Systematic Searching of the Literature

Handbook, Chapter 6

Tabriz University of Medical Sciences
Standard Workshop on Systematic Reviews _ October 2012

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Learning Objectives:

- Understand the key role of searching for studies for a systematic review
- Be aware of support and assistance available
- Be aware of the variety of sources for reports of studies
- Be able to discuss a logical approach to searching for studies
- Understand some of the complexities of searching databases
- Be aware of the need to document your searches and manage your search results

Part I

Comprehensive Searching: Resources and Sources of Evidence

Comprehensive Searching . . .

”A comprehensive search for relevant RCTs, which seeks to minimize bias, is one of the essential steps in doing a systematic review, and one of the factors that distinguishes a systematic review from a narrative review”

- *Cochrane Handbook for Systematic Reviews of Interventions, vers. 4.2.6, Sep 2006, p. 65*

No stone unturned?

- Goal is to find as many RCT's as possible
- Be comprehensive & systematic, "quick and dirty" does not cut it.
- Searching one or two sources not sufficient
- Publication bias
- No one can create the 'perfect' search strategy
- Trade off between *sensitivity* and *specificity*
- Overall objective is to **minimize bias**

Minimize Bias

- What is bias?

  “The systematic disposition of certain trial designs to produce results consistently better or worse than other trial designs.”

- What is publication bias?

  “The likelihood that studies with positive results will be published.”

  -- Bandolier Bias Guide, accessed: August 14, 2008
  http://www.medicine.ox.ac.uk/bandolier/band80/b80-2.html#Heading2

Comprehensive Searching

A reviewer has some options in terms of identifying reports of studies:

- Most CRGs provide support to authors in study identification from the early planning stage with the assistance of the Trial Search Coordinator.
- Reviewer can enlist the services of an Information Specialist or Medical Librarian experienced in systematic review searching.
- Reviewers conduct their own searches, should seek the advice/ guidance of their Trials Search Coordinator or a Librarian familiar with systematic review searching.

Five phases of searching

1. Search for existing systematic reviews

- Cochrane Database of Systematic Reviews
- Database of Abstracts of Reviews of Effects (DARE)
- Health Technology Assessment (HTA) Database
- General databases: PubMed, Embase, CINAHL, Web of Science
- TRIP Database (www.tripdatabase.com)
- Personal contact with experts in the field

Five phases of searching

2. Scoping Search

- Initial search on a small range of databases to identify major trials on the topic
- This will allow you to base your research proposal on a preliminary assessment of the relevant literature and its size
- Will help to determine cost of the review and resources needed
- Provides an opportunity to test and refine your question and inclusion/exclusion criteria
- Yields a source of citations for harvesting relevant search terms

Five phases of searching

3. Comprehensive, systematic search

- Final question will have been established
- Full search strategy developed and tested
- Search all relevant databases
- Search grey literature
- Search for unpublished studies
- Hand-search

Five phases of searching

4. Update the search during the review process

- If the time to complete the review is lengthy, it is essential to update the search during the review process.

Note: Maintaining a well documented search history will make updating the search less time consuming.

Five phases of searching

5. Updating Reviews

- Once the review is published it must be kept up to date. Searches will need to be run at intervals to check for changes in the evidence.

- **Essential** to keeping searches reliable and up to date is documenting the search methods in a systematic and detailed manner.

