Literature Review

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• • Literature review

- What it is
- Scientific account of what has already been published on a specific topic

- What it is not
- Description or summary of all published information

• • Literature reviews must....

- Be organised around a specific research question/ topic
- Synthesize information into a summary of what is and is not known
- Identify areas of uncertainty/ controversy
- Create questions that need further research

• • Literature review

Involves two processes

- 1. Searching for information
- 2. Critically appraising the literature

Literature Search using PubMed

• • Contents

- o Aim
- Systematic approach to searching
- How to use PubMed
- What not to do

• • • Aim

- Time saving
 - Restrict absolute number titles
 - Increase number relevant titles

Reduce Numbers Needed to Read

• • PubMed: What is it?

 PubMed is a free database accessing the MEDLINE database of citations, abstracts and some full text articles on life sciences and biomedical topics.

http://www.nlm.nih.gov/services/pubmed.html

• • PubMed: What is in it?

- As of 8 March 2012 ~ over 25 million citations for biomedical literature
 - from <u>MEDLINE</u>, life science journals, and online books.
- As of November 2011, 5,600 in Medline
- Different languages []

Systematicapproachto searching

What to do and what NOT to do

• • Search strategy in PubMed

- Use knowledge, logic and creativity
- Start with good Research Question
 - Population
 - Determinant/ Exposure
 - Outcome
- Have several terms & synonyms for all
 - Be aware: UK / US spelling

• • Search strategy

- Search #1: Population OR synonyms
- Search #2: Determinant OR synonyms
- Search #3: Outcome OR synonyms

- Search #4: Combine #1, #2 and #3
 - Population (#1) AND Determinant (#2)
 AND Outcome (#3)

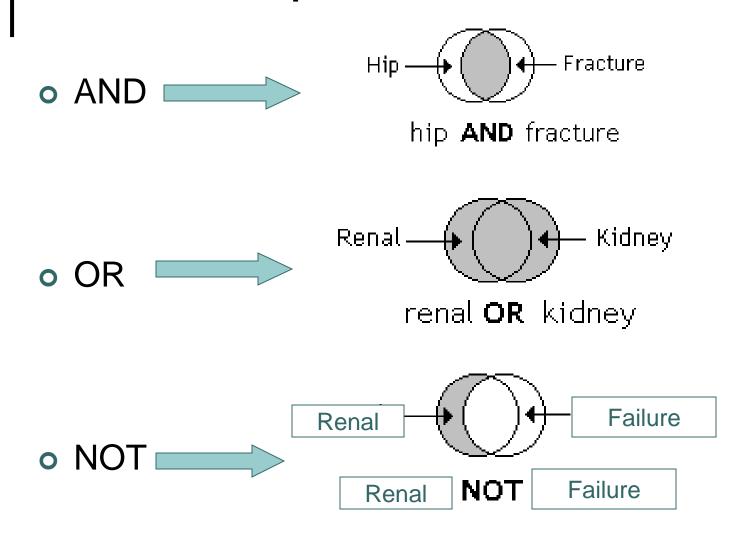
Basic Search Scheme

Population	Determinant/ Exposure	Outcome
term	term	term
Synonym 1	Synonym 1	Synonym 1
Synonym 2	Synonym 2	Synonym 2
	Synonym 3	Synonym 3

