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* Material Not Included in Early Posting
** Material Posted August 4
Resolution No. 401  
New
Report: N/A  
Date Submitted: May 2023
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: 
Amount One-time  
Amount On-going 
ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.

How does this resolution increase member value: See Background

AMENDMENT OF POLICY, COMPREHENSIVE POLICY ON DENTAL LICENSURE

Background: In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans.2012:370), the Council on Dental Education and Licensure has reviewed the policy, Comprehensive Policy on Dental Licensure (Trans.2018:341). This policy was first adopted by the 2018 House of Delegates as the result of the Council’s two-year comprehensive review of the Association’s numerous policies related to dental licensure. The House of Delegates agreed with the Council’s recommendation to eliminate redundancies and lengthy explanations found in 12 policy statements and adopted the new succinct yet comprehensive policy.

Monitoring the ever-changing dental licensure landscape, the Council believes that amendments to the current policy statement should be considered. Highlights include the addition of a statement urging dental boards to ensure all dental board members are free of real or perceived conflicts of interest and should not serve simultaneously as examiners with a clinical testing agency, affirmation that determination of clinical competence may include any of the listed assessment pathways, deletion of the Curriculum Integrated Format (CIF) category because non-patient examination options are now readily available, and the addition of a licensure compacts section to clearly reflect the ADA’s support of compacts. Non-substantive editorial changes related to sequencing of the content and alignment with three sections of the document (General Principles, Initial Licensure and Licensure by Credentials) also are proposed.

The Council on Dental Education and Licensure recommends adoption of the following resolution.

Resolution

401. Resolved, that the ADA Policy on Comprehensive Policy on Dental Licensure (Trans.2018:341) be amended as follows (additions are underlined; deletions are stricken):

Comprehensive Policy on Dental Licensure

General Principles

- One standard of competency for dental licensure must be in place in order to provide quality oral health care to the public.
- Provisions for freedom of movement across state lines for all dental professionals should exist to facilitate the provision of quality oral health care to the public.
Federal licensure and federal intervention in the state dental licensure system are strongly opposed.

Efforts of unlicensed and unqualified persons to gain a right to serve the public directly in the field of dental practice are strongly opposed.

Elimination of patients in the clinical licensure examination process is strongly supported to address ethical and psychometric concerns, including those identified in the ADA Council on Ethics, Bylaws and Judicial Affairs statement entitled Ethical Considerations When Using Patients in the Examination Process (Reports 2008:103). State dental societies and dental boards are urged to work toward acceptance of valid and reliable clinical assessments that do not require single-encounter performance of procedures on patients.

The state boards of dentistry in each state or licensure jurisdiction are the sole licensure and regulating authorities for all dentists and allied dental personnel.

State dental boards are supposed to ensure that all dental board members are free of real and perceived conflicts of interest. The Association believes that dental board members should not serve simultaneously as examiners with a clinical testing agency.

State dental boards are encouraged to require verification of completion of continuing dental education as a condition for re-registration of dental licenses.

Dentists identified as deficient through properly constituted peer review mechanisms should undergo assessment and corrective competency-based education and such provisions should be included in laws, rules and regulations.

Initial Licensure

States are urged to accept the following common core of requirements for initial licensure:

1. Completion of a DDS or DMD degree from a university-based dental education program accredited by the Commission on Dental Accreditation.

2. Successful passage of the National Board Dental Examination, a valid and reliable written cognitive test.

3. A determination of clinical competency for the beginning practitioner, which may include any of the following assessment pathways:

   - Acceptance of clinical examination results from any clinical testing agency that do not involve the use of single encounter procedure-based examinations involving patients; or

   - Graduation from CODA-accredited PGY-1 program, that is, a residency program at least one year in length at a CODA-accredited clinically based postdoctoral general dentistry and/or successful completion of at least one year of a specialty residency program; or

   - An Objective Structured Clinical Examination (OSCE), that is, a valid and reliable non-patient based examination that requires candidates to use critical thinking and their clinical knowledge and skills to successfully complete dental procedures; or

   - Completion of a portfolio-type examination (such as employed by the California Dental Board) or similar assessment, that uses the evaluation mechanisms currently applied by the dental schools to assess and document student competence; or
- An Objective Structured Clinical Examination (OSCE), that is, a valid and reliable non-patient-based examination consisting of multiple, standardized stations that require candidates to use their clinical and skills to successfully complete one or more dental problem-solving tasks.

For initial licensure in dentistry, international graduates of non-CODA accredited dental education programs should possess the following educational credentials: 1) completion of a university-based dental education program accredited by the Commission on Dental Accreditation (CODA) leading to a DDS or DMD degree or 2) graduation from an advanced dental education program in general dentistry accredited by the Commission on Dental Accreditation.

**Curriculum Integrated Format Clinical Examination**

A Curriculum Integrated Format (CIF) clinical examination addresses ethical concerns associated with single encounter patient-based examinations currently administered by dental clinical testing agencies. A CIF provides candidates opportunities to successfully complete independent "third-party" clinical assessments on patients of record prior to graduation from a dental education program accredited by the Commission on Dental Accreditation.

The curriculum integrated format, as defined below, should only be employed as a licensure examination until a non-patient based licensure examination is developed that protects the public and meets psychometric standards. The Association believes that the following CIF provisions must be required by state boards of dentistry and incorporated by testing agencies for protection of the patient:

- A CIF examination must be performed by candidates on patients of record within an appropriately sequenced treatment plan.
- The competencies assessed by the clinical examining agency must be selected components of current dental education program curricula and reflective of current dental practice.
- All portions of the CIF examination must be available at multiple times within each institution during dental school to ensure that patient care is accomplished within an appropriate treatment plan and to allow candidates to remediate and retake prior to graduation any portions of the examination which they have not successfully completed.

**Graduates of Non-CODA Accredited Dental Education Programs**

For initial licensure in dentistry, international graduates of non-CODA accredited dental education programs should possess the following educational credentials: 1) completion of a university-based dental education program accredited by the Commission on Dental Accreditation (CODA) leading to a DDS or DMD degree or 2) graduation from a postgraduate program in general dentistry accredited by the Commission on Dental Accreditation.

**Licensure Compacts**

State dental societies and dental boards should support licensure compacts to allow freedom of movement for practitioners across state lines. Licensure compacts increase licensees’ mobility, facilitate quality oral health care for the public, and support relocating challenges for military members and their families. Licensure compacts benefit licensing boards by providing agreement on uniform
licensure requirements, a shared data system for access to primary source documentation of applicant credentials and tracking of adverse actions. They enhance cooperation and immediate availability of information between state boards critical to protecting the public.

Licensure by Credentials

In addition to participating in licensure compacts, states also should have provisions for licensure of dentists who do not participate in licensure compacts. These individuals should demonstrate they are currently licensed in good standing and also have not been the subject of final or pending disciplinary action in any state or jurisdiction in which they have been licensed. This should also apply to experienced, internationally trained dentists, who have been licensed in a U.S. jurisdiction, and who may or may not have graduated from a CODA-accredited dental school.

Appropriate credentials may include:

- DDS or DMD degree from a dental education program accredited by the Commission on Dental Accreditation
- Specialty certificate/master's degree from an accredited advanced dental education program
- Specialty Board certification
- GPR/AEGD certificate from an accredited advanced dental education program
- Current, unencumbered license in good standing
- Passing grade on Documentation of successful completion of an initial clinical competency assessment licensure exam, unless initial license was granted via completion of PGY-1, Portfolio examination, or other state-approved pathway for assessment of clinical competency.
- Documentation of completion of continuing education

For dentists who hold a current, unencumbered dental license in good standing in any jurisdiction, state dental boards should:

- Not require completion of Accept pathways that allow for licensure without completing an additional clinical examination, e.g., by credentials, reciprocity, and/or endorsement.
- Consider participation in licensure compacts
- Implement specialty licensure by credentials and/or specialty licensure to facilitate licensure portability of dental specialists.
- Make provisions available for a limited or volunteer license for dentists who wish to provide services without compensation to critical needs populations within a state in which they are not already licensed.
• Make provisions available for limited teaching permits for faculty members at teaching facilities and dental programs accredited by the Commission on Dental Accreditation.

• Make provisions available for active-duty military dentists, military spouses and veterans of the armed services.

State dental boards are encouraged to grant the same benefits of licensure mobility to internationally trained dentists who are licensed by their respective jurisdictions.

Licensure by Credentials for Dentists Who Are Not Graduates of CODA-Accredited Dental Education Programs

State dental societies and dental boards are strongly encouraged to grant the same benefits of licensure mobility to U.S. currently licensed dentists who were licensed by their respective jurisdictions prior to state implementation of the requirement for graduation from a CODA-accredited dental school with a DDS or DMD degree.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ITEM)
Resolution No. 402

Report: N/A

Submitted By: Council on Dental Education and Licensure

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

Total Net Financial Implication: None

Amount One-time _______ Amount On-going _______

ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.

How does this resolution increase member value: See Background

RESCISSION OF THE POLICY ON REQUIREMENTS FOR BOARD CERTIFICATION

Background: In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans.2012:370), the Council on Dental Education and Licensure has reviewed the policy, Requirements for Board Certification.

The Council reviewed the ADA Requirements for Recognition of Dental Specialties and Certifying Boards for Dental Specialists adopted by the 2022 House of Delegates and noted that the Certification Requirements section of the Requirements for Recognition of National Certifying Boards for Dental Specialists include a specific provision on waivers addressing board eligibility and permits certification boards to have exceptions (such as graduation from a program prior to 1967) which states:

A certifying board may establish an exception (alternative pathway) to the qualification requirement of completion of an advanced education program that is two (2) or more academic years in length accredited by the Commission on Dental Accreditation for the unique candidate who can demonstrate comparable educational and/or training requirements to the satisfaction of the certifying board. A certifying board must submit a separate petition to the National Commission for permission to establish and/or revise policy on alternative pathways.

The Council has concluded that this policy is redundant with the Requirements for Recognition and recommends rescission.

