Ensuring Maintenance of Oral Hygiene in Persons with Special Needs

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KEYWORDS

• Intellectual and developmental disabilities • Maintenance • Hygiene • Caregivers • Materials • Design • Treatment planning • General anesthesia

KEY POINTS

- Patients with intellectual and developmental disabilities who have dental needs can be treated safely and comprehensively under general anesthesia.
- There are multiple adjunctive aids that can be used to effectively complete oral hygiene for special needs patients. These include triple-headed toothbrushes, electric toothbrushes, dental waterjets, interdental brushes, foam bite blocks, and cheek retractors.
- Thoughtful treatment planning can increase the longevity of restorations and chewing table for special needs patients. Hospital-design specifications include open embrasures, flat buccal/lingual contours, and hygienic pontics with narrow chewing tables.

INTRODUCTION

Patients with special needs require modifications to treatment plans to maximize hygiene and longevity of the restoration. Although there is a broad spectrum of special needs and strategies to treat those patients, this article focuses on the special needs population that has difficulty maintaining their own oral hygiene due to intellectual and/or developmental disability (IDD) and that must be treated under general anesthesia.

Patients diagnosed with IDD present with physical and/or mental impairments before the age of 18.[1] This population is estimated at 4.6 million to 7.7 million people in the United States.[2] IDD limits the ability of patients to maintain oral hygiene or to cooperate with a dental professional, particularly when motor activity is impaired.[3] These patients may not be able to obtain dental care in a traditional setting and care must often be provided under general anesthesia. Due to a limited number of dentists practicing in this setting, the IDD population has significant issues with access to care. Examples of IDD are cerebral palsy, autism, and Down syndrome.[4]

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CURRENT STATUS OF PATIENTS WITH INTELLECTUAL AND/OR DEVELOPMENTAL DISABILITY

The rate of untreated caries, periodontal disease, and poor oral hygiene in patients with IDD is higher than that of the general population. According to the US Centers for Disease Control and Prevention, for adults 20 years of age and older, the prevalence of untreated caries; edentulism; number of missing teeth; and mean decayed, missing, and filled teeth is higher in the population of patients with IDD than in the general population (**Table 1**).[5]

Table 1
Oral health status of population with IDD as compared to general population

	General Population	Intellectual and/or Developmental Disability Population
Untreated caries	22.7%	32.2%
Edentulism	7.6%	10.9%
Mean number of missing teeth	3.6	6.7
Decayed, missing, and filled teeth mean	11.6	13.9

Data from Morgan JP, Minihan PM, Stark PC, et al. The oral health status of 4,732 adults with intellectual and developmental disabilities. J Am Dent Assoc 2012;143(8):838–46; and Beltran-Aguilar ED, Barker LK, Canto MT, et al. Surveillance for dental caries, dental sealants, tooth retention, edentulism, and enamel fluorosis: United States, 1988-1994 and 1999-2002. MMWR Surveill Summ 2005;54(3):1–43.

A 2010 systematic review of oral hygiene in those with IDD showed that although patients with intellectual disabilities had fewer filled teeth, they also have more missing and carious teeth than the general population. This may be because the chosen treatment for these patients is often extraction rather than restoration of carious teeth.[6]

It has also been shown that individuals with IDD may not have the physical ability to clean their own teeth due to lack of dexterity and understanding of the importance of proper oral hygiene.[7] Overall, a combination of poor oral hygiene, untreated caries, and treatment via extraction puts this special needs population at increased risk of pain, infection, and a decreased ability to enjoy food.

WHY TREAT IF MAINTENANCE IS AN ISSUE?

The ability to chew food is among the most basic of human needs. The National Aeronautics and Space Administration attempted to place astronauts on an all-liquid diet multiple times – all ended in failure due to the subjects' aversion to foods that they could not chew. According to food scientist Samuel Lepkovsky, soldiers given rations of potted meat "could undoubtedly survive on these rations a lot longer than we'd care to live."[8] There are multiple examples of patients who must be tube-fed yet insist on chewing food even though they must eventually spit it out. Otolaryngologist Jennifer Long has noted that patients who must make the choice between the ability to swallow food and the ability to speak often prefer to have their larynx removed specifically so that they can swallow. They prefer to be mute rather than tube-fed.[8]

Dentists serving the special needs population have the opportunity to have a significant impact on the quality of life for patients with IDD. By maximizing their occlusal table through careful treatment planning, educating caregivers, and advising a noncariogenic diet, dentists are able to preserve patients' ability to chew and enjoy food, thereby improving their quality of life.