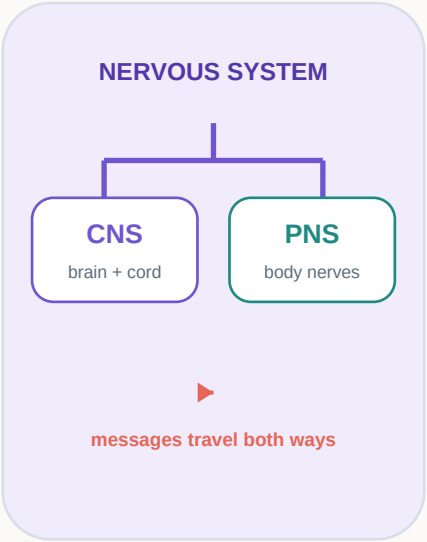
AP PSYCHOLOGY | UNIT 1

TOPIC 1.2

Overview of the Nervous System

The body's fast communication network detects information, processes it, and coordinates a response.



THE CORE MESSAGE LOOP

INPUT sensory information → **RELAY** PNS carries signal → **PROCESS** CNS coordinates → **RESPONSE** motor output

BY THE END, YOU SHOULD BE ABLE TO...

1. Differentiate the central and peripheral nervous systems.
2. Trace sensory input toward the CNS and motor output toward the body.
3. Compare somatic, autonomic, sympathetic, and parasympathetic functions.

BIG IDEA

The CNS is the processing center. The PNS is the communication network that connects that center with the rest of the body.

1 Central processing, peripheral relay

Locate each system first, then connect its location with its job.

CENTRAL NERVOUS SYSTEM

The brain and spinal cord form the body's main processing and coordination center.

CORE FUNCTIONS

- brain interprets and plans
- spinal cord relays messages
- spinal cord coordinates reflexes

PERIPHERAL NERVOUS SYSTEM

Nerves outside the brain and spinal cord connect the CNS with the rest of the body.

CORE FUNCTIONS

- sensory signals travel inward
- motor commands travel outward
- links receptors, muscles, and glands

TRACE A HOT-PAN RESPONSE

HEAT	SENSORY	SPINAL CORD	MOTOR	MUSCLE
receptor detects	toward CNS	fast coordination	away from CNS	hand withdraws

DIRECTION MATTERS

SENSORY INPUT

Body and senses -> toward the CNS

MOTOR OUTPUT

CNS -> toward muscles or glands

REFLEX CHECK

A spinal reflex can begin before full conscious awareness, but the brain still receives and interprets the sensory information.

2 The PNS divides by control

Separate voluntary movement from automatic regulation, then compare the two autonomic branches.

PERIPHERAL NERVOUS SYSTEM



SOMATIC

Voluntary control

Intentional movement of skeletal muscles and sensory information linked with action.

Example: choosing to raise your hand

AUTONOMIC

Involuntary control

Automatic regulation of heart rate, digestion, breathing changes, sweating, and pupils.

Example: heart rate changing before a test

AUTONOMIC BALANCE

Body change	Sympathetic: action	Parasympathetic: maintenance
Heart rate	increases	slows toward baseline
Pupils	dilate	return toward normal
Digestion	slows	resumes or increases

ONE EVENT, TWO PHASES

Sudden noise: sympathetic activity raises arousal and prepares action. Once safety is clear: parasympathetic activity helps the body return toward calm.

REMEMBER

Somatic means voluntary. Autonomic means involuntary. Sympathetic mobilizes; parasympathetic restores. Real behavior can involve several systems at once.