Mom's Oral Health Predicts Infant's Oral Health

Mothers share many health outcomes with their children. This is due, in part, to shared genes, shared social environment and shared health knowledge and attitudes. Mothers also share oral bacteria with their children. Specific strains can be identified in both mothers and their children. Mothers with high salivary levels of *mutans streptococci* (MS) are more likely to have children with MS colonization. Mothers of children with caries are also more likely to have high MS levels.

Researchers at several universities in California participated in a long-term observational study of mothers and their children. Mothers were entered into the study during their second trimester of pregnancy in a community clinic near the U.S./Mexico border. Mothers were 18 to 33 years of age. Their saliva was tested for MS and lactobacillus (LB) during pregnancy and at four, nine, 12, 24 and 36 months postpartum. Clinical exams were also done at these times plus a series of questions. The study included 243 mother-child pairs from low-income, Mexican-American families.

All of the mothers had experienced dental caries. Nearly 60 percent of the mothers had untreated decay at all visits. At 36 months, 34 percent of the children had caries. Mothers with high levels of MS were likely to have children with high MS levels as well. Mothers with high levels of MS during the study were more likely to have children with caries. Mothers with low levels of MS were more likely to have caries-free children.

Clinical Implications: Mother's oral health and bacterial levels will predict early childhood caries in their children. ■

Chaffee, B., Gansky, S., Weintraub, J., Featherstone, J., Ramos-Gomez, F.: Maternal Oral Bacterial Levels Predict Early Childhood Caries Development. J Dent Res 93:(3) 238-244, 2014.

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Lower Right Lingual Most Difficult Area to Clean

Several authors have reported that the area in the mouth most likely to be missed with toothbrushing is the lower right lingual. This area is also reported to have the highest levels of plaque and gingivitis, compared to other areas of the mouth.

In a clinical practice, the hygienist noticed many patients with problems brushing the mandibular right lingual surfaces. These surfaces had more plaque and more inflammation than other areas of the mouth. It was decided to change the pattern of toothbrushing to begin in this area.

Ten patients with puffy, swollen lingual tissue were invited to participate in this Action Research Project. An intraoral camera was used to capture images of both the right and left mandibular lingual tissues. These images were shared with the patient and the difference between the sides was discussed. Following their routine prophylaxis, they were given a new toothbrush and instructed to brush the lower right inside surfaces first, before brushing the rest of the teeth. They were given a disposable mouth mirror and asked to evaluate the tissue for any changes after brushing this way for two weeks. The hygienist either telephoned or emailed, per patient request, after two weeks to see if any difference was noted.

Of the ten patients who participated in this study, six patients reported improvement in the tissue color and no bleeding upon brushing or flossing. Three patients didn't notice any difference and one forgot the instructions and didn't make any changes to the brushing pattern.

Clinical Implication: Teaching patients to begin toothbrushing on the lower right lingual will effectively reduce plaque and inflammation. ■

Rogers, C.: Would Starting Toothbrushing on the Lower Right Lingual Reduce Tissue Swelling from Inflammation? OHU Action Research 9A-13, 2014.

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Xylitol Baby Gel Used on a Denture Eliminated Oral Infection

Denture stomatitis is a common infection resulting in mild inflammation and redness under the denture. It is due to leaving the denture in the mouth rather than removing it during sleep, poor oral hygiene and/or a compromised immune system. In 90 percent of denture stomatitis cases, Candida albicans is involved. Anti-fungal drugs are used but not always effective in controlling these infections.

In this case study, an elderly man residing in a long-term care facility suffered from severe denture stomatitis and angular cheilitis. Because of the oral ulcerations, he was unable to wear his denture very long, eating was difficult, his mouth burned and he lost his sense of taste. Anti-fungal medications had not remedied the situation.

The patient's father was a dentist who wanted to find a solution to this problem. The hygienist suggested using xylitol off label to control the infection. There were no contraindications, so the Spry Xylitol Tooth Gel was used five times daily on the denture. After cleaning the denture, a small amount of gel, the size of a nickel, was spread on the denture before inserting it into the mouth. The gel was also used on the corners of the mouth.

Within one week, the angular cheilitis was healed and within two weeks, the oral ulcerations were gone, which allowed the denture to be worn all day. The patient was pleased with the outcome. The patient's quality of life was positively impacted as he was no longer in pain and could eat comfortably.

Clinical Implications: Spry Xylitol Tooth Gel is an effective remedy for oral candidiasis associated with dentures. ■

Payne, J.: Is Xylitol an Effective Anti Fungal Treatment for Oral Candida Infections? OHU Action Research 9A-13, 2014.

