From Consumer to Creator:
The Scholarly communications landscape, searching, & Research Data Management

499 Projects

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September 22, 2023

Agenda

- **(Re)search process**
  - What does it look like?
  - How can the Library help?
  - How do I develop a research question?
  - Where do I search?
  - How do I save and cite my sources?
  - How do I search?

- **Research Data Management**
  - What is research data management? What's a data management plan?
  - What are tips and tricks to manage my data (and documents)?
  - How can I deposit and share data? Where can I find data?

- **Scholarly Publishing**

The undergraduate research lifecycle vs…

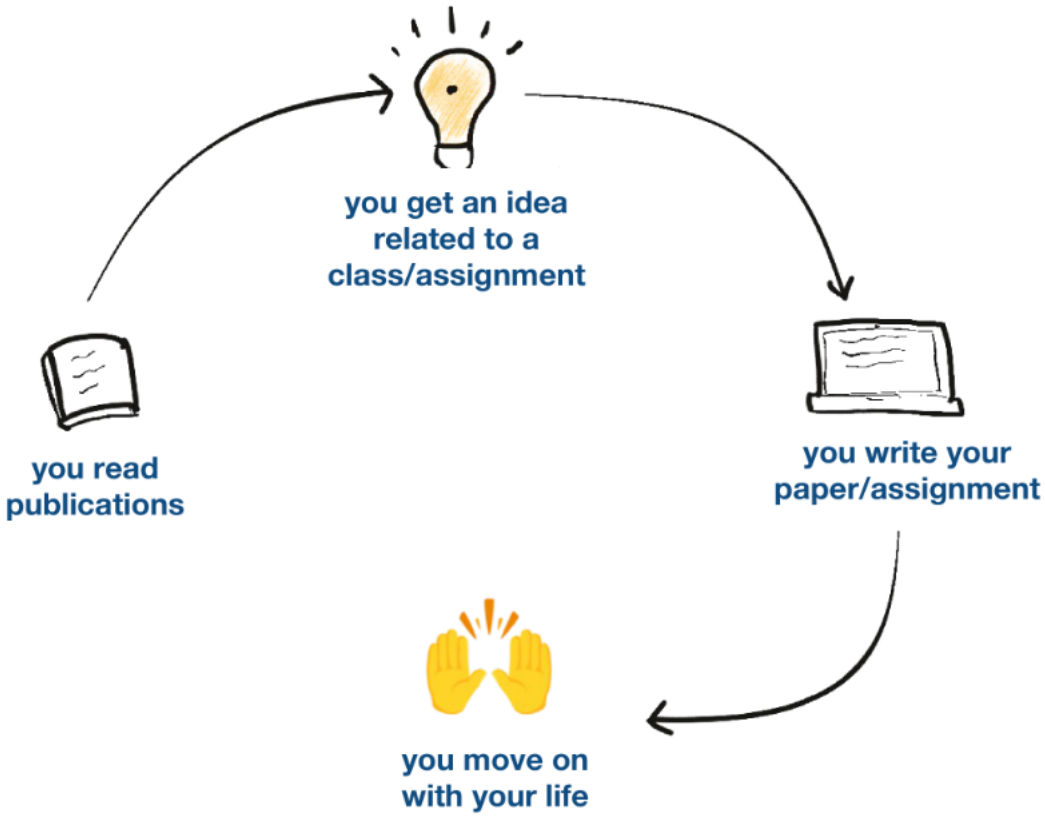
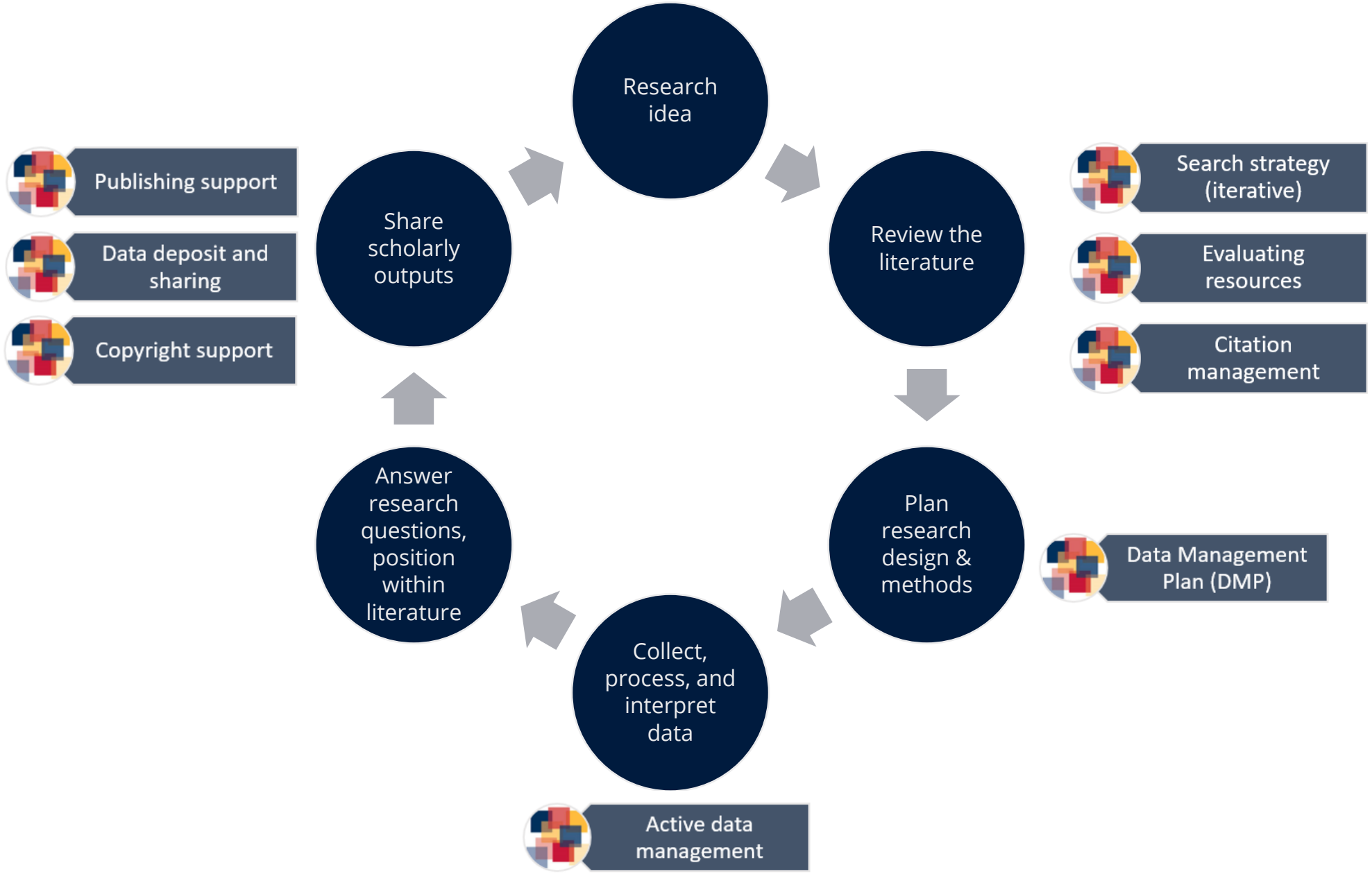


Image: Mike Nason from “Issues in Scholarly Publishing”

