Interview: “Around 50 per cent of children have cavities by 6 years of age”

By Brendan Day, DTI

With recent studies showing that more than four out of ten Australian children aged 5–10 have cavities affecting their primary dentition, it is clear that good oral health habits need to be practised from a very early age. Given that oral disease can cause potentially permanent damage, a preventative approach is essential. Dental Tribune Online spoke with Prof. David Manton, Chairman of the Australian Dental Association’s Oral Health Committee, about the importance of dental check-ups for children and why recent legislative changes in Australia may negatively affect this.

Dental Tribune Online: Prof. Manton, how many times should children be visiting the dentist each year?

Prof. David Manton: The regularity of visiting the dentist for children depends on their oral health. To start with, a child should visit a dentist within six months of the eruption of the first tooth, so around 12 months of age. This is to allow the dentist to examine the child’s mouth and discuss with the parents how to maintain their child’s oral health. This would include issues such as diet and oral hygiene. After that, the time between visits usually varies between six and 12 months, although some children may visit more frequently, such as a child at high risk of dental caries.

What are some of the main contributors to the poor oral health of Australian children?

The main factor affecting oral health in children is dental caries. Around 50 per cent of children have cavities by 6 years of age. The main causative factor is diet—primarily the regular consumption of sugars in the diet. These sugars can be obvious, like sugary sweets and lollies, but can also be hidden in food and drinks, such as soft drinks, dried and processed fruits, soy drinks and flavoured milk. The sugars encourage the overgrowth of decay-causing bacteria in the plaque on the teeth, and these produce acids that weaken the teeth and lead to cavities.

Brushing teeth with fluoride toothpaste decreases the amount of decay that occurs and improves gingival health, so a lack of brushing can lead to the opposite. Around one sixth of children will have teeth affected by developmental defects that may lead to an increased risk of decay, so early detection of these defects can help prevent caries developing.
Researchers find link between oral bacteria, cerebral microbleeds and stroke

By DTI

KYOTO, Japan: Cerebral microbleeds (CMBs) have attracted attention as an important predictive marker of stroke in several studies. Research further suggests that cnm-positive Streptococcus mutans, a type of oral bacteria associated with dental caries, is involved in the development of CMBs. Seeking to clarify the connection, a team of Japanese researchers has now found evidence that cnm-positive S. mutans is a novel factor of cognitive impairment associated with CMBs and therefore may be linked to disorders such as stroke and dementia.

Aiming to understand the clinical significance of CMBs and the mechanisms of their production, researchers from Kyoto Prefectural University of Medicine examined 279 patients (average age of 70) for the presence or absence of the collagen-binding surface. Cnm protein expressed on cnm-positive S. mutans in the saliva. In addition, cognitive function, dental health status and the prevalence of CMBs were assessed. Oral examination included the number of remaining teeth, presence or absence of dental caries, and periodontal status of the participants.

In the study group, 54 per cent tested positive for S. mutans and 31 per cent showed collagen-binding activity associated with S. mutans. Magnetic resonance imaging of the brain detected CMBs in 73 participants (26 per cent). As for the dental examination, 31 per cent of the participants had dental caries and 28 per cent scored a Code 6 or higher on the Community Periodontal Index of Treatment Needs. The mean number of remaining teeth was 22.7 1.5.

The analyses showed that cnm-positive S. mutans was detected more often among participants with CMBs than those without. Furthermore, the percentage of dental caries patients was significantly higher in the collagen-binding activity group, the study found.

According to the researchers, the findings suggest a molecular mechanism for the interaction between chronic oral infections and geriatric disorders, such as stroke and cognitive impairment. In order to clarify the causality, an intervention study focused on oral care and the microbiota in CMB subjects would be of interest, they emphasised. As the current data supports the important influence of the oral microbiota on neurological disease, they further called for improved collaboration between dental and medical researchers.

The study, titled “Cerebral microbleeds: Streptococcus mutans expressing collagen binding activity is a risk factor for cerebral microbleeds and cognitive impairment”, was published online on 9 December in the Scientific Reports journal.

Interview: “Communities without fluoridated water have a higher incidence of dental caries”

By DTI

CAIRNS, Australia: Once a manda- tory measure, the fluoridation of local water supply in Queensland is no longer compulsory. Due to pressure from anti-fluoridation campaigners, many local councils have chosen to abandon the addition of fluoride to water, despite its proven health benefits. Professor John Abbott is the Director of Clinical Dentistry at Cairns’ James Cook University and he recently spoke with Dental Tribune Interna- tional about this ongoing issue.

