



An Introduction to PubMed

www.pubmed.gov

What is PubMed?

PubMed is the National Library of Medicine's search service that provides access to:

MEDLINE: an international bibliographic database of over 4600 biomedical journals from 1966-present.

PreMEDLINE: new records are added daily; will appear with the tag [MEDLINE record in progress].

PubMed also links to molecular biology databases (Nucleotide, Protein, Genome, PopSet).

Subject Searching

PubMed may be searched by entering one or more **keywords** or phrases into the **text box**.

Click **Go** or press the enter key. PubMed will search multiple words as a phrase if it recognizes the terms. Otherwise, PubMed will search the words separately and combine with **AND**. PubMed will also automatically try to map your term to a MeSH heading.

The screenshot shows the PubMed search interface. At the top, there are four tabs: 'All Databases', 'PubMed', 'Nucleotide', and 'Protein'. Below the tabs is a search box with a dropdown menu set to 'PubMed'. The search text is 'vitamin C and common cold'. To the right of the search box is a 'Go' button.

Example: *vitamin c common cold* is searched as ((*"ascorbic acid"*[MeSH Terms] OR *vitamin c* [Text Word]) AND (*"common cold"*[MeSH Terms] OR *common cold*[Text Word]))

PubMed does not perform adjacency searching; instead it uses a Phrase List against which to match terms. Enclosing a term in quotation marks forces PubMed to check a second Phrase List. If the term is still not found, the words are combined with AND.

Example: *"pressure point"*

When using keyword searching, you may sometimes want to truncate (*) words to allow for variant word endings.

Example: *bacteri** retrieves *bacteria, bacterium, bacterial, etc.*

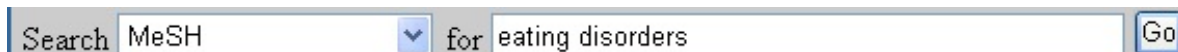
Medical Subject Headings (MeSH)

Using MeSH can help you achieve specificity in results and may be the most precise way to do Subject searches. Articles are entered into MEDLINE using the Medical Subject Headings, NLM's controlled vocabulary for indexing articles. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

Note: Limiting to MeSH may eliminate PreMEDLINE citations because these articles have not yet been indexed.

MeSH Database

One way to select MeSH terms is to use the **MeSH Database** link, found on the blue sidebar, which allows you to browse for appropriate terms. Enter the term in the text box and click **GO**.



Search MeSH for eating disorders Go

One or more terms will appear. Select the desired term using the check box and click on **Send To** : Search Box with AND. This will add your search term into the search query.

To see everywhere the term appears in the MeSH “Trees” (a hierarchical subject category display of Mesh terms) click on the term itself. For example, clicking on *eating disorders* will display narrower terms related to eating disorders that will also be included in the search including *Anorexia Nervosa*, *Bulimia* and *Pica*. Select a narrower term if desired to limit search.

To further refine your search, limit your search by using **Subheadings** or **Major Topic**. **MeSH Subheadings**, which restrict a term to a specific aspect (e.g. diagnosis, drug therapy, etiology, prevention and control, surgery), may be selected here.

Check **Restrict Search to Major Topic headings only** to focus your search to those documents in which your term is considered the major point of the article. Check **Do Not**

I: Eating Disorders

A group of disorders characterized by physiological and psychological disturbances in appetite or food intake.

- blood
- cerebrospinal fluid
- chemical synthesis
- chemically induced
- classification
- complications
- economics
- enzymology
- epidemiology
- ethnology
- etiology
- genetics
- history
- immunology
- Restrict Search to Major Topic headings only
- Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Explode this term to exclude MeSH terms found below your term in the MeSH tree.

Once the needed MeSH term has been selected and any additional details have been selected (explode, major topic), click on **SEND TO** Search Box with AND. This will place the term in the PubMed search box.

Additional terms may be added to the PubMed search box at this time by searching for another term using the MeSH database (found at the top of the screen). Additional terms can either be **ANDed**, or **ORed**, into the Search using the Pull down menu and **SEND To** button. Click on **Search PubMed** to execute the search.

