

Basic Training 2021 for PhD students

# DOCUMENT RETRIEVAL

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**Medical Library**

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# Purposes

1. Learn the structure of databases used for medical researches, and master the skill to obtain the information of references needed for own research effectively.
2. Learn how to obtain the references based on the information from the database.

# Contents and requirements

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## **Title of video**

Address of Library Director

Basic and strategy of document retrieval

PubMed

Web of Science

Acquisition and management

Other databases

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## **Requirments for crediting**

- See all videos
- Answer the Tests in the course through NUCT
- Submit your answer sheet of the final assignment and an evaluation sheet by the deadline

When you have questions, send your inquiry to [med@nul.nagoya-u.ac.jp](mailto:med@nul.nagoya-u.ac.jp)

# **BASIC AND STRATEGY OF DOCUMENT RETRIEVAL**

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# Contents

1. Research/Clinical Question : PICO/PECO
2. Thesaurus
3. Verification of results and correction of conditions of retrieval
4. Outline of medical databases
5. Access to databases

# Contents

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

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PI(E)CO	Meaning
<b>P</b>	Patient, Problem, Population
<b>I (E)</b>	Interventions/Exposure
<b>C</b>	Comparisons, Controls, Comparators
<b>O</b>	Outcomes

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- Formularization of request according to PICO/PECO
- It helps : ①to make the purpose clear ②to put the retrieval keywords in order ③to select an appropriate study design

# Example of PICO/PECO

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



	<b>Component of PICO</b>	<b>Possible retrieval term</b>
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



# Use of PICO/PECO

## Comprehensive serearch such as systematic reveiw

- Search with P AND I .
- Be aware that there is no O in the title or abstract.
- In case of too many hits, narrow down them by adding study design.

## Effective retrieval for the crinical problems

- Search with P AND I AND C AND O.
- In case of no hits, try it using another synonyms.

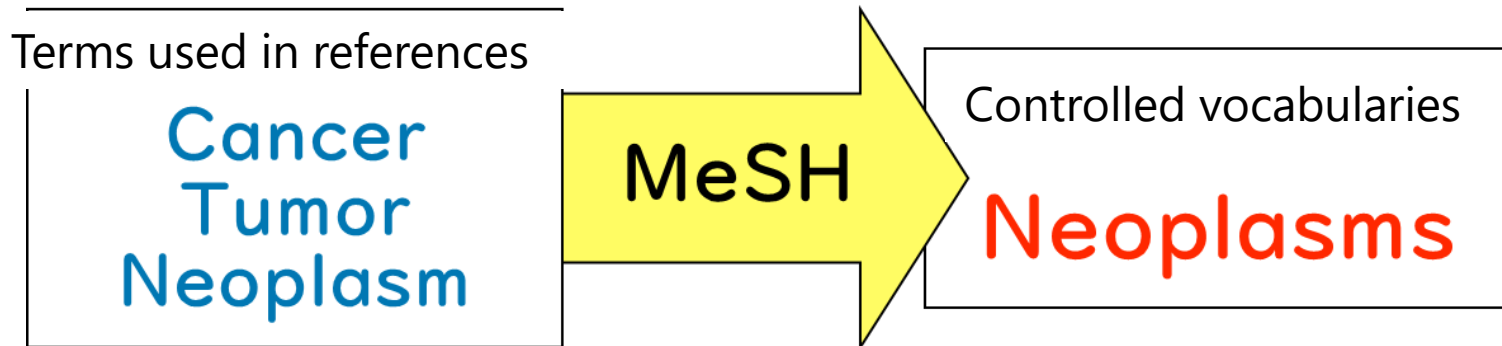
Use of thesaurus is effective in either case.

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# Roles of thesaurus

- Vocabulary set in database
- Conversion of synonyms to controlled vocabularies
- Making a stratified structure
- MeSH in PubMed



# Structure in thesaurus



# Effects of thesaurus

- Use of controlled vocabularies prevents drops from retrieval due to the different expression.
- Only relevant references could be retrieved.

