

Guideline on Behavior Guidance for the Pediatric Dental Patient

Originating Committee

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Purpose

The American Academy of Pediatric Dentistry (AAPD) recognizes that dental care is medically necessary for the purpose of preventing and eliminating orofacial disease, infection, and pain, restoring the form and function of the dentition, and correcting facial disfiguration or dysfunction.¹ Behavior guidance techniques, both nonpharmacological and pharmacological, are used to alleviate anxiety, nurture a positive dental attitude, and perform quality oral health care safely and efficiently for infants, children, adolescents, and persons with special health care needs. Selection of techniques must be tailored to the needs of the individual patient and the skills of the practitioner. The AAPD offers this guideline to educate health care providers, parents, and other interested parties about influences on the behavior of pediatric dental patients and the many behavior guidance techniques used in contemporary pediatric dentistry. Information regarding protective stabilization and pharmacological behavior management for pediatric dental patients is provided in greater detail in additional AAPD clinical practice guidelines.²⁻⁴

Methods

This document was developed subsequent to the AAPD's 1988 conference on behavior management and modified following the AAPD's symposia on behavior guidance in 2003 and 2013.^{5,6} This update reflects a review of the most recent 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.⁷ In addition, a search of the PubMed[®] electronic database was performed using the following parameters: 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, dentist-parent rela-

tions, attitudes of parents to behavior management in dentistry, patient assessment in dentistry, pain in dentistry, treatment deferral in dentistry, toxic stress, cultural factors affecting behavior in dentistry, culture of poverty, cultural factors affecting family compliance in dentistry, poverty and stress and effects on dental care, social risks and determinants of health in dentistry, gender shifts in dentistry, protective stabilization and dentistry, medical immobilization, restraint and dentistry, and patient restraint for treatment; Fields: all; Limits: within the last 10 years, humans, English, birth through age 18. There were 5,843 articles matching these criteria. Papers for review were chosen from this list and from references within selected articles. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

Dental practitioners are expected to recognize and effectively treat childhood dental diseases that are within the knowledge and skills acquired during their professional education. Safe and effective treatment of these diseases requires an understanding of and, at times, modifying the child's and family's response to care. Behavior guidance is the process by which practitioners help patients identify appropriate and inappropriate behavior, learn problem solving strategies, and develop impulse control, empathy, and self-esteem. This process is a continuum of interaction involving the dentist and dental team, the patient, and the parent; its goals are to establish communication, alleviate fear and anxiety, deliver quality dental care, build a trusting relationship between dentist/staff and child/parent, and promote the child's positive attitude toward oral health care. Knowledge of the scientific basis of behavior guidance and skills in communication, empathy, tolerance, cultural sensitivity, and flexibility are requisite to proper implementation. Behavior guidance should never be punishment for misbehavior, power assertion, or use of any strategy that hurts, shames, or belittles a patient.

Predictors of child behaviors

Patient attributes

A dentist who treats children should be able to accurately assess the child's developmental level, dental attitudes, and temperament and to anticipate the child's reaction to care. The response to the demands of oral health care is complex and determined by many factors. Developmental delay, physical/mental disability, and acute or chronic disease are potential reasons for noncompliance during the dental appointment. In the healthy communicating child, behavioral influences often are more subtle and difficult to identify. Contributing factors can include fears, general or situational anxiety, a previous unpleasant and/or painful dental/medical experience, inadequate preparation for the encounter, and parenting practices.^{8-10,22-24} Only a minority of children with uncooperative behavior have dental fears, and not all fearful children present dental behavior guidance problems.^{8,11,12} Fears may occur when there is a perceived lack of control or potential for pain, especially when a child is aware of a dental problem or has had a painful health care experience. If the level of fear is incongruent with the circumstances and the patient is not able to control impulses, disruptive behavior is likely.

