

MANAGING MALADAPTIVE BEHAVIORS

The Use of Dental Restraints and Positioning Devices

Purpose of this Module

This module is designed to provide a comprehensive view of dental restraints and positioning devices. The emphasis is on the treatment of the severely/profoundly developmentally disabled individual, but the information could be applied to pediatric, geriatric or psychiatric individuals.

Learning Objectives

After reviewing the written and videotape materials, the participant will be able to:

1. Define the three types of restraints and give examples of each.
2. Describe at least one physical restraint that should not be used with developmentally disabled patients.
3. Describe one type of positioning device.
4. Describe the process for determining the need for restraints and discuss five criteria that may be considered in the process.
5. State three areas of law that may apply to restraints.
6. Discuss three elements of informed consent.
7. Contrast the professional community standard with the reasonable patient standard.
8. Document restraint usage.
9. Describe two ethical issues that may be associated with restraint usage.
10. Prepare a comprehensive restraint policy.
11. State at least five issues that should be addressed in staff training on restraints.
12. Describe the infection control procedures that should be used with intraoral restraints.
13. Discuss the psychological effects of restraints on developmentally disabled individuals.
14. State at least four physical injuries that could occur when restraints are employed.
15. Demonstrate or describe the correct application of the Molt® mouth prop, McKesson® bite block, Papoose Board®, and wrist bracelets.

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INTRODUCTION

Individuals who are disabled deserve quality dental services limited only by their ability to benefit from and tolerate dental treatment. If maladaptive behaviors are demonstrated in the dental treatment environment, the behavior must be addressed and the delivery of care must be managed to meet the person's needs. For some patients, less restrictive behavior modification techniques such as repetition of instruction, verbal reinforcement, and visual cues are quite effective (see Module 2). Many of these behavior modification techniques are routinely used by most dentists. However, many of these techniques are of little value in managing severe maladaptive behaviors that threaten the safety of the patient and dental staff. To manage these behaviors, dental personnel must resort to more restrictive techniques such as restraints, conscious sedation, or general anesthesia.¹ Without these more restrictive management techniques comprehensive dental services for some disabled people would be impossible.^{1,2}

The decision to employ these behavior management techniques is influenced by other concerns in addition to the patient's dental needs. Rising malpractice premiums, recent litigation, public perception, and professional guidelines, all affect the techniques used to manage maladaptive behaviors.

The information presented in this module is one approach to the use of restraints and should not be interpreted as the standard for all circumstances. Each practitioner must follow the standards and guidelines specific to his/her locality.

PHILOSOPHY OF USE

The goal in dental treatment for the disabled individual is to treat the patient in the safest and most efficient manner.³ Thus, restraints used in the dental environment should never be used for the convenience of the dentist and staff, but must be employed for the protection of the patient.^{1,4-9} Restraints are effective in managing unwanted physical movements in physically handicapped, in

mentally handicapped, and in psychiatrically impaired patients who exhibit difficult behavior and with whom normal communication cannot be established.¹⁰ Restraints should never be used as punishment,^{1,4-16} or as a substitute for psychologic management of the patient.¹² In addition, restraints should have the lowest possible potential to cause physical injury,^{4,9,11,16} should be the least restrictive alternative,^{4-7,16} and should be used only with informed consent^{1,4-7,9,11,17-21} and proper documentation.^{1,4-7,9,17,21} Dental restraints are temporary and specifically limited to the provision of dental care and are not analogous to general behavioral restraints.¹

DEFINITIONS

Dental restraint can be broadly defined as any form of restriction of movement by a patient in the dental environment.^{1,6,8,22} A dental restraint has the following characteristics:

1. short duration (only the time it takes to complete a dental appointment);
2. limits movement of the head, body, and/or extremities;
3. prevents injury to the patient and/or dental staff during the procedure;
4. generates enough physical control to allow dental staff to complete needed dental services;
5. is usually well tolerated by the patient.²²

A dental restraint may be physical, mechanical, chemical or a combination of these types of restraints.

Physical restraint is often called personal restraint and refers to one person physically holding another person's trunk, head and/or extremities.^{4,6,23} Examples include head holds, hand guarding, therapeutic holds, Hand-Over-Mouth-Exercise, and Hand-Over-Mouth with Airway Restricted. Please refer to accompanying video for a demonstration of these techniques and the next section for descriptions.

Mechanical restraint refers to the use of mechanical devices^{4,6,23} which assist the patient in remaining properly positioned during the

course of dental treatment. Examples include Papoose Boards®, Pedi-Wraps®, sheets, straps, seat belts, towels, wrist bracelets, vests, and mouth props. There are many types of mouth props such as the Molt® mouth prop, McKesson® bite block, tongue blades wrapped together with adhesive tape, metal finger guards, acrylic bite blocks and Open-Wide® mouth props. Please refer to the accompanying video for demonstration of these mechanical devices and the next section for descriptions.

Chemical restraint (conscious sedation) is also called pharmacological restraint and refers to the use of a sedative or other drug to manage a patient's movements. In addition, conscious sedation usually requires mechanical and/or physical restraints to effectively manage a patient's movements. Drugs alone are not likely to restrain a patient.⁴ Please refer to Module 5 for more information.

Positioning devices or immobilizers, are protective supports for handicapped patients used during the period of dental treatment. These devices offer the benefits of comfort to the patient and to the dental operator and increased stability for the patient.²⁴ Examples include wheelchair head supports, bean bags, instant form immobilizers, pillows, towels, and wheelchair lifts. Please refer to the accompanying video for demonstration of these devices and the next section for descriptions.

Combinations of physical, mechanical or chemical restraints, or positioning devices may be used as long as they are the least restrictive alternatives. For example, physical restraint may be required for the application of a mechanical device. Likewise, physical restraint may be required to restrain a portion of the body that is not restrained by the mechanical device.²⁵ The accompanying video demonstrates combinations of physical restraint, mechanical restraint, and stabilizers.

TYPES OF RESTRAINTS

Following is a description of examples of physical restraints, mechanical restraints, and stabilizers used by dental staff in treating the disabled individual. The demonstration of each can be found in the accompanying video. The purchasing information on the commercially available products can be found in Appendix A.

Physical Restraints

Head holds — Often side-to-side head movements can be controlled by firmly cradling the patient's head between the operator's upper arm and chest. This allows hands to be free to perform movements necessary in completing dental treatment.^{8,26} In addition, this position may give the patient a sense of security and permits the operator to "feel" the tenseness of the musculature so as to be able to anticipate quick movements that could cause injury to the patient or operator.¹³

Some head movements cannot be controlled by the operator cradling the patient's head. These movements may require another staff member to physically hold the head.²⁶ One method of controlling head movements in highly resistive patients is to have one staff member sit or kneel behind the patient's head and firmly secure the head between the forearm and hands. The fingers are curled under the ear lobes to keep them out of the treatment field but the ears are not used to hold onto. When the patient relaxes his/her head, the staff member relaxes the grip but remains in position to control sudden head jerks. Please refer to Appendix B for steps for implementation of this technique.

Hand guarding — Hand guarding refers to the gentle prompting of a patient's hands back in place on the armrests of the dental chair or the blocking of hands if raised to the mouth.²⁵ It is a type of physical restraint that is more of a passive touch than an active hold.²⁷ Hand guarding is often used by the dental assistant while the dentist is administering local anesthesia or performing surgery.^{8,28}

Therapeutic holds — Bodily movement of patients can be controlled by a technique known as a therapeutic hold. It is a type of physical restraint which is protective and controlling in nature and assists in managing individuals who may be slinging arms or kicking.²⁹ To place a therapeutic hold on a patient's arms, cross the patient's arms at the hip or waist level and grasp the wrists firmly. Keep the patient's hands tightly secured to the sides to prevent scratching. To place a therapeutic hold on a patient's legs, cross the legs at the ankles and grasp the ankles firmly. When a therapeutic hold is placed on the ankles, either physical or mechanical restraint must also be placed above the knees to prevent buckling up of the knees by the patient. Therapeutic holds in the dental environment are usually accomplished by

a third person in addition to the dental operator and chairside dental assistant. Frequent checks should be made of the patient's circulation to hands, fingers, and feet. The hold should be adjusted when the patient relaxes or calms down.

