

All-Ceramic Crowns Compared With Porcelain-Fused-to-Metal Crowns in Adults: A Review

Context

A dental crown is a tooth-shaped cap that covers a damaged tooth to restore it functionally and improve its appearance. For more than 40 years, the gold standard for the repair of damaged teeth has been porcelain-fused-to-metal crowns. However, crowns crafted from other materials are also available.

Technology

Porcelain-fused-to-metal crowns consist of a noble or base metal fused to a porcelain overlay. Although they function well and have high fracture resistance, they are often criticized for being unappealing aesthetically. All-ceramic crowns are more aesthetically pleasing, but they are typically thought to be less resistant to chips and fractures than the porcelain-fused-to-metal ones. However, major advances in ceramic technology during the last 20 years have improved the longevity of all-ceramic crowns.

Issue

Despite the improvements made with respect to all-ceramic crowns, it is unclear whether they are now as durable as porcelain-fused-to-metal crowns. A review of the long-term (eight years or longer) clinical and cost-effectiveness of all-ceramic compared with porcelain-fused-to-metal dental crowns, as well as of the contextual considerations that may affect their clinical or cost-effectiveness, will help inform reimbursement decisions.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Key Messages

- Compared with all-ceramic crowns, porcelain-fused-to-metal crowns:
 - likely have a higher 10 and 15-year survival rate
 - are likely more cost-effective after 10 years.
- These conclusions are based on limited evidence.
- There is a lack of evidence on the contextual considerations that may have an effect on the clinical and cost-effectiveness of specific types of dental crowns.

Results

The literature search identified 567 citations. After screening the abstracts, 3 studies were deemed potentially relevant, while 2 articles were added from a previous Canadian Agency for Drugs and Technologies in Health (CADTH) report on this topic. Of these, only 2 articles met the criteria for inclusion in this review — 1 non-randomized study and 1 cost-effectiveness study.

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