Looking in All the Wrong Places: PubMed for Public Librarians

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Objectives

- Perform basic literature searches in MEDLINE via the PubMed interface using:
  - Limits
  - Field Searching
  - Journals Database
  - Single Citation Matcher
  - Obtain full-text of the articles
Pretest

- What do the acronyms NLM and MeSH stand for?

- What is the name of the largest biomedical database in the world?

- What is the difference between MEDLINE and PubMed?
National Library of Medicine

- The world’s largest biomedical library

- NLM is the producer of:
  - MEDLINE
  - PubMed
  - MedlinePlus.gov

- Visit the National Library’s Home Page at:
What is PubMed?

- Produced by the National Center for Biotechnology Information & the National Library of Medicine
- Accessible worldwide at no charge
- PubMed includes:
  - MEDLINE (1966 to present)
  - In-process & Publisher Supplied citations
  - OLDMEDLINE (1950s to 1965)
What is MEDLINE?

- The world’s largest biomedical database

MEDLINE covers:
- Medicine
- Dentistry
- Veterinary Science
- Nursing
- Other Biological Sciences
What is MEDLINE?

- 4,800 journals are indexed

- Covers all aspects of biosciences and healthcare

- Database of 14+ million journal citations
What is MEDLINE, continued?

- Covers 1966 to the present
- Coverage worldwide, 85% are in English
- 76% have abstracts
What is MeSH?

- MeSH – Medical Subject Headings
  - Controlled vocabulary terms
    - Brain Edema, Otitis Media, Myocardial Infarction

**Breast Neoplasms**

- Breast Neoplasms, Male
- Mammary Neoplasms
- Mammary Neoplasms, Experimental
- Phyllodes Tumor
How do I access PubMed?

- Directly at: [http://pubmed.gov](http://pubmed.gov)

PubMed Screen Layout

Query Box aka Search Box

Feature Tabs

Blue Sidebar
PubMed.gov

- Translates lay terms into medical subject headings
  - *Heart Attack* into *Myocardial Infarction*

- Links to selected free articles through publishers’ web sites

- Most articles are written for health professionals
Subject Searching

- Terms (keywords)
  - *heart*
  - *heart attack*
  - *heart attack surgery*
Searching PubMed

Let’s use this search:

“I was exposed to asbestos for years at the paper mill. Can that cause gastrointestinal cancer?”
Entering Your Search Terms

Enter terms: asbestos gastrointestinal cancer
How Does PubMed Interpret What You Type in the Box?

PubMed uses **Automatic Term Mapping** and maps to:

- Medical Subject Headings – medical terms
- Phrases
- Author Name – lastname initial(s), e.g., smith j, smith ja
- Journal Titles – full journal title, MEDLINE abbreviation, ISSN

*How do you think PubMed searched your terms?*
The Details tab shows you how PubMed translated your search terms.
When to Limit?

There are many reasons for refining a search strategy. You may want to:

- Exclude foreign language titles
- Look for articles published within a certain timeframe
- Retrieve articles that focus on women or perhaps just children
A quick glance at the results….

[Square brackets quickly identify foreign language articles.]
The Limits tab

Use the **Limits** tab to limit by **Age Group**, **Publication Type**, **Specific date** or date range, **Language**, **Gender** and more...

- Use All Fields pull-down menu to specify a field.
- Boolean operators AND, OR, NOT must be in upper case.
- If search fields tags are used enclose in square brackets, e.g., rubella [ti]
- Search limits may exclude in process and publisher supplied citations.
Working with Results

- Citations display in batches of 20 with most recent additions on top.

- Use the check boxes to select multiple citations to view

- Click on icons for more information, such as the abstract
Working with Results

- The **Display** button is used with the following pull-down menus:
  - **Summary** lets you select other formats, such as Abstract, Brief or Citation format
  - The **Show** and **Sort** offer additional display options
  - Use **Send to** to print, save, e-mail, order documents or the **Clipboard** (a temporary holding bin)
Are the actual articles online?

If and only if:

- Someone has invested the time and money to publish online

- You or your library have purchased access to full text
Document Delivery

- **NLM’s Loansome Doc Ordering System**
  - A service that lets users obtain the full-text copies from a medical library
  - For more information go to: [http://www.nlm.nih.gov/loansomedoc/loansome_home.html](http://www.nlm.nih.gov/loansomedoc/loansome_home.html)

- Full-Text services via LinkOut
  - A fee will be charge
  - Supplier and price vary per service
A Closer Look at Starting a Search

Enter search terms here and then click on **Go**.

Add Limits like date, language, publication type, and more.
Related Articles – a pre-formulated search strategy to match other PubMed citations that are closely related to the selected citation
Links to LinkOut

<table>
<thead>
<tr>
<th>Title</th>
<th>Author(s)</th>
<th>Publication</th>
<th>PMID</th>
<th>Linkout</th>
</tr>
</thead>
</table>

**LinkOut** – connects you to other related resources, e.g., publishers, NLM resources and other organizations.
The Clipboard tab

- Lets you keep track of the good ones while you are still searching

How to:

- #1: Check the citations to keep
- #2: Use the **Send** pull-down menu to select Clipboard
- #3: Click on **Send**.