AND

AND

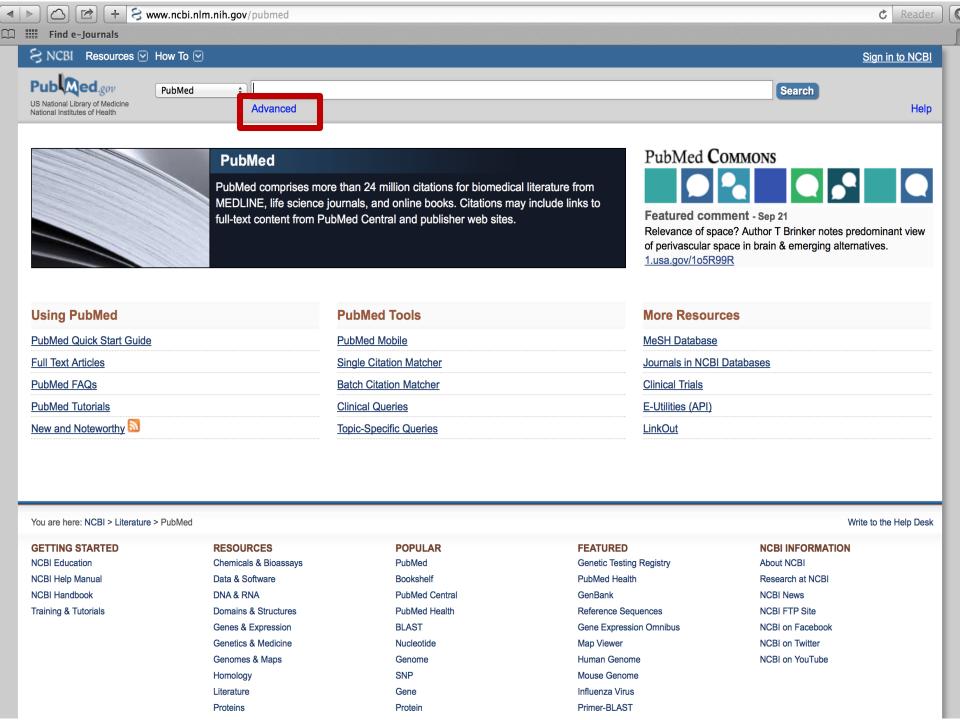
Boolean operators

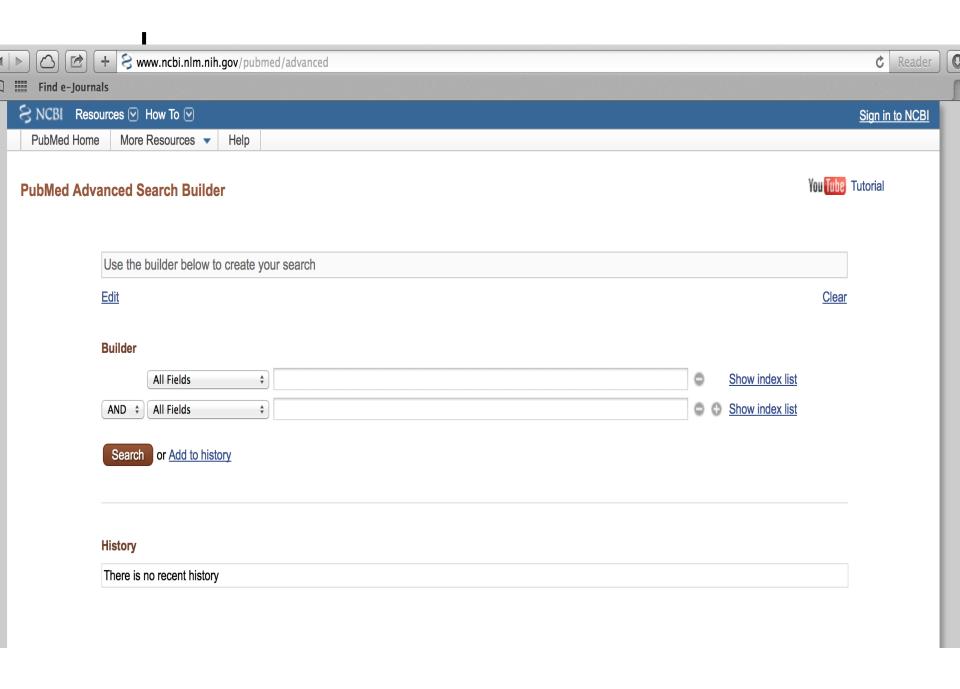


How to search in PubMed?

