

The Body's Control Network

Mapping the Human Neural System

SYSTEM: 01 // THE COMMAND CENTER

Central Neural System (CNS)

Core Components:

Brain & Spinal Cord.

Primary Function:

The central site of information processing and control.

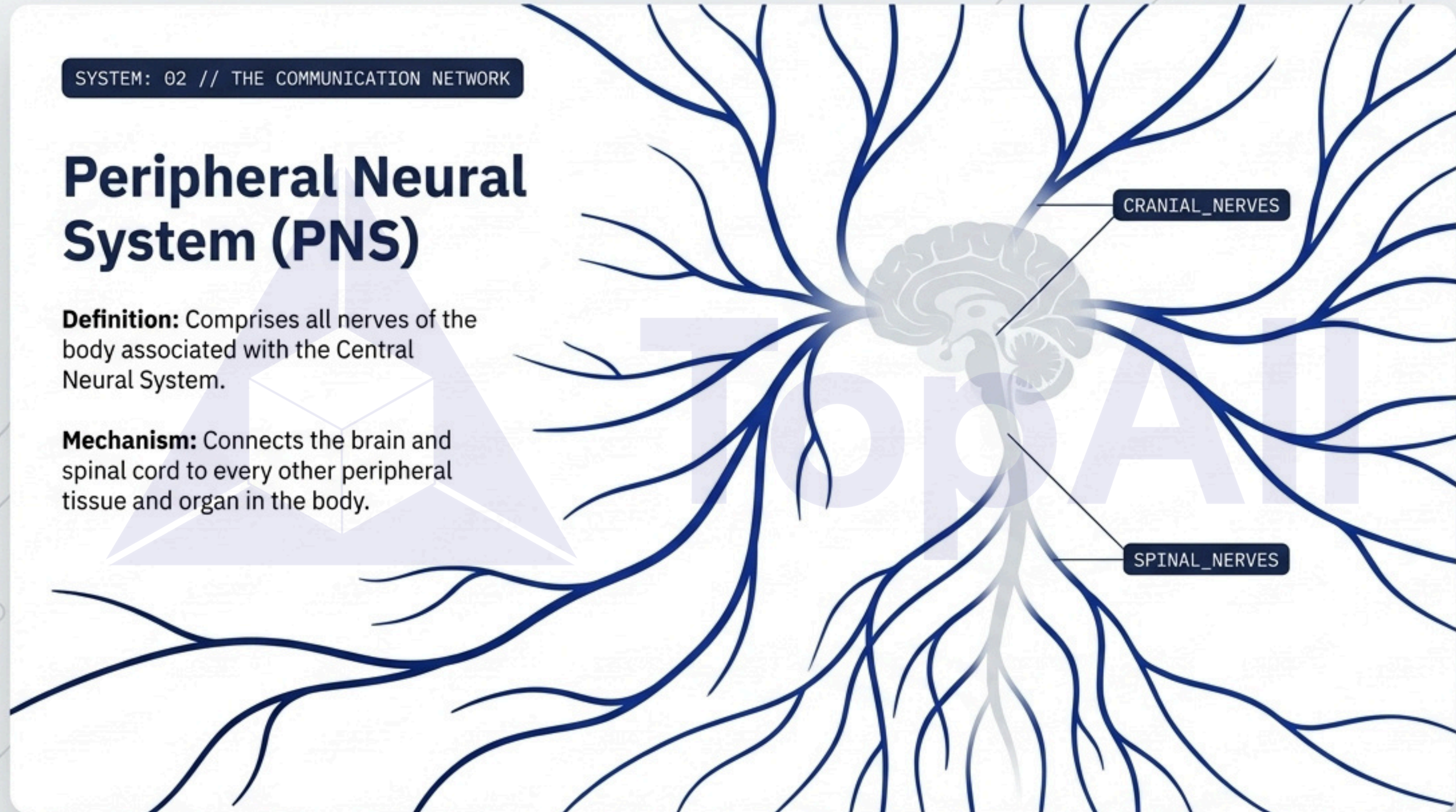


SYSTEM: 02 // THE COMMUNICATION NETWORK

Peripheral Neural System (PNS)

Definition: Comprises all nerves of the body associated with the Central Neural System.

Mechanism: Connects the brain and spinal cord to every other peripheral tissue and organ in the body.





