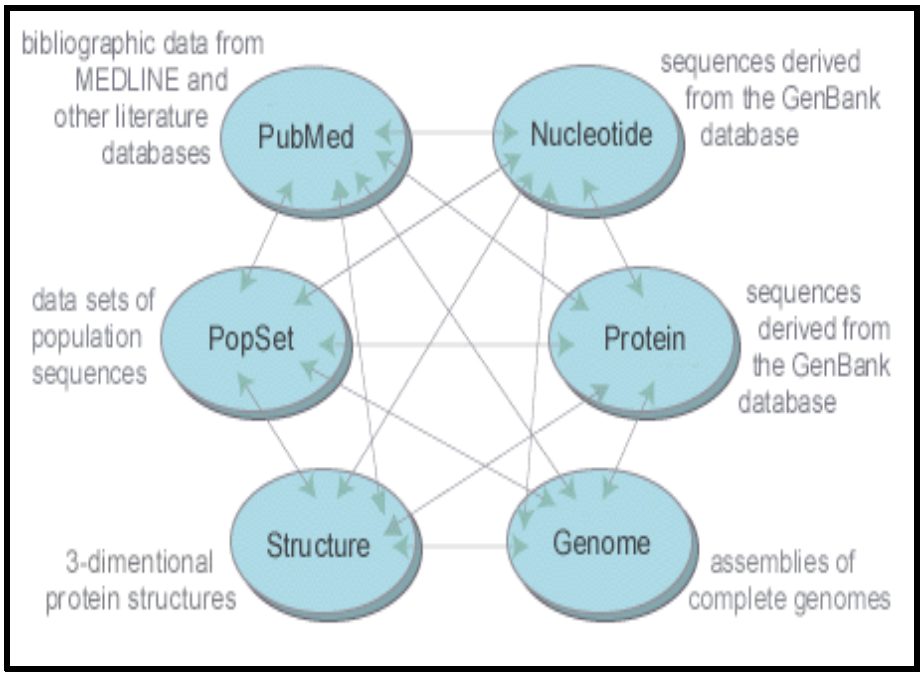
National Library of Medicine PubMed

**(http://www.ncbi.nlm.nih.gov/entrez/query.fcgi)**

- 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:



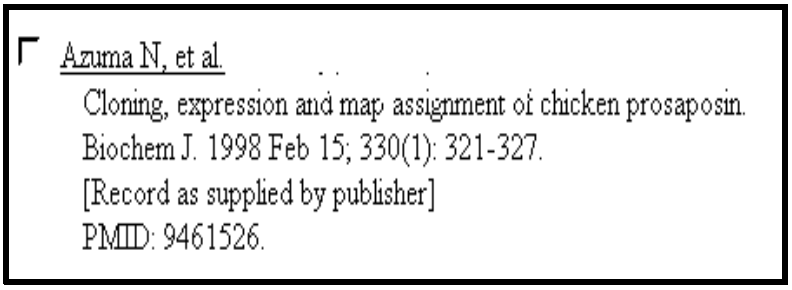
## Publisher Supplied Citations

- 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:**

*Notice the [Record as supplied by publisher] tag.*

*Notice the citation only has a PubMed Unique Identifier (PMID).*


Azuma N, et al.
Cloning, expression and map assignment of chicken prosaposin.
Biochem J. 1998 Feb 15; 330(1): 321-327.
[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:

*Notice the [MEDLINE record in process] tag.*

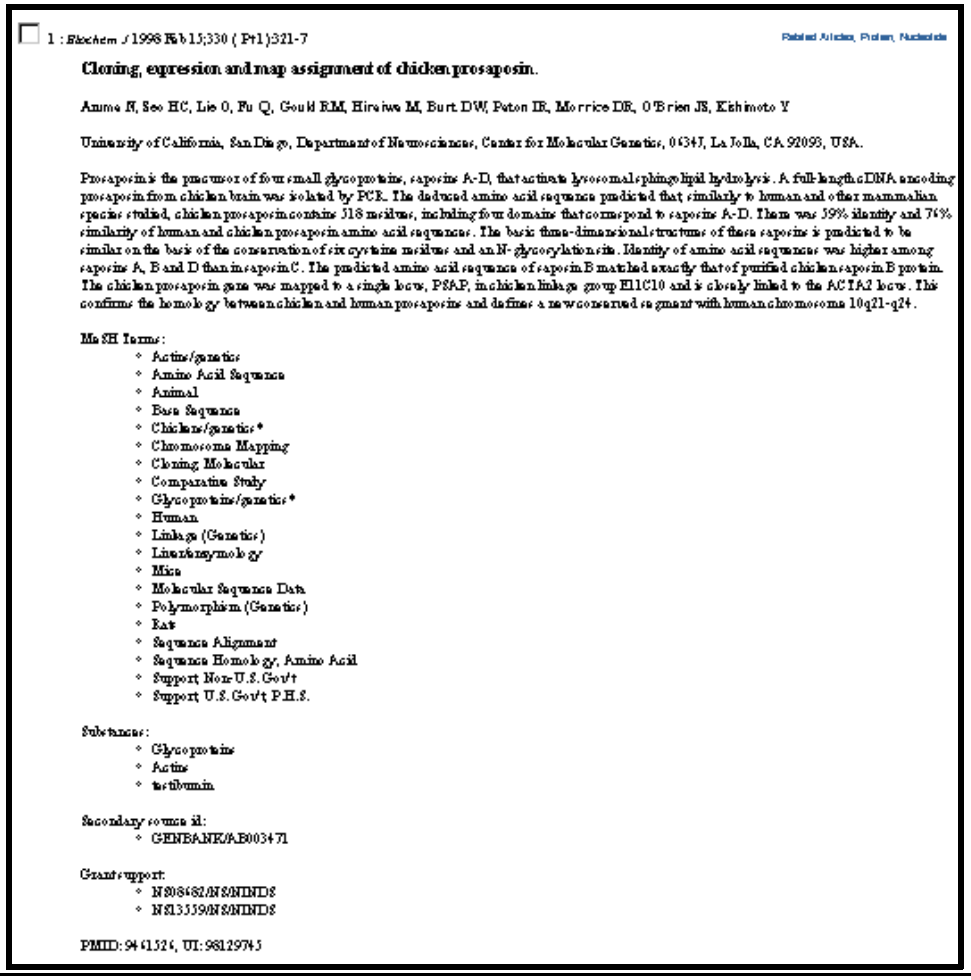
*Notice both PMID and UI.*

Azuma N, et al.
Cloning, expression and map assignment of chicken prosaposin.
Biochem J. 1998 Feb 15; 330( Pt 1): 321-327.
[MEDLINE record in process]
PMID: 9461526; UI: 98129745.

## 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:**



1 : Biochem J 1998 Feb 15;330 ( Pt1):321-7 Related Articles, Protein, Nucleotide

**Cloning, expression and map assignment of chicken prosaposin.**

Anuma N, Seo HC, Lie O, Fu Q, Gould RM, Hiraiwa M, Burt DW, Paton IR, Morrice DR, O'Brien JS, Kishimoto Y

University of California, San Diego, Department of Neurosciences, Center for Molecular Genetics, 0634J, La Jolla, CA 92093, USA.

Prosaposin is the precursor of four small glycoproteins, saposins A-D, that activate lysosomal sphingolipid hydrolysis. A full-length cDNA encoding prosaposin from chicken brain was isolated by PCR. The deduced amino acid sequence predicted that, similarly to human and other mammalian species studied, chicken prosaposin contains 518 residues, including four domains that correspond to saposins A-D. There was 59% identity and 76% similarity of human and chicken prosaposin amino acid sequences. The basic three-dimensional structures of these saposins is predicted to be similar on the basis of the conservation of six cysteine residues and an N-glycosylation site. Identity of amino acid sequences was higher among saposins A, B and D than in saposin C. The predicted amino acid sequence of saposin B matched exactly that of purified chicken saposin B protein. The chicken prosaposin gene was mapped to a single locus, PSAP, in chicken linkage group E11C10 and is closely linked to the ACTA2 locus. This confirms the homology between chicken and human prosaposins and defines a new conserved segment with human chromosome 10q21-q24.

MeSH Terms:
- Actins/genetics
- Amino Acid Sequence
- Animal
- Base Sequence
- Chickens/genetics*
- Chromosome Mapping
- Cloning, Molecular
- Comparative Study
- Glycoproteins/genetics*
- Human
- Linkage (Genetics)
- Liver/enzymology
- Mice
- Molecular Sequence Data
- Polymorphism (Genetics)
- Rats
- Sequence Alignment
- Sequence Homology, Amino Acid
- Support, Non-U.S. Gov't
- Support, U.S. Gov't, P.H.S.

Substances:
- Glycoproteins
- Actins
- activumin

Secondary source id:
- GENBANK/AB003471

Grants, support:
- NS08682/NS/NINDS
- NS13539/NS/NINDS

PMID: 9461524, UI: 98129745

## Other Publisher Supplied Citations

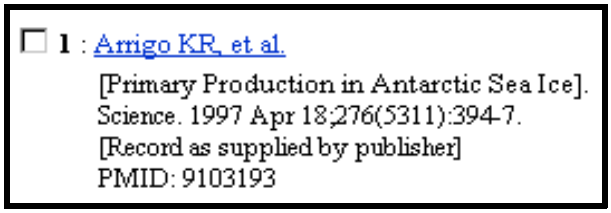
- Some of the citations received electronically from publishers may never become MEDLINE citations.
- These records are assigned Unique Identifiers but are never assigned MeSH terms because they never go through the indexing process.
- These records will carry the notation **[Record as supplied by publisher]**.
- 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.

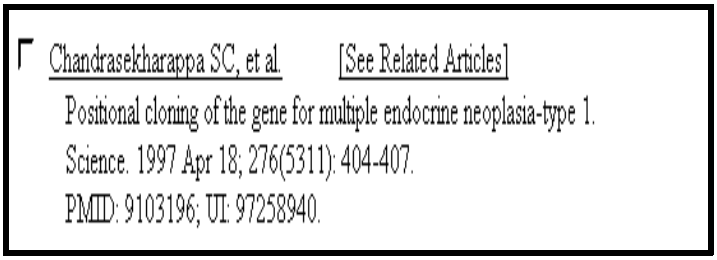
**Sample of an out-of-scope article from a selectively indexed electronically submitted MEDLINE journal that remains in PubMed:**

*Notice the publisher-supplied tag. PubMed UI tag.*




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

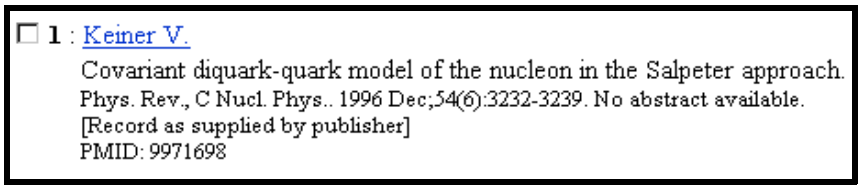
*Both Unique Identifier Tags.*



## 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:**

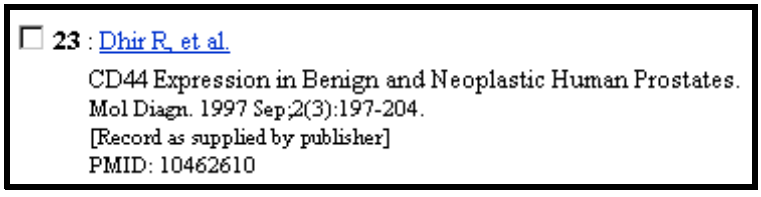

1 : Keiner V.
Covariant diquark-quark model of the nucleon in the Salpeter approach.
Phys. Rev., C Nucl. Phys.. 1996 Dec;54(6):3232-3239. No abstract available.
[Record as supplied by publisher]
PMID: 9971698

## 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.

*Notice that this citation is from volume 2, 1997.*


23 : Dhir R, et al.
CD44 Expression in Benign and Neoplastic Human Prostates.
Mol Diagn. 1997 Sep;2(3):197-204.
[Record as supplied by publisher]
PMID: 10462610

## Future Database Additions

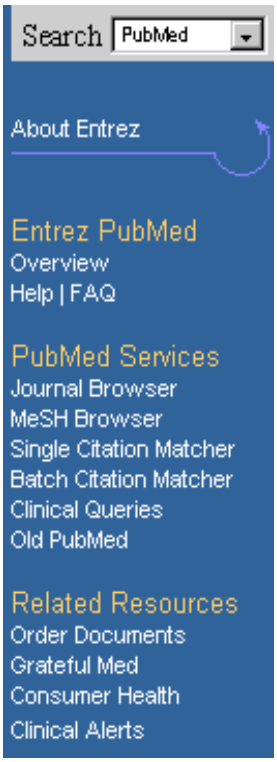
- It is NLM's intent to have all of its databases accessible via the Web.
- Journal and journal-like citations from HealthSTAR moved into PubMed in June 1999. The unique journal and journal-like citations from AIDSLINE will be moved into PubMed next.
- Monographic and audiovisual citations and serial records are now available via NLM's Web-based Online Public Access Catalog (OPAC), called LOCATOR*plus* (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, LOCATOR*plus*, a new full text retrieval system that will include information such as conference abstracts, and MEDLINE*plus*. 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.

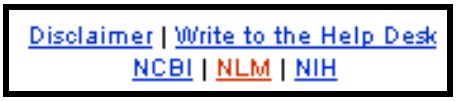
### PubMed Services

- 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 MEDLINE*plus*, 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 Matcher**s

**Take Note:**

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.

**N O T E S**

# 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:**


**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:**


**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:**


**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

- 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:** drug therapy asthma children

| **Searches for:** | **Results:** | **Action:** |
|---|---|---|
| drug therapy asthma children | No match found | Removes term on right to re-run Automatic Term Mapping process. |
| drug therapy asthma | No match found | Removes term on right to re-run Automatic Term Mapping process. |
| drug therapy | Match found in MeSH Translation Table | ***drug therapy*** will be searched as ***drug therapy [Subheading] OR drug therapy [MeSH Terms] OR drug therapy [Text Word].*** |
| asthma children | No match found | Removes term on right to re-run Automatic Term Mapping process. |
| asthma | Match found in MeSH Translation Table | ***asthma*** will be searched as ***Asthma [MeSH Terms] OR asthma [Text Word].*** |
| children | Match found in MeSH Translation Table | ***children*** will be searched as ***Child [MeSH Terms] OR children [Text Word].*** |

**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])

**Take Note:**

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.

**Search Tip:**

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


- Your phrase may actually appear in the citation and abstract data, but may ***not*** appear in ***either*** the Phrase List or the Index. If this is the case, then the individual terms are combined (ANDed) together and searched in All Fields.

**Take Note:**

When you enclose a phrase in double quotes, PubMed will ***not*** 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.

**Take Note:**

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
and
another
any
anyhow
anyone
anything
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
cc
cm
come
compare
could
de
dealing
department
depend
did
discover
dl
do
does
done
due
during
each
ec
ed
effected
eg
either
else
elsewhere
enough
especially
et
etc
ever
every
everyone
everything
everywhere
except
find
for
found
from
further
gave
get
give
go
gone
got
gov
had
has
have
having
he
hence
her
here
hereafter
hereby
herein
hereupon
hers
herself
him
himself
his
how
however
hr
i
ie
if
ii
iii
immediately
importance
important
in
inc
incl
indeed
into
investigate
is
it
its
itself
just
keep
kept
kg
km
last
latter
latterly
lb
ld
letter
like
ltd
made
mainly
make
many
may
me
meanwhile
mg
might
ml
mm
mo
more
moreover
most
mostly
mr
much
mug
must
my
myself
namely
nearly
necessarily
neither
never
nevertheless
next
no
nobody
noone
nor
normally
nos
not
noted
nothing
now
nowhere
obtained
of
off
often
on
only
onto
or
other
others
otherwise
ought
our
ours
ourselves
out
over
overall
owing
own
oz
particularly
per
perhaps
pm
precede
predominantly
present
presently
previously
primarily
promptly
pt
quickly
quite
rather
readily
really
recently
refs
regarding
relate
said
same
seem
seemed
seeming
seems
seen
seriously
several
shall
she
should
show
showed
shown
shows
significantly
since
slightly
so
some
somehow
someone
something
sometime
sometimes
somewhat
somewhere
soon
specifically
still
strongly
studied
sub
substantially
such
sufficiently
take
tell
th
than
that
the
their
theirs
them
themselves
then
thence
there
thereafter
thereby
therefore
therein
thereupon
these
they
this
thorough
those
though
through
throughout
thru
thus
to
together
too
toward
towards
try
type
ug
under
unless
until
up
upon
us
use
used
usefully
usefulness
using
usually
various
very
via
was
we
were
what
whatever
when
whence
whenever
where
whereafter
whereas
whereby
wherein
whereupon
wherever
whether
which
while
whither
who
whoever
whom
whose
why
will
with
within
without
wk
would
wt
yet
you
your
yours
yourself
yourselves
yr

## Search Results Screen

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

- Run the search
- Retrieve and display citations

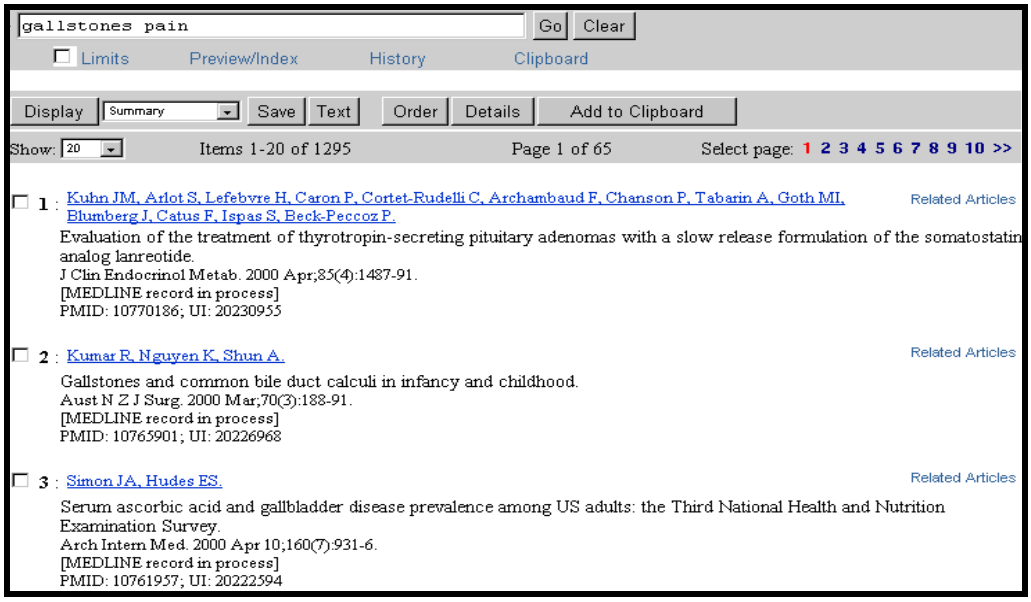
The following is the Results screen returned by PubMed for the search example of :

**Citations to articles about experiencing pain due to gallstones.**

*Live **query box** displaying current search.*

***Display** options*
***Show** pull-down*
***Save** button*
***Text** button*
***Order** button*
***Details** button*
***Add to Clipboard** button*

*Citations are displayed in the **Summary** format.*




**See next page for further explanation.**

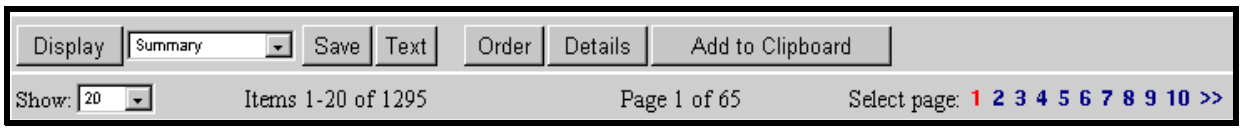
# Results Screen

## Query Box containing Current Search


- 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

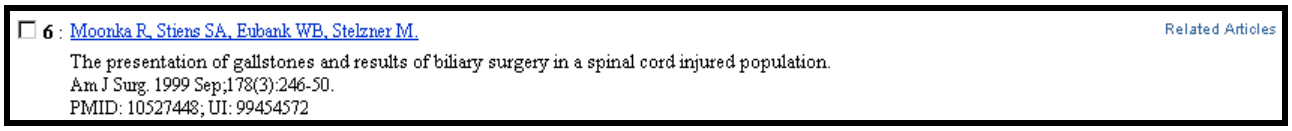
- These options are available both at the top and the bottom of the Results screens.
- The following workbook pages will explain each function.



# Display Options

## Summary Format

PubMed citations are initially displayed in the **Summary** format.


6 : Moonka R, Stiens SA, Eubank WB, Stelzner M. Related Articles
The presentation of gallstones and results of biliary surgery in a spinal cord injured population.
Am J Surg. 1999 Sep;178(3):246-50.
PMID: 10527448; UI: 99454572

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:

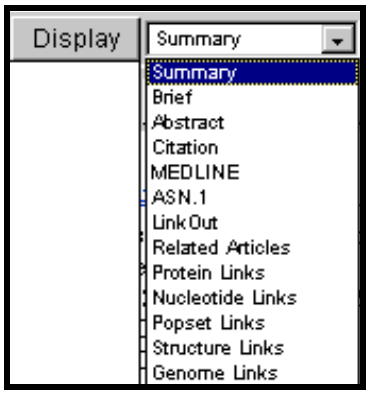
- **Individual Citations**: Clicking on the Author name hyperlink will display the citation in the default Abstract Report format.

- **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

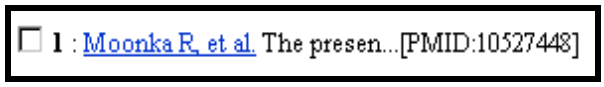
The pull-down menu next to the **Display** button allows the user to select available display formats:




**Take Note:**

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

## Brief Format



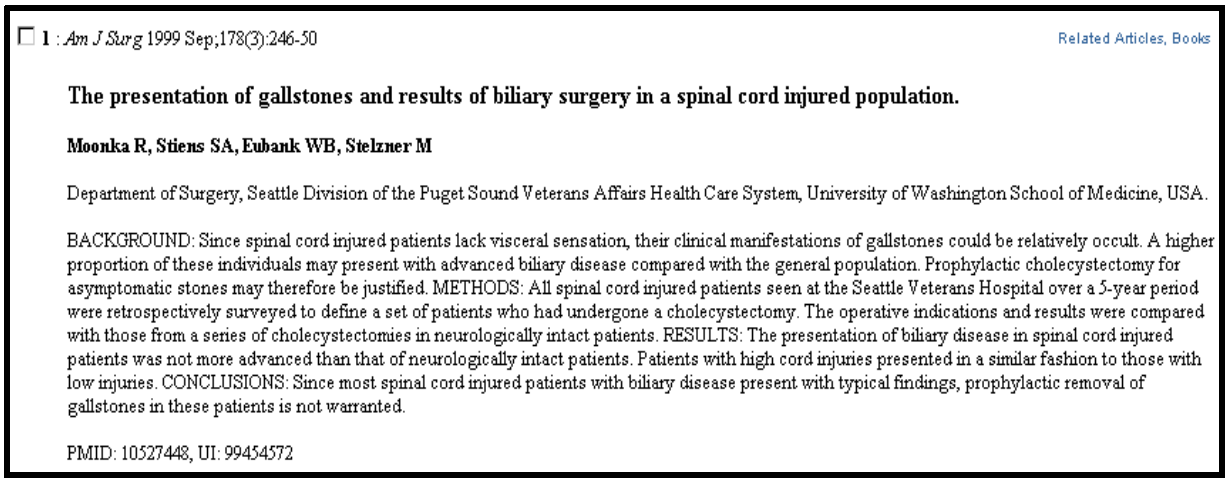

A citation displayed in the brief format includes:

- 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



1. 1 : *Am J Surg* 1999 Sep;178(3):246-50 Related Articles, Books
2. **The presentation of gallstones and results of biliary surgery in a spinal cord injured population.**
3. **Moonka R, Stiens SA, Eubank WB, Stelzner M**
4. Department of Surgery, Seattle Division of the Puget Sound Veterans Affairs Health Care System, University of Washington School of Medicine, USA.
5. 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.
6. PMID: 10527448, UI: 99454572

**Legend:**

1. Journal Source
2. Title
3. Authors
4. Author Affiliation (Address)
5. Abstract
6. PubMed and MEDLINE Unique Identifiers

## Citation

Provides the following information:

- Journal Source
- If necessary, [Record supplied by publisher] or [MEDLINE record in process] tags
- Title
- On non-English language articles, [Article in *language*] tag
- Authors
- Address or affiliation of first author
- Abstract (if present)
- Publication Types (except for the Journal Article pub. type)
- Erratum strings from Title rubrics
- Comments
- MeSH Terms
- Personal Name as Subject
- Chemical substances (if present)
- Grant numbers (if present)
- PubMed and MEDLINE Unique Identifiers

