

Guideline on Protective Stabilization for Pediatric Dental Patients

Originating Council

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Purpose

The American Academy of Pediatric Dentistry (AAPD) believes that all infants, children, adolescents, and individuals with special health care needs are entitled to receive oral health care that meets the treatment and ethical principles of our specialty. The need for the patient to receive timely diagnosis and treatment, as well as to ensure the safety of the patient, practitioner, and staff, should be considered before using protective stabilization. The AAPD has included use of protective stabilization (formerly referred to as physical restraint and medical immobilization) in its guidelines on behavior guidance since 1990.¹⁻⁸ This separate guideline specific to protective stabilization provides additional information to assist the dental professional and other stakeholders in understanding the indications for and developing appropriate practices in the use of protective stabilization as an advanced behavior guidance technique in contemporary pediatric dentistry. This advanced technique must be integrated into an overall behavior guidance approach that is individualized for each patient in the context of promoting a positive dental attitude for the patient, while ensuring the highest standards of safety and quality of care.

Methods

This guideline is based on a review of the current dental and medical literature related to the use of protective stabilization devices and restraint in the treatment of infants, children, adolescents, and patients with special health care needs in the dental office. An electronic search was conducted using PubMed® with the terms: protective stabilization and dentistry, protective stabilization and medical procedures, medical immobilization, restraint and dentistry, restraint and medical procedures, Papoose® board and dentistry, Papoose® board and medical procedures, patient restraint for treatment; fields: all; limits: within the last 10 years, humans, English, birth through 18. Thirty-four articles matched these criteria and were evaluated by title and/or abstract. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background

Pediatric dentists receive formal education and training to gain the knowledge and skills required to manage the various physical challenges, cognitive capacities, and age-defining traits of their patients. A dentist who treats children should be able to assess each child's developmental level, dental attitude, and temperament and also be able to recognize potential barriers to delivery of care (e.g., previous unpleasant and/or painful medical or dental experiences) to help predict the child's reaction to treatment.⁹ A continuum of non-pharmacological and pharmacological behavior guidance techniques, including protective stabilization, may be employed in providing oral health care for infants, children, adolescents, and individuals with special health care needs.⁹ Behavior guidance approaches for each patient who is unable to cooperate should be customized to the individual needs of the child and the desires of the parent and may include sedation, general anesthesia, protective stabilization, or referral to another dentist.⁹ The AAPD Guideline on Behavior Guidance⁹ should be consulted for additional information regarding the spectrum of behavior guidance techniques.

Protective stabilization is defined as “any manual method, physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely.”¹⁰ Active immobilization involves restraint by another person, such as the parent, dentist, or dental auxiliary; passive immobilization utilizes a restraining device.¹¹ When determining whether to recommend use of stabilization or immobilization techniques, the dentist should consider the patient's oral health needs, emotional and cognitive development levels, medical and physical conditions, and parental preferences.¹¹ Furthermore, alternative approaches (e.g., treatment deferral, sedation, general anesthesia) and their potential impact on quality of care and the patient's well-being should be included in the deliberation.¹¹

Recommendations

Education

Didactic and clinical experiences vary for pre-doctoral students between and within dental schools. While some schools provide didactic and hands-on training in advanced behavior

guidance, others offer limited exposure. A survey of pre-doctoral program directors found a majority of dental schools spend fewer than five classroom hours on behavior guidance techniques.¹² Furthermore, 42 percent of institutions reported fewer than 25 percent of students had one hands-on experience with passive immobilization for non-sedated patients, while 27 percent of programs provided no clinical experiences.¹² Therefore, graduates from dental school may lack knowledge and competency in the use of protective stabilization. Limited training in protective stabilization is not unique to dentistry as other health care disciplines have suggested a need for advanced training and guidelines.^{13,14}

