

# Review: Behaviour Management Techniques in Paediatric Dentistry

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**BACKGROUND:** Behaviour management is widely agreed to be a key factor in providing dental care for children. Indeed, if a child's behaviour in the dental surgery/office cannot be managed then it is difficult if not impossible to carry out any dental care that is needed. It is imperative that any approach to behavioural management for the dental child patient must be rooted in empathy and a concern for the well being of each child. **REVIEW:** Based on various presentations given at Congresses of the European Academy of Paediatric Dentistry (EAPD), documents reviewing behaviour management prepared by the Clinical Affairs Committee of the EAPD, and written submissions to the Executive Board of the EAPD, a review of the various approaches to the behaviour management of the child dental patient was completed. All aspects of non-pharmacological behavioural management techniques described in the literature over the past 80 years were reviewed. **FINDINGS:** There is a very wide diversity of techniques used but not all are universally accepted by specialist paediatric and general dentists. Wide cultural and philosophical differences are apparent among European paediatric dentists that seem difficult to bridge when forming agreed guidelines. Accordingly, this review highlights those behaviour techniques that are universally accepted such as tell, show, do (TSD) or positive reinforcement, but nevertheless describes the most commonly mentioned techniques for which there are descriptions in the literature. **CONCLUSION:** A wide variety of behavioural management techniques are available to paediatric dentists which must be used as appropriate for the benefit of each child patient, and which, importantly, must take into account all cultural, philosophical and legal requirements in the country of dental practice of every dentist concerned with dental care of children.

## Introduction

Behaviour management is widely agreed to be a key factor in the care of children in Paediatric Dentistry. Indeed, if a child's behaviour in the dental surgery/office cannot be managed then it is difficult if not impossible to carry out any dental care that is needed. Behaviour management is therefore one of the corner stones of the speciality. For these reasons guidelines have been published by many interested groups, societies and academies in paediatric dentistry and similarly the European Academy of Paediatric Dentistry (EAPD) has always had a major interest in this area. In recent years the

journal of the EAPD, European Archives of Paediatric Dentistry, has published papers dealing with aspects of behaviour management [Weinstein, 2008; Klingberg, 2008; Freeman, 2008; Klassen et al., 2008]

Guidelines are developed to help direct practitioners and are not meant to be legal documents that restrict practice or suggest that there is only one way to practice dentistry. Guidelines do however, imply an approval by their issuing body, and as such need to be agreed by that body as a whole. Dental education on the management of children by dentists and dental auxiliaries varies throughout Europe and such variations in approaches to the dental management of children have to be taken into account in preparing guidelines. Furthermore, there are substantial differences in cultural perspectives towards the raising of children across Europe. Some cultures are more permissive than others and such differences are reflected in the attitudes to behaviour management in the paediatric dental office/surgery. In the light of those differences, it seems currently premature to develop universal guidelines for European paediatric dentists. Instead, this paper will describe a representation of the available literature concerning the non-pharmacological management of child dental behaviour

It is important that the knowledge and practice of behaviour management should be incorporated in a continuous learning process or education for all paediatric dentists. Furthermore, the dental team as a whole, including all auxiliary personnel, should be trained in the knowledge and practice of the various techniques, so that all children may be cared for to the highest possible standards.

By implication, however, this implies that if the operating dentist does not feel that he or she is competent to meet the needs of the child or perform adequate treatment then contact with, or a referral to, a colleague, a secondary dental care clinic or to a specialist paediatric dentist should be considered.

## Aim

This review is intended to inform general dentists and specialist paediatric dentists, together with other members of the dental health team, parents and other interested parties, of current concepts of managing child behaviour in the dental setting. This review was originally based upon, and influenced

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by, presentations on behaviour management at the EAPD 4th Interim Seminar held in Cologne, Germany on 22nd of April 2005, on behaviour management. It is also based upon deliberations by other expert committees and their publications [AAPD, 2009; BSPD, 2008], and from the body of literature published on the subject, particularly over the past 50 years. The various textbooks published on the subject [Ripa and Barenie, 1983; Wright, 1983; Wright, Starkey and Gardner, 1983, Geboy, 1985; Kent and Blinkhorn, 1991; Weinsten, 1995; Milgrom et al., 1995] have also been considered

### Background

Children visit their dentist equipped with a learned set of behaviours that have successfully helped them to cope with other difficult or anxiety-inducing situations, and they will naturally use these coping strategies in the dental setting. Some of their strategies will be helpful while others will make it more difficult to deliver quality dental care.