☐ 1 : *Am J Surg* 1999 Sep;178(3):246-50 Related Articles, Books

**The presentation of gallstones and results of biliary surgery in a spinal cord injured population.**

**Moonka R, Stiens SA, Eubank WB, Stelzner 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.

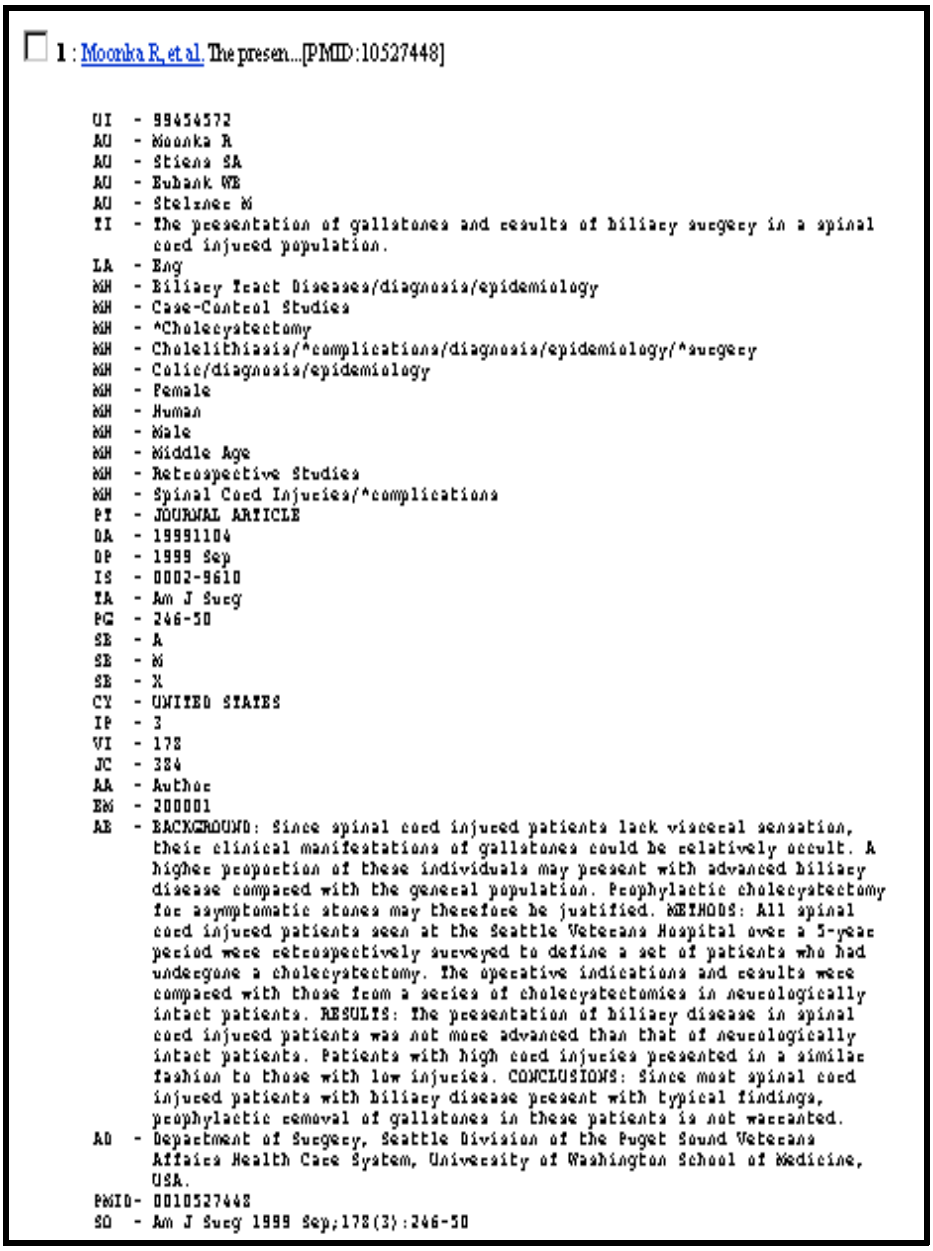
MeSH Terms:

- Biliary Tract Diseases/epidemiology
- Biliary Tract Diseases/diagnosis
- Case-Control Studies
- Cholecystectomy*
- Cholelithiasis/surgery*
- Cholelithiasis/epidemiology
- Cholelithiasis/diagnosis
- Cholelithiasis/complications*
- Colic/epidemiology
- Colic/diagnosis
- Female
- Human
- Male
- Middle Age
- Retrospective Studies
- Spinal Cord Injuries/complications*

PMID: 10527448, UI: 99454572

## MEDLINE

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



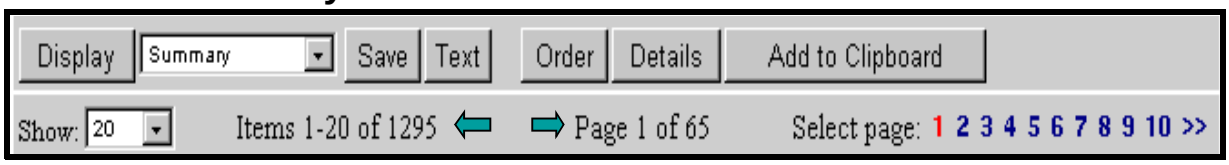
1 : Moonka R, et al. The presen...[PMID:10527448]

```
UI  - 99454572
AU  - Moonka R
AU  - Stiens SA
AU  - Bubank WE
AU  - Stelzner M
TI  - The presentation of gallstones and results of biliary surgery in a spinal
      cord injured population.
LA  - Eng
MH  - Biliary Tract Diseases/diagnosis/epidemiology
MH  - Case-Control Studies
MH  - *Cholecystectomy
MH  - Cholelithiasis/*complications/diagnosis/epidemiology/*surgery
MH  - Colic/diagnosis/epidemiology
MH  - Female
MH  - Human
MH  - Male
MH  - Middle Age
MH  - Retrospective Studies
MH  - Spinal Cord Injuries/*complications
PT  - JOURNAL ARTICLE
DA  - 19991104
DP  - 1999 Sep
IS  - 0002-9610
TA  - Am J Surg
PG  - 246-50
SB  - A
SB  - M
SB  - X
CY  - UNITED STATES
IP  - 3
VI  - 178
JC  - 384
AA  - Author
EM  - 200001
AB  - 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.
AD  - Department of Surgery, Seattle Division of the Puget Sound Veterans
      Affairs Health Care System, University of Washington School of Medicine,
      USA.
PMID- 10510527448
SO  - Am J Surg 1999 Sep;178(3):246-50
```

**Take Note:**

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

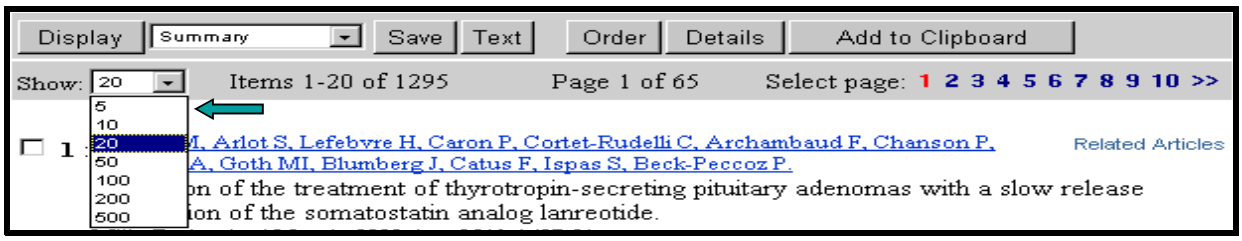
## Retrieval Summary




- 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).

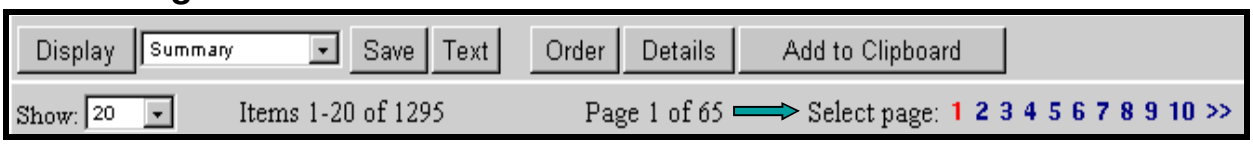
## Show pull-down menu

- PubMed displays search results in batches of 20 citations per page.



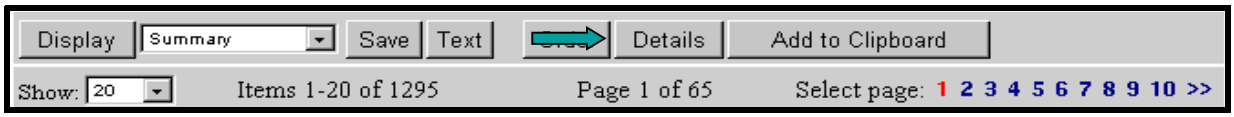

- Click on the Show pull-down menu to select a high/lower number and then click Display.

## 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.

## Details




- 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**.**

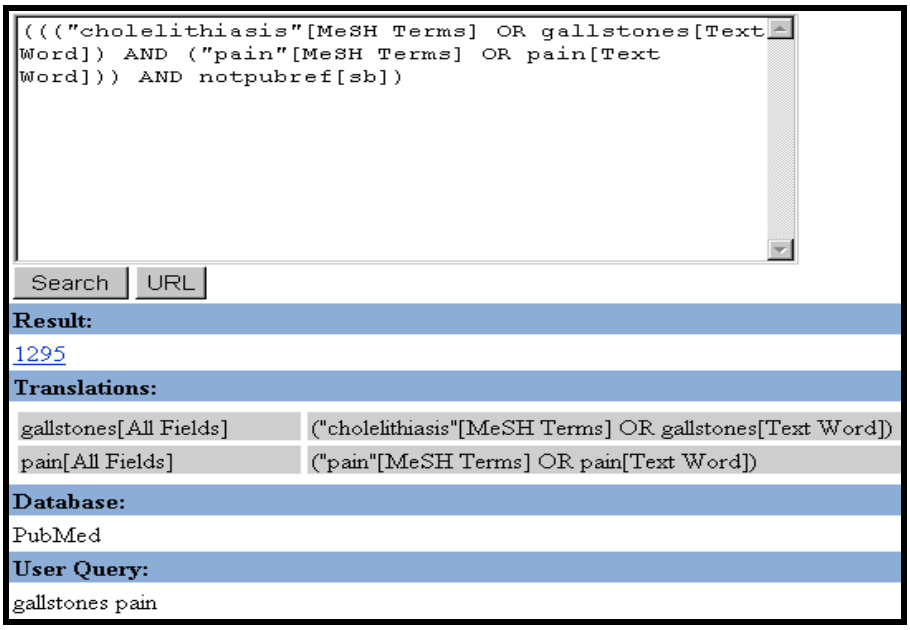
**Here's a closer look at Details :**

*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***



**Take Note:**

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.

## 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

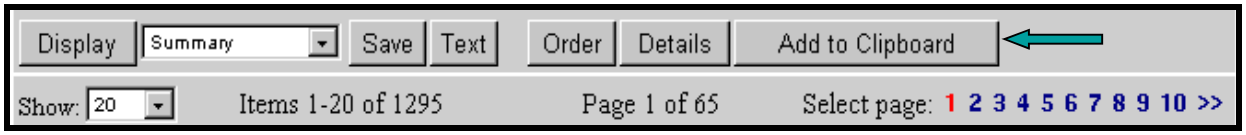
If you wish to run a search periodically to retrieve recent information since you last ran the search, you can:

- 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.).

**Take Note:**

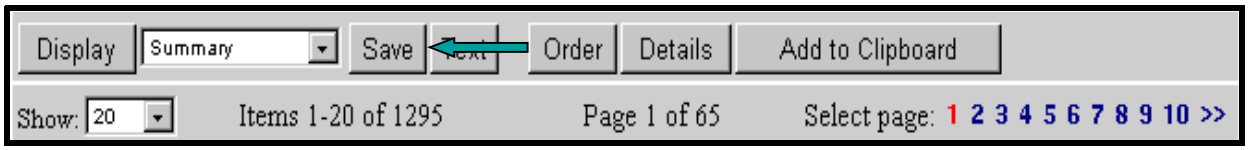
***Caution:*** Be aware that the Entrez Date will remain unchanged and is not updated to reflect the date a Publisher Supplied [Record as supplied by publisher] record is elevated to PREMEDLINE or when a PREMEDLINE [MEDLINE record in process] record is elevated to MEDLINE. Therefore, use caution when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

## 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

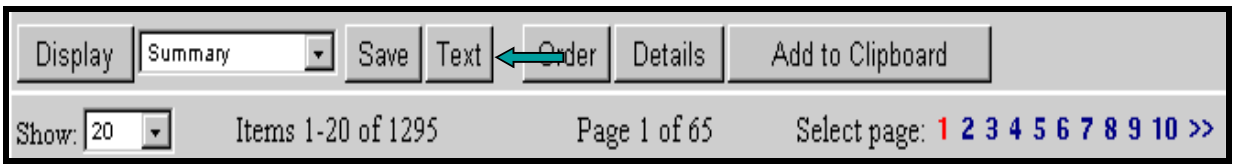



- To **save your entire set of search results**, use the Display pull-down menu to select the desired format, click **Save**. This option saves the entire set of search results in the display format selected.
- To mark **selected citations to save**, click on the check-box to the left of each citation 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.

**Take Note:**

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.

## Text

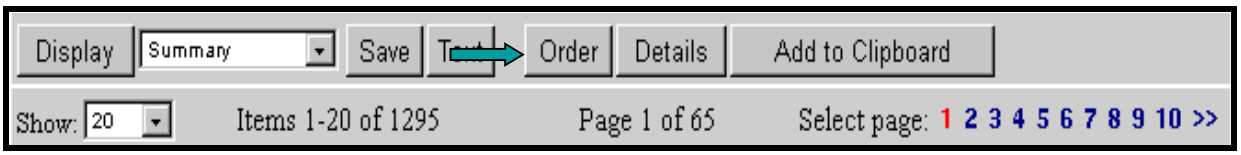



- Use Text to redisplay citations using just the text of the records and omitting the Web or HTML components. When finished with the text display, use your Web browser's Back button to return to your results in HTML.
- You may want to print via your Web browser using this feature so you do not print 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.

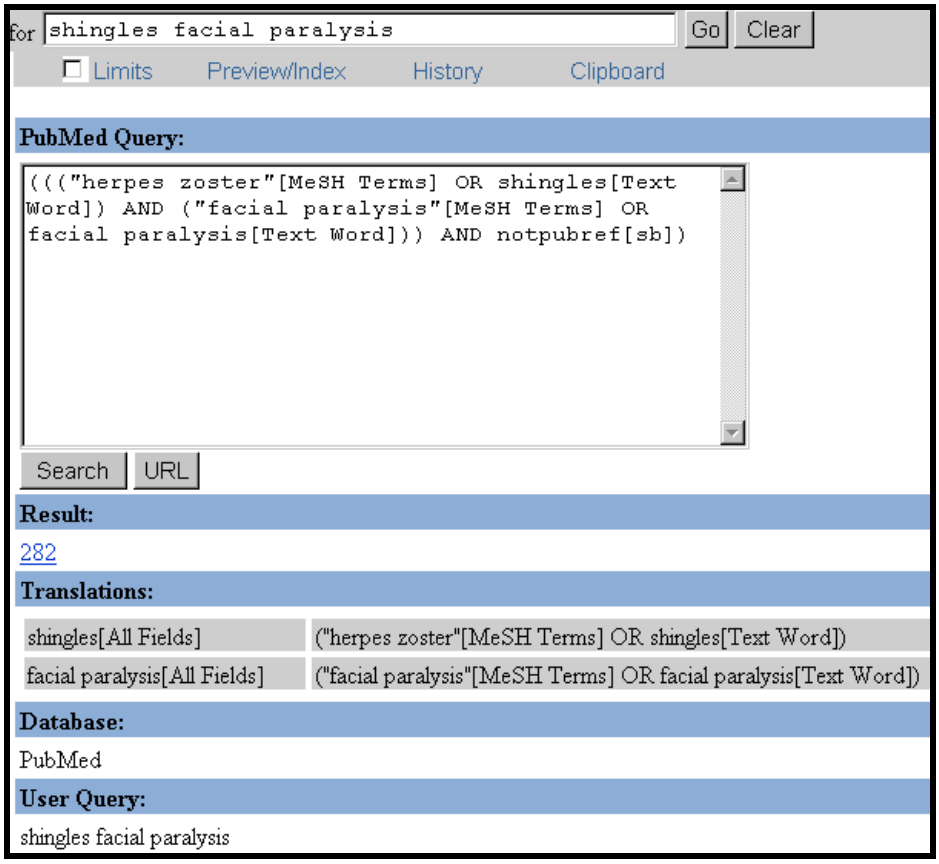
3. Find references about injuries from backpacks or backpacking. Save this search strategy so the search can be run again at a later date.

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?

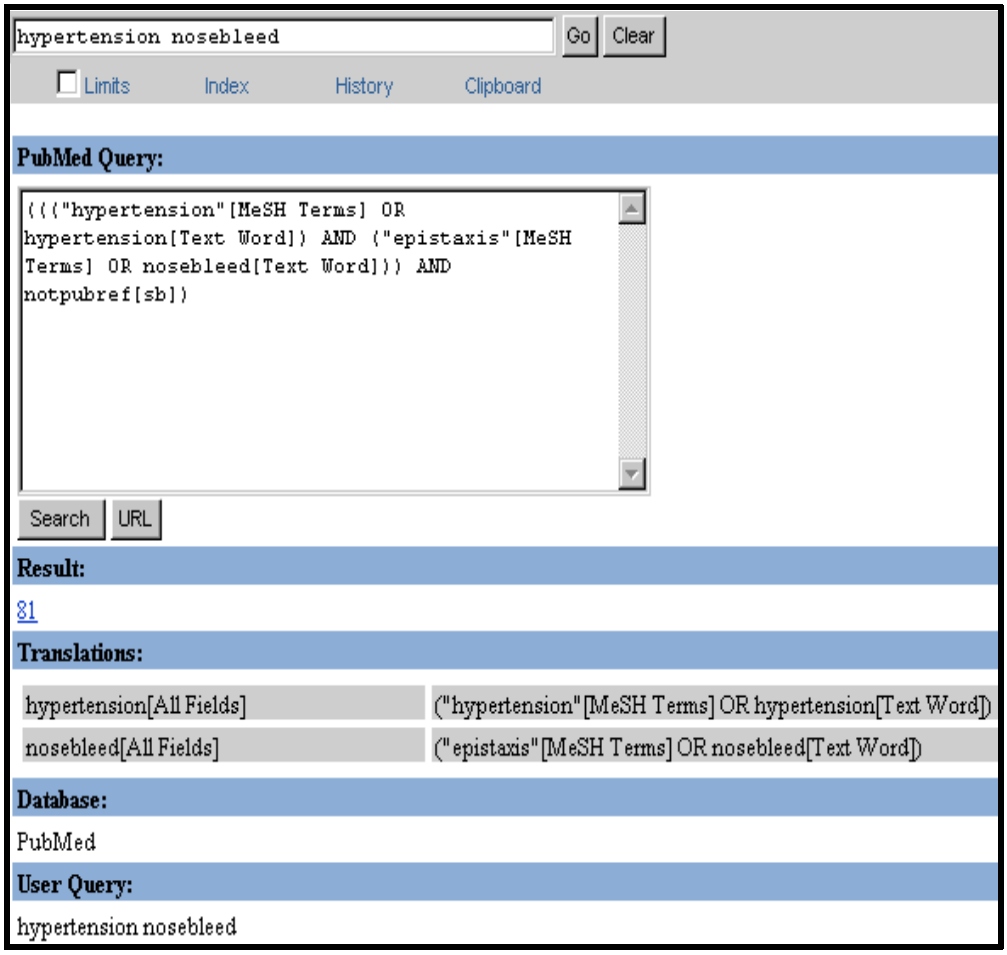
**Details:**




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:**



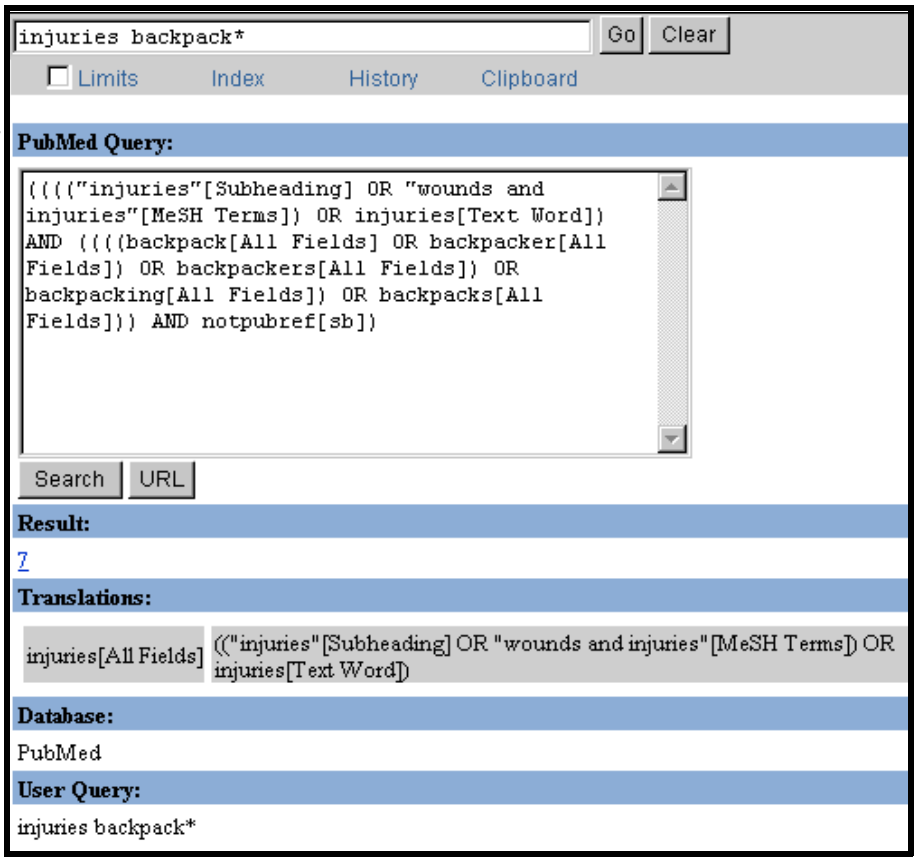

The term, nosebleed, maps to the MeSH heading, **epistaxis**. From the **Show pull-down** menu, choose a number higher than your final retrieval set in order to display all the records on one Web page.

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:*

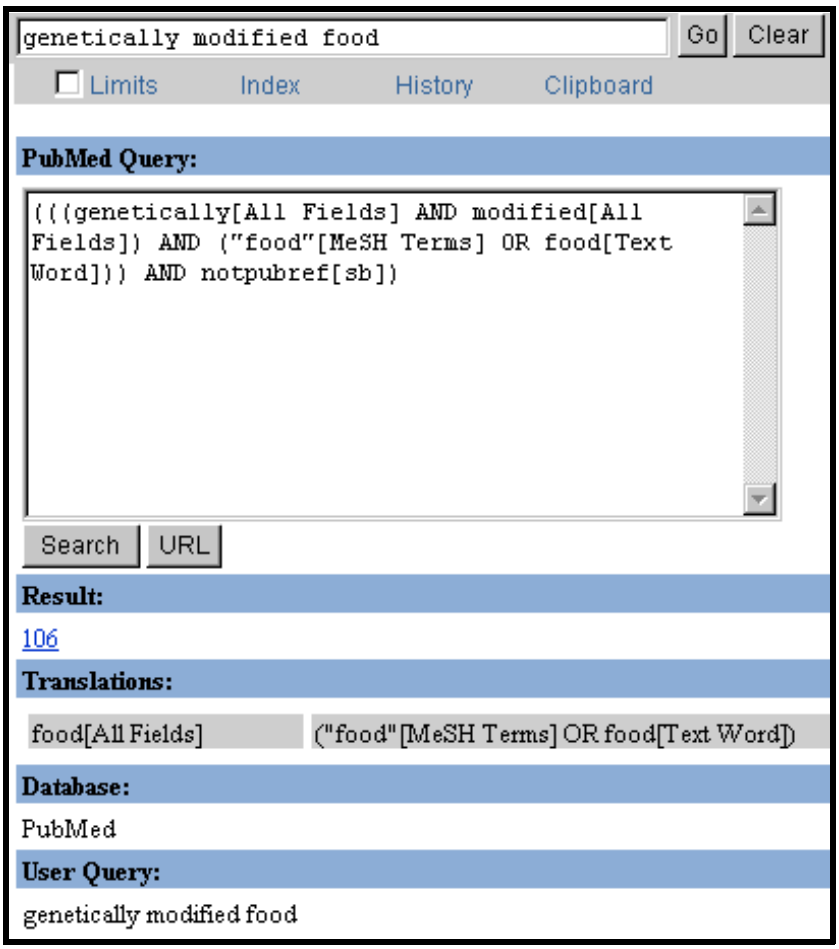
*backpack*
*backpacker*
*backpackers*
*backpacking*
*backpacks*




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:**



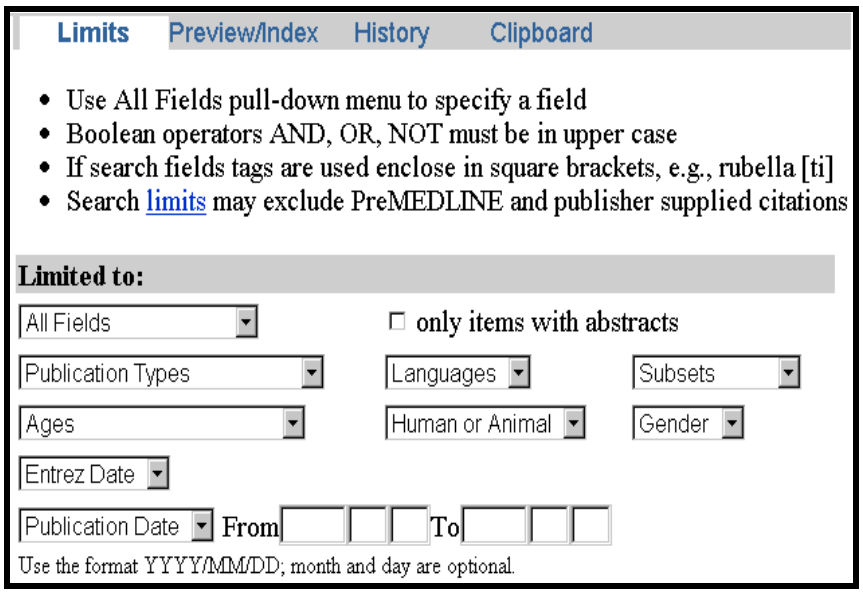

Use the **Abstract** display to display the records with abstracts (if present) but not MeSH headings.

**N O T E S**

## Features Bar


The Features Bar allow you to select several additional functions.

## Limits



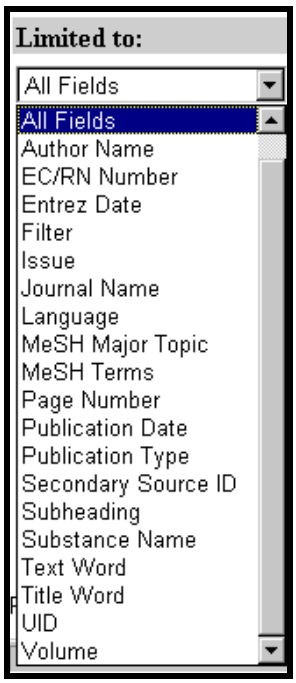

**Take Note:**

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.

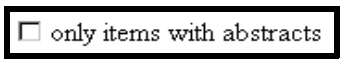
## Field Selection

- 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.



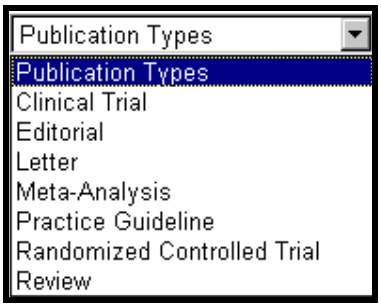

## Only items with abstracts

- 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.

### Ages

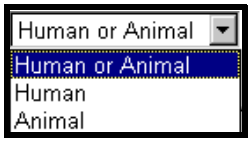
- To select a specific age group for human studies, click on the Ages pull-down menu.


