PubMed is a World Wide Web (WWW) retrieval service developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM).

PubMed is one of several databases under NCBI’s Entrez retrieval system.

PubMed provides access, free of charge, to MEDLINE, a database of over 10 million bibliographic citations, PREMEDLINE™, and other related databases.

PubMed also contains links to the full-text versions of articles at participating publishers' Web sites, biological data, sequence centers, etc. from third parties.

PubMed provides access and links to the integrated molecular biology databases maintained by NCBI. These databases contain: DNA and protein sequences, genome mapping data, and 3-D protein structures, aligned sequences from populations, and the Online Mendelian Inheritance in Man (OMIM).

**Interrelationships between Entrez Databases**

- Links between MEDLINE records and sequence records make it easy to look up MEDLINE abstracts associated with sequence records and vice versa.
- The following diagram illustrates the relationships between the information resources in Entrez:
Publisher Supplied Citations

- For a short period of time, some citations may appear in PubMed without the MEDLINE Unique Identifier. This happens when the citations are electronically supplied by the publisher and sent directly to PubMed. These citations are then forwarded to NLM’s Indexing Section to be added to PREMEDLINE.

- Citations received electronically have the tag: [Record as supplied by publisher]

- Once the citation is added to PREMEDLINE, it receives a UI and [MEDLINE record in process] replaces [Record as supplied by publisher]. Once the MEDLINE record is finished, the [MEDLINE record in process] is removed.

Sample PubMed citation that has been electronically submitted but is not yet in PREMEDLINE:

- \textbf{Azuma N, et al.}
  - Cloning, expression and map assignment of chicken prosaposin.
  - [Record as supplied by publisher]
  - PMID: 9461526.
PREMEDLINE

- NLM’s in-process database for MEDLINE provides basic citation information and abstracts before the citation is indexed with NLM’s MeSH headings and NLM’s quality assurance staff have checked it for errors.

- In addition to an assigned MEDLINE UI, a PubMed unique identifier (PMID) is assigned. PREMEDLINE records also carry the notation, [MEDLINE record in process].

- New records are added to PREMEDLINE Tuesday-Saturday, and each record receives a UI in PubMed.

- Each week citations from PREMEDLINE are moved to MEDLINE where they appear with the appropriate MeSH terms, Publication Types, and other indexing data. These “completed” records are also checked for accuracy.

- As soon as the citations are moved to MEDLINE, they are deleted from the interim PREMEDLINE database. The PREMEDLINE record in PubMed is removed and replaced by the fully indexed MEDLINE record.

Sample of a PREMEDLINE citation in PubMed:

Azuma N, et al.
Cloning, expression and map assignment of chicken prosaposin.
[MEDLINE record in process]
PMID: 9461526, UI: 98129745.
Introduction to Web-based Searching

MEDLINE

- NLM's premier bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences.

- Contains bibliographic citations and author abstracts from more than 4,000 current biomedical journals published in the United States and 70 other countries. Coverage is worldwide, but most records are from English-language sources or have English abstracts.

- Approximately 76% of MEDLINE records include abstracts as they appear in the journal.

- There are currently 11 million records dating from 1966 to present. MEDLINE is updated weekly and records are incorporated into PubMed weekly.

- Each MEDLINE record is assigned a PubMed unique identifier (PMID) in addition to the MEDLINE Unique Identifier (UI) in PubMed.

Sample MEDLINE citation in PubMed:

```
Clearing expression and map assignment of chicken prosasin.


University of California, San Diego, Department of Biochemistry, San Diego, CA 92120, USA.

Prosasin is a member of the small glycoprotein superfamily that binds low density lipoprotein. A full-length cDNA encoding prosasin was isolated from chicken brain RNA by screening a cDNA library. The deduced amino acid sequence predicted that similarity to human and other mammalian species related to chicken prosasin can be obtained from the nucleotide sequence. The deduced amino acid sequence of prosasin is predicted to be similar to the nucleotide sequence of prosasin. The nucleotide sequence of prosasin is predicted to be.

**MeSH Terms:**
- for life sciences
- Amino Acid Sequences
- Animal
- Homo sapiens
- Chicken
- Gene Mapping
- Gene Expression
- Homology
- Protein Sequences
- RNA
- Rats
- Rhesus Monkey
- Amino Acid Sequences
- Sequence Search
- Amino Acid
- Support From NIH
- Support From NSF

**Funding:**
- Grant Support
- OBR-012

PMCID: 1024375
```
Other Publisher Supplied Citations

- Some of the citations received electronically from publishers may never become MEDLINE citations.

- These records are assigned Unique Identifiers but are never assigned MeSH terms because they never go through the indexing process.

- These records will carry the notation [Record as supplied by publisher].

- These records remain forever in PubMed even though they are not technically MEDLINE citations.

- There are three sources of these types of records:

1. Out-of-scope articles from a selectively indexed MEDLINE journal

   - This may occur when a particular article in a selectively indexed journal is out-of-scope for MEDLINE (such as a geology article in a general scientific journal like Science or Nature), and the publisher provides PubMed with electronic information for the entire journal.

Sample of an out-of-scope article from a selectively indexed electronically submitted MEDLINE journal that remains in PubMed:

\[
\text{Notice the publisher-supplied tag. PubMed UI tag.}
\]

Sample citation from the same selectively indexed electronically submitted journal that is indexed for MEDLINE:

Both Unique Identifier Tags.
2. PubRef

- PubRef is a service designed to expand the bibliographic linking feature in PubMed.
- PubRef facilitates linking to a broader set of scientific journals (physics, astronomy, etc.) and full-text of these articles at publishers’ Web sites.
- PubMed is a subset of PubRef.

Sample PubRef citation:

```plaintext
☐ 1: Keiner V.
Covariant quark model of the nucleon in the Salpeter approach.
[Record as supplied by publisher]
PMID: 9971698
```

3. Citations from back issues of newly-indexed MEDLINE journals

- If publishers choose to supply NLM with electronic data from back issues of newly-indexed MEDLINE journals, those citations will be entered into PubMed.
- These earlier citations will have no MeSH headings.

Example: NLM began indexing the journal, Molecular Diagnosis with v. 4, no. 1, 1999. However, the publisher has supplied us with citations from earlier issues. These earlier citations from back issues have been entered into PubMed but will never be indexed with MeSH headings.

```plaintext
CD44 expression in benign and neoplastic human prostates.
[Record as supplied by publisher]
PMID: 9462610
```
Future Database Additions

- It is NLM’s intent to have all of its databases accessible via the Web.

- Journal and journal-like citations from HealthSTAR moved into PubMed in June 1999. The unique journal and journal-like citations from AIDSLINE will be moved into PubMed next.

- Monographic and audiovisual citations and serial records are now available via NLM’s Web-based Online Public Access Catalog (OPAC), called LOCATORplus (http://www.nlm.nih.gov/locatorplus)

Next Generation Gateway

- A new intelligent gateway system, now under development, will allow NLM’s users to initiate searches in NLM’s multiple retrieval systems from one interface at one address in cyberspace.

- As a working name, NLM is calling the new search system the Next Generation Gateway. The name is subject to change.

- The target audience for the new search system is the Internet user who comes to NLM not knowing exactly what NLM resources are available or how best to search for information.

- The new gateway will initially be brought up in parallel with Internet Grateful Med. In the first implementation phase, the gateway will search PubMed, LOCATORplus, a new full text retrieval system that will include information such as conference abstracts, and MEDLINEplus. Access to other systems including TOXNET on the Web, and the forthcoming NIH clinical trials database will follow.
PubMed’s Home Page

The Sidebar

Entrez PubMed

- The Overview provides a detailed description of the PubMed database including database coverage and PubMed journal information.
- Click on Help to get detailed descriptions of all the features and search and retrieval options within PubMed. FAQs are frequently asked questions about PubMed.

PubMed Services

- Use the Journal Browser to search for journals by journal title, title abbreviation, or the International Standard Serial Number (ISSN). The list of journals with links to full-text is also included in the browser.
- The MeSH Browser allows you to browse the MeSH Vocabulary in a hierarchical structure.
- The Single Citation Matcher is a fill-in-the-blank form that allows users to enter journal citation information to locate a specific single article, issue's content, or entire journal's content.
- The Batch Citation Matcher allows you to retrieve the PubMed IDs for many articles all at once. This feature requires that you enter the bibliographic information journal, volume, page, etc.) in a specific format.
- The Clinical Queries page was designed for clinicians and has built-in search “filters” that focus retrieval in four study categories: therapy, diagnosis, etiology, and prognosis.

Related Resources

- Order Documents is a link to the Loansome Doc feature that allows users to order full-text copies of articles from a local medical library (local fees and delivery methods may vary).
- Click on the Grateful Med link to access NLM’s other Web-based service which also provides access to MEDLINE and additional NLM databases (e.g., AIDSLINE, HISTLINE, etc.).
- Consumer Health is a link to MEDLINEplus, the National Library of Medicine's Web site for consumer health information.
- Clinical Alerts expedite the release of findings from the NIH-funded clinical trials where such release could significantly affect morbidity and mortality.

The Footnote

- Click on Disclaimer to obtain information on copyright status, disclaimer of liability and endorsement, and NLM downloading policy.
- Click on Write to the Help Desk to send an e-mail message to NLM Customer Service.
- Click on NCBI, NLM, NIH to access the Web pages of the agencies responsible for the creation and maintenance of PubMed.
Searching With PubMed

PubMed provides a variety of search modes to meet users’ individual needs. You can run a simple search by entering a few search terms in the query box or construct complex search strategies using Boolean commands and using the various functions provided by the Features bar.

PubMed’s Features bar provides additional search options:

- Limits
- Preview/Index
- History
- Clipboard

In addition, these search features are also available:

- The MeSH Browser
- Clinical Queries
- The Journal Browser
- The Citation Matchers

PubMed makes use of cookies from your Web browser for several functions. Please enable cookies from your Web browser. This selection may be found under the Edit menu, and then under Preferences (Netscape), or the Tools menu under Internet Options (Internet Explorer). For more information about cookies, see PubMed’s FAQs.
How it Works

Subject Searching

Search Request: *Find citations to articles about gallstones and pain.*

Entering Search Terms

- Enter significant terms in the query box (e.g., *gallstones pain*).
- Click on the **Go** button.
- Use the **Clear** button to erase the contents of the query box.

What is searched?

- PubMed uses **Automatic Term Mapping**

Unqualified terms that are entered in the query box are matched against (in this order):

- MeSH (Medical Subject Headings) Translation Table
- Journals Translation Table
- Phrase List
- Author Index
1. **MeSH Translation Table** contains:

   - MeSH Terms
   - Subheadings
   - See-Reference mappings (also known as entry terms) for MeSH Heading terms
   - Mappings derived from the Unified Medical Language System (UMLS) that have equivalent synonyms or lexical variants in English
   - Names of Substances and synonyms to the Names of Substances

   • If a match is found in this translation table, the term will be mapped to the appropriate MeSH term and searched as MeSH and as a Text Word.

   **Example:**
   
   | gallstones |
   |
   
   **PubMed Translation:** ("cholelithiasis"[MeSH Terms] OR gallstones[Text Word])

   • Gallstones is an entry term for the MeSH term Cholelithiasis.