All Fields

If you know the Medical Subject Heading you may enter it directly into the **text box**. Click on **Limits**, pull down the **All Fields** menu and select **MeSH Terms** or **MeSH Major Topic**.

Command Language

Another way to search for Medical Subject Headings if you already know the correct term is to use command language. [MeSH] (MeSH term) or [MAJR] (focused MeSH term).

Example: ascorbic acid[MeSH] or ascorbic acid[MAJR]

Title Word Search

Limiting a search to a word found in the title is often a good way to reduce large search results. You can do this by entering the term in the text box. Click on **Limits**, pull down the **All Fields** menu, and select **Title Word**. You may also limit to title by entering the term followed by **[ti]**.

Example: *non-Hodgkins lymphoma [ti]*

Author Search

To retrieve articles by author, enter the author's name in the format of last name followed by initials. Although initials are optional, search retrieval may be quite large (and inaccurate) without them, especially for common last names. Click on **Limits**, pull down the **All Fields** menu, and select **Author Name**. The **Index** provides a list of author names and variations. See "Index" below for instructions. Or follow the name with **[au]** as shown below.

Examples: *jobe [au]* ; *jobe p [au]*; *jobe pc [au]*

Index

The **Index** provides an alternative way to limit your search by Journal Name, author, title words, MeSH terms, Major terms, Publication Types, Substance name, or Affiliation. To use, click on **Preview/Index** found below the textbox. Scroll down the page to **Add Term(s) to Query or View Index**. Using the **All Fields** pull down menu select the desired field. In the text box, enter the term. Click on **INDEX**. Select the term from the list of options that appears. Multiple terms may be selected by holding down the CTRL key. Multiple terms will be **ORed** together. Names can be added to the search box by clicking AND (to combine) , OR (to find either/or), or NOT (to exclude).



Author [v] jobe pc [Preview] [Index]

Click [AND] [OR] [NOT] to add a term to the query box.

Journal Name

To retrieve articles in specific journals, use the **Index**. Follow the Index instructions for searching by author (above), and select **Journal Name** from the **All Fields** pull down menu.

Limiting a Search

Limits allow you to search specific fields using pull-down menus for **Publication Type**, **Language**, **Subsets**, **Ages**, **Human/Animal**, **Gender**, and **Date**. Click on the word **Limits** below the text box.

You can click on **Limits** at any point in your search to apply, drop, or change the limits. A check mark in the box next to the **Limits** indicates that limits are active for the search.

- **Publication Type** is an important limit that acts as a filter in finding studies/literature of a certain type or methodology. For example, the diabetes drug therapy search limited to **Randomized Controlled Trial** will retrieve high-level studies more likely to have clinical relevancy. The same search limited to **Review** will retrieve tutorial or literature reviews.

- **Subset** is another powerful limit which allows users to limit retrieval to subsets within the MEDLINE database such as AIDS, AIM (Abridged Index Medicus), Nursing, Cancer Complementary Medicine, and Dental. **AIM** limits retrieval to a subset of about 120 core clinical journals -- compared to the nearly 4,000 in the MEDLINE database!
- **Only Items with Abstracts** limits your search to only those articles which have abstracts. This is an easy way to eliminate letters, editorials, or commentaries.

HINT: Unless changed or unless the check mark is turned off, limits remain active for an hour. If you start a new search, make sure to refresh the limits!

Displaying Search Results

PubMed displays search results in batches; the default is 20 records per page. To change the default, the **Show** pull-down menu allows you to increase the number of records displayed on a single page up to 500. This is convenient when you wish to browse the entire display to choose selected articles to save or print.

PubMed citations initially display in **Summary** (Author, Title, Journal, PubMed ID) format. Documents can be viewed in other formats including **Brief** (author, PubMed ID), **Abstract** (Author, Title, Journal, PubMed ID, Abstract), **Citation** (Author, Title, Journal, PubMed ID, Abstract, MeSH Headings), and **MEDLINE** (for importing into citation software - Author, Title, Journal, PubMed ID, Abstract, MeSH Headings).



