CLASS OBJECTIVES

- Learn the unique features of PubMed version of MEDLINE
- Perform basic subject, author and journal title searches
- Review Advanced Search options to refine search results
- Use the Clipboard to save selected articles
- Register and use the My NCBI feature
  - Save items to a My NCBI “Collections”
  - Save a search in MyNCBI
- Use search history feature to modify Related Article results
- Use Article Linker to access full text
- Select, display and print citations

HOW TO GET HELP

1. Use the Ask Us link on the library homepage to send an instant message or Email our Ask A Librarian service. http://hslibrary.ucdenver.libanswers.com/ connects you with a Librarian from 9:00 - 5:00, Monday through Friday.
2. Call us! Call the Library Service Desk at 303-724-2152.
3. Come ask us in person. Talk to a reference librarian at the Service Desk: Monday - Friday: 9:00 am to 5:00 pm

WHAT IS PUBMED?

PubMed is the National Library of Medicine’s (NLM) web-based search service. It provides access to over 21 million citations. Dating back to 1966, MEDLINE is NLM’s premier bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system and the preclinical sciences.

- Currently, you can search OLDMEDLINE via PubMed back to 1865.
- PubMed also contains very current in-process citations which have not yet been indexed for MEDLINE.
- Customize your searching experience with My NCBI. Link to full text, set up email alerts and store citations for later.

ACCESSING PUBMED

Click on “PubMed” from the Library’s webpage (http://hslibrary.ucdenver.edu/). This customized gateway links to full text available to University of Colorado Anschutz Medical Campus affiliated users.

TUTORIALS

SEARCHING PUBMED
To search PubMed, enter search terms in the Search Box. The PubMed Search Bar is available from every screen. You do not need to return to the home page to enter a new search.

Subject Searching
Enter one or more terms (e.g. VITAMIN C COMMON COLD) in the query box and press the enter key or click Search. PubMed automatically combines (ANDs) significant terms together using automatic term mapping. Also, common phrases are matched to the index. Use quotation marks if the phrase index doesn’t work for your search.

NOTE: Consider starting your search in the Advanced Search mode. You’ll have access to many more features.

Reviewing Search Results
Once you click Search, PubMed will display your search results in reverse chronological order. The query box displays the search terms you entered. You can modify your current search by adding or deleting terms in the query box or in Details. If you applied Filters, you will see the active filters listed in the upper left of your screen, e.g. Limit: English, Review.

Related Citations
Each citation in PubMed has a link that will retrieve a pre-calculated set of PubMed citations closely related to the selected article. Click on “Related Citations” underneath each citation (in the Summary view) to display the related set of articles.

- PubMed creates this set by comparing words from the title, abstract, and MeSH terms using a powerful word-weighted algorithm.
- Citations are displayed in ranked order from most to least relevant with the linked-from citation displayed first.
- Any limits you selected are disregarded when you look at related articles.
  - Use the History feature to reinstate those limits directly, e.g. #4 AND english[lang] AND human[mesh].
  - Or you can type #4, click on Limits, and select the Limits you want.

Please take the time to evaluate this class at http://hslibrary.ucdenver.edu/classes/evaluate
Spelling Autocorrect
If you miss-type or misspell a term, PubMed will suggest a correct spelling. For example, if you type MYOCARDIAL INFRACTION, PubMed will reply “Your search for myocardial infraction retrieved no results. However, a search for myocardial infarction retrieved the following items.”

Truncation (Wildcard search)
Place an asterisk at the end of a term to search for all terms that begin with that word; for instance backpack* will find all terms that begin with the letters backpack; e.g. backpacking, backpacked, backpacker, backpackers, etc. (Limited to 600 variations of your root term).

Phrase Searching
PubMed consults a phrase index and groups terms into logical phrases. To force PubMed to search for a specific phrase, enter double quotes around the phrase, e.g. “single cell”. PubMed does not actually perform adjacency searching, but rather uses a list of recognized phrases against which search terms are matched.

Automatic Term Mapping
Search terms entered in the query box are matched against a MeSH (Medical Subject Headings) Translation Table, a Journals Translation, a Phrase List, and an Author Index. In other words, PubMed “translates” your keyword search into a searchable strategy using a table of terms from MeSH and other sources in a process known as “automatic term mapping”.