Protective stabilization is considered an advanced behavior guidance technique in dentistry.⁹ Attempts to restrain or stabilize patients without adequate training can leave not only the patient, but also the practitioner and staff, at risk for physical harm.¹⁵ Both didactic and hands-on mentored education beyond dental school is essential to ensure appropriate, safe, and effective implementation of protective stabilization of a patient unable to cooperate.⁹ Advanced training can be attained through an accredited post-doctoral program (e.g., advanced education in general dentistry, general practice residency, or pediatric dentistry residency program) or an extensive and focused continuing education course that includes both didactic and mentored hands-on experiences. Formal training will allow the practitioner to acquire the necessary knowledge and skills in patient selection and in the successful use of restraining techniques to prevent or minimize psychological stress and/or decrease risk of physical injury to the patient, the parent, and the staff. Currently, at least one state requires training beyond basic dental education in order for the practitioner to utilize protective stabilization devices.¹⁶

Consent

Protective stabilization, with or without a restrictive device, performed by the dental team requires informed consent from a parent.⁹ A parent's signature on a consent form should not preclude a thorough discussion of the procedure. The practitioner must explain the benefits and risks of protective stabilization, as well as alternative behavior guidance techniques (e.g., treatment deferral, sedation, general anesthesia), and assist the parent in determining the most appropriate approach to treat his/her child.¹⁷ Informed consent discussion, when possible, should occur on a day separate from the treatment. Supplements such as informational booklets or videos may be helpful to the parent and/or patient in understanding the proposed procedure. Informed consent must be obtained and documented in the patient's record prior to performing protective stabilization.^{16,18,19} If a patient's behavior during treatment necessitates a change in stabilization procedure or technique, further consent must be obtained and documented.¹⁸

When appropriate, an explanation to the patient regarding the need for restraint, with an opportunity for the patient to respond, should occur.^{17,20,21} Although a minor does not have the statutory right to give or refuse consent for treatment,

the child's wishes and feelings (assent) should be considered when addressing the issue of consent.^{18,22}

Laws governing informed consent vary by state. It is incumbent on the practitioner to be familiar with applicable statutes. Currently most states have adopted the "patient-oriented" standard. Thus, a practitioner may be held liable if a parent has not received all of the information that is essential to his/her decision to accept or reject proposed treatment.^{18,23,24}

Written consent before treatment of a patient is mandated by some states.²⁵ Even if not required by state law, detailed written consent for medical immobilization should be obtained separately from consent for other procedures as it increases the parent's awareness of the procedure.¹⁸

Parental presence

Parental presence in the operatory may help both the parent and child during a difficult experience.²⁶ Ninety-two percent of mothers in one study believed they should have been with their child when he/she was placed on a rigid stabilization board to increase the child's security and/or comfort.²⁶ In addition, 90 percent recognized that immobilization protected the children from harm.²⁶ Practitioners should consider allowing parental presence in the operatory or direct visual observation of the patient during use of protective stabilization unless the health and safety of the patient, parent, or the dental staff would be at risk.⁸ Further, if parents are denied access, they must be informed of the reason with documentation of the explanation in the patient's chart.¹⁶ If parents choose not to be present, they should be encouraged to provide positive nurturing support for the child both before and after the procedure. Ultimately, a parent has the right to terminate use of restraint at any time if he or she believes the child may be experiencing physical or psychological trauma due to immobilization. If termination is requested, the practitioner immediately should complete the necessary steps to bring the procedure to a safe conclusion before ending the appointment.

Techniques

Alternative approaches to restricting patient movement during medically necessary dental care should be explored before immobilizing a patient. Protective stabilization should be used only when less restrictive interventions are not effective. It should not be used as a means of discipline, convenience, or retaliation. Furthermore, the use of protective stabilization should not induce pain for the patient.

