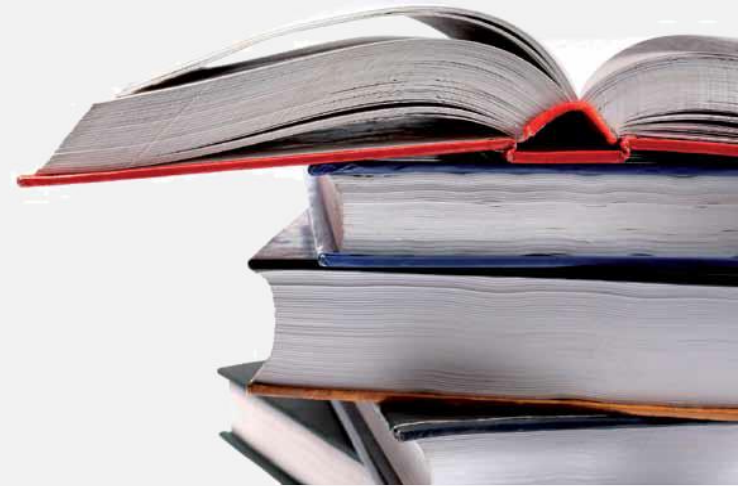


# Library Services



## Enhancing Skills for Systematic Reviews Part 1: **Searching healthcare databases**





## Learning Outcomes

- Brief overview of what is involved in doing a systematic review
- Understand the importance of drawing up a clear search strategy
- Know where to look to find information
- Understand the importance of saving your search strategy properly
- Know where to go to get more help



## High quality systematic reviews seek to:

- Identify all relevant published and unpublished evidence
- Select studies or reports for inclusion
- Assess the quality of each study or report
- Synthesise the findings from individual studies or reports in an unbiased way
- Interpret the findings and present a balanced and impartial summary of the findings with due consideration of any flaws in the evidence.

**The most reliable source of evidence to guide clinical practice!**

Clarke, 2011



# The stages of a systematic review

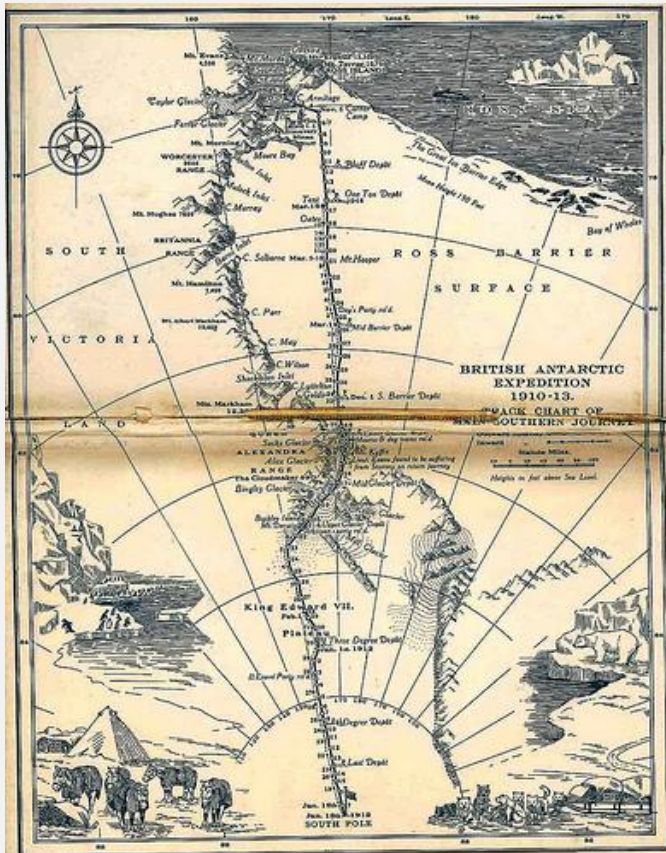
Cochrane Collaboration sets out eight stages of doing a systematic review

1. **Defining the review question and developing criteria for including studies**
2. **Searching for studies**
3. **Selecting studies and collecting data**
4. Assessing risk of bias in included studies
5. Analysing data and undertaking meta-analyses
6. Addressing reporting biases
7. Presenting results and “summary of findings” tables
8. Interpreting results and drawing conclusions



# Stage 1: Planning your search

1. Focus your question
2. Identify key search topics and terms
3. Develop inclusion criteria
4. Identify appropriate databases for your topic





## Focus your question

‘What is the most effective intervention for treating eating disorders?’