Cultural and linguistic factors also may play a role in attitudes and cooperation and behavior guidance of the child.¹³⁻¹⁶ Since every culture has its own beliefs, values, and practices, it is important to understand how to interact with patients from different cultures and to develop tools to help navigate their encounters. Qualified interpreters may be required for those families who have limited English proficiency.^{15,17} The dentist/staff must listen actively and address the patient's/parents' concerns in a sensitive and respectful manner.¹³

Parental influences

Parents influence their child's behavior at the dental office in several ways. Positive attitudes toward oral health care may lead to the early establishment of a dental home. Early preventive care leads to less dental disease, decreased treatment needs, and fewer opportunities for negative experiences.^{18,19} Parents who have had negative dental experiences^{8,20,21} as a patient may transmit their own dental anxiety or fear to the child thereby adversely affecting her attitude and response to care.^{8,20-22} Long term economic hardship and inequality can lead to parental adjustment problems such as depression, anxiety, irritability, substance abuse, and violence.¹³ Parental depression may result in decreased protection, caregiving, and discipline for the child, thereby placing the child at risk for a wide variety of emotional and behavior problems.¹³ In America, evolving parenting styles^{22,23} and parental behaviors influenced by economic hardship have left practitioners challenged by an increasing number of children ill-equipped with the coping skills and self-discipline necessary to contend with new experiences.¹³⁻¹⁵ Frequently, parental expectations for the child's response to care (eg, no tears) are unrealistic, while expectations for the dentist who guides their behavior are great.²⁴

Orientation to dental environment

The non-clinical office staff plays 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. The tone of the call should be welcoming and pleasant. The scheduling coordinator should actively engage the parent to determine the primary patient concerns, including special health care or cultural/linguistic needs. The conversation can provide insights into parental anxiety or stress. The staff should help set expectations for the initial visit by providing relevant information and may suggest a pre-appointment visit to the office to meet the doctor and staff and tour the facility.²⁵ Before the call ends, staff should offer the office's website and directions and ask if there are any further questions. Such encounters serve as educational tools that help to allay fears and better prepare the parent and child for the first visit.

The receptionist is usually the first staff member the child meets upon arrival at the office. The caring and assuring manner in which the child is welcomed into the practice at the first and subsequent visits is important.^{24,26} A child-friendly reception area (eg, age-appropriate toys and games) can both provide a distraction and indicate that the staff has a genuine concern for young patients. These first impressions may influence future behaviors.

Patient assessment

An evaluation of the child's cooperative potential is essential for treatment planning. No single assessment method or tool is completely accurate in predicting a patient's behavior, but awareness of the multiple influences on a child's response to care can aid in treatment planning. Initially, information can be gathered from the parent through questions regarding the child's cognitive level, temperament/personality characteristics,^{9,12,27-29} anxiety and fear,^{8,12,30} reaction to strangers,³¹ and behavior at previous medical/dental visits, as well as how the parent anticipates the child will respond to future dental treatment. Later, the dentist can evaluate cooperative potential by observation of and interaction with the patient. Whether the child is approachable, somewhat shy, or definitely shy and/or withdrawn may influence the success of various communicative techniques. Assessing the child's development, past experiences, and current emotional state allows the dentist to develop a behavior guidance plan to accomplish the necessary oral health care.³² During delivery of care, the dentist must remain attentive to physical and/or emotional indicators of stress.^{13-16,33} Changes in adaptive behaviors may require alterations to the behavioral treatment plan.

Dentist/dental team behaviors

The behaviors of the dentist and dental staff members are the primary tools used to guide the behavior of the pediatric patient. The dentist's attitude, body language, and communication skills are critical to creating a positive dental visit for the child and to gain trust from the child and parent.¹⁸ Dentist/

staff behaviors that help reduce anxiety and encourage patient cooperation are giving clear and specific instructions, an empathetic communication style, and an appropriate level of physical contact accompanied by verbal reassurance.³⁴ While a health professional may be inattentive to communication style, patients/parents are very attentive.³⁵

Communication (ie, imparting or interchange of thoughts, opinions, or information) may occur by a number of means but, in the dental setting, it is accomplished primarily through dialogue, tone of voice, facial expression, and body language.³⁶ Communication between the doctor/staff and the child and parent is vital to successful outcomes in the dental office.

The four 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.⁴⁷

For successful communication to take place, all four elements must be present and consistent. Without consistency, there may be a poor fit between the intended message and what is understood.³⁶

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.¹⁵ It is impossible for a child to perceive an idea for which she has no conceptual framework and it is unrealistic to expect a child patient to adopt the dentist's frame of reference. With a basic understanding of the cognitive development of children, the dentist can use appropriate vocabulary and body language to send messages consistent with the receiver's intellectual development.^{15,36}

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 her clinical skills.³⁶

The importance of the context in which messages are delivered cannot be overstated. The operatory 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.²⁴

