Resolution No. 77

Report: CDEL Supplemental Report 1

Date Submitted: October 2015

Submitted By: Council on Dental Education and Licensure

Reference Committee: C (Dental Education, Science and Related Matters)

Total Net Financial Implication: None

Net Dues Impact: None

Amount One-time

Amount On-going

FTE

0

ADA Strategic Plan Objective: Membership-Obj. 1: Leaders and Advocates in Oral Health

How does this resolution increase member value: See Background

COUNCIL ON DENTAL EDUCATION AND LICENSURE SUPPLEMENTAL REPORT 1 TO THE

HOUSE OF DELEGATES: PROPOSED AMENDMENTS TO THE SEDATION AND ANESTHESIA

GUIDELINES

Background: The Council on Dental Education and Licensure and its Anesthesiology Committee have been considering revisions to the ADA Guidelines for the Use of Sedation and General Anesthesia by Dentists (Use Guidelines) and the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students (Teaching Guidelines) (collectively referred to as Anesthesia Guidelines) since September 2014. The Council relies on the expertise of the members of its Anesthesiology Committee to assist in anesthesiology related matters and appreciates the contributions made by the following Committee members and their organizations:

Dr. Daniel Gesek, Committee Chair and CDEL Vice-Chair
Dr. Edwin Ginsberg, American Academy of Periodontology
Dr. Joseph Giovannitti, American Society of Dentist Anesthesiologists
Dr. Andrew Herlich, American Society of Anesthesiologists
Dr. Lawrence Palmer, American Dental Association
Dr. Daniel Sarasin, American Dental Society of Anesthesiology
Dr. Sarat (Bobby) Thikkurissy, American Academy of Pediatric Dentistry
Dr. Antwan Treadway, American Association of Oral and Maxillofacial Surgeons

Consideration of Comments on Proposed Revisions to the Anesthesia Guidelines: The Council circulated the current Guidelines to the communities of interest* first in November 2014-January 2015 calling for general comments and suggestions for change. Proposed revisions to the Guidelines then were circulated in May-June 2015 via direct email notifications. Notices also were published in the ADA NEWS and in the ADA e-publication Leadership Update.

*CDEL Dental Anesthesiology Communities of Interest:
ADA Council on Dental Practice
ADA Council on Scientific Affairs
ADA Council on Access, Prevention and Interprofessional Relations
ADA Council on Government Affairs
ADA New Dentist Committee
State dental societies
Local dental societies
State boards of dentistry
Recognized dental specialties
Certifying boards of recognized dental specialties
American Dental Education Association
The Council considered 284 letters and emails, including those from the following national and state professional organizations: the American Dental Education Association, American Society of Dentist Anesthesiologists, American Dental Society of Anesthesiology, American Society of Anesthesiologists, American Academy of Pediatric Dentistry, American Academy of Pediatrics, Virginia Board of Dentistry, American Association of Oral and Maxillofacial Surgeons, and American Academy of Periodontology. Comments were also received from practicing general dentists and dental specialists as well as dental educators and a continuing education provider.

The Council reviewed a press release and email blasts regarding the proposed revisions to the Anesthesia Guidelines, which were sent directly to dentist sedation providers from an organization known as TEAM (Trust for Equal Access Medicine) 1500. The TEAM 1500 communications encouraged individuals to write to CDEL. It appeared to the Council that most of those commenting had not studied the proposed changes as distributed by CDEL and did not provide specific comments noting line and page number as requested. The Council wishes to clarify the points made by TEAM 1500 for the Board of Trustees and the House of Delegates:

<table>
<thead>
<tr>
<th>TEAM 1500 Message</th>
<th>Council Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDEL rushed its review of the Anesthesia Guidelines, not providing adequate time</td>
<td>The comprehensive review process began in September 2014. Two comment periods were provided to the communities:</td>
</tr>
<tr>
<td>for comment by the communities of interest</td>
<td>• November 19, 2014 - January 7, 2015</td>
</tr>
<tr>
<td></td>
<td>• May 1, 2015 - June 29, 2015</td>
</tr>
<tr>
<td>Not enough CE courses available to meet proposed guidelines, particularly related</td>
<td>At least 7 CE courses are available throughout the U.S. currently offering the course content and duration as proposed. The Council is confident that providers of CE on the subject of sedation and anesthesia will enrich their educational offerings to reflect current practice in accord with the proposed guidelines and state regulatory requirements.</td>
</tr>
<tr>
<td>to course content and duration.</td>
<td></td>
</tr>
<tr>
<td>A dentist’s sedation permit will be taken away.</td>
<td>State dental boards issue sedation permits, based on their state laws, rules and regulations. While many dental boards do over time incorporate current versions of the ADA Guidelines into rulemaking, or cite the ADA Guidelines in their statues, adoption of new Guidelines by the ADA does not immediately affect any state board or dentist permit holder.</td>
</tr>
<tr>
<td></td>
<td>To be clear, the following language is in the current Anesthesia Guidelines and remains unchanged in the proposed revised document (lines 290-294): “For all levels of sedation and anesthesia, dentists, who are currently providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document, are not subject to [herein specified] educational requirements.”</td>
</tr>
</tbody>
</table>
Proposed guidelines will not increase safety any more than existing guidelines, will reduce access to dental care and make dental care more expensive.

<table>
<thead>
<tr>
<th>Proposed guidelines will not increase safety any more than existing guidelines, will reduce access to dental care and make dental care more expensive.</th>
<th>Given current standards of care, comments received and scientific evidence, the Council believes the proposed changes, (especially regarding, monitoring end-tidal CO₂ and altering training duration for some moderate sedation providers) will help ensure public safety without overburdening dentist providers or dental educators.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many anecdotes related to providing sedation to patients in need; concern expressed that the proposed changes will decrease access to sedation and anesthesia services.</td>
<td>Standards of care, guidelines of other professional medical and dental organizations, the scientific literature, current state regulations for sedation, and the expertise of practitioners, academicians and state dental board members were relied upon to make these recommendations. The proposed changes are intended to support public safety.</td>
</tr>
</tbody>
</table>

The Council also noted the letters received from the American Academy of Pediatric Dentistry (AAPD), American Academy of Pediatrics (AAP) and American Dental Society of Anesthesiology (ADSA) suggesting the need for the ADA to establish new guidelines focused on the provision of sedation and anesthesia to children age 12 and under by dentists who are not pediatric dentists or dental anesthesiologists by education and training. These organizations suggested that the ADA enhance its Anesthesia Guidelines in this regard, rather than referencing the AAP/AAPD “Guideline for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.” The ADSA offered its belief that such enhanced ADA guidance for administering sedation and anesthesia to children age 12 and under could better assist dentists and regulatory agencies and support access to oral health care for children. The AAP offered pediatric physician volunteers to participate in review and development of such guidelines, as appropriate. The Council concluded that the Guideline for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures should be carefully studied in 2016 by the Anesthesiology Committee and the Council prior to proposing additional amendments to the Guidelines.

Rationale for Proposed Revisions: Throughout their deliberations, the Council and its Anesthesiology Committee remained committed to and focused on the importance of standard of care, patient safety, public protection and risk management. They agreed that the ADA Guidelines must reflect the current standard of care to guide practitioners, educators and regulatory agencies in assuring patient safety and managing risk. They also reflected on data collected during both comment periods noting that, although there was some opposition to the use of end-tidal CO₂ monitoring during moderate and deep sedation, capnography is considered to be a standard of care for anesthesiologists and oral surgeons as well as other health care professionals. Further, end-tidal CO₂ monitoring is already required in the anesthesia regulations of at least 14 state dental boards. The Council and the Committee unanimously agreed that pursuit of the proposed changes to the ADA Guidelines is prudent regarding end-tidal CO₂ monitoring, as well as consistent with the spirit of the policies of the American Society of Anesthesiologists and the American Association of Oral and Maxillofacial Surgeons.

