

- I. DH 207: PAIN CONTROL
- II. PREPARED BY: Lisa Kamibayashi R.D.H., M.S.D.H.
- III. REVISED FOR: Spring 2015
- IV. PREREQUISITES: COMPLETION OF ALL ATTEMPTED DENTAL HYGIENE COURSES WITH A FINAL GRADE OF "C" OR BETTER.
- V. UNITS AND HOURS: ONE UNIT, 18 hours
Wednesday 12:00 to 1:05 p.m. (65 minutes)
- VI. COURSE INSTRUCTOR: Lisa Kamibayashi R.D.H., M.S.D.H.
Office Hours: Tuesday 10:00 to 12:00
or By appointment
Mrskamiba@gmail.com
Office: 310-287-4457

VII. COURSE DESCRIPTION:

This course introduces the students to current methods of pain management and anxiety control in dentistry. Emphasis will be on the use of local anesthetics and nitrous oxide and oxygen through lectures and demonstrations.

VIII. REQUIRED TEXT:

LOGOTHETIS, D.D. Local Anesthesia for the dental hygienist, St. Louis, 2012, Mosby Co. Frist Edition. (ISBN # 978-0323-07371-4)

CLARK, Morrison S. and Brunick Ann L. Handbook of Nitrous Oxide and Oxygen Sedation St. Louis, 2014 Mosby Co. 4th Edition (ISBN # 978-1455745470)

X. COURSE OBJECTIVES:

Institutional SLOs:

A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

Program SLOs:

12. Apply problem solving strategies and critical thinking to insure comprehensive oral health care for individuals, groups, and communities.

Course SLO	Criterion Level
1. Understand and differentiate between the different types of anesthetics and their methods of action and analyze the most appropriate types during patient care.analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.	At least 80% of Students must correctly answer 75% or more of the examination questions.

Upon completion of this course, the students will be able to:

1. Modify the treatment plan of local anesthetic use for a given case scenario.
2. Prevent, recognize and manage the complications with dental anesthesia.
3. List both absolute and relative contraindications of local anesthetics.
4. Discuss the properties of topical anesthetics.

5. Prepare the equipment necessary for the administration of local anesthesia in dentistry.
6. Demonstrate proper technique of assembling the syringe, the needle, the local anesthetic cartridge, and addition items of equipment.
7. Identify the cause of problems with equipment failure.
8. Identify the local and systemic complications with dental anesthesia
9. Prevent, recognize and manage the complications with dental anesthesia.
10. List both absolute and relative contraindications of local anesthetics.
11. Explain all the following injection techniques including proper tissue preparation, amount of solution, selection of needle size and length, post administration instruction, safe handling of syringe and needle, and post operative instruction.
 - a. Infiltration,
 - b. PSA,
 - c. MSA,
 - d. Infraorbital NB, (ASA NB)
 - e. Inferior Alveolar NB, Long Buccal NB, Lingual NB
 - f. Incisive NB, (Mental NB)
 - g. Gow Gates NB,
 - h. Greater palatine NB,
 - i. Nasopalatine NB
 - j. AMSA NB
12. Locate and verbalize the nerves to be anesthetized (including branches) for each injection technique
13. State the oral structures anesthetized by the injection
14. State the indications for each injection
15. State the contraindications for each injection
16. Locate anatomical landmarks for each injection
17. Differentiate between the analgesia, sedation and anesthesia.
18. Differentiate between the sedative, excitement, surgical, and respiratory paralysis stages of anesthesia.
19. State the indications and contraindications for using nitrous oxide.
20. Provide post-operative instructions to patient after nitrous administration.
21. Accurately document all the data including; amount of nitrous, duration of sedation, patient tolerance, and pre and post vital signs.
22. Provide nitrous oxide sedation to a patient avoiding the possible operator hazards to using nitrous oxide and oxygen, and the safety procedures for the operator.
23. Discuss the use of local anesthetics among different disciplines in dentistry (endodontics, periodontics, pediatric dentistry and prosthodontics).
24. State examples of computer-controlled local anesthetic delivery (CCLAD) systems.
25. Discuss the legal considerations associated with the administration of local anesthetics.
26. Identify the possible operator hazards to using nitrous oxide and oxygen, and the safety procedures for the operator.
27. Identify eight effects (adverse and beneficial) of nitrous oxide and oxygen sedation and indicate the appropriate operator response for these reactions.
28. State the physiological-psychological effects of nitrous-oxide which can be manifested in patients.
29. Discuss the pharmacological and clinical properties of local anesthetics and the vasoconstrictors.
30. Differentiate the different properties between ester and amide.
31. Identify local anesthetic drugs and vasoconstrictor currently used in anesthesia in dentistry.
32. Explain how local anesthetics work to transiently block nerve conduction both anatomically and physiologically.
33. Select an appropriate anesthetic agents and a vasoconstrictor for a specific case scenario.
34. Identify the indications and contraindications for using a vasoconstrictor.
35. List and explain the factors which affect the duration and onset of the action of the anesthetic agent.
36. Calculate numbers of the cartridges allowed to administer according to the maximum dose of a local anesthetic drug for a given case scenario.
37. Define nitrous oxide and oxygen as a sedative.
38. Indicate the route of nitrous oxide and oxygen from the point of inhalation to the elimination point.
39. Identify the properties of nitrous oxide, including: stability, solubility, color, odor, flammability and chemical composition.
40. Identify the physiological and pharmacological theories of induction and recovery.