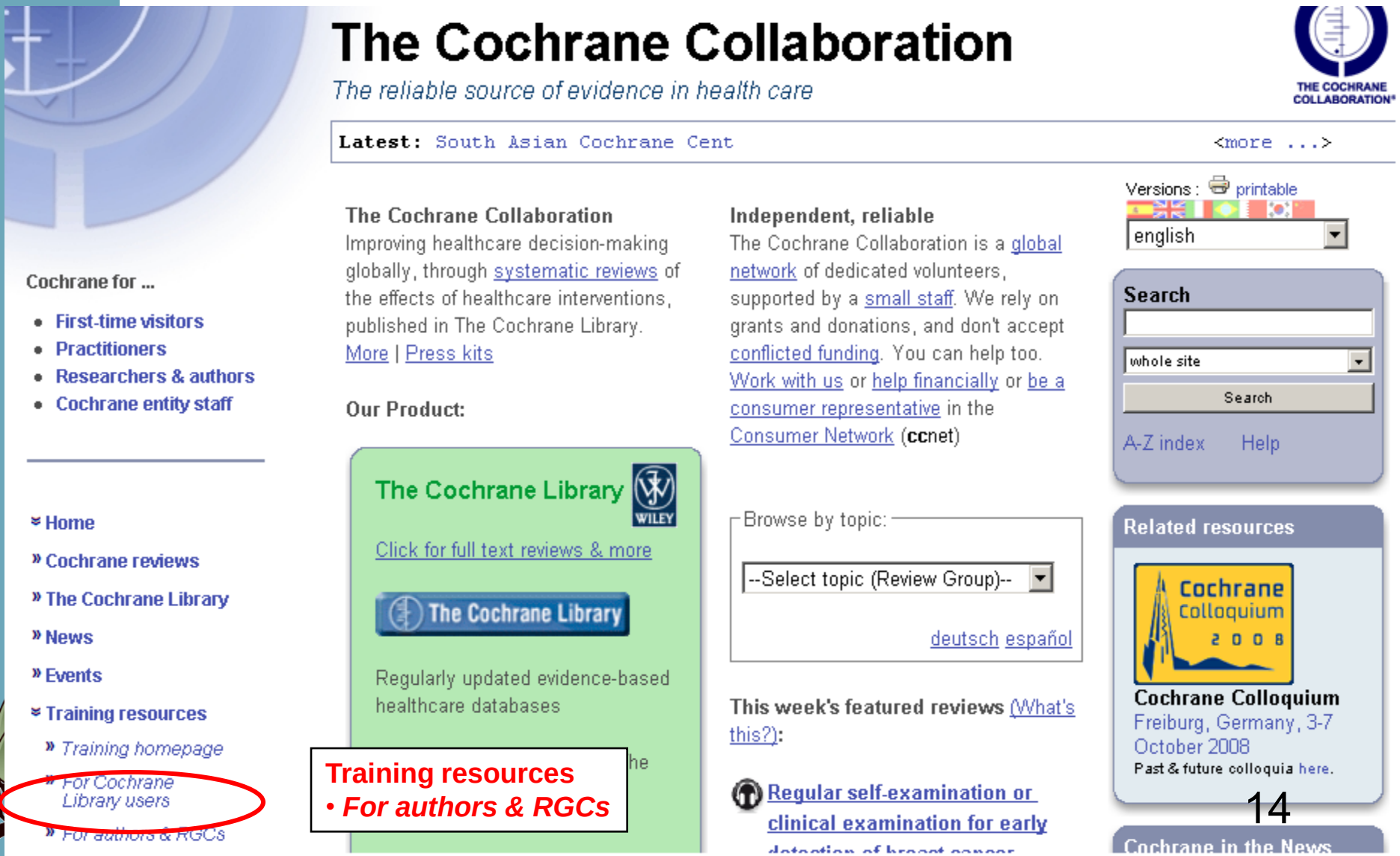
- See example search methods summary

Resources

Your first resource must be your group's Trial Search Coordinator!

- Contact TSC before you start searching to find out their process and how much searching assistance they offer

Resources: www.cochrane.org



Resources: Cochrane Review Groups

http://www.cochrane.org/contact/entities.htm#CRGLIST

- Cochrane e-learning modules
- Other Cochrane reviews
- Reviewer training workshops
- Database Help features

Cochrane Review Groups (CRGs)

Review Groups are composed of persons from around the world who share an interest in developing and maintaining systematic reviews relevant to a particular health area. Groups are coordinated by an editorial team who edit and assemble completed reviews into modules for inclusion in *The Cochrane Library* [more information].

Click on the name of the group for contact details.

Can't find the CRG you are looking for? Try the entity name changes page to see if the CRG name has changed.

Acute Respiratory Infections Group (website) [browse reviews]
Airways Group (website) [browse reviews]
Anaesthesia Group (website) [browse reviews]
Back Group (website) [browse reviews]
Bone, Joint and Muscle Trauma Group (website) [browse reviews]
Breast Cancer Group (website) [browse reviews]
Childhood Cancer Group (website) [browse reviews]
Colorectal Cancer Group (website) [browse reviews]
Consumers and Communication Group (website) [browse reviews]
Cystic Fibrosis and Genetic Disorders Group (website) [browse reviews]
Dementia and Cognitive Improvement Group [browse reviews]
Depression, Anxiety and Neurosis Group [browse reviews]
Developmental, Psychosocial and Learning Problems Group (website) [browse reviews]
Drugs and Alcohol Group (website) [browse reviews]
Ear, Nose and Throat Disorders Group (website) [browse reviews]
Effective Practice and Organisation of Care Group (website) [browse reviews]
Epilepsy Group (website) [browse reviews]
Eyes and Vision Group (website) [browse reviews]
Fertility Regulation Group (website) [browse reviews]
Gynaecological Cancer Group (website) [browse reviews]
HIV/AIDS Group (website) [browse reviews]

Other Assistance and Support:

- Clinical Experts - relevant terminology
- Review Group Coordinator – referrals
- If no TSC, librarians who have experience participating in the systematic review process – your institution's library

Final Search Strategy- When?

- The search strategy should be complete and finalized at the protocol stage.
- The search should be described in such detail that it can be replicated and updated !
- The search strategy should be well documented throughout the searching process, search documentation included with the review should include:
  - Sources searched (all sources not just databases)
  - Search strategy used for at least one database (usually MEDLINE)
  - Time periods of the search (e.g. 1966- Nov 2007)
  - Any restrictions (e.g. Age limit, years, human, etc.)

Where?

- Even the best search strategy will likely not identify all relevant articles
- MEDLINE indexes approx. 5000 biomedical journals but 20,000 journals are published
- Most databases do not index materials such as conference proceedings, unpublished articles, chapters in books and dissertations
- Journals don’t publish all studies

Sources for Locating Trials

- Bibliographic databases/ Specialised registers of trials
  - The three bibliographic databases generally considered to be the most important sources to search for reports of trials: CENTRAL, MEDLINE and EMBASE
- Hand-searching
- Reference lists
- Pharmaceutical companies
- Grey literature
- Internet
- Personal communication

Databases

- **PubMed/Medline**
- **Embase**
- **Cochrane trial registers and CENTRAL**
- **Australasian Medical Database**
- **Chinese Biomed. Lit. Database**
- **Japan File on Science**
- **Latin American/Caribbean Health Sciences Lit. (LILACS)**
- **AMED**
- **Biological Abtracts**
- **CINAHL**
- **Dissertation abstracts**
- **ERIC**
- **PsycINFO**
- **Web of Science**

Consult TSC or librarian about other databases that may be useful for your subject area.

MEDLINE and EMBASE

- **MEDLINE** is the largest biomedical database in the world and focuses on North America.
- **EMBASE** offers better coverage of European biomedical literature, while it is estimated that there is a 40% overlap between the two databases.
- Together the databases index about 7000 journals.
- It is generally important to search both databases.