Library support for research process



Searching: From PubMed to Ovid MEDLINE

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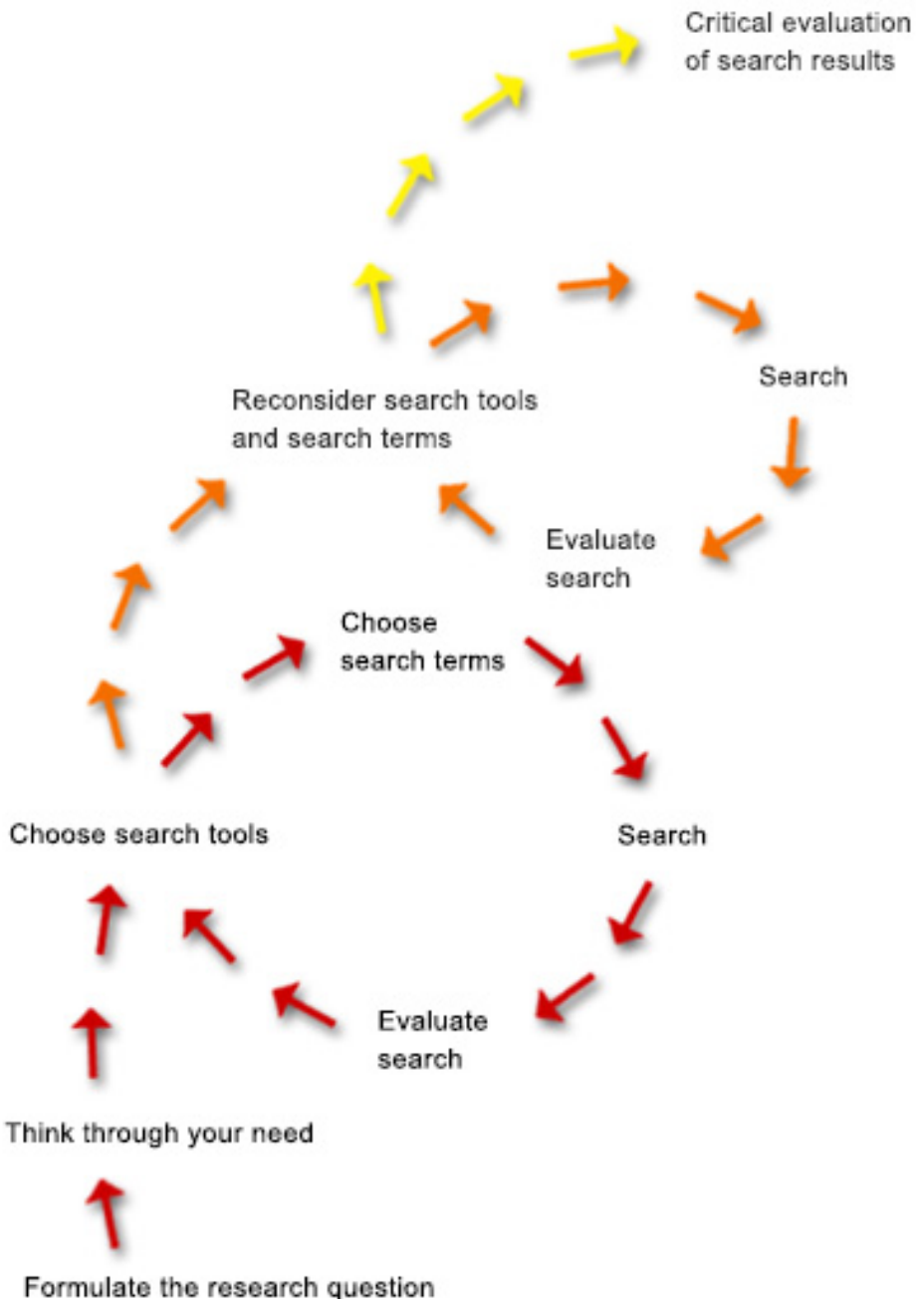
The Search Spiral – it's okay!

- Searching is an iterative process, not a one and done
- Exploration of results with consistent modifications until more relevant results are retrieved



From: Jönköping University, illustration of the search process. Inspired by Saunders, Mark, Lewis, Philip & Thornhill, Adran (2007).

Information Needs & Resources

From: https://www.grammarly.com/blog/how-to-write-a-research-paper/

Define your information need:

- Purpose
- Context
- Scope

Determine your (re)sources:

- Where to search
- Terminology to use
- Perspectives to include

Developing a research question out of a topic of interest

Neonatal sepsis

Use of **melatonin** as adjunctive therapy in **neonatal sepsis**: A systematic review and meta-analysis.

Henderson R, Kim S, Lee E.

Complement Ther Med. 2018 Aug;39:131-136. doi: 10.1016/j.ctim.2018.06.002. Epub 2018 Jun 11.

Murthy S, Godinho MA, Guddattu V, Lewis LES, Nair NS.

PLoS One. 2019 Apr 25;14(4):e0215683. doi: 10.1371/journal.pone.0215683. eCollection 2019.

Expert Rev Anti

Feb 25.

Question formulation frameworks

PICo:	**P**opulation /types of **P**articipants, phenomenon of **I**nterest, **Co**ntext
PICO(S):	**P**atient/**P**roblem, **I**ntervention, **C**omparator/**C**ontrol, **O**utcome, (**S**tudy design)
PECO:	**P**atient/**P**roblem, **E**xposure, **C**omparison/**C**ontrol, **O**utcome
PESICO:	**P**erson, **E**nvironment, **S**takeholders, **I**ntervention, **C**omparison, **O**utcome
PIPOH:	**P**opulation, **I**nterventions, **P**rofessionals/**P**atients, **O**utcome, **H**ealthcare Setting

Using a question formation framework – PICO

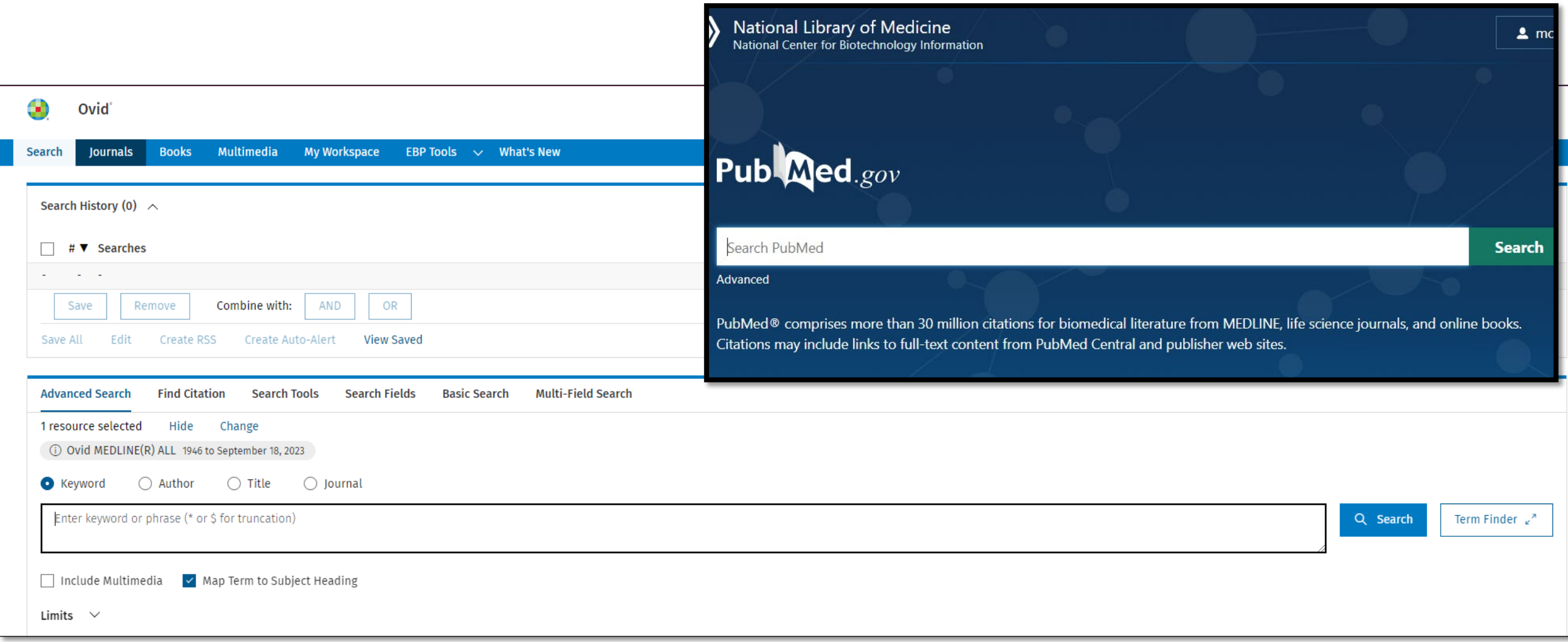
Patient/Population	What patient group or population are you interested in?	**Newborns**
Intervention	What intervention do you plan to study? *Think* – treatment, therapy, exposure	**Melatonin**
Comparison/Control	What alternative or comparison do you want to study? *Think* – a different treatment/therapy, placebo, or absence of an intervention	**N/A**
Outcome	What outcomes or effects do you intend to observe or measure?	Reduction in length of hospital stay; reduced mortality rate

Is the administration of melatonin an effective treatment for newborns with sepsis?

QUL Bibliographic Databases

	MEDLINE	Embase	Cochrane CENTRAL	Web of Science	BIOSIS Previews
Years:	1946-present	1947-present	1991-present	1900-present	1926-present
Journals:	5,600	8,500 +	N/A	33,000 +	5,363
Records:	28 million +	37 million +	1,800,000	171 million +	27 million +
Record Types:	Journal articles, some conference proceedings	Journal articles, conference proceedings	Controlled trials (from journals and trial registries like Clinicaltrials.gov)	Journal articles, book chapters, conference proceedings	Journal articles, conference proceedings, books, book chapters, patents
Subjects Included:	Biomedicine	Biomedicine	Health care interventions, diagnostic assessments etc.	Multi-disciplinary incl. education, social sciences, arts & humanities	Life sciences and biomedicine. Pre-clinical, experimental & animal research
Subject Headings:	MeSH	Emtree	MeSH (Ovid)	N/A	N/A
QUL Platforms:	PubMed & **Ovid**	**Ovid**	**Ovid** (EBM Reviews - Cochrane Central Register of Controlled Trials) & Wiley	Clarivate	Clarivate

MEDLINE Content: PubMed or Ovid?

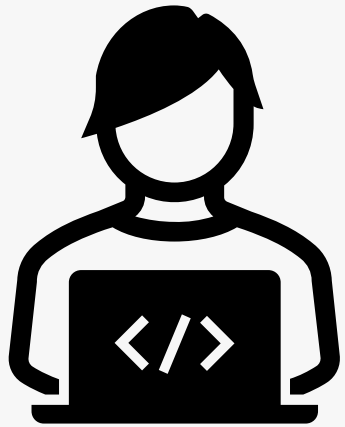


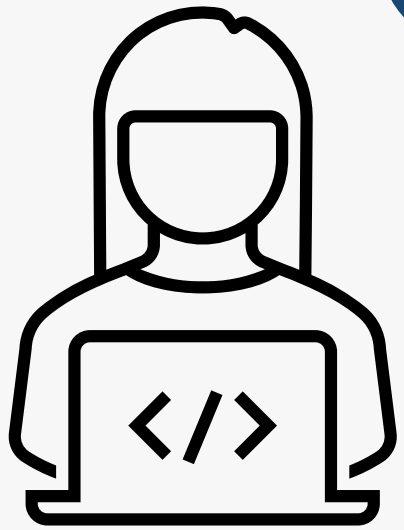
PubMed vs. MEDLINE vs. Ovid MEDLINE

What's the difference?

- **PubMed** is a freely accessible online database of biomedical journal citations and abstracts created by the U.S. NLM.
  - **MEDLINE** is the largest component of PubMed.
  - A distinctive feature of MEDLINE is that the records are ***indexed with MeSH*** (Medical Subject Headings) to identify the main concepts of a record.

- **Ovid** is a database platform that requires a subscription to search.
  - **Ovid MEDLINE** is another platform for searching PubMed/MEDLINE content.





Before beginning your search

Consider the purpose → fit for purpose!

- Short assignment, clinical practice, background reading, research project, systematic review etc.

How comprehensive or exhaustive do you need to be?

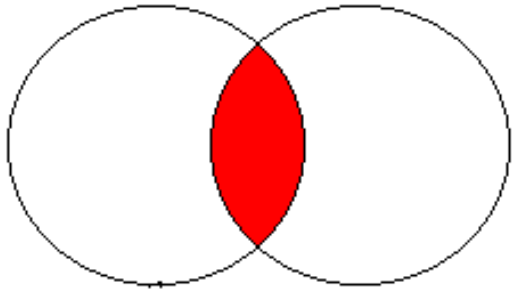
Specific search

- ❑ Subject heading search or keyword search in the title field
- ❑ Higher return of relevant results
- ❑ Some/many relevant results missed
- ❑ Less time spent searching
- ❑ Fewer results retrieved

Sensitive search

- ❑ Keyword search in all fields, searching multiple databases
- ❑ Higher return of irrelevant results
- ❑ Some/few relevant results missed
- ❑ More time spent searching
- ❑ More results retrieved

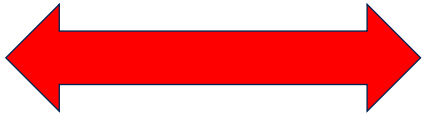
Combining Search Terms

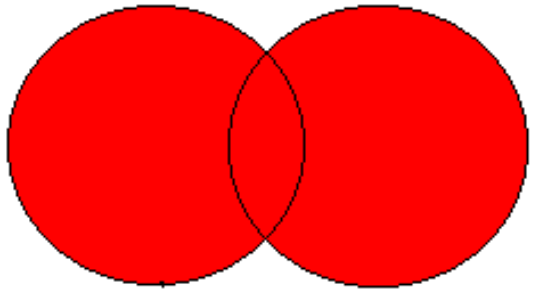


AND

Melatonin AND Sepsis

- Use when you want to combine <u>different</u> concepts of your search.
  Narrows results.

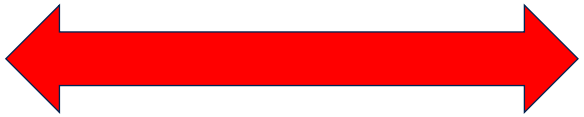




OR

Sepsis OR bloodstream infection

- Use when you want to include similar terms/synonyms for a concept (or antonyms e.g., fertility OR infertility).
  Broadens results.