### Gender

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

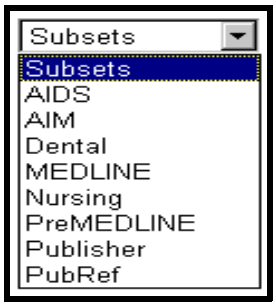

### Human or Animal

- 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.

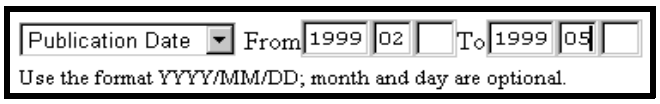
## Limiting by Dates

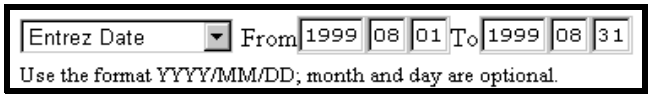
- Use the Entrez Date pull-down menu to limit your search back in time from 30 days to 10 years.


- 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:**



## Limits Indicator


- 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:


**Take Note:**

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.

## Preview/Index


*This page is home to two functions: Preview and Index*

Use Preview/Index to:

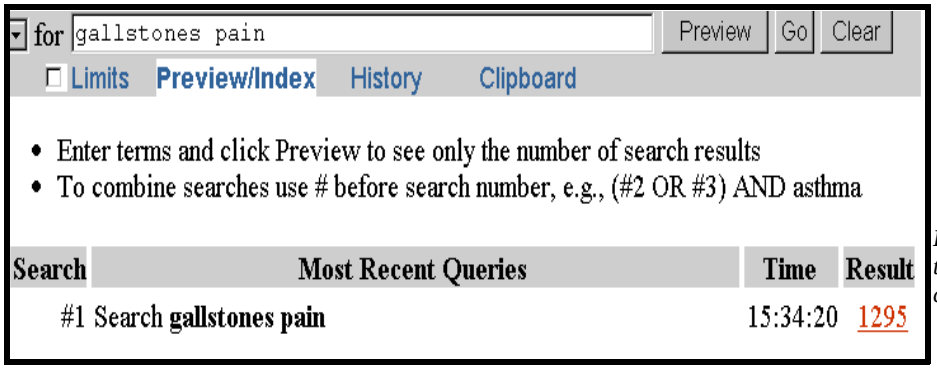
✓ Preview the number of search results before displaying the citations.
✓ Refine search strategies by adding one or more terms one at a time.
✓ Add terms to a strategy from specific search fields.
✓ View and select terms from the Index to develop search strategies.
✓ View your search strategy as you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

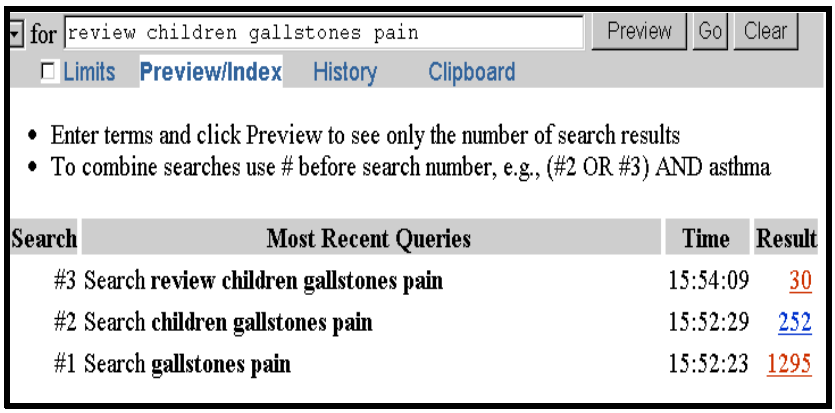



***Result** shows the number of citations.*

## 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.*




**Take Note:**

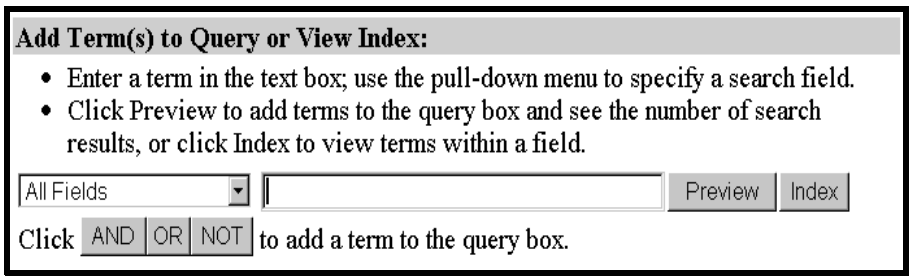
**Preview** displays the last three queries from History. Use History to review up to the last 100 queries. The Clear History button in History also clears the history information in Preview/Index.

**Take Note:**

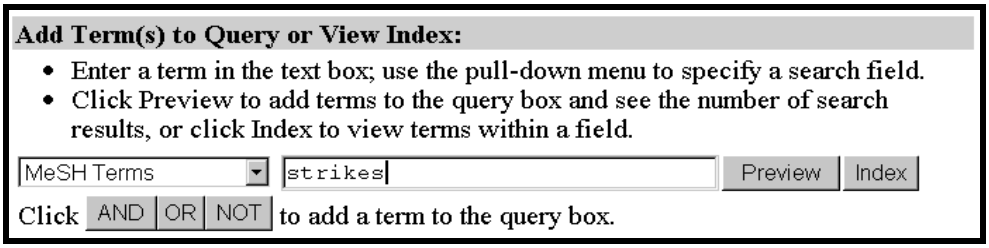
History will be lost after one hour of inactivity on PubMed.

## 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.



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

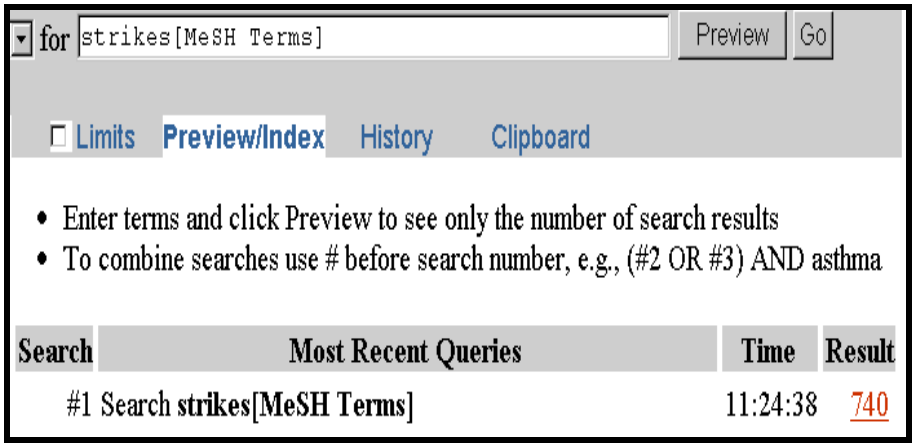



- Click **Preview** to add terms to the query box and see the number of search results.

***Query box*** *shows search term and field.*

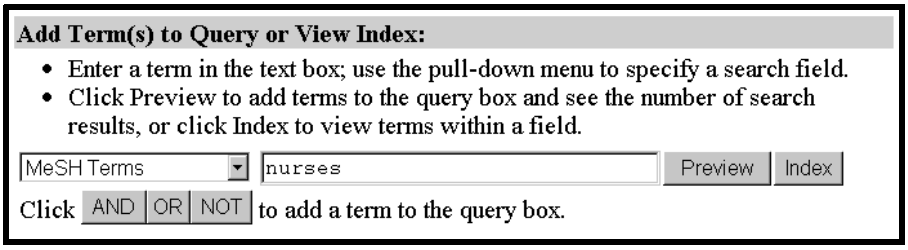
***Strikes*** *is an entry term for the preferred MeSH heading of* ***Strikes, Employee****.*

***Result*** *shows number of citations.*




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

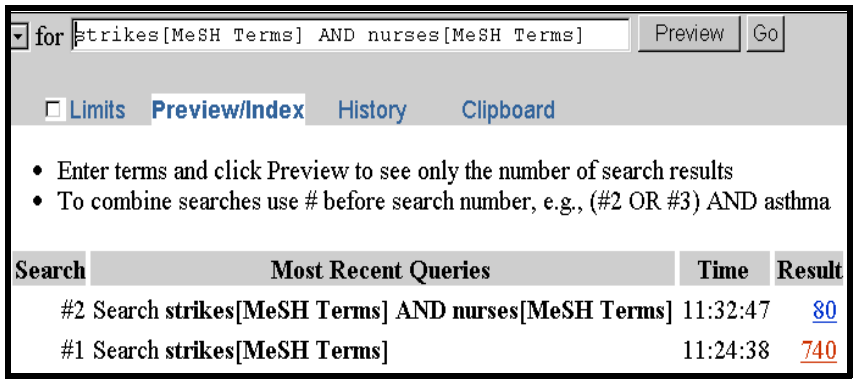
- Use the pull-down menu to specify a search field.
- Add another term to the text box.



- Click **Preview**.
- Continue adding terms and clicking **Preview** until your strategy is complete.
- View your search strategy as you continue to refine your search.

***Query box*** *shows search terms and fields.*

***Results*** *shows number of citations.*

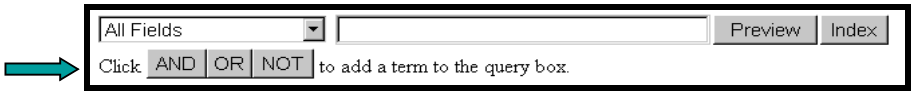



**Take Note:**

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

### Using Boolean operator buttons

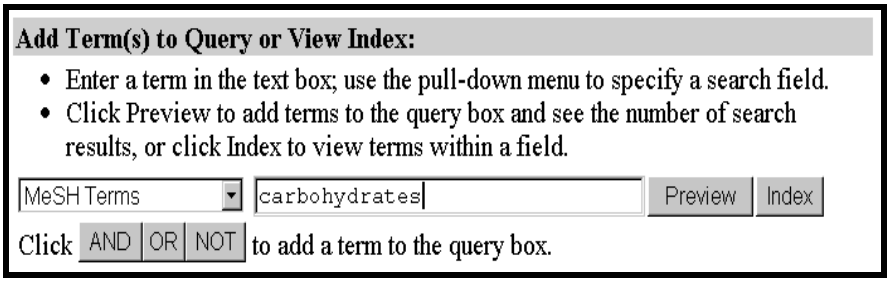
Use the **Boolean operators** to combine search terms as needed. With the Boolean operators, your search terms are added to the PubMed query box, but you must click Preview to see the number of results.




Search example:

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

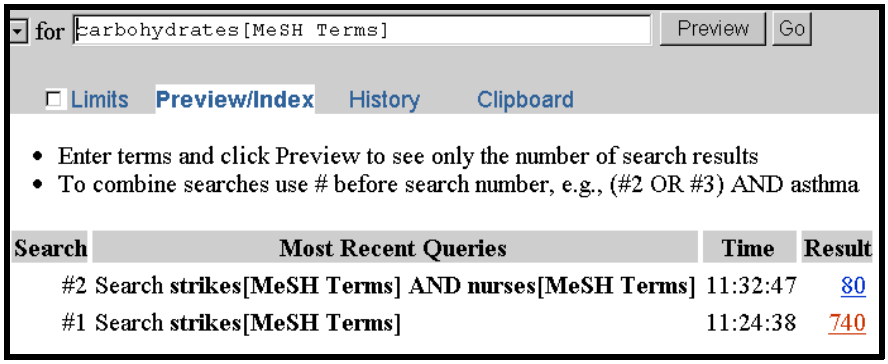
- Use the pull-down menu to specify a search field.
- Add a term to the text box.




- Click the **AND** button.

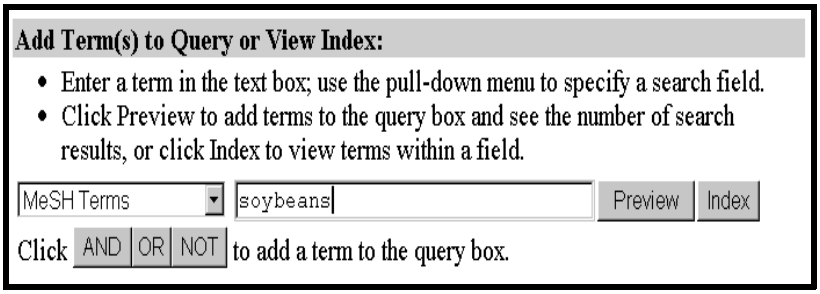
***Query box*** *shows the search term and field.*

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




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.

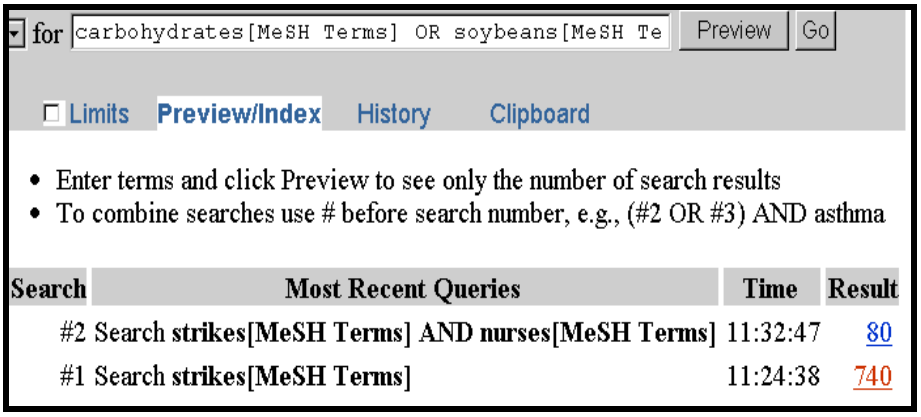
- Use the pull-down menu to specify a search field.
- Add another term to the text box.




- Click the **OR** button.

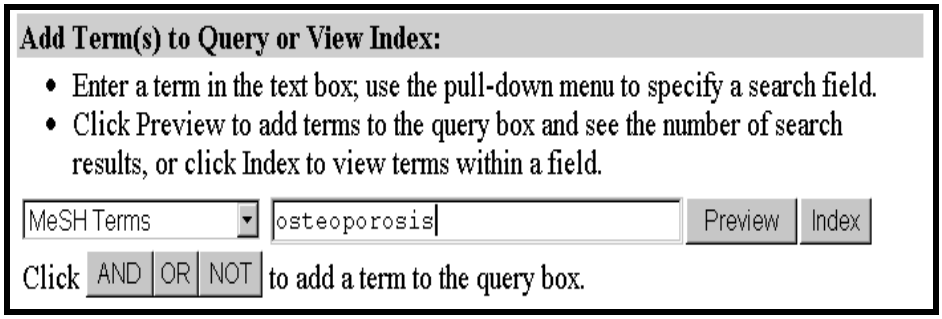
*Soybeans [MeSH Terms] is added to the **Query box** with the **OR** operator.*

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




Let's add our last term to the strategy.

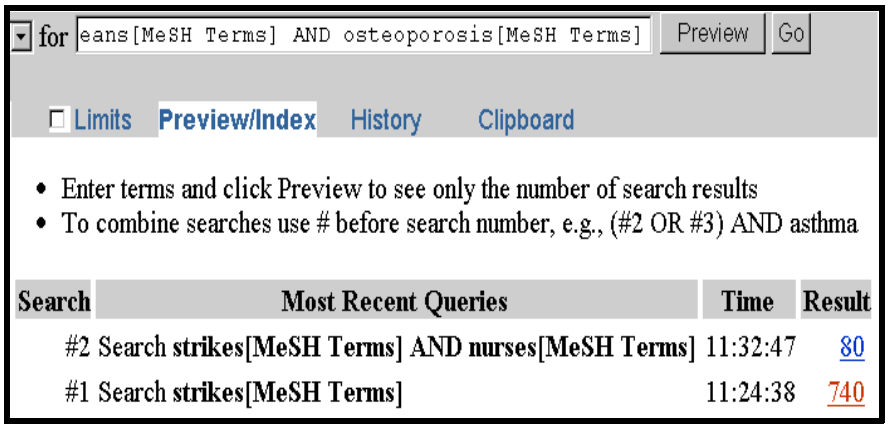
- Use the pull-down menu to specify a search field.
- Add the last term to the text box.



- Click the **AND** button.

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

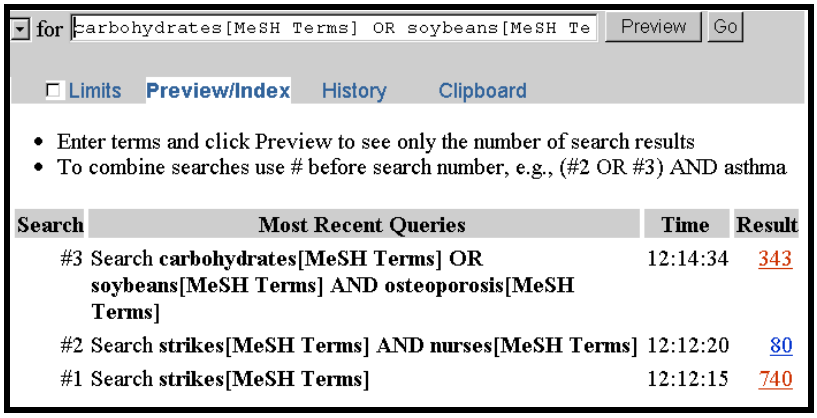
*But the search has not been previewed and the number of results are not shown.*




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

***Query box** shows search terms, search fields and Boolean operators.*

***Result** shows number of citations.*



# 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

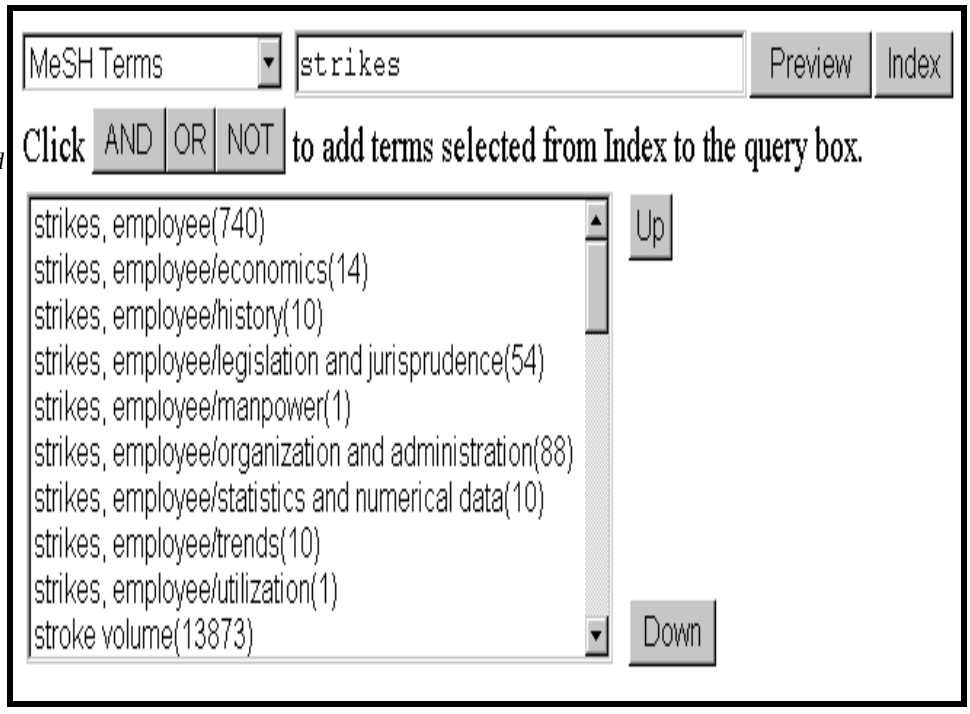
Let's select **MeSH Terms** from the pull-down menu, type in the term, **strikes** and click on the **Index** button.

*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.*

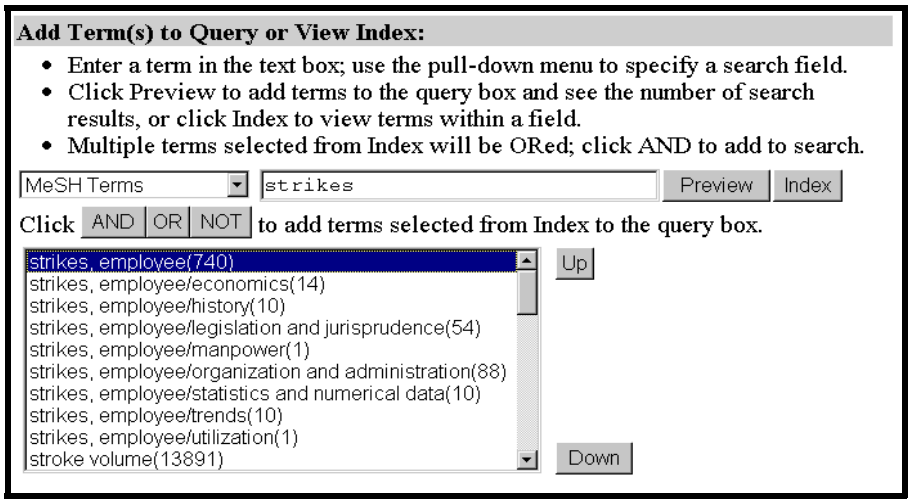
*To scroll up or down the entire Index for the field, click the **Up** or **Down** buttons.*

.



## Selecting a term from the Index

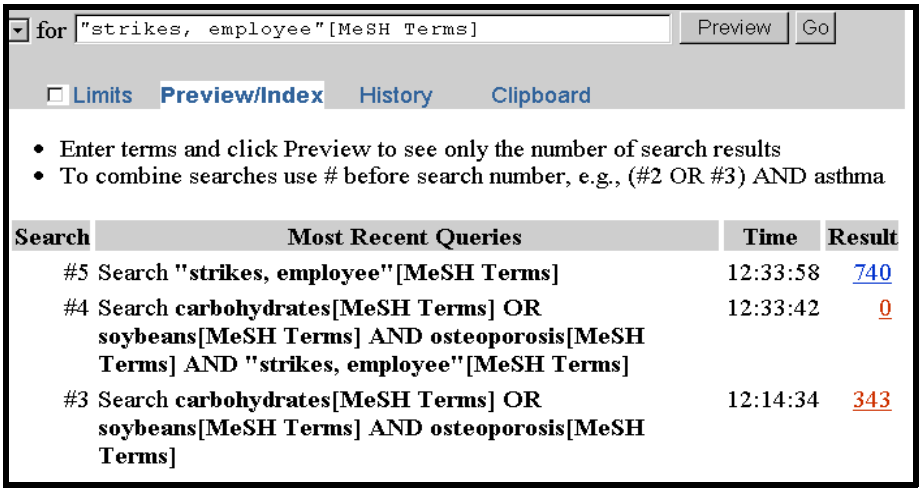
- Click on the term(s) to highlight it.




- 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.*




**Take Note:**

**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.

**Search Tip:**

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.

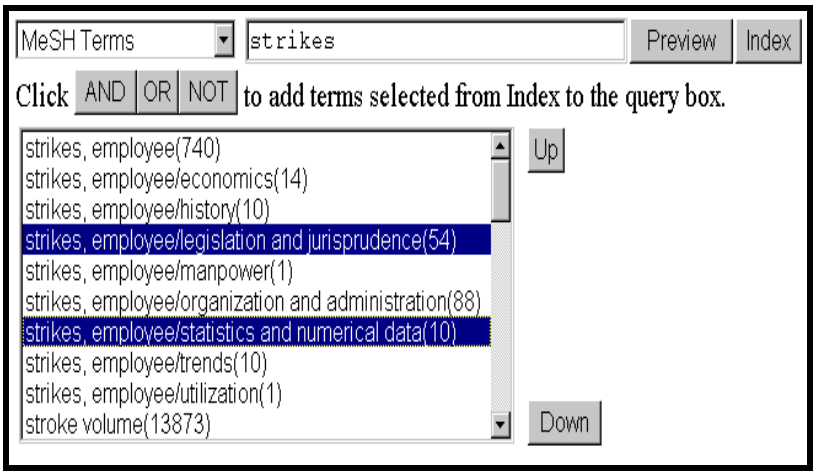
Search example:

- 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.

