



NLM[®] Training: PubMed[®]

**MEDLARS Management Section
U.S. National Library of Medicine[®]
National Institutes of Health
Department of Health and Human Services
Bethesda, Maryland**

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NOTES

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NLM Training: PubMed

Agenda

TIME	TOPIC
8:30 – 8:45	Welcome
8:45 – 9:00	Introduction to NLM and PubMed
9:00 – 9:15	What's in PubMed
9:15 – 10:15	Medical Subject Headings (MeSH)
10:15 – 10:30	BREAK
10:30 – 12:00	Building the Search (part I)
12:00 – 1:00	LUNCH
1:00 – 2:30	Building the Search (part II)
2:30 – 2:45	BREAK
2:45 – 3:15	Managing the Results
3:15 – 3:30	Saving the Search
3:30 – 3:45	Viewing the Articles
3:45 – 4:15	Additional Tools
4:15 – 4:45	Review Exercises
4:45 – 5:00	Closing

Goals and Objectives

By the end of this course, you should be able to:

- Understand PubMed's scope and content.
- Understand how the MeSH vocabulary is used to describe and retrieve citations.
- Build a search using MeSH and PubMed search tools (Details, Limits, History, Search Builder, etc.)
- Manage your results using display, sort, the Clipboard, save, print, e-mail and order features.
- Save your search strategies.
- Customize your display (using My NCBI).
- Link to full-text articles and other resources.
- Use filters and special queries, and other PubMed/NCBI tools.

Introduction to the U.S. National Library of Medicine

The United States National Library of Medicine (NLM), part of the National Institutes of Health (NIH), is the world's largest medical library. The collections of the National Library of Medicine include more than seven million books, journals, technical reports, manuscripts, microfilms, photographs, and images on medicine and related sciences, including some of the world's oldest and rarest works.

The screenshot shows the NLM website with several annotations and red arrows pointing to specific features:

- Click Training & Outreach for online and in-person training on NLM products and services**: Points to the "Training & Outreach" link in the left sidebar.
- Click Network of Medical Libraries for information on local and regional resources**: Points to the "Network of Medical Libraries" link in the left sidebar.
- Click List of NLM Databases and Resources for access to NLM**: Points to the "List of NLM Databases and Resources" link in the right sidebar.
- Click MedlinePlus for consumer health information**: Points to the "MedlinePlus" link in the right sidebar.

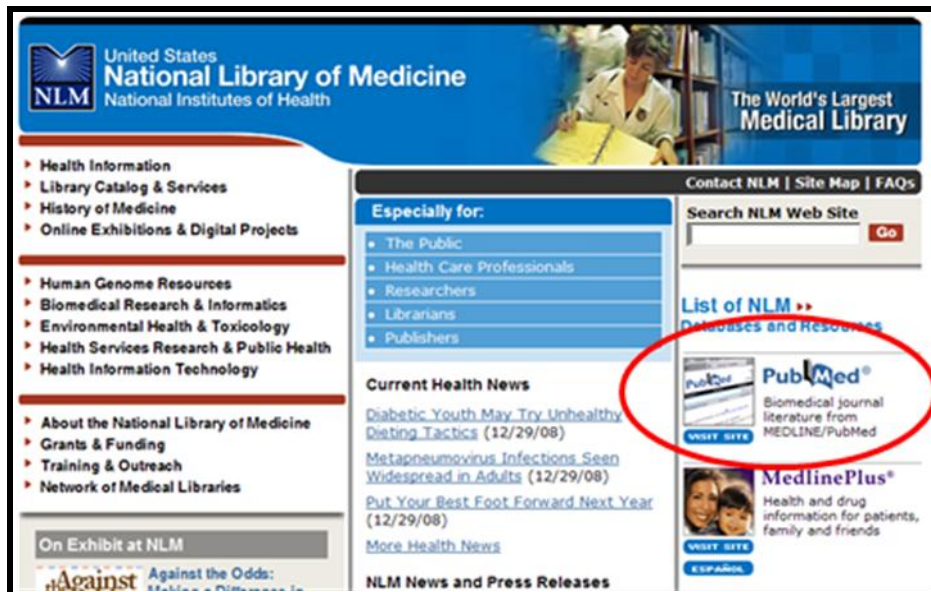
The website content includes:

- Header**: United States National Library of Medicine, National Institutes of Health, The World's Largest Medical Library.
- Left Sidebar**: Health Information, Library Catalog & Services, History of Medicine, Online Exhibitions & Digital Projects, Human Genome Resources, Biomedical Research & Informatics, Environmental Health & Toxicology, Health Services Research & Public Health, Health Information Technology, About the National Library of Medicine, Grants & Funding, Training & Outreach, Network of Medical Libraries, On Exhibit at NLM, Director's Comments.
- Main Content**: Especially for (The Public, Health Care Professionals, Researchers, Librarians, Publishers), Current Health News (Cancer Drug Appears to Help with Aggressive Multiple Sclerosis, Consumers Urged to Avoid Raw Milk and Raw Milk Products, Proscar Lowers Prostate Cancer Risk in All Men), NLM News and Press Releases (NLM Aids Federal Effort to Distribute Revised Hazmat Guidebooks to Emergency First Responders, NIH SeniorHealth Offers Tips on Eating Well as You Get Older, NLM co-sponsoring Public Laboratory LOINC Workshop, Tutorial and Committee Meeting June 9-10, 2008, NCBI Director Dr. David J. Lipman Named Member of American Academy of Arts and Sciences 2008 Class of Fellows).
- Right Sidebar**: Search NLM Web Site, List of NLM Databases and Resources, PubMed, MedlinePlus, NIH SeniorHealth, NLM Gateway.



Introduction to PubMed® (pubmed.gov)

- NLM has been indexing the biomedical literature since 1879, to help provide health professionals access to information necessary for research, health care, and education.
- What was once a printed index to articles, the *Index Medicus*, became a database now known as MEDLINE®. MEDLINE contains journal citations and abstracts for biomedical literature from around the world.
- Since 1996, free access to MEDLINE has been available to the public online via PubMed



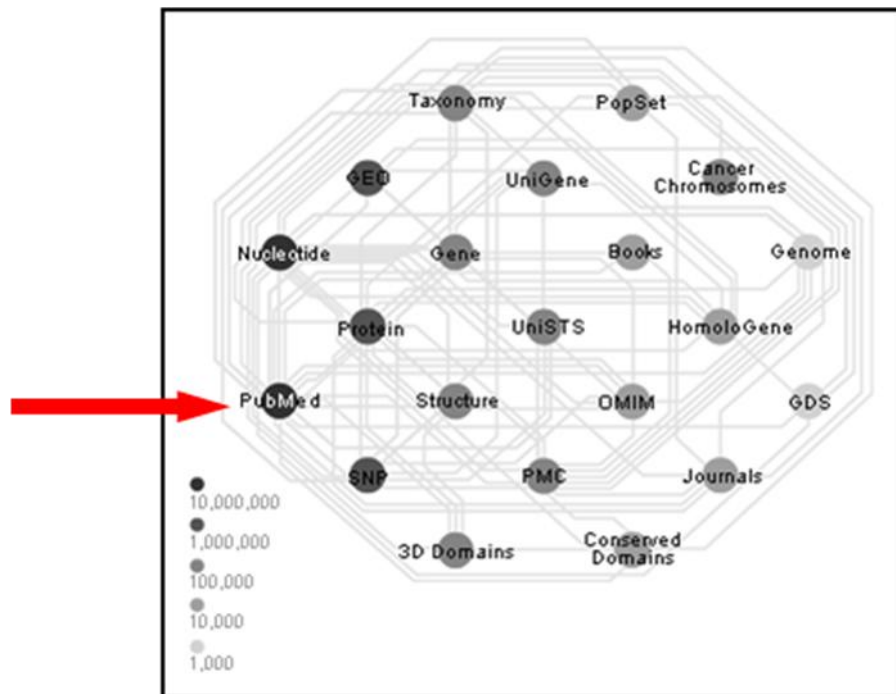
Click here.

Figure 1: NLM Home Page <http://www.nlm.nih.gov>

- PubMed is a database developed by the National Center for Biotechnology Information (NCBI) at the National Library of Medicine (NLM) available on the Web.
- PubMed is one of several databases under NCBI's Entrez retrieval system.
- PubMed currently includes approximately 20 million bibliographic citations.
- PubMed also has links to the full-text of articles at participating publishers' Web sites, as well as biological data, sequence data, and more from other Entrez Databases and from third parties.

Interrelationships between Entrez Databases

- PubMed provides 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). Links between MEDLINE records and sequence records make it easy to find MEDLINE abstracts associated with sequence records and vice versa.
- PubMed also provides links to chemical information in PubChem Substance, PubChem Compound and PubChem Bioassay databases.
- The following diagram illustrates the relationships between some of the information resources in Entrez:



See an interactive view of Entrez links at <http://www.ncbi.nlm.nih.gov/Database/>

What's in PubMed

- Most PubMed records are MEDLINE citations.
- Other records include those in different stages of processing (including records provided directly from the journal publisher) but destined to be MEDLINE citations.
- A relatively small number of records that are included in PubMed but not selected for MEDLINE.

MEDLINE Citations

PubMed provides access to **MEDLINE**, the National Library of Medicine's premier bibliographic database containing citations and author abstracts from approximately 5,400 biomedical journals published in the United States and in other countries.

The scope of MEDLINE includes such diverse topics as microbiology, delivery of health care, nutrition, pharmacology and environmental health. The categories covered in MEDLINE include everything from anatomy, organisms, diseases, psychiatry, and psychology to the physical sciences.

- MEDLINE currently contains over 18 million references dating back to 1947.
- New material is added Tuesday through Saturday.
- Coverage is worldwide, but most recently added records (about 92%) are from English-language sources or have English abstracts.
- Approximately 82% of the citations are included with the published abstract.

MEDLINE Journal Selection

- The Literature Selection Technical Review Committee (LSTRC) meets three times a year and considers approximately 140 titles for MEDLINE at each meeting.
- Final approval is made by the Director of the National Library of Medicine.
- Titles are considered for scope and coverage, quality of content, quality of editorial work, production quality, audience, and type of content.
- For more details, see the NLM Fact Sheet, MEDLINE Journal Selection, at <http://www.nlm.nih.gov/pubs/factsheets/jsel.html>.

MEDLINE® – Basic Bibliographic Citation

One MEDLINE citation represents one journal article and is composed of fields that provide specific information (Title, Author, Language, etc.) about the journal article. The following information is generally provided:

- Title of the journal article
- Names of the Authors
- Abstract published with the article
- Controlled Vocabulary search terms (Medical Subject Headings)
- Journal Source Information
- First Author Affiliation
- Language in which the article was published
- Publication Type (description of the type of article, e.g., Review, Letter, etc.)

A sample MEDLINE citation from PubMed follows.

PubMed MEDLINE citation

[Curr Top Dev Biol, 2006;76:103-27.](#)

Wnt signaling: a key regulator of bone mass.

[Baron R, Rawadi G, Roman-Roman S.](#)

[Yale University School of Medicine New Haven, Connecticut 06520, USA.](#)

The identification of a link between bone mass in humans and gain- [high bone mass (HBM) trait] or loss-of-function [osteoporosis pseudoglioma (OPPG) syndrome] mutations in the Wnt coreceptor lipoprotein receptor-related protein (LRP)5 or in the Wnt antagonist sclerostin (sclerosteosis, Van Buchem syndrome) has called the attention of academic and industry scientists and clinicians to the importance of this signaling pathway in skeletal biology and disease. Multiple genetic and pharmacological manipulations of Wnt signaling in mice have since then confirmed the central role of this pathway in both the establishment of peak bone mass and its maintenance throughout life. Wnt signaling appears to be located downstream of bone morphogenetic proteins (BMPs), itself induced by Hedgehog (Hh) signaling, suggesting that it is the successive recruitment of these three intracellular signaling cascades that allow the full expression of the genetic patterns that characterize the osteoblast, the cell responsible for the formation of bone.

PMD: 17118265 [PubMed - indexed for MEDLINE]

 Publication Types, MeSH Terms, Substances

Publication Types:

[Review](#)

MeSH Terms:

[Animals](#)
[Bone Density](#)
[Bone Remodeling](#)
[Bone and Bones/anatomy & histology*](#)
[Bone and Bones/drug effects](#)
[Bone and Bones/metabolism*](#)
[Humans](#)
[LDL-Receptor Related Proteins/chemistry](#)
[LDL-Receptor Related Proteins/genetics](#)
[LDL-Receptor Related Proteins/metabolism](#)
[Mice](#)
[Models, Biological](#)
[Mutation](#)
[Osteoblasts/metabolism](#)
[Osteogenesis](#)
[Signal Transduction/drug effects](#)
[Wnt Proteins/antagonists & inhibitors](#)
[Wnt Proteins/genetics](#)
[Wnt Proteins/metabolism*](#)
[beta Catenin/metabolism](#)

Substances:

[LDL-Receptor Related Proteins](#)
[LRP6 protein, human](#)
[Wnt Proteins](#)
[beta Catenin](#)
[lipoprotein receptor related protein 5](#)

How Citations Get Into PubMed

- Records are either supplied electronically by publishers or created using scanning and Optical Character Recognition (OCR) at NLM.
- Citations are immediately made available via PubMed. All citations go through a quality control process, and citations from MEDLINE journals are indexed.
- All citations display a status tag, which indicates their stage of processing. See the Summary table on page 12.

Publisher Supplied Citations

- These are citations that are supplied electronically by publishers directly to PubMed. The citations are then forwarded to NLM's Index Section to be processed. (Not all citations are supplied electronically).
- Citations received electronically have the status tag: **[PubMed - as supplied by publisher]**.

Sample PubMed citation that was submitted electronically but processing has not yet begun:

[Autophagy Is a Component of Epithelial Cell Fate in Obstructive Uropathy.](#)
Li L, Zepeda-Orozco D, Black R, Lin F.
Am J Pathol. 2010 Feb 11. [Epub ahead of print]
PMID: 20150430 [PubMed - as supplied by publisher]

Notice the **[PubMed – as supplied by publisher]** status tag.

In Process

- These citations are being reviewed for inclusion in MEDLINE and, if in scope, subsequently are indexed with MeSH[®] vocabulary. In addition the bibliographic data in these records is being checked for accuracy.
- In process records carry the status tag: **[PubMed – in process]**.
- In process records are added to PubMed Tuesday-Saturday.

Sample In Process citation in PubMed:

[Autophagy is a component of epithelial cell fate in obstructive uropathy.](#)
Li L, Zepeda-Orozco D, Black R, Lin F.
Am J Pathol. 2010 Apr;176(4):1767-78. Epub 2010 Feb 11.
PMID: 20150430 [PubMed - in process]

Notice the **[PubMed – in process]** status tag.

MEDLINE Citations

- After Medical Subject Headings (NLM's controlled vocabulary terms) and other indexing terms are added, the in process citations graduate to MEDLINE records. These "completed" records have also been checked for bibliographic accuracy.
- Fully indexed MEDLINE records carry the status tag **[PubMed – indexed for MEDLINE]**.
- MEDLINE records are added to PubMed Tuesday-Saturday.

Sample MEDLINE citation in PubMed:

[Autophagy is a component of epithelial cell fate in obstructive uropathy.](#)
Li L, Zepeda-Orozco D, Black R, Lin F.
Am J Pathol. 2010 Apr;176(4):1767-78. Epub 2010 Feb 11.
PMID: 20150430 [PubMed - indexed for MEDLINE]

Notice the **[PubMed – indexed for MEDLINE]** status tag.

OLDMEDLINE Citations

- About 1.9 million citations (most with no abstracts) are from two printed indexes: *Cumulated Index Medicus (CIM)* and the *Current List of Medical Literature (CLML)* published from 1947 to 1965.
- The citations are from international biomedical journals covering the fields of medicine, preclinical sciences, and allied health sciences.
- OLDMEDLINE citations have been created using standards that are different from the data entry standards for MEDLINE records. There are also variations among OLDMEDLINE citations in the data fields present as well as in their format, depending on the original source from which the citations were obtained.
- Beginning in 2005, the original subject terms applied to the citations in the printed indexes are being mapped to current Medical Subject Headings (MeSH).
- OLDMEDLINE records carry the status tag [**PubMed – OLDMEDLINE**] until *all* original subject terms are mapped to current MeSH. Once all terms are mapped, the records are promoted to status [**PubMed – indexed for MEDLINE**].

Sample OLDMEDLINE citations in PubMed:

<p>New clinical concept of systemic lupus erythematosus. Analysis of 100 cases. RUPE CE, NICKEL SN. J Am Med Assoc. 1959 Oct 24;171:1055-61. No abstract available. PMID: 14440208 [PubMed - OLDMEDLINE]</p>
--

<p>SYSTEMIC LUPUS ERYTHEMATOSUS. OTTO WJ. JAMA. 1965 Sep 20;193:1049. No abstract available. PMID: 14338807 [PubMed - indexed for MEDLINE]</p>
--

Non-MeSH Indexed Citations

- Some citations never become MEDLINE citations.
- These records are not indexed with MeSH terms.
- These records have either the status tag **[PubMed]** or **[PubMed – as supplied by publisher]**.

There are four sources of these types of records:

1. Out-of-scope articles from selectively indexed MEDLINE journals

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*). These citations have been reviewed for accurate bibliographic data. The status tag **[PubMed]** appears on these citations.

Sample citation for an article that is out of scope for MEDLINE:

[Intraslab earthquakes: dehydration of the Cascadia slab.](#)
Preston LA, Creager KC, Crosson RS, Brocher TM, Trehu AM.
Science. 2003 Nov 14;302(5648):1197-200.
PMID: 14615535 [PubMed] Free Article

Notice the **[PubMed]** status tag.

Sample citation for an article from the same journal issue that is indexed for MEDLINE:

[CLIP identifies Nova-regulated RNA networks in the brain.](#)
Ule J, Jensen KB, Ruggiu M, Mele A, Ule A, Darnell RB.
Science. 2003 Nov 14;302(5648):1212-5.
PMID: 14615540 [PubMed - indexed for MEDLINE] Free Article

Notice the **[PubMed – indexed for MEDLINE]** status tag.

2. Articles from issues of journals published prior to selection for MEDLINE indexing

These earlier citations will not be indexed with MeSH headings.

- Prior to late 2003:
 - ▶ the citations were *not* reviewed for accurate bibliographic data
 - ▶ the status tag of **[PubMed – as supplied by publisher]** appears
- Beginning in late 2003:
 - ▶ the citations have been reviewed for accurate bibliographic data
 - ▶ the status tag of **[PubMed]** appears.

Example: *NLM began indexing the journal, The Neurologist with v. 9, no. 1, 2003. However, the publisher electronically supplied NLM with citations from earlier volumes. The citations from back volumes were entered into PubMed but will not be indexed with MeSH.*

[Evaluation and management of the driver with dementia.](#)

Dobbs BM, Carr DB, Morris JC.

Neurologist. 2002 Mar;8(2):61-70.

PMID: 12803692 [PubMed]

Notice the [PubMed] status tag from an item from vol. 8, 2002.[Restoring function after spinal cord injury.](#)

Becker D, Sadowsky CL, McDonald JW.

Neurologist. 2003 Jan;9(1):1-15. Review.

PMID: 12801427 [PubMed - indexed for MEDLINE]

Notice the [PubMed - indexed for MEDLINE] status tag on an item from volume 9, 2003.

Indexing information for a particular journal can be found in the "Current Indexing Status" field in the Journals Database.

3. Articles from non-MEDLINE journals

- Beginning in July 2005:
 - ▶ the citations have been reviewed for accurate bibliographic data
 - ▶ the status tag of **[PubMed]** appears

[Surgical management of abdominal and retroperitoneal Castleman's disease.](#)

Bucher P, Chassot G, Zufferey G, Ris F, Huber O, Morel P.

World J Surg Oncol. 2005 Jun 7;3:33.

PMID: 15941478 [PubMed]

- Author manuscripts in PubMed Central (PMC) that would not normally be in PubMed.

[Size Controlled Synthesis of Monodispersed, Core/Shell Nanogels.](#)

Blackburn WH, Lyon LA.

Colloid Polym Sci. 2008;286(5):563-569.

PMID: 18769603 [PubMed]

4. Books and book chapters from the NCBI Books database

- Selected books are cited by title and by chapter in PubMed
- The status tag of **[PubMed]** appears
- To search for book citations in PubMed, enter **pmcbook** in the PubMed search box.

[Feingold Syndrome.](#)

Marcelis CLM, de Brouwer APM.

In: Pagon RA, Bird TC, Dolan CR, Stephens K, editors. GeneReviews [Internet]. Seattle (WA): University of Washington, Seattle; 1993-.

2009 Jun 30.

PMID: 20301770 [PubMed] [Books & Documents](#) [Free text](#)

See next page for a Citation Status Tags Summary Table.

PubMed Citation Status Tags Summary Table

Citation Status Tag Value	Condition(s)	MeSH-indexed?	Bibliographic data checked?	How to search
PubMed - as supplied by publisher				
	<ul style="list-style-type: none"> Citations supplied electronically when first received. Citations from issues of journals published before journal selected for MEDLINE indexing (records received prior to late 2003). Citations from non-MEDLINE journals (records received prior to June 2005). 	No	No	publisher [sb] NOT pubstatusnihms NOT pubstatuspmcsd NOT pmcbook
PubMed - in process				
	<ul style="list-style-type: none"> Citations in review for inclusion in MEDLINE. 	No	No	in process [sb]
PubMed - indexed for MEDLINE				
	<ul style="list-style-type: none"> Fully indexed citations. 	Yes	Yes	medline [sb]
PubMed - OLDMEDLINE				
	<ul style="list-style-type: none"> Citations originally printed in hardcopy indexes published from 1947 through 1965 that have not had all of their original subject terms mapped to current MeSH. 	Partial	Yes	oldmedline [sb]
PubMed				
	<ul style="list-style-type: none"> Out-of-scope articles from selectively indexed MEDLINE journals. Since late 2003, citations from issues of journals published prior to selection for MEDLINE indexing. Since June 2005, citations from non-MEDLINE journals. Citations for articles with full-text in PubMed Central (PMC) that would not normally be in PubMed. Citations for selected books and book chapters in the NCBI Books database. 	No	Yes	pubmednotmedline [sb] OR pmcbook OR (publisher [sb] AND (pubstatusnihms OR pubstatuspmcsd))

Medical Subject Headings (MeSH[®] Vocabulary)



For a video introduction to MeSH, see *Branching Out: The MeSH Vocabulary* at <http://www.nlm.nih.gov/bsd/disted/video/>

What is MeSH?

- Acronym for Medical Subject Headings
- Similar to key words on other systems
- Used for indexing journal articles for MEDLINE and also used for cataloging books and audiovisuals
- Used by searchers
- Revised annually
- Gives uniformity and consistency to the indexing of the biomedical literature and is a distinctive feature of MEDLINE

MeSH Vocabulary includes four types of terms:

- Headings
- Publication Types
- Subheadings
- Supplementary Concept Records

MeSH Headings

- MeSH headings represent concepts found in the biomedical literature
- MeSH headings and Publication Types are arranged in a hierarchical manner called the MeSH Tree Structure

Examples of MeSH Headings:

- | | |
|-----------------------------|---------------------|
| • Body Weight | • Self Medication |
| • Kidney | • Radioactive Waste |
| • Dental Cavity Preparation | • Brain Edema |

MeSH Tree Structure

- MeSH vocabulary is organized by 16 main branches:
 - A. Anatomy
 - B. Organisms
 - C. Diseases
 - D. Chemical and Drugs
 - E. Analytical, Diagnostic and Therapeutic Techniques and Equipment
 - F. Psychiatry and Psychology
 - G. Phenomena and Processes
 - H. Disciplines and Occupations
 - I. Anthropology, Education, Sociology and Social Phenomena
 - J. Technology, Industry, Agriculture
 - K. Humanities
 - L. Information Science
 - M. Named Groups
 - N. Health Care
 - V. Publication Characteristics
 - Z. Geographic Locations
- Each Descriptor has a tree number that positions the term in the hierarchy.

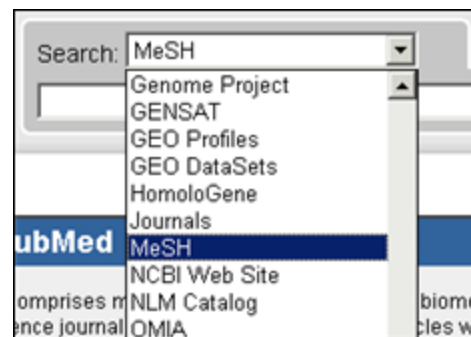
Eye [A01.456.505.420]
 Eyebrows [A01.456.505.420.338]
 Eyelids [A01.456.505.420.504]
 Eyelashes [A01.456.505.420.504.421]

- Some terms have multiple tree numbers because they appear in more than one place in the hierarchy.
- By having narrower terms indented under broader terms, a search of a broad term can automatically include the narrower terms. This is known as an EXPLODE.

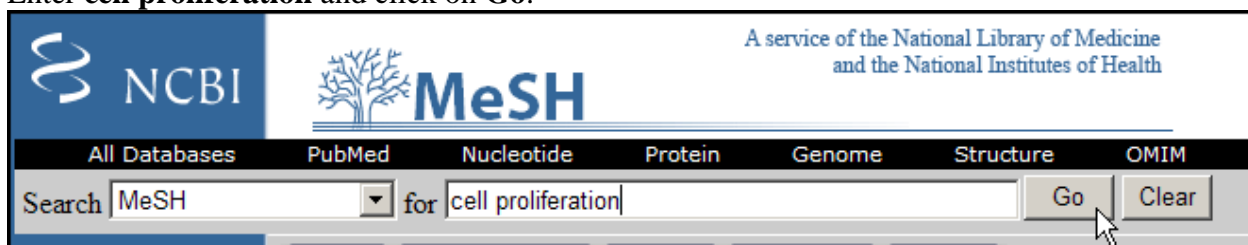
MeSH Database

- MeSH is the name of an Entrez database that assists PubMed users in locating appropriate terms for searches. This database provides information about MeSH terms including:
 - Definitions
 - Synonyms for the concept
 - Related terms
 - The position of the headings in the MeSH hierarchy
- We can use the MeSH database to look at the type of information associated with each MeSH term:

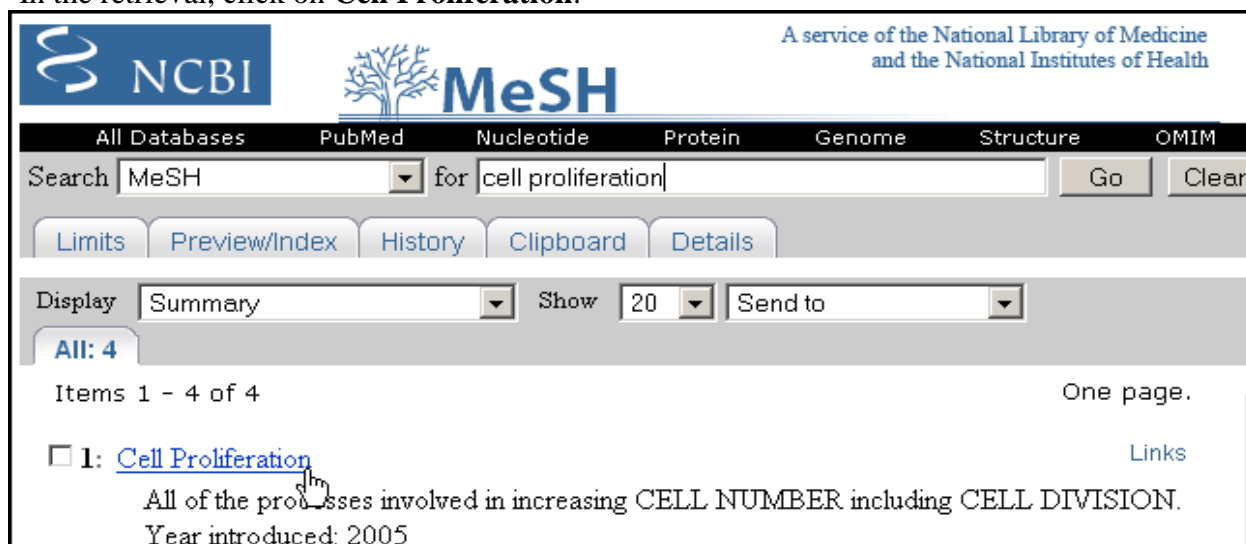
Click on **MeSH Database** on the homepage or select **MeSH** from the database selection box and click **Search**:



Enter **cell proliferation** and click on **Go**:



In the retrieval, click on **Cell Proliferation**:



This displays the full record for **Cell Proliferation**:

[Links](#)

Cell Proliferation

All of the processes involved in increasing CELL NUMBER including CELL DIVISION.

Year introduced: 2005 MeSH Term, definition, and year (searchable by earliest year)

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ drug effects
 ☐ ethics
 ☐ radiation effects
 Select subheadings.

☐ Restrict Search to Major Topic headings only.
☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).
 Major topic & Do Not Explode.

Entry Terms:

- Proliferation, Cell
- Cellular Proliferation
- Proliferation, Cellular
- Cell Multiplication
- Multiplication, Cell
- Cell Growth in Number
- Cell Number Growth
- Growth, Cell Number
- Number Growth, Cell

"Synonyms" for this term.

Previous Indexing:

- [Cell Division \(1966-2004\)](#) Before 2004 ...

See Also:

- [Hyperplasia](#) Related term(s) of interest.

All MeSH Categories

Phenomena and Processes Category

Cell Physiological Phenomena

Cell Physiological Processes

Cell Growth Processes

Cell Proliferation

Cell Division

←

This term has been placed in 2 branches.

←

All MeSH Categories

Phenomena and Processes Category

Physiological Phenomena

Physiological Processes

Growth and Development

Growth

Cell Growth Processes

Cell Proliferation

Cell Division

Use the Links menu to go to the **NLM MeSH Browser** for additional information:

Cell Proliferation
 All of the processes involved in increasing CELL NUMBER including CELL DIVISION
 Year introduced: 2005

Subheadings: This list includes those paired at least once with this heading in MEDLINE
 current rules for allowable combinations.

☐ drug effects ☐ ethics ☐ radiation effects

Links
 ▶ PubMed
 ▶ PubMed - Major Topic
 ▶ Clinical Queries
 ▶ **NLM MeSH Browser**

The **NLM MeSH Browser** is the tool used by MEDLINE indexers and catalogers.

National Library of Medicine - Medical Subject Headings	
2010 MeSH	
MeSH Descriptor Data	
Return to Entry Page	
Standard View. Go to Concept View ; Go to Expanded Concept View	
MeSH Heading	Cell Proliferation
Tree Number	G04.299.233.750
Tree Number	G07.700.320.249.410.750
Scope Note	All of the processes involved in increasing CELL NUMBER including CELL DIVISION .
Entry Term	Cell Growth in Number
Entry Term	Cell Multiplication
Entry Term	Cell Number Growth
Entry Term	Cellular Proliferation
See Also	Hyperplasia
Allowable Qualifiers	DE ES RE
Previous Indexing	Cell Division (1966-2004)
History Note	2005
Date of Entry	20040707
Unique ID	D049109

Indexing with MeSH Headings

- NLM's MEDLINE indexers examine articles and assign the most specific MeSH heading(s) appropriate to describe the main concepts discussed.
- When there is no single specific MeSH heading for a concept, the indexer will use the closest, more general MeSH heading available.
- The indexer will assign as many MeSH headings as appropriate to cover the topics of the article (generally 5 to 15).
- The MeSH terms that reflect the major points of the article are marked with an asterisk (*) by indexers.
- Information the indexer provides includes:
 - topic of article
 - age group of population studied
 - human vs. animal studies
 - male vs. female studies
 - type of article (e.g., review article)

Article Title:

Hormone therapy in perimenopausal and postmenopausal women: examining the evidence on cardiovascular disease risks.

Abstract:

Women may live for 30 years or longer after menopause with cardiovascular disease as their highest mortality risk. Menopause may correspond to health alterations for women, yet the use of estrogen during and after this transition has been controversial for the past four decades. The evidence from recent scientific studies does not support the use of hormone therapy for the prevention or treatment of cardiovascular disease, which has resulted in its removal from national guideline recommendations. However, because of concerns related to specific aspects of the research, there are gaps in the evidence. Studies are under way to evaluate alternate methods for hormone delivery, low-dose hormone therapy, and selective estrogen receptor modulators (SERMs) in reducing cardiovascular risks in perimenopausal and postmenopausal women. Implications for clinical nursing practice include education as well as assessment and counseling related to individual risk factors.

Publication Types:

Review

MeSH Terms:

Aged
Cardiovascular Diseases/chemically induced*
Estrogen Replacement Therapy/adverse effects*
Evidence-Based Medicine
Female
Humans
Middle Aged
Perimenopause*
Postmenopause*
Risk Factors

Subheadings

- Subheadings further describe a particular aspect of a MeSH heading.

The entire list of subheadings follows:

Abnormalities	ab	Isolation & purification	ip
Administration & dosage	ad	Legislation & jurisprudence	lj
Adverse effects	ae	Manpower	ma
Agonists	ag	Metabolism	me
Analogs & derivatives	aa	Methods	my
Analysis	an	Microbiology	mi
Anatomy & histology	ah	Mortality	mo
Antagonists & inhibitors	ai	Nursing	nu
Biosynthesis	bi	Organization & administration	og
Blood	bl	Parasitology	ps
Blood supply	bs	Pathogenicity	py
Cerebrospinal fluid	cf	Pathology	pa
Chemical synthesis	cs	Pharmacokinetics	pk
Chemically induced	ci	Pharmacology	pd
Chemistry	ch	Physiology	ph
Classification	cl	Physiopathology	pp
Complications	co	Poisoning	po
Congenital	cn	Prevention & control	pc
Contraindications	ct	Psychology	px
Cytology	cy	Radiation effects	re
Deficiency	df	Radiography	ra
Diagnosis	di	Radionuclide imaging	ri
Diagnostic use	du	Radiotherapy	rt
Diet therapy	dh	Rehabilitation	rh
Drug effects	de	Secondary	sc
Drug therapy	dt	Secretion	se
Economics	ec	Standards	st
Education	ed	Statistics & numerical data	sn
Embryology	em	Supply & distribution	sd
Enzymology	en	Surgery	su
Epidemiology	ep	Therapeutic use	tu
Ethics	es	Therapy	th
Ethnology	eh	Toxicity	to
Etiology	et	Transmission	tm
Genetics	ge	Transplantation	tr
Growth & development	gd	Trends	td
History	hi	Ultrasonography	us
Immunology	im	Ultrastructure	ul
Injuries	in	Urine	ur
Innervation	ir	Utilization	ut
Instrumentation	is	Veterinary	ve
		Virology	vi

Subheading Groupings

- Related subheadings have been grouped to allow for additional, relevant retrieval.
- Not all subheadings have been placed in these groupings – some do not logically fit.

Families of Subheading Explosions

adverse effects

poisoning
toxicity

analysis

blood
cerebrospinal fluid
isolation & purification
urine

anatomy & histology

blood supply
cytology
 pathology
 ultrastructure
embryology
 abnormalities
innervation

chemistry

agonists
analogs & derivatives
antagonists & inhibitors
chemical synthesis

complications

secondary

cytology

pathology
ultrastructure

diagnosis

pathology
radiography
radionuclide imaging
ultrasonography

embryology

abnormalities

epidemiology

ethnology
mortality

etiology

chemically induced
complications
 secondary
congenital
embryology
genetics
immunology
microbiology
 virology
parasitology
transmission

metabolism

biosynthesis
blood
cerebrospinal fluid
deficiency
enzymology
pharmacokinetics
urine

microbiology

virology

organization & admin

economics
legislation & jurisprudence
manpower
standards
supply & distribution
trends
utilization

pharmacology

administration & dosage
adverse effects
 poisoning
 toxicity
agonists
antagonists & inhibitors
contraindications
diagnostic use
pharmacokinetics

physiology

genetics
growth & development
immunology
metabolism
 biosynthesis
 blood
 cerebrospinal fluid
 deficiency
 enzymology
 pharmacokinetics
 urine
physiopathology
secretion

statistics & numerical data

epidemiology
ethnology
mortality
supply & distribution
utilization

surgery

transplantation

therapeutic use

administration & dosage
adverse effects
contraindications
poisoning

therapy

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

Pharmacologic Action Terms

Every drug and chemical MeSH heading has been assigned one or more headings that describe known pharmacological actions (PA).

- Since 1996, NLM indexers add the appropriate pharmacological action MeSH heading as well as the specific chemical MeSH heading to a citation when the action of the chemical is discussed in the article.

Example:

*The pharmacological actions established for the MeSH Heading, **Aspirin**:*

Pharmacological Action	Anti-Inflammatory Agents, Non-Steroidal
Pharmacological Action	Cyclooxygenase Inhibitors
Pharmacological Action	Fibrinolytic Agents
Pharmacological Action	Platelet Aggregation Inhibitors

- A citation to an article that discusses **aspirin used as an anti-inflammatory agent** will be assigned:

Aspirin
Anti-Inflammatory Agents, Non-Steroidal

- A citation to an article that discusses **aspirin used to inhibit blood clotting** will be assigned:

Aspirin
Platelet Aggregation Inhibitors

See “The Basics of MeSH in MEDLINE/PubMed” (<http://www.nlm.nih.gov/bsd/disted/mesh/>), linked from Tutorials on the PubMed home page for information on searching with pharmacologic action terms.

Other Types of MeSH Vocabulary

Supplementary Concepts

- Over 186,000 terms.
- Display in RN field on MEDLINE record.

cordycepin [Substance Name]	Links
Date introduced: August 1, 1989	
Registry Number: 73-03-0	
Heading Mapped to:	
<ul style="list-style-type: none">• Deoxyadenosines	
Entry Terms:	
<ul style="list-style-type: none">• 3'-deoxyadenosine	
Previous Indexing:	
<ul style="list-style-type: none">• DEOXYADENOSINE (1975-1989)	
Pharmacologic Action:	
<ul style="list-style-type: none">• Antifungal Agents• Antineoplastic Agents• Mutagens	

The data in a Supplemental Concept MeSH Database record may include:

- Name of substance: For example: cordycepin
- Date Introduced: The date the record was added to the vocabulary
- Registry Number: For example: 73-03-0. A unique number assigned to chemicals by the Chemical Abstract Service, or a code for enzymes assigned by the Commission on Biological Nomenclature. May display as zero (0), generally for terms for a group or class of compounds.
- Heading Mapped to: The MeSH term used for indexing this chemical in MEDLINE
- Entry Term: Synonyms that can be used for searching this concept
- Previous Indexing: MeSH terms used before the current term became available
- Pharmacologic Action: An action of a drug or chemical as reported in the literature, e.g., Antifungal Agents or Antineoplastic Agents

Age Group MeSH Headings

These are MeSH headings which indicate the age of human subjects discussed in the article:

Infant, Newborn	Birth to 1 month
Infant	1 to 23 months
Child, Preschool	2 to 5 years
Child	6 to 12 years
Adolescent	13 to 18 years
Young Adult	19 to 24 years
Adult	19 to 44 years
Middle aged	45 to 64 years
Aged	65 to 79 years
80 and over	80+

Publication Types

- Publication Types describe the type of material being indexed.
- The most common type is Journal Article. Other Publication Types include:

Clinical Trial
Retraction of Publication
Comment
Review

Practice Guideline
Twin Study
Retracted Publication

- Publication Types may be searched in the MeSH Database. Definitions are provided.
- They are part of the MeSH hierarchy (V category).

NOTES

Practice Exercises: Introduction to MeSH

Complete the following exercises as assigned by the instructor.

Use the **MeSH Database** to find the answers to the below questions.

1. If you search the term “phytotherapy” in PubMed, what terms are you also searching?
2. How far back can you search with the MeSH term, “Proteomics?”
3. What ages are included by the term, “Child?”
4. What is the preferred MeSH term for “chewing?”

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers – Introduction to MeSH

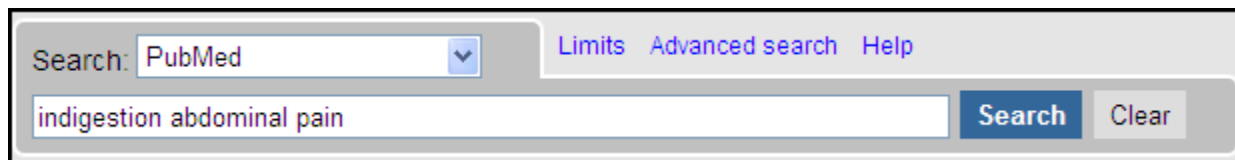
Use the MeSH Database to find the answers to these questions:

1. If you search the term “phytotherapy” in PubMed, what terms are you also searching?
Aromatherapy and Eclecticism, Historical
2. How far back can you search with the MeSH term, “Proteomics?”
To 2003. For 2000-2002, use Proteome.
3. What ages are included by the term, “Child?”
6 to 12 years.
4. What is the preferred MeSH term for “chewing?”
Mastication.

Building the Search

Basic Searching

Search: *Find citations to articles about indigestion and abdominal pain.*



Entering Search Terms

- Enter significant terms in the search box (e.g., *indigestion abdominal pain*).
- Click on the **Search** button.
- Scroll down to **Search details** to check PubMed's translation (more about this later in the workbook)
- Use the **Clear** button to erase the contents of the search box.

Search Results Screen

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

- Run the search
- Retrieve and display citations (results displayed in last in, first out order)
- Provide the option to Save Search via My NCBI feature and an option to save the search to an RSS feed

Results screen returned by PubMed for *indigestion abdominal pain* search. More about results will be covered in the **Managing the Results** section beginning on page 93.

Active search box displaying current search

Modifiable Display settings and Send to: options

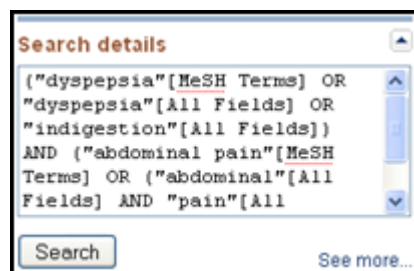
Citations are displayed in Summary format

The screenshot shows the PubMed search results interface. At the top, the NCBI logo and navigation links (Resources, How To) are visible. The search bar contains the query 'indigestion abdominal pain' and a 'Search' button. Below the search bar, there are links for 'RSS', 'Save search', 'Limits', 'Advanced search', and 'Help'. The results are displayed in a list format, showing the first three results. Each result includes a checkbox, a title, authors, journal information, and a PMID. The first result is 'Migration of Eosinophils and CCR2-/CD68-Double Positive Cells Into the Duodenal Mucosa of Patients With Postinfectious Functional Dyspepsia' by Futagami S, Shindo T, Kawagoe T, Horie A, Shimpuku M, Gudis K, Iwakiri K, Itoh T, Sakamoto C. The second result is 'Delay in the diagnosis of esophageal carcinoma: experience of a single unit from a developing country' by Subasinghe D, Samarasekera DN. The third result is 'Diagnosis of abdominal tuberculosis in children' by Liu XL, Zhao SY. On the right side, there are filters for 'Filter your results:' with options for 'All (881)', 'Review (161)', and 'Free Full Text (158)'. There is also a section titled 'Titles with your search terms' showing related articles like 'Abdominal pain, indigestion, anorexia, nausea and vomiting' and 'INDIGESTION AND ABDOMINAL PAIN WITH NEGATIVE FINDINGS'. At the bottom right, there is a section for '66 free full-text articles in PubMed Central' with links to specific articles.

Automatic Term Mapping (ATM)

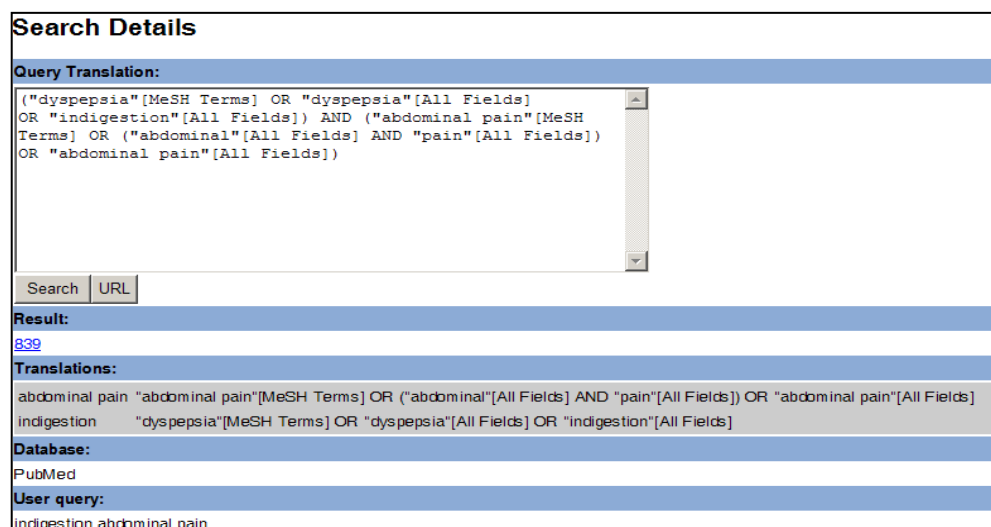
Details screen

You can see how PubMed processes your search by viewing Search details from the right column of your search results page:



Click See more... to open the Search details page

The Search Details page shows how your terms are translated or *mapped* to terms indexed in the database.



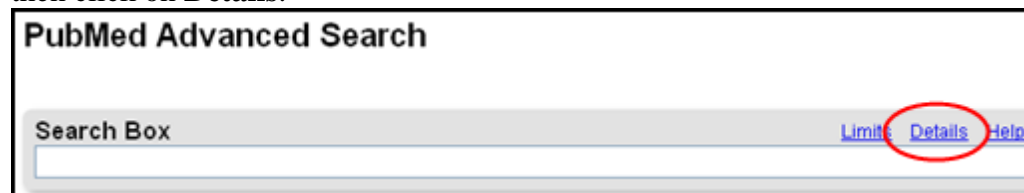
See page 49 for explanation of Boolean logical operators (AND, OR)

Translations are shown in the grey box towards the bottom of the screen.

A link to the Details screen is also available from the Advanced Search screen. Click on Advanced Search, adjacent to the search box buttons,



then click on **Details**:



Terms entered in the search box without a search tag, e.g., [au] are matched against:

- Subjects, using the
 - MeSH (Medical Subject Headings) Translation Table
- Journals, using the
 - Journals Translation Table
- Authors and Investigators, using the
 - Full Author Translation Table
 - Author Index
 - Full Investigator Translation Table
 - Investigator Index

1. MeSH Translation Table contains:

- MeSH Headings
- Subheadings
- Publication Types
- Entry Term mappings (also known as synonyms) for MeSH terms
- Mappings derived from the Unified Medical Language System (UMLS)
- Supplementary Concepts and synonyms to the Supplementary Concepts

If a match is found in this translation table:

- the term will be mapped to the appropriate MeSH term and searched as MeSH
- the searcher's term and the mapped MeSH term will be searched in All Fields

Example:

PubMed's Translation:

""foot"[MeSH Terms] OR "foot"[All Fields] OR "feet"[All Fields]

- Feet is an Entry Term for the MeSH term, Foot.



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.

For example, when searched as a MeSH Term, PubMed will search the heading Foot as well as the more specific term(s) in the hierarchy:



Matching phrases are searched in All Fields as a phrase and broken into individual words, with the exception of phrases mapping to Supplementary Concepts (substances) or MeSH Headings that include a standalone number or single character. These are searched only as phrases in All Fields.

Example:

Search: PubMed

muscle atrophy

PubMed's Translation:

"muscular atrophy"[MeSH Terms] OR ("muscular"[All Fields] AND "atrophy"[All Fields]) OR "muscular atrophy"[All Fields] OR ("muscle"[All Fields] AND "atrophy"[All Fields]) OR "muscle atrophy"[All Fields]

Example:

Search: PubMed

protein c

PubMed's Translation:

"protein c"[MeSH Terms] OR "protein c"[All Fields]

2. Journals Translation Table contains:

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

Example:

Search: PubMed

the journal of cell biology

PubMed Translation:

"J Cell Biol"[Journal] OR "the journal of cell biology"[All Fields]



If a name of a journal also happens to be a MeSH term or a one-word title, PubMed will search the term as a MeSH heading and in All Fields. For example, the search for *Science* untagged will search: "science"[MeSH Terms] OR "science"[All Fields]. To limit your search to a journal title, use the Limits page or use the tag [ta], e.g., science [ta]

3. Full Author Translation Table includes:

- Full author names for articles published from **2002 forward and to journals that publish using the full names of authors.**
- Full author searching can be entered in natural or inverted order:

julia s wong
wong julia s

- When searching a full name using the inverted order, a comma following the last name is generally optional, omit periods after initials, and put all suffixes, e.g., Jr, at the end. For example, to search for the author Bruce J. Herron, you may use any of the following formats:

herron, bruce j
herron bruce j
bruce j herron

- For some names, however, it is necessary to distinguish which name is the last name by using the comma following the last name:

ryan, james
james, ryan

- Full author name searching allows for automatic truncation of the forename. If you don't know the middle initial, enter only the last and first names:

herron bruce

4. Author Index

- Author's names, for all years of publication, are included in the form of Last Name (space) Initials. Use this format for searching.

Examples: *o'brien jm*
adams sh
pogonka t

- If only the first initial is used, PubMed automatically truncates the author's name to account for varying initials.

Example:



This search retrieves citations to articles written by o'brien j, o'brien ja, o'brien jz, etc.



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 an initial. When the last name is the same as a MeSH term, PubMed will search the term in MeSH as well as in All Fields. To limit a search to an author's name, use Limits or use the tag [au], e.g., o'brien [au].

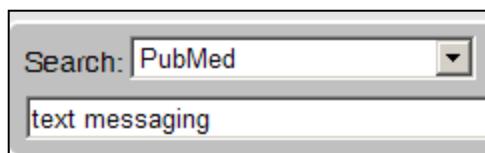
5. Full Investigator Translation Table and Investigator Index

- Investigators are individuals who contributed to the research, but may not have participated in writing the article.
- The names in the Full Investigator Translation Table and the Investigator Index are formatted and searchable in the same way as the Full Author Name Table and Author Index (see above).

If no match is found?

- PubMed breaks apart the phrase and repeats the automatic term mapping process until a match is found.
- Terms that don't make a match will be searched in "All Fields." Individual terms will be combined (ANDed) together.

Example:

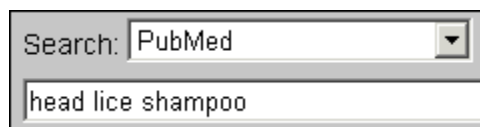


PubMed Translation:

text[All Fields] AND messaging[All Fields]

- PubMed breaks apart a long phrase from right to left:

Example:



<u>Searches for:</u>	<u>Results:</u>	<u>Action:</u>
head lice shampoo	No match found	Removes term on right to re-run Automatic Term Mapping process.
head lice	Match found in MeSH Translation Table	<i>head lice</i> will be searched as <i>"pediculus"[MeSH Terms] OR "pediculus"[All Fields] OR ("head"[All Fields] AND "lice"[All Fields]) OR "head lice"[All Fields]</i>
shampoo	No match found in Translation Tables	<i>shampoo</i> will be searched as <i>shampoo[All Fields]</i>

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

"pediculus"[MeSH Terms] OR "pediculus"[All Fields] OR ("head"[All Fields] AND "lice"[All Fields]) OR "head lice"[All Fields]

AND

shampoo[All Fields]

NOTES

Practice Exercises: Basic Search and ATM

Complete the following exercises as assigned by the instructor.

1. Find references about shingles and facial paralysis. To what MeSH Heading does shingles map? (Hint: View **Search details** from the search results screen. Click **See more...** for a full page view.)
2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed?

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers: Basic Search and ATM

1. Find references about shingles and facial paralysis. To what MeSH Heading does *shingles* map? (Hint: View **Search details** from the search results screen. Click **See more...** for a full page view.)

Enter shingles facial paralysis in the search box, click **Search**. View Search details from the Search Results screen and click **See more...** to see that the term shingles maps to the MeSH heading **Herpes Zoster**.

Query Translation:

```
(
"herpes zoster"[MeSH Terms] OR ("herpes"[All Fields]
AND "zoster"[All Fields]) OR "herpes zoster"[All Fields]
OR "shingles"[All Fields]) AND ("facial paralysis"[MeSH
Terms] OR ("facial"[All Fields] AND "paralysis"[All
Fields]) OR "facial paralysis"[All Fields])
```

Result:

[454](#)

Translations:

facial paralysis	"facial paralysis"[MeSH Terms] OR ("facial"[All Fields] AND "paralysis"[All Fields]) OR "facial paralysis"[All Fields]
shingles	"herpes zoster"[MeSH Terms] OR ("herpes"[All Fields] AND "zoster"[All Fields]) OR "herpes zoster"[All Fields] OR "shingles"[All Fields]

Database:

PubMed

User query:

shingles facial paralysis

2. Find references about hypertension and a nosebleed. How does PubMed map the term, nosebleed?

Enter hypertension nosebleed in the search box and click **Search**. View Search details.

Details:

Query Translation:

```
("hypertension"[MeSH Terms] OR "hypertension"[All Fields])  
AND ("epistaxis"[MeSH Terms] OR "epistaxis"[All Fields]  
OR "nosebleed"[All Fields])
```

Result:

[189](#)

Translations:

```
hypertension "hypertension"[MeSH Terms] OR "hypertension"[All Fields]  
nosebleed  "epistaxis"[MeSH Terms] OR "epistaxis"[All Fields] OR "nosebleed"[All Fields]
```

Database:

PubMed

User query:

hypertension nosebleed

The term, nosebleed, maps to the MeSH heading, **epistaxis**.

Related Citations

- Citations in PubMed have a **Related citations** link. Clicking on this link will access the citations in PubMed that are most closely related to the original citation.

[Botulinum toxin therapy of migraine and tension-type headache: comparing different botulinum toxin preparations.](#)

Schulte-Mattler WJ, Martinez-Castrillo JC.

Eur J Neurol. 2006 Feb;13 Suppl 1:51-4. Review.

PMID: 16417598 [PubMed - indexed for MEDLINE]

[Related citations](#)

- To create this list of Related citations PubMed compares words from the Title, Abstract and MeSH terms (if present) of each citation, using a powerful word-weighted algorithm.
- The Related citations display is in rank order from most to least relevant. The citation you linked from is displayed first.



A detailed explanation of the Related citations algorithm is available in the PubMed **Help** (Search Related citations; then click on “Finding articles related to a citation”; then click on the “algorithm” link.)

Example: Find citations to articles about windshield splatter.

The screenshot shows the PubMed.gov interface. At the top, there's a search bar with 'windshield splatter' entered. Below the search bar, the abstract for 'Windshield splatter analysis with the Galaxy metagenomic pipeline.' is displayed. To the right of the abstract, there's a section titled 'Related citations' which lists several articles. A red arrow points to this section. Below the 'Related citations' section, there's a link 'See all...' which is also pointed to by a red arrow. The sidebar on the right contains links to 'All links from this record', 'Related Citations', 'Compound (MeSH Keyword)', 'References for this PMC Article', 'SRA', and 'Substance (MeSH Keyword)'.


The first five Related citations and Reviews are displayed in the Abstract format when viewing a single record.

Click here to display the complete set of related citations.

The Abstract display of a single record.

Limits

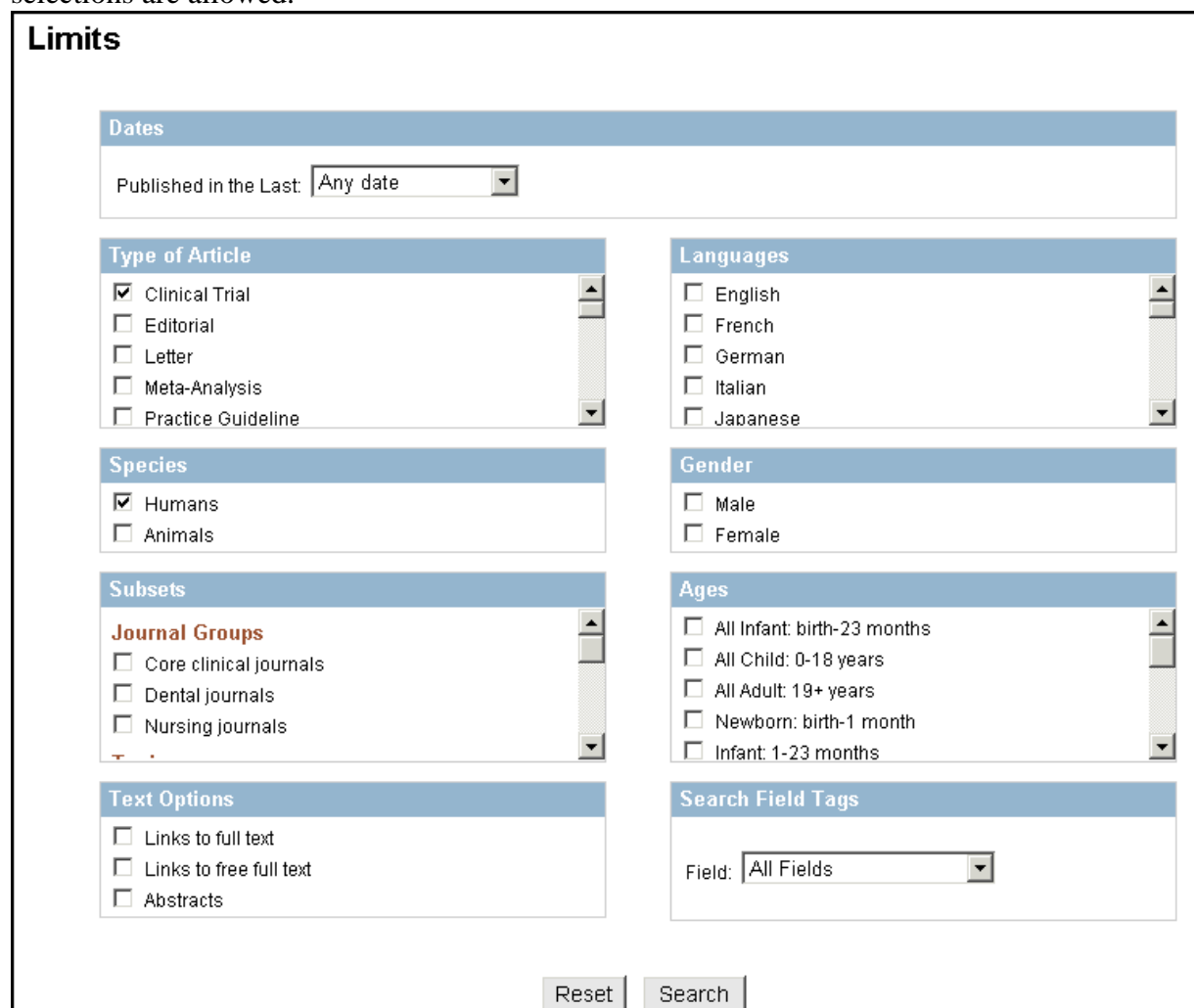
Limits allow you to set commonly used parameters for your query, which may result in more relevant retrieval.



Search: PubMed RSS Save search **Limits** Advanced search Help

indigestion abdominal pain Search Clear

Click Limits above the search box on any PubMed screen to bring up the Limits feature. Multiple selections are allowed.



Limits

Dates

Published in the Last: Any date

Type of Article

- ☒ Clinical Trial
- ☐ Editorial
- ☐ Letter
- ☐ Meta-Analysis
- ☐ Practice Guideline

Languages

- ☐ English
- ☐ French
- ☐ German
- ☐ Italian
- ☐ Japanese

Species

- ☒ Humans
- ☐ Animals

Gender

- ☐ Male
- ☐ Female

Subsets

Journal Groups

- ☐ Core clinical journals
- ☐ Dental journals
- ☐ Nursing journals

Ages

- ☐ All Infant: birth-23 months
- ☐ All Child: 0-18 years
- ☐ All Adult: 19+ years
- ☐ Newborn: birth-1 month
- ☐ Infant: 1-23 months

Text Options

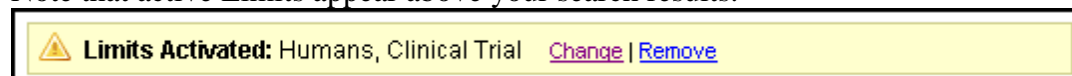
- ☐ Links to full text
- ☐ Links to free full text
- ☐ Abstracts

Search Field Tags

Field: All Fields

Reset Search

Note that active Limits appear above your search results.



Limits Activated: Humans, Clinical Trial [Change](#) | [Remove](#)

To return to the Limits page to change your selections, click **Change**.

To clear your Limits selections, click **Remove**.

The following pages explain more about each type of limit.

Dates:

PubMed contains citations published back to 1948. New citations are generally added Tuesday through Saturday.

Limit your search to articles **Published in the Last** pre-set date range, or specify a date range using yyyy/mm/dd format. Month and days are optional.

Note that PubMed will search both electronic and print publication dates when searching a range of dates. If using a single date, PubMed will search only the earliest publication date.

PubMed displays search results in descending date of entry order, i.e., last in, first out.

Limiting by Type of Article (Publication Type)

- Use to limit your retrieval based on the type of material the citation represents.
- The selections at the top are frequently searched publication types.
- Scroll down to find an alphabetic list of more publication types.
- Multiple selections are allowed (ORed together).

Limiting by Languages


- Journals published in approximately forty languages are indexed.
- The selections at the top are frequently searched languages.
- Scroll down to find a complete alphabetic list of more languages.
- Multiple selections are allowed (ORed together).

Limiting by Species (Humans or Animals)

- Use to limit to a specific group.
- If both options are checked, they are ANDed together.

Limiting by Gender

- Use to limit by gender.
- If both options are checked, they are ANDed together.



