# Preventive strategies in oral health for special needs patients

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## Summary

**As regards to the most common oral disease in pediatric patients, intellectual disability is not a risk factor for caries disease itself, but it rather reduces the individual capability to self-care and therefore to his own oral care. Children suffering of systemic pathologies and/or with different stages of disability are to be considered at high risk for dental caries development. According to recent guidelines for oral health prevention in childhood, individual additional strategies for a preventive care should be applied for these patients. All the health providers, family and caregivers should be involved with the aim of being aware, motivated and informed on oral health issues, and a better access system to the dental care structure, both logistic, professional and economical should be assured.**

**Key words: prevention, special needs, oral care, health promotion.**

## Introduction

Defining "disability" is complex and controversial. During the decades, several terminologies have been used for people with physical, intellectual or mental conditions who also require health care and services of a type or quantity beyond the common requirements: *handicapped, special, exceptional, disabled, special needs* (1-3). A person is considered disabled when a long-term mental or physical disorder or condition affects the ability of performing daily activities (Tab. 1) with a real difficulty, as well as consideration is paid to possible recurrences, progressive impairing conditions, cancer, HIV infection, multiple sclerosis, blindness and former suffering from disabilities (4).
Recently, the main trend is to consider disability as the outcome of the interaction between the individual impaired condition and the environmental barriers (behavioral, social, physical, intellectual, etc.) that "*limit their complete and effective participation in the society in relation to feeling different from all the others*" (5).
Disparity in social acceptation and sustain are the main obstacles that should be avoided. In the UN Convention on the Rights of Persons with Disabilities, held in New York in 2006, the right of disabled people to be equal with other persons has been declared, along with "*support for their specific cultural and linguistic identity, as well as for their signs language and deafs' culture*" and "*the right to get the highest standard of health without any kind of discrimination*", whereas States should guarantee access – either social, professional and logistic – to sanitary services (6-8).
The need of this sort of declarations itself means that some kind of discrimination and disparity in general health-care strategies, rehabilitation and prevention is still present for disabled persons for their status, even in the most evolved societies (9).

### Health promotion and access to oral care services

On a general basis, disease prevention and health promotion are more effective if focused on the indi-

Table 1. Variables for normal daily activities performance assessment.

| Normal daily activities (4) |
|---|
| Mobility |
| Manual ability |
| Physical coordination |
| Continence |
| Ability to heave, transport or move daily-life objects |
| Language, hearing, sight |
| Memory or concentration skill, acknowledge and comprehension |
| Awareness of the risk to have physical damage |

vidual risk assessment. According to Beck (1998) a risk factor is *"a biological, environmental and behavior factor that, throughout time, increases the possibility of pathology; if removed or absent, it reduces the probability. It is part of a casual chain or leads the host to the casual chain. When the pathology has been set off, the removal of it does not necessarily reduce it"* (10).

As regards to the most common oral disease in pediatric patients, intellectual disability is not a risk factor for caries disease itself, but it rather reduces the individual capability to self-care and therefore to his own oral care. In these patients caries pathology is therefore quite high (9, 11).

For that reason, along with the acknowledgement of intrinsic oral disease risk of some general pathology, children suffering of systemic pathologies and/or with different stages of disability are to be considered at high risk for dental caries development. According to recent guidelines for oral health prevention in childhood, individual additional strategies for a preventive care should be applied for these patients, such as the use of fissure sealants and fluoride gel and varnishes, along with clinical check-ups on a regular basis (12-14).

Limited access to dental care services for disabled persons is mostly due to:

- availability of dentist to treat patients with special health care needs;
- awareness of the oral health issue in the patient environment ("halo effect").

In particular, the dentists' availability is dependent by the time committed in treatment of disabled persons, educational experience and training in treating patients with disabilities or chronic conditions, economic factors and age (educational debt, financial practices, family expenses, more frequent in younger dentists), setting of the dental practice (public/private dental service, small/large communities), reimbursement programs (15, 16).

Moreover, accessibility is dependent on the National Health System: national programs of reimbursement or financial coverage for health expenses is crucial for improving access leeway of disabled patient to dental health services. Disabled patient have also logistic difficulties in receiving the dental care services, due to architectonical barriers, public transportation, problems in scheduling the treatment within the daily practice (15).

Dentists' willingness to treat people with special health care needs is affected by the uncooperativeness of some patients during the dental treatment: perceiving it as a barrier depends by the type of performed practice of the dental providers and by their educational experience (e.g. pediatric dentists commonly raise minor obstacles in treating disabled persons, since their training and practice are focused on behavioral management of younger patients). Data on dentists' availability are in reality controversial: no evidence is clear which among personal vocation, age, education or clinical experience is the main determinant factor for willingness to treat patients with disability or chronic conditions (15-17).