Resolution

402. Resolved, that the policy, Requirements for Board Certification (Trans.1975:690; 2018:325) be rescinded.

BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ITEM)
Requirements for Board Certification (*Trans.*1975:690; 2018:325)

Resolved, that candidates for board certification who completed the prescribed length of education for board certification in a program of an institution then listed by the Council on Dental Education and Licensure prior to 1967 and who have announced ethically limitation of practice in one of the recognized dental specialties are considered educationally eligible.
NOTES
RESCISSION OF THE POLICY ON SPECIALTY AREAS OF DENTAL PRACTICE

Background: In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans.2012:370), the Council on Dental Education and Licensure has reviewed the policy, Specialty Areas of Dental Practice, and believes that this policy is redundant with the ADA Requirements for Recognition of Dental Specialties and Certifying Boards for Dental Specialists (Trans.2001:470; 2004:313; 2009:442; 2013:328; 2018:326; 2022:XXX). Specifically, the Introduction to the Requirements for Recognition states, “Dental specialties are recognized to protect the public, nurture the art and science of dentistry, and improve the quality of care in disciplines of dentistry in which advanced knowledge, skills and training are essential to maintain or restore oral health.” In addition, Requirement (2) states, “A proposed or recognized specialty must be a distinct and well-defined field that requires unique advanced knowledge, skills and training beyond those commonly possessed by dental school graduates as defined by the Commission on Dental Accreditation’s Accreditation Standards for Dental Education Programs.” Further, Requirement (6), states, “A proposed or recognized specialty must have formal advanced education programs accredited by the Commission on Dental Accreditation that are a minimum of two (2) academic years in length.” The intent of the policy Special Areas of Dental Practice is clearly reflected in the Requirements for Recognition and is duplicative. The Council on Ethics, Bylaws and Judicial Affairs agrees that the policy is duplicative of the Requirements for Recognition and should be rescinded. Accordingly, the Council recommends that the House rescind the policy statement on specialty areas of dental practice.

Resolution


BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ITEM)

Resolved, that the specialty areas of dental practice meet the ADA’s “Requirements for Recognition of Dental Specialties” to assure the public of the competence of the dentist who holds himself/herself out to the public as a specialist who performs services which require formal advanced education, training and skills beyond those commonly possessed by the general practitioner.
NOTES
Resolution No. 404 ____________________________ New

Report: N/A ____________________________ Date Submitted: May 2023

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: ____________________________

Amount One-time ____________________________ Amount On-going ____________________________

ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.

How does this resolution increase member value: See Background

RESCISION OF THE POLICY ON EXAMINATIONS FOR ALLIED DENTAL (NON-DENTIST) PERSONNEL

Background: In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans.2012:370), the Council on Dental Education and Licensure has reviewed the policy, Examinations for Allied Dental (Non-Dentist) Personnel, and believes that this statement is irrelevant and not necessary. The Council questioned which personnel categories the policy is addressing. It was noted that dental therapist licensure candidates are currently examined together with dental licensure candidates to ensure there is no bias in scoring of the clinical examinations and ensure one standard of care. Further, it was noted that the examination process for dental hygiene licensure candidates is separate from the process for dentists and dental therapists. Because of the ambiguity of the term "allied dental (non-dentist) personnel" and the current practice of examining candidates for dental and dental therapy licensure together and dental hygiene candidates separately, the Council recommends that the House rescind this policy statement.

Resolution


BOARD RECOMMENDATION: Vote Yes.

BOARD VOTE: UNANIMOUS (BOARD OF TRUSTEES CONSENT CALENDAR ITEM)
Examinations for Allied Dental (Non-Dentist) Personnel (Trans.2010:595; 2018:322)

Resolved, that the ADA strongly urges state dental boards to require examination of candidates for dental licensure separately from candidates for allied dental (non-dentist) licensure.
Resolution No. 405
Report: New
Date Submitted: May 2023
Submitted By: Council on Scientific Affairs
Reference Committee: C (Dental Education, Science and Related Matters)
Total Net Financial Implication: None
Net Dues Impact: N/A
Amount One-time None Amount On-going None

ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.

How does this resolution increase member value: See Background

RECISSION OF ADA POLICY ON TOOTH WHITENING ADMINISTERED BY NON-DENTISTS

Background: In accordance with House Resolution 170H-2012, the Council on Scientific Affairs (CSA) reviews Association policies on a broad range of scientific issues every five years. The ADA Policy on Tooth Whitening Administered by Non-Dentists (Trans.2008:477) was first developed in 2008. The Council reviewed this policy as part of its regular review process and recommends rescission. The policy language is provided in the Worksheet Addendum. The following highlights the Council’s reasons for rescission:

- The first resolved clause is redundant. The language reflects the general need for patient education and treatment planning, both of which are topics covered in other ADA policies.

- The second resolved clause is a completed directive. Under House Resolution 73H-2008, the Council developed a report in 2009 that outlined a range of information on whitening/bleaching that can be considered by dentists and their patients (Appendix 1). This report, entitled “Tooth Whitening/Bleaching: Treatment Considerations for Dentists and Their Patients,” was submitted alongside a formal petition to the FDA in 2009.

- The third resolved clause is a completed directive. In 2008, the House passed Resolution 73H-2008, which directed the Council on Government Affairs (CGA) prepare a formal petition to the U.S. Food and Drug Administration (FDA) classifying extra coronal whitening/bleaching products. A CSA report was submitted in support of the petition in 2009. The FDA denied the petition in 2014 citing lack of sufficient data to support its underlying claims.

- The fourth resolved clause is redundant and not supported by currently available science. Furthermore, the language in the policy reflects the need for advocacy to support a position that is not supported by the FDA nor by currently available data.

Upon review, the Council determined that the policy as written is outdated, redundant, and contains multiple completed directives. As such, the Council recommends rescission of the policy. In reviewing this policy, the Council sought feedback from the Councils on Dental Practice (CDP), Government Affairs (CGA), and Ethics, Bylaws, and Judicial Affairs (CEBJA), all of whom expressed alignment and support of this recommendation.
1 Resolution

2 405. Resolved, that the policy titled Tooth Whitening Administered by Non-Dentists (Trans.2008:477) be rescinded.

4 BOARD RECOMMENDATION: Vote Yes.

5 BOARD VOTE: UNANIMOUS
Tooth Whitening Administered by Non-Dentists (*Trans.*2008:477)

Resolved, that the American Dental Association supports educating the public on the need to consult with a licensed dentist to determine if whitening/bleaching is an appropriate course of treatment, and be it further

Resolved, that the Council on Scientific Affairs compile scientific research to describe treatment considerations for dentists prior to the tooth whitening/bleaching procedure in order to reduce the incidence of adverse outcomes and report these findings to all state dental associations, and be it further

Resolved, that the American Dental Association petition the Food and Drug Administration to properly classify tooth whitening/bleaching agents in light of the report from the Council on Scientific Affairs, and be it further

Resolved, that the American Dental Association urges constituent societies, through legislative or regulatory efforts, to support the proposition that the administering or application of any intra-oral chemical for the sole purpose of whitening/bleaching of the teeth by whatever technique, save for the lawfully permitted self application and application by a parent and/or guardian, constitutes the practice of dentistry and any non-dentist engaging in such activity is committing the unlicensed practice of dentistry.
Appendix 1

Tooth Whitening/Bleaching: Treatment Considerations for Dentists and Their Patients

ADA Council on Scientific Affairs

Introduction

Over the past two decades, tooth whitening or bleaching has become one of the most popular esthetic dental treatments. Since the 1800s, the initial focus of dentists in this area was on in-office bleaching of non-vital teeth that had discolored as a result of trauma to the tooth or from endodontic treatment. By the late 1980s, the field of tooth whitening dramatically changed with the development of dentist-prescribed, home-applied bleaching (tray bleaching) and other products and techniques for vital tooth bleaching that could be applied both in the dental office and at home.

The tooth whitening market has developed into four categories: professionally applied (in the dental office); dentist-prescribed/dispensed (patient home-use); consumer-purchased/over-the-counter (OTC) (applied by patients); and other non-dental options (e.g., mall kiosks, spa settings, cruise ships). Additionally, dentist-dispensed bleaching materials are sometimes used at home after dental office bleaching to maintain or improve whitening results.

Consumer whitening products available today for home use include gels, rinses, chewing gums, toothpastes, paint-on films and strips. The latest tooth whitening trend is the availability of whitening treatments or kits in non-dental retail settings, such as mall kiosks, salons, spas and, more recently, aboard passenger cruise ships. Non-dental whitening venues have come under scrutiny in several states and jurisdictions, resulting in actions to reserve the delivery of this service to dentists or appropriately supervised allied dental personnel.

Current tooth bleaching materials are based primarily on either hydrogen peroxide (H₂O₂) or carbamide peroxide. Both may change the inherent color of the teeth, but have different considerations for safety and efficacy. In general, most in-office and dentist-prescribed, at-home bleaching techniques have been shown to be effective, although results may vary depending on such factors as type of stain, age of patient, concentration of the active agent, and treatment time and frequency. However, concerns have remained about the long-term safety of unsupervised bleaching procedures.

Although published studies tend to suggest that bleaching is a relatively safe procedure, investigators continue to report adverse effects on hard tissue, soft tissue, and restorative materials.¹ ³ The rate of adverse events from use or abuse of home-use OTC products is also unclear because consumers rarely report problems through the FDA Medwatch system. Based on these factors, the ADA has advised patients to consult with their dentists to determine the most appropriate whitening treatment, particularly for those with tooth sensitivity, dental restorations, extremely dark stains, and single dark teeth.⁴ Additionally, a patient’s tooth discoloration may be caused by a specific problem that either will not be affected by whitening agents and/or may be a sign of disease or pathology that requires dental therapy.

The purpose of this report is to outline treatment considerations for dentists and their patients prior to tooth whitening/bleaching procedures so that the potential for adverse effects can be minimized. This report does not address agents used for non-vital intracoronal bleaching procedures.
Safety Concerns with Tooth Bleaching Materials

Concerns regarding the safety of all bleaching treatments and products have long existed, but were heightened since the introduction of at-home bleaching. \(^{5-8}\) Discussions in this section focus on peroxides and their use as active ingredients in tooth bleaching materials. Important concerns related to patient examination and diagnoses are addressed elsewhere in this report.

