

Dental Management of Children with Special Health Care needs: A Review

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Abstract

Children with special needs for health care (SHCN) management causes uncertainty and anxiety among health practitioners like dentists as it involves advanced skills gained through special training, enhanced understanding, accommodative measures and resources. A quest was undertaken to find revised and evidence-based guidelines and alternatives for the dental care available to SHCN children. Such guidelines will help dentists determine some suitable dental treatment and also help other medical practitioners recognize the need to ensure good oral health for children with SHCN and the value of collaboration with dental practitioners.

Keywords: *Special health care needs; Behaviour; Sedation; General anesthesia; Dental caries.*

Introduction

The American Academy of Pediatric Dentistry (AAPD) describes special health care requirements as “any physical, physiological, neurological, sensory, behavioral, cognitive or emotional disability or restricting disorder requiring medical treatment, involvement in health care and/or the employment of specific services or programs.” The condition can also be genetic, hereditary or developed by illness or environmental causes, consistent with the AAPD, and may place limits on the performance of daily life-maintenance activities or severe restrictions during large lifetime operations. Yet, despite offering such assistance, many professionals often find it difficult. Such difficulties may vary from an absence of formal experience, uncertainty, potential ergonomic limitations, routine adjustments within the consulting room requiring physical modifications and special equipment, to the shortage of scientific

expertise.¹ Moreover, it’s common for patients with different levels of cooperation, a problem or perhaps an impediment of the dental treatment in an outpatient setting. Thus, health care professionals can reduce barriers using different techniques. Special care dentistry is the dental care provider dedicated to the particular needs of patients with worsening medical conditions or behavioral or cognitive disabilities that need treatment outside traditional method. Patients with intellectual, emotional or physical disorders are often at greater risk of oral and dental illnesses. Thereafter, behavioral treatment method must be used first, but within the case of failure, sedation is another to the patient that’s to not undergo anesthesia.²

Parents with SHCN children spend more money on dental services that healthy children need, a substantial barrier to access to oral care is taken into account. The purpose of this article was to scan the review for up-to-date and proof-based guidelines and usable and affordable dental management approaches with SHCN, help dentists in selecting the correct dental management and assist other medical professionals in identifying the same need.¹

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Mental Retardation: Definition-“Mental retardation is a common neurodevelopmental condition characterized by substantially impaired intellectual and social functioning”-American Mental Deficiency

Association (1983). Mental retardation has a new name “Intellectual disability” or “Intellectual Developmental Disorder or General Learning Disability”. The sizeable subaverage is known as I.Q. Around 70 or below on a standardized intelligence scale.^{4,5}

Table 1. Classification of special health care needs children³

Frank and winter (1974)	According to Agerholm	According to Nowak (1976)
<ul style="list-style-type: none"> • Blind or partially sighted • Deaf and partially deaf • Educationally subnormal • Epileptic • Maladjusted • Physically handicapped • Defective of speech • Senile 	<ul style="list-style-type: none"> • Intrinsic category: The handicapped condition cannot be eliminated/separated/improved significantly in the child. e.g. cerebral palsy, mental retardation • Extrinsic category The handicapped condition may be made better with strategic meticulous care. Social deprivation is an example. 	<ul style="list-style-type: none"> • Physically handicapped • Mentally handicapped retardation • Congenital – cleft lip and palate • Convulsive- epilepsy • Communication-deafness • Systemic- hemophilia • Metabolic- juvenile diabetes • Osseous disorder- rickets • Malignant disorder- leukemia

Table 2. Classification of Intellectual Disability⁵

Types	IQ ranges
Mild Mental Retardation	50-70
Moderate Mental retardation	35-50
Severe Mental retardation	20-25
Profound Mental retardation	<20

- Trauma and Injuries-In people with intellectual disability, TRAUMA, and Injuries occur to the mouth through falls or accidents.
- Owing to the various drugs, increased plaque and calculus formation that contribute to poor oral hygiene, salivary flow is altered further contributing to halitosis.
- Speak disability due to early teething delay.

