

KEY TERMS

Adrenergic (sympathomimetic)	Drug holiday	Psychotropic
Analgesic	Gamma-aminobutyric acid (GABA)	Selective serotonin reuptake inhibitors (SSRIs)
Anxiolytic	Hydantoins	Somatic nervous system
Aura	Monoamine oxidase inhibitors (MAOIs)	Status epilepticus
Autonomic nervous system	Narcotic	Sympathetic nervous system
Blood-brain barrier	Neuroleptic	Synapse
Central nervous system (CNS)	Neurotransmitters	
Cholinergic (parasympathomimetic)	Parasympathetic	
	Peripheral nervous system (PNS)	

■ THE NERVOUS SYSTEM

The nervous system is divided into the **central nervous system (CNS)** and the peripheral nervous system (PNS), which also includes the autonomic nervous system. The CNS includes the brain and spinal cord, which contain billions of neurons. Neurons make up nerves, which make communication and interaction possible between the brain and every part of the body. The brain processes both internal and external information and tells the body how to respond. For example, if the brain receives a signal via nerves that you are cold, it signals your body via nerves to shiver to raise its temperature. Additionally, if your body is not receiving enough glucose because you skipped lunch, nerves send a signal to the brain to stimulate a headache and remind you to eat.

Nervous system medications are used to treat pain, anxiety, depression, mania, insomnia, convulsions, and schizophrenia. Any medication that affects the mind, emotions, or behaviors is known as a **psychotropic**. Nervous system medications act on the CNS and the PNS (discussed in the next section) (Fig. 13-1). Because the PNS extends throughout the body, these drugs can affect other body systems. For example, a drug meant to ease uterine pain may also relieve leg pain.

Most of these drugs act at the **synapse** (gap) between nerves and can adjust the transmission of messages by **neurotransmitters**, which are chemicals that facilitate the movement of messages across the synapses. Medications work by either exciting the CNS or depressing it. Because these drugs are powerful enough to cross the **blood-brain barrier**, which is the barrier in the brain that prevents toxic substances and some medications from entering the brain, they frequently have serious side effects (see the Master the Essentials table for descriptions of the most common nervous system drugs).

The Peripheral Nervous System

The **peripheral nervous system** consists of the **somatic** (voluntary) and **autonomic** (involuntary) nervous systems. The somatic nervous system consists of those muscles over which we have conscious control (e.g., for lifting your arm to scratch your nose). The autonomic nervous system, conversely, controls our internal organs. For example, if you are watching a scary movie, and a monster jumps out from behind a door, your heart begins to race, your stomach may hurt, your pupils dilate, and/or your mouth gets dry, but you do not voluntarily cause these changes; they occur involuntarily based on a stimulus sent to your brain. Medications described in this section include those that affect the autonomic nervous system.

The Autonomic Nervous System

The **autonomic nervous system** is broken down further and consists of two parts: the **sympathetic nervous system**, which controls the body's "fight-or-flight" response, and the **parasympathetic** nervous system, which helps the body to rest and relax (see Fig. 13-1). Acetylcholine and norepinephrine are the two main neurotransmitters that affect the autonomic nervous system. A nerve cell that releases acetylcholine is referred to as **cholinergic**, which relaxes the body. One that releases epinephrine or norepinephrine is