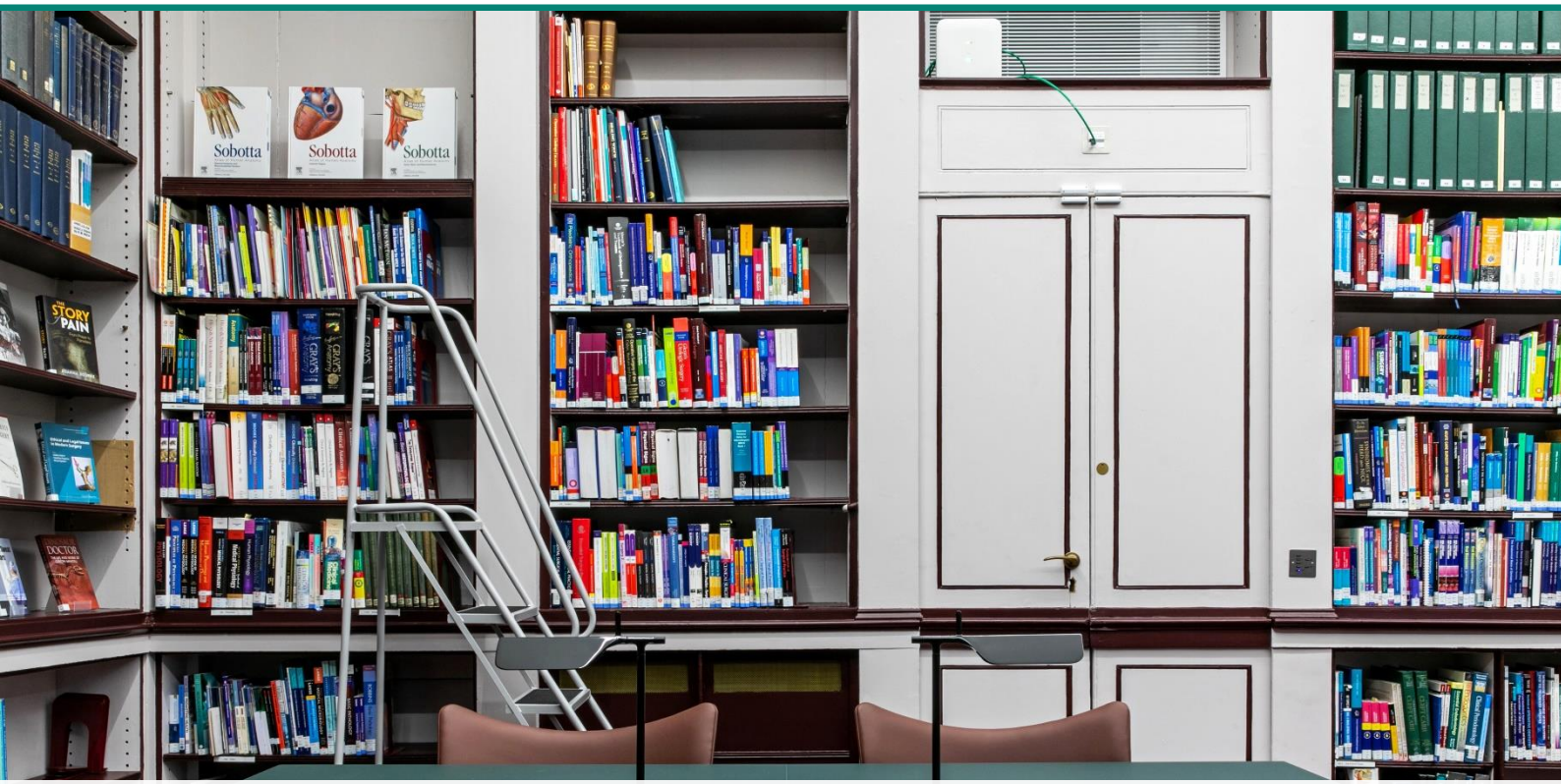
Royal College of Surgeons of England

ADVANCING SURGICAL CARE



Reporting your search results

Reporting your search results

Introduction and objectives

This guide explains how and why to report search strategies and search results.

Objectives

Learn key skills to help you check for mistakes, improve your search, and get published.

- **Save** – search strategy and results, and details of what you did and why you chose that approach.
- **Record** – results at different stages of the search, e.g. total results per database, numbers of duplicate results, results finally included in the study.
- **Document** – search strategy table, literature flow diagram, methods and findings.
- **Publish** – select a journal, and use the journal's author guidance to report your methodology, results and search strategies.
- (For help carrying out a literature search, see the guide **Basics of literature searching for surgery**)

Who this guide is for

- For members needing a printed guide (e.g. due to intermittent internet access)
- To supplement a 1-2-1 training session.