XI. METHODS OF INSTRUCTION:

Lectures, Video Instruction, Demonstrations, Discussions

XII. METHODS OF EVALUATION:

Evaluation will be based upon your attainment of the knowledge of material presented in each lecture of the course, in the outline and textbook and the selected articles and pamphlets. While every effort will be made to cover the material as thoroughly and comprehensively as possible during lectures, students are responsible for attainment of all of the course objectives whether covered in lectures or not. Students should read the appropriate section of your textbooks prior to the related lecture, so that questions can be dealt with at the appropriate time.

Your final grade will be determined as follows:

Written local anesthesia examination	45 %
Written sedation examination	40 %
Local Anesthesia Weekly Assignment	5 %
Comprehensive Local Anesthesia Quiz	10 %

In order to pass this course, a minimum grade of **75%** is required in each examination. A failure in any one of examinations will constitute a failure of the course.

Assignment:

All assignment must be turned in at the beginning of class and it must be handwritten.

Quiz

You will be taking one comprehensive quiz about each injection you learned during the course. The quiz must be passed over 75%.

Written Exam will be multiple choice, true/false statement, mix and match and/or short written answers.

You will need a scantron sheet and number 2 pencils for the written exams.

Course letter grade will be based on the following scale:

- 90 - 100% = A
- 80 - 89% = B
- 75 - 79% = C
- Below 74 % = F

I. DH 209: PAIN CONTROL- Laboratory

II. PREPARED BY: Lisa Kamibayashi R.D.H., M.S.D.H.

- III. REVISED FOR: Spring 2015
- IV. PREREQUISITES: COMPLETION OF ALL ATTEMPTED DENTAL HYGIENE COURSES WITH A FINAL GRADE OF "C" OR BETTER.
- V. UNITS AND HOURS: ONE UNIT, 54 hours Lab Hours/semester
WEDNESDAY 1:30 to 4:50 p.m.
(3 hours 5 minutes with 15 minutes break)
- VI. COURSE INSTRUCTORS: Eleanor Padnick, D.D.S., M.S.
Office Hours: Wednesday 4:50 p.m. – 5:20 p.m.
- Lisa Kamibayashi R.D.H., M.S.D.H.
Office Hours: Tuesday 10:00 to 12:00 p.m.
- Amanda De La Vega, R.D.H., B.S.
Office Hours: Wednesday 4:50 p.m. – 5:50 p.m.

VII. COURSE DESCRIPTION:

This course introduces the students to current methods of pain management and anxiety control in dentistry. Emphasis will be on the use of local anesthetics and nitrous oxide and oxygen through lectures and demonstrations.

VIII. REQUIRED TEXT:

LOGOTHETIS, D.D. Local Anesthesia for the dental hygienist, St. Louis, 2012, Mosby Co. First Edition. (ISBN # 978-0323-07371-4)

CLARK, Morrison S. and Brunick Ann L. Handbook of Nitrous Oxide and Oxygen Sedation St. Louis, 2008 Mosby Co. 3rd Edition (ISBN #9780323048279)

XI. COURSE OBJECTIVES:

Institutional SLOs:

A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.