The Cochrane Library

- Cochrane Central Register of Controlled Trials (**CENTRAL**)
- Database of Abstracts of Reviews of Effectiveness (DARE)
- Cochrane Review Methodology Database (CRMD)
- Health Technology Assessment Database (HTA)
- NHS Economic Evaluation Database (NHS EED)

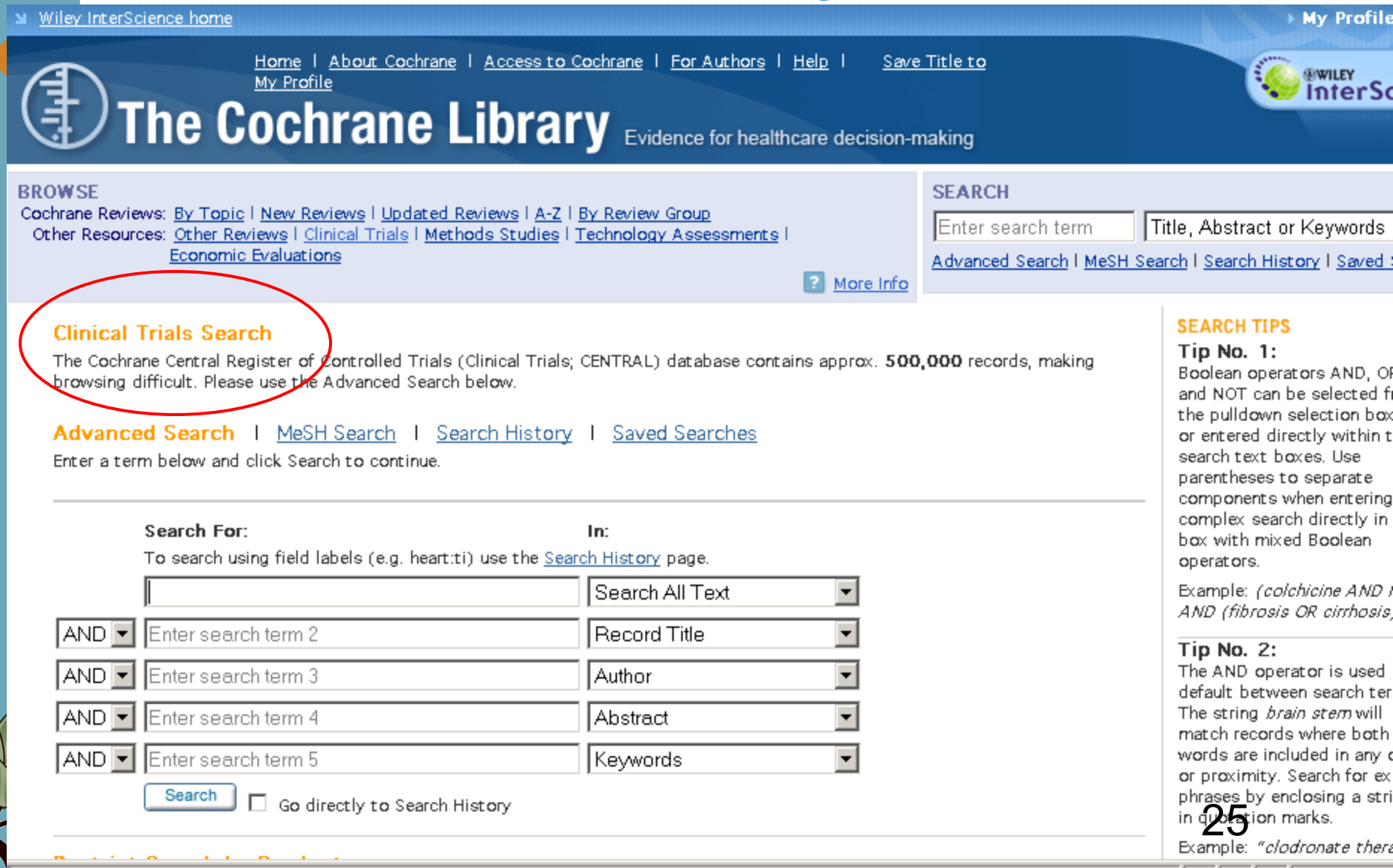
Review Group Registers

- Many Review Groups maintain a trials register
- Search specialized resources and load into CENTRAL (including results of hand searching)
- Can be the primary source of studies for many reviews (eg. EPOC, Mental Health, HIV)
- Ask your Review Group Trial Search Coordinator about other registers

CENTRAL

- Most comprehensive source of controlled trials (to date there are over 540,000 trials – August 2008)
- Available in several web-based platforms (OVID and Wiley)
- Due to the number of records it is advisable to use the “advanced search” function

CENTRAL via Wiley Interface



Handsearching

- Handsearching refers to the planned searching of a journal page by page (by hand), including editorials, letters, etc., to identify all reports of randomized controlled trials.

- US Cochrane Center publishes findings from journal hand-searching conducted by review collaborators. Data is made accessible via their website as an excel file.

  http://apps1.jhsph.edu/cochrane/masterlist.asp

Handsearching

- Not all trial reports are included in electronic bibliographic databases, and when they are included, they may not contain relevant search terms in the titles or abstracts or be indexed with terms that allow them to be easily identified as trials. (Dickersin 1994 in Cochrane Handbook 5.0.0)

- Authors are not routinely expected to handsearch journals for their reviews but they should discuss with their Trials Search Co-ordinator whether in their particular case handsearching of any journals or conference proceedings might be beneficial.

Where is the journal indexed?

- PubMed Journals Database
- NLM Catalogue LocatorPLUS
- Ulrich's Periodicals Directory
- Journal Publisher websites
- JAKE http://jake.openly.com/

(jointly administered knowledge environment, Yale University)

