Searching PubMed® with MeSH®

The National Library of Medicine's (NLM) **Medical Subject Headings (MeSH)** is the controlled vocabulary used for indexing articles for the MEDLINE® subset of PubMed. MeSH terminology provides a consistent way to retrieve information where several different terms may be used for the same concept.

MeSH Features

MeSH contains over 25,000 descriptors. It is updated weekly and reviewed annually.

- Search **Indexed for MEDLINE** citations (90% of the PubMed database) using MeSH terms
- Limit searches to citations where the MeSH term is the major focus of the article
- Broaden/Narrow a search using the MeSH hierarchy
- Use subheadings to build complex and focused search strategies
- Focus searches using other types of MeSH terms including publication types [pt], pharmaceutical actions [pa], or substance names [nm]
- Access the MeSH Browser for annotations: **http://www.nlm.nih.gov/mesh/**

NOTE: MeSH terms apply only to **Indexed for MEDLINE** citations. Other types of citations (e.g. **as supplied by publisher**) cannot be searched using MeSH terms.
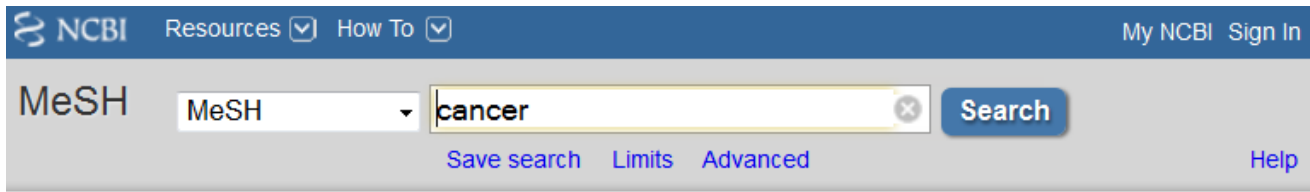
Major Topic Headings

Subject analysts examine each article and assign the most specific MeSH terms applicable, typically ten to twelve per citation. In PubMed, the major topic is represented by an asterisk.

To view MeSH terms for a selected article in PubMed, click on the **MeSH Terms**, etc. plus button below the citation in the abstract format.

In the MeSH Database, use **Restrict to MeSH Major Topic** to limit a search to citations where the heading is the major focus of the article. The term added to the search builder will be followed by [MAJR] (e.g. "Neoplasms"[Majr])

Subheadings

Subheadings are used to help describe more completely a particular aspect of a subject. In the MeSH database, subheadings logically paired with the main heading are presented. In the example above, **methods** is the subheading.

In the MeSH Database, check the appropriate subheading box(es), then use the **Add to search builder** button with **OR** to build a search.

In this example, the search would include:
("Neoplasms/analysis"[Mesh] OR "Neoplasms/epidemiology"[Mesh])

Advanced Searches with Field Tags

Search **PubMed** directly by using specific MeSH headings, subheadings and other qualifier codes; case does not matter. For the complete list, visit PubMed **Help** and the **Search Field Descriptions and Tags** link.

- MeSH Heading: **[mh]** or **[MeSH]** may be added to a term to restrict a search to only MeSH terms (e.g. knee [mh])
- Subheadings: Two letters may be used for subheadings. Therapy is **th**; so cancer/therapy and cancer/th are equivalent searches. Use only one subheading per term; combine additional subheadings by using **OR** (neoplasms/th OR neoplasms/an). A search may also "free float" headings [mh] and subheadings [sh] (e.g., hypertension [mh] AND toxicity [sh])
- Do Not Explode: use **[mh:noexp]** or **[sh:noexp]** to restrict searches to articles focusing on the broadest MeSH term
- Major Topics: use **[majr]** to restrict a search to citations where the term is the major topic or focus of the article. This may be used with *Do Not Explode*: **[majr:noexp]**

Assistance and Training

Help and **Tutorials** links are in PubMed and the MeSH database. Find additional information in the **MeSH Browser** at: **www.nlm.nih.gov/mesh/.**

MeSH   MeSH   ▾   cancer   ⊗   **Search**

Save search   Limits   Advanced   Help

Display Settings: ⊡ Summary, 20 per page   Send to: ⊡   **PubMed search builder**   ▲

Search PubMed with the MeSH Database

Access MeSH in PubMed from the drop-down menu OR click on **MeSH Database** from the PubMed homepage or Advanced search**.**

Enter a topic into the Search bar and click the **Search** button. Possible results include: a single fully displayed term (e.g. prognosis), several terms (e.g. measles) or a related term (e.g. cancer in this example).