A variety of peroxide compounds, including carbamide peroxide, H\(_2\)O\(_2\), sodium perborate and calcium peroxide, have been used as active ingredients for bleaching materials; however, essentially all extracoronal bleaching materials currently available for whitening of vital teeth in the United States contain carbamide peroxide and/or H\(_2\)O\(_2\). Recently, products containing chlorine dioxide were introduced in the United Kingdom, but there is no evidence that tooth bleaching products using chlorine dioxide as the active ingredient are safer than peroxide-based materials. In fact, safety concerns have been documented with chlorine dioxide and its use for tooth bleaching treatment due to the low pH of the material and resultant tooth etching. \(^{5,9}\)

Most OTC bleaching products are H\(_2\)O\(_2\)-based, although some contain carbamide peroxide. Carbamide peroxide decomposes to release H\(_2\)O\(_2\) in an aqueous medium: 10% carbamide peroxide yields roughly 3.5% H\(_2\)O\(_2\). In-office bleaching materials contain high H\(_2\)O\(_2\) concentrations (typically 25-38%), while the H\(_2\)O\(_2\) content in at-home bleaching products usually ranges from 3% to 7.5%; however, there have been home-use products containing up to 15% H\(_2\)O\(_2\).

Safety issues have been raised regarding the effects of bleaching on the tooth structure, pulp tissues, and the mucosal tissues of the mouth, as well as systemic ingestion. Regarding mucosal tissues, safety concerns relate to the potential toxicological effects of free radicals produced by the peroxides used in bleaching products. Free radicals are known to be capable of reacting with proteins, lipids and nucleic acids, causing cellular damage. Because of the potential of H\(_2\)O\(_2\) to interact with DNA, concerns with carcinogenicity and co-carcinogenicity of H\(_2\)O\(_2\) have been raised, although these concerns so far have not been substantiated through research. \(^{5}\) However, studies have shown that H\(_2\)O\(_2\) is an irritant and also cytotoxic. It is known that at concentrations of 10% H\(_2\)O\(_2\) or higher, the chemical is potentially corrosive to mucous membranes or skin, causing a burning sensation and tissue damage. \(^{5,10,11}\) During office bleaching treatment, which routinely uses materials of \(\geq 25\%\) H\(_2\)O\(_2\), severe mucosal damage can occur if gingival protection is inadequate. Clinical studies have also observed a higher prevalence of gingival irritation in patients using bleaching materials with higher peroxide concentrations. \(^{12,13}\)

Data accumulated over the last 20 years indicate no significant, long-term oral or systemic health risks associated with professional at-home tooth bleaching materials containing 10% carbamide peroxide (3.5% H\(_2\)O\(_2\)). However, these data were collected from studies conducted by dental professionals, and there is no safety evidence on bleaching materials that do not involve dental professionals, regardless of H\(_2\)O\(_2\) concentration or application venue. Additionally, consumers are not generally aware of how to report adverse events through FDA’s Medwatch system. If a licensed dental professional is not consulted when patients use OTC bleaching products, many adverse effects may go unreported.

Regarding hard tissues, transient mild to moderate tooth sensitivity can occur in up to two-thirds of users during early stages of bleaching treatment. \(^{14}\) Sensitivity is generally related to the peroxide concentration of the material and the contact time; it is most likely the result of the easy passage of the peroxide through intact enamel and dentin to the pulp during a five- to 15-minute exposure interval. However, there have been no reported long-term adverse pulpal sequelae when proper techniques are employed. The incidence and severity of tooth sensitivity may depend on the quality of the bleaching material, the techniques used, and an individual’s response to the bleaching treatment methods and materials. To date, there is little published evidence documenting adverse effects of dentist-monitored, at-home whiteners on enamel, but two clinical cases of significant enamel damage have been reported, apparently associated with the use of OTC whitening products. \(^{15,16}\) This damage may be related to the low pH of the products and/or overuse.
In vitro studies suggest that dental restorative materials may be affected by tooth bleaching agents. These findings relate to possible physical and/or chemical changes in the materials, such as increased surface roughness, crack development, marginal breakdown, release of metallic ions, and decreases in tooth-to-restoration bond strength. Such findings have not appeared in clinical reports or studies.

To address the safety of bleaching materials, the American Dental Association (ADA) convened a panel of experts in 1993. The ADA subsequently published its first set of guidelines for evaluating peroxide-containing tooth whiteners. These guidelines have been revised periodically.

In March 2005, the European Scientific Committee on Consumer Products (SCCP) concluded the following: “The proper use of tooth whitening products containing >0.1 to 6.0% hydrogen peroxide (or equivalent for hydrogen peroxide-releasing substances) is considered safe after consultation with and approval of the consumer's dentist.” The SCCP, in January 2008, again recommended that up to 6% H$_2$O$_2$ is a safe limit to use for at-home tooth bleaching; however, it did not recommend use of such products without dental consultation.

In summary, available data indicate that extracoronal bleaching treatment in the dental office or at home may cause short-term tooth sensitivity and/or gingival irritation. More severe mucosal damage is possible with high H$_2$O$_2$ concentrations. While available evidence supports the safety of using bleaching materials of 10% carbamide peroxide (3.5% H$_2$O$_2$) by dental professionals, there are concerns with the use of at-home bleaching materials with high H$_2$O$_2$ concentrations. Studies designed specifically to assess the long-term safety of high H$_2$O$_2$ concentration in at-home bleaching materials are needed, especially for repeated use of these products. There appears to be insufficient evidence to support unsupervised use of peroxide-based bleaching materials.

Similar to other dental and medical interventions, questions have been raised about the safety of tooth whitening treatments during pregnancy. In the absence of such evidence, clinicians may consider recommending that tooth whitening be deferred during pregnancy.

The safety of tooth bleaching for children and adolescents is also a consideration. More research is needed to establish appropriate use and limitations for these patients. However, bleaching is a conservative approach compared with restorative options when tooth discoloration causes significant concern. If possible, delaying treatment until after permanent teeth have erupted is recommended, as is use of a custom-fabricated bleaching tray to limit the amount of bleaching gel. Close professional and parental/guardian supervision are needed to maximize benefits and minimize adverse effects and overuse.

**Bleaching Treatment Considerations**

**General Considerations**

A typical dental examination begins with a health and dental history. Intra-oral and extra-oral examinations of the hard and soft tissues of the mouth and head are also conducted to exclude or diagnose cancer, abscesses, periodontal disease and other pathology. Seminal to decisions regarding tooth bleaching, the patient history would include the patient's opinions regarding the cause of tooth discoloration, a history of allergies (which may include ingredients in bleaching materials), and information regarding any past problems with tooth sensitivity. Some tooth discolorations may be the result of pathology or conditions that require endodontic therapy, restorations or dental surgery. Such diagnoses can only be made by a dentist or another licensed health care professional, depending on local licensing regulations. In light of these and additional factors noted below, a dental examination with appropriate radiographs or other screening or diagnostic tests is recommended prior to considering tooth bleaching.

Bleaching discolored teeth in which the color change is the only visible indication of underlying pathology may change tooth color, but will not remove any underlying pathology. This masking effect, which can occur in abscessed teeth and teeth with external or internal resorption, can result in tooth loss or other complications.
Dental caries or leaking restorations may also cause teeth to appear dark. Patients should be advised that bleaching treatments will not remove tooth decay that may subsequently progress and result in the need for more extensive and expensive treatments. Examination of tooth function and para-function may reveal conditions that could affect bleaching procedures. For example, bruxism, temporomandibular dysfunction, or other conditions may be aggravated by use of bleaching trays. Radiographs may be necessary to aid in screening and diagnosis of pathologies that may manifest as tooth discoloration, such as periradicular abscess, anomalous pulp chamber size and anatomy, calcific metamorphosis, root resorption or other pathoses. A history of tooth sensitivity should be investigated carefully to determine the cause(s) and whether treatment before tooth bleaching will benefit the patient.

A dental examination will identify and record the presence and locations of existing tooth restorations. This step may be quite important to an acceptable tooth bleaching outcome, since restorations do not change color. Dental restorations can also be a cause of tooth discoloration: metallic and other restorative materials may influence tooth color significantly depending on the translucency and thickness of the remaining tooth structure.

Patient expectations may be unrealistic unless cosmetic issues with existing restorations are addressed initially. Additional examination considerations include: tooth/enamel cracks and related sensitivity; exposed root surfaces (that resist bleaching); and other smile considerations such as translucency or defects in tooth form or anatomy.

Patient habits and lifestyle, as well as the presence of removable or fixed appliances or protheses, should also be considered during an examination. Pre-treatment photographs are often helpful to record a baseline to better assess treatment success.

Upon completion of the dental examination and diagnosis, treatment may be recommended and prioritized. Although the patient’s primary concern may be tooth discoloration, bleaching procedures may not be recommended (or effective) until other problems are addressed. If dental restorations are present, often the expense and/or the risks related to the replacement fillings or crowns to match post-bleaching tooth color may contraindicate bleaching.

When bleaching is pursued, the dental team will consider and recommend the appropriate materials, techniques, and delivery systems to best serve the patient’s needs and desires (see next section for further discussion of method-specific considerations). These factors affect the costs and may influence treatment decisions.

The length of treatment and expected outcome will depend on the discoloration etiology and diagnosis, as well as the chosen product and technique. Dentists can discuss these concerns with their patients in the treatment plan development process. Success will vary when tooth discoloration is related to inherited/developmental aspects, age-related tooth changes, extrinsic staining (e.g., from diet or smoking), or intrinsic staining such as tetracycline-associated stain or color change secondary to tooth trauma.

If a patient has a history of sensitive teeth, or experiences sensitivity during tooth bleaching, appropriate measures can be initiated to minimize and manage further discomfort before, during and after tooth bleaching. Pre-treatment options may include use of non-steroidal anti-inflammatory drugs (NSAIDs), fluoride, amorphous calcium phosphate, or potassium nitrate. During treatment, it may be necessary to select an alternate bleaching product, or change the delivery system, treatment duration or treatment interval. Depending on the patient’s response, side effects or other issues, it may be in the patient’s best interest to discontinue treatment.

