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PHRM 131: Finding the Evidence

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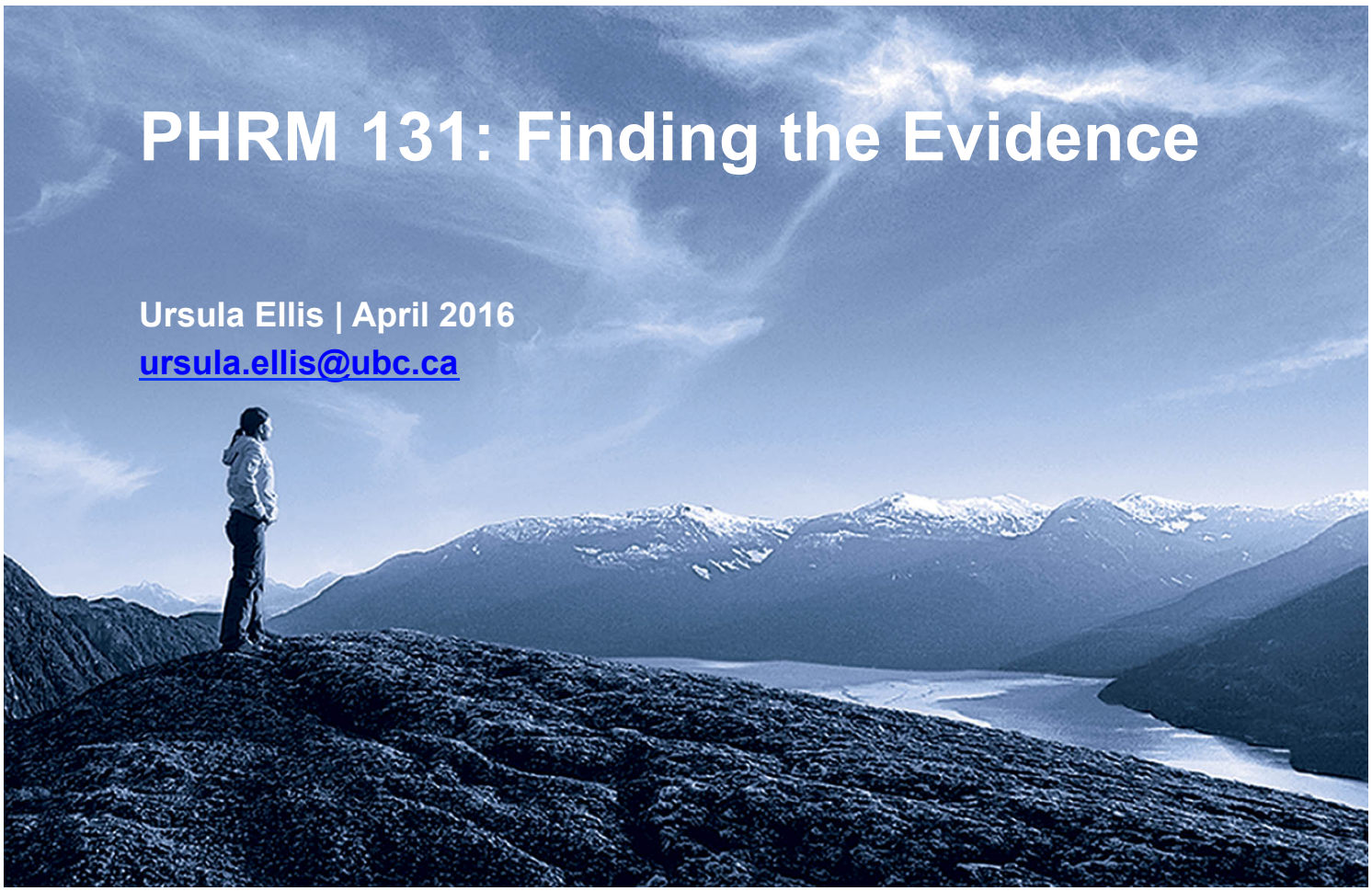

Learning objectives

By the end of this session, you should be able to:

- ❑ Describe the strengths of evidence syntheses, systematic reviews, and guidelines as information sources

- ❑ Explain these features of a PubMed search:
  - Automatic term mapping
  - MeSH and keyword searching
  - Filters