2. **Journals Translation Table** contains:

   - Full journal title
   - MEDLINE abbreviation
   - International Standard Serial Number (ISSN)

   **Example:**
   
   | new england journal of medicine |
   |
   
   **PubMed Translation:** "N Engl J Med"[Journal Name]

   **Search Tip:** If a journal name is also a MeSH heading, PubMed will search the unqualified term both as a MeSH heading and as a Text Word. However, the search will not include the term as a journal name. For example, the search for Science unqualified will not search for citations from the journal, *Science.*
3. Phrase List

If no match is found in the MeSH or Journals Translation Tables, PubMed consults a phrase list containing several hundred thousand phrases generated from:

- MeSH
- Unified Medical Language System (UMLS)
- Names of Substances

**Example:**

```
cold compresses
```

**PubMed Translation:** cold compresses [All Fields]

- PubMed does not find this phrase in the MeSH Translation Table or the Journal Translation Table, but does find it in the Phrase List.

4. Author Index

- If the phrase is not found in the MeSH or Journal Translation Tables or the Phrase List and is a word with one or two letters after it, PubMed then checks the Author Index.

- Enter the author’s name in the form of Last Name (space) Initials:

  o’brien jm
  adams sh
  pogonka t
Introduction to Web-based Searching

PubMed-How it Works

- PubMed automatically truncates the author’s name to account for varying initials.

Query Box:

- If only an author’s last name is entered, PubMed will search that name in All Fields (Author field plus all other searchable fields). It will not default to the Author Index because the last name is not followed by initial(s).

If no match is found?

- PubMed breaks apart the phrase and repeats the above process until a match is found.
- If there is no match, the individual terms will be combined (ANDed) together and searched in All Fields.

Example:

PubMed Translation:

(pressure [MeSH Terms] OR pressure [Text Word]) AND point [All Fields])
PubMed breaks apart a long phrase from right to left:

Example: 

<table>
<thead>
<tr>
<th>Searches for:</th>
<th>Results:</th>
<th>Action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>drug therapy asthma children</td>
<td>No match found</td>
<td>Removes term on right to re-run Automatic Term Mapping process.</td>
</tr>
<tr>
<td>drug therapy asthma</td>
<td>No match found</td>
<td>Removes term on right to re-run Automatic Term Mapping process.</td>
</tr>
<tr>
<td>drug therapy</td>
<td>Match found in MeSH Translation Table</td>
<td><em>drug therapy</em> will be searched as <em>drug therapy [Subheading] OR drug therapy [MeSH Terms] OR drug therapy [Text Word].</em></td>
</tr>
<tr>
<td>asthma children</td>
<td>No match found</td>
<td>Removes term on right to re-run Automatic Term Mapping process.</td>
</tr>
<tr>
<td>asthma</td>
<td>Match found in MeSH Translation Table</td>
<td><em>asthma</em> will be searched as <em>Asthma [MeSH Terms] OR asthma [Text Word].</em></td>
</tr>
<tr>
<td>children</td>
<td>Match found in MeSH Translation Table</td>
<td><em>children</em> will be searched as <em>Child [MeSH Terms] OR children [Text Word].</em></td>
</tr>
</tbody>
</table>

PubMed then combines (ANDs) the found matches to produce a single search strategy:

(drug therapy [Subheading] OR drug therapy [MeSH Terms] OR drug therapy [Text Word])
AND
(asthma [MeSH Terms] OR asthma [Text Word])
AND
(Child [MeSH Terms] OR children [Text Word])

If there is no match, PubMed will then start the Automatic Term Mapping process from left to right. The individual terms with no match will be combined (ANDed) together and processed through the Automatic Term Mapping as single terms.
Phrase Searching (forcing PubMed to search for a phrase)

- PubMed does not actually perform adjacency searching but uses a list of recognized phrases, the Phrase List, against which search terms are matched. PubMed may fail to find a phrase because it is not in the Phrase List.

- The use of quotes around a phrase forces PubMed to check PubMed’s Index to attempt to find the phrase. The Index contains several million phrases generated from:
  - citation titles & abstracts
  - UMLS
  - MeSH vocabulary

Example:

PubMed Translation:

("pressure"[MeSH Terms] OR pressure[Text Word]) AND point[All Fields]

- PubMed does not recognize this as a phrase. PubMed searches for “pressure” and “point” separately.

To force PubMed to search for a specific phrase enter double quotes (" ") around the phrase.

Search Tip:

PubMed doesn’t perform automatic term mapping. For example, “health planning” will include citations that are indexed to the MeSH heading, Health Planning, but will not include the more specific indentations, e.g., Health Care Rationing, Health Care Reform, etc, that are included with automatic MeSH mapping and explosion.
**Truncation** (finding all terms that begin with a given text string):

- Place an asterisk (*) at the end of a term to search for all terms that begin with that word. The asterisk may only be used at the end of a string of characters.

**Example:** `implant*` will find all terms that begin with the letters implant; e.g., implant, implants, implantation, implantable, etc.

- PubMed uses the first 150 variations of a truncated term. If a truncated term, e.g., `staph*`, produces more than 150 variations, PubMed displays the following warning message on the Results screen in a pink area near the top of the screen:

  Warnings: Wildcard search for 'term*' used only the first 150 variations. Lengthen the root word to search for all endings.

1. PubMed has no single character truncation.

2. PubMed processes up to 150 variations of a truncated term.

3. PubMed does not cross a space boundary. Phrases that include a space in a word after the asterisk will not be included; for example, "infection*" includes "infections," but not "infection control."

4. PubMed turns off automatic term mapping. For example, heart attack* will not map to the MeSH term, Myocardial Infarction or include any of its more specific indentions. Native American* will not map to Indians, North American even though Native American and Native Americans are cross references to Indians, North American.
PubMed Stopword List

PubMed also refers to a list of commonly found terms that are referred to as “stopwords.” Stopwords will not be included in your search.

| a       | about | above | abs       | accordingly | across | after | afterwards | again | against | all | almost | alone | along | already | also | although | always | am | among | amongst | an | analyze | any | anyhow | anywhere | applicable | apply | are | arise | around | as | assume | at | be | became | because | become | becomes | becoming | been | before | beforehand | being | below | beside | besides | between | beyond | both | but | by | came | can | cannot | hereupon | E-8 |
|---------|-------|-------|-----------|------------|--------|-------|------------|-------|----------|-----|--------|-------|-------|----------|------|----------|--------|----|--------|---------|-------|---------|-------|--------|--------|----------|--------|-------|-------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|--------|-----|---------|-----|------|--------|---------|--------|-------|--------|-------- |
Search Results Screen

Once you click on Go or press the Enter key, PubMed will automatically:

- Run the search
- Retrieve and display citations

The following is the Results screen returned by PubMed for the search example of:

Citations to articles about experiencing pain due to gallstones.

See next page for further explanation.
Results Screen

Query Box containing Current Search

| gallstones pain | Go | Clear |

- The query box displays your search.

- This box is active; you can modify the current search by adding or eliminating terms and clicking on the Go button.

- Click on the Clear button to clear out the search in the query box and start a new search.

Action Bar Selections

- These options are available both at the top and the bottom of the Results screens.

- The following workbook pages will explain each function.
Display Options

Summary Format

PubMed citations are initially displayed in the Summary format.

A summary citation consists of the following:

- **Author name:** All authors from the record are displayed.
- **Links:** Available links such as Related Articles, Protein, Nucleotide, etc. (LinkOut, Books not displayed in the Summary format.)
- **Title of the article:** Foreign language titles will be translated into English and placed within brackets.
- **Source:** Provides journal title abbreviation, date of publication, volume, issue, and pagination. Will also include language (for non-English articles) and Publication Type if the article is a review or retracted publication. Articles without abstracts will display the notation: “No abstract available”.
- **[Record as supplied by publisher]** or **[MEDLINE record in process]** tags may appear.
- **Identification numbers.** Provides the PubMed identifier (PMID) and the MEDLINE Unique Identifier (UI).

Additional Display Options

You can access other display formats from the Results screen in the following manner:

- **Individual Citations:** Clicking on the Author name hyperlink will display the citation in the default Abstract Report format.

- **All Citations:** Clicking on the Display button without selecting any of the citations will display all of the citations listed on the page in the selected display format. Summary is the default format.

- **Selected Citations:** Clicking on the boxes found to the left of the of the citation number allows you to select multiple records for retrieval. Clicking on the Display button will display the citations in the selected display format. Summary is the default format.
Other Display Formats

The pull-down menu next to the Display button allows the user to select available display formats:

<table>
<thead>
<tr>
<th>Display</th>
<th>Summary</th>
<th>Brief</th>
<th>Abstract</th>
<th>Citation</th>
<th>MEDLINE</th>
<th>ASN.1</th>
<th>LinkOut</th>
<th>Related Articles</th>
<th>Protein Links</th>
<th>Nucleotide Links</th>
<th>Popset Links</th>
<th>Structure Links</th>
<th>Genome Links</th>
</tr>
</thead>
</table>

Take Note:

Summary, Brief, Abstract, Citation, MEDLINE, Related Articles, and LinkOut Links are the most appropriate selections for bibliographic information.

Brief Format


A citation displayed in the brief format includes:

- Author name
- first 10 characters of the title
- PubMed Unique Identifier (PMID)
Abstract

Provides the following information:

- Journal Source (journal title abbreviation, date of publication, volume, issue and pagination)
- If necessary, [Record supplied by publisher] or [MEDLINE record in process] tags
- Title
- On non-English language articles, [Article in language] tag
- Authors
- Author affiliation (address) of first author at time of publication
- Abstract (if present) from published article
- Publication Types (except for Journal Article Publication Type)
- Erratum strings from Title rubrics
- Comments
- PubMed & MEDLINE Unique Identifiers

Legend:

1. Journal Source
2. Title
3. Authors
4. Author Affiliation (Address)
5. Abstract
6. PubMed and MEDLINE Unique Identifiers
The presentation of gallstones and results of biliary surgery in a spinal cord injured population.

McKee, R Silvers SA, Eikenberry EB, Steltzer M

Department of Surgery, Seattle Division of the Puget Sound Veterans Affairs Health Care System, University of Washington School of Medicine, USA.

BACKGROUND: Since spinal cord injured patients lack visceral sensation, their clinical manifestations of gallstones could be relatively occult. A higher proportion of these individuals may present with advanced biliary disease compared with the general population. Prophylactic cholecystectomy for asymptomatic stones may therefore be justified. METHODS: All spinal cord injured patients seen at the Seattle Veterans Hospital over a 5-year period were retrospectively surveyed to define a set of patients who had undergone a cholecystectomy. The operative indications and results were compared with those from a series of cholecystectomies in neurologically intact patients. RESULTS: The presentation of biliary disease in spinal cord injured patients was not more advanced than that of neurologically intact patients. Patients with high cord injuries presented in a similar fashion to those with low injuries. CONCLUSIONS: Since most spinal cord injured patients with biliary disease present with typical findings, prophylactic removal of gallstones in these patients is not warranted.

