Practical 10. How to effectively search literature on PubMed and create your own ORCID

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1. Learning objectives

- Explain how to use common search tags to make your literature searches more effective
- Evaluate and refine literature searches
- Create your own personal ORCID and explain why this is a useful identification number

2. Background

You are most likely using PubMed to search for literature for your assignments and other related tasks. Like many scientists, you are adding your keywords to the search bar to find relevant literature. Sometimes you may become overwhelmed by the amount of literature a simple search can find.

There is more than meets the eye in PubMed. In this practical, we learn about targeting and refining your searches. This is accomplished by the use of Search Field Descriptions and Tags as well as performing targeted queries using built-in filters.

George Boole (1815-1864) was a British mathematician, who developed Boolean logic, a theory of mathematics in which all variables are either "true" or "false", or "on" or "off". This logic underpins all digital devices and database searches. The three basic boolean operators are: AND, OR, and NOT. These operators connect your search words to narrow or broaden your search results.

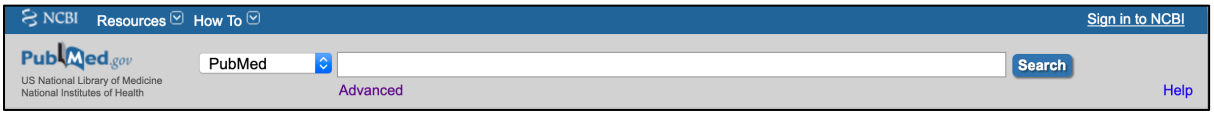
1) To narrow your results: Use AND as this requires that both of your search terms need to be found
2) To broaden your results or to make a query that finds two or more similar concepts: Use OR as this requires that only one of your search terms need to be found
3) To exclude a search term: Use NOT.

Databases usually recognize AND as the primary operator, and will connect concepts with AND together first. If you use a combination of AND and OR operators in a search, enclose the words to be limited by OR together in parentheses. For example: cancer AND (colon OR intestine)

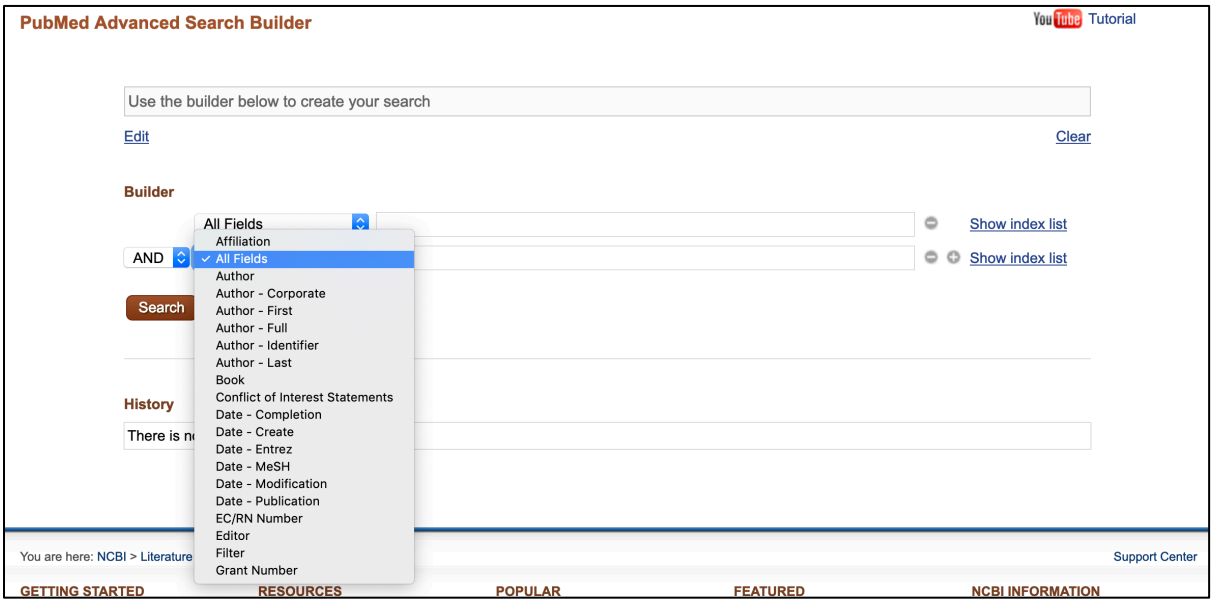
3. Searching PubMed

PubMed can be queried by the Basic or Advanced Search Interface (see the screenshots below). Initially it is useful to learn the syntax of the queries by using the Advanced Search Interface, but in the long run you are more likely to use the basic search interface even for complicated queries.

Basic Search interface (https://www.ncbi.nlm.nih.gov/pubmed):



Advanced Search interface (https://www.ncbi.nlm.nih.gov/pubmed/advanced):



Tasks:

Using the Advanced Search interface, perform the following searches:

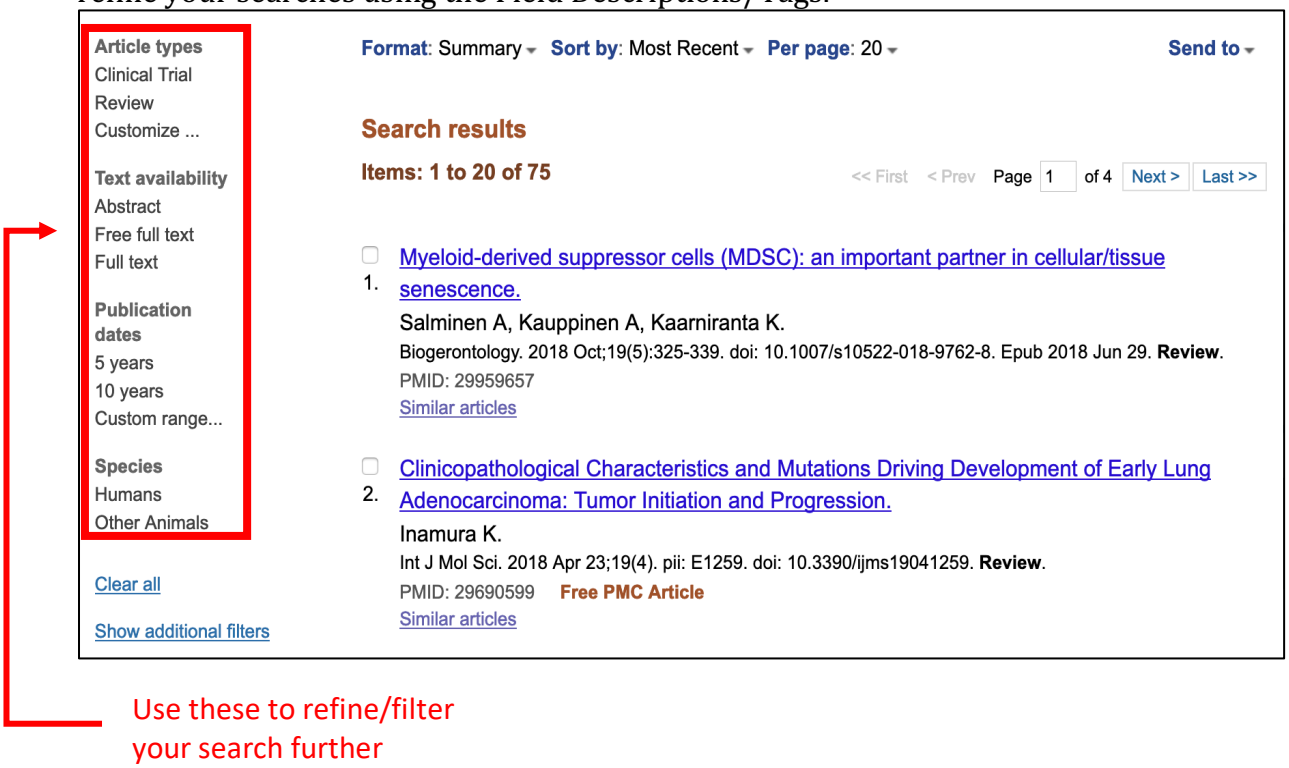
1) Search for publications by professor Hongwei Ouyang during 2005-2012
2) Search for relevant publications related to stem cells in Cell Metabolism journal
3) Search for papers with conflict of interest statements involving a genome sequencing company called “Novogene”
4) Search for review papers on “oncogene induced senescence” published after 2014

Step1. Build specific queries using the Advanced Search Builder and write down the query syntax PubMed generates for you.

Step2. Try to build the same specific queries directly on the Basic Search interface using the Field Descriptions/Tags (*see Appendix*).

Note also that there are a number of "stopwords" (*see Appendix*). These are very frequently occurring words that are excluded from any standard search. Therefore, you cannot search for the stopwords by themselves, but you can include them within search phrases. Usually, these words do not cause much problem for you, but it is good to be aware that including too many of these words in your paper's title or abstract could make your paper less visible for PubMed searches.

Refine your search by using additional filters.
After your initial search results are shown, you can easily refine your search using the selections on the left side of the website (See figure below). You can equally well refine your searches using the Field Descriptions/Tags.



