The Literature Search: PubMed and Zotero

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Interesting fact
Disclaimer

These are our dogs, Daisy and Luna.

They bark a lot.

You may hear them.
Your Turn!

Poll: Do you have any pets?
Learning Objectives

Develop a search strategy using keywords and controlled vocabulary in order to find relevant articles.

Retrieve the full text of articles in order to read and evaluate them.

Organize references using Zotero in order to easily find and cite articles.
Outline

PubMed
• Accessing PubMed
• Developing a search strategy
• Retrieving the full text of articles

Zotero
• Overview
• Setting up online sync
• Saving citations
• Creating a bibliography
The literature search in PubMed
PubMed

Biomedical database with 30 million citations from:

- MEDLINE
- PubMed Central (PMC)
- life science journals
- online books

PubMed is the public interface for searching MEDLINE
Poll: What is your experience using PubMed?
Getting Started

- PubMed
  » more
- E-Journals database
  » more
- MEDLINE (Ovid)
  » more
- AccessMedicine
  » more
- STATeRef
  » more
- UpToDate
  » more

Medical Collection in the Library

Biomedical Resources in the Library

The online and print collections of the Library encompass all areas of the medical & health sciences and related basic biological sciences, with emphasis given to current and emerging areas of biomedical research, teaching, and patient care at the University of Chicago.

See the Collection Policy Statements for Medicine, the Biological Sciences, and the Engineering & Physical Sciences.
Search tips for any database

Use multiple synonyms for concepts

Use controlled vocabulary (e.g. MeSH)

Glean additional search terms from article titles and abstracts

Use citation chaining to locate more articles

Take advantage of database functionality and personal accounts
Start with Keywords (aka text words)

Pros
• Retrieves newest citations
• Uses current terminology
• Necessary when MeSH term does not exist

Cons
• Does not search synonyms
• Ignores context
  • Homonyms (cold, residents, etc.)
  • Negating expressions (but, except, never…)
Exercise: PubMed Search

Find an article that answers:

Do hormonal contraceptives increase risk of breast cancer?
Identify individual concepts & synonyms

Do hormonal contraceptives increase risk of breast cancer?

What are the individual concepts?
- Contraceptives / breast cancer / risk?

What are some synonyms for each concept?
- Contraceptive
- Birth control
- estrogen/progestin
- Breast cancer
- Breast neoplasms
- Breast tumor
Search concepts separately, then combine with Boolean Operators (AND/OR)

1. birth control OR contraceptive
2. breast cancer OR breast neoplasms
3. #1 AND #2

(birth control OR contraceptive) AND (breast cancer OR breast neoplasm)
What other terms were searched?

Go to the Advanced Search and review the search Details

Were any MeSH terms searched?
What is MeSH?

Medical Subject Headings

A controlled vocabulary (thesaurus)

Gives uniformity and consistency to describing and searching the biomedical literature

Developed and maintained by NLM

MeSH terms found in MeSH Database:
MeSH

Pros
• Searches synonyms, multiple word endings, variant spellings
• Disambiguation of terms
• Targeted results

Cons
• Newest citations do not have MeSH terms and so not searched
• Some concepts (e.g. newer treatments) do not have MeSH terms
MeSH examples

Cold
- Air temperature
- Condition caused by a virus

MeSH terms:
- “Cold Temperature”
- “Common Cold”

Residents
- People in medical training
- People in long-term care facilities

MeSH terms:
- “Internship and Residency”
- “Nursing Homes”
Accessing MeSH database

PubMed® comprises more than 30 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full-text content from PubMed Central and publisher web sites.
Exercise: MeSH search

Find a MeSH term that will retrieve articles from the last five years on the detrimental effects of chocolate.

1. What MeSH term(s) represent the concept of chocolate?
2. What year was the term introduced?
3. How are the ‘detrimental aspects’ represented with MeSH?
Chocolate

Food product prepared from fermenting, roasting, and grinding seeds of the COCOA plant.

Year introduced: 2017

PubMed search builder options

Subheadings:

- adverse effects
- analysis
- classification
- economics
- etiology
- microbiology
- organization and administration
- pharmacology
- statistics and numerical data
- therapeutic use
- toxicity

Restrict to MeSH Major Topic.

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

Tree Number(s): G07.203.300.195, J02.500.195

MeSH Unique ID: D000059556

Entry Terms:

- Chocolates
- Cocoa Powder
- Cocoa Powders
- Powder, Cocoa
- Powders, Cocoa

Previous Indexing:

- Cacao (1963-2016)
Exercise: comprehensive search

Combining keywords and MeSH terms

Find all of the articles you can on:

Do hormonal contraceptives increase risk of breast cancer?

(contraceptive OR birth control OR "contraception"[MeSH Terms] OR "contraceptive agents"[MeSH Terms] OR "contraceptive devices"[MeSH Terms] OR "Hormonal Contraception"[MeSH Terms])

AND

(breast cancer OR breast neoplasm OR "breast neoplasms"[MeSH Terms])
Review your results

Do your results appear to answer the question?

How many results did you retrieve?

Is that too many or too few?
Improving your search

Narrow results
- Use more specific search terms
- Apply additional filters: Language, Publication Date, Article Type

Broaden results
- Use additional synonyms
- Broaden the search terms
- Remove filters

Find an article right on target?
- Look at its MeSH terms to identify other potential search terms

Searching is an iterative process; revise your search until you are satisfied with the results or satisfied you’ve done all you can.
Limit your results with Filters

Use the Language filter to filter for English articles only

- Select Additional Filters to access the Languages Filter

Use the Publication Dates filter for recent publications

Some Filters are MeSH!