 Use 'Title/ Abstract' in search builder, under Advanced Search tab in Pubmed

o http://www.ncbi.nlm.nih.gov/pubmed





• • Research Question

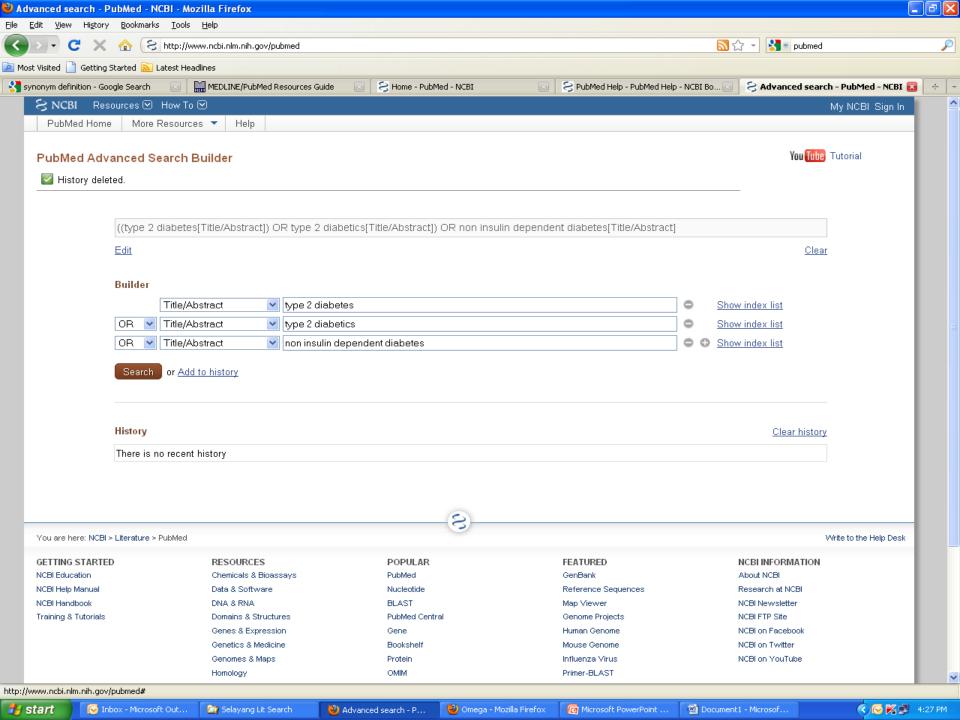
 Does renal impairment increase mortality risk in Type 2 Diabetes Mellitus?

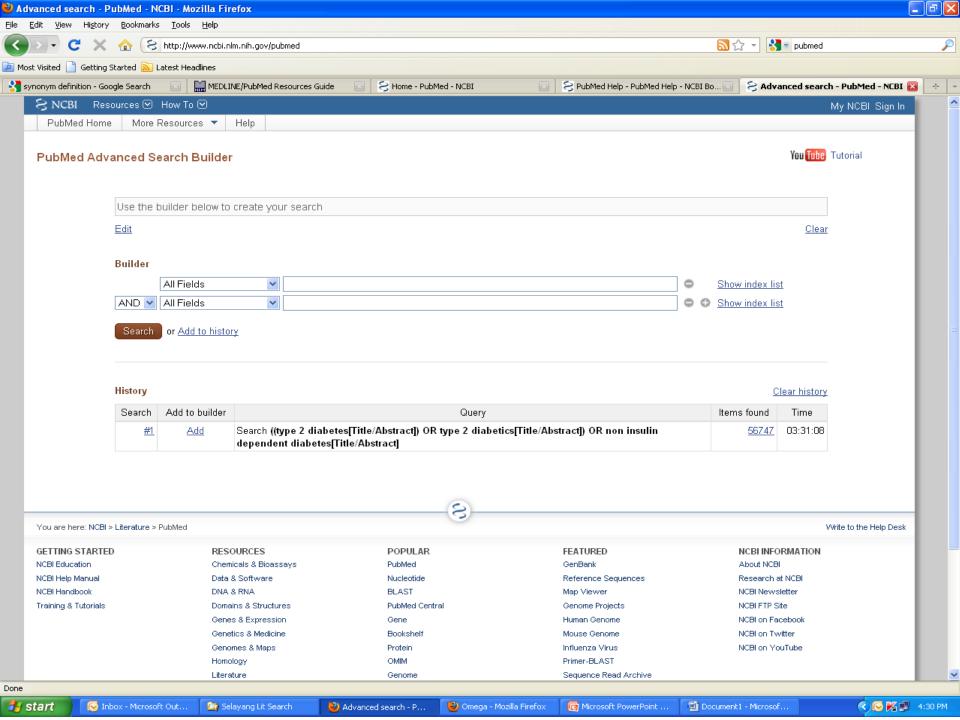
- Population: Type 2 DM
- Determinant: Renal impairment
- Outcome: Mortality