DTI: What prompted the Queensland Government to make the fluoridation of wa- ter supply non-compulsory?

Professor Abbott: On 5 December 2007, the Labor government’s Premier, Anna Bligh, made it mandatory that all water supply in Queens- land be fluoridated. However, in November 2012 the Liberal Party government reversed this decision. The reversal seemed to stem from consideration of the greater area that is called regional Queensland. There are many communities in Queens- land, including far north Queens- land, that never had fluoride in their water supply and there was quite a bit of unrest that water fluoridation had been forced onto these commu- nities.

What benefits does water fluoridation present?

Fluoride in the water supply is considered by dental health authorities to be a very good public health initia- tive. There is clear evidence that long-term exposure to optimal levels of fluoride results in diminishing levels of dental caries in both child and adult populations. The level of fluo- ride in drinking water supplies is also just 1.5 parts per million (ppm).

Which groups does non-fluoridated water affect most?

Simply put, communities without fluoridated water have a higher inci- dence of dental caries. There has been some discus- sion centring on ‘alternative solutions’ to compulsory wa- ter fluoridation. What type of solutions would these be and what limitations do they have?

Alternatives to fluoridated water include toothpaste and fluoride supplements, which may be costly. Bottled fluoridated water could be used in schools, but would require extensive management of the problematic fluoride var- nishes and scheduled dental exami- nations to detect disease early. This is why establishment of a home-oriented scenario is the actual incorporation of fluoride into developing teeth in- utero, by the mother drinking fluor- idated water. This enables fluoride to be incorporated into the developing teeth so that, on eruption, they are strongly protected against acid at- tack and dental caries.

Bottled fluoridated water could be used in schools, but would require extensive management of the pro- gramme, which may be costly. Fluor- idated toothpaste from the super- market contains around 1000ppm of fluoride, but most of this is washed down the sink with vigorous rinsing of the teeth after brushing.

Are there currently any incen- tives for councils to fluoridate their water supply?

As far as I am aware, there are currently no incentives for councils to do this.

Professor Abbott, thank you for speaking with us.

Evidence has repeatedly shown that long-term exposure to optimally fluoridated water results in decreased levels of dental caries in both children and adults. (Photograph: iTransmag/pixabay)
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* p < 0.05 compared to baseline
• p < 0.05 compared to control

Recommend Colgate® Sensitive Pro-Relief™ to your patients suffering from hypersensitivity due to acidic tooth erosion – clinically proven to treat hypersensitivity and relieve pain fast.*²

* When toothpaste is directly applied to each sensitive tooth for 60 seconds.
† Containing 5% potassium nitrate and 1450 ppm fluoride as sodium fluoride.
‡ Containing 1450 ppm fluoride as MFP.

References:
I love it! A personal story by Dubai dental hygienist Raheleh Mahtapour

By Marc Chalupsky, DTI

I have always been very passionate about dental hygiene education and spreading oral health and hygiene awareness in schools in Dubai. Not only do I love the interaction with my patients, but I also continue to learn from them and with them every day. One topic has been of particular importance to me: individually trained oral prophylaxis. A healthier and happier life can be achieved through proper oral hygiene—if one knows how to do it.

I was born and raised in Iran, where oral health education has always been a priority. Iranians are hungry for new things related to dental hygiene and dentistry. Programmes there range from two to three years after that, dental hygienists need to spend at least two years in the hospital before becoming a qualified professional. The schools in Iran ensure that we gain a great deal of exposure and prevention in the UAE. I was with the Dubai Health Authority, and I saw myself as being a little bit more biased, but when I came to Dubai, I saw myself as being a little bit more prepared than the other hygienists I met. Patient interaction and experience have always been very important.

Dental hygiene treatment in Iran is not different than in the rest of the world. We do the scaling, polishing, whitening and charting. In fact, we care about charting a great deal. We usually work with periodontists and our profession is truly appreciated. Oral hygiene does not only affect one’s teeth, it also influences a person’s overall physical and emotional health. By imparting good oral hygiene habits, we help patients live healthier and happier lives.

Today, I work at Dr. Michael’s Dental Clinic in the heart of Dubai. I think that the clinic is one of the most beautiful private practices. We have three clinics, one for orthodontics, one for general dentistry and one for paediatrics. Our clinic is surrounded by gardens, we have a beautiful atmosphere in the clinic. All of our patients feel welcome immediately.