Dental Findings^{6,11}:

- Damaging oral habits is a problem for some intellectually disabled individuals. Specific behaviors include bruxism; breathing of the mouth; thrusting of the tongue; self-injurious actions such as picking on the gingiva or chewing the lips; and pica—consuming items and substances such as dirt, cigarette butts or pens.
- Dental Caries- Incidence is the same as normal children but the occurrence of untreated caries is higher than usual children.
- Periodontal Disease - Medicines, malocclusion, several disabilities and poor oral hygiene lead to increase the risk of periodontal disease in mentally impaired people (6).
- Malocclusion occurrence in persons with intellectual disabilities is equivalent to that found in the general population
- Missing permanent teeth, retarded eruption and hypoplasia of enamel are even more prevalent in Intellectual Disabilities.

Dental Management 3:

- Such kids can have a shorter period of maturity too. Such kids can have a shorter period of maturity too.
- These two main objectives were accomplished by the following:
- Familiarisation (Desensitisation) - To that his anxiety and fear of objects around him that might be unfamiliar to him by getting acquainted with the dental office environment, the apprehensive child patient needs to be desensitized.
- Effective communication—It’s necessary to make the child understand the proceedings through clear and uncomplicated verbal contact. These are used successfully in Mentally Retarded Educable (EMR) and Mentally Retarded Trainable (TMR).
- Active Listening.
- Short appointment time.
- Structuring and scheduling—Care must be given at times when in the early part of the day the dentist and the operator are both less exhausted.

- Positive Reinforcement—A social or material reward will positively reinforce the child’s interpretation of conduct which is beneficial during the operation.

Down syndrome (trisomy 21): Down syndrome, or Down’s syndrome, also known as trisomy 21, is a genetic disorder characterized by whole or part of a single copy of chromosome 21. The most severe abnormality in human chromosomes is the Down syndrome. It occurs every year in about 1 in 1000 babies born.⁸⁻¹⁰

Dental Findings⁷:

- Periodontal disorder: Nearly all children with Down’s syndrome have moderate to extreme periodontal disorder.
- Xerostomia: Dry mouth, normally caused by oral coughing and other drugs (anticonvulsants, sedation).
- Infection: Fissured lips and tongue that lead them to the region’s oral candidacies, aphthous ulcers and wounds.
- Hypotonia: Such disease that affects muscles in different areas of the body.
- Difficulties with oral hygiene and brushing: Few people with Down syndrome will brush and floss easily, while others need assistance.
- Dental abnormalities: This disorder is very common in patients with Down’s syndrome, including enamel hypoplasia, microdontia, impacted teeth, crowded teeth, missing teeth and malformed teeth.
- Malocclusions: a prognathic Class III occlusal relationship, Posterior crossbite, and anterior open bite.
- Macroglossia, Delayed eruption of teeth, Sleep apnea, Dental Caries, Halitosis, Speech difficulties

Dental management¹²:

Table 3. Prescribed medications based on symptoms

Symptoms	Medication	Side effects
Seizures	Anti-convulsant (Dilantin)	Gingival hyperplasia
Hypertension	Calcium channel blockers	Xerostomia

Behavioral Management:

- Pre-(person/phone) plan before the first appointment to discuss special patient needs. Speak best about this-knowing the child to the parents or the caregiver.

- Timetable patient rendezvous early in the morning or best time of day.
- Speak to the parents or caregiver to assess the level of mental and cognitive ability of the patient, and describe each treatment at a level that the patient can understand.
- Using the quick, concise directions and talk to the patient directly.
- Reduce stimuli such as hustle and bustle that can make it difficult for the patient to comply.
- Start the oral examination slowly, beginning with fingers first. When this is a success, continue to use dental products.
- When implementing new instruments or techniques, use the Tell Show-Do approach.
- The cooperative behavior is compensated by positive verbal strengthening.
- Improve faith and continuity between the dental personnel and the patient.

Cerebral Palsy: Cerebral palsy is a category of chronic movement and posture development disorders that cause restriction of activity, due to excessive progressive disorders that developed in the developing fetus or autistic child brain.¹³

Dental Findings³:

- Malocclusion prevalence rate was recorded between 59 and 92 percent, with the overwhelming majority of malocclusion categorized as Angles Class II with increased overjet and overbite, unilateral cross-bite and open bite associated with irregular oral habits is twice as common.
- Rodrigues CAM et al. found that the incidence of dental trauma was (36.3 percent); the most severe trauma (89.1 percent) was enamel fracture.
- In several studies a high prevalence of bruxism has been confirmed in individuals who have Cerebral palsy.
- Higher prevalence of the periodontal condition.
- Ferreira de Camargo et al. found that the occurrence of caries in kids and teens with CP is strong, but Quintela M et al. concluded that in both dentitions, cerebral palsy individuals are less likely to have caries than subjects in comparison groups.