**Method-Specific Considerations**

Dentist-managed bleaching treatments may include in-office bleaching, at-home use of bleaching trays at night or during the day, or a combination of these treatment methods. Additionally, the need for and
effectiveness of maintenance or periodic re-treatment can be addressed depending on the patient’s individual
response to tooth whitening. A dental examination, including any necessary radiographs, should precede re-
treatment.

Other considerations consistent with those covered previously, such as the presence or history of sensitivity,
presence of dental restorations, and occlusal/temporomandibular dysfunction may raise method-specific
concerns that merit attention as well. Allergies to bleaching tray materials, isolation barriers, or bleaching
materials may also limit treatment options.

With the tray bleach method, if tooth sensitivity is problematic, the tray may be used in advance for the
application of potassium nitrate for ten to 30 minutes. Use of potassium nitrate-containing toothpaste
before bleaching and throughout the bleaching therapy can also help minimize side effects. Higher peroxide
concentrations result in more sensitivity without significantly shortening the treatment time, since the tooth can
only change color at a certain rate, regardless of the peroxide concentration of the materials.

Although brown discolorations respond well to bleaching, white discolorations remain unchanged, though the
background may be lightened to make the white areas less noticeable. Occasionally, bleaching may need to
be combined with abrasion techniques or bonded restorations to address non-esthetic white areas. With tray
bleaching, teeth normally lighten in three days to six weeks. However, nicotine-stained teeth may take one to
three months, and tetracycline-stained teeth may require two to six months (or more) of nightly treatment.

Bleaching products should ideally be formulated at neutral pH. Carbamide peroxide seems to be more
effective overnight as a result of its urea content elevating the pH to desirable levels. Hydrogen peroxide
formulations are short-acting and have a lower pH. Bleaching with H2O2 takes more days but less time per
day, while carbamide peroxide takes fewer days but more contact time. The choice between the two types of
products relate to the patient’s lifestyle, caries history, tooth sensitivity, and discoloration type. The need for
re-treatment also varies widely, from as soon as one to three years after initial treatment to more than ten
years.

With in-office bleaching, both proper isolation and protection of mucosal tissues are essential. Dentists may
also wish to consider prescribing non-steroidal anti-inflammatory medications prior to treatment, since post-
treatment sensitivity is unpredictable. The treatment schedule may also be a useful method to help minimize
tooth sensitivity. Multiple appointments are typically scheduled one week apart to allow sensitivity to abate. A
“bleaching light” is sometimes used with in-office bleaching procedures as well. Some reports suggest that
pulpal temperature can increase with bleaching light use, depending on the light source and exposure time.
Pulpal irritation and tooth sensitivity may be higher with use of bleaching lights or heat application, and
cautions have been advised with their use.

There is conflicting evidence on the effects of bleaching lights on tooth color change. Most studies comparing
effectiveness of in-office bleaching with or without light application were conducted in vitro. The effects on
tooth color change were variable, and some differences detected electronically were not detectable visually.
This observation was reported in a recent clinical study report as well. Of studies conducted in vivo, most
found no added benefit for light-activated systems. Heat and light application may initially increase
whitening due to greater dehydration, which reverses with time. Actual color change will not be evident until
two to six weeks after bleaching treatment.

The average number of in-office visits for maximum whitening is three, with a range of one to six visits, so
the patient should be prepared for additional in-office treatments or for a combination of office visits and tray
delivery to complete the process.

As noted previously, the unsupervised use of OTC whitening products raises concerns about possible
masking of undiagnosed pathology (whether related to tooth discoloration or not), cosmetic or functional
aspects of existing dental restorations, and unknown allergies or other untoward responses. In addition to
these safety concerns, absent a dental examination and consultation, user expectations may not be realistic.
Finally, bleaching offered in a mall kiosk or other non-dental venue may present the image of a dental practice and professional supervision without providing the benefits of care from fully trained and licensed oral health care providers.

**Regulatory and Scope of Practice Aspects of Bleaching Treatment**

Presently, all extracoronal tooth bleaching products remain unclassified by the U.S. Food and Drug Administration (FDA). This includes all peroxide-based products used in the in-office, dentist-dispensed products for at-home use, OTC (patient-purchased) products, as well as products used in non-dental settings.

In the early 1990s, the FDA proposed regulating the peroxide-based bleaching materials as drugs and sent warning letters to manufacturers. The FDA’s position was challenged legally, and in alignment with court decisions, the FDA suspended attempts to classify the bleaching materials. To date, the FDA has taken no further action to classify tooth bleaching products.

Products from reputable manufacturers are developed and marketed according to U.S. “cosmetic” regulations. This may lead to the perception that the products are innocuous, though they have the potential to cause harm and may result in undesirable effects to the teeth or oral mucosa. Such adverse effects are generally related to low pH and poor product quality.

The recent appearance of tooth-bleaching businesses in non-dental settings has led to state dental board decisions, attorney general opinions, and legislation in some states. Some jurisdictions have taken recent action to better limit patient risks associated with tooth bleaching. These include: Florida, Iowa, Massachusetts, Nevada, New Jersey, Tennessee and the District of Columbia.

Concerns regarding tooth bleaching in non-dental settings have been raised. Non-dental personnel lack the knowledge, resources (such as radiographs), education and license needed to provide dental examinations. The facilities generally lack effective infection control capabilities and protocols, personnel are not trained in standard infection control precautions and may not be prepared to provide emergency care for allergic reactions.

Tooth bleaching in the United Kingdom (U.K.) emerged in conflict with existing regulations that applied to hairdressers and the use of hydrogen peroxide. Steps toward resolution of this conflict are underway, including an extensive review of tooth bleaching safety data. As noted previously, the Scientific Committee for Consumer Products (SCCP) in Europe supported the safety of tooth bleaching materials containing up to 6.0% H₂O₂ for use by dental professionals. It is expected that this SCCP recommendation will eventually be ratified by the European Council and by the U.K. government. The timeline for these actions is unclear at present.

**Rationale for Dental Professional Involvement in Extracoronal Bleaching Treatment**

Dental professionals are responsible for managing patient care, and are a key resource on oral health to the public at large. Consumers may pursue tooth bleaching without understanding the risks of treatment or the factors that may affect treatment success or failure. For optimal safety and to ensure proper diagnosis and treatment, examination by a dentist is necessary. To aid in patient communication on whitening/bleaching, a helpful summary of considerations is available that can also be used as a resource for the public at large.

As discussed previously, tooth discoloration, particularly intrinsic discolorations, may not be amenable to bleaching. Bleaching materials can affect filling materials, and may also result in color mismatch of teeth with existing fillings or crowns. Therefore, pre-treatment examination and routine monitoring of bleaching by dentists allow for professional assessment of each patient’s situation, recommendations for methods and/or materials to help minimize problems, as well as earlier detection and better management of any adverse effects. Professionally performed or supervised bleaching reduces the risk of patients selecting and using inferior products, inappropriate application procedures and/or product abuse.
Summary

Tooth bleaching is one of the most conservative and cost-effective dental treatments to improve or enhance a person’s smile. However, tooth bleaching is not risk-free and only limited long-term clinical data are available on the side effects of tooth bleaching. Accordingly, tooth bleaching is best performed under professional supervision and following a pre-treatment dental examination and diagnosis.

In consultation with the patient, the most appropriate bleaching treatment option(s) may be selected and recommended based on the patient’s lifestyle, financial considerations, and oral health. Patients considering OTC products should have a dental examination, and should be reminded that they may unknowingly purchase products that may have little or no beneficial effect on the color of their teeth and may also have the potential to cause harm.

References

5. Li Y. Biological properties of peroxide-containing tooth whiteners. Food and Chem Toxicology 1996; 34:887-904.


Resolution No.   N/A  
Report:   Board Report 6  
Date Submitted:   July 2023  
Submitted By:   Board of Trustees  
Reference Committee:   C (Dental Education, Science and Related Matters)  
Total Net Financial Implication:   None  
Net Dues Impact:   
Amount One-time   
Amount On-going   
ADA Strategic Plan Objective: Membership Obj-3: Maintain an overall retention rate of 94%. 
How does this resolution increase member value: See Background

REPORT 6 OF THE BOARD OF TRUSTEES TO THE HOUSE OF DELEGATES: ADA LIBRARY AND ARCHIVES ADVISORY BOARD ANNUAL REPORT

Background: In November 2013, the ADA House of Delegates approved the ADA Library and Archives Transition Plan, including the establishment of a volunteer board to oversee operations of the ADA Library and Archives. An engaged and functioning advisory board is considered a best practice for library management. The ADA Library and Archives Advisory Board serves in an advisory capacity to the Board of Trustees.

At its July/August 2023 meeting, the Board of Trustees approved the appended Annual Report of the ADA Library Archives Advisory Board for transmittal to the 2023 House of Delegates.

Resolutions

This report is informational, no resolutions are presented.

BOARD RECOMMENDATION: Vote Yes to Transmit.

BOARD VOTE: UNANIMOUS* (BOARD OF TRUSTEES CONSENT CALENDAR ITEM)

*Dr. Irani was not in attendance.
Appendix 1

ADA Library & Archives Advisory Board

Graham, Frank J., 2022, Board of Trustees, 4th District (chair)
Liddell, Rudolph T., 2022, Board of Trustees, 17th District
Kademani, Deepak, 2023, Minnesota, Council on Scientific Affairs
Lefebvre, Carol A., 2022, Georgia, Council on Scientific Affairs
Keith Coble, Shandra, 2023, Alabama, Council on Dental Education and Licensure
Mousel, Barbara L., 2023, Illinois, Council on Dental Education and Licensure
Marcos, Carliza A., 2023, California, at-large member
Segelnick, Stuart, 2023, New York, at-large member
De Groote, Sandy, 2023, public member, special/dental librarian
Nickisch Duggan, Heidi, director, ADA Library & Archives
Fleming, Anna, electronic resources & research services librarian, ADA Library & Archives
Matlak, Andrea, archivist & metadata librarian, ADA Library & Archives
O’Brien, Kelly, informationist, ADA Library & Archives
Pontillo, Laura, coordinator, ADA Library & Archives
Strayhorn, Nicole, data informationist, ADA Library & Archives

Areas of Responsibility

The areas of responsibility for the ADA Library & Archives Advisory Board (LAAB) are as follows:

- Creating and developing the mission and strategic plan of the ADA Library & Archives.
- Ensuring that the ADA Library & Archives remain relevant to the ADA strategic plan.
- Providing input during the annual ADA budgeting process on library funding, priorities and needs.
- Adopting policies and rules regarding library governance, assets and use; developing, approving, and codifying all policies, based on input from the library staff; also delegating procedural work to the library staff.
- Regularly planning and evaluating the service program.
- Evaluating the library facility to ensure that it continues to meet ADA member and ADA staff needs.
- Launching a marketing plan for the promotion of the ADA Library & Archives to ADA members; ADA component and constituent societies; the local dental and medical communities; and affiliated dental organizations.
- Conducting the business of the library in an open and ethical manner in compliance with all applicable laws and regulations and with respect for the association, staff and public.