Finally, given the required course objectives and content for moderate sedation in the proposed Teaching Guidelines, and given changes in technology and practice over the last seven years since 2007 comprehensive review, the Council and Committee unanimously agreed to include one course duration statement for all training in moderate sedation: “A minimum of 60 hours of didactic instruction, plus administration of sedation for at least 20 individually-managed dental patients by any route per participant, including intravenous administration, is required to demonstrate competency in moderate sedation techniques. Of the 20 cases, all must be managed by the anesthesia operator dentists.”

The following summarizes the Council’s proposed revisions. Appendix 1 presents the Council’s proposed amendments with deletions stricken and additions underlined.
Guidelines for the Use of Sedation and General Anesthesia by Dentists

- Lines 70-77: Added statements regarding sedation of children 12 and under, consistent with the American Academy of Pediatric Dentistry (AAPD) and American Academy of Pediatrics (AAP) guidelines.

- 213-224: Added a reference, citing the American Society of Anesthesiologists' Preoperative Fasting Guidelines.

- Lines 230, 252, 264, 274-275, and 282: Amended the Educational Requirements to include a statement about competency, and for moderate and deep sedation including certification in Pediatric Advanced Life Support as an alternative to Advanced Cardiac Life Support.

- Lines 314-319, 334-336, 403-408, 417-422, 438-440, 530-550, and 575-577: Amended the Clinical Guidelines for all levels of sedation and anesthesia to enhance preoperative recording of vital signs, maintain a log of equipment maintenance, and conduct a pre-anesthesia evaluation for moderate and deep sedation.

- Lines 445-448, 472-477, 585-589, and 603-607: For moderate sedation clinical guidelines, added a statement that the dentist must monitor ventilation by monitoring end-tidal CO₂ unless precluded or invalidated by the nature of the patient, procedure or equipment. (Note: the current 2012 Anesthesia Guidelines require the monitoring of end-tidal CO₂ for deep sedation and general anesthesia.)

- Lines 659-699: Deleted Section V. Additional Sources of Information per the recommendation of the ADA Speaker of the House. Current additional sources of information to support these Guidelines will be maintained on ADA.org, ensuring currency and relevancy.

Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students

- Lines 823-829: Added statements regarding sedation of children 12 and under, consistent with the American Academy of Pediatric Dentistry (AAPD) and American Academy of Pediatrics (AAP) guidelines.

- Lines 977-988: Added a reference, citing the American Society of Anesthesiologists' Preoperative Fasting Guidelines.

- Lines 1157-1158: Added a new course objective to Section IV. Teaching Administration of Minimal Sedation, “Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia to be delivered.” (Note: the current Guidelines include the following statements: “Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.” This responsibility is now proposed as a required course objective.)

- Lines 1353-1354: Added a new course objective to Section V. Teaching Administration of Moderate Sedation, “Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia to be delivered.” (Note: the current Guidelines include the following statements: “Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.” This responsibility is now proposed as a required course objective.)

- Lines 1386-1415: Merged the Moderate Enteral Sedation Course Duration and Moderate Parenteral Sedation Course Duration sections into one section, "Moderate Sedation Course Duration."

- Lines 1402-1407: Revised the moderate sedation course duration to "A minimum of 60 hours of didactic instruction, plus administration of sedation for at least 20 individually-managed dental patients by any route per participant, including intravenous administration, is required to demonstrate competency in moderate sedation techniques. Of the 20 cases, all must be managed by the anesthesia operator dentist."
Resolution 77

Resolved, that the Guidelines for the Use of Sedation and General Anesthesia by Dentists and the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students be amended as presented in Appendix 1 of the Council’s Supplemental Report 1 to the House of Delegates.

BOARD RECOMMENDATION: Vote Yes.

Vote: Resolution 77

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA</td>
<td>y</td>
<td>DOW</td>
<td>y</td>
<td>JEFFERS</td>
</tr>
<tr>
<td>BITTER</td>
<td>y</td>
<td>FAIR</td>
<td>y</td>
<td>KWASNY</td>
</tr>
<tr>
<td>BUCKENHEIMER</td>
<td>y</td>
<td>GAMBA</td>
<td>y</td>
<td>ROBERTS</td>
</tr>
<tr>
<td>COLE</td>
<td>n</td>
<td>GEHANI</td>
<td>y</td>
<td>ROBINSON</td>
</tr>
<tr>
<td>CROWLEY</td>
<td>y</td>
<td>ISRAELSON</td>
<td>y</td>
<td>SHENKIN</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>STEVENS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SUMMERHAYS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>YONEMOTO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ZENK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ZUST</td>
</tr>
</tbody>
</table>
Appendix 1 - August 2015

Proposed Revisions:

Guidelines for the Use of Sedation and General Anesthesia by Dentists

Underscore denotes proposed additions
Strikethrough denotes proposed deletions

I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of dental practice. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists. The purpose of these guidelines is to assist dentists in the delivery of safe and effective sedation and anesthesia.

Dentists providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document are not subject to Section III. Educational Requirements.

II. Definitions

Methods of Anxiety and Pain Control

analgesia - the diminution or elimination of pain.  [moved to Terms section]

conscious sedation \(^4\) - a minimally depressed level of consciousness that retains the patient's ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.

combination inhalation–enteral conscious sedation (combined conscious sedation) - conscious sedation using inhalation and enteral agents.  [moved to Terms section]

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation–enteral conscious sedation (combined conscious sedation) does not apply.  [moved to Terms section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug.  [Moved to Terms section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents.  [Moved to Terms section]

\(^4\) Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.
**combination inhalation–enteral conscious sedation** (combined conscious sedation) - conscious sedation using inhalation and enteral agents.

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation-enteral conscious sedation (combined conscious sedation) does not apply.

**minimal sedation** - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient’s ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

*Note:* In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.

For children age 12 and under, the use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations, must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.

Prescription medications intended to accomplish procedural sedation for children age 12 and under must not be administered without the benefit of direct supervision by a trained dental/medical provider. (Source: the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures)

Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

The following definitions apply to administration of minimal sedation **via an enteral route:**

*maximum recommended (MRD)* - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.

*incremental dosing* - administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).

---

² Portions excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.
supplemental dosing - during minimal sedation, supplemental dosing is a single additional dose of the initial dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment. For the purpose of enteral or combination enteral/inhalation sedation, when the MRD of a drug is exceeded or more than one drug is used in combination, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation apply.

moderate sedation - a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.3

Note: In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to the administration of moderate or greater sedation:

titration - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug’s time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

deep sedation - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.3

general anesthesia - a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.3

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

Routes of Administration

ental - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

3 Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.
parenteral - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal - a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain. [Moved from Definitions section]

local anesthesia - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved from Definitions section]

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression, especially in combination with sedative agents. [Moved from Definitions section]

qualified dentist - meets the educational requirements for the appropriate level of sedation in accordance with Section III of these Guidelines, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document.

operating dentist – dentist with primary responsibility for providing operative dental care while a qualifying dentist or independently practicing qualified anesthesia healthcare provider administers minimal, moderate or deep sedation or general anesthesia.

competency – displaying special skill or knowledge derived from training and experience

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should - indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.
American Society of Anesthesiologists (ASA) Patient Physical Status Classification

ASA I - A normal healthy patient.
ASA II - A patient with mild systemic disease.
ASA III - A patient with severe systemic disease.
ASA IV - A patient with severe systemic disease that is a constant threat to life.
ASA V - A moribund patient who is not expected to survive without the operation.
ASA VI - A declared brain-dead patient whose organs are being removed for donor purposes.
E - Emergency operation of any variety (used to modify one of the above classifications, i.e., ASA III-E).

