Searching for Evidence

Heather Cunningham
Gerstein Library

Jan.22, 2015

Material in support of a verbal presentation, not intended as a stand-alone document: January 2015
What We’ll Cover

- Why perform a comprehensive literature search?
- Advanced search strategies
- Types of scholarly info
- EndNote
Example of a systematic review

**Title:** Laparoscopic versus small-incision cholecystectomy for patients with symptomatic cholecystolithiasis

**Authors:** Frederik Keus, Jeroen de Jong, Hein G Gooszen, CHJM van Laarhoven

Published Online: 18 OCT 2006

**Objectives:** To compare the beneficial and harmful effects of laparoscopic versus small-incision cholecystectomy for patients with symptomatic cholecystolithiasis.

**Selection criteria:** All published and unpublished randomised trials in patients with symptomatic cholecystolithiasis comparing any kind of laparoscopic cholecystectomy versus small-incision or other kind of minimal incision open cholecystectomy. No language limitations were applied.
Search methods for identification of studies

- We searched the following databases: The Cochrane Controlled Trials Register, the Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effects (DARE), the Cochrane Central Register of Controlled Trials (CENTRAL), Health Technology Assessment (HTA) Database, NHS Economic Evaluation Database, MEDLINE (1966 to January 2004), EMBASE (1980 to January 2004), Web of Science (1988 to January 2004), and CINAHL (1982 to January 2004). The search strategies used are provided in Appendix 1.

- Our aim was to perform a maximal sensitive search in order to conduct a more complete review. As describing an operation of the gallbladder in medical terms without the word cholecystectomy is impossible, a maximal sensitive search with the term cholecystectomy was used. For our MEDLINE search, a more sophisticated strategy, advised by the Dutch Cochrane Centre and listed in Appendix 1 was used (with help from Geert van der Heijden, Julius Center, Utrecht).

- Additional relevant trials were looked for by cross reference checking of identified randomised trials. Finally all authors of included trials were requested by letter for additional information on any published, unpublished, or ongoing trials.

- Furthermore, during data extraction it turned out that in a large number of trials essential data and information on methods were missing. To improve the quality of the analysis, individual trialists were contacted and asked for missing data.
MEDLINE search strategy


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Why search more than one database?

A search of MEDLINE alone is not considered adequate. A systematic review showed that only 30% - 80% of all known published randomized trials were identifiable using MEDLINE (depending on the area or specific question) ... Going beyond MEDLINE is important not only for ensuring that as many relevant studies as possible are identified but also to minimize selection bias for those that are found. Relying exclusively on a MEDLINE search may retrieve a set of reports unrepresentative of all reports that would have been identified through a comprehensive search of several sources.

Source: Cochrane Handbook
**Research Guide**

guides.library.utoronto.ca/PSL495

**PSL495 Communicate Biomedical Science**

*no tags specified*

**Medical Journal Article Databases**

- **MEDLINE**
  - Premier bibliographic database covering the fields of medicine and the preclinical sciences.

- **PubMed**
  - Freely available version of MEDLINE.

- **BIOSIS**
  - Covers journals and conference proceedings across all aspects of the biological and health sciences.

- **EMBASE**
  - Biomedical database with strong coverage in pharmacy and alternative & herbal therapies.

- **CINAHL**
  - Covers journals in nursing and the allied health fields.

- **Physical Educational Index**
  - Indexes journals on topics related to physical education, fitness, sports, kinesiology, and physical therapy.

**Step 1: Structure Your Research**

Structure your search strategy with Concept Boxes

1. Write out the question which you would like to answer through a literature search.
2. Underline the main topics.
3. List each unique topic in one box list.
4. Group synonymous topics in the same box.

*Example: I would like to explore the factors affecting compliance with a methadone maintenance program for my patients with heroin addiction issues. Why do so many patients drop out or refuse to be treated in the first place?*

*Search question becomes: What factors affect compliance in a methadone maintenance program for patients with heroin addiction issues?*

*Why?*

This allows you to search in a more efficient manner. You can now start to gather samples for each of the concept areas you've identified (for example...)*
Research Question vs. Search Question

Good research questions will:

- Provide a clear **focus** for your research
- Give you some idea of **where to look** for information
- Give you search **concepts and terms**

Search question **MAY** be broader than research question.
Concept boxes

I am looking for articles on how exercise affects memory in the aged population.

<table>
<thead>
<tr>
<th>concept 1</th>
<th>concept 2</th>
<th>concept 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity</td>
<td>Memory</td>
<td>Elderly</td>
</tr>
<tr>
<td>or Physical fitness</td>
<td>Or Retention</td>
<td>or Seniors</td>
</tr>
<tr>
<td>Or Exercises</td>
<td>Or Memorization</td>
<td>Or</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aged</td>
</tr>
</tbody>
</table>
Searching Medline

Best Practices:

- Search one concept at a time
- Map terms to subject headings
- Scope notes
- Tree
  - Explode
- Use keywords as well as MeSH
- Combine terms with booleans
- Limit/Filter results if required
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Explode

This is the ‘Full Tree’ view in Medline

<table>
<thead>
<tr>
<th>Select Term(s)</th>
<th>Subject Heading</th>
<th>Hits</th>
<th>Explode</th>
<th>Focus</th>
<th>Scope Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning</td>
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<td></td>
<td></td>
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<tr>
<td>Memory</td>
<td>Deja Vu</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Memory, Episodic</td>
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<tr>
<td></td>
<td>Memory, Long-Term</td>
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</tr>
<tr>
<td></td>
<td>Memory, Short-Term</td>
<td>16515</td>
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<tr>
<td></td>
<td>Mental Recall</td>
<td>27239</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>Recognition (Psychology)</td>
<td>12514</td>
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<td></td>
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<tr>
<td></td>
<td>Repetition Priming</td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td>Retention (Psychology)</td>
<td>7845</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spatial Memory</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exploding ‘Memory’ includes all NARROWER terms in your search

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Also use keywords

Find words ANYWHERE in the record of an article (title, abstract...)

- Truncations * or $ 
- Proximity operator ADJ#
  - eg. physical ADJ2 (activit* OR exercise*)
Citation mgmt

EndNote Web demo
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h.cunningham@utoronto.ca

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