Advancing ADA Strategic Goals and Objectives: Agency Programs, Projects, Results and Success Measures

Objective 1: Grow Active, Full Dues Paying Membership

Initiative/Program: Scientific Support/Utilization of Library Content

Success Measure: Achieve a 5% variance in the number of user searches via electronic resources from prior year, by December 2022.

Target: 133,606 (Regular and automated searches)

Range: 126,926 – 140,287
Outcome: 130,286

Usage statistics show continued and increased use of the library's electronic resources (journals, databases, e-books, clinical resources). ADA members and staff conducted approximately 2% more regular and automated searches in 2022 over 2021’s 127,244 regular* and automated** searches. This outcome is not inclusive of all the databases members can access.

*Regular Searches refers to the number of times a user searches a database, where they have actively chosen that database from a list of options or there is only one database available to search.

** Automated Searches refers to the number of times a user searches a database, where they have not actively chosen that database from a list of options. That is, Searches Automated is recorded when the platform offers a search across multiple databases by default, and the user has not elected to limit their search to a subset of those databases.

<table>
<thead>
<tr>
<th>Table 1: Top 5 Most Heavily Searched Subscribed Databases, 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dentistry &amp; Oral Sciences Source</td>
</tr>
<tr>
<td>2. MEDLINE Complete</td>
</tr>
<tr>
<td>3. Cochrane Database of Systematic Reviews</td>
</tr>
<tr>
<td>4. CINAHL Complete</td>
</tr>
<tr>
<td>5. DynaMed</td>
</tr>
</tbody>
</table>

Dentistry & Oral Sciences Source (DOSS) is a full-text database covering all facets of dentistry including dental public health, endodontics, facial pain and surgery, odontology, oral and maxillofacial pathology/surgery/radiology, pediatric dentistry, and periodontology. MEDLINE Complete and CINAHL Complete provide access to over 7,000 journals covering various health disciplines including medicine, nursing, consumer health, and dentistry. Health Business Elite provides access to more than 600 journals on healthcare administration and management.

Objective 2: Grow Active, Full Dues Paying Membership

Initiative/Program: Scientific Support/Utilization of Library Content

Success Measure: Achieve a 5% variance in the number of unique item investigations and full-text downloads via electronic resources from prior year by December 2022.

Target: 37,786

Range: 35,897 – 39,676

Outcome: Exceeded, 42,876

Downloads and unique item investigations (the number of unique content items (e.g., chapters) investigated by a user) are more difficult to predict because ADA staff and members tend to search for known items and ask for staff assistance when conducting more open research, for instance, to answer a clinical question. As a result, ADA Library & Archives staff search more broadly, thus increasing the total search numbers but selecting fewer and more focused full-text downloads than the typical user might. ADA Library & Archives service goals influence sending only the most relevant full-text downloads combined with abstracts and citations to prompt user evaluation.
## Table 2: Downloads & Unique Item Investigations, 2022

<table>
<thead>
<tr>
<th>Target</th>
<th>Diff</th>
</tr>
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<tbody>
<tr>
<td>37,786</td>
<td>13%</td>
</tr>
<tr>
<td><strong>42,876</strong></td>
<td><strong>13%</strong></td>
</tr>
</tbody>
</table>

## Table 3: Top 10 Journals by Article Downloads, 2022

<table>
<thead>
<tr>
<th>Journal</th>
<th>Downloads</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Journal of the American Dental Association</td>
<td>6,678</td>
</tr>
<tr>
<td>The Journal of Prosthetic Dentistry</td>
<td>1,473</td>
</tr>
<tr>
<td>American Journal of Orthodontics and Dentofacial Therapy</td>
<td>1,226</td>
</tr>
<tr>
<td>British Dental Journal</td>
<td>1,176</td>
</tr>
<tr>
<td>Dental Clinics of North America</td>
<td>966</td>
</tr>
<tr>
<td>Journal of Dentistry</td>
<td>824</td>
</tr>
<tr>
<td>Journal of Endodontics</td>
<td>593</td>
</tr>
<tr>
<td>Clinical Oral Implants Research</td>
<td>555</td>
</tr>
<tr>
<td>Journal of Esthetic and Restorative Dentistry</td>
<td>511</td>
</tr>
<tr>
<td>Clinical Oral Investigations</td>
<td>480</td>
</tr>
</tbody>
</table>

## Table 4. Top 10 eBook Title Usage, 2022

<table>
<thead>
<tr>
<th>Title</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairness in Educational and Psychological Testing:</td>
<td>99</td>
</tr>
<tr>
<td>Newman and Carranza's Clinical Periodontology</td>
<td>52</td>
</tr>
<tr>
<td>Ingle's Endodontics</td>
<td>45</td>
</tr>
<tr>
<td>Anesthesia Complications in the Dental Office</td>
<td>21</td>
</tr>
<tr>
<td>Manual of Minor Oral Surgery for the General Practitioner</td>
<td>18</td>
</tr>
<tr>
<td>Oral Health and Aging</td>
<td>18</td>
</tr>
<tr>
<td>Endodontics - E-Book: Principles and Practice</td>
<td>17</td>
</tr>
<tr>
<td>Contemporary Fixed Prosthodontics</td>
<td>17</td>
</tr>
<tr>
<td>Esthetic Soft Tissue Management of Teeth and Gums</td>
<td>13</td>
</tr>
<tr>
<td>Craig's Restorative Dental Materials</td>
<td>11</td>
</tr>
</tbody>
</table>
Emerging Issues and Trends

Libraries continue to maximize resources through the expanded use of digital and electronic means to convey information to their patrons. The ADA Library & Archives continually reviews these rapid changes in order to remain relevant to ADA Members and the profession.

The ADA Library & Archives Advisory Board is committed to:

1. Expanding access to state and local society-published dental literature through Resolution 411H-2022

In dental and oral health research, there is a growing need for storing, moving, finding, sharing, and accessing digital publications and their associated data files. The 2022 House of Delegates passed Resolution 411 directing the ADA to establish a searchable digital archive of state and component publications. The supporting funds approved in 2022 enable the ADA to curate and maintain dental and oral health scholarly works using advanced technologies and make it possible to hire specialized personnel to collaborate with the state and local societies in this important endeavor.

Purpose: This open digital archive of scientific research, literature, and Tripartite publications, events, digital collections and more, ensures global discoverability and findability to dental professionals and other researchers all over the world. The enhanced visibility of individual publications also serves to increase author submissions. This online archive is intended to include curated collections tailored for dental and oral health care research needs: state and local journals, newsletters, photograph collections, webinars and conference videos, other events, data sets, etc. The site is geared toward dental and oral health professionals, educators, researchers, and the public.

Progress: Digital Commons has been selected as the platform that meets the expressed needs of our members and society editors. The ADA’s Digital Commons instance is called ADACommons.

The library team has been working closely with Digital Commons consultants to design the digital archive, establish the internal structures and administration of the repository and engage in training to fully realize and implement the architectural design and journal publishing features of the platform. This process is a several months-long process, but the careful planning in the early developmental stages of the project will help ensure an increasingly valuable dental archive for the future, a stable and fully functional journal publishing platform, and repository for other Tripartite digital assets. Additionally, the library team is developing a workflow for accepting and ingesting publications and identifying policy issues and needs around the digital archives including copyright and reprints. Staff have given multiple presentations, including for publications teams and the ADA Power of Three and the American Association of Dental Editors and Journalists (AADEJ) webinars to engage with and gather participation interest from states and components for inclusion in the digital archive. Now that the repository is underway, recruiting for a Digital Publishing and Archives Librarian and Digital Archives Assistant has begun.

Future Plan: ADACommons will go live in July 2023, under the URL commons.ada.org. At that point the ingest of content from state and local components for global utilization can begin. Several states have already begun the planning and design phases of their journals and other publications and will go live on a continuing basis. ADACommons team will continue to provide training for editors and staff to ensure knowledge transfer for all aspects of the content and editorial management systems. ADACommons will be on display at the ADA Library & Archives booth in Dental Central at SmileCon in October 2023. The team can be reached at commons@ada.org.
2. World-wide Remote Access

Providing efficient searching using current eResources and making the ADA Library & Archives a 24/7 knowledge center.

a. This was partially accomplished by the implementation of DISCOVERY and OpenAthens, an identity access management tool that allows members to access subscribed electronic content 24/7.

Table 5. OpenAthens Usage*

<table>
<thead>
<tr>
<th>Year</th>
<th>Accesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>5,234</td>
</tr>
<tr>
<td>2019</td>
<td>5,040</td>
</tr>
<tr>
<td>2020</td>
<td>5,591</td>
</tr>
<tr>
<td>2021</td>
<td>9,923</td>
</tr>
<tr>
<td>2022</td>
<td>10,015</td>
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</table>
*On-site (ADA building at 211 E. Chicago) usage is not reflected in these statistics; complete resource use is much higher and includes staff use, in-house and clinical guidelines research, etc.

### Table 6: OpenAthens Users by Country in 2022

![Map of OpenAthens Users by Country in 2022]

b. Improvements to the website and access management have made services and resources increasingly accessible, and library staff continue to see a rise in members' remote and independent use of electronic resources to perform searches and article retrieval. In many cases, the member does not have to enter a resource from the ADA Library's webpage but can authenticate from within a journal website or other resource on the internet. Even so, the library saw nearly 9000 new users engage with library webpages in 2022.

