



Advanced PubMed® Searching Resource Packet



Additional PubMed and NLM-related resources:

NN/LM PubMed Brochures

PubMed Basics: <http://nmlm.gov/training/resources/pmtri.pdf>

PubMed My NCBI: <http://nmlm.gov/training/resources/myncbtri.pdf>

Searching PubMed with MeSH: <http://nmlm.gov/training/resources/meshtri.pdf>

Full Text and PubMed: <http://nmlm.gov/training/resources/fulltexttri.pdf>

Loansome Doc: <http://nmlm.gov/training/resources/ldtrifold.pdf>

NLM PubMed Online Training: <http://www.nlm.nih.gov/bsd/disted/pubmed.html>

NN/LM Non-English Guides to PubMed: <http://nmlm.gov/training/resources/intlpubmedlinks.html>

Additional NN/LM Materials linked to PubMed

All About Drugs @ NLM: <http://nmlm.gov/training/resources/drugstri.pdf>

MedlinePlus® for Health Professionals: <http://nmlm.gov/training/resources/mp4hptri.pdf>



National Network of Libraries of Medicine - Greater Midwest Region

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This resource is freely available at: <http://nmlm.gov/training/resources/pubmedpacket.doc>

MeSH® Subheadings and Related Abbreviations

<i>Abbr.</i>	<i>MeSH Subheading</i>	<i>Abbr.</i>	<i>MeSH Subheading</i>
AB	Abnormalities	LJ	Legislation and Jurisprudence
AD	Administration and Dosage	MA	Manpower
AE	Adverse Effects	ME	Metabolism
AG	Agonists	MT	Methods
AA	Analogues and Derivatives	MI	Microbiology
AN	Analysis	MO	Mortality
AH	Anatomy and Histology	NU	Nursing
AI	Antagonists and Inhibitors	OG	Organization and Administration
BI	Biosynthesis	PS	Parasitology
BS	Blood Supply	PY	Pathogenicity
BL	Blood	PA	Pathology
CF	Cerebrospinal Fluid	PK	Pharmacokinetics
CS	Chemical Synthesis	PD	Pharmacology
CI	Chemically Induced	PH	Physiology
CH	Chemistry	PP	Physiopathology
CL	Classification	PO	Poisoning
CO	Complications	PC	Prevention and Control
CN	Congenital	PX	Psychology
CT	Contraindications	RE	Radiation Effects
CY	Cytology	RA	Radiography
DF	Deficiency	RI	Radionuclide Imaging
DI	Diagnosis	RT	Radiotherapy
DU	Diagnostic Use	RH	Rehabilitation
DH	Diet Therapy	SC	Secondary
DE	Drug Effects	SE	Secretion
DT	Drug Therapy	ST	Standards
EC	Economics	SN	Statistics and Numerical Data
ED	Education	SD	Supply and Distribution
EM	Embryology	SU	Surgery
EN	Enzymology	TU	Therapeutic Use
EP	Epidemiology	TH	Therapy
ES	Ethics	TO	Toxicity
EH	Ethnology	TM	Transmission
ET	Etiology	TR	Transplantation
GE	Genetics	TD	Trends
GD	Growth and Development	US	Ultrasonography
HI	History	UL	Ultrastructure
IM	Immunology	UR	Urine
IN	Injuries	UT	Utilization
IR	Innervation	VE	Veterinary
IS	Instrumentation	VI	Virology
IP	Isolation and Purification		

Available at: <http://www.ncbi.nlm.nih.gov/books/NBK3827/table/pubmedhelp.T41/>

PubMed® Qualifier Hierarchies / Families of Subheading Explosions

Searching on these subheadings searches the narrower subheadings as well. * are top level terms.

Not all subheadings are available for all MeSH® terms.

