



Database Search Clinic

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Searching the Literature

Goals for today

- Understand components of search construction
- Use search tips & tricks in PubMed
- Understand how to find an exact phrase and use field tags to specify content you want
- Learn how to build a complex search and add Mesh terms to your search
- Find evidence-based articles quickly
- Find open access resources
- Google pearl – getting to the gray literature

Top databases for clinical sciences

Today we will focus on PubMed

- PubMed
- Web of Science
- Embase
- CINAHL Complete

Additional databases

Social and behavioral sciences

- GenderWatch – focus on gender issues
- PAIS – public health, international focus, health policy
- PsycINFO – mental health
- PsycTESTS – find surveys, instruments, assessment tools
- Social services abstracts – social safety net questions
- Sociological abstracts – literature in the social sciences
- ERIC – educational resources

Database search basics

The search construction is everything: algebra with words!

- Databases like PubMed are not Google
- They do not understand or parse language
- They use an algebraic formula to understand your search query
- Search construction: put synonyms in parenthesis!
 - ❖ breast cancer AND (brca-1 OR brca-2)
 - ❖ fever AND children AND (motrin OR ibuprofen OR tylenol OR acetaminophen OR paracetamol)

Simple search modifications in PubMed

Force a phrase and find terms in specific fields

- Simple keyword search
 - ❖ Social determinants of health AND (food insecurity OR poverty)
- Find words in the title or abstract
 - ❖ Social determinants of health AND (food[tiab] insecurity[tiab] OR poverty[tiab])
- Find words in the title
 - ❖ Social determinants of health AND (food[ti] insecurity[ti] OR poverty[ti])
- Force a phrase
 - ❖ "Social determinants of health" AND ("food insecurity"[ti] OR poverty[ti])

Building a search

Question: What are some strategies to improve medication adherence for teens with HIV on antiretroviral therapy?

- Simple keyword search
(HIV OR human immunodeficiency virus) AND antiretroviral therapy
AND medication adherence AND (teens OR adolescents)
- Force phrases and find words in the title
(HIV OR human immunodeficiency virus) AND "antiretroviral
therapy" AND "medication adherence"[ti] AND (teens OR
adolescents)

Develop a complex search

Adding additional synonyms to your search

- Start with original keyword search
 - ❖ (HIV OR human immunodeficiency virus) AND antiretroviral therapy AND medication adherence AND (teens OR adolescents)
- Add additional synonyms for drug concept
 - ❖ antiretroviral agents
- Add additional synonyms for medication adherence
 - ❖ medication compliance, patient compliance
- Add additional synonyms for age concept
 - ❖ teenagers, adolescence, youth

Develop a complex search

- Original keyword search

HIV AND antiretroviral therapy AND medication adherence AND (teens OR adolescents)

- Modified search

(HIV OR human immunodeficiency virus) AND (antiretroviral therapy OR antiretroviral agents) AND (medication adherence OR medication compliance OR patient compliance) AND (teens OR teenagers OR adolescents OR adolescence OR youth)

Develop a complex search: your turn!

Question: What are barriers for access to pre-exposure prophylaxis medications for HIV prevention?

- Start with a simple keyword search
 - ❖ What terms will you use?
- Add additional synonyms for your concepts:
 - ❖ Term 1 (HIV)
 - ❖ Term 2 (pre-exposure prophylaxis)
 - ❖ Term 3 (barriers)
- Modified search:
 - ❖ What does your search look like now?

Complex Search Example

- Question

What are barriers for access to pre-exposure prophylaxis medications for HIV prevention?

- Keyword search

(HIV OR human immunodeficiency virus) AND (pre-exposure prophylaxis OR PReP) AND (barriers OR healthcare access)

Develop a complex search 2

Adding Mesh terms to your search: data-mining your results

- Select an article -> jump down to the Mesh terms -> add Mesh terms to your search:
(HIV OR human immunodeficiency virus OR "HIV Infections/prevention and control"[Mesh]) AND (pre-exposure prophylaxis OR PReP OR "Pre-Exposure Prophylaxis"[Mesh]) AND (barriers OR healthcare access OR "Social Stigma"[Mesh] OR "Health Knowledge, Attitudes, Practice"[Mesh])
- Sometimes the number of references will be the same or similar when you add Mesh terms; this depends on how many and which Mesh terms you add

