

Guideline on Behavior Guidance for the Pediatric Dental Patient

Originating Committee

Clinical Affairs Committee – Behavior Management Subcommittee

Review Council

Council on Clinical Affairs

Adopted

1990

Revised

1991, 1996, 2000, 2005, 2006, 2008*

Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes that, in providing oral health care for infants, children, adolescents, and persons with special health care needs, a continuum of both nonpharmacological and pharmacological behavior guidance techniques may be used by dental health care providers. The various behavior guidance techniques used must be tailored to the individual patient and practitioner. Promoting a positive dental attitude, safety, and quality of care are of the utmost importance. This guideline is intended to educate health care providers, parents, and other interested parties about many behavior guidance techniques used in contemporary pediatric dentistry. It will not attempt to duplicate information found in greater detail in the AAPD's Guideline on Appropriate Use of Nitrous Oxide for Pediatric Dental Patients,¹ Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update,² and Guideline on the Use of Anesthesia Care Providers in the Administration of In-office Deep Sedation/General Anesthesia to the Pediatric Dental Patient.³

Methods

This guideline was developed following the AAPD's 1989 consensus conference on behavior management for the pediatric dental patient. In 2003, the AAPD held another symposium on behavior guidance, with proceedings published in *Pediatric Dentistry* (2004, Vol. 26, No. 2). This revision reflects a review of those proceedings, other dental and medical literature related to behavior guidance of the pediatric patient, and sources of recognized professional expertise and stature including both the academic and practicing pediatric dental communities and the standards of the Commission on Dental Accreditation.⁴ MEDLINE searches were performed using key terms such as "behavior management in children", "behavior management in dentistry", "child behavior and dentistry", "child and dental anxiety", "child preschool and dental anxiety", "child personality and test", "child

preschool personality and test", "patient cooperation", "dentists and personality", "dentist-patient relations", "patient assessment", "treatment deferral", and "restraint".

Background

Overview

Dental practitioners are expected to recognize and effectively treat childhood dental diseases that are within the knowledge and skills acquired during dental education. Safe and effective treatment of these diseases often requires modifying the child's behavior. Behavior guidance is a continuum of interaction involving the dentist and dental team, the patient, and the parent directed toward communication and education. Its goal is to ease fear and anxiety while promoting an understanding of the need for good oral health and the process by which that is achieved.

A dentist who treats children should have a variety of behavior guidance approaches and, in most situations, should be able to assess accurately the child's developmental level, dental attitudes, and temperament and to predict the child's reaction to treatment. The child who presents with oral/dental pathology and noncompliance tests the skills of every practitioner. By virtue of differences in each clinician's training, experience, and personality, a behavior guidance approach for a child may vary among practitioners. The behaviors of the dentist and dental staff members play an important role in behavior guidance of the pediatric patient. Through communication, the dental team can allay fear and anxiety, teach appropriate coping mechanisms, and guide the child to be cooperative, relaxed, and self-confident in the dental setting. Successful behavior guidance enables the oral health team to perform quality treatment safely and efficiently and to nurture a positive dental attitude in the child.

Some of the behavior guidance techniques in this document are intended to maintain communication, while others are intended to extinguish inappropriate behavior and establish communication. As such, these techniques cannot be evaluated on an individual basis as to validity, but must be assessed within

*The 2008 revision was limited to clarifications within "Advanced Behavior Guidance, Protective Stabilization".

the context of the child's total dental experience. Each technique must be integrated into an overall behavior guidance approach individualized for each child. Therefore, behavior guidance is as much an art as it is a science. It is not an application of individual techniques created to "deal" with children, but rather a comprehensive, continuous method meant to develop and nurture the relationship between patient and doctor, which ultimately builds trust and allays fear and anxiety.

This guideline contains definitions, objectives, indications, and contraindications for behavior guidance techniques commonly taught and used in pediatric dentistry.⁵⁻⁷ This document is reflective of the AAPD's role as an advocate for the improvement of the overall health of the child. Dentists are encouraged to utilize behavior guidance techniques consistent with their level of professional education and clinical experience. Behavior guidance cases that are beyond the training, experience, and expertise of individual practitioners should be referred to practitioners who can render care more appropriately.

Dental Team Behavior

The pediatric dental staff can play an important role in behavior guidance. The scheduling coordinator or receptionist will have the first contact with a prospective parent, usually through a telephone conversation. Information provided to the parent prior to an appointment will help set expectations for the initial visit. The Internet and customized Web pages are excellent ways of introducing parents/patients to one's practice. These encounters serve as educational tools that help the parent and child be better prepared for the first visit and may answer questions that help to allay fears. In addition, the receptionist is usually the first staff member the child meets. The manner in which the child is welcomed into the practice may influence future patient behavior.

The clinical staff is an extension of the dentist in terms of using communicative behavior guidance techniques. Therefore, their communicative skills are very important. The dental team should work together in communicating with parents and patients. A child's future attitude toward dentistry may be determined by a series of successful experiences in a pleasant dental environment. All dental team members are encouraged to expand their skills and knowledge in behavior guidance techniques by reading dental literature, observing video presentations, or attending continuing education courses.

