With over 22 million citations indexed in PubMed you can easily find yourself overwhelmed with too many irrelevant results. However with a few simple tips and tricks you will be able to find what you need in no time!

1. **Create a basic logic grid:**

Start with this step by step guide to create a basic logic grid for your topic. Below is an example of a basic logic grid, which includes truncation.

- Quotation marks around phrases are not required for PubMed (except around MeSH – see below)
- In PubMed truncation can only be used at the end of a word
- Include British vs American spelling variations (Example: behavior OR behaviour)
- Include one-word vs two-word variations (Example: healthcare OR health care)

<table>
<thead>
<tr>
<th>Dietary factors</th>
<th>Migraine</th>
<th>Adolescence</th>
</tr>
</thead>
<tbody>
<tr>
<td>diet* OR dietary factors OR nutrition OR food intake</td>
<td>migraine* OR vascular headache*</td>
<td>adolescen* OR teen* OR young adult*</td>
</tr>
</tbody>
</table>

2. **Add MeSH terms (Medical Subject Headings) to the basic logic grid:**

MeSH terms are the controlled vocabulary used to index all of the articles in PubMed. Once you have identified suitable MeSH terms for your topic you can very quickly locate specific, highly relevant results. Learn how to find and select MeSH terms for your topic using this [Step by step guide to using MeSH](#).

Use quotation marks around MeSH (even single-word MeSH). [This video](#) explains why.

When you have identified suitable MeSH for each concept, add them to your logic grid with the appropriate field code (indicating whether or not you wish to explode the MeSH):

<table>
<thead>
<tr>
<th>Dietary factors</th>
<th>Migraine</th>
<th>Adolescence</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;diet&quot;[mh] OR &quot;eating&quot;[mh] OR diet* OR dietary factors OR nutrition OR food intake</td>
<td>&quot;migraine disorders&quot;[mh:noexp] OR &quot;migraine with aura&quot;[mh:noexp] OR migraine* OR vascular headache*</td>
<td>&quot;adolescent&quot;[mh] OR adolescen* OR teen* OR young adult*</td>
</tr>
</tbody>
</table>
3. **Apply field codes:**

Applying field codes to each of the terms in your logic grid is a powerful way to focus your search results. They enable precision searching by telling PubMed where you would like each of the terms to be searched. In PubMed field codes are applied at the end of each word or phrase, and are enclosed in square brackets.

Here are some of the most commonly used field codes in PubMed:

<table>
<thead>
<tr>
<th>Field Code</th>
<th>Used for</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>ti</td>
<td>Searching for words in titles</td>
<td>Migraine[ti]</td>
</tr>
<tr>
<td>tiab</td>
<td>Searching for words in both titles and abstracts</td>
<td>Migraine[tiab]</td>
</tr>
<tr>
<td>mh</td>
<td>Searching for MeSH terms</td>
<td>&quot;Neoplasms&quot;[mh]</td>
</tr>
<tr>
<td>mh:noexp</td>
<td>Searching for MeSH terms without exploding</td>
<td>&quot;Neoplasms&quot;[mh:noexp]</td>
</tr>
</tbody>
</table>

Visit the PubMed FAQs page for a full list of PubMed field codes.

Consider your keywords and decide where you want PubMed to search for them. In the logic grid below, all of the keywords and phrases will be searched for in article titles and abstracts:

<table>
<thead>
<tr>
<th>Dietary factors</th>
<th>Migraine</th>
<th>Adolescence</th>
</tr>
</thead>
</table>

4. **Run the completed search strategy in PubMed:**

1. Go to PubMed Basic Search
2. Paste the first column of your logic grid into the search box, Click Search.
3. When the search has run, clear the search box by clicking the X:

   ![PubMed Search](https://example.com/)

4. Repeat this process with the remaining columns of your logic grid
5. Go to **Advanced Search** to view your search history
6. Click the **Add** link to the left of each search string to add them to the Search Builder:
Search PubMed effectively using a logic grid: April 2019

5. Apply Filters

On the left of the results screen you will see a list of filters that can be applied to your search such as Publication dates and Language.

7. Notice that the **AND** operator is automatically selected between each of your search strings. This means that each of the results returned will include **one or more term** from the first line, **and** one or more term from the second line and **one or more term** from the third line.

8. Now click **Search** to view the combined results.
To access the language filter, click on **Show additional filters**. Select the Language option, click Show. The language filter will now appear on the main screen. Select English, or click customize for other languages:

![Language Filter](image)

**Pubmed search tips:**

**Tip 1: Check search details**

Each time you run a search in PubMed, have a look at the Search details box on the right of the search results screen to make sure it is searching in the way you expect:

![Search Details](image)

**Tip 2: Find recent papers**

It can sometimes take up to 12 months for MeSH headings to be applied to articles, so always search PubMed using a combination of MeSH and other keywords. In the following example any articles which are too recently published to have been tagged with the migraine disorders MeSH will still be picked up if they have the word migraine in the title or abstract.

migraine disorders[mh] OR migraine*[tiab]

**Tip 3: Find full-text**

To find full text, click on an article title. If full text is available, you will see a link at the top right corner. If full text is not available, try these options:

- Search for the article in **Library Search**
- Request a copy via **Interlibrary Loan**
- Contact **Ask Library** for assistance

**Tip 4: Find synonyms**

The Entry Terms on the MeSH browser pages can be a useful source of keywords. Entry terms are not official MeSH, however they can be added to your logic grid and searched in titles and abstracts. The example below shows some of the entry terms for the Mesh Dental Anxiety:
Search PubMed effectively using a logic grid: April 2019

Tip 5: Find which MeSH have been applied to a specific article

To see which MeSH have been applied to an article, click on the article title. Scroll down and look for the MeSH terms section. In the example below MeSH with a forward slash are followed by MeSH subheadings. An asterisk at the end of a MeSH indicates that those MeSH are a major focus of the article. Remember that many recent articles do not yet have MeSH terms applied.

Tip 6: Save your searches

To save your searches and set up alerts refer to the PubMed saved searches guide.

Tip 7: Exporting results to EndNote

To export results to EndNote, refer to the PubMed and EndNote guide.

See Also:
Step by step guide to using MeSH
PubMed and EndNote: Journal title abbreviations

Contact Us

For further support or questions, please email the Liaison Librarians for Health & Medical Sciences Vikki Langton and Robert Franchini at: fhms_librarians@adelaide.edu.au