Hand-Over-Mouth Exercise (HOME) — HOME is a physical restraint technique used on hysterical patients who are screaming, crying and totally immune to verbal communication. The dentist places a hand firmly over the patient's mouth and calmly explains to the patient that the hand will be removed as soon as the appropriate behavior begins.^{21,30,31} The objectives of HOME are to gain the patient's attention and to eliminate the patient's inappropriate avoidance responses.²¹ It should only be used on patients who are able to understand and communicate and therefore has little use for the patients being discussed in this module.^{17, 21,28,30-32}

Hand-Over-Mouth with airway restricted (HOMAR) — HOMAR, or Hand-over-mouth with airway restricted, is a technique that was used in the past on patients when additional applications of HOME were unsuccessful. This type of physical restraint required the dentist to place a hand over the patient's mouth with the thumb and forefinger lightly closing the nostrils. Fifteen seconds was the maximum length of time the nostrils were closed. When the patient started to cooperate, the dentist's hand was removed.³⁰ The objectives were the same as those for HOME. There is little support for use of this technique for any patient, and it has no place in the care of patients discussed in this module.

Mechanical Restraints

Mouth props

Mouth props are often necessary for dental treatment of disabled patients because many lack the ability to keep their mouths open or are unwilling to do so.¹⁰ Mouth props are mechanical restraints that protect the patient from injury that could occur during sudden and unexpected closing of the mouth. They also improve access and visibility for the dental practitioner,¹⁴ and protect the practitioner from injury.^{9,14,15} Many devices are available commercially and others can be easily fabricated.

Molt® mouth prop — Most practitioners prefer the adjustable Molt® mouth prop over others.^{14,33} This scissors-type mouth prop is commercially available in adult, child and infant sizes. The metal

blades must be covered with a soft material, such as surgical rubber tubing, to prevent damage to the teeth and soft tissues. The patient is able to remain open by biting against the rubber covered blades. The Molt® mouth prop gives the dental practitioner the most positive control over mandibular movements and can also be used to open the mouth wider if necessary.⁸ The dental practitioner and assistant must stabilize the prop in the mouth by holding the prop close to or against the patient's face.^{12,15,34-36} In addition, the blades of the prop must be kept on posterior teeth to prevent subluxation of anterior teeth, soft tissue lacerations,^{8,12, 15,26,36} or injury to the operator's hand.³⁶ Minor traumas may occur, such as an imprint of the mouth prop on the cheek. This may be prevented by placing a gauze between the prop and the cheek. Trauma to the lip or corner of the mouth may occur if the patient moves during insertion. Any type of trauma caused by a mouth prop should be reported to the patient's caregiver. A disadvantage of the Molt® mouth prop is its expense.²⁶ *Molt® mouth props should not be used by non-professionals such as technicians in the patient's living unit.*

McKesson® bite block — The McKesson® bite block is another commercially available mouth prop. This wedge shaped rubber block can be placed between the posterior teeth distal to the canines. The dental practitioner or dental assistant should use a finger to hold the prop in place and to stop the patient from pushing the bite block forward with the tongue.³⁴ Dental floss should be attached to the mouth prop to prevent the block from being swallowed and for easy removal.^{8,9,15,26,33} If bib clips are used, the floss can be attached to the clip to keep the prop from falling onto the floor.⁸ McKesson® bite blocks are available in five sizes: edentulous, large adult, adult, child, and pedo. Most practitioners are more successful in using this prop on children than adults, since adults tend to open wider than the prop opening and dislodge the prop.³⁵ This prop is more likely to be used for the cooperative patient who has difficulty keeping his/her mouth open or with patients under general anesthesia.

Tongue blades — Tongue blades wrapped together with gauze and secured with adhesive tape provide a simple mouth prop.^{8,9,12,15,26,34,36} In addition to easy fabrication, this type of mouth prop is inexpensive and can be customized for the amount of bite

opening that is desired.⁹ The mouth can be opened wider by placing the tongue blades further posteriorly.⁸ This type of mouth prop is used more on residential living units or at home. Heavy prying or wedging forces may cause the tongue blades to splinter and may result in soft tissue lacerations.³⁵ They should be discarded after a single use.

Open-Wide® Mouth Prop — The Open-Wide® mouth prop is a relatively new commercially available prop.⁹ It is available in two sizes, small and large. The prop itself consists of a soft durable foam head attached to a tongue blade-like handle. It is inexpensive enough to be disposable, easy to use, and applicable to professional as well as home use. The Open-Wide® mouth prop is very helpful with small, fragile patients.

Other Mouth Props — In addition to the previously mentioned mouth props, an acrylic bite block fashioned similar to a McKesson® bite block can be custom made for patients. Collapsible stainless steel finger guards that were once available commercially, and metal tailor's thimbles can also be used as mouth props.^{12,15,26,33,34,36} All are hard and can damage teeth, or slip and damage the clinician's fingers. Rubber door stops and rubber dog toys have been used by some practitioners for mouth props but are regarded by most as stigmatizing and offer little advantage over the McKesson® prop. Plastic evacuator tips are contraindicated for use as mouth props due to possible splintering. Stainless steel evacuator tips may damage teeth and are not recommended.³⁵

Papoose Board®

The Papoose Board® is a commercially available rigid board with soft canvas body wraps held by Velcro® that crisscross over the patient.^{8,11} It is available in three sizes: regular for children ages 2 to 5 years, large for children ages 6-12 years, and extra large for teenagers and adults.^{8,14} A removable head stabilizer may be attached to the rigid board.^{9,26,37} Many practitioners find the head stabilizer to be bulky and ineffective in controlling head movements. The Papoose Board® itself is very effective in restraining torso and extremity movements.^{14,34} Many dental practitioners who treat disabled patients consider the Papoose Board® to be the only device capable of controlling larger patients.⁸ The Papoose Board® is somewhat costly (see Appendix A for cost and purchasing information), but is a good investment for the institutional dental clinic. The heavy

canvas straps may make a struggling patient hot,^{8,37} and make it difficult to monitor respirations.²⁶ In addition, its rigid form does not conform to the curvature of some dental chairs^{26,37} leaving an unsupported area between the board and the chair. Books or pillows may be used to help support the board in these instances.

Pedi-Wrap®

Another commercially available full body restraint is the Pedi-Wrap®. It consists of open weave nylon mesh that completely encircles the child patient and fastens with Velcro®.^{8,9,11,34} It is designed to fit children from infancy to about ten years and is available in three sizes: small, medium, and large.^{8,9,11} Its light material diminishes the possibility of overheating.^{5,8,9,15,26,28,34} Many very young children might feel more secure when wrapped in the Pedi-Wrap®.^{12,34,36} This may be because of an association between the Pedi-Wrap® and a blanket.³⁴ The nonrigid form of the Pedi-Wrap® allows children to be treated in either an upright or reclining position. On the other hand, its lack of rigidity is also its chief disadvantage. This can be overcome by adding a belt or strap to help keep the patient in the dental chair.^{8,26} Its cost is another disadvantage even though it is considerably less than the Papoose Board®.²⁶

Sheets

A bed sheet wrapped around a patient has been shown to be an effective and inexpensive restraint for torso and extremity movements.^{8,12,13,15,26,34,38} One method is to have the patient stand with hands pressed to the sides and wrap the patient in the sheet from the shoulders to the ankles.³⁸ The sheet is then secured with tape that is easy to cut. Another method is to wrap the patient with the bed sheet in a mummy-like fashion and fasten the ends with large safety pins.⁸ This procedure is not usually frightening and may even provide patients with a sense of security.

Straps and Seat Belts

Automobile seat belts^{8,12,15,34} and straps of canvas,^{33,36} vinyl,⁸ Velcro®, or other materials may be used to maintain patients in the proper chair position. Straps or seat belts may be placed around the waist and under the patient's arms to secure the torso to the back of the dental chair. A concern in this case is that they not interfere with the patient's breathing or the chair controls. Straps or seat belts may also be used to secure the patient's legs to the

dental chair, in which case, the device should be placed above the knees to prevent buckling up of the knees by the patient. The familiar automobile seat belt and Velcro® strap tend to be easier to remove, less stigmatizing, and less frightening than other belts or straps. Seat belts and straps may also be used in conjunction with mechanical restraints such as the Papoose Board® and Pedi-Wrap® for safety purposes. This will be demonstrated in the video.

Towels

A simple restraint device is to wrap the patient's arms in a towel, then wrap adhesive tape around the towel and finally tape the arms to the chair arm rests.^{8,26} The same procedure may be used to restrain the patient's legs against the base of the dental chair. Care should be taken not to use adhesive tape that may remove the vinyl covering of some chairs. A folded towel placed on a patient's forehead and held by a dental assistant standing behind the dental chair, can limit minor head movements. This is a good example of a combination of a physical (dental assistant) and mechanical (towel) restraint. When the folded towel cannot be held such as during radiographic procedures, the towel may be taped to the dental chair.

Wrist Bracelets

Soft cloth straps may be wrapped around the patient's arms and tied once, and then attached to the dental chair, wheelchair, or stretcher.¹⁵ Velcro® alone is usually ineffective in restraining strong arm movements. However, when combined with a buckle, even the strongest arm movements can usually be limited (see Appendix C for more information). There are some commercially available extremity holders, many of which add synthetic fur or foam for the patient's comfort (see Appendix A for purchasing information).

