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What is MEDLINE®?

MEDLINE provides authoritative medical information on medicine, nursing, veterinary medicine, the healthcare system, dentistry, pre-clinical sciences and much more. Created by the National Library of Medicine (NLM), MEDLINE uses MeSH (Medical Subject Headings) indexing, tree hierarchy and explosion capabilities to search abstracts from over 4,600 current biomedical journals. Included are citations from Index Medicus, International Nursing Index, Index to Dental Literature, PREMEDLINE®, AIDSLINE®, BIOETHICSLINE®, and HealthSTAR®.

What is EBSCOhost®?

EBSCOhost is a powerful online reference system accessible via the Internet. It offers a variety of proprietary full text databases and popular databases from leading information providers. The databases range from general reference collections to specially designed, subject-specific databases for public, academic, medical, corporate and school libraries.

System Requirements

To effectively use EBSCOhost features, the minimum browser requirements are Internet Explorer 6.0 or higher, Firefox 2.0 and higher, and Safari 2.0 or higher. Javascript and Cookies must be enabled and the recommended screen resolution for EBSCOhost 2.0 is 1024 x 768.

Note: You must have Adobe Acrobat® installed to view the PDF Full Text files.

Choosing Databases to Search

To search a single database – Click directly on the database name link, e.g., MEDLINE. The default search screen appears.

To search several databases – Check the box located to the left of each database you want to search. Click Continue. The search screen appears.

Database Help

To obtain help for the database(s) you are searching, click the Help icon to the right of the database name or databases drop-down list. From the Choose Databases Screen, click the More Information link below the Database description.

From the Choose Databases Screen, the Title List link connects to the Publication Authority File.
Using the Toolbar

EBSCOhost® offers a toolbar for functions that are available at all times during a search session.

The function of each toolbar feature is explained throughout this guide.

Using the Toolbar

- **View Folder** – This will display results placed in the folder. *(Note: If you are not signed in to My EBSCOhost, your folder items will be cleared when the session ends.)*

- **New Features** – The Try New Features link provides an innovative way to learn about the features and functionality available on EBSCOhost. When the library administrator activates “New Features,” the New Features link will display in the top toolbar on EBSCOhost. You can visit the New Features Screen, try out selected features for your session, learn about additional features that are already active, and read about features that will be “coming soon.”

- **Ask-A-Librarian** – When the Ask-a-Librarian link appears on the interface, you can click the link, and EBSCOhost displays an e-mail form. Enter your name, e-mail address, a subject line, and your question. If you have Search History available, you can mark the check box to indicate that your Search History should be included with the e-mail.

- **Help** – This link opens the Online Help.

- **Exit/Home Library** – This link appears only if no home library graphic and URL are available. Click Exit to log out of EBSCOhost.

- **Home Library Graphic** – Click on the library graphic or logo to return to the library home page.

The Toolbar is available on all search screens and will vary depending on the database and features your library administrator selects. The Keyword, Publications, MeSH and Indexes authority file buttons are displayed on the toolbar on both the Basic and Advanced Search Screens.

If enabled in Preferences, a Language drop-down list allows you to translate the search screens, tabs, buttons and citation field descriptors into Spanish, French, German, Italian, Portuguese, Russian, Korean, Japanese, Simplified Chinese, Traditional Chinese, and Greek. Preferences are available by clicking the Preferences link below the Find field.

Search Screens

From the links below the Find field, you can select the Advanced Search Screen as well as Visual Search. To choose the Basic Search screen, click the EBSCOhost logo found to the left of the Find field. You will be returned to Basic Search and your search terms will be cleared.
Using the Basic Search Screen

Performing a Basic Search

To perform a search, enter your term(s) in the **Find** field and click **Search**. Click **Clear** to remove any term(s) in the **Find** field. The **Clear** button does not remove any limiters selected from the Refine Search Tab.

You can use Boolean operators, field codes, truncation (*), wildcard (?) and quotation mark search phrasing when performing a Basic Search. All results are in reverse chronological order, beginning with the most current item. Boolean Search techniques are explained in the next section.

If you wish to refine your search, you can view available Search Modes, limiters, and expanders by clicking the Search Options link below the find field.
Refine Search Options
Limiters and Expanders can be used to focus or broaden a search.