Gender

☐ Male


☐ Female

Limiting by Subsets

Allows you to limit your retrieval to 3 types of groupings of records:

1. Journal Groups:

- ▶ Core clinical journals: 120 English-language journals from the formerly published *Abridged Index Medicus*
- ▶ Dental
- ▶ Nursing



Subsets

Journal Groups

☐ Core clinical journals

☐ Dental journals

☐ Nursing journals

2. Topics:

- ▶ AIDS
- ▶ Bioethics
- ▶ Cancer
- ▶ Complementary Medicine
- ▶ History of Medicine
- ▶ Space Life Sciences
- ▶ Systematic Reviews
- ▶ Toxicology

3. More Subsets:

- ▶ MEDLINE: completed citations with MeSH headings and other indexing terms that have also been checked for accuracy
- ▶ PubMed Central: citations for articles available free in NLM's archive of life sciences journal literature

- Multiple selections are allowed (ORed together).



Each Subject Subset uses its own specialized search strategy to aid in the retrieval of citations on these topics. You may view these strategies at http://www.nlm.nih.gov/bsd/pubmed_subsets.html.

Limiting by Ages

Use to search for a specific age group or multiple age groups (ORed together).



Ages

☐ All Infant: birth-23 months

☐ All Child: 0-18 years

☐ All Adult: 19+ years

☐ Newborn: birth-1 month

☐ Infant: 1-23 months

Text Options

Click the appropriate checkboxes to limit to those records that link to full text, link to free full text or contain abstracts.

Text Options	
<input type="checkbox"/>	Links to full text
<input type="checkbox"/>	Links to free full text
<input type="checkbox"/>	Abstracts

Search Field Tags

Select a specific search tag to limit subsequent searches to that field.

Search Field Tags	
Field:	All Fields
	All Fields
	Affiliation
	Author
	Book
search	Corporate Author
	Create Date
	EC/RN Number
	Editor
	Entrez Date
	Filter
	First Author
	Full Author Name



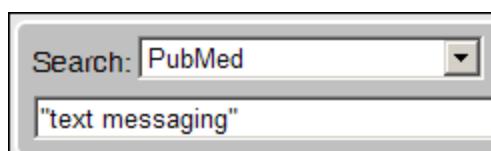
To **turn off all of the limits** before you run your next search, click the **Remove** link on the Limits Activated message or the **Reset** button on the Limits page.

Phrase Searching

PubMed searches for phrases under these conditions:

1. The phrase is found in the MeSH, journal, author or investigator tables or indexes during the automatic term mapping process
2. The phrase is entered with a search tag:
kidney allograft [tw]
3. The phrase is enclosed in double quotes: (The absence of a search tag indicates the search should be conducted in All Fields.)
"kidney allograft"
4. The term is hyphenated:
first-line
5. The term is truncated:
*kidney allograft**

Example:



Search: PubMed

"text messaging"

PubMed Translation: "text messaging"[All Fields]

- The above formats for phrase searching instruct PubMed to bypass automatic term mapping. Instead PubMed looks for the phrase in its Index of searchable terms. If the phrase is in the Index, PubMed will retrieve citations that contain the phrase.
- PubMed may fail to find a phrase because it is not in the Index.



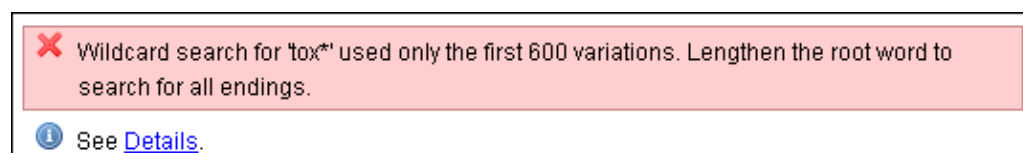
When you enclose a phrase in double quotes, PubMed will **not** perform automatic term mapping which includes explosions of MeSH terms. For example, “health planning” **will** include citations that have the MeSH heading, Health Planning, but **will not** include the more specific indentations (e.g., Health Care Rationing, Health Care Reform) 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 string of characters to search for all terms that begin with that string. The asterisk may only be used at the *end* of a string of characters.

Example: *mimic** will find all terms that begin with the letters m-i-m-i-c-; e.g., *mimic*, *mimics*, *mimicing*.

- PubMed searches the first 600 variations of a truncated term. If a truncated term, e.g., *tox**, produces more than 600 variations, PubMed displays the following warning message on the Results screen in pink near the top of the screen:



Truncation 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 terms, e.g., Myocardial Stunning.

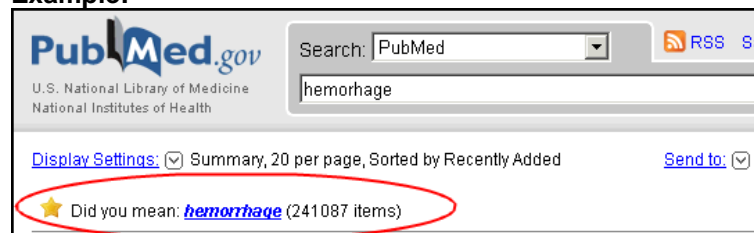
Stopword List

- PubMed also compares each search to a list of commonly found terms that are referred to as "stopwords." Stopwords may be ignored. This list is available in PubMed's Help.

Spell Check Feature

- Suggests alternative spellings for search terms that include misspellings.
- Terms entered with a search tag (e.g., [mh]; [majr]; [tw]) will *not* generate alternative spellings.

Example:



Click on the hyperlinked alternative spelling to generate that search.



- The alternative spellings are not based on a dictionary but rather the frequency with which a term appears in PubMed.
- The spell checking function will not display an alternative spelling for misspellings that have a high frequency of occurrence in PubMed or for terms with numbers or fewer than five characters.

Practice Exercises: Limits & Phrase Searching

Complete the following exercises as assigned by the instructor.

1. Using only the search box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to the publication type (Type of Article), Clinical Trial.
2. Compare the searches “wisdom teeth” and wisdom teeth (with and without quotes), using the Details link on the Advanced Search screen. What accounts for the difference?
3. Find references about tuberculosis from the AIDS literature available in free full text.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers: Limits and Phrase Searching

1. Using only the search box, find some information about using a living donor for a liver transplantation. Using Limits, further restrict the search to the publication type (Type of Article), Clinical Trial.

Details screen showing the search including the Clinical Trial limit:

Search Details

Query Translation:

```
((("living donors"[MeSH Terms] OR ("living"[All Fields] AND "donors"[All Fields]) OR "living donors"[All Fields] OR ("living"[All Fields] AND "donor"[All Fields]) OR "living donor"[All Fields]) AND ("liver transplantation"[MeSH Terms] OR ("liver"[All Fields] AND "transplantation"[All Fields]) OR "liver transplantation"[All Fields])) AND Clinical Trial[ptyp])
```

Result:

[135](#)

Translations:

liver transplantation	"liver transplantation"[MeSH Terms] OR ("liver"[All Fields] AND "transplantation"[All Fields]) OR "liver transplantation"[All Fields]
living donor	"living donors"[MeSH Terms] OR ("living"[All Fields] AND "donors"[All Fields]) OR "living donors"[All Fields] OR ("living"[All Fields] AND "donor"[All Fields]) OR "living donor"[All Fields]

Database:

PubMed

User query:

living donor liver transplantation AND (Clinical Trial[ptyp])

2. Compare the searches “wisdom teeth” and wisdom teeth (with and without quotes), using the Details link on the Advanced Search screen. What accounts for the difference?

Query Translation:	
<code>"molar, third"[MeSH Terms] OR ("molar"[All Fields] AND "third"[All Fields]) OR "third molar"[All Fields] OR ("wisdom"[All Fields] AND "teeth"[All Fields]) OR "wisdom teeth"[All Fields]</code>	
<input type="button" value="Search"/>	<input type="button" value="URL"/>
Result:	
6006	
Translations:	
wisdom	<code>"molar, third"[MeSH Terms] OR ("molar"[All Fields] AND "third"[All Fields]) OR "third molar"[All Fields] OR</code>
teeth	<code>("wisdom"[All Fields] AND "teeth"[All Fields]) OR "wisdom teeth"[All Fields]</code>
Database:	
PubMed	
User query:	
wisdom teeth	

Using quotes bypasses Automatic Term Mapping and misses many records which were indexed with the MeSH term, Molar, Third:

Query Translation:	
<code>"wisdom teeth"[All Fields]</code>	
<input type="button" value="Search"/>	<input type="button" value="URL"/>
Result:	
512	
Database:	
PubMed	
User query:	
<code>"wisdom teeth"</code>	

3. Find references about tuberculosis from the AIDS literature available in free full text.

U.S. National Library of Medicine
National Institutes of Health

tuberculosis Search Clear

Limits

Dates
Published in the Last: Any date

Type of Article
☐ Clinical Trial
☐ Editorial
☐ Letter
☐ Meta-Analysis
☐ Practice Guideline

Languages
☐ English
☐ French
☐ German
☐ Italian
☐ Japanese

Species
☐ Humans
☐ Animals

Gender
☐ Male
☐ Female

Subsets
Topics
☒ AIDS
☐ Bioethics
☐ Cancer
☐ Complementary Medicine

Ages
☐ All Infant: birth-23 months
☐ All Child: 0-18 years
☐ All Adult: 19+ years
☐ Newborn: birth-1 month
☐ Infant: 1-23 months

Text Options
☐ Links to full text
☒ Links to free full text
☐ Abstracts

Search Field Tags
Field: All Fields

Boolean Logical Operators

In the context of database searching, Boolean logic refers to the logical relationships among search terms.

- The Boolean operators AND, OR, NOT can be used to combine search terms in PubMed. They must be entered in uppercase letters.

Logical Operator **OR**:

- Used to retrieve a set in which each citation contains *at least one* of the search terms.
- Use OR when you want to pull together articles on similar topics.

Example: *football OR hockey OR soccer*

Each circle in the diagram to the right represents the retrieval for each term. The grey areas represent the retrieval for this example – all records that include any one of these terms.



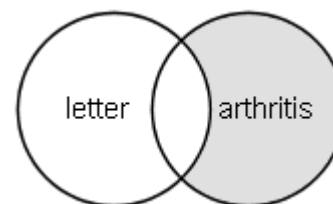
The table below represents sample results for each term, then for the terms combined with OR.

<u>Search terms</u>	<u>Results</u>
football	3948
hockey	1466
soccer	3137
football OR hockey OR soccer	7538

Logical Operator **NOT**:

- Retrieves a set from which citations to articles containing specified search terms following the NOT operator are eliminated.
- Use the NOT operator with caution; you might eliminate relevant articles.

Example: *arthritis NOT letter*



Note in the diagram to the right and in the sample search results below that the retrieval is a portion of the total retrieval for arthritis – that portion not including the term letter.

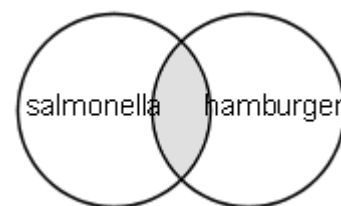
<u>Search terms</u>	<u>Results</u>
arthritis	185375
letter	686049
arthritis NOT letter	176352

Logical Operator AND:

- Used to retrieve a set in which each citation contains *all* search terms.

Example: *salmonella AND hamburger*

Note in the diagram to the right and in the sample search results below that the retrieval is only the overlap of the results for each term – those records in which both terms appear.



<u>Search terms</u>	<u>Results</u>
salmonella	69432
hamburger	2703
salmonella AND hamburger	14

- AND is the default operator used in PubMed. If you do not include Boolean operators in your search, PubMed will automatically use AND between terms.

Example: *diabetes mellitus phototherapy*
 PubMed searches as: *diabetes mellitus AND phototherapy*

Nesting

- When using multiple Boolean operators in PubMed, they are processed left to right.

Example: *salmonella AND hamburger OR eggs*
 This will retrieve records that include both terms *salmonella* AND *hamburger* as well as all records with the term *eggs*, whether or not they contain the other two terms.



- To change the order in which terms are processed, enclose the terms(s) in 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: *salmonella AND (hamburger OR eggs)*
 This will retrieve records that contain the term *salmonella*, as well as one or both of the terms *hamburger* OR *eggs*.



History

- History available from the Advanced Search screen.
- Temporarily holds up to 100 searches and links to results.
- The History screen displays:
 - Your search query
 - Most recent 5 searches are displayed
 - The time of the search
 - The number of citations in your search results
 - Search statement numbers menu for combining searches

Search History			
Search	Most Recent Queries	Time	Result
#6	Search salmonella enteritis	10:11:37	3653
#5	Search salmonella AND (hamburger OR eggs)	10:08:36	1384
#4	Search salmonella AND hamburger OR eggs	10:08:26	45812
#3	Search salmonella AND hamburger	10:08:04	14
#2	Search arthritis NOT letter	10:07:42	189577
<div>More History Clear History</div> Search History Instructions			

Using History

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

Example:

Search: PubMed
#5 AND antibodies



Type Boolean operators in all caps as shown in the example above.

Other examples:

#8 AND #10
#7 OR #14

Complete the following exercises as assigned by the instructor.

- Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers: Boolean Operators and History

1. In one search, find references about the relationships between circadian rhythms and either cortisol or melatonin in humans.

circadian rhythms AND (cortisol OR melatonin) AND humans

[You may also use the Humans checkbox from the Limits area on the Advanced Search screen. These terms can be in any order but the OR phrase must be in parentheses.]

2. Find references about heart surgery (notice how the term is mapped using **Search details**). Using History, combine this search with the previous search to find references about heart surgery, circadian rhythms and cortisol or melatonin in humans.

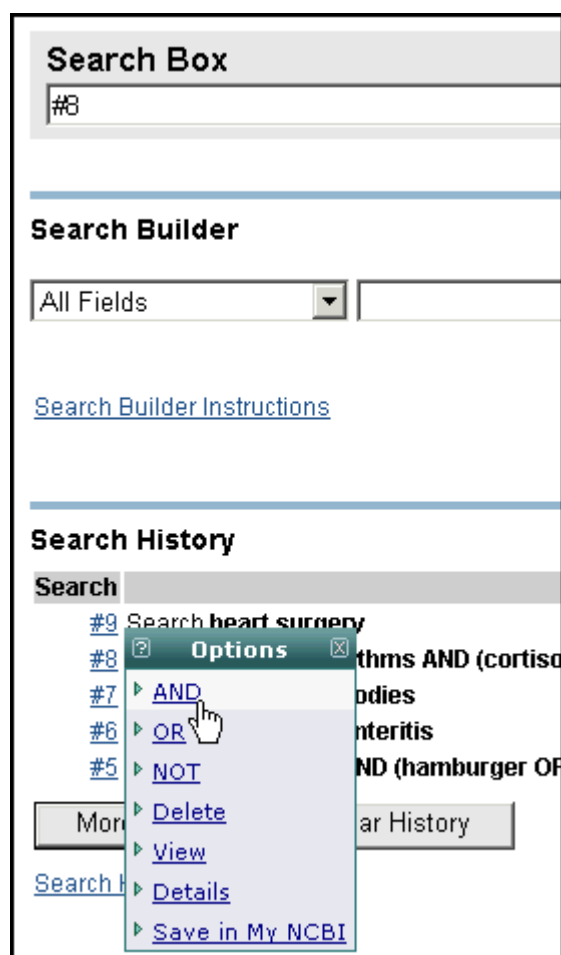
After running a search for heart surgery, go to History area of the Advanced Search screen, click on the search number link for your circadian rhythm search and select AND. Repeat with your heart surgery search. Click the **Search** button.

OR

Combine the two searches by typing in the search box:

#8 AND #9

(substituting the numbers of the appropriate searches).



Searching with MeSH and the MeSH Database

MeSH Database

The MeSH Database allows you to:

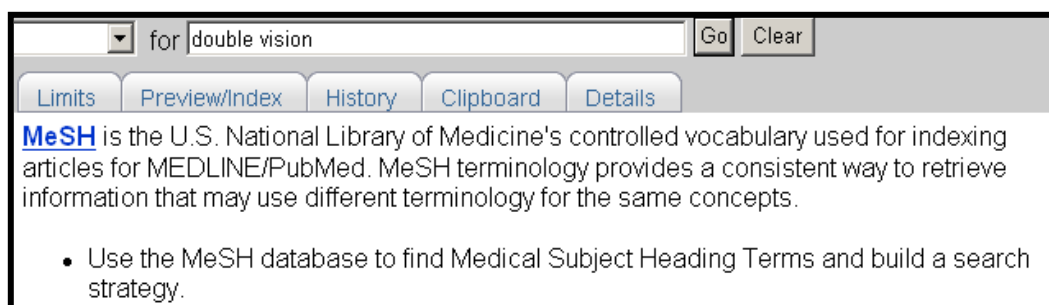
- Locate and select MeSH terms (Headings, Subheadings, & Publication Types); Supplementary Concept terms (Substance Names) and Pharmacological Action terms.
- See the definition and other helpful information for a MeSH term.
- Build a PubMed search strategy.
- Display MeSH terms in the hierarchy.
- Limit MeSH terms to a major concept for a search.
- Attach subheadings for a search.
- Link to the NLM MeSH Section's MeSH Browser.

How to Get There

- Click MeSH link at the bottom of the Advanced Search screen; Click on **MeSH Database** under More Resources on the PubMed home page; or use the database selection menu on the search bar.

Let's use the MeSH Database to find the proper **MeSH term** for condition of *double vision* and then search PubMed for relevant citations.

Enter the term, **double vision**, in the search box and click the **Go** button.



for double vision Go Clear

Limits Preview/Index History Clipboard Details

MeSH is the U.S. National Library of Medicine's controlled vocabulary used for indexing articles for MEDLINE/PubMed. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

- Use the MeSH database to find Medical Subject Heading Terms and build a search strategy.

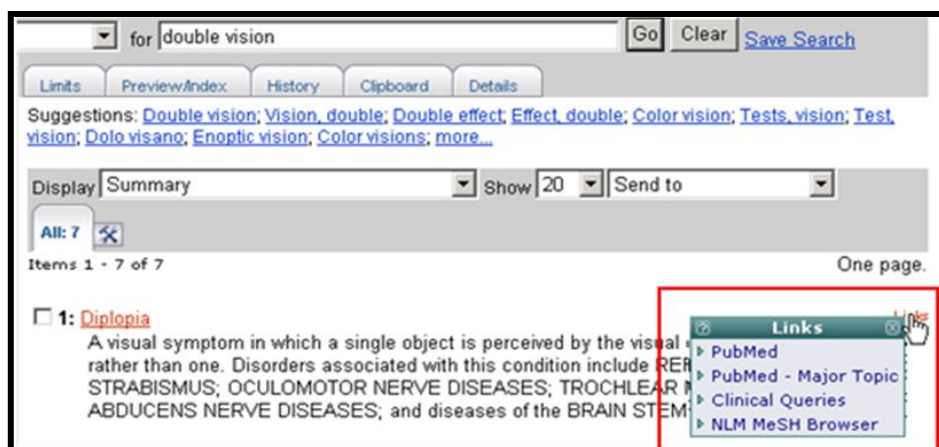
Summary format:

- Select PubMed from the Links pull-down menu to run a PubMed search with that term.

Suggestions are MeSH or Entry terms generated by an algorithm that compares letter combinations.

Scope Note (meaning for this concept is displayed.)

Links allows you to use the term in a PubMed search, use it as a major topic, link to the MeSH Section MeSH Browser or Clinical Queries.



for double vision Go Clear Save Search

Limits Preview/Index History Clipboard Details

Suggestions: Double vision; Vision, double; Double effect; Effect, double; Color vision; Tests, vision; Test, vision; Dolo visano; Enoptic vision; Color visions; more...

Display Summary Show 20 Send to

All: 7

Items 1 - 7 of 7 One page.

1: **Diplopia**

A visual symptom in which a single object is perceived by the visual system as two objects rather than one. Disorders associated with this condition include REFRACTIVE ERRORS; STRABISMUS; OCULOMOTOR NERVE DISEASES; TROCHLEAR NERVE DISEASES; ABDUCENS NERVE DISEASES; and diseases of the BRAIN STEM.

Links

- PubMed
- PubMed - Major Topic
- Clinical Queries
- NLM MeSH Browser

Let's search for the supplementary concept term: **1,4-bis(chloromethyl)benzene**



Some substance names are long and "complicated." Please note also that when searching any Entrez database for a term with parentheses, e.g., 1,4-bis(chloromethyl)benzene, do *not* enter the parentheses.

The screenshot shows the MeSH database search results for the term "1,4-bis chloromethyl benzene". The search bar at the top contains the term, and buttons for "Go", "Clear", and "Save Search" are visible. Below the search bar, there are tabs for "Limits", "Preview/Index", "History", "Clipboard", and "Details". The "Limits" tab is selected, showing a list of suggestions: "1,4 bis chloromethyl benzene", "1,4 bis trichloromethyl benzene", "1,4 bis chloromethoxymethyl benzene", "1,4 bis dimethylamino benzene", "1,2 bis hydroxymethyl benzene", "1,2 bis chloromethoxy ethane", "1,3 benzenedicarbonyl chloride", "1,2 bis trimethylsilyl benzene", "1 chloro 4 dichloromethyl benzene", "4 chloromethyl benzoylformate", and "More...". Below the suggestions, there are dropdown menus for "Display" (set to "Full"), "Show" (set to "20"), and "Send to". A section titled "All: 1" contains a list of links: "If making selections (e.g., Subheadings, etc.), use the [Send to Search Box](#) feature to see PubMed records with those specifications.", "Select PubMed under the Links menu to retrieve all records for the MeSH Term.", and "Select [NLM MeSH Browser](#) under the Links menu for additional information." Below this, a checkbox is checked next to the term "1,4-bis(chloromethyl)benzene [Substance Name]". The term is followed by a description: "causes contact dermatitis; structure", the date introduced: "January 1, 1980", the registry number: "623-25-6", and the heading mapped to: "Xylenes". Below this, the entry terms are listed: "1,4-bischloromethylbenzene" and "1,4-bischloromethylbenzol". Finally, the previous indexing is listed: "HYDROCARBONS, CHLORINATED (1980-1982)" and "BENZYL CPDS (1980-1980)". A "Links" menu is open, showing options: "PubMed", "Clinical Queries", "NLM MeSH Browser", "PubChem Compound", and "PubChem Substance".

These terms will display in search retrieval with the label [Substance Name].

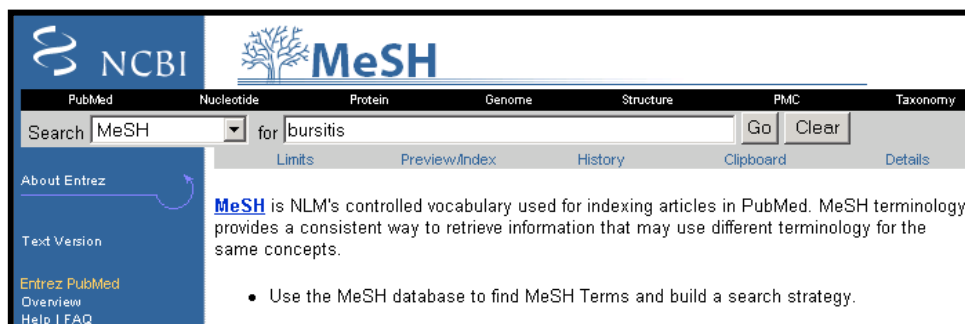
To see additional information for any term, use the link to the NLM MeSH Browser from the Links menu.



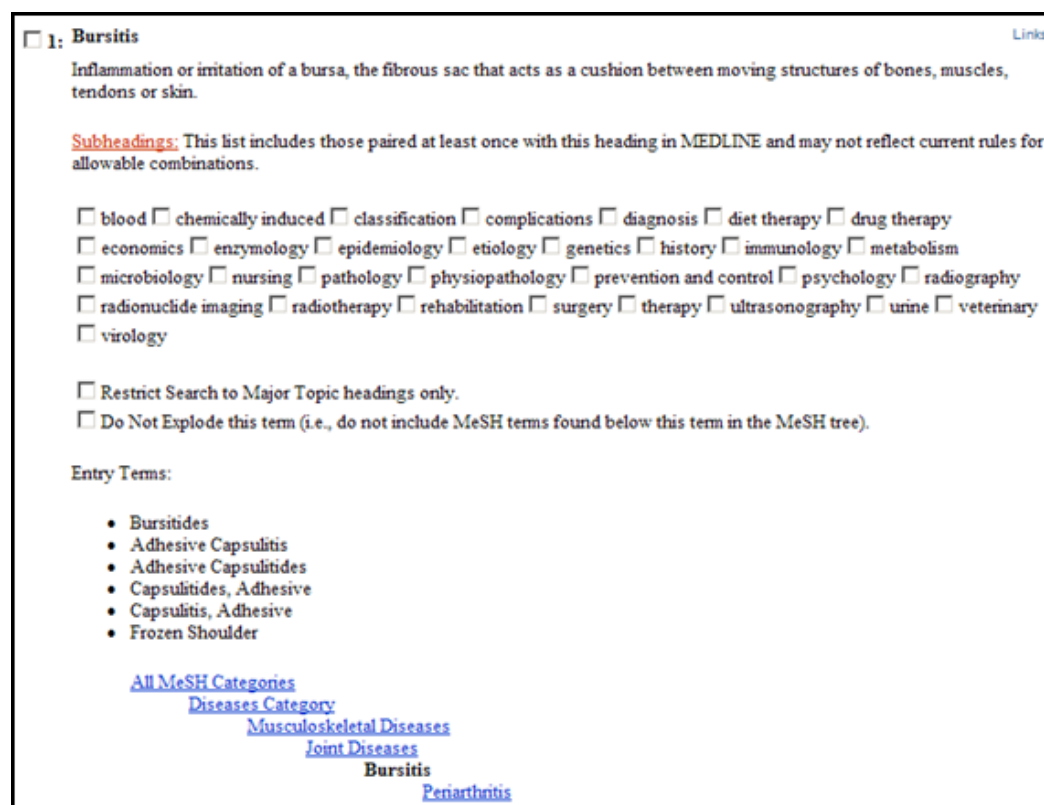
The Feature tabs (Limits, History, etc.) from the MeSH Database deal specifically with the MeSH Database not the PubMed database.

Now, let's use the MeSH Database to build a search strategy for a search for citations about the *diagnosis of bursitis* which requires the use of a subheading.

Enter the term, **bursitis**, in the search box and click the **Go** button.



The single record retrieved is displayed in the Full format:



Use the checkboxes to select subheadings. Click on the **Subheadings** link to see a list of subheading definitions.

Use these checkboxes to restrict to major topic or to not explode a term.

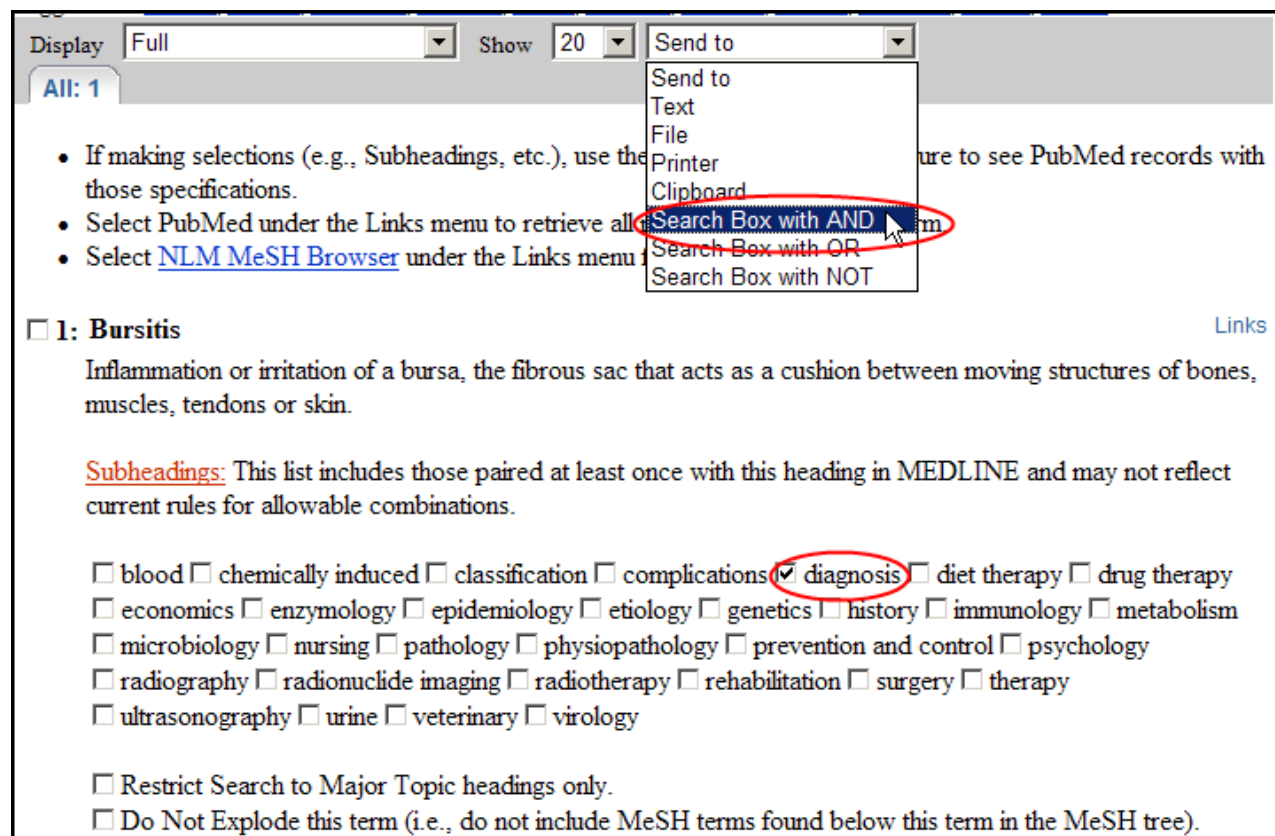
Entry Terms (synonyms) are provided.

MeSH hierarchy is displayed with searched term in boldface.

Send to Search Box

To specify a search for: *Citations about the **diagnosis** of bursitis*

1. Select the diagnosis subheading from the Full display screen.
2. Select Search Box with AND from the **Send to** pull-down menu.



The screenshot shows the PubMed interface. At the top, there are dropdown menus for 'Display' (set to 'Full'), 'Show' (set to '20'), and 'Send to'. The 'Send to' menu is open, showing options: 'Send to', 'Text', 'File', 'Printer', 'Clipboard', 'Search Box with AND', 'Search Box with OR', and 'Search Box with NOT'. The 'Search Box with AND' option is highlighted with a red circle and a mouse cursor. Below the menu, there is a list of subheadings for 'Bursitis'. The 'diagnosis' subheading is checked and circled in red. Other subheadings include 'blood', 'chemically induced', 'classification', 'complications', 'diet therapy', 'drug therapy', 'economics', 'enzymology', 'epidemiology', 'etiology', 'genetics', 'history', 'immunology', 'metabolism', 'microbiology', 'nursing', 'pathology', 'physiopathology', 'prevention and control', 'psychology', 'radiography', 'radionuclide imaging', 'radiotherapy', 'rehabilitation', 'surgery', 'therapy', 'ultrasonography', 'urine', 'veterinary', and 'virology'. There are also checkboxes for 'Restrict Search to Major Topic headings only' and 'Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree)'.

The term with any specifications will appear in the Search Box:



The screenshot shows the PubMed Search Box. The text 'Bursitis/diagnosis' [MeSH] is entered into the search box. Below the search box are two buttons: 'Search PubMed' and 'Clear'.

To add additional terms to this strategy, continue searching the database and add terms to the Search Box using the Send to Search Box feature.

Now, let's adjust our search to specifically look for articles discussing the *diagnosis of bursitis in the knee joint*. Restrict to citations where the **major focus of the article is knee joints** and then add this term to the strategy we are building:

Searching on the next term. Click **Go**.

Here's the strategy being built.

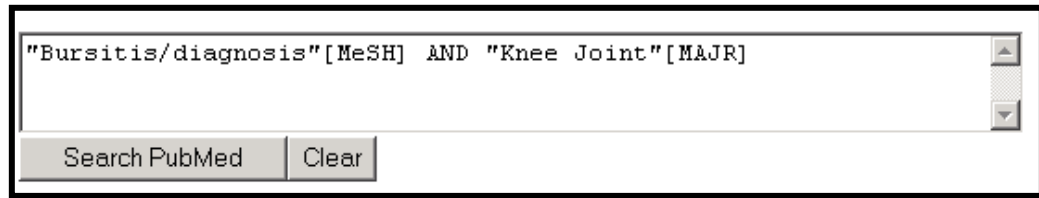
This brings you to the Full display for **Knee Joint**.

1. Click in the check box for: **Restrict Search to Major Topic headings only**.

2. Select **Search Box with AND** from the **Send to** pull-down menu.

Now, the search is built and is ready to be run in PubMed. Click the Search PubMed button below the Search box:

Click **Search PubMed** button.



The screenshot shows a web-based search interface. At the top, a search box contains the text: "Bursitis/diagnosis"[MeSH] AND "Knee Joint"[MAJR]. To the right of the search box is a vertical scroll bar. Below the search box are two buttons: "Search PubMed" and "Clear".

Practice Exercises: Searching with MeSH

Complete the following exercises as assigned by the instructor.

Try using the MeSH database to build your searches that require the use of MeSH headings.

1. Find articles discussing prostate cancer as the main focus of the article. Use the MeSH Database to begin your search. Restrict to studies involving treatment by leuprolide.
2. Find references discussing the economics of community-acquired pneumonia.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers: Searching with MeSH

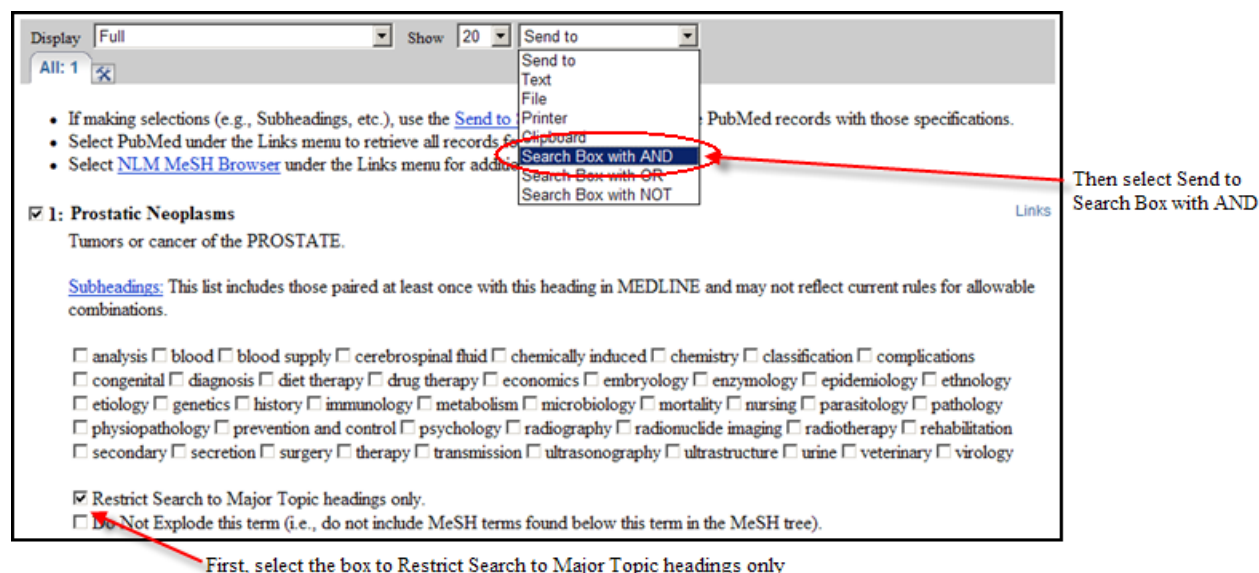
1. Find articles discussing prostate cancer as the main focus of the article. Use the MeSH Database to begin your search. Restrict to studies involving treatment by leuprolide.

Search prostate cancer in the MeSH Database.

Click term to reach Full display.



Restrict to Major Topic and add the term to your search:



With “Prostatic Neoplasms”[Majr] in the MeSH Database Search Box, find the record for leuprolide and select the therapeutic use subheading. Send to Search Box with AND.

The screenshot shows the PubMed MeSH Database search interface. At the top, there is a search box with the text "for leuprolide" and buttons for "Go", "Clear", and "Save Search". Below this are tabs for "Limits", "Preview/Index", "History", "Clipboard", and "Details". A search box contains the text "Prostatic Neoplasms"[Majr]. Below the search box are buttons for "Search PubMed" and "Clear".

Suggestions: [Leuprolide](#), [Leuprorelin](#), [Leptolide](#), [Lepidolide](#), [Leupeptin](#), [Leupeptins](#), [Leucinamide](#), [Leupurin](#), [Eupatolide](#), [Leu pro](#), [More...](#)

Display: Full Show: 20 Send to: [Dropdown]

All: 1 [X]

Send to menu options: Send to, Text, File, Printer, Clipboard, **Search Box with AND**, Search Box with OR, Search Box with NOT.

1: **Leuprolide** [Links](#)

A potent synthetic long-acting agonist of GONADOTROPIN-RELEASING HORMONE that regulates the synthesis and release of pituitary gonadotropins, LUTEINIZING HORMONE and FOLLICLE STIMULATING HORMONE.

Year introduced: 1992

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ administration and dosage ☐ adverse effects ☐ analogs and derivatives ☐ analysis ☐ antagonists and inhibitors ☐ blood ☐ chemical synthesis ☐ chemistry ☐ classification ☐ contraindications ☐ diagnostic use ☐ economics ☐ immunology ☐ **isolation and purification** ☐ metabolism ☐ pharmacokinetics ☐ pharmacology ☐ standards ☒ **therapeutic use** ☐ toxicity

☐ Restrict Search to Major Topic headings only.

☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Once satisfied with the search strategy, click Search PubMed:

The screenshot shows the PubMed search box with the text "Prostatic Neoplasms"[Majr] AND "Leuprolide/therapeutic use"[Mesh]. Below the search box are buttons for "Search PubMed" and "Clear".

- Find references discussing the economics of community-acquired pneumonia.

Search pneumonia in the MeSH Database.

From the full display, select the economics subheading.

☐ **1: Pneumonia** Links

Inflammation of any part, segment or lobe, of the lung parenchyma.
Year introduced: 1963

Subheadings: This list includes those paired at least once with this heading in MEDLINE and may not reflect current rules for allowable combinations.

☐ blood ☐ cerebrospinal fluid ☐ chemically induced ☐ classification ☐ complications ☐ congenital
☐ diagnosis ☐ diet therapy ☐ drug therapy ☒ economics ☐ embryology ☐ enzymology ☐ epidemiology
☐ ethnology ☐ etiology ☐ genetics ☐ history ☐ immunology ☐ metabolism ☐ microbiology ☐ mortality
☐ nursing ☐ parasitology ☐ pathology ☐ physiology ☐ physiopathology ☐ prevention and control
☐ psychology ☐ radiography ☐ radionuclide imaging ☐ radiotherapy ☐ rehabilitation ☐ statistics and numerical data ☐ surgery ☐ therapeutic use ☐ therapy ☐ transmission ☐ ultrasonography ☐ urine
☐ veterinary ☐ virology

☐ Restrict Search to Major Topic headings only.
☐ Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree).

Search for the next term: community acquired.

Read the Scope Note. If relevant, click on the term to see the Full Display for more information including subheadings.

for community acquired Go Clear Save Search

Limits Preview/Index History Clipboard Details

"Pneumonia/economics" [MeSH]

Search PubMed Clear

Suggestions: [Community actions](#); [Community action](#); [Action, community](#); [Actions, community](#); [Community medicine](#); [Consents, community](#); [Community relation](#); [Consent, community](#); [Community consents](#); [Community pharmacy](#); [more...](#)

Display Summary Show 20 Send to

All: 1 X

☐ **1: Community-Acquired Infections** Links

Any infection acquired in the community, that is, contrasted with those acquired in a health care facility (CROSS INFECTION). An infection would be classified as community-acquired if the patient had not recently been in a health care facility or been in contact with someone who had been recently in a health care facility.
Year introduced: 1994

Send the final strategy to PubMed:

"Pneumonia/economics" [MeSH] AND "Community-Acquired Infections/economics" [MeSH]

Search PubMed Clear

Finding a Specific Citation

Using the Search box

- PubMed looks for combinations of search terms that are characteristic of citation searching, e.g., volume/issue numbers, author names, journal titles, article titles, publication dates, using a feature called the Citation Sensor.
- Simply type in the available information into the Search box:

Example 1: Journal title abbreviation, volume, issue and page number

The screenshot shows the PubMed.gov search interface. The search bar contains the query "exp neurol 187 2 279", which is circled in red. The search results display the following information:

Search: PubMed
Search: exp neurol 187 2 279
[Search](#) [Clear](#)

[Display Settings:](#) ☒ Abstract [Send to:](#) ☐

Exp Neurol. 2004 Jun;187(2):279-88.

Fibrillization of alpha-synuclein and tau in familial Parkinson's disease caused by the A53T alpha-synuclein mutation.

Kotzbauer PT, Giasson BI, Kravitz AV, Golbe LI, Mark MH, Trojanowski JQ, Lee VM.

Center for Neurodegenerative Disease Research, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA 19104, USA.
 kotzbaue@mail.med.upenn.edu

Abstract

Mutations in the alpha-synuclein (alpha-syn) gene are responsible for a rare familial parkinsonism syndrome, a finding that has led to extensive characterization of altered alpha-syn structure in sporadic Parkinson's disease (PD) and other neurodegenerative disorders. We report here the immunohistochemical, biochemical and ultrastructural characterization of alpha-syn neuropathology in a case of familial PD with the A53T alpha-syn gene mutation. Insoluble filamentous alpha-syn lesions were detected in almost all brain regions examined and as in sporadic PD, we observed the accumulation of insoluble nitrated alpha-syn in this familial disorder. Significant accumulations of filamentous insoluble tau protein also were detected in some brain regions of this patient, suggesting a role for A53T mutant alpha-syn in tau fibrillization. Indeed, in vitro studies of tau and alpha-syn fibrillization showed that the A53T mutation accelerated alpha-syn fibril formation, initiated tau assembly into filaments and synergistically enhanced fibrillization of both tau and alpha-syn. Our data implicate fibrillization of alpha-syn and tau in the pathogenesis of PD, and suggest that distinct amyloidogenic proteins may cross-seed each other in neurodegenerative diseases.

PMID: 15144854 [PubMed - indexed for MEDLINE]

Related citations

Human alpha-synuclein-harboring familial Parkinson's dis [Proc Natl Acad Sci U S A. 2002]

Initiation and synergistic fibrillization of tau and alpha-synuclein. [Science. 2003]

Fibrils formed in vitro from alpha-synuclein and two mutant forms linked to [Biochemistry. 2000]

Review From genetics to pathology: tau and alpha [Philos Trans R Soc Lond B Biol Sci. 2001]

Review Filamentous nerve cell inclusions in neuron [Philos Trans R Soc Lond B Biol Sci. 1999]

[See reviews...](#)
[See all...](#)

Cited by 6 PubMed Central articles

Alpha-synuclein S129 phosphorylation mutants do not alter nig [J Neuropathol Exp Neurol. 2009]

Physiological and Pathological Role of Alpha-synuclein in Parkinson's Dis [Int J Mol Sci. 2009]

Neurodegeneration associated with genetic defects in phospholipase A(2) [Neurology. 2008]

Example 2: Article title words



- If multiple citation matches are retrieved by the Citation Sensor, you will see a yellow area above the default retrieval with links to one or more citations for your consideration:



Single Citation Matcher

The Single Citation Matcher, available from the PubMed Home page and the Advanced Search page, allows you to fill in the information you have about a citation (e.g., author, title, journal, volume, issue, page number) by field.

NCBI Resources How To

PubMed Single Citation Matcher

- Use this tool to find PubMed citations. You may omit any field.
- Journal may be the full title or the title abbreviation.
- For first and last author searching, use smith jc format.

Journal:

Date: (month and day are optional)

Volume: Issue: First page:

Author name (see [help](#))

☐ Only as first author ☐ Only as last author

Title words:

Autocomplete feature available for Journal and Author name

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: [RSS](#) [Save search](#) [Limits](#) [Advanced search](#)

[Jour] AND 187[volume] AND 2[issue] AND 279[page]

[Display Settings:](#) ☒ Abstract [Send to:](#) ☐

Exp Neurol. 2004 Jun;187(2):279-88.

Fibrillization of alpha-synuclein and tau in familial Parkinson's disease caused by the A53T alpha-synuclein mutation.

Kotzbauer PT, Giasson BI, Kravitz AV, Golbe LI, Mark MH, Trojanowski JQ, Lee VM.

Center for Neurodegenerative Disease Research, Department of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine, Philadelphia, PA 19104, USA.
kotzbauer@mail.med.upenn.edu

Abstract

Mutations in the alpha-synuclein (alpha-syn) gene are responsible for a rare familial parkinsonism syndrome, a finding that has led to extensive characterization of altered alpha-syn structure in sporadic Parkinson's disease (PD) and other neurodegenerative disorders. We report here the immunohistochemical, biochemical and ultrastructural characterization of alpha-syn neuropathology in a case of familial PD with the A53T alpha-syn gene mutation. Insoluble filamentous alpha-syn lesions were detected in almost all brain regions examined and as in sporadic PD, we observed the accumulation of insoluble nitrated alpha-syn in this familial disorder. Significant accumulations of filamentous insoluble tau protein also were detected in some brain regions of this patient, suggesting a role for A53T mutant alpha-syn in tau fibrillization. Indeed, in vitro studies of tau and alpha-syn fibrillization showed that the A53T mutation accelerated alpha-syn fibril formation, initiated tau assembly into filaments and synergistically enhanced fibrillization of both tau and alpha-syn. Our data implicate fibrillization of alpha-syn and tau in the pathogenesis of PD, and suggest that distinct amyloidogenic proteins may cross-seed each other in neurodegenerative diseases.

PMD: 15144854 [PubMed - indexed for MEDLINE]

Related citations

Human alpha-synuclein-harboring Parkinson's dis [Proc Natl Acad S

Initiation and synergistic fibrillization of alpha-synuclein.

Fibrils formed in vitro from alpha-syn two mutant forms linked to [Biot

[Review](#) From genetics to pathology: alpha-synuclein [Philos Trans R Soc Lond B

[Review](#) Filamentous nerve cell inclusions: alpha-synuclein [Philos Trans R Soc Lond B

Cited by 6 PubMed Central

Alpha-synuclein S129 phosphorylation does not alter nigrostriatal dopamine release [J Neuropathol Exp Neurol

Physiological and Pathological Role of Alpha-Synuclein in Parkinson's Disease [Int J

Neurodegeneration associated with defects in phospholipase A2 (PLA2) [J Biol Chem

NOTES

Journals Database

The PubMed Journals database allows you to look up information about a PubMed journal and search for that title. You can search for a journal using:

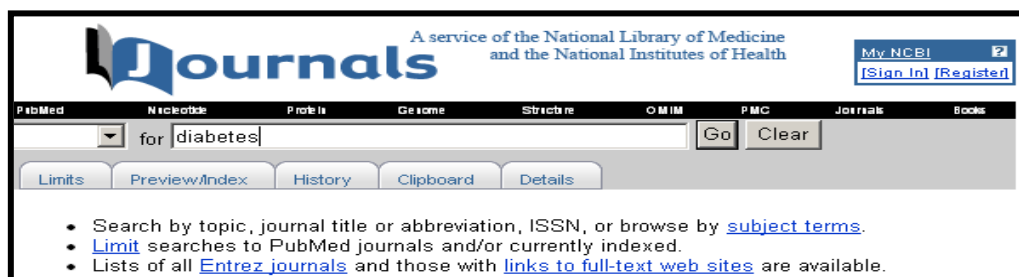
- journal title
- MEDLINE/PubMed title abbreviation
- NLM ID (NLM's unique journal identifier)
- ISO (International Organization for Standardization) abbreviation
- print and electronic International Standard Serial Numbers (pISSNs and eISSNs)
- subject terms (see page 71 of this workbook)

How to get there:

- Click on Journals links from the bottom of the Advanced Search screen; click on Journals Database link from PubMed's homepage; or click on Journals from the database selection menu and use the search box:

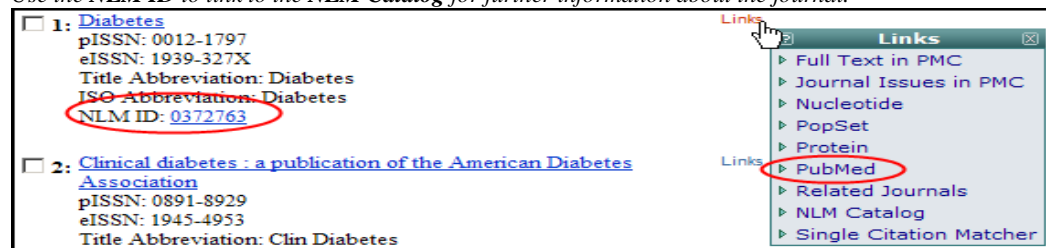


Type your term(s) in the search box.



Result:

Use the **NLM ID** to link to the **NLM Catalog** for further information about the journal.



Use the **PubMed** link from the **Links** pull-down to retrieve citations for an individual journal in PubMed.



Retrieval display order is alphabetical, except if term has an exact match, which will display first.

Click on the hyperlinked journal title or choose the Full display format to see more information about the title:

☐ 1:

Title: Diabetes [Links](#)

ISSN: 0012-1797 (Print)
1939-327X (Electronic)

Title Abbreviation: Diabetes

ISO Abbreviation: Diabetes

Publication Start Year: 1952

Current Indexing Status: Currently indexed for MEDLINE.

Current Subset: Core clinical journals (AIM); Index Medicus

Version Currently Indexed: Electronic

Publisher: American Diabetes Association

Continuation Notes: Formed by the union of: Proceedings of the American Diabetes Association, and: Diabetes abstracts.

Acid-Free: Some or all issues printed on acid-free paper.

Language: English

Place of Publication: United States

Subject Term(s): Endocrinology

NLM ID: [0372763](#)

Limit to currently indexed titles, by language or by subset

Click on Limits tab.

Search for

Use the checkbox to limit your search to currently indexed MEDLINE journal titles or other criteria.

Limit your search by any of the following criteria:

Languages

☐ English

☐ Chinese

☐ French

☐ German

☐ Italian

☐ Japanese

☐ Latin

☐ Russian

☐ Spanish

[More Languages](#)

Current Subsets

☐ Only PubMed Journals

☐ Currently indexed in MEDLINE

☐ PubMed Central Journals

☐ PubMed Central Forthcoming Journals

Other Subsets for Currently Indexed Journals

☐ Consumer Health Journals

☐ Core Clinical Journals (AIM)

☐ Dental Journals

☐ Index Medicus Journals (IM)

☐ Journals Indexed from the Electronic

Search Field



The Journals database includes journals in *all* Entrez databases (e.g., PubMed, Nucleotide, Protein). Use the **Only PubMed journals** option on the Limits page to limit to journals in PubMed.

Subject Term [st]

- Subject terms are assigned by NLM to describe the overall scope of MEDLINE-indexed journals.
- Subject terms will display in the Full display format.
- Use the [st] tag.

Example: *pediatrics* [st]



Search Tip:

Searching for non-tagged terms, e.g., pediatrics in the Journals database, will retrieve all journals that include the word pediatrics in the title as well as journals with the Subject Term, Pediatrics



Take Note:

The complete list of terms is available at the Journal Subject Terms Web page (<http://www.nlm.nih.gov/bsd/journals/subjects.html>).

Building a PubMed query for multiple journals



Click in the **checkbox** to the left of desired journal title.

Choose **Search Box with OR** from the Send to menu.

Once finished building your search, click **Search PubMed** button.



Search Tip:

Use Save Search and My NCBI to facilitate the task of limiting searches to a specific group of journals.



Quick
Tour

See the **E-mail Alerts for Articles from Your Favorite Journals** Quick Tour at <http://www.nlm.nih.gov/bsd/disted/pubmed.html>.

Journals Lists

- On the Journals database screen, click on **links to full-text web sites** for a list of full-text journals available on the Web to which PubMed is currently linked.



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.

- Click on **Entrez journals** to FTP a list of all journals that are included in PubMed in the GNU Zip, Uncompressed, UNIX Compress, or PKZIP format.

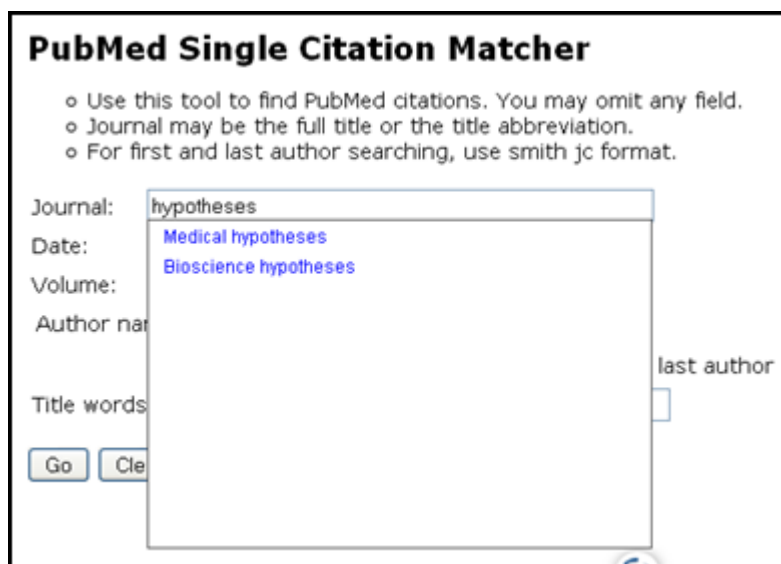
Practice Exercises: Searching by Citation or Journal

Complete the following exercises as assigned by the instructor.

1. There is an article titled [something about] *salted food* published in the journal [something] *hypothesis* or *hypotheses*. Can you find it?
2. Use the search box to find the two articles published in 2009 by Roysommuti on taurine depletion.
3. What was the theme of volume 10 issue 5 of the Journal of Medical Internet Research?

Suggested Answers: Searching by Citation or Journal

1. There is an article titled [something about] *salted food* published in the journal [something] *hypothesis* or *hypotheses*. Can you find it?



PubMed Single Citation Matcher

- Use this tool to find PubMed citations. You may omit any field.
- Journal may be the full title or the title abbreviation.
- For first and last author searching, use smith jc format.

Journal:

Date:

Volume:

Author name (see [help](#)):

Title words:

Step 1: Use the autocomplete feature on the Single Citation Matcher to quickly find journal titles that include the word hypotheses. The answer could be one of these.



PubMed Single Citation Matcher

- Use this tool to find PubMed citations. You may omit any field.
- Journal may be the full title or the title abbreviation.
- For first and last author searching, use smith jc format.

Journal:

Date: (month and day are optional)

Volume: Issue: First page:

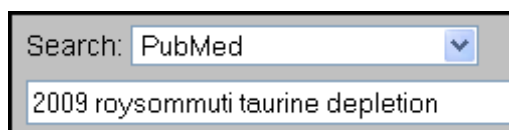
Author name (see [help](#)):

☐ Only as first author ☐ Only as last author

Title words:

Step 2: Enter the title words into the Title words box and click Go.

2. Use the search box to find the two articles published in 2009 by Roysommuti on taurine depletion.



Search:

3. What was the theme of volume 10 issue 5 of the Journal of Medical Internet Research?

PubMed Single Citation Matcher

- Use this tool to find PubMed citations. You may omit any field.
- Journal may be the full title or the title abbreviation.
- For first and last author searching, use smith jc format.

Journal:

Date: (month and day are optional)

Volume: Issue: First page:

Author name (see [help](#))

☐ Only as first author ☐ Only as last author

Title words:

Step 1: In the Single Citation Matcher, enter *Journal of Medical Internet Research* in the Journal box, 10 in the Volume box, and 5 in the Issue box.

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed

RSS Save search Limits Adv

"Journal of medical Internet research"[Jour] AND 10[volume] AND 5[issue]

Display Settings: ☒ Summary, 20 per page, Sorted by Recently Added

Send to: ☒ Filter your results

Results: 15

All (15)
[Review \(1\)](#)
[Free Full Text](#)

Find related
Database:

Search details
"Journal of medical Internet research"[Jour] AND 10[volume] AND 5[issue]

Recent activity

- ☐ [Utilization of smoking cessation informational, interactive, and online community resources as predictors of abstinence: cohort study.](#)
An LC, Schillo BA, Saul JE, Wendling AH, Klatt CM, Berg CJ, Ahluwalia JS, Kavanaugh AM, Christenson M, Luxenberg MG.
J Med Internet Res. 2008 Dec 20;10(5):e55.
PMID: 19103587 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Free text](#)
[Related citations](#)
- ☐ [Patterns of use of an automated interactive personalized coaching program for smoking cessation.](#)
Balmford J, Borland R, Benda P.
J Med Internet Res. 2008 Dec 17;10(5):e54.
PMID: 19097975 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Free text](#)
[Related citations](#)
- ☐ [Effect of adding a virtual community \(bulletin board\) to smokefree.gov: randomized controlled trial.](#)
Stoddard JL, Augustson EM, Moser RP.
J Med Internet Res. 2008 Dec 19;10(5):e53.
PMID: 19097974 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Free text](#)
[Related citations](#)
- ☐ [A digital smoking cessation program delivered through internet and cell phone without nicotine replacement \(happy ending\): randomized controlled trial.](#)
Brendryen H, Drozd F, Kraft P.

Step 2: Review the list of titles. It appears that smoking cessation is the common theme.

NOTES

Using the Search Builder to Search by Field

There are several ways to search using a specific field (e.g., author, title, journal name). The Search Builder on the Advanced Search page is one convenient method.

PubMed Advanced Search [Back to PubMed](#)

Search Box [Limits](#) [Details](#) [Help](#)

Search **Preview** **Clear**

Search Builder

All Fields AND

[Show Index](#)

[Search Builder Instructions](#)

- Use to search for terms within selected fields
 - Use the pull-down menu to change the search field(s)
 - Select AND, OR or NOT
 - Click Add to Search Box
- Auto-complete feature available for Author, First Author, Last Author, and Journal
- Click Search Builder Instructions for help

Author and Journal Search Example:

Search Builder

Author AND

[Search Builder Instructions](#)

Search History

Search	Time
#14 Search oil spill	13:48:3
#13 Search blasovich[A	13:47:5
#12 Search "Journal of m	12:13:2
#11 Search "Experiment	11:39:3
#10 Search exp neurol 1977	11:36:3

Auto-complete list for Author: Sabucedo, Sabucedo A, Sabucedo AJ, Sabucedo J, Sabucedo JM, Sabucedo, Alberto, Sabucedo, Alberto J, Sabucedo, Jose, Sabucedo M, Sabucedo, Jose M.

Step 1:
Select Author from field selection.

Type the last name of author and select using the auto-complete feature.

Click Add to Search box.

Step 2:
Select Journal from field selection.

Type the journal title and select using the auto-complete feature.

Leave AND as the Boolean operator.

Click Add to Search Box.

Search Box [Limits](#) [Details](#) [Help](#)

Search **Preview** **Clear**

Search Builder

Journal AND

[Show Index](#)

[Search Builder Instructions](#)

Search Box

[Limits](#)
[Details](#)
[Help](#)

Search

Step 3: When you've completed entering your terms, click the Search button.

Using the Index feature

- Click on the Show Index link below the Search Builder text box to display the index of searchable terms for the selected search field
- View and select terms from the Index to add them to your search strategy.
- Use the <ctrl> key (PC) or <Command> key (Mac) to select more than one term from one index to combine with OR.

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

Example 1: Use the Index function on the Search Builder to find citations to articles about gene expression where the first author's affiliation is listed as Princeton University.

Search Box

[Limits](#)
[Details](#)
[Help](#)

Search Preview Clear

Search Builder

Affiliation

princeton university

AND

Add to Search Box

princeton university (6009)

princeton university 08544 (1)

princeton university 265 (1)

princeton university 265 wallace (1)

princeton university 265 wallace hall (1)

princeton university 265 wallace hall princeton (1)

princeton university and (11)

princeton university and bell (1)

princeton university and bell telephone (1)

princeton university and bell telephone laboratories (1)

[Show Index](#)
[Previous 200](#)
[Next 200](#)
[Close Index List](#)

[Search Builder Instructions](#)

Subject term entered in the Advanced Search search box.

Select affiliation from the pull-down menu.

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 **Previous** or **Next** links.
- Click on the term to highlight it.
- Click on the Close Index List link to collapse the Index display if desired.
- Continue selecting fields and adding search terms until your strategy is complete. Then click the **Search** button at the top of screen.

Search Box

[Limits](#)
[Details](#)
[Help](#)

Search

Search box shows the search term and the search field.

Example 2: Find articles discussing diet therapy or drug therapy to treat obesity hypoventilation syndrome. Limit to articles where aspects are the main point.

Search Builder

MeSH Major Topic AND

obesity hypoventilation syndrome (311)
obesity hypoventilation syndrome/analysis (1)
obesity hypoventilation syndrome/anatomy and histology (6)
obesity hypoventilation syndrome/blood (1)
obesity hypoventilation syndrome/classification (3)
obesity hypoventilation syndrome/complications (52)
obesity hypoventilation syndrome/cytology (6)
obesity hypoventilation syndrome/diagnosis (68)
obesity hypoventilation syndrome/diet therapy (1)
obesity hypoventilation syndrome/drug therapy (8)

[Show Index](#)
[Previous 200](#)
[Next 200](#)
[Close Index List](#)

[Search Builder Instructions](#)

- Select Search field from drop-down menu.
- Type in search term(s)
- Click Show Index.
- Use the Ctrl-key (PC) or the Command-key (Mac) to OR together multiple terms.
- Select the desired Boolean connector to add terms (OR'ed together) to the query.
- Click Add to Search Box



See the next section for more on searching by fields using search field tags.

NOTES

Using Search Tags -- Search Field Descriptions

- Search fields can be specified using PubMed's search field tags. A list of the field names and searching information is found in PubMed Help: Search Field Descriptions and Tags (http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search_Field_Descrip). Not all searchable fields are included in this workbook section.
- For further information on the data found in the fields found on the MEDLINE display format, see MEDLINE®/PubMed® Data Element (Field) Descriptions (<http://www.nlm.nih.gov/bsd/mms/medlineelements.html>)

Rules

- 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.

Correct entry: aromatherapy [mh]

Incorrect entry: [mh] aromatherapy

- Search field tags must be enclosed in **square brackets**.
- Case and spacing do not matter: ice [mh] = Ice[mh] = ICE [MH]



Terms entered with a search tag (e.g., [mh]; [majr]; [tw]) will not generate the “Did you mean” message (PubMed’s spell check feature).

MeSH headings [mh]

- MeSH headings can be searched using two search field tags:
 - [mh] to search a MeSH heading
 - [majr] to search a MeSH heading that is a major topic of an article
- PubMed **automatically** searches the MeSH heading as well as the more specific terms beneath that heading in the MeSH hierarchy; i.e., **the term is exploded**.
- To turn off automatic explosion of MeSH headings, use one of the following tags:
[mh:noexp] or [majr:noexp]

Example: *thromboembolism [majr:noexp]*



Alternatively, consider using the “Do not explode” selection from the Detailed Display in the MeSH Database.



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

Subheadings [sh]

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

- Only one subheading may be attached to a MeSH heading at a time. To attach multiple subheadings, combine each MeSH/subheading combination with the OR connector or use the MeSH Browser.

Example: *thromboembolism/pc [majr] OR thromboembolism/di [majr]*

- For a MeSH/subheading combination, PubMed always explodes the MeSH term and also searches the subheading and its grouping if there is one.

In the example below, the subheading therapy or members of the therapy grouping (e.g., diet therapy) will be attached to the MeSH term (hypertension) or one of its indentions (e.g., hypertension, malignant).

Example: *hypertension/th*

Hypertension with its indentions:

Hypertension
[Hypertension, Malignant](#)
[Hypertension, Pregnancy-Induced](#)
[Hypertension, Renal](#)
[Hypertension, Renovascular](#)

Subheading grouping for therapy:

therapy
 diet therapy
 drug therapy
 nursing
 prevention and control
 radiotherapy
 rehabilitation
 surgery
 transplantation



A list of subheadings and subheading groupings appears in PubMed's Help.



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

hypertension/th [mh:noexp]

hypertension/th [majr:noexp]

These search for **only** the subheading therapy attached to **only** the MeSH term hypertension (with “majr,” only as the main point).

- 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 when you want to search for a subheading that cannot be applied to the MeSH heading you are also searching.

Example: *hypertension [mh] AND toxicity [sh]*

To **turn off the subheading grouping**, use the tag [sh:noexp]. You may only do this when “free-floating” a subheading.

Text Words [tw]

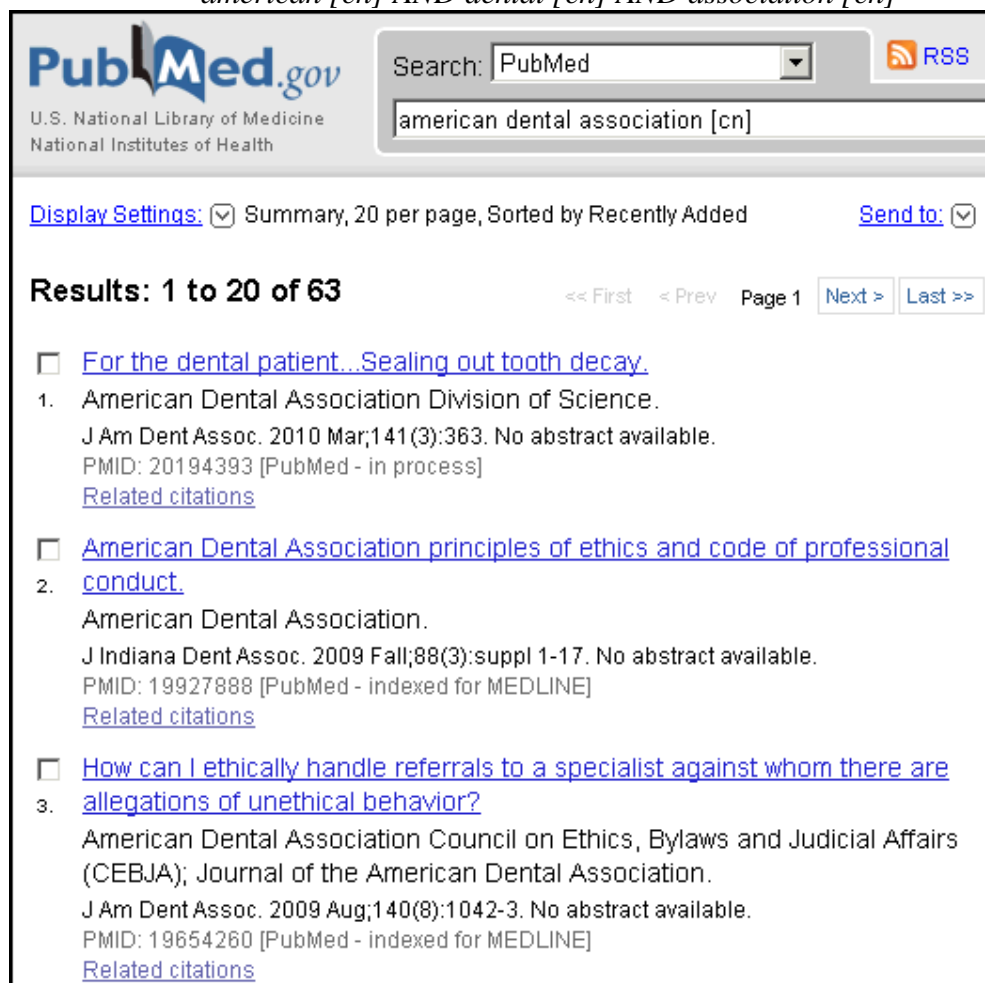
Terms or numbers that are searched with the Text Words [tw] field tag will be searched in the following fields:

- Title
- Abstract
- MeSH headings, Subheadings, Publication Types (includes single words and phrases)
- Other Terms field
- 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

Corporate Author [cn]

- Use the [cn] tag to search for corporate authorship of an article. Search the whole name or individual words from the name.

Examples: *american dental association [cn]*
american [cn] AND dental [cn] AND association [cn]



The screenshot shows the PubMed.gov search interface. The search bar contains 'american dental association [cn]'. Below the search bar, the results are displayed in a list format. The first three results are:

- ☐ [For the dental patient...Sealing out tooth decay.](#)
 1. American Dental Association Division of Science.
 J Am Dent Assoc. 2010 Mar;141(3):363. No abstract available.
 PMID: 20194393 [PubMed - in process]
[Related citations](#)
- ☐ [American Dental Association principles of ethics and code of professional conduct.](#)
 2. American Dental Association.
 J Indiana Dent Assoc. 2009 Fall;88(3):suppl 1-17. No abstract available.
 PMID: 19927888 [PubMed - indexed for MEDLINE]
[Related citations](#)
- ☐ [How can I ethically handle referrals to a specialist against whom there are allegations of unethical behavior?](#)
 3. American Dental Association Council on Ethics, Bylaws and Judicial Affairs (CEBJA); Journal of the American Dental Association.
 J Am Dent Assoc. 2009 Aug;140(8):1042-3. No abstract available.
 PMID: 19654260 [PubMed - indexed for MEDLINE]
[Related citations](#)

From May 2006 forward, corporate authors are displayed in the order found in the byline of the published article. From 2000 – April 2006, corporate authors are always displayed last in the list of authors.



This field was added in 2001; however this field may be added to some older records retrospectively. Citations indexed pre-2000 and some citations indexed in 2000-2001 display corporate authors at the end of the title field. For comprehensive searches, consider including terms and/or words searched in the title field.

Example: *american dental association [cn] OR*
american dental association [ti]

Personal Name as Subject [ps]

- Use the [ps] tag to search for citations to articles about a named individual. The name is searched in the conventional author searching format: lastname + initial(s)



The Personal Name as Subject field is *not* available from the Search Builder on the Advanced Search screen.

Example: *lincoln a [ps]*



Date 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



Use the Single Citation Matcher (see page 77) for a fill-in-the-blank Date searching option.

Place of Publication [pl]

- This field indicates the cited journal's country of publication.
- Use the [pl] tag.

Example: *aids AND nigeria [pl]*



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.

Secondary Source Identifier [si]

- Identifies a secondary source that supplies information, e.g., other data sources, databanks and accession numbers of molecular sequences

Examples of Data Sources:

GenBank

GEO (NLM's Gene Expression Omnibus) – beginning in February 2006

ClinicalTrials.gov identifier numbers – beginning in July 2005

International Standard Randomised Controlled Trial Number (ISRCTN) – beginning in mid-2006)

Reference Sequence (RefSeq) collection accession numbers

PubChem databases identifiers – beginning in January 2007

- The field is composed of a source followed by a slash followed by an accession number.
- Use the [si] search tag.

Examples:

genbank/af113832 [si]

clinicaltrials.gov/nct00000419 [si]

clinicaltrials.gov [si]

clinicaltrials.gov [si]

Unique Identifier Searching [pmid]

- To search using the PubMed Unique Identifier (PMID), type in the number with or without the search field tag [pmid].

Example: 11073054

- You can search for several Unique Identifier numbers by entering each number in the search box separated by a space. PubMed will OR them together. Do *not* enter the OR connector.

Example: 7715939 11073054



*Unique Identifiers
as entered in the
search box.*

PubMed finds the 2 citations.



To find the PubMed Central unique identifier (PMCID), see the MEDLINE or Abstract format for the record in PubMed, or use the PMID: PMCID Converter at <http://www.ncbi.nlm.nih.gov/sites/pmctopmid>

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.
- Use the [ad] search tag.
- This field can be used to search for work done at specific institutions.
- The data is how it appears in the original journal article. It is not standardized, therefore the same institution may appear in variant forms.

Example: cleveland [ad] AND clinic [ad]

Grant Number [gr]

- Research grant numbers, contract numbers, or both that designate financial support by:
 - an agency of the US PHS (Public Health Service)
 - the Howard Hughes Medical Institute,
 - eight funding sources from the United Kingdom,
 - Canadian Institutes of Health Research,
 - Other funding organizations from the European Union.
- For Public Health Services agencies, the number is followed by the Institute acronym; followed by the agency's hierarchical structure from lower to higher entity, when known; and then followed by the country name.

Examples: LM05545/LM/NLM NIH HHS/United States
CA47147/CA/NCI NIH HHS/United States

- For other funding organizations, the number is followed by the name of the organization; followed by the country name.

Examples: GR072308/Wellcome Trust/United Kingdom
066866/Wellcome Trust/United Kingdom
Howard Hughes Medical Institute/United States

- Use the [gr] search tag.

Example: *lm05545/lm/nlm nih hhs/united states [gr]*

The four pieces of the grant number (e.g., LM05545 – number; LM – acronym; NLM NIH HHS – parts of, or the entire string of the agency's hierarchical structure; and funding country) are each individually searchable using the [gr] tag.

Examples: *lm05545 [gr]* *wellcome trust [gr]*
nlm [gr] *united kingdom [gr]*



PubMed's online Help links to a Web page detailing Grant Number Information Found in the GR Field in MEDLINE/PubMed (http://www.nlm.nih.gov/bsd/grant_acronym.html).

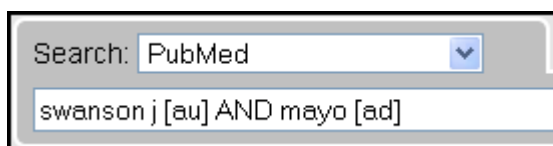
Practice Exercises: Searching by Field

Complete the following exercises as assigned by the instructor.

1. Using the Search box, find a few articles by Jerry Swanson from the Mayo Clinic.
2. Using the Search Builder on the Advanced Search page, search the journal Pediatrics for citations with vaccines or vaccination as a Major Topic. Limit to articles published in the last year.

Suggested Answers: Searching by Field

1. Using the search box, find a few articles by Jerry Swanson from the Mayo Clinic.



Search: PubMed
swanson j [au] AND mayo [ad]


NOTE: The affiliation field contains information about the first author only. This search will not yield comprehensive results for articles by Jerry Swanson from the Mayo Clinic. It will only include articles where an author affiliated with the Mayo Clinic is the first author of the article and J Swanson is one of the authors. Alternatively, you could search:

swanson j [1au] AND mayo [ad]

to limit to articles where Swanson is the first author and is the author affiliated with the Mayo Clinic.

2. Using the Search Builder on the Advanced Search page, search the journal *Pediatrics* for citations with vaccines or vaccination as a Major Topic. Limit to articles published in the last year.

Step 1: Select Journal, start typing Pediatrics and select the title from the autocomplete feature. Click Add to Search Box.



Search Builder

Journal: pediatrics

- Pediatrics
- The Journal of pediatrics
- Indian pediatrics

[Search Builder Instructions](#)

Step 2: Select **MeSH Major Topic**. Type **vaccin** and click the **Index** button to bring up the entries alphabetically.

Hold the <ctrl> key (PC) or <command> key (Mac) while you select **vaccination** and **vaccines**.

Click **Add to Search Box**.

The search box will display:

((("Pediatrics"[Journal])) AND ("vaccination"[MeSH Major Topic] OR "vaccines"[MeSH Major Topic]))

Step 3: Click **Limits**. Use the dropdown to select **Published in the Last: 1 year**. Click **Search**.

The results will have the **Limits Activated** message at the top.

Be sure to remove the limit if you don't want to use it for subsequent searches.

NOTES

Managing the Results

Display Settings

The **Display Settings** menu allows the user to select record display format, number of items per page, and sort order.

The default results display settings are: Summary format, 20 items per page, sorted by Recently Added. You can select your preferred default settings using My NCBI Preferences (see page 124).



Format

Summary Format

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

[Cell-cycle checkpoints and cancer.](#)
Kastan MB, Bartek J.
Nature. 2004 Nov 18;432(7015):316-23. Review.
PMID: 15549093 [PubMed - indexed for MEDLINE]
[Related citations](#)

[Ocular and systemic autoimmunity after successful tumor-infiltrating lymphocyte immunotherapy for recurrent, metastatic melanoma.](#)
Yeh S, Karne NK, Kerkar SP, Heller CK, Palmer DC, Johnson LA, Li Z, Bishop RJ, Wong WT, Sherry RM, Yang JC, Dudley ME, Restifo NP, Rosenberg SA, Nussenblatt RB.
Ophthalmology. 2009 May;116(5):981-989.e1.
PMID: 19410956 [PubMed - indexed for MEDLINE] [Free PMC Article](#) [Free text](#)
[Related citations](#)

The Summary format may include the following:

- **Title of the article:** The article title serves as the link to the full display for the record (Abstract format). Most foreign language titles will be translated into English and placed within brackets.
- **Author Name(s):** Author names are displayed and are links to a PubMed search for that author's works
- **Corporate Author:** Identifies the corporate authorship of an article.
- **Source:** Includes journal title abbreviation, date of publication, volume, issue, and pagination. A mouseover of journal title abbreviation displays the full journal title.

- PubMed Unique Identifier (PMID).
- A status tag: [PubMed - as supplied by publisher], [PubMed - in process], [PubMed - indexed for MEDLINE], [PubMed - OLDMEDLINE] or [PubMed]
- **Related citations:** Link to the Related set of citations.
- The label: **Books & Documents** when free full text is available from the Entrez Books database.
- The label: **Free PMC Article** when free full text is available from PubMed Central.
- The label: **Free Article** when free full text is available from the publisher or other full text provider. The link to the full text appears on the Abstract display.
- **Free text** link: Appears when free full text is available from either the Books database or PubMed Central.
- May 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".
- Annotations to associated citations (e.g., Errata).

Abstract Format

A single citation will be displayed in Abstract format by default.

Display Settings: ☒ Abstract Send to: ☒

nature

Nature. 2004 Nov 18;432(7015):316-23.

Cell-cycle checkpoints and cancer.

Kastan MB, Bartek J.

Department of Hematology-Oncology, St Jude Children's Research Hospital, 332 North Lauderdale Street, Memphis, Tennessee 38105, USA. michael.kastan@stjude.org

Abstract

All life on earth must cope with constant exposure to DNA-damaging agents such as the Sun's radiation. Highly conserved DNA-repair and cell-cycle checkpoint pathways allow cells to deal with both endogenous and exogenous sources of DNA damage. How much an individual is exposed to these agents and how their cells respond to DNA damage are critical determinants of whether that individual will develop cancer. These cellular responses are also important for determining toxicities and responses to current cancer therapies, most of which target the DNA.

PMID: 15549093 [PubMed - indexed for MEDLINE]

[+ Publication Types, MeSH Terms](#)

[+ LinkOut - more resources](#)

Related citations

[Review](#) Genetic instability in cancer cells by impaired cell cycle checkpoint [Cancer Sci. 2006]

[Review](#) DNA damage-dependent cell cycle checkpoints and genomic [DNA Cell Biol. 2006]

[Review](#) DNA damage checkpoints and cancer. [J Mol Histol. 2006]

[Review](#) Sensing, signaling, and responding to DNA damage: organization [J Cell Biochem. 2005]

[Review](#) A concise review of DNA damage checkpoints and [Cardiovasc Revasc Med. 2006]

[See reviews...](#)

[See all...](#)

Cited by over 100 PubMed Central articles

Three-dimensionally specific inhibition of DNA

The Abstract format may include the following information:

- **Source** (journal title abbreviation - mouseover for full title and link for search options; date of publication; volume; issue; and pagination)
- **Title**
- On non-English language articles, [Article in language] tag
- **Author(s)** with author names displayed as "search links" to author searches.
- **Corporate Author**
- **Affiliation** (address) of first author
- **Abstract** (if present) from published article
- **Annotations** to associated citations (e.g., errata)
- **PMID**

☒ Publication Types, MeSH Terms

Publication Types:

[Research Support, Non-U.S. Gov't](#)

[Research Support, U.S. Gov't, P.H.S.](#)

[Review](#)

MeSH Terms:

[Animals](#)

[Cell Cycle*](#)

[DNA Damage](#)

[Humans](#)

[Neoplasms/enzymology](#)

[Neoplasms/metabolism*](#)

[Neoplasms/pathology*](#)

[Signal Transduction*](#)

- **Status tag**
- Supplemental Information (expand the section to view):
 - **Publication Types** (except for “Journal Article”) with search links
 - **MeSH Terms** with search links (if present)
 - **Personal Name as Subject** (if present)
 - (Chemical) **Substances** (if present) with search links
 - **Grant numbers** (if present) with search links
 - ClinicalTrials.gov identifier number with search links (if present)
- Links to external resources (including **LinkOut**, see page 115)
- Icons with link to full text (if present)
- **Related articles** (if viewing a single citation)

MEDLINE Format

Two- to four-character tagged field format displaying all fields of the PubMed record.

```
PMID- 15549093
OWN - NLM
STAT- MEDLINE
DA - 20041119
DCOM- 20041221
LR - 20061115
IS - 1476-4687 (Electronic)
IS - 1476-4687 (Linking)
VI - 432
IP - 7015
DP - 2004 Nov 18
TI - Cell-cycle checkpoints and cancer.
PG - 316-23
AB - All life on earth must cope with constant exposure to DNA-damaging agents such as
the Sun's radiation. Highly conserved DNA-repair and cell-cycle checkpoint
pathways allow cells to deal with both endogenous and exogenous sources of DNA
damage. How much an individual is exposed to these agents and how their cells
respond to DNA damage are critical determinants of whether that individual will
develop cancer. These cellular responses are also important for determining
toxicities and responses to current cancer therapies, most of which target the
DNA.
AD - Department of Hematology-Oncology, St Jude Children's Research Hospital, 332
North Lauderdale Street, Memphis, Tennessee 38105, USA. michael.kastan@stjude.org
FAU - Kastan, Michael B
AU - Kastan MB
FAU - Bartek, Jiri
AU - Bartek J
LA - eng
PT - Journal Article
PT - Research Support, Non-U.S. Gov't
PT - Research Support, U.S. Gov't, P.H.S.
PT - Review
PL - England
TA - Nature
JT - Nature
JID - 0410462
SB - IM
MH - Animals
MH - *Cell Cycle
MH - DNA Damage
MH - Humans
MH - Neoplasms/enzymology/*metabolism/*pathology
MH - *Signal Transduction
RF - 96
EDAT- 2004/11/19
MHDA- 2004/12/22
CRDT- 2004/11/19
AID - nature03097 [pii]
AID - 10.1038/nature03097 [doi]
PST - ppublish
SO - Nature. 2004 Nov 18;432(7015):316-23.
```



Use Send to File (see page 97) to download using this format into reference management software

- For further information on the data found in the fields found on the MEDLINE display format, see MEDLINE®/PubMed® Data Element (Field) Descriptions (<http://www.nlm.nih.gov/bsd/mms/medlineelements.html>)

Other Display Formats

- The **Summary (Text)** format is designed for reference lists. It includes the same information as the Summary display, with the addition of the PubMed Central ID (PMCID).
- The **Abstract (Text)** format includes the information in the fuller display with the exception of the supplemental data. It may be useful for copying, printing, saving to a file or e-mailing.
- Use the **PMID List** to store batches of IDs for later retrieval.

Items per page

- PubMed initially displays search results in batches of 20 citations per page.
- Click on the **Display Settings** menu to select a different number.
- Click Apply
- PubMed redisplay the citations based on your selection.

Display Settings: Summary, 20 per page, Sorted by Recently Added

Format	Items per page	Sort by
<input checked="" type="radio"/> Summary	<input type="radio"/> 5	<input checked="" type="radio"/> Recently Added
<input type="radio"/> Summary (text)	<input type="radio"/> 10	<input type="radio"/> Pub Date
<input type="radio"/> Abstract	<input checked="" type="radio"/> 20	<input type="radio"/> First Author
<input type="radio"/> Abstract (text)	<input type="radio"/> 50	<input type="radio"/> Last Author
<input type="radio"/> MEDLINE	<input type="radio"/> 100	<input type="radio"/> Journal
<input type="radio"/> XML	<input type="radio"/> 200	<input type="radio"/> Title
<input type="radio"/> PMID List		

Apply

Sort by

- PubMed initially displays search results by Recently Added
- To sort items by Publication date, First Author, Last Author, Journal or Title, select the field of interest in the **Display Settings** menu and click Apply.

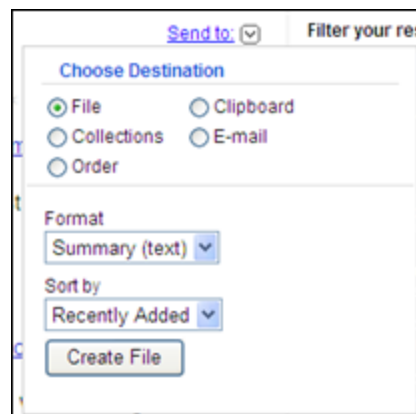
Send to...

Select Send to: to send selected or all records in your results to a file, to My NCBI Collections, to order, to the Clipboard, or to e-mail.

The screenshot shows the PubMed.gov search results page. The search query is "cell cycle dna damage cancer signal transduction". The results are displayed in the Summary format, sorted by Recently Added, with 20 items per page. The first result is "The combined status of ATM and p53 link tumor development response" by Jiang H, Reinhardt HC, Bartkova J, Tommiska J, Blomqvist J, Yaffe MB, Hemann MT. The "Send to" dropdown menu is open, showing options: File, Clipboard, Collections, E-mail, and Order. The "Clipboard" option is selected. The "Filter your results" section shows 121 results.

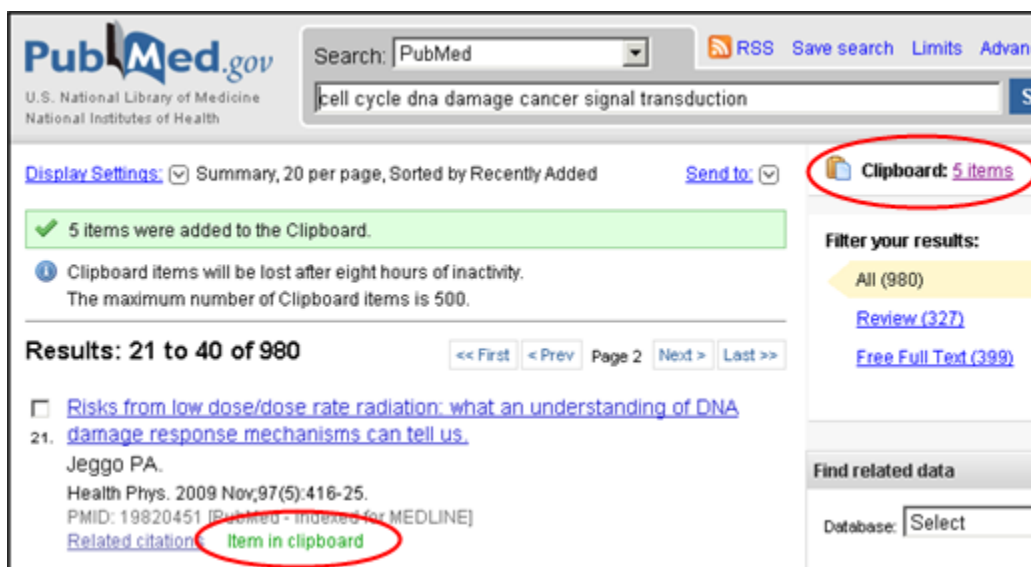
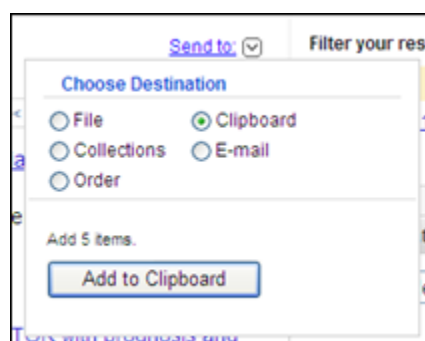
Send to File

- To save and send your **entire set of search results** to a file, use the Send to: menu, select File, and select your formatting and sorting preferences
- To mark **selected citations** to save and send to a file, click on the check-box above the item number as you go through each page of your retrieval. After you have finished selecting citations, then select File from the Send to menu and select your preferences.
- Send to File with Summary (text) format displays the citations with Author names first followed by title.



Send to Clipboard

- The Clipboard allows you to collect 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**.
- To place an item in the Clipboard, click on the box next to the citation and select **Clipboard** from the Send to menu.
- Once you have added a citation to the Clipboard, the item will display a note, "Item in Clipboard" and the Clipboard link displays below the search box.

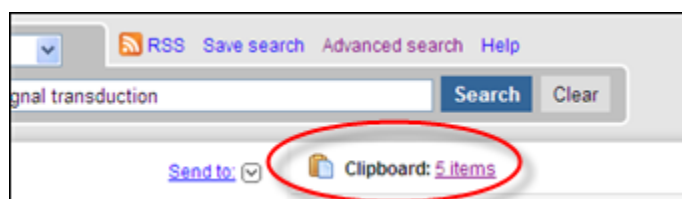


Clipboard Tips:

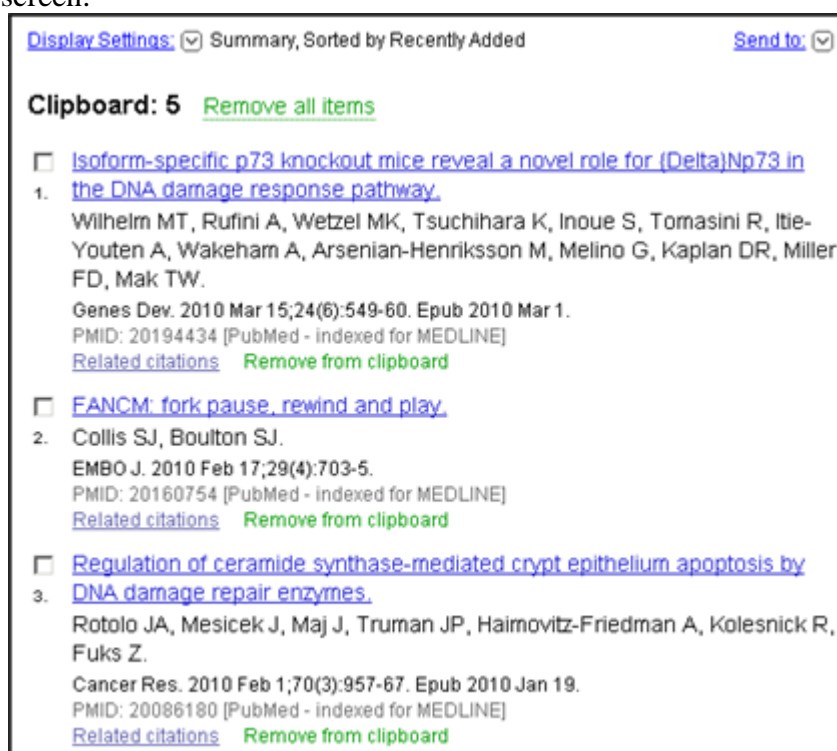
- ✓ If you send items to the **Clipboard** without selecting citations using the check-box, PubMed will add up to 500 citations from your retrieval to the clipboard.
- ✓ The maximum number of items that can be added to the clipboard is 500.
- ✓ The clipboard will be lost after 8 hours of inactivity.

Using the Clipboard

- To view the contents of our clipboard, click on Clipboard link in the right column of your search results:



You are directed to the Clipboard screen:



- You can use the same Display Settings and Send to: options with the citations in the Clipboard.

Deleting citations from the Clipboard

- To delete citations on the Clipboard, click **Remove from clipboard** next to the item, or select the item(s), and click **Remove selected items**
- To empty the Clipboard, select **Remove all items**



Citations on the Clipboard may be incorporated into a search statement using #0. For example, limit the items on the Clipboard to English language citations using the following search:

#0 AND english [la]

This does not affect or replace the Clipboard contents.

Send to E-mail

- Select E-mail from the Send to menu.
- Select the format.
 - For Abstract format: Choose whether to include MeSH and Other Data
- Select the sort order.
- Select the number to send (if sending more than the first 20 records).
- Select the citation number to start from (if sending in batches).
- Enter an e-mail address. Only one is permitted, to prevent spam.
- Add additional text if you wish.
- Click E-mail.

E-mail Tips:

- ✓ You may E-mail up to 200 items per message.
- ✓ A default E-mail address may be stored via My NCBI User Preferences.

