



# Create a Search Strategy

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# After this tutorial, you will be able to:

- Build a good research topic or question
- Identify keywords
- Search on your topic
- Refine your search results
- Get the articles and sources you need!

# **| Build a good research topic**

**Identify keywords**

**Search on your topic**

**Refine your search results**

**Get the articles**

Your searching will be more successful if you prepare your research topic or question prior to searching.

Here are a few examples of prepared research topics:

- Critical analysis of programs designed to involve communities in clean water efforts.
- Hospital wastewater: A review of characteristics, risk factors, and technological solutions.
- Spatial transmission of dengue fever in Hanoi, Vietnam from 2009-2016.

**What is your research topic? Type (or write) it out.**

**Next, you will identify keywords.**

Build a good research topic

**| Identify keywords**

Search on your topic

Refine your search results

Get the articles

It is important to find the keywords in your topic (you won't be searching whole sentences!)

For the following example, we've identified some keywords.

- Critical analysis of **programs** designed to involve **communities** in **clean water** efforts.

Keywords: **programs, communities, clean water**

Write down your keywords.

Next, you will find identify other keywords.

Think of synonyms for your keywords. Good searching takes many tries with different keywords.

Here are synonyms of keywords from our example:

- **programs:** campaign, initiative, project
- **communities:** neighborhood, rural, zone, tribe
- **clean water:** safe water, potable water

Find synonyms or related terms for your keywords.

Next, restate your research topic in new ways.

Apply the new keywords to your research topic and create new statements. This will improve your searching.

We've applied the new keywords to our example research topic:

- programs to include community in clean water efforts
- clean water community programs
- rural campaigns for potable water

Write out your research topic in other ways. It may even change the way you understand your topic. Next, let's search!



Build a good research topic

Identify keywords

**| Search on your topic**

Refine your search results

Get the articles

All of your preparation will improve your searching in many databases and popular search engines. For this example, we will search using PubMed, which is freely available to the public.

You will be able to access abstracts and open-source articles from PubMed Central.

- [PubMed Search-Building Tutorial](#)

Are your searches in PubMed getting better?

Next, apply some additional strategies to get even better search results.

You may also have access to another database called HINARI. [Check here to see if your institution has access.](#) Download the following to learn how to connect to, and navigate, the [HINARI](#) databases which can also connect you to PubMed.

- HINARI Tutorial for use with PubMed - Basic
  - [Part A \(ppt, 3.39Mb\)](#)
  - [Part B \(ppt, 3.65Mb\)](#)
  - [Workbook activities \(doc, 168kb\)](#)
  - [Appendix : Getting full-text via HINARI/PubMed \(pdf, 754kb\)](#)
- [Basic Course on the HINARI Interface and PubMed Searching](#)
- [Advanced Course on PubMed Searching and other health sources on the internet](#)

Are you able to navigate and search PubMed and HINARI?

Next, explore some different tips for improving your searching.

Build a good research topic

Identify keywords

Search on your topic

**| Refine your search results**

Get the articles

**Limiting** can help you narrow or broaden a search on your topic. Look at all of the keywords and synonyms you have so far - powerful searches limit by combining keywords using AND, OR, and NOT.

## AND

- AND narrows your search (less results)
- Use AND between keywords to incorporate only those keywords into your results
- For example:  
*programs AND communities AND clean water*

## OR

- OR expands your search (more results)
- Use OR between keyword synonyms to incorporate all of them into your results.
- For example:  
*neighborhood OR rurality OR zone*

## NOT

- NOT narrows your search (less results)
- Use NOT to remove unwanted results from your search.
- For example:  
*neighborhood NOT suburbs*

**Phrase Searching** encloses phrases in quotes. This tells the search to keep those keywords together.

Some examples include:

- “Safe water”
- “Clean water”
- “Oil spill”

**Sorting** -- results are always sorted in some way. You can change the sort order of your results to suit your needs.

Here are a few examples of sorting:

- Sort by “most recent” to have the newest results at the top
- Sort by “best match” or “relevance” to have results that most closely match your topic at the top
- Sort by “journal” to sort by journal title

Use limiting, phrase searching, and sorting to improve your search results.

Finally, get the articles!