• • Example



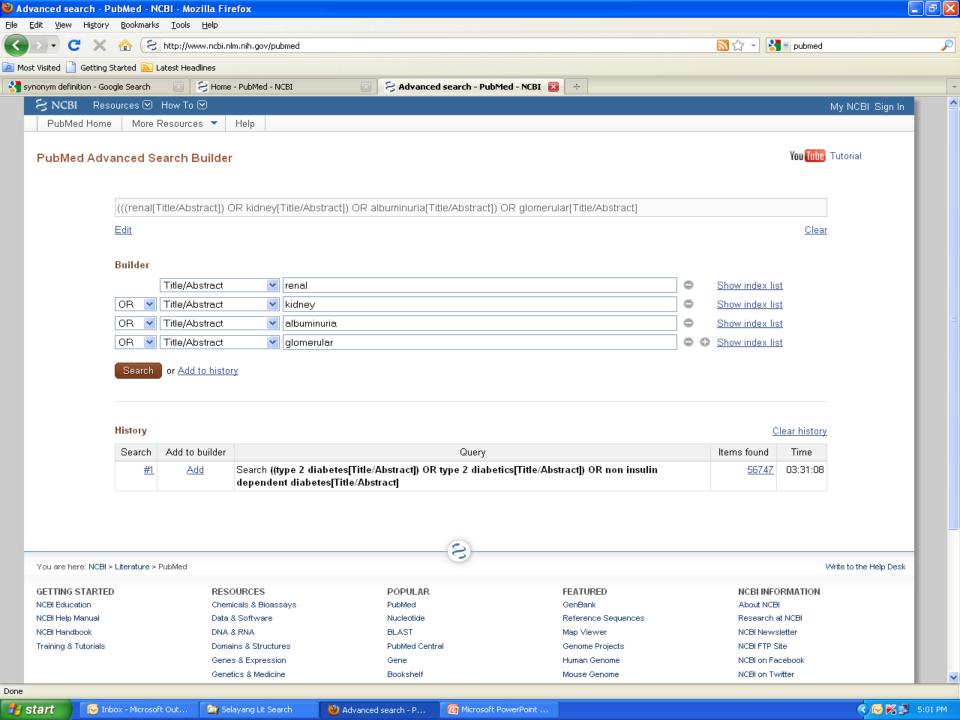
Population	
Type 2 Diabetes	
Type 2 diabetics	
Non insulin dependent diabetes	

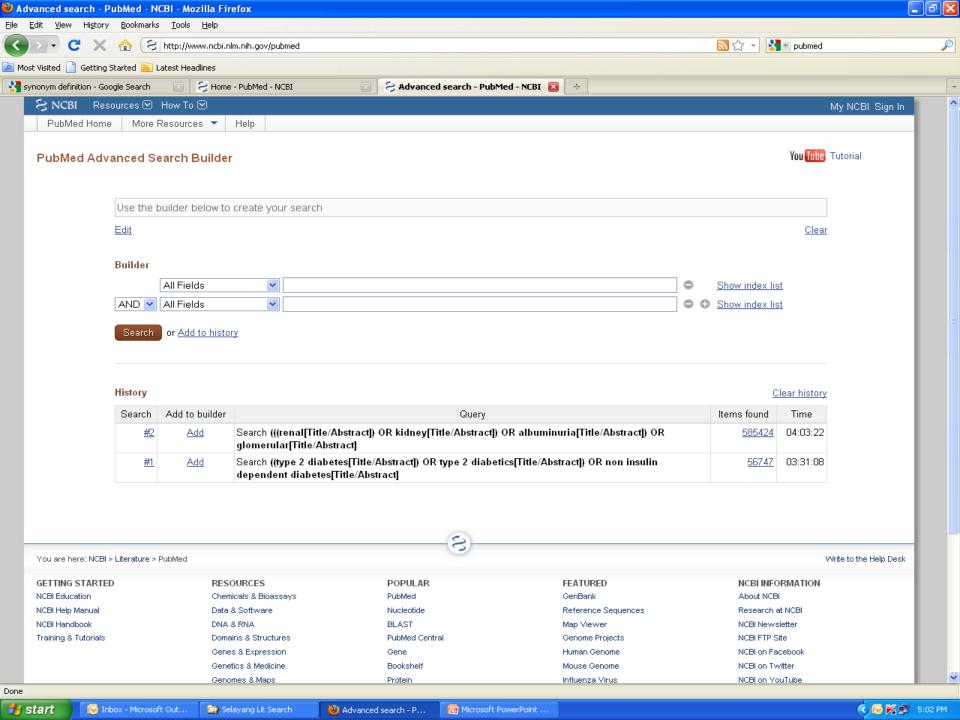




• • • Example

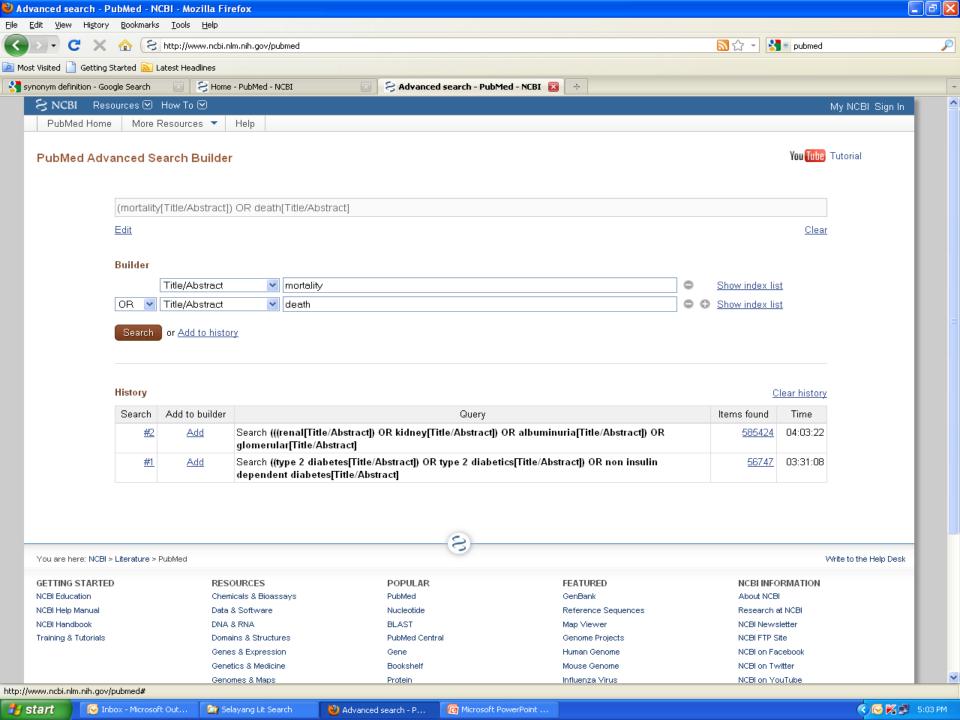
	Determinant/ Exposure	
OR	Renal	
	Kidney	
OR	Albuminuria	
OR	Glomerular	