MeSH Terms:
- Biliary Tract Diseases/epidemiology
- Biliary Tract Diseases/diagnosis
- Case-Control Studies
- Cholecystectomy
- Cholecystectomy/surgery
- Cholecystectomy/epidemiology
- Cholecystectomy/diagnosis
- Cholecystectomy/complications
- Colonial/epidemiology
- Colonial/diagnosis
- Female
- Human
- Male
- Middle Age
- Retrospective Studies
- Spinal Cord Injuries/complications

PMID: 9637442, UI: 9637442
MEDLINE

- Two-character tagged field format displaying all fields of the MEDLINE record.

<table>
<thead>
<tr>
<th>Record Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ID:</strong> 1 \</td>
</tr>
<tr>
<td><strong>Author:</strong> Mooika, M. et al.</td>
</tr>
<tr>
<td><strong>Title:</strong> The presentation of gallstones and results of biliary surgery in a spinal cord injured population.</td>
</tr>
<tr>
<td><strong>JOURNAL:</strong> Journal of Clinical Surgery</td>
</tr>
<tr>
<td><strong>Volume:</strong> 3</td>
</tr>
<tr>
<td><strong>Issue:</strong> 2</td>
</tr>
<tr>
<td><strong>Publication Year:</strong> 1998</td>
</tr>
<tr>
<td><strong>Pages:</strong> 124-126</td>
</tr>
<tr>
<td><strong>Affiliation:</strong> Department of Surgery, Seattle Veterans Affairs Health Care System, University of Washington School of Medicine, USA.</td>
</tr>
</tbody>
</table>

Take Note:

Use this format for downloading records into bibliographic management software programs.
Retrieval Summary

- The retrieval summary line displays the total number of citations that have been retrieved by the current search, and how many pages of citations there are given the selected number of citations per page (default = 20 citations/page).

Show pull-down menu
- PubMed displays search results in batches of 20 citations per page.

Select Page
- PubMed redisplays the citations based on your selection.
- The Results screen will have links to the other pages containing the rest of the search results. Click on the next page of results you wish to display.
- The page number you are currently displaying is in red.
- Click on the >> symbol to see page numbers greater than the ones displayed.
- Click on the << symbol to see page numbers less than the ones displayed.
• Clicking on the Details button displays your search strategy as it was translated by PubMed including MeSH vocabulary term mappings as well as mappings from the PubMed phrase index.

• Error messages (e.g., stopwords, truncation warnings, misspellings) are also displayed.

• The PubMed Query box in Details allows you to edit a search strategy and resubmit it.

• Details also allows you to save a search strategy.

Here’s a closer look at Details:

You can modify the search strategy if you wish and then click on the Search button.

Click on the URL button to create a URL that allows you to save your search strategy.

Click on the Result number hyperlink to return to the current search results.

PubMed’s Translations

<table>
<thead>
<tr>
<th>Search</th>
<th>URL</th>
</tr>
</thead>
</table>

Result:

<table>
<thead>
<tr>
<th>Translations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>gallstones[All Fields]</td>
</tr>
<tr>
<td>pain[All Fields]</td>
</tr>
</tbody>
</table>

Database:

PubMed

User Query:

gallstones pain
PubMed is actually a subset of the larger database, PubRef. PubMed searches always exclude PubRef citations unless you delete the “AND notpubref [sb]” from the PubMed Query box and click Search.

Take Note:

Saving a search strategy from Details:

• Click on the URL button. PubMed will return to the search results screen. The translated search strategy will be displayed in the query box and this search strategy will also be embedded as part of the URL.

• Next, use your Web browser’s bookmark function to save the URL as a bookmark. After saving the bookmark, you may want to use your Web browser’s edit functions to rename the bookmark.

• See Caution in PubMed-Features Bar (Section G) about the History feature and saving strategies.

Current Awareness Searching

If you wish to run a search periodically to retrieve recent information since you last ran the search, you can:

• Save the strategy using the URL button in Details and then bookmark the results.
• Re-run the strategy by selecting the saved URL from your browser.
• After you run the saved strategy (bookmarked URL), consider using the Entrez date pull-down menu in Limits to restrict the retrieval to a particular Entrez date range (e.g., 30 days, 60 days, etc.).

Caution: Be aware that the Entrez Date will remain unchanged and is not updated to reflect the date a Publisher Supplied [Record as supplied by publisher] record is elevated to PREMEDLINE or when a PREMEDLINE [MEDLINE record in process] record is elevated to MEDLINE. Therefore, use caution when your strategy includes only MeSH terms because the addition of MeSH terms to a record will not change the Entrez Date [edat].
Take Note:

Add to Clipboard

- The clipboard allows you save or view selected citations from one search or several searches that you may want to print, save, or order.

- The maximum number of items that can be placed in the Clipboard is 500.

- The Clipboard will be lost after one hour of inactivity on PubMed or any of the other Entrez databases.

- To place an item in the Clipboard, click on the check-box to the left of the citation and then click on the Add to Clipboard button.

- Once you have added a citation to the Clipboard, the record number color will change.

Save

- To save your entire set of search results, use the Display pull-down menu to select the desired format, click Save. This option saves the entire set of search results in the display format selected.

- To mark selected citations to save, click on the check-box to the left of each citation as you go through each page of your retrieval. Once you have marked all of your selected citations and chosen a display format, click the Save button.

The maximum number of items that can be saved is 5000. If you try to save a file with more than 5000 citations, PubMed will display an error message that instructs you to refine your search.
Use Text to redisplay citations using just the text of the records and omitting the Web or HTML components. When finished with the text display, use your Web browser’s Back button to return to your results in HTML.

You may want to print via your Web browser using this feature so you do not print PubMed’s sidebar and buttons unnecessarily.

The text version will display either selected citations, or if no citations are selected, all the citations on the page.

Before using the Text button, consider using the Show feature to increase the number of items per page.

Printing

Use the Print function of your Web browser which will print all the information and citations displayed on your Web page.

Consider using the Text button described above.

Think about using the Show pull-down menu to display all of your citations on one Web page. You can only print the citations from the displayed page.

Order

Click Order to use an automated document ordering program called Loansome Doc.

You can also Order directly from the Clipboard. See the Ordering Documents section of this workbook, pages G-21 through G-25, for detailed information on Loansome Doc.
Practice Exercises

1. Find references about shingles and facial paralysis. Display the records in the format that shows the abstract and the MeSH headings. How does PubMed map the term, shingles?

2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed? Display all of the retrieved records on one Web page.

3. Find references about injuries from backpacks or backpacking. Save this search strategy so the search can be run again at a later date.

4. Find references about genetically modified food. Display the retrieved records in the format where you display the abstract but not the MeSH headings.
Suggested Answers:

1. Find references about shingles and facial paralysis. Display the records in the format that shows the abstract and the MeSH headings. How does PubMed map the term, shingles?

Details:

Use the **Citation** display format to display both the abstract and MeSH headings. The term, shingles, maps to the MeSH heading of **Herpes Zoster**.
2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed? Display all of the retrieved records on one Web page.

Details:

The term, nosebleed, maps to the MeSH heading, epistaxis. From the Show pull-down menu, choose a number higher than your final retrieval set in order to display all the records on one Web page.
3. Find references about injuries from backpacks or backpacking. Save this search strategy so the search can be run again at a later date.

Details:

If you truncate backpack*, you pick up:
- backpack
- backpacker
- backpackers
- backpacking
- backpacks

PubMed Query:

```plaintext
((("injuries"[Subheading] OR "wounds and injuries"[MeSH Terms]) OR injuries[Text Word])
AND (((backpack[All Fields] OR backpacker[All Fields]) OR backpackers[All Fields]) OR
backpacking[All Fields]) OR backpacks[All Fields])) AND notpubref[sl])
```

Result:

0

Translations:

- injuries[All Fields] (("injuries"[Subheading] OR "wounds and injuries"[ MeSH Terms]) OR injuries[Text Word])

Database:

PubMed

User Query:

injuries backpack*

Use the URL button from Details to have PubMed embed the search strategy into a URL. Use the Web browser’s bookmark function to save this URL.
4. Find references about genetically modified food. Display the retrieved records in the format where you display the abstract but not the MeSH headings.

Details:

Use the **Abstract** display to display the records with abstracts (if present) but not MeSH headings.
Introduction to PubMed

The Features Bar allow you to select several additional functions.

**Limits**

Click on **Limits** from the Features Bar to bring up the Limits page.

- Allows you to limit your search terms to a specific search field.
- Allows you to limit your search to a specific age group, gender, or human or animal studies.
- Also allows you to restrict your articles published in specific language and to specific types of articles such as review articles.
- You may choose to limit to only citations containing abstracts.
- You can also limit by either Entrez Date or Publication Date.
- You may limit to a specific subset of citations within PubMed, such as citations from *Abridged Index Medicus* or AIDS-related citations.
Field Selection

• You may limit your search terms to a specific search field.

• All Fields is the default.

• To select a specific field, click the All Fields pull-down menu and select a search field.

Only items with abstracts

• Click in this box to limit your retrieval to only citations having an abstract present on the record.

Publication Types

• You may limit your retrieval based on the type of material the article represents.

• The Publication Types pull-down menu contains a list of frequently searched publication types.

Languages

• Journals from approximately forty languages are indexed.

• The Languages pull-down menu contains a list of frequently searched languages.
Introduction to PubMed

Ages

• To select a specific age group for human studies, click on the Ages pull-down menu.

Gender

• To select a specific gender for a human study, click on the Gender pull-down menu.

Human or Animal

• To select a specific study group, click on the Human or Animal pull-down menu.

Subsets

• Allows you to limit your retrieval to one of the four types of groupings of records:

1. Level of processing:
   ▶ Publisher: [Record as supplied by publisher] citations
   ▶ PreMEDLINE: [MEDLINE record in process] citations
   ▶ MEDLINE: Fully MeSH-indexed citations

2. Subject Filter:
   ▶ AIDS: Based on a strategy developed for creating NLM’s AIDSLINE database

3. Journal groupings
   ▶ AIM: Abridged Index Medicus journals; 120 English-language journals
   ▶ Dental: Subset of dental journals
   ▶ Nursing: Subset of nursing journals

4. PubRef: Service designed to expand the bibliographic linking feature in PubMed by facilitating linking to a broader set of scientific journals (physics, astronomy, etc.) and full-text of articles at publishers’ Web sites.

If you select the PubRef subset limit, your search will not be limited to only PubMed citations.
Dates

• PubMed contains citations published back to 1966.

• New citations are added Tuesday-Saturday.

• There are two date fields:
  ▶ Entrez Date: the date the citation was initially added to PubMed
  ▶ Publication Date: the date the article was published

• When PubMed displays your search results, the citations are displayed in Entrez Date order - last in, first out.

Limiting by Dates

• Use the Entrez Date pull-down menu to limit your search back in time from 30 days to 10 years.

• The Publication Date pull-down menu toggles between Publication Date and Entrez Date

• Use the From and To boxes to specify a range of dates.

• Enter the dates in the format of YYYY/MM/DD (month and day are optional)

Examples:
• A check appears in the check-box next to Limits to indicate that limits have been selected.

• If you run a search, the limits in effect will appear in the yellow bar above the Display button:

To turn off all the limits before you run your next search, click on the check box to remove the check and turn off the limits.
Introduction to PubMed

PubMed-Features Bar

Preview/Index

This page is home to two functions: Preview and Index

Use Preview/Index to:

✓ Preview the number of search results before displaying the citations.
✓ Refine search strategies by adding one or more terms one at a time.
✓ Add terms to a strategy from specific search fields.
✓ View and select terms from the Index to develop search strategies.
✓ View your search strategy as you continue to refine your search.

