

## Box 1. Search Field Descriptions and Tags

Affiliation [AD]	Issue [IP]	Place of Publication [PL]
All Fields [ALL]	Journal Title [TA]	Publication Date [DP]
Author [AU]	Language [LA]	Publication Type [PT]
Comment Corrections	Last Author [LASTAU]	Publisher Identifier [AID]
Corporate Author [CN]	MeSH Date [MHDA]	Secondary Source ID [SI]
EC/RN Number [RN]	MeSH Major Topic [MAJR]	Subset [SB]
Entrez Date [EDAT]	MeSH Subheadings [SH]	Substance Name [NM]
Filter [FILTER]	MeSH Terms [MH]	Text Words [TW]
First Author Name [1AU]	NLM Unique ID [JID]	Title [TI]
Full Author Name [FAU]	Other Term [OT]	Title/Abstract [TIAB]
Grant Number [GR]	Owner	Transliterated Title [TT]
Investigator [IR]	Pagination [PG]	UID [PMID]
	Personal Name as Subject [PS]	Volume [VI]
	Pharmacologic Action MeSH	
	Terms [PA]	

### Affiliation [AD]

May include the institutional affiliation and address (including e-mail address) of the first author of the article as it appears in the journal. This field can be used to search for work done at specific institutions (e.g., cleveland [ad] AND clinic [ad]).

### All Fields [ALL]

Includes all searchable PubMed fields. However, only terms where there is no match found in one of the translation tables or indexes using automatic term mapping will be searching in all fields. PubMed ignores stopwords (Table 7) in search queries.

### Author [AU]

The format to search for this field is: last name followed by a space and up to the first two initials followed by a space and a suffix abbreviation, if applicable, all without periods or a comma after the last name (e.g., fauci as or o'brien jc jr). Initials and suffixes may be omitted when searching.

PubMed automatically truncates on an author's name to account for varying initials, e.g., o'brien j [au] will retrieve o'brien ja, o'brien jb, o'brien jc jr, as well as o'brien j. To turn off this automatic truncation, enclose the author's name in double quotes and tag with [au] in brackets, e.g., "o'brien j" [au] to retrieve just o'brien j.

Searching by full author name for articles published from 2002 forward is also possible, if available. Full names display in the FAU field on the MEDLINE display format (Table 8). Various limits on the number of authors included in the MEDLINE citation have existed over the years (see NLM policy on author names).

### Comment Correction Type

The data in these fields are citations to other associated journal publications, e.g., comments or errata. Often these link to the respective citation. Comments/Corrections data can be retrieved by the search term that follows each type:

- **Comment in:** hascommentin
- **Comment on:** hascommenton
- **Erratum in:** haserratumin

- **Erratum for:** haserratumfor
- **Corrected and republished in:** hascorrectedrepublishedin
- **Corrected and republished from:** hascorrectedrepublishedfrom
- **Republished in:** hasrepublishedin
- **Republished from:** hasrepublishedfrom
- **Retraction in:** hasretractionin
- **Retraction of:** hasretractionof
- **Update in:** hasupdatein
- **Update of:** hasupdateof
- **Summary for patients in:** hassummaryforpatientsin
- **Original Report in:** hasoriginalreportin

## Corporate Author [CN]

Identifies the corporate or collective authorship of an article. Corporate names display exactly as they appear in the journal.

Note: Citations indexed pre-2000 and some citations indexed in 2000-2001 retain corporate authors at the end of the title field. For comprehensive searches, consider including terms and/or words searched in the title field [ti].

## EC/RN Number [RN]

Number assigned by the Enzyme Commission (EC) to designate a particular enzyme or by the Chemical Abstracts Service (CAS) for Registry Numbers, e.g., 1-5-20-4[rn]

## Entrez Date [EDAT]

Date the citation was added to the PubMed database. The Entrez Date is set to the Publication Date on citations before September 1997, when this field was first added to PubMed. Citations are displayed in Entrez Date order that is last in, first out.

Dates or date ranges must be entered using the format YYYY/MM/DD [edat], e.g., 1998/04/06 [edat]. The month and day are optional (e.g., 1998 [edat] or 1998/03 [edat]).

To enter a date range, insert a colon (:) between each date (e.g., 1996:1997 [edat] or 1998/01:1998/04 [edat]).

Note: The Entrez Date is not changed to reflect the date a publisher supplied record is elevated to in process or when an in process record is elevated to indexed for MEDLINE.

