

Basic Training 2025 for PhD students

DOCUMENT RETRIEVAL

Nagoya University Graduate School of Medicine
Medical Library

Purposes

1. Learn basic understanding of medical research databases, and master search skills to find information of resources effectively.
2. Learn how to get articles using the information from database searches.

BASICS AND STRATEGIES OF DOCUMENT RETRIEVAL

Contents

1. Research/Clinical Question : PICO/PECO
2. Database thesaurus
3. Refining your search
4. Two major databases
5. Access to databases

Contents

1. **Research/Clinical Question : PICO/PECO**
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What is PICO/PECO?

PI(E)CO Stands for:

P	P atient, P roblem, P opulation
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I (E)	I nterventions/ E xposure
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C	C omparisons, C ontrols, C omparators
----------	--

O	O utcomes
----------	------------------

PICO/PECO frames your research questions.

It helps

- ①make your purposes clear.
- ②pull out keywords.
- ③select appropriate study design.

PICO/PECO for example question

“Effect of mucolytic drugs to patients with stable chronic obstructive pulmonary disease”



	Concepts	Keywords
P	Patients with stable chronic obstructive pulmonary obstructive disease	COPD/chronic bronchitis
I	Mucolytic drugs	Mucolytic
C	Placebo (and latest best therapy)	Placebo
O	Number of deteriorated patients and death	Exacerbation/mortality

Using PICO/PECO format

Comprehensive search for systematic review

- Use P AND I .
- Add study design for narrowing down if too many results,
- Tips: title or abstract does not include O usually.

Effective retrieval for clinical problems

- Use P AND I AND C AND O.
- Try other synonyms if too few results.

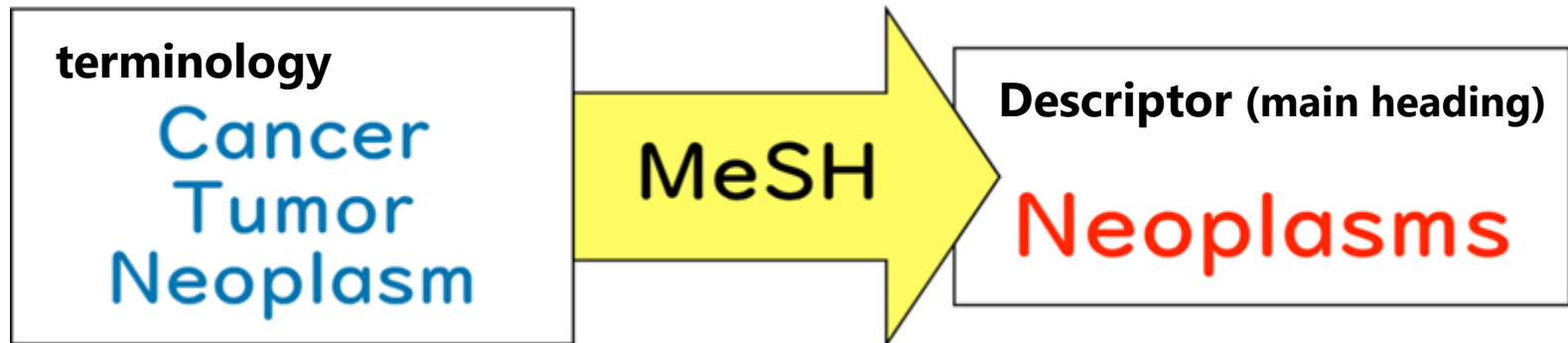
Database thesaurus will help you in both cases.

