USING PUBMED

MEDLINE, one of the premier databases for clinical medicine, can be accessed through many different search interfaces from many different vendors. PubMed contains the free version of MEDLINE made available by the National Library of Medicine. The UT Libraries and OhioLINK have added links to PubMed to connect users to full-text articles. To see these links, access PubMed through the Libraries' web page at http://www.utoledo.edu/library. You can find PubMed in the **Research Databases by Name** or **Subject** pages under the **Quick Links** menu on the left side of the page.

PubMed has special features that are not found in all versions of MEDLINE:

- **In Process Citations** (also **Supplied by Publisher**), are additional citations that have not yet been indexed and included in MEDLINE, allowing earlier access to new articles
- Links to the **full text of (publisher) selected articles** are available ; not all of the full text articles are available for free; some require a subscription
- The ability to find **related articles** for an individual item in a search result
- Special filters for **clinical queries** (see below for details on the clinical queries feature)
- The **journals database** can be used to find full journal titles from abbreviations or vice versa.
- A **single citation matcher** searches for citations when only some bibliographic information is available (e.g., journal name, author name(s) , volume, page number).

General Information

- The **Using PubMed** section of the PubMed home page provides a great deal of help information and tutorials.
- There are several help sheets available from the Mulford Library that may be of interest:

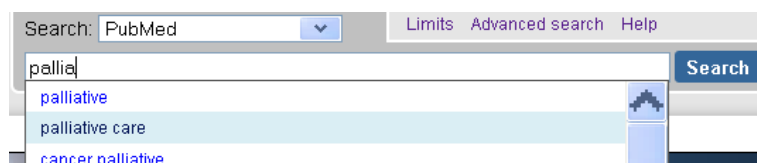   ***Accessing Online Journal Articles through PubMed****:*
        http://www.utoledo.edu/library/mulford/pdf/pubmedfulltext.pdf

    Step-by-Step Searching in PubMed: http://www.utoledo.edu/library/mulford/pdf/PubMedstep.pdf

- If you need help, ask a librarian: http://libguides.utoledo.edu/mulfordhelp

Quick Searching with Keywords

You can perform a quick keyword search of PubMed by entering terms in the search box at the top of the page. PubMed will suggest different keywords or phrases to use. Click the one that best fits your topic and click Search.

If you opt not to use PubMed's keyword suggestions, you can create your own keyword search by following some basic searching principles. If you combine terms in the search box, like *smoking AND myocardial infarction* or *home care services OR home care agencies*, make sure that your operator (AND, OR) is capitalized. Field searching is also available in the search box using field tags (e.g., smith [au]). You can also search in specific fields under **Advanced Search**.

MeSH Searching

To minimize irrelevant search results and maximize control, search PubMed with MeSH (Medical Subject Headings).

1) Click on **MeSH Database** under **More Resources** or choose **MeSH** from the drop-down menu at the top of the page
2) Type one term or concept in the search field and click on the **Search** button
3) If more than one subject heading appears, click on the subject heading that most appropriately represents the search term. The resulting page allows refinement of the search:
    o **Subheadings –** Select desired subheadings, if any, to narrow your search to a specific aspect

    o **Restrict to MeSH Major Topic –** Check this to include articles which have the topic as the main focus

    o **Do not include MeSH terms found below this term in the MeSH hierarchy -** If this box is unchecked, PubMed will search for articles with any narrower terms in the subject hierarchy. To *not* include narrower terms in your search, check the box.

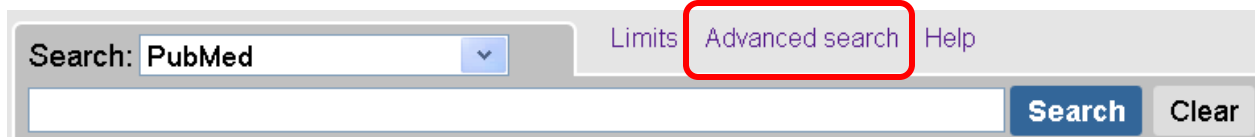4) After selecting the desired search options, click on the button labeled **Add to search builder** in the upper right corner.

After clicking **Add to search builder**, your selected MeSH term will appear in the box.

5) **To add more MeSH terms to the search builder**, enter the next term in the search box at the top and repeat the process (steps 2-3 above). To combine two or more MeSH terms, use the options **AND/OR/NOT** located in the drop-down menu in the search builder box, then click **Add to search builder**.

    AND   Restricts a search, for example, to articles indexed with both *smoking* and *myocardial infarction*.

    OR   Expands a search, such as *home care services OR home care agencies,* to include articles indexed with one or both terms.

    NOT   Excludes articles in a particular set. For example, to find non-drug therapies for ADD, search *attention deficit disorder with hyperactivity/therapy NOT attention deficit disorder with hyperactivity/drug therapy*.

6) If the search is complete, click on the **Search PubMed** button.