*Holding down the Ctrl or Command key; click to highlight **the terms**.*

*Click on the **AND** button.*

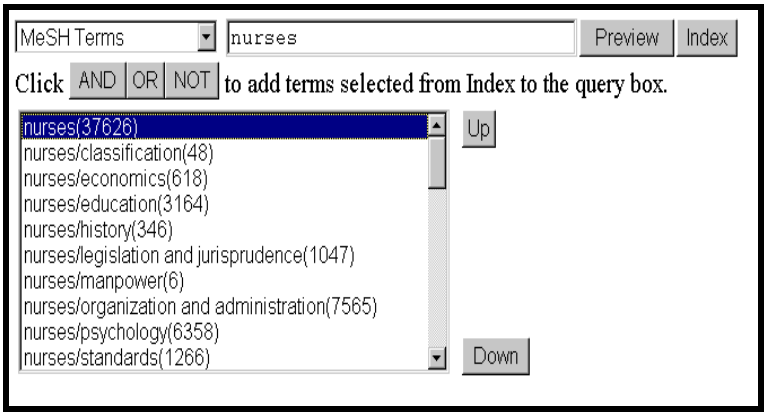
*Multiple selections are automatically ORed together.*




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])**

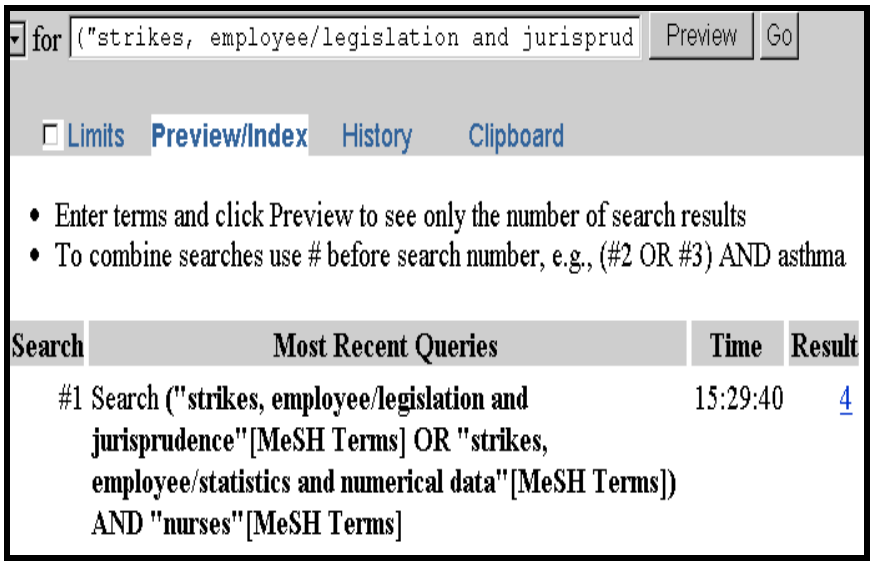
Let's further refine this search using the **Index**. We want to narrow the search to those citations discussing this situation and **nurses**. Enter **nurses** in the view entry box and click **Index**. Select nurses in the Index and then click on the **AND** button to add it to your query:




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

***Query box*** *shows search terms, search fields and Boolean operators.*

***Results*** *shows number of results.*

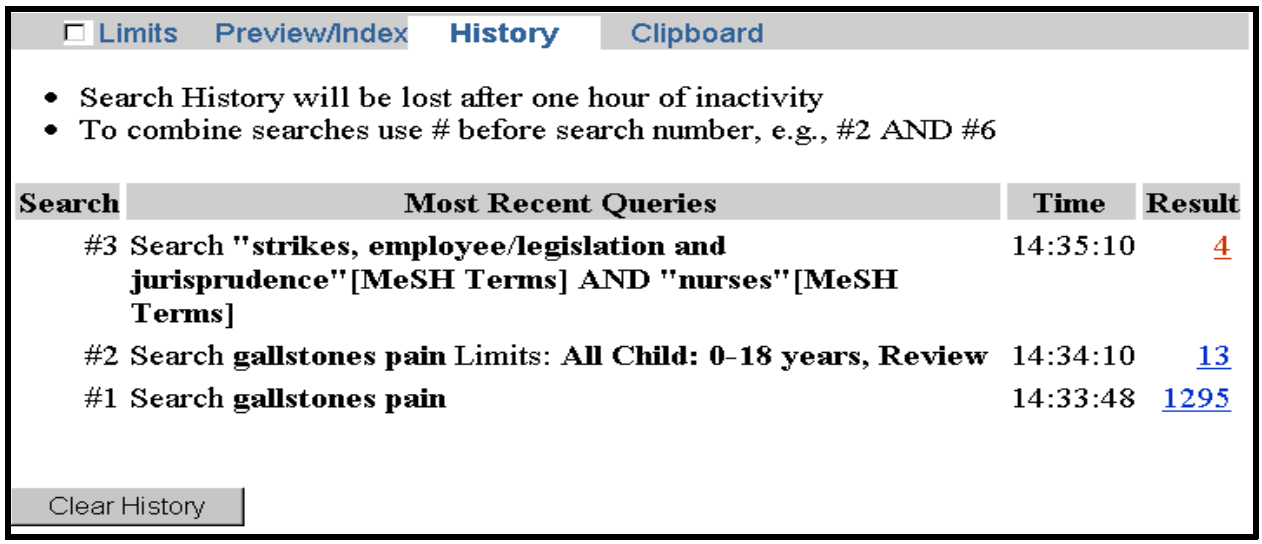



**Take Note:**

**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




**Using History**

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

**Example:**


**Search Tip:**

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

**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.

**Search Tip:**

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.


- 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:**

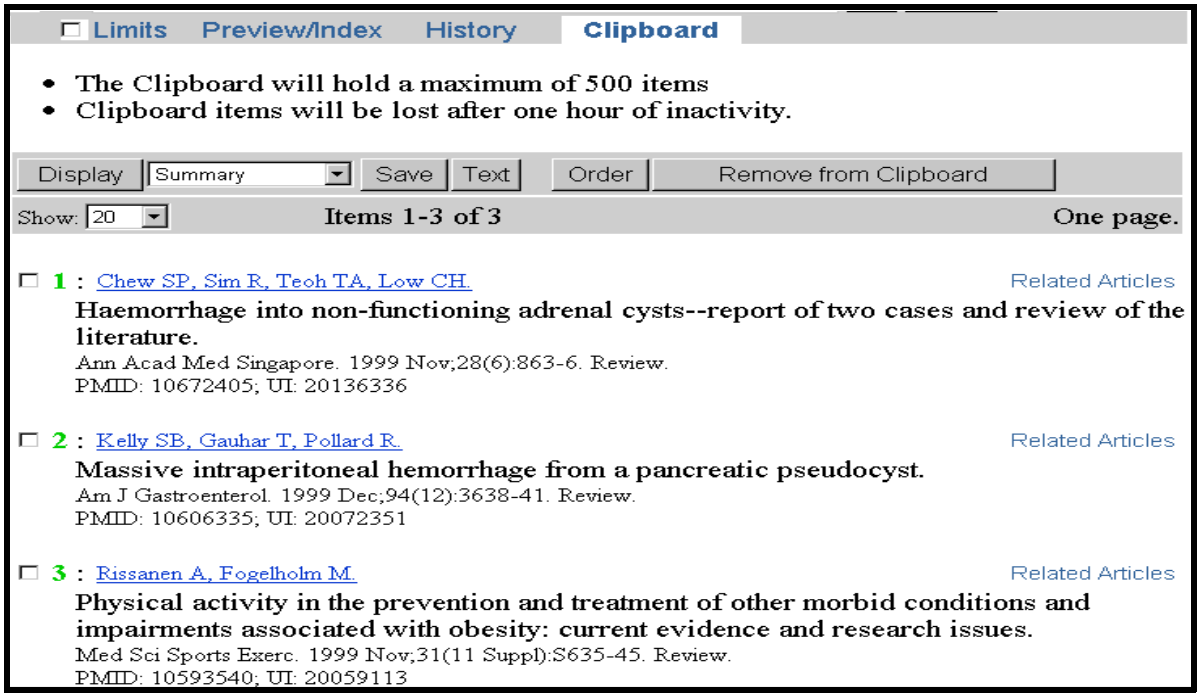
✓ If you click Add to Clipboard without selecting citations using the check-box, PubMed will add up to 500 citations to the Clipboard.

✓ 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.




## 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.

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

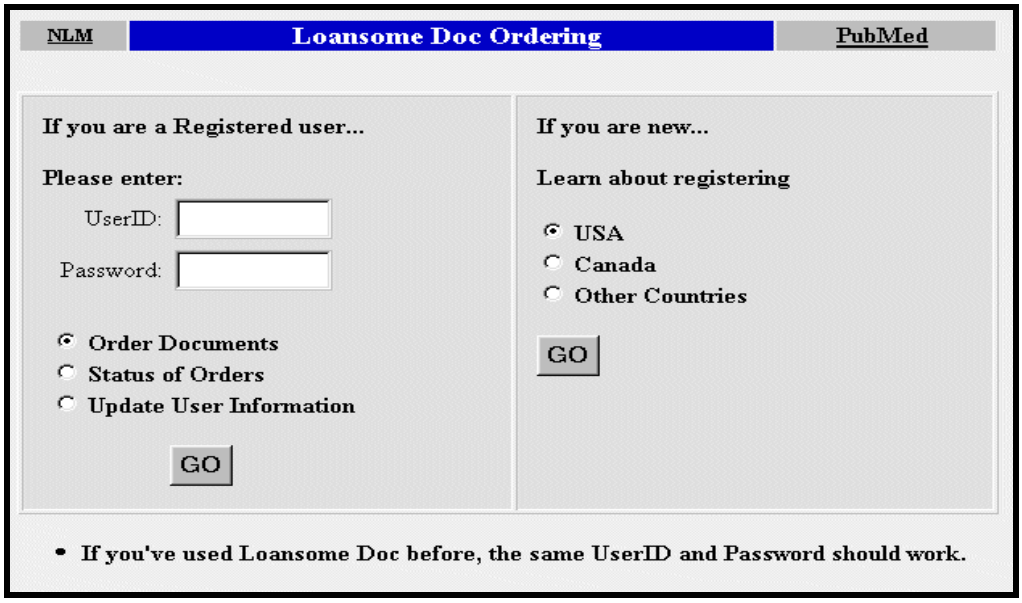
**Take Note:**

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

- Click the **Order** button.

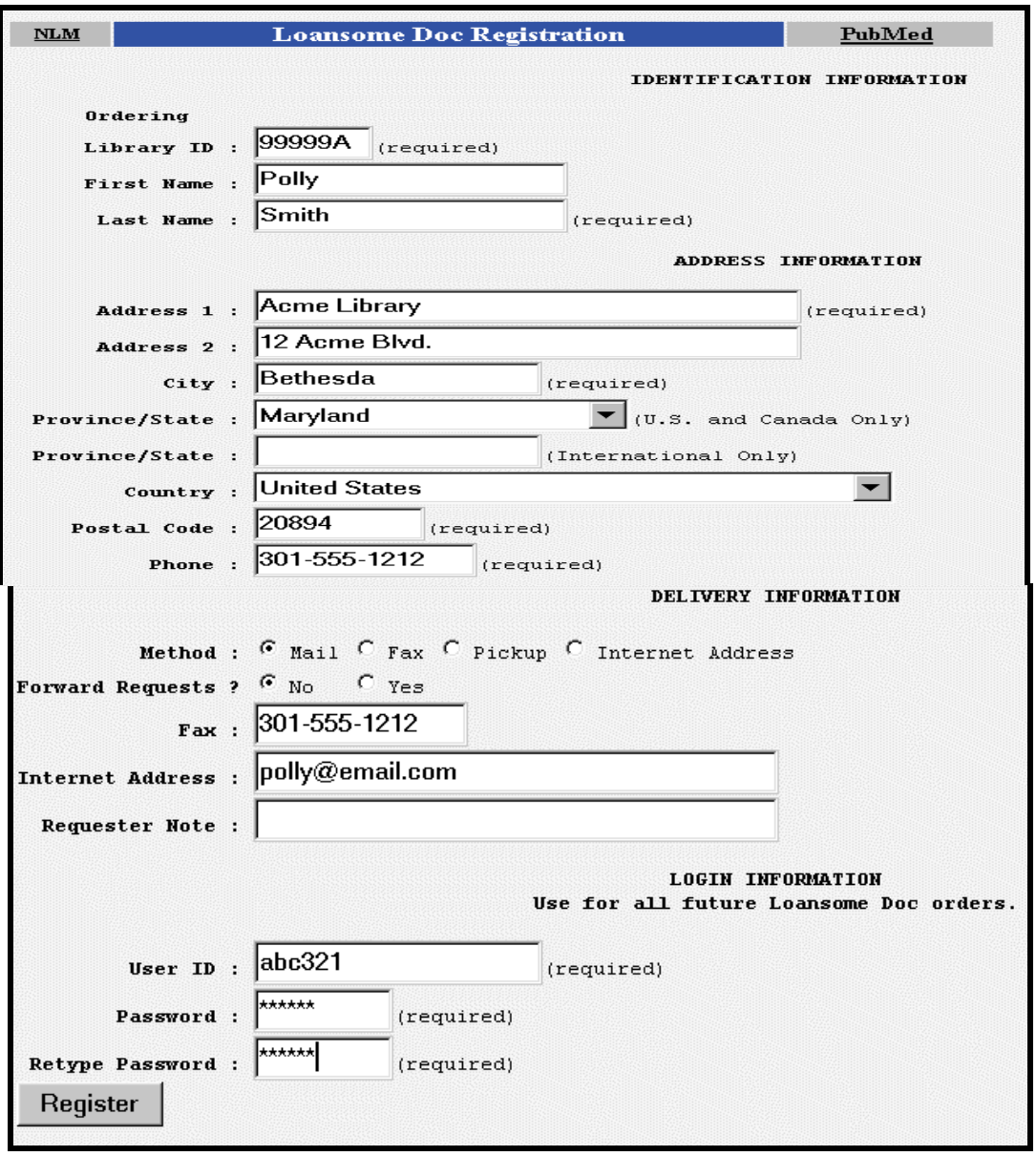
After clicking on the **Order** button from the Clipboard, you are brought to this next screen allowing you to:

- 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.*



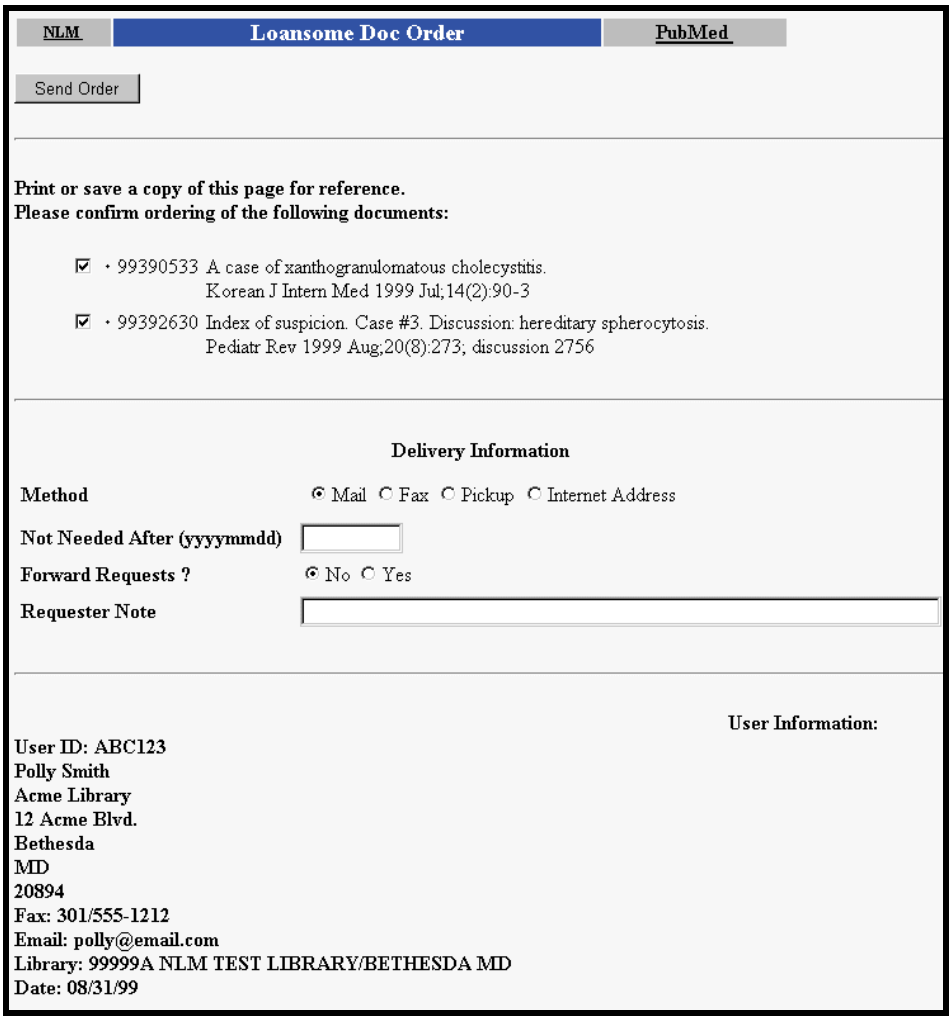
- Next, you receive a screen explaining copyright compliance**.** Click on the **Accept** button.


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.

***Send Order*** *button.*

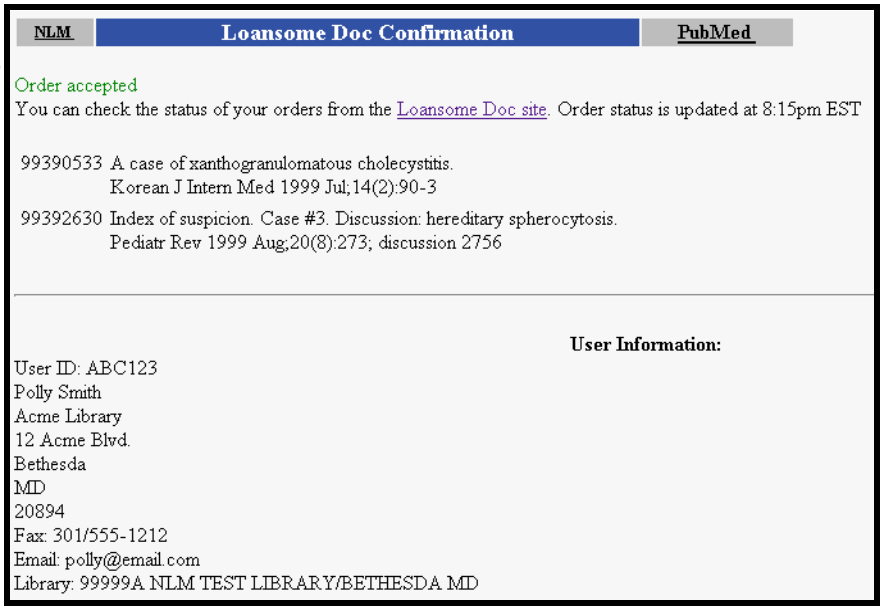
*Articles you checked off to order.*

*User-supplied information.*



Next you are brought to the Loansome Doc Confirmation screen which confirms that your order was accepted.

*Order accepted message.*



NLM | Loansome Doc Confirmation | PubMed

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 xanthogranulomatous cholecystitis.
Korean J Intern Med 1999 Jul;14(2):90-3

99392630 Index of suspicion. Case #3. Discussion: hereditary spherocytosis.
Pediatr Rev 1999 Aug;20(8):273; discussion 2756

**User Information:**

User ID: ABC123
Polly Smith
Acme Library
12 Acme Blvd.
Bethesda
MD
20894
Fax: 301/555-1212
Email: polly@email.com
Library: 99999A NLM TEST LIBRARY/BETHESDA MD

# Links

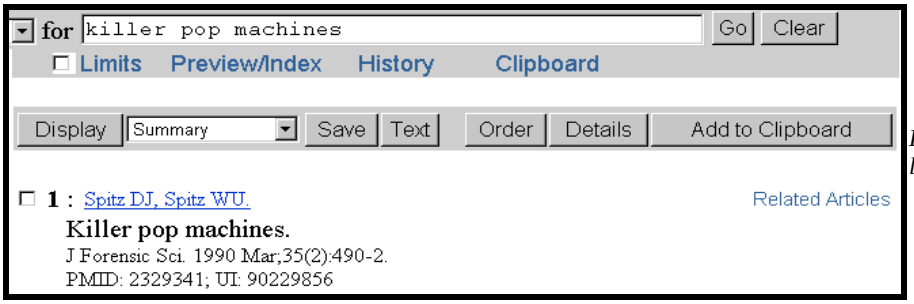
## Related Articles

- 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**.

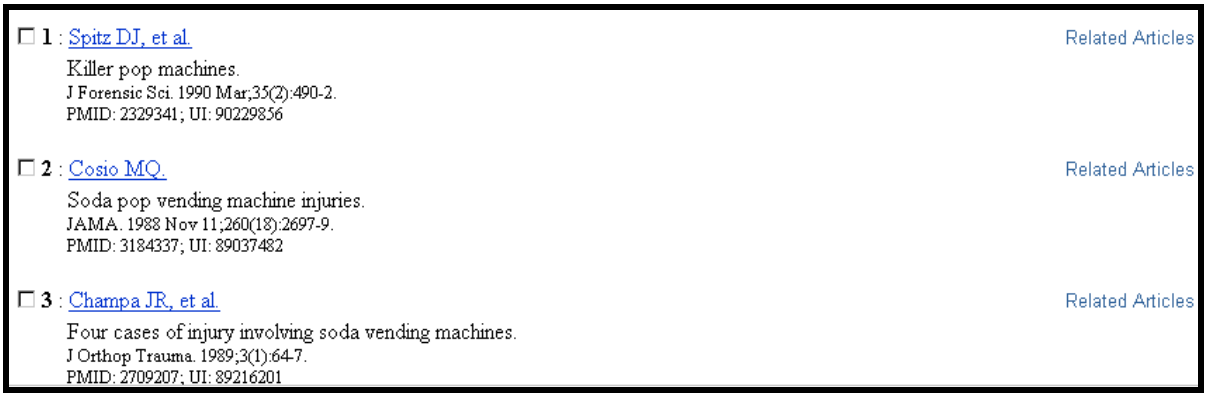
**Take Note:**

Try this search: **killer pop machines**



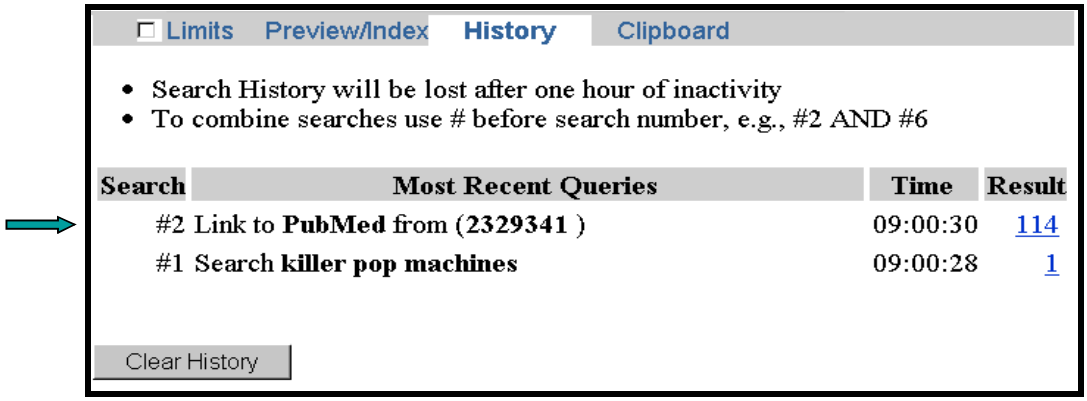

*Related articles link.*

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




**Refining your Related Articles retrieval set:**

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



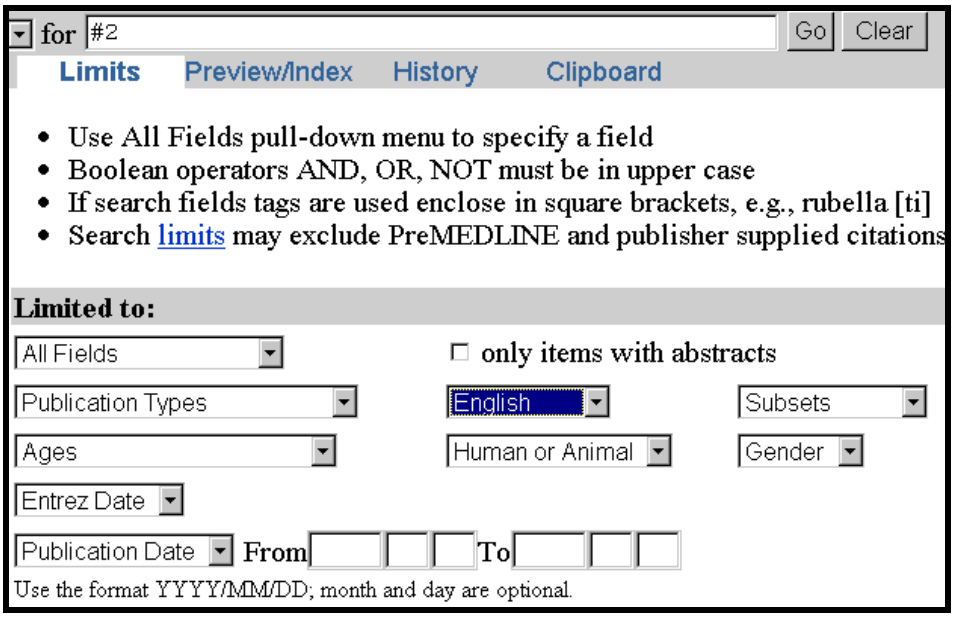

- Use the search statement number and combine with another concept:

- 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.***



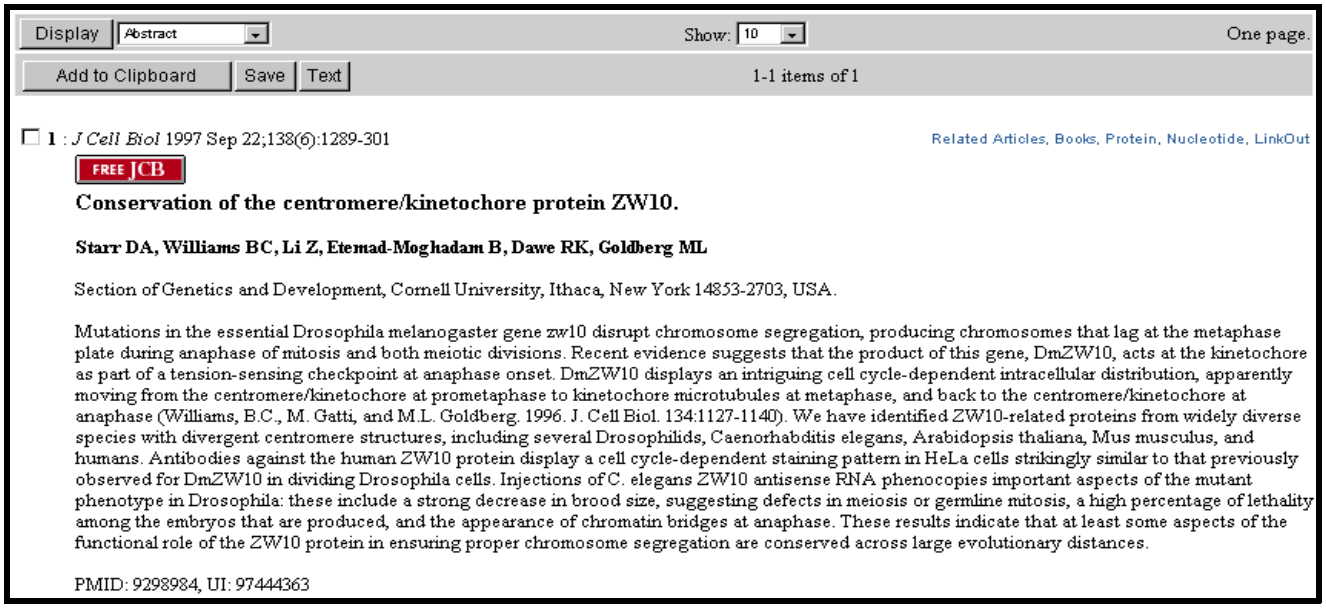
## Links to Other Resources and NCBI Databases

- **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.**


Notice the Related Articles, Books, Protein, Nucleotide, LinkOut links on the right:

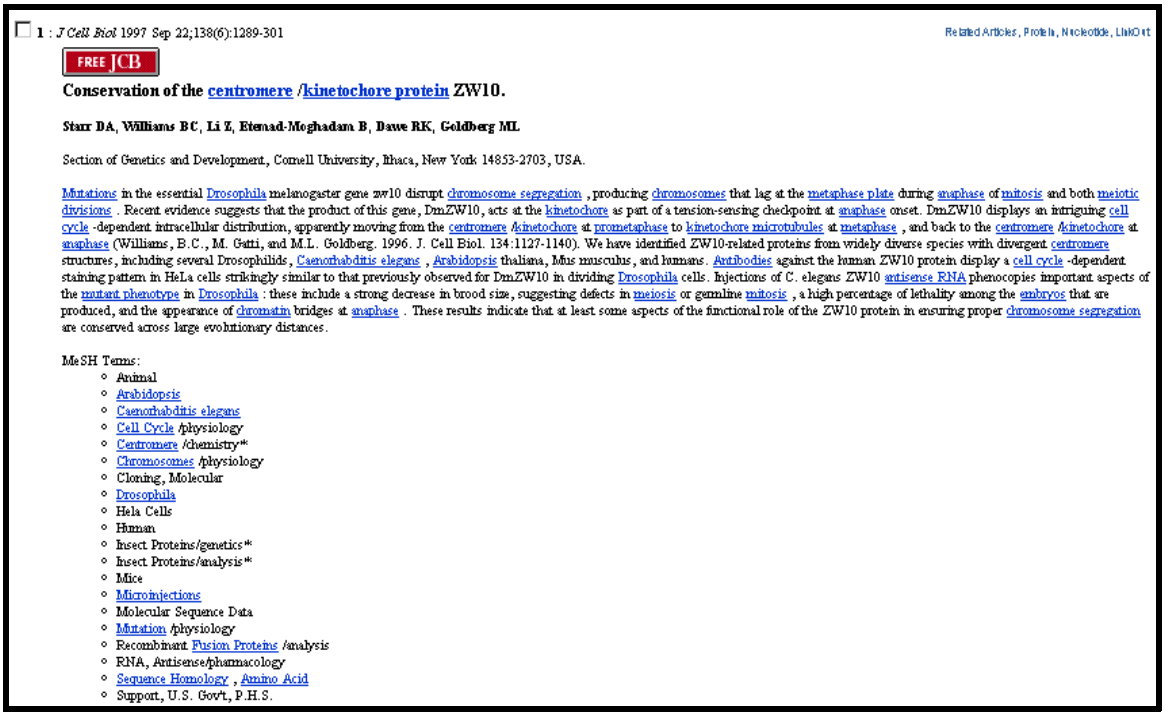
**Take Note:**



## 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.*



1 : *J Cell Biol* 1997 Sep 22;138(6):1289-301 Related Articles, Protein, Nucleotide, LinkOut

FREE JCB

**Conservation of the centromere /kinetochore protein ZW10.**

**Starr DA, Williams BC, Li Z, Etemad-Moghadam B, Dawe 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, DmZW10, acts at the kinetochore as part of a tension-sensing checkpoint at anaphase 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. Gatti, and M.L. Goldberg. 1996. J. Cell Biol. 134:1127-1140). We have identified ZW10-related proteins from widely diverse species with divergent centromere structures, including several Drosophilids , Caenorhabditis elegans , Arabidopsis thaliana, Mus musculus, 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 germline mitosis , a high percentage of lethality among the embryos that are produced, and the appearance of chromatin bridges at anaphase . 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.