The communicative behavior of dentists is a major factor in patient satisfaction.^{37,38} Dentist actions that are 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.^{27,34} However, when a provider offers compassion, empathy, and genuine concern, there may be better acceptance of care.³⁴ While some patients may express a preference for a provider of a specific gender, female and male practitioners have been found to treat patients and parents in a similar manner.³⁹

The clinical staff is an extension of the dentist in behavior guidance of the patient and communication with the parent. A collaborative approach helps assure that both the patient and parent have a positive dental experience. All dental team members are encouraged to expand their skills and knowledge through dental literature, video presentations, and/or continuing education courses.⁴⁰

Informed consent

All behavior guidance decisions must be based on a review of the patient's medical, dental, and social history followed by an evaluation of current behavior. 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 practitioner, as the expert on dental care (ie, the timing and techniques by which treatment can be delivered), should effectively communicate behavior and treatment options, including potential benefits and risks, and help the parent decide what is in the child's best interests.¹⁸ Successful completion of diagnostic and therapeutic services is viewed as a partnership of dentist, parent, and child.^{18,41,42}

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 Consent⁴³ and applicable state laws. If the parent refuses the proposed and alternative treatment, other than noncommunicative behavior guidance procedures, it is prudent to have an informed refusal form signed by the parent and retained in the patient's record.⁴⁴

In the event of an unanticipated behavioral 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 obtain informed consent for the alternative methods.^{43,45}

Pain assessment and management during treatment

Pain has a direct influence on behavior.⁴⁶ Findings of pain or a painful past health care visit are important considerations in the patient's medical/dental history that will help the dentist anticipate possible behavior problems.^{32,44,46} Likewise, pain assessment and management during pediatric dental procedures are critical as pain has a direct influence on behavior.³⁶ Prevention or reduction of pain during treatment can nurture the relationship between the dentist and the patient, build trust, allay fear and anxiety, and enhance positive dental attitudes for future visits.⁴⁷⁻⁵¹ The subjective nature of pain perception, varying patient responses to painful stimuli, and lack of use of accurate pain assessment scales may hinder the dentist's attempts to diagnose and intervene during procedures.^{20,47,49,52-54} Observing changes in patient behavior (eg, facial expressions, crying, complaining, body movement during treatment) is important in pain evaluation.^{47,51} The patient is the best

reporter of her pain.^{20,49,52,55} Listening to the child at the first sign of distress will facilitate assessment and any needed procedural modifications.⁴⁹ At times, dental providers may underestimate a patient's level of pain or may develop pain blindness as a defense mechanism and continue to treat a child who really is in pain.^{20,47,55-58} Misinterpreted or ignored changes in behavior due to painful stimuli can cause sensitization for future appointments as well as psychological trauma.⁵⁹

Documentation of patient behaviors

Recording the child's behavior serves as an aid for future appointments.⁵³ One of the more reliable and frequently used behavior rating systems in both clinical dentistry and research is the Frankl Scale.^{25,53} This scale (see Appendix 1) separates observed behaviors into four categories ranging from definitely negative to definitely positive.^{25,55} In addition to the rating scale, an accompanying descriptor (eg, "+, non-verbal") will help practitioners better plan for subsequent visits.

Treatment deferral

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 cognitive abilities or 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.^{45,60} In some cases, treatment deferral may be considered as an alternative to treating the patient under sedation or general anesthesia. However, rapidly advancing disease, trauma, pain, or infection usually dictates prompt treatment. Deferring some or all treatment or employing therapeutic interventions [eg, interim therapeutic restoration (ITR)],^{61,62} 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.⁴³⁻⁴⁵

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.⁶⁰⁻⁶²

Caries risk should be reevaluated when treatment options are compromised due to child behavior.⁶³ 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 indi-

cated.⁶⁴ ITR may be useful as both preventive and therapeutic approaches.^{61,62}

Behavior guidance techniques

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 and be tolerant and flexible in their implementation.^{18,25} Behavior guidance 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 the patient and doctor, which ultimately builds trust and allays fear and anxiety. 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 context of the child's total dental experience. Techniques must be integrated into an overall behavior guidance approach individualized for each child. Consequently, behavior guidance is as much an art as it is a science.