- Dental erosion is prevalent in patients with Cerebral palsy.
- In children with CP the sequence of eruption was almost close to normal. Except for the second premolar and the second molar, showing delayed eruption.
- Lin et al. found a high frequency of developmental enamel deficiencies in children with CP {Enamel hypoplasia (25.9%), opacity alone (3.7%), and mixed deficiencies (opacity and hypoplasia)}.
- Restorative treatment that involves both primary and permanent endodontic and restorative care.
- Surgical treatment including extractions of the tooth, gingivectomies, biopsies and other mild oral surgery.
- It could be suggested and appropriate to recommend some relaxation exercises or even physical help, so that the dental treatment runs out un-eventually. Both of these advocate limiting movement, which must be used to prevent patient movement from obstructing dental assistance. This strategy often prevents patient “escape attempts,” while shielding the work team as bites from potential traumas and injuries. Based on clinical experience with journalists, below are a few suggestions:

Dental management³:

The reason for the treatment involves three aspects:

- Intellectual maturity and willingness to cooperate: Based on this measure, children are graded as educable, trainable and untrainable.
- Postural compliance in the dental chair: the manifestation of increased muscular rigidity, hypercontractility, uncoordinated movement, and ataxic gait that compromise the child’s compliance with a dental chair.
- Preventive care: Requires good oral hygiene habits, instruction and knowledge of the caretaker’s oral hygiene habits, application of fluoride and sealant, as well as regular examination

Some Considerations: A patient who is using a wheelchair should be treated in the wheelchair itself. The patient must be balanced and held as security in the midline of the dental chair, with arms and legs as close to the midline. The patient’s upper and lower limbs will not be pushed into an uncomfortable position. Patient choice should be essential. A choice of two adapted radiographic techniques is available to reduce extreme gag reflexes which may occur in children with cerebral palsy: one is the 45-degree oblique head plate, and another is the reverse bitewing (buccal technique). Working as effectively as possible must be on the operator, and reducing the exhaustion of the muscles involved.

Dental management while doing Dental Treatments

The therapeutic needs must be prioritized (preventive, conservative, surgical) as follows:

- Preventive treatment involving the regular scaling/cleaning and application of fluoride, as well as the positioning of sealants.

- ‘Holding therapy’ is a child-friendly physical support strategy that stays in the lap of the person responsible for stabilizing the trunk and arms while supporting the patient (Figure 1).



Figure 1. Holding therapy

The “knee to knee” position is ideal for 1-3-year-old children. The technique consists of placing the child on the dentist’s and the person responsible’s hands, each reaching the knees and creating a kind of hammock (Figure 2).



Figure 2. Knee to knee position

The procedure in which the auxiliaries carries the head of the patient should be extended to patients of all ages. The auxiliaries support the head of the patient to stabilize or sustain it (Figure 3).



Figure 3. Auxiliary sustaining the patient's head

Such method can be used for short dental visits in which, as mentioned above, preventive, restorative and/or surgical treatments can be performed before the pharmacological restraint attempt.^{14,15}

Conclusions

For a person with SHCN, oral and general health care needs “specialized knowledge acquired through additional training, as well as increased awareness and attention, adaptation and accommodation beyond what is considered normal”.¹⁵ Children with special health care needs get a substantially greater incidence of dental diseases due to lack of oral health education, exposure to treatment, and prevention measures such as fluoride supplements and dental adhesives for their caregivers. Children with special health care needs have also considered oral health low relative to otherwise healthy children in terms of their dentition status, periodontium

of their treatment needs and dentofacial defects. Many children with mild to moderate developmental disorders may be treated with limited modifications in a dental clinic. A well-trained team of professional dentists, fair parental participation in difficult care plans, and knowledge of the level of child development for daily language skills and attention will also enable the patient to cope with the care better. By delivering comprehensive school-based services (along with oral hygiene programs to help children develop skills), delivering fluoride supplements and sealants, and providing health and nutritional guidance, the dental team will seek to improve oral hygiene. Educational videos that show both children with SHCN and healthy children with a variety of materials can be useful in teaching them oral protection. Routine oral healthcare preparation is much more critical for children with SHCN than for healthy children because of the complications of the condition and the chronic nature of the disease.

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