Vests

Vests are commercially available which may be used to restrain a patient to a bed, wheelchair, or even a dental chair. The vests may be purchased in several types of washable materials in sizes small, medium, and large (see Appendix A).

Positioning Devices

Many disabled individuals are wheelchair bound, requiring extra personnel to move them to the dental chair. The transfer, itself, can pose hazards to both the staff and the patient.⁴ For some patients, the

wheelchair is a familiar physical environment, especially the modified wheelchair. By providing dental treatment for them in their wheelchairs, their general sense of security is increased and the threat of anxiety stemming from sudden changes is decreased.³⁹ For these patients the positioning device provides support and offers comfort during dental treatment. However, for the dentist treating the patient in the wheelchair, particularly those chairs with high and wide backs, lengthy procedures may place intolerable strain on the dentist's back. It may be more practical for the dentist to transfer the patient to the dental chair for lengthy procedures. When the patient is moved from the wheelchair to the dental chair, positioning devices once again may be helpful.

Wheelchair Head Supports — Wheelchair head supports that can be installed quickly on the handles of a wheelchair are available commercially.^{11,15} The major disadvantage of the manufactured device is cost (see Appendix A). Some practitioners have adapted a headrest from a dental chair to a tubular attachment similar to the commercially available device.⁴⁰ Others have fabricated mounting brackets that are fixed to the wall and which will accommodate adjustable slide-in headrests when needed.⁴¹ An even less expensive wheelchair head support can be fabricated from plywood and padding. This T shaped device can be inserted between the patient's back and chair back and held in position by the pressure of the patient.⁴²

Bean Bags — Several authors have described the use of simple bean bag chairs for support and stabilization of the disabled patient.^{9,15} A bean bag chair may be placed in the reclined dental chair and the patient may then be placed on the bean bag. The beans will conform to the patient's body as the patient settles into the position that is most comfortable.⁹

Another option is to purchase a bag of replacement beans and fabricate several bean bags of various sizes. A long neck-roll and a standard bed pillow are useful sizes of bean bags that can be placed behind the head of the rigid patient. When fabricating bean bags, an inner bag should contain the beans and be covered by an outer bag of a vinyl-like material that can be easily cleaned.

Instant Form Immobilizers — Splinting appliances used in orthopedic medicine have been modified for use during dental treatment as positioning

devices. Several authors have described the use of these appliances.^{9,13,24,43} The device consists of a rubberized vinyl bag partially filled with small plastic beads and a vacuum source to evacuate the air. The result is a customized molded form. The bags are commercially available in ten different sizes and shapes. Bags may be placed on the patient's wheelchair or stretcher, the dental chair, or the operating room table. A hand pump, high volume evacuator, surgical suction, or saliva ejector may be used as a vacuum source.²⁴ The bags can be reused by breaking the vacuum which returns them to their soft moldable state. Their main disadvantage is cost (see Appendix A).

Other Positioning Devices — Bed pillows or sandbags can be used as stabilizers for a patient's head or torso and can fill in the space between the body and the dental chair. For the patient who has difficulty in supporting his head, towels or sheepskin pads may be rolled up to provide support.¹¹

There are commercially available wheelchair lifts (See Appendix A) that tilt the wheelchair to a reclining position for the patient who must remain in the wheelchair for dental treatment.¹⁵ A less expensive alternative to purchasing a wheelchair lift is to fabricate wooden lifts that fit under the small front wheels of the wheelchair. By placing the small wheels in these wooden "boxes" the wheelchair can be tilted approximately 25 degrees to the posterior.⁴⁴

CRITERIA FOR SELECTION

Patient management techniques for dental procedures should be the least restrictive alternative, or that technique which is the least intrusive available from a hierarchical system of treatment options. This system includes psychologic management, physical and mechanical restraints, followed by inhalation sedation, oral sedation, intramuscular sedation, intravenous sedation, and finally progressing to general anesthesia.³² Treatment preferences should usually be given to techniques that are the least restrictive.⁴⁵ However, this should not be interpreted to mean that one is required to proceed through the hierarchy of treatment options in all cases.^{4,45,46} In an emergency situation, the time factor does not permit progression through the hierarchy.^{8,46}

If restraints are indicated they should be placed on the patient before the patient becomes upset and unmanageable. The important point is that there is no

single technique for treating all patients, and specific problems should be anticipated and handled on an individual basis.^{3,11,28,32} Each patient must be evaluated each time to determine an acceptable level where treatment can be successfully and safely rendered.²⁵ The practitioner must evaluate all relevant patient variables to determine the technique that balances presumed risks and presumed effectiveness.^{21,45} The risks of general anesthesia usually outweigh the benefits for the resistive patient who requires only prophylaxis, periodic exams, or minimal restorations.^{5,16} Other professionals such as psychologists, social workers, physicians, or nurses may need to be consulted for additional information,⁴ but not for decisions or approval. *The choice of treatment options is the responsibility of the dentist.*

Behavior

Physically resistive behavior interferes with the safe, effective delivery of dental services. The majority of mentally retarded patients do not exhibit maladaptive behavior in the dental environment. However, for the 30% of the mentally retarded population in general or for the estimated 60% of the institutionalized mentally retarded population who do, the dental practitioner must be prepared.^{10,35} The patient who displays hyperactivity, aggression or similar behaviors in the waiting room will more than likely display these behaviors in the dental treatment area. The same holds true for the patient who displays maladaptive behaviors in similar situations such as physical exams, blood drawing, or nail cutting. These behaviors are signals to the dental practitioner to consider behavior management techniques from the hierarchical system of treatment options. For the extremely aggressive patient, the safest procedure may be the immediate use of physical and/or mechanical restraints. For the mildly agitated patient, psychological techniques should always be attempted first, followed by others, depending on their success or failure.³ For example, if behavior modification corrects the maladaptive behavior, there is no need for restraints or sedation.²²

For patients where communication is severely impaired such as some autistic individuals, behavior modification techniques should be attempted first. However, when oral disease is extensive or urgent there is insufficient time for these techniques. In these cases restraints, sedation and general anesthesia are reasonable options.⁴

Behavior within the dental environment can vary from appointment to appointment, and within the same appointment. However, past dental behavior is a good indicator for the need for restraints. If arm and leg movements have been a problem in past dental appointments, then the practitioner should be prepared to mechanically restrain the limbs.⁸ Treatment should first be attempted with no restraints unless there is a history of unpredictable, violent behavior which could be dangerous to the patient and/or staff. Otherwise, serious injury could result before the decision to restrain is made. If movements occur, the least restrictive restraint, i.e. physical holding of extremities should be the next course of action. If arm movements become continuous, mechanical restraints such as wrist bracelets should be considered. If whole body movements begin, the operator may need to place the patient in a full body wrap such as a Papoose Board®. This example follows the progression from less restrictive to most restrictive behavior management techniques.

Where indicated, for physically resistive patients, restraints should be used without reservation.^{2,21,26,47,48,49} It may even be considered negligence in respect to both patient and operator safety for a dentist to provide dental treatment to a very resistive patient without the use of restraints.²

Medical and Physical Conditions

The medical and physical conditions of the patient may contraindicate the use of some behavior management techniques.^{3,4,21,25,32} For example, general anesthesia poses certain risks, particularly for those patients with severely compromised respiratory functions.³ These patients may have to be treated using restraints, or a combination of restraints and conscious sedation. However, restraints and conscious sedation may also pose risks for these patients but in some cases may be a lower risk than general anesthesia. Deep sedation and general anesthesia may be contraindicated for patients with moderate or severe scoliosis, due to the respiratory abnormalities associated with these conditions.⁴

Many institutionalized patients have physical abnormalities that must be considered in the decision to use restraints. Individuals with spinal cord disorders, scoliosis, or cerebral palsy may require positioning devices during dental treatment.^{4,26} Curvatures of the spine may prohibit the use of full body restraints such as a Papoose Board®. Extremities

may be rigid and fixed in positions that do not adapt well to commercial restraining devices. Atlantoaxial instability (a cervical spine abnormality), found in 10-20% of individuals with Down Syndrome, mandates caution in extending the neck.⁴ Many cerebral palsy patients should not be placed in a completely supine position (in order to minimize difficulties in swallowing).²⁶ For these types of individuals the rigid Papoose Board® could pose problems. Modifications of mechanical restraints or the use of physical restraints alone may be indicated. Small, fragile patients must also be cautiously positioned to insure airway maintenance.

