Exercise #1: Keyword/Boolean Searching, Using Filters

Objective: Notice the different types of PubMed citations. Learn the differences between searching using phrase searching and boolean operators (AND, OR). See how to order concepts together using "( )". Restrict your search results using Filters.

1. Go to the CDPH PubMed URL by clicking on Key Resources from:
   http://www.lib.berkeley.edu/PUBL/cdph/

2. Click on PubMed.

3. Type: HIV infections into the search box and click Search.
   How many items did you retrieve? ____ (Should be over 263,000) This is way too many to browse through!

4. Go back to the search box and type: "HIV infections" AND spouses and click Search.
   How many items did you retrieve? ____ (Should be about 530)

5. Go back to the search box and type: "HIV infections" AND (spouses OR sexual partners) and click Search.
   How many items did you retrieve? ____ (Should be about 8550) Why did you get more results than the search before?

6. In the right column of the screen under Search details, click on See more ...
   to see how PubMed translated your query. NOTE: We will talk about MeSH terms in Exercises 2 and 3.

7. Click on your browser's BACK button or arrow to go back to your search results page.

8. Keeping the last search results (8550), look at the left side of the screen and click on Show additional filters.
   Using filters is a good way to narrow your search and get fewer results.
9. Leave the checked items checked. Select **Ages** by clicking the box to the left side. Click **Show**.

10. On the left side, select the following filters by clicking the link name. (NOTE: You will need to wait a few seconds for the screen to refresh after each selection then you will see a ✓):
   a. Under **Article types**, click on **Review**.
   b. Under **Publication dates**, click on **5 years**. You should now see a check mark next to 5 years.
   c. Under **Ages**, click on **Adult: 19-44 years**.

11. How many items do you have now? ________ (Should be about 30)

12. Click on **Clear all** at the bottom left under all the filters or under **Filters activated**: to remove the selections.

   ![Search results](image)

   **Search results**

   Items: 1 to 20 of 30  Page 1 of 2  Next >  Last >>

   Filters activated: Review, published in the last 5 years, Adult: 19-44 years. Clear all to show 8549 items.

   **End of Exercise 1**

**Finished early?**

1. Go to the search box and type: "HIV infections" AND spouses OR sexual partners and click **Search**. How many items did you retrieve? ____ (Should be about 26530)

   Why did you get more results than in step 5 above?
   
   ![Hint](image)

   Look at the search details

2. Do you get more or less results when you use OR in your search?

3. Do you get more or less results when you use AND in your search?
Exercise 2: Using Medical Subject Headings (MeSH) Terms

**Objective:** Use a field tag to narrow down a search. Learn how to browse MeSH terms found from a title word search.

1. In **PubMed**, start a new search by going to the search box and clicking on the **Clear** button.
   - **TIP:** This is a quick way to delete the contents in the search box.
2. Make sure to **Clear all** Filters as well if you did not do so from Exercise 1.
3. Type: `obesity[ti] AND "social determinants"` into the search box and click **Search**.
   - **TIP:** `[ti]` requires the word preceding it to be in the title field of the article. This is field searching.
4. Click on **Format: Summary** at the top of the search results screen then choose **Format: Abstract**.
5. Scroll through the first page of results and notice that some results are tagged `[ Indexed for MEDLINE]`.
6. When you see a citation with `[ Indexed for MEDLINE]` and you will see the words **MeSH terms** somewhere at the end of the citation.
7. Click on **MeSH terms** to see the MeSH Terms. Note which MeSH terms listed for this article that would be useful for your topic.
8. Look for a **MeSH major term** (MeSH Term with * after it) and click on the **MeSH term**.
   - It does not matter if there is a /. **Note:** Some terms have a slash (/) and a word after the slash. The word after the slash is a subheading. You will look at subheadings in Exercise 3.
9. A new box will open with 3 choices: **Search in PubMed, Search in MeSH, Add to Search**.
10. Click on **Search in PubMed**. This will run a **NEW** PubMed search for only this term (and subheading if you choose a term with a /) as a major MeSH term.
    - **TIP:** Using a **MAJOR** MeSH will help you retrieve articles where the MeSH term is a primary subject of the article.
11. Use your browser's **Back button or arrow** to return to your citations.
12. From same article, click on a different **MeSH term**. It does not have to have an *.
13. After the box opens, click on **Add to Search** to add the selected term to the Search box.
14. Find a new article with MeSH terms and click on **MeSH terms**.
15. Click on a different **MeSH term**. It does not have to have an *.
16. After the box opens, click on Add to Search to add the selected term to the Search box.