Active immobilization involves restraint by another person, such as the parent, dentist, or dental auxiliary; examples of active immobilization include head holding, hand guarding, and therapeutic holding. Treatment should first be attempted with communicative behavior guidance without protective stabilization unless there is a history of maladaptive or combative behavior that could be injurious to the patient and/or staff.²⁷ When mechanical immobilization is indicated, it should be the least restrictive alternative or technique.^{28,29}

An accurate, comprehensive, and up-to-date medical history is necessary for effective treatment. This would include careful review of the patient's medical history to ascertain if there are any conditions (e.g., asthma) which may compromise respiratory function or neuromuscular or bone/skeletal disorders which may require additional positioning aids due to rigid extremities.

Following explanation of the procedures and consent by the parent, protective stabilization of the patient should begin in conjunction with distraction techniques³⁰ by placing the child, in a manner as comfortable as possible, in a supine position. If restriction of extremity movement is needed, the dentist may ask a dental auxiliary or parent to employ hand guarding or hold the patient's hands. Full-body protective stabilization, when indicated, should be accomplished in a sequential manner.³¹ If the stabilization device includes a head hold, that is activated last. At no time should the device be active to the point of restricting blood flow or respiration.⁹

Equipment

Numerous devices are available to limit movements by a patient unable to cooperate during dental treatment. The ideal characteristics of a mechanical restraining device to use as an adjunct to dental procedures include the following:

- Easily used.
- Appropriately sized for the patient.
- Soft and contoured to minimize potential injury to the patient.
- Specifically designed for patient stabilization (i.e., not improvised equipment).³¹
- Able to be disinfected.

Stabilization of a patient's extremities can be accomplished using devices (e.g., Posey straps®, Velcro® straps, seat belts) or an extra assistant. If hand guarding or hand holding does not deter disruptive movement of a patient's hands, wrist restraints may be utilized.^{27,32} If a patient is unable (due to medical diagnosis) or unwilling (due to maladaptive behaviors) to control bodily movement, a full body wrap may need to be used. Full-body stabilization devices include, but are not limited to, Papoose Board® and Pedi-Wrap®.^{27,32} Stabilization for the head may be accomplished using forearm-body support, a head positioner, or an extra assistant.³² Although a mouth prop may be used as an immobilization device, the use of a mouth prop in a compliant child is not considered protective stabilization.

Monitoring

Tightness of the stabilization device must be monitored and reassessed at regular intervals.⁹ Ongoing awareness/assessment of the patient's physical and psychological well-being during the dental procedure must be performed. For a patient who is experiencing severe emotional stress or hysterics, protective stabilization must be terminated as soon as possible to prevent possible physical or psychological trauma.²⁸ At the completion of dental procedures, removal of restraints should be accomplished sequentially with short pauses between stages to assess

the patient's level of cooperation.²⁷ Struggling during removal of restraints may increase the potential for injury to the child as well as others. When immobilization has been introduced intra-operatively (i.e., unplanned intervention), debriefing is beneficial for the understanding of parent/patient²⁰ and to discuss management implications for future appointments.

Indications

Protective stabilization is indicated when:

- A patient requires immediate diagnosis and/or urgent limited treatment and cannot cooperate due to emotional and cognitive developmental levels or lack of maturity or medical and physical conditions.
- Emergent care is needed and uncontrolled movements risk the safety of the patient, staff, dentist, or parent without the use of protective stabilization.
- A previously cooperative patient quickly becomes uncooperative during the appointment in order to protect the patient's safety and help to expedite completion of treatment.
- A sedated patient may become uncooperative during treatment.
- A patient with special health care needs may experience uncontrolled movements that would be harmful or significantly interfere with the quality of care.

Benefits

When used correctly and in accordance with this guideline, protective stabilization has the following benefits:⁹

- Reduction or elimination of untoward movements.
- Protection of the patient, staff, dentist, or parent from injury.
- Facilitation of quality dental treatment.

Contraindications:

Protective 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 restraint (unless no other alternatives are available).
- Patients with non-emergent treatment needs in order to accomplish full mouth or multiple quadrant dental rehabilitation.