F. Technical Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

Program SLO #10: Provide and evaluate dental hygiene services, including preventive and pain management procedures, that are based on current scientific evidence for a variety of periodontal conditions of children, adolescents, adults, geriatrics and medically compromised patients from diverse populations.

Program SLO #11: Recognize and provide the appropriate care for medical emergencies that occurs in the dental setting.

Program SLO #12: Apply problem solving strategies and critical thinking to insure comprehensive oral health care for individuals, groups and communities.

Course SLOs:

- Demonstrate proper local anesthetic technique showing understanding of rationale, preparation and administration of injections.
- Verbally explain and demonstrate proper administration of nitrous oxide technique showing understanding of rationale, preparation and administration.

Course SLO	Criterion Level
1. Demonstrate proper local anesthetic technique showing understanding of rationale, preparation and administration of injections.	At least 80 of students must achieve minimum of 90% of the grading rubric components.
2. Verbally explain and demonstrate proper administration of nitrous oxide technique showing understanding of rationale, preparation and administration.	At least 80 of students must achieve minimum of 90% of the grading rubric components.

Course Objectives:

Upon completion of this course, the students will be able to:

1. Prepare the equipment necessary for the administration of local anesthesia in dentistry.
2. Demonstrate proper technique of assembling the syringe, the needle, the local anesthetic cartridge, and additional items of equipment.
3. Demonstrate all the following injection techniques with 100 % accuracy.
4. Explain proper tissue preparation, amount of solution, selection of needle size and length, post administration instruction, safe handling of syringe and needle, and post-operative instruction for all the following injection techniques.
 - a. Infiltration,
 - b. PSA,
 - c. MSA,
 - d. Infraorbital NB, (ASA NB)
 - e. Inferior Alveolar NB, Long Buccal NB, Lingual NB
 - f. Incisive NB, (Mental NB)
 - g. Gow Gates NB,
 - h. Greater palatine NB,
 - i. Nasopalatine NB
 - j. AMSA NB
5. Demonstrate proper technique of nitrous oxide – oxygen sedation.
6. Explain orally step by step procedures of the sedation techniques.

XI. METHODS OF INSTRUCTION:

Hands on Demonstration, Video Demonstrations, Discussions, Clinical Instruction

XII. METHODS OF EVALUATION:

Evaluation will be based upon your attainment of the knowledge of material presented in each lecture and Lab of the course, in the outline and textbook and the selected articles and pamphlets. While every effort

will be made to cover the material as thoroughly and comprehensively as possible during lectures, students are responsible for attainment of all of the course objectives whether covered in labs/lectures or not. Students should read the appropriate section of your textbooks prior to the related lecture and laboratory topics, so that questions can be dealt with at the appropriate time.
Your final grade will be determined as follows:

Local anesthesia Laboratory Practice	Complete all injection practices
Local anesthesia practical examination	must achieve 90% or over
Nitrous Oxide/Oxygen Sedation Practical Examination	must achieve 90 % or over

In order to pass this course, a minimum grade of **90 %** is required in each examination.
Course grade will be based on **CREDIT – NO CREDIT basis**.

XIII. COURSE CONTENT OUTLINE

**DH 207 Pain Control and DH 209 Pain Control Lab
Schedule Spring Session 2015**

Things to bring to Lecture: One non sterile syringe with a needle capper and the Textbook.

Things to bring to Lab: **Two sterilized** syringes with needle cappers. Safety Glasses. Gown, Mask. & Textbook.

