

# Lesson 5

## The Nervous System

### Lesson Objectives

After completing this lesson, the student should be able to pronounce and define the following:

- The terms for different parts of the nervous system and their functions
- The disorders and diseases common to the nervous system
- Tests, treatments, and surgical procedures applicable to the nervous system.
- Abbreviations and acronyms related to the nervous system

### Focus

Have each student put a finger on his or her radial pulse. (The radial pulse is located at the wrist with hand facing up on the same side as the thumb.) Have students count the pulse for one minute. Ask the students the following questions:

1. Are you causing your heart to beat like you would cause your hand to move?
2. Why does your heart continue to beat when you are not thinking about causing it to beat?

Now have students count how many times they breathe in and out in a minute. (Be sure to tell students that each breath in and out is considered one respiration.) Ask the following questions:

3. Do you have to think about breathing? Why not?
4. What causes you to breathe?

Review the following basic information relative to the nervous system.

- The nervous system:
- Directs the function of all the human body systems
- Controls both voluntary and involuntary activity
- Has 100 billion nerve cells throughout the body
- Is divided into two subsystems: the central nervous system and the peripheral nervous system

**Media.** In the computer laboratory, have students complete the activities on the student CD for Lesson 5.

**Discussion.** Ask: Why are we able to have a pulse and breathe without thinking about it?

*(Continues on next page)*

**Presentation.** Using a drawing, identify the different parts of the brain and central nervous system, including:

- Cerebrum
- Occipital lobe
- Parietal lobe
- Frontal lobe
- Medulla oblongata
- Thalamus
- Cerebellum
- Spinal cord
- Meninges
- Pons

**Activity.** Have students identify the functions controlled by each part of the brain, spinal cord and meninges.

**Assignment.** Have each student choose four diagnostic, procedural, or laboratory terms associated with the nervous system that involve the brain, meninges, and spinal cord. Have them develop a presentation, bulletin board, or brochure discussing the purpose for each.

**Discussion.** Describe the parts peripheral nervous system.

- Somatic nervous system—receives and processes sensory input from the skin, muscles, tendons, joints, eyes, tongue, nose, and ears.
- Automatic nervous system—carries impulses from the central nervous system to glands, various smooth (involuntary) muscles, cardiac muscle, and various membranes.

**Activity.** Have the student touch the end of their nose. Have the student explain how the sense of touch is relied back to the brain.

**Assignment.** Have each student choose one of the diseases or disorders of the nervous system list below and develop a presentation, bulletin board, or brochure discussing the cause, prevention, and treatment.

- Tourette syndrome
- Tay-Sachs disease
- Somnambulism
- Seizure
- Narcolepsy
- Multiple sclerosis
- Hydrocephalus

**Discussion.** Ask: How is a telephone exchange or computer network like the human nervous system?

*(Continues on next page)*

Answer: All three have a central receiving and processing area and cables or wires that transmit information:

Central Receiving and Processing	Transmitting or Transport System
Switching center	Telephone wires
Computer server	Internet cables or line
Central nervous system (CNS—the brain and spinal cord)	Peripheral nervous system (PNS—the nerves)

## Enrich

**Presentation.** Use the PowerPoint® presentation for Lesson 5, found on the Instructor Resource CD, for a class lecture or review.

**Activities.** Use the resources provided on this Instructor Resource CD-ROM for the following activities.

- **Labeling Activities:** Have students practice labeling the parts of the nervous system, vertebral anatomy, and the brain using the diagrams provided in the Labeling Activities section.
- **Terminology:** Using the Student CD-ROM and the terminology study sheet for Lesson 5, have students complete the definitions for each term in the lesson.
- **Definitions:** Using the Student CD and the definition study sheet for Lesson 5, have the students find the terms to match each of the definitions.
- **Application:** Complete the Classroom Application Activity “Movement and the Nervous System.”

## Assess

**Student CD.** Have students print their Score Cards for Lesson 5 from the Student CD-ROM.

**Instructor CD.** Use the following tools to assess student knowledge.

- Use the Terminology Application Worksheet for Lesson 5 as a class quiz to evaluate each student’s ability to use nervous system terms in a sentence.
- Using the *ExamView® Assessment Suite* and the test bank provided for Lesson 5, create a written test in two versions for a final evaluation of student proficiency.

**Participation.** Encourage participation by providing points for each student on a daily basis for attendance, staying on task, speaking in class discussion, participating in group activities, turning in assignments, and maintaining a positive attitude.