Thesaurus retrieval	A fewer hits with a fewer unrelated references
Keyword retrieval	A more hits with a more unrelated references

# Limitation of thesaurus

- No thesaurus in recent references
- No controlled vocabularies for new terms

・ 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)

# Subheading

- Subheading indicates the field the word used.
- Example 1: Chemotherapy for liver cirrhosis in PubMed

MeSH	<b>Liver Cirrhosis</b>
Subheading	<b>drug therapy</b>

- 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 mapping

- Automatic guidance to appropriate controlled vocabularies for an input natural term
- OR retrieval for natural terms and controlled vocabularies
- Retrieval solely by natural terms in case of no controlled vocabularies

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]

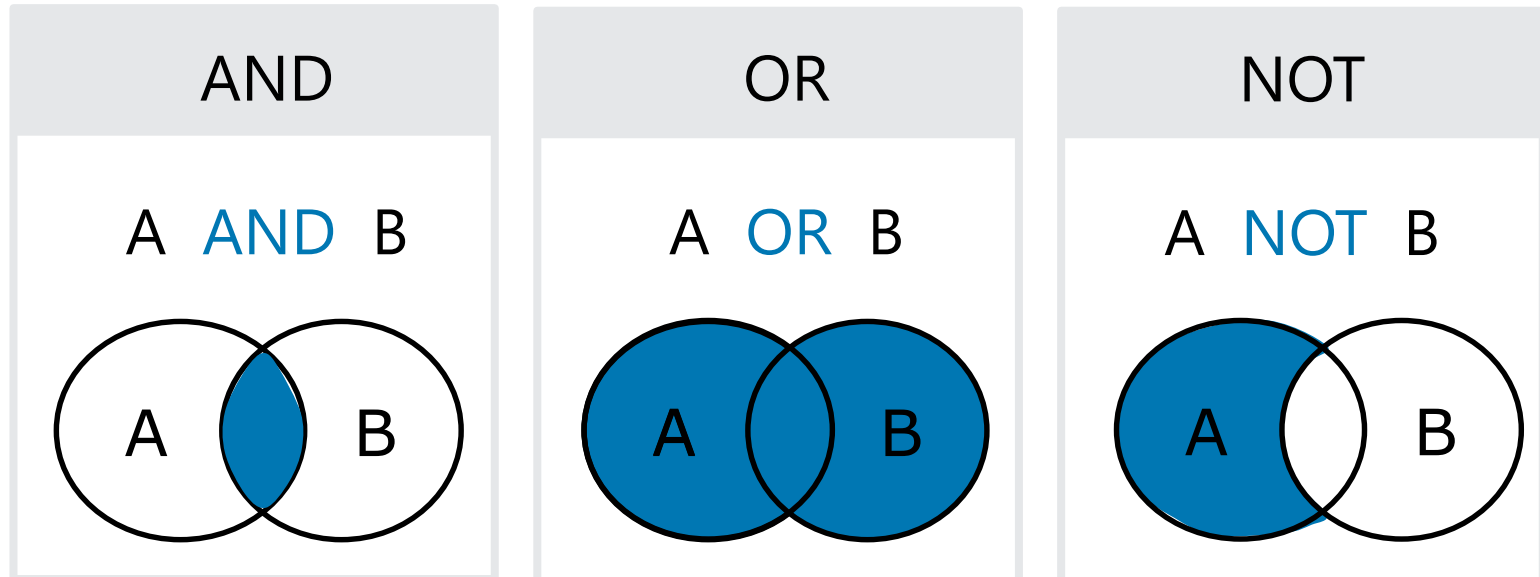


# Databases without thesaurus

## 1. Collect synonyms

- Retrieval using synonyms by OR function

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



# Databases without thesaurus

- Use of partial match
  - When a part of retrieval terms is input, references with the same words can be retrieved.
  - \*, ?, \$, etc. can be used before and after the words. The symbols are unique in each database.

Right-Hand Truncation    enzym\*                    → enzyme, enzym**es**

Internal Truncation       Hof\*man\*                → Hof**mann**, Hoff**man**

Left-Hand Truncation    \*old                        → **told**, househ**old**, **bold**

