



## Oral Health Care for Special Needs Children: A Review

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**DOI:** 10.31080/ASDS.2022.06.1371

**Received:** April 19, 2022

**Published:** May 05, 2022

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### Abstract

Special health care need is the medical management or health care intervention for an individual with any physical, mental, behavior, cognitive, emotional impairment or any other limiting conditions. These conditions might be congenital or acquired. The individual may have limitations in performing basic self-care routine or major life activities and require specialized health service programs. Oral health management includes primary, secondary and tertiary prevention. Individual with special needs and their parents require special knowledge and increased awareness, attitude about the oral health care. The primary oral health care is often neglected by the caregivers and leads to seeking of complex dental treatment. The interdisciplinary approach is needed from dental professionals, physicians, caregivers, NGOs and other health workers to achieve the goal of Primary prevention.

**Keywords:** Special Dental Needs; Oral Care; Prevention; Dental Professionals; Dental Management

### Introduction

Special health care need is the medical management or health care intervention for an individual with any physical, mental, behavior, cognitive, emotional impairment or any other limiting conditions. These conditions might be congenital or acquired. The individual may have limitations in performing basic self-care routine or major life activities and require specialized health service programs [1].

Oral health plays a vital role in maintaining general health for physical and psychological well-being. Poor oral health has a negative impact on general health and living quality of an individual.

Compared to general population children with disabilities are more prone to oral diseases such as periodontal diseases and dental caries because of the unattended oral health care needs of the disabled people [2].

Families of Special Health Care Needs (SHCN) children experience much higher expenditures than normal. Due to the financial barriers and priorities of other responsibilities they are providing less priority for oral health care which contributes to poor oral health among disabled children. In many instances, the family of SHCN children are emotionally or intellectually incapable of dealing with their health problems [3].

Oral health management includes primary, secondary and tertiary prevention. Individual with special needs and their parents require special knowledge and increased awareness, attitude about the oral health care. The primary oral health care is often neglected by the caregivers and leads to seeking of complex dental treatment [4]. The interdisciplinary approach is needed from dental professionals, physicians, caregivers, NGOs and other health workers to achieve the goal of Primary prevention. It is the most effective and also reduces the financial burden for the complex restorative treatment.

The aim of this article is to highlight the oral health management of individuals with special health care needs.

### Cerebral palsy

Cerebral palsy is a complex group of motor abnormalities and functional impairments that affect coordination. It is associated with uncontrolled body movements, seizure disorders, balance related abnormalities, sensory dysfunction and intellectual disability. The oral manifestations are not specific to cerebral palsy but some conditions are most frequent such as periodontal disease, dental caries, malocclusion, dysphagia, drooling, bruxism, hyperactive bite and gag reflexes, trauma and injury to the oral tissues.

Specific recommendations should be given on brushing methods and toothbrush adaptations. Patients and caregivers should be actively involved in brushing demonstration and flossing. Modified toothbrushes can be used in patients with poor manual dexterity. It can be either custom made or conventional. These are some modified toothbrushes which can be locally made and easy to hold such as Tennis Ball, Bicycle Handle, elastic band or a piece of Velcro to hold the brush in the child's hand. Electric toothbrushes can also be used effectively. Caregivers/assistants are needed to do oral hygiene procedures if child has not able to do their own. There are positions which can be used safely and effectively by caregivers to their children such as standing behind the wheelchair and sitting on the floor/bed/sofa.

Antimicrobial agent such as chlorhexidine can be recommended. Rinsing is difficult with patients who cannot expectorate. So, it can be applied using a spray bottle or cotton swab. Recommend preventive measures such as fluorides in many forms and sealants. Frequent recall and follow up is necessary to maintain the good oral hygiene [5-7].

### ADHD (Attention Deficit Hyperactive Disorder)

ADHD is a persistent pattern of inattention and hyperactivity-impulsivity that interferes with functioning or development and negatively impacts directly on social, academic, or occupational functioning. Presence of dental caries, molar-incisor hypoplasia, bruxism is more prone to dental traumatic injuries. High prevalence of caries is due to poor oral hygiene practices as these children are forgetful and unable to brush the teeth effectively. Nail-biting and bruxism are common habits in these children.