- Will keep up to 500 records for 8 hours!
Are there other ways to limit your search?

- Add additional terms to query box
  - copd air pollution

- Use Boolean Connectors
  - AND, OR, NOT
Combination Searching

Let’s use the search:

“I am looking for an article from a few years ago (maybe 4-5 years ago) by Dr. Keys about cervical cancer treatment. It was published in the New England Journal of Medicine.”
Combination Searching

- PubMed uses Automatic Term Mapping and maps the search terms as:
  - keys ➔ keys[All Fields]
  - cervical cancer ➔ "cervix neoplasms" [MeSH Terms]
Let’s use this search:

“My child has celiac disease. I understand that Dr. Chin has done research on the neurological aspects of this and it was published in the journal Neurology.”

We need to search in specific fields for this type of search – adding terms to the query box won’t do.
Preview/Index tab

- Preview the number of search results before displaying the citations

- Refine searches by adding one or more terms one at a time

- Add terms to a strategy from specific search fields
Preview/Index tab

- Enter terms and click Preview to see only the number of search results.
- To combine searches use # before search number, e.g., (#2 OR #3) AND asthma.
- Click on query # to add to strategy.

Search | Most Recent Queries
--- | ---
#2 Search keys cervical cancer new england journal of medicine | 11:57:38 1
#1 Search asbestos gastrointestinal cancer | 11:22:32 222

Add Term(s) to Query or View Index:
- Enter a term in the text box, use the pull-down menu to specify a search field.
- Click Preview to add terms to the query box and see the number of search results, or click Index to view terms within a field.

Click **AND** OR **NOT** to add a term to the query box.
Boolean Searching

- AND narrows
- OR broadens
Boolean Searching, continued:

- Let’s use the search:

“A woman heard that there was a study published recently in either JAMA or in the New England Journal of Medicine on the effectiveness of a “virtual” colonoscopy.”
Boolean Searching

Use AND, OR, NOT and parentheses:

\((jama \ OR \ new\ \ england\ \ journal\ \ of\ \ medicine)\)

AND virtual colonoscopy
The History tab

- Shows the searches that you have done
- Searches are available for 8 hours if inactivity
- You can combine searches using the search number e.g. #2 AND #6.
The History tab

- Lists of searches that you have done
- Searches will be lost after 8 hrs of inactivity
- You can combine search using the search number, e.g., #2 and #6
Sometimes when performing a search, it is difficult to determine the full Journal name. You may see something like:

- Arch Dis Child
- Methods Find Exp Clin Pharmacol
- BJOG
- J Bone Miner Res
- J Womens Health Gend Based Med
Archives of disease in childhood.
  pISSN: 0003-9888
eISSN: 1468-2044
  MEDLINE Abbr: Arch Dis Child
  NLM ID: 0372434

Archives of disease in childhood. Fetal and neonatal edition.
  pISSN: 1359-2998
eISSN: 1468-2052
  MEDLINE Abbr: Arch Dis Child Fetal Neonatal Ed
  NLM ID: 9501297
Let’s use the search:

“I know that there was an article published in 2001 in JAMA about the quality of information on the Internet. The researchers used search engines to retrieve health information in English and Spanish. There were a bunch of authors, but I don’t know their names. I do know that the words English and Spanish were in the title. Can you find this?”
Single Citation Matcher

Enter information about the article you wish to find.

- Journal:
- Date:
- Volume:
- Issue:
- First page:
- Author's last name and initials (e.g., Smith BJ):
- Title words:

Search  Clear

Notes:
- You may omit any item if you wish.
- Journal titles may be entered in full or as valid MEDLINE abbreviations.
- For Date, you may enter yyyy, yyyy/mm, or yyyy/mm/dd. For example, 1998/03/06.
- Author names are automatically truncated to account for varying in match on smith ja, smith jb, smith jc, jr, etc. Enclose author names in "Smith, J."

Related Resources
- PubMed Services
- Journals Database
- MeSH Database
- Single Citation Matcher
- Batch Citation Matcher
- Clinical Queries
- LinkOut
- Cubby

Related Resources
- Order Documents
- NIH Gateway
Saved Searches

- This new PubMed feature allows you to:
  - Save search strategies and set-up automatic email updates
  - Select filters that customize and sort your search results
  - *and more...*

- This feature replaces **Cubby**
My NCBI box lets you **Sign in** or for first time users, **Register**. After a search is run, click on the **Save Search** link to save the search strategy.
Saved Searches

After you sign in, the **Save Search** box displays. 1) **Enter a name for your search** (something meaningful), 2) click **Yes** or **No** for automatic e-mail updates and 3) click **OK** after you have made your selections.
Click on **My NCBI** to update saved searches. Click check boxes to get **What’s New** for selected searches. Click on **No Schedule** to get email updates.
Saved Searches

- Important My NCBI Note:
  - Record your user name and password!
EXERCISES
Customer Support & Contact Info

- NLM Customer Support
  - If you need assistance or have questions, please contact the **NLM Help Desk**:
    - **E-mail:** custserv@nlm.nih.gov
    - **Phone:** 1.888.346.3656

- NN/LM Contact Information:
  - Your Regional Web site: [http://nnlm.gov/mar](http://nnlm.gov/mar)
  - Phone: 1.800.338.7657