17. Scroll up to your search box and you should see your two MeSH terms in the search box separated by an AND.

18. Click on Search to run the search.
   Note: Depending on which MeSH terms you chose to combine together, you may or may not get any search results.

   End of Exercise 2

Finished early?

1. Search on a topic of your own using AND in your search string.

2. Change the Format from Summary to Abstract.

3. Find a citation labeled [Indexed for Medline] and identify relevant MeSH terms for your topic.

4. Create a new search using the MeSH terms you found.
Exercise #3: Using Medical Subject Headings (MeSH) Subheadings

Objective: See information about the MeSH term such as the definition, when the term started being used, subheadings, and tree structure. Learn how to narrow a search by selecting a MeSH subheading, Restrict to MeSH Major Topic, and Do not include MeSH terms found below this term in the MeSH hierarchy.

1. In PubMed, start a new search by going to the search box and clicking on the Clear button. Also make sure to click Clear all filters if you see any selected.

2. Type: "teenage pregnancy"[ti] into the search box and click Search.

3. Under the Species filter, click on Humans.

4. From the search results, find an interesting citation and click on the article title to see the full record.

5. Click on MeSH terms to see the MeSH terms. Note the subject headings listed for this article that would be useful for your topic.

6. Click on any MeSH term. It's okay if it has a slash (/) or *.

7. A box will open with 3 choices: Search in PubMed, Search in MeSH, Add to Search.

8. Click on Search in MeSH. This runs a search in the MeSH database.
   a. If your search finds more than 1 MeSH term, you will see a list of MeSH terms with their definitions.
   b. If your search only finds 1 MeSH term, you will see the MeSH record for that term.

9. If you found more than 1 MeSH term, click on the most appropriate MeSH term. This will bring up the MeSH record for the term. See a MeSH record example to the right.

10. Scroll down to see the definition, Year introduced, available subheadings, and other selections. You may also see Entry Terms and Previous Indexing.

11. Further down are the MeSH "trees" (hierarchies) where this term is found. Your term may have broader terms and narrower terms. A term can also be in more than one "tree".

12. Click in the box to the left of the subheading(s) you are interested in to start building your search.

13. Click in the box next to Restrict to MeSH Major Topic.

14. Click in box next to Do not include MeSH terms found below this term in the MeSH hierarchy to exclude any narrower terms in the MeSH tree.

15. Under the PubMed Search Builder box, click on Add to search builder to start creating your search. You will see your MeSH term and subheading(s) appear in the box.
16. In the MeSH search box, click on the Clear button.
17. In the MeSH box at the top, type united states and click Search.  
   ![TIP] There are MeSH terms for geographic locations.
18. Click in the box next to the MeSH term United States
19. Under the PubMed Search Builder box, click on Add to search builder.
20. Click on Search PubMed to run your search using the 2 MeSH terms and subheadings you selected.

   End of Exercise 3

Finished early?
1. Search on a topic of your own.
2. Under the Species filter, choose Humans
3. Click on the title of any interesting articles and identify the relevant MeSH terms for your topic.
4. Look at the MeSH records for your relevant terms and answer these questions.
   a. Looking at the MeSH term definition, is this the right term for your topic?
   b. When was the MeSH term introduced?
   c. What are the most relevant subheadings for your topic?