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Pharmaceutical Sciences research guide

guides.library.ubc.ca/pharmacy

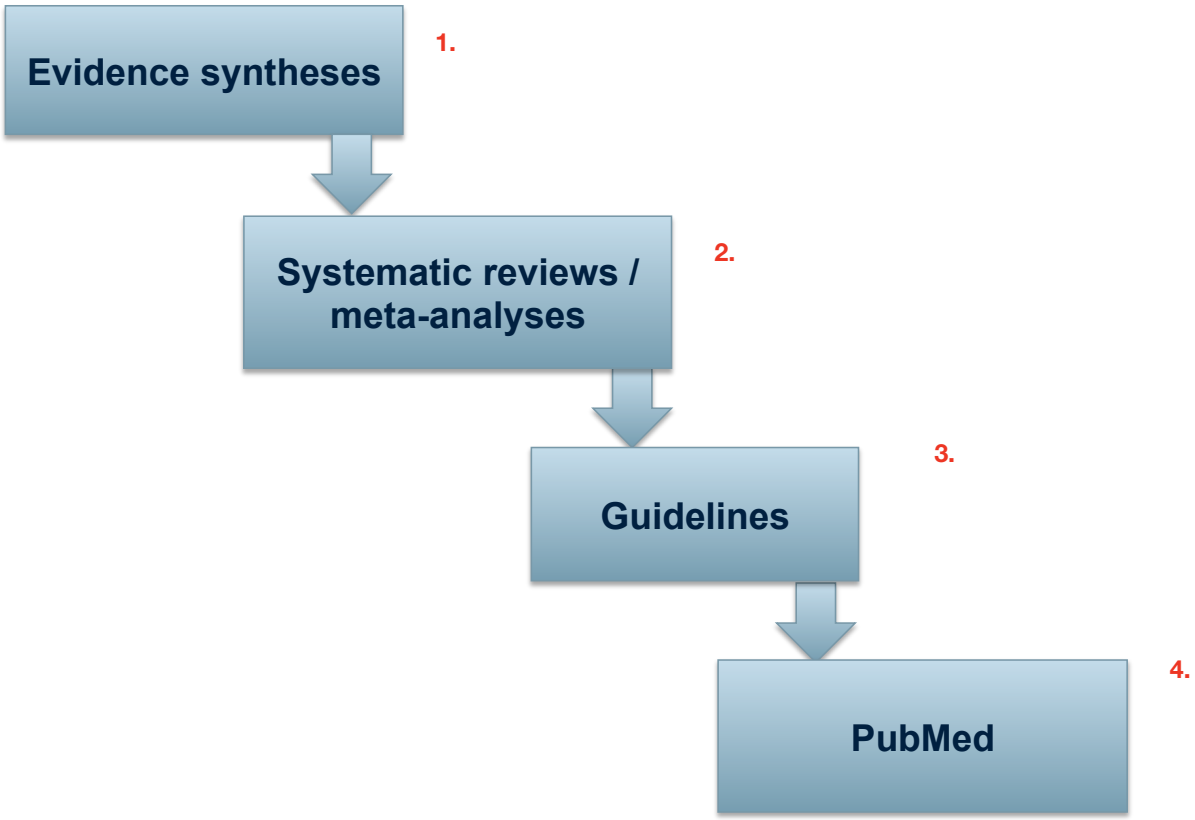
Example clinical question:

Do statins reduce cardiovascular risk?

Where do you begin your research?

Why?

Suggested search pathway



1. Evidence syntheses

Key sources available from UBC Library:

- Dynamed
- BMJ Best Practice

Dynamed has actually been shown to be better than UpToDate --> divided into Level 1, 2, 3 evidence (will provide Vancouver referencing citation

BMJ is more condition-based

UpToDate is also quite popular, and accessible with a personal subscription or to staff at the health authorities.
Studies have shown that it's not as current as DynaMed.

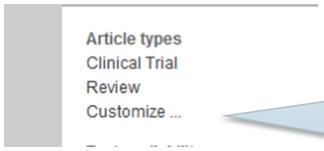
2. Systematic Reviews and Meta-Analyses

- Reviews from the Cochrane Database of Systematic Reviews are usually very high quality.

  (*note: UBC gets full text of these reviews via Ovid, not Wiley*)

- Individual journals also publish systematic reviews. You can find both Cochrane reviews and other SRs by filtering your PubMed search as shown below.