Preview

Previewing the number of search results before displaying the citations

• Enter terms in the query box and click Preview.

• PubMed returns the number of citations but not the actual results.
Refining search strategies by adding one or more terms one at a time

- Add another term to the query box and click **Preview**.
- Continue adding terms and clicking **Preview** until your strategy is complete.
- View your search strategy and number of results as you continue to refine your search.

**Preview** shows search strategy and number of results as each term is added.

<table>
<thead>
<tr>
<th>Search strategy</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3 Search review children gallstones pain</td>
<td>15:54:19</td>
<td>30</td>
</tr>
<tr>
<td>#2 Search children gallstones pain</td>
<td>15:52:29</td>
<td>252</td>
</tr>
<tr>
<td>#1 Search gallstones pain</td>
<td>15:52:23</td>
<td>1295</td>
</tr>
</tbody>
</table>

**Take Note:**

**Preview** displays the last three queries from History. Use History to review up to the last 100 queries. The Clear History button in History also clears the history information in Preview/Index.

**Take Note:**

History will be lost after one hour of inactivity on PubMed.

Adding terms to a strategy from specific search fields

- Scroll down Preview/Index to find the “Add Term(s) to Query or View Index” section of the screen.

**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.
Introduction to PubMed

- Use the pull-down menu to specify a search field.
- Enter a term in the text box.

```
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.

<table>
<thead>
<tr>
<th>MeSH Terms</th>
<th>Strike</th>
<th>Preview</th>
<th>Index</th>
</tr>
</thead>
</table>
```

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

- Click **Preview** to add terms to the query box and see the number of search results.

```
Query box shows search term and field.

Strikes is an entry term for the preferred MeSH heading of Strikes, Employee.

Result shows number of citations.
```

• 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

```
Search | Most Recent Queries | Time   | Result
------|---------------------|--------|--------
#1 Search strikes[MeSH Terms] |                  | 11:24:38 | 740
```

Now, let’s refine this search by adding the MeSH term, Nurses.

- Use the pull-down menu to specify a search field.
- Add another term to the text box.

```
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.

<table>
<thead>
<tr>
<th>MeSH Terms</th>
<th>Nurses</th>
<th>Preview</th>
<th>Index</th>
</tr>
</thead>
</table>
```

Click **AND** | **OR** | **NOT** to add a term to the query box.
• Click **Preview**.
• Continue adding terms and clicking **Preview** until your strategy is complete.
• View your search strategy as you continue to refine your search.

**Take Note:**

Query box shows search terms and fields.

Results shows number of citations.

**Preview** automatically ANDs search terms together and previews the search results.

**Using Boolean operator buttons**

Use the **Boolean operators** to combine search terms as needed. With the Boolean operators, your search terms are added to the PubMed query box, but you must click **Preview** to see the number of results.

Search example:

Let’s say we want to learn more about the health effects of either carbohydrates or soybeans on osteoporosis.

• Use the pull-down menu to specify a search field.
• Add a term to the text box.
Click the **AND** button.

We can preview this result or continue building our strategy. Since we also want to know about soybeans in addition to carbohydrates, let’s continue building.

- Use the pull-down menu to specify a search field.
- Add another term to the text box.

Click the **OR** button.
Soybeans [MeSH Terms] is added to the Query box with the OR operator. But the search has not been previewed and the number of results are not shown.

Let’s add our last term to the strategy.

- Use the pull-down menu to specify a search field.
- Add the last term to the text box.

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.
• Click the **AND** button.

---

**Osteoporosis**

[MeSH Terms] is added to the **Query box** with the **AND** operator.

But the search has not been previewed and the number of results are not shown.

---

Click the **AND** button.

---

Click **Preview** to see the number of results for the strategy.
Index

Viewing and selecting terms from the Index to develop search strategies

- Use the Index button to view and select terms from the Index of the specific field to add them to your strategy.
- The Index allows you to view a listing of terms within a search field.
- You may also select terms to build a search strategy using Boolean operators.

Selecting a field and entering a term to look up in the Index

Let’s select MeSH Terms from the pull-down menu, type in the term, strikes and click on the Index button.

PubMed displays a portion of the alphabetical list of available terms for the selected search field. Scroll up and down this window using the scroll bar.

The number of citations that contain the term appears in parentheses to the right of the term.

To scroll up or down the entire Index for the field, click the Up or Down buttons.
Selecting a term from the Index

- Click on the term(s) to highlight it.

<table>
<thead>
<tr>
<th>Add Term(s) to Query or View Index:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Enter a term in the text box; use the pull-down menu to specify a search field.</td>
</tr>
<tr>
<td>• 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.</td>
</tr>
<tr>
<td>• Multiple terms selected from Index will be ORed; click AND to add to search.</td>
</tr>
</tbody>
</table>

Click [AND | OR | NOT] to add terms selected from Index to the query box.

- Click on Preview.
- Continuing viewing, selecting, and previewing search terms until your strategy is complete.

Query box shows the search term and search field.

Result shows the number of citations.

Preview automatically ANDs search terms together and previews the search. Use the Boolean operators to combine search terms as needed. If you use the Boolean operators, your search terms are added to the PubMed query box, and you must click Preview to see the number of results.
To OR together multiple terms from an Index display and then add (or AND) them to your search, click on each term while holding down the Ctrl-key (PC) or the Command-key (Mac). When all the terms you want are highlighted, click the connector AND to add the terms (ORed together) to the query.

Search Tip:

Search example:

- Click to highlight, strikes, employee used with the subheading of legislation and jurisprudence as well as strikes, employee used with the subheading statistics and numerical data in the display.

- Click on the AND button to select and add the terms to your query.

- Multiple selections are automatically ORed together.

The following search has been added to PubMed’s query box:

("strikes, employee/legislation and jurisprudence"[MeSH Terms] OR "strikes, employee/statistics and numerical data"[MeSH Terms])
Let’s further refine this search using the **Index**. We want to narrow the search to those citations discussing this situation and **nurses**. Enter **nurses** in the view entry box and click **Index**. Select nurses in the Index and then click on the **AND** button to add it to your query:

Once this term has been added to your search, click on the **Preview** button to get the number of results.

**Author Field Index:** PubMed automatically truncates on the author's name to account for varying initials, e.g., smith j will retrieve smith ja, smith jb, smith j jr, etc. In the Author Field Index, when an author's name is displayed with the @ symbol after the first initial, this indicates occurrences of the author name without a middle initial. Selecting smith j@ from the index will only retrieve smith j.
History

• History holds all your search strategies and results.

• History is only available after you run your first search.

• The History screen displays:
  > your search query
  > the time of the search
  > the number of citations in your search results

<table>
<thead>
<tr>
<th>Search Query</th>
<th>Most Recent Queries</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3</td>
<td>Search &quot;strikes, employee/legislation and jurisprudence&quot;[MeSH Terms] AND &quot;nurses&quot;[MeSH Terms]</td>
<td>14:35:10</td>
<td>4</td>
</tr>
<tr>
<td>#2</td>
<td>Search gallstones pain Limits: All Child: 0-18 years, Review</td>
<td>14:34:10</td>
<td>13</td>
</tr>
<tr>
<td>#1</td>
<td>Search gallstones pain</td>
<td>14:33:48</td>
<td>1295</td>
</tr>
</tbody>
</table>

Using History

• You can use the search statement numbers shown in history in search strategies.

Example:

Example: #1 AND laparoscopy

Boolean operators must be typed in all caps as shown in the example above.

Search Tip:

Other examples: #8 AND #10
#7 OR #14
History Tips:

✓ Maximum number of queries that can be held in History is **100**. Once the maximum number is reached, PubMed will remove the oldest search from the History to add the most current search query.

✓ Your search History will automatically be **lost after 1 hour of inactivity**.

✓ PubMed will move a search statement number to the top of the History if the new search is the same as a previous search.

✓ A separate Search History will be kept for each of the other Entrez databases although the search statement numbers will be assigned sequentially for all databases.

✓ Caution: Search statement numbers from History should **not** be used in a strategy that you intend to save using the URL button in Details.

Why Not? Although the strategy will be saved, your History will automatically be lost or cleared after 1 hour of inactivity. Any search statement numbers included in the saved strategy will be gone, or possibly replaced by other searches.

Click on the **Clear History** button available at the bottom of your search History screen to remove *all* searches from the History.
Clipboard

- Clipboard allows you to save or view selected citations from one search or several searches.

<table>
<thead>
<tr>
<th>Display</th>
<th>Summary</th>
<th>Save</th>
<th>Text</th>
<th>Order</th>
<th>Details</th>
<th>Add to Clipboard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Show: 20</td>
<td>Items 1-20 of 129</td>
<td>Page 1 of 7</td>
<td>Select page: 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


- You can then print, save, or order the citations in the Clipboard.
- To place items in the clipboard, click on the check-box to the left of the citation.
- Then click the Add to Clipboard button.
- Once the citation has been added to the Clipboard, the record number color will change.

Clipboard Tips:

- If you click Add to Clipboard without selecting citations using the check-box, PubMed will add up to 500 citations to the Clipboard.
- The maximum number of items that can be placed in the Clipboard is 500.
- The Clipboard will be lost after one hour of inactivity.
**Using Clipboard**

- To view the contents of your Clipboard, click on **Clipboard** from the Features bar.

<table>
<thead>
<tr>
<th>Number</th>
<th>Title</th>
<th>URL</th>
<th>PubMed ID</th>
<th>Date</th>
</tr>
</thead>
</table>

**Deleting citations from the clipboard:**

- To delete selected citations, click on the check-box to the left of the citation and then click on the **Remove from Clipboard** button.

- To empty the Clipboard, simply click on the **Remove from Clipboard** button.

**Saving citations in the Clipboard**

- Select a display format.

- Select citations you wish to save from the Clipboard (if you want to save all citations, no selection is necessary).

- Click on **Save** button.
Ordering Documents

You can order directly from the results screen, or you can collect citations on the Clipboard and order from there.

Take Note:

The Order Documents feature allows you to use an automated document ordering program called Loansome Doc.

What is Loansome Doc?
The Loansome Doc feature allows you to electronically order the full text of a citation from a Loansome Doc participating library in your area. Prior to using this feature, you need to establish an agreement with a Loansome Doc participating library. Your Loansome Doc library will provide you with their Library ID which is needed when setting up the service within PubMed or IGM.

What does it cost?
The library providing you this service will explain their ordering fees. This service is generally not free.

What library can provide me this service?
Call your Regional Medical Library at 1-800-338-7657 Monday-Friday, 8:30 A.M. - 5:00 P.M. in all time zones to find out which medical libraries in your area can provide you Loansome Doc ordering service.
Introduction to PubMed

PubMed-Features Bar

- To order specific citations, click on the check-box to the left of each citation in the Clipboard.

Publisher-supplied citations cannot be ordered through Loansome Doc because they do not have MEDLINE UIs.

Take Note:

- Click the **Order** button.