<table>
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<tbody>
<tr>
<td>Table 7: Top 5 States using the library website in 2022</td>
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</table>

c. Continued interlibrary loan (ILL) services to provide ADA Staff and members with scholarly articles not held in the collections of the ADA Library & Archives (borrowing) and providing those same services to outside researchers via other libraries (lending). In 2022, outside libraries fulfilled 74% of ILL requests made by ADA members and staff. ADA Library staff fulfilled 63% of ILL requests from outside libraries. From late April through May 2022, staff were not able to provide any interlibrary loan services to either ADA staff and members or outside libraries due to the cybersecurity event. This event contributed to the decrease in interlibrary loan requests in 2022 over previous years.
d. **New Electronic Resources**

i. **eBooks:**
   1. Oral Health & Aging (2022)
   3. Wilkins' Clinical Practice of the Dental Hygienist (2021)

ii. **Databases:**
   **InCites:** This important resource is a research analytics and evaluation tool designed to help showcase research program’s strengths, identify influential researchers, analyze institutional productivity, and visualize collaborators around the world. InCites enables deep analysis of research publication trends and citation patterns. Research performance benchmarking can be accomplished at various levels – individual researchers, groups, organizations, countries, journals, and research areas.
3. Information Services

Reference and information services and access to a robust collection of evidence-based resources remain one of the most visible values the ADA Library & Archives offers to members.

a. In 2022, library staff conducted research for over 200 in-depth clinical queries for ADA members and staff, each requiring 2 hours or more of research. This was in addition to countless daily ready reference questions.

b. In addition to member support, the ADA Library & Archives staff continue to provide robust reference services to various ADA divisions and departments including, ADA Science and Research Institute (ADASRI), the Practice Institute, and the Health Policy Institute. The ADA Library & Archives Informationist Kelly O’Brien actively engages in expert searching for clinical practice guideline development, systematic reviews, and other evidence synthesis, provides education and access to evidence-based clinical tools and drug information, and provides expert support for ADA initiatives and publications including:

1. Direct materials for restoring caries lesions clinical practice guideline and systematic review (published in 2023)
2. FDA-ADA joint statement on dental radiographs update (did updates for panel meeting and IADR submissions)
3. A report on the connection between diabetes and home oral care (to be published 2023)
4. An update of the pediatric topical fluoride measure for the National Quality Health Forum via the ADA Dental Quality Alliance
5. A report in response to the NCCIH Whole Person Health request for information suggesting “number of teeth” be added to their measures of whole person health

4. ADA Archives and Dental History

The ADA Archives is the official repository of the Association’s historical publications and records. The Archives collections are maintained by Ms. Andrea Matlak, Archivist & Metadata Librarian, who also provides expert reference and research assistance to ADA staff, members, and other dental organizations and institutions searching for information on ADA history, history of dentistry, and biographical information on individuals involved in the profession.

- Compiled timeline to document diversity, equity, and inclusion milestones at the American Dental Association throughout its history at the request of the Diversity, Equity & Inclusion Joint Action Team (made up of leaders from four Councils/Committees). The timeline summarily documents the history of diversity, equity, and inclusion at the ADA and includes milestones such as racial and gender precedents, officer appointments, and elimination of race-based impediments to ADA membership.
- Answered queries from ADA staff, ADA members, and members of the public on a variety of topics on the history of dentistry and people involved in its history.
- Assisted ADA staff answering requests for information including: for Membership Division staff provided information on African Americans who served as officers of the ADA for an ADA officer participating in a panel for Black History month; for ADA Business Group staff provided information on the origins of Dudley the Dragon as ADA mascot; for Council on Dental Education & Licensure and Legal staff located information on the final report of the Oral Preventive Assistant (OPA) curriculum & licensing agreement; for Communications staff found information on the history of toothpaste in preparation for a media interview;
for Product Development & Sales staff found and provided a copy of the ADA's first patient brochure on periodontal disease for a presentation.

5. Data Visualization Services

Providing expertise in data visualization to drive policy, planning, and other decision making in support of ADA initiatives, publications, and strategic goals. The ADA Library & Archives Data Informationist Nicole Strayhorn actively collaborates with multiple divisions across the ADA to consult and provide data visualization services, including:

- Enhancing the National Membership Dashboard and State Membership Dashboard in collaboration with the Membership Data Analytics and Reporting team (MDAR) by creating charts and figures that communicate the progress and results of growing segments, member retention, identify opportunity states, and improve data-driven decision making for membership growth.

- Developed a fourth companion map for the Dental Licensure dashboard originally implemented in 2019, which now incorporates specialty licensure information to help established dentists and new dentists working across state lines navigate continuously changing information and upcoming deadlines on licensure requirements from all states, [https://www.ada.org/resources/licensure/dental-licensure-by-state-map](https://www.ada.org/resources/licensure/dental-licensure-by-state-map).
6. COVID-19 Response

Leverage expertise and organizational knowledge to support the ADA’s leadership during the COVID-19 pandemic.

- Ms. Matlak oversaw the transfer of the official COVID-19 Archive to the custody of the ADA Library & Archives to preserve for historical reference. The COVID-19 Archive comprises Association-wide documentation and records of the ADA’s response to the pandemic compiled by the Emerging Issues Team. Items transferred to the custody of the ADA Library & Archives include information handouts, reports, and presentations previously shared on ADA.org/VIRUS and other media outlets. The COVID-19 Archive will serve as the record going forward of what the organization experienced and how it responded to the crisis. This is the first time in the history of the ADA Archives that such an intact group of office records has been transferred to its custody.

- Library and archives staff continued to maintain the searchable COVID-19 FAQ repository by evaluating and adding meaningful questions from ADA members and corresponding answers from key ADA staff and other health professionals. The site was accessible to ADA staff, volunteers, state societies, and the Board of Trustees. It was archived in March 2022.

- Ms. Laura Pontillo continued to manage content updates for ADA.org/VIRUS in collaboration with ADASRI, Dental Practice Institute, Government Affairs, and other divisions.

- Ms. O’Brien has continued to support ADASRI, with automated searches of published materials and pre-prints on COVID-19, COVID-19 variants, COVID-19 long-term vaccination response, and Long COVID.
7. Professional Contributions

Library staff continue to contribute to professional activities and continue to be active in the library and archive community-at-large by participating in professional organization committees and building partnerships in 2022.

- Ms. O’Brien served as a peer reviewer for the *Journal of the Medical Library Association* and for *BMJ Open*.
- Ms. Strayhorn served a second term as the co-chair of ADA 4 ALL to help strengthen the ADA employee community and further the Association’s commitment to diversity, equity and inclusion. She also served on the Journal of the Medical Library Association Editor-in-Chief search committee to ensure a more inclusive and equitable search was conducted to identify potential candidates.
- Ms. Pontillo served as chair of the Resource Sharing Caucus of the Medical Library Association. She remains the group lead contact for the Greater Midwest Region Reciprocal Group (GMRRG) for the Network of the National Library of Medicine. Ms. Pontillo served on the planning committee for the first-ever Collection Development and Resource Sharing Symposium for the 2022 MLA annual conference and co-organized the popular session, “Think Like a Lawyer: A Socratic Seminar on Copyright Law” held during the conference.
- Ms. Fleming served as chair of the Dental Caucus in the Medical Library Association beginning in June 2022. In that capacity, she completed a Caucus history report, led Executive Committee and Caucus meetings, managed a special election for Caucus leadership, and mentored incoming Caucus leadership.
- Ms. Matlak, a Certified Archivist, started coursework (and completed six courses) for the Society of American Archivists Digital Archives Specialist (DAS) Certificate which will facilitate her work with the increasing volume of digital publications and records being collected and preserved in the ADA Archives.
- Ms. Nickisch Duggan delivered a talent and strengths development workshop for the National Library of Medicine Associate Fellows Program. She continues to lead the redevelopment of the ADA Institutional Review Board (IRB). She also served as a non-affiliated member of the IRBs of the Ann & Robert H. Lurie Children’s Hospital of Chicago and Northwestern University.
Resolution No. 406 New

Report: N/A Date Submitted: June 2023

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: 

Amount One-time Amount On-going

ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.

How does this resolution increase member value: See Background

**AMENDMENT TO THE GUIDELINES FOR THE USE OF SEDATION AND GENERAL ANESTHESIA BY DENTISTS**

**Background:** In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans. 2012:370), the Council on Dental Education and Licensure (CDEL) has conducted a preliminary review of the Guidelines for the Use of Sedation and General Anesthesia by Dentists. The “Use Guidelines” focus on sedation and general anesthesia for adult patients.

Further review of the “Use Guidelines” by CDEL will be conducted in 2024 pending the results of a scoping review on moderate sedation in adults in the dental setting underway by the ADA Council on Scientific Affairs (CSA) with the support of the ADA Science and Research Institute (ADASRI). In the meantime, CDEL believes that an amendment to the Guidelines for the Use of Sedation and General Anesthesia by Dentists should be approved by the 2023 House of Delegates to include reference to the Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students, adopted by the Council on Dental Education and Licensure in January 2021.

Accordingly, the Council on Dental Education and Licensure recommends adoption of the following resolution. The complete Guidelines for the Use of Sedation and General Anesthesia by Dentists, as amended, appears in Appendix 1.

**Resolution**

406. Resolved, that Section I. Introduction of the Guidelines for the Use of Sedation and General Anesthesia by Dentists (Trans.2007:282; 2012:468; 2016:277) be amended in the fourth unnumbered paragraph as follows (additions are underlined):

**Guidelines for the Use of Sedation and General Anesthesia by Dentists**

**Adopted by the ADA House of Delegates**

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 must comply with their state laws, rules and/or regulations when providing sedation and anesthesia and will only be subject to Section III. Educational Requirements as required by those state laws, rules and/or regulations.

Level of sedation is entirely independent of the route of administration. Moderate and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children, 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 and the American Dental Association’s Council on Dental Education and Licensure’s 2021 Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students.

