

The Cochrane Collaboration: Cochrane Oral Health Group



INFORMATION: COCHRANE SYSTEMATIC REVIEWS

▪ Background

The primary task of The Cochrane Collaboration is to prepare, maintain, and disseminate systematic reviews of the effects of health care. The main activity of Collaborative Review Groups (CRGs), such as the Oral Health Group, is to prepare Cochrane systematic reviews, within their scope, for publication on The Cochrane Library. Reviews are published electronically so that more and more reviews can be added and existing reviews can be brought up-to-date as new clinical studies are completed and reported.

▪ Systematic reviews

If someone decides to look critically at articles that have appeared in the medical or health literature on a particular topic they are said to be 'reviewing the literature'. An individual may review, say, all the drug treatments available for one type of heart disease.

A systematic review aims to thoroughly assess, by means of an explicit set procedure, the best possible evidence about the effects of a healthcare intervention or treatment in a particular healthcare situation.

For a systematic review to be called a 'Cochrane Review' it must be prepared and maintained by The Cochrane Collaboration using specific methodologies carefully set out by The Cochrane Collaboration. How these methodologies are applied is described in each review.

▪ Cochrane Systematic Reviews

A **Cochrane Review** is a systematic, up-to-date summary of reliable evidence of the benefits and risks of health care. Cochrane Reviews are intended to help people make practical decisions. For a review to be called a 'Cochrane Review' it must be in the *Parent Database* maintained by *The Cochrane Collaboration*. The *Parent Database* is composed of *modules* of reviews submitted by *Collaborative Review Groups* (CRGs), e.g. Cochrane Oral Health Group. The reviews contributed to one of the modules making up the *Parent Database* are refereed by the *editorial team* of the CRG, as described in the CRG module. Reviewers adhere to guidelines published in the *Cochrane Reviewers' Handbook*. The specific methods used in a Cochrane Review are described in the text of the review. Cochrane Reviews are prepared using *Review Manager* software, also known as RevMan, provided by the Collaboration and adhere to a structured format that is described in the Handbook. Cochrane Reviews are published electronically in successive issues of *The Cochrane Library*.

▪ Format of a Cochrane Systematic Review

Cochrane Reviews follow a standard format so that readers can find the results of research quickly and assess the validity, applicability and implications of those results. It guides reviewers to report their work explicitly and concisely, and minimises the effort required to do this. The format is also suited to electronic publication and updating, and it generates reports that are informative and readable when viewed on a computer monitor or printed.

Each review consists of:

- a cover sheet - giving the title, citation details and contact addresses
- a synopsis – prepared in collaboration with the Cochrane Consumers Network
- an abstract - using a structured format
- the text of the review - consisting of an introduction (background and objective), materials (selection criteria and search strategy) and methods, results (description of studies, methodological quality, and results), discussion and reviewers' conclusions
- tables and figures – showing characteristics of the included studies, specification of the interventions that were compared, the results of the included studies, a log of the studies that were excluded, and additional figures relevant to the review
- references.

Title: The title succinctly states the focus of the review. It makes clear the intervention(s) reviewed and the problem at which the intervention is directed. Someone scanning the title should be able to decide quickly whether the review addresses a question of interest. At its most basic, a title takes the structure 'Intervention for condition'.

Synopses: The synopsis is a brief summary of the results of the review in plain language for consumers and non-specialist readers. The synopsis does not replace the abstract but is an additional product. It is published as part of the Cochrane Review in the Cochrane Database of Systematic Reviews (The Cochrane Library). The synopsis enhances the accessibility of the review, disseminating its findings to a wide community internationally and acts as an aid to browsing in The Cochrane Library. The Consumer Network will consider each synopsis and those that are suitable will additionally be made available on The Cochrane Collaboration's Internet site, and available on paper from the Consumer Network and some other Cochrane entities. Synopses are often translated into several non-English languages.

The synopsis has two parts: a short, single sentence 'headline' of up to 25 words followed by a single paragraph summary of the context and findings of the review (50 to 100 words).

The text briefly covers: the context and alternatives relating to the problem and interventions; the potential benefits and risks of the interventions; and the main findings of the review.

Abstract: All full reviews must include an abstract of not more than 400 words. Abstracts are made freely accessible on the Internet and are often read as stand-alone documents. They summarise the key methods and content of the review and do not contain any material that is not in the review.

They are primarily targeted to healthcare decision makers (clinicians, consumers and policy makers) rather than just researchers.

The content under each heading in the abstract is as follows:

Background: One or two sentences to explain the context or elaborate on the purpose and rationale of the review.

Objectives: A precise statement of the primary objective of the review, ideally in a single sentence.

Search strategy: This will list the sources and the date of the last search. Any constraints based on language or publication status, will be listed. If individuals or organisations were contacted to locate studies this will also be noted. If journals were specifically handsearched for the review, this will be noted.

Selection criteria: This is given as '*[type of study] of [type of intervention or comparison] in [disease, problem or type of people]*'.

Data collection and analysis: Restricted to how data were extracted and assessed. This section covers whether extraction and quality assessment of studies were done by more than one person. If the reviewers contacted investigators to obtain missing information and if any attempts were made to identify adverse effects.

Main results: This section includes the total number of trials and participants included in the review, and brief details pertinent to the interpretation of the results (e.g. the quality of the studies overall or a comment on the comparability of the studies, if appropriate). It addresses the primary objective and is restricted to the main qualitative and quantitative results.

Reviewers' conclusions: This section is succinct and draws directly from the findings of the review so that they directly and obviously reflect the main results. Important limitations of data and analyses are noted. Important conclusions about the implications for research are included if these are not obvious.