Weeks	DH 207: Lecture Topic Mrs. Kamibayashi Wednesday 12:00 to 1:05 p.m. (65 min)	DH 209: Lab Topic Dr. Padnick Mrs. De La Vega Mrs. Kamibayashi Wednesday 1:30 to 4:50 p.m. (3 hours 20 minutes)	Reading Assignment & Homework
1 2/11/15	Introduction of DH 207 & DH 209 Review of Course Requirements Introduction to Local Anesthesia Local Anesthesia - Neurophysiology	Prevention of needle stick Armamentarium Handling of syringe Basic injection technique Practice handling of syringe on peach. Practice set up cubicles, pretend syringe orientation on each other in clinic. Documentation Supraperiosteal Injection, MSA and Mental/Incisive injection techniques Medical Assessment Local Complications Systemic complications	Logothetis Chapter 1 (Intro) Chapter 2 (Neurophysiology) Chapter 9 (Armanmentarium), 10 (Anatomic Consideration), 11 (Basic Injection Technique) Logothetis Chapter 14 (Local Complications), Chapter 7 (Assessment) Page 227-230 (Max Supraperiosteal) Page 299 -300 (Mand Supraperiosteal) Page 289-295 (Mental/Incisive) Page 237 – 241 (MSA) *Bring a peach or nectarin, paper plates, napkins, sterile syringes, gloves, yellow cassette and textbook to the lab on 2/10/14.
2 2/18/15	Infraorbital, ASA	MSA, Supraperiosteal Injection, Incisive and mental on each other	HW Sheet: (IO, Mental, Incisive) Logothetis Page 241- 249 (ASA & IO), 261-265 (Common Maxillary Injection Errors)
3 2/25/15	Posterior Superior Alveolar (PSA)	Infraorbital and incisive/mental on each other	HW Sheet (PSA) Logothetis Page 231 – 237(PSA), 261- 265 (Common Maxillary Injection Errors)
4 3/4/15	Inferior Alveolar/Buccal	PSA and Infraorbital on each other	HW sheet (IA & Buccal) Logothetis Page 271 – 288 (IA & Buccal)
5 3/11/15	Gow Gates	IA/ Buccal and PSA on each other	HW Sheet (Gow Gates) Logothetis Page 295 – 299 (Gow Gates)

Weeks	DH 207: Lecture Topic Mrs. Kamibayashi Wednesday 12:00 to 1:05 p.m. (65 min)	DH 209: Lab Topic Dr. Padnick Mrs. De La Vega Mrs. Kamibayashi Wednesday 1:30 to 4:50 p.m. (3 hours 20 minutes)	Reading Assignment & Homework
6 3/18/15	AMSA/Greater Palatine/Naso Palatine	Gow Gates and IA each other	HW Sheet (AMSA, GP & Naso) Logothetis Page 249 – 261 (Maxillary Palatal Injections)
7 3/25/15	Case studies on the following topics: Legal Considerations Local anesthetic consideration in dental specialties Neurophysiology Pharmacology of Local Anesthetics Drug Doses Specific drugs Vasoconstrictors	GP/ Naso Palatine/AMSA	Logothetis Chapter 3 (Pharmacology) Chapter 4 (Vasoconstrictors) Chapter 5 (Local Anesthetic Agents) Chapter 6 (Topical Anesthetic) Chapter 8 (Drug Doses) Chapter 15 (Legal Considerations)
8 4/1/15	Comprehensive Injection Quiz	Practice for all injections for difficult side (Especially PSA, IO, IA & Gow)	
9 4/15/15	Review of Quiz, Review of written exam Clinical Tips of Local Anesthesia	Mock Exam on selected injection techniques. (Especially PSA, IO, IA & Gow)	
10 4/22/15	Comprehensive Written Exam (Multiple Choice Questions)	Anesthesia Practical Exam	Review Everything!!
11 4/29/15	Introduction to Nitrous Oxide/Oxygen Sedation and Demonstration	Nitrous oxide/oxygen sedation set up and armamentarium	Clark: Chapters 1-7
12 5/6/15	Anatomy, Physiology, and Administration of Nitrous Oxide Sedation	Practice nitrous oxide sedation techniques	Clark: Chapters 8-16
13 5/13/15	Issue of Special Consideration of Nitrous Oxide Sedation	Problem solving with equipment and sedation techniques	Clark: Chapters 17- 21
14 5/20/15	Nitrous Oxide Sedation Multiple choice/ written Exam	Nitrous Oxide Sedation Competency Exam	
15 5/27/15	Review of the course and any catch ups	Nitrous Oxide Sedation Competency Exam	
Final Week	Any Make Up Exam	Any Make Up Exam	

NOTE:

Students' partner assignment will be randomly assigned by the course instructors.

Students must wear clinic attire and clinic hygiene code must be followed.

Students must stay in the clinic for entire lab time in order to learn the materials from each other and other sources.