Basic Training 2024 for PhD students

DOCUMENT RETRIEVAL

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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

Title of video

0_Address of Library Director

1_Basic and strategy of document retrieval

2_PubMed

3_Web of Science

4_How to obtain the references

5_The other databases

Requirements for crediting

- See all videos
- Answer the Tests in the course through **TACT**
- Submit your answer of the final assignment by the deadline

When you have any questions, email to : libmed@t.mail.nagoya-u.ac.jp

BASIC AND STRATEGY OF DOCUMENT RETRIEVAL

Contents

1. Research/Clinical Question： PICO/PECO

2. Thesaurus

3. Relevance feedback and query modification

4. Two major medical databases

5. Access to databases

Contents

1. **Research/Clinical Question： PICO/PECO**

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What is PICO/PECO

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

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"

	Component of PICO	Possible retrieval term
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 search such as systematic review

- 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 clinical 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

Terms used in references
Cancer
Tumor
Neoplasm

MeSH →

Controlled vocabularies
Neoplasms
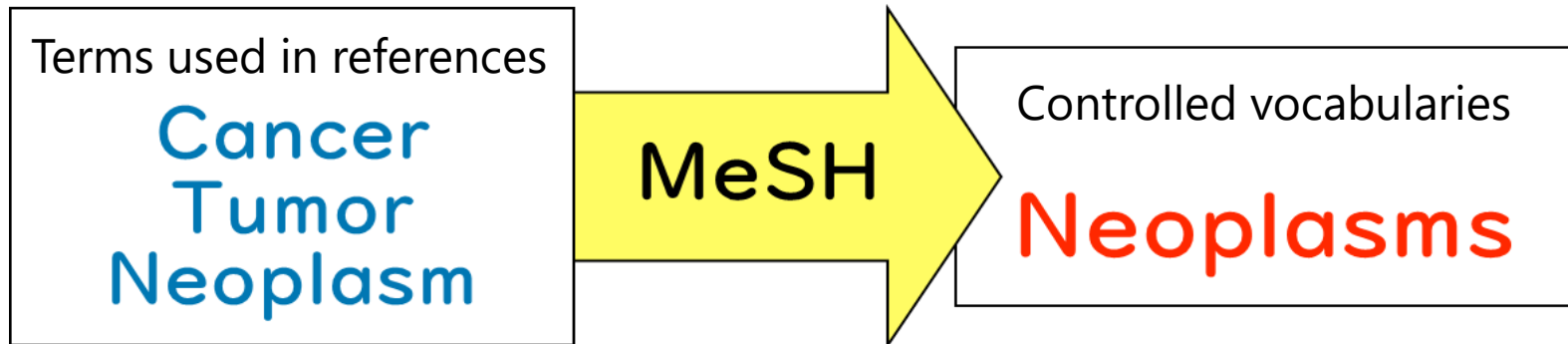
Stucture in thesaurus

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

Limitations 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	**Liver Cirrhosis**
Subheading	**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 recognizes entered natural terms to controlled vocabularies

- OR retrieval for natural language terms and controlled vocabularies

- Retrieval solely by natural language 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** …

AND	OR	NOT
A AND B	A OR B	A NOT B
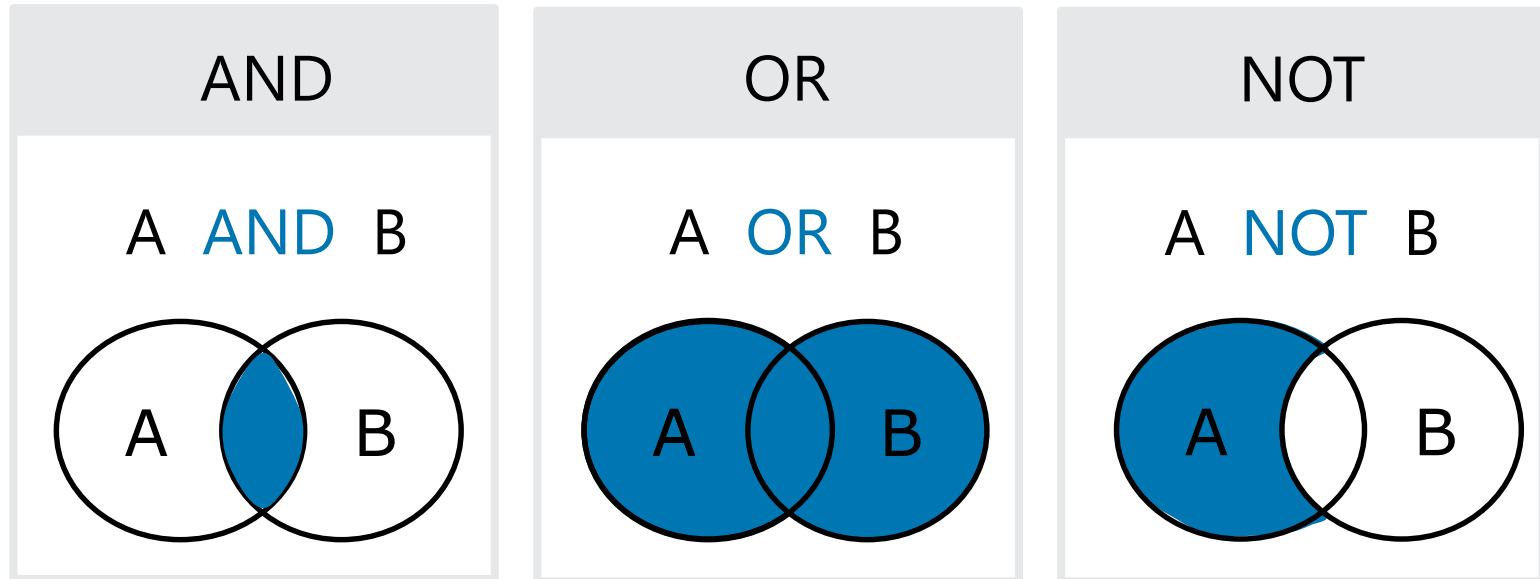
Databases without thesaurus

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

Right-Hand Truncation   enzym*****   → enzym**e**, enzy**mes**

Internal Truncation   Hof*****man*****   → Hof**man**n, Hoff**man**

Left-Hand Truncation   *****old   → **told**, househ**old**, b**old**

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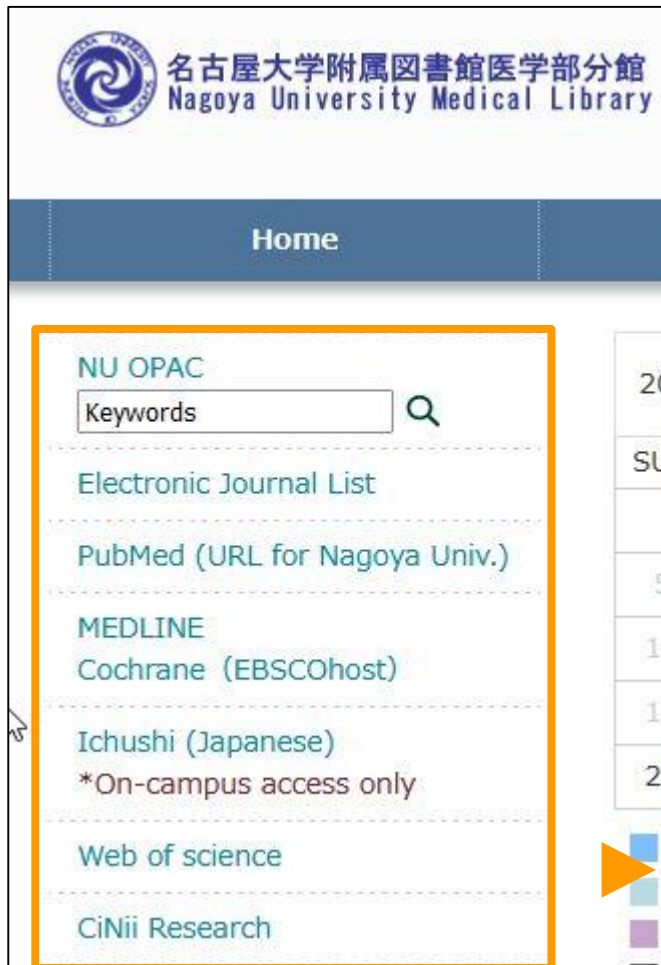
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Drop and noise

Drop   Necessary references are not retrieved.

Noise   Inclusion of unnecessary references
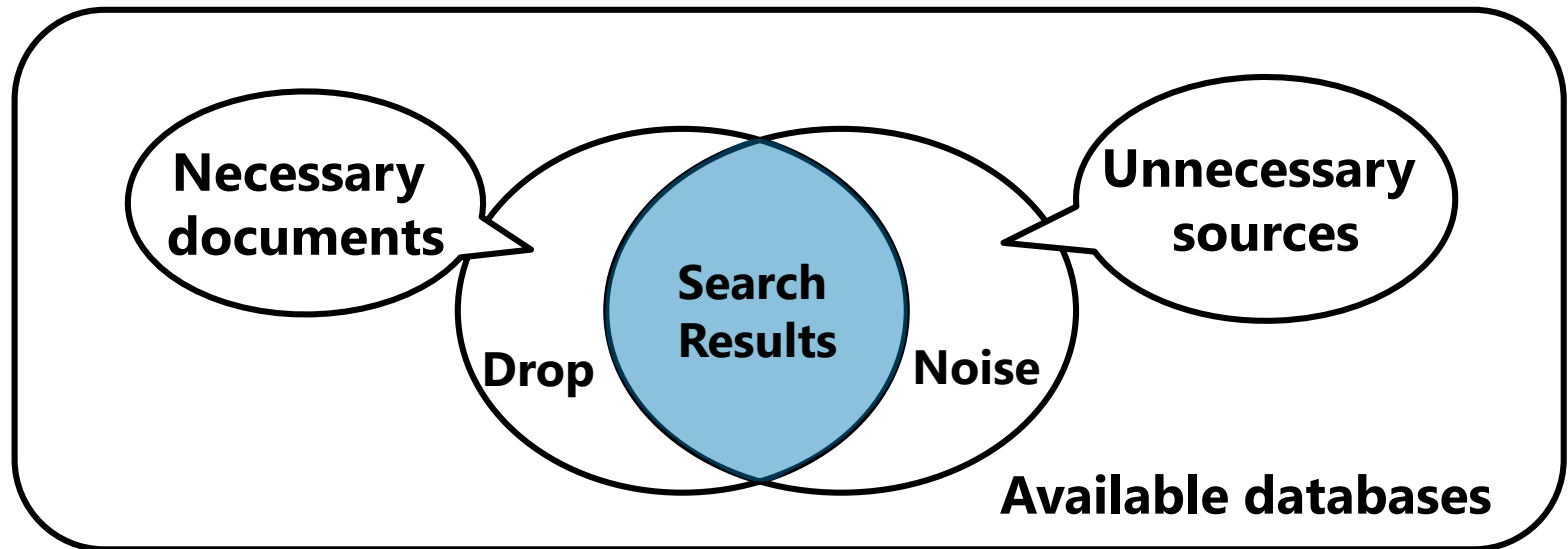
No drops ?

Modification of search terms

- 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

- Subheadings

- Study design

- Age of subjects, etc.

Contents

Characteristics and usage （Journal databases）

Database	Characteristics
PubMed	Mainly including literatures in English
Web of Science	• Selected data from PubMed • Identify similar studies or researchers working in the same fields by searching citation information

EBM is explained in the video of "The 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.

Off-campus access

*Your THERS account will be requested.

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
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