Identifying key concepts and terms

		OR Synonym A	OR Synonym B	OR Synonym C	Synonym D
	Concept 1	Sepsis	Septicemia	Bloodstream infection	Blood poisoning
AND	Concept 2	Melatonin			
AND	Concept 3	Newborns			
AND	Concept 4				

Image from UCSF Library: https://guides.ucsf.edu/c.php?g=126216&p=825824

Subject Headings: MeSH

- Medical Subject Headings (MeSH) is a hierarchically-organized vocabulary thesaurus produced by the National Library of Medicine.
- Applied to all citation records in MEDLINE, which is the largest component of PubMed (making up 29 million of the 34 million records).
- Designed to help retrieve more relevant results by mapping common search terms to a singular subject heading.
- Can be used in combination with keywords or on their own depending on the topic. For example, the MeSH for *Diabetes Mellitus* on its own will retrieve over 115,000 results.

Depressive Disorder

An affective disorder manifested by either a dysphoric mood or loss of interest or pleasure in usual activities. The mood disturbance is prominent and relatively persistent.
Year introduced: 1981

PubMed search builder options
Subheadings:

analysis	enzymology	parasitology
anatomy and histology	epidemiology	pathology
blood	ethnology	physiology
cerebrospinal fluid	etiology	physiopathology
chemically induced	genetics	prevention and control
classification	history	psychology
complications	immunology	rehabilitation
diagnosis	metabolism	statistics and numerical data
diagnostic imaging	microbiology	surgery
diet therapy	mortality	therapy
drug therapy	nursing	urine
economics	organization and administration	virology

Restrict to MeSH Major Topic.
Do not include MeSH terms found below this term in the MeSH hierarchy.

Tree Number(s): F03.600.300
MeSH Unique ID: D003866
Entry Terms:

- Depressive Disorders
- Disorder, Depressive
- Disorders, Depressive
- Neurosis, Depressive
- Depressive Neuroses
- Depressive Neurosis
- Neuroses, Depressive
- Depression, Endogenous
- Depressions, Endogenous
- Endogenous Depression
- Endogenous Depressions
- Depressive Syndrome
- Depressive Syndromes
- Syndrome, Depressive
- Syndromes, Depressive
- Depression, Neurotic
- Depressions, Neurotic
- Neurotic Depression
- Neurotic Depressions
- Melancholia
- Melancholias
- Unipolar Depression
- Depression, Unipolar
- Depressions, Unipolar
- Unipolar Depressions

Entry terms are synonymous or related terms

PubMed Search Overview

PubMed uses automatic term mapping so basic searches are very effective.

Notice the mapping for this search compared to our initial search

History and Search Details

Download

Search	Actions	Details	Query	Results
#6	•••		Search: **melatonin neonatal sepsis** ("melatonin"[MeSH Terms] OR "melatonin"[All Fields] OR "melatonin s"[All Fields] OR "melatonine"[All Fields] OR "melatonins"[All Fields]) AND ("neonatal sepsis"[MeSH Terms] OR ("neonatal"[All Fields] AND "sepsis"[All Fields]) OR "neonatal sepsis"[All Fields])	29

Translations

melatonin: "melatonin"[MeSH Terms] OR "melatonin"[All Fields] OR "melatonin's"[All Fields] OR "melatonine"[All Fields] OR "melatonins"[All Fields]

neonatal sepsis: "neonatal sepsis"[MeSH Terms] OR ("neonatal"[All Fields] AND "sepsis"[All Fields]) OR "neonatal sepsis"[All Fields]

Search: **melatonin neonatal bloodstream infection**

("melatonin"[MeSH Terms] OR "melatonin"[All Fields] OR "melatonin s"[All Fields] OR "melatonine"[All Fields] OR "melatonins"[All Fields]) AND ("infant, newborn"[MeSH Terms] OR ("infant"[All Fields] AND "newborn"[All Fields]) OR "newborn infant"[All Fields] OR "neonatal"[All Fields] OR "neonate"[All Fields] OR "neonates"[All Fields] OR "neonatality"[All Fields] OR "neonatals"[All Fields] OR "neonate s"[All Fields]) AND ("sepsis"[MeSH Terms] OR "sepsis"[All Fields] OR ("bloodstream"[All Fields] AND "infection"[All Fields]) OR "bloodstream infection"[All Fields])

Translations

melatonin: "melatonin"[MeSH Terms] OR "melatonin"[All Fields] OR "melatonin's"[All Fields] OR "melatonine"[All Fields] OR "melatonins"[All Fields]

neonatal: "infant, newborn"[MeSH Terms] OR ("infant"[All Fields] AND "newborn"[All Fields]) OR "newborn infant"[All Fields] OR "neonatal"[All Fields] OR "neonate"[All Fields] OR "neonates"[All Fields] OR "neonatality"[All Fields] OR "neonatals"[All Fields] OR "neonate's"[All Fields]

bloodstream infection: "sepsis"[MeSH Terms] OR "sepsis"[All Fields] OR ("bloodstream"[All Fields] AND "infection"[All Fields]) OR "bloodstream infection"[All Fields]

PubMed Stop Words

Searches for unnecessary/unhelpful terms

Query

Search: **Is the administration of melato**
newborns with sepsis?

administration: "administrable"[All Fields] OR "administrate"[All Fields] OR "administrated"[All Fields] OR "administrating"[All Fields] OR "administrations"[All Fields] OR "administred"[All Fields] OR "administrered"[All Fields] OR "organization and administration"[MeSH Terms] OR ("organization"[All Fields] AND "administration"[All Fields]) OR "organization and administration"[All Fields] OR "administration"[All Fields]
melatonin: "melatonin"[MeSH Terms] OR "melatonin"[All Fields] OR "melatonin's"[All Fields] OR "melatonine"[All Fields] OR "melatonins"[All Fields]
effective: "effect"[All Fields] OR "effecting"[All Fields] OR "effective"[All Fields] OR "effectively"[All Fields] OR "effectiveness"[All Fields] OR "effectivenesses"[All Fields] OR "effectives"[All Fields] OR "effectivities"[All Fields] OR "effectivity"[All Fields] OR "effects"[All Fields]
treatment: "therapeutics"[MeSH Terms] OR "therapeutics"[All Fields] OR "treatments"[All Fields] OR "therapy"[Subheading] OR "therapy"[All Fields] OR "treatment"[All Fields] OR "treatment's"[All Fields]
newborns: "infant, newborn"[MeSH Terms] OR ("infant"[All Fields] AND "newborn"[All Fields]) OR "newborn infant"[All Fields] OR "newborn"[All Fields] OR "newborns"[All Fields] OR "newborn's"[All Fields]

Warnings

Is the administration **of** melatonin **an** effective treatment **for** newborns **with** sepsis?

Stop words: Is, the, of, an, for, with

- Search for key concepts only. Unlike Google, PubMed has certain “stop words” that the database does not recognize in a search.
  - They do not add value and can remove results relevant to your research
- Truncating and using a direct phrase (i.e. educat* for education, educational, educator, etc.; “abo blood group”) will turn off automatic term mapping to MeSH terms.

Medical Subject Headings (MeSH) Database

Sepsis

Systemic inflammatory response syndrome with a proven or suspected infectious etiology. When sepsis is associated with organ dysfunction distant from the site of infection, it is called severe sepsis. When sepsis is accompanied by HYPOTENSION despite adequate fluid infusion, it is called SEPTIC SHOCK.

Year introduced: 1995

PubMed search builder options

Subheadings:

☐ blood	☐ enzymology	☐ pathology
☐ cerebrospinal fluid	☐ epidemiology	☐ physiopathology
☐ chemically induced	☐ ethnology	☐ prevention and control
☐ classification	☐ etiology	☐ psychology
☐ complications	☐ genetics	☐ radiotherapy
☐ congenital	☐ history	☐ rehabilitation
☐ diagnosis	☐ immunology	☐ surgery
☐ diagnostic imaging	☐ metabolism	☐ therapy
☐ diet therapy	☐ microbiology	☐ transmission
☐ drug therapy	☐ mortality	☐ urine
☐ economics	☐ nursing	☐ veterinary
☐ embryology	☐ parasitology	☐ virology

☐ Restrict to MeSH Major Topic.

☐ Do not include MeSH terms found below this term in the MeSH hierarchy.

Previous Indexing:

- Septicemia (1966-1994)
- specific infection (1966-1994)

All MeSH Categories

Diseases Category

Infections

Sepsis

Bacteremia

Endotoxemia

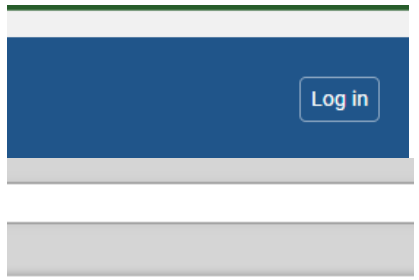
Hemorrhagic Septicemia

Fungemia

Candidemia

Neonatal Sepsis

Shock, Septic



sepsis is associated with organ
nied by HYPOTENSION despite

https://www.ncbi.nlm.nih.gov/mesh

Notice that Neonatal sepsis and Shock, Septic are branches of the Sepsis trunk

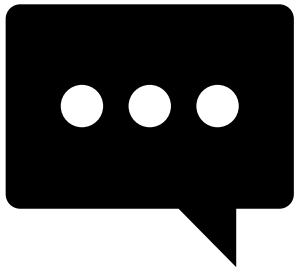
Many MeSH terms will have narrower terms. Think of the main MeSH term you searched as the tree trunk and the narrower terms are its branches. Decide which, if any, are also relevant

Subject headings and keywords

- To conduct a comprehensive, systematic search, we can incorporate subject headings as well as keywords

- We are ***building in redundancy on purpose*** – keywords are free text words that we will use based on our background reading (i.e. septic shock). We will combine keywords with subject headings (database-specific terms) using OR to broaden our results
  - Ex.: shock, septic [MeSH Term] **OR** septic shock (keyword)

- This will capture any record where no indexing was applied (i.e. not tagged) including preprints (non-peer reviewed publications) and anything hot off the press



**Be sure to use the thesaurus or subject heading guide specific to the database. MeSH terms are unique to MEDLINE and can be searched in PubMed or Ovid MEDLINE. Databases like Embase, CINAHL, and PyscINFO have their own subject headings*

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View Saved

	# ▼	Searches	Results	Type	Actions	Annotations
-	-	-	-	-	-	-

Save | Remove | Combine with: | AND | OR

Save All | Create Auto-Alert | View Saved | Email All Search History | Copy Search History Link | Copy Search History Details

Advanced Search | Find Citation | Search Tools | Search Fields | Basic Search | Multi-Field Search

1 Resource selected | Hide | Change

Ovid MEDLINE(R), Ovid MEDLINE(R) Daily and Epub Ahead of Print, In-Process & Other Non-Indexed Citations 1946 to Present

Enter keyword or phrase
(* or $ for truncation)

(•) **Keyword** ( ) Author ( ) Title ( ) Journal

Search | Expand Term Finder ▸

▸ **Limits** *(expand)*

[ ] Include Multimedia [x] Map Term to Subject Heading

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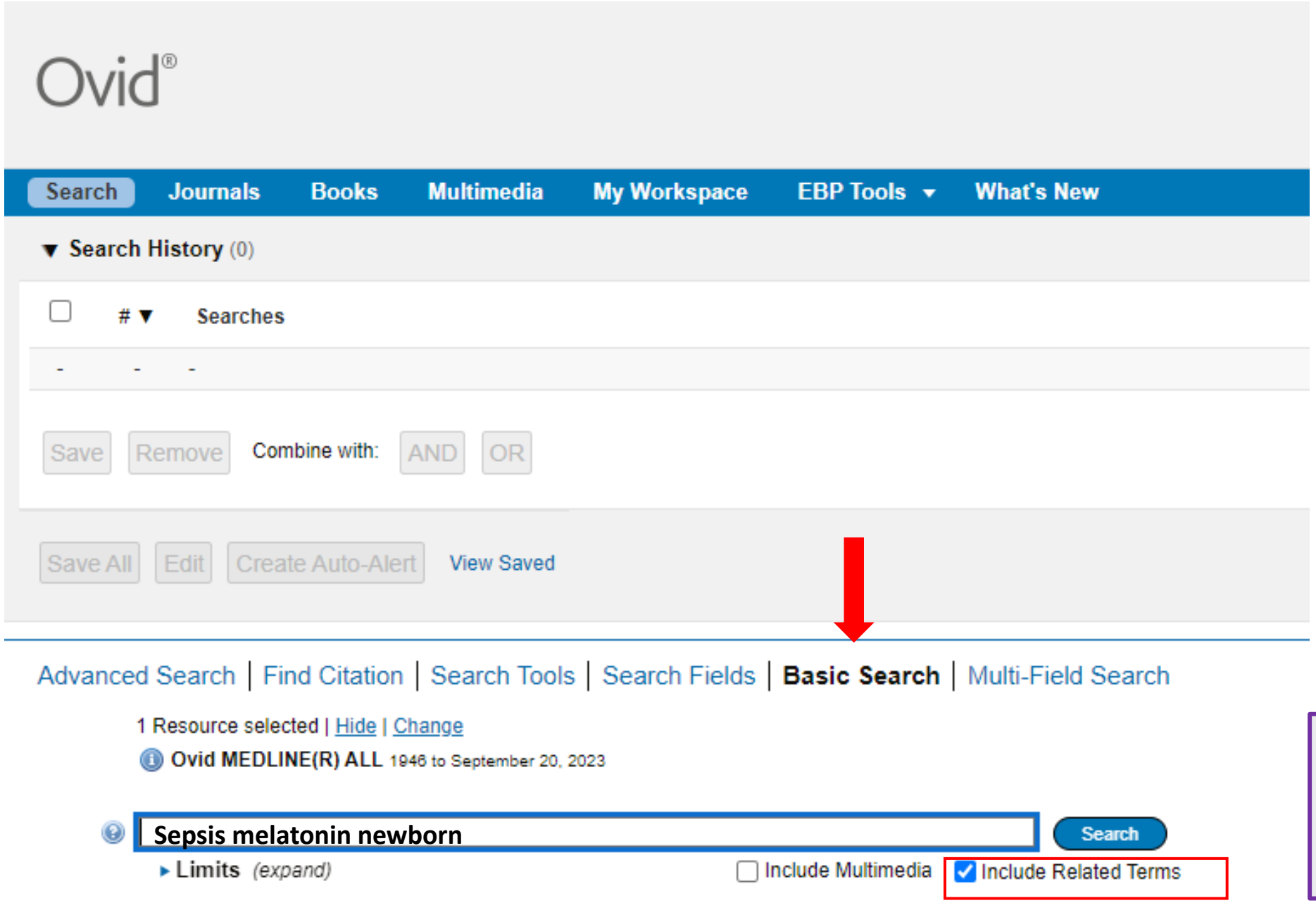
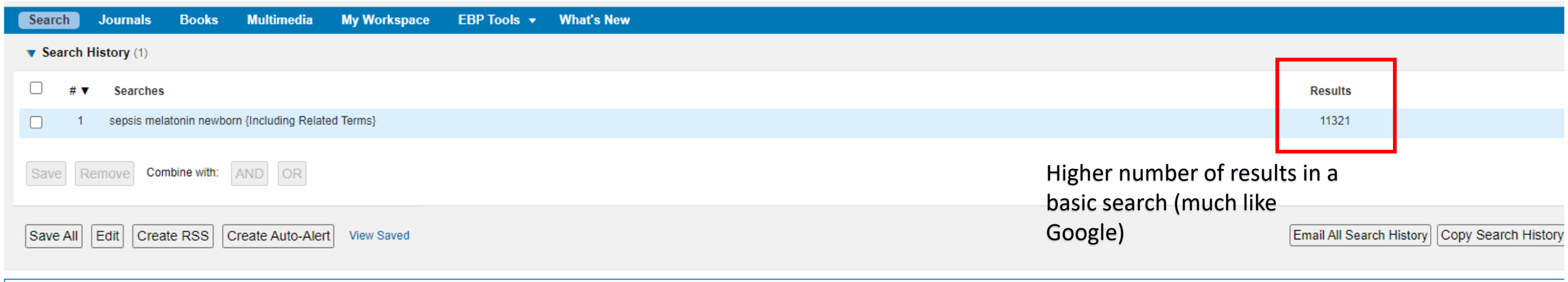
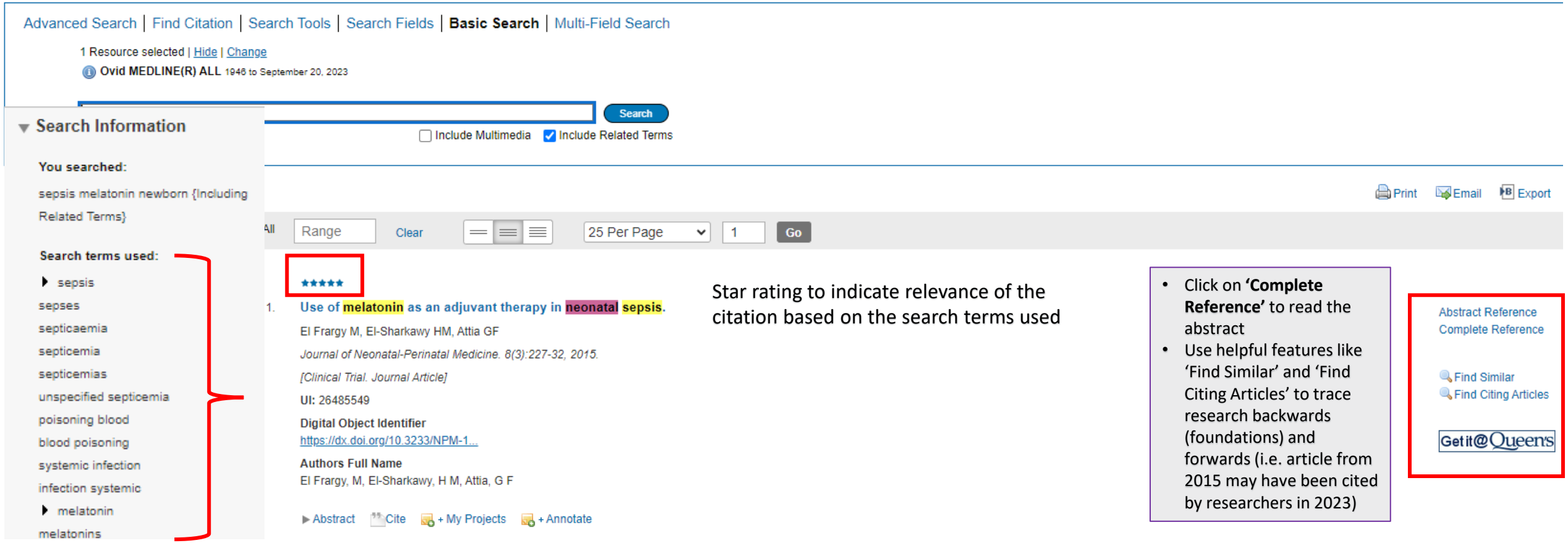