Recommendations

Basic behavior guidance

Communication and communicative guidance

Communicative management and appropriate use of commands are applied universally in pediatric dentistry with both the cooperative and uncooperative child. At the beginning of a dental appointment, asking questions and active/reflective listening can help establish rapport and trust.⁶⁵ The dentist may establish teacher/student roles in order to develop an educated patient and deliver quality dental treatment safely.^{18,25} Once a procedure begins, the dentist's ability to guide and shape behavior becomes paramount, and information sharing becomes secondary. The two-way interchange of information often gives way to one-way guidance of behavior through directives. Use of self-disclosing assertiveness techniques (eg, "I need you to open your mouth so I can check your teeth", "I need you to sit still so we can take an X-ray") tells the child exactly what is required to be cooperative.⁶⁵ Observation of the child's body language is necessary to confirm the message is received and to assess comfort and pain level.^{47,48,65} Communicative management comprises a host of specific 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 pre-visit imagery, direct observation, tell-show-do, ask-tell-ask, voice control, nonverbal communication, positive reinforcement, distraction, and memory restructuring. 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.

Positive pre-visit imagery

- Description: Patients are shown positive photographs or images of dentistry and dental treatment in the waiting area before the dental appointment.⁶⁶
- Objectives: The objectives of positive pre-visit imagery are to:
 - provide children and parents with visual information on what to expect during the dental visit, and
 - provide children with context to be able to ask providers relevant questions before dental procedures are initiated.
- Indications: May be used with any patient.
- Contraindication: None.

Direct observation

- Description: Patients are shown a video or are permitted to directly observe a young cooperative patient undergoing dental treatment.^{67,68}
- Objectives: The objectives of direct observation are to:
 - familiarize the patient with the dental setting and specific steps involved in a dental procedure, and
 - give the patient and parent an opportunity to ask questions about the dental procedure in a safe environment.
- Indications: May be used with any patient.
- Contraindications: None.

Tell-show-do

- Description: 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.^{18,26,69}
- 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, and
 - shape the patient's response to procedures through desensitization and well-described expectations.
- Indications: May be used with any patient.
- Contraindications: None.

Ask-tell-ask

- Description: This technique involves inquiring about the patient's visit and feelings toward or about any planned procedures (ask); explaining the procedures through demonstrations and non-threatening language appropriate to the cognitive level of the patient (tell); and again inquiring if the patient understands and how she feels about the impending treatment (ask). If the patient continues to have concerns, the dentist can address them, assess the situation,

and modify the procedures or behavior guidance techniques if necessary.¹⁵

- Objective: The objectives of ask-tell-ask are to:
 - assess anxiety that may lead to noncompliant behavior during treatment;
 - teach the patient about the procedures and how they are going to be accomplished; and
 - confirm the patient is comfortable with the treatment before proceeding.
- Indications: May be used with any patient able to dialogue.
- Contraindications: None.

Voice control

- Description: Voice control is a deliberate alteration of voice volume, tone, or pace to influence and direct the patient's behavior. While a change in cadence may be readily accepted, use of an assertive voice may be considered aversive to some parents unfamiliar with this technique. An explanation prior to its use may prevent misunderstanding.^{18,25,26,69}
- Objectives: The objectives of voice control are to:
 - gain the patient's attention and compliance;
 - avert negative or avoidance behavior; and
 - 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.^{18,26,42,69}
- Objectives: The objectives of nonverbal communication are to:
 - enhance the effectiveness of other communicative management techniques, and
 - gain or maintain the patient's attention and compliance.
- Indications: May be used with any patient.
- Contraindications: None.

Positive reinforcement and descriptive praise

- Description: In the process of establishing desirable patient behavior, it is essential to give appropriate feedback. Positive reinforcement rewards desired behaviors thereby strengthening the likelihood of 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. Descriptive praise emphasizes specific cooperative behaviors (eg, "Thank you for sitting still", "You are doing a great job keeping your hands in your lap") rather than a generalized praise (eg, "Good job").⁶⁵ Nonsocial reinforcers include tokens and toys.
- Objective: The objective of positive reinforcement and descriptive praise is to reinforce desired behavior.^{25,36,69,70}
- Indications: May be used with 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.^{25,36,70}
- Objectives: The objectives of distraction are to:
 - decrease the perception of unpleasantness, and
 - avert negative or avoidance behavior.
- Indications: May be used with any patient.
- Contraindications: None.