In our approach to the child we will therefore try to encourage the learning of appropriate behaviours, to teach new ones, and to discourage the use of others. How we do that, in a professional and non-litigious provoking manner, forms the basis of this paper.

Many of the well-tried and proven techniques of behaviour management/modification have their origins in learning theories in the behavioural science [Pavlov, 1927; Watson, 1913; Skinner, 1938; Bandura, 1969]. The manner in which individual dentists apply these techniques will differ greatly, depending upon the communication and empathic skills of each dentist [Jackson, 1978]. Thus behaviour management is as much an art as a science.

The aim is to build and maintain relationships with the child and parent that will allow the highest quality of dentistry to be delivered. It is also to help each child to develop the skills and behaviours necessary to willingly seek appropriate lifetime of dental care, not hindered by undue anxiety or fear.

It should be emphasized here that not all of the approaches to be described would be used by every dentist who treats children. Some techniques require understanding and skills only provided by specialist education programs. Some will not suit the personality of the dentist, and some may not be legal or socially acceptable in every European country or society. Nevertheless, it is important to include all of the techniques available within the literature, their rationale, indications and contra-indications. Individual circumstances will dictate which of those each dentist develops and adopts for the benefit of the child patient.

This review emphasises the non-pharmacological approach to behaviour management and therefore does not include detailed descriptions of oral/rectal sedation, inhalation sedation, or general anaesthesia, but rather the emphasis is upon the non-pharmacological approach to behaviour management. However, it must be appreciated that whenever

pharmacological techniques are used the behaviour management approaches herein described must be used at the same time. The aim is always to achieve complete and willing acceptance of dental care.

### An evidence-based approach

Evidence-based dentistry (EBD), a sub-set of evidence-based medicine (EBM), has in recent years been developed as a consequence of clinicians' reliance upon their own opinions, past practice and precedent, to formulate their treatment plans. However, the principals of EBD have been predicated on research, of which the gold standard has been deemed to be the randomised clinical trial (RCT), but also taking into account a range of research approaches including simple clinical trials, through to expert opinion. However, RCT's of behavioural aspects of paediatric dentistry are less common than in adult dentistry. Therefore much of the evidence comes from studies that may not have been able to control for all the variables of interest. It also comes from expert opinion and many years of clinical expertise by paediatric dentists.

### Legislation

The UN Convention on the Right of the Child, since 1989, forms the general standpoints for all aspects of children's life, including when dental health professionals meet and interact with children. All European countries have now ratified this Convention and it is important that all professionals working with children, including dental personnel, are acquainted with it. The overriding point in the Convention is that children have rights to be respected and also to be protected against health hazards and unfair treatment, for example. Therefore, within his or her level of intellectual understanding and competence, a child has the right to be involved with any decisions about treatment and his or her views should be respected. In this context a child's age and maturity should be taken into consideration, but even a young child should be appropriately informed depending upon his/her level of maturity and understanding and thus be involved in the planning and treatment process. Another important principle, which is found in the third article of the convention, is to always act in the best interest of the child, and health care professionals should take this into account at all times.

Nevertheless, the legal rules and regulations governing dental practice differ between European countries. It is paramount to emphasise that any behavioural approach taken must be within a dentist's own national context of legislation, cultural and legal practice. The EAPD advises that personnel should be educated and experienced in behaviour and communication techniques, and be aware of the legislation under which they practice.

### The Dental Team

The whole team has an active role to play. Initial contact is through the receptionist, who can allay parental concerns with a confident manner; the chair-side assistant can provide

an invaluable role in assisting the dentist in dealing with problem behaviours [Weinstein et al., 1983a, Weinstein, 2008]; the dental hygienist can provide education through appropriate communication with the child and parent, that can help the family minimise future dental disease.