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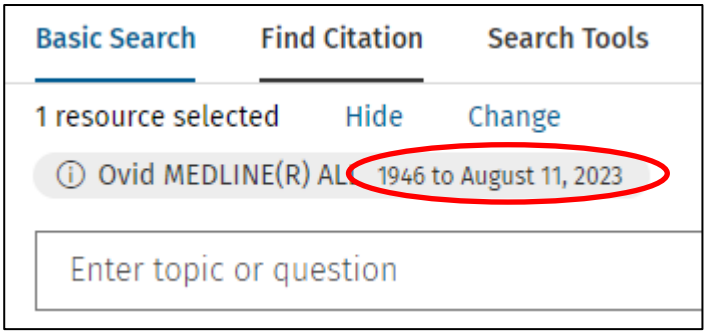
Saving and recording your search strategy

Best practice tip: Avoid the pitfall of thinking you've documented everything, then later not being able to work out what you did!

It's a good idea to comply with PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). PRISMA is a well-recognised standard and checklist for reporting systematic reviews.
You should record enough detail that another researcher could rerun your search.

When you run a database search, most search sources show the key terms you used, and the number of results. Recording these is a good start. But it's important to also:

- Keep a record of the **database interface** (eg OVID, ProQuest or EBSCO) as well as the database (e.g. MEDLINE or Embase).
- Different interfaces have different search functions and work in slightly different ways. See guide on **Reporting surgical search results**.
- Use the **copy or export functions** within the database to copy or export the search strategy, and save it in a spreadsheet or table.
- Record the **date of your search**, and if available, the **date that the database was last updated** (in the screenshot below, 1946 to August 11, 2023).



- Write **summary notes** about your search process covering:
  - the search concepts used, e.g. music therapy, perioperative care
  - examples of search terms
  - how you found those terms and any variants
  - any date restrictions or other limits.

Saving your search strategy

This is important to:

- Save you time and effort from having to duplicate your work.
- Allow you to check and improve your strategy and keep records of how your search strategy has changed.
- Help you with reporting your strategy if you are hoping to publish your results.

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You can save your search strategies in most databases.

- Look for a ‘Save Search’ or ‘Search History’ button.
- You may need to create a free account within the database.
- For more information, see our accompanying guides **Searching MEDLINE and Embase for surgery** and **Searching Cochrane Library for surgery**.

Recording the search strategy in a document

It’s also best practice to record search strategies in programmes like Microsoft Word and Microsoft Excel, using tables.

Most databases offer a search strategy export function. (See **Searching MEDLINE and Embase for surgery** and **Searching Cochrane Library for surgery**).
For some databases, such as Google Scholar, you may need to copy the search terms directly from the screen into a document.

A table should contain:

- Search date (and date of database’s most recent update, if available).
- Interface (e.g. Ovid, EBSCO).
- Database (e.g. MEDLINE).
- Search terms in rows.
- Search results for each row.

Search strategy and results in Ovid MEDLINE

Search History (10)

# ▲	Searches	Results	Type	Actions
1	Music/	16811	Advanced	Display Results
2	(music* or song* or sound* or sing).ti,ab,kw,kf.	155204	Advanced	Display Results
3	1 or 2	159065	Advanced	Display Results
4	Preoperative Care/	65331	Advanced	Display Results
5	(preop* or pre-op* or presurg* or pre-surg*).ti,ab,kw,kf.	425567	Advanced	Display Results
6	4 or 5	454220	Advanced	Display Results
7	Anxiety/	107052	Advanced	Display Results
8	(anxi* or fear* or nerv* or stress*).ti,ab,kw,kf.	2173293	Advanced	Display Results
9	7 or 8	2190814	Advanced	Display Results
10	3 and 6 and 9	381	Advanced	Display Results

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The same search strategy presented in a table

Row number	Ovid MEDLINE(R) ALL <1946 to August 03, 2023>	Number of results
1	Music/	16811
2	(music* or song* or sound* or sing).ti,ab,kw,kf.	155204
3	1 or 2	159065
4	Preoperative Care/	65331
5	(preop* or pre-op* or presurg* or pre-surg*).ti,ab,kw,kf.	425567
6	4 or 5	454220
7	Anxiety/	107052
8	(anxi* or fear* or nerv* or stress*).ti,ab,kw,kf.	2173293
9	7 or 8	2190814
10	3 and 6 and 9	381

Describing your search strategy

In the methods section, you'll summarise and explain your search approach, including:

- Source (interface and database) used.
- Dates searched.
- Outline of search approach, including concepts and terms.
- Any search filters used, for example for study type, population or language.
- The contributions of others (e.g. did an information specialist offer advice?).
- Where to find the full strategy (e.g. in an appendix).

For example:
Following best practices from the PRISMA statement and Cochrane Handbook, we searched Ovid MEDLINE, Ovid Embase and the Cochrane Library, from 1 January 2013 to 3 August 2023. These were chosen as the principal databases covering our topic area, as employed in three earlier key systematic reviews. We also harvested references from these three systematic reviews. The search strategy was constructed using subject headings from MeSH and Emtree, and freetext terms for the key concepts of music, pre-operative care, and anxiety. Examples of included terms are the MeSH term Music/ or the freetext terms music* or song* or sound* or sing in title, abstract, keywords or key phrases, where * indicates truncation to retrieve word variants. We combined the three concepts of music, pre-operative care, and anxiety using AND. No further search filters were applied apart from the publication date limit. An information specialist from the library of the Royal College of Surgeons of England quality assured our draft search strategy and suggested improvements, which we implemented. For the full search strategy, please see Appendix A.

Note: Depending on the journal, you may need to provide additional information.

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Managing your search results

Saving and recording the results found at each stage is crucial. Without doing this, it's easy to lose track of the numbers that you will need to report in your article.

Saving your search results

Collating your search results

Searching more than one database or source means that you will need to collect all your results in one place in order to find duplicates and remove irrelevant results. A convenient tool for this could be a reference manager or a spreadsheet.

Transferring results to a reference manager/spreadsheet can usually be done via:

- Direct export, where you select results to export in your preferred format which can be opened immediately on download.
- A browser capture button for individual pdfs or web pages (these are usually linked to a reference manager).
- Manually typing in the details of individual results. This is the slowest and most labour-intensive method. It's also the most likely to result in mistakes!

Detailed instructions can be found in the MEDLINE, Embase, and Cochrane guides.

Reference managers help collect, keep track of, and organise your search results in one place. Some are freely available online, like Zotero.

If you work in an NHS Trust, get in touch with your Trust library to access RefWorks.

If you are affiliated with a university, you may have free/discounted access to a different reference manager. Check with your university library.

Keeping track of your search results

In terms of keeping track of results, make sure to record:

1. Numbers of results from each database.
2. Numbers of duplicates.
3. Numbers of irrelevant results excluded using different criteria.
4. Numbers of relevant results available in full text.
5. Final numbers of results included in the review.

A search summary table can help with visualising this:

Databases searched	Date of search	Number of results

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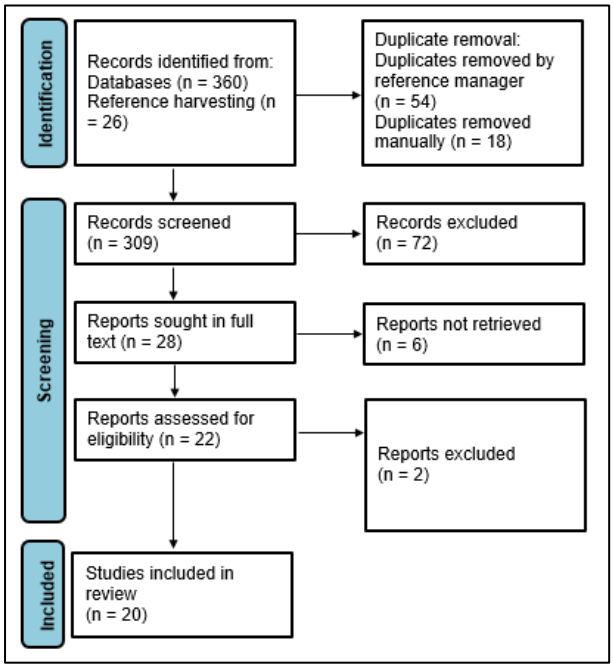
Ovid MEDLINE(R) ALL <1946 to August 02, 2023>	03/08/2023	150
Ovid Embase <1974 to 2023 Week 30>	03/08/2023	162
Cochrane Central Register of Controlled Trials (CENTRAL) and Cochrane Database of Systematic Reviews (CDSR)	03/08/2023	CENTRAL: 44 CDSR: 4
Reference harvesting (from 3 systematic reviews)	03/08/2023	26
Total results after deduplication	309 (after subtracting 72 duplicates)	
Total results after sift of abstracts for relevance	28 (after subtracting 281 excluded results)	
Relevant results available in full text	22 (after subtracting 6 not available in full text)	
Total results in final review (after sift of full text)	20 (after subtracting 2 excluded results)	

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) is often used to show the flow of search results in a systematic review. However, the diagram is useful for keeping track in any study that contains a literature search.