Limiters: Examples of limiters include: Linked Full Text, Date of Publication, Human and Gender.

Expanders:

- **Also search within full text of the articles** expands search results by searching for term(s) within the full text of the articles.
- **Apply related words** expands the search results to include synonyms and plurals of search term(s).

Note: The Reset button will clear all items selected from the Refine Search Tab.
Using the Advanced Search Screens

The library administrator chooses one of three available Advanced Search Screen styles: Single Find Field, Single Find Field with Search Builder, or Guided Style. All three Advanced Search Screens have the following options available:

- **Limiters**: Examples of limiters for MEDLINE include: Linked Full Text, Date of Publication, Human and Gender.

- **Expanders**: Also search within the full text of the articles and Apply related words.

- **Special Limiters** are database-specific and will appear in separate sections when you conduct a multi-database search.

Suggest Subject Terms

On any of the three Advanced Search Screen styles, you can enter search terms in the **Find** field and mark the **Suggest subject terms** check box to the right of (or above) the field. When you click **Search**, the MeSH authority file is searched, with the most relevant terms displayed.

Advanced Search: Single Find Field

To perform a Single Find Field search:

1. From the default search screen, click the **Advanced Search** Tab.
2. In the **Find** field, enter keyword(s).
3. Apply limiters or expanders, using the Refine Search Tab.
4. Click **Search**. A Result List is displayed.

In the Single Find Field, you can combine terms with Boolean operators on a single line (command line searching), e.g., **arthritis and exercise and pain**.
Advanced Search: Single Find Field with Search Builder

Single Find Field with Search Builder allows you to combine keywords, search fields and a Boolean operator with any existing text in the Find field.

**Note:** If there is no existing text in the Find field, the Boolean operator selection is ignored.

Each time you click Add to Search, the new terms are surrounded by parentheses.

**To perform a Single Find Field with Search Builder search:**

1. Type *lung OR pulmonary* in the Find field.
2. Type *failure* in the Term(s) field.
3. Choose AND as the Boolean operator.
4. Click Add to Search.

These steps result in: *(lung OR pulmonary) AND (failure).*
Advanced Search: Guided Style Find Fields

Guided Style Find Fields provides fill-in-the-blank keyword searching to aid in complex or specific searches.

To perform a Guided Style Find Fields search:
1. Enter a search term in the first Find field.
2. Choose the Field to search from the drop-down list.
3. Select a Boolean operator to combine the next term.
4. Enter another term in the next Find field.
5. Choose the Field to search from the drop-down list.
6. Click Search. A Result List is displayed.

Using Guided Style Find Fields, you can also combine terms together on a single line. For example, type kidney OR lung for results containing the word kidney or lung.
Search History/Alerts Tab

From the Result List you can save, retrieve or reuse your basic and advanced searches. You can view these searches from the Search History/Alerts link below the Find field. New searches can consist of combined or modified searches.

The following items are present in the Search History/Alerts Tab:

- **Combine searches with** – Choose the Boolean operator to use when combining searches.
- **Add to Search** – Click on the box to the left of any search you would like to include in a new search.
- **Search ID #** – This column contains the number assigned to each of your searches. You can conduct a search by entering the search ID number and prefix (S) in the Find field and clicking Search. (For example, S1 or s3.)
- **Search Terms** – This column contains the search terms entered in the Find field, including any field codes and Boolean operators.
- **Search Options** - The limiters and expanders used in the search are listed here.
- **View Results** – The total number of search results is shown here. When you click on this number, the Result List for the search appears. Searches that do not produce results are included in the Search History and display a zero in this column. When you change or add databases, searches saved in the current database display question marks in the Display Results column.
- **Revise Search** – When you click on the Revise link, the search terms are displayed in the Find field. Edit the search by changing terms manually, entering field codes or adding limiters or expanders.
- **Delete** – To remove a search string, click on the X button next to it.

Your Search History includes the searches from the current EBSCOhost® session that used the Basic or Advanced Search Screen. When your session ends, the Search History is deleted.

If you change databases, your Search History will be saved.
Search Techniques

Boolean Searching

Boolean logic defines logical relationships between search terms. The Boolean search operators AND, OR and NOT allow you to broaden or focus your search results.

- The **AND** operator combines search terms so that each result contains *all* of the terms. For example, *kidney AND lung* will result in articles that contain both *kidney* and *lung*.

- The **OR** operator combines search terms so that each result contains *at least one* of the terms. For example, *blood OR plasma* will result in articles that contain either *blood* or *plasma*.

- The **NOT** operator excludes search terms so that each result *will not contain any* of the terms that follow it. For example, *blood NOT vein* will result in articles that contain the term *blood*, but not the term *vein*.
The Wildcard (?) and Truncation (*) Symbols

Use the wildcard and truncation symbols in searches using terms with unknown characters, multiple spellings or various endings.

**Note:** *Neither the wildcard nor the truncation symbol can be used as the first character in a search term.*

- **The wildcard** is represented by a question mark (?). To use the wildcard, enter the search terms and replace each unknown character with a ?. EBSCOhost will provide results containing variations of that character set, with the ? replaced by a letter.

  For example, type ne?t to find all citations containing neat, nest or next. EBSCOhost will not find net because the wildcard replaces a single character.

- **Truncation** is represented by an asterisk (*). To use truncation, enter the root of a search term and replace the ending with an asterisk (*). EBSCOhost will find all available forms of that word.

  For example, type hemat* to find the words hematocrit or hematoma.
Proximity Search

A Proximity Search produces results with two or more terms that appear a specified number of words (or fewer) apart in the database(s). The proximity operator is composed of a letter (N or W) and a number (to specify the number of words), placed between search terms.

- **Near Operator (N)** - N5 will find a result if the terms are within five (5) words of each other, regardless of the order in which they appear.
  
  For example, type **kidney N5 failure** for results that contain **kidney failure**, as well as **failure of the kidneys**.

- **Within Operator (W)** - W8 will find a result if the terms are within eight (8) words of each other, in the exact order entered.

  For example, type **kidney W8 failure** for results that contain **kidney failure**, but not **failure of the kidneys**.

Grouping Terms Together Using Parentheses

Parentheses can be used to control a search query. Without parentheses, a search is executed from left to right. However, words enclosed in parentheses are searched first.

Why is this important? Parentheses allow you to define the way the search will be executed. The left phrase in parentheses is searched first; then, based upon those results, the second phrase in parentheses is searched.

**Generalized Search:** heart or lung and blood or oxygen

**Focused Search:** (heart or lung) and (blood or oxygen)

In the first example, the search will retrieve results on **heart**, as well as references to the terms **lung** and **blood**, and everything on **oxygen**.

In the second example, parentheses control the query to only find articles about **heart or lung** that reference **blood or oxygen**.

Command Line Searching

Command Line Searching can be used to conduct searches on either the Basic or Advanced Search Screen. Manually entering Boolean expressions and field codes in the search field will produce the same results as using the drop-down lists to build a search.

For example, typing **AU Sullivan** will produce results that include **Sullivan** in the article’s **Author** citation field. Typing **AU Sullivan and JN Health Bulletin** will produce results that include **Sullivan** in the **Author** citation field only if they are from the journal **Health Bulletin**.

The **Explode** feature for subject terms can be included in a command line search, using the desired MeSH field code headings such as **MH**, followed by the search term, then a +. For a list of searchable field codes, click the **Database Help** icon to the right of the Database name. **Subheadings** can also be searched enter the **MeSH Heading** followed by /subheading two letter acronym/subheading two letter acronym. **MH Heart Disease+/dt/dh/pc** etc. **Free floating subheadings** can be searched use the MeSH Heading Field code followed by the two letter acronym for the subheading. **MW ae**
Toolbar Options

As an alternative to keyword searching, EBSCOhost® offers the capability to search a database by browsing a list of Publications, MeSH and Indexes.

Searching by Publication

The Publications Authority File lists the information contained in a database according to journal name. You can browse a list of publications or perform a search on several publications in a specific database.

To browse the Publications Authority File:

1. Click the Publications toolbar link. The Publications Authority File appears, with the beginning of the list displayed.
2. From the Publications Tab, enter your search term(s) in the Browse for field. You can enter all or part of a publication name, for example, Pediatrics.
3. Select a search type by clicking the radio button next to:
   - Alphabetical – Finds journals beginning with the letters you entered. Results are displayed in alphabetical order.
   - Relevancy Ranked – Display publication titles containing the term you entered.
4. Click Browse to view your terms as they appear in the Publications Authority File. A Result List is displayed.

Click on the name of the publication to view the journal title, journal title abbreviation, ISSN and NLM Journal ID.

Place a check mark next to the title and click Search to view all articles from that publication.

To search for several publications at the same time:

1. With the Publications Result List displayed, select the title of the first journal by placing a check mark in the box to the left of the title.
2. Type the name of the second publication in the Browse for field.
3. Click Browse.
4. Select the second title by placing a check mark in the box to the left of the title.
5. Click Search.
Searching MeSH

Medical Subject Headings (MeSH) is the National Library of Medicine’s controlled vocabulary thesaurus. Each bibliographic reference is associated with a set of MeSH terms that are assigned to describe the content of an article. There are more than 19,000 main headings in MeSH, as well as thousands of cross-references that assist in finding the most appropriate MeSH heading. MeSH terms are arranged in a hierarchy, or “tree structure,” that permits searching at various levels of detail, from the most general to more narrow levels to find the most precise terms. MeSH records include indexing annotations, tree numbers, scope notes, entry vocabulary, history notes and allowable qualifiers. MeSH headings can be exploded to retrieve all references indexed to the term, as well as all references indexed to any narrower term(s). Searches can be limited to Major Headings, where MeSH headings indicate the main focus of an article. Searches can also be qualified with specific subheadings to increase precision. Subheadings and their abbreviations can be found by clicking on the Database Help link, above the Find field on the search screen.

To browse MeSH:

To browse a list of subject headings available in the database, click the MeSH link on the toolbar. A new thesaurus-specific Browse Screen is displayed.

Enter search terms in the Browse for field. Select either the Term Begins With, Term Contains or Relevancy Ranked radio button and click Browse. A list of headings is displayed. As you select headings, mark Explode or Major Concept.

To display a list of results that match your search terms, click Search Database.

- **Term Begins With** – Enter a term in the Browse for field and choose Term Begins With. An alphabetical list is displayed.

- **Term Contains** – Enter a term in the Browse for field and choose Term Contains. The search term appears first, followed by terms that contain the word in alphabetical order.
• **Relevancy Ranked** – Enter a term in the **Browse for** field and choose **Relevancy Ranked**. The exact match for the term appears first in the list, followed by the relevanity ranked list.

Explode

When you **Explode** a term, you create a search query that expands on the subject heading. The headings are exploded to retrieve all references indexed to that term, as well as all references indexed to any narrower terms.

In a database with a tree, such as MeSH, exploding retrieves all documents containing any of the terms below the term selected in the tree. If a plus sign (+) appears next to a narrower or related term, there are narrower terms below it.

**Major Concept**

When you select **Major Concept** for a term, you create a search query that returns only those records for which the subject heading is a major point of the article. Searches are limited with specific qualifiers (subheadings) to improve the precision of the search, and limited to major subject headings to indicate the main concept of an article.

**Combining Explode and Major Concept**

If you select Explode and Major Concept, you retrieve all references indexed to your term (and its narrower terms) and all articles for which the subject heading is a major point of the article.
Searching by Indexes

Browse a list of indexes to view the database’s citation fields.

**Note:** Unless otherwise specified by your library administrator, Index Browse is only available from the

To search by Indexes:

1. Click the **Indexes** toolbar link.
2. Choose the field you would like to view from the drop-down list.
3. Enter search terms in the **Browse for** field.
4. Click **Browse** to view resulting search terms in alphabetical order, beginning with your selected term.
5. Click the box next to the term you want to select. Repeat steps 2-4 to add more items to the **Browse for** field.
6. Click **Search** to view the results.
Result List Features

The Result List displays the search results sorted by relevance and the total number of results above and below them, on the left side. You can sort the results by Date, Source, or Relevance using the Sort by: drop-down list.

- **Navigation Arrows** – In a Result List, navigation arrows allow you to access the next or previous page of results. The numbers allow you to go directly to a specific page.

- **Linked Full Text** – If enabled, Linked Full Text will bring you to the full text article, if available from alternate sources, e.g., other EBSCOhost® databases you subscribe to, EJS, or CrossRef.

- **Add** – The Add to Folder option allows you to add one or all results on the page to your folder.

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Persistent Link to Searches

Once a search has been performed, you can add a persistent link to a search to the folder. The link to a search can be e-mailed or saved and will allow you to conduct the search again by clicking on the link, or entering it in the address field. To add a link to your folder, click the Alert/Save/Share link in the upper right corner of the result list and then click Add search to folder link in the resulting pop-up menu.

To copy a persistent link to the current search on the screen, click the Alert/Save/Share link. Highlight the Permalink in the link field in the resulting pop-up menu and copy using your browser's copy function. You can immediately paste the link into a web site, document or e-mail.
Detailed Citation Features

- **Arrows** – The arrows to the left and right of the record number allow you to navigate to the previous or next result.
- **Result List** – Clicking this link will return you to the Result List.
- **Refine Search** – Clicking this link allows you to apply limiters and expanders to your search.
- **Print/E-mail/Save/Export/Cite/Folder** – These icons allow you to Print, E-mail or Save the current result, Export your citations in a variety of bibliographic manager formats, get a citation in various formats and add the article to the folder or access the folder.
- **Find Similar Results** – When this link appears, you can click the link to perform a search for articles with similar subject headings. A new Result List will display.
The following items may change, depending on the item selected:

- **Title** – The English language title of an article.
- **Transliterated Title** – The title of a foreign language article in the original language.
- **Author(s)** – Author names in the format: last name followed by one or more initials, or first name.
- **Corporate Author** – Corporate author or group names with authorship responsibility.
- **Author’s Address** – Institution of affiliation or address of the first author.
- **Source** – Source information includes the journal title, journal title abbreviation, date of publication (format varies), volume, issue/part/supplement, and pagination.
- **Pub. Type** – The type of publication, as assigned by NLM indexers, to describe the article.
- **Language** – The publication language of an article.
- **Journal Info** – Country of Publication - The country of publication for this journal; NLM ID - National Library of Medicine Unique ID number; ISSN - International Standard Serial Number of the journal; Subsets - The journal subset code assigned to specific subsets of journals.
- **MeSH Heading** – Medical Subject Headings (MeSH) used by indexers at the NLM to describe the content of an article. Major headings or subheadings are identified by an asterisk (*). Click the headings to search that term; click the subheadings to search the headings/subheading pair.

**Note:** PreMEDLINE records, also called ‘in process’ records, have not been assigned MeSH headings.

- **Personal Name as Subject** – A named individual who is the subject of biographical information, an obituary, or an entire article.
- **Abstract** – A short summary written by the author and taken directly from the published article. There are no abstracts for pre-1975 records.
- **Comments** – A cross-reference between an article, and subsequent comments about the article, that may include the PMID of the referenced article.
- **Grant Information** – Grant or contract numbers, grant abbreviation, and institute acronym that designates financial support by any agency of the US PHS (Public Health Service).
- **Contributed Indexing** – MEDLINE now includes unique records contributed by select agencies. Information may include Indexing Agency, Local ID #, Investigator, Space Flight Mission, Keywords, Note and Local Abstracts.
- **Gene Symbol** – The symbol or abbreviated form of the gene name as reported in the article. This field was entered into MEDLINE from 1991-1995.
- **Molecular Sequence** – Identifies a secondary source that supplies information, e.g., other data sources, databanks, and accession numbers of molecular sequences discussed in articles.
- **CAS Registry #** - The Chemical Abstracts Service (CAS) registry number or the Enzyme Commission number for a compound mentioned in an article (the generic compound name may be included). This field was added to MEDLINE in 1980.
- **Revision Date** – The date a change was made to a record during a maintenance procedure.
• **Entry Date(s)** – Date Created is the date processing began, or the date of entry into PreMED. Date Completed is the date processing ended, or the date of entry into MEDLINE. In-process records (PreMEDLINE) will contain a Date Created, but not a Date Completed.

• **Citation ID(s)** – PMID is the primary unique number assigned to each PubMed citation. MEDLINE UI was the primary ID assigned to each citation prior to 2001, and was discontinued in 2003.

• **Persistent Link to this Article** – A link to an article that can be e-mailed or saved, and will allow you to retrieve the same article again by clicking on the link or entering it in the address field.

• **Database** – Identifies from which database the article was retrieved.