After clicking on the **Order** button from the Clipboard, you are brought to this next screen allowing you to:

- log into the Loansome Doc Ordering Server
- obtain a status report of your orders
- modify information on your Loansome Doc ID record
- learn about registering for a Loansome Doc code/password

If you are new, and click on the **GO** button to learn about registering, you reach a screen giving you important information about the Loansome Doc service.

If you click on the **Registration** button at the bottom of this screen, you reach the registration screen as shown on the next page.
This example uses a demonstration Library ID.

<table>
<thead>
<tr>
<th>Ordering</th>
<th>Library ID : 99999A (required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name : Polly</td>
<td></td>
</tr>
<tr>
<td>Last Name : Smith (required)</td>
<td></td>
</tr>
</tbody>
</table>

**ADDRESS INFORMATION**

| Address 1 : Acme Library (required) |
| Address 2 : 12 Acme Blvd. |
| City : Bethesda (required) |
| Province/State : Maryland (U.S. and Canada Only) |
| Province/State : United States (International Only) |
| Country : United States |
| Postal Code : 20894 (required) |
| Phone : 301-555-1212 (required) |

**DELIVERY INFORMATION**

| Method : Mail |
| Forward Requests : No |
| Fax : 301-555-1212 |
| Internet Address : polly@email.com |
| Requester Note : |

**LOGIN INFORMATION**

Use for all future Loansome Doc orders.

| User ID : abc321 (required) |
| Password : * * * * * * * (required) |
| Retype Password : * * * * * * * (required) |

Register
Next, you receive a screen explaining copyright compliance. Click on the Accept button.

PubMed now brings you to a screen confirming the citation(s) you are ordering and your user information. Click on the Send Order button after reviewing the information.
Next you are brought to the Loansome Doc Confirmation screen which confirms that your order was accepted.

**Loansome Doc Confirmation**

Order accepted
You can check the status of your orders from the Loansome Doc site. Order status is updated at 8:15pm EST

99390533 A case of neutrophilic leukoplakia of the oral cavity

99392630 Index of suspicion: Case #3 Discussion hereditary spherocytosis.

**User Information:**

User ID: ABC123
Polly Smith
Acme Library
12 Acme Blvd.
Bethesda
MD
20894
Fax: 301052-1212
Email: polly@email.com
Library: 99999A NLM TEST LIBRARY/BETHESDA MD
Introduction to Web-based Searching

Links

Related Articles

- Citations in PubMed will have a Related Articles link. Clicking on this link will access the articles in PubMed which are most closely related to the original article.

- PubMed compares words from the Title and Abstract of each citation, as well as the MeSH headings assigned, using a powerful word-weighted algorithm.

- The best matches for each citation are saved and stored in a pre-calculated set.

- The Related Articles citation display is in rank order from most to least relevant. The citation you linked from is displayed first.

- You may see a few citations without a Related Articles link. This simply means the citation has not yet gone through the powerful algorithm. This process may take several days.

A detailed explanation of the Related Articles algorithm is available in the PubMed Help under Computation of Related Articles.

Take Note:

Try this search: killer pop machines
You retrieve only 1 citation. Now, click on the **Related Articles** link and PubMed will display a list of related citations:

   - Killer pop machines.
   - PMID: 2228946; UI: 90229816

2. Copa ME.
   - Soda pop vending machine injuries.
   - PMID: 3192337; UI: 88067462

   - Four cases of injury involving soda vending machines.
   - PMID: 2002927; UI: 98016301

**Refining your Related Articles retrieval set:**

- **Click History.**
- The Related Articles link shows up as:  Link to PubMed from (“PubMed Unique Identifier”)

Search History will be lost after one hour of inactivity.
To combine searches use # before search number, e.g., #2 AND #6

<table>
<thead>
<tr>
<th>Search</th>
<th>Most Recent Queries</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#2 Link to PubMed from (2329341)</td>
<td>09:00:30</td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>#1 Search killer pop machines</td>
<td>09:00:28</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

- Use the search statement number and combine with another concept:
Introduction to Web-based Searching

- Alternatively, use the search statement number in the query box and a pull-down menu selection from the Limits screen:

Enter search statement # found in History.

Select limit(s).

Click Go.

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 PreMEDLINE and publisher supplied citations

Limited to:

- only items with abstracts

Publication Date From [ ] To [ ]

Use the format YYYY/MM/DD, month and day are optional.
Links to Other Resources and NCBI Databases

- **LinkOut** - A service that provides external links from PubMed citations to publisher Web sites for full-text journal articles, biological data, sequence centers, etc. from third parties.
- **Books** - provides links from individual PubMed journal citations to full text of molecular biology textbooks.
- **Protein** - Protein sequences from Swiss-Prot, PIR, PRF, PDB, and translated protein sequences from the DNA sequences databases.
- **Nucleotide** - DNA sequences from GenBank, EMBL, and DDBJ.
- **PopSet** - The PopSet database contains aligned sequences submitted as a set from a population, phylogenetic or mutation study describing such events as evolution and population variation.
- **Structure** - The Molecular Modeling Database (MMDB) contains 3-dimensional structures determined by X-ray crystallography and NMR spectroscopy.
- **Genome** - Provides access to records and graphic displays of entire genomes and chromosomes for megabase sequences obtained from large-scale sequencing of genomes and chromosomes.

Example: An article in the Journal of Cell Biology written by D. A. Starr.

Conservation of the centromere/kinetochore protein ZW10.

Starr DA, Williams BC, Li Z, Eismail-Meghahan B, Dave RK, Goldberg ML

Section of Genetics and Development, Cornell University, Ithaca, New York 14853-2703, USA.

Mutations in the essential Drosophila melanogaster gene zw10 disrupt chromosome segregation, producing chromosomes that lag at the metaphase plate during anaphase of mitosis and both meiotic divisions. Recent evidence suggests that the product of this gene, Dm Zw10, acts at the kinetochore as part of a tension-sensing checkpoint at metaphase onset. DmZw10 displays an intriguing cell cycle-dependent intracellular distribution, apparently moving from the centromere/kinetochore at prometaphase to kinetochore microtubules at metaphase, and back to the centromere/kinetochore at anaphase (Williams, B.C., M. Gott, and M. L. Goldberg. 1996. J. Cell Biol. 134:1277-1280). We have identified ZW10-related proteins from widely diverse species with divergent centromere structures, including several Drosophila, Caenorhabditis elegans, Arthrpnopus halli, blue mussel, and humans. Antibodies against the human ZW10 protein display a cell cycle-dependent staining pattern in HeLa cells strikingly similar to that previously observed for DmZw10 in dividing Drosophila cells. Injections of C. elegans ZW10 antisense RNA phenocopies important aspects of the mutant phenotype in Drosophila; these include a strong decrease in brood size, suggesting defects in meiosis or gamete motility, a high percentage of lethality among the embryos that are produced, and the appearance of chromosome bridges at metaphase. These results indicate that at least some aspects of the functional role of the ZW10 protein in ensuring proper chromosome segregation are conserved across large evolutionary distances.

PMID: 9396264; UI: 97446363
Introduction to Web-based Searching

**Book link:**
- When viewing a PubMed abstract, click on the "Books" hyperlink.
- This takes you to a facsimile of the abstract, in which some phrases are hypertext links. These phrases correspond to terms that are also found in the books available at NCBI.

The term, *Drosophila* has been clicked.

---

**PubMed-Links**

- Clicking on a hypertext link takes the reader to a list of book sections in which the phrase is found. The most relevant sections of the books to the phrase are listed first. The title of the section in which the phrase is found is hyperlinked to that part of the book.
• That part of the book is then displayed:

When you are on the textbook linking list page (as on the previous page), you will see an Overview, Help, and FAQs specific for the Books feature.

Take Note:
### Protein Link:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Accession</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AAB27177</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>2</td>
<td>AAB28328</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>3</td>
<td>AAB28329</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>4</td>
<td>AAB28346</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>5</td>
<td>AAB28356</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>6</td>
<td>NP_004715</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
</tbody>
</table>

### Nucleotide link:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Accession</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TF54956</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>2</td>
<td>TF54959</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>3</td>
<td>TF54957</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>4</td>
<td>TF00351</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
<tr>
<td>5</td>
<td>NM_004724</td>
<td>Protein</td>
<td>PubMed, Protein, Nucleotide</td>
</tr>
</tbody>
</table>

Introduction to Web-based Searching

PubMed-Links
LinkOut link:


- **OMIM** Link provided by [Online Mendelian Inheritance in Man (OMIM)]
- **FREE JST** Link provided by [HighWire Press]
  - publisher of information in URL
  - online full-text
- **FlyBase** Link provided by [FlyBase]
- **NIH Library** Link provided by [NIH Library]

Take Note:

Some journal Web sites may require you to subscribe or pay a fee in order to view the full text of an article.
Introduction to Web-based Searching

PubMed-Links

Linking back to PubMed from references

Links back to citations in PubMed are often provided within the references at the end of an article viewed from a publisher’s Web site:

Click on Medline link to go to the PubMed record for this reference.

Clicking on the Medline link for the 4th reference brings you to that citation in PubMed:

**SKP1 connects cell cycle regulators to the ubiquitin proteolysis machinery through a novel motif, the F-box.**


Howard Hughes Medical Institute, Baylor College of Medicine, Houston, Texas 77030, USA.

We have identified the yeast and human homologs of the SKP1 gene as a suppressor of cdc4 mutants and as a cyclin F-binding protein. Skp1p indirectly binds cyclin A/Cdk2 through Skp2p, and directly binds Skp2p, cyclin F, and Cdc4p through a novel structural motif called the F-box. SKP1 is required for ubiquitin-mediated proteolysis of Cln2p, Clb5p, and the Cdk inhibitor Sic1p, and provides a link between these molecules and the proteolysis machinery. A large number of proteins contain the F-box motif and are thereby implicated in the ubiquitin pathway. Different skp1 mutants arrest cells in either G1 or G2, suggesting a connection between regulation of proteolysis in different stages of the cycle.

PMID: 8706131, UI: 96319729
Practice Exercises

1. Using only the query box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to only review articles. Display the results so you can see the MeSH headings and the entire retrieval is on one page.

2. Find the title, “Baby walkers--an underestimated hazard for our children?” Link from an author to see the Abstract. Review the related articles.

3. Are there articles by George Barrera-Hernandez referenced in MEDLINE?

4. Locate citations about using a baboon for a bone marrow transplant that were published between 1997-2000.

5. Please find information about wisdom tooth pain. Using the Details screen, determine what MeSH heading wisdom tooth maps to.
Suggested Answers

1. Using only the query box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to only review articles. Display the results so you can see the MeSH headings and the entire retrieval is on one page.

Display the results so you can see the MeSH headings and the entire retrieval is on one page.
2. Find the title, “Baby walkers--an underestimated hazard for our children?”. Link to see the Abstract. Review the related articles.

Find the requested title:

Include the Boolean AND between title words.

Use the Title Word pull-down menu selection.

Use the Abstract display to see the abstract. Click on Related Articles link to review the related articles.
3. Are there articles by George Barrera-Hernandez referenced in MEDLINE?
4. Locate citations about using a baboon for a bone marrow transplant that were published between 1997-2000.

5. Please find information about wisdom tooth pain. Using the Details screen, determine what MeSH heading wisdom tooth maps to.

