Periodontal disease and Down syndrome patients

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I began my day as I have every workday, checking my schedule, only to see some of my favorite patients were coming in. Joe and Jude like to repeat the same statements: “Suzy, are you married?” “I love you!” “I’m happy!” Cynthia loves to tell me jokes during her entire appointment time. Caroline hates coming to the office and refuses to talk to anyone. Mark just wants to hug me and hold my hand.

What do Joe, Jude, Cynthia, Caroline, and Mark have in common? They all have various levels of Down syndrome (DS). The other common trait for these adults is periodontal disease. Jude, Caroline, and Mark’s foster mothers are diligent in their dental care. They not only bring them in for a professional prophylaxis every three months, they also supervise their homecare, keep after the staff to supervise their brushing and flossing, and have taken on the system so these individuals receive good dental care. Joe’s caregiver has become proactive in his oral care by supervising his use of disclosing tablets, fluoride rinse, and a power brush. Cynthia’s parents are also diligent in seeing that she performs good oral health care.

My patients’ lack of improvement in their oral health led me to do some investigating as to why, with the involvement of their caregivers, their conditions continue to deteriorate.

Down syndrome is a set of mental and physical symptoms that are the result of an extra copy of chromosome 21 (also called Trisomy 21, where there are three copies of chromosomes instead of two), which changes the body and brain’s normal development. DS is the most common genetic birth defect and affects 1 to 800 babies a year in the United States. According to the National Down Syndrome Society, there are more than 400,000 individuals with DS in the United States.

The following are manifestations of DS listed on the Center for Pediatric Dentistry’s website:

• **Clinical** — Increased risk of abnormalities in al-

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As dental professionals, there is much we can do for both DS patients and their caregivers. Primarily, we can treat individuals with DS with respect. In the pamphlet, “Practical Oral Care for People With Mental Retardation” from the National Institute of Dental and Craniofacial Research, the following suggestions for professionals were made:

1. Encourage the patient to perform oral care independently, if possible.
2. Engage the caregiver or parent to supervise the patient’s homecare routine.
3. Suggest the use of disclosing tablets to highlight missed areas, making it easier for these patients to see where they need to brush.
4. Ask patients to demonstrate their brushing technique to you. Follow up with hand-over-hand specific directions on either brushing technique or adaptations. Demonstrate not only to patients, but also to their caregivers.
5. Use your experience in patient positioning to assist the caregiver in assisting the DS patient. (In the case of Jude and Mark’s foster mothers, they stood them in front of the kitchen sink to not only watch, but also assist in brushing.)
6. Use of a power brush may encourage DS patients to be more independent in their oral health care.
7. Use of an antimicrobial mouthwash may help these patients. (Some patients find it difficult to expectorate. In this instance, the toothbrush can be dipped in the mouthwash and applied to the patient’s teeth.)
8. Should particular medications be required due to gingival hyperplasia, stress their importance as well as regularly scheduled hygiene appointments.

most every organ system, including intellectual disability and delayed growth; vision and hearing problems; cardiac defects (VSD, ASD, PDA, Tetralogy of Fallot); characteristic physical features such as brachycephalic skull, prominent epicanthic skin folds, small low-set ears, reduced muscle tone, pelvic dysplasia, transverse palmar crease, broad hands and feet, short fingers, and lenticular opacities.

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FEATURE

• **Oral** — Early onset severe periodontal disease (most significant oral health problem); lower prevalence of dental caries; delayed eruption of permanent teeth, malocclusion; congenitally missing and malformed teeth are common; hypoplasia of mid-facial region; hypodontia, microdontia; macroglossia, fissured and protruding tongue; and tongue thrust, bruxism, clenching, and mouth breathing.

• **Other potential disorders/concerns** — Epilepsy, cardiac defects, atlantoaxial instability (fragility of cervical vertebrae/spinal cord), compromised immune system, sleep apnea, increased risk of leukemia, hearing loss, vision problems, and hypothyroidism.

The immune alterations described in DS are related to leukocyte function, which is responsible for the defensive mechanisms in periodontal tissues. It is also characterized by aggressive and generalized periodontitis.