### **Communication**

Techniques used in the early period of paediatric dentistry were adapted from behaviour modification scientific studies, from the learning theories of Pavlov [1927] and Skinner [1938] and the social learning theories such as Bandura [1969]. These behaviour modification approaches in effect impose a set of behavioural rules for any child by manipulating his or her dental environment. However, behavioural management approaches changed considerably during the second half of the 20th century, with an increasing emphasis on communication and empathic skills [Rogers, 1939; 1951]. In paediatric dentistry, empathy is the ability to understand the internal frame of reference of the child patient, including the emotions and cognitive processes [Rogers, 1959; Bandura, 1969]. This approach acknowledges that a child's disruptive dental behaviour reflects his or her reaction to a perceived threat in the dental environment and his/her attempt to control that perceived threat. The aim of behaviour management from this standpoint is to reframe the perception of dentistry and to enhance the child's useful coping skills. This will reduce his/her perception that the dental situation is overwhelming or dangerous. Troutman [1988] stated, "Contemporary dental care for children must include empathy rather than indifference, structure rather than diffuseness, and flexible authority rather than rigid control".

Appropriate communication with the child, integrated with behavioural techniques, aim to encourage a child to perceive dentistry as non-threatening enough to warrant behaviours that do not interfere with the delivery of high quality dental care. The establishment of communication is essential to a dentist's ability to manage any child's behaviour in the dental environment [Chambers, 1976; Wepman and Sonnenburg, 1978]. Until good communication can be obtained the delivery of good dental care is compromised. Once a child is listening to a dentist then all the appropriate techniques herein described can be used.

Good communication with parents is also essential. This is needed to facilitate understanding and acceptance of treatment plans and behavioural techniques used by the dentist [Murphy et al., 1984; Lawrence et al., 1991], and also to minimize the likelihood of litigious action [Klein, 1985].

### **Barriers to Behaviour Management**

Why do children vary so much in their responses to dentistry? This is multi-factorial, and apart from developmental age [Piaget, 1964; Phillips, 1969; Weinstein et al., 1983b], behaviour is influenced by parenting styles, general health, pathology, culture, social expectations and temperament [Carey, 1998].

Temperament differences may account for excessive, inappropriate and unexpected responses to stimuli [Chess and Thomas, 1977; Venham, 1979a; Toledano et al., 1995; Carey, 1998]. Although dental fear has been shown to be the major predictor of dental behaviour management problems (DBMP), temperamental reactivity i.e. frustration, anger, shyness, have also been shown to play a large role in DBMP with child and adolescent patients [Gustafsson et al., 2010]. Previous negative or aversive dental/medical experiences may classically condition the child to be wary of accepting treatment, and of building a trusting relationship with the dentist [Pavlov, 1927]. The child who receives a great deal of attention from a concerned parent when he/she cries is likely to be reinforced by the attention and thus be more likely to cry at the next visit. Similarly, if the child is being treated in the presence of a highly anxious parent, then the social learning theory of modelling/vicarious conditioning may lead him/her to also become anxious [Bandura, 1969].

### **Parental Influences on Child Dental Behaviour**

Parental influences play a major part in how a child copes with the stresses and stimuli of dental treatment [Bailey et al., 1973]. Freeman and others have discussed the various models of parent/child dyads [Barlow and Parsons, 2003; Freeman, 2008]. They pointed out that if dentists were aware of some particular relationships they would be forewarned of potential difficult child behaviours and of possible consequences if the parent were to be actively involved with, or actively excluded from, the treatment session. Earlier research [Frankl, 1962; Pfefferle, 1982] showed that at least with only mildly anxious children, passive parental presence does not make a child's behaviour worse and in pre-school children it has a positive effect. However, a parent who is directly communicating with their child during treatment can make the dentist/child communication more difficult.

There appears to be a consensus of opinion in the literature that dental stress-tolerance and coping skills of children are best when there is a structured home environment, parents are responsive and self-assured, and parents set limits and provide ample rewards and appropriate punishments i.e. when they demonstrate consistent expectations for the child's behaviour [Venham et al., 1979b; Weinstein et al., 1982a; Melamed et al., 1983]. The same parameters for a dentist's own behaviour with child patients also seem to ensure successful behaviour management [Wurster et al., 1979] although unfortunately it has been shown that even paediatric dentists do not always respond to fear-related behaviours of children with effective measures [Weinstein et al., 1982b].

Each dentist treating children will have to decide for him or herself whether having a parent present during treatment will be beneficial or not. There does seem to be a trend for parents to have a greater desire to be actively involved in all aspects of their children's life [Pinkham, 1991; Peretz and

Zadik, 1998], and a growing unwillingness to allow another responsible adult to guide their child's behaviour. This trend seems to be reducing job-satisfaction amongst paediatric dentists [Casamassimo, 2002]. Nevertheless, dentists should acknowledge that parenting trends change with changing society [Long, 2004], and the need to accommodate parental involvement in their approach to managing child behaviours. Recent studies have shown that parental presence or absence can be used as a behaviour management strategy but it is much influenced by the ability of the dentist concerned [Fenlon et al., 1993; Feigal, 2001; Kotsanos et al., 2009].

### Behavioural Management Techniques

Because there are many views as to what is acceptable, the techniques that most if not all paediatric dentists would accept are limited in number. Other techniques are more controversial and although these might have been used extensively in the past, are now not employed by some paediatric dentists or accepted by some parts of society. This dichotomy poses problems in formulating any meaningful attempt at advice as to what should, could or might be used. Accordingly this review of the existing literature is separated into two parts. Part I describes and discusses those behavioural management techniques that are virtually universally accepted and widely used. Part II discusses those techniques that are controversial, not widely accepted but still used successfully by some practitioners. Some of the techniques in this section may also not be legal in some European countries. Nevertheless they are recorded in the literature and are included herein for completeness of the review but with the caveat that their use is not condoned widely but nor can they be universally condemned.

*Use of techniques.* Dentists should have a variety of techniques and approaches available to them in order to effectively deal with the many different responses to dentistry that their child patients will manifest. For each child's behaviour there will be a dentist response that could help the child to adapt to the dental experience in a positive manner, and the dentist must be capable of changing his/her own behaviour to meet the individual child's needs at a particular moment. It should be recognised that although there follows a list of management techniques, they are rarely used in isolation; for instance tell-show-do, a basic desensitisation technique is nearly always immediately followed by some form of praise (reinforcement), and if this is used as an approximation to an eventual cooperative behaviour the technique could be termed 'behaviour shaping'. Similarly, whichever technique is used, its effectiveness will vary greatly depending upon how it is applied, including the empathic skills shown by the dentist and, for example, whether working contact was maintained concurrently [Weinstein et al., 1982a; ter Horst et al., 1987].

*Children's comprehension level.* For each of the management techniques available a deficient or exaggerated sensory

or cognitive response would render that technique less likely to succeed and therefore be contra-indicated. The dentist therefore needs to give due consideration to each child's comprehension level [Kreinces, 1975], stage of development [Christen, 1977], and any possible handicapping conditions or sensory deprivations, when deciding which approach to take. These limitations could be regarded as contra-indications to a particular technique.

*Parental consent.* Parental consent should be obtained for all management techniques, but it is extremely unlikely to be refused for those techniques aimed at effective communication or to strengthen desired behaviour. Techniques that are used to discourage inappropriate behaviour such as verbal punishment, voice control or restraint, however, should be discussed with parents first.