Dentist Behavior

The health professional may be inattentive to communication style, but patients/parents are very attentive to it.⁸ The communicative behavior of dentists is a major factor in patient satisfaction.^{9,10} The dentist should recognize that not all parents may express their desire for involvement.¹¹ Dentist behaviors reported to correlate with low parent satisfaction include rushing through appointments, not taking time to explain procedures, barring parents from the examination room, and generally being impatient.¹² Relationship/communication problems have been demonstrated to play a prominent role in initiating malpractice

actions. Even where no error occurred, perceived lack of caring and/or collaboration were associated with litigation.^{13,14}

Studies of efficacy of various dentist behaviors in management of uncooperative patients are equivocal. Dentist behaviors of vocalizing, directing, empathizing, persuading, giving the patient a feeling of control, and operant conditioning have been reported as efficacious responses to uncooperative patient behaviors.¹⁵⁻¹⁷

Communication

Communication (ie, imparting or interchange of thoughts, opinions, or information) may be accomplished by a number of means but, in the dental setting, it is affected primarily through dialogue, tone of voice, facial expression, and body language.

The 4 "essential ingredients" of communication are:

1. the sender;
2. the message, including the facial expression and body language of the sender;
3. the context or setting in which the message is sent; and
4. the receiver.¹⁸

For successful communication to take place, all 4 elements must be present and consistent. Without consistency, there may be a poor "fit" between the intended message and what is understood.

Communicating with children poses special challenges for the dentist and the dental team. A child's cognitive development will dictate the level and amount of information interchange that can take place. It is impossible for a child to perceive an idea for which he has no conceptual framework and unrealistic to expect a child patient to adopt the dentist's frame of reference. The dentist, therefore, must have a basic understanding of the cognitive development of children so, through appropriate vocabulary, messages consistent with the receiver's intellectual development can be sent.

Communication may be impaired when the sender's expression and body language are not consistent with the intended message. When body language conveys uncertainty, anxiety, or urgency, the dentist cannot effectively communicate confidence in his/her clinical skills.

It is possible to communicate with the child patient briefly at the beginning of a dental appointment to establish rapport and trust. However, once a procedure begins, the dentist's ability to control and shape behavior becomes paramount, and information sharing becomes secondary. The 2-way interchange of information gives way to 1-way manipulation of behavior through commands. This type of interaction is called "requests and promises".¹⁹ When action must take place to reach a goal (eg, completion of the dental procedure), the dentist assumes the role of the requestor. Requests elicit promises from the patient that, in turn, establish a commitment to cooperate. The dentist may need to frame the request in a number of ways in order to make the request effective. For example, reframing a previous command in an assertive voice with appropriate facial expression and body language is the basis for the technique of voice control. While voice control is classified as one of the means of

communicative guidance, it may be considered aversive in nature by some parents.²⁰

The 3 “essential communications” imparted to child patients through primarily non-verbal means are:

1. “I see you as an individual and will respond to your needs as such”;
2. “I am thoroughly knowledgeable and highly skilled”;
3. “I am able to help you and will do nothing to hurt you needlessly”.²¹

The importance of the context in which messages are delivered cannot be overstated. The dental office may be made “child friendly” by the use of themes in its decoration, age-appropriate toys and games in the reception room or treatment areas, and smaller scale furniture. The operatory, however, may contain distractions (eg, another child crying) that, for the patient, produce anxiety and interfere with communication. Dentists and other members of the dental team may find it advantageous to provide certain information (eg, post-operative instructions, preventive counseling) away from the operatory and its many distractions.

Patient Assessment

The response of a child patient to the demands of dental treatment is complex and determined by many factors. Multiple studies have demonstrated that a minority of children with uncooperative behavior have dental fears and that not all fearful children present dental behavior guidance problems.²²⁻²⁴ Child age/cognitive level,²⁴⁻²⁸ temperament/personality characteristics,^{22,23,29-31} anxiety and fear,^{23,24,32} reaction to strangers,³³ previous dental experiences,^{24,26,34} and maternal dental anxiety³⁴⁻³⁶ influence a child’s reaction to the dental setting.

The dentist should include an evaluation of the child’s cooperative potential as part of treatment planning. Information can be gathered by observation of and interacting with the child and by questioning the child’s parent. Ideal assessment methods are valid, allow for limited cognitive and language skills, and are easy to use in a clinical setting. Assessment tools that have demonstrated some efficacy in the pediatric dental setting, along with a brief description of their purpose, are listed in Appendix 1.^{24,27,29,30,36-44} No single assessment method or tool is completely accurate in predicting a child patient’s behavior for dental treatment, but awareness of the multiple influences on child behavior may aid in treatment planning for the pediatric patient.

Since children exhibit a broad range of physical, intellectual, emotional, and social development and a diversity of attitudes and temperament, it is important that dentists have a wide range of behavior guidance techniques to meet the needs of the individual child.

Barriers

Unfortunately, various barriers may hinder the achievement of a successful outcome. Developmental delay, physical/mental disability, and acute or chronic disease all are potential reasons for noncompliance. Reasons for noncompliance in the healthy, communicating child often are more subtle and difficult to

diagnose. Major factors contributing to poor cooperation can include fears transmitted from parents, a previous unpleasant dental or medical experience, inadequate preparation for the first encounter in the dental environment, or dysfunctional parenting practices.²⁴⁻²⁶

To alleviate these barriers, the dentist should become a teacher. The dentist’s methods should include assessing the patient’s developmental level and comprehension skills, directing a message to that level, and having a patient who is attentive to the message being delivered (ie, good communication). To deliver quality dental treatment safely and develop an educated patient, the “teacher-student” roles and relationship must be established and maintained.