  (*note: filter is not perfect! Not all results are systematic reviews*)



On left side of search result screen - Click "customize," check the box for systematic reviews, then when it appears on the menu click it to limit your search results.

3. Guidelines

Strength of evidence in guidelines varies.

Two suggested sources to find guidelines:

National Guideline Clearinghouse

www.guidelines.gov --> can compare side by side different guidelines

- Not limited to just US guidelines

Trip database

it sorts things by types of research --> systematic review

- Searches lots of types of evidence in addition to guidelines

Note: full text of some guidelines is not accessible, esp. for some UK guidelines.

The previous ones are time-saving methods, because someone had synthesized the info for you

4. Going beyond synthesized information: Searching PubMed

PubMed is good for information that is not well-synthesized together --> not well known

- PubMed includes the Medline database plus some additional articles.
- Subject experts read articles and add data to their Medline records – the added data make article searching easier.
- Medline covers nearly 6000 biomedical journals, 1946-present.

Search PubMed via the Library's website. Log in to EZProxy to access full text articles:

- Google ubc library pubmed
- Or, on library homepage, click Indexes and Databases and search for PubMed

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5 things to know about PubMed

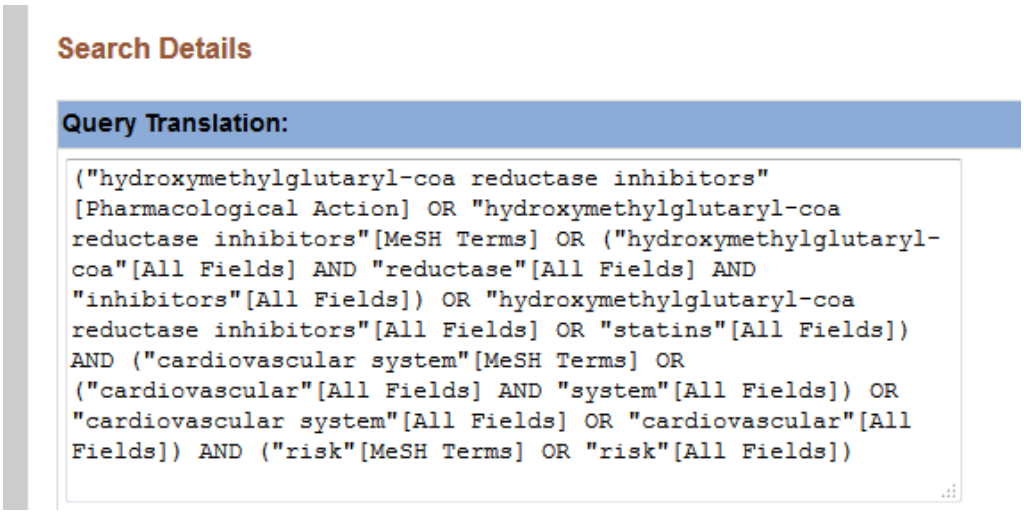
PubMed tries to match up the terms that you looked up with PubMed's MeSH terms

1) Automatic term mapping can help you search – if it works correctly
2) MeSH can help you find all the articles on your topic, without you having to think of all the words to describe it. There are also special drug terms (Pharmacological Actions and Supplementary Concepts)
3) Keywords may also be necessary in your search.
4) Filters can focus your search to most relevant results.
5) You can use the Advanced Search screen to build a search with multiple concepts.

Automatic Term Mapping – always check the Details!

You can enter your terms into the search box as you would with Google: statins cardiovascular risk

Check Search Details on the right side of the screen to see how PubMed interpreted your search:



Search Details

Query Translation:

```
("hydroxymethylglutaryl-coa reductase inhibitors"
[Pharmacological Action] OR "hydroxymethylglutaryl-coa
reductase inhibitors"[MeSH Terms] OR ("hydroxymethylglutaryl-
coa"[All Fields] AND "reductase"[All Fields] AND
"inhibitors"[All Fields]) OR "hydroxymethylglutaryl-coa
reductase inhibitors"[All Fields] OR "statins"[All Fields])
AND ("cardiovascular system"[MeSH Terms] OR
("cardiovascular"[All Fields] AND "system"[All Fields]) OR
"cardiovascular system"[All Fields] OR "cardiovascular"[All
Fields]) AND ("risk"[MeSH Terms] OR "risk"[All Fields])
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What are MeSH terms?

When change PubMed to MeSH, only put 1 idea in at a time!
Subheadings under MeSH shows only 1 aspect of the idea

Medical Subject Headings are standard terms that subject experts use to label articles. Using them helps you find more relevant results, and keeps you from having to think of, and search for, every possible keyword to describe your concept.
Example: Hydroxymethylglutaryl-CoA Reductase Inhibitors

Pharmacological Action terms are similar – they group together all the drugs with that action so you can search them all at once:
Example:
Hydroxymethylglutaryl-CoA Reductase Inhibitors [Pharmacological Action]

Supplementary Concepts are also similar. They are typically used for less common drugs.
Example: cerivastatin [Supplementary Concept]

Put each aspect of PICO in seperately

Why does automatic term mapping use both MeSH and "all fields" (keywords?)

When you search for a term in “all fields,” it’s looking for an exact match for that word in the title, abstract, and a few other places (not the whole text of the article).

Searching for your idea only as “all fields” will miss some relevant articles that might use a synonym for your idea, or have a misspelling. So it’s best to use MeSH terms in your search too.

MeSH and keyword strengths

MeSH strengths:

- Finds relevant articles, no matter the exact keywords used
- Will also find narrower, related terms
