PubMed 101 for Public Health

PubMed’s search box may look like Google, but it behaves very differently. Knowing PubMed’s “anatomy” and how it works will make you a better searcher. Follow below for the steps to an effective search.

Preparing Your Search

1. State your search question:

   Example: what has been written about secondhand smoke and public smoking bans?

2. Identify the main subjects, or topics, of your search.

<table>
<thead>
<tr>
<th>Subject 1</th>
<th>Subject 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>secondhand smoke</td>
<td>public smoking bans</td>
</tr>
</tbody>
</table>

3. Identify ways you want to limit your search results (you may not know this until after you search!)

<table>
<thead>
<tr>
<th>Limit 1</th>
<th>Limit 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>English language</td>
<td>Last 10 years</td>
</tr>
</tbody>
</table>

Executing Your Search

1. Access PubMed from the library’s homepage at hsl.virginia.edu. This will ensure you can access the full articles in the library’s subscriptions. Enter your first term into PubMed and click Search:

   ![PubMed search](image)

2. Scroll down to the lower right to Search details. We want to see what PubMed is doing behind the scenes. Click on See more under the Search details box.

   ![Search details](image)
3. **What's going on here!?** PubMed is trying to find the correct **MeSH Term** for the concept of secondhand smoke. It’s found one, “tobacco smoke pollution”!

There is more going on – PubMed has also looked for our original term “secondhand smoke”, and, “tobacco smoke pollution” as well as the individual words “tobacco” and “smoke” and “pollution” in the article citations’ titles, abstracts and keywords, i.e. “All Fields” of the PubMed records.

4. **Is this a good thing?** Yes! Our best searches will utilize both MeSH Terms and our terminology.

5. **Note that we can also look up a MeSH term** before we search, from PubMed’s main screen. Change the drop-down menu where it says “PubMed” to MesH. Then enter a term to look up:

6. **If a Mesh Term is found**, scroll down the page – it defines the terms and also gives many of the synonyms for it (example below). This means that when an author uses one of these phrases in their article (e.g. passive smoking), it will be “tagged” in PubMed with that MeSH Term.

7. **OK, back to searching.** Return to PubMed and enter additional terms the same way, one at a time.
8. **Check the Search details** for this search. Here we see that PubMed has found a relevant MeSH Term, “smoke-free policy”, that describes smoking bans.

![Search details](image)

9. After you’ve entered **at least two terms**, click on the **Advanced** link:

![PubMed Advanced Search Builder](image)

10. You’ll see all the individual searches you’ve created. **They don’t have anything to do with each other – yet!** Now you’ll **combine** them. Scroll down to the **History** to see your previous searches. Click on the Add button next to each. You’ll see your search coming together under the **Builder**. When you’re finished, click **Search**.

![PubMed Advanced Search Builder History](image)
11. We’ve found almost 1000 citations. **We may want to limit this**, as mentioned above in Step 3. Many common limits are found on the left side of the PubMed screen. To see more (like languages), click on **Show additional filters**, then check the filter you would like to display, then **Show**.

12. Now you’ll have **that filter as a choice** for your session. Click the language you would like to use as a limit. Now all the searches in this session will be limited to English.
13. You can **further refine** your search in several ways, including adding additional terms. One smart way to utilize PubMed’s capabilities is to show what tags are present on relevant articles you find.

Say we wanted to learn more about smoke-free campuses and secondhand smoke. We are wondering about MeSH terms for campus. From our original search, we see several records that look relevant. Very new records will not be tagged with MeSH Terms yet. But let’s look at a record from a year or so ago, like this one:

**Students’ Beliefs About and Perceived Effectiveness of a Tobacco-Free Campus Policy.**
Ickes MJ, Rayens MK, Wiggins A, Hahn EJ.
PMID: 28558518

14. **Click on the title** to see the full PubMed citation, then, click on the + symbol next to Publication type, MeSH terms, Substance:

**Students’ Beliefs About and Perceived Effectiveness of a Tobacco-Free Campus Policy.**
Ickes MJ, Rayens MK, Wiggins A, Hahn EJ.

15. **Look at the MeSH Terms** that are used to describe this article. Could any be used to retrieve information on campus policies? Looks like a couple: **Students**, and or **Universities**.

Note that a MeSH term with an * indicates it was a major focus of the article.
16. You can click on any of the MeSH Terms to get an option to search them in PubMed:

![Image of MeSH terms]

17. This will create a search in PubMed, but you will still need to combine it with your previous searches: click on Advanced to go to your Search History and combine searches using the Add button as before.

![Image of search history]

We find about 20 articles!!

Note that if we had clicked on Universities, we would see this search string:

**Search "Universities"[MeSH Terms]**

The [MAJR] OR [MeSH Terms] tag after each term shows that those terms are “official” PubMed terms, and whether they were the main point of the article or not. All MAJR terms can also be searched as MeSH terms, and vice versa.

18. Once you know what relevant MeSH Terms exist for your concept, you can use them in a search string, along with your own keywords, like below:

![Image of search interface]

**Important!** We are using “OR” to connect each of these variants and synonyms.

It may seem like overkill, but PubMed does not automatically search these variations, so it is up to you to try and imagine what terms an author may use in their title, abstract, or keywords! Remember that MeSH Terms are trying to help retrieve variants (like in our secondhand smoke example).

When we combine this with our secondhand smoke and smoking ban search we get over 60 results!
Finding the Full Articles

1. **How do you access the full PDFs** for citations of interest? If you’ve accessed PubMed through the library’s web pages, you should get a Find@UVA link to the right of each citation:

   ![PubMed search result with Find@UVA link](image)

   ![Predicting students' noncompliance with a smoke-free university campus policy](image)

2. Clicking on that will get you to the publisher’s website with a **link to the PDF**.

3. Know that for articles we don’t own, we can get you a PDF for free through our **Interlibrary Loan service**.

   ![Is your brain full?](image)

   **Is your brain full?**

   There are lots of tips and tricks to PubMed searching that we are happy to share.

   Email us at hslref@virginia.edu, or Ask a Librarian from our homepage.

   A librarian is happy to help via phone, email or in person. We are here for you, whether it is a quick question or an in-depth refresher!

   We can help identify how to search public health concepts in PubMed like:

   - interventions, incentives, knowledge and beliefs,
   - prevalence and incidence, longitudinal and follow up, mortality, and more.