Risks

The use of protective stabilization may lead to potential serious consequences, such as physical or psychological harm, loss of dignity, and violation of patient's rights.⁹ Research has demonstrated that psychological trauma can have lasting detrimental effects on brain function, and when this trauma is of sufficient intensity, frequency, or duration, subsequent neurodevelopment may be altered and become maladaptive.³³ Parents may also experience distress when their children are restrained.²¹

The majority of restraint-related injuries consist of minor bruises and scratches, although other more serious injuries have been reported.³⁴ Fewer injuries were incurred due to passive stabilization compared to active stabilization, and fewer injuries occurred with the use of planned passive stabilization compared to its use in emergent situations.³⁴ Patients placed on a rigid stabilization board may overheat during the dental procedure and must never be unattended as the patient and the board may roll out of the chair.²⁸ A rigid stabilization board may not allow for complete extension of the neck and, therefore, may compromise airway patency, especially in young children or sedated patients.³⁵ Proper training and use of a neck roll may minimize this risk.

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.
- Management implications for future appointments.

References

1. American Academy of Pediatric Dentistry. Guideline for behavior management. Chicago, Ill.; May, 1990.
2. American Academy of Pediatric Dentistry. Guideline for behavior management. In Reference Manual 1991-1992. American Academy of Pediatric Dentistry. Chicago, Ill.; 1991:49-53.
3. American Academy of Pediatric Dentistry. Guideline for behavior management. *Pediatr Dent* 1996;18(special issue):40-4.
4. American Academy of Pediatric Dentistry. Guideline for behavior management. *Pediatr Dent* 2000;22(special issue):47-51.
5. American Academy of Pediatric Dentistry. Guideline on behavior guidance for the Pediatric Dental Patient. *Pediatr Dent* 2005;27(suppl issue):92-100.
6. American Academy of Pediatric Dentistry. Guideline on behavior guidance for the Pediatric Dental Patient. *Pediatr Dent* 2006;28(suppl issue):97-105.
7. American Academy of Pediatric Dentistry. Guideline on behavior guidance for the Pediatric Dental Patient. *Pediatr Dent* 2008;30(suppl issue):125-33.
8. American Academy of Pediatric Dentistry. Guideline on behavior guidance for the Pediatric Dental Patient. *Pediatr Dent* 2011;33(special issue):161-73.
9. American Academy of Pediatric Dentistry. Guideline on behavior guidance for the pediatric dental patient. Available at: "http://www.aapd.org/media/Policies_Guidelines/G_BehavGuide.pdf". Accessed April 1, 2013.
10. Office of the Federal Register. Code of Federal Regulations. 42 Public Health, 482.13; 2010.
11. American Dental Association. Principles of Ethics and Code of Professional Conduct. With official advisory opinions revised to April 2012. Available at: "http://www.ada.org/sections/about/pdfs/code_of_ethics_2012.pdf". Accessed April 1, 2013.
12. Adair SM, Schafer TE, Rockman RA, Waller JL. Survey of behavior management teaching in predoctoral pediatric dentistry programs. *Pediatr Dent* 2004;26(2):143-50.
13. Valler-Jones T, Shinnick A. Holding children for invasive procedures: Preparing student nurses. *Paediatr Nurs* 2005;17(5):20-2.
14. Graham P, Hardy M. The immobilization and restraint of paediatric patients during plain film radiographic examinations. *Radiography* 2004;10(1):23-31.
15. Lambreno K, McArthur E. Introducing a clinical holding policy. *Paediatr Nurs* 2003;15(4):30-3.
16. State of Colorado Department of Regulatory Agencies. Board of Dental Examiners. 3CCR709-1. Rules and Regulations; Medical immobilization/protective stabilization. 2011; page 37-8. Available at: "<http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheadername1=Content-Disposition&blobheadername2=ContentType&blobheadervalue1=inline%3B+filename%3D%22Colorado+Board+of+Dental+Examiners+Rules+and+Regulations%2C+effective+December+30%2C+2011.pdf%22&blobheadervalue2=application%2Fpdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1251832177717&cssbinary=true>". Accessed April 1, 2013.
17. Crock C, Olsson C, Phillips R, et al. General anesthesia or conscious sedation for painful procedures in childhood cancer: The family's perspective. *Arch Dis Child* 2003;88(3):253-7.
18. American Academy of Pediatric Dentistry Guideline on informed consent. *Pediatr Dent* 2011;33(6):285-7.
19. American Academy of Pediatrics Committee on Bioethics. Informed consent, parental permission and assent in pediatric practices. *Pediatrics* 1995;95(2):314-7.
20. Royal College of Nursing. Restrictive physical intervention and therapeutic holding for children and young people. Guidance for nursing staff. 2010. London: RCN. Available at: "http://www.rcn.org.uk/__data/assets/pdf_file/0016/312613/003573.pdf". Accessed April 1, 2013.
21. McGrath P, Forrester K, Fox-Young S, Huff N. "Holding the Child Down" for treatment in paediatric haematology: The ethical, legal and practice implication. *J Law Med* 2002;10(1):84-94.
22. Runeson I, Hallström I, Elander G, Hermerén G. Children's participation in the decision making process during hospitalization: An observational study. *Nurs Ethics* 2002;9(6):583-98.
23. Choate BB, Seale NS. Current trends in behavior management techniques as they relate to new standards concerning informed consent. *Pediatr Dent* 1990;12(2):83-6.

24. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Making Healthcare Decisions. Vol. 3 (Appendices, Studies on the Foundations of Informed Consent). Washington, DC: U.S. Government Printing Office; 1982:1-35, 63-81, 117-42, 193-251.
25. Sfakis P. A duty to disclose: Issues to consider in securing informed consent. *J Am Dent Assoc* 2003;134(10):1329-33.
26. Frankel RI. The Papoose Board and mothers' attitudes following its use. *Pediatr Dent* 1991;13(5):284-8.
27. Southern Association of Institutional Dentists. Managing maladaptive behaviors—the use of dental restraints and positioning devices. Self-study course; Module 6: 1-24. Available at "http://saiddent.org/admin/images/03567700_1339447006.pdf". Accessed April 1, 2013.
28. Fenton SJ. Revisiting the issue of physical restraint in dentistry. *Spec Care Dentist* 1989;9(6):183.
29. Nunn J, Foster M, Master S, Greening S. British Society of Paediatric Dentistry: A policy document on consent and the use of physical intervention in the dental care of children. *Int J Paediatr* 2008;18(suppl 1):39-46.
30. Vessey JA, Carlson KL, McGill J. Use of distraction with children during an acute pain experience. *Nurs Res* 1994;43(6):369-72.
31. Fein JA, Daugherty RJ. Restraint techniques and issues. In: King C, Henretig FM, eds. *Textbook of Pediatric Emergency Procedures*, 2nd ed. Philadelphia: Pa. Lippincott Williams and Wilkins; 2008:15-22.
32. Weddell JA, Sanders BJ, Jones JE. Dental problems of children with special health care needs. In: Dean JA, Avery DR, McDonald RE, eds. *McDonald and Avery's Dentistry for the Child and Adolescent*, 9th ed. Maryland Heights, Mo. Mosby Elsevier; 2011:460-86.
33. Weber DA, Reynolds CR. Clinical perspectives on neurobiological effects of psychological trauma. *Neuropsych Rev* 2004;14(2):115-29.
34. Spreat S, Lipinski D, Hill J, Halpin ME. Safety indices associated with the use of contingent restraint procedure. *Applied Research Mental Retardation* 1986;7(4):475-81.
35. Adair SM, Durr DP. Modification of Papoose Board® restraint to facilitate airway management of the sedated pediatric dental patient. *Pediatr Dent* 1987;9(2):163-5.