Contents

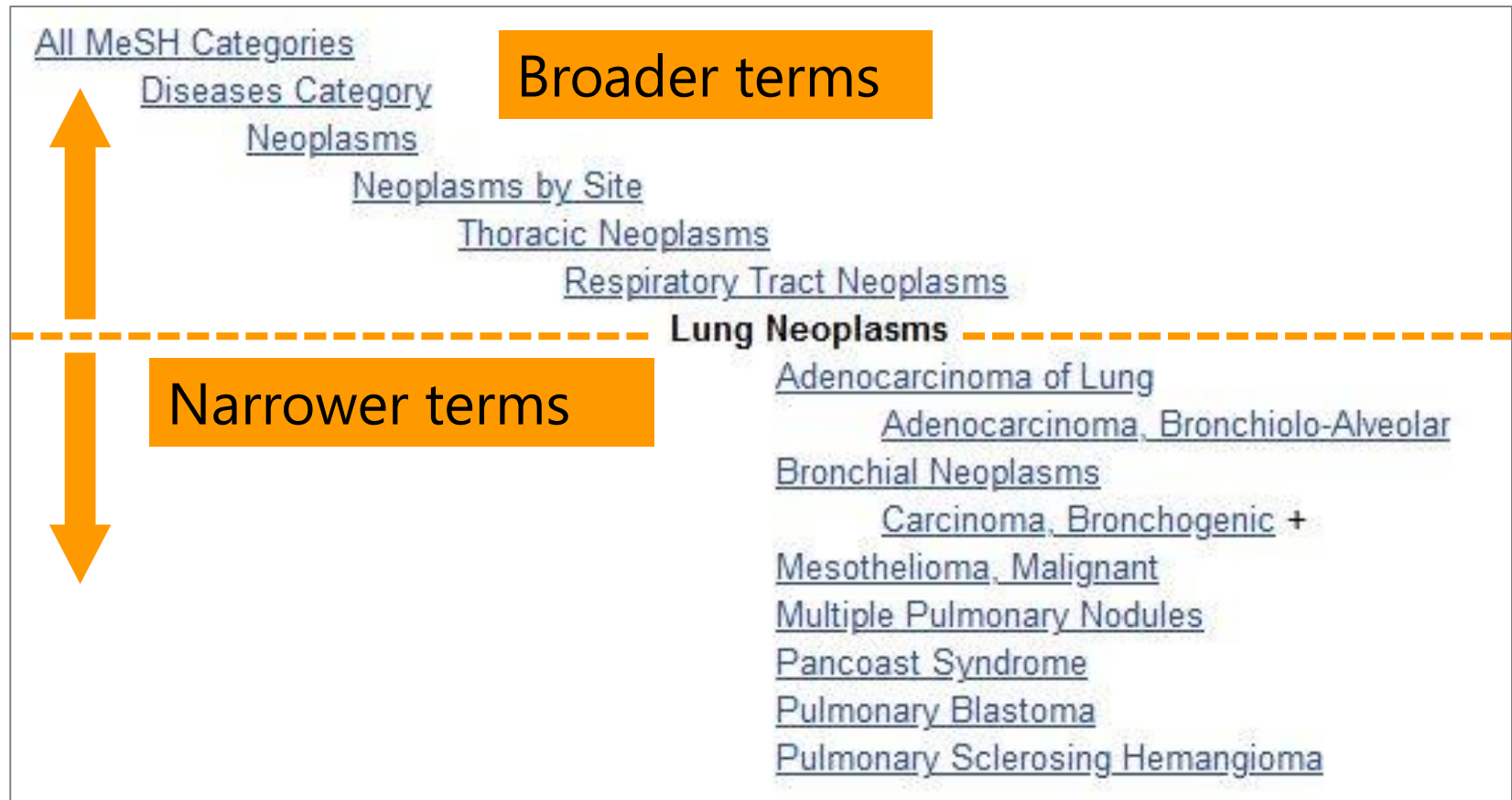
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Thesaurus in database

- MeSH for PubMed
- Specialized vocabularies for database
- Including synonyms of descriptors
- Hierarchically-organized vocabularies



Hierarchical structure in MeSH



Effects of using MeSH

- Controlled, hierarchically-organized vocabularies (MeSH) reduce missing literatures because of indexed terms.
- Only relevant articles can be searched.

MeSH vocabularies searches	Relevant matches
Keyword searches	Unnecessary and too many matches

Limitations to searching with MeSH

- Citations have not been available in PubMed yet
- Latest terminologies have not been added in MeSH

・ 12月3日付でNLMの整備するシソーラスである医学件名標目表（MeSH）について、最新の2021年版がMeSH用語のデータベース“MeSH Browser”のデフォルトへ設定された。PubMedへの2021年版MeSHの反映は12月中旬までに完了予定である。

・ 2021年版MeSHでは、2020年版の14件の標目について新しい用語への更新が行われた。また、277件の新しい用語が標目に追加された。

・ 2020年1月以降、MeSHの補足用語（Supplementary Concept Record）として追加された“COVID-19”や“SARS-CoV-2”をはじめ、新型コロナウイルス感染症に関連する多数の語彙が標目に昇格している。