Molar, third is the MeSH heading that PubMed is mapping to.
Searching with MeSH

Two selections are available for MeSH searching from the field selection pull-down menu from Limits:

- **MeSH Terms**

  Use when you want to qualify a term so that it is searched only as a MeSH heading. Unqualified search terms that are MeSH headings will automatically be searched as a MeSH term as well as a Text Word.

  When a term is searched as a MeSH heading, PubMed automatically searches that heading and the more specific headings underneath in the hierarchy. This is called exploding a term.

  **Take Note:**

  For example, the MeSH term **Face** when searched as MeSH Term in PubMed would search the heading Face as well as all the more specific terms below the term in the hierarchy:

  - Face
  - Cheek
  - Chin
  - Eye
    - Eyebrows
    - Eyelids
    - Eyelashes
  - Forehead
  - Mouth
  - Lip
  - Nose

  Searching with MeSH terms will exclude PREMEDLINE citations and publisher-supplied citations as they have not been indexed with MeSH headings.

  **Take Note:**

- **MeSH Major Topic**

  Use when you wish to limit to articles where the topic is the main point of the article.
PubMed’s MeSH Browser

PubMed’s MeSH Browser allows you to:

- Display MeSH terms in a hierarchical structure.
- Select MeSH terms for searching.
- Limit MeSH terms to a major concept.
- Attach subheadings.
- Display the preferred MeSH term and its hierarchy if a cross reference is entered.

How to Get There

- Click on MeSH Browser on the sidebar.

Now, let’s use the MeSH Browser to build a search strategy for a search for citations about bursitis.

PubMed brings you to this MeSH Browser screen:
Click on the **Detailed Display** link to the right of the browsed term at the top of the screen as shown below:

**Bursitis** [Detailed display]

Inflammation of a bursa, occasionally accompanied by a calcific deposit in the

This will bring you to another screen providing more information about the browsed term.

- You may search on this term or add this term to an existing strategy. At the same time you may select one or several subheadings, restrict the search to this term as a major point, or select not to explode the MeSH term

**Detailed display screen for Bursitis**

- Use the **Add** button to add the term to your search.
- You can also change the Boolean operator.
- Subheadings that have been attached to the term on current MEDLINE citations are listed.
- You may also restrict to a major point or choose not to explode the term.
Now, let’s adjust our search to:

**Citations about the diagnosis of bursitis**

Select the diagnosis subheading from the MeSH browser screen’s Detailed Display. Click on Add button when selections are complete.

The MeSH Browser Current Query displays your search strategy. You may also look up another term in the query box.

Now, let’s adjust our search and **specifically look for articles discussing the diagnosis of bursitis in the knee joint**.

Enter **knee joint** in the query box, click Go.
Introduction to Web-based Searching

PubMed-MeSH Browser

This brings you to the MeSH Browser screen for **Knee Joint**. Next click on the **Detailed Display** link to see more information about this term.

Let’s restrict to citations that have been indexed to indicate that the major focus of the article is knee joints and add this term to the strategy we are building.

Once you have checked off **Restrict Search to Major Topic headings only**, click the **Add** button to continue building our strategy:

Click on the **PubMed Search** button to actually run the search in PubMed.
Practice Exercises

Try using the MeSH Browser for searches that require the use of MeSH headings.

1. Find articles discussing the diagnosis of prostate cancer as the main focus of the article. Then limit to articles entered into PubMed in the last 2 years.

2. Find citations to articles discussing the surgical or drug treatment of osteosarcoma in children. Limit to studies involving the drug, cisplatin. Osteosarcoma should be the main point of the article. Also, limit to English language articles.

3. Find citations to references discussing the economics of community-acquired pneumonia.

4. 
   a. Find information on how to save a strategy in PubMed’s online Help.
   
   b. You need to explain to someone how to import PubMed records into a bibliographic management program such as EndNotes® or Reference Manager®. Use PubMed’s FAQs to find this answer.
Suggested Answers

1. Find articles discussing the diagnosis of prostate cancer as the main focus of the article. Then limit to articles entered into PubMed in the last 2 years.

MeSH Browser screen:

Choosing diagnosis subheading and restricting to major:

- [Prostatic Neoplasms (Detailed display)]
- Add this term to the Search using operator: AND
- Prostatic Neoplasms appears in more than one place in the MeSH tree.
2. Find citations to articles discussing the surgical or drug treatment of osteosarcoma in children. Limit to studies involving the drug, cisplatin. Osteosarcoma should be the main point of the article. Also, limit to English language articles.
3. Find citations to references discussing the economics of community-acquired pneumonia.

Select the subheading of economics to attach to the MeSH heading, pneumonia from the Detailed display in the MeSH Browser:

Next, the MeSH Browser does not find an exact match for community acquired but leads us to this list of available terms. The term, Infection, Community-Acquired is now browsed. This leads us to Community-Acquired Infection which is Added to our strategy and returned to PubMed.
4.

a. Find information on how to save a strategy in PubMed’s online Help.

1. Click on Help in PubMed’s sidebar.
2. Click on Saving a Search Strategy under Details.

b. You need to explain to someone how to import PubMed records into a bibliographic management program such as EndNotes® or Reference Manager®. Use PubMed’s FAQs to find this answer.

1. Click on FAQ in PubMed’s sidebar.
2. Click on Can I import PubMed search results into a bibliographic management program? under The New PubMed.

A quick way to locate information on a Web page is to use the Find (in Page) feature under the Edit menu of your Web browser.

Take Note:
Search Field Descriptions

- Alternatively if you prefer not to use the pull-down menus, you may enter a Boolean search statement directly in the query box when building your search.

Search Rules and Syntax

- The Boolean operators AND, OR, NOT must be entered in uppercase letters.

- Boolean connectors are processed left to right.

- Nesting of search terms is possible. To change the order in which terms are processed, enclose the concept(s) with parentheses. The terms inside the set of parentheses will be processed as a unit and then incorporated into the overall strategy. This is called nesting.

Example: shoulder joint [mh] AND (baseball [mh] OR hockey [mh]) AND arthroscopy [mh]

Search Field Abbreviations

- Terms may be qualified using PubMed’s search field tags. A list of the available field names, abbreviations, and brief field descriptions may be found in the PubMed Help under Search Field Descriptions and Tags. A table listing this same information is provided on the next few workbook pages.

- Each search term should be followed with the appropriate search field tag which indicates which field will be searched. The search field tag must follow the term -- you cannot prequalify.

  Correct entry: aromatherapy [mh]
  Incorrect entry: [mh] aromatherapy

- Search field tags must be enclosed in square brackets.

- Case and space do not matter: ice [mh] = Ice [mh] = ICE [MH]
MeSH headings:

- MeSH headings are qualified using the search field tags:
  
  [mh] to search a MeSH heading
  [majr] to search a MeSH heading which is a major topic of an article

- If a MeSH heading is not qualified, PubMed will search the term as a MeSH heading (exploded) and OR-together the term(s) as a Text Word(s) as well.

Example:

Here’s the contents of the Details screen showing how PubMed translated this search:

```
for: thromboembolism

PubMed Query:

{""thromboembolism"[MeSH Terms] OR
 thromboembolism[Text Word]) AND notpubref[ab]

Result:
24682

Translations:
thromboembolism[All Fields] ("thromboembolism"[MeSH Terms] OR thromboembolism[Text Word])
```
PubMed automatically searches the MeSH headings as well as the more specific terms underneath that heading in the MeSH hierarchy; i.e., the term is exploded.

- **Turning off automatic explosion** of MeSH headings:

  Use one of the following tags: [mh:noexp] or [majr:noexp]

  Example: thromboembolism [mh:noexp]
  thromboembolism [majr:noexp]

  Alternatively, consider using the Do not explode selection from the Detailed Display in the MeSH Browser:

  Searching with MeSH headings will exclude PREMEDLINE and publisher-supplied citations as they are not indexed with MeSH.

  Take Note:
Subheadings:

- You can directly attach subheadings to MeSH headings using the format MeSH heading/subheading.

- Two letter abbreviations for subheadings or the full subheading name may be used.

Examples:

- thromboembolism/pc [mh]
- thromboembolism/prevention and control [mh]
- toes/in [majr]
- toes/injuries [majr]

- Only one subheading may be directly attached to a MeSH heading at a time. If you wish to attach multiple subheadings you must combine them with the OR connector or use the MeSH Browser:

  thromboembolism/pc [majr] OR thromboembolism/di [majr]

- For a MeSH/subheading combination, PubMed always explodes the MeSH term and also explodes the subheading if it is explodable. In the example below, the explodable subheading (therapy) or one of its indentions (e.g., diet therapy) will be directly attached to the MeSH term (hypertension) or one of its indentions (hypertension, malignant).

Example: hypertension/th

Hypertension with its indentions:  

<table>
<thead>
<tr>
<th>Hypertension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension, Malignant</td>
</tr>
<tr>
<td>Hypertension, Portal</td>
</tr>
<tr>
<td>Esophageal and Gastric Varices</td>
</tr>
<tr>
<td>Hypertension, Pulmonary</td>
</tr>
<tr>
<td>Persistent Fetal Circulation Syndrome</td>
</tr>
<tr>
<td>Hypertension, Renal</td>
</tr>
<tr>
<td>Hypertension, Renovascular</td>
</tr>
<tr>
<td>Nephrosclerosis</td>
</tr>
</tbody>
</table>

Therapy subheading and its indentions:  

<table>
<thead>
<tr>
<th>therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>diet therapy</td>
</tr>
<tr>
<td>drug therapy</td>
</tr>
<tr>
<td>nursing</td>
</tr>
<tr>
<td>prevention &amp; control</td>
</tr>
<tr>
<td>radiotherapy</td>
</tr>
<tr>
<td>rehabilitation</td>
</tr>
<tr>
<td>surgery</td>
</tr>
<tr>
<td>transplantation</td>
</tr>
</tbody>
</table>
A list of the current subheadings and subheading explosions appears in PubMed’s online Help (under References, see Subheadings and Families of Subheading Explosions) as well as Section B (MeSH Vocabulary) of this workbook.

To turn off both the MeSH heading explosion and subheading explosion, you would enter:

```
hypertension/th [mh:noexp]
```

This turns off the explosion in both parts, searching for only the subheading therapy attached directly to only the MeSH term hypertension.

- You may also choose to “free-float” a subheading with a MeSH heading using the Boolean AND and the subheading field tag of [sh]. This is typically done if you wish to directly attach a subheading with a MeSH heading that is not an approved combination.

Example:

breast neoplasms [mh] AND trends [sh]

- To turn off the subheading automatic explosion, use the tag [sh:noexp]. You may only do this when “free-floating” a subheading.
Introduction to Web-based Searching

PubMed-Search Field Descriptions

Truncation Symbol:

- The asterisk (*) is the truncation symbol.

There is no single character truncation symbol in PubMed.

Search Tip:

Text Words:

- Terms that are qualified with the Text Words [tw] field tag will be searched for in the following fields:
  - Title
  - Abstract
  - Numbers from the Title and Abstract
  - MeSH headings and Subheading
    (also fragments and phrases from these 2 fields)
  - Chemical Names of Substances
  - Secondary Source Identifier (The SI field identifies other data sources, databanks and accession numbers of molecular sequences discussed in MEDLINE articles.)
  - Personal Name as Subject
Title Word Searching

- Enter significant terms (numbers, too) from the title of an article.
- Each word must be followed by the [TI] search field tag.
- Words should be combined with the AND operator.