NOTE: To create an IE Favorite for your search strategy, click on the “URL” button in this window, then add your search to your favorites. Or you may copy and paste the URL to a web page or email, allowing a direct link to the search results for that specific search.

Author Searching
Enter the author’s name as last name plus initials (no punctuation), e.g., frist wh
PubMed automatically truncates on the author’s name to account for varying initials and designations such as Jr. or 2nd. If only the author’s last name is entered, PubMed will search that name in All Fields not just the author field unless the author name is found in the MeSH (NLM’s Subject Headings) Translation table.

Journal Title Searching
Three methods are available to search for journal titles:
- Under More Resources, select “Journals in NCBI Databases”. Type your journal title into the search box and click Search, then click on the desired title, or click "Add to search builder" on the right, and then on “Search PubMed”.
- Use the MEDLINE abbreviation and the title abbreviation field tag, e.g. mol biol cell [ta]
- In Advanced Search, use the journal field in the “Search Builder” feature.

Please take the time to evaluate this class at http://hslibrary.ucdenver.edu/classes/evaluate
ADVANCED SEARCH

Advance Search offers several useful PubMed tools. We suggest using Advanced Search regularly to refine your search results.

Search History

PubMed will hold all your search strategies and results in the Search History. The Search History displays the search number, your search query, the time of search, and the number of citations in your results.

- To view the results from a search, click on the number of results.
- You can combine searches or add additional terms to an existing search by clicking on the pound sign before the search number, and selecting the appropriate search option: e.g., #2 AND domestic violence
  - Once you have entered a revised search strategy in the query box, click Search to view the search results.
  - To view the Search History after running a new search, go to Advanced Search. Click Clear Search History to remove all searches from the Search History screen.

**NOTE:** The Search History will be lost after eight hours of inactivity on PubMed or any of the other Entrez databases

Field Searching

Use the Search Builder tool in Advanced Search to select specific fields to search (author, title, MeSH, etc.) to create a more refined search result.

Filters

Use Filters to further narrow your search to a year, article type, age range, gender, language and so on. Click on the desired filter to apply it to your results. Click on Show additional filters to find more options. To turn off the applied filters, click on Clear all above the search results.

**Note:** Do not select the Text Availability filters. The Library offers more extensive full text than is offered through this filter.
More Resources

CLINICAL QUERIES

This specialized search query with built-in search research methodology filters is intended for clinicians.

Four category filters are provided:
- Therapy
- Diagnosis
- Etiology
- Prognosis

Two emphasis filters are provided:
- Sensitivity (a broad range of experimental designs)
- Specificity (limited to randomized, blinded, clinical trial studies)

Systematic Reviews

This feature is provided to help clinicians locate systematic reviews and similar articles. It combines your search term(s) with citations identified as:
- Systematic reviews
- Meta-analyses
- Evidence-based medicine
- Reviews of clinical trials
- Consensus development conferences
- Guidelines

Citations from journals specializing in clinical review studies are also included. The resulting retrieval can be further refined using PubMed's Limits e.g., English language.

Medical Genetics

Filters provided to help clinician locate clinically relevant research on medical genetics.
- Diagnosis
- Differential Diagnosis
- Clinical Description
- Therapy
- Genetic Counseling
- Genetic Testing
- Molecular Genetics

MeSH DATABASE

PubMed’s MeSH (Medical Subject Headings) Database is available on PubMed’s homepage under PubMed Resources or from the Search pull-down menu. This database displays MeSH terms in a hierarchical structure and lets users select terms for searching. In addition you can directly attach subheadings and limit terms to a MeSH Major Term. When you enter a term that is not a valid MeSH term, the MeSH Database will check against the MeSH Mappings and display the associated MeSH term.

SINGLE CITATION MATCHER

Use the Single Citation Matcher to look for a single citation. This feature is a fill-in-the–blank form that lets you enter journal citation information to locate a single citation, or items from a particular volume or issue of a journal.

DISPLAY SETTINGS

Your search retrieval is originally displayed in the Summary format.