出典：“米国国立医学図書館（NLM）、医学件名標目表（MeSH）2021年版の適用をはじめとした医学学術文献データベースMEDLINEの年末更新処理を実施”。カレントアウェアネス・ポータル. 2020-12-9. <https://current.ndl.go.jp/node/42724>, (参照 2021-3-32)

Subheadings

- Subheadings indicate a specific aspect of concept.
- Example 1: Chemotherapy for liver cirrhosis in PubMed

MeSH Main Heading (Descriptor)	Liver Cirrhosis
Subheading (Qualifier)	drug therapy

- Example 2: Possibility of adverse event of t-PA administration to acute cerebral embolism
→Stroke[MeSH] AND Tissue Plasminogen Activator[MeSH]
AND **Intracranial Hemorrhages** / **chemically induced**[MeSH]

Automatic term mapping

- Automatic term mapping translates text words to controlled vocabularies (MeSH)
- Search strings combine Boolean OR operators
- Try only MeSH terms if you retrieved too many results

Search: **lung cancer**

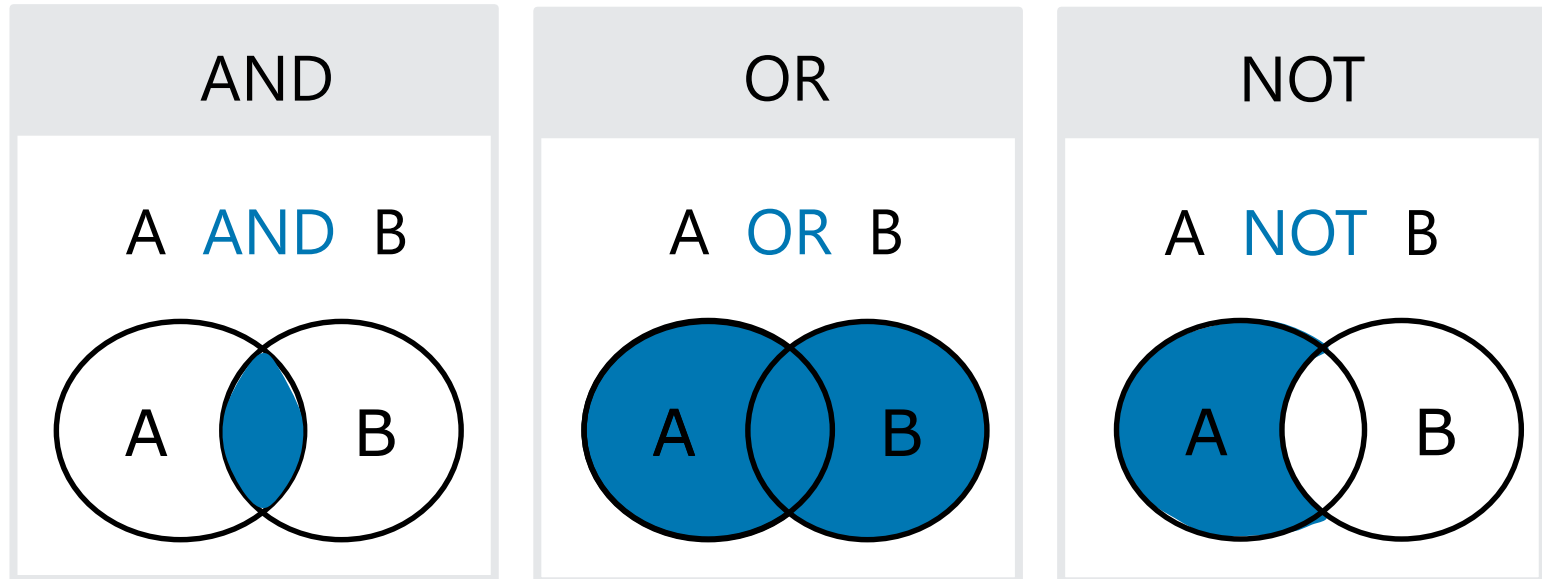
PubMed

"lung neoplasms"[MeSH Terms] OR ("lung"[All Fields] AND "neoplasms"[All Fields]) OR "lung neoplasms"[All Fields] OR ("lung"[All Fields] AND "cancer"[All Fields]) OR "lung cancer"[All Fields]

Search databases do not have controlled vocabulary

1. Find synonyms and search them combining with Boolean operators

Ex : cancer **OR** tumor **OR** neoplasm **OR** ...



Search databases do not have controlled vocabularies

2. Use wildcards and truncation

- Wildcard search will find results including multiple spellings
- The symbols are unique in each database
- Wildcard symbol substitutes for zero or more characters

Right-Hand Truncation	enzym *	→ enzym e , enzy mes
Internal Truncation	Hof * man *	→ Hof mann , Hoff man
Left-Hand Truncation	* old	→ t old , househ old , b old

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Focusing your search results

Phrase searching

- Enclose your search phrase in double quotes .
Ex. "lung cancer"
- A search using lung cancer will be broken up.
- Not every database uses double quotes for phrase search.

Searching with database fields (also called filters)

- Subheadings
- Study design
- Age of subjects, etc.

Expanding your search results

Find broader/narrower terms in database thesaurus

- Broader terms search includes narrower terms automatically. (Ex. PubMed)

Modify search queries

- Add additional terms using OR Boolean operator.

Limitations to expanding your search

- Database do not cover everything that can be searched.

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Two major databases

Database	Key features
PubMed	Mainly including biomedical literatures in English
Web of Science	• Multidisciplinary literatures • Identify similar studies or researchers by searching citation information

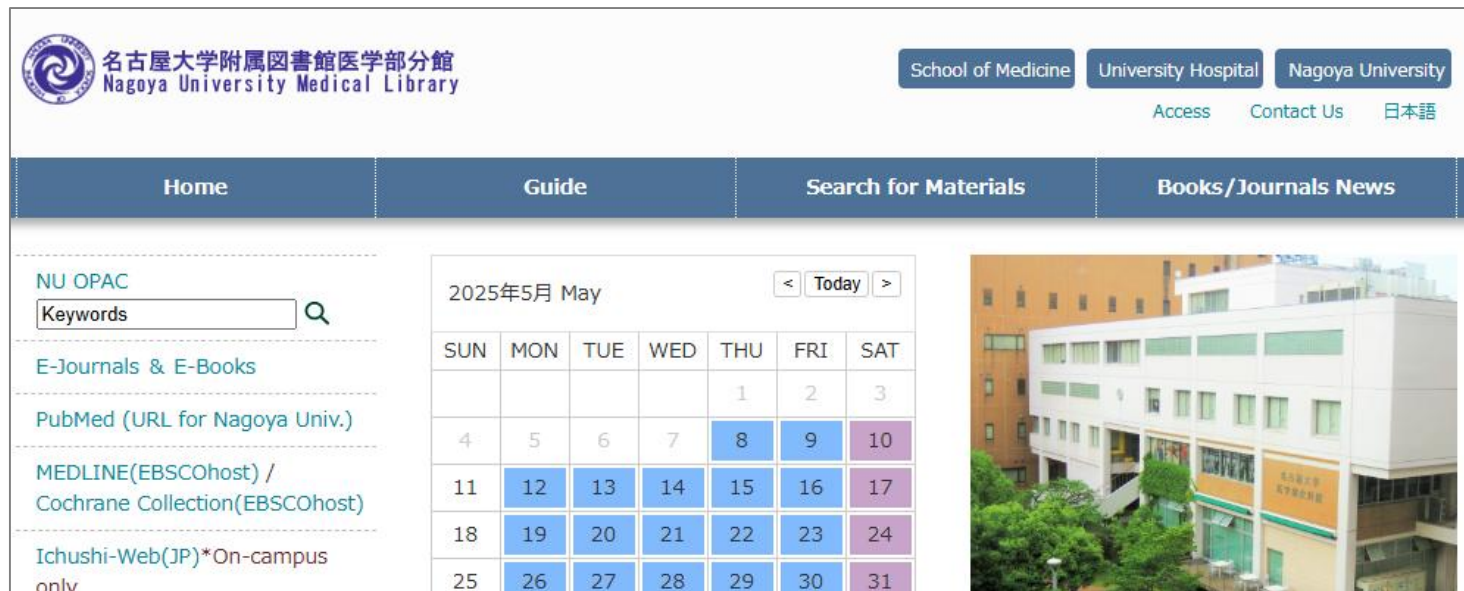
EBM will be focused in the video of “Other databases”.

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Medical Library web site

- https://www.med.nagoya-u.ac.jp/medlib/index_en.html
- Bookmark this page in your browser.

