

# 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, 2011

## 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 Use of Nitrous Oxide for Pediatric Dental Patients,<sup>1</sup> Guidelines for Monitoring and Management of Pediatric Patients During and After Sedation for Diagnostic and Therapeutic Procedures: An Update,<sup>2</sup> and Guideline on the Use of Anesthesia Personnel in the Administration of Office-based Deep Sedation/General Anesthesia to the Pediatric Dental Patient.<sup>3</sup>

## Methods

This document is an update of the previous guideline adopted in 1990 and last revised in 2008. It was developed/revised following the AAPD's 1988 and 2003 conferences on behavior management for the pediatric dental patient.<sup>4,5</sup> This update 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.<sup>6</sup> In addition, a systematic search of the MEDLINE/PubMed<sup>®</sup> 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 relations", "attitudes of parents to behavior management in dentistry", "patient assessment in dentistry", "pain in dentistry", "treatment deferral in dentistry", and "patient restraint for treatment"; Fields: all; Limits: within the last 10 years, humans, English, birth through age 18. There were 5694 articles matching these criteria. Papers for review were chosen from this list and from references withing 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

### 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 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.<sup>6-11</sup> 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 skillfully.

### **Pain Management**

Pain management during dental procedures is crucial for successful behavior guidance. Prevention of pain can nurture the relationship between the dentist and the patient, build trust, allay fear and anxiety, and enhance positive dental attitudes for future visits.<sup>12-16</sup> However, 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.<sup>12,14,17-20</sup>

Children perceive and react to painful stimuli differently from each other. Children under age 4 are more sensitive to painful stimuli and are not able to communicate as well as older children and teens.<sup>17,18</sup> Observing behavior and listening to children during treatment are essential in any evaluation of pain. Facial expressions, crying, complaining, and body movement are important diagnostic criteria.<sup>12-16</sup>

At times, dental providers may underestimate a patient's level of pain or may develop "pain blindness" as a defense mechanism.<sup>12,19,21-24</sup> One of the possible causes of fear and/or behavior problems is a painful past medical or dental visit.<sup>17,18</sup> It has been shown that the patient is the best reporter of his/her pain.<sup>14,17,19,24</sup> Listening to the child and observing his/her behavior at the first sign of distress will help diagnose the situation and facilitate proper behavior guidance techniques.<sup>14</sup>

Use of a self-reported pain intensity scale has been helpful in the medical field.<sup>19,20</sup> While there are over 30 such scales in

use, only 6 have shown evidence of reliability and validity. Of these, the Faces Pain Scale-Revised (FPSR) appears to be the most validated for children between ages 4 and 12 and the Wong-Baker FACES Pain Scale for children over 3 years of age.<sup>25,26</sup> (See Appendix 1.)

### **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.<sup>27,28</sup>

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.<sup>27</sup>

### **Dentist Behavior**

The dentist's communication skills play an important role in behavior guidance.<sup>29</sup> The health professional may be inattentive to communication style, but patients/parents are very attentive to it.<sup>30</sup> The communicative behavior of dentists is a major factor in patient satisfaction.<sup>31,32</sup> The dentist should recognize that not all parents may express their desire for involvement.<sup>33</sup> 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.<sup>34</sup> 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.<sup>35,36</sup>

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.<sup>11,29,37,39</sup>

### **Parental Influence**

Parents exert a significant influence on their child's behavior,



especially if they had previous negative dental experiences.<sup>19,40,41</sup> An anxious or fearful parent may affect the child's behavior negatively.<sup>19,40,42</sup> Educating the parent before the child's first dental visit is important. Discussing the office procedures on the initial telephone call, followed by sending office information and an invitation to visit the office web site or even an office "pre-visit", may be helpful in reducing parental anxiety.<sup>11</sup>

Parenting styles in America have evolved in recent decades.<sup>42</sup> 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 (eg. no tears) are unrealistic, while expectations for the dentist who guides their behavior are great.<sup>27</sup> Some parents may even try to dictate treatment, although their understanding of the procedure is lacking.<sup>27</sup> Effective communication with more demanding parents represents an opportunity for the dentist to carefully review behavior and treatment options and together decide what is in the child's best interests.<sup>29</sup>

Practitioners agree that good communication is important among the dentist, patient, and parent in building trust and confidence.<sup>29,43</sup> 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. Most children respond positively when their parent is in the treatment area.<sup>29,44-46</sup> Occasionally, the presence of a parent has a negative effect on the necessary communication between the child and the dentist.<sup>19,40</sup> 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.