Build a good research topic

Identify keywords

Search on your topic

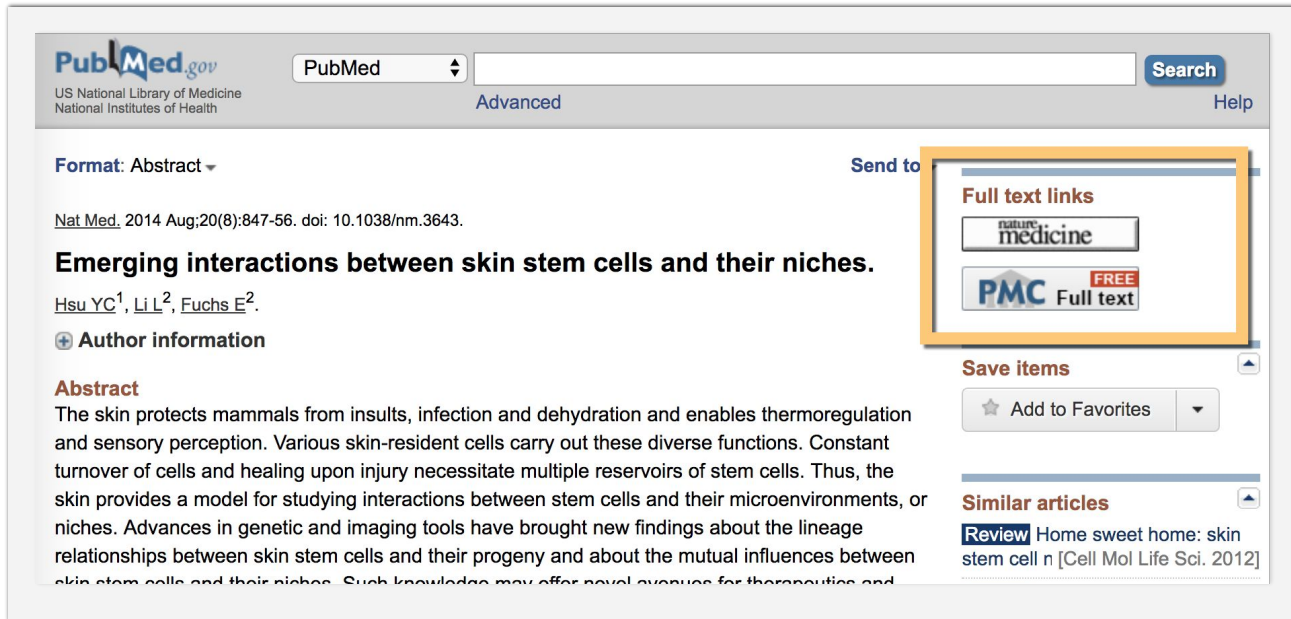
Refine your search results

**| Get the articles**



Search results are great but you want to get some articles! Look for links to the “PDF” or “full text” of an article.

For example, look for “Full text links” in the record view in PubMed.



The screenshot shows the PubMed interface for an article. At the top, there is a search bar with 'PubMed' selected and a 'Search' button. Below the search bar, the article's citation is displayed: 'Nat Med. 2014 Aug;20(8):847-56. doi: 10.1038/nm.3643.' The article title is 'Emerging interactions between skin stem cells and their niches.' The authors are listed as 'Hsu YC<sup>1</sup>, Li L<sup>2</sup>, Fuchs E<sup>2</sup>.' The 'Abstract' section is visible, starting with 'The skin protects mammals from insults, infection and dehydration and enables thermoregulation and sensory perception. Various skin-resident cells carry out these diverse functions. Constant turnover of cells and healing upon injury necessitate multiple reservoirs of stem cells. Thus, the skin provides a model for studying interactions between stem cells and their microenvironments, or niches. Advances in genetic and imaging tools have brought new findings about the lineage relationships between skin stem cells and their progeny and about the mutual influences between skin stem cells and their niches. Such knowledge may offer novel avenues for therapeutic and...'. On the right side, there is a 'Send to' section with a 'Full text links' box highlighted in yellow, containing a 'PubMed medicine' logo and a 'PMC Full text' button with a 'FREE' tag. Below this is a 'Save items' section with an 'Add to Favorites' button. At the bottom right, there is a 'Similar articles' section with a 'Review' button and a link to 'Home sweet home: skin stem cell n [Cell Mol Life Sci. 2012]'. The PubMed logo and 'US National Library of Medicine National Institutes of Health' are visible in the top left corner.

# Review - you are now able to:

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# What's next?

Next, apply your search techniques to other databases and internet resources.