**Oral health prevention and treatment issues**

According to Casamassimo (3), pediatric dentistry has automatically become the dental assistance reference for children as well as adults with special health needs, because pediatric practitioners are used to manage communication and uncontrolled movements. But pediatric dentists do not represent the majority of the dental care offer in most of the areas, consequently adult patients with special health care needs have to attend general dental practices. Loeppky and Sigal (16) observed in their study that most of pediatric dentists limited their practice to disabled patients under 18 years of age, while general dentists treat patients with special health care needs of all ages. In the pediatric dentists practices, many of the disabled patients have conditions that were congenital or acquired during childhood. General dentists visit instead special needs adults who present conditions or disabilities consequent to aging pathologies, as stroke, dementia and failing organ systems. This kind of patients may be more at ease in a general dental practice than in a pediatric one.

Therapy also differs significantly: general dentists provide rehabilitative care such as prosthodontics, periodontal procedures and endodontic therapies, while pediatric dentists tend to provide more preventive procedures such as restorative, oral hygiene, scaling, fluoride, sealants and orthodontics.

In order to respond to dental care needs and concurrent medical conditions or low level of cooperation, some patients with intellectual/physical impairment or systemic disease may require treatment in general anesthesia. However disabled patients' pattern of age, treatment need and caries experience is not proportional, as one can imagine, to the severity of the impairing condition. Haubek et al. (18) report that, in a group of patients who underwent to general anesthesia for dental treatment, special needs children *"were older at referral and had a less comprehensive total treatment need than non-special needs patients*", supporting as a possible explanation that attention to preventive oral health attitude is often paid by caregivers and specialized personnel, so that these children develop a treatment need only at higher ages.

Similarly, Camilleri et al. (19), compared the level of dental disease and the pattern of dental treatment under general anesthesia for children with different ASA Physical Status Classification System level. Children of both groups were about to undergo to general anesthesia for dental treatment and had high caries experience indices. They report that children with severe systemic diseases had significantly lower caries experience in both dentitions than normal healthy or mild systemic diseases affected children. In this case, too, the Authors explain their result with

the high level of medical and preventive care of these patients, that make children referral possible at an earlier stage, as soon as carious lesions are detected, allowing "*a significantly higher level of preventive and restorative care"* with an average rate of extracted teeth per patient which was significantly lower.
In addition, multi-specialized examinations in general anesthesia were done to treat the patients with preventive treatments as pit and fissure sealants. Professional team (dental hygienist, medical assistants, doctors, parents/tutors) appears to be essential to the achievement of better level of oral health in these patients. Kakaouanaki et al. (20), studying further dental treatment needs in children after exodontia in general anesthesia, focus on the importance of preventive oral health approach in children as well as for parents/tutors to reduce the risk of new carious processes. In fact, a high percentage of follow-ups and new treatments was related to new dental pathologies, developed after 6 years from the general anesthesia.

## Conclusions

To guarantee equal access opportunities for treatment to patients with special health care needs, is important to accomplish a participation and a full consent from families.
All the health providers, family and caregivers should be involved with the aim of being aware, motivated and informed on oral health issues, and a better access system to the dental care structure, both logistic, professional and economical should be assured.
As stated before, regular dental check-ups are decisive to achieve and maintain a high standard of oral health. In patients with disabilities in fact, in the oral health problems are essentially due to poor oral hygiene, which often results in an increase of caries and gingivitis (13). Poor oral hygiene is fundamentally due to a limited cooperation by the patient to daily oral hygiene procedures, the difficulty during mastication and to cariogenic diet (21, 22). In this perspective, could be useful to anticipate the first dental examination in children with special health care needs at 1 year of age, scheduling regular dental recalls at least on a four/six-month basis (23, 24).
Besides, the other strategic area for oral health in disables children and adults is to improve the dentists' willingness to treat persons with special health care needs. This could be attained by means of: (i) lectures and hands-on education in the specific topic of dental therapy in persons with special health care needs in the pre- and post- graduate education, also for non-pediatric dentists *curricula*, with the purpose of guarantee better access to treatment also to adults with special health care needs; (ii) economical incentives (productivity bonuses and others); (iii) coordination of the professional team through an integrated education (dentists, medical providers, dental hygienist, caregivers, parents/tutors).