Anticipatory guidance should be provided to parents regarding prevention and management of dental traumatic injuries. Home

care instructions could be given in written format and place in the washroom, as these children are extremely forgetful and disorganized.

They should be advised to maintain the tooth-brushing charts and keep a record of practicing oral hygiene measures adequately at home. Fluoride supplements can also be used to minimize the risk of dental caries. Custom-fabricated occlusal splints are recommended for the treatment of bruxism.

### Mental retardation

According to American Association on Intellectual Disabilities (AAID) - 2002, "Mental retardation is a disability characterized by significant limitations, both in intellectual functioning and in adaptive behavior, as expressed in conceptual, social, and practical adaptive skills, the disability originating before the age of 18 years".

The significant sub average is defined as I.Q. of 70 or below on the standardized scale of intelligence. Oral and dental anomalies are frequently occurred in mentally handicapped persons which leads to disturbance in functioning of stomatognathic complex.

Preventive programs are needed to meet the individual needs with different diagnoses, prognoses, severity, stages of mental health and developed support and from the multidisciplinary team. Oral hygiene measures such as brushing method and brushing position is important to maintain the oral hygiene. Horizontal scrub method is mostly advised and easier to perform in these patients. Anticipatory guidance is also important to advise to their parents. Advice on the importance of sugar free diet and to get relieve from the symptoms of dry mouth are essential to reduce the adverse oral side effects of anti-psychotic medication causing xerostomia [8,9].

### Spina bifida and latex allergy

Patients with meningocele (Spina bifida) are frequently sensitive to the latex products. It has been reported that latex products associated with severe intraoperative IgE-mediated anaphylactic reactions. They usually undergo frequent urinary catheterizations and require multiple corrective surgeries which result in extensive exposure to latex products. They have risk of developing an IgE-mediated reaction to latex gloves and other related products which in turn create the potential for a severe intraoperative anaphylactic reaction in the dental clinic [15].

In dental office, there should be available of alternate items for latex products to prevent the allergic reactions.

### Vinyl gloves - for latex gloves

Rubber dam - high speed evacuation/svedopters/anti-sialagogues and other related materials for isolation of teeth to prevent salivary contamination during dental procedures.

Anti-allergic medications such as injectable epinephrine and diphenhydramine should be available in dental emergency kit. Patients of spina bifida and their parents must be educated about aware of latex allergies and their products to avoid contact in home and other areas. The dentist and other health professionals should keep in mind while treating these patients to prevent life-threatening anaphylactic reaction in dental office [10].

### Down syndrome

Down syndrome is a chromosomal abnormality caused by trisomy of 21<sup>st</sup> chromosome. The tooth cavities developing in a child with Down syndrome is far less than that of a normal child. Gingival and periodontal diseases are more prevalent among children with Down syndrome. Brushing should be started when the first tooth comes in the child's mouth.

Child with Down syndrome may initially find difficulty in using toothbrush, because they have not yet developed enough motor skills. To help baby to accustom with tooth brushing, tooth cleaning should be started when the first tooth erupts. Soft bristle toothbrushes, gentle cleaning with a napkin could be used for this purpose.

A number of modifications in tooth brush design available commercially help the child with decreased manual dexterity, to clean their teeth better. Parent can be advised to purchase these modified designs for their babies with Down syndrome or any conditions affecting the fine motor skills of the baby [11].

### Autism

Autism is a complex developmental disability that impairs social communication, and intellectual functioning. Autistic children do not exhibit any peculiar intra oral hard or soft tissue features. But oral health of people with ASD is worse than that of the general population. Many factors such as communication limitation, personal negligence, eating habits (uncontrolled and restrictive feeding), opposition to dental care, hypersensitivity to external stimuli, preference for soft and sweetened foods, and food pouching habit inside the mouth are few which increase their susceptibility to dental caries.

Medications used to control the manifestations of ASD, such as psychoactive drugs or antiepileptic drugs like phenytoin, related to hypertrophic-hyperplastic gingivitis as well as eruption delay.

