



Introduction to Medical Search Using Medline

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Outline

- Objectives of literature search
- Search strategy
- Methods of finding relevant literature?
- Electronic Journals
 - Features/Advantages



Literature Search

- Objectives

- What has been published in the area?
- Is my question novel?
- How have similar questions been addressed?

Litreature Search

- What has been published in the area?
 - what is the context of my specific question?
- Is my question novel?
 - how important is my question?
- How have similar questions been addressed?
 - is my approach appropriate?
 - to what extent can comparisons be made?



Litreature Search

- What do we know?
- What don't we know?
- What's the best approach?

Literature

- Several approaches
 - Medline (GENERAL), others
 - Abstracts of proceedings
 - Bibliographic searches
 - Review articles
 - Reference Manager
 - Other



Journals Online

- Most journals have print & Electronic formats
- HTML or PDF
- Personal or library subscription gives you access to both (usually)
- Some journals are free
- Many journals make back issues available for free
- Wealth of accessible information on line



Medline Search

- Good for:
 - Comprehensive search
 - Latest publications
 - State of the art approaches



What is Medical Search?

Medical Search

- Helps in collecting medical information needed in the medical researches.
- Helps physicians maintain the level of their clinical skills, which tend to decline with time.
- Helps in learning more quickly about advances in medical diagnosis and therapy.

Medical Search

- The World Wide Web is triggering a large growth in the amount of medical information that is potentially freely available to practicing physicians quickly.
- Medical information is often difficult to find on the World Wide Web.
- The Major problem while searching for medical information on the World Wide Web is the presence of much noise, resulting from the varying values of the published information.



MEDLINES

- MEDLINE, the National Library of Medicine's premier bibliographic database, standing in contrast with the potentially larger usefulness of the Web, given that it presents full-text information instead of just abstracts.
- The primary source in the U.S for information from biomedical literature.
- The single most important research tool for physicians, nurses and health personnel.

Scope of MEDLINE

- It has Most of the citations published in English language.
- All references appearing in:
 - Index Medicos
 - Index to Dental Literature and
 - International Nursing.



Biological Database

- A Biological database is a large, organized body of persistent data, usually associated with computerized software designed to update, query, and retrieve components of the data stored within the system.
- A simple database might be a single file containing many records, each of which includes the same set of information.



Biological Database

- For researchers to benefit from the data stored in a database, two additional requirements must be met:
 - easy access to the information
 - a method for extracting only that information needed to answer a specific biological question
- There are many databases available in the internet some have free articles
 - E.g. www.Diabetes.org/diabetes
 - some of have ordered articles, and most have only the abstracts:



Search Strategy

- Developing a Search Strategy:
 - Before you can search for any information, you should first develop your search strategy.
- What is a Search Strategy?
 - A search strategy is a plan that helps you look for the information you need.



Search Strategy Tips

- Determine your goal from the search
- Determine the scope of the search
- Identify the key concepts
- Key words
- Determine the name of the database you need to search in.
- Determine alternative terms for these concepts, if needed.



Search Strategy Tips

- Refine your search to dates, study groups, etc., as appropriate.
- Practice helps. Strategies and styles will differ according to personal choice and professional discipline.
- Specify the field of the search even the author, Journal name, or certain topic.

Search Tips

Truncation:

- Truncation can be used when you want to find all terms that begin with a given text string.
- Truncation is represented by the asterisk (*), sometimes referred to as a "wildcard."
- For example, let's say you are trying to search all terms that have the root, mimic.
- If you search mimic* you will retrieve words such as mimic, mimics, mimicing, etc. PubMed has no single character truncation symbol.

Truncation (*)

- This search method is also called a wild card or root word search.
- If you type an asterisk after the root of the word you want to search, the search engine will find all records containing words beginning with that root.
- Use this tool if you are unsure of spelling or if you want to include plural forms of search terms.
 - Example: chem* -- searches for "chemical," "chemicals," "chemistry," "chemotherapy," etc.
- Please note that left and internal truncation cannot be used -
- the system ignores all letters to the right of the truncation symbol (*).



Limitation Result

To limit the search result you can use the following tools:

- Boolean operators with combination words
- Specify date
- Specify the journal
- Specify the author.



Introduction to Boolean Logic

- **Boolean logic** symbolically represents relationships between entities.
- Boolean operators allow you to combine terms (or text strings) in your search.
- These operators can be used within individual fields, or as a tool to combine terms across more than one field.



Boolean Operators

- Boolean Operators:
 - Boolean operators:
 - And
 - Or
 - Not

Boolean Operators

- **AND**

The default operator is and -- if an operator is not specified by the user, and will automatically be used by the system. Records retrieved must contain all search terms surrounding the and operator.

- Example: typing: Pediatric AIDS treatment -- searches for records containing "Pediatric" and "AIDS" and "treatment" (i.e. all the terms must be present).
- Example: typing pediatric and AIDS and treatment -- is the same search as above.

Boolean Operators

OR

- Use the OR operator to retrieve documents that contain at least one of the specified search terms.
- Use OR when you want to pull together articles on similar subjects. The or operator tells the system to search for records that contain either of the search terms entered into the field (or to combine the fields on either side of it
 - Example: cancer or oncology -- searches for records containing either "cancer" or "oncology."



Boolean Operators

NOT

- Use the NOT operator to exclude the retrieval of terms from your search.
- The not operator tells the system to eliminate any records from the search that contain a given term.
 - Example: `pediatric not AIDS` -- searches for records which contain "pediatric" but not "AIDS."

Precedence

- You can tell the search engine to execute search commands in a particular order by using parentheses.
- This works like the rules for math problems. For example, in the equation $(4+3) \times 2$, you first add 4 and 3 to get 7, and then multiply 7 by 2.
 - Example: ((AIDS or HIV) and Microbiology) not Tropical -- will search for records with either "AIDS" or "HIV" and containing the term "Microbiology," and then will limit this set of records to those that do not contain the term "Tropical."

Name Searching

The methods by which to search on author names are as follows:

- Using only a last name:
 - Example: ruiz -- searches for all records by "ruiz" with any first name.
 - When a first name or initial is available, also use the Initial(s) field.
 - Example: typing ruiz in the Last Name box and m in the Initial(s) box -- searches for all records by "Ruiz" with a first name beginning with m.
- Multiple authors names can be searched (using the Advanced Search option only) in the following ways:

Name Searching

- **A word of caution about NOT:** Be careful when using this operator as you may eliminate relevant articles. In this search, we have eliminated the citations about this condition in children but may have also eliminated citations that discuss both children and other age groups.

for	<input type="text" value="e-coli AND hamburger"/>	<input type="button" value="Go"/>	<input type="button" value="Clear"/>
for	<input type="text" value="football OR hockey OR soccer"/>	<input type="button" value="Go"/>	<input type="button" value="Clear"/>
for	<input type="text" value="lead poisoning NOT children"/>	<input type="button" value="Go"/>	<input type="button" value="Clear"/>

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Boolean Logic

Boolean logic search rules and syntax :

- Boolean operators: AND, OR, and NOT, must be entered in UPPERCASE.
- Boolean connectors processed in a left-to-right sequence.
- the order of search statement can be changed by enclosing, that is nesting, an individual concept in parentheses.
- The terms inside the parentheses will be processed as a unit and then incorporated into the overall strategy.

Result Fields

- Title [*ti*]: Article title
- Author [*au*]: Author name
- Journal Name [*jn*]:
- Volume [*vi*] Page [*pg*], and Year.
- example, *page 552 of volume 120 in the Journal of Endocrinology.*
- Abstract [*AB*]: The AB field contains abstracts, or summaries taken directly from the published article.

Getting the Result

After searching the Medline and get the result you can either:

- Download the article text (Free or paid).
- Print it (If available in the site).
- Order it by mail.
- Some sites give you only the abstract of the articles then you have to search for it in the University or Hospitals Libraries.

http://medline.cos.com/ Search Screen

Search MEDLINE - Microsoft Internet Explorer

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Address http://medline.cos.com/cgi-bin/search Go

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Search MEDLINE

Clear the fields Do the search

<u>Date Range:</u>	in-process 2004 2003 2002 2001	<u>Unique Identifier</u>					
and	<u>Full Text</u>						
and	<u>Title</u>						
and	<u>Author</u>	Last name:	Initial(s):				
and	<u>Institutional affiliation</u>						
and	<u>Journal Name</u>						
and	<u>Abstract</u>						
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and	<u>Volume</u>	and	<u>Page</u>	and	<u>Year</u>		
and	<u>Language</u>	African Bulgarian			and	<u>Type</u>	CLINICAL TRIAL COMMENT

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Searching the Libraries

Using the result fields you can search for the full article in the library:

- First, you have to check if the journal available in the library through searching the library index.
- Second, check the year and the volume of the journal.
- Third, check the place of the journal in the library (Row and Shelf)
- Fourth, if you get the journal check the page numbers you have and check the title of the article then copy it.



Required Bibliographic Information

- **Journal Article**

- Authors (add all author names)
- Article title
- Journal title
- Year of publication
- Volume (plus issue if available)
- Start and end pages

- **Conference Proceedings**

- Authors (add all author names)
- Title of paper
- Editors or proceedings (add all editor names)
- Conference title
- Date of conference
- Place of publication
- Publisher name
- Year of publication
- Start and end pages

Required Bibliographic Information

- **Book**

- Authors or editors (add all names)
- Book title
- Year of publication
- Publisher name
- Place of publication
- Edition (if not first edition)

- **Book chapter**

- Authors or editors of chapter (add all names)
- Title of chapter
- Authors or editors of book (add all names)
- Title of book
- Year of publication
- Publisher name
- Place of publication
- Edition (if not first edition)
- Start and end pages of chapter