## Filter [FILTER] [SB]

Technical tags used by LinkOut [/entrez/linkout/doc/linkoutoverview.html], filters include:

- **loall[sb]** - Citations with LinkOut links in PubMed.
- **free full text[sb]** - Citations that include a link to a free full-text article.
- **full text[sb]** - Citations that include a link to a full-text article.

Use Preview/Index to browse the LinkOut index. Select Filter from the All Fields pull-down menu, enter 'loprov' in the query box, select Index. PubMed displays an alphabetic list of the LinkOut providers [[http://www.ncbi.nlm.nih.gov/entrez/journals/active\\_providers.html](http://www.ncbi.nlm.nih.gov/entrez/journals/active_providers.html)]. The 'losubj' and 'loattr' entries are links indexed by Subject Types and Attributes [<http://www.ncbi.nlm.nih.gov/entrez/linkout/doc/subjecttypes.html>]. The 'loftext' entries include a link to the online full-text of a journal citation.

## First Author Name [1AU]

The first personal author name in a citation.

## Full Author Name [FAU]

The full author name for articles published from 2002 forward, if available. Full author searching can be entered in natural or inverted order, e.g., julia s wong or wong julia s.

## Grant Number [GR]

Research grant numbers, contract numbers, or both that designates financial support by any agency of the US PHS (Public Health Service) or Wellcome Trust. The three pieces of the grant number (LM05545 - number, LM - acronym, and NLM - institute mnemonic) are each individually searchable using the [gr] tag.

Additional information about NIH grant numbers and tips for searching:

NIH grant numbers, e.g., 5R01CA101211-03, typically have three main parts:

1. A prefix that indicates the type of grant, e.g., 5R01
2. An 8-character serial number consisting of a 2-letter NIH institute/center code and a 6-digit number, e.g., CA101211
3. A suffix that includes additional data such as grant year

To search for an individual NIH grant number use the 8-character serial number and the [gr] tag, e.g., ca101211[gr].

**Note:** Grant numbers display in PubMed as they appear in the published article. If the number in the journal article is not 6 digits, e.g., CA84141, insert a leading zero, e.g., ca084141[gr], so the entire search string is a total of 8 characters long.

- For a broader search, use the 2-letter grant code assigned to an agency and the [gr] tag, e.g., ca[gr]
- For the broadest search, use the agency abbreviation and the [gr] tag, e.g., nci[gr]. See Grant codes and agency abbreviations used in grant numbers [[http://www.nlm.nih.gov/bsd/grant\\_acronym.html](http://www.nlm.nih.gov/bsd/grant_acronym.html)] for help determining the agency abbreviation using the grant code.
- See also Funding Support [[http://www.nlm.nih.gov/bsd/funding\\_support\\_2005.html](http://www.nlm.nih.gov/bsd/funding_support_2005.html)] for additional information.

## Issue [IP]

The number of the journal issue in which the article was published.

## Investigator [IR]

Names of the NASA-funded principal investigator(s) who conducted the research. Search names following the Author field format, e.g., sollar b [ir]

## Journal Title [TA]

The journal title abbreviation, full journal title, or ISSN number (e.g., J Biol Chem, Journal of Biological Chemistry, 0021-9258).

The Journals database is available from the PubMed homepage sidebar to look up the full name, abbreviation, and ISSN number of a journal. If a journal title contains special characters, e.g., parentheses, brackets, enter the name without these characters, e.g., enter J Hand Surg [Am] as J Hand Surg Am.

## Language [LA]

The language in which the article was published. Note that many non-English articles have English language abstracts. You can either enter the language or enter just the first three characters of most languages, e.g., chi [la] retrieves the same as chinese [la]. The most notable exception is jpn [la] for Japanese.

## Last Author Name [LASTAU]

The last personal author name in a citation.

## MeSH Date [MHDA]

The date the citation was indexed with MeSH Terms and elevated to MEDLINE for citations with an Entrez Date after March 4, 2000. The MeSH Date is initially set to the Entrez Date when the citation is added to PubMed. If the MeSH Date and Entrez Date on a citation are the same, and the Entrez Date is after March 4, 2000, the citation has not yet been indexed.

Dates must be entered using the format YYYY/MM/DD [mhda], e.g. 2000/03/15 [mhda] . The month and day are optional (e.g., 2000 [mhda] or 2000/03 [mhda]).

To enter a date range, insert a colon (:) between each date (e.g., 1999:2000 [mhda] or 2000/03:2000/04 [mhda]).

## MeSH Major Topic [MAJR]

A MeSH term that is one of the main topics discussed in the article denoted by an asterisk on the MeSH term or MeSH/Subheading combination, e.g., Cytokines/physiology\* See MeSH Terms [MH] below.