Deferred treatment

Dental disease usually is not life-threatening and the type and timing of dental treatment can be deferred in certain circumstances. When a child’s behavior prevents routine delivery of oral health care using communicative guidance techniques, the dentist must consider the urgency of dental need when determining a plan of treatment. Rapidly advancing disease, trauma, pain, or infection usually dictates prompt treatment. Deferring some or all treatment or employing therapeutic interventions (eg, alternative restorative technique [ART],^{45,46} fluoride varnish, antibiotics for infection control) until the child is able to cooperate may be appropriate when based upon an individualized assessment of the risks and benefits of that option. The dentist must explain the risks and benefits of deferred or alternative treatments clearly, and informed consent must be obtained from the parent.

Treatment deferral also should be considered in cases when treatment is in progress and the patient’s behavior becomes hysterical or uncontrollable. In such cases, the dentist should halt the procedure as soon as possible, discuss the situation with the patient/parent, and either select another approach for treatment or defer treatment based upon the dental needs of the patient. If the decision is made to defer treatment, the practitioner immediately should complete the necessary steps to bring the procedure to a safe conclusion before ending the appointment.

Caries risk should be reevaluated when treatment options are compromised due to child behavior. The AAPD has developed a caries-risk assessment tool (CAT)⁴⁷ that provides a means of classifying caries risk at a point in time and can be applied periodically to assess changes in an individual’s risk status. An individualized preventive program, including appropriate parent education and a dental recall schedule, should be recommended after evaluation of the patient’s caries risk, oral health needs, and abilities. Topical fluorides (eg, brush-on gels, fluoride varnish, professional application during prophylaxis) may be indicated.⁴⁸ ART may be useful as both preventive and therapeutic approaches.^{45,46}

Informed consent

Regardless of the behavior guidance techniques utilized by the individual practitioner, all guidance decisions must be based on

a subjective evaluation weighing benefits and risks to the child. The need for treatment, consequences of deferred treatment, and potential physical/emotional trauma must be considered.

Decisions regarding the use of behavior guidance techniques other than communicative management cannot be made solely by the dentist. They must involve a parent and, if appropriate, the child. The dentist serves as the expert on dental care (ie, the timing and techniques by which treatment can be delivered). The parent shares with the practitioner the decision whether or not to treat and must be consulted regarding treatment strategies and potential risks. Therefore, the successful completion of diagnostic and therapeutic services is viewed as a partnership of dentist, parent, and child.

Informing the parent about the nature, risk, and benefits of the technique to be used and any professionally-recognized or evidence-based alternative techniques is essential to obtaining informed consent.⁴⁹ All questions must be answered to the parent's understanding.

Communicative management, by virtue of being a basic element of communication, requires no specific consent. All other behavior guidance techniques require informed consent consistent with the AAPD's Guideline on Informed Consent⁴⁹ and applicable state laws. In the event of an unanticipated reaction to dental treatment, it is incumbent upon the practitioner to protect the patient and staff from harm. Following immediate intervention to assure safety, if techniques must be altered to continue delivery of care, the dentist must have informed consent for the alternative methods.

Summary

- Behavior guidance is based on scientific principles. The proper implementation of behavior guidance requires an understanding of these principles. Behavior guidance, however, is more than pure science and requires skills in communication, empathy, coaching, and listening. As such, behavior guidance is a clinical art form and a skill built on a foundation of science.
 - The goals of behavior guidance are to establish communication, alleviate fear and anxiety, deliver quality dental care, build a trusting relationship between dentist and child, and promote the child's positive attitude toward oral/dental health and oral health care.
 - The urgency of the child's dental needs must be considered when planning treatment. Deferral or modification of treatment sometimes may be appropriate until routine care can be provided using appropriate behavior guidance techniques.
 - All decisions regarding use of behavior guidance techniques must be based upon a benefit vs risk evaluation. As part of the process of obtaining informed consent, the dentist's recommendations regarding use of techniques (other than communicative guidance) must be explained to the parent's understanding and acceptance. Parents share in the decision-making process regarding treatment of their children.
- The dental staff must be trained carefully to support the doctor's efforts and properly welcome the patient and parent into a child-friendly environment that will facilitate behavior guidance and a positive dental visit.

Recommendations

Basic behavior guidance

Communication and communicative guidance

Communicative management and appropriate use of commands are used universally in pediatric dentistry with both the cooperative and uncooperative child. In addition to establishing a relationship with the child and allowing for the successful completion of dental procedures, these techniques may help the child develop a positive attitude toward oral health. Communicative management comprises a host of techniques that, when integrated, enhance the evolution of a cooperative patient. Rather than being a collection of singular techniques, communicative management is an ongoing subjective process that becomes an extension of the personality of the dentist. Associated with this process are the specific techniques of tell-show-do, voice control, nonverbal communication, positive reinforcement, and distraction. The dentist should consider the cognitive development of the patient, as well as the presence of other communication deficits (eg, hearing disorder), when choosing specific communicative management techniques.

