## Self-ligating orthodontic brackets vs. conventional brackets: systematic review of systematic reviews

## Citation

Abdulghani Alarabi, David Bearn. Self-ligating orthodontic brackets vs. conventional brackets: systematic review of systematic reviews. PROSPERO 2017 CRD42017072287 Available from:
https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42017072287

## Review question

Is there any difference between self-ligating orthodontic brackets and conventional orthodontic brackets in the reported systematic reviews?

## Searches

We searched the following electronic bibliographic databases: PubMed, MEDLINE, EMBASE, The Cochrane Library (Cochrane Database of Systematic Reviews), TRIP, and SCOPUS. The search strategy was including only terms relating to or describing the intervention. There were no language restrictions. There were no date restrictions. The searches will be re-run just before the final analyses and further studies retrieved for inclusion.

## Types of study to be included

Systematic reviews only.

## Condition or domain being studied

Orthodontic bracket systems.

## Participants/population

Orthodontic patients receiving full arches upper and lower fixed orthodontic appliances using either self-ligating orthodontic bracket system or conventional orthodontic bracket system, no age restriction, and no gender restriction.

## Intervention(s), exposure(s)

this review will report systematic reviews comparing between self-ligating orthodontic brackets and conventional orthodontic brackets

Inclusion criteria

1. Systematic review of prospective randomised, controlled clinical trials, and observational studies comparing self-ligating and conventional ligating preadjusted orthodontic appliances.

2. Orthodontic treatment for all ages and gender (no age or gender restriction)

3. Full arch treatment with self-ligating / conventional ligating orthodontic appliances.

4. In-vivo human studies.

5. Written in any language (no language restriction)

Exclusion criteria

1. Systematic reviews including retrospective studies.

2. In-vitro, ex-vivo, or animal studies.

3. Studies without a comparison group.

4. Review, opinions, response, viewpoints, editorial, or philosophical articles.

## Comparator(s)/control

Subjects were treated with conventional ligating orthodontic appliances.

## Main outcome(s)

• time (chair side and treatment duration)

• treatment efficiency

• the patient experience

• the operator preferences

• Complications (white spot lesions), plaque accumulation, and periodontal problems.

• Smile aesthetics

## Additional outcome(s)

None.

## Risk of bias (quality) assessment

The quality of the studies included will be assessed with two reviewers using AMSTAR tool (Shea et al., 2009). SHEA, B. J., HAMEL, C., WELLS, G. A., BOUTER, L. M., KRISTJANSSON, E., GRIMSHAW, J., HENRY, D. A. & BOERS, M. 2009. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. Journal of clinical epidemiology, 62, 1013-1020.

## Strategy for data synthesis

We will provide a narrative synthesis of the findings from the included studies, type of outcome and intervention content. We will provide summaries of intervention effects for each study by calculating risk ratios (for dichotomous outcomes) or standardised mean differences (for continuous outcomes).

We are aiming to do meta-analysis if possible, so where studies have used the same type of intervention and comparator, with the same outcome measure, we will pool the results using a random-effects meta-analysis, with standardised mean differences for continuous outcomes and risk ratios for binary outcomes, and calculate 95% confidence intervals and two sided P values for each outcome.

We will assess the heterogeneity between the studies in effect measures. And we will also assess if there are any publication bias.

## Analysis of subgroups or subsets

If the necessary data are available, subgroup analyses will be done for people treated with different brands of orthodontic brackets (e.g Ormco orthodontic brackets and 3M orthodontic brackets).

## Contact details for further information

Abdulghani Alarabi

algani79@yahoo.co.uk

## Organisational affiliation of the review

Dundee Dental School, University of Dundee

http://dentistry.dundee.ac.uk/

## Review team members and their organisational affiliations

Dr Abdulghani Alarabi. Orthodontic department, Dundee Dental School, University of Dundee

Professor David Bearn. Orthodontic department, Dundee Dental School, University of Dundee

## Type and method of review

Systematic review

## Anticipated or actual start date

01 March 2017

## Anticipated completion date

01 March 2018

## Funding sources/sponsors

None

## Conflicts of interest

None known

## Language

English

## Country

Scotland

## Stage of review

Review Ongoing

## Subject index terms status

Subject indexing assigned by CRD

## Subject index terms

Humans; Ligation; Orthodontic Appliance Design; Orthodontic Brackets; Orthodontic Wires

## Date of registration in PROSPERO

17 July 2017

## Date of first submission

## Stage of review at time of this submission

| Stage | Started | Completed |
|---|---|---|
| Preliminary searches | Yes | Yes |
| Piloting of the study selection process | Yes | Yes |
| Formal screening of search results against eligibility criteria | Yes | Yes |
| Data extraction | Yes | No |
| Risk of bias (quality) assessment | Yes | No |
| Data analysis | Yes | No |

*The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.*

*The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.*

## Versions

17 July 2017