Related Terms will capture synonyms for those searched



Higher number of results in a basic search (much like Google)



Star rating to indicate relevance of the citation based on the search terms used

- Click on **'Complete Reference'** to read the abstract
- Use helpful features like 'Find Similar' and 'Find Citing Articles' to trace research backwards (foundations) and forwards (i.e. article from 2015 may have been cited by researchers in 2023)

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	# ▼	Searches	Results	Type	Actions	Annotations
-	-	-	-	-	-	-

Save | Remove | Combine with: AND | OR

Save All | Edit | Create Auto-Alert | View Saved | Email All Search History | Copy Search History Link | Copy Search History Details

Advanced Search | Find Citation | Search Tools | Search Fields | Basic Search | Multi-Field Search

1 Resource selected | Hide | Change

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Enter keyword or phrase
(* or $ for truncation)

(●) **Keyword** ( ) Author ( ) Title ( ) Journal

sepsis

Search | Expand Term Finder ▸

▸ **Limits** *(expand)*

☐ Include Multimedia

☑ Map Term to Subject Heading

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Your term mapped to the following Subject Headings:

Click on a subject heading to view more general and more specific terms within the tree.

Any term you select will automatically be exploded to include all narrower terms. To select a term with kbox for that term.

Term mapped through permuted index

☐ **Include All Subheadings**

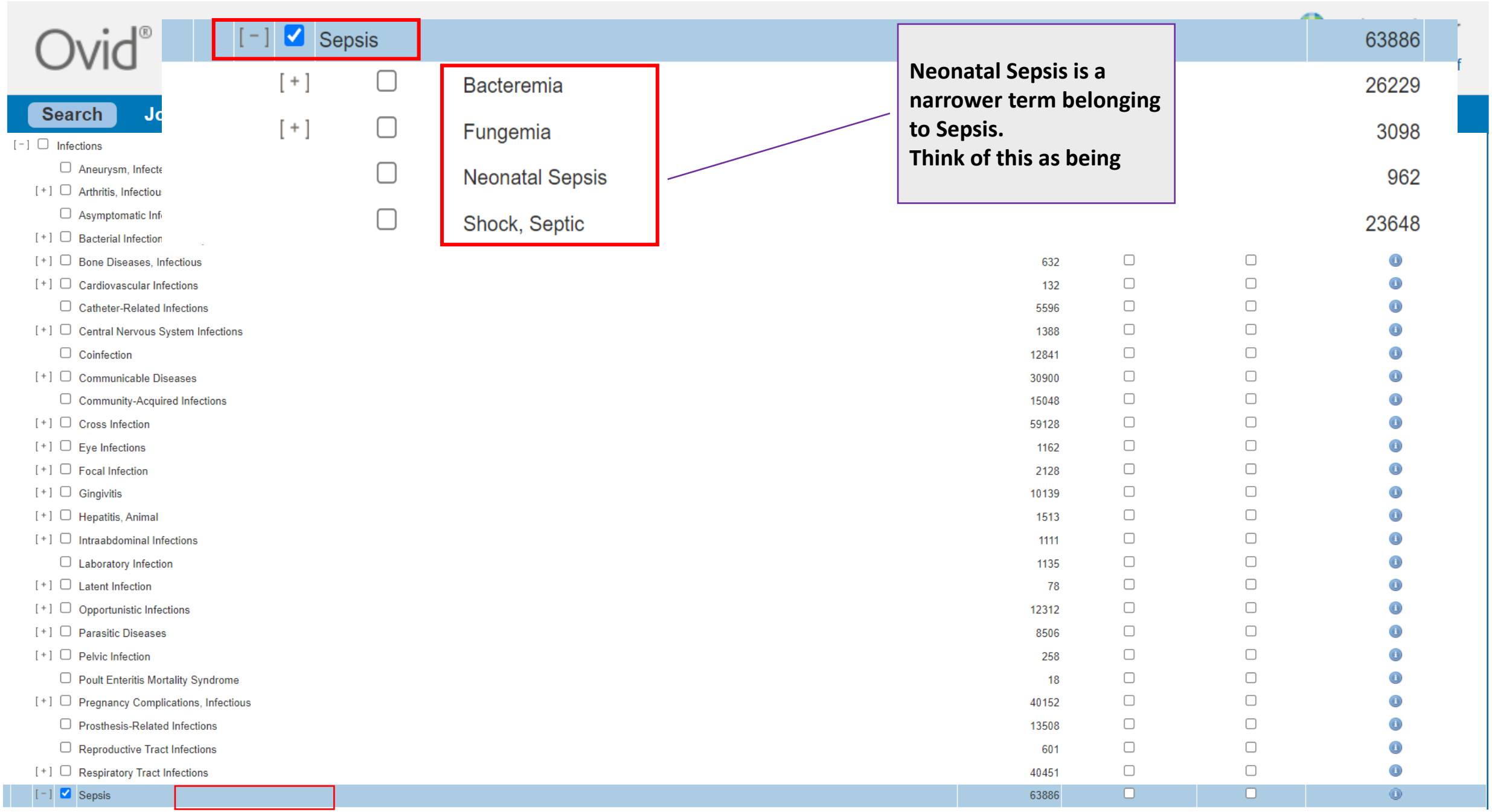
Combine with: OR Continue

Use the scope note to determine the definition and scope of a subject heading.

Select	Subject Heading	Auto Explode	Focus	Scope
☐	Neonatal Sepsis ★	☐	☐	ⓘ
☑	Sepsis	☑	☐	ⓘ
☐	Sepsis-Associated Encephalopathy	☐	☐	ⓘ
☐	sepsis.mp. *search as Keyword*			

Hints:

- **Trigger a Subject Heading link to view its tree - related terms that are more general and more specific.**