American Society of Anesthesiologists Fasting Guidelines

<table>
<thead>
<tr>
<th>Ingested Material</th>
<th>Minimum Fasting Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clear liquids</td>
<td>2 hours</td>
</tr>
<tr>
<td>Breast milk</td>
<td>4 hours</td>
</tr>
<tr>
<td>Infant formula</td>
<td>6 hours</td>
</tr>
<tr>
<td>Nonhuman milk</td>
<td>6 hours</td>
</tr>
<tr>
<td>Light meal</td>
<td>6 hours</td>
</tr>
<tr>
<td>Fatty meal</td>
<td>8 hours</td>
</tr>
</tbody>
</table>


III. Educational Requirements

A. Minimal Sedation

1. To administer minimal sedation the dentist must demonstrate competency by having successfully completed:
   a. training to the level of competency in minimal sedation consistent with that prescribed in the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students,
   or
   b. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students at the time training was commenced,
   or
   c. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage minimal sedation commensurate with these guidelines;
   and
   c. a current certification in Basic Life Support for Healthcare Providers.

2. Administration of minimal sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

B. Moderate Sedation

1. To administer moderate sedation, the dentist must demonstrate competency by having successfully completed:

---

4 ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.
a. a comprehensive training program in moderate sedation that satisfies the requirements described in the Moderate Sedation section of the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students at the time training was commenced, or
b. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage moderate sedation commensurate with these guidelines; and
c. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent, e.g., Pediatric Advanced Life Support) or completion of an appropriate dental sedation/anesthesia emergency management course on the same recertification cycle that is required for ACLS.

2. Administration of moderate sedation by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support for Healthcare Providers.

C. Deep Sedation or General Anesthesia

1. To administer deep sedation or general anesthesia, the dentist must demonstrate competency by having have completed:

a. an advanced education program accredited by the ADA Commission on Dental Accreditation that affords anesthesia, commensurate with Part IV.C of these guidelines; and
b. 1) a current certification in Basic Life Support for Healthcare Providers and 2) either current certification in Advanced Cardiac Life Support (ACLS or equivalent, e.g., Pediatric Advanced Life Support) or completion of an appropriate dental sedation/anesthesia emergency management course on the same re-certification cycle that is required for ACLS.

2. Administration of deep sedation or general anesthesia by another qualified dentist or independently practicing qualified anesthesia healthcare provider requires the operating dentist and his/her clinical staff to maintain current certification in Basic Life Support (BLS) Course for the Healthcare Provider.

For all levels of sedation and anesthesia, dentists, who are currently providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document, are not subject to these educational requirements. However, all dentists providing sedation and general anesthesia in their offices or the offices of other dentists should comply with the Clinical Guidelines in this document.

IV. Clinical Guidelines

A. Minimal sedation

1. Patient Evaluation

Patients considered for minimal sedation must be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II) this should may consist of a review of their current medical history and medication use. However, in addition, patients with significant medical considerations (ASA III, IV) may require consultation with their primary care physician or consulting medical specialist.
2. Pre-Operative Preparation

- The patient, parent, guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- Baseline vital signs (blood pressure, pulse and respiration rates) must be obtained unless invalidated by the nature of the patient, procedure or equipment the patient’s behavior prohibits such determination.
- A focused physical evaluation must be performed as deemed appropriate, including recording the patient’s body weight and BMI. In addition, body temperature should be measured when clinically indicated.
- Preoperative dietary restrictions must be considered based on the sedative technique prescribed.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, guardian or care giver.

3. Personnel and Equipment Requirements

**Personnel:**

- At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

**Equipment:**

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- A log of equipment maintenance, including monitors and anesthesia delivery system, must be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.
- When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.

4. Monitoring and Documentation

**Monitoring:** A dentist, or at the dentist’s direction, an appropriately trained individual, must remain in the operatory during active dental treatment to monitor the patient continuously until the patient meets the criteria for discharge to the recovery area. The appropriately trained individual must be familiar with monitoring techniques and equipment. Monitoring must include:

**Consciousness:**

- Level of sedation (e.g., responsiveness to verbal commands) must be continually assessed.

**Oxygenation:**

- Color of mucosa, skin or blood must be evaluated continually.
- Oxygen saturation by pulse oximetry must be used unless precluded or invalidated by the nature of the patient, procedure, or equipment may be clinically useful and should be considered.

**Ventilation:**

- The dentist and/or appropriately trained individual must observe chest excursions continually.
• The dentist and/or appropriately trained individual must verify respirations continually.

Circulation:
• Blood pressure and heart rate should be evaluated pre-operatively, post-operatively and intraoperatively as necessary (unless the patient is unable to tolerate such monitoring).

Documentation: An appropriate sedative record must be maintained, including the names of all drugs administered, time administered and route of administration, including local anesthetics, dosages, and monitored physiological parameters.

5. Recovery and Discharge

• Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
• The qualified dentist or appropriately trained clinical staff must monitor the patient during recovery until the patient is ready for discharge by the dentist.
• The qualified dentist must determine and document that level of consciousness, oxygenation, ventilation and circulation are satisfactory prior to discharge.
• Post-operative verbal and written instructions must be given to the patient, parent, escort, guardian or caregiver.

6. Emergency Management

• If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient returns to the intended level of sedation.
• The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of minimal sedation and providing the equipment and protocols for patient rescue.

7. Management of Children

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

B. Moderate Sedation

1. Patient Evaluation

Patients considered for moderate sedation must undergo a pre-anesthesia evaluation prior to the administration of any sedative, be suitably evaluated prior to the start of any sedative procedure. In healthy or medically stable individuals (ASA I, II), this should consist of at least a review at an appropriate time (ideally within the previous 30 days) of their current medical history and medication use. However, in addition, patients with significant medical considerations (e.g., ASA III, IV) may also require consultation with their primary care physician or consulting medical specialist.

2. Pre-operative Preparation

• The patient, parent, legal guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative agents and informed consent for the proposed sedation must be obtained.
• Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.

• Baseline vital signs including blood pressure, pulse and respiration rates, and blood oxygen saturation by pulse oximetry must be obtained unless precluded by the nature of the patient, procedure or equipment the patient's behavior prohibits such determination.

• A focused physical evaluation must be performed, including recording the patient's body weight and BMI. In addition, body temperature should be measured when clinically indicated as deemed appropriate.

• Preoperative dietary restrictions must be considered based on the sedative technique prescribed.

• Pre-operative verbal or written instructions must be given to the patient, parent, escort, guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.

3. Personnel and Equipment Requirements

Personnel:
• At least one additional person trained in Basic Life Support for Healthcare Providers must be present in addition to the dentist.

Equipment:
• A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.

• A log of equipment maintenance, including monitors and anesthesia delivery system, must be maintained. A pre-procedural check of equipment for each administration of sedation must be performed.

• When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.

• End tidal CO2 must be monitored unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored by evaluation by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.

• An appropriate scavenging system must be available if gases other than oxygen or air are used.

• The equipment necessary to establish intravenous access must be available.

• If parenteral sedation is administered, a secure intravenous access site must be maintained until the patient meets discharge criteria.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering moderate sedation must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. When active treatment concludes and the patient recovers to a minimally sedated level a qualified auxiliary may be directed by the dentist to remain with the patient and continue to monitor them as explained in the guidelines until they are discharged from the facility. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Consciousness:
• Level of sedation consciousness (e.g., responsiveness to verbal command) must be continually assessed.

Oxygenation:
• Color of mucosa, skin or blood must be evaluated continually.
• Oxygen saturation must be evaluated by pulse oximetry continuously.

Ventilation:
• The dentist must observe chest excursions continually.
• The dentist must monitor ventilation and/or breathing by monitoring end-tidal CO2 unless precluded or invalidated by the nature of the patient, procedure or equipment. In addition, ventilation may be monitored by continual observation of qualitative signs, including chest excursion and auscultation of breath sounds with a precordial or pretracheal stethoscope. This can be accomplished by auscultation of breath sounds, monitoring end-tidal CO2 or by verbal communication with the patient.

Circulation:
• The dentist must continually evaluate blood pressure and heart rate (unless invalidated by the nature of the patient, procedure or equipment, the patient is unable to tolerate and this is noted in the time-oriented anesthesia record).
• Continuous ECG monitoring of patients with significant cardiovascular disease should be considered.