Physical disabilities may actually dictate the use of restraints. For the cerebral palsy patient with spasticity or athetosis (uncontrollable slow twisting, writhing movements), restraints can provide stability and assistance in cooperating with dental treatment.^{4,26}

Dental Treatment Needs

One very important determinant in the decision to use restraints is the amount of dental treatment required by the patient.^{3,9,21,32,34} Resistant patients with rampant decay might best be treated under general anesthesia on a one time visit as opposed to several long appointments.^{3,26} Individuals with minimal dental needs requiring brief appointments might best be stabilized with restraints rather than general anesthesia or sedation.^{3,5,16,38,48} As previously stated, emergency dental treatment needs often necessitate restraints. In these situations time does not permit other techniques to be attempted.

Cognitive Functioning

The degree of management difficulty in the dental environment is usually inversely proportional to the level of cognitive functioning.⁴ Also, individuals with severe/profound mental retardation will not generally profit from behavior modification techniques due to their severe cognitive and communicative deficits. Most practitioners agree restraints are more frequently indicated for this group;^{3,4,21,26,34,38,50} however, an individualized approach is always preferred. The practitioner should not assume that because a patient is severely/profoundly retarded that dental management problems are always to be expected or that the need for restraints is inevitable. One very important reason restraints are needed in patients with cognitive deficits is the impulsive nature of their movements.

Age

Very young patients have difficulty understanding and often need help in controlling their extremities. With these small patients, movements can many times be controlled through physical restraint by the caretaker or dental assistant.²⁶ Mechanical restraints are not used as often for dental treatment in patients under the age of two. However, restraint is a valid treatment modality in many young patients.^{8,21,26,47,49}

Cost of Alternative Methods

Another determinant in the selection process for restraint usage is the economic expense of other alternatives.^{3,9,50,51} When indicated, most institutionalized severely disabled patients are able to obtain dental treatment under general anesthesia. However, for many patients residing in the community, the use of general anesthesia for dental procedures is not a realistic option.⁵⁰ Many health plans do not cover general anesthesia for dental treatment. If the family is unable to bear the costs, the alternatives are to not treat the patient or to use restraints and/or sedation. With the increasing costs associated with the use of both oral and parenteral sedation and general anesthesia, restraints may be the safest and most cost effective method of providing dental treatment to some patients.⁹

Sedation

Restraints are indicated for sedated patients to prevent harmful reflex movements and to provide safety.^{5,8,28,38,47,49,51} Wrist bracelets may be needed to prevent the sedated patient from placing his arms behind his head. A full body restraint, such as a Papoose Board® or PEDI WRAP, may be useful in keeping the patient from rolling over on his/her side. In any case, straps or seat belts should be used to prevent the patient from falling from the chair.

Protection

The need to protect the patient and dental staff from injury during dental treatment is a valid justification for restraint usage.^{2,5,8,17,21} As previously stated, dental staff and patients themselves should not be placed at risk by strict requirements for progression through the hierarchy of treatment modalities. If a patient has consistently shown resistance to dental procedures or a history of assault against those providing other treatment, then sharp instruments should not be utilized until potentially hazardous movements are controlled.²

The emergence of HIV infection and the long standing risk of HBV infection has created new challenges for patient and staff protection in the dental setting. The possibility of blood borne infections has led to new infection control standards that require thorough investigation of exposure incidents involving sharp instruments. To avoid restraints and subject staff to possible risks of infection in known resistive patients is inconsistent with accepted professional standards.

External Forces

Many external forces play a role in behavior management techniques dentists choose. Rising malpractice insurance costs for those using sedation have forced many practitioners to change their sedation usage.^{48,51,52} More stringent sedation guidelines that include training requirements, additional personnel, and costly monitoring equipment (such as the pulse oximeter) have also led to a reduction in sedation usage.^{5,16,48,50-52}

Recent legislation in several states regarding restraints has led to limitations in restraint usage.^{47,48,52,53} However, recent surveys have shown that the rate of use of restraint techniques (excluding the use of HOME and HOMAR) has changed little.⁴⁸

Another factor that has influenced the use of restraints in the dental environment is the public's perception of restraint.^{2,16,48} Often dental restraints are confused with general behavioral restraints. Images of patients tied to beds or chairs for long periods of time evoke negative connotations of restraints for the average person. The result may be limitations on restraint usage by human rights advocates and governmental agencies.^{2,16}

Closely related to the public's perception of restraints are parental attitudes. Papoose Boards® have been found to be unacceptable in some surveys of parental attitudes toward management techniques.^{50,54-56} Even though the use of Papoose Boards® may be objectionable to some, their use in an institutional setting is often mandatory. Their usage should be fully explained to parents or guardians when requesting consent. The acceptability of management techniques by parents has been shown to be dependent on the nature of the dental procedure. If the procedure is perceived by the parent to be more urgent and needed for the patient's well-being and comfort, more restrictive techniques become acceptable. Thus, there appears to be a

hierarchy of approval of management techniques by parents.⁵⁴⁻⁵⁶

In summary, as a result of external forces such as rising costs of malpractice insurance, stricter sedation guidelines, state legislation, public perception and parental acceptance, some dentists have been forced to modify their restraint practices. In spite of these forces tending to limit the use of dental restraints, their use is still indicated and acceptable for many patients with severe handicapping disorders.

LEGAL ISSUES

Applicable Laws

Constitutional Law — Several areas of law may impact the use of restraints in the dental treatment of the disabled patient. Constitutional laws are derived from the Constitution of the United States and endow every person in the US with certain inalienable rights.⁵⁷ The Fifth Amendment to the Constitution is often referred to as due process of law and provides that no person shall be deprived of life, liberty, or property without due process of law.⁵⁸ Disabled patients cannot be deprived of liberties if resistive, regardless of whether they are involuntarily or voluntarily committed to an institution, or treated in a private dental office. Protection for individuals with diminished capabilities is guaranteed by the due process clause.^{5,57}

Due process of law attempts to strike a balance between individual interests and government interests.⁵⁸ Committed individuals have a constitutional right to adequate health care.^{5,57} However, are personal liberties violated when an individual is temporarily restrained during dental treatment to protect the dentist and the individual from injury? The balancing test of individual interests vs. government interests must be applied to answer this question.

From the individual's standpoint, if dental care is withheld due to the individual's resistive behavior, the individual's constitutionally guaranteed right to adequate medical care may have been violated.⁵ Failure to treat dental needs can lead to pain, loss of teeth, loss of self esteem, and death. If the individual is restrained, then his personal freedoms are denied.

From the government's standpoint, early treatment is in its best economic interest.⁵ To add to the dilemma, for many institutions regulated by the federal government, funds can be withdrawn if dental ser-

vices are not provided to all residents of the facility.² Most would agree that curtailment of an individual's liberty interests is minimal and temporary, and would recommend the selective use of restraints in the dental care of the disabled.⁵ The benefit of good dental care outweighs the concern for individual rights in some instances.

Due process is not a fixed concept but varies with time, place, and circumstance.⁵⁸ The Constitution only demands that professional judgment be exercised when the question of liberty interests arises.⁵

Federal Law — All long term care facilities that receive federal funds are mandated by federal statutes to provide oral health care for their residents.^{2,57} Regulation and monitoring are carried out by federal agencies empowered to revoke funds if noncompliance exists.² To meet the requirement of oral health care services for all residents, restraints are necessary in some instances. Federal statutes have allowed the temporary use of restraints in selected cases for resistive patients; however, the decision to use restraints must be determined by a physician or dentist.⁵

The recent Americans with Disabilities Act, (Public Law 101-336), prohibits discrimination against disabled persons who seek services and employment. Disabled persons include those who are mentally retarded or learning disabled, blind, hearing impaired, wheelchair bound, or those who have AIDS, mental illness or other diseases. The law requires auxiliary aids and services when necessary to serve persons with disabilities unless the procurement of those aids would result in "undue burden".⁵⁹ In the past, a practitioner may have refused to treat resistive patients if restraints were unavailable. Because the purchase of restraints, such as mouth props and Papoose Boards®, would not pose an "undue burden", the practitioner may no longer be able to refuse treatment of resistive individuals on the basis of unavailable aids.

If the disabled person is a "direct threat" or significant risk to the health or safety of others that cannot be eliminated by the use of auxiliary aids, practitioners may refuse treatment. Disruptive behavior such as vocalizations and self-abusive actions are not considered to pose a direct threat to the health or safety of others.⁵⁹ Extremely resistive, uncontrollable hitting, kicking, etc., could cause harm to others. Consideration should be given to treating these indi-

viduals in another setting under general anesthesia. If the practitioner does not have access to facilities that provide these services, a referral should be made to a facility that can accommodate the individual's needs.

