Systematic Reviews

What is a systematic review?

“A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making.”

(http://www.cochranelibrary.com/about/about-cochrane-systematic-reviews.html)

Systematic review services at Galter Library

We recommend you consult with a librarian at the outset of your project, when you are planning your review. Galter librarians can collaborate with you to:

- Formulate your research question.
- Investigate whether there is already a published systematic review on your topic or whether there is one currently under development.
- Plan the search and write the search methods for your review protocol.
- Determine which sources to search and develop sensitive search strategies for each source.
- Identify appropriate search filters and execute the searches.
- Deliver de-duplicated search results in a mutually agreed upon format (e.g. EndNote, RIS, Word).
- Identify tools and strategies to capture the data for the PRISMA flow diagram.
- Document the search process for reporting purposes.
- Write the search methods of the review.

Librarians collaborating on systematic reviews commonly satisfy the criteria for authorship set forth by ICMJE. Co-authorship is expected when a librarian serves as collaborator rather than a consultant. If your project is in support of a grant proposal, plan to discuss the appropriate allocation of effort and include the librarian as a co-investigator or consultant.

Please download Preparing for your systematic review and contact Linda O'Dwyer if you are interested in learning more about systematic review services at Galter Library.

Galter Library does not offer assistance pertaining to meta-analysis or meta-analytic methods. Contact the Biostatistics Collaboration Center for inquiries regarding meta-analysis.

Getting Started

What do you need before you get started on your review?

Team
Do you have appropriate expertise in all the required domains for completing a rigorous review? Ideally, your team should include subject specialists, a systematic review methods expert, a librarian or information specialist with training in systematic review methods, and a quantitative methods/meta-analysis specialist (IOM 2011).

**Time**
This is not an endeavor for the faint of heart. Depending on the subject matter, experience of the review team, commitments to other projects, and other factors, systematic reviews can take a year or more from start to finish. When assembling a team, you should always take these considerations into account and plan your milestones accordingly.

**Resources**
Remember that your systematic review should attempt to identify all of the existing evidence addressing your topic. To cast as broad a net as possible and minimize risk of bias, you will need to search for studies in multiple bibliographic databases, clinical trials registers, and other sources as appropriate. The Cochrane Handbook lists MEDLINE (PubMed or Ovid), EMBASE, and the Cochrane Central Register of Controlled Trials (CENTRAL) as the most important bibliographic databases for identifying trials (Lefebvre 2011). Depending on the subject matter of the review, you might also consider PsycINFO, CINAHL, and other specialized subject or geographic indexes. Be sure to consult with your librarian or information specialist when planning the search methods for your review protocol.


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**The systematic review process**

1. Define a focused and relevant research question.
2. Conduct a preliminary search to determine whether there are any existing systematic reviews that already address your research question. We suggest searching the Cochrane Database of Systematic Reviews, Epistemonikos, PROSPERO, and PubMed with an appropriate systematic review filter, e.g. systematic[sb].
3. Assemble a project team.
4. Write a review protocol specifying your plan for conducting the review. It should include the rationale for the review, objectives of the review, inclusion/exclusion criteria, methods for locating studies, quality assessment methods, data extraction methods, data synthesis/meta-analysis methods, etc.
5. Register your protocol with PROSPERO, Systematic Reviews, or other appropriate entity.
6. Search for studies.
7. Screen titles and abstracts to identify potentially relevant studies.
8. Review full-text and apply inclusion and exclusion criteria.
10. Extract data from individual studies.
11. Analyze data (and synthesize if appropriate).
12. Report findings.

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**Standards and guidance**

Here are some standards and additional research synthesis methods papers to get you started:


