Evidence Based Practice (EBP) in Health Sciences: Searching Ovid Medline

**Exercise: Combined Subject Heading & Keyword searching in OVID Medline**

**Keyword searching** - when you use keyword searching you are searching for the exact words that an author used in the title or abstract of an article. Different authors may use different terms to talk about the same concept. It is important to think of all possible synonyms that different authors might use to refer to that concept. You will need to search all of these synonyms in order to ensure that collect a comprehensive set of relevant articles.

A **Subject Heading** (e.g. MeSH terms) are a controlled vocabulary taken from a thesaurus of approved terms applied to article citations by human indexers. Searching with subject headings can help you find more relevant results as they effectively 'tag' articles that cover the same topics.

**Combined keyword and subject heading** searching provides the most comprehensive search as it ensures that if an indexer has not assigned an article correctly it can still be found by the author keywords.

This activity demonstrates how to conduct a combined MeSH Subject Heading and Keyword search of OVID Medline using the PICO search strategy example for

**Answerable question:**

In **football codes** with high incidents of player **concussion** does the use of **helmets** compared to **not wearing helmets** help to **reduce concussion rates**? 

In this example we are searching the [P] and [I] concepts identified as the [C] is ‘no helmets’ and we can assume that the research will discuss this. [O] is not usually searched as it is difficult for these terms to be indexed. Can be added to a search if too many results.

[P]Population/Problem - football code players/concussion

[I]Intervention - helmets

NOTE: When searching OVID Medline you do not need to use quotation marks “...“ around the words in a phrase, for example **common cold**. You also do not need to capitalize the OR operator, but you may need to in other databases.

- football OR rugby union OR rugby league OR soccer
- OR australian rules football
- AND
- helmet OR protective headgear OR padded headgear
- AND
- concussion OR brain injury

1. Start by finding a Subject Heading term for your first concept (Population group or Problem): For example: Type football and then tick Map Term to Subject Heading and then Search

Football is listed as a Subject Heading. You can click on the Scope note to view the definition and what terms are included under this heading.

This is useful to help with synonyms and alternate terms to be searched as keywords.

Go back and tick box Include All Subheadings and then Continue.
You can see in the **Search History** that we have created a first set of results that we now need to refine. The `i` after the term indicates it is a Subject Heading.

**Keyword search**—now we need to search for the synonyms/alternate terms of *football* as keywords to ensure we identify all the research that includes these as author keywords. Ensure you have unticked the **Map Term to Subject Heading**.

Example: rugby union or rugby league or soccer or australian rules football

The `.mp.` after the terms indicates it is a keyword search and indicates where it is being searched in the database records e.g. title/abstract.

We now need to combine our **Subject Heading** term with the **keyword** synonyms using **OR**

We now have one set for one of the concepts that has been expanded by using **OR**
2. Now you need to repeat the process with the other identified search terms

Type in the other identified term from your (Population group or Problem):

For example: Type **concussion** and **Map Term to Subject Heading** and then click **Search**

Medline has suggested two relevant Subject headings for this term.

If you click on the link **BRAIN CONCUSSION** you can see where it sits on the MeSH Tree. It sits under the main **Subject Heading** Brain injuries > Brain Injuries, Traumatic > Brain Concussion

Go back to your results
For this search, just select **Brain Concussion** and then check the **Scope** note if you need to and then tick **Include All Subheadings** and **Continue**

Now search your concussion synonyms from the search strategy in the keyword search.
Example: **concussion** or **brain injury**
Now we need to combine the sets using **OR** as we did with the previous concept.
3. **Type in the terms from your next concept (Intervention):**

For example: Type **helmet** and Map Term to Subject Heading and then click Search.