Documentation:
• Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics, dosages and monitored physiological parameters. (See Additional Sources of Information for sample of a time-oriented anesthetic record).
• Pulse oximetry, heart rate, respiratory rate, blood pressure and level of consciousness must be recorded continually.

5. Recovery and Discharge
• Oxygen and suction equipment must be immediately available if a separate recovery area is utilized.
• The qualified dentist or appropriately trained clinical staff must continually monitor the patient’s blood pressure, heart rate, oxygenation and level of consciousness.
• The qualified dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge.
• Post-operative verbal and written instructions must be given to the patient, and parent, escort, guardian or care giver.
• If a pharmacological reversal agent is administered before discharge criteria have been met, the patient must be monitored for a longer period than usual before discharge, since re-sedation may occur once the effects of the reversal agent have waned.

6. Emergency Management
• If a patient enters a deeper level of sedation than the dentist is qualified to provide, the dentist must stop the dental procedure until the patient returns is returned to the intended level of sedation.
• The qualified dentist is responsible for the sedative management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of moderate sedation and providing the equipment, drugs and protocol for patient rescue.

7. Management of Children

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for
Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

C. Deep Sedation or General Anesthesia

1. Patient Evaluation

Patients considered for deep sedation or general anesthesia must undergo a pre-anesthesia evaluation prior to the start of the administration of any sedative procedure. In healthy or medically stable individuals (ASA I, II) this must consist of at least a review of their current medical history and medication use and NPO status. In addition, however, patients with significant medical considerations (e.g., ASA III, IV) may also require consultation with their primary care physician or consulting medical specialist.

2. Pre-operative Preparation

- The patient, parent, guardian or care giver must be advised regarding the procedure associated with the delivery of any sedative or anesthetic agents and informed consent for the proposed sedation/anesthesia must be obtained.
- Determination of adequate oxygen supply and equipment necessary to deliver oxygen under positive pressure must be completed.
- Baseline vital signs (including body weight, blood pressure, pulse rate, respiration rate, and blood oxygen saturation) must be obtained unless invalidated by the patient, procedure or equipment the patient's behavior prohibits such determination. In addition, body temperature should be measured when clinically appropriate.
- A focused physical evaluation must be performed including recording the patient's body weight and BMI as deemed appropriate. In addition, body temperature should be measured when clinically indicated.
- Preoperative dietary restrictions must be considered based on the sedative/anesthetic technique prescribed.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, guardian or care giver, including pre-operative fasting instructions based on the ASA Summary of Fasting and Pharmacologic Recommendations.
- An intravenous line, which is secured throughout the procedure, must be established except as provided in part IV. C.6. Pediatric and Special Needs Patients.

3. Personnel and Equipment Requirements

Personnel: A minimum of three (3) individuals must be present.

- A dentist qualified in accordance with part III. C. of these Guidelines to administer the deep sedation or general anesthesia.
- Two additional individuals who have current certification of successfully completing a Basic Life Support (BLS) Course for the Healthcare Provider.
- When the same individual administering the deep sedation or general anesthesia is performing the dental procedure, one of the additional appropriately trained team members must be designated for patient monitoring.

Equipment:

- A positive-pressure oxygen delivery system suitable for the patient being treated must be immediately available.
- A log of equipment maintenance, including monitors and anesthesia delivery systems, must be maintained. A pre-procedural check of equipment for each administration must be performed.
• When inhalation equipment is used, it must have a fail-safe system that is appropriately checked and calibrated. The equipment must also have either (1) a functioning device that prohibits the delivery of less than 30% oxygen or (2) an appropriately calibrated and functioning in-line oxygen analyzer with audible alarm.
• An appropriate scavenging system must be available if gases other than oxygen or air are used.
• The equipment necessary to establish intravenous access must be available.
• Equipment and drugs necessary to provide advanced airway management, and advanced cardiac life support must be immediately available.
• End tidal CO2 must be monitored unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope. If volatile anesthetic agents are utilized, a capnograph must be utilized and an inspired agent analysis monitor should be considered.
• Resuscitation medications and an appropriate defibrillator must be immediately available.

4. Monitoring and Documentation

Monitoring: A qualified dentist administering deep sedation or general anesthesia must remain in the operatory room to monitor the patient continuously until the patient meets the criteria for recovery. The dentist must not leave the facility until the patient meets the criteria for discharge and is discharged from the facility. Monitoring must include:

Oxygenation:
• Color of mucosa, skin or blood must be continually evaluated.
• Oxygenation saturation must be evaluated continuously by pulse oximetry.

Ventilation:
• Intubated patient: End-tidal CO2 must be continuously monitored and evaluated.
• Non-intubated patient: Breath sounds via auscultation and/or End-tidal CO2 must be continually monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation may be monitored and evaluated by continual observation of qualitative signs, including auscultation of breath sounds with a precordial or pretracheal stethoscope.
• Respiration rate must be continually monitored and evaluated.

Circulation:
• The dentist must continuously evaluate heart rate and rhythm via ECG throughout the procedure, as well as pulse rate via pulse oximetry.
• The dentist must continually evaluate blood pressure.

Temperature:
• A device capable of measuring body temperature must be readily available during the administration of deep sedation or general anesthesia.
• The equipment to continuously monitor body temperature should be available and must be performed whenever triggering agents associated with malignant hyperthermia are administered.

Documentation:
• Appropriate time-oriented anesthetic record must be maintained, including the names of all drugs, dosages and their administration times, including local anesthetics and monitored physiological parameters. (See Additional Sources of Information for sample of a time-oriented anesthetic record)
• Pulse oximetry and end-tidal CO2 measurements (if taken), heart rate, respiratory rate and blood pressure must be recorded continually.

5. Recovery and Discharge
Oxygen and suction equipment must be immediately available if a separate recovery area is utilized. The dentist or clinical staff must continually monitor the patient’s blood pressure, heart rate, oxygenation and level of consciousness. The dentist must determine and document that level of consciousness; oxygenation, ventilation and circulation are satisfactory for discharge. Post-operative verbal and written instructions must be given to the patient, and parent, escort, guardian or care giver.

6. Pediatric Patients and Those with Special Needs

Because many dental patients undergoing deep sedation or general anesthesia are mentally and/or physically challenged, it is not always possible to have a comprehensive physical examination or appropriate laboratory tests prior to administering care. When these situations occur, the dentist responsible for administering the deep sedation or general anesthesia should document the reasons preventing the recommended preoperative management.

In selected circumstances, deep sedation or general anesthesia may be utilized without establishing an indwelling intravenous line. These selected circumstances may include very brief procedures or periods of time, which, for example, may occur in some pediatric patients; or the establishment of intravenous access after deep sedation or general anesthesia has been induced because of poor patient cooperation.

7. Emergency Management

The qualified dentist is responsible for sedative/anesthetic management, adequacy of the facility and staff, diagnosis and treatment of emergencies related to the administration of deep sedation or general anesthesia and providing the equipment, drugs and protocols for patient rescue.

*****

Note regarding Section V: Additional Sources of Information as well as references supporting the Guidelines will become available on the ADA’s website and no longer listed within the policy document.

V. Additional Sources of Information


American Society of Anesthesiologists (ASA). Practice Guidelines for Preoperative Fasting and the Use of Pharmacological Agents to Reduce the Risk of Pulmonary Aspiration: Application to Healthy Patients

American Society of Anesthesiologists (ASA). Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists. Available at http://www.asahq.org/publicationsAndServices/practiceparam.htm#sedation. The ASA has other anesthesia resources that might be of interest to dentists. For more information, go to http://www.asahq.org/publicationsAndServices/sgstoc.htm


Dionne, Raymond A.; Yagiela, John A., et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA 2006;137(4):502-13. ADA members can access this article online at http://jada.ada.org/cgi/content/full/137/4/502
Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students

Underscore denotes proposed additions
Strikethrough denotes proposed deletions

I. Introduction

The administration of local anesthesia, sedation and general anesthesia is an integral part of the practice of dentistry. The American Dental Association is committed to the safe and effective use of these modalities by appropriately educated and trained dentists.