Tell-show-do

- **Description:** Tell-show-do is a technique of behavior shaping used by many pediatric professionals. The technique involves verbal explanations of procedures in phrases appropriate to the developmental level of the patient (tell); demonstrations for the patient of the visual, auditory, olfactory, and tactile aspects of the procedure in a carefully defined, nonthreatening setting (show); and then, without deviating from the explanation and demonstration, completion of the procedure (do). The tell-show-do technique is used with communication skills (verbal and nonverbal) and positive reinforcement.
- **Objectives:** The objectives of tell-show-do are to:
 - teach the patient important aspects of the dental visit and familiarize the patient with the dental setting;
 - shape the patient's response to procedures through desensitization and well-described expectations.
- **Indications:** May be used with any patient.
- **Contraindications:** None.

Voice control

- **Description:** Voice control is a controlled alteration of voice volume, tone, or pace to influence and direct the patient's behavior. Parents unfamiliar with this technique may benefit from an explanation prior to its use to prevent misunderstanding.
- **Objectives:** The objectives of voice control are to:
 - gain the patient's attention and compliance;
 - avert negative or avoidance behavior;
 - establish appropriate adult-child roles.

- Indications: May be used with any patient.
- Contraindications: Patients who are hearing impaired.

Nonverbal communication

- Description: Nonverbal communication is the reinforcement and guidance of behavior through appropriate contact, posture, facial expression, and body language.
- Objectives: The objectives of nonverbal communication are to:
 1. enhance the effectiveness of other communicative management techniques;
 2. gain or maintain the patient's attention and compliance.
- Indications: May be used with any patient.
- Contraindications: None.

Positive reinforcement

- Description: In the process of establishing desirable patient behavior, it is essential to give appropriate feedback. Positive reinforcement is an effective technique to reward desired behaviors and, thus, strengthen the recurrence of those behaviors. Social reinforcers include positive voice modulation, facial expression, verbal praise, and appropriate physical demonstrations of affection by all members of the dental team. Nonsocial reinforcers include tokens and toys.
- Objective: To reinforce desired behavior.
- Indications: May be useful for any patient.
- Contraindications: None.

Distraction

- Description: Distraction is the technique of diverting the patient's attention from what may be perceived as an unpleasant procedure. Giving the patient a short break during a stressful procedure can be an effective use of distraction prior to considering more advanced behavior guidance techniques.
- Objectives: The objectives of distraction are to:
 1. decrease the perception of unpleasantness;
 2. avert negative or avoidance behavior.
- Indications: May be used with any patient.
- Contraindications: None.

Parental presence/absence

- Description: The presence or absence of the parent sometimes can be used to gain cooperation for treatment. A wide diversity exists in practitioner philosophy and parental attitude regarding parents' presence or absence during pediatric dental treatment.

Parenting styles in America have evolved in recent decades.⁵⁰ Practitioners are faced with challenges from an increasing number of children who many times are ill-equipped with the coping skills and self-discipline necessary to deal with new experiences in the dental office. Frequently, parental expectations for the child's behavior are unrealistic, while expectations for the dentist who guides their behavior are great.⁵¹

Practitioners agree that good communication is important among the dentist, patient, and parent. Practitioners also are united in the fact that effective communication between the

dentist and the child is paramount and requires focus on the part of both parties. Children's responses to their parents' presence or absence can range from very beneficial to very detrimental. Each practitioner has the responsibility to determine the communication and support methods that best optimize the treatment setting recognizing his/her own skills, the abilities of the particular child, and the desires of the specific parent involved.

- Objectives: The objectives of parental presence/absence are to:
 1. gain the patient's attention and improve compliance;
 2. avert negative or avoidance behaviors;
 3. establish appropriate dentist-child roles;
 4. enhance effective communication among the dentist, child, and parent;
 5. minimize anxiety and achieve a positive dental experience.
- Indications: May be used with any patient.
- Contraindications: Parents who are unwilling or unable to extend effective support (when asked).

Nitrous oxide/oxygen inhalation

- Description: Nitrous oxide/oxygen inhalation is a safe and effective technique to reduce anxiety and enhance effective communication. Its onset of action is rapid, the effects easily are titrated and reversible, and recovery is rapid and complete. Additionally, nitrous oxide/oxygen inhalation mediates a variable degree of analgesia, amnesia, and gag reflex reduction.

The need to diagnose and treat, as well as the safety of the patient and practitioner, should be considered before the use of nitrous oxide/oxygen analgesia/anoxiolysis. Detailed information concerning the indications, contraindications, and additional clinical considerations may be found in the Guideline on Appropriate Use of Nitrous Oxide for Pediatric Dental Patients.¹