PubMed retrieves search results and displays the citations in batches of 20 per page. To change this default (20 per page), click on the Display Settings link to see a menu of Display options. You may select Format, Items per page, and a Sorting order. **Note the newest Sort by choice: Relevance.** Click on Apply and PubMed redisplay the citations based on your selections.

**NOTE:** Select the Abstract Display Format to see the Article Linker icon, which will link you to the Full Text Journal holdings of the Health Sciences Library.

**Formats**
- Summary – The default format includes author, title, source, record status, indication if article is non-English, tag for review or retracted publication, “No abstract available” notation, citation number, and links for Related Articles and Free Full Text.
- Summary (text) – The above with the exclusion of the links for Related Articles and Free Full Text.
- Abstract – In addition to summary material, includes the author affiliation, personal name as subject, erratum, comments, abstract, links to full text (including the HSL’s Article Linker icon), and links to publication types, MeSH and more.
- Abstract (text) – The above with the exclusion of the links to full text and publication types, MeSH, etc.
- Medline – Two-character tagged field format for the complete MEDLINE record. Use this format to download records into a bibliographic management software program.
You can change formats for:
- Individual Citations – click on the author name hyperlink to display the Abstract format.
- All Citations – Select from the Display pull-down menu to view all citations in a new format.
- Selected Citations - Click on the boxes to the left of each author’s name to select specific citations and then select a format from the Display pull-down menu.

FULL-TEXT LINKS
Use the Display dropdown box to select the Abstract view. The black and gold Health Sciences Library “Article Linker” button provides a link to full text articles available through Health Science Library subscriptions.

SELECTING and SAVING YOUR SEARCH RESULTS
You may select specific citations or your entire set of citations to print or save. To select specific citations, simply use the check box next to each one. Once your selections are made, Use the Send To drop down menu to select the Destination.

File
Save specific citations by check marking the desired citations and select “File” from the “Send to” drop down menu. You may save the entire set by selecting “File” from the “Send to” menu without making specific selections. The maximum number of items that can be saved is 10,000. Use the file save dialog box to save your results to your USB drive or to the desktop or other drive.

Collections
Send a list of citations to your My NCBI Collection by selecting the desired citations and choosing “Collections” from the “Send To” menu. Go to Page 8 for information on setting up a My NCBI account.

Order
If you have an account set up with the HSL Document Delivery/Interlibrary Loan office, you may select the “Order” option from the “Send To” menu. Call 303-724-2111 or see http://hslibrary.ucdenver.edu/interlibrary/ for details.

Clipboard
The Clipboard allows you to temporarily save or view selected citations from one search or several searches that you may want to print, save, email or order. Checkmark the items you want to save and select “Clipboard” from the “Send to” drop down menu. A message will tell you how many items you have just added. Once you have added items to the Clipboard, you can click on the Clipboard link to view, print, email, save, or order your selections. The maximum number of items that can be placed in the Clipboard is 500.

Email
To email the search results to yourself, change the “Send to” drop down menu choice to “Email”. Complete the email options form, and click on the “Mail” button. If your email supports HTML, you will receive the full text link graphics with the emailed citations. This provides convenient access to full text from your email message.
PRINTING YOUR SEARCH RESULTS
To print the citations saved to your clipboard, click on the Clipboard button to display the list of citations. Then use the Print function from your Web browser to print the list. The browser print button always prints what is displayed on the current web page. Consider using the “Display” menu to change the Format or to increase the number of documents per page so that the total number of documents is displayed on one page.

Note: To print the citations without graphics, change the “Display” menu choice to one of the Text options and then print.

My NCBI
My NCBI allows you to save a search in PubMed and receive current awareness alerts via email. You can also set up five customized tabs to filter your search results.

Register for My NCBI and Sign In whenever you want to save a search or use the My NCBI filters you've set up.
1. Click on "My NCBI" in the upper right hand corner of the PubMed Home Page and fill in the registration form.
2. Use the “Sign In” link whenever you want to use My NCBI -- A separate window will open, enter your user name and password.