‘Is cognitive therapy better than antidepressants for treating eating disorders?’





## PICO - search framing technique

<b>P</b>	Patient, population / problem, condition	People suffering from eating disorders
<b>I</b>	Intervention / exposure	Cognitive therapy
<b>C</b>	comparison – comparing therapies or options	Antidepressant drugs
<b>O</b>	outcome – the effects of the intervention	Reduction of symptoms





# Alternatives to PICO

- **PESTEL** - Political, Economic, Social, Technological, Environmental and Legal Factors
- **SPICE** – Setting, Population, Intervention, Comparison, Evaluation
- **ECLIPS** [management and service related issues] – Expectations, Client Group, Location, Impact, Professionals Involved, Service
- **MIP** [medical ethics review] – Methodology, Issues, Participants



## Key Databases -

<http://www.kcl.ac.uk/library/help/documents/keyhealthcare2014.pdf>

- Ovid databases – Medline, PsycInfo, Embase
- CINAHL
- Cochrane Central Register of Controlled Trials
- Web of Science
- Scopus
- HMIC
- ASSIA – Applied Social Sciences Index
- SciFinder



## Choose the most relevant for your subject

Subject	Databases
Medicine, Biomedicine, Dentistry	Medline, Web of Science
Pharmaceutical	Embase, SciFinder
Psychotherapy	PsycInfo, Web of Science
Social Sciences	Scopus, ASSIA
Nursing	Cinahl
Chemistry	SciFinder



## PICO Exercise

- Complete the PICO exercise on the handout
  - Individually or in small groups
- Complete the blank template for your own research question/systematic review title
  - Use the PICO template, or one of the alternatives to PICO, or if not appropriate use the Literature Search Practical template splitting your research question into different concepts.



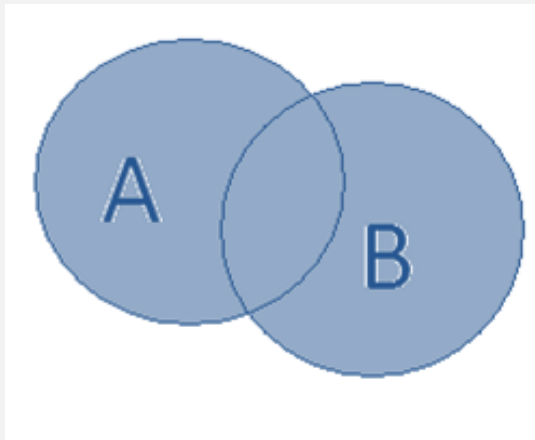
## Step 2 - Searching



1. Using Boolean operators
2. Subject heading searching
3. Search tools – truncation wildcard etc.
4. Refining and limiting

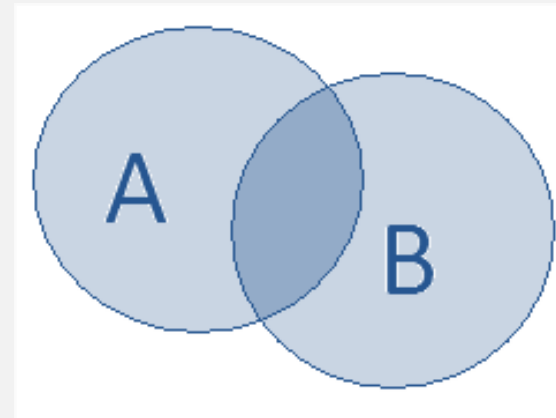
# Boolean Operators: Combing your search terms

OR



Antidepressant drugs  
**OR** antidepressive  
agents

AND

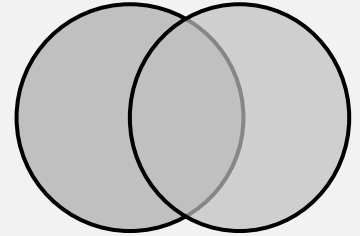


Eating disorders **AND**  
cognitive therapy



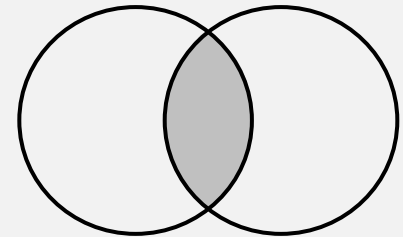
## OR

- Retrieves results containing either term, i.e. inclusive
- Useful for synonyms and related terms
- e.g. **Antidepressant drugs OR antidepressive agents**
- Useful for variant terms
- e.g. **Selective serotonin reuptake inhibitors OR SSRIs**
- Makes search broader