Anxiety and pain control can be defined as the application of various physical, chemical and psychological modalities to the prevention and treatment of preoperative, operative and postoperative patient anxiety and pain to allow dental treatment to occur in a safe and effective manner. It involves all disciplines of dentistry and, as such, is one of the most important aspects of dental education. The intent of these Guidelines is to provide direction for the teaching of pain control and sedation to dentists and can be applied at all levels of dental education from predoctoral through continuing education. They are designed to teach initial competency in pain control and minimal and moderate sedation techniques.

These Guidelines recognize that many dentists have acquired a high degree of competency in the use of anxiety and pain control techniques through a combination of instruction and experience. It is assumed that this has enabled these teachers and practitioners to meet the educational criteria described in this document.

It is not the intent of the Guidelines to fit every program into the same rigid educational mold. This is neither possible nor desirable. There must always be room for innovation and improvement. They do, however, provide a reasonable measure of program acceptability, applicable to all institutions and agencies engaged in predoctoral and continuing education.

The curriculum in anxiety and pain control is a continuum of educational experiences that will extend over several years of the predoctoral program. It should provide the dental student with the knowledge and skills necessary to provide minimal sedation to alleviate anxiety and control pain without inducing detrimental physiological or psychological side effects. Dental schools whose goal is to have predoctoral students achieve competency in techniques such as local anesthesia and nitrous oxide inhalation and minimal sedation must meet all of the goals, prerequisites, didactic content, clinical experiences, faculty and facilities, as described in these Guidelines.

Techniques for the control of anxiety and pain in dentistry should include both psychological and pharmacological modalities. Psychological strategies should include simple relaxation techniques for the anxious patient and more comprehensive behavioral techniques to control pain. Pharmacological strategies should include not only local anesthetics but also sedatives, analgesics and other useful agents. Dentists should learn indications and techniques for administering these drugs enterally, parenterally and by inhalation as supplements to local anesthesia.

The predoctoral curriculum should provide instruction, exposure and/or experience in anxiety and pain control, including minimal and moderate sedation. The predoctoral program must also provide the knowledge and skill to enable students to recognize and manage any emergencies that might arise as a consequence of
treatment. Predoctoral dental students must complete a course in Basic Life Support for the Healthcare Provider. Though Basic Life Support courses are available online, any course taken online should be followed up with a hands-on component and be approved by the American Heart Association or the American Red Cross.

Local anesthesia is the foundation of pain control in dentistry. Although the use of local anesthetics in dentistry has a long record of safety, dentists must be aware of the maximum safe dosage limit for each patient, since large doses of local anesthetics may increase the level of central nervous system depression with sedation. The use of minimal and moderate sedation requires an understanding of local anesthesia and the physiologic and pharmacologic implications of the local anesthetic agents when combined with the sedative agents.

The knowledge, skill and clinical experience required for the safe administration of deep sedation and/or general anesthesia are beyond the scope of predoctoral and continuing education programs. Advanced education programs that teach deep sedation and/or general anesthesia to competency have specific teaching requirements described in the Commission on Dental Accreditation requirements for those advanced programs and represent the educational and clinical requirements for teaching deep sedation and/or general anesthesia in dentistry.

The objective of educating dentists to utilize pain control, sedation and general anesthesia is to enhance their ability to provide oral health care. The American Dental Association urges dentists to participate regularly in continuing education update courses in these modalities in order to remain current.

All areas in which local anesthesia and sedation are being used must be properly equipped with suction, physiologic monitoring equipment, a positive pressure oxygen delivery system suitable for the patient being treated and emergency drugs. Protocols for the management of emergencies must be developed and training programs held at frequent intervals.

II. Definitions

Methods of Anxiety and Pain Control

analgesia—the diminution or elimination of pain. [Moved to Terms section]

conscious sedation—a minimally depressed level of consciousness that retains the patient’s ability to independently and continuously maintain an airway and respond appropriately to physical stimulation or verbal command and that is produced by a pharmacological or non-pharmacological method or a combination thereof.

In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of conscious sedation.

combination inhalation–enteral conscious sedation (combined conscious sedation)—conscious sedation using inhalation and enteral agents.

When the intent is anxiolysis only, and the appropriate dosage of agents is administered, then the definition of enteral and/or combination inhalation–enteral conscious sedation (combined conscious sedation) does not apply.

local anesthesia—the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug. [Moved to Terms section]

\footnote{Parenteral conscious sedation may be achieved with the administration of a single agent or by the administration of more than one agent.}
minimal sedation - a minimally depressed level of consciousness, produced by a pharmacological method, that retains the patient's ability to independently and continuously maintain an airway and respond normally to tactile stimulation and verbal command. Although cognitive function and coordination may be modestly impaired, ventilatory and cardiovascular functions are unaffected.²

Note: In accord with this particular definition, the drug(s) and/or techniques used should carry a margin of safety wide enough never to render unintended loss of consciousness. Further, patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

When the intent is minimal sedation for adults, the appropriate initial dosing of a single enteral drug is no more than the maximum recommended dose (MRD) of a drug that can be prescribed for unmonitored home use.

For children age 12 and under, the use of preoperative sedatives for children (aged 12 and under) prior to arrival in the dental office, except in extraordinary situations, must be avoided due to the risk of unobserved respiratory obstruction during transport by untrained individuals.

Prescription medications intended to accomplish procedural sedation for children age 12 and under must not be administered without the benefit of direct supervision by a trained dental/medical provider. (Source: the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

Children (aged 12 and under) can become moderately sedated despite the intended level of minimal sedation; should this occur, the guidelines for moderate sedation apply.

For children 12 years of age and under, the American Dental Association supports the use of the American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.

Nitrous oxide/oxygen may be used in combination with a single enteral drug in minimal sedation.

Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

The following definitions apply to administration of minimal sedation via an enteral route:

maximum recommended dose (MRD) - maximum FDA-recommended dose of a drug as printed in FDA-approved labeling for unmonitored home use.

incremental dosing - administration of multiple doses of a drug until a desired effect is reached, but not to exceed the maximum recommended dose (MRD).

supplemental dosing - during minimal sedation, supplemental dosing is a single additional dose of the initial dose of the initial drug that may be necessary for prolonged procedures. The supplemental dose should not exceed one-half of the initial total dose and should not be administered until the dentist has determined the clinical half-life of the initial dosing has passed. The total aggregate dose must not exceed 1.5x the MRD on the day of treatment. For the

² Portions excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014 2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.
purpose of enteral or combination enteral/inhalation sedation, when the MRD of a drug is exceeded or more than one drug is used in combination, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation apply.

**Moderate sedation** - a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain a patent airway, and spontaneous ventilation is adequate. Cardiovascular function is usually maintained.³

*Note:* In accord with this particular definition, the drugs and/or techniques used should carry a margin of safety wide enough to render unintended loss of consciousness unlikely. Repeated dosing of an agent before the effects of previous dosing can be fully appreciated may result in a greater alteration of the state of consciousness than is the intent of the dentist. Further, a patient whose only response is reflex withdrawal from a painful stimulus is not considered to be in a state of moderate sedation.

The following definition applies to administration of moderate and deeper levels of sedation:

**Titration** - administration of incremental doses of an intravenous or inhalation drug until a desired effect is reached. Knowledge of each drug’s time of onset, peak response and duration of action is essential to avoid over sedation. Although the concept of titration of a drug to effect is critical for patient safety, when the intent is moderate sedation one must know whether the previous dose has taken full effect before administering an additional drug increment.

**Deep sedation** - a drug-induced depression of consciousness during which patients cannot be easily aroused but respond purposefully following repeated or painful stimulation. The ability to independently maintain ventilatory function may be impaired. Patients may require assistance in maintaining a patent airway, and spontaneous ventilation may be inadequate. Cardiovascular function is usually maintained.