## MeSH Subheadings [SH]

MeSH Subheadings [<http://www.nlm.nih.gov/mesh/topsubscope2006.html>] are used with MeSH terms to help describe more completely a particular aspect of a subject. For example, the drug therapy of asthma is displayed as asthma/drug therapy, see MeSH/Subheading Combinations in MeSH Terms [MH] below.

The MeSH Subheading field allows users to "free float" Subheadings, e.g., hypertension [mh] AND toxicity [sh].

MeSH Subheadings automatically include the more specific Subheading [<http://www.nlm.nih.gov/mesh/subhierarchy2006.html>] terms under the term in a search. To turn off this automatic feature, use the search syntax [sh:noexp], e.g., therapy [sh:noexp].

In addition, you can enter the MEDLINE two-letter MeSH Subheading abbreviations (Table 5) rather than spelling out the Subheading, e.g., dh [sh] = diet therapy [sh].

## MeSH Terms [MH]

NLM's Medical Subject Headings [<http://www.nlm.nih.gov/mesh/meshhome.html>] controlled vocabulary of biomedical terms that is used to describe the subject of each journal article in MEDLINE. MeSH contains more than 23,000 terms and is updated annually to reflect changes in medicine and medical terminology. MeSH terms are arranged hierarchically by subject categories with more specific terms arranged beneath broader terms. PubMed allows you to view this hierarchy and select terms for searching in the MeSH Database.

Skilled subject analysts examine journal articles and assign to each the most specific MeSH terms applicable - typically ten to twelve. Applying the MeSH vocabulary ensures that articles are uniformly indexed by subject, whatever the author's words.

Notes on MeSH Terms and Major MeSH Topic search fields:

- To search the term only as a MeSH term, it must be tagged using the search field, e.g., [mh] for MeSH Terms or [majr] for MeSH Major Topic. A tagged term is checked against the MeSH translation table. And mapped to the appropriate MeSH term. Some concepts may map to two or more MeSH terms. To turn off this mapping, enclose the MeSH term in double quotes and tag with [mh], e.g., "cold" [mh].
- MeSH terms are arranged hierarchically by subject categories with more specific terms arranged beneath broader terms. MeSH terms in PubMed automatically include the more specific MeSH terms in a search. For more detailed information about MeSH vocabulary including the hierarchical structure, please see the MeSH home page [<http://www.nlm.nih.gov/mesh/meshhome.html>].
- MeSH/Subheading Combinations: To directly attach MeSH Subheadings, use the format MeSH Term/Subheading, e.g., neoplasms/diet therapy. You may also use the MEDLINE two-letter MeSH Subheading abbreviations, e.g., neoplasms/dh (Table 5). The [mh] tag is not required, however [majr] may be used, e.g., plants/genetics[majr]. Only one Subheading may be directly

attached to a MeSH term. For a MeSH/Subheading combination, PubMed always includes the more specific terms arranged beneath broader terms for the MeSH term and also includes the more specific terms arranged beneath broader Subheadings [<http://www.nlm.nih.gov/mesh/subhierarchy2006.html>]. The broader Subheading, or one of its indentions', will be directly attached to the MeSH term or one of its indentions'. For example, hypertension/therapy also retrieves hypertension/diet therapy; hypertension/drug therapy; hypertension, malignant/therapy; hypertension, malignant/drug therapy, and so on, as well as hypertension/therapy.

- To turn off the automatic inclusion of the more specific terms, use the syntax [field:noexp], e.g., hypertension [mh:noexp], or hypertension [majr:noexp], or hypertension/therapy [mh:noexp]. The latter example turns off the more specific terms in both parts, searching for only the one Subheading therapy attached directly to only the one MeSH term hypertension.
- If parentheses are embedded in a MeSH term, replace the parentheses with a space and tag with [mh] e.g., enter the MeSH term Benzo(a)pyrene as benzo a pyrene [mh].
- MeSH terms can be selected for searching in the MeSH database and from Preview/Index.

## NLM Unique ID [JID]

The alpha-numeric identifier for the cited journal that was assigned by NLM's Integrated Library System LocatorPlus [<http://130.14.16.152/>], e.g., 0375267 [jid].

## Other Term [OT]

Mostly non-MeSH subject terms (keywords), including NASA Space Flight Mission, assigned by an organization other than NLM. The Other Term data may be marked with an asterisk to indicate a major concept, however asterisks are for display only. You cannot search Other Terms with a major concept tag. The OT field is searchable with the Text Word [tw] and Other Term [ot] search tags.