Adverse Effects -AE

Poisoning -PO
Toxicity -TO

Analysis-AN

Blood -BL
Cerebrospinal fluid -CF
Isolation & purification -IP
Urine -UR

***Anatomy & Histology -AH**

Blood Supply -BS
Cytology -CY
Pathology -PA
Ultrastructure -UL
Embryology -EM
Abnormalities -AB
Innervation -IR

***Chemistry -CH**

Agonists -AG
Analog & derivatives -AA
Antagonists & inhibitors -AI
Chemical synthesis -SC

Complications -CO

Secondary -SC

Cytology -CY

Pathology -PA
Ultrastructure -UL

***Diagnosis -DI**

Pathology -PA
Radiography -RA
Radionuclide imaging -RI
Ultrasonography -US

Embryology -EM

Abnormalities -AB

Epidemiology -EP

Ethnology -EH
Mortality -MO

***Etiology -ET**

Chemically induced -CI
Complications -CO
Secondary -SC
Congenital -CN
Embryology -EM
Genetics -GE
Immunology -IM
Microbiology -MI
Virology -VI
Parasitology -PS
Transmission -TM

Metabolism -ME

Biosynthesis -BI
Blood -BL
Cerebrospinal fluid -CF
Deficiency -DF
Enzymology -EN
Pharmacokinetics -PK
Urine -UR

Microbiology -MI

Virology -VI

***Organization & administration**

-OG

Economics -EC
Legislation & jurisprudence -LJ
Manpower -MA
Standards -ST
Supply & distribution -SD
Trends -TD
Utilization -UT

Pharmacology -PD

Administration & dosage -AD
Adverse Effects -AE
Poisoning -PO
Toxicity -TO
Agonists -AG
Antagonists & inhibitors -AI
Contraindications -CT
Diagnostic use -DU
Pharmacokinetics -PK

***Physiology -PH**

Genetics -GE
Growth & Development -GD
Immunology -IM
Metabolism -ME
Biosynthesis -BI
Blood -BL
Cerebrospinal Fluid -CF
Deficiency -DF
Enzymology -EN
Pharmacokinetics -PK
Urine -UR
Physiopathology -PP
Secretion -SE

***Statistics & numerical data-SN**

Epidemiology -EP
Ethnology -EH
Mortality -MO
Supply & distribution -SD
Utilization -UT

Surgery -SU

Transplantation -TR

***Therapeutic use -TU**

Administration & dosage -AD
Adverse effects -AE
Contraindications -CT
Poisoning -PO

***Therapy -TH**

Diet Therapy -DH
Drug Therapy -DT
Nursing -NU
Prevention & control -PC
Radiotherapy -RT
Rehabilitation -RH
Surgery -SU
Transplantation -TR

Available at: <http://www.nlm.nih.gov/mesh/2013/introduction/subhierarchy.html> with links to definitions.

PubMed® Subset Searching

Topic and Filter Subsets

Available subset search terms (use [sb])

aids [sb] – AIDS**
 bioethics [sb] – Bioethics**
 cancer [sb] – Cancer**
 cam [sb] – Complementary Medicine**
 dietsuppl [sb] - Dietary Supplements**
 effectiveness [sb] – Comparative Effectiveness Research
 history [sb] – History of Medicine**
 medline[sb] – MEDLINE® *^
 oldmedline [sb] – OLDMEDLINE
 reportresearch [sb] – Research Reporting Guidelines and Initiatives
 space [sb] – Space Life Sciences
 systematic [sb] – Systematic Reviews*, **
 tox [sb] – Toxicology**
 veterinary [sb] – Veterinary Science**

Additional Links to Queries and Interfaces from the Special Queries page

CAM on PubMed
 Cancer Topic Searches
 Electronic Health Records
 Health Disparities
 Health Literacy
 Health Services Research (HSR) Queries
 Healthy People 2020
 MedlinePlus Health Topics
 National Institutes of Health Funding Support
 Retracted Publication*
 Smallpox

(Available as a filter under *Article types, **Subjects, and/or *^Journal Categories)
http://www.nlm.nih.gov/bsd/pubmed_subsets.html and http://www.nlm.nih.gov/bsd/special_queries.html