Send to Collections: See page 100

Send to Order: See page 116

The screenshot shows the 'Send to E-mail' form in PubMed. At the top, under 'Choose Destination', there are radio buttons for 'File', 'Clipboard', 'Collections', 'E-mail' (which is selected), and 'Order'. Below this, the search query 'cell cycle tumor suppression cdk4' is displayed. The 'Format' is set to 'Abstract' with a dropdown arrow, and a checkbox for 'MeSH and Other Data' is checked. The 'Sort by' dropdown is set to 'Recently Added'. The 'Number to send' is set to '50' with a dropdown arrow. The 'Start from citation' is set to '51' in a text box. The 'E-mail' field contains 'doctorpeabody@gmail.com'. The 'Additional text' field contains 'Part 2 of 3' with up and down arrows. At the bottom, there is a blue 'E-mail' button and a link for 'SPAM filtering software notice'.

My NCBI Collections



My NCBI Features

- My Saved Data
 - Searches: save search strategies to get updates, including automatic e-mail updates.
 - Collections: save search results.
 - My Bibliography: collect citations for your publications.
- Search Filters: group your retrieval by topics of interest to you.
- Preferences: select highlighting and to expand the supplemental data in the Abstract display



If your Web browser is set to block pop-ups, you will need to allow pop-ups from NCBI Web pages to use My NCBI.

Getting to My NCBI

- PubMed's banner will display links to My NCBI.
- The **My NCBI** link goes to the My NCBI home page.
- **Sign In** links to the Sign In page and to registration.

My NCBI Sign In

Registering for My NCBI

- To use My NCBI you need to register for an account or sign in through a partner organization.
- If you choose to include an e-mail address, you will receive a confirmation e-mail (see page 107 for details).

Sign In:

My NCBI Sign In

Sign in directly to your My NCBI account.

Check the "Keep me signed in" if you are using your own computer to access My NCBI.

Click **About automatic sign in** for more information.

Sign in via Partner Organization

Use your NIH, eRA Commons, Google or other credentials to register and sign into My NCBI. Click **See expanded list** for the full list of partner organizations.

Use My NCBI to save your searches and data, and to set NCBI Web site preferences [About My NCBI...](#)

Sign in directly to your My NCBI account:

My NCBI Sign In

Username:

Password:

☐ Keep me signed in unless I sign out (Leave unchecked on public computers)

Sign In

[Register for an account](#)

[I forgot my username](#)

[I forgot my password](#)

[About automatic sign in](#)

or

Register or sign in through one of the partner organization login routes:

Sign in via Partner Organization

[NIH Login](#)

[eRA Login](#)

[Google](#)

Or choose from:

Case Western Reserve University

Colorado State University

Columbia University

Cornell University

[See expanded list](#)

Sign In

Collections

- Use Collections to save search results within My NCBI.

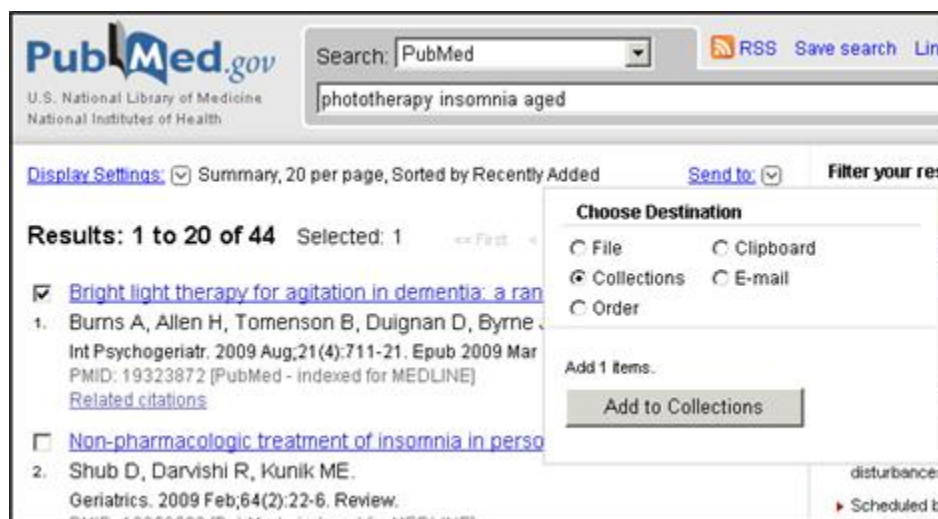
Create a Collection

Step 1: Select search result items you wish to save

Step 2: Choose Collections from the Send to menu.

Step 3: Click Add to Collections

If you are not already signed into My NCBI, you will be prompted to do so.



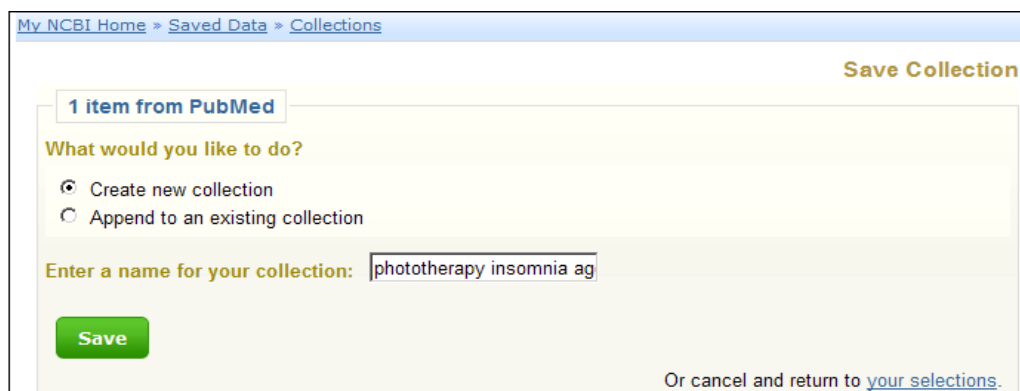
Search Tip:

If you do not select items, all items (up to 5000) will be saved to the collection you are creating.

Step 4: Choose to create a new collection.

Rename your collection.

Click Save.



Take Note:

The maximum number was increased to 5,000 from 500. If you have saved any Collections prior to February 2009, then these will remain with 500 as the maximum number unless you recreate the Collection again.

Append to a collection

- Choose **Append to an existing collection** from the Save Collection pop-up window.
- Choose the collection to which you want to add items and click **OK**.

My NCBI Home > Saved Data > Collections

Save Collection

2 items from PubMed

What would you like to do?

☐ Create new collection

☒ Append to an existing collection

Choose a collection: Collections

Save Cancel

Collections

exercise vascular reactivity

Peabody Citations

phototherapy diabetic neuropathy

PAD exercise

exercise lipid metabolism



You can add up to a maximum of 5000 items to a collection.

Edit a collection

From the My NCBI Collections page you may:

- Sort by column using the column name.
- View the collection in a PubMed results screen to print, save or e-mail.
- Edit collections
- Merge collections
- Delete collections

My NCBI Home > Saved Data > Collections

Collections

PubMed Collections

Name	Sharing	Last Modified	Items
<input type="checkbox"/> PAD exercise (Edit)	Public	4 months ago	18
<input type="checkbox"/> exercise vascular reactivity (Edit)	Private	7 days ago	8
<input type="checkbox"/> exercise lipid metabolism (Edit)	Private	last year	2
<input type="checkbox"/> phototherapy diabetic neuropathy (Edit)	Private	2 years ago	3
<input type="checkbox"/> Peabody Citations (Edit)	Private	7 days ago	9

Merge PubMed Collections Delete PubMed Collections

From the Edit Collection page you may:

- Delete items from the collection
- Rename the collection.
- View in PubMed
- Sort by publication date, first author or article title
- Access Collection Settings to change your collection to Public or Private

My NCBI Home > Saved Data > Collections

Edit Collection

Actions: Sort by:

Collection: PAD exercise (Public) [Edit Collection Settings](#)

Page 1 of 1

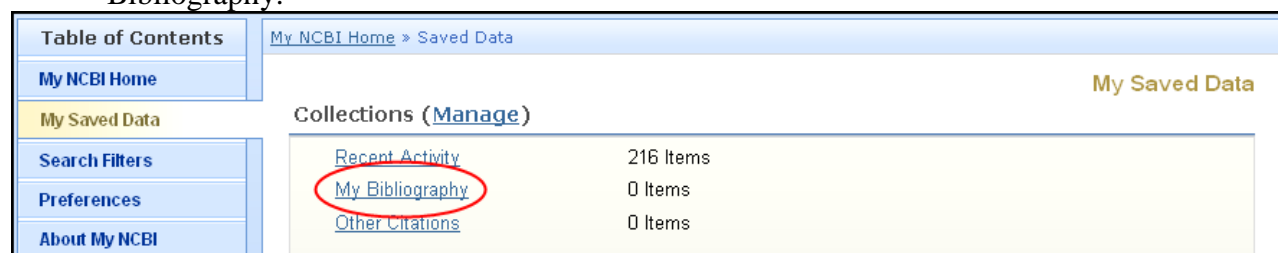
☐ 1: [Exercise for intermittent claudication](#)
Watson L et al. Cochrane Database Syst Rev, 2008. 18843614

My Bibliography

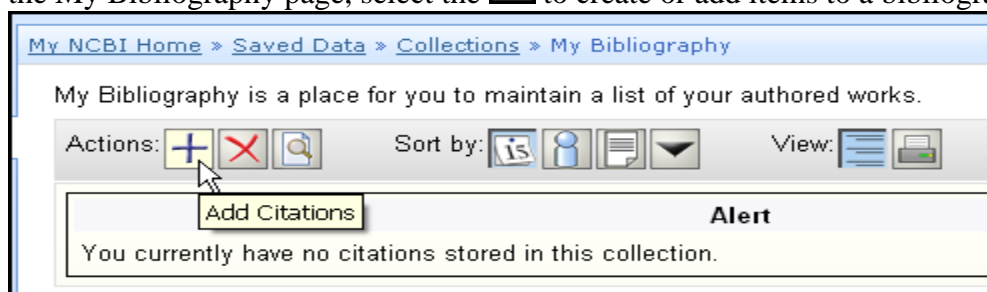
My Bibliography is designed to make it easier for authors to search and collect citations for their publications from PubMed. In addition, citations to journal articles not found in PubMed, books, meetings, etc. may be manually added.

Create Your Bibliography

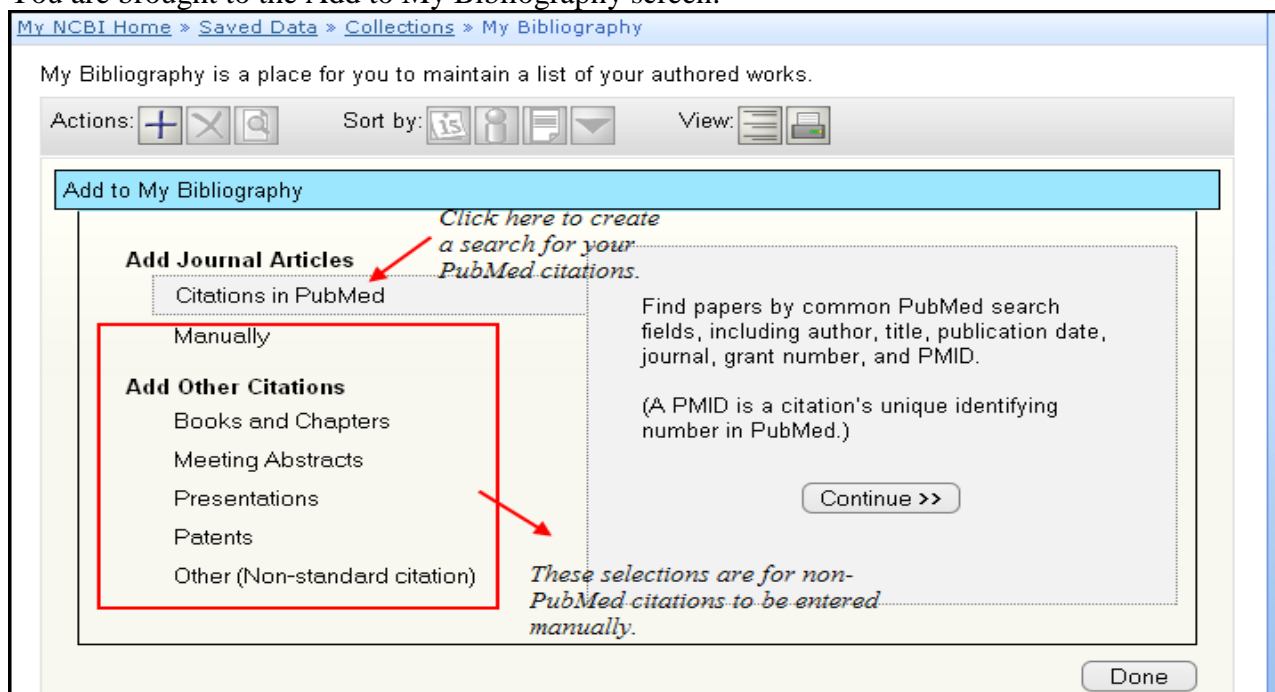
- In the My Saved Data section of My NCBI, under Collections, click on the link to My Bibliography:



- On the My Bibliography page, select the  to create or add items to a bibliography:



- You are brought to the Add to My Bibliography screen:



Create a search for your PubMed citations:

Enter your name in the **Author** search box.

If you have written under another name, select **Add Another Author**

Enter some **Title Words** to help differentiate your work from another author.

Show **All Citations** to create your bibliography

Click **Done**

Add Citations in PubMed

Author/Title [More Options](#)

Author: [Add Another Author](#)

Title Words:

☐ New citations only (since 2009/11/12) ☒ All Citations

Type or paste above to see a list of matching articles.

Done

Use the **+Add** button to select citations.

Click **Done**.

Add Citations in PubMed

Author/Title [More Options](#)

Author: [Add Another Author](#)


Title Words:

☐ New citations only ☒ All Citations

First 100 results are shown...

- Primary Tumor Necrosis Predicts Distant Control in Locally Advanced Soft-Tissue Sarcomas After Preoperative Concurrent Chemoradiotherapy.
- The American Orthopaedic Association clinical trials curriculum.
- Radiofrequency ablation of solitary eosinophilic granuloma of bone.
- Histologic response of dose-intense chemotherapy with preoperative hypofractionated

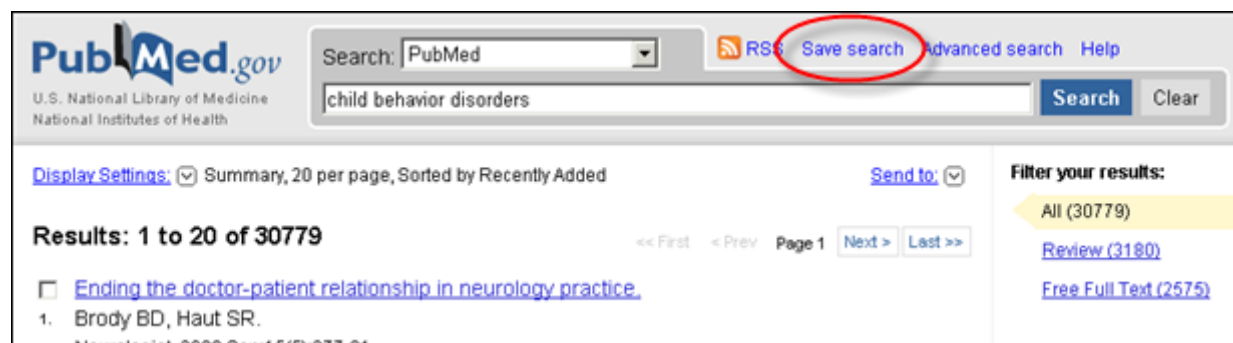
Done

Your bibliography is created. You can add items to the bibliography by returning to Saved Data > My Bibliography and using the .

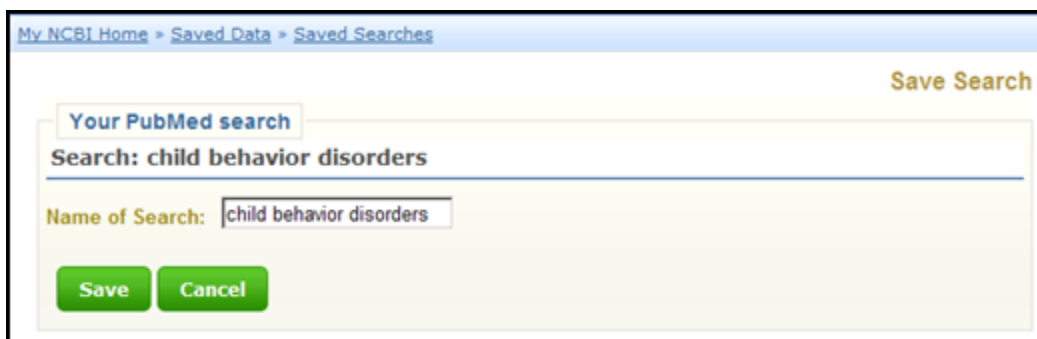
Saving the Search

Saving Search Strategies with My NCBI

- Run your PubMed search.
- From the Results page, click on the **Save Search** link above the search box.



- PubMed will open a separate window in your browser to start the saving process. (If you are not already signed into My NCBI, you will be prompted to do so).
 - Be aware that the default search name does not include any Boolean operators, search statement numbers or search tags, if entered. This name does not affect the strategy, so it is advisable to edit it to something short, yet meaningful.
- *You can edit the name of the search.*
 - *This name will be part of the Subject line of automatic e-mail updates.*
 - *Click Save.*



Your search strategy is saved and the Saved Search Settings Window is displayed (see next page).

Setting Up Automatic Updating

Set up your updates using the Saved Search Settings page:

- *Modify the name of the search, if desired.*
- *Enter an **e-mail** address for the account if you haven't already.*
- *Select how often you want to get updates - monthly, weekly, or daily.*
- *Select the **format** (Summary, Abstract, etc.).*
- *Select the **Number of items** to be sent with each update. A link in the e-mail will take you to the total update results in PubMed.*
- *If you want to know when an update retrieved no citations, select **Send even when there aren't any new results**.*
- *The text box is a place to add a note. This text will display on each e-mail update as "Sender's message."*
- *Click Save.*

The screenshot shows the 'Saved Search Settings' page for a PubMed search. The breadcrumb trail at the top is 'My NCBI Home > Saved Data > Saved Searches'. The page title is 'Saved Search Settings'. The search name is 'Your PubMed search' and the search text is 'Search: child behavior disorders'. The 'Name of Search' field contains 'child behavior disorders'. The 'E-mail' field contains 'doctorpeabody@gmail.com'. The section 'Would you like e-mail updates of new search results?' has four radio button options: 'No thanks.' (selected), 'Yes, once a month.' (with a dropdown for 'the first Saturday'), 'Yes, once a week.' (with a dropdown for 'Saturday'), and 'Yes, every day.'. The 'Formats' section has a 'Report format' dropdown set to 'Summary'. The 'Number of items' section has a 'Send at most' dropdown set to '5 items' and a checkbox for 'Send even when there aren't any new results'. There is a text box for 'Any text you want to be added at the top of your e-mail (optional)'. A green 'Save' button is at the bottom left. At the bottom right, there is a link to 'Skip scheduling and return to your search, or proceed to manage your Saved Searches.'

Partial e-mail update results:

Click on the word "here" to view the complete results. For this example, to see all 27 citations.

This message contains My NCBI what's new results from the National Center for Biotechnology Information (NCBI) at the U.S. National Library of Medicine (NLM).
Do not reply directly to this message.

Sender's message:

Sent on Saturday, 2010 Apr 17
Search **macular degeneration**
Click [here](#) to view complete results in PubMed. (Results may change over time.)
To unsubscribe from these e-mail updates click [here](#).

PubMed Results

Items 1 - 5 of 27

1. [A Rat Model for Choroidal Neovascularization Using Subretinal Lipid Hydroperoxide Injection.](#)
Baba T, Bhutto IA, Merges C, Grebe R, Emmert D, McLeod DS, Armstrong D, Luty GA.
Am J Pathol. 2010 Apr 15. [Epub ahead of print]
PMID: 20395434 [PubMed - as supplied by publisher]
2. [Lysine and Arginine Side Chains in Glucosaminoglycan-Protein Complexes Investigated by NMR, Cross-Linking, and Mass Spectrometry: A Case Study of the Factor H-Heparin Interaction.](#)
Blaum BS, Deakin JA, Johansson CM, Herbert AP, Barlow PN, Lyon M, Uhrin D.
J Am Chem Soc. 2010 Apr 15. [Epub ahead of print]
PMID: 20394361 [PubMed - as supplied by publisher]

Important Facts about the E-mail for My NCBI Account

- Each My NCBI account can have **only one** e-mail address that will be used for all automatic e-mail updates saved in that account.
- If, at a later time, you change the e-mail address for your account, the new e-mail address will be used for **all** automatic updates following confirmation (see below).
- To change the e-mail address on an account, go to **Preferences** on the My NCBI sidebar.



The address for PubMed's Send to E-mail feature *can* be changed for individual e-mails on the Send to E-mail page without affecting the e-mail address used for the My NCBI account.

The Confirmation E-mail

- The first time an automatic e-mail update is created for an account, or if the e-mail is changed in User Preferences, a confirmation e-mail will be sent to that address.
- No automatic updates will be sent to an address until it has been confirmed.

Manually Updating Searches

- To manually update a search, go to My Saved Data > Saved Searches > Manage in My NCBI.
- Check the box to the left of the search to be updated and click **Show What's New** at the bottom of the page.
- My NCBI will indicate if there are any new citations retrieved by the strategy since your last update.
- If you link to the results, i.e., complete the update, your saved search list will reflect the date and time of the update.

About the Updates

- The update strategies used for My NCBI are detailed in PubMed's Help.
- New or modified searches can be generated no sooner than the next day. For example, this morning, you changed the frequency for an update from Monthly to Daily. The first update will be sent tomorrow.

Additional Functions available from the Saved Searches page

Saved searches can be run to retrieve total results, i.e., not limited to new citations. Click on the name of the search. (This will not affect future updates.)

*Click on **Settings** to go to the Saved Search Settings page where you can make changes (e.g., to frequency or format of e-mail updates).*

*Hold your cursor over the data in the **Last Searched** column to show the date the last e-mail update was sent or manually updated.*

<input type="checkbox"/> Name	Last Searched	Schedule
<input type="checkbox"/> exercise lipid metabolism (Settings)	2 months ago	none
<input type="checkbox"/> gastroenterology journals (Settings)	22 days ago	monthly
<input type="checkbox"/> lipoproteins metabolic syndrome x (Settings)	3 days ago	weekly
<input type="checkbox"/> light therapy seasonal depression (Settings)	yesterday	weekly
<input type="checkbox"/> phototherapy diabetic neuropathy (Settings)	yesterday	weekly
<input type="checkbox"/> chocolate (Settings)	yesterday	daily
<input type="checkbox"/> torsion abnormality (Settings)	yesterday	weekly

At the bottom of the table are two buttons: 'Delete PubMed Searches' and 'Show What's New'.

Modifying a Strategy: Save a New One and Delete the Old

- Saved search strategies cannot be edited. To modify a strategy, re-save it with your changes.
- To delete a search, select the search using the check box and click on the **Delete PubMed Searches** button at the bottom of the page.

Changing the E-mail Address for an Account

- **Preferences** is accessible via a link on the My NCBI sidebar. You can change the e-mail address for your My NCBI account here.
- Keep in mind, anytime you change the e-mail for an account, all automatic updates will be sent to that address following confirmation.

Table of Contents
My NCBI Home
My Saved Data
Search Filters
Preferences
About My NCBI

RSS



RSS feeds bring content (like news items) from multiple online sources into one reader or Web page. The feeds are dynamically updated as new items are added from each source. An RSS reader is required and many are available to download free from the Web or incorporated into e-mail software. Each RSS reader behaves and displays data differently.

Select the
RSS link

An options menu appears:

Change these selections if needed.

Click **Create RSS**

Drag the XML button to your feed reader OR Click the XML icon to obtain the URL from the address line.

Copy and paste the URL into the "subscribe" form in your RSS reader.

NOTES

Practice Exercises: Managing the Results and Saving the Search

Complete the following exercises as assigned by the instructor.

1. Create a My NCBI account and sign in (or sign in to your existing account).
2. Using the Limits screen, find English-language articles on clinical trials using light therapy to treat seasonal depressive disorder. Show all results in Abstract format on one page. Select three or four citations and save them in a Collection.
3. Save your light therapy search and set up weekly automatic updates in Abstract format.

Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Suggested Answers: Managing the Results and Saving the Search

See pages 100 and 105 for instructions on #1 and #3.

- Using the Limits screen, find English-language articles on clinical trials using light therapy to treat seasonal depression. Show all results in Abstract format on one page, sorted by publication date. Select three or four citations and save them in a Collection.

Run a search for light therapy seasonal depression

Select Clinical Trial as Type of Article (publication type) and English as Language.

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

light therapy seasonal depression **Search** Clear

Limits

Dates

Published in the Last: Any date

Type of Article

- ☒ Clinical Trial
- ☐ Editorial
- ☐ Letter
- ☐ Meta-Analysis
- ☐ Practice Guideline

Languages

- ☒ English
- ☐ French
- ☐ German
- ☐ Italian
- ☐ Japanese

Using the Display Settings menu:

Select Abstract display.

Change Items per page to 200.

Sort by Publication Date.

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

light therapy seasonal depression **Search** Clear

Display Settings: ☒ Summary, 20 per page, Sorted by Recently Added [Send](#)

Format	Items per page	Sort by
<input type="radio"/> Summary	<input type="radio"/> 5	<input type="radio"/> Recently Added
<input type="radio"/> Summary (text)	<input type="radio"/> 10	<input checked="" type="radio"/> Pub Date
<input checked="" type="radio"/> Abstract	<input type="radio"/> 20	<input type="radio"/> First Author
<input type="radio"/> Abstract (text)	<input type="radio"/> 50	<input type="radio"/> Last Author
<input type="radio"/> MEDLINE	<input type="radio"/> 100	<input type="radio"/> Journal
<input type="radio"/> XML	<input checked="" type="radio"/> 200	<input type="radio"/> Title
<input type="radio"/> PMID List		

Apply

On results page:

Select citations of
interest.

Select Send to
Collections.

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed
light therapy seasonal depression

Display Settings: [v] Abstract, 200 per page, Sorted by Pub Date
Send to: [v] Limits Act

Results: 168 Selected: 3

[x] Biol Psychiatry. 2009 Aug 1;66(3):253-8. Epub 2009 Jan 8.
1. **Evidence of a biological effect of light therapy in patients with seasonal affective disorder.**
Lavoie MP, Lam RW, Bouchard G, Sassequille A, Charron M, Filteau MJ, Hébert M.
Centre de recherche Université Laval Robert-Giffard, Centre hospitalier de la Sagouine, 1000, rue de la Sagouine, Québec G1J 2G3, Canada.

Choose Destination
☐ File ☐ Clipboard
☒ Collections ☐ E-mail
☐ Order
Add 3 items.
Add to Collections

NOTES

Getting the Articles

PubMed does not include copies of journal articles. However, PubMed does offer links to the full text of journal articles when links are available. Access to some articles will be free. Access to others will require payment.

LinkOut

- Links to full text resources from PubMed are available through a service called LinkOut.
- When you click on LinkOut icons, you leave PubMed and are directed to the full text at an external site.
- The National Library of Medicine does not hold the copyright to this material, and cannot give permission for its use. Users should review all copyright restrictions set forth by the full text provider before reproducing, redistributing, or making commercial use of material accessed through LinkOut.
- LinkOut provides links from PubMed and other Entrez databases to a wide variety of relevant web-accessible online resources including full-text publications.
- Look for icon links to full text resources on the Abstract display.
- Activate icons to link to your library subscriptions using My NCBI filters (see page 119)

The icon links to full-text from the Abstract format.

The screenshot shows a PubMed abstract page. At the top, there are links for 'Display Settings' and 'Send to'. The article title is 'Conservation of the centromere/kinetochore protein ZW10' by Starr DA, Williams BC, Li Z, Etemad-Moghadam B, Dawe RK, Goldberg ML. The abstract text describes mutations in the Drosophila melanogaster gene zw10 and the identification of ZW10-related proteins in various species. On the right side, there are two LinkOut icons: 'Final Version FREE J Cell Biol' and 'FREE full text article in PubMed Central'. Below these are two Penn Library icons: 'Penn Library link to full-text' and 'Penn Library in Print'. A red circle highlights these four icons. Further down, there are sections for 'Related citations' and 'Cited by 22 PubMed Central articles'.

Display Settings: ☒ Abstract Send to: ☐

J Cell Biol. 1997 Sep 22;138(6):1289-301.

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.

Abstract

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.

PMID: 9298984 [PubMed - indexed for MEDLINE] PMCID: PMC2132553 Free PMC Article

Final Version FREE J Cell Biol

FREE full text article in PubMed Central

Penn Library link to full-text

Penn Library in Print

Related citations

Bipolar spindle attachments affect redistributions of ZW10, a Dro [J Cell Biol. 1996]

ZW10 helps recruit dynactin and dynein to the kinetochore. [J Cell Biol. 1998]

Determinants of *Drosophila* zw10 protein localization and function. [J Cell Sci. 1994]

Review The formation, structure, and composition of the mamma [Int Rev Cytol. 1982]

Review Functional morphology of the kinetochore. [Int Rev Cytol Suppl. 1977]

See reviews...

See all...