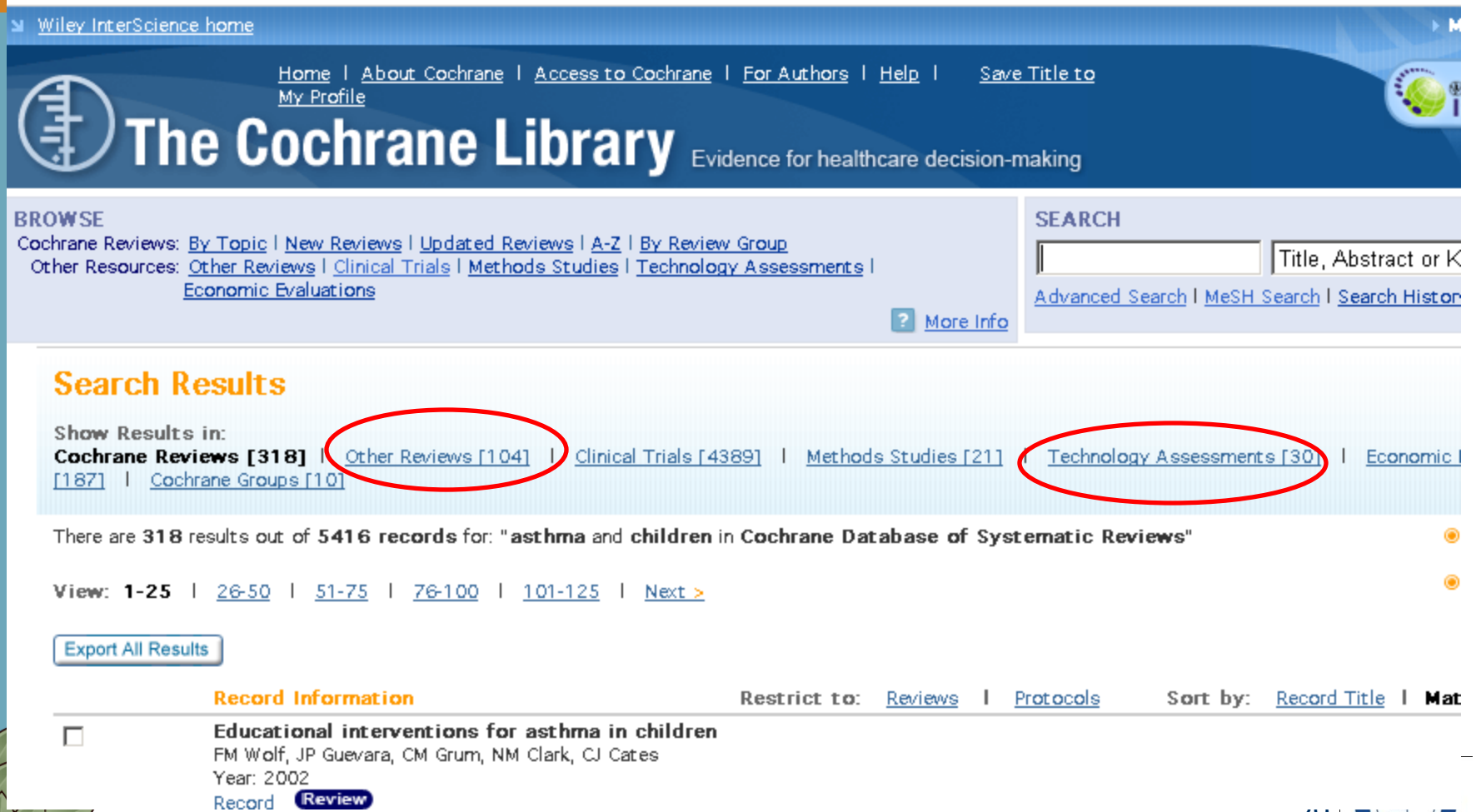
→ Watch for journal title changes

Example:
The journal SOGC changed its title to Journal of Obstetrics and Gynaecology Canada: JOGC; in 2001 and is indexed in PubMed from 2002 onward.
Earlier issues under the title SOGC are not indexed in Pubmed.

Reference Lists

- Search of electronic databases will never be 100% comprehensive and/or accurate. (human indexing, authors abstracts)
- Check through bibliographic references of relevant **review articles and/or trials** to find references to other potentially relevant trials
- Search for other reviews in your topic area (DARE database in The Cochrane Library or PubMed).

Finding Reviews of References



Pharmaceutical Companies

- Write to pharmaceutical companies and experts in field to request data from published or unpublished trials

- A standard letter is often available from review group co-ordinator.

Sources of Trial Information:

- Canadian Trials: http://www.canadatrials.com/
- FDA site search: www.fda.gov/cder/
- USA clinical trials: www.clinicaltrials.gov
- UK clinical trials: www.controlled-trials.com/mrct/
- WHO Listing: http://www.who.int/ictrp/en/

Citation Indices

Web of Science

- Electronic web-based version of the Science Citation Index. It lists where a citation has been subsequently cited.
- It can be searched as a source database like MEDLINE. It can also be used to identify studies for a review by identifying a known relevant source article, and checking each of the articles citing the source article for relevance.
- Indexes articles from 6,000 major scientific, technical and medical journals and links them to the articles in which they have been cited.

Citation Indices

Scopus

- Web-based abstract and citation database launched in 2004 by Elsevier.
- Covers 15,000 journals (of which over 1,000 are open access journals.)
- It contains over 30 million abstracts and includes, conference proceedings, patents and scientific web pages.

Grey Literature

Definition:

"information produced on all levels of government, academia,business and industry in electronic and print formats not controlled by commercial publishing" - ICGL Luxembourg definition, 1997 - expanded in New York, 2004

- Includes theses, technical reports, conference proceedings, poster presentations, oral presentations, policy papers etc.
- Maybe unpublished and not indexed

Finding grey literature

- Grey Matters: a practical search tool for evidence based searching. Canadian Agencies for Drugs and Technologies in Health (CADTH)
  http://cadth.ca/media/pdf/Grey-Matters_A-Practical-Search-Tool-for-Evidence-Based-Medicine.doc

- New York Academy of Medicine Grey Literature Database
  www.nyam.org/library/pages/grey_literature_report

- Practical guide to searching grey literature (UBC)
  http://toby.library.ubc.ca/subjects/subjpage2.cfm?id=877

- OpenSIGLE http://opensigle.inist.fr/
  European database indexes grey literature

Finding grey literature

- Databases such as which index conference proceedings & theses (CINAHL)
- Dissertations databases
- Library catalogues
- NLM Gateway http://gateway.nlm.nih.gov/gw/Cmd
- Institutional repositories
- Internet search engines (e.g. GOOGLE/ Google Scholar)
  Google Cheat Sheet
  http://www.google.com/help/cheatsheet.html

Personal Communication

- Colleagues/specialists in the field can be an important source of information on recent trials that have not yet been published, or older trials that were never published.
- Can help find grey literature and unpublished studies
- Can find out about key authors in area and contact them

Part II

Search Strategy and Online Searching

Search Strategy

- A well formulated question is the foundation of a solid search strategy.
- The concepts articulated in your question will be the starting point for determining the text words and subject terms that will be used to create your search strategy.
- The eligibility criteria for studies to be included in the review will also assist in selecting the appropriate subject headings and text words for your search. (types of designs, types of participants, types of intervention (s).

