

***Clinical Significance.*—Conservative methods used chairside via CAD/CAM systems offer the advantages of reduced loss of tooth substance, rapid availability, and acceptable survival rate. In addition, these restorations are highly satisfying to patients. These techniques offer dental practitioners a successful restorative option.**

Nejatidanesh F, Amjadi M, Akouchekian M, et al: Clinical performance of CEREC AC Bluecam conservative ceramic restorations after five years—A retrospective study. *J Dent* 43:1076-1082, 2015

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Gingivitis

Toothbrushing to address gingivitis

Background.—The toothbrush is the most widely used homecare method for controlling plaque, with a twice daily regimen commonly considered the best approach. The toothbrush achieves mechanical disruption, with fluoridated toothpastes used to address infectious agents and remineralization needs. A meta-review, which contains just systematic reviews, provides more evidence that separate empirical studies and is highly appropriate for determining if the current evidence base is complete or incomplete through a synthesis of the information. A meta-review was undertaken to summarize the contemporary synthesized evidence regarding the safety and efficacy of home mechanical plaque removal using a toothbrush to manage plaque and gingivitis.

Methods.—The National Library of Medicine, the Cochrane Library, and the American Dental Association Center for Evidence-based Dentistry databases were searched to identify studies that satisfied the requirements for this meta-review. Plaque scores and gingivitis scores were the primary parameter, with safety considered as an important contributor to efficacy. The study also determined risk of bias and graded the evidence using the GRADE system.

Results.—Ten evaluations were included in the review. Most of the systematic reviews were judged to have low to moderate risk of bias, with two having a substantial to high risk of bias. A meta-analysis was not done in view of the heterogeneity of the reviews.

Moderate evidence shows that the use of a single oral hygiene instruction describing how to use a mechanical toothbrush plus a single professional prophylaxis produces a small positive effect on reducing gingivitis. None of the evidence addressed the efficacy of manual toothbrushes'

effect on gingivitis. Strong evidence shows that a manual brushing exercise has an overall treatment effect and that power toothbrushes are able to reduce plaque after a brushing exercise.

Comparison of manual and powered toothbrushes shows that powered toothbrushes reduce plaque and gingivitis more than does manual toothbrushing both in short-term and in long-term evaluations. Limited evidence indicates oscillating-rotating brushes reduce plaque and gingivitis more effectively than side-to-side brushes over the short term. More research is needed before health care professionals can recommend specific powered brushes to the public with the full backing of strong evidence.

The review also indicated that toothbrushing can produce adverse events such as gingival traumatic injury and seizures along with ingestion, impaction, and sudden trauma. However, the occurrence of such events is incidental compared to the large number of toothbrushes in use worldwide. Strong but inconclusive evidence is available addressing the link between toothbrushing and gingival recession.

A comparison of powered and manual toothbrushes indicates toothbrush type does not affect the occurrence of soft tissue trauma. Limited but strong evidence shows gingival recession is not significantly different between manual and oscillating-rotating toothbrushing. Indirect but strong evidence shows oscillating-rotating toothbrushes are safe compared to manual toothbrushes. Limited evidence indicates toothbrushes of healthy adults and those with oral disease become contaminated with pathogenic bacteria from dental plaque, design, environment, or combinations of factors. However, the effect of this contamination on disease

transmission is unknown. Mechanical plaque control efficacy remains insufficiently evaluated.

Discussion.—Five studies evaluated the efficacy of manual and powered toothbrushes. Three assessed toothbrush safety, one evaluated the effect of oral hygiene instruction with a toothbrush on plaque and gingivitis, and one assessed toothbrush contamination. Overall, toothbrushing was found to be effective in reducing plaque levels. Powered toothbrushes tend to be better at preventing gingivitis than manual toothbrushes. Oscillating-rotating brushes were studied most often. All toothbrushing is safe for teeth and soft tissues in the oral cavity.

Clinical Significance.—Toothbrushing is the primary way most of us remove dental plaque, and it is done at home, usually at least once a day. It is both efficient and readily available. As professionals, dentists should ensure that their patients understand the best way to brush

the teeth to achieve good results. They should also understand as much as possible about new or novel products and methods so that they can properly advise patients about the efficacy of these products or methods. A substantial body of evidence exists that can guide the dentist and patient in making good choices. For adults with gingivitis, toothbrushing could be improved to have a stronger effect on dental plaque and gingival health.

Van der Weijden FA, Slot DE: Efficacy of homecare regimens for mechanical plaque removal in managing gingivitis: A meta review. *J Clin Periodontol* 42:S77-S91, 2015

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Hypersensitivity

Agents' efficacy against hypersensitivity

Background.—The pain of dentin hypersensitivity (DH) is short, but sharp and sudden. This common oral pain condition results when exposed dentin is stimulated and is resolved when the stimulus is removed. Risk factors include gingival recession, erosive diet, and various lifestyle factors, including aging. As the population ages and people are retaining more of their natural teeth, tooth wear is more common, as is DH. No specific treatment has proved universally effective against DH. Various self-applied and professionally applied treatments were compared for their ability to reduce the pain of DH.

Methods.—PubMed, Medline, and The Cochrane Database Trials Register were searched and hand searches were carried out seeking randomized controlled trials studying the treatment of DH. The results of the 30 studies were divided into those dealing with self-administered products (including toothpastes and mouthrinses) and those applied professionally (prophylaxis pastes).

Results.—Meta-analysis on the results was not possible. The evidence for or against each intervention was described and recommendations noted.

Arginine applied in a toothpaste form is effective for pain relief from DH. The evidence supporting this role is high quality, so arginine is recommended for this use. Applied professionally, arginine treatment is effective, but the evidence was insufficient to recommend this product over others.

PVA/MA polymers may be delivered in a mouthrinse formulation. However, many other agents are combined in these products, so the quality of evidence that PVA/MA alone or combined with other factors is effective against DH is low and inconclusive.

The use of potassium salts to relieve pain caused by DH is not sufficiently supported by the available evidence. It cannot be recommended as an effective treatment. The same findings were noted for casein derivatives.

The self-administration of strontium acetate-containing toothpaste is effective in providing pain relief in cases of DH. The product is recommended and supported by moderate quality evidence.