

## OP36 DO ACRYLIC AND WIRE RETAINERS PERFORM SIMILARLY TO OTHER REMOVABLE RETENTION APPLIANCES? A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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**AIM:** Acrylic and wire retention removable appliances (Hawley, wrap-around, Begg, etc.) have traditionally been popular among orthodontists. The aim of this study was to compare their performance to the other removable appliances used for retention after the completion of orthodontic treatment.

**MATERIALS AND METHOD:** A search without restrictions for published and unpublished literature took place utilizing Medline via PubMed, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, Scopus, Web of Science, Lilacs, IndMed, Scielo, Arab World Research Source, Deutsche Zentralbibliothek für Medizin, Google Scholar, ClinicalTrials.gov, International Standard Randomised Controlled Trial Number registry, OpenGrey and Pro-Quest Dissertation and Theses Global database. In addition, hand searching was performed. Randomized controlled trials (RCTs) that compared various acrylic and wire retention appliances (Hawley, wrap-around, Begg) to other removable retention appliances (clear thermoplastic appliances, tooth positioners and modifications, etc.) were reviewed. The risk of bias was assessed using the Cochrane Collaboration's Risk of Bias assessment tool for RCTs and the quality of evidence (confidence in the observed estimates) according the Grades of Recommendation, Assessment, Development and Evaluation approach.

**RESULTS:** The initially retrieved records were finally reduced to eight RCTs comparing Hawley to Essix appliances and one RCT that compared the Hawley appliance to a positioner. In general, Hawley and Essix appliances performed in a similar manner in terms of tooth alignment, arch form, occlusion, speech alterations and appliance survival. However, patients seemed to prefer more the transparent appliances that could also be considered more cost-effective in the context of a public health-care system. Hawley appliances were reported to be more beneficial to periodontal health compared to positioners. The overall quality of evidence limited the confidence in the observed estimates.

**CONCLUSIONS:** Acrylic and wire removable appliances and thermoplastic retainers seem to perform similarly in the medium term but patients have a greater preference for transparent appliances. Standardization, better reporting in longer follow-ups and data on patient compliance could be useful in forming robust recommendations for the clinical setting.