Search Strategy

- Your search strategy will be based on the controlled vocabulary (thesaurus terms) for each database, as well as free text or text words

- You will require a different search strategy for each database you search, however the basic principles of literature searching do not change.

Search Strategy

1. Question formulation
2. Exemplar articles / reviews
3. Subject headings and descriptors / free text and text words
4. Boolean operators
5. Study design filters
6. Managing your search results

Question Formulation - PICO

Without a well-focused question, it can be very difficult and time consuming to identify appropriate resources and search for relevant evidence. Practitioners of EBM (evidence based medicine) often use a specialized framework, called PICO, to form the question and facilitate the literature search. PICO stands for Patient problem, Intervention, Comparison, and Outcome.

Snowball R: Using the clinical question to teach search strategy: fostering transferable conceptual skills in user education by active learning. *Health Libr Rev* 1997, 14:167-173.

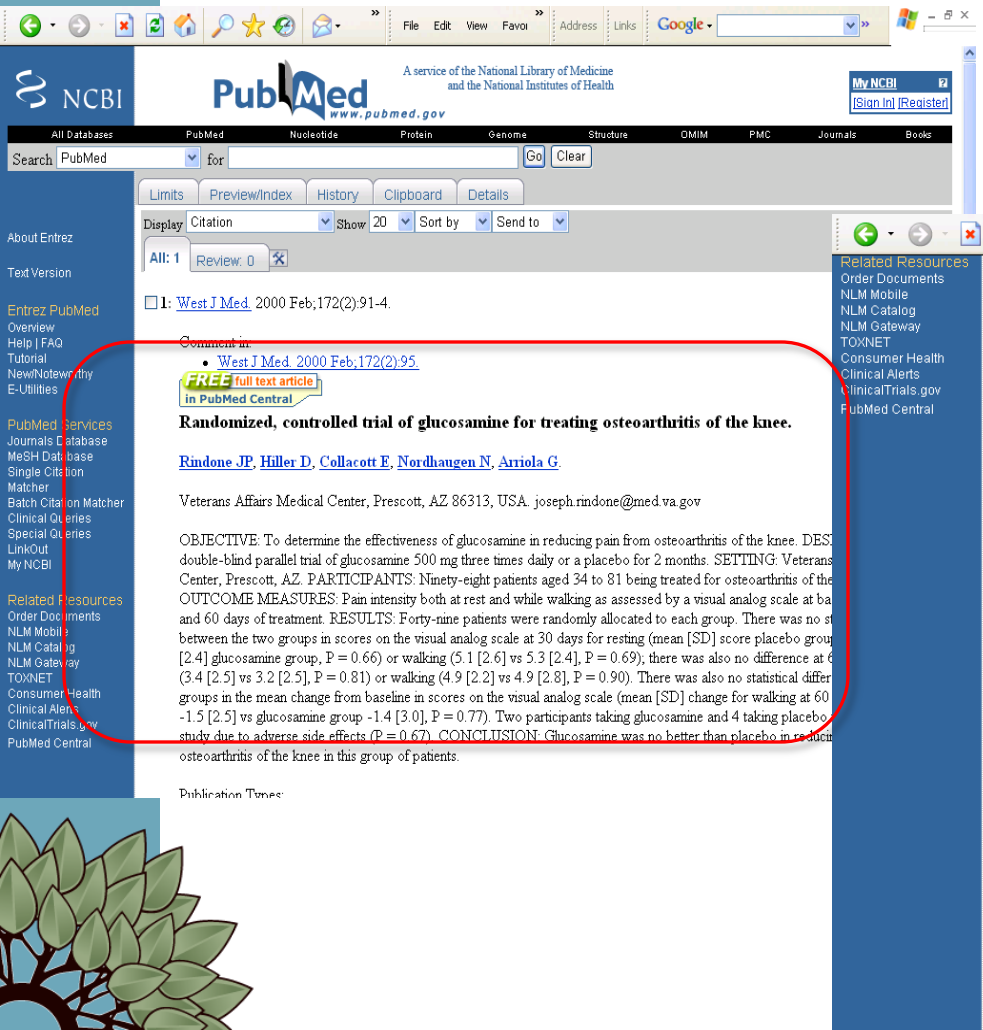
Example question

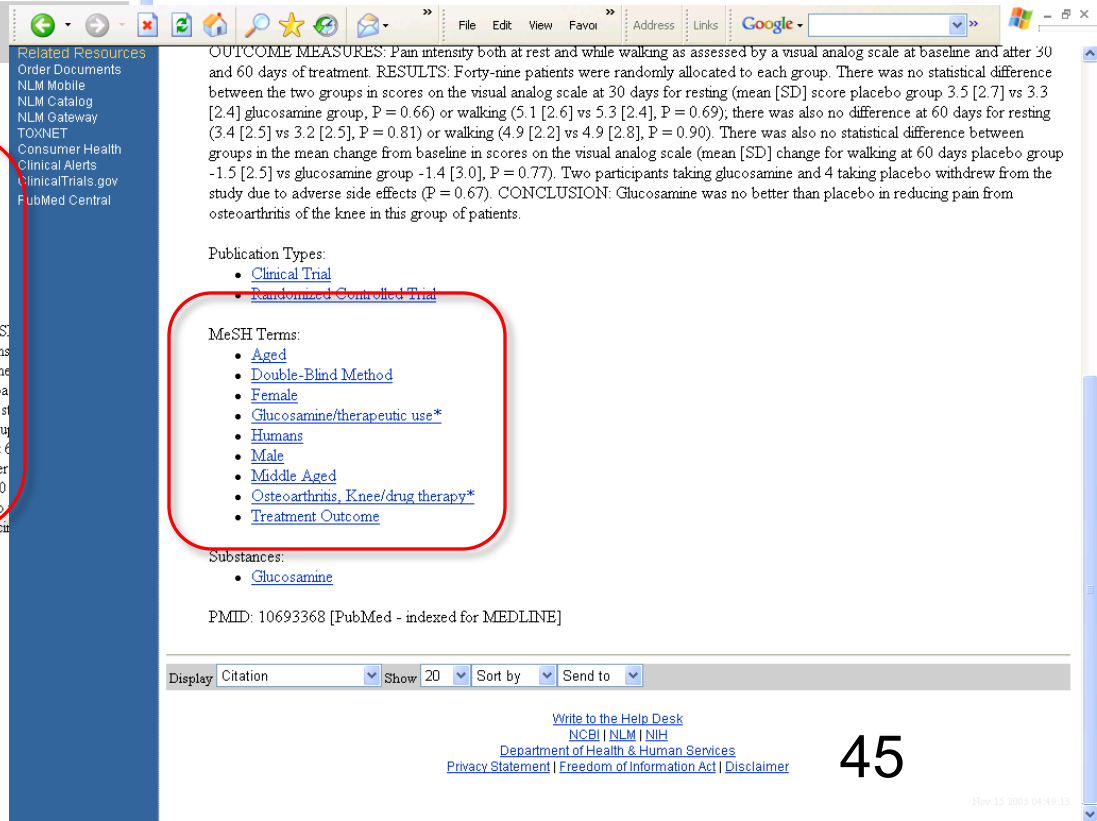
In adult patients with osteoarthritis, is glucosamine effective in reducing pain and improving function?

Exemplar Articles

- Examine exemplar articles and existing reviews, look at what terms were used to index the article or review.
- Use these terms to build or expand upon your search strategy.

Examplar Articles





Look at MeSH headings, words in abstract or text

Look at Search Strategies in Similar Reviews

- Search the Cochrane Library for other reviews in your area
- Look at the search strategy for that review
- Look at the search strategy in other non-Cochrane reviews

Mapping Terms to Controlled Vocabulary

1: **Osteoarthritis** Links

A progressive, degenerative joint disease, the most common form of arthritis, especially in older persons. The disease is thought to result not from the aging process but from biochemical changes and biomechanical stresses affecting articular cartilage. In the foreign literature it is often called osteoarthrosis deformans.

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ blood ☐ cerebrospinal fluid ☐ chemically induced ☐ classification ☐ complications ☐ congenital ☐ diagnosis ☐ diet therapy ☐ drug therapy ☐ economics ☐ embryology ☐ enzymology ☐ epidemiology ☐ ethnology ☐ etiology ☐ genetics ☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ mortality ☐ nursing ☐ parasitology ☐ pathology ☐ physiology ☐ physiopathology ☐ prevention and control ☐ psychology ☐ radiography ☐ radionuclide imaging ☐ radiotherapy ☐ rehabilitation ☐ surgery ☐ therapy ☐ ultrasonography ☐ ultrastructure ☐ urine ☐ veterinary ☐ virology