## AND

- Retrieves results containing only both terms
- e.g. **Eating disorders AND cognitive therapy**
- Makes search more specific
- Sometimes automatic for two or more terms depending on database





## Free text searching

- Free text, keyword, or 'natural language' searching
- The strategy used for searching the web and any database
- Finds results if the words you are searching for are present in:
  - article title
  - abstract
  - keywords
- **You will find an article if you use the same terminology as the author(s)**





# Problems with free text searching

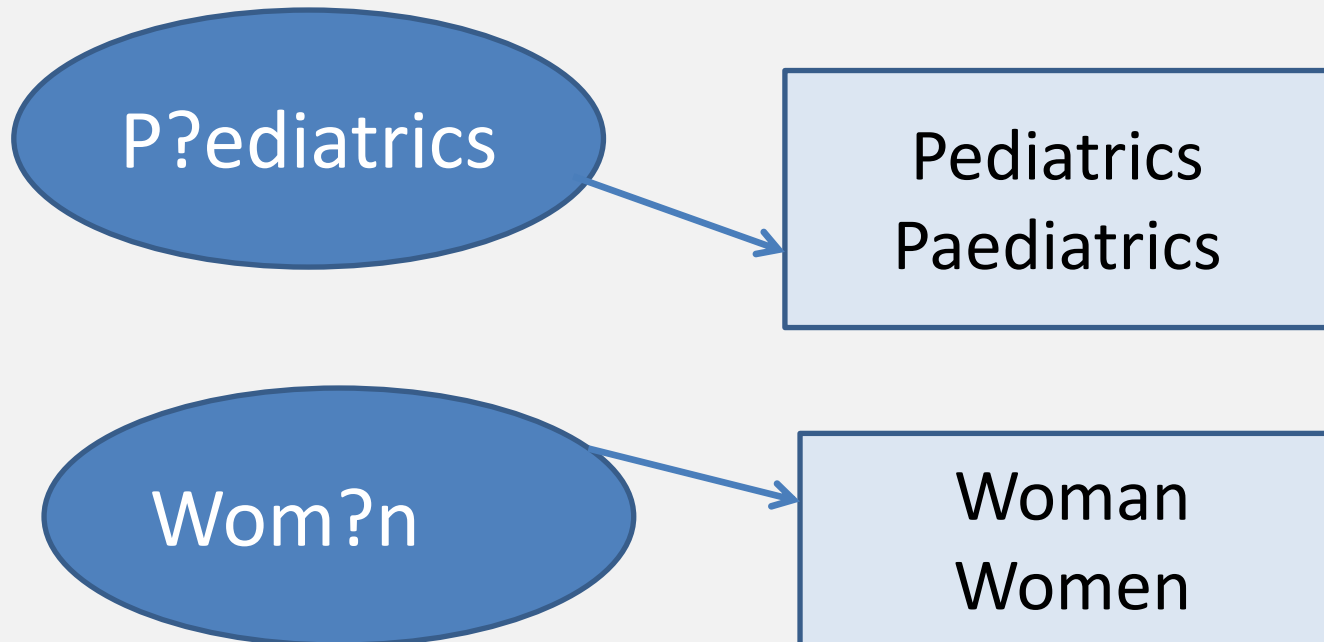
- The ambiguity of 'natural language'
- Synonyms, homonyms etc..
- Variant forms of the same word or phrase – spelling, plural v. singular, abbreviations etc..
- How do you know what you are missing?