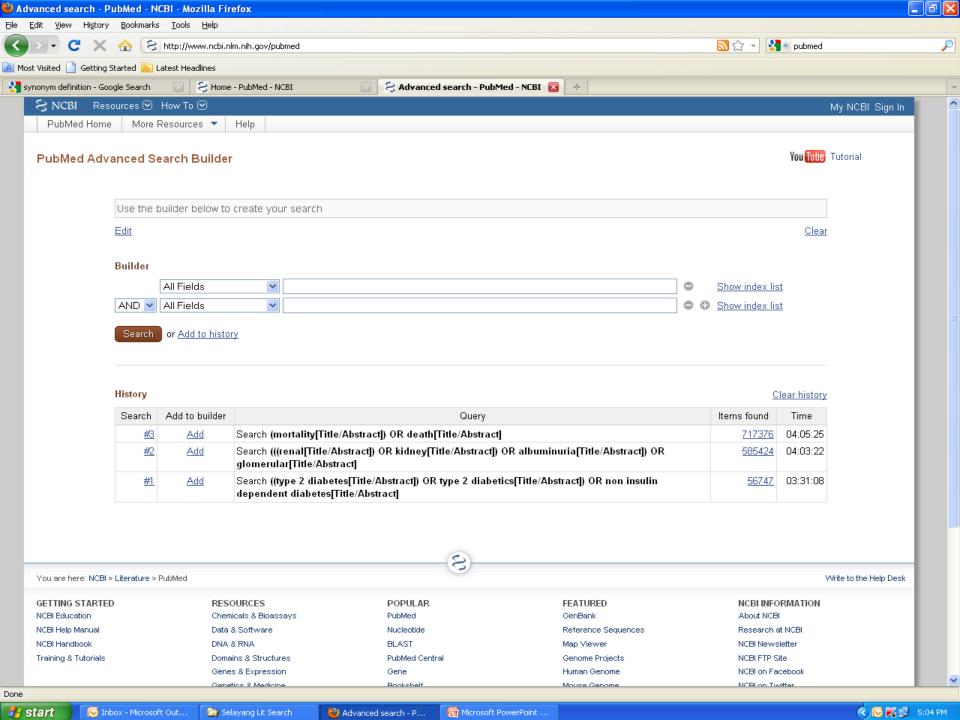




• • Example

	Outcome
OR	Mortality
	Death



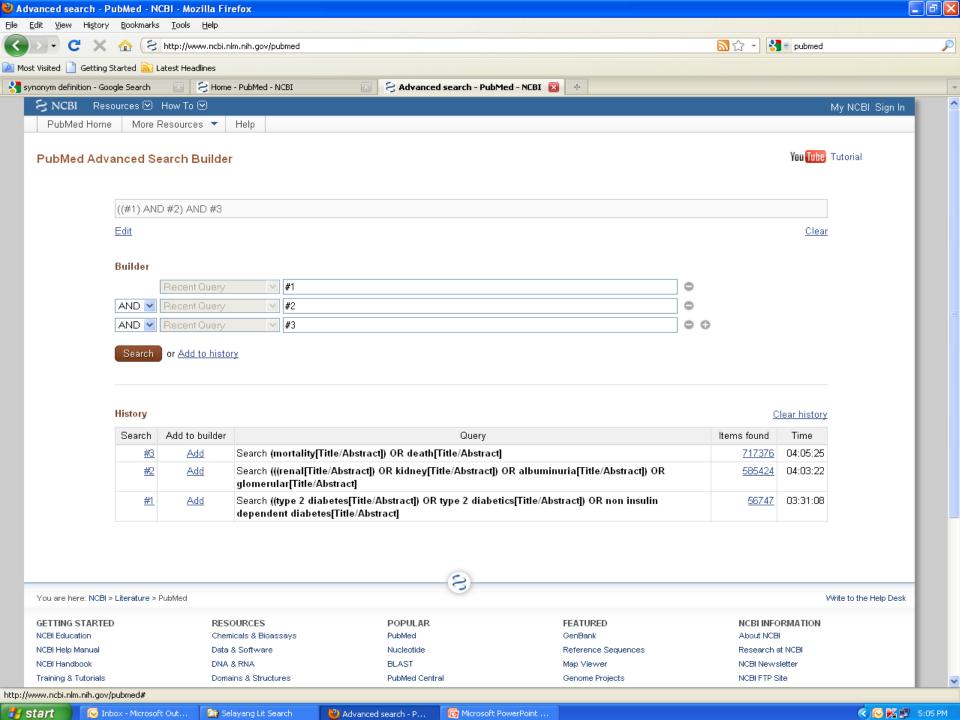


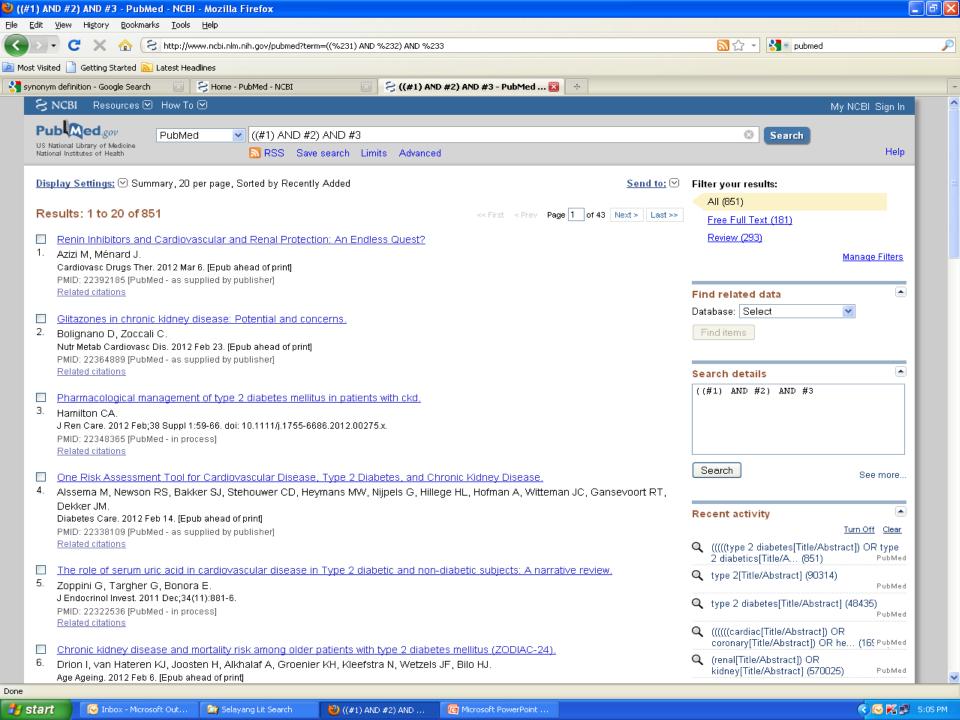
• • Example

Population	Determinant/ Exposure	Outcome
Type 2 Diabetes	Renal	Mortality
Type 2 diabetics	Kidney	Death
Non insulin dependent diabetes	Albuminuria/ Albumin	
	Glomerular	