Administrative Bodies — Individual states have the power to enact laws through administrative bodies. These standards can be more restrictive than federal laws. Each state varies on the definition of restraint and selection criteria for restraint usage.^{4,5,7,11} In some states, protocols regarding restraints vary among institutions within the state.⁵ One state has developed minimal guidelines for dental restraints in state facilities with the option for each state facility to develop more stringent and comprehensive policies and procedures.⁶ Other states are beginning to develop policies.⁶⁰

A problem occurs when discrepancies arise between the standards of administrative bodies, state statutes, and federal laws.⁵⁷ Recently, one state's Board of Dental Examiners suspended the license of a mental health institution dentist for among other charges "improper use of restraints."⁶¹ Officials at the state level held that applicable state statutes were not violated,^{60,61} but the State Board of Dental Examiners ruled that it was against the standard of care for a dentist "to force an elective dental procedure on a legally competent patient who refused treatment."^{60,61} The lesson to be learned by all practitioners is the importance of investigating the applicable local laws.^{4,5,7,11}

Conflicts also may occur between the rules and regulations of different administrative bodies. The board of mental health, board of dentistry, and various advocacy groups may each have rules and regulations governing treatment for disabled individuals. Each administrative body may issue its own rules and regulations with no regard for the rules and regulations of other administrative bodies. The board of dentistry may promulgate its own rules and regulations and investigate inquiries from other boards and agencies. If the board of dentistry makes a decision against a dentist, the dentist may appeal the decision in an appropriate court of law. A court of law is ultimately the final arbiter in determining the standard of care for treating handicapped patients.⁵⁷ The dentist who treats disabled patients would be well advised to negotiate acceptable guidelines for the use of restraints with various administra-

tive bodies before problems arise.^{2,57,60} Each administrative body must be made aware of overlapping and conflicting rules and regulations.

Criminal Law — Charges of criminal assault and battery for using restraints have been brought against dentists.^{51,53,57} Authorities attempt to show unreasonable and/or unconsented to restraint by the dentist on the patient,⁵⁷ or an unprivileged touching of another person's body.³⁰ The case could also be made for willful nondisclosure if precise consent is not obtained and could justify an award of punitive damages designed to punish the dentist.¹⁸

Unfortunately, criminal assault is not covered by most malpractice insurance policies.^{17,53} As will be discussed in other sections, consent is mandatory for restraints to be used. The use of restraints or any procedure without consent could result in a criminal charge of assault and battery.^{17,18,30,54,62}

Tort Law — A tort is an injury that results by virtue of society's expectations regarding interpersonal conduct.⁵⁸ Standard of care and informed consent are covered by tort law. Malpractice charges may be brought against the dentist who provides treatment below the standard of care, or who fails to obtain informed consent.^{17,57}

If a state has established a standard of care regarding restraints, as it has in one state,^{60,61} and a practitioner fails to adhere to this standard by performing improperly or negligently, malpractice charges may be brought against the practitioner. Practitioners are legally bound to perform to the standard of care in their state.

Informed Consent

Implied vs. Express Consent — Prior to the initiation of any dental procedure, appropriate consent should be obtained.^{1,2,4,6,18-21} As previously stated, failure to obtain informed consent could be both a criminal offense (assault and battery) and a personal tort (a malpractice charge).^{17,18}

Consent may be either implied, or express. Express consent is expressed in words, either written or spoken which unambiguously show intent.^{6,18,58} Implied consent arises from the signs, actions or conduct of an individual that raise the presumption that consent has been given.^{6,18,58} For example, when a legally competent adult seeks routine dental care, consent is implied. Consent is also implied when a parent takes a child to a dental office for routine dental care.^{20,30} Routine dental procedures (restora-

tion, cleaning, etc.) are those procedures the average, reasonable person would expect.²⁰ However, the average, reasonable person may not expect procedures such as sedation, general anesthesia, nitrous oxide, or restraints.^{17,20} Therefore, these special procedures which many people are unfamiliar with, and which carry the potential for misuse, misinterpretation, or adverse reactions, should have express consent.^{17-20,51} Written consent is preferred and may be required at some institutions for any "unexpected" procedure. If properly documented, verbal or telephone consent may be adequate.

Elements of Consent — At least three elements must exist for consent to be legally valid: the first element is the *mental capacity* of the individual to make reasonable decisions.^{6,63} Children less than 18 years of age are considered incapable of making decisions in their best interest and consent must be obtained from their parent or legal guardian.^{4,62} An individual over 18 who has never been adjudicated incompetent by a court, is legally competent in most states.

Legally competent individuals may consent to or refuse treatment.⁶ However, the individual must fully comprehend the information that is presented.⁶² Clearly this is not possible if the patient is *de facto* incompetent. Frequently, disabled adult patients have "compromised" abilities to make decisions regarding their dental care, yet have never been adjudicated incompetent.^{2,64} They may be competent to provide consent in some situations but not in health care issues.⁴ For these individuals, some states allow a guardian to be appointed for medical decisions. Other states allow the dentist to petition the court for permission to perform necessary treatment.² Still other states allow medical decisions to be made by a number of people who have the individual's best interest in mind even though a legal guardian has not been appointed.⁴

It should never be assumed that the administration of the institution has the legal authority to provide consent for the individual who resides in an institution.⁶² If an individual has been adjudicated incompetent, the practitioner can obtain consent from the legal guardian.^{6,62} However, many institutionalized patients who are "incompetent" have not been declared legally incompetent due to uninterested or nonexistent families, or inadequate staffing and support to expedite guardianship proceedings. The

result is failure to provide appropriate dental care because treatment cannot be performed on these "incompetent" individuals who are not mentally able to give valid legal consent.^{61,65} This scenario is not unique to institutional dentistry. The private practitioner who treats disabled rest or nursing home patients, or developmentally disabled patients who reside in group homes or with their parents, must follow the same requirements of valid legal consent.⁶⁵

Needless to say, the determination of who gives consent is a complicated issue that varies from state to state. Legal advice should always be obtained whenever the practitioner is in doubt.^{4,5,63}

The second element that must exist for consent to be valid is that it must be *informed*.^{6,63} The individual giving the consent must have enough information to make an intelligent decision regarding whether to proceed with the procedure.^{6,18,20} Informed consent should include an explanation of the nature, risks, and benefits of the procedure.^{4,6,17-21,62} In addition, information should be provided on the alternative procedures, and the risks of foregoing the procedure.^{4,6,17-21} The person giving consent should have adequate time to make a decision and ask questions.¹⁷

The third element necessary for legally valid consent is that it must be given *voluntarily*.^{6,63} The person giving consent has the right to choose not to proceed with the procedure.⁶ The health care professional may not coerce the person into consenting to the procedure, even if the decision to forego the procedure seems unreasonable to the health care professional.¹⁸ If the practitioner detects any hesitation in the person giving consent, it may be best not to perform the procedure.²⁰

Professional Community vs. Reasonable Patient Standards — As previously stated one element of legally valid consent is that the consent be informed. The question arises as to what specific information a practitioner is required to provide. Two standards of disclosure have evolved in the American courts — the *professional community* and the *reasonable patient* standards. In the past, most states adhered to the *professional community* standard. This standard required a practitioner to make disclosures that the majority of local practitioners would deem reasonable under the same or similar circumstances. Professionals would be held liable for nondisclosure

only if the standard of professional practice was violated.^{18,19,30}

With the increased focus on the informational needs of the average, reasonable patient rather than on professional standards, a new *reasonable patient* or materiality standard has developed.^{18,30} This new standard requires disclosure of all aspects of treatment that the average patient would consider significant.^{18,19,30} The *reasonable patient* standard reflects the societal demand of personal choice in health care matters for patients. It requires express consent for any procedure which may be considered objectionable to the average patient.

What constitutes appropriate practice as perceived by the patient becomes extremely important to the practitioner.¹⁸ With the *professional community* standard, nondisclosure for some behavior management techniques would be reviewed as professionally reasonable and consent would be implied as a part of the general consent to treatment.^{18,30} However, with the *reasonable patient* standard, implied consent would only apply to aspects of treatment that the average person would anticipate and approve, regardless of their acceptance in the professional community.^{18,19,30}

Since previous studies have shown restraints to be unacceptable by many parents,^{17,50,54-56} and the average parent may not even be aware of these management techniques, the new *reasonable patient* standard would require explicit disclosure of any information concerning restraints.^{18,19} If a dentist fails to disclose information a reasonable person would consider material to his decision to accept treatment, malpractice has been committed.³⁰

Many practitioners lack knowledge as to which informed consent standard exists in their state.¹⁹ The best course of action for the prudent practitioner is to practice in a manner that will satisfy the most rigorous informed consent standard. In addition, express consent should be obtained for any procedure that the average person might find objectionable.¹⁸

Emergency Situations — In a true medical emergency, where any delay would endanger the life or health of the individual, treatment can be pursued without consent in most states. However, in most instances dental needs would not be considered true medical emergencies.⁶² If a disabled patient develops a severe abscess with threatened general health, then dental treatment can usually be initiated without

consent. Likewise, if the patient is resistive and it becomes necessary to use a technique such as a physical hold or mechanical restraint to avoid immediate injury to the patient and/or staff during a dental emergency, consent is usually implied.²¹ Only those procedures that are necessary to preserve the life or health of the patient should be undertaken without consent.