☐ Restrict Search to Major Topic headings only.
☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Entry Terms:

- Osteoarthritides
- Arthritis, Degenerative
- Arthritides, Degenerative
- Degenerative Arthritides
- Degenerative Arthritis
- Osteoarthrosis
- Osteoarthroses
- Osteoarthrosis Deformans

All MeSH Categories
Diseases Category
Musculoskeletal Diseases
Joint Diseases
Arthritis
Osteoarthritis
Osteoarthritis, Hip
Osteoarthritis, Knee
Spinal Osteophytosis

All MeSH Categories
Diseases Category
Musculoskeletal Diseases
Rheumatic Diseases
Osteoarthritis
Osteoarthritis, Hip
Osteoarthritis, Knee

Subject Headings, Descriptors, Controlled Vocabulary versus Free Text/Textwords

- Relying solely on the controlled vocabulary that indexers deemed as right for the article is risky (e.g. Tissue Plasminogen Activator vs. thrombolytic therapy)
- Use ‘free text’ /textwords to ensure you find all articles
- Can specify fields to search (e.g. ti, ab, ky)
- Different rules for truncation, wild cards, etc. for each database
- Check HELP for rules for $, *, #, ?
- adj# or near# – finds words close to another

  E.g. **(degenerative adj2 arthritis)** finds the word arthritis within 2 words of degenerative in any order.

☐ 1: **Osteoarthritis** Links

A progressive, degenerative joint disease, the most common form of arthritis, especially in older persons. The disease is thought to result not from the aging process but from biochemical changes and biomechanical stresses affecting articular cartilage. In the foreign literature it is often called osteoarthrosis deformans.

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☐ Restrict Search to Major Topic headings only.
☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Entry Terms:

- Osteoarthritides
- Arthritis, Degenerative
- Arthritides, Degenerative
- Degenerative Arthritides
- Degenerative Arthritis
- Osteoarthrosis
- Osteoarthroses
- Osteoarthrosis Deformans

All MeSH Categories
Diseases Category
Musculoskeletal Diseases
Joint Diseases
Arthritis
Osteoarthritis
Osteoarthritis, Hip
Osteoarthritis, Knee
Spinal Osteophytosis

All MeSH Categories
Diseases Category
Musculoskeletal Diseases
Rheumatic Diseases
Osteoarthritis
Osteoarthritis, Hip
Osteoarthritis, Knee

Search Strategy

- The search question
- Terms to search for the health condition of interest, i.e. the population
- Terms to search for the intervention(s) evaluated
- Terms to search for the types of study design to be included (typically a ‘filter’ for randomized trials).