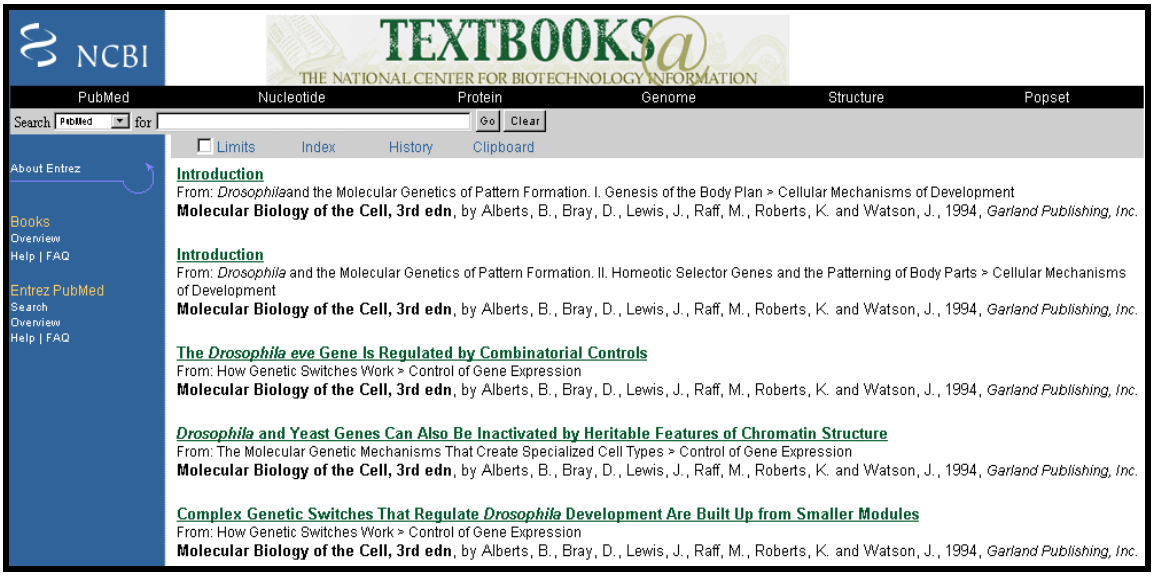
MeSH Terms:

- Animal
- Arabidopsis
- Caenorhabditis elegans
- Cell Cycle /physiology
- Centromere /chemistry*
- Chromosomes /physiology
- Cloning, Molecular
- Drosophila
- Hela Cells
- Human
- Insect Proteins/genetics*
- Insect Proteins/analysis*
- Mice
- Microinjections
- Molecular Sequence Data
- Mutation /physiology
- Recombinant Fusion Proteins /analysis
- RNA, Antisense/pharmacology
- Sequence Homology , Amino Acid
- Support, U.S. Gov't, P.H.S.

- 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.

*Notice the Overview, Help, FAQ links.*

*Click on the first book section listed.*



NCBI TEXTBOOKS@ THE NATIONAL CENTER FOR BIOTECHNOLOGY INFORMATION

PubMed Nucleotide Protein Genome Structure Popset

Search PubMed for Go Clear

Limits Index History Clipboard

About Entrez

Books
Overview
Help | FAQ

Entrez PubMed
Search
Overview
Help | FAQ

**Introduction**
From: *Drosophila*and the Molecular Genetics of Pattern Formation. I. Genesis of the Body Plan > Cellular Mechanisms of Development
**Molecular Biology of the Cell, 3rd edn**, by Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J., 1994, *Garland Publishing, Inc.*

**Introduction**
From: *Drosophila* and the Molecular Genetics of Pattern Formation. II. Homeotic Selector Genes and the Patterning of Body Parts > Cellular Mechanisms of Development
**Molecular Biology of the Cell, 3rd edn**, by Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J., 1994, *Garland Publishing, Inc.*

**The *Drosophila eve* Gene Is Regulated by Combinatorial Controls**
From: How Genetic Switches Work > Control of Gene Expression
**Molecular Biology of the Cell, 3rd edn**, by Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J., 1994, *Garland Publishing, Inc.*

***Drosophila* and Yeast Genes Can Also Be Inactivated by Heritable Features of Chromatin Structure**
From: The Molecular Genetic Mechanisms That Create Specialized Cell Types > Control of Gene Expression
**Molecular Biology of the Cell, 3rd edn**, by Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J., 1994, *Garland Publishing, Inc.*

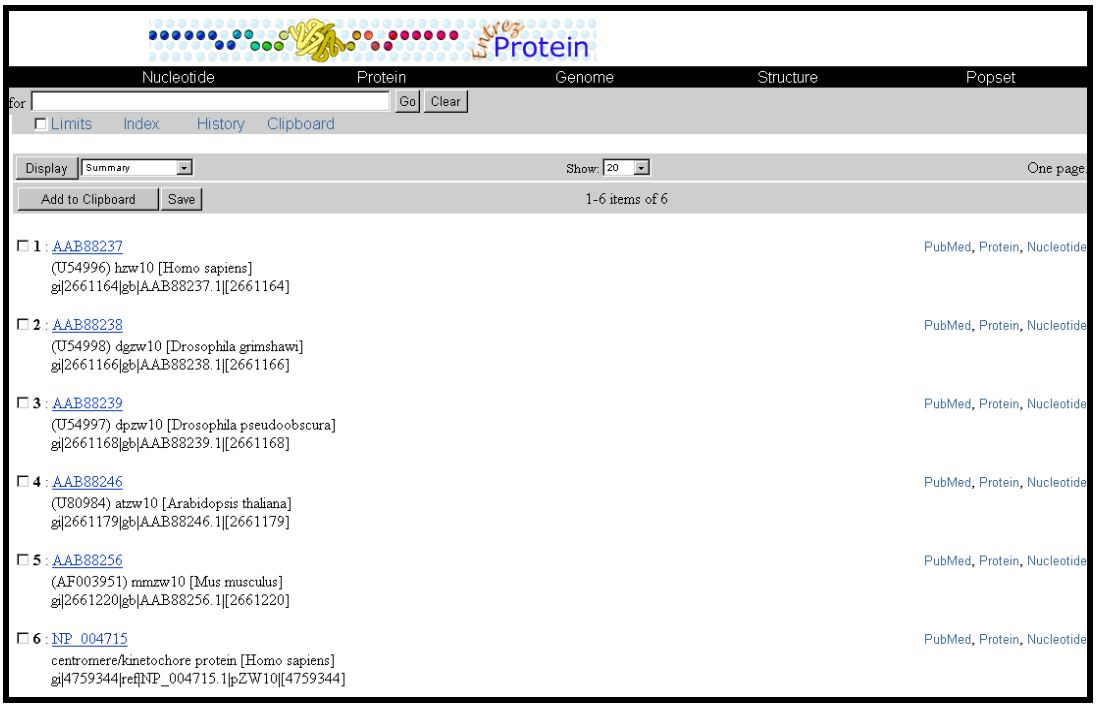
**Complex Genetic Switches That Regulate *Drosophila* Development Are Built Up from Smaller Modules**
From: How Genetic Switches Work > Control of Gene Expression
**Molecular Biology of the Cell, 3rd edn**, by Alberts, B., Bray, D., Lewis, J., Raff, M., Roberts, K. and Watson, J., 1994, *Garland Publishing, Inc.*

- That part of the book is then displayed:

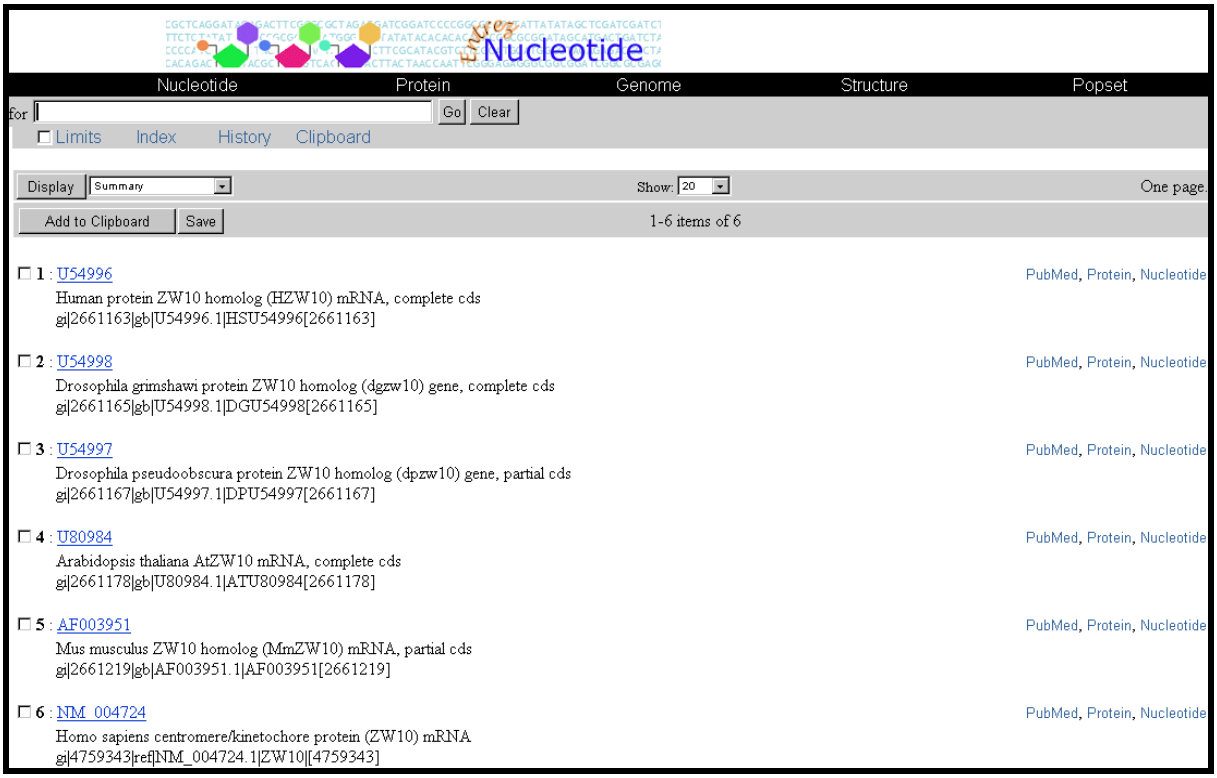

**Take Note:**

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.

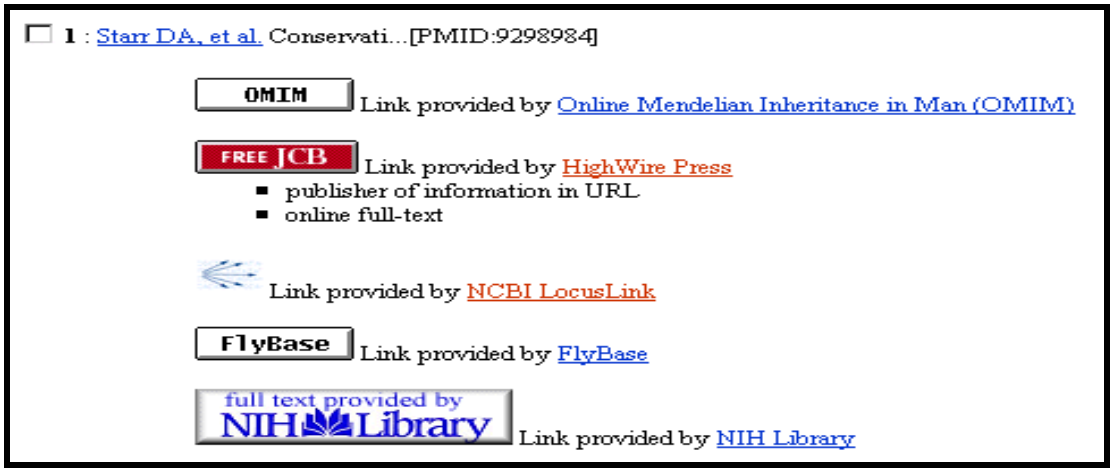
## Protein Link:




## Nucleotide link:



**LinkOut link:**



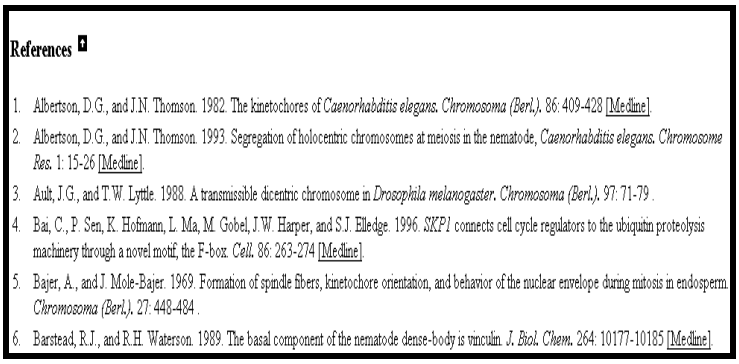

**Take Note:**

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

## 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:

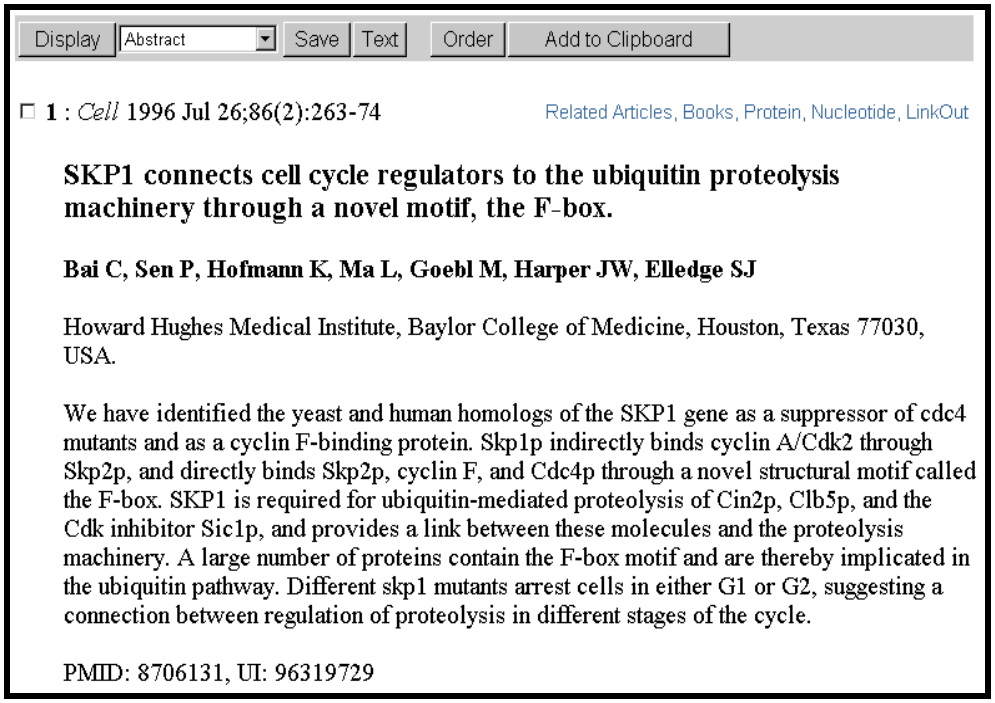
*Click on **Medline** link to go to the PubMed record for this reference.*



**References**

1. Albertson, D.G., and J.N. Thomson. 1982. The kinetochores of *Caenorhabditis elegans*. *Chromosoma (Berl.)*. 86: 409-428 [Medline].
2. Albertson, D.G., and J.N. Thomson. 1993. Segregation of holocentric chromosomes at meiosis in the nematode, *Caenorhabditis elegans*. *Chromosome Res.* 1: 15-26 [Medline].
3. Ault, J.G., and T.W. Lyttle. 1988. A transmissible dicentric chromosome in *Drosophila melanogaster*. *Chromosoma (Berl.)*. 97: 71-79 .
4. Bai, C., P. Sen, K. Hofmann, L. Ma, M. Gobel, J.W. Harper, and S.J. Elledge. 1996. *SKP1* connects cell cycle regulators to the ubiquitin proteolysis machinery through a novel motif, the F-box. *Cell*. 86: 263-274 [Medline].
5. Bajer, A., and J. Mole-Bajer. 1969. Formation of spindle fibers, kinetochore orientation, and behavior of the nuclear envelope during mitosis in endosperm. *Chromosoma (Berl.)*. 27: 448-484 .
6. Barstead, R.J., and R.H. Waterson. 1989. The basal component of the nematode dense-body is vinculin. *J. Biol. Chem.* 264: 10177-10185 [Medline].

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



Display | Abstract | Save | Text | Order | Add to Clipboard

☐ **1** : *Cell* 1996 Jul 26;86(2):263-74 Related Articles, Books, Protein, Nucleotide, LinkOut

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

**Bai C, Sen P, Hofmann K, Ma L, Goebl M, Harper JW, Elledge SJ**

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 Cin2p, 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

**N O T E S**

## 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.

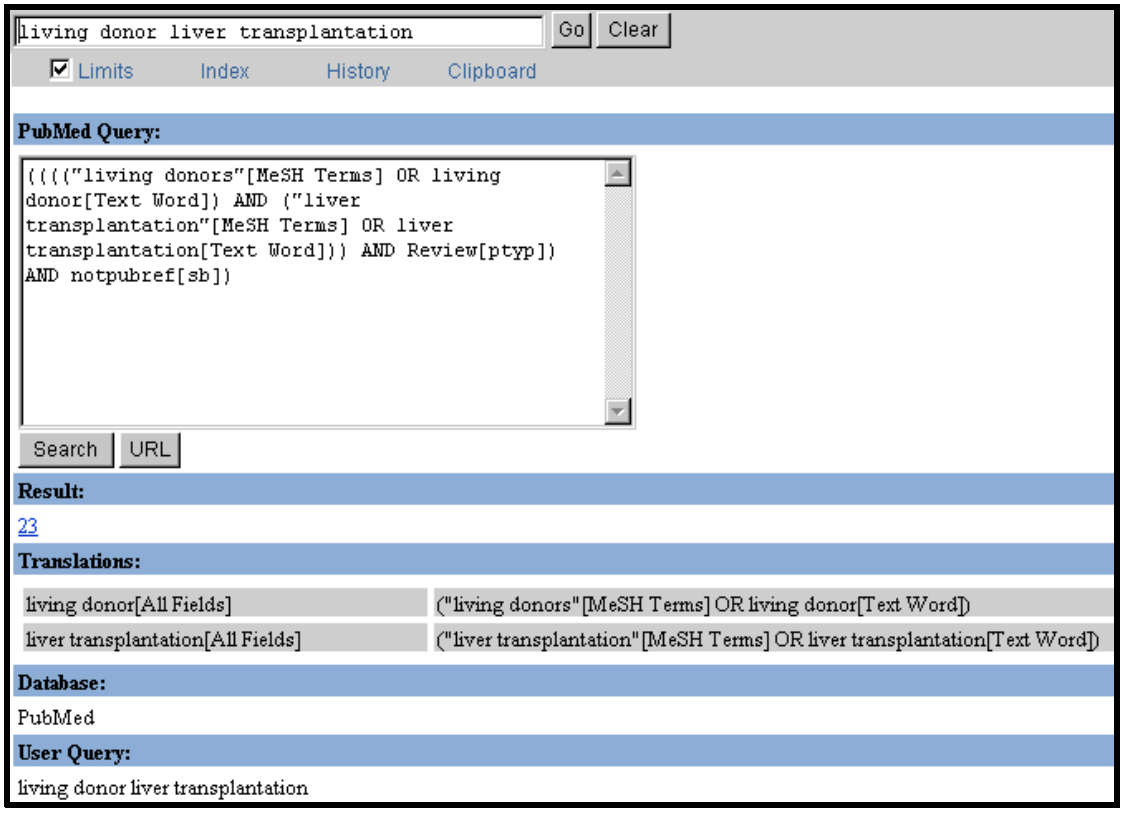
3. Are there articles by George Barrera-Hernandez referenced in MEDLINE?

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

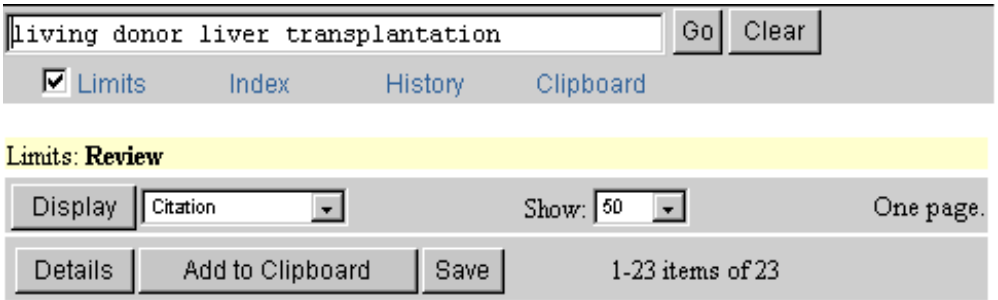
5. Please find information about wisdom tooth pain. Using the Details screen, determine what MeSH heading wisdom tooth maps to.

## 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.



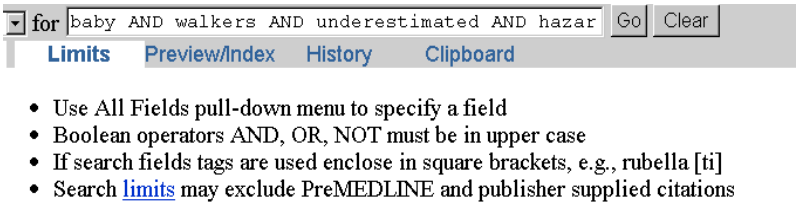

*Use the **Citation** display.*

*Use the **Show** pull-down menu.*

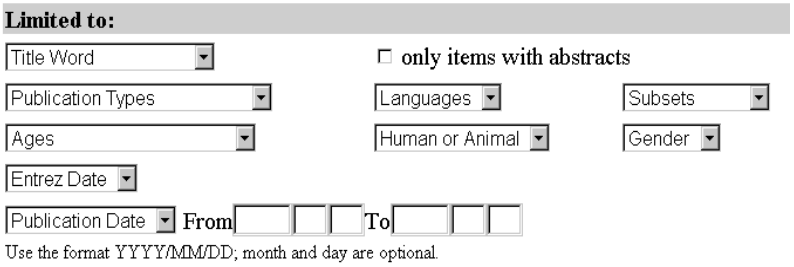
2. Find the title, "Baby walkers--an underestimated hazard for our children?". Link to see the Abstract. Review the related articles.

