Athena Dental Solutions, LLC

Local Anesthesia Training for North Carolina Dental Hygienists

Curriculum – Course Contents

Dr. Joseph R Hendrick, Jr

Lori Hendrick, MS, CDA, CDT, RDH, PhDc

![Text

Description automatically generated with medium confidence]()

**Local Anesthesia for Dental Hygienists**

**CEUs: 24 - 26 Total Contact Hours**

* 16 Didactic Hours (4 hours live and 12 hours web-based/self-instruction)
* 8 - 10 Clinic Hours – Live
* 12 Block & 12 Infiltration injections (live & simulations)

Format – all participants must attend the live sessions, pass the written exam (80%), complete all web-based and self-instruction to obtain a completion certificate.

**Cost : $1600**

**Required Texts:** Local Anesthesia for Dental Professionals (2nd Edition, 2015). Bassett, DiMarco, and Naughton. ISBN: 978-0-13-307771-1

**Recommended Videos:**

**Mandibular Anesthesia**: Dr. Malamead’s local anesthesia mandibular injection

<https://www.youtube.com/watch?v=9Ei6cvKhqls>

Mandibular Anesthesia Injection Techniques– Dentsply Sirona

<https://www.youtube.com/watch?v=3_7BqHJCXsU>

**Maxillary Anesthesia:** Maxillary Anesthesia Injection Techniques – Dentsply Sirona

<https://www.youtube.com/watch?v=zFndz48ojTE&t=268s>

*Athena Dental Solutions, LLC is an AGD/Pace recognized CE provider*

**Local Anesthesia For North Carolina Dental Hygienists**

**Table of Contents**

**NC Statute** (SB 146) – GS 90.225.2; GS 90.225.3

**Course Description**

**Pre-Requisites**

**Goals**

**Objectives**

**Post-test Evaluation**

**Athena Dental Solutions, LLC Curriculum**

**Required Materials**

**NC Statute 90.225.2 (SB 146)**

**§ 90-225.2.** **Current hygiene students in CODA-approved curriculum programs.** Programs required for dental hygienists licensed in this State to qualify to administer local anesthetics pursuant to G.S. 90-221(a) shall be taught using lecture and laboratory or clinical formats at the University of North Carolina Adams School of Dentistry, the East Carolina University School of Dental Medicine, or a dental hygiene program accredited by the Commission on Dental Accreditation (CODA), or a similar organization approved by the United States Department of Education.

The training program will include, at a minimum, a 30-hour session composed of 16 didactic hours and 14 clinical hours. Clinical instruction shall be provided by a dentist holding a DDS or DMD degree, and the faculty-to-student ratio shall be no greater than 1:5 for the laboratory and clinical instruction. Courses must be taught to a minimum score of eighty percent (80%) in the parenteral administration of local anesthesia, and successful students shall be awarded a certificate of completion."

**NC Statute 90.225.3 (SB 146)**

**§ 90-225.3. Requirements to administer local anesthetics for licensed dental hygienists; reciprocity.** (a) The Board may approve a dental hygienist licensed in this State or any other state or territory to provide local anesthesia upon the dental hygienist meeting all of the following criteria:

(1) Produces satisfactory evidence of the required education, training, and clinical qualifications to provide local anesthesia.

(2) Has been practicing dental hygiene, as defined in G.S. 90-221, under the supervision of a licensed dentist for a minimum of two years immediately preceding the date of the application.

(3) Has successfully completed a course of study on local anesthetics offered through a school or college approved by the United States Department of Education or a Board-approved continuing education provider that includes all of the following:

* A minimum of 16 lecture hours on pharmacology, physiology, equipment, block and infiltration techniques, and medical emergencies, including systemic complications.
* A minimum of eight (8) clinical hours of instruction and experience in administering local anesthesia injections.
* Completion of at least 12 block and 12 infiltration injections under the direct supervision of a licensed dentist who must certify the applicant's competency.

(b) If an applicant cannot satisfy the requirements as set forth in subsection (a) of this section, the Board may require the licensed dentist hygienist to complete all or parts of the requirements specified in subsection (a) of this section before the applicant can be qualified to administer intraoral, local dental anesthetics in this State.

(c) Dental hygienists who administer local anesthetics must maintain current CPR training and annually complete two hours of approved continuing education which shall include a review of local anesthetic technique, contraindications, systemic complications, medical emergencies related to local anesthesia, and a general overview of dental office emergencies. These hours may be among those chosen to satisfy the hours of continuing education otherwise required of licensed dental hygienists in this Article.

**Course Description –** In July 2021, NC Governor Cooper signed SB 146 into law which allows NC hygienists to administer local anesthetic with appropriate documented certification. Dental hygienists who are administering local anesthesia should be knowledgeable in all aspects of clinical dental hygiene. This includes providing local anesthesia agents to provide comfort to patients for dental procedures.