AND

AND





How to MeSH up your search

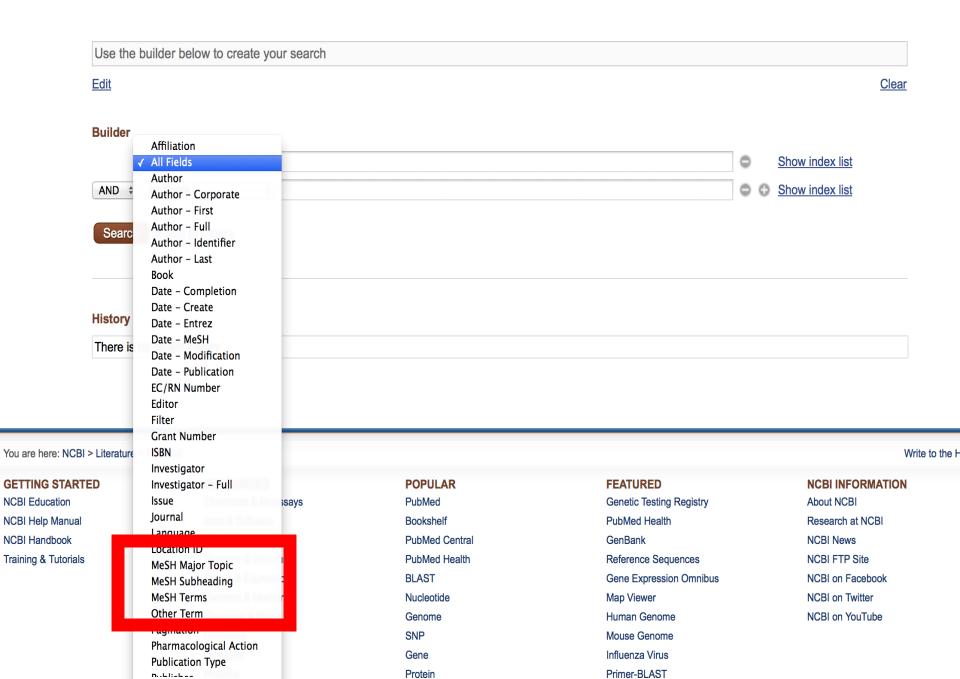
What NOT to do

MeSH database

- Medical Subject Headings (MeSH)
- Systematic keyword catalogue
- Related to content
- 5 MeSH terms per record
 - Based on title and abstract words
- Partially manual process
 - Misclassification possible
 - MeSH = US spelling

MeSH database

- Author keywords: NOT used
- Only available 3 6 months after publication
- Adjustment to terms regular
 - Eg. 2007
 - 22 terms removed
 - 494 terms added
 - 99 terms replaced



Nurses and other allied health researchers

 RQ: What is the level of knowledge and attitudes of nursing students toward tuberculosis?

 Reason: To understand and determine whether there is a need for improvement in nursing education regarding tuberculosis.

• • Research Question

• What is the level of knowledge and attitudes of nursing students toward tuberculosis?

- Population: Nursing students
- Determinant: Level of knowledge and attitudes towards TB
- o Outcome: None

• • Example



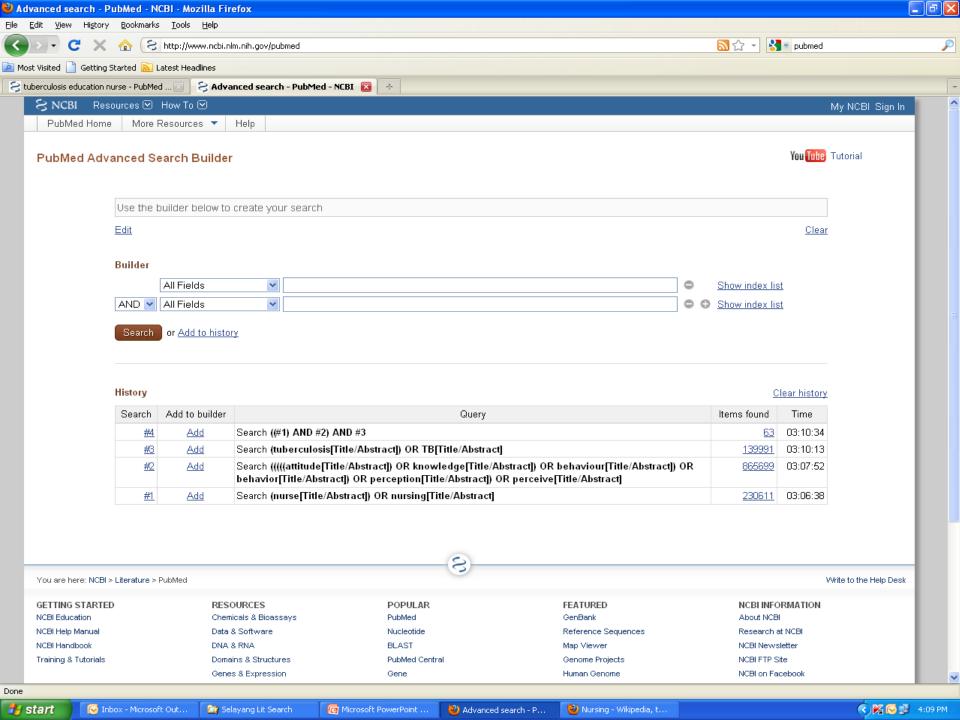
Population		
Nurse	? Nurse student	
nursing		