Begin your search in MEDLINE / PubMed.

Terms to Search: Condition and Intervention

Patients/Condition	Intervention
Exp Osteoarthritis/	Exp glucosamine/
OR	**OR**
"degenerative arthritis".tw.	Glucosamine.tw.
OR	**OR**
Osteoarthr*.tw.	Acetylglucosamine.tw.
	OR
	N-acetylglucosamine.tw.
	OR
	N-acetyl-d-glucosamine.tw.

Boolean: AND, OR, NOT

Osteoarthritis AND Glucosamine

Article must contain both the word osteoarthritis and glucosamine.

Glucosamine OR n-acetyl-d-glucosamine

Article contains either the word glucosamine **or** the word n-acetyl-d-glucosamine.

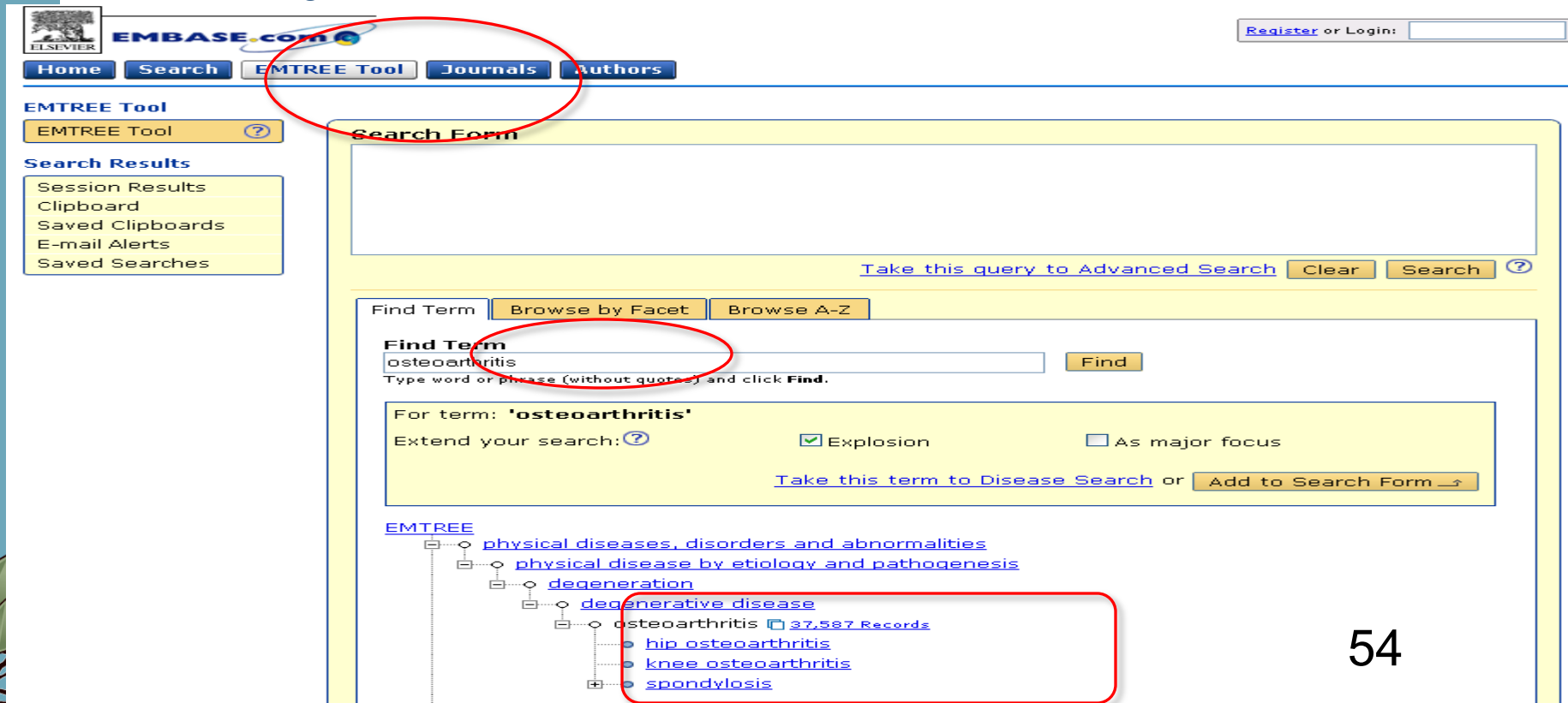
Glucosamine NOT chondroitin

Any article containing the word chondroitin will **not** be included in the search results.

Where to start?
MEDLINE, EMBASE, or CINAHL?

Once the MEDLINE strategy has been built, then convert to EMBASE or another database by testing the controlled vocabulary.

e.g. osteoarthritis in EMBASE



PubMed Search Filter for Trials (all phases)

randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized controlled trials [mh] OR random allocation [mh] OR double-blind method [mh] OR single-blind method [mh] OR clinical trial [pt] OR clinical trials [mh] OR ("clinical trial" [tw]) OR ((singl* [tw] OR doubl* [tw] OR trebl* [tw] OR tripl* [tw]) AND (mask* [tw] OR blind* [tw])) OR (placebos [mh] OR placebo* [tw] OR random* [tw] OR research design [mh:noexp] OR comparative study [pt] OR evaluation studies [pt] OR Evaluation Studies as Topic [mh] OR follow-up studies [mh] OR prospective studies [mh] OR control* [tw] OR prospectiv* [tw] OR volunteer* [tw]) NOT (animals [mh] NOT humans [mh])

Documenting Your Search

- Provide your search strategies for each database so they can be replicated
- Provide details of which databases you searched (e.g. MEDLINE, EMBASE, CENTRAL, etc.)
- Document the date you searched each database, the number of hits and any search limits used (publication dates, gender, etc.).