Find the requested title:

*Include the Boolean **AND** between title words.*

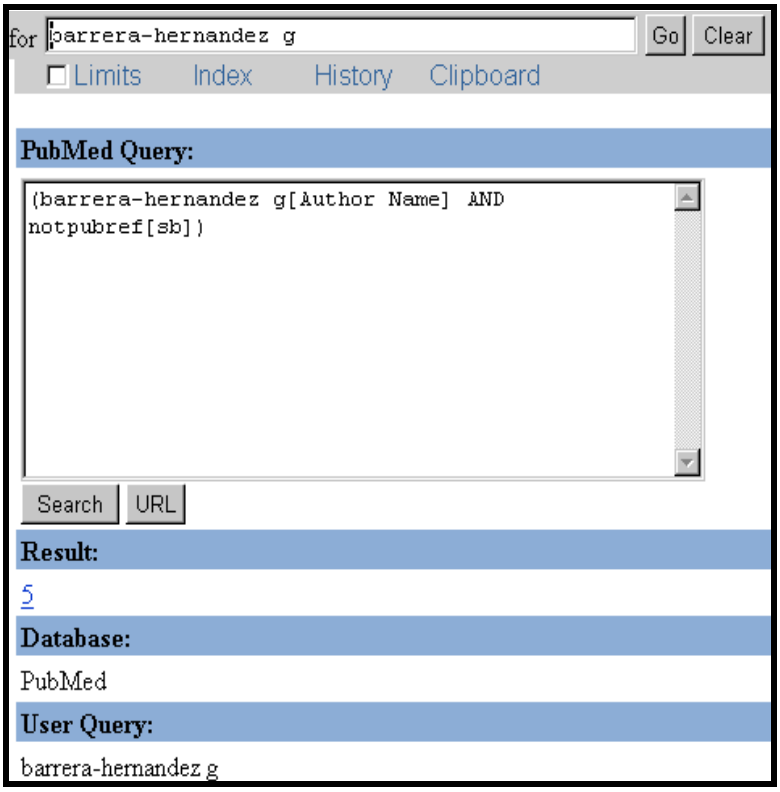



*Use the **Title Word** pull-down menu selection.*

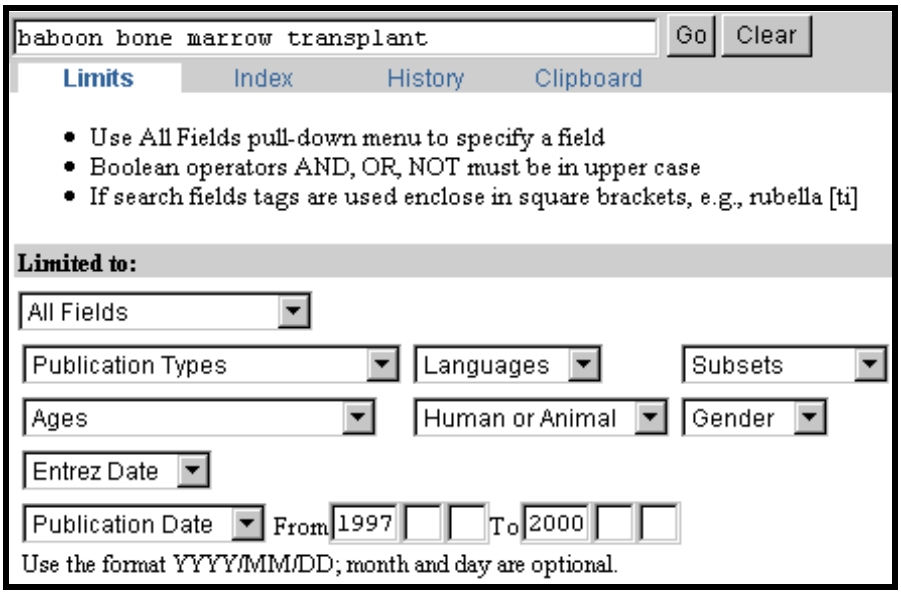



Use the **Abstract** display to see the abstract. Click on **Related Articles** link to review the related articles.

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

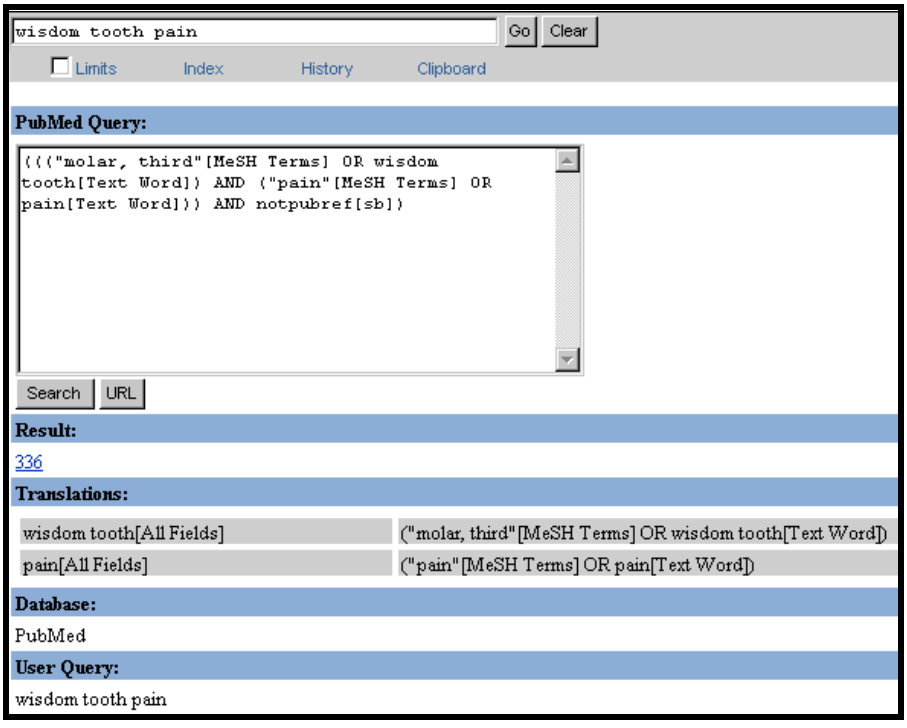


4. Locate citations about using a baboon for a bone marrow transplant that were published between 1997-2000.




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.*



## N O T E S

## 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:

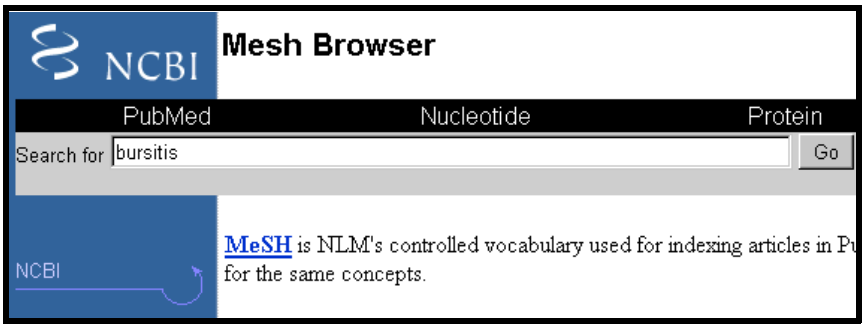
- Display MeSH terms in a hierarchical structure.
- Select MeSH terms for searching.
- Limit MeSH terms to a major concept.
- Attach subheadings.
- Display the preferred MeSH term and its hierarchy if a cross reference is entered.

### 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**.

*Type in term here. Click on the **Go** button.*

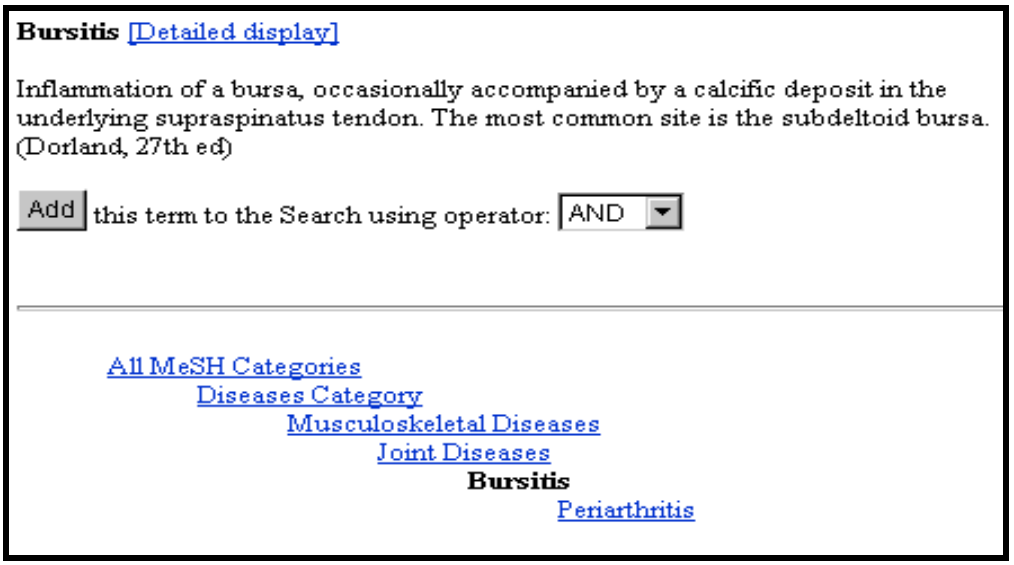



PubMed brings you to this MeSH Browser screen:

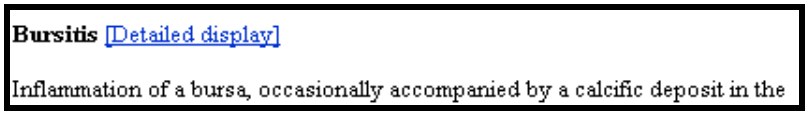
*Here is a definition of the concept.*

*MeSH tree structure is shown.*

*The browsed term is in boldface.*



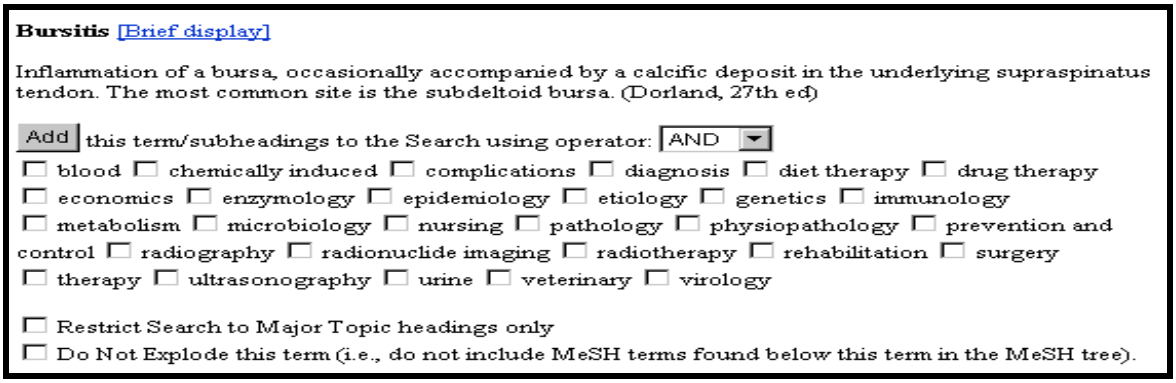
Click on the **Detailed Display** link to the right of the browsed term at the top of the screen as shown below:




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

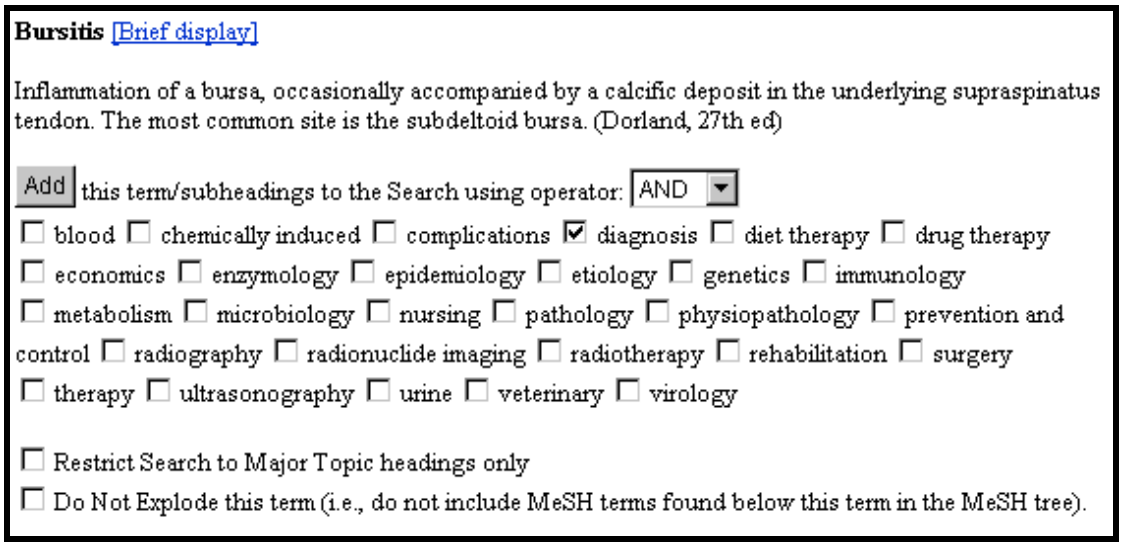



- Use the **Add** button to add the term to your search.
- You can also change the Boolean operator.
- Subheadings that have been attached to the term on current MEDLINE citations are listed.
- You may also restrict to a major point or choose not to explode the term.

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.



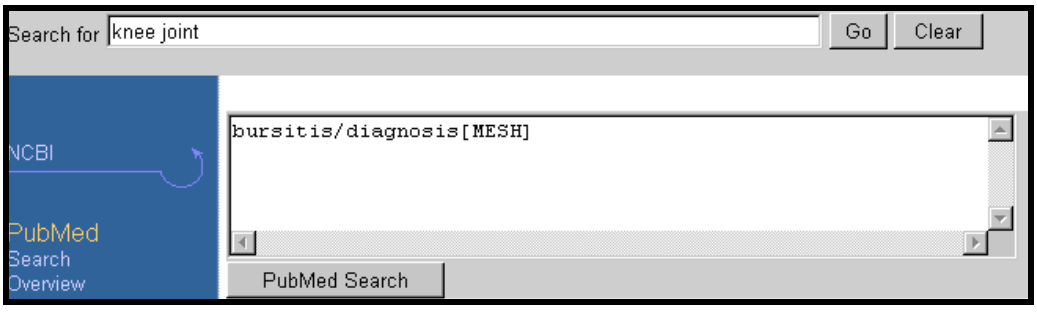

The MeSH Browser Current Query displays your search strategy. You may also look up another term in the query box.

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**.

*Searching on the next term.*

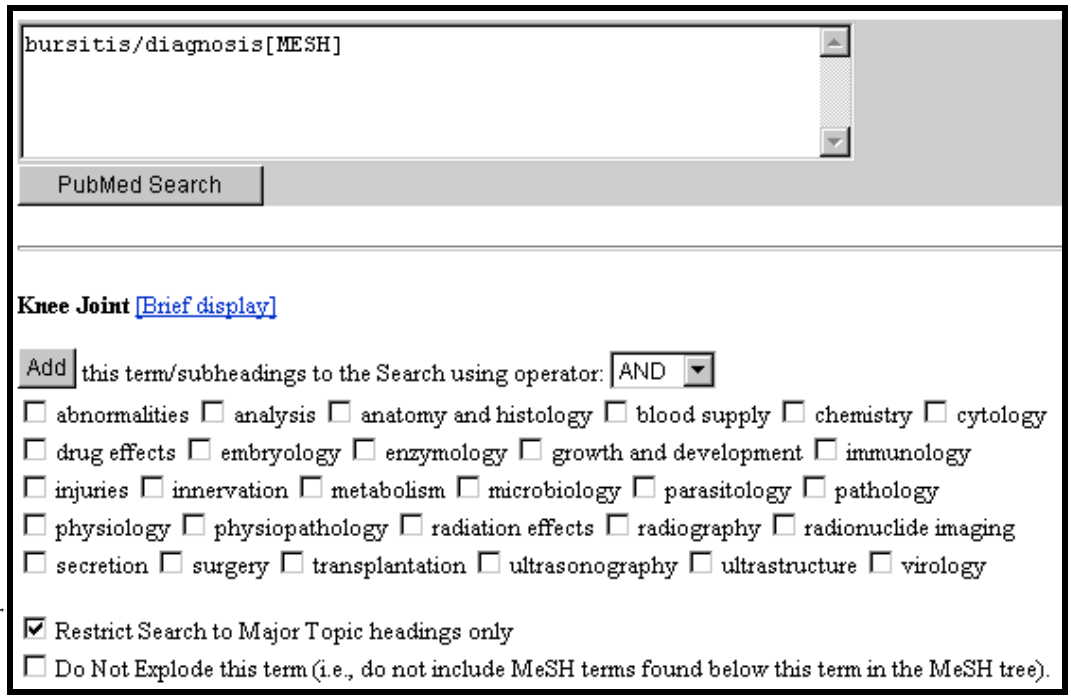
*Here's the strategy being built.*



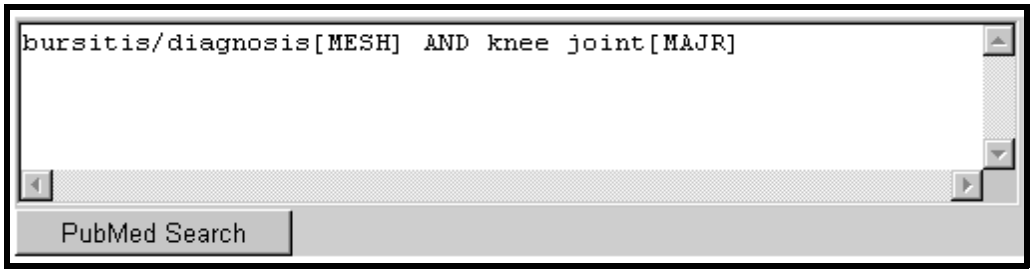
This brings you to the MeSH Browser screen for **Knee Joint**. Next click on the **Detailed Display** link to see more information about this term.

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.

*Click here to restrict to a Major Topic.*




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.

## N O T E S

## 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.

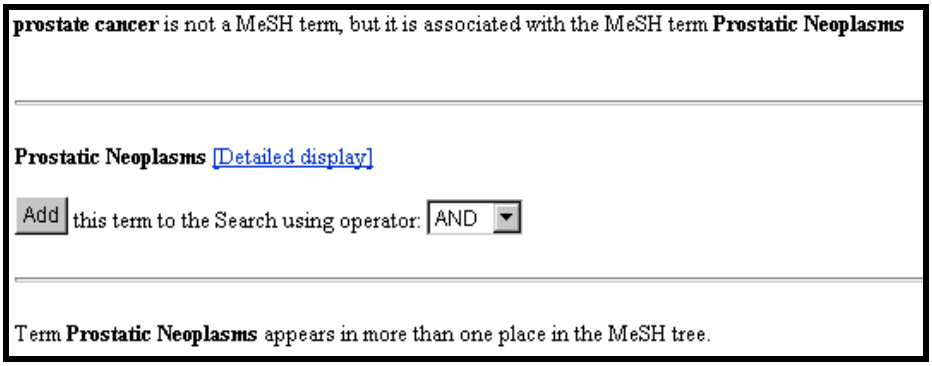
a. Find information on how to save a strategy in PubMed's online Help.

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.

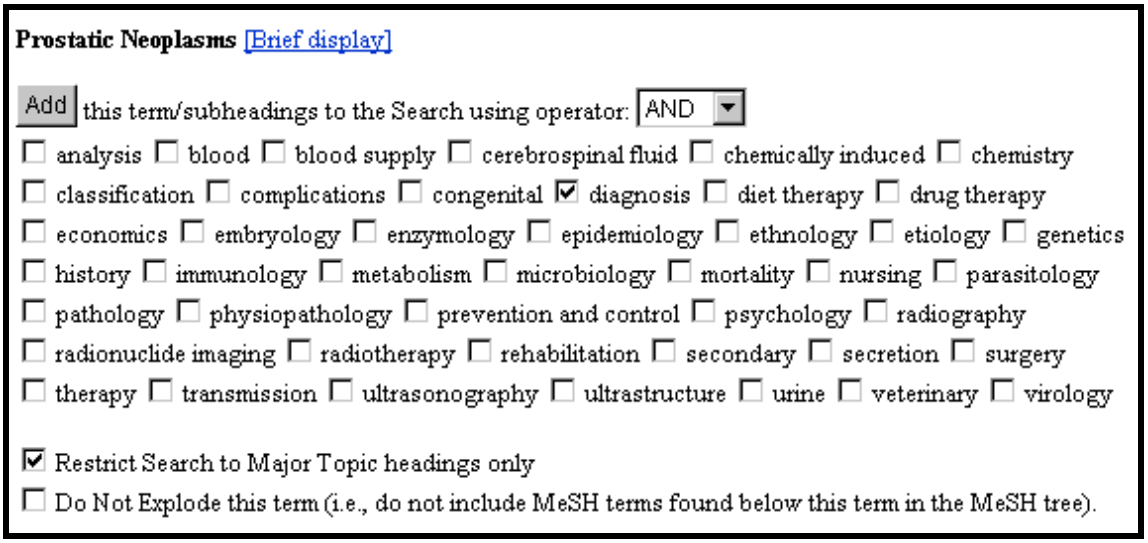
## Suggested Answers

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.

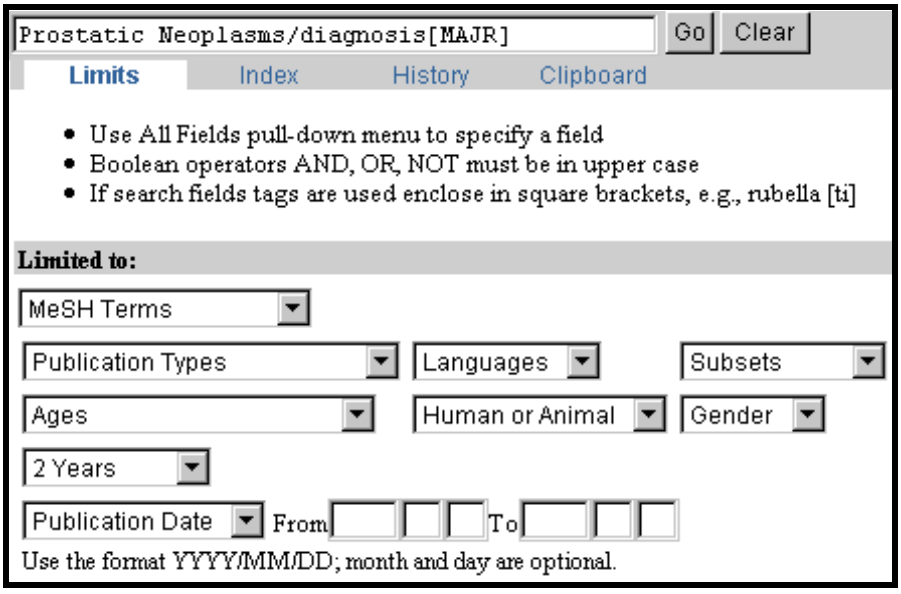
MeSH Browser screen:



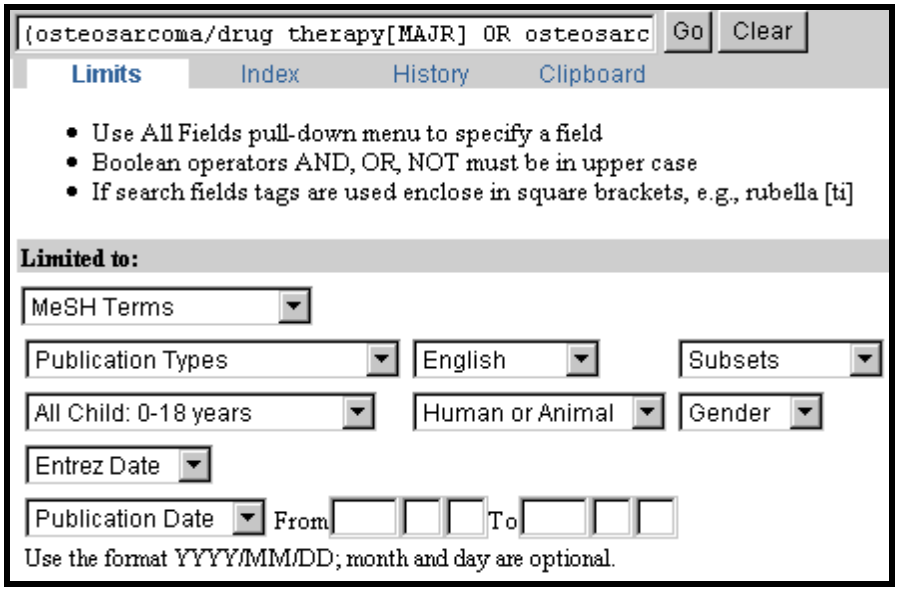

Choosing diagnosis subheading and restricting to major:



Returned to PubMed with our search strategy built within the MeSH Browser. Now, restrict to those citations entered into the database 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.



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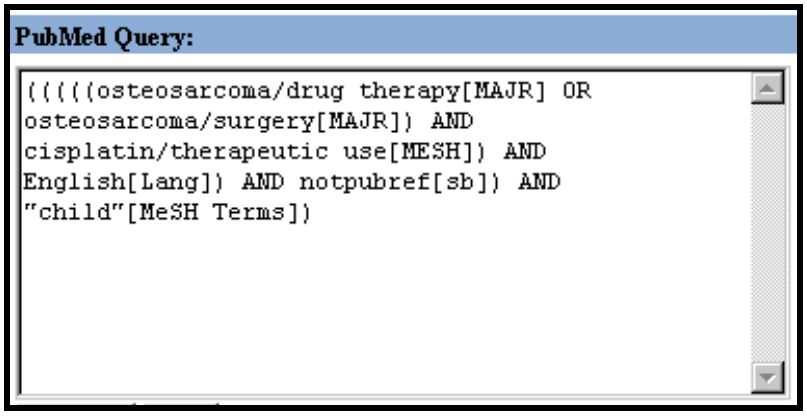
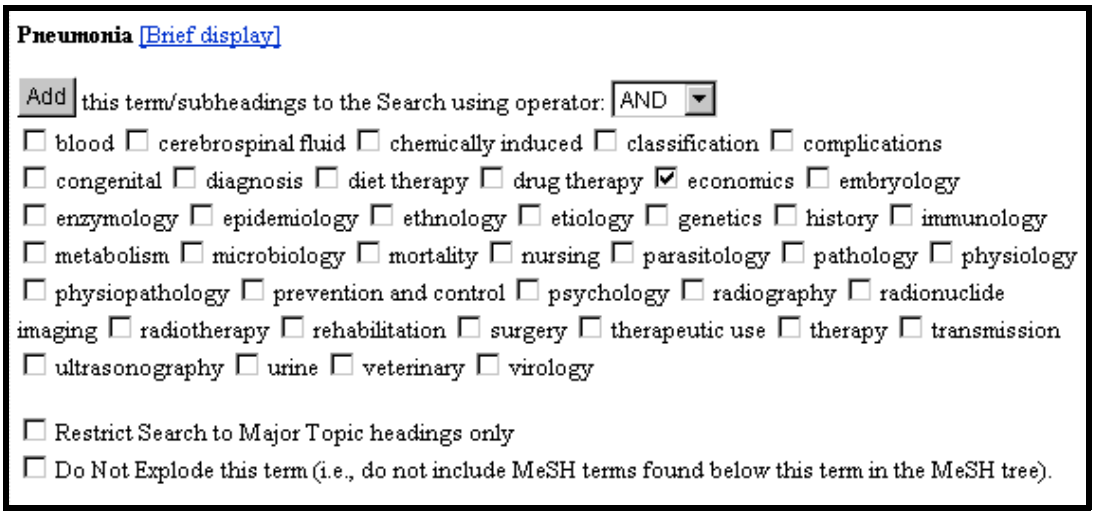
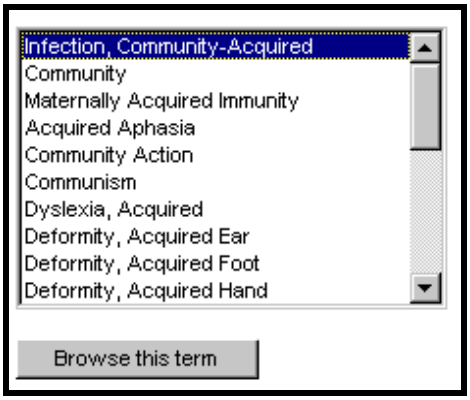



3. Find citations to references discussing the economics of community-acquired pneumonia.

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**.