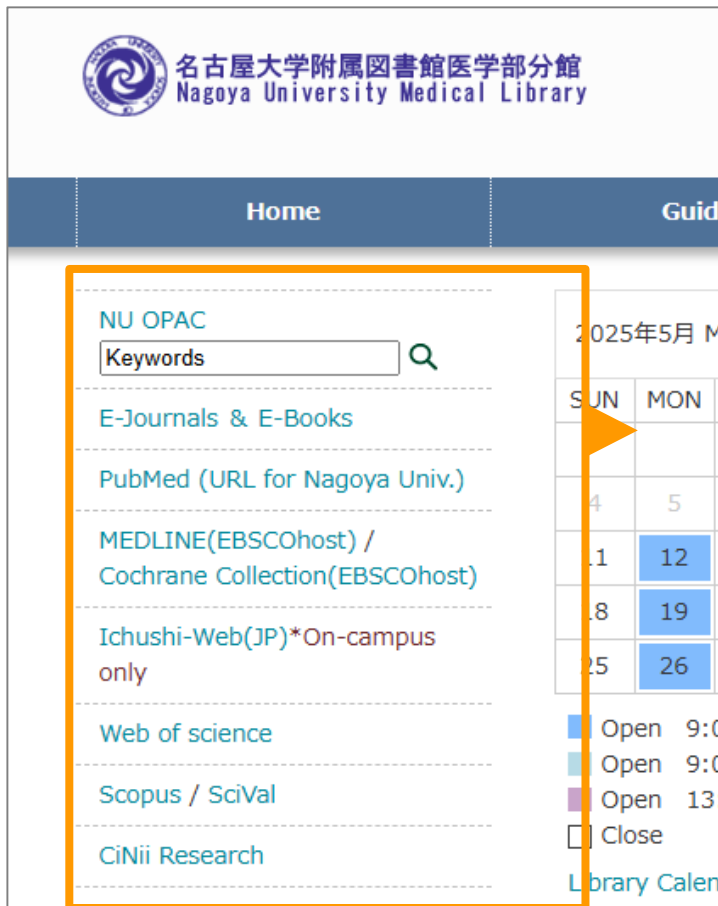


The screenshot displays the Nagoya University Medical Library website. At the top left is the library's logo and name in Japanese and English. To the right are navigation buttons for 'School of Medicine', 'University Hospital', and 'Nagoya University', along with links for 'Access', 'Contact Us', and '日本語'. A main navigation bar includes 'Home', 'Guide', 'Search for Materials', and 'Books/Journals News'. The left sidebar features a search bar labeled 'NU OPAC' with a 'Keywords' input field and a magnifying glass icon. Below the search bar are links for 'E-Journals & E-Books', 'PubMed (URL for Nagoya Univ.)', 'MEDLINE(EBSCOhost) / Cochrane Collection(EBSCOhost)', and 'Ichushi-Web(JP)*On-campus only'. The central area shows a calendar for May 2025, with the current date 'Today' highlighted. The calendar table is as follows:

SUN	MON	TUE	WED	THU	FRI	SAT
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

On the right side of the calendar is a photograph of the Nagoya University Medical Library building, a modern multi-story structure with a mix of white and orange facades.

Off-campus access



The screenshot shows the Nagoya University Medical Library website. The header includes the library's logo and name in Japanese and English. Below the header is a navigation bar with 'Home' and 'Guid' (likely 'Guidance'). A sidebar on the left contains a search bar labeled 'NU OPAC' with a 'Keywords' input field and a magnifying glass icon. Below the search bar are links for 'E-Journals & E-Books', 'PubMed (URL for Nagoya Univ.)', 'MEDLINE(EBSCOhost) / Cochrane Collection(EBSCOhost)', 'Ichushi-Web(JP)*On-campus only', 'Web of science', 'Scopus / SciVal', and 'CiNii Research'. An orange box highlights the search bar and the 'PubMed' link. To the right of the sidebar is a calendar for May 2025, showing dates 1 through 5, with some dates highlighted in blue. Below the calendar is a legend with colored squares and text: 'Open 9:0', 'Open 9:0', 'Open 13', and 'Close'. At the bottom right of the sidebar, there is a link for 'Library Calen'.

***Your THERS account
will be requested.**

This is the end of "Basics and strategies of document retrieval".

Go on the next video.

If you have questions, please email to:

libmed@t.mail.nagoya-u.ac.jp