Dr. Joseph Hendrick, Jr and Lori Hendrick, MS, CDA, CDT, RDH, PhDc will address all aspects of local anesthesia delivery. This will include pharmacology, physiology, equipment, block and infiltration techniques, legal issues, and medical emergencies, including systemic complications. For dental hygienists, techniques specific to the periodontal patient will be discussed. Additionally, we will have other qualified dentists to assist with clinical instruction to maintain a 1:5 staff to student ratios.

This local anesthesia course is designed as a hands-on course. Your competency and proficiency in the administration of local anesthesia depends on your continued practice and administration of local anesthesia. As dental professionals, you know that to maintain high standards, continuing education and re-evaluations are critical.

**Pre-Requisites:** Please provide required documentation when requested and review all online materials prior to the first-class session.

* Read assigned textbook chapters – review chapter tests
* Watch and review mandibular and maxillary injection technique videos
* Provide a copy of current NC Dental Hygiene License
* Provide a current CPR Certification

**Goals:** The goals of this course are to provide and assist the dental hygienist to:

* Become knowledgeable in administration techniques for local anesthesia
* Become knowledgeable about pharmacology, physiology, equipment, block and infiltration techniques
* Become knowledgeable about possible legal issues, patient consent, complete physical and psychological evaluation of the dental patient
* Become knowledgeable in medical emergencies including systemic complications which may be impacted by local anesthesia use

**Objectives:** Upon completion of this course, the participants will be knowledgeable in:

A. Introduction, History, and NC Local Anesthesia

1. Discussion/implications of local anesthesia use in dentistry

2. History of local anesthesia use in dentistry

3. Discuss NC Laws and legalities surrounding administration of local anesthesia

B. Neurophysiology and Theory of Pain Control

1. Describe the characteristics of pain and anxiety

2. Understand mode and site of local anesthesia action

3. Demonstrate the process of nerve conduction

4. Delineate differences between sensory and motor neurons

C. Physical and Psychological Evaluation

1. Discuss Patient Evaluation required prior to LA or sedation

a. Complete Medical History

b. Physical Evaluation

c. Psychological Evaluation

d. Signs and Symptoms of Anxiety

e. ASA Classification

f. Monitoring for Adverse Reactions

D. Pharmacology of Local Anesthesia

1. Discuss pharmacokinetics of LA

a. Uptake

b. Distribution

c. Metabolism

d. Excretion

2. Discuss systemic actions of local anesthetics on:

a. Central Nervous System (CVS)

b. Respiratory System

c. Cardiovascular System

d. Other Systemic effects

3. Discuss vasoconstrictor in local anesthetic solutions

a. Mechanism of Action

b. Maximum dosage

c. Toxicity

d. Metabolism

e. Contraindications

4. Discuss most popular local anesthetics used in dentistry

a. Lidocaine

b. Mepivacaine

c. Bupivacaine

5. Discuss topical anesthetics

6. Demonstrate how to calculate anesthetic and vasoconstrictors contained in anesthetic solutions

E. Local Anesthesia Armamentarium

1. Identify Components

a. self-aspirating syringe

b. needles – long & short

c. carpules

2. Discuss Possible Malfunctions

3. Discuss Chemical Components of LA contained within the Carpules

4. Discuss Expired or Compromised Carpules

5. Address Latex and Sulfite Allergies

F. Local Anesthesia Injection Techniques – including anatomical considerations & clinical applications

1. Maxillary Anesthesia

a. PSA

b. MSA

c. ASA

d. Greater Palatine

e. Infraorbital

d. Nasopalatine

2. Mandibular Anesthesia

a. Inferior Alveolar

b. Lingual

c. Long Buccal

d. Mental

e. Incisive

3. Gow-Gates

4. Akinosi

5. Interosseous

6. PDL

7. Other delivery devices

G. Local Anesthetic Complications

1. Discuss Common Local Complications

a. Breakage of needles

b. Trismus

c. Paresthesia

d. Infection

c. Hematoma

d. Tissue irritation

e. Trauma

f. Facial Nerve Paralysis

g. Intravascular Injection

h. Pain on Injection

2. Discuss Systemic Complications

a. Epi Overdose

b. LA Overdose

c. Allergies

d. Side Effects

**Evaluations:**

**Didactic Evaluation -** Participants will demonstrate competency by completing a written examination to an 80% passing score.

Participants will learn and demonstrate the following injections on both manikins and/or live patients:

1. PSA

2. MSA

3. ASA

4. Infraorbital

5. Nasopalatine

6. Greater Palatine

7. Inferior Alveolar

8. Lingual

9. Long Buccal

10. Mental

11. Incisive

12. PDL Infiltrations – Maxillary and Mandibular

**Clinical Evaluation** - Clinical competency will be evaluated by demonstrating and completing mandibular and maxillary injections as assigned and evaluated.

Remediation will be required for participants who do not pass the written competency exam or are unable to demonstrate competency with assigned injections.