

# Chapter 01: Local Anesthesia in Dental Hygiene Practice: An Introduction

## Logothetis: Local Anesthesia for the Dental Hygienist, 2nd Edition

### MATCHING

Match the following word or phrase with the correct drug category.

- a. ester (E)
- b. amide (A)
- c. inhalation drug (I)

- 1. Ether
- 2. Lidocaine
- 3. Prilocaine
- 4. Procaine
- 5. Nitrous oxide
- 6. Halothane
- 7. Mepivacaine
- 8. Novocaine
- 9. Causes more allergic reactions
- 10. Patients experience fewer allergic reactions

- 1. ANS: C                    DIF: Recall                    REF: 2                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 2. ANS: B                    DIF: Recall                    REF: 2                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 3. ANS: B                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 4. ANS: A                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 5. ANS: C                    DIF: Recall                    REF: 2|4|5|6                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 6. ANS: C                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 7. ANS: B                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 8. ANS: A                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 9. ANS: A                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology
- 10. ANS: B                    DIF: Recall                    REF: 2|3                    OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

## MULTIPLE CHOICE

1. The first objections to the use of inhalation sedation included which of the following?
  - a. It was viewed as a religious offense
  - b. It was viewed as an unethical practice
  - c. It was viewed as a retardant to the health process
  - d. All options listed

ANS: D

All options listed. Objections to operating on an unconscious patient included all options listed. Some viewed it as offensive to their religious beliefs; some viewed it as an ethical matter; and some objected because they believed that the relief from pain might actually retard the health process.

DIF: Recall

REF: 2

OBJ: 1

TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

2. Who was the first dentist to use “laughing gas” for dental procedures?
  - a. William Clarke
  - b. Horace Wells
  - c. Henry Beecher
  - d. Nils Lofgren

ANS: B

Horace Wells was the first dentist to use “laughing gas” for dental procedures. William Clark is known for his work with ether, Henry Beecher for his observations regarding clinical trials, and Nils Lofgren for the synthesis of lidocaine.

DIF: Recall

REF: 2|3

OBJ: 1

TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

3. A highly effective analgesic and antipyretic compound, introduced in 1899 and still used today, is commonly referred to as what?
  - a. Aspirin
  - b. Alcohol
  - c. Novocaine
  - d. Opium

ANS: A

A new compound, introduced as aspirin in 1899, proved to be remarkably safe and well tolerated by patients. It is a highly effective analgesic and antipyretic. Alcohol and opium were universally popular narcotics used for pain control as was Novocaine (procaine), a local anesthetic.

DIF: Recall

REF: 2

OBJ: 1

TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

4. Early methods of pain control included which of the following?
- Use of opium
  - Scaring off of demons
  - Roots, berries, and seeds
  - All options listed

ANS: D

All options listed. Early methods of pain control included all options listed: the use of opium, religious techniques of scaring off demons; and the use of plants and herbs for treating pain.

DIF: Recall            REF: 2            OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

5. Pain threshold is best described as which of the following?
- The physical and emotional response to a particular situation.
  - The relationship between human need fulfillment and human behavior.
  - A neurologic experience of pain.
  - The point at which a sensation starts to be painful and discomfort results.

ANS: D

Pain threshold is best described as the point at which a sensation starts to be painful and discomfort results. The physical and emotional response to a particular situation describes stress; the relationship between human need fulfillment and human behavior is known as the Human Needs Paradigm; and a neurologic experience of pain describes pain perception.

DIF: Recall            REF: 6            OBJ: 4  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control

6. The neurologic experience of pain is referred to as what?
- Pain control
  - Pain threshold
  - Pain perception
  - Pain reaction

ANS: C

Pain perception is the neurologic experience of pain. It differs little between individuals. Pain control refers to the mechanism to alleviate pain; pain threshold is the point at which a sensation starts to be painful and discomfort results; and pain reaction is the personal interpretation of and response to the pain message and is highly variable between individuals.

DIF: Recall            REF: 6            OBJ: 4  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control

7. An unpleasant sensory and emotional experience is called what?
- Pain
  - Pain control

- c. Pain threshold
- d. Pain reaction

ANS: A

Pain is an unpleasant sensory and emotional experience. Pain control refers to the mechanism to alleviate pain; pain threshold is the point at which a sensation starts to be painful and discomfort results; and pain reaction is the personal interpretation of and response to the pain message.

DIF: Recall            REF: 2            OBJ: 4  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control

8. The personal interpretation and response to the pain message is called what?
- a. Pain
  - b. Pain control
  - c. Pain threshold
  - d. Pain reaction

ANS: D

The personal interpretation and response to the pain message is called one's pain reaction. It is highly variable among individuals. Pain is an unpleasant sensory and emotional experience; pain control refers to the mechanism to alleviate pain; and pain threshold is the point at which a sensation starts to be painful and discomfort results.

DIF: Recall            REF: 6            OBJ: 4  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control

9. The creation of the loss of sensation in a circumscribed area, without loss of consciousness, best defines which of the following?
- a. Inhalation anesthesia
  - b. Local anesthesia
  - c. General anesthesia
  - d. All options listed

ANS: B

Local anesthesia creates a numbing feeling or the loss of sensation in a circumscribed area, without loss of consciousness. Inhalation and general anesthesia involve loss of consciousness.

DIF: Recall            REF: 2|3            OBJ: 4  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control

10. The newest amide to arrive on the dental market in the United States is which one of the following?
- a. Articaine
  - b. Mepivacaine
  - c. Lidocaine
  - d. Bupivacaine

ANS: A

The newest amide local anesthetic, introduced to the dental field in 2000, is articaine. Mepivacaine and bupivacaine were introduced in 1957, and lidocaine was introduced in 1943.

DIF: Recall            REF: 2|3            OBJ: 1  
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11. Lidocaine is said to have revolutionized pain control in dentistry. Why?
- It is more potent than prilocaine.
  - It is less potent than procaine.
  - Patients experience fewer allergic reactions with lidocaine.
  - Some combination of the above

ANS: C

Lidocaine is said to have revolutionized pain control in dentistry because it is less allergenic and more potent than procaine. Lidocaine is less potent than prilocaine.

DIF: Recall            REF: 2|3            OBJ: 1  
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12. Procaine was used extensively in dentistry for a number of years; however, it was not the ideal local anesthetic. Why not?
- It took a long time to produce the desired anesthetic result.
  - It wore off quickly.
  - It had a high potential for triggering allergic reactions.
  - All options listed

ANS: D

All options listed. Procaine took a long time to produce the desired anesthetic results and it had a high potential for triggering allergic reactions. Procaine wore off quickly.

DIF: Recall            REF: 2|3            OBJ: 1  
TOP: NBDHE, 3.0 Planning and Managing Dental Hygiene Care| NBDHE, 3.4 Anxiety and Pain Control| NBDHE, 6.0 Pharmacology

13. The first local anesthetic used in dentistry was which of the following?
- Novocaine
  - Cocaine
  - Procaine
  - Lidocaine

ANS: B

Cocaine was the first anesthetic used in dentistry (in 1884); followed by Novocaine (procaine) in 1905; and later, lidocaine in 1943.

DIF: Recall            REF: 2|3            OBJ: 1  
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