   ![Hint] Click on Subheadings to see the Subheading definitions. Identify the subheadings most relevant to your topic. Use your browser's Back button or arrow to return to the MeSH record.

   ![TIP] Using subheadings/qualifiers will result in a more focused search of your MeSH term and will narrow your search results.
   d. Is there any previous indexing for your MeSH term?
Exercise #4: Working With Your Search Results and Advanced Search

Objective: Use Advanced to re-run a search. Note the different display and sorting options available. Learn how to use the Clipboard to temporarily save search results. Look at full text articles. Use Similar Articles to help you find more citations on your topic. Learn how to e-mail and save your search results.

1. In PubMed, click on the Advanced link BELOW the PubMed Search box. Make sure to click Clear all filters if you have any filters selected.

2. Under History, you will see the searches you have done today. To re-run any of the searches, click on the number under Items found (NOT the number under the Search column).

3. Click on the Items found # for the "HIV infections" AND (spouses OR sexual partners) search. Your Items found #s may be different.

4. Click on Format: Summary at the top of the search results screen then choose Abstract.

5. Click on Sort by: Most Recent and change it to Publication Date. (PubMed’s default sort is "Most Recent," which is the date the citation entered the PubMed database)

6. At the top of the page next to Per page, click on 20 and change it to 50.

7. Click in the box to the left of 4 article citations. Include one that has after the abstract.

8. At the top of the screen, click on Send to: in order to send the results to the Clipboard. Choose Destination: Clipboard. Click on Add to Clipboard.

9. Note the new Clipboard icon and confirmation message of how many items were added to the Clipboard.
The Clipboard icon and the [number] items link are only visible on a search results page. However, a clipboard link also appears under History in the PubMed Advanced Search Builder page and at the bottom of PubMed Tools on the PubMed Home Page.

10. Under the citations you sent to the Clipboard is now item in clipboard. This helps you keep track of the citations you already reviewed and sent to the clipboard.

11. Click on 4 items next to the Clipboard icon. On the results screen, clicking on allows one to delete items from the clipboard.

12. Click on Format: Summary at the top of the search results screen then choose Abstract.

13. Find a citation that has the and click on . This should take you right to the full text article. Ovid-licensed journals will require you to be at a CDPH facility or you would need to login with a username and password found in your web portal.

14. To find other articles, find a relevant article and click on Similar articles at the bottom of the citation.

15. Click in the box to the left of 2 new citation titles.

16. Click on Send to: in order to send the results to the Clipboard. Choose Destination: Clipboard. Click on Add to Clipboard. This will add the new results to your saved citations.

17. Click on 6 items next to the Clipboard icon.

18. Click on Send to: and choose E-mail in order to e-mail the results to yourself. Follow the prompts to e-mail the citations to yourself.
   a. If you want to send abstracts, under Format you need to choose either the Abstract or Abstract (text) [ if you want plain text e-mail format. With Abstract, check MeSH and Other Data if you would like the citation MeSH terms included with the citation.

19. Type your e-mail address in and click on E-mail.

   If the e-mail message does not come to your e-mail account, you may need to click on Didn't get the message? Find out why... to read about how to make sure you get the e-mail message.

20. Click on Send to and choose File in order to save the results to your computer.
   a. Use the Abstracts (text) format if you want to have abstracts included with your citations.
   b. If you will be importing the citations into EndNote, use the MEDLINE format.

21. Click on Create File. Name and save the file to the desktop. Keep the file suffix .txt.

For future reference:
To add PubMed citations to your EndNote X7 or X8 Library, you can do a direct export.
1. Open EndNote
2. In PubMed, select the citations you want to import
3. Click on Send to:
4. Select Citation manager
5. Your citations should automatically import into EndNote. If not, use Step 20 above and save them to a file in the MEDLINE format and go to EndNote and manually import the file.

Please take a couple of minutes to fill out our survey at:

http://svy.mk/2o2nSD5