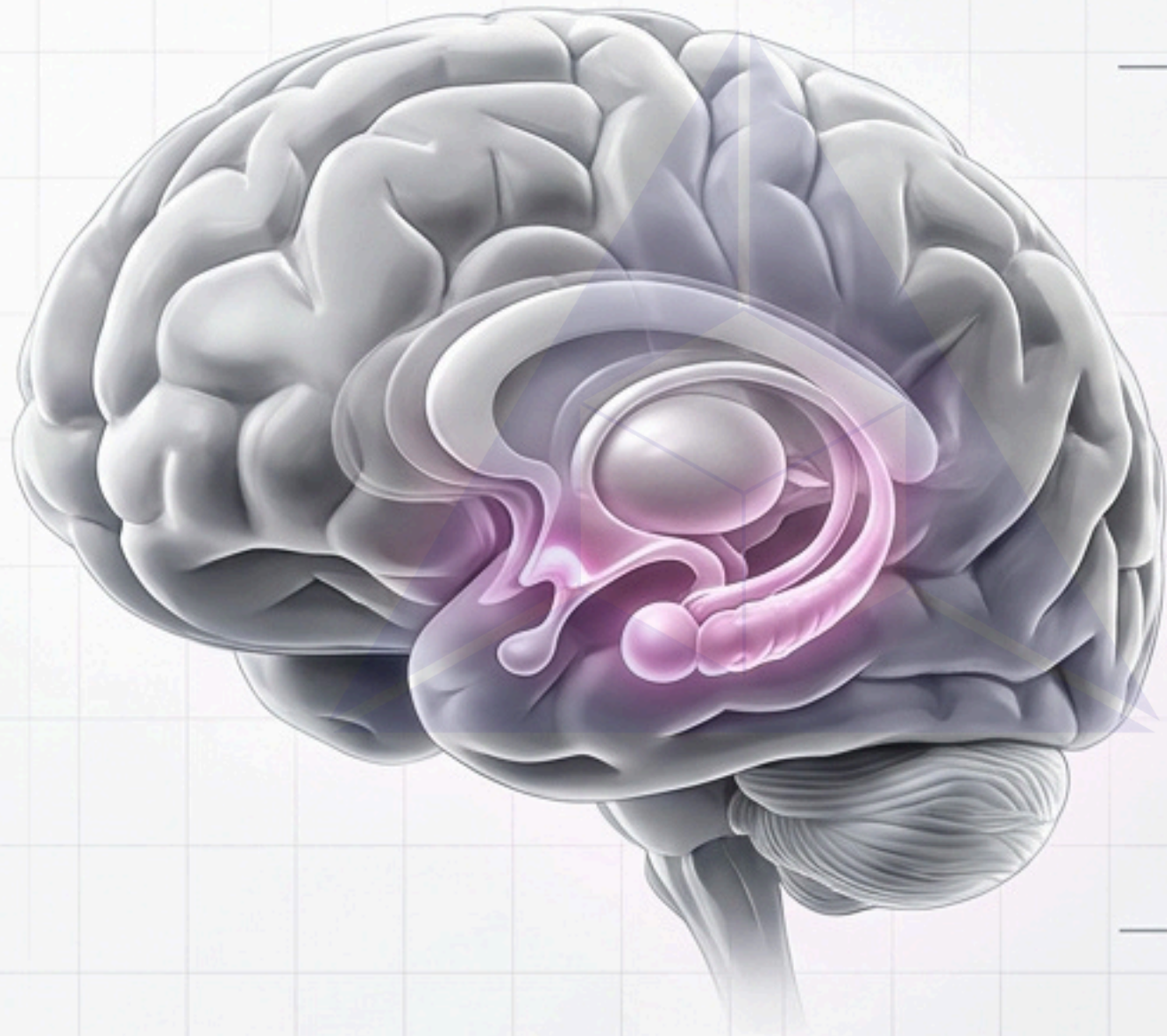
Central Concept

A major coordinating centre for sensory and motor signaling.

Sensory Signals



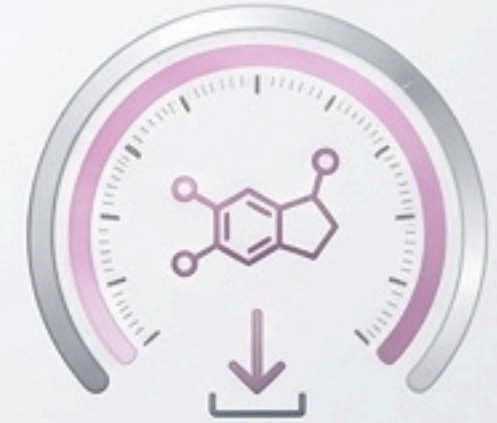
Hypothalamus & The Limbic System



Limbic Lobe



Thermoregulation & Urge
Controls body temperature, eating, and drinking (Hypothalamus).



Endocrine Control
Neurosecretory cells release hypothalamic hormones.



Emotion
Regulates expression of excitement, pleasure, rage, and fear.



Drive
Regulates sexual behaviour and base motivation.

Anatomy of the Human Experience

Abstract Concept	Anatomical Structure	Mechanism
Thinking & Memory	 Cerebral Cortex	Association areas handle complex cognitive processing and intersensory mapping.
Control (Routing)	 Thalamus	The central hub coordinating all incoming sensory and outgoing motor signals.
Emotion & Survival	 Hypothalamus & Limbic System	Deep structures driving base urges, endocrine release, and emotional states.



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