

## Chapter 2 The Physiology and Psychology of Pain

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_ 1. Which statement best describes nociception?
- A. Nociception must be interpreted as pain by higher brain centers.
  - B. Nociception is a neuropsychological process that must be interpreted as pain.
  - C. Nociception describes an unpleasant sensation.
  - D. Nociception is the neural process of encoding and processing noxious stimuli.
- \_\_\_ 2. Which of the following dimensions of pain perception localize the source and type of pain?
- A. Effective-terminal
  - B. Sensory-discriminative
  - C. Cognitive-evaluative
  - D. Affective-motivational
- \_\_\_ 3. Pain threshold is often based on the recruitment of \_\_\_\_\_ fibers.
- A. A-delta
  - B. A-beta
  - C. C
  - D. COX-1
- \_\_\_ 4. Memories of past experiences are a component that creates one's "pain filter." Where do these memories come from?
- A. Limbic system
  - B. Cerebral cortex
  - C. Somatosensory system
  - D. Thalamus
- \_\_\_ 5. What best defines pain that is produced from a normally nonpainful stimulus?
- A. Hyperesthesia
  - B. Hyperalgesia
  - C. Primary hyperalgesia
  - D. Primary hyperesthesia
- \_\_\_ 6. In pain control theory, which is considered a secondary pain control approach?
- A. Target the perception of pain
  - B. Resolve physiological pain triggers
  - C. Decrease mechanical irritation
  - D. Decrease chemical irritation
- \_\_\_ 7. Which scenario will result in a closing of the gate, thus inhibiting the pain signal from getting to the second-order neuron?
- A. Large-diameter afferent traffic is greater than small diameter.
  - B. Small-diameter afferent traffic is greater than large diameter.
  - C. Increase speed of small-diameter afferent transmission.
  - D. Increase speed of large-diameter afferent transmission.
- \_\_\_ 8. Damage to the diaphragm can result in referred pain to the skin and muscles of the \_\_\_\_\_.
- A. neck and shoulder
  - B. lower back

- C. thigh and knee
  - D. anterior thorax
- \_\_\_ 9. Which therapeutic modality has the ability to alter cell membrane permeability and thus alter the rate of nerve depolarization?
- A. Cold packs
  - B. Therapeutic ultrasound
  - C. Electrical stimulation
  - D. Intermittent compression
- \_\_\_ 10. Which inflammatory pain mediator is released by mast cells to directly stimulate nociceptors?
- A. Bradykinins
  - B. Prostaglandin
  - C. Substance P
  - D. Histamine
- \_\_\_ 11. What mechanoreceptor is located deeper in the skin and reacts to higher levels of mechanical pressure?
- A. Merkel's disks
  - B. Meissner's corpuscles
  - C. Pacinian corpuscles
  - D. Ruffini corpuscles
- \_\_\_ 12. What does the verbal rating scale use to represent the current pain intensity of a patient?
- A. 10-cm line
  - B. Different faces
  - C. Numbers 1 through 10
  - D. Descriptive terms
- \_\_\_ 13. Regarding pain control, the primary action of NSAIDS is to block the action of what inflammatory pain mediator?
- A. Bradykinins
  - B. Prostaglandin
  - C. Substance P
  - D. Histamine
- \_\_\_ 14. What substance is released by the body and reduces the perception of pain by bonding to pain receptor sites?
- A. Serotonin
  - B. Enkephalin
  - C. Mast cells
  - D. Tract cells
- \_\_\_ 15. What pain-decreasing medication temporarily blocks nerve conduction, thus resulting in the loss of sensation?
- A. Aspirin
  - B. Lidocaine
  - C. Endorphin
  - D. Propoxyphene

### Multiple Response

*Identify one or more choices that best complete the statement or answer the question.*

- \_\_\_ 1. Which therapeutic modalities can provide mechanical pain reduction by removing swelling, restoring joint motion, decreasing pressure on nerve endings, and restoring blood flow? *Select all that apply.*

- A. Intermittent compression
- B. Continuous passive motion
- C. Shortwave diathermy
- D. Electrical stimulation
- E. Cervical/lumbar traction

- \_\_\_\_\_ 2. Which statements are true regarding the afferents responsible for transmitting pain? *Select all that apply.*
- A. The fibers that transmit pain are A-beta and C fibers.
  - B. The fibers are heavily myelinated.
  - C. A-delta fibers give ability to localize pain to a specific spot.
  - D. Both types of fibers respond to mechanical pressure and temperature extremes.
  - E. Pain originating from C fibers is referred to as “fast” pain.
- \_\_\_\_\_ 3. Which of the following are examples of mechanical stimuli that can trigger peripheral nociceptors? *Select all that apply.*
- A. Thermal changes associated with the inflammatory response
  - B. Direct-force trauma
  - C. Release of prostaglandins from trauma
  - D. Pressure from swelling
- \_\_\_\_\_ 4. Which of the following are associated with pain tolerance? *Select all that apply.*
- A. Limbic system
  - B. C fibers
  - C. Cortex
  - D. A-delta fibers
  - E. Thalamus
- \_\_\_\_\_ 5. Which statements are true regarding the definition of pain? *Select all that apply.*
- A. Pain is an unpleasant sensory and emotional experience.
  - B. Pain is associated only with actual tissue damage and not potential damage.
  - C. Pain is always an emotional experience.
  - D. Acute pain has an identifiable cause and extended duration.
  - E. Pain is just a simple sensation and not a process.

## Chapter 2 The Physiology and Psychology of Pain Answer Section

### MULTIPLE CHOICE

1. ANS: D                   PTS: 1
2. ANS: B                   PTS: 1
3. ANS: A                   PTS: 1
4. ANS: A                   PTS: 1
5. ANS: A                   PTS: 1
6. ANS: A                   PTS: 1
7. ANS: A                   PTS: 1
8. ANS: A                   PTS: 1
9. ANS: B                   PTS: 1
10. ANS: D                   PTS: 1
11. ANS: C                   PTS: 1
12. ANS: D                   PTS: 1
13. ANS: A                   PTS: 1
14. ANS: B                   PTS: 1
15. ANS: B                   PTS: 1

### MULTIPLE RESPONSE

1. ANS: A, B, E           PTS: 1
2. ANS: C, D               PTS: 1
3. ANS: B, D               PTS: 1
4. ANS: A, B, C           PTS: 1
5. ANS: A, C               PTS: 1