Journal/Citation Subsets

For the following, use *jsubsetcode* without the [sb]; e.g. *jsubsetk*

Code	Description
AIM	Abridged Index Medicus - list created 20 years ago and includes 119 core clinical English language journals; corresponds to "Core clinical journals" filter under Journal Categories
D	Dentistry journals (also available as a filter under Journal Categories)
E	Citations from bioethics journals or selected bioethics citations from other journals
H	Health administration journals, non-Index Medicus
IM	Index Medicus journals
K	Consumer health journals, non-Index Medicus
N	Nursing journals (also available as a filter under Journal Categories)
OM	OLDMEDLINE citations from the Cumulated Index Medicus (CIM) and the Current List of Medical Literature (CLML) - 1947-1965 (plus some earlier) - not available in NLM Catalog
Q	History of medicine journals and selected citations from other journals
QIS	Citations from non-Index Medicus journals in the field of history of medicine
S	Citations from space life sciences journals and selected citations from other journals
T	Health technology assessment journals, non-Index Medicus
X	AIDS/HIV journals (selected citations from other journals 1980-2000)

<http://www.ncbi.nlm.nih.gov/books/NBK3827/table/pubmedhelp.1.3.24/> and http://www.nlm.nih.gov/databases/databases_oldmedline.html

Additional Selected Subsets

- all [sb] – All citations in PubMed
- free full text [sb] – Citations which include links to free full text articles
- hasabstract or hasstructuredabstract – Citations with abstracts or structured abstracts (no [sb])
- loall [sb] – Citations with LinkOut links in PubMed
- loprovmedlib [sb] – LinkOut holdings in medical library, e.g. loprovuiclib [sb]; see provider names and abbreviations at: http://www.ncbi.nlm.nih.gov/projects/linkout/journals/htmllists.cgi?type_id=6
- pubmed pmc [sb] – Free full-text article available in PubMed Central

<http://www.ncbi.nlm.nih.gov/books/NBK3827/#pubmedhelp.Subsets>
http://www.ncbi.nlm.nih.gov/books/NBK3827/#pubmedhelp.Text_availability
http://www.ncbi.nlm.nih.gov/books/NBK3827/#pubmedhelp.Filter_FILTER_SB

Citation Status Tags and Search Terms

Search Term	Status Tag	Description
publisher [sb]	PubMed - as supplied by publisher	Citation as supplied by publisher, not yet indexed (may be an E-Pub)
pubstatusaheadofprint	PubMed - as supplied by publisher	E-Pub - citations available in advance of journal issue's print release (no [sb])
in process [sb]	PubMed - in process	Citation is in the review process
medline [sb]	PubMed - indexed for MEDLINE	Fully indexed and cross-linked citations
oldmedline [sb]	PubMed - OLDMEDLINE	Pre 1966 citations not mapped to current MeSH
pubmednotmedline [sb]	PubMed	Processed, not indexed for MEDLINE
pubstatusnihms	PubMed	Author manuscript from non-MEDLINE journal submitted to PMC (no [sb])
pubstatuspmcsd	PubMed	Non-MEDLINE citations in PMC (no [sb])
pmcbook pmcbooktitle pmcbookchapter	PubMed	Book and book citations available on the NCBI Bookshelf (no [sb])

<http://www.ncbi.nlm.nih.gov/books/NBK3827/table/pubmedhelp.T39/>
http://www.ncbi.nlm.nih.gov/books/NBK3827/#pubmedhelp.Ahead_of_Print_Citations

Publication Types Found in PubMed®

In addition to *Clinical Queries*, use bolded publication types for **evidence-based medicine** searches. For the following, use [publication type] OR [PT]; e.g. clinical trial [pt] (also available as a Filter, under Article types)