Advanced behavior guidance

Most children can be managed effectively using the techniques outlined in basic behavior guidance. These basic behavior guidance techniques should form the foundation for all of the management activities provided by the dentist. Children, however, occasionally present with behavioral considerations that require more advanced techniques. These children often cannot cooperate due to lack of psychological or emotional maturity and/or mental, physical, or medical disability. The advanced behavior guidance techniques commonly used and taught in advanced pediatric dental training programs include protective stabilization, sedation, and general anesthesia.⁶ They are extensions of the overall behavior guidance continuum with the intent to facilitate the goals of communication, cooperation, and delivery of quality oral health care in the difficult patient. Appropriate diagnosis of behavior and safe and effective implementation of these techniques necessitate knowledge and experience that are generally beyond the core knowledge students receive during predoctoral dental education. While most predoctoral programs provide didactic exposure to treatment of very young children (ie, aged birth – 2 years), patients with special health care needs,

and advanced behavior guidance techniques, hands-on experience is lacking.⁵² A minority of programs provides educational experiences with these patient populations, while few provide hands-on exposure to advanced behavior guidance techniques.⁵² “On average, predoctoral pediatric dentistry programs teach students to treat children four years of age and older, who are generally well behaved and have low levels of caries.”⁵² Dentists considering the use of these advanced behavior guidance techniques should seek additional training through a residency program, a graduate program, and/or an extensive continuing education course that involves both didactic and experiential mentored training.

Protective stabilization

• **Description:** The use of any type of protective stabilization in the treatment of infants, children, adolescents, or patients with special health care needs is a topic that concerns health care providers, care givers, and the public.⁵³⁻⁶¹ The broad definition of protective stabilization is the restriction of patient’s freedom of movement, with or without the patient’s permission, to decrease risk of injury while allowing safe completion of treatment. The restriction may involve another human(s), a patient stabilization device, or a combination thereof. The use of protective stabilization has the potential to produce serious consequences, such as physical or psychological harm, loss of dignity, and violation of a patient’s rights. Stabilization devices placed around the chest may restrict respirations; they must be used with caution, especially for patients with respiratory compromise (eg, asthma) and/or who will receive medications (ie, local anesthetics, sedatives) that can depress respirations. Because of the associated risks and possible consequences of use, the dentist is encouraged to evaluate thoroughly its use on each patient and possible alternatives.⁶² Careful, continuous monitoring of the patient is mandatory during protective stabilization.

Partial or complete stabilization of the patient sometimes is necessary to protect the patient, practitioner, staff, or the parent from injury while providing dental care. Protective stabilization can be performed by the dentist, staff, or parent with or without the aid of a restrictive device. The dentist always should use the least restrictive, but safe and effective, protective stabilization. The use of a mouth prop in a compliant child is not considered protective stabilization.

The need to diagnose, treat, and protect the safety of the patient, practitioner, staff, and parent should be considered prior to the use of protective stabilization. The decision to use protective stabilization must take into consideration:

1. alternative behavior guidance modalities;
2. dental needs of the patient;
3. the effect on the quality of dental care;
4. the patient’s emotional development;
5. the patient’s medical and physical considerations.

Protective stabilization, with or without a restrictive device, performed by the dental team requires informed consent from a parent. Informed consent must be obtained and documented in the patient’s record prior to use of protective stabilization. Due to the possible aversive nature of the technique, informed

consent also should be obtained prior to a parent’s performing protective stabilization during dental procedures. Furthermore, when appropriate, an explanation to the patient regarding the need for restraint, with an opportunity for the patient to respond, should occur.⁶³

In the event of an unanticipated reaction to dental treatment, it is incumbent upon the practitioner to protect the patient and staff from harm. Following immediate intervention to assure safety, if techniques must be altered to continue delivery of care, the dentist must have informed consent for the alternative methods.

The patient’s record must include:

1. informed consent for stabilization;
 2. indication for stabilization;
 3. type of stabilization;
 4. the duration of application of stabilization;
 5. behavior evaluation/rating during stabilization.
- **Objectives:** The objectives of patient stabilization are to:
1. reduce or eliminate untoward movement;
 2. protect patient, staff, dentist, or parent from injury;
 3. facilitate delivery of quality dental treatment.
- **Indications:** Patient stabilization is indicated when:
1. patients require immediate diagnosis and/or limited treatment and cannot cooperate due to lack of maturity or mental or physical disability;
 2. the safety of the patient, staff, dentist, or parent would be at risk without the use of protective stabilization;
 3. sedated patients require limited stabilization to help reduce untoward movement.
- **Contraindications:** Patient stabilization is contraindicated for:
1. cooperative nonsedated patients;
 2. patients who cannot be immobilized safely due to associated medical or physical conditions;
 3. patients who have experienced previous physical or psychological trauma from protective stabilization (unless no other alternatives are available);
 4. nonsedated patients with nonemergent treatment requiring lengthy appointments.
- **Precautions:** The following precautions should be taken:
1. careful review of the patient’s medical history to ascertain if there are any medical conditions (eg, asthma) which may compromise respiratory function;
 2. tightness and duration of the stabilization must be monitored and reassessed at regular intervals;
 3. stabilization around extremities or the chest must not actively restrict circulation or respiration;
 4. stabilization should be terminated as soon as possible in a patient who is experiencing severe stress or hysterics to prevent possible physical or psychological trauma.

Sedation

• **Description:** Sedation can be used safely and effectively with patients unable to receive dental care for reasons of age or mental, physical, or medical condition. Background information and documentation for the use of sedation is detailed in the Guideline for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures.²

The need to diagnose and treat, as well as the safety of the patient, practitioner, and staff, should be considered for the use of sedation. The decision to use sedation must take into consideration:

1. alternative behavioral guidance modalities;
2. dental needs of the patient;
3. the effect on the quality of dental care;
4. the patient's emotional development;
5. the patient's physical considerations.