## References


1. American Academy of Pediatric Dentistry. Definition of special health needs patient. Pediatr Dent. 2004;26(suppl):15.
2. Australian Institute of Health and Welfare (AIHW) 2003. ICF Australian User Guide. Version 1.0. Disability Series. AIHW Cat. No. DIS 33. Canberra: AIHW.
3. Casamassimo PS. Children With Special Health Care Needs; Patient, Professional and Systems Issues. Pediatric Oral Health Interfaces Background Paper. 2006. cdhp.org:1-23. Available from http://www.cdhp.org/downloads/interfaces/interfaces%20special%20health%20care.pdf. (last access January, 3rd, 2010).
4. UK Disability Discrimination Act (DDA) 2005. Available at http://www.opsi.gov.uk/acts/acts2005/20050013.htm (last access January, 3rd, 2010)
5. UK Department for International Development. Disability, Poverty and Development. DFID. 2000 Issue, February.
6. U.N. Convention on the Rights of Persons with Disabilities. New York, December 6, 2006.
7. Italian Ministry of Foreign Affairs (MAE). Guidelines of Italian cooperation on the issue of Handicap. 2002 July.
8. German Federal Ministry for Economic Cooperation and Development (BMZ). Health, Education, Social Protection. Sector Initiative Systems of Social Protection. Disability and Development. A contribution to promoting the interests of persons with disabilities in German Development Cooperation. Policy Paper. 2006 November.
9. Hennequin M, Moysan V, Jourdan D, Dorin M, Nicolas E. Inequalities in Oral Health for Children with Disabilities: A French National Survey in Special Schools. PLoS ONE. 2008; 3(6):e2564.
10. Burt BA. Definitions of Risk. J Dent Edu. 2001;65(10):1007-8.
11. Beltran-Aguilar ED, Beltran-Neira RJ. Oral diseases and conditions throughout the lifespan. II. Systemic diseases. Gen Dent. 2004 Mar-Apr;52(2):107-14.
12. Campus G, Condò SG, Di Renzo G, Ferro R, Gatto R, Giuca MR, Giuliana G, Majorana A, Marzo G, Ottolenghi L, Petti S, Piana G, Pizzi S, Polimeni A, Pozzi A, Sapelli PL, Ugazio A. National Italian Guidelines for caries prevention in 0 to 12 years-old children. Eur J Paediatr Dent. 2007;Sep;8(3):153-9.
13. Italian Ministry of Health. National guidelines on Oral Health Promotion and Prevention of Oral Pathologies in Childhood. 2013 Update. Available at http://www.salute.gov.it/imgs/C_17_pubblicazioni_2073_allegato.pdf
14. Guidelines on the use of fluoride in children: an EAPD policy document. European Archives of Paediatric Dentistry. 2009;10(3).
15. Casamassimo PS, Seale NS, Ruehs K. General Dentists' Perceptions of Educational and Treatment Issues Affecting Access to Care for Children with Special Health Care Needs. Journal of Dental Education 2004 Jan;(68)1:23-28.
16. Loeppky WP, Sigal MJ. Patients with Special Health Care Needs in General and Pediatric Dental Practices in Ontario. J Can Dent Assoc. 2006;72(10):915.
17. Milnes AR, Tate R, Perillo E. A survey of dentists and the services they provide to disabled people in the province of Manitoba. J Can Dent Assoc. 1995;61(2):149-58.
18. Haubek D, Fuglsang M, Poulsen S, Rolling I. Dental treatment of children referred to general anaesthesia – association with country of origin and medical status. Int J of Paediatric Dentistry. 2006;16:239-246.
19. Camilleri A, Roberts G, Ashley P, Scheer B. Analysis of paediatric dental care provided under general anaesthesia and levels of dental disease in two hospitals. British Dental Journal. 2004;196:219-223.
20. Kakaouanaki E, Tahmassebi JF, Fayle SA. Further dental treatment needs of children receiving exodontia under gen-

eral anaesthesia at a teaching hospital in the UK. Int J of Paediatric Dentistry. 2006;16:263-269.
21. American Academy of Pediatric Dentistry (AAPD) Council on Clinical Affairs. Guideline on management of dental patients with special health care needs. Pediatr Dent. 2008-2009a;30 (7 Suppl):107-11.
22. Moursi AM, Fernandez JB, Daronch M, Zee L, Jones CL. Nutrition and oral health considerations in children with special health care needs: implications for oral health care providers. Pediatr Dent. 2010;32:333-42.
23. Nowak AJ, Casamassimo PS. The dental home: A primary care oral health concept. J Am Dent Assoc. 2002;133:93-98.
24. Avenali L, Guerra F, Cipriano L, Corridore D, Ottolenghi L. Disabled patients and oral health in Rome, Italy: long-term evaluation of educational initiatives. Ann Stomatol (Roma). 2011 Mar;2(3-4):25-30. Epub 2012 Jan 27.