It is somewhat ironic that in an institutional setting where the dentist is obligated to provide dental care to the patients, patients may refuse treatment yet the dentist is still responsible for the state of dental health. However, an emergency condition reverses the patient's decision to forego a procedure and allows the dentist to proceed with treatment without the patient's consent.⁶⁶

Other Consent Issues — Competent individuals may consent for themselves and this consent may be written, verbal, or implied depending on the procedure. Individuals who are legally competent may refuse a procedure. If there is a question involving the capacity of a competent institutionalized or out patient to consent to a procedure, it is advisable to seek consultation from the treatment team (or other similarly constituted organization). If a competent patient initially consents to a special procedure such as the use of a mouth prop or wrist bracelet, and then expresses a change of mind during the course of treatment, the practitioner should use professional judgment to suspend the treatment at the earliest opportunity. In most instances, if a patient arrives for a dental procedure with restraints already applied, no additional consent should be required.⁶

The length of time a consent remains valid depends on the type of procedure and the institution. Most consents require renewal at least annually and consent for some special procedures expires at the end of 90 days. Consent in many psychiatric hospitals is valid for the length of hospitalization.

Guardians or competent patients have the right to exclude procedures when giving consent. For example, the guardian could elect to consent to all restraints except for full body restraints. If consent is given for restraint during a dental examination, the same consent could also cover restraints that might be needed for immediate dental treatment found at the time of the examination.⁶

Documentation

The importance of complete and accurate documentation cannot be overstated. Both the consent process and restraint usage must be included in the documentation. For the institutionalized or group home patient, documentation may need to be placed in both the residential chart that accompanies the patient and the patient's dental chart. Requirements will vary from institution to institution. As previously stated, explicit written consent is strongly recommended *prior* to the use of any type of restraint. Information regarding the indications, reasons, risks, benefits of restraints, types of restraints, alternatives to restraints and the consequences of not using restraints should be provided to the legally responsible person or legally competent patient. For most institutionalized patients this consent should be obtained upon admission,¹ and updated annually or according to institutional policy. Consents should be witnessed, dated, and documented. It is advisable to use a separate and clearly labelled consent form for the use of restraints in addition to a general consent form for routine treatment.²⁰ Consent may be withdrawn or refused by the guardian of incompetent patients and minors, or by competent patients. Withdrawal or refusal of consent should be witnessed and documented.

Alternatives attempted prior to using restraints and any related consultations should be documented.⁶ Some institutions require restraints to be authorized with a written order by a dentist or physician on a "Physician's Orders" sheet.^{6,45}

The patient's treatment record, either the residential record and/or the dental record, depending on the institution, might include the following:

1. date of use^{1,6}
2. justification of use^{1,5,6,21}
3. description of the restraint^{1,5,6,21}
4. degree of effectiveness of the restraint^{1,6}
5. duration of restraint^{1,5,6,21}

Any periodic re-evaluation of the use of dental restraints should be documented.

ETHICAL ISSUES

The practitioner who treats disabled patients is often faced with a complex set of ethical issues. Many questions arise concerning the rights of the individual with cognitive deficits and the individual's ability to participate in health care decisions.^{64,67} A

comprehensive discussion on the use of restraints requires consideration of these ethical issues.

One ethical concern is that the patient is in fact incompetent and unable to participate in dental care decisions. The assumption cannot be made that the institutionalized, elderly, medically diagnosed, or legally incompetent patient is dentally incompetent and can not participate in treatment decisions.^{57,64} Often individuals cannot be placed in clear categories of competent and incompetent. They may be incapable of making some decisions, but may be able to express an opinion against restraints and in favor of sedation or general anesthesia. The ethical practitioner must look for the signs and indications that an individual is capable of participating in the decision process and must learn how to more fully empower these persons. Dentists should have a commitment to all patients, regardless of their level of disability, to assist them in participating in treatment decisions.⁶⁴

A second ethical issue arises when the person is truly unable to participate in treatment decisions. How should other responsible decision makers proceed in deciding for the person? Two sets of principles emerge. One principle is to do what the individual would have done if the individual were now capable of making a decision. This concept is based on the person's past actions and values.⁶⁴ For the disabled patient who may have once been competent and is now incompetent, this principle may apply. However, with most institutionalized developmentally disabled patients another principle would apply. The principle of "beneficence" directs responsible decision makers to choose an action that would maximize the patient's well-being.^{57,64}

It is not a simple task to identify the course of action that maximizes the well-being of another. Clinicians often rely upon the standard of care to help them judge the best form of therapy in a given clinical situation. For the compromised individual, treatment must meet the standard of care for the individual's clinical circumstances.⁶⁴ The technical standard of care for restorations and cavity preparations in an institutional setting is the same as in the community.^{2,66} Behavior management techniques such as restraints and sedation are not different but used more frequently in an institutional setting.² Often a person's behavior makes it impossible to place an acceptable restoration without the use of behavior management techniques such as restraints.

An unacceptable restoration placed without the aid of restraints does not maximize the well-being of the patient.

A third ethical issue relates to the dentist's obligation to assume the role of advocate.^{64,66} This advocacy is closely related to the ethical commitment of the dental professional to work for the individual's maximal well-being.⁶⁴ However, there is another component of advocacy that is the dentist's obligation to educate the guardian of an incompetent person. This advocacy may relate to a certain procedure which the dentist feels is in the patient's best interest.⁶⁶ For example, a guardian may refuse restraints and instead request general anesthesia for a disabled patient requiring minimal dental work. It would be the dentist's professional responsibility to educate the guardian on the risks vs. benefits of general anesthesia and restraints.

Finally, ethical consideration must be given to the legally competent individual who has not been adjudicated incompetent, but is clearly suffering from cognitive deficits. If this individual refuses dental procedures, can treatment be imposed against the will of the individual? To impose treatment would deprive the individual of the right to independently make decisions, or to be autonomous. The possible use of restraints and the associated denial of an individual's autonomy must be weighed against the advantages of imposing treatment against the will of the individual. The individual, institution, and dental staff would benefit from early treatment, yet forced treatment would be a denial of an individual's rights. Dentists may find it difficult NOT to intervene since dentistry has trained its professionals to maintain health and comfort by early detection and treatment of problems.⁶⁷ However, the legally competent individual has a constitutionally guaranteed right to refuse treatment.

There are no precise answers to these ethical issues. Individuals must be evaluated at each dental visit.⁶⁴ Practitioners should always bear in mind a competent individual's rights. In addition, the incompetent individual's well-being should always be considered.

ADMINISTRATIVE ISSUES

Policy Implications

Policies, protocols, and guidelines on restraints must be developed to provide safeguards for patients

and to reduce the staff's liability in respect to restraints. It may be the responsibility of the administration of the institution to insure that reasonable standards are in place, however, the dental staff must often assure that this occurs. Consultation with an attorney, appropriate state officials, or the state dental board may be necessary before establishing some office policies.⁵

There are several elements that should be included in the development of policies, protocols, and guidelines on the use of restraints. One of the first considerations should be to formulate a written philosophy that commits to using the least restrictive means of reaching a particular clinical goal.^{45,63} Other elements that should be included are the criteria for selection,^{2,45} consent requirements,^{2,45,63} monitoring^{45,63} and documentation. The written document should define the different types of restraints and give examples.^{2,45} The document author should include an explanation of each type of restraint, and a clinical photograph or illustration if possible. Information on staff training^{45,63} and infection control should also be included in the document. Generally, more complete and inclusive policies will provide better protection for patients and staff.⁴⁵

The document should cite written rules and regulations promulgated by different administrative bodies and agencies.^{57,63} It is advisable to have the document reviewed by a committee of knowledgeable professionals such as a peer review committee and/or the Human Rights Committee.^{45,63} All communities of interest, (e.g. the institution's director, medical director, advocates, and state dental board), should receive copies.^{2,57} By sharing the policy with interested parties, any questions or concerns can be addressed upon receipt of the document.⁵⁷

These policies, protocols, and guidelines should not bias clinicians toward the least regulated procedures or interventions. The practitioner is professionally obligated to use the most effective procedures, rather than merely choosing those that are less regulated.⁶³ (For example, some practitioners may choose to forgo restraints, except for emergency treatment, if policies require extensive report writing and committee meetings.)

Restraint usage should be monitored for compliance with restraint policies. Policies should establish documentation protocols that allow ready retrieval of information related to restraint usage.