Example: I’m looking for an article. The title is “Memory improvement following cardiac transplantation”.


Details:

```
PubMed Query:

{{(memory[ti] AND improvement[ti]) AND cardiac[ti]) AND transplantation[ti] AND notpubref[ab]}}
```

Result:

1

Database:

PubMed

User Query:


☐ 1: Roman DD, et al.

PMID: 9408799; UI: 98073116
Alternatively, consider using the Title Word selection from the Fields pull-down menu in Limits. When using this method, you do not have to tag each title word.

Example:

Author Searching:

- Use Last Name Initials format with the [au] tag. Example: o’brien j [au]
- PubMed automatically truncates the author’s name to account for varying initials.

Example:
- To **turn off automatic truncation of an author’s name**, surround the author’s name with double quotes and use the `[au]` search tag.

  ![PubMed Search Field Description](image)

  **Personal Name as Subject:**

  - Use the `[ps]` tag to search for citations to articles about a named individual. The name is searched in the same format as for authors.

  **Example:** lincoln a `[ps]`

  ![Example Search Results](image)

  The Personal Name as Subject field is *not* available from the Search Field pull-down menu in Limits.

  **Take Note:**
Introduction to Web-based Searching

PubMed-Search Field Descriptions

### Journal Name:

- Search by full journal name, MEDLINE abbreviation, or ISSN.

  Examples:
  
  Journal of Biological Chemistry [ta]
  J Biol Chem [ta]
  0021-9258 [ta]

  Any single-word journal title or MEDLINE journal title abbreviation should be qualified with [ta].

### Languages:

- First three letters of language may be used as abbreviation when searching.
  (There are a few exceptions. Example: JPN for Japanese)

  Language values may also be spelled out.

  Examples:
  
  common cold [mh] AND chi [la]
  common cold [mh] AND chinese [la]
  common cold [mh] AND por [la]
  common cold [mh] AND portugese [la]

  Remember, the following languages are available from the Languages pull-down menu in Limits:
Entrez Date:

- The Entrez Date field contains the date that a record was initially added to PubMed, in the format yyyy/mm/dd [edat], e.g.,

  1999/07/10 [edat]

- Month and day are optional:

  1999 [edat]
  1999/07 [edat]

Be aware that the Entrez Date will remain unchanged and is not updated to reflect the date a Publisher Supplied record is elevated to PREMEDLINE or when a PREMEDLINE record is elevated to MEDLINE.

Take Note: Remember the Entrez Date pull-down menus in Limits.

Publication Date:

- The date that the article was published in the format of YYYY/MM/DD [dp]. Use the [dp] tag.

  1984/10/06 [dp]

- Month and day are optional:

  1984/10 [dp]
  1984 [dp]

Publication Date formats are not standardized from journal to journal.

Take Note:
Introduction to Web-based Searching

PubMed-Search Field Descriptions

Ranging:

- The colon (:) is used between ranging values.
- To search on Publication Date from 1993 to 1997, enter:
  1993:1997 [dp]
- To search on a date, use the format YYYY/MM/DD

**Example 1:** Search on citations entered into PubMed from Jan 16, 1998 to Feb 13, 1998

1998/01/16:1998/02/13 [edat] where edat is the abbreviation for Entrez Date

**Example 2:** Search on citations entered into PubMed in January or February 1998

1998/01:1998/02 [edat]

Remember the **Publication Date** fill-in-the-blank selection in Limits.

Search Tip:
Introduction to Web-based Searching

Introduction to Web-based Searching

Publication Type:

- Describes the type of material the article represents
- Use the [pt] tag

Example: vascular diseases [majr] AND twin study [pt]

PubMed’s Help includes a listing of all available Publication Types.

Take Note:

Remember, the following Publication Types are available from the pull-down menu in Limits:

PubMed’s Help includes a listing of all available Publication Types.

Publication Types
- Clinical Trial
- Editorial
- Letter
- Meta-Analysis
- Practice Guideline
- Randomized Controlled Trial
- Review

Subset:

- Allows you to limit your search to a particular portion of PubMed
- Available values include:
  - MEDLINE searched as MEDLINE [sb]
  - PREMEDLINE searched as premedline [sb]
  - PUBLISHER-supplied searched as publisher [sb]
  - AIDS searched as aids [sb]
- Use the [sb] tag
- Example: hospice care AND aids [sb]

Remember, you may use the Subset pull-down menu from Limits.

Search Tip:
Limiting to published journal indexes:

- The following values are available:
  
  Abridged Index Medicus          jsubseta
  Dental                         jsubsetd
  Nursing                       jsubsetn

  Do not use a field qualifier; just use the search value.

  Search Tip: Example: baseball AND jsubseta

  Remember, you may use the Subset pull-down menu from Limits to limit to these values.

Secondary Source Identifier (SI):

- Identifies a secondary source that supplies information, e.g., other data sources, databanks and accession numbers of molecular sequences.
- The field is composed of a source followed by a slash followed by an accession number.

  Example: GENBANK/AF113832

  Use this field also to limit to or exclude the unique HealthSTAR citations in PubMed.
Unique Identifier Searching:

- To search for either the PubMed Unique Identifier (PMID) or the MEDLINE Unique Identifier (UI), **type in the number with or without the search field qualifier [uid]**.

  **Example:** 98015703

- You can search for several unique identifier numbers by entering each number in the query box separated by a space, PubMed will OR the terms together. Do **not** enter the OR connector.

  - To search a **Unique Identifier in combination with other terms** you **must** use the search field tag, [uid].

  **Example:**

  smith [au] AND (10403340 [uid] OR vaccines [mh]).
Grant Number Searching:

- Grant number information when provided on the article is included in the Author Affiliation or Address field.

Example: LM is the abbreviation used for NLM when grant numbers are assigned. To search for citations to references that indicated that support was from an NLM grant, enter:

Im [ad]

Caution: You may get false hits from other information provided in the Author Affiliation field.

Search Tip:

PubMed’s online Help includes a table listing Grant Abbreviations and Institute Acronyms

Take Note:

Limiting to citations with abstracts:

- Use the value: hasabstract.

Do not use a field qualifier; just use the search value.

Example: baseball AND jsubseta AND hasabstract

Remember you can use the check box in Limits to restrict to only items with abstracts.
## Search Field Qualifier Tags

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliation</td>
<td>[AD, AFFL]</td>
<td>Institutional affiliation and address of the primary author, and grant numbers.</td>
</tr>
<tr>
<td>All Fields</td>
<td>[ALL]</td>
<td>Includes all PubMed search fields</td>
</tr>
<tr>
<td>Author Name</td>
<td>[AU, AUTH]</td>
<td>Up to 25 authors are included. MEDLINE does not list the full name. The format to search for an author name is last name, followed by a space and the first initial(s), without periods (e.g., Fauci AS). Initials may be omitted when searching.</td>
</tr>
<tr>
<td>EC/RN Number</td>
<td>[RN, ECNO]</td>
<td>Number assigned by the Enzyme Commission (E.C.) to designate a particular enzyme and the RN lists the Chemical Abstracts (CAS) Registry Numbers.</td>
</tr>
<tr>
<td>Entrez Date</td>
<td>[EDAT]</td>
<td>Contains the date that a record was initially added to PubMed, in the format yyyy/mm/dd [edat], e.g., 1998/01/10 [edat].</td>
</tr>
<tr>
<td>Issue</td>
<td>[IP, ISSUE]</td>
<td>The number of the journal issue in which the article is published.</td>
</tr>
<tr>
<td>Journal Name</td>
<td>[TA, JOUR]</td>
<td>The journal title abbreviation, full journal name, or ISSN number (e.g., J Biol Chem, Journal of Biological Chemistry, 0021-9258).</td>
</tr>
<tr>
<td>Language</td>
<td>[LA, LANG]</td>
<td>The language in which the article was published.</td>
</tr>
<tr>
<td>MeSH Major Topic</td>
<td>[MAJR]</td>
<td>A MeSH term that is one of the main topics discussed in the article.</td>
</tr>
<tr>
<td>MeSH Terms</td>
<td>[MH, MESH]</td>
<td>NLM’s Medical Subject Headings controlled vocabulary of biomedical terms which is used to describe the subject of each journal article in MEDLINE.</td>
</tr>
<tr>
<td>Page</td>
<td>[PG, PAGE]</td>
<td>The number of the first journal page that the article appears on.</td>
</tr>
<tr>
<td>Personal Name as Subject</td>
<td>[PS]</td>
<td>Use to search for citations about a named individual. Follow Author field search rules.</td>
</tr>
<tr>
<td>Field Description</td>
<td>Example/Description</td>
<td></td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Publication Date</td>
<td>The date that the article was published in the format of yyyy/mm/dd (e.g. 1984/10/06). A year with just the month (e.g., 1984/03) will retrieve all for that month. Publication Date formats are not standardized from journal to journal.</td>
<td></td>
</tr>
<tr>
<td>Publication Type</td>
<td>Describes the type of material the article represents (e.g., Review, Clinical Trials, Retracted publications, Letters).</td>
<td></td>
</tr>
<tr>
<td>Secondary Source Identifier</td>
<td>Identifies a secondary source that supplies information, e.g., other data sources, databanks and accession numbers of molecular sequences.</td>
<td></td>
</tr>
<tr>
<td>Subset</td>
<td>Allows you to limit your search to a particular portion of PubMed (e.g., MEDLINE, PREMEDLINE, PUBLISHER-supplied, AIDS).</td>
<td></td>
</tr>
<tr>
<td>Subheading</td>
<td>Use subheadings to further qualify your subject search.</td>
<td></td>
</tr>
<tr>
<td>Substance Name</td>
<td>The name of a chemical discussed in the article (MEDLINE Name of Substance field).</td>
<td></td>
</tr>
<tr>
<td>Text Words</td>
<td>All words and numbers in the title and abstract, MeSH terms, subheadings, chemical substance names, personal name as subject, and secondary source identifier fields.</td>
<td></td>
</tr>
<tr>
<td>Title Words</td>
<td>Words and numbers found in the title of an article.</td>
<td></td>
</tr>
<tr>
<td>Unique Identifier</td>
<td>PubMed Unique Identifier PMID and MEDLINE Unique Identifier UI.</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>The number of the journal volume in which the article is published.</td>
<td></td>
</tr>
</tbody>
</table>

You can print a version of this list from the PubMed Help (Search Field Descriptions and Tags).
Practice Exercises

Use search field abbreviations when doing these exercises. Remember you can use the History feature to combine searches.

1. Find references to articles discussing decision-making by nurse practitioners.

2. Find references to articles about Winston Churchill.

3. Find references to articles discussing video display terminals and carpal tunnel syndrome. Use the Related Articles feature to find similar articles. Limit the list of Related Articles to the publication type, Review. (Hint: Use History.)

4. Using the MeSH Browser, find citations to articles about the prevention of chickenpox or measles during pregnancy. Limit to English language articles that have abstracts.
Suggested Answers

1. Find references to articles discussing decision-making by nurse practitioners.

2. Find references to articles about Winston Churchill.

3. Find references to articles discussing video display terminals and carpal tunnel syndrome. Use the Related Articles feature to find similar articles. Limit the list of Related Articles to the publication type, Review. (Hint: Use History.)

