

Module 6: Searching for studies

This module covers finding studies to be considered for inclusion in systematic reviews.

Learning objectives

- Understand the key role of searching for studies in a systematic review
- Be aware of the variety of sources of reports of studies.
- Be able to discuss a logical approach to searching for studies
- Have discussed a search strategy with the appropriate Cochrane review group
- Be aware of the need to manage references and be aware of some ways of doing this

Relevant section of the *Cochrane Handbook for Systematic Reviews of Interventions*

- Chapter 6: Searching for studies

Other relevant material

- Lefebvre C, Clarke M. Identifying randomised controlled trials. In: Egger M, Davey Smith G, Altman D (eds). *Systematic Reviews in Health Care*. London: BMJ Publishing, 2001.

Where does this go in a Cochrane review?

- Under the heading 'Search methods for identification of studies' in the text of the protocol and review.

Searching far and wide

How do you go about finding studies that meet the inclusion criteria for your review? At one extreme you could do a very quick search on one electronic database and find a couple of relevant articles. At the other extreme you could try to find every study that's ever been done addressing your review's question.

It's much easier to find studies with dramatic results

Inadequate searches can introduce bias to your review, and make the conclusions less useful

As you might expect, there are problems with both these approaches. If you don't look very hard, the studies you do find are not likely to be representative of all the studies done. The reasons for this are explained in detail in the module on '*Publication bias*'. For now, you just need to know that studies with dramatic results are much easier to find than studies that don't have dramatic findings. The other problem with only looking for a few studies is that you end up with less information. This can limit the precision of the results of your review, and restrict the conclusions you can make.

However, is it feasible to find absolutely every relevant study that has ever been done? It's certainly not easy and might not be possible in most reviews. Many studies are never published, and those that are may not be indexed in places, such as MEDLINE, you'd normally look. At some point, the effort required to find more studies becomes too much, but there is relatively little evidence on exactly when we need to stop. So, for now, most people adopt a pragmatic approach – look as far and as wide as possible, taking care to look in such a way that we take account of what we know about the biases in finding studies.

In the meantime, one of the major, ongoing efforts of the Cochrane Collaboration is to make the reports of relevant studies easier to find.

Developing a logical approach to searching

In developing your search strategy, there are a few principles. Your search should:

- Be sensitive (trying to find as many studies as possible)
- Minimise bias
- Be efficient

You'll need to look for studies in a number of ways and in a number of places

Start searching where you expect the highest yield

Get advice from an information specialist who is familiar with the searches needed for systematic reviews

To make your search sensitive, you'll need to look in a number of different places - no single database, journal or book will contain all relevant records. To minimise bias, you will need to think about finding studies that aren't in the major sources like MEDLINE. For an efficient search, it is usual to start looking in the place you expect to have the highest yield.

To do your search well, you'll need access to help from an information specialist/librarian, who has a good knowledge of helping people with systematic reviews. It is only recently that people have started going to libraries and asking for help with finding *everything* on a given topic, rather than asking for only a few bits of relevant information, so these skills are fairly new!

Where to look for studies

The next sections run through the sources you are likely to use in finding studies.

Electronic databases

Cochrane review group specialised registers



Contact your [Review Group](#) to find out about their register of studies

Each Cochrane review group is building up a register of studies relevant to its scope. The idea is that instead of each reviewer searching lots of databases and journals for trials relevant to interventions for, say, asthma, it would be more efficient to search these sources centrally for *all* trials relevant to asthma. The reviewer can then use the register compiled from this work as their first place to search, and they will effectively be searching several sources at once.

Of course, some Cochrane review groups have been around longer than others, and some have more resources to devote to this. So the completeness of these registers varies. You'll need to talk to your review group about getting access to the information in their register.