Individuals with ASD present with self-injurious behaviors. Its consequences include intra oral traumatic ulcerated lesions, head banging, face tapping, and gingival picking, Auto extraction (self-removal of teeth) etc. Furthermore, they also have the risk of damaging oral habits such as bruxism. This specialized care should be started at the early age, to increase the child's compliance toward its performance. It may help the child to incorporate these healthy habits into the life routine and to develop better tolerance towards it [12,13].

### Visually challenged children

When compared with their normal sighted peers, learning and performance of daily oral hygiene procedures are more challenging for visually impaired children. Audio-tactile performance technique is a multisensory health education method that is specially designed to educate the visually impaired children regarding oral hygiene maintenance. Audio, Tactile, and Performance are incorporated in the ATP technique. First part (AUDIO component) involves verbally informing the child about the importance of teeth and proper methods of brushing. Second part (TACTILE component) allows the child to feel the teeth in a large sized model and practicing proper brushing in this model. Third part involves (PERFORMANCE) brushing of their teeth in the prescribed manner under adequate supervision [14].

This oral health education approach is similar to ATP technique. Along with the audio and tactile part it also involves providing oral health instructions in the form of a story through Braille scripts. In the Tactile part child was made to feel the difference between clean and unclean teeth after the application of petroleum jelly to simulate dental plaque to plastic models. At the end part, a brushing demonstration was given on the models and children were made to feel and distinguish between cleaned and uncleaned tooth surfaces, followed by a demonstration of brushing in each child's own mouth [15].

### Children with hearing impairment

Hearing impairment results in a communication barrier for children to receive adequate oral hygiene maintenance methods. Different studies have shown that they could be trained with Video clip and illustration book demonstration materials about oral

health and hygiene methods. Training needs patients and consistency, if interrupted with loss of attention or fatigue, it should be resumed later.

Enlarged models of plaster teeth can be used to teach brushing habits. Models are with and without carious destruction, red silicone imitation plaque as well as plaque-retentive places would be more educative. Child should be allowed to practice brushing in the models. Plastic dolls can also be used for learning brushing technique.

An illustration book containing pictures of sequence of actions, structuring the different stages of brushing and flossing can be used. For younger children some form of games or their favorite toys, animated cartoons can be used for teaching oral hygiene knowledge [16,17].

### Epilepsy

It is chronic disorder of multiple etiologies which is characterized by frequent episodes of paroxysmal brain dysfunction caused by a sudden disorderly and excessive neuronal discharge. The common dental manifestations are caries, injury, and periodontal disease due to the combined effect of neglected oral hygiene, oral cavity injury, and socioeconomic background. There is no peculiar dental feature related to patients with epilepsy. Seizures can have occurred under stress and anxiety conditions. The adverse effects of Anti-epileptic medications such as Carbamazepine induce gingival hypertrophy.

The preventive management is the key to prevent dental complications in these patients. Modified toothbrushes with fluoridated toothpaste can be prescribed to patients who are physically challenged. Anti-epileptic and other medications induced gingival hypertrophy can be modified after consultations with the Physicians. Dental appointments are scheduled during the time of the day when seizure is less likely to occur. Dental procedures should be done under stress free conditions to avoid seizure triggering factors like sudden movement of chair. Dark glasses can be worn by the patient to prevent operating light on the eyes. Consent should be taken from Neurologists and Pediatricians before the dental procedures. Nitrous oxide or intravenous sedation might be given in certain conditions. According to Novak, "tell-show-do" method can be approached for these patients [18,19].

### Conclusion

The SHCN children often lack and neglect their personal oral health care due to limited accessibility and affordability. The additional efforts to be given by caregivers and dental professionals to maintain their oral health care. According to the AAPD (American Academy of Pediatric Dentistry), Anticipatory guidance plays a major role and provides holistic dental care to children and their caregivers. Prevention is the key to minimize the severe dental complications and lessen the dental expenditure. A multi-disciplinary approach is needed while managing with these children. The Pediatricians, Dental professionals, General Physicians, nurses, midwives, policymakers and other stakeholders should come together

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