**General anesthesia** – a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation. The ability to independently maintain ventilatory function is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

Because sedation and general anesthesia are a continuum, it is not always possible to predict how an individual patient will respond. Hence, practitioners intending to produce a given level of sedation should be able to diagnose and manage the physiologic consequences (rescue) for patients whose level of sedation becomes deeper than initially intended.

For all levels of sedation, the qualified dentist practitioner must have the training, skills, drugs and equipment to identify and manage such an occurrence until either assistance arrives (emergency medical service) or the patient returns to the intended level of sedation without airway or cardiovascular complications.

**Routes of Administration**

**Enteral** - any technique of administration in which the agent is absorbed through the gastrointestinal (GI) tract or oral mucosa [i.e., oral, rectal, sublingual].

**Parenteral** - a technique of administration in which the drug bypasses the gastrointestinal (GI) tract [i.e., intramuscular (IM), intravenous (IV), intranasal (IN), submucosal (SM), subcutaneous (SC), intraosseous (IO)].

³ Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014-2004, of the American Society of Anesthesiologists (ASA). A copy of the full text can be obtained from ASA, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.
transdermal - a technique of administration in which the drug is administered by patch or iontophoresis through skin.

transmucosal – a technique of administration in which the drug is administered across mucosa such as intranasal, sublingual, or rectal.

inhalation - a technique of administration in which a gaseous or volatile agent is introduced into the lungs and whose primary effect is due to absorption through the gas/blood interface.

Terms

analgesia – the diminution or elimination of pain  
local anesthesis - the elimination of sensation, especially pain, in one part of the body by the topical application or regional injection of a drug.  

Note: Although the use of local anesthetics is the foundation of pain control in dentistry and has a long record of safety, dentists must always be aware of the maximum, safe dosage limits for each patient. Large doses of local anesthetics in themselves may result in central nervous system depression especially in combination with sedative agents. 

qualified dentist – meets the educational requirements for the appropriate level of sedation in accordance with Section III of these Guidelines, or a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations prior to adoption of this document. 

must/shall - indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

should -indicates the recommended manner to obtain the standard; highly desirable.

may - indicates freedom or liberty to follow a reasonable alternative.

continual - repeated regularly and frequently in a steady succession.

continuous - prolonged without any interruption at any time.

time-oriented anesthesia record - documentation at appropriate time intervals of drugs, doses and physiologic data obtained during patient monitoring.

immediately available – on site in the facility and available for immediate use.

Levels of Knowledge

familiarity - a simplified knowledge for the purpose of orientation and recognition of general principles.
in-depth - a thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding (highest level of knowledge).

Levels of Skill

exposed - the level of skill attained by observation of or participation in a particular activity.

competent - displaying special skill or knowledge derived from training and experience.

proficient - the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time (highest level of skill).
**American Society of Anesthesiologists (ASA) Patient Physical Status Classification**

ASA I - A normal healthy patient.

ASA II - A patient with mild systemic disease.

ASA III - A patient with severe systemic disease.

ASA IV - A patient with severe systemic disease that is a constant threat to life.

ASA V - A moribund patient who is not expected to survive without the operation.

ASA VI - A declared brain-dead patient whose organs are being removed for donor purposes.

E - Emergency operation of any variety (used to modify one of the above classifications, i.e., ASA III-E).

**American Society of Anesthesiologists’ Fasting Guidelines**

Ingested Material | Minimum Fasting Period
--- | ---
Clear liquids | 2 hours
Breast milk | 4 hours
Infant formula | 6 hours
Nonhuman milk | 6 hours
Light meal | 6 hours
Fatty meal | 8 hours


**Education Courses**

Education may be offered at different levels (competency, update, survey courses and advanced education programs). A description of these different levels follows:

1. **Competency Courses** are designed to meet the needs of dentists who wish to become competent knowledgeable and proficient in the safe and effective administration of local anesthesia, minimal and moderate sedation. They consist of lectures, demonstrations and sufficient clinical participation to assure the faculty that the dentist understands the procedures taught and can safely and effectively apply them so that mastery of the subject is achieved. Faculty must assess and document the dentist’s competency upon successful completion of such training. To maintain competency, periodic update courses must be completed.

2. **Update Courses** are designed for persons with previous training. They are intended to provide a review of the subject and an introduction to recent advances in the field. They should be designed didactically and clinically to meet the specific needs of the participants. Participants must have completed previous competency training (equivalent, at a minimum, to the competency course described in this document) and have current experience to be eligible for enrollment in an update course.

3. **Survey Courses** are designed to provide general information about subjects related to pain control and sedation. Such courses should be didactic and not clinical in nature, since they are not intended to develop clinical competency.

4. **Advanced Education Courses** are a component of an advanced dental education program, accredited by the ADA Commission on Dental Accreditation in accord with the **Accreditation Standards for advanced dental education**.

---

4 **ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, 520 N. Northwest Highway, Park Ridge, IL 60068-2573.**
education programs. These courses are designed to prepare the graduate dentist or postdoctoral student in the most comprehensive manner to be competent knowledgeable and proficient in the safe and effective administration of minimal, moderate and deep sedation and general anesthesia.

III. Teaching Pain Control

These Guidelines present a basic overview of the recommendations for teaching pain control.

A. General Objectives: Upon completion of a predoctoral curriculum in pain control the dentist must:

1. have an in-depth knowledge of those aspects of anatomy, physiology, pharmacology and psychology involved in the use of various anxiety and pain control methods;

2. be competent in evaluating the psychological and physical status of the patient, as well as the magnitude of the operative procedure, in order to select the proper regimen;

3. be competent in monitoring vital functions;

4. be competent in prevention, recognition and management of related complications;

5. be familiar with have in-depth knowledge of the appropriateness of and the indications for medical consultation or referral;

6. be competent in the maintenance of proper records with accurate chart entries recording medical history, physical examination, vital signs, drugs administered and patient response.

B. Pain Control Curriculum Content:

1. Philosophy of anxiety and pain control and patient management, including the nature and purpose of pain

2. Review of physiologic and psychologic aspects of anxiety and pain

3. Review of airway anatomy and physiology

4. Physiologic monitoring

   a. Observation

      (1) Central nervous system

      (2) Respiratory system

      a. Oxygenation

      b. Ventilation

      (3) Cardiovascular system

   b. Monitoring equipment

5. Pharmacologic aspects of anxiety and pain control

   a. Routes of drug administration

   b. Sedatives and anxiolytics

   c. Local anesthetics

   d. Analgesics and antagonists

   e. Adverse side effects

   f. Drug interactions

   g. Drug abuse

6. Control of preoperative and operative anxiety and pain

   a. Patient evaluation

      (1) Psychological status

      (2) ASA physical status

      (3) Type and extent of operative procedure

   b. Nonpharmacologic methods

      (1) Psychological and behavioral methods
C. Sequence of Pain Control Didactic and Clinical Instruction: Beyond the basic didactic instruction in local anesthesia, additional time should be provided for demonstrations and clinical practice of the injection techniques. The teaching of other methods of anxiety and pain control, such as the use of analgesics and enteral, inhalation and parenteral sedation, should be coordinated with a course in pharmacology. By this time the student also will have developed a better understanding of patient evaluation and the problems related to prior patient care. As part of this instruction, the student should be taught the techniques of venipuncture and physiologic monitoring. Time should be included for demonstration of minimal and moderate sedation techniques.

Following didactic instruction in minimal and moderate sedation, the student must receive sufficient clinical experience to demonstrate competency in those techniques in which the student is to be certified. It is understood that not all institutions may be able to provide instruction to the level of clinical competence in pharmacologic sedation modalities to all students. The amount of clinical experience required to achieve competency will vary according to student ability, teaching methods and the anxiety and pain control modality taught.

Clinical experience in minimal and moderate sedation techniques should be related to various disciplines of dentistry and not solely limited to surgical cases. Typically, such experience will be provided in managing healthy adult patients. The sedative care of pediatric patients and those with special needs requires advanced didactic and clinical training.
Throughout both didactic and clinical instruction in anxiety and pain control, psychological management of the patient should also be stressed. Instruction should emphasize that the need for sedative techniques is directly related to the patient’s level of anxiety, cooperation, medical condition and the planned procedures.