**Take Note:**

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**.

**N O T E S**

## 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:**

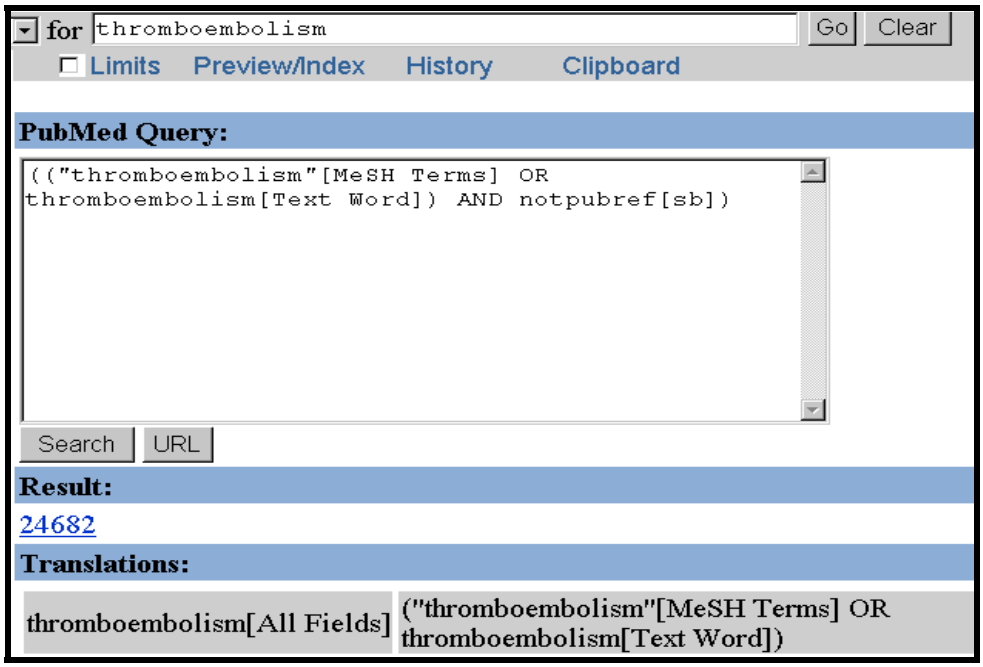
- MeSH headings are qualified using the search field tags:

  [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:



- 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:

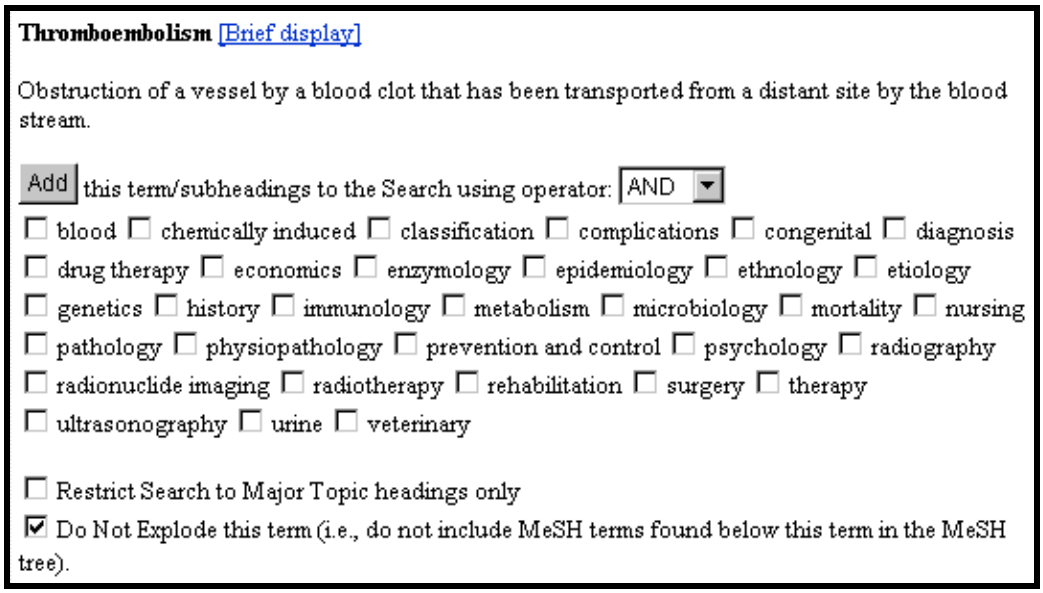
  Use one of the following tags: [mh:noexp] or [majr:noexp]

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

**Search Tip:**

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

*Click here.*




**Take Note:**

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

**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:

**Hypertension**
Hypertension, Malignant
Hypertension, Portal
Esophageal and Gastric Varices
Hypertension, Pulmonary
Persistent Fetal Circulation Syndrome
Hypertension, Renal
Hypertension, Renovascular
Nephrosclerosis

Therapy subheading and its indentions:

**therapy**
diet therapy
drug therapy
nursing
prevention & control
radiotherapy
rehabilitation
surgery
transplantation

Sample of citation results:

**Platelet eicosanoids and the effect of captopril in blood pressure regulation.**

MeSH Terms:

- Angiotensin-Converting Enzyme Inhibitors/pharmacology*
- Animal
- Antihypertensive Agents/pharmacology*
- Arachidonic Acid/metabolism
- Blood Platelets/metabolism
- Blood Platelets/drug effects*
- Blood Pressure/drug effects*
- Captopril/pharmacology*
- Comparative Study
- Eicosanoids/metabolism*
- Fatty Acids, Unsaturated/metabolism
- Fatty Acids, Unsaturated/biosynthesis
- Hypertension/drug therapy
- Lipoxygenase/metabolism
- Male
- Prostaglandin D2/biosynthesis
- Prostaglandin-Endoperoxide Synthase/metabolism
- Rats
- Rats, Inbred SHR
- Rats, Wistar
- Support, Non-U.S. Gov't
- Thromboxanes/biosynthesis

**Hypertension in pregnancy.**

MeSH Terms:

- Antihypertensive Agents/therapeutic use
- Chronic Disease
- Endothelium, Vascular/metabolism
- Female
- Human
- Hypertension/therapy*
- Hypertension/physiopathology
- Hypertension/etiology
- Hypertension/diagnosis
- Kidney Diseases/diagnosis
- Kidney Diseases/complications
- Male
- Pre-Eclampsia/physiopathology
- Pre-Eclampsia/etiology
- Pre-Eclampsia/diagnosis
- Pregnancy
- Pregnancy Complications, Cardiovascular/therapy*
- Pregnancy Complications, Cardiovascular/physiopathology
- Pregnancy Complications, Cardiovascular/etiology
- Pregnancy Complications, Cardiovascular/diagnosis
- Pregnancy Outcome

**Salt: blood pressure, the kidney, and other harmful effects.**

MeSH Terms:

- Animal
- Blood Pressure/drug effects*
- Comparative Study
- Diet, Sodium-Restricted
- Disease Progression
- Human
- Hypertension, Renal/metabolism
- Hypertension, Renal/etiology*
- Hypertension, Renal/diet therapy
- Rats
- Sodium Chloride/urine
- Sodium Chloride/blood
- Sodium, Dietary/adverse effects*

**Take Note:**

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.

**Search Tip:**

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.

**Truncation Symbol:**

- The asterisk (*) is the truncation symbol.

**Search Tip:**

There is no single character truncation symbol in PubMed.

**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

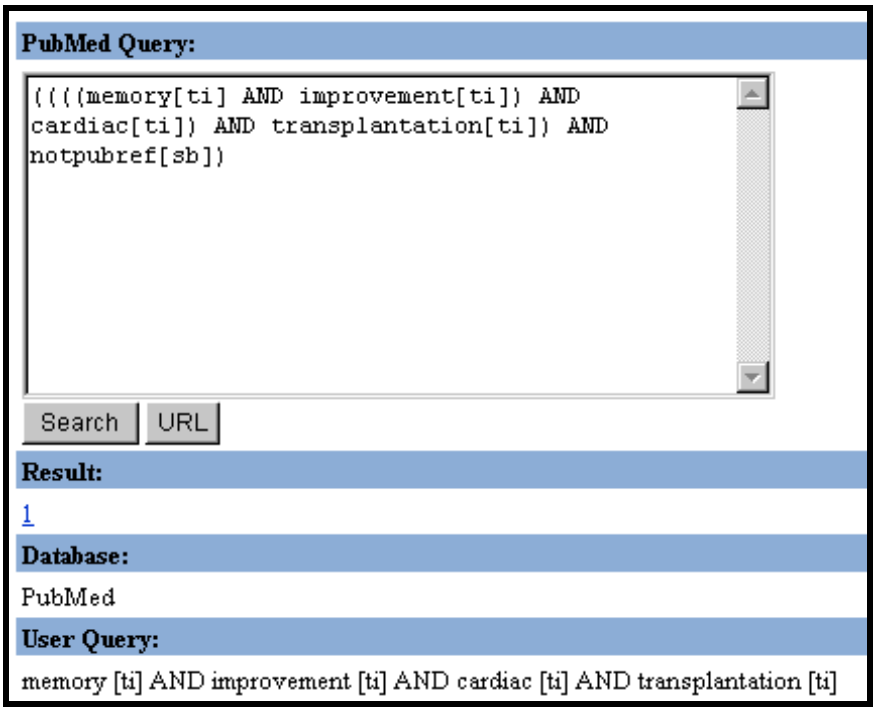
## Title Word Searching

- 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.

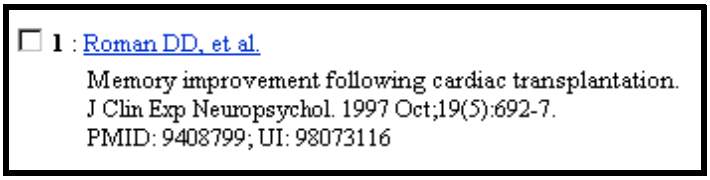
**Example:** I'm looking for an article. The title is "Memory improvement following cardiac transplantation".

**Query box:** memory [ti] AND improvement [ti] AND cardiac [ti] AND transplantation [ti]

**Details:**



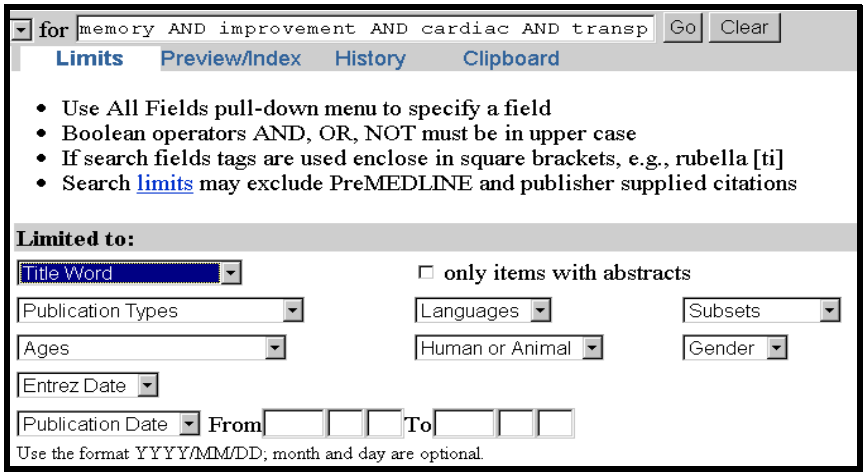

**Result:**



**Search Tip:**

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.

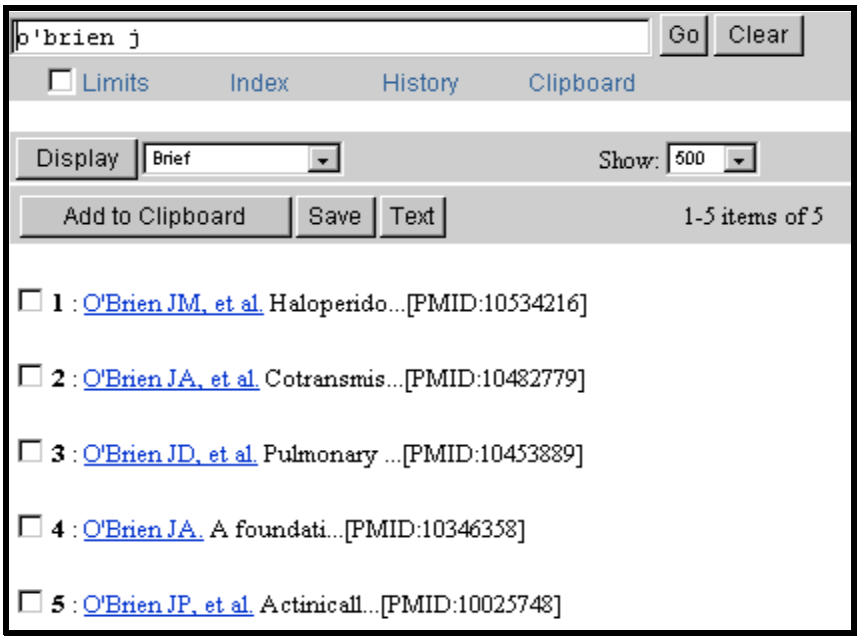
**Example:**



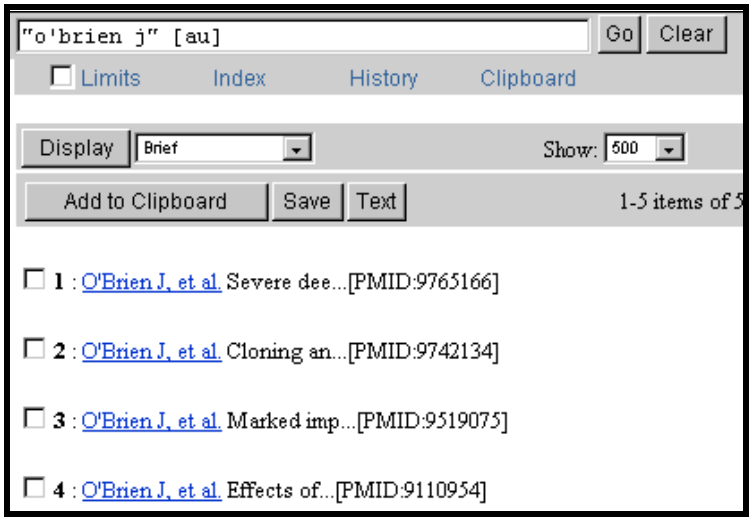

## Author Searching:

- 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.




**Personal Name as Subject:**

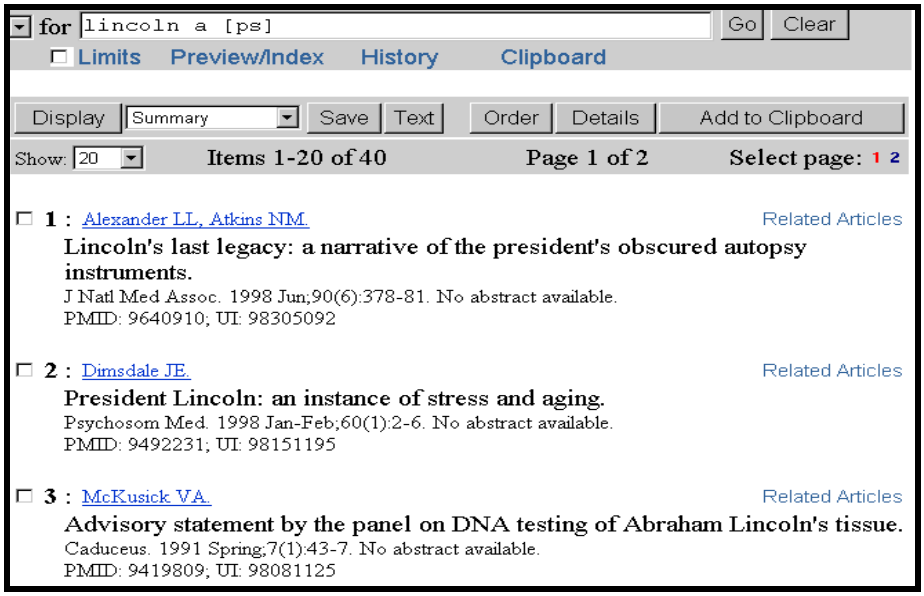
- Use the [ps] tag to search for citations to articles about a named individual. The name is searched in the same format as for authors.

Example: lincoln a [ps]

**Take Note:**

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

**Example:**



**Journal Name:**

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

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

**Search Tip:**

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]

**Search Tip:**

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]

**Take Note:**

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.

**Search Tip:**

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]

**Take Note:**

Publication Date formats are not standardized from journal to journal.

**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]

**Search Tip:**

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

**Publication Type :**

- Describes the type of material the article represents
- Examples: Twin Study, News, Review, Clinical Trial, Retracted Publication, Letter
- Use the [pt] tag

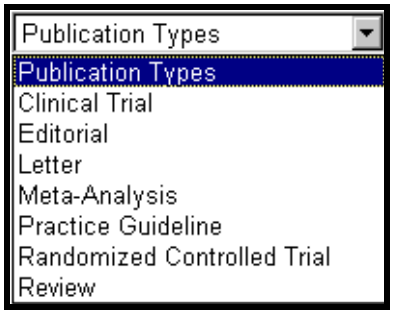
Example: vascular diseases [majr] AND twin study [pt]

**Take Note:**

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

**Search Tip: .**

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




**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]

**Search Tip:**

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

**Limiting to published journal indexes**:

- The following values are available:

| | |
|---|---|
| *Abridged Index Medicus* | jsubseta |
| Dental | jsubsetd |
| Nursing | jsubsetn |

**Search Tip:**

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

**Example:** baseball AND jsubseta

**Search Tip:**

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.

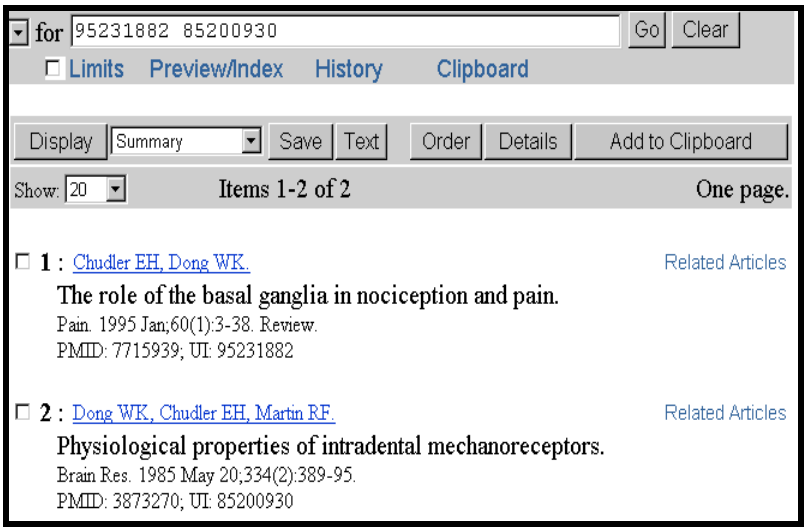
**Unique Identifier Searching:**

- 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.

***Unique Identifiers*** *as entered in search query.*




*PubMed finds the 2 unique citations.*

- To search a **Unique Identifer in combination with other terms** you ***mus***t 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:

lm [ad]

**Search Tip:**

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

**Take Note:**

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

**Limiting to citations with abstracts**:

- Use the value: hasabstract.

**Search Tip:**

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

**Example:** baseball AND jsubseta AND hasabstract

**Search Tip:**

Remember you can use the check box in Limits to restrict to only items with abstracts.

## Search Field Qualifier Tags

| Field Name | Abbreviation | Description |
|---|---|---|
| Affiliation | [AD, AFFL] | Institutional affiliation and address of the primary author, and grant numbers. |
| All Fields | [ALL] | Includes all PubMed search fields |
| Author Name | [AU, AUTH] | 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. |
| EC/RN Number | [RN, ECNO] | Number assigned by the Enzyme Commission (E.C.) to designate a particular enzyme and the RN lists the Chemical Abstracts (CAS) Registry Numbers. |
| Entrez Date | [EDAT] | Contains the date that a record was initially added to PubMed, in the format yyyy/mm/dd [edat], e.g., 1998/01/10 [edat]. |
| Issue | [IP, ISSUE] | The number of the journal issue in which the article is published. |
| Journal Name | [TA, JOUR] | The journal title abbreviation, full journal name, or ISSN number (e.g., J Biol Chem, Journal of Biological Chemistry, 0021-9258). |
| Language | [LA, LANG] | The language in which the article was published. |
| MeSH Major Topic | [MAJR] | A MeSH term that is one of the main topics discussed in the article. |
| MeSH Terms | [MH, MESH] | NLM's Medical Subject Headings controlled vocabulary of biomedical terms which is used to describe the subject of each journal article in MEDLINE. |
| Page | [PG, PAGE] | The number of the first journal page that the article appears on. |
| Personal Name as Subject | [PS] | Use to search for citations about a named individual. Follow Author field search rules. |

| | | |
|---|---|---|
| Publication Date | [DP, PDAT] | 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. |
| Publication Type | [PT, PTYP] | Describes the type of material the article represents (e.g., Review, Clinical Trials, Retracted publications, Letters). |
| Secondary Source Identifier | [SI] | Identifies a secondary source that supplies information, e.g., other data sources, databanks and accession numbers of molecular sequences. |
| Subset | [SB] | Allows you to limit your search to a particular portion of PubMed (e.g., MEDLINE, PREMEDLINE, PUBLISHER-supplied, AIDS). |
| Subheading | [SH] | Use subheadings to further qualify your subject search. |
| Substance Name | [NM, SUBS] | The name of a chemical discussed in the article (MEDLINE Name of Substance field). |
| Text Words | [TW, WORD] | All words and numbers in the title and abstract, MeSH terms, subheadings, chemical substance names, personal name as subject, and secondary source identifier fields. |
| Title Words | [TI, TITL] | Words and numbers found in the title of an article. |
| Unique Identifier | [UID] | PubMed Unique Identifier PMID and MEDLINE Unique Identifier UI . |
| Volume | [VI, VOL] | The number of the journal volume in which the article is published. |

**Take Note:**

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.

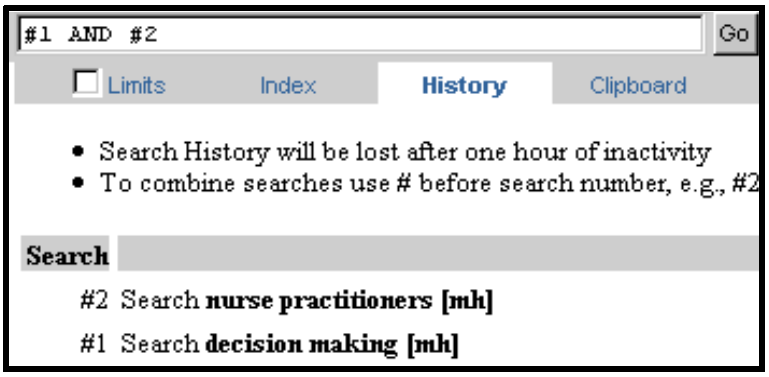
2. Find references to articles about Winston Churchill.

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

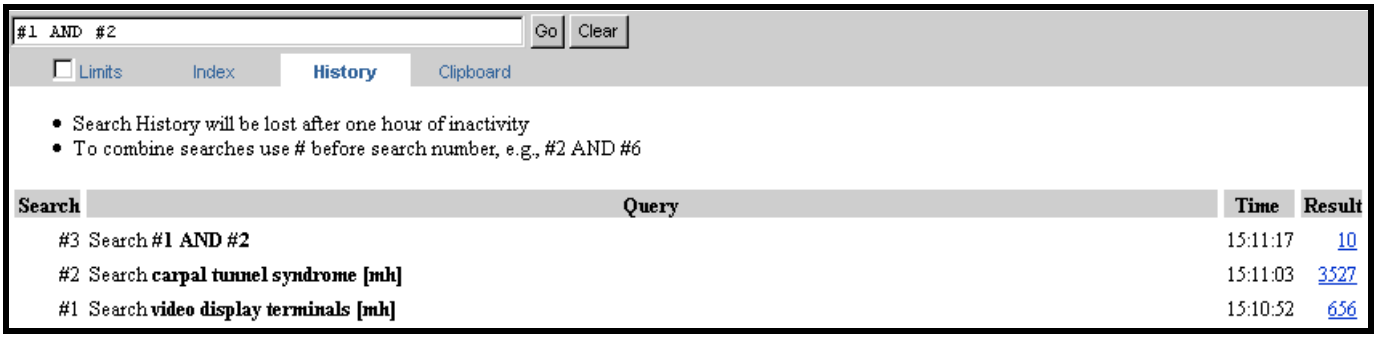
1. Find references to articles discussing decision-making by nurse practitioners.