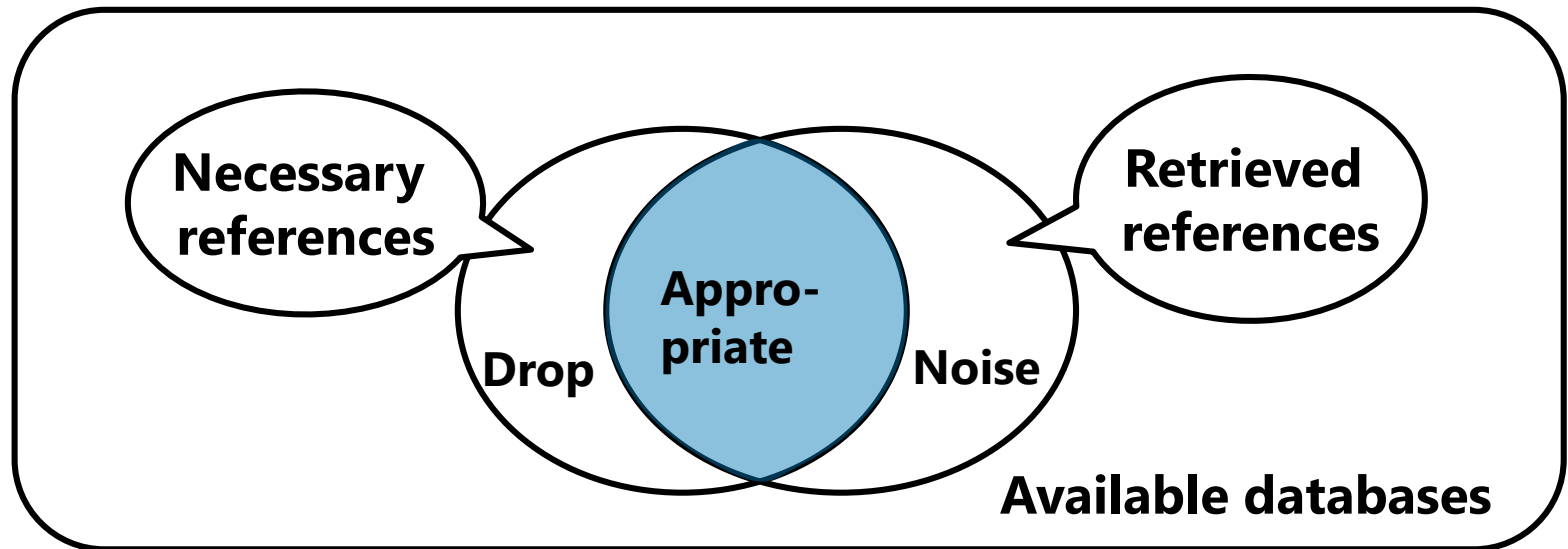
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# Drop and noise

**Drop** Necessary references are not retrieved.

**Noise** Inclusion of unnecessary references



# No drops ?

## Modification of thesaurus (Keywords)

- Adding synonyms using OR

## Examine upper/lower terms in thesaurus

- Upper terms = retrieval in a wider range
- Retrieval with lower terms

## Pay special attention to recent data and old data

- No thesaurus, no registration of reference data, or so.

# Many noises ?

## Phrase (idiom) retrieval

- Retrieval as an idiom with more than 2 words  
Ex. "lung cancer"
- The symbol is unique in each database.

## Restriction by item other than keywords

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

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# Characteristics and usage (Journal databases)

Database	Characteristics
PubMed	Registration mainly including English references
Web of Science	<ul style="list-style-type: none"><li>• Selected from PubMed</li><li>• With the information on citation, clearing the relation between studies</li></ul>

EBM is explained in the video of "The other databases".