My daily morning fun

Daily work starts at 8 a.m. in the morning. I take my daughter to kindergarten and then go to the clinic. I start preparing my brushes and my room. When the first patient comes in, I immediately begin discussing oral hygiene.

The session starts with photographs. I then do the overall check-up and cancer screening, checking for anything abnormal and informing the dentist if necessary. After that, I perform 15-20 minutes of ultrasound scaling and follow with hand scaling and polishing. Appointments usually last 1 hour. In fact, I might do the probing and charting in a separate appointment. The hygienist and dentist work closely together, discussing cases and referring patients to each other.

I love it!

I love the daily interaction with my patients. I have learnt so much from my patients and made many new friends. At the same time, I do my best to teach them about oral hygiene and how it can affect their health. I enjoy seeing my patients smile.

This is especially rewarding, as a large number of patients in the UAE do not know how to floss and brush properly. Even worse, many patients are referred from dentists who advised them to buy a medium toothbrush. I then show them the benefits of a soft toothbrush and explain that failure to use the correct brushing technique leaves plaque around the teeth, leading to bleeding and even gingival infection. One of my favourite pieces of information continues to be “Yes, you can remove bacteria and biofilm with a soft toothbrush.”

In Iran, many patients only go to the clinic when they already have a dental problem. In the UAE, there are many patients with poor oral health. Furthermore, there are many smokers, and judging from the oral health of many patients, they certainly like to eat sweets and drinks sugary beverages. Patients usually come to the clinic, but it is too late. This is even the case with children.

That is why I usually see my patients twice a year, because most insurance covers these visits. Sometimes, I see my patients again after two months or two weeks. I then ask them to bring their toothbrushes, which we will check together.

I am still in love

About ten years ago, I started ordering many toothbrushes and interdental brushes from the Swiss brand CURAPROX and introduced them to my patients. One day, a representative approached me and told me more about individually trained oral prophylaxis (iTOP). I attended the initial training programme—and loved it! After attending four iTOP seminars in Prague in the Czech Republic, I am still in love. I feel every dentist and hygienist can benefit from this. In the second iTOP programme, I practised brushing, but I continued to use a little bit too much pressure. It was evident to me that as dental hygienists need to continue to train. Through attending the iTOP courses, I learnt the right technique and now know that soft toothbrushes are the best products for proper cleaning.

iTOP teaches the following: interdental brushes first, then dental flossing. Many of my patients do not like to floss; they see bleeding and stop. Interdental brushing, however, is easier and more convenient. One has to help one’s gingivae become clean. Almost all of my patients have gingival bleeding—and most of them think it is normal.

Today, I am a proudly certified iTOP instructor and will continue to travel to Prague to learn more for the benefit of my colleagues and patients. I simply love being a dental hygienist and dental educator. Please let us spread the word together.
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Effective School Dental Health Program, step towards making “Little Oral Health Champions” #YearOfGiving

By Dr. Aparna Sharma, UAE

Introduction
Children's dental health habits in our children can give them a lifetime of better health. Schools can play a key role in preventing or identifying children's oral problems before they become serious and help families obtain the health services that are accessible and affordable.

Little Smile Officers are in real need...
Children with severe untreated dental decay often are in pain, can't sleep at night, can't concentrate and get poor grades. Young children and children with special needs are often unable to communicate about their oral problems or pain. Teachers may notice a child having difficulty while completing tasks by showing the effects of pain—atrophy, fatigue, irritability, depression and withdrawal from normal activities. Children who have a toothache when they take tests are unlikely to score as well as children who are not distracted by pain. When children’s acute oral health problems are treated and they are not experiencing pain, their learning and school attendance records improve.

Children and adolescents with special health care needs compared to all other health care services, oral health care is the most prevalent unmet need. According to parents, children and adolescents with special health care needs without insurance, their families with low incomes are more likely not to receive the health care services they need. More than half of children and nearly all other health care services, oral health care needs. Children and adolescents with special health care needs also have a higher risk of an unmet oral health care need. Unmet oral health care need. Unmet oral health care needs of all births. This rate varies substantially across different ethnic groups, and geographical areas.

