**The Nervous and Endocrine Systems**

The **nervous system** is the body’s speedy, electrochemical communication network, consisting of all the nerve cells. It’s broken down into two sections: the central nervous system and the peripheral nervous system. The peripheral nervous system is responsible for gathering information and for transmitting CNS decisions to other body parts. **Nerves,** electrical cables formed of bundles of axons, link the CNS with the body’s sensory receptors, muscles, and glands. The optic nerve, for example, bundles a million axons into a single cable carrying the messages each eye sends to the brain. Information travels through three types of neurons

1. **Sensory neurons** which carry messages from the body’s tissues and sensory receptors to the spinal cord and brain
2. **Motor neurons** which carry instructions from the central nervous system out to the body’s muscles and glands.
3. **Interneurons** are neurons within the brain and spinal cord that communicate internally and intervene between the sensory inputs and motor outputs

The Central Nervous System (CNS)

Simply put, the Central Nervous System consists of the brain and the spinal cord. The brain enables all our humanity—our thinking feeling, and acting. It’s connected to our peripheral nervous system by the spinal cord--our two-way information highway



The Peripheral Nervous System (PNS)

The PNS has two components:

1. The **somatic nervous system** which enables voluntary control of our skeletal muscles
2. The **autonomic nervous system** which controls our glands and the muscles of the internal organs
3. **Sympathetic nervous system:** part of ANS that arouses and mobilizes the body
4. **Parasympathetic nervous system:** part of ANS that calms and conserves energy

The Endocrine System

The endocrine system is the body’s “slow” chemical communication system; a set of glands that secrete hormones into the bloodstream. **Hormones** are chemical messengers that are manufactured by the endocrine glands and travel through the bloodstream affect other tissues.



Key Glands

**Adrenal**:

pair of glands that sit just above the kidneys and secrete hormones (epinephrine and norepinephrine) that help arouse the body in times of stress.

**Pituitary:**

The endocrine system’s most influential gland. Under the influence of the hypothalamus, the pituitary regulates growth and controls other endocrine glands