☐ Neoplasms
1. New abnormal growth of tissue.
    Year introduced: /diagnosis was NEO

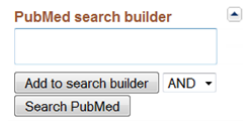Note: Always verify that the definition of the term matches the expected definition.

Refine a Search

The MeSH Database offers options to clarify and focus searches. Click the selected MeSH title (neoplasms); the fully displayed term includes:

- Definition or scope note, usually including the year introduced
- Check boxes include:
  o Subheadings
  o Restrict Search to MeSH Major Topic
  o Do not include MeSH terms found below this term in the MeSH hierarchy
- **Entry Terms** (similar terms used by an author)
- **See Also** related and linked terms
- **MeSH hierarchy** of linked terms

Combine MeSH Terms

Use the PubMed search builder to combine multiple MeSH terms and subheadings.

PubMed search builder   ▲

[   ]
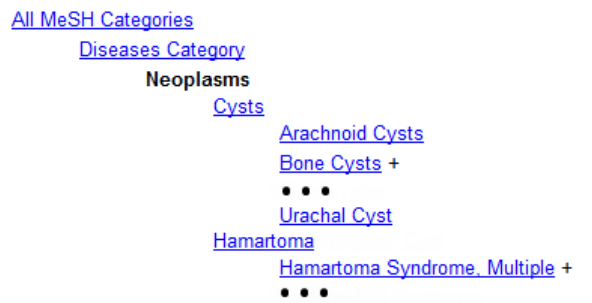
[Add to search builder] [AND ▾]
[Search PubMed]

1. Check the boxes of the desired MeSH terms, subheadings and/or restrictions
2. Click the **Add to search builder** button and select either AND, OR or NOT from the drop-down menu
3. Continue to search for and add terms
4. Make any necessary changes to the parentheses and Boolean terms in the search box to clarify the search
5. When all desired terms have been added and the search has been checked for accuracy, click **Search PubMed**

Recommended: do complex searches in pieces. Send groups of terms separately to PubMed. Combine the terms using the Search History under the Advanced search link.

The MeSH Hierarchy

MeSH terms are arranged hierarchically by subject categories with more specific (narrower) terms arranged beneath broader terms. PubMed automatically explodes searches to include *all* narrower terms.

Thus, a search for **neoplasms** will include all articles which focus not only on the main term, neoplasms, but also focus on narrower terms such as **urachal cyst**.

All MeSH Categories
   Diseases Category
      Neoplasms
         Cysts
            Arachnoid Cysts
            Bone Cysts +
            ● ● ●
            Urachal Cyst
         Hamartoma
            Hamartoma Syndrome, Multiple +
            ● ● ●

Check **Do not include MeSH terms found below this term in the MeSH hierarchy** for articles focusing only on the main term and eliminating those focusing on narrower terms.

NOTE: The MeSH hierarchy may also be used to identify related broader or narrower terms to help focus a search or to find additional search terms. Click on terms to access and use them in a search.

Use Related Information

Related information ▲
PubMed
PubMed - Major Topic
Clinical Queries
NLM MeSH Browser

Search MeSH and select one specific term. Use **Related information** for additional searches.

- PubMed: Search PubMed with the selected term
- PubMed – Major Topic: Search PubMed with the MeSH term, retrieving citations where the term is a major focus of the article
- Clinical Queries: Put the MeSH term into the Clinical Queries search box where the search may be further refined
- NLM MeSH Browser: Show the MeSH browser Descriptor Data for this term including Scope Note and Allowable Qualifiers