



NITROUS OXIDE MONITORING ONLINE COURSE SYLLABUS

This course will be hosted online continuously at the convenience of the student. The course is designed to be self-guided using multimedia presentations, comprehension quizzes, learning activities, instructional videos and photos, and a final exam. Students will have the opportunity to reach out to a qualified instructor to ask questions or seek clarification.

OBJECTIVES:

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

1. Understand and follow Tennessee laws pertaining to administration and monitoring of nitrous oxide
2. Analyze the differences between physiological and psychological aspects of pain
3. Characterize the function and structure of the respiratory system
4. Characterize the function and structure of the cardiovascular system
5. Name and understand the four stages of anesthesia
6. Observe and comprehend the signs and symptoms of light, moderate, and deep analgesia
7. Describe and understand the chemical and physical properties of nitrous oxide
8. Classify the possible side effects of nitrous oxide analgesia
9. Understand and determine signs that a patient is experiencing an adverse reaction to nitrous oxide
10. Understand and recall the procedure of induction and termination of nitrous oxide
11. Recognize potential risks of long-term exposure to nitrous oxide
12. Describe and follow methods to reduce unnecessary exposure to nitrous oxide in a dental office setting
13. Identify contraindications for nitrous oxide analgesia
14. Identify and understand the functions of nitrous oxide monitoring equipment
15. Educate patients regarding nitrous oxide administration

NUMBER OF HOURS: (5)

Students will view 9 multimedia presentations, take comprehension quizzes, view photos, watch an educational instructional video, read articles, complete learning activities, and pass a final exam to show mastery.



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COURSE OUTLINE:

Didactic- The didactic portion of this course shall include instruction in all the following subject matters:

1. The history, philosophy, psychology of nitrous oxide inhalation sedation
2. Definitions and descriptions of the physiological and psychological aspects of pain and anxiety
3. Description of the stages of drug induced central nervous system depression, through all levels of consciousness and unconsciousness
4. Anatomy and physiology of the cardiovascular and respiratory systems
5. Pharmacological and physiological effects of nitrous oxide, including physical properties, action, side effects, absorption, excretion, and toxicity
6. Advantages and disadvantages of inhalation sedation with nitrous oxide
7. Management of adverse reactions to nitrous oxide
8. Patient status assessment including:
 - a. Taking and reviewing vital signs
 - b. Reflexes related to consciousness
 - c. Possible reactions to nitrous oxide
 - d. Recognition, prevention and management of complications and life-threatening situations related to nitrous oxide
 - e. Legal considerations of nitrous oxide use
 - f. Information on hallucinatory effects reported with nitrous oxide use
 - g. Recommended techniques for reducing occupational exposure to nitrous oxide
 - h. Introduction of potential health hazards of trace anesthetics and proposed techniques for elimination thereof, including but not limited to, recommendations and guidelines from the Centers for Disease Control (CDC) or the Occupational Health and Safety Administration (OSHA)
9. Instructional video covering the following topics:
 - a. Equipment & Opening Tanks
 - b. Preparing the patient
 - c. Determining tidal volume
 - d. Beginning nitrous oxide administration
 - e. Post-induction oxygenation
 - f. Dismissal of patient after checking vital signs



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MATERIALS AND EQUIPMENT:

Computer or mobile device with internet access, ability to watch videos, access to dental office to view nitrous oxide administration equipment and to complete learning activities

METHOD OF EVALUATION:

Topic Quizzes: students will be required to take a quiz on each of the 9 topics covered in the course, with a required 100% to pass.

Final Exam: Upon completion of all course materials, quizzes, and learning activities, students will take an online Final exam. The final exam passing grade is set at seventy-five percent (75%) to pass the course. A student who fails the examination may retake the examination two (2) additional times before needing to repeat the course. Review of course materials will be available to the student prior to taking the final exam.