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$$E=mc^2$$



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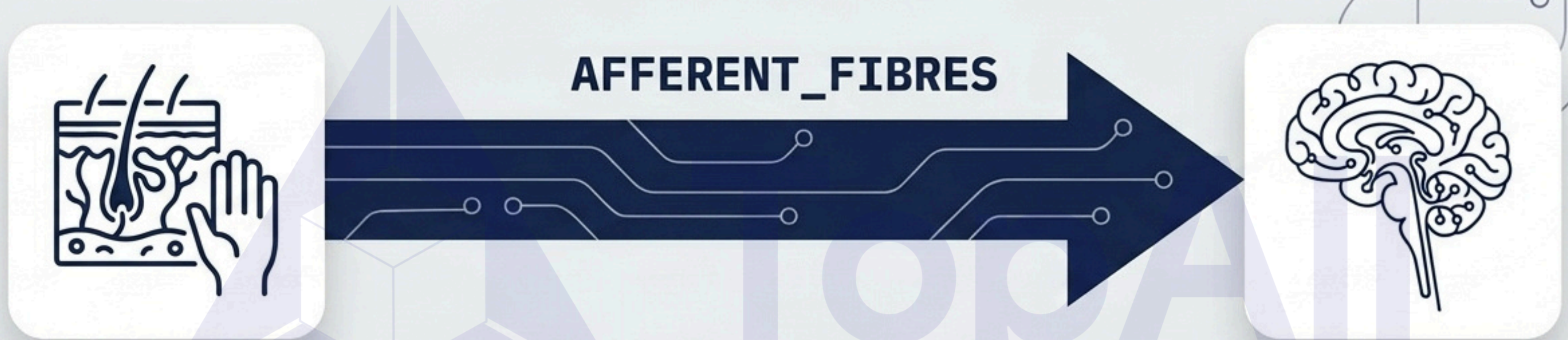
Key Highlights

- » Free Study Material, Videos & Infographics
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Afferent Nerve Fibres

Delivering the Input



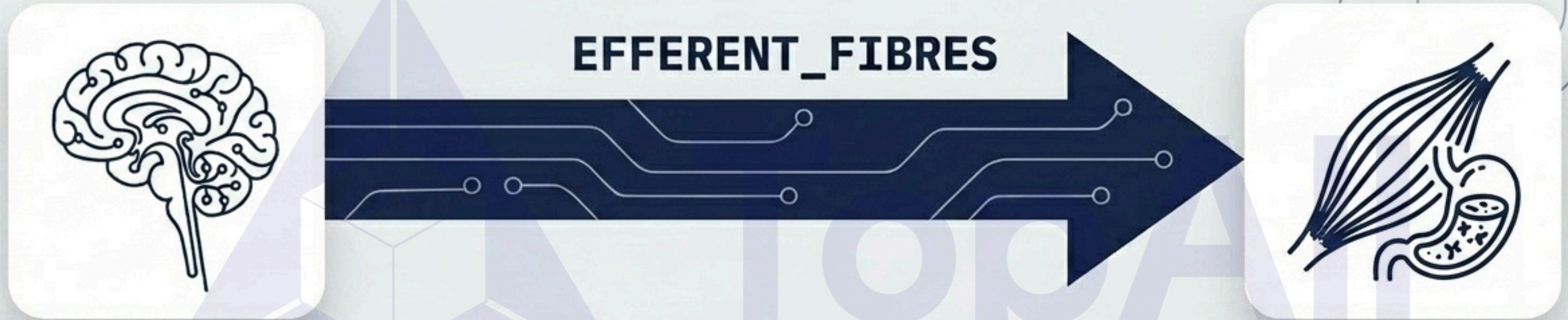
Flow: Tissues / Organs -> Central Neural System

Function: Transmits sensory impulses from the peripheral body to the brain and spinal cord for processing.

Think of afferent fibres as the body's sensory array, capturing raw environmental data and sending it to the processor.

Efferent Nerve Fibres

Delivering the Output



Flow: Central Neural System -> Peripheral Tissues / Organs

Function: Transmits regulatory impulses and motor commands from the brain outward to the body.

Efferent fibres represent the execution phase—carrying the command signals that dictate physical responses.

DIVISION 01 / PNS

Somatic Neural System

Action: Relays impulses directly from the CNS to skeletal muscles.

Domain: Complete command over voluntary movements (e.g., walking, lifting, speaking).

TARGET: SKELETAL_MUSCLE



DIVISION 02 / PNS

Autonomic Neural System

TARGET: INVOLUNTARY_ORGANS & SMOOTH_MUSCLE

Transmits impulses from the CNS to internal organs, operating beneath conscious control (Visceral nervous system).

Sympathetic Neural System

Prepares the body for intense physical activity or stress responses.

Parasympathetic Neural System

Relaxes the body and inhibits or slows high-energy functions ("rest and digest").



The Ultimate Goal: Homeostasis

The central and peripheral neural systems work in absolute synchrony. Together, they detect sensory inputs, process data in real-time, and execute precise motor outputs. This unbroken loop exists for one primary purpose: to maintain perfect internal biological balance despite a constantly changing external environment.

SYSTEM_STATUS: SYNCHRONIZED



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