Documentation shall include²:

1. informed consent. Informed consent must be obtained from the parent and documented prior to the use of sedation;
 2. instructions and information provided to the parent;
 3. health evaluation;
 4. a time-based record that includes the name, route, site, time, dosage, and patient effect of administered drugs;
 5. the patient's level of consciousness, responsiveness, heart rate, blood pressure, respiratory rate, and oxygen saturation at the time of treatment and until predetermined discharge criteria have been attained.
 6. adverse events (if any) and their treatment;
 7. time and condition of the patient at discharge.
- Objectives: The goals of sedation are to:
 1. guard the patient's safety and welfare;
 2. minimize physical discomfort and pain;
 3. control anxiety, minimize psychological trauma, and maximize the potential for amnesia;
 4. control behavior and/or movement so as to allow the safe completion of the procedure;
 5. return the patient to a state in which safe discharge from medical supervision, as determined by recognized criteria, is possible.
 - Indications: Sedation is indicated for:
 1. fearful, anxious patients for whom basic behavior guidance techniques have not been successful;
 2. patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability;
 3. patients for whom the use of sedation may protect the developing psyche and/or reduce medical risk.
 - Contraindications: The use of sedation is contraindicated for:
 1. the cooperative patient with minimal dental needs;
 2. predisposing medical conditions which would make sedation inadvisable.

General anesthesia

- Description: General anesthesia is a controlled state of unconsciousness accompanied by a loss of protective reflexes, including the ability to maintain an airway independently and respond purposefully to physical stimulation or verbal command. The use of general anesthesia sometimes is necessary to provide quality dental care for the child. Depending on the patient, this can be done in a hospital or an ambulatory setting, including the dental office. Additional background informa-

tion may be found in the Guideline on Use of Anesthesia Care Providers in the Administration of In-office Deep Sedation/General Anesthesia to the Pediatric Dental Patient.³

The need to diagnose and treat, as well as the safety of the patient, practitioner, and staff, should be considered for the use of general anesthesia. The decision to use general anesthesia must take into consideration:

1. alternative behavioral guidance modalities;
2. dental needs of the patient;
3. the effect on the quality of dental care;
4. the patient's emotional development;
5. the patient's medical status.

Prior to the delivery of general anesthesia, appropriate documentation shall address the rationale for use of general anesthesia, informed consent, instructions provided to the parent, dietary precautions, and preoperative health evaluation. Because laws and codes vary from state to state, minimal requirements for a time-based anesthesia record should include:

1. the patient's heart rate, blood pressure, respiratory rate, and oxygen saturation at specific intervals throughout the procedure and until predetermined discharge criteria have been attained.
2. the name, route, site, time, dosage, and patient effect of administered drugs, including local anesthesia;
3. adverse events (if any) and their treatment;
4. that discharge criteria have been met, the time and condition of the patient at discharge, and into whose care the discharge occurred.

- Objectives: The goals of general anesthesia are to
 1. provide safe, efficient, and effective dental care;
 2. eliminate anxiety;
 3. reduce untoward movement and reaction to dental treatment;
 4. aid in treatment of the mentally, physically, or medically compromised patient;
 5. eliminate the patient's pain response.
- Indications: General anesthesia is indicated for:
 1. patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability;
 2. patients for whom local anesthesia is ineffective because of acute infection, anatomic variations, or allergy;
 3. the extremely uncooperative, fearful, anxious, or uncommunicative child or adolescent;
 4. patients requiring significant surgical procedures;
 5. patients for whom the use of general anesthesia may protect the developing psyche and/or reduce medical risk;
 6. patients requiring immediate, comprehensive oral/dental care.
- Contraindications: The use of general anesthesia is contraindicated for:
 1. a healthy, cooperative patient with minimal dental needs;
 2. predisposing medical conditions which would make general anesthesia inadvisable.

Appendix 1. PATIENT ASSESSMENT TOOLS

TOOL	FORMAT	APPLICATION	REFERENCE
Toddler temperament scale	Parent questionnaire	Behavior of 12 to 36 months	30, 37
Behavioral style questionnaire (BSQ)	Parent questionnaire	Child temperament of 3 to 7 years	29, 38
Eyberg Child Behavior Inventory (ECBI)	Parent questionnaire	Frequency and intensity of 36 common problem behaviors	39
Facial Image Scale (FIS)	Drawings of faces, child chooses	Anxiety indicator suitable for young preliterate children	40
Children's Dental Fear Picture Test (CDFP)	3 picture subtests, child chooses	Dental fear assessment for children >5 years old	41
Child Fear Survey Schedule-Dental Subscale (CFSS-DS)	Parent questionnaire	Dental fear assessment	24, 41, 42
Parent-Child Relationship Inventory (PCRI)	Parent questionnaire	Parent attitudes and behavior that may result in child behavior problems	27, 43
Corah's dental anxiety scale (DAS)	Parent questionnaire	Dental anxiety of parent	24, 36, 44