**BOARD COMMENT:** The Board of Trustees understands the Council’s intent, in accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans. 2012:370), to complete a review of the Guidelines for the Use of Sedation and General Anesthesia by Dentists and provide an update to the guidelines within the timeline established by Resolution 170H-2012. The Board also became aware that a pending scoping review in 2024 may result in additional revisions to be considered by the House in 2024 or 2025. The Board came to the conclusion that multiple, separate sets of revisions in such a short time frame may lead to issues, especially with many state dental boards that base their anesthesia regulations and rules on the Guidelines. The Board recommends referral to allow CDEL to complete a single, comprehensive revision of the Guidelines for consideration by the 2024 or 2025 House of Delegates.

**BOARD RECOMMENDATION:** Vote Yes on Referral.

**Vote: Resolution 406**

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<td>MORRISON</td>
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Appendix 1

Guidelines for the Use of Sedation and General Anesthesia by Dentists
Adopted by the ADA House of Delegates

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 must comply with their state laws, rules and/or regulations when providing sedation and anesthesia and will only be subject to Section III. Educational Requirements as required by those state laws, rules and/or regulations.

Level of sedation is entirely independent of the route of administration. Moderate and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children, 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 and the American Dental Association’s Council on Dental Education and Licensure’s 2021 Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students.

II. Definitions

Methods of Anxiety and Pain Control

minimal sedation (previously known as anxiolysis) - 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.\(^1\)

Patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

The following definitions apply to administration of minimal sedation:

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

dosing for minimal sedation via the enteral route – minimal sedation may be achieved by the administration of a drug, either singly or in divided doses, by the enteral route to achieve the desired clinical effect, not to exceed the maximum recommended dose (MRD).

The administration of enteral drugs exceeding the maximum recommended dose during a single appointment is considered to be moderate sedation and the moderate sedation guidelines apply.

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

\(^1\)Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014, of the American Society of Anesthesiologists (ASA)
If more than one enteral drug is administered to achieve the desired sedation effect, with or without the concomitant use of nitrous oxide, the guidelines for moderate sedation must apply.

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. The use of the MRD to guide dosing for minimal sedation is intended to create this margin of safety.

**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.¹

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.¹

**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.¹

For all levels of sedation, the qualified dentist 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].
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.

local anesthesia - 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 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 - a dentist providing sedation and anesthesia in compliance with their state rules and/or regulations.

operating dentist – dentist with primary responsibility for providing operative dental care while a qualified 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

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Examples, including but not limited to:</th>
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<tbody>
<tr>
<td>ASA I</td>
<td>A normal healthy patient</td>
<td>Healthy, non-smoking, no or minimal alcohol use</td>
</tr>
<tr>
<td>ASA II</td>
<td>A patient with mild systemic disease</td>
<td>Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy,</td>
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</table>

2 ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, Updated by ASA House of Delegates, October 15, 2014.
Obesity (30 < BMI < 40), well-controlled DM/HTN, mild lung disease

ASA III
A patient with severe systemic disease
Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, *ESRD undergoing regularly scheduled dialysis, premature infant PCA < 60 weeks, history (>3 months) of MI, CVA, TIA, or CAD/stents.

ASA IV
A patient with severe systemic disease that is a constant threat to life
Examples include (but not limited to): recent (<3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or *ESRD not undergoing regularly scheduled dialysis.

ASA V
A moribund patient who is not expected to survive without the operation
Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction.

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

*The addition of "E" denotes Emergency surgery: (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part)

### American Society of Anesthesiologists Fasting Guidelines

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

### III. Educational Requirements

#### A. Minimal Sedation

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

   a. training in minimal sedation consistent with that prescribed in the ADA Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students,

   or

   b. comprehensive training 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.

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or

c. an advanced education program accredited by the Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage minimal sedation commensurate with these guidelines;

and

d. 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:

   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 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) 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 completed:

   a. An advanced education program accredited by the Commission on Dental Accreditation that affords comprehensive and appropriate training necessary to administer and manage deep sedation or general 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) 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.

IV. Clinical Guidelines

A. Minimal sedation

1. Patient History and 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 consist of a review of their current medical history and medication use. 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 Evaluation and 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.
- An appropriate focused physical evaluation should be performed.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, and respiration rate must be obtained unless invalidated by the nature of the patient, procedure or equipment. 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, legal 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.
- Documentation of compliance with manufacturers’ recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should 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:
- Oxygen saturation by pulse oximetry may be clinically useful and should be considered.

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

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, legal guardian or care giver.

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 minimal sedation and providing the equipment and protocols for patient rescue.

B. Moderate Sedation

1. Patient History and Evaluation
Patients considered for moderate sedation must undergo an evaluation prior to the administration of any sedative. This should consist of at least a review at an appropriate
time of their medical history and medication use and NPO (nothing by mouth) status. In addition, patients with significant medical considerations (e.g., ASA III, IV) should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI) is should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

### 2. Pre-operative Evaluation and 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.
- An appropriate focused physical evaluation must be performed.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless precluded by the nature of the patient, procedure or equipment. Body temperature should be measured when clinically indicated.
- Pre-operative verbal or written instructions must be given to the patient, parent, escort, legal 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.
- Documentation of compliance with manufacturers’ recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should 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.
- The equipment necessary for monitoring end-tidal CO2 and auscultation of breath sounds must be immediately available.
- An appropriate scavenging system must be available if gases other than oxygen or air are used.
- The equipment necessary to establish intravascular or intraosseous access should be available 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

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4 Standardized BMI category definitions can be obtained from the Centers for Disease Control and Prevention or the American Society of Anesthesiologists.
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 (e.g., responsiveness to verbal command) must be continually
assessed.

Oxygenation:
• 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 should be monitored by continual observation
of qualitative signs, including auscultation of breath sounds with a precordial or
pretracheal stethoscope.

Circulation:
• The dentist must continually evaluate blood pressure and heart rate unless
invalidated by the nature of the patient, procedure or equipment 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.
• 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;
oxgenation, ventilation and circulation are satisfactory for discharge.
• Post-operative verbal and written instructions must be given to the patient, parent,
escort, legal 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 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.

C. Deep Sedation or General Anesthesia

1. Patient History and Evaluation

Patients considered for deep sedation or general anesthesia must undergo an evaluation prior to the administration of any sedative. This must consist of at least a review of their medical history and medication use and NPO (nothing by mouth) status. In addition, patients with significant medical considerations (e.g., ASA III, IV) should also require consultation with their primary care physician or consulting medical specialist. Assessment of Body Mass Index (BMI) should be considered part of a pre-procedural workup. Patients with elevated BMI may be at increased risk for airway associated morbidity, particularly if in association with other factors such as obstructive sleep apnea.

2. Pre-operative Evaluation and Preparation

- The patient, parent, legal 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.
- A focused physical evaluation must be performed as deemed appropriate.
- Baseline vital signs including body weight, height, blood pressure, pulse rate, respiration rate, and blood oxygen saturation by pulse oximetry must be obtained unless invalidated by the patient, procedure or equipment. In addition, body temperature should be measured when clinically appropriate.
- Pre-operative verbal and written instructions must be given to the patient, parent, escort, legal 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. 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.
- Documentation of compliance with manufacturers’ recommended maintenance of monitors, anesthesia delivery systems, and other anesthesia-related equipment should 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.

The equipment necessary for monitoring end-tidal CO\textsubscript{2} and auscultation of breath sounds must be immediately available.

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:

- Oxygenation saturation must be evaluated continuously by pulse oximetry.

Ventilation:

- Intubated patient: End-tidal CO\textsubscript{2} must be continuously monitored and evaluated.
- Non-intubated patient: End-tidal CO\textsubscript{2} must be continually monitored and evaluated unless precluded or invalidated by the nature of the patient, procedure, or equipment. In addition, ventilation should 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.
- Pulse oximetry and end-tidal CO\textsubscript{2} 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. Special Needs Patients

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 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.
NOTES
Resolution No. 407  New
Report:  N/A  Date Submitted:  June 2023
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
ADA Strategic Plan Objective: Public Goal Obj-9: The ADA will be the preeminent driver of trusted oral health information for the public and profession.
How does this resolution increase member value: See Background

AMENDMENT TO THE GUIDELINES FOR TEACHING PAIN CONTROL AND SEDATION TO DENTISTS AND DENTAL STUDENTS

Background: In accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans. 2012:370), the Council on Dental Education and Licensure (CDEL) has conducted a preliminary review of the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students. The “Teaching Guidelines” focus on pain control and sedation for adult patients.

Further review of the Teaching Guidelines by CDEL will be conducted in 2024 pending the results of a scoping review on moderate sedation in adults in the dental setting underway by the ADA Council on Scientific Affairs (CSA) with the support of the ADA Science and Research Institute (ADASRI). In the meantime, CDEL believes that an amendment to the Teaching Guidelines should be approved by the 2023 House of Delegates to include reference to the Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students, adopted by the Council on Dental Education and Licensure in January 2021 and reported to the 2021 House of Delegates.

As reported by CDEL to the House in 2021 (Reports 2021:39), The “Pediatric Teaching Guidelines” complement the ADA-endorsed American Academy of Pediatrics/American Academy of Pediatric Dentistry Guidelines for Monitoring and Management of Pediatric Patients Before, During and After Sedation for Diagnostic and Therapeutic Procedures and provide an additional resource for educators, continuing education providers and state dental boards regarding appropriate training for dentists who provide pain control and minimal and moderate sedation to pediatric patients. Prior to adoption, the Council sought advice from ADA leadership and the legal division confirming that the new Pediatric Teaching Guidelines would be within the scope of review of the Council, allowing for timely revisions to the document.

The Council believes that future oversight of the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students (for adult patients) also should be the sole responsibility of the Council to ensure that the document remains current and accurate at all times as a reference for dental educators, continuing dental education providers and state dental boards. The document was adopted in 2007 and amended in 2012 and 2016 by the House, however the Governance Manual states that CDEL has subject matter responsibilities for dental anesthesiology and sedation. Therefore, the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students fall within the purview of the Council and its Anesthesiology Committee composed of members with significant expertise in sedation and anesthesia representing the ADA, American Association of Oral and Maxillofacial Surgeons (AAOMS), American Academy of Pediatric Dentistry (AAPD), American Academy of Periodontology (AAP), American Dental Society of Anesthesiology (ADSA), Academy of General Dentistry (AGD), American Society of Anesthesiologists (ASA) and American Society of Dentist Anesthesiologists (ASDA).
Council respectfully requests that future management of the Teaching Guidelines be granted to the Council.