### Part I. Universally accepted techniques

#### Desensitisation

*Description.* While desensitisation is traditionally used with a child who is already anxious about the dental situation, its principles can be readily utilised by paediatric dentists with all patients, in order to minimise the possibility that patients might develop dental anxiety. The child's existing anxieties are dealt with by exposing him or her to a series of dental experiences, presented in an order of increasing anxiety evocation, progressing only when the child can accept the previous one in a relaxed state [Wolpe, 1958; Machen and Johnson, 1974]. In the original psychotherapeutic mode, several sessions would be needed just to establish the actual hierarchy of stimuli for a client's phobia, whereas in paediatric dentistry, an assumed progression is used. Thus for most children a digital examination would precede the use of a mirror and probe, followed perhaps by radiography, rubber cup prophylaxis, fissure sealing and leading eventually to local analgesia, rubber dam and restorations.

#### Objectives

- To help the child overcome dental anxieties.
- To expose the child to a graduated series of potentially anxiety-inducing experiences.

*Indications.* May be used with all child patients.

#### Key References.

- Machen JB, Johnson R. Desensitization, model learning and the dental behaviour of children *J Dent Res* 1974; 53:83-87
- Wolpe J. *Psychotherapy by Reciprocal Inhibition*. Palo Alto: Stanford University Press, 1958, pp71-75

#### Tell-show-do

*Description.* Closely aligned with desensitisation, this is a method of introducing child patients to a procedure in a step-wise fashion. Each of the hierarchy of stimuli discussed in the desensitisation section above has its own hierarchy, tell, then show, then do, to allow the child to assimilate the procedure in a graduated manner [Addleston, 1959]: the procedure is

first described in words and phrases appropriate to the child's understanding ('Childrenese' [Kreinces, 1975]), then demonstrated in a way that involves the appropriate senses, and finally performed immediately without any delays.

When acceptance has been obtained, the child's behaviour can be rewarded, and the technique then becomes part of behaviour shaping (see below).

### Objectives

- To allow the child to learn about and understand dental procedures in a way that minimises anxiety.
- Used with rewards, to gradually shape the child's behaviour towards acceptance of more invasive procedures.

*Indications.* May be used with all patients. Can be used to deal with pre-existing anxieties and fears, or with patients facing dentistry for the first time.

### Key References

- Addleston HK. Child patient training. Fort Rev Chicago Dent Soc 1959; 38:7-9, 27-29
- Kreinces GH. Ginott psychology applied to pedodontics. J Dent Child 1975; 42:119-122

### Modelling

*Description.* According to the social learning theories [Bandura and Walters, 1963], a large part of a child's development and learning is based upon his observation and imitation of others vicarious conditioning, and this forms the basis of the management technique of modelling [Adelson and Goldfried, 1970]. It is particularly effective when the observer is paying attention to the model, and the model is perceived to be similar status and sex as him/herself. Ideally, for an anxious patient, the model would also appear to be initially anxious but then proceed to develop better coping behaviour, and is then rewarded for the modelled behaviour. For a non-anxious child the model need not exhibit initial anxiety, but rather for instance be seen to be asking questions about the novel situation; the observer may then feel easier dealing with similar uncertainties in a like fashion, anticipating rewards for doing so. It is indirect learning, i.e. learning from others, who may be parents, teachers, peers, siblings or the media. Modelling may work to our disadvantage when children visit the dentist for the first time with negative expectations based upon misinformation gained from siblings or peers; that child, if uncooperative or anxious, might be better treated in a private room, rather than in an open clinic or multi-chair office/surgery, where his/her behaviour may be overheard and then modelled by other patients. Modelling has been shown to be an effective technique with either filmed modelling [Machen and Johnson, 1974; Melamed et al., 1975], or live modelling [Ghose et al., 1969; Gordon et al., 1974].

Other influential models in the dental setting are the parents and the dentist him or herself. On that basis, a highly anxious parent may be asked to remain outside of the treatment room,

or else to be a truly passive observer. It also implies that the dentist should remain a model of calmness and confidence, not harassed by the child's uncooperative behaviour.

### Objectives

- To reduce anxiety in a child with previous experience.
- To introduce a child to dentistry.

*Indications.* Introduction of a child to new procedures and reduction of anxiety. Appropriate filmed modelling can be an economical approach, not requiring extensive chairside time.