Individual citation

Display by clicking on the author's name. This causes PubMed to display the Abstract.

All Citations

Select a display format and click **Display** to view a different display for all citations on a page.

Selected Citations

Click on the boxes to the left of each author name to select specific citations, then select a format from the Display menu and click **Display**.

Printing Search Results

Once search results have been **Displayed** in the desired format (**Summary**, **Brief**, **Abstract**, **Citation**, or **MEDLINE**), click the **Print** icon on your browser to print the results.

Saving Results to Disk

Results may be saved to a disk or hard drive. Once search results have been **Displayed** in the desired format (**Summary**, **Brief**, **Abstract**, **Citation**, or **MEDLINE**), click on the pull-down menu next to **Send To**. Select "File" and click on **Send To**. A **Save As** Dialog Box will appear. Title the name of your search in the **File Name** Box. Click **Save**. These files can be opened in Word, WordPerfect, or Notepad.

Saving to Citation Software (Reference Manager, Endnote, RefWorks)

To import results into Citation Software, you must display your results in **MEDLINE** format. Click on the pull-down menu next to **Send To**. Select "File" and click on **Send To**. Title the name of your search in the **File Name Box**. Click **Save**.

Email Results

Once search results have been **Displayed** in the desired format (**Summary, Brief, Abstract, Citation, or MEDLINE**), click on the pull-down menu next to **Send To**. Select "**E-Mail**" and click on **Send To**. In the text box next to "E-mail" enter your email address. Click **Mail**.

Clipboard

The Clipboard allows you to group selected citations from one or more searches. You may then print or save the citations. A maximum of 500 citations can be placed in the Clipboard. Clipboard items will be lost after one hour of inactivity.

To add items to the clipboard, click on the check box to the left of the citation and then click on the pull-down menu next to **Send To**. Select "**Clipboard**" and click on **Send To**. Once a citation has been added to the Clipboard, the record number color will change to green. Once you have added items to the Clipboard, you can click on Clipboard from the Features bar to view your selections. In the Clipboard, you can sort citations by author, journal, or publication. Click on the Clipboard Sort pull-down menu to select a sort field. Click Display.

Related Articles Feature

A helpful PubMed feature is the ability to find documents that are similar to a document which you find of interest. To retrieve related articles for a given record, click on **Related Articles**, which appears at the right of each citation.

The Related Articles will display in relevancy rank order, becoming less relevant the further down you progress in the display. Limits are disregarded by the Related Articles function. For example, foreign language articles will appear even if your original search was limited to English only.

The Related Articles feature is a good way to discover synonymous/related concepts that you may not have considered in your original strategy. Examine the MeSH terms (use the **Citation** display) to look for alternative or additional MeSH terms to use in a modified search.

Combining Concepts: The Search History

Continue to add terms to your search until you have entered all the concepts (clear the **text box** before entering a new concept). Or you may enter the concepts separated by search operators as illustrated below.

The **History** function keeps track of your searches and numbers them, allowing you to go back to earlier searches and combine or modify them. The **History** button is found on the function bar under the text box.

HINT: You must use the # symbol before the search numbers and search operators (**AND, OR, NOT**) must be **capitalized**.

Search	Most Recent Queries	Time	Result
#3	Search #1 AND #2	11:39:40	1
#2	Search tongue piercing	11:39:29	117
#1	Search brain abscess	11:39:24	6663

AND Articles containing all of the terms you selected. AND narrows your retrieval
Example: see example above

OR Articles containing one or any of the terms you selected. OR broadens your retrieval.
Example: hay fever OR asthma
Example: (heat OR humidity) AND multiple sclerosis

NOT Use NOT to eliminate terms or sets you do not wish to appear in your search.
Example: asthma/therapy NOT child

Clinical Queries

The **Clinical Queries** search mode is designed with clinicians in mind. It works only for diagnosis, etiology, therapy and prognosis questions. Built-in search “filters,” tested by the EBM Working Group at McMaster University, screen for clinical relevancy.