- You can use subheadings to make your search more targeted.

Keyword strengths:

•Time lag in adding MeSH terms to articles – a few months to over a year. Find newest articles using keywords.

•There's not a MeSH term for every idea – sometimes a keyword is the only way to find things. Example: there's not yet a MeSH term for antimicrobial stewardship.

For a comprehensive search, it's best to use both MeSH and keywords.

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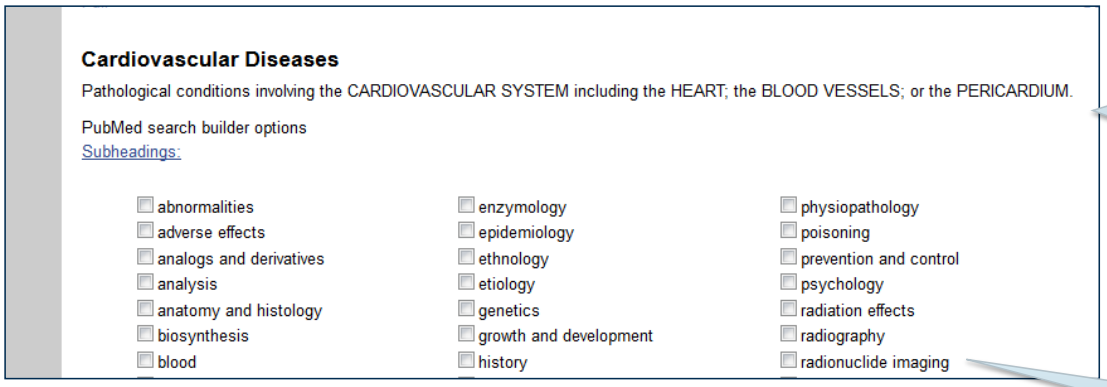
Building a search using the MeSH database

Access the MeSH database by changing the drop-down menu next to the search box. Enter one concept at a time.

Look up term into MeSH --> add to search builder (use 'and'/'or') --> add 'subheading' --> after done looking up all MeSH terms --> look under PubMed , then go to "advanced" and decide which searches you want to include

MeSH database: anatomy of a record



Cardiovascular Diseases

Pathological conditions involving the CARDIOVASCULAR SYSTEM including the HEART; the BLOOD VESSELS; or the PERICARDIUM.

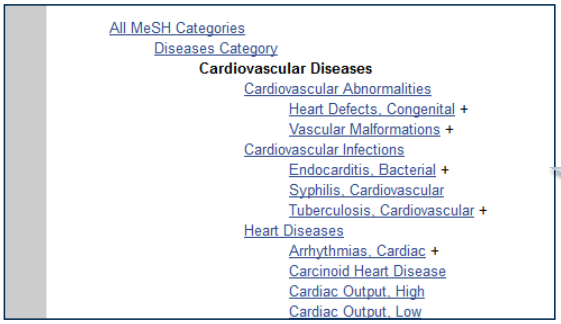
PubMed search builder options

Subheadings:

abnormalities	enzymology	physiopathology
adverse effects	epidemiology	poisoning
analogs and derivatives	ethnology	prevention and control
analysis	etiology	psychology
anatomy and histology	genetics	radiation effects
biosynthesis	growth and development	radiography
blood	history	radionuclide imaging

Definition – important to read. May point you to more relevant MeSH.

Subheadings can focus your search.

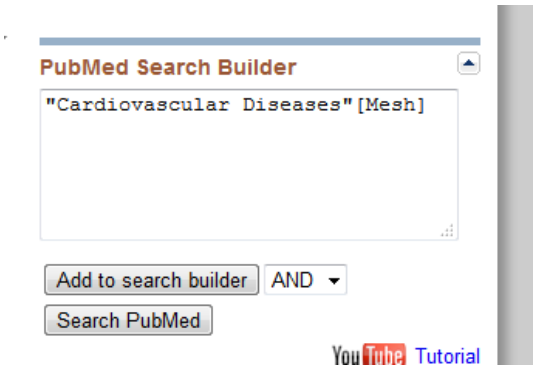


All MeSH Categories
Diseases Category
Cardiovascular Diseases
Cardiovascular Abnormalities
Heart Defects, Congenital +
Vascular Malformations +
Cardiovascular Infections
Endocarditis, Bacterial +
Syphilis, Cardiovascular
Tuberculosis, Cardiovascular +
Heart Diseases
Arrhythmias, Cardiac +
Carcinoid Heart Disease
Cardiac Output, High
Cardiac Output, Low

The Tree at the bottom shows you narrower terms that will be included in your search.