The Cochrane Central Register of Controlled Trials (CENTRAL)

This register is part of *The Cochrane Library*. The idea behind this register is that it should be a central place to put all the reports of controlled trials identified through the work of the Cochrane Collaboration. This means that it contains the results of searching MEDLINE, EMBASE, some other databases and a long list of journals, books and conference proceedings. Many of the reports of studies on the register have been included because they *might* be reports of trials, based on reading the title and abstract (if there was one).

The content of *The Cochrane Central Register of Controlled Trials* changes all the time, as does the indexing of entries and retrieval methods. There's more information about this on *The Cochrane Library*.



Read [section 6.2.1](#) of the *Cochrane Handbook for Systematic Reviews of Interventions*

Other databases

These are described in section 6.2.1 of the *Cochrane Handbook for Systematic Reviews of Interventions*, and in the further reading listed at the start of this module. You'll need some advice from an information specialist about which ones to search.

A particularly important source might be registers of ongoing and unpublished trials.

Handsearching

This means going through journals, books and conference proceedings by hand, looking for relevant studies. Because this takes a long time, the Cochrane Collaboration has encouraged people to register their handsearching and look for all reports of controlled trials. These are then collected and put onto *The Cochrane Central Register of Controlled Trials* so that no one else has to handsearch that source. The list of journals being searched can be downloaded from the internet at:

[Master List \(Journals\).xls](#)

[Master List \(Conference Proceedings\).xls](#)

Again, you may need some guidance from an information specialist about which journals may need searching for your review.

Checking references

It's usual to read through the reference lists of any studies you do find, in case the authors have referred to any other relevant studies. It may also be worthwhile looking for previous reviews of the topic and checking their reference lists, too.

Personal communication

People who have been working in a particular topic area may know of studies you haven't yet found. Reviewers commonly send a list of the studies they have found to the authors of those studies, asking if they are aware of any other relevant studies.

Another approach is to write to the manufacturers of relevant drugs or devices and ask if they are aware of any other studies.

Coming up with a search strategy

If you're not an information specialist, you may find the sources listed above a bit daunting. Don't worry; it doesn't all have to be done at once. Remember the logical approach of starting to look at the richest source and working down.

Remember that this is something your review group should be able to help you with. Get in touch with them and ask what help they can give you.

Document your search

It's very important to keep an accurate record of what you've searched, when you searched it and how you searched it. It'll help you avoid having to repeat searches and it will help people using your review to appraise how well they think you've minimised bias.

All these details should be documented in the 'Search methods for identification of studies' section of the text box in RevMan. The only exception is that where you've used the register of your review group, you don't need to write down the strategy your group used. You should, however, explain the search used to retrieve studies from your review group's register.

Keeping it under control

Keeping track of searches can be a challenge. You may find several reports of the same study, and you will probably find the same report of a study in several databases. So you need some way of keeping track of the references you've looked at, and then some way of grouping together all the reports of a single study.

You might like to keep a record of where you found each study, so that you can report how useful different sources were.

If you don't already use one, now might be a good time to learn to use reference management software

Some people use reference management software to do all this, such as ProCite, Reference Manager, EndNote or IdeaList. If you like working with databases this is great, and can save time typing in references later on. Other people prefer printing out citations and writing on them. You're going to need some system for keeping track of which references you think are relevant, which ones you have ordered from the library, which ones you've received the paper for, etc. It's a good idea to keep a note of which studies you have found and rejected. You may well come across them again later and it can be very frustrating to re-read irrelevant records.

Whichever route you take, you'll probably end up with a file with a section for each study. In this section you'll keep the form you use to collect information about the study and all the papers that report that study.

Tips for saving time and effort

Here are a few ways you can save yourself some time and effort. At the risk of being repetitive, the main advice is simply to get some help from an expert. But some other little tips are:

- Look at the terms used to index and describe a few studies you already know are relevant to your review, and use these terms in your search strategy
- Add new terms to your search strategy and then pilot them on part of the database to see whether you get relevant material, before you run it on the whole database
- Use date limits for your search if appropriate. For example, if drugs, surgical techniques or diseases have only been around since a certain date, there's no point searching before then