### 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.<sup>47</sup>

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.<sup>47</sup>

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 and body language, messages consistent with the receiver's intellectual development can be sent.<sup>47</sup>

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.<sup>47</sup>

It is important to communicate with the child patient briefly at the beginning of a dental appointment to establish rapport and trust. Once a procedure begins, the dentist's ability to guide and shape behavior becomes paramount, and information sharing becomes secondary. The 2-way interchange of information gives way to 1-way guidance of behavior through commands. This type of interaction is called "requests and promises".<sup>48</sup> 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 must assure the child is comfortable and feeling no pain during the procedure and 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.<sup>27,42,49-51</sup>

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.<sup>27</sup>

### 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.<sup>41,52,53</sup> Child age/cognitive level,<sup>41,54-57</sup> temperament/personality characteristics,<sup>52,53,58-60</sup> anxiety and fear,<sup>41,53,61</sup> reaction to strangers,<sup>62</sup> previous dental experiences,<sup>41,55,63</sup> and maternal dental anxiety<sup>63-65</sup> 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. For example,



questions concerning the child's behavior at the physician's office may provide valuable insight into fear levels during routine visits and visits where painful stimuli were used.<sup>14,17,18</sup> 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 2.<sup>41,56,58,59,65-73</sup> 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 and be tolerant and flexible in their implementation.<sup>11,29</sup> Dentists also should record the child's behavior as a diagnostic aid for future visits.<sup>18</sup> One of the more reliable and frequently used behavior rating systems in both clinical dentistry and research is the Frankl Scale.<sup>11,18</sup> This scale (see Appendix 3) separates observed behaviors into 4 categories ranging from definitely negative to definitely positive.<sup>11,24</sup>

### 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 and/or painful dental or medical experience, inadequate preparation for the first encounter in the dental environment, or dysfunctional parenting practices.<sup>41,54,55</sup>

To alleviate these barriers, the dentist should become a teacher. The dentist's methods should include active listening and observation of the child's body language, 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.<sup>11,29</sup> Another way to reduce barriers is to establish a dental home<sup>74</sup> as early as possible. The dental home provides an ongoing relationship between the dentist, patient, and parent to facilitate communication and positive attitude and behaviors.<sup>29,74</sup> Early preventive care leads to less dental disease, decreased treatment needs, and fewer opportunities for negative experiences.<sup>29,74</sup>

### 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.<sup>75,76</sup> 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),<sup>77,78</sup> fluoride varnish, antibiotics for infection control] until the child is able to co-operate 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.<sup>76,79</sup>

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.<sup>75,77,78</sup>

Caries risk should be reevaluated when treatment options are compromised due to child behavior. The AAPD has developed caries risk-assessment forms and management protocols<sup>80</sup>; they provide 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 along with suggestions on caries management. 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.<sup>81</sup> ITR may be useful as both preventive and therapeutic approaches.<sup>77,78</sup>

### 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.<sup>76,79</sup>

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.<sup>29,43,50</sup>

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.<sup>79</sup> All questions must be answered to the parent's understanding.<sup>76,79</sup>

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 Consent<sup>79</sup> 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.<sup>76,79</sup>

### Summary

1. 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, tolerance, flexibility, and active listening. As such, behavior guidance is a clinical art form and a skill built on a foundation of science.
2. The goals of behavior guidance are to establish communication, alleviate fear and anxiety, deliver quality dental care, build a trusting relationship between dentist, child, and parent, and promote the child's positive attitude toward oral/dental health and oral health care.
3. The urgency of the child's dental needs must be considered when planning treatment. Deferral or modification of treatment sometimes may be necessary until routine care can be provided using appropriate behavior guidance techniques.
4. 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.
5. The staff must be trained carefully to support the dentist's efforts and welcome the patient and parent into a child-friendly environment that will facilitate behavior guidance and a positive dental visit.
6. Pain management during dental procedures is crucial for successful behavior guidance and enhancing positive dental attitudes for future visits. Listening to the child and observing his/her behavior at the first sign of distress will be helpful in diagnosing the situation and facilitating proper behavior guidance techniques.
7. Parents exert a significant influence on the behavior of their children. Educating the parents before their child's visit may be helpful and promote a positive dental experience.
8. Dentists should record the patient's behavior at each visit. This will serve as a documentation of past behavior and aid in diagnosis for future visits.

## 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.<sup>10,28,29</sup>

- **Objectives:** The objectives of tell-show-do are to:

1. teach the patient important aspects of the dental visit and familiarize the patient with the dental setting;
2. 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 possibly aversive technique may benefit from an explanation prior to its use to prevent misunderstanding.<sup>10,11,28,29</sup>

- **Objectives:** The objectives of voice control are to:

1. gain the patient's attention and compliance;
2. avert negative or avoidance behavior;
3. 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.<sup>10,28,29,50</sup>
- 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.<sup>10,11,47,48</sup>
- 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.<sup>11,47,48</sup>
- 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. 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.<sup>29,82</sup> 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.<sup>45</sup> Practitioners should become accustomed to this added involve-

ment 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.<sup>27,29,4,44,45</sup>

- Objectives: The objectives of parental presence/absence are:
  - For parents to:
    1. participate in infant examinations and/or treatment (if asked);
    2. offer very young children physical and psychological support;
    3. observe the reality of their child's treatment.
  - For practitioners 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;
    6. 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 (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/anxiolysis. 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.<sup>1</sup>