To set up our “Outside Tool” to view resources owned by the Health Sciences Library.
1. Log in to My NCBI and click on “MyNCBI Site Preferences” in the upper right hand menu.
2. Under “PubMed Preferences” click on “Outside Tool”
3. Click on the letter “U” at the top of the page
4. Scroll down and click on the circle next to “University of Colorado Denver and Health Sciences Center”
5. Scroll to the top and click on “Save”
6. Now, whenever you search PubMed from outside the library, you can login to you’re My NCBI account and you will see the green Article Linker button.

To save search strategies and create email alerts:
1. Perform your search in PubMed, but do not limit by date. The PubMed search results page will have a "Save Search" underneath the query box.

2. Click on the “Save Search” to save your strategy. A separate window will open in your browser to connect you to “My NCBI”
3. Enter your password or if you don’t have one, set up a new account with “My NCBI”.
4. Give your search a meaningful name. If you choose to set up a “current awareness” service, the name of your search will be part of the subject line of the email which will be sent to you.
5. Choose if you would like to have the search sent to you automatically via email. This will allow you to select options for your email deliveries.
6. If you choose “No, thanks” the search will be saved and you can go into “My NCBI” to update the search manually.

NOTE: Saved search strategies cannot be edited. To modify a strategy, re-save it with your changes. One way to do this is to first run the search by clicking on the name on the My Saved Searches page. On the results page modify the search in the query box and/or use Limits (but not date limits) if desired and click “Search” to examine the results. If you prefer the new strategy, use the Save Search link to save it. You can save it with the same name, just be sure to delete the old saved search.

To save citations to My NCBI Collections:
Save sets of citations from a search for later recall.
1. Perform your search in PubMed
2. Checkmark the items you want to save, change the “Send to” drop down menu choice to “Collections”.
3. Be sure that the “Pop-up Blockers” on your browser or Google (or other) toolbars is turned off.
4. A box will pop up and allow you to select or rename your collection. Type in a descriptive title for your collection.
5. You may repeat this process and add citations to a collection, if you click on “Append to Existing Collection”
6. You can have multiple collections.
OTHER My NCBI tools:

<table>
<thead>
<tr>
<th>Highlight keywords:</th>
<th>Change your Display preferences:</th>
<th>Set a filter for guidelines (or other publications types):</th>
<th>Set a filter for clinical queries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Click on the “My NCBI” link</td>
<td>1. Click on the “My NCBI” link</td>
<td>1. Follow steps 1-2 as at left.</td>
<td>Select from a set of search filters designed to focus your search on clinical trials for evidence based practice.</td>
</tr>
<tr>
<td>2. Select “MyNCBI Site Preferences” in the upper right hand menu</td>
<td>2. Select “MyNCBI Site Preferences” in the upper right hand menu.</td>
<td>2. Select “PubMed Filters &amp; Icons” on the list of PubMed Preferences</td>
<td>1. Follow steps 1-2 as at left.</td>
</tr>
<tr>
<td>3. Select “Highlighting” and pick a color choice.</td>
<td>3. Select “Result Display Settings” in the list of PubMed Preferences</td>
<td>3. Select the “Properties” radio button and then the “Publication Types”</td>
<td>2. Select “PubMed Filters &amp; Icons” on the list of PubMed Preferences</td>
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<tr>
<td>4. Return to your search.</td>
<td>4. Select the default format, items per page, and sort you prefer.</td>
<td>4. Click in the check box next to Practice Guidelines (or select another Publication Type)</td>
<td>3. Select the “Properties” radio button and then the “Clinical Queries”</td>
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<td></td>
<td>5. Click Save.</td>
<td>5. Practice Guidelines should appear in the list of Filters on the left</td>
<td>4. Select the Clinical Queries that you want to have as automatic search filters.</td>
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<td></td>
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<td></td>
<td>5. The Clinical Queries you select will appear on the list of Filters on the left side of the page.</td>
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To return to PubMed:
Scroll to the bottom of any MyNCBI screen and select PubMed from the list of tools under the Popular column.

NOTE: If you are using PubMed at a public or shared computer (such as in a clinic, hospital workroom, or the library) be sure to click “Sign Out” when you have completed your search session or exit the web browser.