Impact of poor oral health on physical, social and emotion-al health
Tooth decay is an infection caused by bacteria that are transmitted via saliva. Without proper care, the infection tends to progress becoming a cavity and maybe an abscess, thus not just affecting the tooth but the rest of the mouth and even the rest of the body, leaving the child prone to many other childhood infections such as ear or sinus infections. Oral injuries often occur during childhood and adolescence, and the teeth most frequently affected are the highly visible front teeth. Nearly 5% of children ages 6–8, 15% of children ages 9–11, 18% of adolescents ages 12–19, and 25% of adolescents ages 16–19 experience oral injuries. Emergency room admission studies reveal that more than 40% of oral injuries are the result of a fall. Trauma to the head and mouth can occur during school-sponsored physical activities, especially contact sports, as well as on the playground. Students who report accidents or injuries indicate that about 30% of dental injuries and about 90% of face injuries are related to loss of primary (baby) teeth from injuries or severe dental decay can result in permanent teeth that are crooked, trapped under other teeth or over crowded, making them more susceptible to decay and periodontal (gum) disease. A single injury to a tooth may not heal completely and may create expensive, long-term problems.

Children who have untreated oral diseases or injuries can suffer from inadequate nutritional intake, impaired growth and development, sleep problems from missing teeth, or poor self-esteem.

Planned Services to be offered in School-based Dental Program
In-school based dental programs preventive care services can be offered at the school. Programs may provide services in school clinics with stationary equipment, in a room in the school building using portable equipment, or in mobile vans parked at the school. Four common school-based dental services model include:

1. Dental screening programs: Students in any grade level may be screened. No treatment is provided at the school, thus, students with dental needs can be referred to a local dental clinic.

2. Dental sealant programs: Dental screenings are done and sealants are placed on students in selected grades (typically 2nd and 6th grades) to reach at least 50% of oral injuries are the result of a fall. Trauma to the head and mouth can occur during school-sponsored physical activities, especially contact sports, as well as on the playground. Students who report accidents or injuries indicate that about 30% of dental injuries and about 90% of face injuries are related to loss of primary (baby) teeth from injuries or severe dental decay can result in permanent teeth that are crooked, trapped under other teeth or over crowded, making them more susceptible to decay and periodontal (gum) disease. A single injury to a tooth may not heal completely and may create expensive, long-term problems. Children who have untreated oral

How often and for how long will the program be at school site— for instance, once a year, a half day? Will there be some other arrangement?
For better impact the program should be conducted at least once a year. Each program’s length will vary based upon the number of students needed to be seen. To ensure that all children who sign up for the program receive treatment, we must present paper-work to the school looking for words such as “staff hour” or “time allows” or “as time permits.” These words often indicate that the program is scheduled to be at the school for a set number of days even if not all the children who are signed up for care can be seen.

Participants wanted for trial testing to explore painless caries treatment

By DTI

BIRMINGHAM, Ala., USA: The University of Alabama at Birmingham School of Dentistry has announced that it will be offering patients with interdental caries a new, less painful treatment option as part of a new clinical trial. The new treatment, which entails infiltrating a preparation gel and then a liquid resin through a perforated plastic sheet between the teeth, allows dentists to treat cavities without administering local anesthesia or drilling, which is conventionally unavoidable to access the cavity.

The resin infiltration system is a commercially available product made in Germany and approved by the Food and Drug Administration, but is mostly being used only in clinical trials in the U.S. The university's clinical research center is conducting the largest U.S. clinical trial of this product, enrolling 150 patients in the study.

“When we develop cavities between teeth, sometimes we have to go through the tooth, and we end up damaging a lot of tooth,” said Dr. Augusto Robles, assistant professor and director of the operative dentistry clinic at the university. “This new system allows us to skip the drilling and helps us preserve sound structure.”

With the new procedure, the cavity is first cleaned by pushing a gel that prepares the surface to accept the resin infiltrant through the perforated sheet. The tooth is then filled by pushing a liquid resin through the perforated sheet. Finally, a dental curing light is then applied to the tooth to cure the resin.

Despite the apparent simplicity of the procedure, the treatment works only in between teeth or on smooth surfaces with small cavities. Some large lesions or those on the occlusal surfaces are not suited for this kind of system because the liquid resin cannot be used to build up shapes. Therefore, its application has to be very specific, Robles highlighted.

Dentists with patients interested in participating can advise their patients to make an appointment for a free 20-minute radiographic and screening assessment by email. Participation is free of charge.
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