### Key References

- Adelson R, Goldfried MR. Modelling and the fearful child patient. J Dent Child 1970; 37:476-489
- Bandura A, Walters RH. Social Learning and Personality Development. New York: Holt, Rinehart and Winston, 1963
- Ghose LJ, Giddon DB, Shiere FR, Fogels HR. Evaluation of sibling support. J Dent Child 1969; 36:35-40
- Gordon DA, Terdal L, Sterling E. The use of modelling and desensitization in the treatment of a phobic child patient. J Dent Child 1974; 41:012-105
- Machen JB, Johnson R. Desensitization, model learning and the dental behaviour of children. J Dent Res 1974; 53:83-87
- Melamed B, Weinstein D, Hawes R, Katin-Borland M. Reduction of fear-related dental management problems with use of filmed modelling. J Amer Dent Assoc. 1975; 90:822-826

### Reinforcement

*Description.* When a behaviour that follows a stimulus is reinforced, it is strengthened, and is more likely to recur in similar circumstances. This is one half of the behaviour modification technique of contingency management or operant conditioning [Skinner, 1938]. The other part is 'punishment', when the consequence of behaviour, e.g. a loud and firm "Put your hands down by your side and open your mouth!", is such that the behaviour is weakened and therefore less likely to recur in similar circumstances.

Behaviour can be reinforced positively or negatively. If, as a consequence of a particular behaviour, a child dental patient receives something of value, materially or otherwise, then potentially that behaviour has been positively reinforced. When behaviour is immediately followed by the removal of an unpleasant stimulus, it is potentially negatively reinforced.

As an example, if the child cooperates with their dentist's request for an appropriate behaviour and the dentist rewards the behaviour by a smile, a warm touch, a "thank you for helping me by keeping your mouth open wide", or a token such as a sticker badge, then providing the reward has sufficient impact on a child that the behaviour is more likely to recur in the future, in similar circumstances. An example of negative reinforcement would be when a highly anxious child runs from the treatment room and is allowed by his parent simply to go home without any dentistry being accomplished; the consequences of his/her behaviour was immediate cessation of the unpleasant stimulus (dentistry), and thus the behaviour of running away is likely to have been strengthened.

It is noteworthy that the terms reinforcement and feedback are often erroneously used synonymously. Positive feedback is intended to strengthen behaviour, similar to positive reinforcement. Negative feedback is intended to weaken behaviour, whereas a behaviour that has been negatively reinforced is strengthened. The other difference is that feedback is defined as such the moment it occurs, whereas reinforcement is defined retrospectively in terms of its actual effect upon the child's behaviour. Only if the behaviour is strengthened can the consequence of the behaviour be called reinforcement [Hemsley and Carr, 1981].

Although reinforcement is by definition used to strengthen a behaviour, by implication it is also effective in reducing frequent and disruptive child dental behaviours. If we reinforce a patient for keeping the mouth open then that patient is more likely to open the mouth again, and therefore less likely to refuse to open the mouth [Melamed et al., 1983; Allen et al., 1988]. We should be always looking for opportunities to positively reinforce desired child dental behaviour, and by the same token we need to avoid negatively reinforcing behaviours we would like to eliminate, either by our own actions, or by permitting inappropriate words or actions by parents.

It should be recognised that there is not a universal positive reinforcer; it has to be one that is valued by the child in order to strengthen the behaviour. Those most likely to be of value are the social ones, such as facial expressions, tone of voice (see next section), praise and appropriate physical contact. Other commonly employed 'reinforcers' are sticker-badges, tokens and toys.

### Objectives

- To strengthen desired behaviours.

*Indications.* Can be used with all patients.