Automatic Term Mapping in PubMed

Deconstructing the complex search

- PubMed automatically attempts to find the appropriate mesh terms for the keywords you used and links to articles with those mesh terms
- Automatic term mapping is turned off:
 - ❖ when you force a phrase like "adverse effects"
 - ❖ when you use field tags like [ti] or [tiab]
- Mesh is important when constructing systematic review searches, but less for day-to-day "I need some articles on this" searches
- It is still very useful to force phrases and use field tags to narrow results

When Mesh makes a difference 1

The power of Mesh

- Look up concepts using the Mesh browser
- [Mesh]: the concept must be discussed in the article
- [Majr]: the concept is the main focus in the article (* in PubMed records)
- Get to a very specific concept by using mesh subheadings
("Acetaminophen/adverse effects"[mesh] OR "Acetaminophen/posioning"[mesh] OR "Acetaminophen/toxicity"[mesh])
- Make it the main point
("Acetaminophen/adverse effects"[majr] OR "Acetaminophen/poisoning"[majr] OR "Acetaminophen/toxicity"[majr])

When Mesh makes a difference 2

The Mesh hierarchy

- Get to an entire set of concepts using one Mesh term
- Articles are indexed to the most specific point
- Mesh terms are arranged in a hierarchical tree structure with more specific concepts listed under broader concepts
- Mesh automatically explodes concepts to include narrower terms that fall under the broader concept

Mesh browser exercise

Using the thesaurus to find index terms

- Look up the term HIV drugs
- What is the mesh term you find?
- What are 3 of the allowable subheadings that you can add to the term to focus your search?
- Scroll down to the mesh tree structure. What are some additional terms mesh will automatically search if you use that mesh term in your PubMed search?

Using clinical queries

Automatic filters help you find evidence-based articles quickly

- Limits searches to the clinical literature
- Limits to 5 clinical areas
 - ❑ Therapy
 - ❑ Diagnosis
 - ❑ Etiology
 - ❑ Prognosis
 - ❑ Clinical Prediction Guides
- Removes animal studies, laboratory studies, articles in the basic sciences, etc.

Using clinical queries

Run a clinical queries search

- TOPIC: Treatment outcomes, morbidity, and mortality in patients with AIDS or HIV
- Start with keyword search
 - ❖ (acquired immunodeficiency syndrome OR HIV) AND ("treatment outcome"[ti] OR morbidity[ti] OR mortality[ti])
- Use clinical queries -> therapy
 - ❖ (acquired immunodeficiency syndrome OR HIV) AND ("treatment outcome"[ti] OR morbidity[ti] OR mortality[ti])
- Narrow filter limits your results to robust studies like RCTs

Finding systematic reviews in PubMed

TOPIC: vaccine hesitancy among minority populations

- Use systematic review filter (left menu bar)
- Set up your own filters using MyNCBI and select systematic reviews as one of your filters
- Use the subset tag [sb]
(vaccine hesitancy OR vaccine refusal OR anti-vaccine) AND
(minorities OR "minority communities" OR african american OR hispanic OR asian american) AND "systematic review"[sb]

Open Access Resources

- PubMed Central
 - ❖ <https://www.ncbi.nlm.nih.gov/pmc/>
- DOAJ: Directory of open access journals
 - ❖ <https://doaj.org/>
- UC eScholarship open access repository
 - ❖ <https://escholarship.org/search>
- Use UC library search on the UCSF Library home page; limit your search to open access

Search for open access sources

- Use UC search on the UCSF Library home page; limit your search to open access
- Search google for other open access repositories
 - ❖ open access repositories site:.edu
- Find OA resources curated by librarians
 - ❖ open access resources libguide

Other open access tools

- Unpaywall <https://unpaywall.org/>
 - ❖ Chrome/Firefox browser extension that searches across multiple publishers and repositories
- Open access button (OA Button) <https://openaccessbutton.org/>
 - ❖ Chrome/Firefox browser extension searches from paywalled site for OA version, and if not found can contact the author for help with making a self-archived article accessible
- Kopernio <https://kopernio.com/>
 - Chrome/Firefox browser plug-in from Clarivate Analytics with access to 20K+ open access articles, links to UC subscriptions

Google Pearl: find the gray literature

Tell google where it should search!

- Use site:.org to find white papers, policy guidelines, and reports from NGOs and professional medical associations
 - ❖ HIV "white paper" site:.org
- Use site:.gov to find statistics and government documents
 - ❖ HIV statistics site:.gov
- Use site:.edu to find courses, classes, and programs at other academic medical centers and universities
 - ❖ DEI curriculum site:.edu

Thank You!

Questions?

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Schedule a consultation:

<https://calendars.library.ucsf.edu/appointments?u=3950>