Use these to refine/filter your search further

Advanced searches using built-in filters

A less well-known feature of PubMed is the built-in filters. These are very useful for digging into specific topics or clinical trials. To access these, simply follow the links under "PubMed Tools" found on the main page.

Tasks:

1) Identify main geographic locations for liver cancer related clinical trials
(Start by going to the Clinical trials site: https://clinicaltrials.gov/)

2) Find systematic reviews on breast cancer drug palbociclib
(Go to the Clinical Queries https://www.ncbi.nlm.nih.gov/pubmed/clinical)
3) Find the filter set that is used to define the Search Strategy Used to Create the "*PubMed History of Medicine*" filter
4) Using the "*History of Medicine*" filter, search for articles related to Chinese traditional medicine

Automated searches with emailed results

If you register for a MyNCBI account, you have additional advanced features at your disposal. You can for example get your query results automatically to your email at certain time intervals. MyNCBI features include:

Save searches & automatic e-mail alerts
Display format preferences
Filter options
My Bibliography & NIH public access policy compliance
SciENcv: a researcher biosketch profile service
Highlighting search terms
Recent activity searches & records for 6 months

Task:
Register and Sign-in for My NCBI. Set up a search with results emailed to you weekly. You can cancel this anytime!

4. Using ORCID

Some reasons to use ORCID from https://www.elsevier.com/connect/authors-update/ten-reasons-to-get-and-use-an-orcid-id!

1. ORCID is a unique ID, which connects you with your works, awards, and affiliations. It can be used when submitting a manuscript or applying for a grant.
2. ORCID alleviates mistaken identity. Having and using your own ORCID ID ensures that you are correctly identified.
3. You own and control your ORCID record, managing what information is connected and how it is shared.
4. Major manuscript submission systems have embedded ORCID IDs and over 1,600 journals are now requiring some or all authors to use an ID. You can often login using your ORCID credentials.
5. ORCID saves you time as you don't need to enter all your information again and again.
6. ORCID ID is your lifelong digital identifier.

How to create your own id at orcid.org

- Go to the ORCID homepage.
- Click Register now!
- Complete the registration form. As usual, you will be asked for an email address, to create a password.
- You will be prompted by ORCID to add further profile information.

Appendix 1.

Search Field Descriptions and Tags for PubMed Queries

Search Field Descriptions and Tags

Affiliation [AD]	Grant Number [GR]	Pharmacological Action [PA]
Article Identifier [AID]	Investigator [IR]	Place of Publication [PL]
All Fields [ALL]	ISBN [ISBN]	PMID [PMID]
Author [AU]	Issue [IP]	Publisher [PUBN]
Author Identifier [AUID]	Journal [TA]	Publication Date [DP]
Book [book]	Language [LA]	Publication Type [PT]
Comment Corrections	Last Author [LASTAU]	Secondary Source ID [SI]
Corporate Author [CN]	Location ID [LID]	Subset [SB]
Create Date [CRDT]	MeSH Date [MHDA]	Supplementary Concept[NM]
Completion Date [DCOM]	MeSH Major Topic [MAJR]	Text Words [TW]
Conflict of Interest [COIS]	MeSH Subheadings [SH]	Title [TI]
EC/RN Number [RN]	MeSH Terms [MH]	Title/Abstract [TIAB]
Editor [ED]	Modification Date [LR]	Transliterated Title [TT]
Entrez Date [EDAT]	NLM Unique ID [JID]	UID [PMID]
Filter [FILTER]	Other Term [OT]	Version
First Author Name [1AU]	Owner	Volume [VI]
Full Author Name [FAU]	Pagination [PG]	
Full Investigator Name [FIR]	Personal Name as Subject [PS]	

Appendix 2.

Stopwords recognized by PubMed

	Stopwords
A	a, about, again, all, almost, also, although, always, among, an, and, another, any, are, as, at
B	be, because, been, before, being, between, both, but, by
C	can, could
D	did, do, does, done, due, during
E	each, either, enough, especially, etc
F	for, found, from, further
H	had, has, have, having, here, how, however
I	i, if, in, into, is, it, its, itself
J	just
K	kg, km
M	made, mainly, make, may, mg, might, ml, mm, most, mostly, must
N	nearly, neither, no, nor
O	obtained, of, often, on, our, overall
P	perhaps, pmid
Q	quite
R	rather, really, regarding
S	seem, seen, several, should, show, showed, shown, shows, significantly, since, so, some, such
T	than, that, the, their, theirs, them, then, there, therefore, these, they, this, those, through, thus, to
U	upon, use, used, using
V	various, very
W	was, we, were, what, when, which, while, with, within, without, would