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CONSERVATIVE DENTAL SURGERY

Effectiveness of single-surface ART restorations in the permanent dentition: a meta-analysis

Frænken JE, van't Hof MA *et al.* *J Dent Res* 2004; **83**: 120-123

Survival of atraumatic restorative treatment (ART) restorations and amalgam restorations did not differ over a 3 year period.

The ART approach was developed 2 decades ago, using hand instruments for cavity preparation, followed by placing an adhesive restoration in cavity and associated pits and fissures. The aim was to be able to restore teeth using limited resources. Glass ionomer cements were the original choice of material, and the present study identified 7 randomised ART trials in which this had been compared with conventional amalgam restorations.

One was excluded because of low power, and another because 3 year results were not included. The remaining trials involved 723 amalgams and 822 ART restorations in permanent teeth. Because of material and technique differences, 3 studies performed during 1987-1992 were analysed separately from 2 performed after 1994.

In the early studies, amalgam had statistically better survival than ART at 1, 2 and 3 years: 5%, 8% and 13%. In the late studies there was no significant difference between the approaches. The authors conclude that there is now no difference between the survival rates of these different approaches to conservation up to 3 years after treatment.

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ORAL DIAGNOSIS; PERIODONTICS

Use of the basic periodontal examination and radiographs in the assessment of periodontal diseases in general dental practice

Tugnait A, Clerehugh V *et al.* *J Dent* 2004; **32**: 17-25

Most dentists used the basic periodontal examination (BPE), but choice of radiographs varied considerably.

This study investigated the degree to which the BPE was used by general dental practitioners (GDPs) who provide treatment in the British National Health Service (NHS), and how it related to their radiographic examination of periodontal disease. The BPE is based on the Community Periodontal Index of Treatment Need. A random sample of 800 practitioners in the NHS was mailed a questionnaire up to 3 times, and the response rate was 74%; 107 of them had dental postgraduate qualifications.

Only 1% of GDPs did not use the BPE or pocket depth measurements for new adult patients. However, those who used these diagnostic procedures did not all do so on all occasions, and 80% used BPE to decide on the need for further periodontal examination. Those with additional qualifications were more likely to use BPE frequently for new and recall patients.

In respect of 6 specified scenarios, most GDPs used radiographic views different from those suggested by the Faculty of General Dental Practitioners of the Royal College of Surgeons of England. Some GDPs considered that periodontal assessment could not be separated from other aspects of dental assessment in their patients.

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ORAL HYGIENE

The effectiveness of manual versus powered toothbrushes for dental health: a systematic review

Deery C, Heanue M *et al.* *J Dent* 2004; **32**: 197-211

In general, reduction of plaque and gingivitis was similar with powered and manual toothbrushes.

Many studies have compared tooth brushing methods. This review sought to identify all randomised controlled trials comparing manual and powered tooth brushing on several databases. In an initial 354 published trials, 27 had all required inclusion criteria, and 2 further unpublished trials were identified and included.

Five types of powered toothbrush were compared with manual brushes, mainly in studies of 1-3 months. Manufacturers wholly or partly funded 19 studies. Powered brushes were at least as effective as manual brushes in plaque and gingivitis reduction. The largest group of studies concerned rotational oscillation powered brushes, which gave statistically significant better reductions: plaque 11%, and gingivitis 6%. Counter oscillation and ultrasonic brushes were significantly better in plaque removal, but not in gingivitis reduction.

The authors comment on the heterogeneity of trials, the question of what constitutes clinically significant results, and the failure of most trials to follow design and reporting methods recommended by the CONSORT statement (<http://www.consort-statement.org>). They conclude there is no general difference in efficacy of the two types of brush, though specific designs of powered brush may be better.

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DENTAL PUBLIC HEALTH

The relation of tobacco smoking to tooth loss among young adults

Ylöstalo P, Sakki T *et al.* *Eur J Oral Sci* 2004; **112**: 121-126

There was a dose-response relationship of smoking with tooth loss in a large group of 31-year-old Finns.

Smoking is associated with dental caries (probably for behavioural reasons unfavourable to health and common to both) and with periodontal diseases (because smoking interferes with the immune response). However, periodontitis is unlikely to account for much tooth loss in subjects as young as 30 yrs old.

This study investigated tooth loss in relation to smoking in a cohort of subjects born in 1966, when 11,541 remaining members were sent a questionnaire at the age of 31-32 yrs and 8,690 responded. Five subjects had lost all teeth, 29 had lost more than 10 teeth, 2% had 6-10 missing teeth, 41% had 1-5 missing, and 57% had lost none.

In a multivariate analysis including demographic factors, healthy lifestyle and dentally related behaviour, smoking exposure had a dose-related association with tooth loss: the significant odds ratios were for 6-10 pack-years (1.24), 11-15 pack-years (3.47) and 16 or more pack-years (5.3). The authors suggest that both smoking and the tendency for smokers to indulge in other unhealthy behaviour are likely to be reasons for their findings.

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