## Owner

Acronym that identifies the organization that supplied the citation data. Search using owner + the owner acronym, e.g. ownernasa.

## Pagination [PG]

Enter only the first page number that the article appears on. The citation will display the full pagination of the article but this field is searchable using only the first page number.

## Personal Name as Subject [PS]

Use this search field tag to limit retrieval to where the name is the subject of the article, e.g., varmus h[ps]. Search names following the Author field format, e.g., varmus h[ps].

## Pharmacologic Action MeSH Terms [PA]

Substances known to have a particular pharmacologic action. Each pharmacologic action term index is created with the drug/substance terms known to have that affect. This includes both MeSH terms and terms for Supplementary Concept Records.

## Place of Publication [PL]

Indicates the cited journal's country of publication. Geographic Place of Publication regions are not searchable. In order to retrieve records for all countries in a region (e.g., North America) it is necessary to OR together the countries of interest. Note: This field is not included in All Fields or Text Word retrieval.

## Publication Date [DP]

The date that the article was published.

Dates or date ranges must be searched using the format YYYY/MM/DD [dp], e.g. 1998/03/06 [dp] . The month and day are optional (e.g., 1998 [dp] or 1998/03 [dp]).

To enter a date range, insert a colon (:) between each date (e.g., 1996:1998 [dp] or 1998/01:1998/04 [dp]).

Use the following format to search X days, months or years immediately preceding today's date where X = numeric value:

- "last X days"[dp]
- "last X months"[dp]
- "last X year"[dp]

Note:

- Journals vary in the way the publication date appears on an issue. Some journals include just the year, whereas others include the year plus month or year plus month plus day. And, some journals use the year and season (e.g., Winter 1997). The publication date in the citation is recorded as it appears in the journal.
- If an article is published electronically and in print on different dates both dates may be included on the citation prefaced with an Epub or Print label.

## Publication Type [PT]

Describes the type of material the article represents (e.g., Review, Clinical Trial, Retracted Publication, Letter); see the PubMed Publication Types (Table 6), e.g., review[pt]. Publication Types are arranged hierarchically with more specific terms arranged beneath broader terms. Publication types automatically include the more specific publication types in a search.

## Publisher Identifier [AID]

Includes article identifiers submitted by journal publishers such as DOI.

## Secondary Source ID [SI]

The SI field identifies secondary source databanks and accession numbers of outside resources discussed in MEDLINE articles. The field is composed of the source followed by a slash followed by an accession number and can be searched with one or both components, e.g., genbank [si], AF001892 [si], genbank/AF001892 [si].

The SI field and the Entrez sequence database links are not linked. The PubMed links to these databases are created from the reference field of the GenBank or GenPept flat file. These references include citations that discuss the specific sequence presented in these flat files.

## Subset [SB]

Method of restricting retrieval by topic, citation status and journal/citation subsets. Searchable with [SB]. See also Limits and Finding Related Links for a Citation Using LinkOut).

## Substance Name [NM]

The name of a chemical discussed in the article. Synonyms to the Supplementary Concept Substance Name will automatically map when tagged with [nm]. This field was implemented in mid-1980. Many chemical names are searchable as MeSH terms before that date.

## Text Words [TW]

Includes all words and numbers in the title, abstract, other abstract, MeSH terms, MeSH Subheadings, Publication Types, Substance Names, Personal Name as Subject, MEDLINE Secondary Source, and Other Terms (see Other Term [OT] above) typically non-MeSH subject terms (keywords), including NASA Space Flight Mission, assigned by an organization other than NLM.

## Title [TI]

Words and numbers included in the title of a citation.

## Title/Abstract [TIAB]

Words and numbers included in the title, abstract, and other abstract of a citation. English language abstracts are taken directly from the published article. If an article does not have a published abstract, NLM does not create one.

## Transliterated Title [TT]

Words and numbers in title originally published in a non-English language, in that language. Non-Roman alphabet language title are transliterated. Transliterated title is not included in All Fields or Text Word retrieval so you must search terms using the [tt] search tag.

## Unique Identifier [PMID]

PubMed Unique Identifier PMID.

To search for a PMID enter the number with or without the search field tag [pmid]. You can search for several PMIDs by entering each number in the query box separated by a space (e.g., 95091318 97465762); PubMed will OR the PMIDs together.

To search in combination with other terms, you must enter the search field tag, e.g., smith [au] AND (10403340 [pmid] OR vaccines [mh]).

## Volume [VI]

The number of the journal volume in which an article is published.