This information will be recorded in the *Description of Studies or Results* section of the review. See the Cochrane Handbook for details on documenting and reporting your search strategy.

Identification of Search Strategy: Example from a protocol

Search methods for identification of studies

See: **Cochrane Musculoskeletal Group** methods used in reviews.

Electronic Searches: The trials search coordinator (TSC) will carry out the searches of The Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE, LILACS, CINAHL, AMED and Current Controlled Trials. There will be no language or date restrictions in the search for trials and the databases will be searched from inception to present date. The search will be updated before the completion of the review to ensure inclusion of new trials in the intervening period.

Manual Searches: The reference lists of the studies included in the review will be searched for further trials. Since numerous International Nutraceutical companies market chondroitin, we believe it will be impossible to contact each of them for unpublished data. We will not search conference proceedings or journals specifically for the review.

Search Terms:

We will use the following search strategy which has been developed in Medline and will be adapted for other databases.

1. exp OSTEOARTHRITIS/
2. osteoarthr$.tw.
3. (degenerative adj2 arthritis).tw.
4. or/1-3
5. exp CHONDROITIN/
6. chondroitin.sh,rn,tw.
7. 5 or 6
8. 4 and 7
9. randomized controlled trial.pt.
10. controlled clinical trial.pt.
11. randomized controlled trials.sh.
12. random allocation.sh.
13. double blind method.sh.
14. single-blind method.sh.
15. clinical trial.pt.
16. clinical trials.sh.
17. clinical trial.tw.
18. ((singl$ or doubl$ or trebl$ or tripl$) and (mask$ or blind$)).tw.
19. placebos.sh.
20. placebo$.tw.
21. random$.tw.
22. Research Design/
23. comparative study.sh.
24. evaluation studies.sh.
25. follow-up studies.sh.
26. prospective studies.sh.
27. control$.tw.
28. prospectiv$.tw.
29. volunteer$.tw.
30. or/9-29
31. (animal not human).mp.
32. 30 not 31
33. 8 and 32

Document the Search
Example from completed review:

"Search methods for identification of studies

See: **Cochrane Musculoskeletal Group** methods used in reviews.

Relevant randomised controlled trials were selected from those identified by application of the general search strategy developed by the Musculoskeletal Review Group (update from the end of 2002 to Oct 13, 2005). The latter included:

a) computer aided searching of various computer databases, MEDLINE (1982-2005), EMBASE (1982-2005), CINAHL (1982-2005), as well as the Cochrane Musculoskeletal Group Trials Register, the Cochrane Controlled Trials Register (CENTRAL/CCTR), the Health Technology Assessment database (HTA) and the Database of Abstracts of Reviews of Effectiveness (DARE) (2005). A trained medical librarian was consulted to develop an optimal search strategy"

Search Strategy

Search terms that were used:

1 arthroplasty, replacement, hip/ (6632)
2 Hip Prosthesis/ (14867)
3 or/1-2 (18638)
4 arthroplasty/ or arthroplasty, replacement/ (6923)
5 Joint Prosthesis/ (7466)
6 "Prostheses and Implants"/ (27329)
7 (arthroplasty or replacement or prosthes#s).tw. (151653)
8 or/4-7 (177019)
9 hip/ or hip joint/ or hip.tw. (59269)
10 8 and 9 (19395)
11 3 or 10 (25121)
12 (moore or austin-moore).tw. (1569)
13 posterior.tw. (113463)
14 12 or 13 (115004)
15 3 and 14 (542)
16 hardinge.tw. (27)
17 lateral.tw. (121370)
18 16 or 17 (121386)
19 3 and 18 (616)
20 15 and 19 (102)
21 (mt or su).fs. (2162624)
22 11 and 21 (13337)
23 clinical trial.pt. (431542)
24 randomized controlled trial.pt. (206880)
25 random$.tw. (352004)
26 meta-analysis.pt,sh. (21089)
27 (meta-anal: or metaanal:).tw. (16560)
28 (quantitativ: review: or quantitativ: overview:).tw. (336)
29 (methodologic: review: or methodologic: overview:).tw. (181)
30 (systematic: review: or systematic: overview).tw. (13159)
31 review.pt. and medline.tw. (12662)
32 or/23-31 (651784)
33 22 and 32 (1007)
34 33 not 20 (1004)
35 limit 20 to all adult <19 plus years> (63)
36 limit 33 to all adult <19 plus years> (798)
37 from 35 keep 1-63 (63)
38 limit 37 to yr="2002-2005" (16) (update from the end of 2002 to Oct 13, 2005)

Document the Search

Example from completed review:

b. investigation of the bibliographies of retrieved studies,

c. entering identified trials into Science Citation Index to identify articles that quoted the original study.

“Unpublished data were not sought, but authors of published trials were contacted to clarify or provide additional information.”

“No language restriction were applied. The search covered the period from January 1982 to October, 2005. Studies before 1982 were not included in order to have articles dealing with the Hardinge approach (published in 1982) and describing results of modern implantation techniques and modern types of prostheses.”

Document the Search

Include:

- The name of the database searched
- The name of the host/system/vendor/interface used
- The date when the search was run
- The years covered by the search
- Filename for search strategy (e.g. Embasestrategy.txt)
- Filename for search results (e.g. Embaseresults.txt)

Example:

Embase via Elsevier, searched December 2007, period 1974 to date.

Managing References

- Once you run your search then what??
- Use bibliographic management software (Reference Manager, EndNote, RefWorks) to manage your references
- Methods differ for each database for exporting records into a citation manager.
- Import all references into citation manager from all databases, remove duplicates, then screen the articles.

Revman

- RevMan can only import references from plain text files that contain either tagged text references or references formatted in the Vancouver style. – **p. 23 Revman Users Manual**