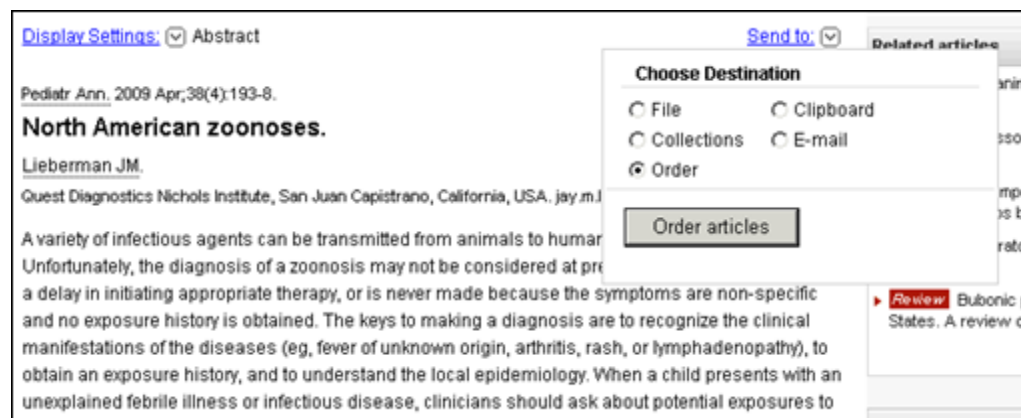
Cited by 22 PubMed Central articles

Review Key players in chromosome segregation in *Caenorhabditis* [Front Biosci. 2009]

The spindle assembly checkpoint in *Caenorhabditis elegans*: one [Cell Cycle. 2009]

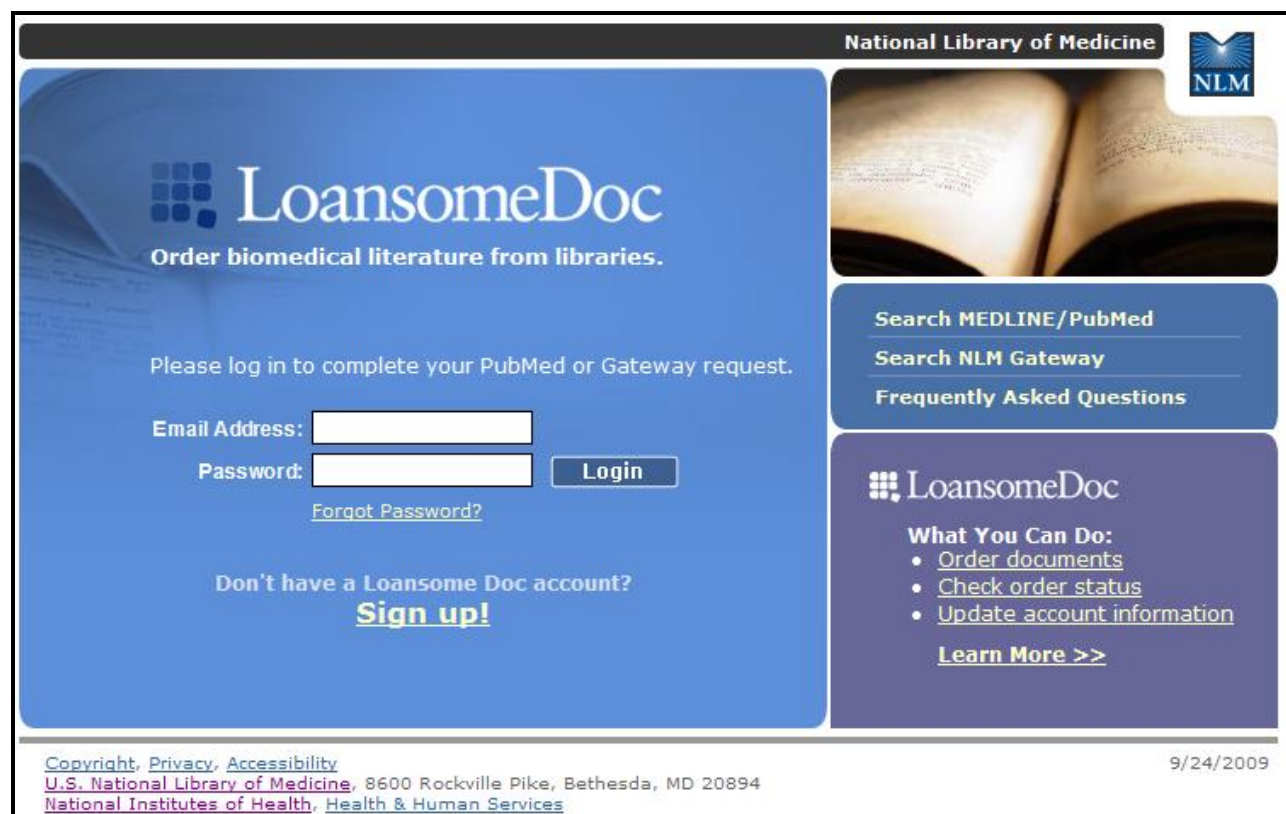
CDL-1 functions as a kinetochore receptor for

Send to Order



To order articles via PubMed:

- Select the citations for the articles by clicking on the check-box to the left of each item (from any results screen or the Clipboard).
- Select **Order** from the **Send to** menu.
- You are brought to the page shown below:



What is Loansome Doc?

- **Loansome Doc**[®] offers full-text document ordering from a participating library. This feature is part of PubMed and the NLM Gateway.
- **DOCLINE**[®] is the computerized interlibrary loan system that is the foundation for Loansome Doc.

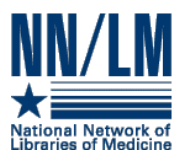


Prior to using this feature, you need to establish an agreement with a Loansome Doc participating library. Your Loansome Doc library will provide you with their **Library ID**, which is needed when setting up the service within PubMed or the NLM Gateway.

What does it cost?

The library providing you this service will explain their ordering fees, if any. This service is generally **not** free.

What library can provide me with this kind of service?



Medical libraries throughout the United States are joined together in a network called the **National Network of Libraries of Medicine**[®] (NN/LM[®]). The purpose of the NN/LM is to provide health science practitioners, investigators, educators, and administrators in the United States with timely, convenient access to biomedical and health care information resources.

- The network is administered by the National Library of Medicine.
- It consists of eight Regional Medical Libraries (major institutions under contract to NLM), more than 159 Resource Libraries (primarily at medical schools), and some 4,762 Primary Access Libraries (primarily at hospitals).
- The Regional Medical Libraries administer and coordinate services in the network's eight geographical regions.



NN/LM Web site: <http://nnlm.gov>

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 library in your area can set you up with the Loansome Doc ordering service.

For more information on Loansome Doc and DOCLINE, see:

Loansome Doc – http://www.nlm.nih.gov/pubs/factsheets/loansome_doc.html
DOCLINE - <http://www.nlm.nih.gov/pubs/factsheets/docline.html>

For more information about obtaining full text articles, see the tri-fold handout, *Full Text and PubMed* at <http://nnlm.gov/training/resources/fulltexttri.pdf>.

NOTES

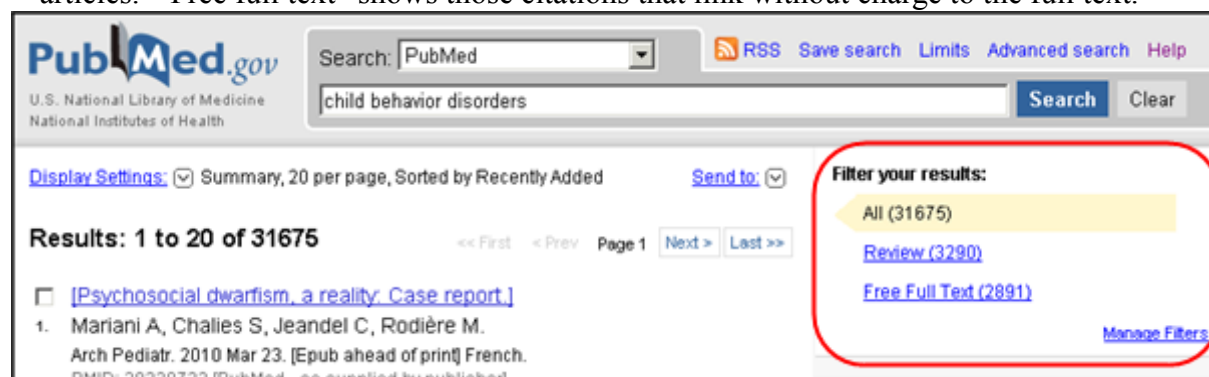
Additional Tools

Filters

- My NCBI includes a Filters feature which groups search results by areas of interest.
- Filters are available from the right hand column of your search results
- You can have up to **fifteen** active filters using My NCBI.

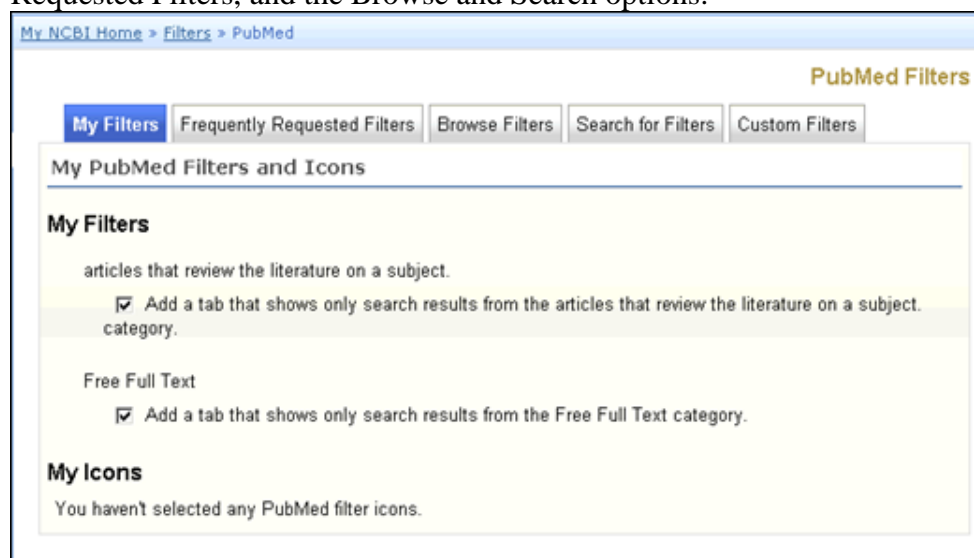
Default Filters

- “All” shows the total retrieval for the search. “Review” shows the total retrieval for review articles. “Free full text” shows those citations that link without charge to the full text.



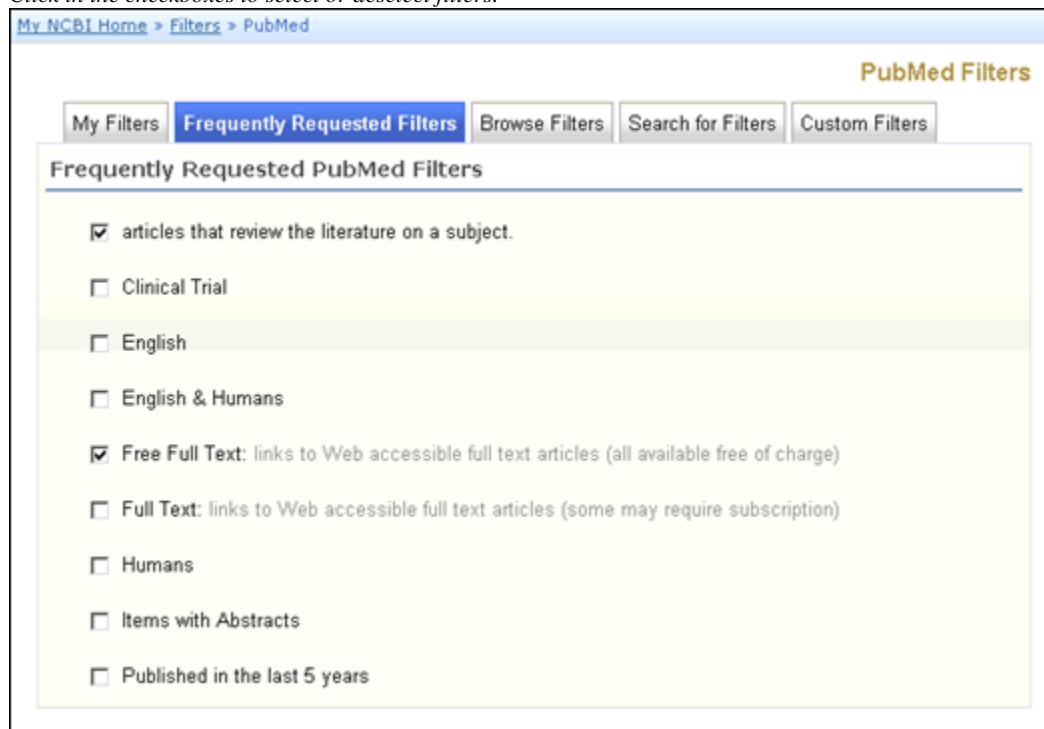
Adding Filters

- Use the **Manage Filters** link to the **My PubMed Filters menu** (you must sign in to My NCBI if not already signed in)
- This page displays the filters currently applied to PubMed, and provides links to the Frequently Requested Filters, and the Browse and Search options:



- Click on **Frequently Requested Filters** to add common filters to your display:

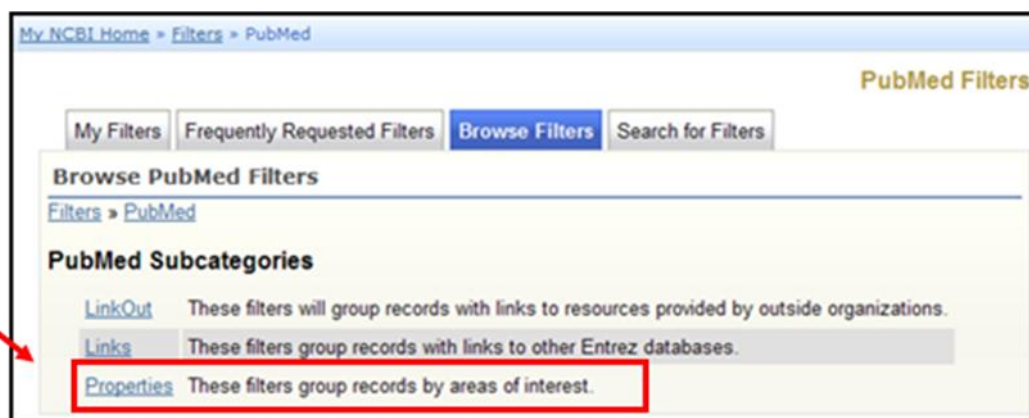
Click in the checkboxes to select or deselect filters.



Browse

- Click on Browse to see additional options for PubMed filters.
- On the Browse page there are three categories:
 - LinkOut
 - Links
 - Properties
- Users interested in **subject-related filters** for their searches should look at **Properties**.

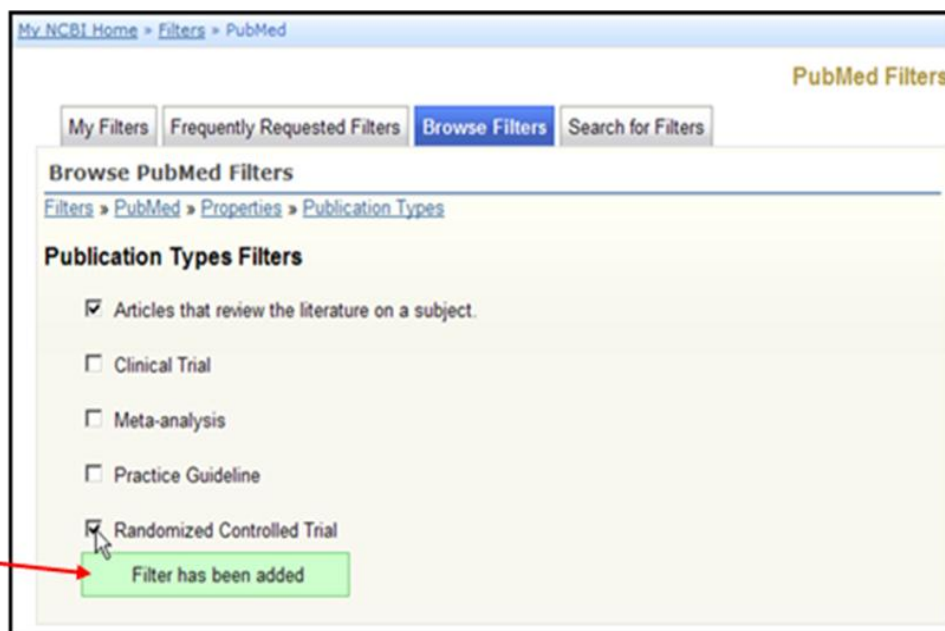
There are over 70 filter options under **Properties**.



Under Properties, use the links to see the available filters for each sub-category. Here's the one for Publication Types:

Click in the checkbox to select the filter.

A confirmation message will display.



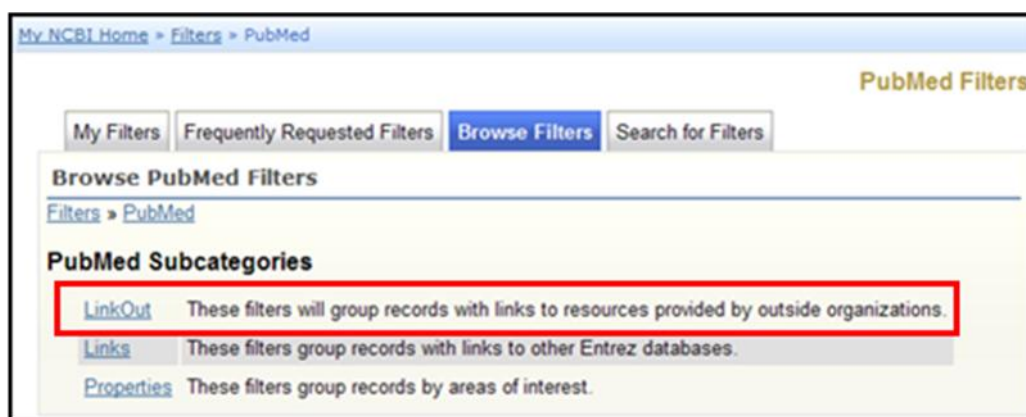
LinkOut Filters

- Filters in this category group results by full text providers, libraries, and other outside resources.

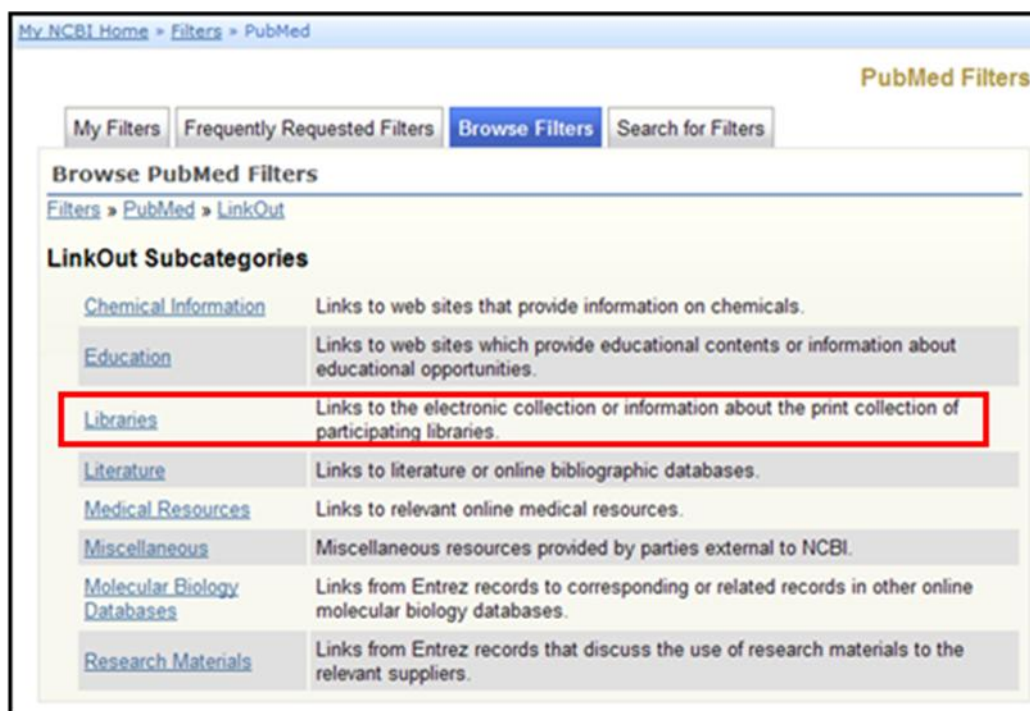
Adding your library's holdings as a filter

- From the PubMed "Browse" filters page:

Click on **LinkOut**



Click on
Libraries



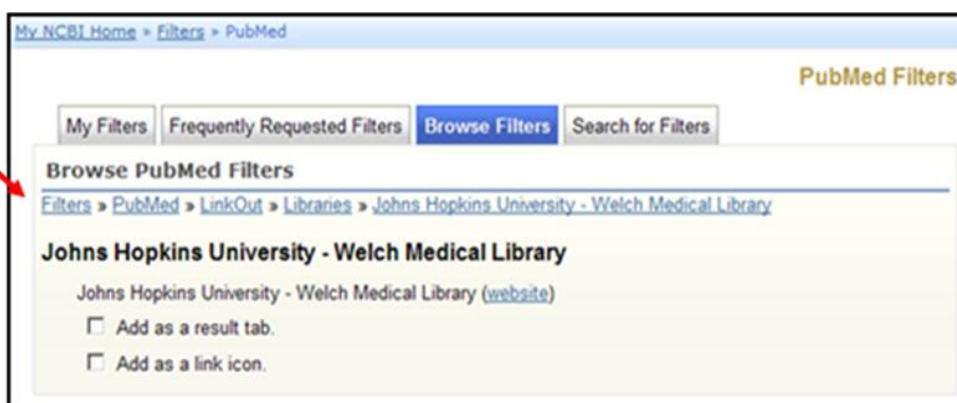
This will bring up a page with all of the LinkOut-participating libraries.

- Use your browser's Find feature to locate your library.
- Click on the desired library link.
- Then click on the checkboxes to add a result tab and/or display the library's icon:

Notice the use of
"breadcrumbs" on
the Filters pages.

Each breadcrumb
for a higher level is
a link to that page.

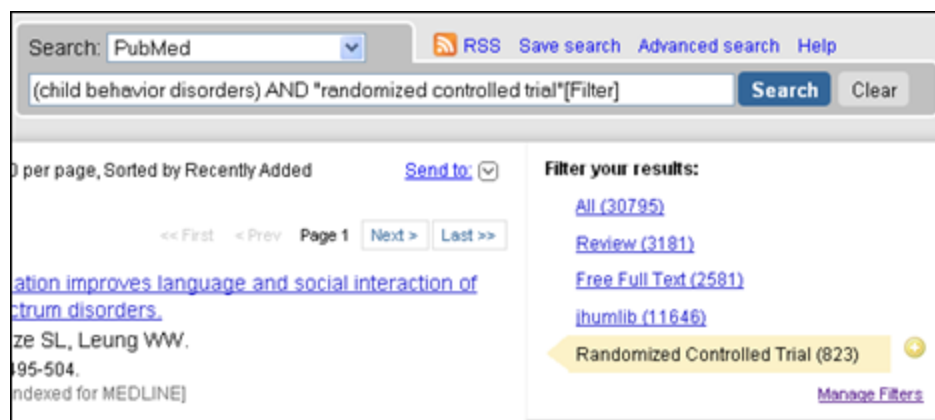
Click in the
checkboxes to add
these selections.



- Filter links for LinkOut providers display the LinkOut user name.
- Place your cursor over this ID to see the name of the provider.
- Users who connect to PubMed with a URL that includes a library's holdings parameter will continue to see their library icon even if they do not select their library in My NCBI. Users should select their library filter if they want to see a filter link for their library in the search results.

Using the Filter Links

- Click on a filter name to go to the citations for a particular filter. Select any display format you wish.
- When you click on the filter name to see the results for a filter, a (+) symbol will appear in the menu:



Clicking on the + icon adds that filter to the search box.



- Filters added using the (+) icon will display in the search box with the [Filter] tag.
- If you want to save this search, click on Save Search.
- Many filter topics can be added to the search via the Limits page. Either way will yield the same results.

My NCBI User Preferences

- Available from My NCBI sidebar.
- In effect when you are signed in to My NCBI.

Common Preferences (for all NCBI databases):

- Save an e-mail address for e-mail updates.
- Highlight search words in retrieval.

PubMed Preferences:

- Open the supplemental data in the Abstract display by default.
- Set your document delivery and/or Outside Tool preferences.
- Turn off the Auto Suggest feature, which displays suggested searches as you type in the PubMed search box.
- Select your default result display settings (format, number per page and sort order).

The image illustrates the steps to access and modify PubMed preferences. It shows the 'PubMed Preferences' dialog box with settings for Abstract Supplemental Data, Document Delivery, PubMed Filters & Icons, Outside Tool, Auto Suggest, and Result Display Settings. It also shows the 'Display Settings' link in the footer of the PubMed homepage and a search dropdown menu.



See demos on various My NCBI features. Click on PubMed Tutorials under More Resources from the PubMed homepage or go directly to:

<http://www.nlm.nih.gov/bsd/disted/pubmed.html>

Clinical Queries

- Available on PubMed homepage; also available from the bottom of the Advanced Search screen
- There are 3 search filters available from this page:
 - Search by Clinical Study Category
 - Find Systematic Reviews
 - Medical Genetics Searches

Search by Clinical Study Category

- 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.

Five study categories or filters are provided:

- etiology
- diagnosis
- therapy
- prognosis
- clinical prediction guidelines

Two emphasis categories or filters are provided:

- narrow, specific search -- will get more precise, relevant citations but less retrieval
- broad, sensitive search -- includes relevant citations but probably some less relevant; will get more retrieval

Example: *Find citations on having a rash with a fever using the defaults of therapy and narrow, specific search.*

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input checked="" type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

Find Systematic Reviews

- This feature is provided to help clinicians locate systematic reviews and similar articles.
- It retrieves systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines. Citations from journals specializing in clinical review studies are also included.

Example: *Find Systematic Reviews on inhalation therapy for pneumonia.*

Enter search terms in the search box

Find Systematic Reviews
↑

For your topic(s) of interest, this search finds citations for systematic reviews, meta-analyses, reviews of clinical trials, evidence-based medicine, consensus development conferences, and guidelines.

For more information, see [Help](#). See also [related sources](#) for systematic review searching.

Search



This subset can be combined directly with other search terms using AND systematic [sb]. For example, lyme disease AND systematic [sb].

Alternatively, you may select Systematic Reviews from the Subset pull-down menu on the Limits screen.

Medical Genetics Searches

- Finds citations related to various topics in medical genetics.
- Default is to **All** topics. Click on All check box to deselect; then click on topic(s) of interest.
- Developed in conjunction with the staff of GeneReviews: Genetic Disease Online Reviews at GeneTests, University of Washington, Seattle.

Example: *Find citations about sickle cell anemia using the Medical Genetics Searches categories: Genetic Counseling; Genetic Testing*

Enter search terms in the search box.

Select topics of interest.

Medical Genetics Searches
↑

This search finds citations and abstracts related to various topics in medical genetics. See the [filter table](#) for details.

Search

Category

☐ All
☐ Diagnosis
☐ Differential Diagnosis
☐ Clinical Description
☐ Management
☒ Genetic Counseling
☐ Molecular Genetics
☒ Genetic Testing

Special Queries – Health Services Research (HSR) Queries

Why?

- Provides a search interface to find PubMed citations relating to **health care quality** and health care costs

Where?

- Click on **Topic-Specific Queries** from PubMed homepage; or click on the link from bottom of the Advanced Search screen
- Click on **Health Services Research (HSR) Queries** from the Special Queries page

National Information Center on Health Services Research and Health Care Technology (NICHSR)

NICHSR Home | About Us | Contact Us

Home > Health Services Research & Public Health > NICHSR

PubMed Health Services Research (HSR) Queries

This page provides specialized PubMed searches on healthcare quality and costs.

After running one of these searches, you may further refine your results using PubMed's [Limits](#) feature.

Results of searches on this page are limited to specific health services research areas [\(see definitions\)](#). For comprehensive searches, use [PubMed](#) directly.

Additional PubMed search filters are available, including a filter for [Systematic Reviews](#).

Search by HSR Study Category [↑ Top](#)

This search finds citations that correspond to a specific health services research study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al](#). See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> Appropriateness	<input type="radio"/> Broad, sensitive search
<input type="radio"/> Process assessment	<input checked="" type="radio"/> Narrow, specific search
<input checked="" type="radio"/> Outcomes assessment	
<input checked="" type="radio"/> Costs	
<input type="radio"/> Economics	
<input type="radio"/> Qualitative research	

Click on
“[definitions](#)”
to display
helpful
explanations
of the HSR
categories.

Enter search
terms here.

Choose
appropriate
category and
scope.

Linking to PubMed

Creating Links to PubMed Citations and Searches

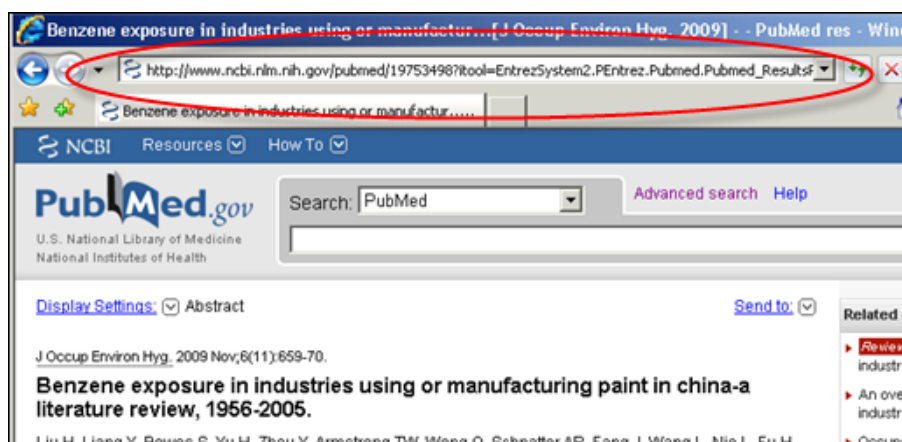
To create a link to PubMed citations for use in a bookmark, Web page, or e-mail message, create or generate a customized URL. With this URL, you can link to specific citations or link to the current results of your PubMed search strategy.



Recent publications from the [Washington University School of Medicine faculty](#) (Bernard Becker Medical Library). The PMID number links to the citation in PubMed in Abstract format.

To create a link to a single citation in PubMed:

1. View the citation in the Summary format
2. Click the title link to display the Abstract format
3. Bookmark this page, or copy the URL from the browser's address bar to paste as a link in a Web page or e-mail message



Copy the URL from the address bar when viewing a single citation in the Abstract display.

To create a customized link to one or more citations in your preferred format:

Use the base URL for PubMed:

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

then add the PMID.

For multiple PMIDs, use commas (but no spaces) between each number, as follows:

18235850,17701905

Add **?&report=** followed by your preferred display format (docsum, brief, abstract, medline, xml,— see PubMed Help at

<http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.table.pubmedhelp.T40> for descriptions), as follows:

?&report=abstract

Strung together, your URL now looks like:

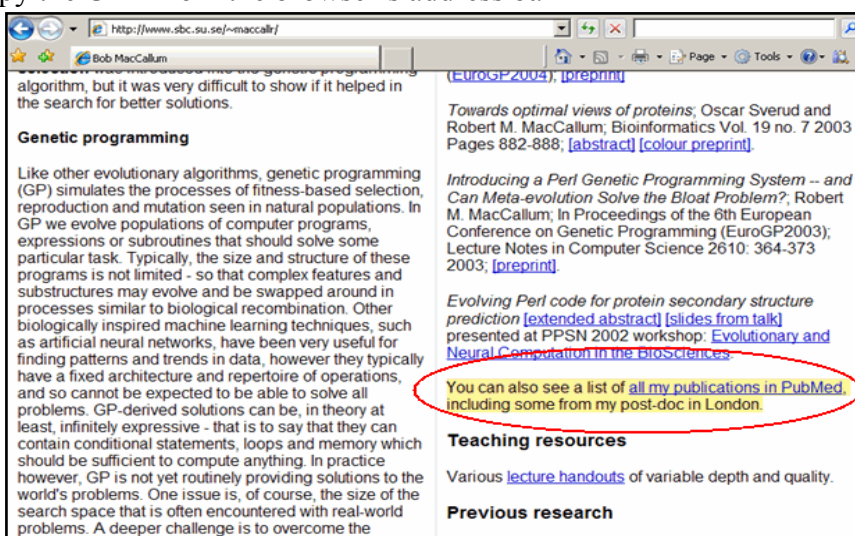
<http://www.ncbi.nlm.nih.gov/pubmed/18235850,17701905?&report=abstract>

Note that there are no spaces.