## Search tools – Wildcard

(symbols vary from database to database)

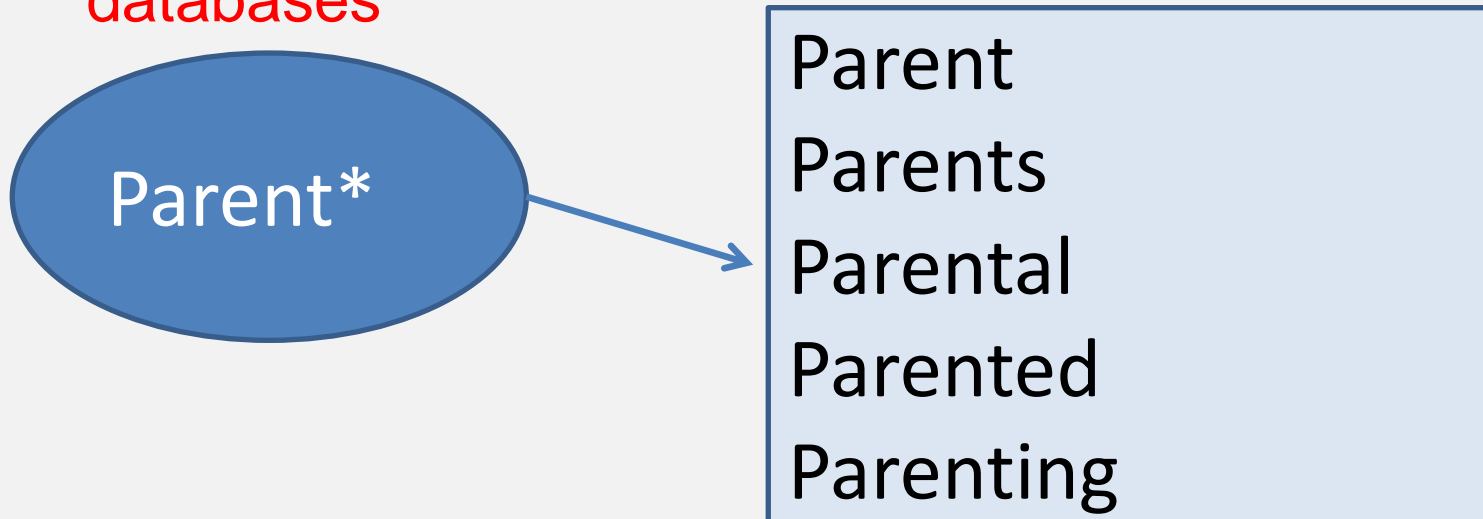
The '?' or '\$' stands for zero or one character





# Search tools - Truncation

Truncation - Use the 'truncation' symbol, an asterisk \* to find alternative word endings: **symbols vary in databases**



Phrase searching – ensure the terms appear together  
e.g. **“antidepressant drugs”**



## Search tools - Adjacency searching

- (adj# - Ovid) acute adj5 otitis media
- (N# - Cinahl) middle ear N3 inflam\*
- (NEAR/x – Web of Science) chronic NEAR/4 disease\*



## What do you see?



<http://www.flickr.com/photos/rossjamesparker/89414788/sizes/m/in/photostream/>



- FRUIT

- Apples

- Green apples
      - Granny Smith apples
      - Golden Delicious apples
    - Red apples
      - Cox apples
      - Gala apples

- Bananas

- Peaches

- Pears

- Conference pears
    - Comice pears

- Example subject heading thesaurus showing narrower more specific terms under the heading Fruit.
- Most databases with subject headings will allow you to select a heading e.g. Fruit and choose to automatically select any article which has been tagged with one of the more specific subject headings which fall underneath it e.g. Bananas or Gala Apples.
- This option is called **Explode** in Medline, Embase etc on the Ovid platform.



# Subject heading searching

- Standardised terms
- Assigned by expert indexers (humans not machines!)
- Allows exploration of associated (broader, narrower and related) terms in subject tree.
- Can help your search and avoid problems inherent in free text
- Can retrieve articles where the term does not occur in title or abstract



# Using subject headings


- Not all databases provide subject headings or a thesaurus
- Medline uses MeSH, EMBASE uses EMTREE etc..
- In OvidSP search usually maps to headings by default.
- Remember to check 'Scope' notes and explore the subject tree where you can explode or focus terms.
- Search in stages and then combine results using Search History functions





## Step 3 - Retrieving



1. Article in full text databases
2. King's subscriptions via 
3. Interlibrary loan or access to other libraries
4. Open access article