Patients with DS often lose their teeth in their early teens due to periodontal disease as well as other contributing factors:

- Immune deficiency
- Inadequate control of bacterial plaque
- Deficient masticatory function
- Early aging
- Alterations in dental anatomy (short roots)

In a study conducted with 26 DS patients and 16 healthy volunteers, the saliva of these people was tested. The LL-37 (cleaved antimicrobial peptide) and hCAP18 (human cathelicidin antimicrobial protein) was found to be higher in individuals with DS than in those without DS. A Brazilian study found patients with DS had a higher incidence of periodontal disease than dental caries. This prevalence seems to be due to the impaired host response rather than to specific periodontal pathogens. Prevalence of low caries rates seems due to immune protection caused by the elevated salivary S. mutans-specific IgA concentrations.

The caregivers of Joe, Jude, Cynthia, Caroline, and Mark are making a difference in their lives. It is a slow process, but they are determined to be the best for them. Verbalization for patients with DS is difficult when they try to express any discomfort. Mark routinely tells me his teeth are loose. We have done a prophylaxis, probed, charted, and X-rayed his entire mouth and have not found a tooth that is loose. However, we continue to advise his foster mother to supervise his oral homecare.

Research needs to continue for these individuals, as does advocating by their caregivers on their behalf. Additionally, as professionals, we need to slow down and listen when they try to tell us what their problems are — to them their problems are very real.

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opment of new programs and clinics is vast and ever-growing. If there is one thing the world of dentistry needs, it is more strong and caring individuals to join the public health team. On top of that, public health and private practice are not the only options out there. One of the best parts of being a hygienist is the variety and flexibility of the job, and, of course, all the faces and places you meet along the way.

**Do you have anything else to share?**

I am very fortunate to have learned early in my profession to set my sights high. Looking back over the last few years, I can see that I have made it to this point in my career by allowing every possible opportunity to take me by the hand and lead me through more experiences. I have invested much hard work and dedication into my profession, and I can say with confidence and pride that getting my master's degree has opened more doors for me than I can fit into my work schedule.

I am proud to be a dental hygienist and I strive to always hold myself to the highest standard of patient care and integrity. My hope is that my students and colleagues will share these endeavors with me, and together our profession will grow in strength and with the respect it deserves.

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member of the American Dental Hygienists' Association with 34 years of experience and thousands of client successes to her credit. She provides practices and individuals with optimal efficiency using fresh, innovative, and usable practice management tools. Since she is not a hygienist, she wanted to learn as much as she could about hygiene because she was tired of hearing hygienists being called “prophy queens.” With her understanding of the role of hygienists in the practice, Kathleen has enabled dentists and other team members to understand the value that the hygiene department brings to the table. She is concerned about the numbers of hygienists who are seeking employment at this time with practices that don’t value the hygienist. Kathleen has recommended to many practices that they use reactiva-

tion campaigns with the appropriate verbal techniques to revitalize their hygiene department.

Beyond educating dental teams to achieve higher levels, Kathleen is passionate about her children, rescuing animals, and the New York Yankees! She strives to create relationships within her programs and during her consultations that are free of pressure, demonstrate mutual respect, and provide skills and knowledge that elevate the dental practice, the team, and especially the patients to achieve maximum oral and business health.

For more information on Kathleen’s programs or her consultation services, email her at kajohnson@sbcglobal.net or visit www.kjohnsonconsulting.biz.

**Thought for the month:** If you greatly desire something, have the guts to stake everything on obtaining it. — Brendan Francis

**FEATURE • BURZYNSKI**

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In looking ahead to my work schedule for the week, I see that Joe is coming in. I know this is going to be a good week. He will be sure to ask me if I am married. He has added a new question as well. “Suzy, how old are you?” My response is, “A lady never tells.”

**References**


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that require them to work off-the-clock. The office manager has no authority to pass such a “rule” to deny any employee payment for wages, whether she considers them productive or not.

Since finishing on time seems to be the issue, here is...