To create a link to the results for a short PubMed search (e.g., an author's name):

1. Run the search
2. Click on the Advanced Search link
3. Go to Details
4. Click on the URL button, below the search details
5. Bookmark this page, or copy the URL from the browser's address bar

A personal home page with a link that runs a search for the author's citations in PubMed.



Click on the URL button on the Details page to create a link to a PubMed search.

Search Details

Query Translation:

mccallum rm[Author]

Search **URL**

Result:

18

Translations:

mccallum rm mccallum rm[Author]

Database:

PubMed

User query:

mccallum rm

Note: Some browsers have a size limit for URLs in the address bar. If your link doesn't work, the search string may be too long for your browser. Use the "customized link" method, described below.

To create a customized link to PubMed search results:

A customized search link allows you to select the display format and number of citations in the PubMed results page.

Use the base URL for a PubMed "search" function:

<http://www.ncbi.nlm.nih.gov/pubmed?term=>

Add your search terms. Use the "+" sign between terms instead of spaces, as follows:

gastrointestinal+stromal+tumors

To use specific search fields, use the field tag (see Search Field Descriptions and Tags http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helppubmed.section.pubmedhelp.Search_Field_Description). For example, to limit the above search to articles published in the last ten years, use the [dp] tag, as follows:

+AND+"last+10+years"[dp]

Optionally, add **&report=** followed by your preferred display format (docsum, brief, abstract, medline, xml), as follows:

&report=abstract

Add **&dispmax=** followed by the number of items to display on each page, as follows:

&dispmax=100

Your finished URL will look like:

`http://www.ncbi.nlm.nih.gov/pubmed?term=gastrointestinal+stromal+tumors+AND+"last+10+years"[dp]&report=abstract&dispmax=100`

Note that there are “&” symbols between each element, and there are no spaces.

Troubleshooting:

If your URL isn't working, the special characters may not be interpreted properly by PubMed. Try the following substitutions:

- Use **&** instead of **&**
- Use **%20** instead of **+**
- Use **%5B** instead of **[**
- Use **%5D** instead of **]**
- Use **%22** instead of **“**

For more details on creating links to PubMed or other Entrez databases, see Creating a Web Link to the Entrez Databases at <http://www.ncbi.nlm.nih.gov/books/bv.fcgi?rid=helplinks.chapter.linkshelp>

E-Utilities

- E-Utilities provide access to Entrez data outside of the regular web query interface.

Why use E-Utilities?

- E-Utilities are useful for retrieving large sets of PMIDs or records, or counts of records, matching a search strategy.



There are specific instructions and requirements for using E-Utilities in order to manage the workload on NCBI servers. See the E-Utilities documentation on the PubMed home page. You may consider asking your institution's IT staff for technical support.

NOTES

Review Exercises

Choose one or two of the below case studies to review what you've learned about PubMed. Use My NCBI Save Search and Collections features to save your work.

1. Emergency department physicians are concerned about the number of patients who leave the department without being seen (usually because they feel they have waited too long). Find articles about this phenomena using PubMed.
2. Locate information on the Pelizaeus-Merzbacher Disease. Please search back to 1988. Do the Clinical Queries help you find information on etiology?
3. What are the economic effects of breast cancer on a community? Consider using MeSH subheadings and/or the Health Services Research (HSR) Queries (follow the link to Topic-Specific Queries on the PubMed homepage or Advanced Search page).
4. Find the latest review articles on Edwards Syndrome.
5. A woman presents with dementia and the neuropathological findings suggest a prominent contribution by Cerebrovascular disease. Find information on diagnosis and treatment. Try the Clinical Queries, Search by Clinical Study Category.
6. Explore the ethical issues raised by the deaf community regarding cochlear implants. Consider using a subset, or looking specifically at audiology journals (see the broad subject term in the Journals Database).
7. Find systematic reviews for accidents caused by sleep deprivation.

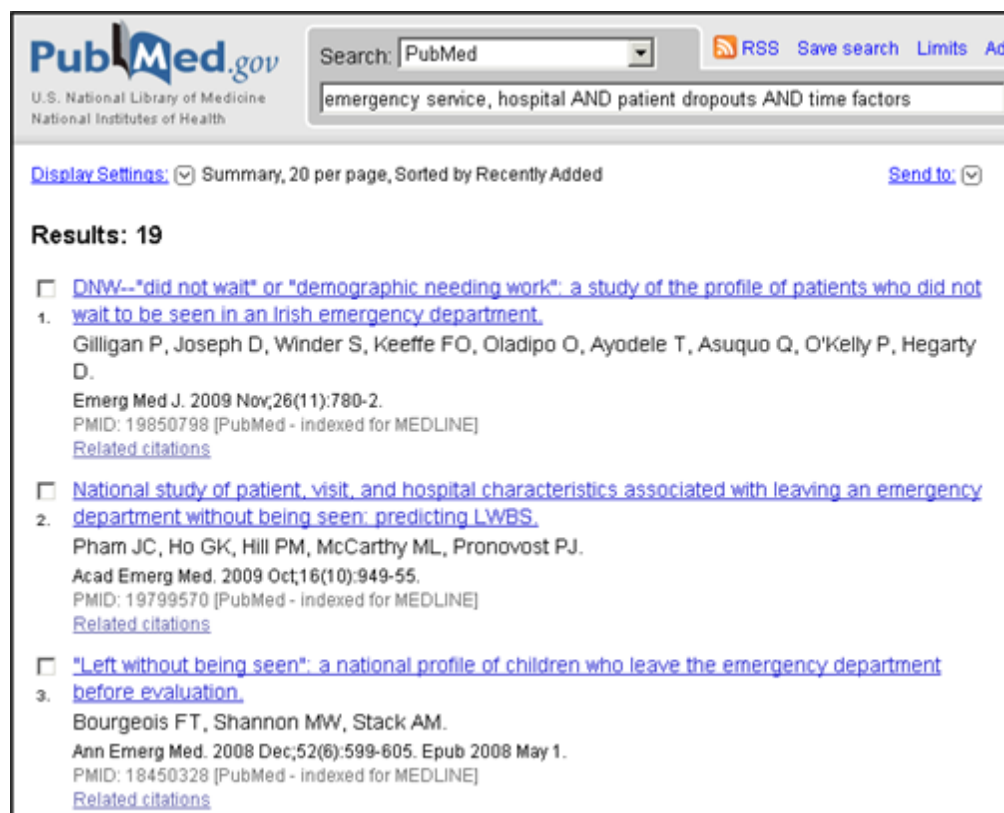
Finished? Sign up for NLM Announces at <https://list.nih.gov/archives/nlm-announces.html> to receive a weekly e-mail with important news about PubMed and other NLM services.

Review Exercises: Suggested Answers

1. Emergency department physicians are concerned about the number of patients who leave the department without being seen (usually because they feel they have waited too long). Find articles about this phenomena using PubMed.

One approach:

emergency service, hospital AND patient dropouts AND time factors



PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed
RSS Save search Limits Adv

emergency service, hospital AND patient dropouts AND time factors

Display Settings: Summary, 20 per page, Sorted by Recently Added Send to:

Results: 19

- ☐ [DNW--"did not wait" or "demographic needing work": a study of the profile of patients who did not wait to be seen in an Irish emergency department.](#)
1. Gilligan P, Joseph D, Winder S, Keefe FO, Oladipo O, Ayodele T, Asuquo Q, O'Kelly P, Hegarty D.
Emerg Med J. 2009 Nov;26(11):780-2.
PMID: 19850798 [PubMed - indexed for MEDLINE]
[Related citations](#)
- ☐ [National study of patient, visit, and hospital characteristics associated with leaving an emergency department without being seen: predicting LWBS.](#)
2. Pham JC, Ho GK, Hill PM, McCarthy ML, Pronovost PJ.
Acad Emerg Med. 2009 Oct;16(10):949-55.
PMID: 19799570 [PubMed - indexed for MEDLINE]
[Related citations](#)
- ☐ ["Left without being seen": a national profile of children who leave the emergency department before evaluation.](#)
3. Bourgeois FT, Shannon MW, Stack AM.
Ann Emerg Med. 2008 Dec;52(6):599-605. Epub 2008 May 1.
PMID: 18450328 [PubMed - indexed for MEDLINE]
[Related citations](#)



Use natural language to begin your search and then review MeSH headings used to index relevant articles to determine patterns of indexing for pertinent articles.

- Locate information on the Pelizaeus-Merzbacher Disease. Please search back to 1988. Do the Clinical Queries help you find information on etiology?

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed
Advanced search Help

Search

Limits

Dates

Published in the Last: Specify date range

1988 MM DD to YYYY MM DD

Note that Pelizaeus-Merzbacher Disease was introduced in MeSH in 2000. Because the previous indexing terms (Diffuse Cerebral Sclerosis of Schilder and Multiple Sclerosis) are much broader and the term Pelizaeus-Merzbacher was well defined by 1988, this untagged search using ATM (which picks up terms from the title and abstract via the All Fields search) works fine. However, if you limited to MeSH, you would want to search:

Pelizaeus-Merzbacher disease [mh] OR (pelizaeus-merzbacher [tw] AND 1988:1999[pdat])

to include citations with publication dates prior to 2000 that include Pelizaeus-Merzbacher in the title, abstract or subject fields of the record (see page 84 for a description of the Text Word [tw] search).

Using Clinical Queries (Search by Clinical Study Category) to locate etiology information:

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search pelizaeus-merzbacher disease Go

Category	Scope
<input checked="" type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

3. What are the economic effects of breast cancer on a community? Consider using MeSH subheadings and/or the Health Services Research (HSR) Queries (follow the link to Topic-Specific Queries on the PubMed homepage).

Possible strategy using MeSH/subheadings:

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed [Advanced search](#) [Help](#)

breast neoplasms/ec AND (community health services OR community) **Search**

Search Details

Query Translation:

```
"breast neoplasms/economics"[Mesh Terms] AND (("community health services"[MeSH Terms] OR ("community"[All Fields] AND "health"[All Fields] AND "services"[All Fields]) OR "community health services"[All Fields]) OR ("residence characteristics"[MeSH Terms] OR ("residence"[All Fields] AND "characteristics"[All Fields]) OR "residence characteristics"[All Fields] OR "community"[All Fields]))
```

Search **URL**

Result:
[255](#)

Translations:

breast neoplasms/ec	"breast neoplasms/economics"[Mesh Terms]
community health services	"community health services"[MeSH Terms] OR ("community"[All Fields] AND "health"[All Fields] AND "services"[All Fields]) OR "community health services"[All Fields]
community	"residence characteristics"[MeSH Terms] OR ("residence"[All Fields] AND "characteristics"[All Fields]) OR "residence characteristics"[All Fields] OR "community"[All Fields]

Database:
PubMed

User query:
breast neoplasms/ec AND (community health services OR community)

Using Health Services Research Queries from the Special Queries page:

Search by HSR Study Category

This search finds citations that correspond to a specific health services research study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search **Go** **Clear**

Category	Scope
<input type="radio"/> Appropriateness	<input type="radio"/> Broad, sensitive search
<input type="radio"/> Process assessment	<input checked="" type="radio"/> Narrow, specific search
<input type="radio"/> Outcomes assessment	
<input type="radio"/> Costs	
<input checked="" type="radio"/> Economics	
<input type="radio"/> Qualitative research	

4. Find review articles on Edwards Syndrome.
 - Search: “edwards syndrome” as a phrase so PubMed’s automatic term mapping does not break it apart.
 - Then review the citations and the MeSH headings used to index the citations to figure out what Edward Syndrome is. From that review, you should ascertain that Edwards Syndrome is a Trisomy, specifically Trisomy 18.
 - If you check the MeSH Database, you will find that Trisomy 18 is not a MeSH heading.
 - When you continue to review relevant citations, you will find the indexing pattern using the two MeSH Headings of Trisomy and Chromosomes, Human, Pair 18 for Edwards Syndrome.
 - Therefore, a recommended search strategy could be:

(trisomy [mh] AND chromosomes, Human, Pair 18 [mh])

- Click on the Review filter to view the Review articles subset of this retrieval.
5. A woman presents with dementia and the neuropathological findings suggest a prominent contribution by Cerebrovascular disease. Find information on diagnosis and treatment. Try the Clinical Queries, Search by Clinical Study Category.

Because you can only select one Clinical Study Category at a time, you must run 2 separate searches from the Clinical Queries page and then using the Advanced Search screen History feature combine those searches together for your final result. (Hint: There is a link to Clinical Queries at the bottom of the Advanced Search screen.)

Clinical Study Category search for the diagnosis focus:

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input checked="" type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

Clinical Study Category search for the treatment or “therapy” focus:

Search by Clinical Study Category

This search finds citations that correspond to a specific clinical study category. The search may be either broad and sensitive or narrow and specific. The search filters are based on the work of [Haynes RB et al.](#) See the [filter table](#) for details.

Search

Category	Scope
<input type="radio"/> etiology	<input checked="" type="radio"/> narrow, specific search
<input type="radio"/> diagnosis	<input type="radio"/> broad, sensitive search
<input checked="" type="radio"/> therapy	
<input type="radio"/> prognosis	
<input type="radio"/> clinical prediction guides	

Using the History function, combine the two separate searches using the Boolean connector OR:

Search Box

#10 OR #11

Search Builder

Search History

Search	Most Recent Queries
#11	Search (dementia AND cerebrovascular disease) AND (Therapy:Narrow[filter])
#10	Search (dementia AND cerebrovascular disease) AND (Diagnosis:Narrow[filter])

- Explore the ethical issues raised by the deaf community regarding cochlear implants. Consider using a subset, or looking specifically at audiology journals (use the broad subject term in the Journals Database).

Using the Bioethics Subset Limit:

Search: PubMed

cochlear implants

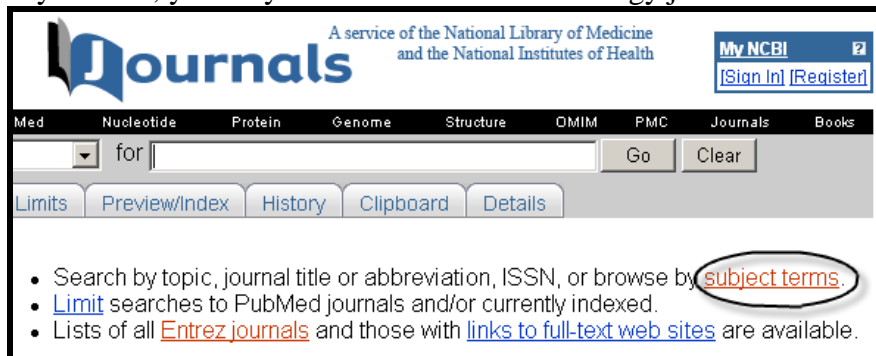
Subsets

CLEAR

Topics

☐ AIDS
☒ Bioethics
☐ Cancer
☐ Complementary Medicine

If you wish, you may limit this search to audiology journals:



Journals
A service of the National Library of Medicine
and the National Institutes of Health

My NCBI [Sign In] [Register]

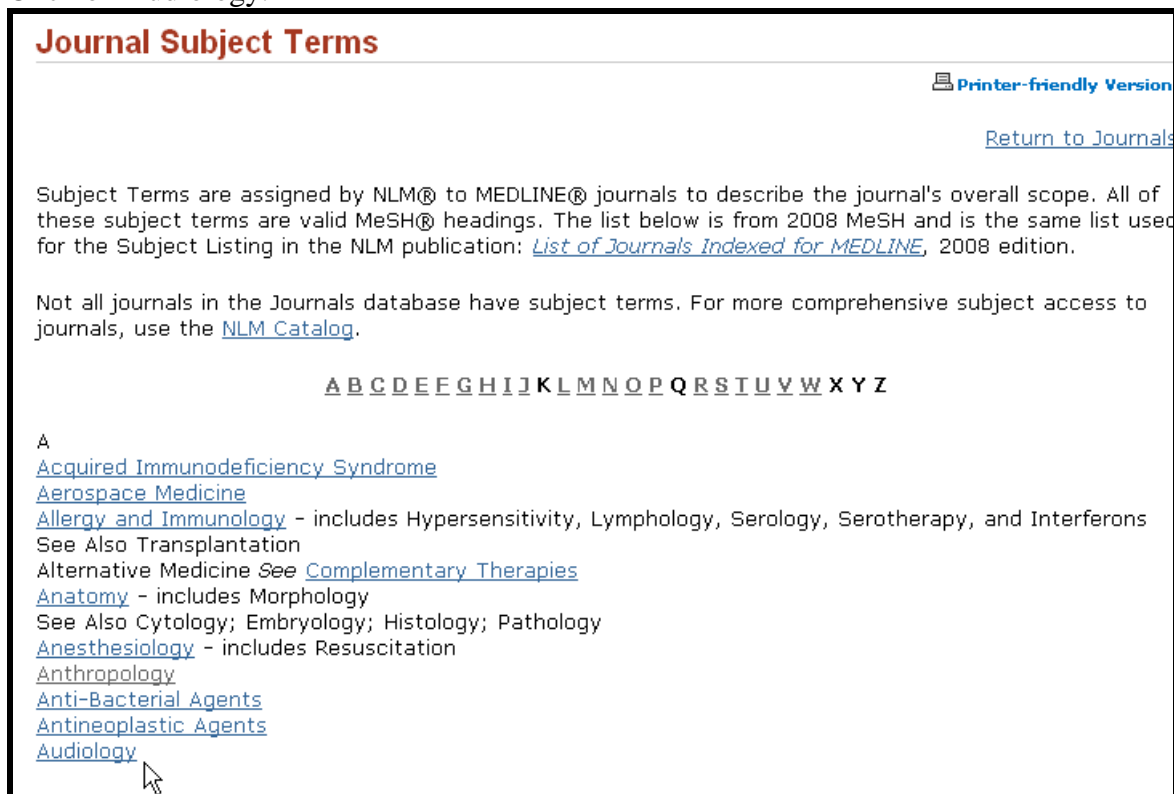
Med Nucleotide Protein Genome Structure OMIM PMC Journals Books

for [] Go Clear

Limits Preview/Index History Clipboard Details

- Search by topic, journal title or abbreviation, ISSN, or browse by **subject terms**.
- [Limit](#) searches to PubMed journals and/or currently indexed.
- Lists of all [Entrez journals](#) and those with [links to full-text web sites](#) are available.

Click on Audiology:



Journal Subject Terms

[Printer-friendly Version](#)

[Return to Journals](#)

Subject Terms are assigned by NLM® to MEDLINE® journals to describe the journal's overall scope. All of these subject terms are valid MeSH® headings. The list below is from 2008 MeSH and is the same list used for the Subject Listing in the NLM publication: [List of Journals Indexed for MEDLINE](#), 2008 edition.

Not all journals in the Journals database have subject terms. For more comprehensive subject access to journals, use the [NLM Catalog](#).

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

A

- [Acquired Immunodeficiency Syndrome](#)
- [Aerospace Medicine](#)
- [Allergy and Immunology](#) - includes Hypersensitivity, Lymphology, Serology, Serotherapy, and Interferons
- See Also Transplantation
- Alternative Medicine See [Complementary Therapies](#)
- [Anatomy](#) - includes Morphology
- See Also Cytology; Embryology; Histology; Pathology
- [Anesthesiology](#) - includes Resuscitation
- [Anthropology](#)
- [Anti-Bacterial Agents](#)
- [Antineoplastic Agents](#)
- [Audiology](#)

Go to Limits and select currently indexed PubMed journals:

Journals
A service of the [U.S. National Library of Medicine](#)
and the [National Institutes of Health](#)

PubMed Nucleotide Protein Genome Structure OMIM PMC Journals

for

Limits Preview/Index History Clipboard Details

Limit your search by any of the following criteria:

Languages

☐ English
☐ Chinese
☐ French
☐ German
☐ Italian
☐ Japanese
☐ Latin
☐ Russian
☐ Spanish
[More Languages](#)

Current Subsets

☒ Only PubMed Journals
☒ Currently indexed in MEDLINE
☐ PubMed Central Journals
☐ PubMed Central Forthcoming Journals
[Other Subsets for Currently Indexed Journals](#)
☐ Consumer Health Journals
☐ Core Clinical Journals (AIM)
☐ Dental Journals
☐ Index Medicus Journals (IM)
☐ Journals Indexed from the Electronic

Now select the Audiology journals of interest to you and select “Send to: Search Box with OR.”

for [Save Search](#)

☒ **Limits** Preview/Index History Clipboard Details

Limits: Only PubMed Journals, Currently indexed in MEDLINE

Suggestions: [Audiology](#), [Radiology](#), [Cardiology](#), [Angiology](#), [Sociology](#), [Autophagy](#), [Audubon](#), [Geobiology](#), [Austrian](#)

Display Show Sort By Send to

All: 36

Items 1 - 20 of 36

- Use the Links menu to retrieve records for that journal from a data [Matcher](#)
- Build a list of journals using the [Send to Search Box feature](#)

☒ **1: [American annals of the deaf](#)** [Links](#)

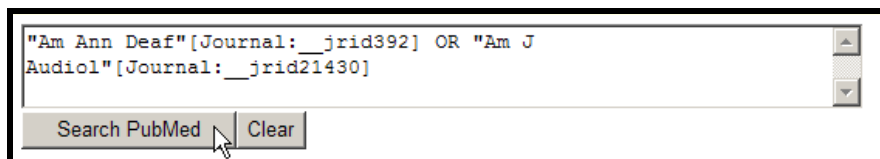
pISSN: 0002-726X
Title Abbreviation: Am Ann Deaf
NLM ID: [0414670](#)

☒ **2: [American journal of audiology](#)** [Links](#)

pISSN: 1059-0889
Title Abbreviation: Am J Audiol
NLM ID: [9114917](#)

Send to
Text
File
Printer
Clipboard
E-mail
Search Box with OR

Then click the Search PubMed button under the larger search box.



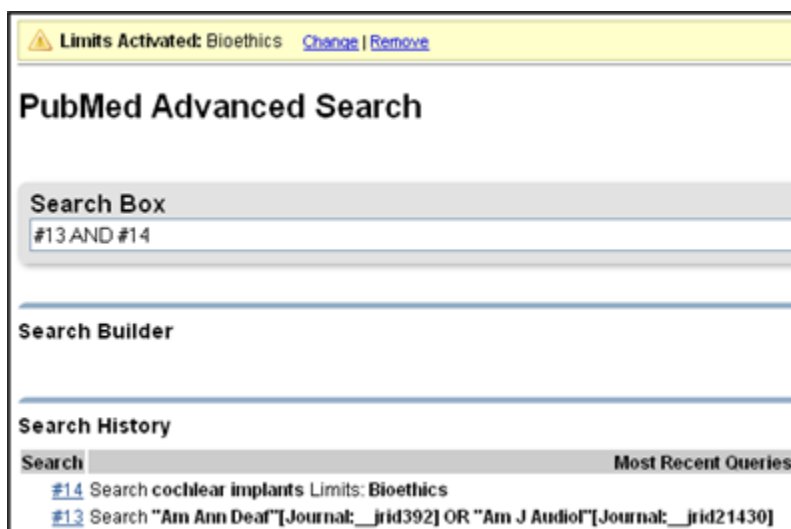
"Am Ann Deaf"[Journal:__jrid392] OR "Am J
Audiol"[Journal:__jrid21430]

Search PubMed Clear



Alternatively, select **PubMed Links** from the Display pull-down – this option selects *all* the journal titles displayed and searches them in PubMed.

Now go to History and combine the two searches:



Limits Activated: Bioethics [Change](#) | [Remove](#)

PubMed Advanced Search

Search Box
#13 AND #14

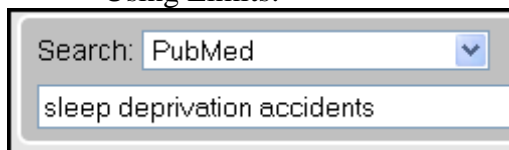
Search Builder

Search History

Search	Most Recent Queries
#14	Search cochlear implants Limits: Bioethics
#13	Search "Am Ann Deaf"[Journal:__jrid392] OR "Am J Audiol"[Journal:__jrid21430]

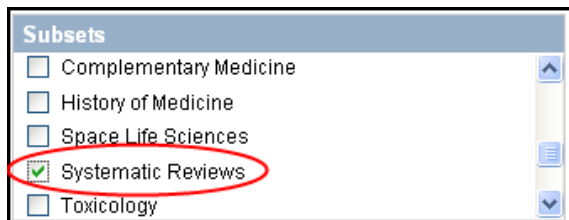
- Find systematic reviews for accidents caused by sleep deprivation.

Using Limits:



Search: PubMed ▼

sleep deprivation accidents



Subsets

- ☐ Complementary Medicine
- ☐ History of Medicine
- ☐ Space Life Sciences
- ☒ Systematic Reviews
- ☐ Toxicology

NOTES

Keeping Current with PubMed

NLM Technical Bulletin

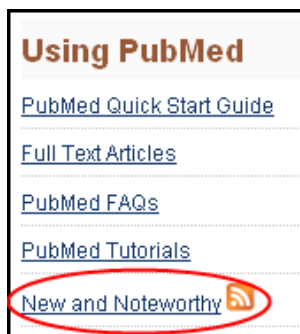
- A bi-monthly newsletter published for NLM online searchers.
- The *NLM Technical Bulletin* keeps searchers apprised of:
 - changes and enhancements to NLM retrieval systems
 - changes to MeSH vocabulary
 - tips for searching
- The *Technical Bulletin* is published electronically on the NLM Web site. The URL is:

<http://www.nlm.nih.gov/pubs/techbull/tb.html>



Sign up for an **RSS** feed to be notified each time an article is published.

PubMed New and Noteworthy



Brief announcements regarding recent enhancements and changes to the PubMed, Journals, and MeSH databases are posted to PubMed's New and Noteworthy, accessible from the PubMed home page under Using PubMed and available as an RSS feed. Announcements are often linked to more details in the *NLM Technical Bulletin*.

Subscribe to NLM-Announces Mailing List

This mailing list will alert you when new information has been added to the NLM Web site.
For example:

- When articles have been added to the *NLM Technical Bulletin* Web site
- When the training manuals have been revised
- Other important NLM announcements and events

Go to <https://list.nih.gov/archives/nlm-announces.html>

Click on **Join or leave the list (or change settings)**

or

Click on **About the National Library of Medicine** from the NLM home page.

Click on **News and Events**.

Scroll down to **New on this Site**. Click on **Subscribe to the NLM-Announces mailing list**.

Click on **NLM-Announces**.

Click on **Join or leave the list (or change settings)**.

NLM-ANNOUNCES

Join, Leave , or Change Options

This screen allows you to join or leave the NLM-ANNOUNCES list. To confirm your identity and prevent third parties from subscribing you to the list against your will, an e-mail message with a confirmation code will be sent to the address you specify in the form. Simply wait for this message to arrive, then follow the instructions to confirm the operation.

Alternatively, you can [login with your LISTSERV password](#) (if you have one) and update your subscription interactively, without e-mail confirmation.

Your e-mail address:

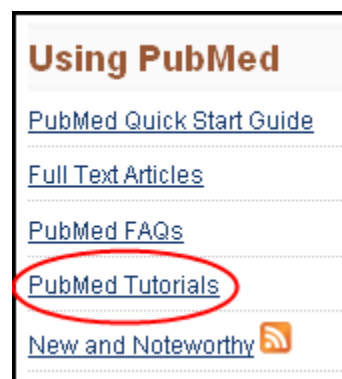
Your FULL name:

Subscription type: ☒ Regular ☐ [MODIGEST]

*Fill in this
information.*

*Click Join
the list
button.*


PubMed Tutorial and Quick Tours



Click on the PubMed Tutorials link on the PubMed home page to get additional instruction on using PubMed.

The Tutorial covers all of the material included in the full-day PubMed class.

The Quick Tours are brief demonstrations of useful PubMed search tips, features and tools.


**United States
National Library of Medicine**
National Institutes of Health


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Home > Training & Outreach > Distance Education Resources


PubMed® Online Training
[Return to PubMed](#)


The [PubMed Tutorial](#) is based on the NLM's one-day [PubMed training course](#).


**Hot Topics**

- [How PubMed processes a search](#) (Automatic Term Mapping)
- [How to find a specific citation](#)
- [How to build a multi-part search](#) (Search Builder)

Quick Tours 
The following are brief [animated tutorials](#) with audio for using PubMed. Running times are rounded to the nearest minute. Click on the link to launch the tour.

Searching PubMed 

- [Search PubMed for an Author](#) (3 min., January 2010)
- [Searching PubMed by Author and Subject](#) (1 min., September 2009)
- [PubMed Simple Subject Search](#) (1 min., January 2010)
- [Search for a Journal](#) (3 min., September 2009)
- [Retrieving Citations from a Journal Issue](#) (1 min., February 2010)

Managing Results 

- [Downloading Results for Use in Reference Management Software](#) (2 min., November 2009)

Getting Help

Contact NLM Customer Service if you need assistance or have questions about PubMed.

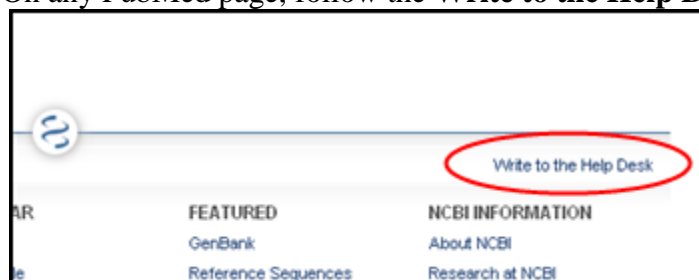
E-mail

custserv@nlm.nih.gov

Toll-Free Phone

1-888-FINDNLM (1-888-346-3656)

On any PubMed page, follow the **Write to the Help Desk** link in the footer:



You will be taken to this screen:

A screenshot of the PubMed Help Desk form. The header includes the NCBI logo and the text 'National Center for Biotechnology Information', 'National Library of Medicine', and 'National Institutes of Health'. The main heading is 'Welcome to the PubMed Help Desk'. Below this are three bullet points: 'Find health and disease information in MedlinePlus', 'Get copies of articles', and 'Write to the PubMed Help Desk'. A note states: 'Please note that we cannot respond to questions about individual medical cases, provide second opinions or make specific recommendations regarding therapy. Those issues should be addressed directly with your healthcare provider.' The form includes fields for 'Subject:', 'Comment, question or suggestion (required):', 'First Name:', 'Last Name:', 'E-mail address (if you want a reply):', and 'Re-type your e-mail address:'. At the bottom are 'Send Message' and 'Clear Form' buttons.