### Key References

- Allen KD, Stark LJ, Rigney BA, Nash DA, Stokes TF. Reinforced practice of children's cooperative behaviour during restorative dental treatment. *J Dent Child* 1988; 55:273-277
- Hemsley R, Carr J. In Behavior Modification for People With Mental Handicaps. Editors Yule W, Carr J. London; New York: Croom Helm. 1987 Chap 3, Ways of Increasing Behaviour – Reinforcement.
- Skinner BF. The Behavior of Organisms. New York: Appleton-Century-Crofts, 1938

### Voice control

*Description.* Changes in the tone and loudness of speech have long been used in paediatric dentistry. Brauer [1964] was of the opinion that a sharp, loud, surprise comment of "Open your mouth and stop crying" will frequently be effective. It has been suggested that besides the change in voice quality, the associated facial expression may be important in effecting a behaviour change [Pinkham, 1985]. Chambers [1976] suggested that it is how something is said rather than what is said, that matters; it would be just as effective in a foreign language. Greenbaum et al. [1990] described voice control as a therapeutic punishment procedure, and found

that when used contingent upon a child's disruptive behaviour it suppressed that behaviour very effectively, within two seconds, and the effect lasted throughout the two-minute period of observation. Voice control can quickly re-establish a relationship between dentist and child to the desired one of guidance-cooperation [Szasz and Hollender, 1956], if the disruptive behaviour is altering that relationship. Although the technique is usually described in terms of a punishment, with the intention of weakening or eliminating behaviour, it should be recognised that a modulation of tone can be equally effective in encouraging a particular behaviour, reinforcing it (see previous section).

### Objectives

- To control disruptive behaviour.
- To gain the child's attention.

*Indications.* Can be used with all patients.

### Key References

- Brauer JC. Dentistry for Children. New York: McGraw-Hill; 1964
- Chambers DW. Communicating with the young dental patient. *J Amer Dent Assoc.* 1976; 93:793-799.
- Greenbaum P, Turner C, Cook EW, Melamed BG. Dentists' voice control: effects on children's disruptive and affective behavior. *Health Psychology* 1990; 9:546-558
- Pinkham J. Voice control: an old technique re-examined. *J Dent Child* 1985; 52: 199-202.
- Szasz TS, Hollender MH. A contribution to the philosophy of medicine. *Arch Intern Med* 1956; 97:585-592

## Part II. Controversial Techniques not universally accepted

### Restraint

*Description.* Restraint in the dental setting is the act of physically limiting the body movements of the child in order to facilitate dental procedures and to decrease possible injuries to the child and/or dentist. It encompasses a spectrum of procedures, from keeping a child's head still with one hand while giving an injection with the other, through to wrapping a child's whole in a body custom-made body restraint (Papoose Board) or bed sheet, [Frankel, 1991]. It is generally considered that the use of mouth props in a conscious patient is not deemed to be a form of restraint.

Some of the more assertive approaches are only taught as part of a postgraduate education in paediatric dentistry, and by their nature have attracted criticism. Undoubtedly their acceptance by parents, and more importantly their success in helping to instil a positive acceptance of dentistry by child patients, is dependent largely upon the frame of mind of the dentist when he/she uses these techniques. If restraint in whatever form is used punitively, or out of a sense of anger or frustration, then it is completely unacceptable.

The literature is divided on all versions of restraint. Weinstein et al. [1982] showed that when paediatric dentists used restraint in an attempt to control fear-related behaviour, in 85% of cases the poor behaviour continued but the same

author found that when chairside assistants held a child patient it was very effective [Weinstein et al., 1983]. It has to be acknowledged that parental attitudes to the management of their children are constantly changing, and partly to accommodate those changes it has been suggested that the term restraint should be substituted by 'protective stabilisation' [Friedman; 1997].

*Indications.* In a review of restraint used in various health-care settings, Connick et al. [2000] distilled five salient points.

- It should only be used when absolutely necessary,
- The least restrictive alternative should be chosen,
- It should not be used as punishment,
- It should not be used solely for the convenience of the dental team,
- Staff should closely monitor its use.

### Key References

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- Frankel RI. The papoose board and mothers' attitude following its use. 1981; *Ped Dent* 13(5) 284-288
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- Connick C, Palat M, Pugliese S. The appropriate use of physical restraint: considerations. *ASDC J Dent Child*. 2000 Jul-Aug;67(4):256-62, 231.