Staff Training

Adequate training regarding the clinical use of restraints is essential for the protection of both the individual requiring restraints and the staff implementing the restraint. Staff must be protected from both legal and physical harm. The institution will not be able to legally defend the use of these interventions unless reasonable efforts have been made to train staff.⁶³

All staff involved in implementing restrictive procedures should have adequate training.^{1,6,23,45,46,63,68} Training should be documented and the procedure reviewed with staff on a regular basis.^{6,45} Training should include information on the types of restraints and their correct application, the criteria for selection, applicable laws, informed consent, documentation procedures, infection control procedures, possible risks of restraints, and monitoring requirements. Training could be provided by a knowledgeable individual or a team of experts from various departments at the institution (e.g. advocacy, records, staff development, psychology, etc.) Training could consist of written materials and videos or demonstrations. This module is a good starting point but should be supplemented with information applicable to individual agencies, institutions, and states.

Infection Control Recommendations

Proper infection control techniques protect both staff and patients from acquiring infectious diseases associated with dental care. Any instrument that comes in contact with body fluids (saliva, blood, or urine) must be cleaned and disinfected. Devices that can be sterilized should be sterilized by a method that does not damage the materials.

Both the Molt® mouth prop and the McKesson® bite block can be sterilized by steam autoclave, ethylene oxide, or chemical agents. Because sterilization by chemical agents cannot be monitored biologically, it is not the preferred method of sterilization. Sterilization by steam autoclave or ethylene oxide is preferred. The rubber tubing can be removed from the Molt® mouth prop prior to sterilization, placed in an autoclavable bag along with the Molt® prop and sterilized in the steam autoclave. Or the tubing may be left on the prop during steam autoclaving. (Please refer to appendix D for more information.) One should wet the tubing with water or a lubricant such as petroleum jelly or with ultrasonic cleaning solution to replace the rubber on the metal tips. The

tubing should be discarded when it becomes frayed, sticky or unsightly. One should remove the string or dental floss attached to the McKesson® bite block after each use. New string or floss may be attached prior to sterilization or at the time of use. The Molt® mouth prop and the McKesson® bite block should be kept wrapped or packaged until used.

Tongue blades are disposable and should be discarded after each usage. The Open-Wide® mouth prop can be rinsed with warm water and sent home or to the residential unit with a trained caregiver; however, it is intended to be disposable and should NOT be reused on different patients. Other mouth props, such as custom made acrylic bite blocks, collapsible stainless steel finger guards, and tailor's thimbles, should be sterilized by ethylene oxide or steam autoclave.

The vinyl covered board component of a Papoose Board® may be sprayed with an ADA-approved disinfectant after each use. If the fabric component is contaminated with body fluids, it should be removed from the board and washed with detergent. The fabric portion should be air dried, if time permits. Drying may be accomplished in an automatic dryer, but this method may damage the Velcro® if other fabrics such as terry cloth are dried in the same load. The mesh Pedi-Wrap® should also be washed with detergent and air dried if it becomes contaminated with body fluids.

Sheets, towels, and some wrist bracelets and straps may be laundered in an automatic washer and dryer, unless they have a Velcro® component in which case hand washing and air drying should be employed to prolong the life of the Velcro®. Seat belts or vests with metal buckles should also be hand washed and air dried.

Plastic garbage bags may be used as protective coverings for head supports, bean bags, instant form immobilizers, and pillows. If a device cannot be covered with a protective covering, it should be cleaned and disinfected between patients, or when visibly contaminated with body fluids.

SIDE EFFECTS

Psychological Effect on Patients

Most practitioners agree that psychological trauma is unlikely when restraints are properly used on children of normal mentalities.^{8,18,47,49} If restraints can be used without emotional damage on children of

normal mentalities, then the absence of emotional damage is likely in developmentally disabled individuals.⁸ Restraints may even provide a sense of security to very young children,^{34,36} physically disabled individuals,^{8,36} developmentally disabled individuals,^{8,36} and sedated individuals.¹²

For some developmentally disabled individuals, restraints are a positive reinforcer.^{45,69} These individuals actually appear to enjoy restraint in mechanical devices and will resist their removal. For these individuals, restraint may be associated with physical contact when an individual has been deprived of physical contact.⁶⁹

Mechanical restraints have been suggested to be less stressful to the patient than physical holding by multiple auxiliaries.^{9,12,36} Physical holds may unintentionally signify empowerment,^{12,36} clutter the treatment environment,^{9,12} or allow non-verbal transfer of anxieties from the staff to the patient.⁹ Data on the long term psychological effects of restraints are unavailable.^{49,50} Controlled longitudinal research in this area would be of benefit to both the practitioner and the disabled patients.

Physical Harm to Patients

The use of restraints must be continuously monitored by trained staff to prevent restraint-related injuries to patients.^{1,6,26} The majority of restraint-related injuries consist of minor bruises and scratches, although serious injuries such as fractures, broken teeth, and respiratory distress have been reported.⁶⁸

Studies have shown that mildly and moderately mentally retarded individuals in an institution are at a greater risk of injury from restraints than severely or profoundly mentally retarded individuals.^{23,68} One study has shown higher patient injury rates with the use of physical restraint than mechanical restraint; however, the study does not recommend the uniform use of mechanical rather than physical restraint. Risks are also associated with mechanical restraint. Consideration must be given to the fact that some mechanical restraints cannot be terminated quickly in the event of a seizure or medical complication. The same study reported higher patient injury rates with emergency restraint procedures than with planned procedures.⁶⁸

Precautions must be followed with the use of any restraint either mechanical or physical, emergency or planned. In addition, a restrained individual should

never be left unattended.^{1,6} Many safety considerations have already been addressed in the discussion on the various types of restraints. For example, the Molt® mouth prop must be carefully monitored to avoid subluxation of teeth and soft tissue lacerations. Mouth props should not force the mouth open beyond its natural limits,²⁶ should not be opened beyond the amount required for treatment, and should be removed periodically to prevent fatigue.³² The patient's mouth should be open prior to the insertion of any mouth prop to avoid injury to the temporomandibular joint.⁹

Overheating may result during long periods of restraint with a full body wrap such as a Papoose Board® or bed sheet. Full body restraints require constant supervision to prevent the individual from rolling out of the chair. The rigid design of the small Papoose Board® may not allow extension of the head and neck for airway patency in sedated children. Folded towels may be placed under the neck and shoulders of the individual, or the Papoose Board® itself may be modified with a hinge.³⁷

Any type of strap, belt or tie device must be adjusted so that neither the circulation nor respiration is compromised.³² Temporary nerve injuries due to pressure from restraint buckles,⁷⁰ and wrist cuffs⁷¹ have been reported. Individuals with spinal cord injuries may not perceive pressure or injury to nerves and must also be carefully monitored.⁴

Any abrasion, bruising or redness that can be attributed to a restraint device or physical hold should be pointed out to caregivers. Obvious injuries, whether minor or serious, should be documented in the patient's record. In addition, the institution may require an "Incident Report" to be completed.

Physical Injury to Staff

Injuries to staff have occurred during restraint procedures.^{23,68} The overall rate of staff injury attributable to restraint is low considering the amount of physical struggle that often accompanies the implementation of a restraint. Staff injuries result in discomfort and pain for the staff, economic costs to the facility (medical expenses, worker compensation, replacement costs, and legal costs), lower staff morale, and increased staff turnover.²³

Data from a recent study of staff injuries showed higher numbers of male staff injured than female staff.²³ Experience suggests that male staff are more frequently needed to implement restraints with diffi-

cult individuals, thereby increasing their chances of injury. Most injuries in this study were minor scratches or abrasions. Additional data from this study suggest that the use of mechanical restraint is safer for staff than the use of physical restraint for aggressive and disruptive individuals. Mechanical restraints may be safer due to the more limited amount of direct physical contact involved with such restraints. In this study, emergency physical restraint incurred the highest number of staff injuries. Planned mechanical restraint incurred the lowest number of staff injuries.²³

Staff training in restraint procedures appears to reduce the rate of staff injury. Annual training is recommended. Proactive efforts to anticipate restraint strategy for emergency treatment of individuals who only rarely require restraint may also minimize the injury rates of staff.²³

CONCLUSION

For some disabled individuals, restraints are a necessary technique for managing potentially dangerous and maladaptive behaviors in the dental environment. The decision to employ restraints and the selection of appropriate restraint is a complex task which requires the consideration of multiple factors. Consideration must be given to legal issues such as applicable laws and informed consent. Often ethical questions are difficult, if not impossible to answer. Comprehensive policies covering all aspects of restraint usage are essential to protect both the patient who is restrained and the staff who implement the restraint. Whenever restraints are used the ultimate goal should be to implement the least restrictive alternative for the individual.