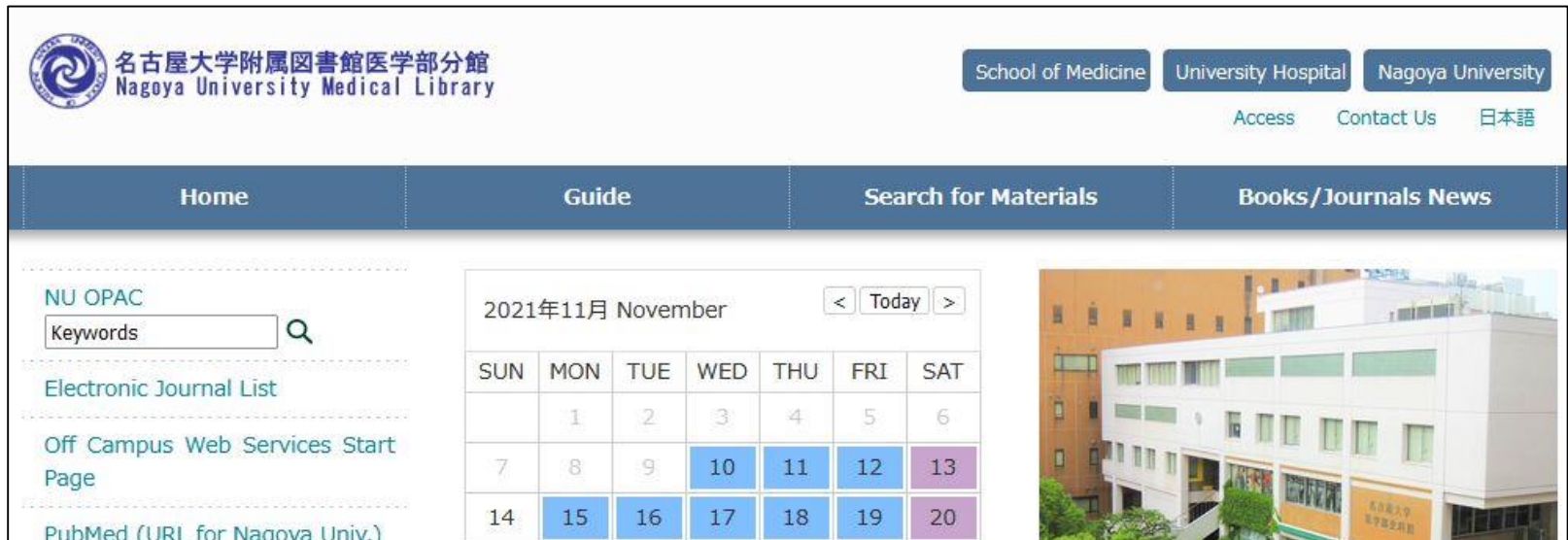


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# The site of medical library

- [https://www.med.nagoya-u.ac.jp/medlib/index\\_en.html](https://www.med.nagoya-u.ac.jp/medlib/index_en.html)
- Bookmark this page in your browser.




The screenshot displays the website for the Nagoya University Medical Library. At the top left is the library's logo and name in Japanese and English. On the top right, there are navigation buttons for 'School of Medicine', 'University Hospital', and 'Nagoya University', along with links for 'Access', 'Contact Us', and '日本語'. A dark blue navigation bar contains 'Home', 'Guide', 'Search for Materials', and 'Books/Journals News'. The main content area features a search bar labeled 'NU OPAC' with a 'Keywords' input field and a search icon. Below the search bar are links for 'Electronic Journal List', 'Off Campus Web Services Start Page', and 'PubMed (URL for Nagoya Univ.)'. In the center, a calendar for November 2021 is shown, with the current date 'Today' highlighted. To the right of the calendar is a photograph of a modern, multi-story building, likely a hospital or library building.

名古屋大学附属図書館医学部分館  
Nagoya University Medical Library

School of Medicine University Hospital Nagoya University

Access Contact Us 日本語

Home Guide Search for Materials Books/Journals News

NU OPAC  
Keywords  

Electronic Journal List

Off Campus Web Services Start Page

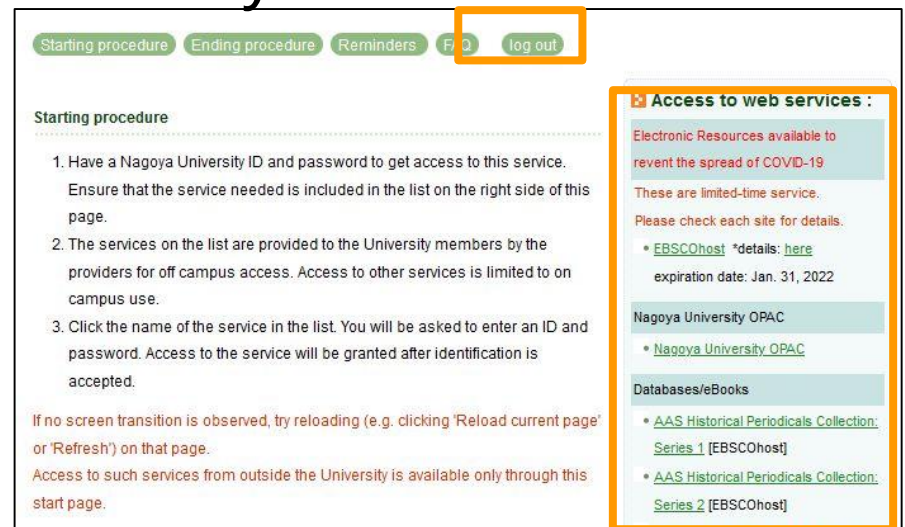
PubMed (URL for Nagoya Univ.)

2021年11月 November < Today >

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

# Use from the off-campus

- Select the below at homepage of library  
<https://www.nul.nagoya-u.ac.jp/db/DBannai/ezproxy/index.html>
- Cochran, WoS, and PubMed are also available at the page.
- Please, logout at the end of your work.



This is the last slide of “Basic and strategy of document retrieval”

Go on the next video.

If you have questions, please send them to  
[med@nul.nagoya-u.ac.jp](mailto:med@nul.nagoya-u.ac.jp)