Addresses	Duplicate Publication	Periodical Index
Autobiography	Editorial	Portraits
Bibliography	English Abstract (foreign article)	Practice Guideline (health care)
Biography	Evaluation Studies	Publication Components
Case Reports	Festschrift	Publication Formats
Classical Article (republished)	Government Publications	Published Erratum
Clinical Conference (reports of clinical case conferences)	Guideline (administrative, procedural guidelines)	Randomized Controlled Trial
Clinical Trial (includes all types and phases of clinical trials)	Historical Article	Research Support, American Recovery and Reinvestment Act
Clinical Trial, phase I	In Vitro	Research Support, ...
Clinical Trial, phase II	Interactive Tutorial	N.I.H., Extramural
Clinical Trial, phase III	Interview	N.I.H., Intramural
Clinical Trial, phase IV	Introductory Journal Article	Non-U.S. Gov't
Collected Works	Journal Article (excludes letter, editorial, news, etc.)	U.S. Gov't, Non-P.H.S.
Comment (on previously published work)	Lectures	U.S. Gov't, P.H.S.
Comparative Study	Legal Cases	Retracted Publication
Congresses	Legislation	Retraction of Publication Review (author's statement)
Consensus Development Conference	Letter	Scientific Integrity Review (US)
Consensus Development Conference, NIH	Meta-Analysis (quantitative summary)	Study Characteristics
Controlled Clinical Trial	Multicenter Study	Support of Research
Corrected and Republished Article	News (medical or scientific)	Technical Report
Dictionary	Newspaper Article	Twin Study
Directory	Overall (collection of articles)	Validation Studies
	Patient Education Handout	Video-Audio Media
		Webcasts

Search PubMed Help for Publication Types; or visit: <http://www.ncbi.nlm.nih.gov/books/NBK3827/?rendertype=table&id=pubmedhelp.T42>
 For the complete list of types and links to definitions of terms, visit: <http://www.nlm.nih.gov/mesh/pubtypes.html>
 For the Publication Characteristics in the Mesh Tree, visit: http://www.nlm.nih.gov/mesh/2013/mesh_browser/MeSHtree.V.html

Search Field Descriptions and Tags
and related MEDLINE®/PubMed® Data Element (Field) Descriptions

Date Searching

Search Tag	Tag Name	Search Tag Description	MEDLINE data element
[CRDT]	Create Date	Date the citation record was first created; defaulted to publication date for older records	CRDT
[DCOM]	Completion Date	NLM processing completion date	DCOM
[DP] or [PDAT]	Publication Date	Date article was first published in either electronic or print format; default PubMed search	DP, DEP
[EDAT]	Entrez Date	Date citation was added to PubMed; for records entering PubMed more than one year after publication date, EDAT is set to publication date	EDAT
[EPDAT]	Electronic Publication Date	Date article was published electronically (often in advance of availability)	DEP
[LR]	Modification Date	Citation's last revision date	LR
[MHDA]	MeSH Date	Date MeSH terms were added to the citation	MHDA
[PPDAT]	Print Publication Date	Date of publication on the citation (whether a print or electronic journal)	DP