**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.<sup>8</sup> 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. 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 – 2 years), patients with special health care needs, and advanced behavior guidance techniques, hands-on experience is lacking.<sup>84</sup> A minority of programs provides educational experiences with these patient populations, while few provide hands-on exposure to advanced behavior guidance techniques.<sup>84</sup> "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."<sup>84</sup> 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.<sup>28,76,84-91</sup> 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.<sup>76,92</sup> Careful, continuous monitoring of the patient is mandatory during protective stabilization.<sup>76,92</sup>

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.<sup>76,92</sup> The dentist always should use the least restrictive, but safe and effective, protective stabilization.<sup>76,92</sup> 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.<sup>76,79,93</sup>

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.<sup>75</sup>

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 non-sedated 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. non-sedated patients with non-emergent treatment requiring lengthy appointments.
  - **Precautions:** The following precautions should be taken:
    1. the patient's medical history must be reviewed carefully 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.<sup>2</sup>

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 medical and physical considerations.

Documentation shall include<sup>2</sup>:

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 and/or physical 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 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.<sup>3</sup>

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:

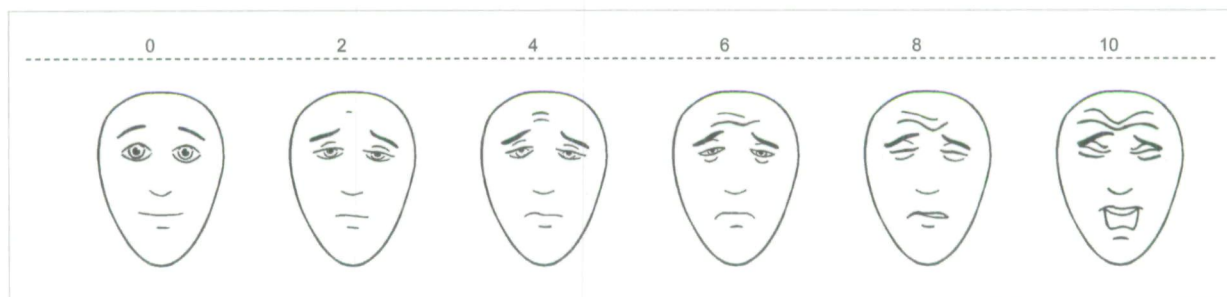
1. the patient's heart rate, blood pressure, respiratory rate, and oxygen saturation at specific intervals throughout the procedure and until predetermined discharge criteria have been attained;
  2. the name, route, site, time, dosage, and patient effect of administered drugs, including local anesthesia;
  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. PAIN SCALES FOR USE WITH CHILDREN

### Faces Pain Scale – Revised (FPS-R)



*In the following instructions, say "hurt" or "pain", whichever seems right for a particular child.*

"These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] – it shows very much pain. Point to the face that shows how much you hurt [right now]."

*Score the chosen face 0, 2, 4, 6, 8, or 10, counting left to right, so '0' = 'no pain' and '10' = 'very much pain.' Do not use words like 'happy' and 'sad'. This scale is intended to measure how children feel inside, not how their face looks.*

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### Wong-Baker FACES Pain Scale



*Brief word instructions:* Point to each face using the words to describe the pain intensity. Ask the child to choose face that best describes own pain and record the appropriate number.

*Original instructions:* Explain to the child that each face is for a child who feels happy because he has no pain (hurt) or sad because he has some or a lot of pain. Face 0 is very happy because he doesn't hurt at all. Face 1 hurts just a little bit. Face 2 hurts a little more. Face 3 hurts even more. Face 4 hurts a whole lot. Face 5 hurts as much as you can image, although you don't have to be crying to feel this bad. Ask the child to choose the face that best describes how he is feeling. Rating scale is recommended for persons age 3 years and older.

From Hockenberry MJ, Wilson D: Wong's essentials of pediatric nursing, ed. 8, St. Louis, 2009, Mosby. Used with permission. Copyright Mosby.



## APPENDIX 2. PATIENT ASSESSMENT TOOLS

Tool	Format	Application	Reference
Toddler temperament scale	Parent questionnaire	Behavior of 12 to 36 months	59, 66
Behavioral style questionnaire (BSQ)	Parent questionnaire	Child temperament of 3 to 7 years	58, 69
Eyberg Child Behavior Inventory (ECBI)	Parent questionnaire	Frequency and intensity of 36 common problem behaviors	68
Facial Image Scale (FIS)	Drawings of faces, child chooses	Anxiety indicator suitable for young preliterate children	69
Children's Dental Fear Picture Test (CDFP)	3 picture subtests, child chooses	Dental fear assessment for children >5 years old	70
Child Fear Survey Schedule-Dental Subscale (CFSS-DS)	Parent questionnaire	Dental fear assessment	41, 71, 72
Parent-Child Relationship Inventory (PCRI)	Parent questionnaire	Parent attitudes and behavior that may result in child behavior problems	56, 72
Corah's dental anxiety scale (DAS)	Parent questionnaire	Dental anxiety of parent	41, 65, 73

## APPENDIX 3. 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.

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