The “Table for Clinical Queries Using Research Methodology Filters” outlines the filters used for each of these four categories. The objective of Clinical Queries is to reduce retrieval to articles that report research conducted using specific methodologies.

For example, a therapy search will retrieve **randomized controlled trials** and a diagnosis search will retrieve studies which employed **sensitivity and specificity** criteria. If you wish to retrieve everything on a subject, you should not use this search mode.

Citation Matcher

The **Citation Matcher** feature allows you to find/verify citations using bibliographic information such as journal name, volume, issue, page number, publication year, or author. This feature is especially helpful when you have incomplete bibliographic information.

Journals Database

Use the database to search for a journal and then link to records for that journal in the desired database. The Journals database can be searched used the journal title, MEDLINE abbreviations, NLMID, OR ISSN. The database includes journals in all Entrez databases (e.g. PubMed, Nucleotide, Protein). Linking retrieves a “Table of Contents” type listing starting with the most recent issue of the journal. This can serve as a current awareness service.

Saving Search Strategies & My NCBI (Cubby):

My NCBI can be used to save search strategies and set up email up-date alerts.

To **register**, click on My NCBI from the PubMed sidebar. Next click "Register for an Account." Fill in the form provided and click Register.

To use My NCBI, you must **Log In**. To do so, click on My NCBI from the PubMed sidebar and enter your User Name and Password and click Login.

Login if you haven't already done so. Run the search.

To the right of "Go" next to the search text box click on "Save Search"
A box will appear with your search strategy as the search name - edit this for a meaningful name for the search. Next click if you want e-mail update alerts. If yes, fill in the additional information (email, how often want to receive alerts).

To Run a Saved Searched Strategy: Click on MyNCBI from the PubMed side. Click on the check box next to the search you want to run and click "What's new for selected."

HINTS:

"Related Articles " links cannot be stored in the Cubby.

You cannot save strategies created using Search History search numbers (e.g., #5).

Your browser must be set to accept cookies in order for this feature to work.

Save Search

Your search in PubMed
myocardial infarction AND viagra
Limits: **Adult: 19-44 years**

Enter a name for your search:

Would you like to receive e-mail updates of new search results? No Yes

E-mail to:
["SPAM" filtering software notice](#)

How often? The of each month
 Every
 Every day

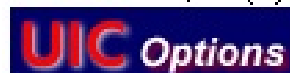
Format: as

Maximum number of items to send

Send e-mail even when there are no new results Yes

Additional text (optional)

Link Outs to Full-Text and UIC Print Journal Holdings



Link Outs: UIC subscribes to numerous journals both online and print. Most online journals that UIC subscribes to can be accessed directly from PubMed using the UIC Options Linkout Icon. UIC subscription holdings to journals owned in print may also be viewed through the UIC Options feature.

To check for full-text (or view print journal holdings), click on Abstracts from the “Summary” pull down menu. This displays the article’s abstract and a “UIC Options” icon. Click on “UIC Options” and a second window will pop-up.

- “Full-text is available via the following links” indicates full-text. Click on “article” to access the full-text.
- If a link does not appear for full-text, click “Search by ISSN” for print holdings. This will tell you if the library holds the journal in print.
- Click “Submit InterLibrary Loan Request” for items not available online or in print. For more information on linkouts see:

<http://www.uic.edu/depts/lib/lhs/resources/guides/sslinkout.shtml>

Note: PubMed must be accessed through

<http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?otool=uiclib>

for the UIC Options to appear. Vendor provided link-outs cannot be used off-campus.

Special Instructions for MDConsult:

If you see an article is available in UIC Options - you will note that there is not a direct link to the full-text article. In order to access **MDConsult** articles directly at this time, you must first have set up a personal account through UIC at <http://home.mdconsult.com/groups/uic.html>. There is no charge for this special feature. For the citation where the article is available through MDConsult - change the display from Abstract to LinkOut. When you click on MDConsult in PubMed, you will be prompted for a user name and password. Use your MDConsult personal edition account information.

Please note:

- Many important journals are still only available in print format. Check UICCAT for Print and Online Holdings information.
- Most journal articles written prior to 1996 will not be available online.

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