Memory restructuring

- Description: Memory restructuring is a behavioral approach in which memories associated with a negative or difficult event (eg, first dental visit, local anesthesia, restorative procedure, extraction) are restructured into positive memories using information suggested after the event has taken place.⁷¹ This approach been tested with children who received local anesthesia at an initial restorative dental visit and has been shown to change local anesthesia-related fears and improve behaviors at subsequent treatment visits.^{71,72} Restructuring involves four components: (1) visual reminders; (2) positive reinforcement through verbalization; (3) concrete examples to encode sensory details; and (4) sense of accomplishment. A visual reminder could be a photograph of the child smiling at the initial visit (ie, prior to the difficult experience). Positive reinforcement through verbalization could be asking if the child had told her parent what a good job she had done at the last appointment. The child is asked to role-play and to tell the dentist what she had told the parent. Concrete examples to encode sensory details include praising the child for specific positive behavior such as keeping her hands on her lap or opening her mouth wide when asked. The child then is asked to demonstrate these behaviors, which leads to a sense of accomplishment.
- Objectives: The objectives of memory restructuring are to:
 - restructure difficult or negative past dental experiences, and
 - improve patient behaviors at subsequent dental visits.
- Indications: May be used with patients who had a negative or difficult dental visits.
- 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. As establishment of a dental home by 12 months of age continues to grow in acceptance, parents will expect to be with their infants and young children during examinations as well as during treatment. Parental involvement, especially in their children's health care, has changed

dramatically in recent years.^{18,73} Parents' desire to be present during their child's treatment does not mean they intellectually distrust the dentist; it might mean they are uncomfortable if they visually cannot verify their child's safety. It is important to understand the changing emotional needs of parents because of the growth of a latent but natural sense to be protective of their children.⁷⁴ Practitioners should become accustomed to this added involvement of parents and welcome the questions and concerns for their children. Practitioners must consider parents' desires and wishes and be open to a paradigm shift in their own thinking.^{5,18,24,74,75}

- Objectives: The objectives of parental presence/absence are:
 - For parents to:
 - participate in infant examinations and/or treatment;
 - offer very young children physical and psychological support; and
 - observe the reality of their child's treatment.
 - For practitioners to:
 - gain the patient's attention and improve compliance;
 - avert negative or avoidance behaviors;
 - establish appropriate dentist-child roles;
 - enhance effective communication among the dentist, child, and parent;
 - minimize anxiety and achieve a positive dental experience; and
 - facilitate rapid informed consent for changes in treatment or behavior guidance.
- Indications: May be used with any patient.
- Contraindications: Parents who are unwilling or unable to extend effective support.

Communication techniques for parents (and age appropriate patients)

Because parents are the legal guardians of minors, successful bi-directional communication between the dentist/staff and the parent is essential to assure effective guidance of the child's behavior.⁴³ Socioeconomic status, stress level, marital discord, dental attitudes aligned with a different cultural heritage, and linguistic skills may present challenges to open and clear communication.^{13,15,76} Communication techniques such as ask-tell-ask, teach back, and motivational interviewing can reflect the dentist/staff's caring for and engaging in a patient/parent centered-approach.¹⁵ These techniques are presented in Appendix 2.

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/anxiolysis.

If nitrous oxide/oxygen inhalation is used in concentrations greater than 50 percent or in combination with other sedating medications (eg, midazolam, an opioid), the likelihood for moderate or deep sedation increases.^{77,78} In these situations, the clinician must be prepared to institute the guidelines for moderate or deep sedation.³ Detailed information concerning the indications, contraindications, and additional clinical considerations may be found in the Guideline on Use of Nitrous Oxide for Pediatric Dental Patients and Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update.^{2,3}

- Objectives: The objectives of nitrous oxide/oxygen inhalation include to:
 - reduce or eliminate anxiety;
 - reduce untoward movement and reaction to dental treatment;
 - enhance communication and patient cooperation;
 - raise the pain reaction threshold;
 - increase tolerance for longer appointments;
 - aid in treatment of the mentally/physically disabled or medically compromised patient;
 - reduce gagging; and
 - potentiate the effect of sedatives.
- Indications: Indications for use of nitrous oxide/oxygen inhalation analgesia/anxiolysis include:
 - a fearful, anxious, or obstreperous patient;
 - certain patients with special health care needs;
 - a patient whose gag reflex interferes with dental care;
 - a patient for whom profound local anesthesia cannot be obtained; and
 - a cooperative child undergoing a lengthy dental procedure.
- Contraindications: Contraindications for use of nitrous oxide/oxygen inhalation may include:
 - some chronic obstructive pulmonary diseases;⁷⁹
 - severe emotional disturbances or drug-related dependencies;⁷⁹
 - first trimester of pregnancy;^{79,80}
 - methylenetetrahydrofolate reductase deficiency;⁸¹ and
 - recent illnesses (eg, cold or congestion) that may compromise the airway.