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:

| Search | Query | Time | Result |
|---|---|---|---|
| #5 | Search **#4 AND review [pt]** | 16:19:28 | 7 |
| #4 | Link to **PubMed** from (**1** document(s)) | 16:19:10 | 102 |
| #3 | Search **#1 AND #2** | 16:19:05 | 10 |
| #2 | Search **carpal tunnel syndrome [mh]** | 16:18:56 | 3532 |
| #1 | Search **video display terminals [mh]** | 16:18:47 | 656 |

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]

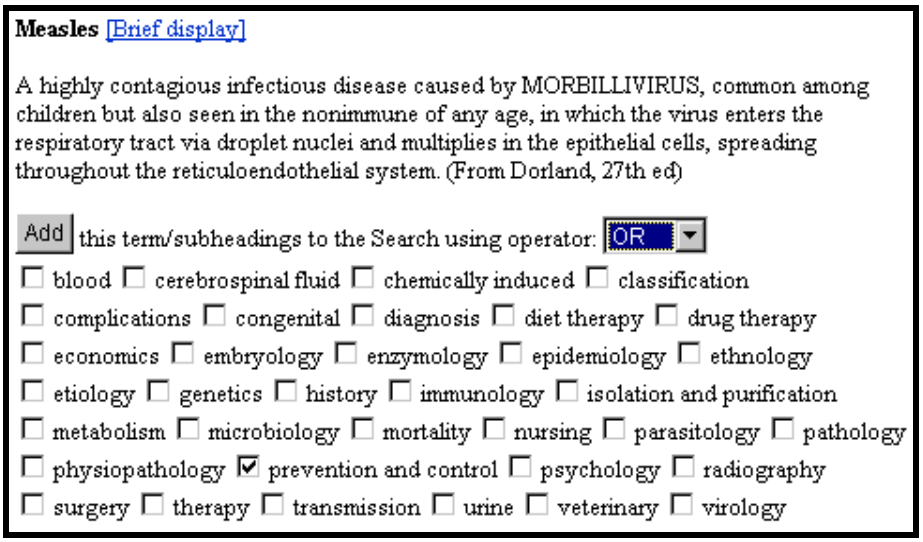
A highly contagious infectious disease caused by the varicella-zoster virus (HERPESVIRUS 3, HUMAN). It usually affects children, is spread by direct contact or respiratory route via droplet nuclei, and is characterized by the appearance on the skin and mucous membranes of successive crops of typical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

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

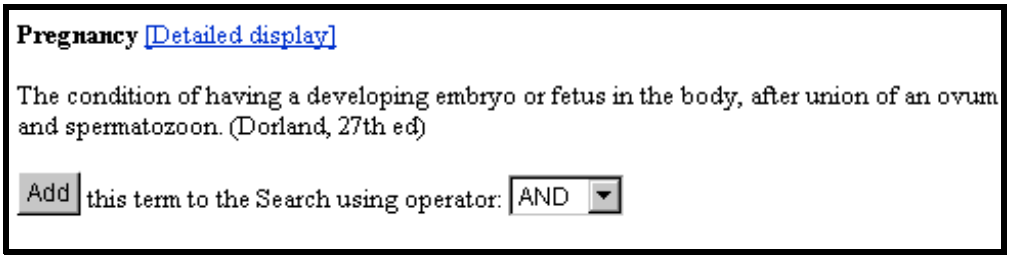
☐ blood ☐ cerebrospinal fluid ☐ chemically induced ☐ classification
☐ complications ☐ congenital ☐ diagnosis ☐ drug therapy ☐ economics
☐ embryology ☐ enzymology ☐ epidemiology ☐ ethnology ☐ etiology ☐ genetics
☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ mortality ☐ nursing
☐ pathology ☐ physiopathology ☑ 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:

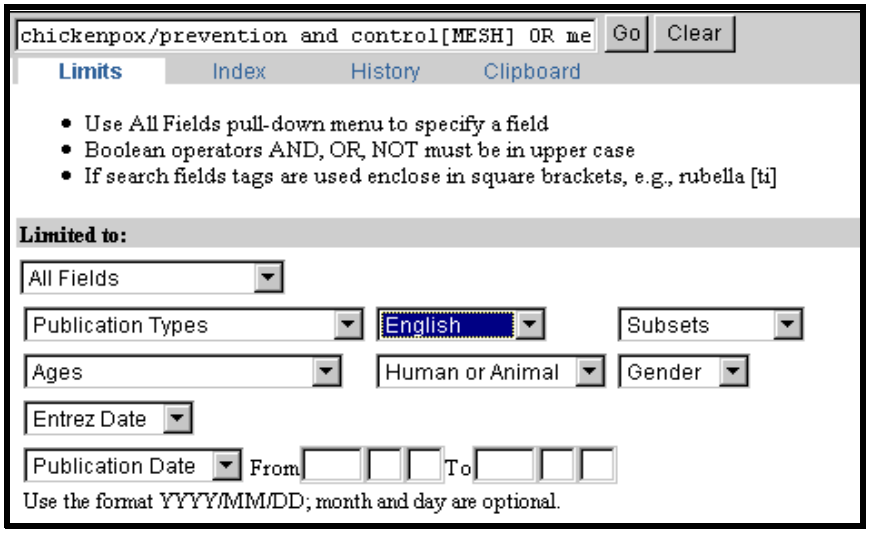
*Select the **OR** operator. Then click on the **Add** button.*



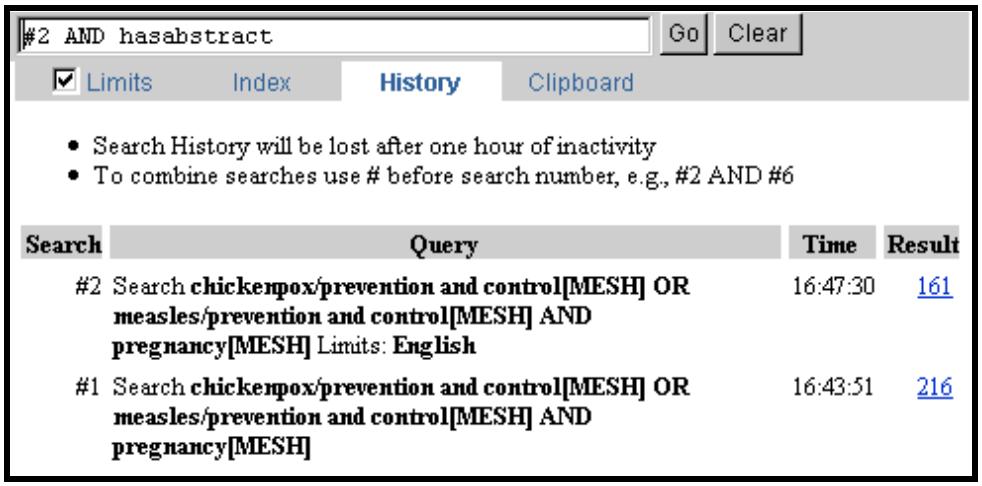

Next, enter pregnancy. No need to look at the detailed display, so just click on the Add button to AND this term into your search strategy:



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:



**N O T E S**

## 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:

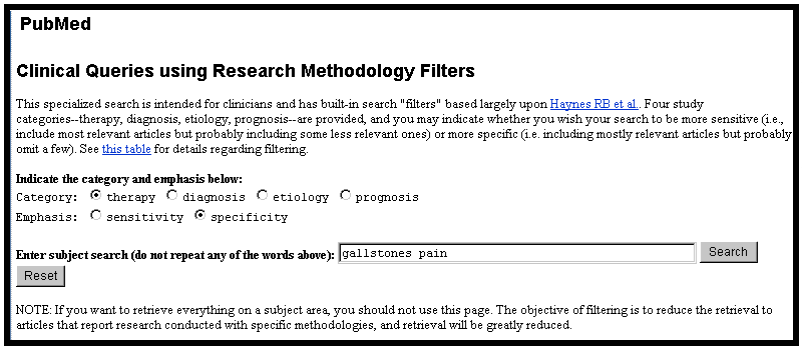
- sensitivity (also referred to as "recall" -- includes relevant articles but probably including some less relevant; will get more retrieval)

- 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:**




*Link to Haynes citation.*

*Link to details about "filtering."*

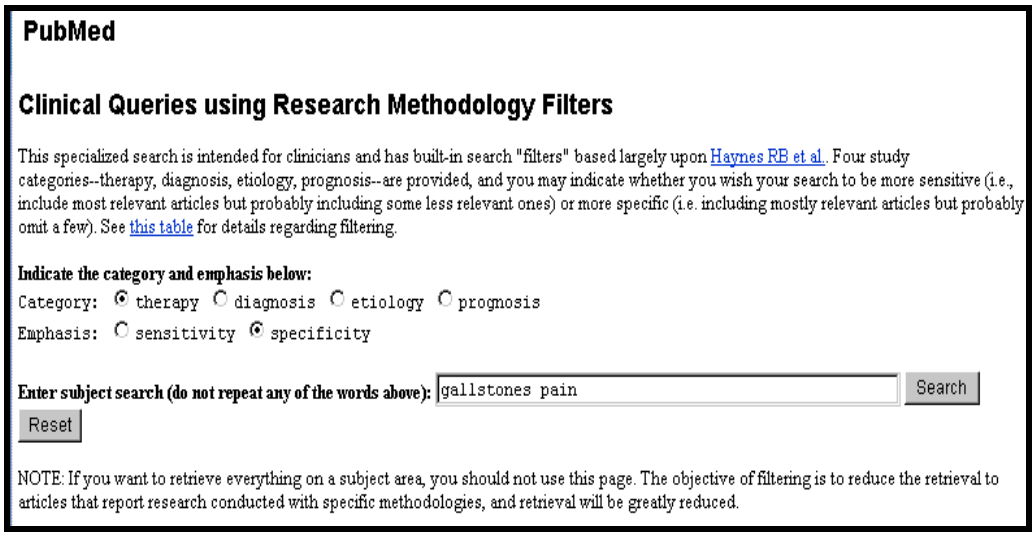
**Take Note:**

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.

**Search Tip:**

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

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 RB et al. Four study categories--therapy, diagnosis, etiology, prognosis--are provided, and you may indicate whether you wish your search to be more sensitive (i.e., include most relevant articles but probably including some less relevant ones) or more specific (i.e. including mostly relevant articles but probably omit a few). See this table for details regarding filtering.

**Indicate the category and emphasis below:**

Category: (•) therapy ( ) diagnosis ( ) etiology ( ) prognosis

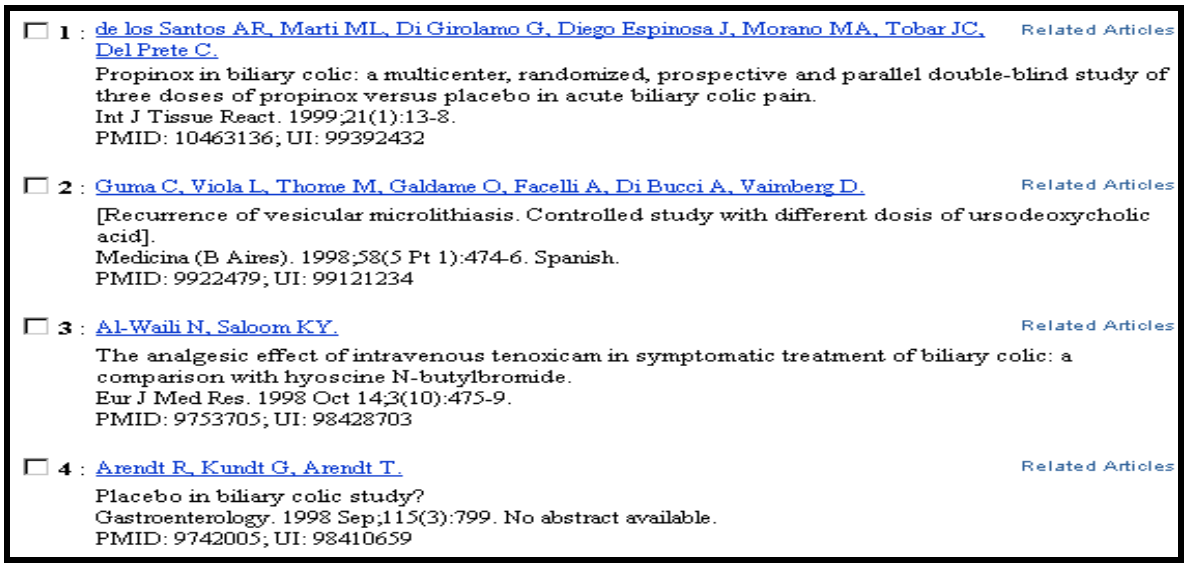
Emphasis: ( ) sensitivity (•) specificity

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

[Reset]

NOTE: If you want to retrieve 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, Del Prete C. Related Articles

Propinox in biliary colic: a multicenter, randomized, prospective and parallel double-blind study of three doses of propinox versus placebo in acute biliary colic pain.
Int J Tissue React. 1999;21(1):13-8.
PMID: 10463136; UI: 99392432

2 : Guma C, Viola L, Thome M, Galdame O, Facelli A, Di Bucci A, Vaimberg D. Related Articles

[Recurrence of vesicular microlithiasis. Controlled study with different dosis of ursodeoxycholic acid].
Medicina (B Aires). 1998;58(5 Pt 1):474-6. Spanish.
PMID: 9922479; UI: 99121234

3 : Al-Waili N, Saloom KY. Related Articles

The analgesic effect of intravenous tenoxicam in symptomatic treatment of biliary colic: a comparison with hyoscine N-butylbromide.
Eur J Med Res. 1998 Oct 14;3(10):475-9.
PMID: 9753705; UI: 98428703

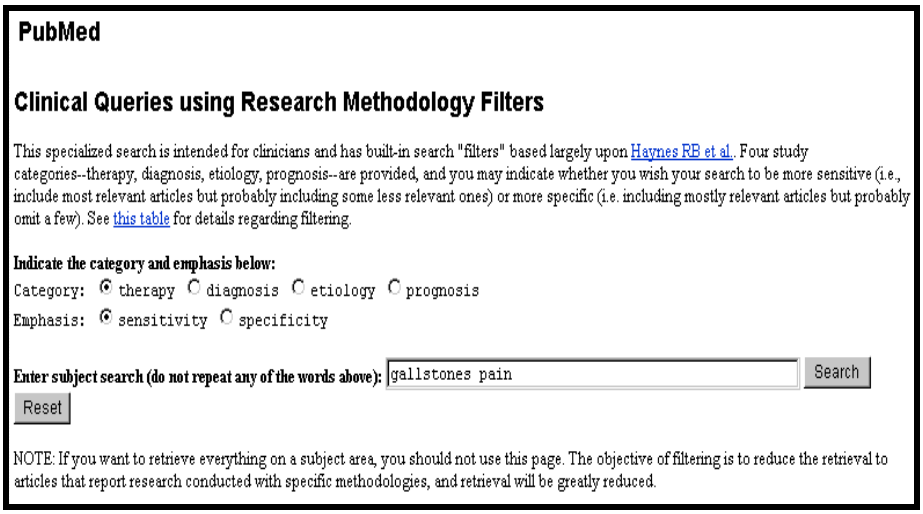
4 : Arendt R, Kundt G, Arendt T. Related Articles

Placebo in biliary colic study?
Gastroenterology. 1998 Sep;115(3):799. No abstract available.
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:

*Select here.*




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

**N O T E S**

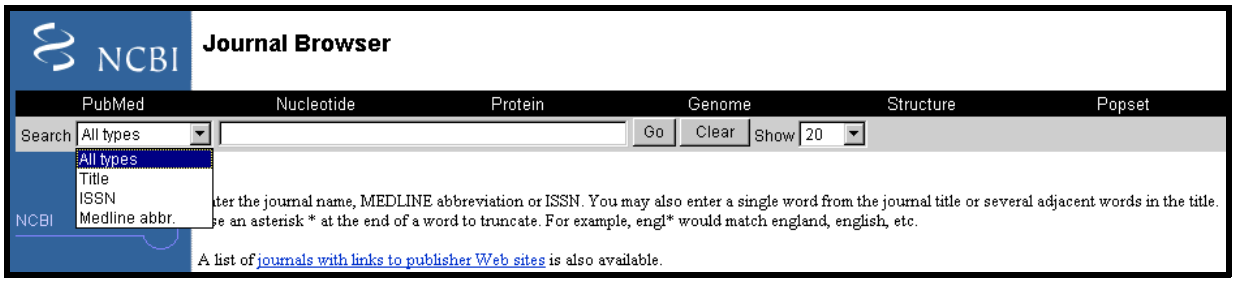
## Journal Browser

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.

**Take Note:**

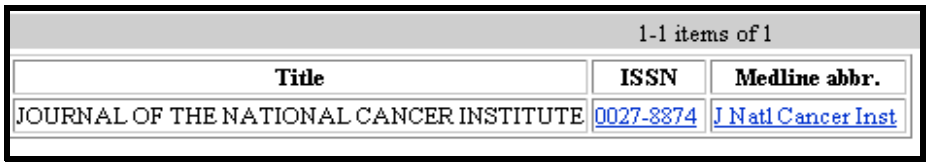
- Some journals may require that you register, subscribe, or pay a fee in order to view the full text of an article.
- Contact the journal publishers as noted on their individual Web sites for specific access information.

Journal Browser Screen:

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

Search example: ***Journal of the National Cancer Institute***


Search Results:




- 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.

**Search Tip:**

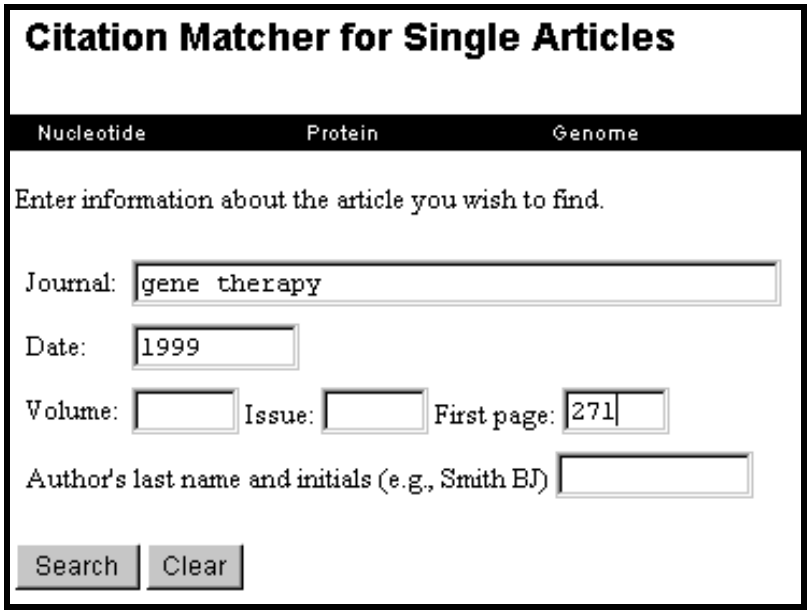
The **Single Citation Matcher** can also be used to get a "Table of Contents" listing of items indexed from a particular issue of a journal. Caution: Remember some MEDLINE journals are selectively indexed and there are indexing policies which might mean that not every article from every journal will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

**How to Get There**

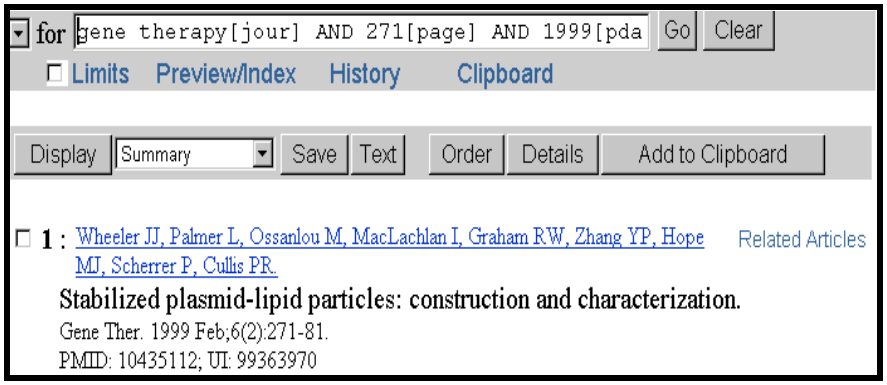
- Clicking on **Single Citation Matcher** on the PubMed homepage sidebar takes you to the Citation Matcher for Single Articles screen:

**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:




**Take Note:**

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

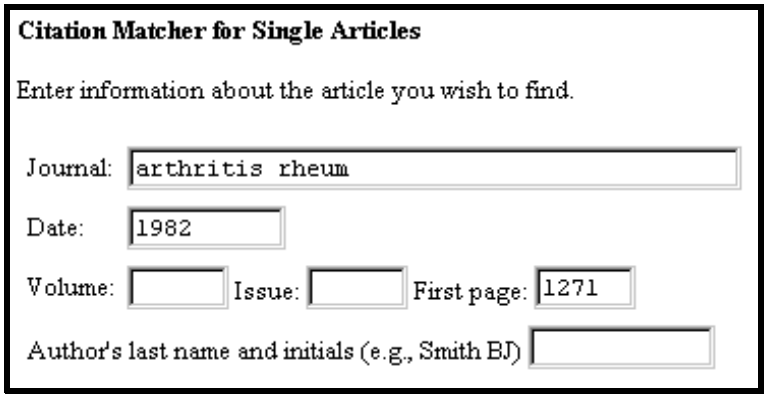
3. V. Lee
   Biochemical Pharmacology
   vol. 29
   issue 14

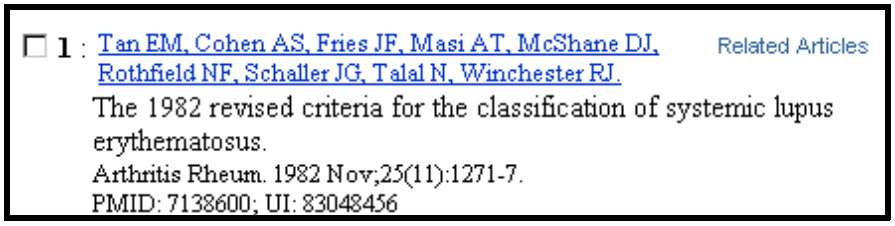
4. Vojvoda
   Lancet
   Jan. 6

## Suggested Answers

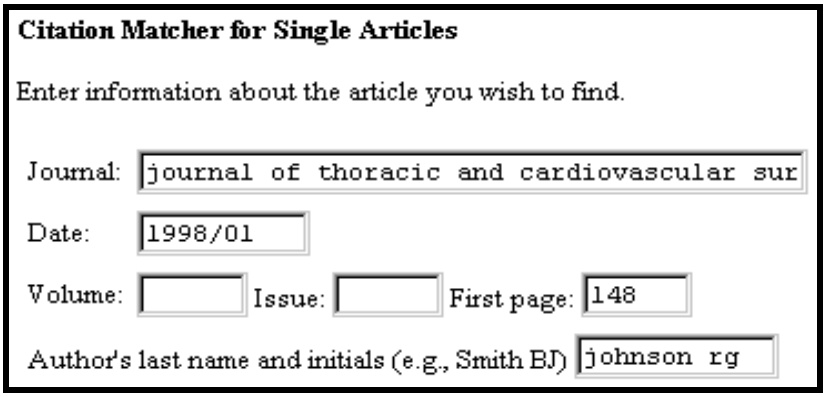
Try to find the references using the following information and PubMed's Single Citation Matcher:

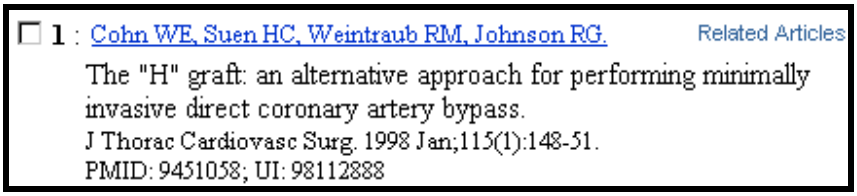
1. Arthritis Rheum
   1982
   page 1271-7



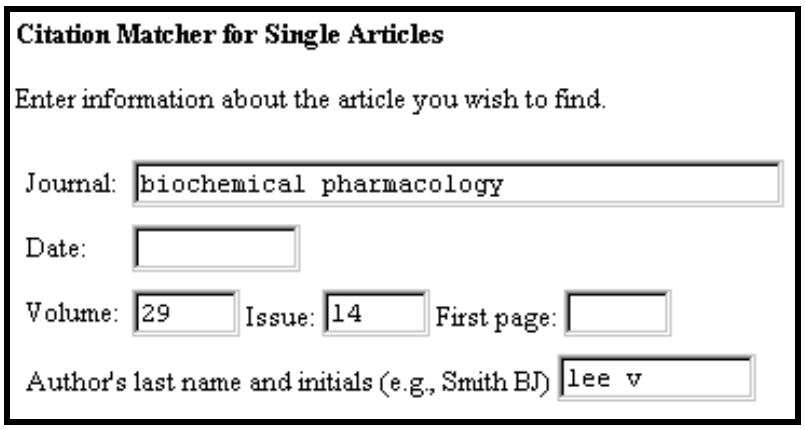



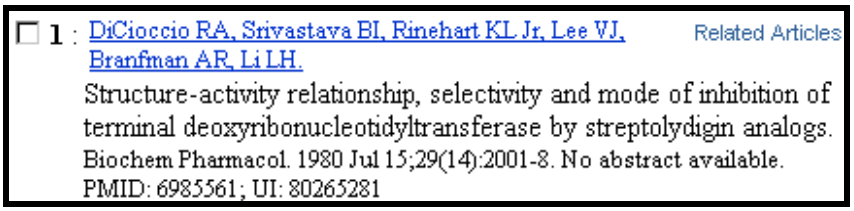

2. R. G. Johnson
   Journal of Thoracic and Cardiovascular Surgery
   Jan. 1998
   page 148



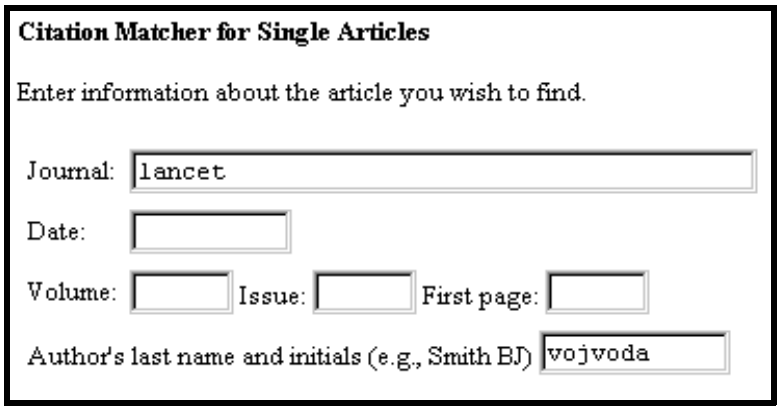
3. V. Lee
   Biochemical Pharmacology
   vol. 29
   issue 14

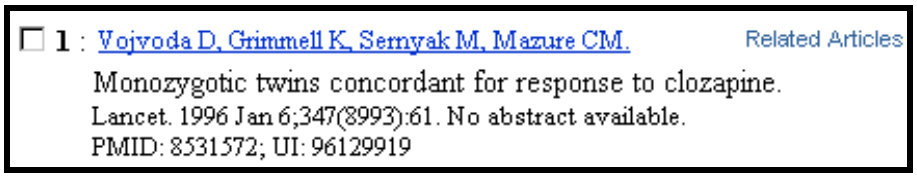



4. Vojvoda
   Lancet
   Jan. 6

*Without the publication year, the month and day are not helpful. Fill in the form with the significant information you have.*



**N O T E S**