# Information Management for Busy Practitioners

PubMed (PM) is the U.S. National Library of Medicine's (NLM) premiere search system for health information. It contains bibliographic references to journal articles in the life sciences from more than 4000 journals, dating back to 1950. It includes all *Medline* references in addition to "in process" or "publisher supplied" records. It is freely available at www.pubmed.gov.

This introductory article will focus on basic PubMed searching. Future articles will cover advanced search features of the PubMed database, such as searching with MeSH terms, (subheadings, explosions, MAJOR MeSH) using Clinical Queries, Automatic Search Updates by email, etc.

## Basic PubMed Searching

You've probably used the basic search function in PubMed. You've typed words into the search box and combined terms together with connector words "AND", "OR" or "NOT". This is sometimes called "freetext" searching because the search engine is looking for words in the text of references as you've typed them into the search box.

To search a specific phrase, enclose it in "double quotation marks" to ensure the words are found together.

Consider spelling (British and North American), plural and singular word endings, as well as synonyms for important search terms:

> Ex. paediatrics OR pediatrics adolescent OR teenager OR youth

Also consider using the wildcard * to truncate words to capture various word endings:

> Ex. child* will retrieve "child" as well as "children"

In PubMed you can focus your freetext search to ensure that words appear in specific fields of the references retrieved. It may be useful to limit words to the article title or abstract of the reference. To do this, add the specific two letter code in square brackets after the word:

> Ex. child[ti] will find references that contain the word *child* in the *title* of the paper-

child [TIAB] will find references that contain the word *child* in the *title* or *abstract* of the paper.

## Searching for References by a Specific Author in PM

In the search box type in the author's last name, with initials, if known (without punctuation or credentials). If the authors initials are not known, type only the last name but add [au] after the author's name. This will limit your search to the author field only.

## Searching for References in a Specific Journal in PM

You can type the full journal title, journal abbreviation, or ISSN in the search box to retrieve references in a specific journal.

## Single Citation Matcher

This PM feature is helpful if you have an incomplete or incorrect reference. You can use the form to match the information you have with a complete PM reference. You can add any combination of author, title word, date, volume, issue, pages, or journal title to find a complete PM reference (as little or as much information as you have). Click on *Single Citation Matcher* in the blue sidebar to access.

## Placing Limits on Your Search

Consider placing limits after you've done your PubMed search. Click on the "limits" tab. Various types of limits include: human/animal studies, publication date, male/female, language, publication type, and age.

## History

Click on the History tab to find a list of all the searches that you've done in your current PubMed session. From the history page you can combine searches together with the AND, OR, or NOT connectors.

## Use the "NOT" Connector with Caution

The "NOT" connector can be used to *exclude* subjects from your search strategy. Use this cautiously! By excluding a concept you may miss relevant references simply because

they also include information about a topic that is not of interest to you. You may miss comparative studies for example.

### Related Articles

You've found the perfect reference in PubMed! The "related articles" feature will help you to find other, similar references. Click on the "related articles" link to the right of the relevant paper. The database will perform a search based on the title words, abstract and MeSH terms to help you to find similar papers. The results from the "related articles" search are displayed in order from most to least relevant, with the "linked from" reference displayed first.

### PubMed Search Results

You can change the display of search results by clicking on the drop-down menu beside *display*. Display the retrieved references with an abstract if you'd like to read more about the paper. You can also change the number of references that are displayed on one page. This is useful if you want to browse through many references since you can display up to 500 on one page and won't have to click continually on next page after the default of 20 references.

Remember to make sure that your results are displayed in your format of choice before saving, printing, emailing etc. The display you see will be the display that you get.

This article has covered basic search functions in PubMed. These functions may meet your literature searching needs most of the time. PubMed has sophisticated searching capabilities that may assist you to perform more focused, more complex, more comprehensive and more refined searches. Look for future columns to cover advanced PubMed features.

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**Editorial Note**: Ms. Chapman has agreed to provide a series of brief, practical articles on how to effectively search the literature (Pubmed, Cochrane reviews etc.) in order for clinicians to stay up to date. This will not become a regular feature of the *Journal*.