Advanced Search Options

Many helpful features of PubMed, including the Search Builder and Search History, are included in a separate **Advanced Search** option.
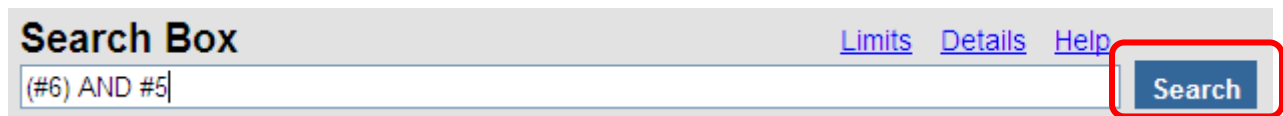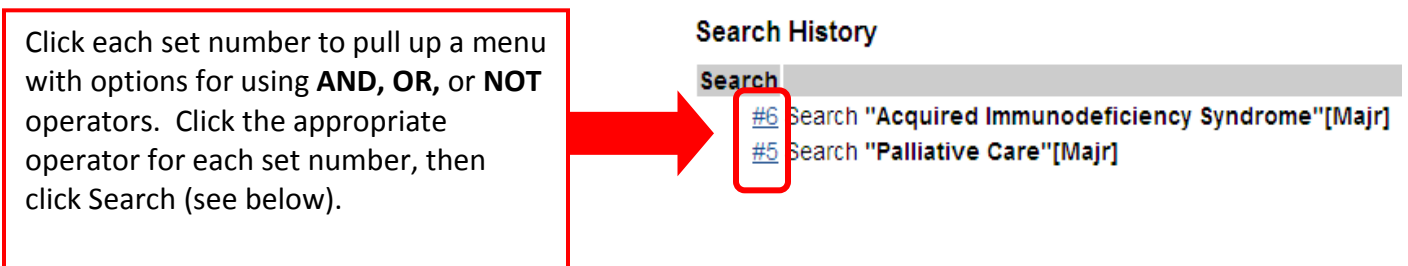

Search Builder

The **Search Builder** drop down box lets you search for terms in specific fields such as **Author, Journal, Publication Date, Publication Type,** and **Title/Abstract**. Select the field you want to search in. Enter your search term and select the appropriate one from the list that appears. Alternately, you can enter your search term and click the **Show Index** link to see a list of terms to select from. Click the **Add to search box** button. Repeat the steps as needed in order to create different search term combinations using AND/OR/NOT, then click **Search**.

Search History

The **Search History** allows you to combine previous searches.

Click each set number to pull up a menu with options for using **AND, OR,** or **NOT** operators. Click the appropriate operator for each set number, then click Search (see below).

Applying Limits to Search Results

After doing a search, you can refine your results by clicking **Limits** at the top of the screen. These options include things like publication date, **Type of article**, (Journal) **Subsets**, **Languages**, **Sex,** and **Ages.** We recommend that you do NOT limit to references with full text, free full text or abstracts because you will exclude many very recent articles that haven't been indexed yet.

Specialized Searches

PubMed provides access to specialized searches from its home page under **PubMed Tools**; usually these have built-in hedges (parts of a search strategy that will narrow the search to particular types of articles, etc.).

Clinical Queries

- **Clinical Study** finds citations that correspond to a specific clinical study category (e.g. etiology, diagnosis, and therapy). Select broad (more relevant references, but also more irrelevant ones) or narrow (may miss some relevant references, but will exclude more irrelevant references too).
- **Systematic Reviews** finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.
- **Medical Genetics** finds citations and abstracts related to various topics in medical genetics.

Topic-Specific Queries

These are broad searches on a variety of topics: electronic medical records, health literacy, bioethics, etc.
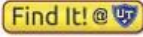
Citation Information in the Results List

When viewing a single reference or a list of references, you can change how they are displayed by selecting **Display settings** (change forms, the number of items per page, and sort options).

Other notes that you will see for some references:

- **In Process Citations** and **As Supplied by Publisher** are generally very recent articles that are searchable by a quick search. While they often contain abstracts, they have not yet been assigned MeSH terms, so you would not find them with a MeSH search.
- **Epub ahead of print** citations are provided by the publisher before the article has been officially published (and often times these are missing information like volume and pages because they don't have them yet). Often, the Libraries do not have access to these articles in full text; ask a reference librarian to check for you.
- The **Related articles** link "retrieves a pre-calculated set of PubMed citations that are closely related to the selected article". Sometimes the related articles are clearly related to your search; sometimes they aren't.
- **Filter your Results** options are only available on lists of references. Standard options are all references, reviews, and free full text. You can change these filter preferences in your NCBI account (see end of help sheet).

Full-Text Access to Articles

UT and OhioLINK provide online journal content from many biomedical journals. These full text links are only available when assessing PubMed through the Libraries' web pages. Any available full-text links can be found through an article's abstract display. Click on a desired title from a list of citations to obtain the accompanying abstract. The icon **Find it @ UT /**   **Find It! @ UT**   is the best option for full-text, as it allows easy access to the full-text article directly or through the UT Library catalog, if the full-text is available. For complete details, consult the ***Accessing Online Journal Articles through PubMed*** help sheet: http://www.utoledo.edu/library/mulford/pdf/pubmedfulltext.pdf.

Saving, Printing, Printing, Emailing, and Exporting Records

Select desired items in the results list and click the **Send to** link (located at the top and bottom of the page of references). If no items are checked, all displayed references on the page will be sent.

If you want to:	Destination	Format	then...
Print records	File	Summary or Abstract	open the file
Download for EndNote	Citation Manager	--	create the file
Email records	Email	Summary or Abstract	enter address and send
Save records to your NCBI account	Collection	- -	add to collection

My NCBI

The My NCBI feature allows you to create an account where you can save search strategies, references, and some preferences. To create a free My NCBI account, click the link at the top of the PubMed page in the upper right corner. My NCBI features include:

- Storing multiple search strategies (which can be sent to run automatically and email you the results; or you can manually run the searches when you want)
- Saving references in collections
- Grouping search results by selected areas of interest (including publication types as review articles and clinical trials, human studies, time period, specific age groups)

For Additional Help

If you have any questions, do not hesitate to ask a librarian: http://www.utoledo.edu/library/serv/reference.html