Advanced behavior guidance

Most children can be managed effectively using the techniques outlined in basic behavior guidance. Such 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.⁸² 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 non-compliant patient. Skillful 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 through two years), patients with special health care needs, and patients requiring advanced behavior guidance techniques, hands-on experience is lacking.⁸² A minority of programs provides educational experiences with these patient populations, while few provide hands-on exposure to advanced behavior guidance techniques.⁸² “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.”⁸² 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.^{26,45,84-91} 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 person(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 for patients 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.^{45,92} Careful, continuous monitoring of the patient is mandatory during protective stabilization.^{45,92}

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.^{45,92} The dentist always should use the least restrictive, but safe and effective, protective stabilization.^{45,92} 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:

- alternative behavior guidance modalities;
- dental needs of the patient;
- the effect on the quality of dental care;
- the patient's emotional development; and
- the patient's medical and physical considerations.

Protective stabilization, with or without a restrictive device, led by the dentist and 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. Furthermore, when appropriate, an explanation to the patient regarding the need for restraint, with an opportunity for the patient to respond, should occur.^{43,45,93}

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.^{43,60}

- Objectives: The objectives of patient stabilization are to:
 - reduce or eliminate untoward movement;
 - protect patient, staff, dentist, or parent from injury; and
 - facilitate delivery of quality dental treatment.
- Indications: Patient stabilization is indicated for:
 - a patient who requires immediate diagnosis, urgent care, and/or limited treatment and cannot cooperate due to emotional or cognitive developmental levels, lack of maturity, or mental or physical conditions;
 - a patient who requires immediate diagnosis, urgent care, and/or limited treatment and uncontrolled movements risk the safety of the patient, staff, dentist, or parent without the use of protective stabilization; and
 - sedated patients to help reduce untoward movement.
- Contraindications: Patient stabilization is contraindicated for:
 - cooperative non-sedated patients;
 - patients who cannot be immobilized safely due to associated medical, psychological, or physical conditions;
 - patients with a history of physical or psychological trauma due to immobilization (unless no other alternatives are available);
 - patients with non-emergent treatment needs in order to accomplish full mouth or multiple quadrant dental rehabilitation; and
 - practitioner's convenience.
- Precautions: The following precautions should be taken:
 - the patient's medical history must be reviewed carefully to ascertain if there are any medical conditions (eg, asthma) which may compromise respiratory function;
 - tightness and duration of the stabilization must be monitored and reassessed at regular intervals;
 - stabilization around extremities or the chest must not actively restrict circulation or respiration;

- observation of body language and pain assessment must be continuous to allow for procedural modifications at the first sign of distress; and
- 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.

- Documentation: The patient's record must include:
 - indication for stabilization;
 - type of stabilization;
 - informed consent for protective stabilization;
 - reason for parental exclusion during protective stabilization (when applicable);
 - the duration of application of stabilization;
 - behavior evaluation/rating during stabilization;
 - any untoward outcomes, such as skin markings; and
 - management implication for future appointments.

Sedation

- Description: Sedation can be used safely and effectively with patients who are unable to cooperate due to lack of psychological or emotional maturity and/or mental, physical, or medical disability. 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.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 sedation. The decision to use sedation must take into consideration:

- alternative behavioral guidance modalities;
- dental needs of the patient;
- the effect on the quality of dental care;
- the patient's emotional development; and
- the patient's medical and physical considerations.
- Objectives: The goals of sedation are to:
 - guard the patient's safety and welfare;
 - minimize physical discomfort and pain;
 - control anxiety, minimize psychological trauma, and maximize the potential for amnesia;
 - control behavior and/or movement so as to allow the safe completion of the procedure; and
 - 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:
 - fearful, anxious patients for whom basic behavior guidance techniques have not been successful;
 - patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability; and
 - 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:
 - the cooperative patient with minimal dental needs; and
 - predisposing medical and/or physical conditions which would make sedation inadvisable.
- **Documentation:** The patient's record shall include:²
 - informed consent. Informed consent must be obtained from the parent and documented prior to the use of sedation;
 - instructions and information provided to the parent;
 - health evaluation;
 - a time-based record that includes the name, route, site, time, dosage, and patient effect of administered drugs;
 - 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;
 - adverse events (if any) and their treatment; and
 - time and condition of the patient at discharge.