History screen:
Limit the list of Related Articles to the publication type, Review. (Hint: Use History.)

Final History screen:

<table>
<thead>
<tr>
<th>Search</th>
<th>Query</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5</td>
<td>Search #4 AND review [pt]</td>
<td>16:19:28</td>
<td>7</td>
</tr>
<tr>
<td>#4</td>
<td>Link to PubMed from (1 document(s))</td>
<td>16:19:10</td>
<td>102</td>
</tr>
<tr>
<td>#3</td>
<td>Search #1 AND #2</td>
<td>16:19:05</td>
<td>10</td>
</tr>
<tr>
<td>#2</td>
<td>Search carpal tunnel syndrome [mh]</td>
<td>16:18:56</td>
<td>3532</td>
</tr>
<tr>
<td>#1</td>
<td>Search video display terminals [mh]</td>
<td>16:18:47</td>
<td>656</td>
</tr>
</tbody>
</table>

4. Using the MeSH Browser, find citations to articles about the prevention of chickenpox or measles during pregnancy. Limit to English language articles that have abstracts.

Chickenpox MeSH Browser Detailed Display screen when selected the subheading of prevention & control:

Click on Add button to begin to build your strategy.

**Chickenpox [Brief display]**

A highly contagious infectious disease caused by the varicella-zoster virus (HERPESVIRUS 3, HUMAN). It usually affects children, is spread by direct contact or respiratory route via droplet nuclei, and is characterized by the appearance on the skin and mucous membranes of successive crops of typical pruritic vesicular lesions that are easily broken and become scabbed. Chickenpox is relatively benign in children, but may be complicated by pneumonia or encephalitis in adults. (From Dorland, 27th ed)

Add this term/subheadings to the Search using operator AND:

- blood
- cerebrospinal fluid
- chemically induced
- classification
- complications
- congenital
- diagnosis
- drug therapy
- economics
- embryology
- enzymology
- epidemiology
- etiology
- etiology
- genetics
- history
- immunology
- metabolism
- microbiology
- mortality
- nursing
- pathology
- physiotherapy
- prevention and control
- psychology
- radiography
- surgery
- therapy
- transmission
- ultrasonography
- urine
- veterinary
- virology
Next, you look up measles and display the detailed screen. Select the prevention & control subheading:

**Measles** [Brief display]

A highly contagious infectious disease caused by MOREBILLIVIRUS, common among children but also seen in the nonimmune of any age, in which the virus enters the respiratory tract via droplet nuclei and multiplies in the epithelial cells, spreading throughout the reticuloendothelial system. (From Dorland, 27th ed)

Select the OR operator. Then click on the Add button.

[Add this term/subheadings to the Search using operator: OR ]

- blood
- cerebrospinal fluid
- chemically induced
- classification
- complications
- congenital
- diagnosis
- diet therapy
- drug therapy
- economics
- embryology
- enzymology
- epidemiology
- ethnology
- etiology
- genetics
- history
- immunology
- isolation and purification
- metabolism
- microbiology
- mortality
- nursing
- parasitology
- pathology
- physiopathology
- prevention and control
- psychology
- radiography
- surgery
- therapy
- transmission
- urine
- veterinary
- virology

Next, enter pregnancy. No need to look at the detailed display, so just click on the Add button to AND this term into your search strategy:

**Pregnancy** [Detailed display]

The condition of having a developing embryo or fetus in the body, after union of an ovum and spermatozoon. (Dorland, 27th ed)

[Add this term to the Search using operator: AND ]
Next, click on the PubMed Search button from the MeSH Browser screen to run the strategy in PubMed. From the Results screen, click on Limits and select English from the Languages pull-down menu and then click the Go button.

Now, go the History screen, to check the search statement number to use so you can limit to those citations that have an abstract:
Clinical Queries

This specialized search query is intended for clinicians and has built-in search "filters" based on research done by R. Brian Haynes, M.D., Ph.D. at McMaster University in Canada.

Four study categories or filters are provided:

- therapy
- diagnosis
- etiology
- prognosis

Two emphasis categories or filters are provided:

- sensitivity (also referred to as “recall” -- includes relevant articles but probably including some less relevant; will get more retrieval)
- specificity (also referred to as “precision” -- will get less retrieval)

How to get there

- Click on Clinical Queries on the PubMed homepage sidebar to access this search feature.

Clinical Queries Screen:

The Clinical Queries page has a link to the Brian Haynes citation and abstract for the article in MEDLINE discussing this research. You can also link to a Table for Clinical Queries using Research Methodology Filters that shows a listing of terms using the PubMed and NLM’s ELHILL search engines.

Take Note:

The default filter category is Therapy.
The default emphasis is Specificity.

Search Tip:

Link to Haynes citation.
Link to details about "filtering."
Introduction to Web-based Searching

PubMed-Clinical Queries

Search Example: **Gallstones and pain** -- using the Clinical Queries defaults of Therapy and Specificity

PubMed

Clinical Queries using Research Methodology Filters

This specialized search is intended for clinicians and has built-in search "filters" based largely upon Haynes RE et al. Four study categories—therapy, diagnosis, etiology, prognosis—are provided, and you may decide whether you wish your search to be more sensitive (i.e., include more relevant articles but probably including some less relevant ones) or more specific (i.e., including mostly relevant articles but probably omit a few). See the table for details regarding filtering.

Indicate the category and emphasis below:

**Category:** C therapy C diagnosis C etiology C prognosis

**Emphasis:** C sensitivity C specificity

Enter subject search (do not repeat any of the words above): [Gallstones pain]

Search

Reset

NOTE: If you want to restrain everything on a subject area, you should not use this page. The objective of filtering is to reduce the retrieval to articles that report research conducted with specific methodologies, and retrieval will be greatly reduced.

Search Results using **Therapy category and Specificity emphasis**:

1. de los Santos AR, Marti ML, Di Girolamo G, Diego Espinosa J, Morano MA, Tobar JC.
   PMID: 10463136; UI: 99392432

   [Recurrence of vesicular microlithiasis. Controlled study with different doses of ursodeoxycholic acid].
   PMID: 9922479; UI: 9912123

3. Al-Waili N, Saloom KY.
   The analgesic effect of intravenous tenoxicam in symptomatic treatment of biliary colic: a
   comparison with hyoscine N-butylbromide.
   PMID: 9753705; UI: 98428703

   Placebo in biliary colic study?
   PMID: 9742005; UI: 98410659
Repeat the search on gallstones and pain using the category therapy and the emphasis sensitivity. We should see higher retrieval.

Search screen:

Search Results using Therapy category and Sensitivity emphasis:


Journal Browser

The PubMed Journal Browser allows you to look up information about a journal in both PubMed and PubRef and search for citations from that journal. You can locate a journal using:

- Title
- ISSN (International Standard Serial Number)
- MEDLINE journal title abbreviations

How to get there

- Clicking on the Journal Browser link from the PubMed Homepage sidebar takes you to the Journal Browser screen:

Click on journals with links to publisher Web sites for a list of full-text journals available on the Web to which PubMed is currently linked. New journals are regularly added.

- Some journals may require that you register, subscribe, or pay a fee in order to view the full text of an article.
- Contact the journal publishers as noted on their individual Web sites for specific access information.
Journal Browser Screen:

- Enter the journal information.
- Click on Go button to run search.

Search example: *Journal of the National Cancer Institute*

![Journal of the National Cancer Institute search interface](image)

Search Results:

<table>
<thead>
<tr>
<th>Title</th>
<th>ISSN</th>
<th>Medline abbr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>JOURNAL OF THE NATIONAL CANCER INSTITUTE</td>
<td>0027-8434</td>
<td>NatCancerInet</td>
</tr>
</tbody>
</table>

- The **MEDLINE abbreviation** link will search PubMed for citations to that journal.

- The **ISSN** link will take you to a commercial journal Web site called PubList.com which provides further information about the journal.
Single Citation Matcher

The **Single Citation Matcher** allows you to find a single citation using bibliographic information such as journal, volume, issue, page number, and publication date.

The **Single Citation Matcher** can also be used to get a “Table of Contents” listing of items indexed from a particular issue of a journal. Caution: Remember some MEDLINE journals are selectively indexed and there are indexing policies which might mean that not every article from every journal will be in the database.

How to Get There

- Clicking on **Single Citation Matcher** on the PubMed homepage sidebar takes you to the Citation Matcher for Single Articles screen:

**Search Example:** *Gene Therapy*, 1999, page 271

- Enter as much information as you have. Only one field is required.

- PubMed will inform you if it can’t find a match with the information entered.

- Click on the **Search** button.
Search Result:

The **Batch Citation Matcher** allows you to retrieve the PubMed IDs for many articles all at once. This feature requires that you enter the bibliographic information (journal, volume, page, etc.) in a specific format.

The Batch Citation Matcher is primarily a tool used by publishers to check their electronic submissions and links.
Practice Exercises

Try to find the references using the following information and PubMed’s Single Citation Matcher:

1. Arthritis Rheum
   1982
   page 1271-7

2. R. G. Johnson
   Journal of Thoracic and Cardiovascular Surgery
   Jan. 1998
   page 148

3. V. Lee
   Biochemical Pharmacology
   vol. 29
   issue 14

4. Vojvoda
   Lancet
   Jan. 6
Suggested Answers

Try to find the references using the following information and PubMed’s Single Citation Matcher:

1. Arthritis Rheum
   1982
   page 1271-7

   Citation Matcher for Single Articles
   Enter information about the article you wish to find

   Journal: arthritis rheum

   Date: 1982

   Volume: [ ] Issue: [ ] First page: 1271

   Author's last name and initials (e.g., Smith BJ): [ ]

   Related Articles

2. R. G. Johnson
   Journal of Thoracic and Cardiovascular Surgery
   Jan. 1998
   page 148

   Citation Matcher for Single Articles
   Enter information about the article you wish to find.

   Journal: journal of thoracic and cardiovascular surgery

   Date: 1998/01

   Volume: [ ] Issue: [ ] First page: 148

   Author's last name and initials (e.g., Smith BJ): Johnson rg

   Related Articles
3. V. Lee  
   Biochemical Pharmacology  
   vol. 29  
   issue 14

Citation Matcher for Single Articles
Enter information about the article you wish to find.

Journal: biochemical pharmacology
Date: 
Volume: 29 Issue: 14 First page: 
Author's last name and initials (e.g., Smith BJ) lee v

☐ 1: D Cicco RA, Srivastava BI, FIREHART KL Jr, Lee YJ, 
Branham AR, Li LH.  
Structure-activity relationship, selectivity and mode of inhibition of 
terminal deoxynucleotidyltransferase by streptolydigin analogs. 
PMID: 6935561; UI: 80265281

4. Vojvoda  
   Lancet  
   Jan. 6

Citation Matcher for Single Articles
Enter information about the article you wish to find.

Journal: lancet
Date: 
Volume: Issue: 14 First page: 
Author's last name and initials (e.g., Smith BJ) vojavoda

☐ 1: Vojvoda D, Grimmell K, Sernyak M, Mazure CM.  
Monozygotic twins concordant for response to clozapine. 
PMID: 8531572; UI: 96129919