D. Faculty: Instruction must be provided by qualified faculty for whom anxiety and pain control are areas of major proficiency, interest and concern.

E. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

IV. Teaching Administration of Minimal Sedation

The faculty responsible for curriculum in minimal sedation techniques must be familiar with the ADA Policy Statement: Guidelines for the Use of Sedation and General Anesthesia by Dentists, and the Commission on Dental Accreditation’s Accreditation Standards for dental education programs. These Guidelines present a basic overview of the recommendations for teaching minimal sedation. These include courses in nitrous oxide/oxygen sedation, enteral sedation, and combined inhalation/enteral techniques. These Guidelines are not intended for the management of enteral and/or combination inhalation-ental minimal sedation in children, which requires additional course content and clinical learning experience. (Moved from Section C)

General Objectives: Upon completion of a competency course in minimal sedation, the dentist must be able to:

1. Describe the adult and pediatric anatomy and physiology of the respiratory, cardiovascular and central nervous systems, as they relate to the above techniques.
2. Describe the pharmacological effects of drugs.
3. Describe the methods of obtaining a medical history and conduct an appropriate physical examination.
4. Apply these methods clinically in order to obtain an accurate evaluation.
5. Use this information clinically for ASA classification and risk assessment, and pre-procedure fasting instructions.
6. Choose the most appropriate technique for the individual patient.
7. Use appropriate physiologic monitoring equipment.
8. Describe the physiologic responses that are consistent with minimal sedation.
9. Understand the sedation/general anesthesia continuum.
10. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia than intended.

Inhalation Sedation (Nitrous Oxide/Oxygen)

A. Inhalation Sedation Course Objectives: Upon completion of a competency course in inhalation sedation techniques, the dentist must be able to:

1. Describe the basic components of inhalation sedation equipment.
2. Discuss the function of each of these components.
3. List and discuss the advantages and disadvantages of inhalation sedation.
4. List and discuss the indications and contraindications of inhalation sedation.
5. List the complications associated with inhalation sedation.
6. Discuss the prevention, recognition and management of these complications.
7. Administer inhalation sedation to patients in a clinical setting in a safe and effective manner.
8. Discuss the abuse potential, occupational hazards and other untoward effects of inhalation agents.

B. Inhalation Sedation Course Content:
1. Historical, philosophical and psychological aspects of anxiety and pain control.

2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological considerations.


4. Description of the stages of drug-induced central nervous system depression through all levels of consciousness and unconsciousness, with special emphasis on the distinction between the conscious and the unconscious state.

5. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.

6. Pharmacology of agents used in inhalation sedation, including drug interactions and incompatibilities.

7. Indications and contraindications for use of inhalation sedation.

8. Review of dental procedures possible under inhalation sedation.

9. Patient monitoring using observation and monitoring equipment (i.e., pulse oximetry), with particular attention to vital signs and reflexes related to pharmacology of nitrous oxide.

10. Importance of maintaining proper records with accurate chart entries recording medical history, physical examination, vital signs, drugs and doses administered and patient response.


12. Administration of local anesthesia in conjunction with inhalation sedation techniques.

13. Description, maintenance and use of inhalation sedation equipment.

14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting occupational exposure.

15. Discussion of abuse potential.

C. Inhalation Sedation Course Duration: While length of a course is only one of the many factors to be considered in determining the quality of an educational program, the course should be a minimum of 14 hours plus management of clinical dental cases, including a clinical component during which clinical competency in inhalation sedation technique is achieved. The inhalation sedation course most often is completed as a part of the predoctoral dental education program. However, the course may be completed in a postdoctoral continuing education competency course.

D. Participant Evaluation and Documentation of Inhalation Sedation Instruction: Competency courses in inhalation sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training. Records of the didactic instruction and clinical experience, including the number of patients treated by each participant must be maintained and available.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess an active permit or license to administer moderate sedation in at least one state, have had at least three years of experience, including the individual’s formal postdoctoral training in anxiety and pain control. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than ten-to-one when inhalation sedation is being used allows for adequate supervision during the clinical phase of instruction; a one-to-one ratio is recommended during the early state of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.
Enteral and/or Combination Inhalation-Enteral Minimal Sedation

A. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Objectives: Upon completion of a competency course in enteral and/or combination inhalation-ental minimal sedation techniques, the dentist must be able to:

1. Describe the basic components of inhalation sedation equipment.
2. Discuss the function of each of these components.
3. List and discuss the advantages and disadvantages of enteral and/or combination inhalation-ental minimal sedation (combined minimal sedation).
4. List and discuss the indications and contraindications for the use of enteral and/or combination inhalation-ental minimal sedation (combined minimal sedation).
5. List the complications associated with enteral and/or combination inhalation-ental minimal sedation (combined minimal sedation).
6. Discuss the prevention, recognition and management of these complications.
7. Administer enteral and/or combination inhalation-ental minimal sedation (combined minimal sedation) to patients in a clinical setting in a safe and effective manner.
8. Discuss the abuse potential, occupational hazards and other effects of enteral and inhalation agents.
9. Discuss the pharmacology of the enteral and inhalation drugs selected for administration.
10. Discuss the precautions, contraindications and adverse reactions associated with the enteral and inhalation drugs selected.
11. Describe a protocol for management of emergencies in the dental office and list and discuss the emergency drugs and equipment required for management of life-threatening situations.
12. Demonstrate the ability to manage life-threatening emergency situations, including current certification in Basic Life Support for Healthcare Providers.
13. Discuss the pharmacological effects of combined drug therapy, their implications and their management. Nitrous oxide/oxygen when used in combination with sedative agent(s) may produce minimal, moderate, deep sedation or general anesthesia.

B. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.
2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological profiling.
4. Description of the stages of drug-induced central nervous system depression through all levels of consciousness and unconsciousness, with special emphasis on the distinction between the conscious and the unconscious state.
5. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.
6. Pharmacology of agents used in enteral and/or combination inhalation-ental minimal sedation, including drug interactions and incompatibilities.
7. Indications and contraindications for use of enteral and/or combination inhalation-ental minimal sedation (combined minimal sedation).
8. Review of dental procedures possible under enteral and/or combination inhalation-ental minimal sedation.
9. Patient monitoring using observation, monitoring equipment, with particular attention to vital signs and reflexes related to consciousness.
10. Maintaining proper records with accurate chart entries recording medical history, physical examination, informed consent, time-oriented anesthesia record, including the names of all drugs administered including local anesthetics, doses, and monitored physiological parameters.
12. Administration of local anesthesia in conjunction with enteral and/or combination inhalation-ental minimal sedation techniques.
13. Description, maintenance and use of inhalation sedation equipment.
14. Introduction to potential health hazards of trace anesthetics and proposed techniques for limiting occupational exposure.

15. Discussion of abuse potential.

C. Enteral and/or Combination Inhalation-Enteral Minimal Sedation Course Duration: Participants must be able to document current certification in Basic Life Support for Healthcare Providers and have completed a nitrous oxide competency course to be eligible for enrollment in this course. While length of a course is only one of the many factors to be considered in determining the quality of an educational program, the course should include a minimum of 16 hours, plus clinically-oriented experiences during which competency in enteral and/or combined inhalation-ental minimal sedation techniques is demonstrated. Clinically-oriented experiences may include group observations on patients undergoing enteral and/or combination inhalation-ental minimal sedation. Clinical experience in managing a compromised airway is critical to the prevention of life-threatening emergencies. The faculty should schedule participants to return for additional clinical experience if competency has not been achieved in the time allotted. The educational course may be completed in a predoctoral dental education curriculum or a postdoctoral continuing education competency course.