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Appendix A

(Prices Effective 10-21-92)

<u>Product</u>	<u>Manufacturer</u>	<u>Cost</u>
Molt® Mouth Prop	Hu-Friedy 3232 N. Rockwell St. Chicago, Il. 60618	\$165.00 (all sizes)
McKesson® Mouth Prop	M.D.T. 7371 Spartan Blvd. E. N. Charleston, SC 29418	\$11.00 (all sizes)
	or Crescent Dental Mfg. Co. 7750 W. 47th St. Lyons, Il 60534 1-800-323-8952	Pedo \$11.00 Child \$10.00 Adult \$10.00 Lg. Adult \$12.50 Edentulous \$13.00
Open-Wide® Mouth Prop	Specialized Care Co. 15 Renee Court Edison, NJ 0882-3634 1-800-722-7375	100 Small \$43.50 100 Lg. \$43.50 50 Lg/50sm \$43.50
Papoose Board®	Olympia Medical 4400 Seventh South Seattle, WA 98108 1-800-426-0353	Reg. \$149.50 Lg. \$292.50 X-lg \$309.50
Pedi-Wrap®	Specialized Care Co. 15 Renee Court Edison, NJ 08820-3634 1-800-722-7375	Small \$75.00 Medium \$77.00 Large \$79.00
Wheelchair Headrest	Metal Dynamics Corp. 9324 State Road Philadelphia, PA 19114 215-632-8889	\$545.00
Wheelchair Automatic Lift	Metal Dynamics Corp. 9324 State Road Philadelphia, PA 19114 215-632-8889	\$5250.00
Vac-Pac®	Olympic Medical 4400 Seventh South Seattle, WA 98108 1-800-426-0353	Elect. pump \$156.50 Hand pump \$72.95 10 different sizes priced from \$129 - \$444
Restraining belts, wrists cuffs, vests, etc.	J.T.Posey 5635 Peck Rd Arcadia, CA 91006-0020 1-800-423-4292	Call for prices

Appendix B Dental Head Hold

The Dental Head Hold is a method of controlling head movement in highly resistive dental patients. In the absence of such a procedure, patients could be at risk and the dental operator is unable to work without resistiveness from the patient. The method does not interfere with delivery of dental treatment. The staff member who is executing the hold is behind the resident, out of the treatment field, lessening the possibility of needle sticks, injury by instruments, etc.

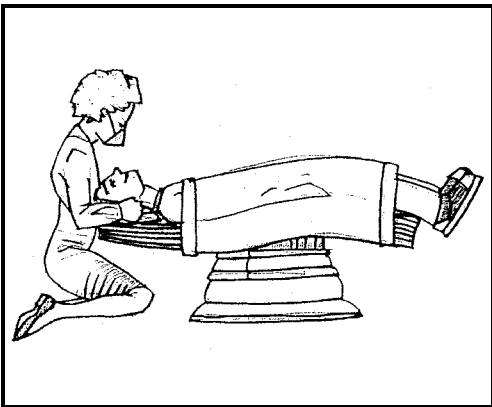


Basically, the Dental Head Hold is a physical restraint method used in conjunction with a papoose board. One dental staff member kneels or sits behind the patient's head and firmly secures the head between the forearm and hands. The fingers are curled under the ear lobes to keep them out of the treatment field, but the ears are not used to hold onto. When the patient relaxes his/her head, the staff member relaxes the grip but remains in position to control sudden head jerks. Once the first staff member is in position the dental operator is able to work safely.

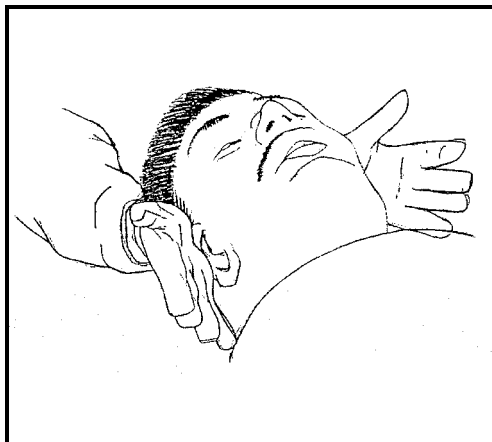
The hold should be documented on the Dental Restraint Record. The reason for the restraint should be recorded as "excessive head movement."

Steps for Implementation

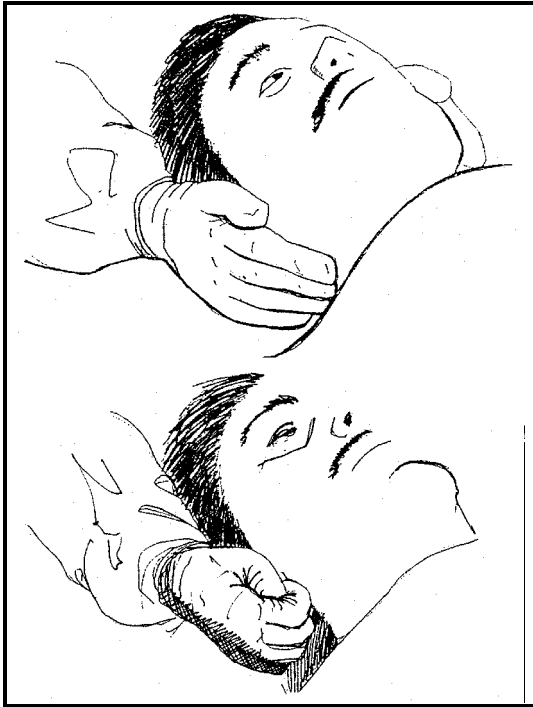
- Remove watches and other jewelry and don gloves
- Remove earrings from the patient



Kneel, sit or squat behind the patient's head.



Secure the patient's head between the forearms.



Curl the fingers under the patients ear lobes but DO NOT hold onto the ears. The forearms should “hold” the head in position.



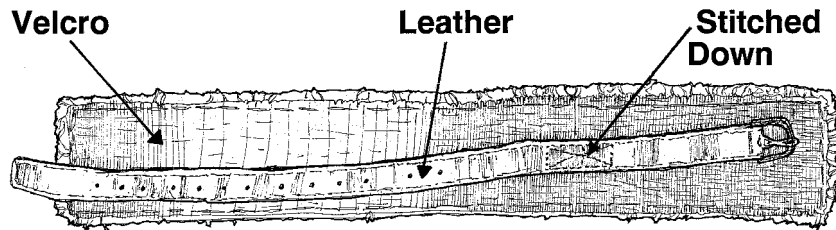
The dental operator can begin treatment.

Appendix C

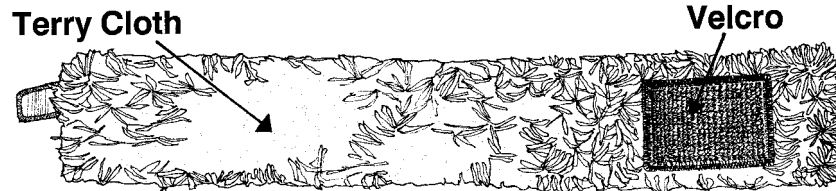
Restraint Straps

Two strap sizes:
Upper Arm: 20" and Wrist: 12"

Outside

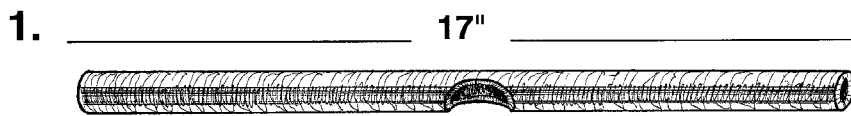


Inside

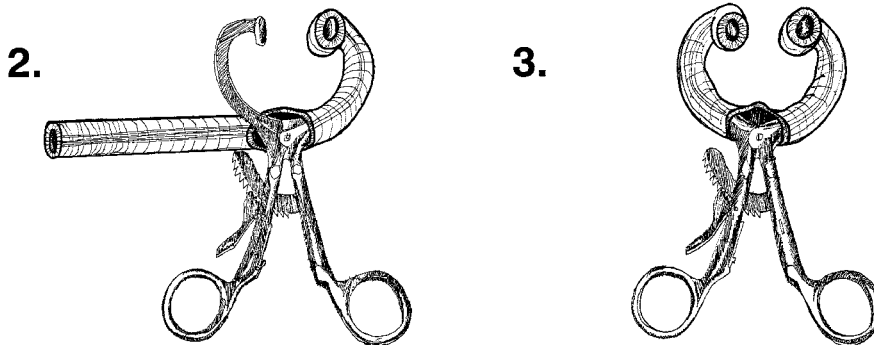


Appendix D

MOLT MOUTH PROP (Modified with latex tubing)



5/16" X 3/32" Latex Tubing



Both ends of the tubing are attached to the MOLT MOUTH PROP.