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Comparator choice in cariology trials limits conclusions on the comparative effectiveness of caries interventions

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Appendix

Search sequence

Exemplarily search sequences for PubMed for trials on prevention and management of carious lesions.

Prevention of carious lesions

Search (((((((((((fluoride) OR sealant) OR sealing) OR remineralisation) OR remineralization) OR remineralise) OR remineralize) OR antibacterial) OR chlorhexidine) OR brushing) OR brush))) AND (((((((((((progression) OR prevention) OR arrest) OR prevent) OR progress) OR activity)))) AND (decay) OR carious) OR dmft) OR dmfs)))) AND (((((patients) OR clinical) OR randomized) OR randomised) OR random)))) 1305 06:56:36

Management of carious lesions

Search (("Tooth"[Mesh] AND "Dental Caries"[Mesh]) AND (((((((("pit and fissure sealant" OR "pit and fissure sealants")) OR ("Pit and Fissure Sealants"[Mesh]) OR "Dental Restoration, Permanent"[Mesh]) OR "Dental Restoration, Temporary"[Mesh]) OR ((ultraconservative[Title/Abstract] OR stepwise excavation*[Title/Abstract] OR atraumatic*[Title/Abstract] OR minim*[Title/Abstract])) OR (ultraconservative[Text Word] OR stepwise excavation*[Text Word] OR atraumatic*[Text Word] OR minim*[Text Word]))) OR "Dental Cements"[Mesh]) OR "Dental Amalgam"[Mesh]) OR "Resins, Synthetic"[Mesh])

Rules for classification

A number of rules were applied to further classify the strategies:

- If treatment combinations such as ART were used in several arms, but only one component varied (the material, the excavation instrument, the pre-treatment), the comparator was categorized according to these components.
- If studies used a factorial design (for example, hand excavation or rotary excavation combined with glass ionomer or amalgam restorations), we aimed to conserve this design by assigning groups accordingly (in this case, two comparators were concerned with caries removal, and two with materials).

- As terms were not always used stringently, we classified comparators according to their description, which sometimes deviated from the examples in Table 1. For example, ART was sometimes used as synonymous with “hand excavation”, without the further aspects of ART (sealants, material) being considered. In this case, the comparator was classified as caries removal comparator. Similarly, crowns placed using the Hall Technique (no caries removal) were sometimes placed on teeth after caries removal. In this case, this was not classified as a caries removal comparator, as the Hall Technique would have been, but as an “other” invasive comparator (dealing with the restoration placement technique rather than the caries management method). Also, where restoration replacements (for example composite or amalgam) were compared with repairs or resealing, replacement was classified as Invasive Technique Others (I_T_O) and not as a material comparator with composite or amalgams, to reflect the purpose of this comparator.
- In some studies, baseline controls were described as arms. These were not counted as comparators and were omitted.
- Similarly, in some groups placebo comparators were performed (for example, using no liner under a restoration, and comparing with a lining being placed). This was not classified as placebo, but as a (lining) comparator.