These Guidelines are not intended for the management of enteral and/or combination inhalation-ental minimal sedation in children, which requires additional course content and clinical learning experience. [Moved to Section IV]

D. Participant Evaluation and Documentation of Instruction: Competency courses in combination inhalation-ental minimal sedation techniques must afford participants with sufficient clinical understanding to enable them to achieve competency. The course director must certify the competency of participants upon satisfactory completion of the course. Records of the course instruction must be maintained and available.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess a current permit or license to administer moderate sedation in at least one state, have had at least three years of experience, including the individual's formal postdoctoral training in anxiety and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under consideration should participate. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, and cardiologists and psychologists, should be encouraged. The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies.

V. Teaching Administration of Moderate Sedation

These Guidelines present a basic overview of the requirements for a competency course in moderate sedation. These include courses in enteral and parenteral moderate sedation and parenteral moderate sedation. The teaching guidelines contained in this section on moderate sedation differ slightly from documents in medicine to reflect the differences in delivery methodologies and practice environment in dentistry. For this reason, separate teaching guidelines have been developed for moderate enteral and moderate parenteral sedation.

Completion of a pre-requisite nitrous oxide-oxygen competency course is required for participants combining parenteral sedation with nitrous oxide-oxygen. [Moved from Section C]

A. Course Objectives: Upon completion of a course in moderate sedation, the dentist must be able to:

1. List and discuss the advantages and disadvantages of moderate sedation.

2. Discuss the prevention, recognition and management of complications associated with moderate sedation.
3. Administer moderate sedation to patients in a clinical setting in a safe and effective manner.

4. Discuss the abuse potential, occupational hazards and other untoward effects of the agents utilized to achieve moderate sedation.

5. Describe and demonstrate the technique of intravenous access, intramuscular injection and other parenteral techniques.

6. Discuss the pharmacology of the drug(s) selected for administration.

7. Discuss the precautions, indications, contraindications and adverse reactions associated with the drug(s) selected.

8. Administer the selected drug(s) to dental patients in a clinical setting in a safe and effective manner.

9. List the complications associated with techniques of moderate sedation.

10. Describe a protocol for management of emergencies in the dental office and list and discuss the emergency drugs and equipment required for the prevention and management of emergency situations.

11. Discuss principles of advanced cardiac life support or an appropriate dental sedation/anesthesia emergency course equivalent.

12. Demonstrate the ability to manage emergency situations.

13. Demonstrate the ability to diagnose and treat emergencies related to the next deeper level of anesthesia than intended.

B. Moderate Sedation Course Content:

1. Historical, philosophical and psychological aspects of anxiety and pain control.

2. Patient evaluation and selection through review of medical history taking, physical diagnosis and psychological considerations.

3. Use of patient history and examination for ASA classification, risk assessment and pre-procedure fasting instructions.


5. Description of the sedation anesthesia continuum, with special emphasis on the distinction between the conscious and the unconscious state.

6. Review of pediatric and adult respiratory and circulatory physiology and related anatomy.

7. Pharmacology of local anesthetics and agents used in moderate sedation, including drug interactions and contraindications.

8. Indications and contraindications for use of moderate sedation.


10. Patient monitoring using observation and monitoring equipment, with particular attention to vital signs, ventilation/breathing and reflexes related to consciousness.

11. Maintaining proper records with accurate chart entries recording medical history, physical examination, informed consent, time-oriented anesthesia record, including the names of all drugs administered including local anesthetics, doses, and monitored physiological parameters.


13. Description, maintenance and use of moderate sedation monitors and equipment.


15. Intravenous access: anatomy, equipment and technique.

16. Prevention, recognition and management of complications of venipuncture and other parenteral techniques.

17. Description and rationale for the technique to be employed.

18. Prevention, recognition and management of systemic complications of moderate sedation, with particular attention to airway maintenance and support of the respiratory and cardiovascular systems.

C. Moderate Enteral Sedation Course Duration: A minimum of 24 hours of instruction, plus management of at least 10 adult case experiences by the enteral and/or enteral-nitrous oxide/oxygen route are required to achieve competency. These ten cases must include at least three live clinical dental experiences managed by participants in groups no larger than five. The remaining cases may include simulations and/or video presentations, but must include one experience in returning (rescuing) a patient from deep to moderate
Participants combining enteral moderate sedation with nitrous oxide-oxygen must have first completed a nitrous oxide competency course.

Participants should be provided supervised opportunities for clinical experience to demonstrate competence in airway management. Clinical experience will be provided in managing healthy adult patients. This course in moderate enteral sedation is not designed for the management of children (aged 12 and under).

Additional supervised clinical experience is necessary to prepare participants to manage medically compromised adults and special needs patients. This course in moderate enteral sedation does not result in competency in moderate parenteral sedation. The faculty should schedule participants to return for additional didactic or clinical exposure if competency has not been achieved in the time allotted.

Moderate Parenteral Sedation Course Duration: A minimum of 60 hours of didactic instruction, plus administration of sedation for management of at least 20 individually-managed dental patients by the intravenous any route per participant including intravenous administration, is required to demonstrate achieve competency in moderate sedation techniques. Of the 20 cases, all must be individually managed by the anesthesia operator dentist. Participants combining parenteral moderate sedation with nitrous oxide-oxygen must have first completed a nitrous oxide competency course.

Clinical experience in managing a compromised airway is critical to the prevention of emergencies. Participants should be provided supervised opportunities for clinical experience to demonstrate competence in management of the airway. Typically, clinical experience will be provided in managing healthy adult patients. Additional supervised clinical experience is necessary to prepare participants to manage children (aged 12 and under) and medically compromised adults. Successful completion of this course does result in clinical competency in moderate parenteral sedation. The faculty should schedule participants to return for additional clinical experience if competency has not been achieved in the time allotted.

D. Participant Evaluation and Documentation of Instruction: Competency courses in moderate sedation techniques must afford participants with sufficient clinical experience to enable them to achieve competency. This experience must be provided under the supervision of qualified faculty and must be evaluated. The course director must certify the competency of participants upon satisfactory completion of training in each moderate sedation technique, including instruction, clinical experience and airway management. Records of the didactic instruction and clinical experience, including the number of patients managed by each participant in each anxiety and pain control modality must be maintained and available for review.

E. Faculty: The course should be directed by a dentist or physician qualified by experience and training. This individual should possess a current permit or license to administer deep sedation and general anesthesia in at least one state, have had at least three years of experience, including formal postdoctoral training in anxiety and pain control. Dental faculty with broad clinical experience in the particular aspect of the subject under consideration should participate. In addition, the participation of highly qualified individuals in related fields, such as anesthesiologists, pharmacologists, internists, cardiologists and psychologists, should be encouraged.

A participant-faculty ratio of not more than five-four-to-one when moderate enteral sedation is being taught allows for adequate supervision during the clinical phase of instruction. A participant-faculty ratio of not more than three-to-one when moderate parenteral sedation is being taught allows for adequate supervision during the clinical phase of instruction. A one-to-one ratio is recommended during the early stage of participation.

The faculty should provide a mechanism whereby the participant can evaluate the performance of those individuals who present the course material.

F. Facilities: Competency courses in moderate sedation must be presented where adequate facilities are available for proper patient care, including drugs and equipment for the management of emergencies. These facilities may include dental and medical schools/offices, hospitals and surgical centers.
Note regarding Section V: Additional Sources of Information as well as references supporting the Guidelines will become available on the ADA’s website and no longer listed within the policy document.

VI. Additional Sources of Information


American Academy of Pediatric Dentistry (AAPD). Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update. Developed through a collaborative effort between the American Academy of Pediatrics and the AAPD. Available at http://www.aapd.org/policies


American Society of Anesthesiologists (ASA). Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists. Available at http://www.asahq.org/Home/For-Members/Practice-Management/Practice-Parameters#sedation

The ASA has other anesthesia resources that might be of interest to dentists. For more information, go to http://www.asahq.org/publicationsAndServices/sgstoc.htm


Dionne, Raymond A.; Yagiela, John A., et al. Balancing efficacy and safety in the use of oral sedation in dental outpatients. JADA 2006;137(4):502-13. ADA members can access this article online at http://jada.ada.org/cgi/content/full/137/4/502