**Medline** suggests **Head Protective Devices** as a Subject Heading

Check the **Scope** note and then Continue

Search the keyword terms

Example: **helmet or protective headgear or padded headgear**

Combine sets with **OR**
4. Combining all concepts with AND

In order to refine all of your results to the final set we need to connect the concepts with **AND**

Our final set of relevant articles is 160

Look at the results and click on the **Abstract** link to see if the article is relevant to your question. Medline does not contain the full-text pdf for all articles, click the **Check for full text link** to find the full-text via the Library.
Click on View It to open the full-text of the article to save or print

Rugby headgear and concussion prevention: misconceptions could increase aggressive play.
Manger, Richard Manger, Austin Nanda, Aini
Available on View It Tab

Available at: DOAJ Directory of Open Access Journals
Available from 1555

Limiting your Search results
You can choose to reduce the number of your results by selecting limiters like publication date or publication type. Choose Additional Limits to view more options.
In the following example we have limited our results to only show **Randomized Controlled Trials** on our topic.

3. **The Influence of cervical muscle characteristics on head impact biomechanics in football.**
   Schmidt JD; Guskiewicz KM; Blackburn JT; Mihalik JP; Siegmund GP; Marshall SW.
   [Journal Article, Randomized Controlled Trial]
   UI: 24628761
   Authors Full Name
   Schmidt, Julianne D; Guskiewicz, Kevin M; Blackburn, J Troy; Mihalik, Jason P; Siegmund, Gunter P; Marshall, SW.

4. **Does padded headgear prevent head injury in rugby union football?**
   McIntosh AS; McCrory P; Finch CF; Best JP; Chalmers DJ; Wolfe R.
   [Journal Article, Randomized Controlled Trial, Research Support, Non-U.S. Gov't]
   UI: 19127196
   Authors Full Name
   McIntosh, Andrew S; McCrory, Paul; Finch, Caroline F; Best, John P; Chalmers, David J; Wolfe, Rory.
Tips

If you wanted to see if there was Australian research included in your results you could search Australia as a keyword and then combine the results with AND with your initial results. There are 5 articles that are Australian focused.

Editing your search strategy
You can select to edit your search if you need to make changes or add synonyms
To record your search strategy, you can right click to and select to print and then change the option to save as PDF.
You can create a personalized account in Medline to save and edit your searches. When you have developed a good search strategy and it gives you a reasonable number of results, go to the Search History and click on Save All.

If you are not already logged into your My Account, you will be prompted to login. On the Save Current Search page, add a Search Name, Comments (e.g., the database or other details) and choose Permanent from the Type drop-down list.

Choose from the range of options, then click Save.
Where does your evidence fit on the hierarchy of evidence? Is it reliable?

Review your results and refine your search if necessary:
- If you retrieve too many results: use more specific search terms; use limits
- If you retrieve too few results: use more general search terms; remove limits; check a known reference for alternative keywords; or try a different database

5. Challenge the data. Consider the following:
- Study authors
- Funding of study
- Why was the study done?
- Quality/ specificity of the research question
- Design and conduct of trials/ experiments
  - Was the study design the most appropriate for the research?
  - Any bias?
  - True random allocation of patients?
  - Systematic data collection?
  - Meta-analysis of statistics

Use Critical Appraisal tools for assessing evidence, for example:
- CASP checklists at: http://www.casp-uk.net/casp-tools-checklists
- Centre for Evidence-Based Medicine appraisal sheets/tools at: http://www.cebm.net/critical-appraisal/
Other tips

Searching for books in the Monash University Library collection

Check Search (http://search.lib.monash.edu/primo_library/libweb/action/search.do?vid=MUL) to find print and electronic books held in the Monash University Library collection, as well as journal articles.

Citation searching

If you locate a key reference for your topic, use it to locate other references:
- Check the reference list at the end of the article, to identify older articles that may be useful.

Finding full text of a specific journal article

Check the A-Z ejournals link in Search to locate journals subscribed to by the library as well as free electronic journals.

Library guides for Subject areas with key databases and search tips

Help

Monash University Library help: http://monash.edu/library/about/contacts/index.html
- Ask a question via our email, telephone or face-to-face services
- Help yourself with classes and workshops, online tutorials and guides
  (http://monash.edu/library/services/users/students/)
- Research & Learning Online (https://www.monash.edu/rlo)