Accordingly, the Council on Dental Education and Licensure recommends adoption of the following resolution. The complete Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students, as amended, appears in Appendix 1.

Resolution

407. Resolved, that Section I. Introduction of the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students (Trans.2007:282; 2012:469; 2016:277) be amended in the tenth unnumbered paragraph as follows (additions are underlined; deletions are stricken):

Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students
Adopted by the ADA House of Delegates

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.

Level of sedation is entirely independent of the route of administration. Moderate and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children, 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, and the American Dental Association’s Council on Dental Education and Licensure’s 2021 Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students.

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.

and be it further

Resolved, that the Council on Dental Education and Licensure be assigned full oversight and responsibility of the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students.

BOARD COMMENT: The Board of Trustees understands the Council’s intent, in accord with Resolution 170H-2012, Regular Comprehensive Policy Review (Trans. 2012:370), to complete a review of the Guidelines for Teaching Pain Control and Sedation to Dentists and Dental Students and provide an update to the guidelines within the timeline established by Resolution 170H-2012. The Board also became aware that a pending scoping review in 2024 may result in additional revisions to be considered by the House in 2024 or 2025. The Board came to the conclusion that multiple, separate sets of revisions
in such a short time frame may lead to issues, especially with many state dental boards that base their anesthesia regulations and rules on the Guidelines. The Board recommends referral to allow CDEL to complete a single, comprehensive revision of the Guidelines for consideration by the 2024 or 2025 House of Delegates.

BOARD RECOMMENDATION: Vote Yes on Referral.

BOARD VOTE: UNANIMOUS
Appendix 1

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

Adopted by the ADA House of Delegates

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.

Level of sedation is entirely independent of the route of administration. Moderate and deep sedation or general anesthesia may be achieved via any route of administration and thus an appropriately consistent level of training must be established.

For children, 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 and the American Dental Association’s Council on Dental Education and Licensure’s 2021 Guidelines for Teaching Pediatric Pain Control and Sedation to Dentists and Dental Students.

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

**minimal sedation (previously known as anxiolysis)** - 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. Patients whose only response is reflex withdrawal from repeated painful stimuli would not be considered to be in a state of minimal sedation.

The following definitions apply to administration of minimal sedation:

**maximum recommended dose (MRD)** - maximum FDA-recommended dose of a drug, as printed in FDA-approved labeling for unmonitored home use.
dosing for minimal sedation via the enteral route – minimal sedation may be achieved by the
administration of a drug, either singly or in divided doses, by the enteral route to achieve the
desired clinical effect, not to exceed the maximum recommended dose (MRD).

The administration of enteral drugs exceeding the maximum recommended dose during a
single appointment is considered to be moderate sedation and the moderate sedation
guidelines apply.

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

If more than one enteral drug is administered to achieve the desired sedation effect, with or
without the concomitant use of nitrous oxide, the guidelines for moderate sedation must
apply.

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. The use
of the MRD to guide dosing for minimal sedation is intended to create this margin of safety.

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.¹

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:

titratio n - 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
titratio n 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.

dee p 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.¹

gene ral 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.¹

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.1

For all levels of sedation, the qualified dentist 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

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

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

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

5. **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

6. **Analgesia** – the diminution or elimination of pain.

7. **Local Anesthesia** - the elimination of sensation, especially pain, in one part of the body by
the topical application or regional injection of a drug.

8. **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.

9. **Qualified Dentist** – a dentist providing sedation and anesthesia in compliance with their
state rules and/or regulations.

10. **Must/Shall** - indicates an imperative need and/or duty; an essential or indispensable item;
mandatory.

11. **Should** - indicates the recommended manner to obtain the standard; highly desirable.

12. **May** - indicates freedom or liberty to follow a reasonable alternative.

13. **Continual** - repeated regularly and frequently in a steady succession.

14. **Continuous** - prolonged without any interruption at any time.

15. **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.

### American Society of Anesthesiologists (ASA) Patient Physical Status Classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Definition</th>
<th>Examples, including but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASA I</td>
<td>A normal healthy patient</td>
<td>Healthy, non-smoking, no or minimal alcohol use</td>
</tr>
<tr>
<td>ASA II</td>
<td>A patient with mild systemic disease</td>
<td>Mild diseases only without substantive functional limitations. Examples include (but not limited to): current smoker, social alcohol drinker, pregnancy, obesity (30 &lt; BMI &lt; 40), well-controlled DM/HTN, mild lung disease</td>
</tr>
<tr>
<td>ASA III</td>
<td>A patient with severe systemic disease</td>
<td>Substantive functional limitations; One or more moderate to severe diseases. Examples include (but not limited to): poorly controlled DM or HTN, COPD, morbid obesity (BMI ≥40), active hepatitis, alcohol dependence or abuse, implanted pacemaker, moderate reduction of ejection fraction, *ESRD undergoing regularly scheduled dialysis, premature infant PCA &lt; 60 weeks, history (&gt;3 months) of MI, CVA, TIA, or CAD/stents.</td>
</tr>
<tr>
<td>ASA IV</td>
<td>A patient with severe systemic disease that is a constant threat to life</td>
<td>Examples include (but not limited to): recent (&lt; 3 months) MI, CVA, TIA, or CAD/stents, ongoing cardiac ischemia or severe valve dysfunction, severe reduction of ejection fraction, sepsis, DIC, ARD or *ESRD not undergoing regularly scheduled dialysis</td>
</tr>
<tr>
<td>ASA V</td>
<td>A moribund patient who is not expected to survive without the operation</td>
<td>Examples include (but not limited to): ruptured abdominal/thoracic aneurysm, massive trauma, intracranial bleed with mass</td>
</tr>
<tr>
<td>Ingested Material</td>
<td>Minimum Fasting Period</td>
<td></td>
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<td>------------------------</td>
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<td></td>
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<tr>
<td>Clear liquids</td>
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<tr>
<td>Breast milk</td>
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<td></td>
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<tr>
<td>Infant formula</td>
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<tr>
<td>Nonhuman milk</td>
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<tr>
<td>Light meal</td>
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</tr>
<tr>
<td>Fatty meal</td>
<td>8 hours</td>
<td></td>
</tr>
</tbody>
</table>

*The addition of “E” denotes Emergency surgery: (An emergency is defined as existing when delay in treatment of the patient would lead to a significant increase in the threat to life or body part)*

American Society of Anesthesiologists' Fasting Guidelines

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 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.

Effect, ischemic bowel in the face of significant cardiac pathology or multiple organ/system dysfunction

ASA VI A declared brain-dead patient whose organs are being removed for donor purposes
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 Commission on Dental Accreditation in accord with the Accreditation Standards for advanced dental education programs. These courses are designed to prepare the graduate dentist or postdoctoral student in the most comprehensive manner to be competent 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. 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
1. (3) Cardiovascular system
2. b. Monitoring equipment
3. 5. Pharmacologic aspects of anxiety and pain control
4. a. Routes of drug administration
5. b. Sedatives and anxiolytics
6. c. Local anesthetics
7. d. Analgesics and antagonists
8. e. Adverse side effects
9. f. Drug interactions
10. g. Drug abuse
11. 6. Control of preoperative and operative anxiety and pain
12. a. Patient evaluation
13. (1) Psychological status
14. (2) ASA physical status
15. (3) Type and extent of operative procedure
16. b. Nonpharmacologic methods
17. (1) Psychological and behavioral methods
18. (a) Anxiety management
19. (b) Relaxation techniques
20. (c) Systematic desensitization
21. (2) Interpersonal strategies of patient management
22. (3) Hypnosis
23. (4) Electronic dental anesthesia
24. (5) Acupuncture/Acupressure
25. (6) Other
26. c. Local anesthesia
27. (1) Review of related anatomy, and physiology
28. (2) Pharmacology
29. (a) Dosing
1 (b) Toxicity
2 (c) Selection of agents
3 (3) Techniques of administration
4 (a) Topical
5 (4) Infiltration (supraperiosteal)
6 (5) Nerve block – maxilla-to include:
7 (a) Posterior superior alveolar
8 (b) Infraorbital
9 (c) Nasopalatine
10 (d) Greater palatine
11 (e) Maxillary (2nd division)
12 (f) Other blocks
13 (6) Nerve block – mandible-to include:
14 (a) Inferior alveolar-lingual
15 (b) Mental-incisive
16 (c) Buccal
17 (d) Gow-Gates
18 (e) Closed mouth
19 (7) Alternative injections-to include:
20 (a) Periodontal ligament
21 (b) Intraosseous
22
d. Prevention, recognition and management of complications and emergencies

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.

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.

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

1. Describe the adult 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 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 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, 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-ental 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 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 anesthetics 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.

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. 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.

Completion of a pre-requisite nitrous oxide-oxygen competency course is required for participants combining moderate sedation with nitrous oxide-oxygen.

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.


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 Sedation Course Duration and Documentation:

The Course must include:

- A minimum of 60 hours of instruction plus administration of sedation for at least 20 individually managed patients.
- Certification of competence in moderate sedation technique(s).
- Certification of competence in rescuing patients from a deeper level of sedation than intended including managing the airway, intravascular or intraosseous access, and reversal medications.
Provision by course director or faculty of additional clinical experience if participant competency has not been achieved in time allotted.

- Records of instruction and clinical experiences (i.e., number of patients managed by each participant in each modality/route) that are maintained and available for participant review.

D. Documentation of Instruction: The course director must certify the competency of participants upon satisfactory completion of training in each moderate sedation technique, including instruction, clinical experience, managing the airway, intravascular/intraosseous access, and reversal medications.

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 or 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 four-to-one when moderate 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.

1. Excerpted from Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia, 2014, of the American Society of Anesthesiologists (ASA)

2. ASA Physical Status Classification System is reprinted with permission of the American Society of Anesthesiologists, Updated by ASA House of Delegates, October 15, 2014.