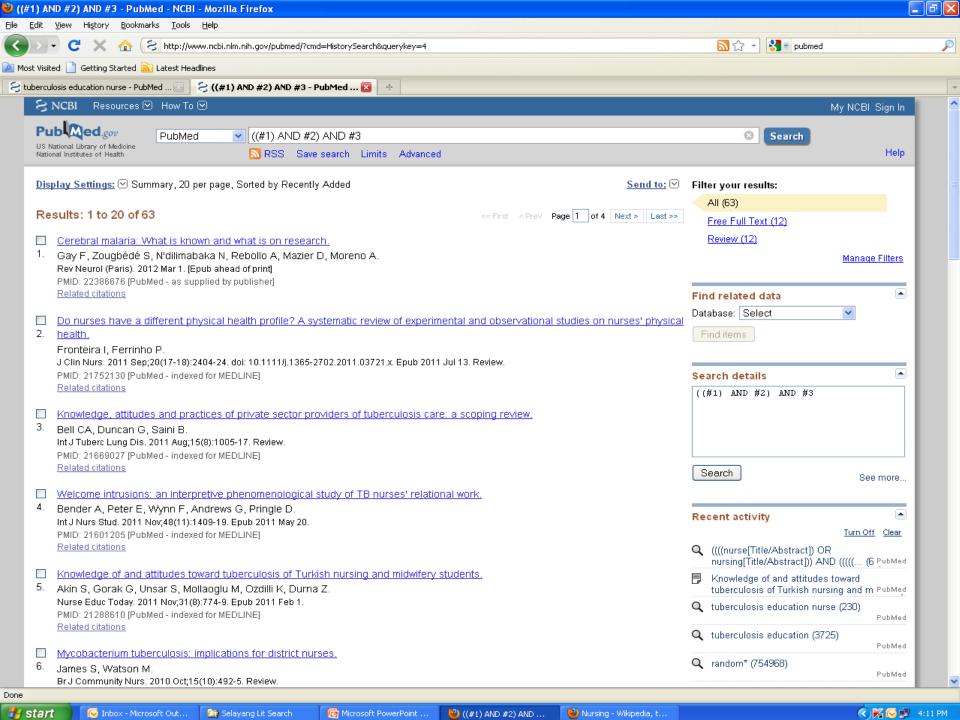
• • Example

	Determinant/ Exposure	
OR	attitude	
	knowledge	
OR	behaviour	
OR	Behavior	
OR	Perception	
UR	perceive	

• • • Example

	Determinant/ Exposure/ (Disease of interest)	
OP	tuberculosis	
OK OK	ТВ	





 Example: effect of traffic-related air pollution on blood pressure

- Gather separate concepts:
- Blood pressure, hypertension
 - Vehicle exhaust, diesel exhaust, vehicle emissions, traffic, etc.

0

Search 1: blood pressure OR hypertension

0

 Search 2: exhaust OR emissions OR pollution OR diesel

0

Search 3: vehicle* OR traffic

- HISTORY click on Advanced Search from the <u>PubMed home</u> <u>page</u>. Combine your previous searches, #1 AND #2 AND #3, or combine a previous search with new keywords.
- Search History is located below the Search Builder, on the Advanced Search page.

• • Practical session

- Think of a research question and prepare search terms
 - 5 minutes
- Go through PubMed search together

Thank you

Any Questions?