Other Search Tags

Search Tag	Tag Name	Search Tag Description	MEDLINE data element
[1AU]	First Author Name	First personal author name in a citation	AU, FAU
[AD]	Affiliation	Institutional affiliation and address of the first author, sometimes with email address	AD
[AID]	Article Identifier	Article ID values supplied by the publisher including DOI codes (must use full code)	AID
[ALL]	All Fields	Includes all searchable PubMed fields	---
[AU] or [Author]	Author	Author(s)	AU, FAU
[Book]	Book	Book citation title (must be exact)	BTI
[CN]	Corporate Author	Corporate or collective authorship	CN
[ED]	Editor	Editors for book or chapter citations from Bookshelf	ED
[FAU]	Full Author Name	Full author names since 2002	FAU
[FILTER]	Filter	Technical tags used by LinkOut (see also subsets)	---
[FIR]	Full Investigator Name	Full investigator or collaborator name	FIR
[GR]	Grant Number	Research grant numbers and/or contract numbers	GR
[IP]	Issue	Number of the issue, part, or supplement	IP
[IR]	Investigator	NASA-funded principal investigator	FIR, IR
[ISBN]	ISBN	ISBN for book or book chapters	ISBN
[JID]	NLM Unique ID	Unique journal ID in NLM's catalog	JID
[Journal] or [TA]	Journal title abbr.	Journal title or title abbreviation or ISSN	JT, TA, IS
[LA]	Language	Language in which the article was published	LA
[LASTAU]	Last Author Name	Last personal author name in a citation	AU, FAU
[LID]	Location Identifier	Location ID data from publishers; Digital Object Identifier (DOI) or other publisher ID	LID
[MAJR]	MeSH Major Topic	One of the main topics discussed in the article	MH
[MH]	MeSH Terms	NLM's MeSH controlled vocabulary	MH
<i>lettersnumbers</i>	Manuscript Identifier (e.g. NIHMS3373)	Assigned to manuscripts in PubMed Central including: HALMS, HHMIMS, NIHMS, UKMS http://www.nlm.nih.gov/bsd/mms/medlineelements.html#mid	MID
[NM]	Substance Name	Name of the chemical; includes Supplementary Concept terms. Note: this search does not explode.	RN

Search Tag	Tag Name	Search Tag Description	MEDLINE data element
[xx:noexp]	Do not explode	Use only the most general MeSH term without accessing the narrower terms below it; e.g. [mh:noexp], [sh:noexp] or [majr:noexp]	---
[OT]	Other Term	Non-MeSH subject terms including author keywords	OT
<i>ownernasa</i>	Owner + acronym	Organization supplying citation data (i.e. NASA)	OWN
[PA]	Pharmacologic Actions	MeSH Term - Substances known to have a particular pharmacologic action	MH, RN
[PG]	Pagination	Full pagination of the article	PG
[PL]	Publication Place	Journal's country of publication	PL
[PMID]	PubMed Unique Identifier	Unique number (UID) assigned to each citation	PMID
<i>PMCnumber</i>	PMC Identifier	Unique number assigned to item in PMC	PMC
[PS]	Personal Name as Subject	Individual is the subject of the article	FPS, PS
[PT]	Publication Type	Type of material the work represents	PT
[PUBN]	Publisher	Publisher's name of citations on the Bookshelf	PB
[RN]	EC/RN Number	Enzyme Commission, CAS Registry Number, or Unique Ingredient Identifiers (UNIIs)	RN
[SB]	Subset	Specified subset values	SB
[SH]	MeSH Subheading	Describe more completely an aspect of a subject	MH
[SI]	Secondary Source Identifier	Secondary source databanks and accession numbers (e.g. clinicaltrials.gov)	SI
[TA] or [Journal]	Journal title abbr.	Journal title or title abbreviation or ISSN	JT, TA, IS
[TI]	Title	Title of the article	TI
[TIAB]	Title/Abstract	Words and numbers included in the title or English abstract of a citation	TI, AB
[TT]	Transliterated Title	Title in the published non-English language	TT
[TW] or [textword]	Text Word	Identified as text by PubMed (does not search affiliation or journal fields)	AB, MH, OT, RN, TI
[VI]	Volume	Volume number of the journal	VI

<http://www.nlm.nih.gov/bsd/mms/medlineelements.html> and http://www.ncbi.nlm.nih.gov/books/NBK3827/#pubmedhelp.Search_Field_Descrip and <http://www.ncbi.nlm.nih.gov/books/NBK3827/?rendertype=table&id=pubmedhelp.T44>

PubMed® Stopwords

(words ignored by PubMed even in “quoted phrases”, unless those phrases are in MeSH)

