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The effects of xylitol-containing chewing gums on dental plaque and acidogenic potential

Scheie AA, Fejerskov O et al.
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The sugar substitute xylitol appears to have no effect on plaque in relation to caries, contrary to earlier reports. Instead, it seems to be inert.

Different chewing gums were given to 3 groups of 10 healthy dental students: xylitol (X), xylitol/sorbitol (XS) and sucrose (S). Students chewed 2 pieces for 5 minutes, 5 times daily, and the release of sweeteners was known. Plaque was allowed to accumulate for 3 days without use of gum and samples were assessed for quantity and acidogenic potential. This was followed by 30 days of normal oral hygiene with use of gum, after which oral hygiene again ceased for 3 days but gum was continued, and further plaque samples were removed.

Plaque protein assessment suggested that numbers of plaque bacteria were unaltered by chewing the gums, although the XS gum showed a trend towards an increase. Acidogenic potential (measured by glucose consumption by plaque samples) did not show a difference for any gum, nor was there any effect on glycolytic profiles. The authors consider that X-induced effects *in vivo* are marginal and only detectable in extreme conditions.

Causes of death and life expectancies among dentists

Shimpo H, Yokoyama E et al.
Int Dent J 1998; 48: 563-570

Tokyo dentists live approximately as long as other inhabitants of that city, but appear more likely to die of tumours of the gastrointestinal tract and less likely to die of heart and lung disease.

Males account for more than 90% of Tokyo dentists, and 80% of dentists are members of the Tokyo Dental Society, which requires death certificates to be submitted for an insurance benefit. From 1985-1994, 560 male dentists died out of an average population of 4704. Standardised mortality rates were calculated for the main causes of death, with the Tokyo population SMRs for reference.

Life expectancies of Tokyo dentists at birth and age 25 were 75 and 51 years respectively, and not significantly different from 77 and 52 for the general population. Leading causes of death were: malignant neoplasms (40%), cerebrovascular diseases (16%), heart diseases (16%), and pneumonia and bronchitis (8%).

Dentists were about 30% more likely to die of neoplasms, and particularly those of the oesophagus and colon, and about 10% less likely to die of heart disease or pneumonia and bronchitis. The authors give a fascinating picture of Japanese dental practice, with a figure of 11.5 hours for a working day in 1971. The tumours may relate to alcohol consumption, smoking, and sedentary work. Occupational risks such as HBV did not affect mortality rates.

Emotional responses evoked by dental odours: an evaluation from autonomic parameters

Robin O, Alaoui-Ismaïli O et al.
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The smell of a dental surgery may evoke memories of previous dental experiences, and be viewed differently by people who are afraid or unafraid of dentistry.

Forty-four healthy non-smoking students inhaled 5 odours in random order: eugenol, menthol, methyl methacrylate, vanillin and propionic acid. All odours were preceded by a pleasant smell of lavender to suppress the surprise effect of each stimulus. Throughout the test, 6 autonomic nervous system parameters were measured: skin potential and resistance, skin blood flow and temperature, instantaneous respiratory frequency and heart rate. Subjects were asked to recognise each odour and assess it on a scale of pleasantness.

Vanillin and menthol were rated pleasant, and methyl methacrylate and propionic acid very unpleasant. Nineteen subjects recognised eugenol as reminiscent of a dental surgery. Of these, 7 were not apprehensive about dental care, but 12 were. There were no differences between these two groups about the other 4 odours, but eugenol was rated as unpleasant by the apprehensive group, and pleasant by the other group.

Oral mucosal changes in coeliac patients on a gluten-free diet

Lähteenoja H, Toivanen A et al.
Eur J Oral Sci 1998; 106: 899-906

This study reinforces the role of oral diagnostic procedures in the identification of coeliac disease (CD).

A comparison was made of 128 coeliac disease patients on a gluten-free diet, 8 newly-diagnosed CD patients and 30 healthy controls. The respective numbers of those with oral mucosal symptoms were 85, 10 and 5; with actual oral mucosal lesions, the numbers were 71, 7 and 4. Thus more than half of CD patients had symptoms or lesions, as opposed to one-quarter to one-third of controls. The commonest lesions or symptoms in CD patients were soreness or burning sensation of the tongue, dryness or soreness of the mouth, and mucosal ulceration. In controls, dry mouth was commonest.

A 4 mm diameter buccal mucosa biopsy was taken adjacent to a second upper molar. Nearly half of the CD patients had a moderate or intense inflammatory cell infiltrate, as opposed to one-tenth of the healthy controls. Treated and untreated CD patients had similar conditions. The authors note that recurrent aphthae or dental hypoplasia may be presenting features of CD, and that some of their patients on a gluten-free diet still had CD oral manifestations, despite reports that this diet may reduce oral ulceration. It was possible that some patients were not strictly complying with the diet.