MeSH database: search builder

From the MeSH database, you can add terms to the search builder and search PubMed.



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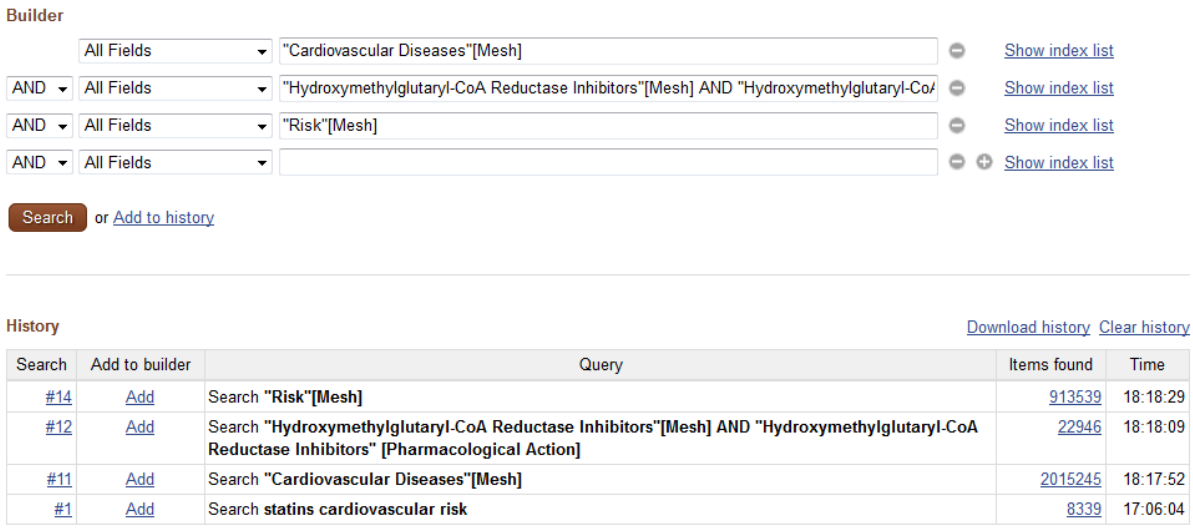
Advanced search

After you've chosen your MeSH terms, click the “Advanced” link under the search box to combine with AND or OR.
(remember: OR gets you MORE results)



Using filters to focus your search

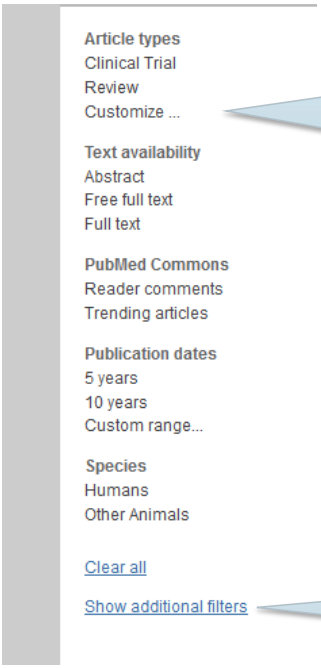
Filters can be found on the left side of the search results screen. They will get you fewer, better results.

Some aspects of the "P" in your PICO are best addressed through filters (age, sex, human)

Publication types can also be useful in finding high quality evidence. You can limit to systematic reviews, RCTs, or several other study types.

*Note: using most filters will exclude the newest articles which are in PubMed, but have not yet been indexed in Medline.

Using filters: two steps



1. To find systematic review and RCT filters, click Customize and choose them out of the menu.
2. Once they show up, then click them to limit your search results.

Similar process to find filters for sex, age, language. First click Show Additional Filters to add them to your options. Then click on them to actually limit your search.

Recap: finding the evidence

Step 1: Check DynaMed/Best Practice, look for systematic reviews, look for guidelines.

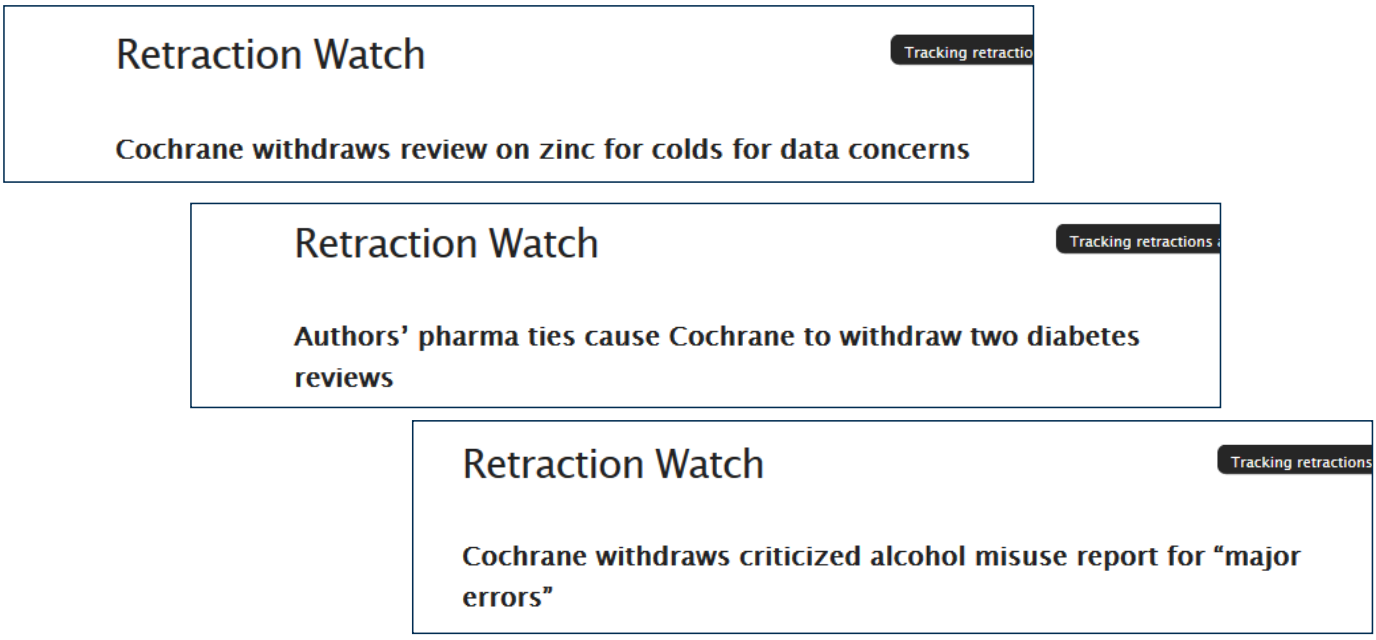
Step 2: Search PubMed – tools you can use include:

- automatic term mapping to discover MeSH terms
- using the MeSH database to learn more about MeSH terms
- keyword searching when appropriate
- filters to focus on special populations or study types
- advanced search to combine search sets together

Step 3: Contact me! guides.library.ubc.ca/pharmacy

Appraisal is critical!

No matter where you find information – examine it critically.



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Your feedback, please!

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