References

- American Academy of Pediatric Dentistry. Guideline on appropriate use of nitrous oxide for pediatric dental patients. *Pediatr Dent* 2006;28(suppl):112-4.
- American Academy of Pediatrics, American Academy of Pediatric Dentistry. Guideline for monitoring and management of pediatric patients during and after sedation for diagnostic and therapeutic procedures: An update. *Pediatr Dent* 2006;28(suppl):115-32.
- American Academy of Pediatric Dentistry. Guideline on use of anesthesia care providers in the administration of in-office deep sedation/general anesthesia to the pediatric dental patient. *Pediatr Dent* 2006;28(suppl):133-5.
- American Dental Association Commission on Dental Accreditation. Accreditation Standards for Advanced Specialty Education Programs in Pediatric Dentistry. American Dental Assoc. Chicago, Ill. 1998.
- Adair SM, Schafer TE, Rockman RA, Waller JL. Survey of behavior management teaching in predoctoral pediatric dentistry programs. *Pediatr Dent* 2004;26(2):143-50.
- Adair SM, Rockman RA, Schafer TE, Waller JL. Survey of behavior management teaching in pediatric dentistry advanced education programs. *Pediatr Dent* 2004;26(2):151-8.
- Adair SM, Waller JL, Schafer TE, Rockman RA. A survey of members of the American Academy of Pediatric Dentistry on their use of behavior management techniques. *Pediatr Dent* 2004;26(2):159-66.
- Hall JA, Roter DL, Katz NR. Task versus socioemotional behaviors in physicians. *Med Care* 1987;25(5):399-412.
- Gale EN, Carlsson SG, Eriksson A, Jontell M. Effects of dentists' behavior on patients' attitudes. *J Am Dent Assoc* 1984;109(3):444-6.
- Schouten BD, Eijkman MA, Hoogstraten J. Dentists' and patients' communicative behavior and their satisfaction with the dental encounter. *Community Dent Health* 2003; 20(1):11-5.
- Lepper HS, Martin LR, DiMatteo MR. A model of nonverbal exchange in physician-patient expectations for patient involvement. *J Nonverb Behav* 1995;19:207-22.
- Reichard A, Turnbull HR, Turnbull AP. Perspectives of dentists, families, and case managers on dental care for individuals with developmental disabilities in Kansas. *Ment Retard* 2001;39(4):268-85.
- Lester GW, Smith SG. Listening and talking to patients: A remedy for malpractice suits. *West J Med* 1993;158(3): 268-72.
- Beckman HB, Markakis KM, Suchman AL, Frankel RM. The doctor-patient relationship and malpractice. Lessons from plaintiff depositions. *Arch Intern Med* 1994;154(12): 1365-70.
- Weinstein P, Getz T, Raetener P, Domoto P. The effect of dentists' behavior on fear-related behaviors in children. *J Am Dent Assoc* 1982;104(1):32-8.
- ten Berge M, Veerkamp J, Hoogstraten J. Dentists' behavior in response to child dental fear. *ASDC J Dent Child* 1999;66(1):36-40.
- Sarnat H, Arad P, Hanauer D, Shohami E. Communication strategies used during pediatric dental treatment: A pilot study. *Pediatr Dent* 2001;23(4):337-42.
- Chambers DW. Communicating with the young dental patient. *J Am Dent Assoc* 1976;93(4):793-9.
- Pinkham JR. The roles of requests and promises in child patient management. *J Dent Child* 1993;60(3):169-74.
- Abushal MS, Adenubi JO. Attitudes of Saudi parents toward behavior management techniques in pediatric dentistry. *J Dent Child* 2003;70(2):104-10.
- Chambers DW. Behavior management techniques for pediatric dentists: An embarrassment of riches. *ASDC J Dent Child* 1977;44(1):30-4.
- Klingberg G, Broberg AG. Temperament and child dental fear. *Pediatr Dent* 1998;20(4):237-43.
- Arnup K, Broberg AG, Berggren U, Bodin L. Lack of cooperation in pediatric dentistry: The role of child personality characteristics. *Pediatr Dent* 2002;24(2):119-28.
- Baier K, Milgrom P, Russell S, Mancl L, Yoshida T. Children's fear and behavior in private pediatric dentistry practices. *Pediatr Dent* 2004;26(4):316-21.
- Rud B, Kisling E. The influence of mental development on children's acceptance of dental treatment. *Scand J Dent Res* 1973;81(5):343-52.