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 information may be found in the Guideline on Use of Anesthesia Care Personnel in the Administration of Office-based Deep Sedation/General Anesthesia to the Pediatric Dental Patient.⁴ 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. Anesthetic and sedative drugs are used to help ensure the safety, health, and comfort of children undergoing procedures. Increasing evidence from research studies suggests the benefits of these agents should be considered in the context of their potential to cause harmful effects.⁹⁴ Additional research is needed to identify any possible risks to young children. "In the absence of conclusive evidence, it would be unethical to withhold sedation and anesthesia when necessary".⁹⁵ The decision to use general anesthesia must take into consideration:
 - alternative modalities;
 - age of the patient;
 - risk benefit analysis;
 - treatment deferral;
 - dental needs of the patient;
 - the effect on the quality of dental care;
 - the patient's emotional development; and
 - the patient's medical status.
- **Objectives:** The goals of general anesthesia are to:
 - provide safe, efficient, and effective dental care;
 - eliminate anxiety;
 - reduce untoward movement and reaction to dental treatment;
 - aid in treatment of the mentally, physically, or medically compromised patient; and
 - eliminate the patient's pain response.
- **Indications:** General anesthesia is indicated for:
 - patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability;
 - patients for whom local anesthesia is ineffective because of acute infection, anatomic variations, or allergy;
 - the extremely uncooperative, fearful, anxious, or uncommunicative child or adolescent;
 - patients requiring significant surgical procedures;
 - patients for whom the use of general anesthesia may protect the developing psyche and/or reduce medical risk; and
 - patients requiring immediate, comprehensive oral/dental care.
- **Contraindications:** The use of general anesthesia is contraindicated for:
 - a healthy, cooperative patient with minimal dental needs;
 - a very young patient with minimal dental needs that can be addressed with therapeutic interventions (eg, ITR, fluoride varnish) and/or treatment deferral;
 - patient/practitioner convenience; and
 - predisposing medical conditions which would make general anesthesia inadvisable.
- **Documentation:** 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, each practitioner must be familiar with her state guidelines. Minimal requirements for a time-based anesthesia record should include:
 - 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;
 - the name, route, site, time, dosage, and patient effect of administered drugs, including local anesthesia;
 - adverse events (if any) and their treatment; and
 - that discharge criteria have been met, the time and condition of the patient at discharge, and into whose care the discharge occurred.

APPENDIX 1. FRANKL BEHAVIORAL RATING SCALE

1	--	Definitely negative. Refusal of treatment, forceful crying, fearfulness, or any other overt evidence of extreme negativism.
2	-	Negative. Reluctance to accept treatment, uncooperative, some evidence of negative attitude but not pronounced (sullen, withdrawn).
3	+	Positive. Acceptance of treatment; cautious behavior at times; willingness to comply with the dentist, at times with reservation, but patient follows the dentist's directions cooperatively.
4	++	Definitely positive. Good rapport with the dentist, interest in the dental procedures, laughter and enjoyment.

APPENDIX 2. SAMPLE COMMUNICATION TECHNIQUES FOR PATIENTS & PARENTS ¹

When clinicians share information, they predominantly TELL information, often in too much detail, and in terms that sometimes alarm patients. Information sharing is most effective when it is sensitive to the emotional impact of the words used. By using a technique of ask-tell-ask, it is possible to improve the patients' understanding and promote adherence. According to the adult learning theory, it is important to stay in dialogue (not monologue), begin with an assessment of the patient's or parents' needs, tell small chunks of information tailored to those needs, and check on the patient's understanding, emotional reactions, and concerns. This is summarized by the three step format **Ask-Tell-Ask**.

ASK to assess patient's emotional state and their desire for information. TELL small amounts of information in simple language, and ASK about the patient's understanding, emotional reactions, and concerns. Many conversations between clinicians and parents sound like **Tell-Tell-Tell**, a process known as doctor babble, because clinicians seem to talk to themselves, rather than have a conversation with parents or patients.

