Looking in All the Wrong Places: PubMed for Public Librarians

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Objectives



- Perform basic literature searches in MEDLINE via the PubMed interface using:
 - Limits
 - Field Searching
 - Journals Database
 - Single Citation Matcher
 - Obtain full-text of the articles

Pretest

What do the acronyms NLM and MeSH stand for?

- What is the name of the largest biomedical database in the world?
- What is the difference between MEDLINE and PubMed?

National Library of Medicine

The world's largest biomedical library

- NLM is the producer of:
 - MEDLINE
 - PubMed
 - MedlinePlus.gov
- Visit the National Library's Home Page at:
 - <u>http://www.nlm.nih.gov</u>

What is PubMed?

- Produced by the National Center for Biotechnology Information & the National Library of Medicine
- Accessible worldwide at no charge
- PubMed includes:
 - MEDLINE (1966 to present)
 - In-process & Publisher Supplied citations
 - OLDMEDLINE (1950s to 1965)

What is MEDLINE?

The world's largest biomedical database

MEDLINE covers:

- Medicine
- Dentistry
- Veterinary Science
- Nursing
- Other Biological Sciences



What is MEDLINE?

- 4,800 journals are indexed
- Covers all aspects of biosciences and healthcare

 Database of 14+ million journal citations

What is MEDLINE, continued?

Covers 1966 to the present

 Coverage worldwide, 85% are in English

76% have abstracts

What is MeSH?

MeSH – Medical Subject Headings

- Controlled vocabulary terms
 - Brain Edema, Otitis Media, Myocardial Infarction

Breast Neoplasms

Breast Neoplasms, Male

<u>Mammary Neoplasms</u>

<u>Mammary Neoplasms, Experimental</u>

<u>Phyllodes Tumor</u>

How do I access PubMed?



- Directly at: <u>http://pubmed.gov</u>
- Or, National Library of Medicine's homepage: <u>http://www.nlm.nih.gov</u>

PubMed Screen Layout



PubMed.gov

- Translates lay terms into medical subject headings
 - Heart Attack into Myocardial Infarction
- Links to selected free articles through publishers' web sites
- Most articles are written for health professionals

Subject Searching

Terms (keywords)

heart

heart attack

heart attack surgery

Searching PubMed

Let's use this search:

"I was exposed to asbestos for years at the paper mill. Can that cause gastrointestinal cancer?"



Entering Your Search Terms

Enter terms: asbestos gastrointestinal cancer

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Entrez PubMed	Nucleotide Protein Genome S	Structure OMIM PMC	Journals Books	
Search PubMed	🔽 for asbestos gastrointestinal cano	cer Go Clea	ar <u>Save Search</u>	
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About Entrez				
Text Version	All: 222 Review: 29 🕱			
	Items 1 - 20 of 222	Page 1	of 12 Next	
Entrez PubMed Overview	🔲 1: Luo SQ, Mu SH, Wang JT, Zhang Y, Wen Q	B,CaiSP. R	elated Articles, Links	
Help FAQ Tutorial New/Noteworthy E-Utilities	[A study on risk of malignant neoplasm Sichuan Da Xue Xue Bao Yi Xue Ban. 2005 J PMID: 15702795 [PubMed - in process]	and environmental exposure to an;36(1):105-7. Chinese.	o crocidolite]	
D third One from	2: Reid A, Ambrosini G, de Klerk N, Fritschi L,	<u>Musk B.</u> R	elated Articles, Links	
PubMed Services Journals Database MeSH Database Single Citation Matcher	Aerodigestive and gastrointestinal tract cancers and exposure to crocidolite (blue asbestos): incidence and mortality among former crocidolite workers. Int J Cancer. 2004 Sep 20;111(5):757-61. PMID: 15252247 [PubMed - indexed for MEDLINE]			

How Does PubMed Interpret What You Type in the Box?

- PubMed uses Automatic Term Mapping and maps to:
 - Medical Subject Headings medical terms
 - Phrases
 - Author Name lastname initial(s), e.g., smith j, smith ja
 - Journal Titles full journal title, MEDLINE abbreviation, ISSN

How do you think PubMed searched your terms?

The Details tab

	Entrez Pub	Med	Nucleotide	Protein	Genome	Structure	омім	PMC	Journals	Books
	Search PubMed	ł	🛃 for 🔤	sbestos gas	strointestinal ca	ncer	Go	Clear	Save Searc	: <u>h</u>
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	Order Documents		PubMed							
	NLM Gateway		User query:							
	Consumer Health		asbestos gastrointe	estinal canc	er					

When to Limit?

There are many reasons for refining a search strategy. You may want to:

- Exclude foreign language titles
- Look for articles published within a certain timeframe
- Retrieve articles that focus on women or perhaps just children

A quick glance at the results....

[Square brackets quickly identify foreign language articles.]

	4:	: Sun T, Li L, Shi N, Zhang X.	Related Articles, Links
	F	[A 40-year cohort study on cancer mortality among female workers with manual spinning of chrysotile asbestos; Wei Sheng Yan Jiu, 2003 Nov;32(6):511-3. Chinese. PMID: 14963894 [PubMed - indexed for MEDLINE]	1
	5:	Chen R, Froom P.	Related Articles, Links
S		The CUSCORE test and the q-interval in cluster analyses of colon cancer and of lymphoma among asbestos we Stat Med. 2003 Oct 15;22(19):3101-9. PMID: 12973790 [PubMed - indexed for MEDLINE]	vrkers.
	□6.	Coggiola M, Bosio D, Pira E, Piolatto PG, La Vecchia C, Negri E, Michelazzi M, Bacaloni A.	Related Articles, Links
		An update of a mortality study of talc miners and millers in Italy. Am J. ed Med. 2003 Jul;44(1):63-9. PMID: N 222137 [PubMed - indexed for MEDLINE]	
s.l	7:	: Kishimoto T	Related Articles, Links
0.]		[A case of triple malignancies (gastric cancer, lung cancer and malignant pleural mesothelioma) after asbestos ex Nihon Kokyuki Gakkai Zasshi. 2003 Apr;41(4):304-9. Japanese. PMID: 12795187 [PubMed - indexed for MEDLINE]	posure]
	8	: <u>Cavazza A, Nigrisoli E, De Marco L, Paci M, Annessi V, Agostini L, Gardini G</u>	Related Articles, Links
		[Bronchiolitis obliterans-organizing pneumonia (BOOP) containing asbestos bodies: clinico-pathological study o Pathologica. 2001 Dec;93(6):681-4. Italian. PMID: 11785122 [PubMed - indexed for MEDLINE]	fa case]
	9:	: Muller AM, Fischer S, Neumann V, Muller KM, Fischer M.	Related Articles, Links
		[Association of asbestos fibers and colon cancer: an electron-microscopic study of mineral fiber concentrations : asbestos-exposed and non-exposed patients with and without colon cancer] Z Gastroenterol. 2001 Dec;39(12):993-1000. German. No abstract available. PMID: 11753783 [PubMed - indexed for MEDLINE]	n colon tissue of
		0: Goldberg MS, Parent ME, Siemiatycki J, Desy M, Nadon L, Richardson L, Lakhani R, Latreille B, Valois MF.	Related Articles, Links
		A case-control study of the relationship between the risk of colon cancer in men and exposures to occupations Am J Ind Med. 2001 Jun;39(6):531-46.	l agents.

The Limits tab

Use the **Limits** tab to limit by **Age** Group, **Publication** Type, Specific **date** or date range, **Language**, **Gender** and more...

	Pub	National Library of Medicine		<u>[Sign</u>
4	bMed Nucleotide Protein	Genome Structure	OMIM PMC	Journals
	💌 for asbestos gastrointestinal cancer	Go Clear		
	Limits Preview/Index History Clipboard	Details		
	 Use All Fields pull-down menu to specify a fi Boolean operators AND, OR, NOT must be If search fields tags are used enclose in squar Search <u>limits</u> may exclude in process and publications. 	ield. e in upper case. re brackets, e.g., rubella [ti]. plisher supplied citations.		
7	Limited to:			
	All Fields	🔲 only items with abstracts		
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	Ages 💌	Humans or Animals 💌	Gender 💌	
	Entrez Date 💌			
	Publication Date 👻 From To			
	Use the format YYYY/MM/DD; month and day are option	al.		

Working with Results

- Citations display in batches of 20 with most recent additions on top.
- Use the check boxes to select multiple citations to view
- Click on icons I for more information, such as the abstract

Working with Results

- The **Display** button is used with the following pulldown menus:
 - Summary lets you select other formats, such as Abstract, Brief or Citation format
 - The **Show** and **Sort** offer additional display options
 - Use Send to to print, save, e-mail, order documents or the Clipboard (a temporary holding bin)

Are the actual articles online?

- If and only if:
 - Someone has invested the time and money to publish online
 - You or your library have purchased access to full text



Document Delivery

- NLM's Loansome Doc Ordering System
 - A service that let's users obtain the full-text copies from a medical library
 - For more information go to: <u>http://www.nlm.nih.gov/loansomedoc/loansome_home.html</u>
- Full-Text services via LinkOut
 - A fee will be charge
 - Supplier and price vary per service

A Closer Look at Starting a Search

arch terms en click on (here d National Library of Medicine	My NCBI [Sign In] [Register]
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Nems 1 - 20	of 222	Page 1 of 12 Next
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EA study on fisk Sichuan Da Xue X PMID: 15702795 [F	Add Limits like date,	language,
	publication type, ar	nd more.
	AII: 222 Review: 29 Terms 1 - 20 I: Luo SO, Mu Shi W E [A study on risk Sichuan Da Xue X PMID: 15702795 [F	Arch terms here be a click on Go.



Related Articles

Лed	Nucleotide Protein Genome Structure Ol	MIM PMC	Journals	Books
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Iten	is 1 - 2 of 2			One page.
	: Chin RL, Latov N.		Related A	Articles, Links
	Peripheral Neuropathy and Celiac Disease. Curr Treat Options Neurol. 2005 Jan;7(1):43-48. PMID: 15610706 [PubMed - as supplied by publisher]			
	2: <u>Chin RL, Sander HW, Brannagan TH, Green PH, Hays AP, Alaedini A, Latov N.</u>		Bolotod A	uticlos Links
	Celiac neuropathy. Neurology. 2003 May 27;60(10):1581-5. Review. PMID: 12771245 [PubMed - indexed for MEDLINE]		 Substance Books LinkOut 	s ⊠ via MeSH
	Related Articles – a pre-formulated search strategy to match other PubMed citations that are closely related to the selected citation			



Links to LinkOut

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Lin	nits Preview/Index History Clipboard Detai	ils				
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AII	2 nyamlib: 1 🛠					
Item	s 1 - 2 of 2					One page.
	: Chin RL, Latov N.				Related /	Articles, <mark>Links</mark>
	Peripheral Neuropathy and Celiac Disease. Curr Treat Options Neurol. 2005 Jan;7(1):43-48. PMID: 15610706 [PubMed - as supplied by publisher]					
	: Chin RL, Sander HW, Brannagan TH, Green PH, Hays AP, Alae	edini A, Latov N.			Polated /	vtieloe Links
	Celiac neuropathy. Neurology. 2003 May 27,60(10):1581-5. Review. PMID: 12771245 [PubMed - indexed for MEDLINE]				 Substance Books LinkOut 	via MeSH
	LinkOut – connects you to other resources, e.g., publishers, NLM other organizations	er related resources	s and			



The Clipboard tab

- Lets you keep track of the good ones while you are still searching
- How to:
 - #1: Check the citations to keep
 - #2: Use the **Send** pull-down menu to select Clipboard
 - #3:Click on **Send**.
- Will keep up to 500 records for 8 hours!

Are there other ways to limit your search?

Add additional terms to query box
 copd air pollution

Use Boolean ConnectorsAND, OR, NOT

Combination Searching

• Let's use the search:

"I am looking for an article from a few years ago (maybe 4-5 years ago) by Dr. **Keys** about **cervical cancer** treatment. It was published in the **New England Journal of Medicine**."

Combination Searching

- PubMed uses Automatic Term Mapping and maps the search terms as:
 - keys → keys[All Fields]
 - cervical cancer → "cervix neoplasms" [MeSH Terms]
 - new england journal of medicine → "N Engl J Med"[Journal]

Advanced Searching

Let's use this search:

"My child has celiac disease. I understand that Dr. Chin has done research on the neurological aspects of this and it was published in the journal Neurology."

 We need to search in specific fields for this type of search – adding terms to the query box won't do.

Preview/Index tab

- Preview the number of search results before displaying the citations
- Refine searches by adding one or more terms one at a time
- Add terms to a strategy from specific search fields

Preview/Index tab



Boolean Searching



AND narrows

OR broadens

Boolean Searching, continued:

• Let's use the search:

"A woman heard that there was a study published recently in either JAMA or in the New England Journal of Medicine on the effectiveness of a "virtual" colonoscopy."





Boolean Searching

Use AND, OR, NOT and parentheses:

(jama OR new england journal of medicine) AND virtual colonoscopy

The History tab

- Shows the searches that you have done
- Searches are available for 8 hours if inactivity
- You can combine searches using the search number e.g. #2 AND #6.

The History tab



To combine searches use # before search number, e.g., #2 AND #6. Search numbers may not be continuous; all searches are represented.

Click on query # to add to strategy

- Lists of searches that you have done
- Searches will be lost after 8 hrs of inactivity
- You can combine search using the search number, e.g., #2 and #6

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	neoplasms"[MeSH Terms] OR cervical cancer[Text Word]) AND "N Engl J Med"[Journal]) AND English[Lang] AND "2000/03/02 21.36"[EDAT] : "2005/03/01 21.36"[EDAT] Limits: ignored		
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	▶ OR		
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	▶ Details ▶ Save in My NCBI		

Journals Database

- Sometimes when performing a search, it is difficult to determine the full Journal name.
 You may see something like:
 - Arch Dis Child
 - Methods Find Exp Clin Pharmacol
 - BJOG
 - J Bone Miner Res
 - J Womens Health Gend Based Med

Journals Database Search

Med	Nucleotide	Protein	Genome	Structure	OMIM	PMC	Journals	Books
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1:	Archives of disease in chil	dhood.						Links
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	NLM ID: <u>0372434</u>							
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	eISSN: 1468-2052						PubMed Single Citat	ion Matcher
	MEDLINE Abbr: Arch I	is Child Fetal N	eonatal Ed				▶ NLM Catalo	q
	NLM ID: <u>9501297</u>							-

Single Citation Matcher

Let's use the search:

"I know that there was an article published in **2001** in **JAMA** about the quality of information on the Internet. The researchers used search engines to retrieve health information in English and Spanish. There were a bunch of authors, but I don't know their names. I do know that the words **English** and **Spanish** were in the title. Can you find this?"

Single Citation Matcher

Entrez	PubMed	Nucleotide Protein Genome Structure OMIN	đ
About Entrez		Enter information about the article you wish to find.	
		Journal: jama	
Text Version		Date: 2001	
Entrez PubN	1ed	Volume: Issue: First page:	
Overview Help FAQ		Author's last name and initials (e.g., Smith BJ)	
Tutorial New/Noteworf	thy	Title words: english spanish	
E-Utilities PubMed Ser	vices	Search Clear	
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This new PubMed feature allows you to:

- Save search strategies and set-up automatic email updates
- Select filters that customize and sort your search results

and more...

This feature replaces Cubby



5	S NCBI	Pub	National Library of Medicine	My NCBI I [Sign In] [Register]
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My Reg Sea	NCBI b J ister . / rch link	Display Summary	The sent of the sent of the sent of the sent sent of the sent sent sent sent sent sent sent sen	d to Text



After you sign in, the **Save Search** box displays. 1) **Enter a name for your search** (something meaningful), 2) click **Yes** or **No** for automatic e-mail updates and 3) click **OK** after you have made your selections.

My NCBI - Microsoft Internet Explorer

Save Search

Your search in PubMed asbestos gastrointestinal neoplasms	
Enter a name for your search:	asbestos gastrointestinal neoplasms
Would you like to receive e-mail updates of new search results?	⊙ No O Yes
OK Cancel	





Click on **My NCBI** to update saved searches. Click check boxes to get **What's New** for selected searches. Click on **No Schedule** to get email updates.

Med	My Saved Searches		
	Search PubMed	Last Updated	Details
esources	asbestos gastrointestinal neoplasms	today	No Schedule
arches	🗖 <u>breast cancer</u>	6 days ago	No Schedule
₩ LinkOut)	Asbestos Gastrointestinal Cancer Mr. Jones	4 months ago	No Schedule
: Delivery	Health Literacy Search	19 days ago	No Schedule
erences	Consumer Health Information Search	19 days ago	No Schedule
assword	🗖 gallstones pain	2 years ago	No Schedule
	consumer health on the internet and physicians	2 years ago	No Schedule
	🗖 vitamin c common cold	2 years ago	No Schedule
	What's New for Selected Delete	Selected	



Important My NCBI Note:

Record your user name and password!



EXERCISES

Customer Support & Contact Info

NLM Customer Support



National Library of Medicine

- If you need assistance or have questions, please contact the NLM Help Desk:
 - E-mail: custserv@nlm.nih.gov
 - **Phone:** 1.888.346.3656
- NN/LM Contact Information:
 - National Web site: http://nnlm.gov
 - Your Regional Web site: http://nnlm.gov/mar
 - Phone: 1.800.338.7657