*A. Whole body restraint/body wrapping.* Fields [1988] reported that whole-body restraint in the form of a Papoose Board was the least acceptable management technique to parents. In a later survey the great majority of mothers who had been involved in its use for their own children were very positive about the technique [Frankel, 1991]. Perhaps the actual management technique used is not as important as the philosophy of the dentist who is using the technique [Roberts, 1995]. Whole-body restraint is often used in conjunction with sedation for patients who have physical or mental hand-capping conditions to help prevent involuntary limb or head movements or in very young children as an alternative to sedation or general anaesthesia.

The technique may use readily to hand materials such as bed sheets, a child's own blanket or a custom made padded board such as the commercial 'Papoose Board'.

*B Hand-Over-Mouth (HOM).* This is another technique in which restraint is used, and one that has polarised views for decades. It has been promoted and also attacked with such strength of conviction that one wonders if the respective parties are describing the same procedure [Levitas, 1974; Weinstein et al., 1993]. In an editorial Casamasimo [1993] acknowledged that the skill with which the technique is used varies greatly between dentists and that while results can be impressive it can also be 'downright ugly'.

As described by Craig [1971] the purpose of the technique is to gain the attention of a child to allow communication. Rombom [1981] argued that the technique is best described in psychological terms as response prevention, a flooding procedure, rather than an aversive technique. It might better be described in terms of negative reinforcement, where the child's behaviour of stopping the protest and being quiet is reinforced by the cessation of the unpleasantness of not being allowed to protest loudly and of having his/her limbs restrained. It has been found that children do not remember, nor are affected by, hand over mouth/restraint experiences [Barton et al., 1993] but in a UK survey 51% of the paediatric dentists surveyed thought that the child would come to fear dental treatment if HOM were used [Newton et al., 2004].

The legality of using hand over mouth and other forms of restraint within the legal system of the USA has been discussed [Bowers, 1982; Klein, 1987]. The legal situation on the use of HOM has not been assessed within the European legal systems except for one case in Great Britain, where the dentist in question was found to be not guilty. HOM, although very effective when used correctly, is no longer endorsed by the American Academy of Paediatric Dentistry (AAPD) [Guidelines, 2008]. However, a recent survey of 2,600 members of the AAPD recorded that 350 of the 704 respondents (50%) believed HOM was still an acceptable technique [Oueis et al., 2010]. It continues to be a very controversial technique.

*Technique.* When confronted with defiance or temper-tantrum, the dentist places his/her hand over the child's mouth only sufficiently to stifle the noise the child is making, to allow effective communication. At the same time the Dental Surgery Assistant restrains any flailing limbs, and the dentist speaks quietly and calmly into the child's ear along the lines of "Listen to me, stop the noise, put your hands down to your side, keep your legs straight, and I will take my hand away". This may need to be repeated a few times, and then when the child acquiesces the dentist's hand is taken away. Every chance should then be taken to positively reinforce any and all appropriate behaviours that the child shows. However if after a few repetitions the child's anxieties escalate rather than lessens the dentist should then abandon this technique immediately.

There is a variation of HOM where the child's airway is deliberately restricted, named hand-over-mouth with airway restriction (HOMAR). This is to be universally condemned and should never be used.

### Objectives

- Restraint is used to control unwanted physical movement of the child, both to facilitate treatment and also to prevent harm to the child and dental staff.
- Hand-over-mouth is used to establish communication between dentist and an hysterical child or one who is having a tantrum.

**Indications. Restraint**

- When immediate treatment or diagnosis is required and the patient is unable to cooperate,
- To ensure the safety of both patient and dental staff,
- To control involuntary movement with sedated patients,
- When sedation or general anaesthesia are not available or permitted by parents.

**HOM:**

- To establish communication with hysterical or tantrum children, within the approximate age-range 3-8 years old and with children who are capable of effective communication.

**Contra-indications**

- It is totally contra-indicated in any child whose mental capacity and command of language means that effective communication would be impossible.

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**Conclusions**

A wide variety of behavioural management techniques are available to paediatric dentists which must be used as appropriate taking into account cultural, philosophical and legal requirements in the country of dental practice of every dentists concerned with dental care of children, solely for the benefit of the child.

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