The Ask-Tell-Ask format maintains dialogue with patients and their parents. The important areas for sharing include:

ASK to assess patient needs:

- 1. Make sure the setting is conducive.**
- 2. Assess the patient's physical and emotional state.** If patients are upset or anxious, address their emotions and concerns before trying to share information. Sharing information when the patient is sleepy, sedated, in pain, or emotionally distraught is not respectful and the information won't be remembered.
- 3. Assess the patient's informational needs.** Find out what information the patient wants, and in what format. Some patients want detailed information about their conditions, tests, and proposed treatments; recommendations for reading; websites; self-help groups and/or referrals to other consultants. Others want an overview and general understanding. Patients may want other family members to be present for support or to help them remember key points. Reaching agreement with the patient about what information to review may require negotiation if the clinician understands the issues, priorities, or goals differently than the patient. Also, some patients may need more time, and so it might be wise to discuss the key points, and plan to address others later, or refer them to other staff or health educators. Instead of asking, "*Do you have any questions?*" to which patients often reply, "*No,*" instead ask, "*What questions or concerns do you have?*" Be sure to ask, "*Anything else?*"
- 4. Assess the patient's knowledge and understanding.** Find out what previous knowledge or relevant experience patients have about a symptom or about a test or treatment.
- 5. Assess the patient's attitudes and motivation.** Patients will not be interested in hearing your health information if they are not motivated, or if they have negative attitudes about the outcomes of their efforts, so ask about this directly. Start by asking general questions about attitudes and motivation: "*So – tell me how you feel about all of this?*" "*This is a complicated regimen. How do you think you will manage?*" If patients are not motivated, ask why, and help the patient work through the issues.

Appendix 2 continues on next page

TELL information:

1. **Keep each bit of information brief.** It is difficult to understand and retain large amounts of information, especially when one is physically ill, upset or fearful.
2. **Use a systematic approach.** For example, name the problem, the next step, what to expect, and what the patient can do.
3. **Support the patient's prior successes.** Explicitly mention and appreciate patients' previous efforts and accomplishments in coping with previous problems or illness.
4. **Personalize the information.** Personalize your information by referring to the patient's personal and family history.
5. **Use simple language; avoid jargon.** Be mindful of how key points are framed.
6. **Choose words that do not unnecessarily alarm.** Words and phrases a practitioner takes for granted may be misinterpreted or alarm patients and families.
7. **Use visual aids, and share supplemental resources.** Find reliable resources and educational aids to meet the needs of your patients.

ASK: Continue to assess needs, comprehension and concerns.

After each bit of telling, stop and check in with patients. When finished with information sharing, make a final check. This step closes the feedback loop with patients, and helps the practitioner understand what patients hear, whether they are **taking home** the intended messages, and how they feel about the situation. The second ASK section consists of the following items:

1. **Check for patients' comprehension.** ASK about the patients' understanding. This ASK improves patient recall, satisfaction, and adherence.
2. **Check for emotional responses and respond appropriately.** Letting patients know their concerns and worries have been heard is compassionate, improves outcomes, and takes little time.
3. **Check about barriers.** Patients may face external obstacles as well as internal emotional responses that inhibit them from overcoming obstacles.

Teach Back

A strategy called teach back is similar. The dentist or dental staff asks the patient to **teach back** what he has learned. This may be especially effective for patients with low literacy who cannot rely on written reminders. It is important to present the process as part of the normal routine. This pertains to explanations or demonstrations: *"I always check in with my patients to make sure that I've demonstrated things clearly. Can you show me how you're going to floss your teeth?"* If the patient's demonstration is incorrect, the dentist may say, *"I'm sorry, I guess I didn't explain things all that well: let me try again."* Then go over the information again and ask the patient to teach it back to you again.

Motivational Interviewing

Motivational interviewing facilitates behavior change by helping patients or parents explore and resolve their ambivalence about change. It is done in a collaborative style, which supports the autonomy and self-efficacy of the patient and uses the patient's own reasons for change. It increases the patient's confidence and reduces defensiveness. Motivational interviewing keeps the responsibility to change with the patient and/or parent, which helps to decrease staff burnout. In dentistry, it is useful in counseling about brushing, flossing, fluoride varnish, reducing sugar sweetened beverages, and smoking cessation. Open-ended questions, affirmations, reflective listening, and summarizing (OARS) characterize the patient centered approach. It is especially helpful in higher levels of resistance, anger, or entrenched patterns. Motivational interviewing is empowering to both staff and patients, and by design is not adversarial or shaming.

¹ Adapted from Goleman J. Cultural factors affecting behavior guidance and family compliance. *Pediatr Dent* 2014;36(2):121-7. Copyright © 2014, American Academy of Pediatric Dentistry, www.aapd.org.

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