# Finding full text

- Finding full text
- Electronically as 'e-journals'
- In print at King's libraries
- In print at other libraries (e.g. other UL colleges)
- Document delivery – interlibrary loans
- Look out for the **SFX@King's** logo – link to full text





# Medline

- Subject coverage
  - Medicine, nursing, allied health, chemistry, biological & physical sciences, nutrition, health care, psychiatry, social science & education
- 5,500 journals. - 18 million references. 1946 -
- Journal articles
  - Doesn't contain book chapters, conferences etc.
- Bibliographic database
  - Links to full-text holdings
- OVID SP web access– King's username & password
- Alternative access via PubMed



# Embase

- Subject coverage
  - major literature resource in the field of biomedicine and drug research. Extensive coverage of the European literature
- over 4,000 international journals. 1974 to date.-
- Journal articles
  - Doesn't contain book chapters, conferences etc.
- Bibliographic database
  - Links to full-text holdings
- OVID Web Gateway – King's username & password



# Medline and Embase demo



## ISI Web of Science

Subject coverage

- Science Citation Index - 1899-
- Social Science Citation Index – 1956-
- Arts & Humanities Citation Index – 1975-
- Conference Proceedings Citation Index- Science -1990-
- Conference Proceedings Citation Index- Social Science & Humanities -1990-
- Conference proceedings and articles
- Inclusion of cited references
- Full-text links (via SFX)
- No thesaurus
- King's username and password to access



## SciVerse Scopus

- Updated daily, Scopus covers 50 million abstracts of over 20,500 peer-reviewed titles from more than 5,000 publishers
- Covers all major peer-reviewed STM titles and is integrated with SciVerse Hub's web search to cover the scientific web.
  - Patents, conference proceedings and selected web pages
- Citation overview; Journal analyzer; Author evaluator – data to be used in REF
- No thesaurus
- King's username and password to access



# Web of Science demo





## The Cochrane Library

An international organisation and a collection of databases:

- Cochrane Database of Systematic reviews
- DARE (Database of Abstracts of Reviews of Effects)
- Cochrane Controlled Trials Register
- Cochrane Methodology Register
- NHS Economic Evaluation Database (NHS EED)
- Health Technology Assessment Database (HTA).

Contains reliable evidence about the effectiveness of Interventions



# Cochrane demo



## An example of a search strategy

<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD006911.pub2/abstract>

(navigate to Appendices for search strategy via 'Jump to' box under Article tab).

- Adjacency
- Truncation
- Synonyms
- Subject headings v free text searching
- Limit to specific fields e.g. PT (publication type)



# Summaries of Evidence

## BMJ Best Practice

- Single source of information delivered at the point of care - latest research evidence, guidelines and expert opinion – presented in a step-by-step approach, covering prevention, diagnosis, treatment and prognosis. Includes **Clinical Evidence** content.
- Access from the Databases link at <http://www.kcl.ac.uk/library>



# Evidence Search

(previously NHS Evidence)

- <http://www.evidence.nhs.uk/>
  - NICE search engine of evidence based resources, e.g. guidelines and reviews
  - Covers health and social care



## Using Filters (e.g. to limit results to RCTs)

- Cochrane filter
  - <http://www.cochrane-handbook.org/>
- SIGN
  - <http://www.sign.ac.uk/methodology/filters.html>
- Centre for Reviews and Dissemination
  - <http://www.york.ac.uk/inst/crd/intertasc/rct.htm>



# The Cochrane Handbook

- <http://www.cochrane-handbook.org/>
- The *Cochrane Handbook for Systematic Reviews of Interventions* is the official document that describes in detail the process of preparing and maintaining Cochrane systematic reviews on the effects of healthcare interventions.
- **Part 2, Section 6 – Searching for Studies.**



## Further information and support

- Your subject guides pages  
<http://libguides.kcl.ac.uk/content.php?pid=617491>
- Contact Library Services  
[libraryservives@kcl.ac.uk](mailto:libraryservives@kcl.ac.uk) or visit us any  
King's Library Enquiry desk





# Further Training

- LIB:212 Enhancing skills for systematic reviews Part 2:  
Advanced search techniques and tools for systematic reviews
- LIB:229 Literature Review Workshop for Health and Clinical PG students
- LIB:200 Introduction to EndNote for health and physical sciences
- Book on SkillsForge: <http://training.kcl.ac.uk/>