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Oral physiology; paediatric dentistry

Salivary factors affecting dental erosion in children

O'Sullivan EA, Curzon MEJ
Caries Res 2000; 34: 82-87

Children with erosion have minimal caries but have salivary characteristics similar to caries-active subjects.

Erosion arises from acids of non-bacterial origin, from sources such as diet, the environment and the stomach. Individual susceptibility to erosion may be affected by a number of factors. This study compared 103 children aged 3–16 yrs referred to a university paediatric dentistry department with suspected dental erosion (E), and two groups of control subjects (caries-free: CF, and caries-active: CA) matched by age and gender attending in the same department. Up to 25% of children (mainly aged < 6) did not complete all tests involving salivary flow.

E subjects differed significantly from CF subjects in: mutans streptococci count > 100 CFU (unadjusted odds ratio OR = 2.2), unstimulated salivary pH < 6.5 (18.1) and stimulated salivary pH < 7.0 (3.1), but not in stimulated (< 1.0 ml/min) or unstimulated (< 0.4 ml/min) salivary flow rate. However, E differed from CA only in the two latter factors (ORs = 4.9 and 5.8). Salivary buffering capacity was highest in CF subjects, but lowest in the E group, and a low level increased the risk of erosion (OR = 14). The authors consider buffering capacity the most useful chairside test for explaining susceptibility to parents.

Oral medicine

Salivary flow and oral complaints in adult dental patients

Bergdahl M
Community Dent Oral Epidemiol 2000; 28: 59-66

Several clinical conditions were associated with reduced salivary flow.

In northern Sweden, 90% of the 0.5 million inhabitants receive regular dental care, half of which is provided by the public dental health service. A random sample of 2,000 patients was selected from 48,500 registered with 14 public dental clinics, and 1,427 participated in this study. Unstimulated and stimulated salivary samples were collected, and subjects completed a questionnaire on disease experience, prescribed and non-prescribed medication, perceived xerostomia, depression, anxiety and psychological stress.

Salivary flow rates were significantly higher in men than women (mean unstimulated 0.33 ml/min v. 0.26; stimulated 2.5 v 2.02), and unstimulated flow was lower for women over 55 yrs than for those who were younger. Disease or medication (including 71 women on hormone treatments) was reported by 40% of subjects. Multiple regression tests identified low flow rates in subjects with perceived xerostomia or fewer teeth, and male smokers had lower unstimulated flow. Perceived xerostomia was associated with burning mouth, muscular pain, taste disturbances and dry eyes. The authors point out that causes cannot be inferred from their cross-sectional

Orthodontics; oral pathology

Long-term follow-up of maxillary incisors with severe apical root resorption

Levander E, Malmgren O
Eur J Orthod 2000; 22: 85-92

Orthodontic root resorption may lead to hypermobility.

Apical root resorption can occur during orthodontic treatment, and the effects vary between teeth and between patients. Once the treatment is completed, the process appears to stop. This study assessed 20 subjects who were available and willing to take part, out of 30 who had participated in previous orthodontic root resorption investigations.

The present study was 10–15 yrs after active treatment in 13 patients (aged 13–24), and 5–10 years later in 7 patients (20–25). All had worn retainers for a minimum of 2 years, and 7 patients still had bonded wire retainers.

Radiographically assessed total root length ranged from 5.5 to 18.1 mm; it was ≤ 8 mm in 15 and 8.1–9.0 mm in 12, with the remaining 46 roots longer. Intra-alveolar root length was a mean 1.5 mm less than total length and correlated well with it. Mobility measured by two methods was significantly associated with root length, but was not related to the presence of a bonded wire retainer. The authors consider that tooth hypermobility is likely to affect teeth with a total root length of ≤ 9 mm after orthodontic root resorption, and recommend follow-up of all resorbed teeth.

Orthodontics; professions complementary to dentistry

The effectiveness and efficiency of hygienists in carrying out orthodontic auxiliary procedures

Mandall NA, Read MJF
Br J Orthod 1999; 26: 229-232

A variety of orthodontic procedures were completed effectively by 2nd year student hygienists newly trained in orthodontic auxiliary procedures; however, recently trained orthodontists were 2–4 times as efficient.

The potential for auxiliary support in orthodontics is currently a matter of interest in the UK, and such staff are already employed in some other countries. The main questions appear to relate to cost-effectiveness. Following a modular orthodontic auxiliary training course, 5 student hygienists were assessed performing 11 different appliance-related procedures on typodonts. They were compared with 5 orthodontists who had completed the 3 year course of specialist training.

There were no significant differences between the hygienists and orthodontists with regard to satisfactory performance of any procedures, which included placing separators, bands, archwires and attachments. In all but 2 procedures, the orthodontists completed their work in half to quarter the time taken by hygienists. The authors point out that with increased experience, the hygienists may be able to work at greater speeds.