Reducing Mandibular Lingual Calculus Formation

Despite repeated oral hygiene instructions, patients return time after time with moderate to heavy supragingival calculus accumulating on the lingual of the lower anterior teeth. Two solutions have been presented to reduce plaque biofilm and the resulting supragingival calculus formation. The biofilm can be mechanically removed with dry toothbrushing on the lingual surfaces first. Blocking biofilm formation with xylitol use three to five times daily will also prevent supragingival calculus formation.

Six patients with moderate to heavy supragingival calculus formation on the lingual of the lower anterior teeth were invited to participate in the study. The two with the heaviest deposit were instructed to dry brush the mandibular lingual surfaces first, before brushing the rest of the mouth. They were then instructed to add toothpaste and repeat the brushing. They were also given 100 percent xylitol-sweetened gum and mints and told to use them after meals and snacks, five times daily. The second two patients were asked to follow the xylitol protocol and follow their regular oral hygiene. The last two patients were instructed in the dry toothbrushing technique. Subjects were examined two weeks later.

Both dry toothbrushing lingual surfaces first and xylitol use five times daily effectively reduced the supragingival calculus formation. Xylitol was slightly more effective and easier to use, thus compliance was better. One of the patients wasn't properly placing the toothbrush on the lower lingual surfaces to effectively remove the plaque. His technique was corrected and upon further evaluation two weeks later, the biofilm and calculus were effectively controlled.

Clinical Implications: Both dry brushing and xylitol can prevent biofilm formation and the resulting supragingival calculus formation. ■

Anguiano, E.: Can Dry Brushing and the Use of Xylitol Mints and Chewing Gum Help Reduce Supragingival Calculus Deposits? Action Research 9A-13, 2014.

Baking Soda Elevates pH and Reduces Inflammation

Baking soda (sodium bicarbonate) has long been suggested for toothbrushing and as a tooth whitener. Actress Julia Roberts reports following her grandfather's advice to brush with baking soda for a brighter smile. Sodium bicarbonate dates back to ancient Egypt. The ability of baking soda to neutralize acids makes it an inexpensive home remedy for full body issues as well as the prevention of dental disease.

Ten patients ranging in age from 20 to 60 years participated in the study involving toothbrushing with baking soda. At baseline they were screened for hypertension, salivary flow, salivary pH, gingival tissue appearance and bleeding.

They were instructed to brush daily with baking soda instead of toothpaste. They were to put half a teaspoon of baking soda into the palm of their hand, wet their toothbrush with water and scoop up the baking soda with the bristles and brush their teeth. They were also asked to add a teaspoon of baking soda to a glass of water to make a mouth rinse. After rinsing, they were to spit out the baking soda water mix and not rinse with water. They were given pH strips and asked to record the pH of their saliva upon waking up each morning and to record it on the form provided.

Patients returned one to two weeks later. The group showed reduced pH scores over the test period and also reduced bleeding and signs of gingivitis. Patients reported their mouths felt cleaner.

Clinical Implications: Baking soda is an inexpensive and readily available product for elevating salivary pH and reducing inflammation. ■

McKenzie, S.: Will Sodium Bicarbonate Change the pH Levels of Saliva and Reduce Gingival Inflammation? Action Research 9A-13, 2014.

Blood Test Screening for Diabetes in the Dental Office

Many people have diabetes and don't know it. According to the CDC, in 2010, 25.8 million people or 8.3 percent of the U.S. population had diabetes. Within this number, the undiagnosed cases account for 7 million or 21 percent of those with diabetes. Early treatment is essential to preventing serious complications including kidney failure, blindness, heart disease and stroke. Periodontal disease is also a risk factor for those with diabetes. Screening for diabetes in the dental office may provide an opportunity for early intervention.

Researchers at the University of Buffalo in New York screened patients for signs of diabetes in 11 general and periodontal practices and one community clinic in Providence, Rhode Island. Patients were asked a series of diabetes risk questions and given an HbA_{1c} finger stick blood test. Scores of 5.7-6.4 indicate pre-diabetes, 6.5 or greater indicates diabetes. Patients with scores of 5.7 and higher were referred by the dentist to their physician for a definitive diagnosis. A total of 1,022 people 45 years and older participated in the study. Half of those tested at the community center were at high risk for diabetes, compared to one-quarter in private dental practices. Community clinic patients were more likely to follow up with their physician than those seen in private dental office. Twenty-two percent of those referred by the dental office actually went to the physician compared to 79 percent from the community clinic.

Clinical Implications: It is feasible to screen for diabetes and pre-diabetes with the HbA_{1c} finger stick blood test. Follow-through on the referral to a physician may be a problem. ■

Genco, R., Schifferle, R., Dunfor, R., Falkner, K., Hsu, W., Balukjian, J.: Screening for Diabetes Mellitus in Dental Practices. JADA 145:(1) 57-64, 2014.