Example of a PRISMA flow diagram



Adapted from: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Reporting your search

Writing up your results section

The **results section** of your manuscript should outline the volumes and types of search output. For example:

> The database search of Ovid Medline, Ovid Embase and the Cochrane Library produced a combined search output of 381 results. After removing duplicates, there were 309 records remaining. Sifting to remove 281 irrelevant results (i.e. not on the topic of interest, non-English language in full text, animal studies) gave 28 results, of which 22 could be obtained in full text and entered the final analysis. 20 studies were finally included: 5 systematic reviews, 10 randomised controlled trials and 5 observational studies. Please see Fig. 1 for the PRISMA flow diagram.

Sources of guidance and help

Journal publishers

Reputable publishers produce detailed guidance for authors. This will include the required format for reporting search methods and strategies. Some even provide a template. Sheffield Hallam University also has a very useful research publishing guide.

PRISMA

PRISMA is a well-recognised standard and checklist for reporting systematic reviews.

Cochrane Handbook for Systematic Reviews of Interventions

The Cochrane Handbook's main purpose is to help researchers produce Cochrane reviews but is also useful for other non-Cochrane systematic reviews.

Librarians and information specialists

Evidence shows that involving health librarians/information specialists leads to better quality methods and higher standards of reporting.[1-3] Their involvement can include carrying out and reporting the search in the published article. All such contributions should be described in the published article and recognised through co-authorship or named acknowledgement.

Health information specialists at RCS England can provide search training, carry out searches on your behalf, and/or peer-review your strategy. Contact us to arrange support.

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Publishing your research

What to consider when choosing journals

There is lots to consider when selecting a potential journal to submit to, including:

- Scope of the journal and its intended audience.
- Findability of the journal.
- Charges/fees.
- The peer review process.
- Acceptance/rejection rates.
- Time taken to publication.
- Impact factor and other bibliometrics that measure journal quality.

To start, you might want to think about these questions:

- What journals do you read? What journals do your colleagues read/publish in?
- Could you submit your work to publications linked to professional bodies? E.g. RCS England publications, such as *The Annals of The Royal College of Surgeons of England*, *The Bulletin*, or *The Faculty Dental Journal (FDJ)*.
- Which journals publish studies with similar topics or study designs as yours? Which journals published the studies included in your own research?
- What do journal selectors/finders suggest? (Try PubMed JANE)

Think, Check, Submit

Think, Check, Submit is a useful website when you are preparing to publish. The checklist for journals can help you identify a suitable, reputable, and ethical journal. Avoid predatory journals, which are journals that market publishing services but do not maintain high standards, potentially wasting your money and damaging your reputation.

References

1. Rethlefsen ML, Farrell AM, Osterhaus Trzasko LC, Brigham TJ. Librarian co-authors correlated with higher quality reported search strategies in general internal medicine systematic reviews. J Clin Epidemiol 2015;68(6):617-26.
2. Meert D, Torabi N, Costella J. Impact of librarians on reporting of the literature searching component of pediatric systematic reviews. J Med Libr Assoc 2016;104(4):267-277.
3. Rethlefsen ML, Murad MH, Livingston EH. Engaging medical librarians to improve the quality of review articles. JAMA 2014;312(10):999-1000.

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Library services

RCS England members and fellows can get free help and advice on literature searching from: evidencesupport@rcseng.ac.uk

Literature search help

- Ask one of our experienced Information Specialists to search the literature on your behalf. Choose from a quick search, comprehensive search, or search to support systematic review.
- Have your search strategy reviewed by an Information Specialist, with helpful feedback.
- Book one-to-one online sessions on literature searching tailored to your experience and needs. We can train you on searching databases, including MEDLINE, Embase, and the Cochrane Library.

For literature search or training enquiries, email evidencesupport@rcseng.ac.uk

Other searching training guides

- Getting started with Surgical Library
- Basics of literature searching for surgery
- Searching MEDLINE and Embase for surgery
- Searching Cochrane Library for surgery

Contact details

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The Royal College of Surgeons of England
38-43 Lincoln's Inn Fields
London WC2A 3PE

General library enquiries: Library@rcseng.ac.uk or 020 7869 6555 (9am - 5pm)
Or Contact us via a web form.

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