- **Select the Explode box if you wish to retrieve results using the selected term and all of its more specific terms.**
- **Select the Focus box if you wish to limit your search to those documents in which your subject heading is considered the major point of the article.**
- **If your search did not map to a desirable subject heading, select the box Search as Keyword.**
- **If you select more than one term, you can combine them using a boolean operator (AND or OR).**


Ovid®
Search
[-] Sepsis 63886
[+] Bacteremia 26229
[+] Fungemia 3098
Neonatal Sepsis 962
Shock, Septic 23648
Neonatal Sepsis is a narrower term belonging to Sepsis.
Think of this as being
[-] Infections
Aneurysm, Infecte
[+] Arthritis, Infectiou
Asymptomatic Inf
[+] Bacterial Infection
[+] Bone Diseases, Infectious 632
[+] Cardiovascular Infections 132
Catheter-Related Infections 5596
[+] Central Nervous System Infections 1388
Coinfection 12841
[+] Communicable Diseases 30900
Community-Acquired Infections 15048
[+] Cross Infection 59128
[+] Eye Infections 1162
[+] Focal Infection 2128
[+] Gingivitis 10139
[+] Hepatitis, Animal 1513
[+] Intraabdominal Infections 1111
Laboratory Infection 1135
[+] Latent Infection 78
[+] Opportunistic Infections 12312
[+] Parasitic Diseases 8506
[+] Pelvic Infection 258
Poult Enteritis Mortality Syndrome 18
[+] Pregnancy Complications, Infectious 40152
Prosthesis-Related Infections 13508
Reproductive Tract Infections 601
[+] Respiratory Tract Infections 40451
[-] Sepsis 63886

Scope Note for: *Sepsis*

MeSH HEADING: SEPSIS

SCOPE: Systemic inflammatory response syndrome with a proven or suspected infectious etiology. When sepsis is associ…nfection, it is called severe sepsis. When sepsis is accompanied by HYPOTENSION despite adequate fluid infusion, it is called SEPTIC SHOCK.

NOTE: SEPSIS SYNDROME see SYSTEMIC INFLAMMATORY RESPONSE SYNDROME is also available

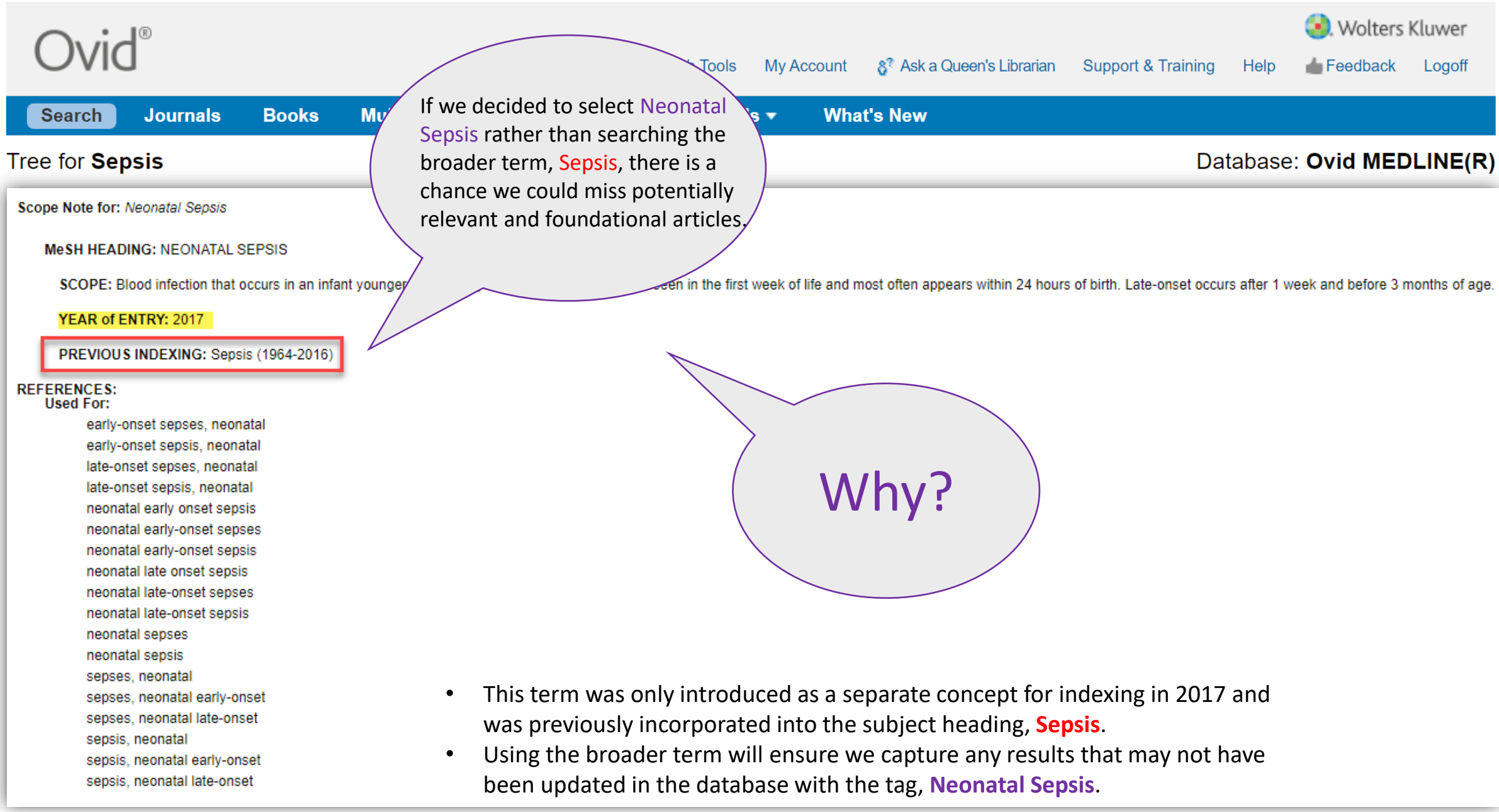
YEAR of ENTRY: 1995

PREVIOUS INDEXING: Septicemia (1966-1994); specific infection (1966-1994)