A	a, about, again, all, almost, also, although, always, among, an, and, another, any, are, as, at	N	nearly, neither, no, nor
B	be, because, been, before, being, between, both, but, by	O	obtained, of, often, on, our, overall
C	can, could	P	perhaps, pmid
D	did, do, does, done, due, during	Q	quite
E	each, either, enough, especially, etc	R	rather, really, regarding
F	for, found, from, further	S	seem, seen, several, should, show, showed, shown, shows, significantly, since, so, some, such
H	had, has, have, having, here, how, however	T	than, that, the, their, theirs, them, then, there, therefore, these, they, this, those, through, thus, to
I	i, if, in, into, is, it, its, itself	U	upon, use, used, using
J	just	V	various, very
K	kg, km	W	was, we, were, what, when, which, while, with, within, without, would
M	made, mainly, make, may, mg, might, ml, mm, most, mostly, must		

Search for Stopwords or visit: <http://www.ncbi.nlm.nih.gov/books/NBK3827/?rendertype=table&id=pubmedhelp.T43>

Searching for PubMed Journals in the NLM Catalog

<http://www.ncbi.nlm.nih.gov/nlmcatalog>

General Information

Access the NLM Catalog from

- **Journals in NCBI Databases** link on the PubMed homepage
- **NLM Catalog** from the drop-down menu in the PubMed Search box

Recommended when searching for journals to send to PubMed:

- Check the **Only PubMed journals** under *Journal Subsets in Limits*
- Or use the search tag: `nlmcatalog pubmed[sb]`

Journal Subsets – Broad Subject Terms

In addition to searching by a specific journal name, two subset options are available:

- Identify journals by using an existing journal subset, see page 4 above for definitions or visit: http://www.ncbi.nlm.nih.gov/books/NBK3799/#catalog.Journal_Subsets
 - Use AIM, D, E, H, IM, K, N, Q, QIS, S, T, and/or X
 - E.g. `jsubsetcode` (i.e. `jsubsetd`)
- Use Broad Subject Terms with [ST]. Subject terms are assigned by NLM to MEDLINE journals to describe the journal's overall scope (i.e., cardiology, genetics). Not all journals have subject terms.
 - Access the Broad Subject Terms for Indexed Journals:
 - From the direct **Broad Subject Terms** link on the NLM Catalog homepage
 - Use the Search Builder drop-down menu in the Advanced Search
 - At: <http://wwwcf.nlm.nih.gov/serials/journals/>
 - Or use a known subject term code (e.g. `cardiology[st]`)

Note: Access the consumer health topic from **Limits, Publication Type**; the subject includes part of `jsubsetk` with additional journals that are not currently indexed for MEDLINE.

Status Search Codes

Filter/Subset	Filter/Subset Description	NLM Catalog tag
<code>all[sb]</code>	Results in all Journals. NOTE: This is the default and does not need to be used	
<code>nlmcatalog pubmed[sb]</code>	Only PubMed journals	
<code>currentlyindexed</code>	Journals currently indexed for MEDLINE (also in Limits)	Current Indexing Status
<code>notcurrentlyindexed</code>	Journals not currently indexed for MEDLINE	Current Indexing Status
<code>reportedmedline</code>	Journals currently or previously indexed in MEDLINE	Current Indexing Status
<code>journalspmc</code>	Journals currently in PubMed Central (PMC)	PMC Availability
<code>journalspmcforthcoming</code>	PubMed Central forthcoming journals	PMC Availability

http://www.nlm.nih.gov/pubs/techbull/nd10/nd10_mms_nlm_catalog.html

Journal resources include:

- Search Field Descriptions and Tags: http://www.ncbi.nlm.nih.gov/books/NBK3799/#catalog.Search_Field_Descrip
- MEDLINE® Journal Selection (general information): <http://www.nlm.nih.gov/pubs/factsheets/jsel.html>
- The List of Journals Indexed in Index Medicus (`jsubsetaim`): <http://www.nlm.nih.gov/tsd/serials/lji.html>
- Journals Recently Accepted by NLM for Inclusion in MEDLINE: http://www.nlm.nih.gov/bsd/lstrc/new_titles.html
- Journal Selection for MEDLINE® Indexing at NLM (specifically for publishers): http://www.nlm.nih.gov/pubs/factsheets/j_sel_faq.html