The use of interdental brushes along with toothbrushing removes most plaque

Abstracted from

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Question: Are the use of interdental brushes (IDB) as an adjunct to toothbrushing more effective than toothbrushing alone?

Data Sources The National Library of Medicine (Washington DC; to access Medline-PubMed) and the Cochrane Central Register of Controlled Trials were searched for articles dated from 1965 up to November 2007.

Study selection Two independent reviewers assessed studies for inclusion, aiming to identify appropriate randomised controlled clinical trials and controlled clinical trials. Studies were selected if they were conducted in humans, and included subjects of over 18 years of age in good general health with sufficient interdental space to use an interdental brushes. The articles were limited to English-language publications. Case reports, letters and narrative or historical reviews were excluded.

Data extraction and synthesis As there was considerable heterogeneity in the design of the studies, a meta-analysis was only conducted for the comparison of the interdental brush with floss, with weighted mean differences (WMD) calculated using a random effects model. Descriptive comparisons were presented for brushing alone, brushing and flossing or brushing and woodsticks where appropriate.

Results After searching the literature, 234 titles and abstracts required screening, resulting in 18 full-text articles. Based on the full texts, another five articles were excluded and finally nine studies were identified as eligible. Two were of crossover design, three of a split-mouth design and four were parallel design. The longest study duration was 12 weeks.

Conclusions The evidence showed that interdental brush use as an adjunct to toothbrushing removes more dental plaque than brushing alone, being even more effective than dental floss or woodsticks in removing dental plaque. The evidence available for the effect on gingival inflammation is less conclusive. The reduction of pocket depth after the use of the interdental brush is more pronounced than with floss.

Commentary

The interdental sites are the areas of the teeth that are most frequently coated with dental plaque.¹ The toothbrush, which is successful in removing plaque at buccal, lingual and occlusal surfaces, seems not to be completely successful in removing plaque at interproximal sites.² Interdental elements are frequently recommended by dental professionals to patients in order to achieve a good dental and periodontal health.

The question proposed here by Slot *et al.* is whether the use of interdental brushes as an adjunct to toothbrushing, compared with toothbrushing alone or other interdental oral hygiene measures, reduces plaque and

improves the clinical parameters used for measuring periodontal inflammation. Only three studies compared the interdental brush with the toothbrush alone. The evidence derived from this review supports recommendations by dentists and dental hygienists for their patients to use interdental brushes in addition to toothbrushing since it reduces dental plaque. Systematic reviews are considered to be the highest level of evidence because only well-designed studies are selected for evaluation. This review is carried out well by the authors, but a number of weaknesses can be found. As the search was restricted to English-language publications, the search cannot be considered exhaustive: we are not sure that some important data published in other languages were not missed. The method of randomisation was often unclear in the papers considered, and only in one study was block randomisation used. Even though the difference between means were clinically significant, not all of the studies included presented confidence intervals, but these are vital when estimating the statistical significance and the magnitude of the effect.

Some conflicts of interests should be noted because six studies were financially supported by manufacturers or the products under study were provided by the industry. In the remaining three studies, no information about conflicts of interest was presented. As the authors suggested, more research is also required that takes into account smoking habits and also that considers changing the technique in the use of interdental brushes, from lingual to buccal sites.

As to strengths, the period of followup of the included studies accorded with American Dental Association guidelines for adjunctive dental therapies (<http://www.ada.org/ada/seal/standards/index.asp>).³ On the other hand, as the outcome has high prevalence, the sample size of the different trials can be considered large enough to allow identification of statistically and clinically significant differences.

Interdental cleaning elements are a useful device to complement toothbrushing. The evidence suggests that interdental brushing is the most effective method to remove plaque. Dental professionals can recommend interdental brushes while respecting patient's preferences for cleaning methods, but more important and difficult will be motivating the patient to add interproximal devices to their daily oral cleaning.

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