Topics covered in this guide include:
Searching with MeSH (Medical Subject Headings) + Using Boolean Logic to Form a Search Strategy with MeSH + MeSH Sub-headings + Consulting the MeSH Tree + Major Topic [MAJR]

To Start / Navigating PubMed Using Boolean Logic to Form a Search Strategy with MeSH

- Access the Health Sciences Library through the Intranet by selecting Library, Health Sciences in the right hand Quick Links menu, or from the public site @ http://www.cdha.nshealth.ca/health-sciences-library by selecting the Library link in the upper right corner.
- Select Databases in the left menu of the Library, Health Sciences page and select PubMed from the Databases list

NOTE: It is important to access all resources through the library site so that you can take advantage of how the library has set up each resource, including opportunities for full-text items.

Precision Searching in 3 Steps
1. Create a PICO Question / Develop Key Concepts

   P (Population/Patient) – For male patients interested in **vasectomy**
   I (Intervention) – does having a vasectomy
   C (Comparison) - compared to not having a vasectomy
   O (Outcome) - increase the risk of developing **testicular cancer**?

   **Key Concepts:** Vasectomy, Testicular Cancer

2. Search Key Concepts in the MeSH Database & Search Each MeSH Term Separately in PubMed

   Locating MeSH subject headings for key concepts allows for precision or more exact results. MeSH is the “language” used by PubMed to describe articles. By translating key concepts into MeSH the same “language” as the database can be used when searching.

   - At the PubMed main page, set the drop-down menu in the top search box to **MeSH**
   - Enter **Vasectomy** in the box next to the MeSH drop-down and select **Search**
   - A number of options will appear. Mark **Vasectomy**
   - Note the PubMed search builder options to the right of the page
   - Select **Add to search builder**

**Questions?**
Ask the Health Sciences Library: cdhalib@cdha.nshealth.ca
Vasectomy will appear in the search builder box. Select "Vasectomy" [MeSH]. You will now be presented with all articles which have the MeSH heading "Vasectomy".

At the top of the results page, set the drop down to MeSH again, delete "Vasectomy" [MeSH], and enter testicular cancer.


When there is only one MeSH subject heading available for a search, marking is not required before sending to the search builder box.

Select Add to search builder.

Select Search PubMed.

You will now be presented with all articles which have the MeSH heading "Testicular Neoplasms".

### 3. Use Boolean Operators to Combine MeSH Subject Headings & Search in PubMed

At the results page for the "Testicular Neoplasms" [MeSH] search, select Advanced located below the main search box.

Note searches are located below History.

Select Add for each search in the History.

The two search terms will now appear in the box at the top of the page. The default is to join all terms with Boolean Operator AND.

Since this search is for articles which have both MeSH terms, AND is the appropriate Boolean Operator.

Select Search.

**NOTE:** To change a Boolean Operator or alter the search strategy, select Edit under the top search box.

### 4. MeSH Subheadings

When searching the MeSH database sub-headings can be added to a given subject heading, making results more specific or precise. A good way to begin using sub-headings is to browse MeSH subject headings used in relevant articles found by doing an initial MeSH search.

**NOTE:** Using MeSH sub-headings should be done with caution. Adding sub-headings in the early stages of a search can limit results and miss valuable resources.
• From the search for “Testicular Neoplasm” [MeSH] AND “Vasectomy” [MeSH], select the review article: Putative health risks associated with vasectomy

• Select the plus sign next to Publication Types, MeSH Terms

• Note the terms listed under MeSH Terms

• Left click on the MeSH subject heading with subheading: Vasectomy/adverse effects*. From the Links menu that appears, select MeSH

• Select the hyper-link for the heading Vasectomy to view the entry for this heading

• Mark adverse effects from the list of subheadings

• Set the drop-down box to AND, select

• Select Search PubMed

• Select Advanced and note that “Vasectomy/adverse effects” [MeSH] appears in the Search History. “Vasectomy/adverse effects”[MeSH] can now be used to create a search strategy

5. Consulting the MeSH Tree

Consulting the MeSH Tree can be useful in developing more terms to search with. A broader term may be discovered that generates more results. Alternatively, a more precise term may be discovered that can help to better focus a search.

• Search for Testicular cancer in the MeSH database again by selecting the More Resources drop-down at the top of the Advanced page. Select MeSH Database

• In the MeSH database enter Testicular cancer in the top search box and select Search

• Scroll down the entry for Testicular Neoplasms and note the See Also: area

• Broader and narrower terms can be located by consulting the tree (hierarchy of terms) under See Also:

Questions?
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See Also:

- Gamorinoma

Terms further up in the tree are less specific (broader). Using a higher term will get more results and search for all terms that fall beneath the higher term in the tree.

- Terms lower in the tree are more specific (narrow). Using a lower term will get fewer results.

☐ Do not include MeSH terms found below this term in the MeSH hierarchy.

listed below subheading options directly applies to the MeSH tree for a given MeSH term. If this box is marked before sending a term to PubMed, terms found lower in the tree will be excluded (more specific). Without marking this box, all terms lower in the tree will be included (less specific).

6. Major Topic [MAJR]

When viewing the MeSH terms for an individual article, terms marked with an asterisk are considered to be a main topic of the article. **Vasectomy/adverse effects***

Using [MAJR] or Major Topic allows for greater specificity, and will therefore produce fewer results than if the term was searched with [MeSH].

Following a similar process as searching with subheadings above, MeSH terms can be searched by Major Topic.

- Return to article: **Putative health risks associated with vasectomy**
- View the MeSH terms associated with the article by selecting the plus sign
  - Publication Types, MeSH Terms, Substances, Grant Supports
- Left click the term **Vasectomy/adverse effects***
- Select PubMed

Alternatively, you can set a particular term to be a Major Topic by locating the MeSH term in the MeSH database and marking ☐ Restrict to MeSH Major Topic. before adding it to the search builder.

Questions?
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