Text: The text of the review should be as succinct as possible and written so that someone who is not an expert in the area can understand it.

It is a part of the mission and a basic principle of The Cochrane Collaboration to promote the accessibility of systematic reviews of the effects of healthcare interventions to anyone wanting to make a decision about health care. However, this does not mean that Cochrane Reviews must be understandable to anyone, regardless of their background. This is not possible, any more than it would be possible for Cochrane Reviews to be written in a single language that is understandable to everyone in the world. It is important to translate the content, or elements of the content, of reviews into different languages and formats targeted at different audiences including healthcare professionals, consumers and policy makers in a variety of circumstances.

Cochrane Reviews are written so that they are easy to read and can be understood by someone with a basic sense of the topic who may not necessarily be an expert in the area.

The readability of Cochrane Reviews should be comparable to that of a well-written article in a general medical journal.

Background: A brief synthesis of the underlying biology and healthcare of the topic being reviewed, explaining the motivation and rationale for the review. It should be presented in a fashion that is understandable to the consumers of that health care.

Objectives: A precise statement of the primary objective of the review, including the intervention(s) reviewed and the targeted problem. Why this review was undertaken and how it might relate to a wider review of a general problem.

Criteria for considering studies for this review: The criteria used to select studies for inclusion in the review. **Types of studies** (e.g. 'all randomised controlled comparisons' or 'all double blind randomised controlled trials'), **types of participants**, **types of interventions** and **types of outcome measures** are subheadings in this section.

Search strategy for identification of studies: The data sources used to identify studies are summarised, including bibliographic databases, reference lists from pertinent articles and books, conference proceedings and personal contact with experts or organisations active in the area. The databases searched, the date they were searched and the terms used are stated, including any constraints, such as language. If journals were specifically

handsearched for the review, these are noted. Any additional data sources are listed, including any contacts made with individuals or organisations (including pharmaceutical companies) to identify studies.

Methods of the review: This section includes the method used to apply the selection criteria (e.g. if they were applied independently by more than one reviewer), the criteria used to assess the quality of studies and how they were applied, how data were obtained (e.g. if individual patient data were sought or if the number of events was calculated from published survival curves), how the data were synthesised, and any statistical techniques used and sensitivity analyses performed.

Description of studies: This refers to the information contained in the 'Characteristics of Included Studies' and the 'Characteristics of Excluded Studies' tables. It describes the key characteristics of the study participants, interventions and outcome measures in the included studies and any important differences among the studies.

Methodological quality of included studies: This describes the general quality of the included studies and any important flaws in individual studies.

Results: A summary of the main findings of the review and details of any sensitivity analyses that were undertaken. The results of individual trials, and any statistical summary of these, are included in Data tables.

Discussion: Includes brief comments on any methodological limitations of the included studies and the review that are important for decisions about practice or future research.

Reviewers' conclusions: Implications for practice and Implications for research are subheadings in this section.

Conflict of interest: Any conflict of interest capable of influencing the judgements of any of the reviewers is reported here, including financial, personal, political or academic conflicts.

References: References to studies are organised under four standard headings: **included studies**, **excluded studies**, **studies awaiting assessment**, and **ongoing studies**. Other references include **additional references** that are cited in the review and **other published versions of the review**; e.g. if the review has been published in a journal.

Tables and figures:

Characteristics of included studies: This is a standard table with seven columns: study ID, methods, participants, interventions, outcomes, notes and allocation concealment.

Characteristics of excluded studies: Any studies meeting the inclusion criteria, or appearing to meet the inclusion criteria, that were excluded are placed in this table with reasons for their exclusion (e.g. inappropriate control group).

Characteristics of ongoing studies: This is a standard table with seven columns: Study ID, Trial name or title, Participants, Interventions, Outcomes, Starting date, Contact information and Notes.

Comparisons and data: The comparisons correspond to the questions or hypotheses under 'Objectives'. Data for each comparison is entered in a standardised format from which tables and figures for each comparison can be generated.

▪ **Summary of stages involved in preparing and maintaining a Cochrane Systematic Review**

(Oral Health Group)

1. (Reviewer/s) choose a topic for a systematic review
 2. Register the title with the Group
 3. Attend Cochrane Protocol Development workshop and write a protocol
 4. Submit protocol for editorial, external and consumer peer review
 5. Amendments by reviewer if necessary
 6. Enter protocol in RevMan (Review Manager software)
 7. Send above for inclusion in Oral Health Group's list of registered protocols published in *The Cochrane Library*
 8. Identify trials
 9. Attend Cochrane Analysis workshop
 10. Complete systematic review
 11. Enter review into RevMan software
 12. Peer review of the systematic review (editorial, external & consumers)
 13. On completion submit via RevMan to Group Co-ordinator for transfer into ModMan (Review Group Module manager software)
 14. Group Co-ordinator sends review to Cochrane Consumer Network for synopsis to be written
 15. Group Co-ordinator transfers files from ModMan for review to be entered and published in the *Cochrane Database of Systematic Reviews (CDSR)* in *The Cochrane Library*
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16. New trials published and/or comments received from users
 17. Amendments/updating by reviewer entered into RevMan software repeat stages 11 – 13.

Acknowledgements:

A lot of the information included in this document has been taken or adapted from the following sources:

Clarke M, Oxman AD, editors. Cochrane Reviewers' Handbook 4.2.0 [updated March 2003]. In: The Cochrane Library, Issue 2, 2003. Oxford: Update Software. Updated quarterly.

The Cochrane Consumer Network (CCNet) web site: <http://www.cochrane.org/consumers/>