26. Brill WA. The effect of restorative treatment on children's behavior at the first recall visit in a private pediatric dental practice. *J Clin Pediatr Dent* 2002;26(4):389-94.
27. Allen KD, Hutfless S, Larzelere R. Evaluation of two predictors of child disruptive behavior during restorative dental treatment. *J Dent Child* 2003;70(3):221-5.
28. Cunha RF, Delbem ACB, Percinoto C, Melhado FL. Behavioral evaluation during dental care in children ages 0 to 3 years. *J Dent Child* 2003;70(2):100-3.
29. Radis FG, Wilson S, Griffen AL, Coury DL. Temperament as a predictor of behavior during initial dental examination in children. *Pediatr Dent* 1994;16(2):121-7.
30. Lochary ME, Wilson S, Griffen AL, Coury DL. Temperament as a predictor of behavior for conscious sedation in dentistry. *Pediatr Dent* 1993;15(5):348-52.
31. Jensen B, Stjernqvist K. Temperament and acceptance of dental treatment under sedation in preschool children. *Acta Odontol Scand* 2002;60(4):231-6.
32. Arnup K, Broberg AG, Berggren U, Bodin L. Treatment outcome in subgroups of uncooperative child dental patients: An exploratory study. *Int J Paediatr Dent* 2003;13(5):304-19.
33. Holst A, Hallonsten AL, Schroder U, Ek L, Edlund K. Prediction of behavior-management problems in 3-year-old children. *Scand J Dent Res* 1993;101(2):110-4.
34. Klingberg G, Berggren U, Carlsson SG, Noren JG. Child dental fear: Cause related factors and clinical effects. *Eur J Oral Sci* 1995;103(6):405-12.
35. Johnson R, Baldwin DC. Maternal anxiety and child behavior. *J Dent Child* 1969;36(2):87-92.
36. Peretz B, Nazarian Y, Bimstein E. Dental anxiety in a students' pediatric dental clinic: Children, parents and students. *Int J Paediatr Dent* 2004;14(3):192-8.
37. Fullard W, McDevitt SC, Carey WB. Assessing temperament in one- to three-year-old children. *J Pediatr Psychol* 1984;9(2):205-17.
38. McDevitt SC, Carey WB. The measurement of temperament in 3- to 7-year-old children. *J Child Psychol Psychiatry* 1978;19(3):245-53.
39. Eyberg S, Pincus D. *Child Behavior Inventory*. Odessa, Fla: Professional Manual Psychological Assessment Resources, Inc; 1999.
40. Buchanan H, Niven N. Validation of a facial image scale to assess child dental anxiety. *Int J Paediatr Dent* 2002;12(1):47-52.
41. Klingberg G, Vannas Löfqvist L, Hwang CP. Validity of the children's dental fear picture test (CDFP). *Eur J Oral Sci* 1995;103(1):55-60.
42. Cuthbert MI, Melamed BG. A screening device: Children at risk for dental fears and management problems. *ASDC J Dent Child* 1982;49(6):432-6.
43. Gerard AB. *Parent-Child Relationship Inventory (PCRI) Manual*. Los Angeles, Calif: Western Psychological Services; 1994.
44. Corah NL. Development of a dental anxiety scale. *J Dent Res* 1969;48(4):596.
45. American Academy of Pediatric Dentistry. Guideline on pediatric restorative dentistry. *Pediatr Dent* 2006;28(suppl):136-43.
46. American Academy of Pediatric Dentistry. Policy on alternative restorative treatment (ART). *Pediatr Dent* 2006;28(suppl):33.
47. American Academy of Pediatric Dentistry. Policy on use of a caries-risk assessment tool (CAT) for infants, children and adolescents. *Pediatr Dent* 2006;28(suppl):24-28.
48. American Academy of Pediatric Dentistry. Guideline on fluoride therapy. *Pediatr Dent* 2006;28(suppl):95-6.
49. American Academy of Pediatric Dentistry. Guideline on informed consent. *Pediatr Dent* 2006;28(suppl):198-9.
50. Long N. The changing nature of parenting in America. *Pediatr Dent* 2004;26(2):121-4.
51. Sheller B. Challenges of managing child behavior in the 21st century dental setting. *Pediatr Dent* 2004;26(2):111-3.
52. Seale NS, Casamassimo PS. US predoctoral education in pediatric dentistry: Its impact on access to dental care. *J Dent Educ* 2003;67(1):23-30.
53. Connick C, Palat M, Puagliese S. The appropriate use of physical restraint: Considerations. *ASDC J Dent Child* 2000;67(4):231,256-62.
54. Crossley ML, Joshi G. An investigation of pediatric dentists' attitudes towards parent accompaniment and behavioral management techniques in the UK. *Br Dent J* 2002;192(9):517-21.
55. Peretz B, Zadik D. Parents' attitudes toward behavior management techniques during dental treatment. *Pediatr Dent* 1999;2(3):201-4.
56. Peretz B, Gluck GM. The use of restraint in the treatment of pediatric dental patients: Old and new insights. *Int J Paediatr Dent* 2002;12(6):392-7.
57. Brill WA. Parents' assessment and children's reactions to a passive restraint device used for behavior control in a private pediatric dental practice. *ASDC J Dent Child* 2002;69(3):236, 310-3.
58. Law CS, Blain S. Approaching the pediatric dental patient: A review of nonpharmacologic behavior management strategies. *J Calif Dent Assoc* 2003;31(9):703-13.
59. Kupietzky A. Strap him down or knock him out: Is conscious sedation with restraint an alternative to general anesthesia? *Br Dent J* 2004;196(3):133-8.
60. Manley MCG. A UK perspective. *Br Dent J* 2004;196(3):138-9.
61. Morris CDN. A commentary on the legal issues. *Br Dent J* 2004;196(3):139-40.
62. Joint Commission on Accreditation of Healthcare Organizations (JCAHO). *Comprehensive Accreditation Manual for Hospitals 2004-2005*. Oakbrook Terrace, Ill: Joint Commission on Accreditation of Healthcare Organizations; 2004: pc25-pc40.
63. American Academy of Pediatrics Committee on Pediatric Emergency Medicine. The use of physical restraint interventions for children and adolescents in the acute care setting. *Pediatrics* 1997;99(3):497-8.