- Age
- Species
- Sex
- Article Type*
Use titles & abstracts for search terms

**Contact Allergy: A Review of Current Problems from a Clinical Perspective.**

Uter W¹, Werfel T², White IR³, Johansen JD⁴.

**Author information**

**Abstract**
Contact allergy is common, affecting 27% of the general population in Europe. Original publications, including case reports, published since 2016 (inclusive) were identified with the aim of collating a full review of current problems in the field. To this end, a literature search employing methods of systematic reviewing was performed in the Medline® and Web of Science™ databases on 28 January 2018, using the search terms "contact sensitization" or "contact allergy". Of 446 non-duplicate publications identified by above search, 147 were excluded based on scrutiny of title, abstract and key words. Of the remaining 299 examined in full text, 291 were deemed appropriate for inclusion, and main findings were summarised in topic sections. In conclusion, diverse sources of exposures to chemicals of widely differing types and structures, continue to induce sensitisation in man and may result in allergic contact dermatitis. Many of the chemicals are "evergreen" but others are "newcomers". Vigilance and proper investigation (patch testing) are required to detect and inform of the presence of these happens to which our populations remain exposed.

**KEYWORDS:** allergic contact dermatitis; contact allergy; exposure; review
Citation chaining

Search citations backward and forward in time

Search an article’s references to find older articles

Use Google Scholar and PubMed to find newer articles a relevant article

Example:

Contemporary Hormonal Contraception and the Risk of Breast Cancer

Lina S Mørch 1, Charlotte W Skovlund 1, Philip C Hannaford 1, Lisa Iversen 1, Shona Fielding 1, Øjvind Lidegaard 1
Search an article’s references

References (39)

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

   CrossRef Web of Science Medline Google Scholar

    CrossRef Web of Science Medline Google Scholar
Use PubMed to find newer articles
Search citing articles using Google Scholar
Database functionality: PubMed

Create a personal account:

• Highlight search terms
• Save searches/create alerts
• Have PubMed run search and email results to you
• Create collections and save citations
• Create a Bibliography of your own work
Set up a personal account
Create a Collection

Add to Collections

Selection: All results on this page

- Create a new collection
- Add to an existing collection

Name your collection:

Add

Sorted by: Best match

Clipboard
My Bibliography
Collections
Citation manager
Finding Full Text
Finding full text – click Find It!

Find It links a citation to the full text, if the Library subscribes to it.

Management of Critically Ill Adults With COVID-19

Jason T Poston ¹, Bhakti K Patel ¹, Andrew M Davis ²
Affiliations + expand
PMID: 32215647  DOI: 10.1001/jama.2020.4914

Similar articles
How do I access Library resources from off-campus?
Tips for using online resources when you're away from campus
Activity

Come up with search terms for research topic (keywords and MeSH terms)

Find 3 citations that might work (will use these in next section)

Save the search strategy (create alert)

Save the citations as a collection
Poll: Do you already use a reference manager?
Zotero is a reference manager that facilitates collecting and organizing references.
Zotero Connector

Connects your browser to Zotero

Zotero Connector
Save to Zotero from your browser

Install Chrome Connector

Firefox connector Install
Safari connector Install
Edge connector Install
Set Up Online Sync

1. Go to Zotero.org
2. Click ‘Log In’ in upper right
3. Click ‘Register for a free account’
4. Create your account
5. Verify your account
Set Up Online Sync (continued)

6. Open Zotero (desktop app)

7. Go to Preferences:

Windows

Mac
Set Up Online Sync (continued)

8. Set Sync preferences
Save Citations

Zotero icon appears in browser location bar

Click icon to save citations to Zotero

Firefox

Chrome

Safari
Save Citations from PubMed
Save Multiple Pages from PubMed

Select “Send to”

Select “Citation Manager”

Click “Create File” button

In Zotero, Import file
Drag & Drop PDFs

Zotero creates an item record from dropped PDF and attaches the PDF to it.

If it fails, right click and select Retrieve Metadata for PDF.
Find Full Text

Right click and select “Find Available PDF.”

The item needs a DOI or URL for this to work.

If on campus or using the VPN, will try institutional subscriptions, then will look for Open Access (OA) copies.

If off campus and not using the VPN, will only look for OA PDFs.
Activity – Add citations to Zotero

Go to the citations you previously identified and add them to Zotero.

Try to get the full text of a few of the articles.
Zotero with Word

Zotero Plugin installed in Word ribbon with Zotero installation

Add citations and bibliographies to papers

Windows

Mac
Create a standalone bibliography

Right-Click > Create Bibliography from Items
Create a standalone bibliography

Choose a citation style

Output Mode: Bibliography

Output Method: Save as RTF (for best results)
Activity – Create a bibliography

Using your SRP citations, create a bibliography.

This is what you will have to do when your references are due on June 14th.
Do More with Zotero

Folders – organize your library

Duplicates – find & reconcile duplicate citations

Notes – take research notes in Zotero

Groups – share citations with collaborators
Learn More & Get Help

Library's Zotero Guide: guides.lib.uchicago.edu/zotero

Zotero.org
• Quick Start Guide
• Screencast tutorials
• Discussion forums
Questions?