REFERENCES:
Used For:
- blood poisoning
- blood poisonings
- bloodstream infection
- bloodstream infections
- infection, bloodstream
- poisoning, blood
- poisonings, blood
- pyaemia
- pyaemias
- pyemia
- pyemias
- pyohemia
- pyohemias
- sepsis
- sepsis, severe
- septicemia
- septicemias
- severe sepsis

REFERENCES:
Used For:
- blood poisoning
- blood poisonings
- bloodstream infection
- bloodstream infections
- infection, bloodstream
- poisoning, blood
- poisonings, blood
- pyaemia
- pyaemias
- pyemia
- pyemias
- pyohemia
- pyohemias
- sepsis
- sepsis, severe
- septicemia
- septicemias
- severe sepsis

"Used For" terms refers to synonymous terms for the Medical Subject Heading (MeSH). If I typed in *blood poisoning*, it would map to the MeSH *SEPSIS*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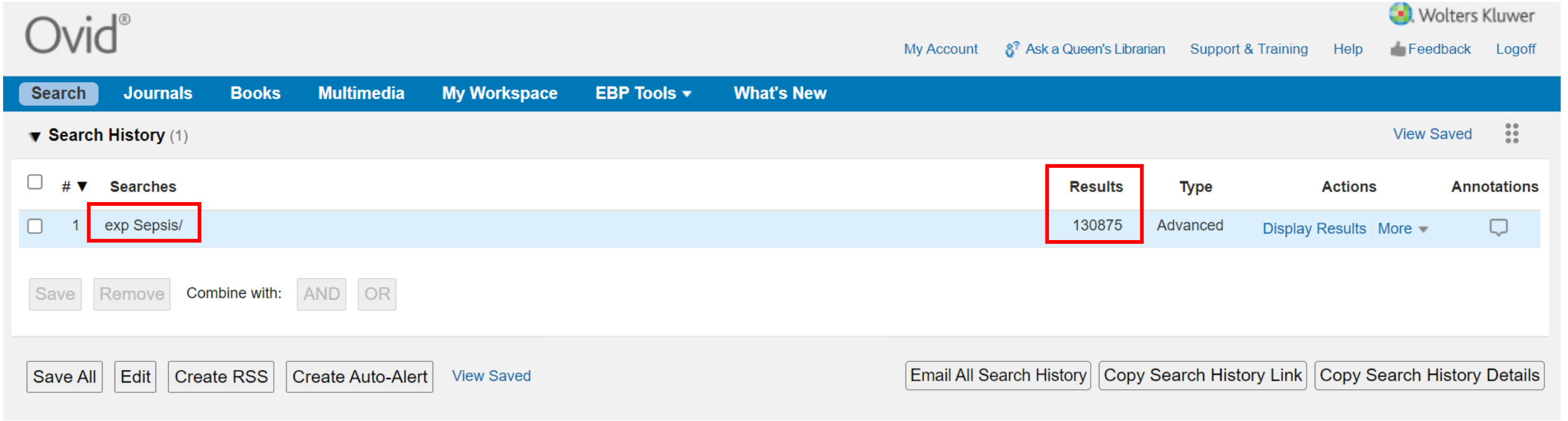
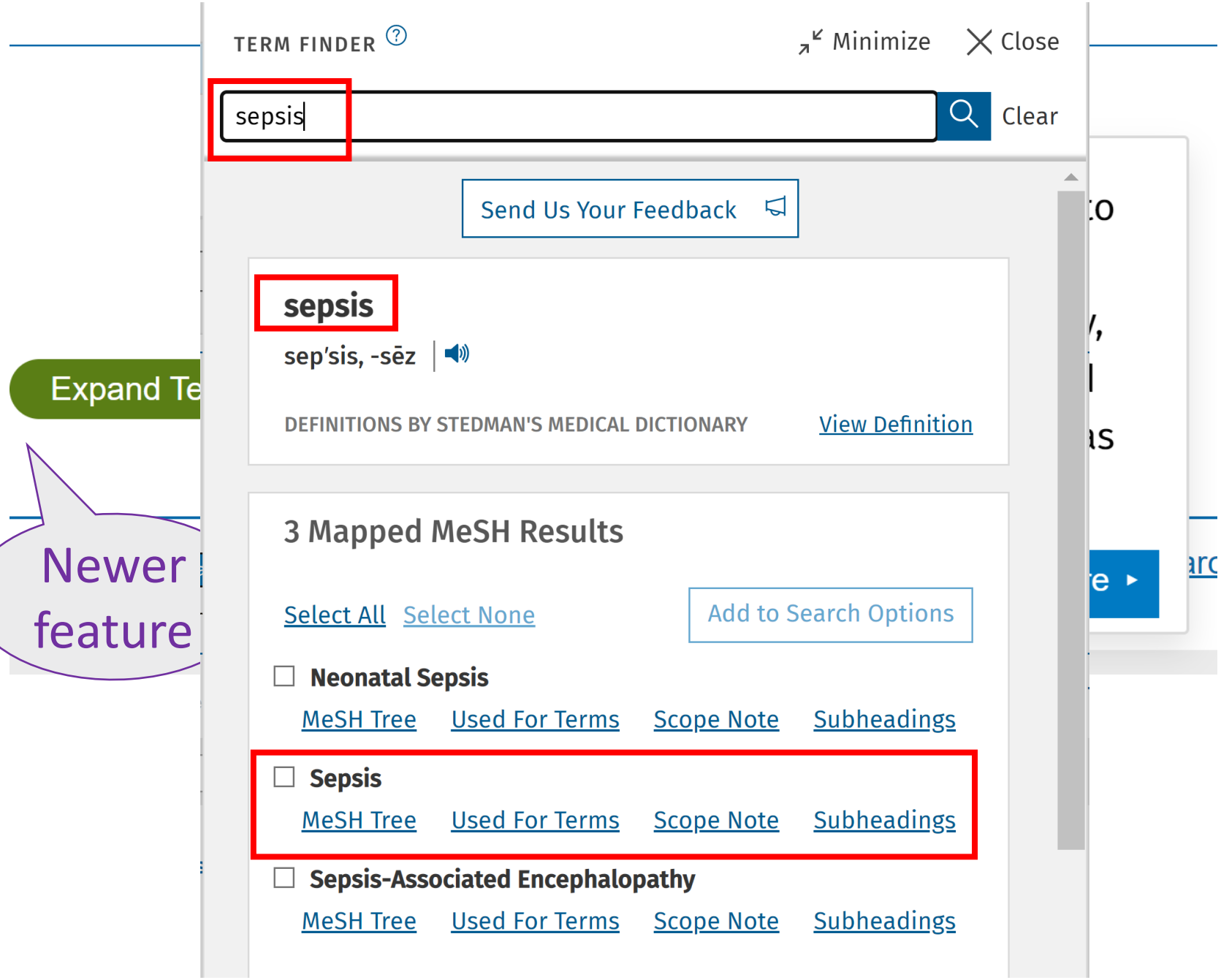
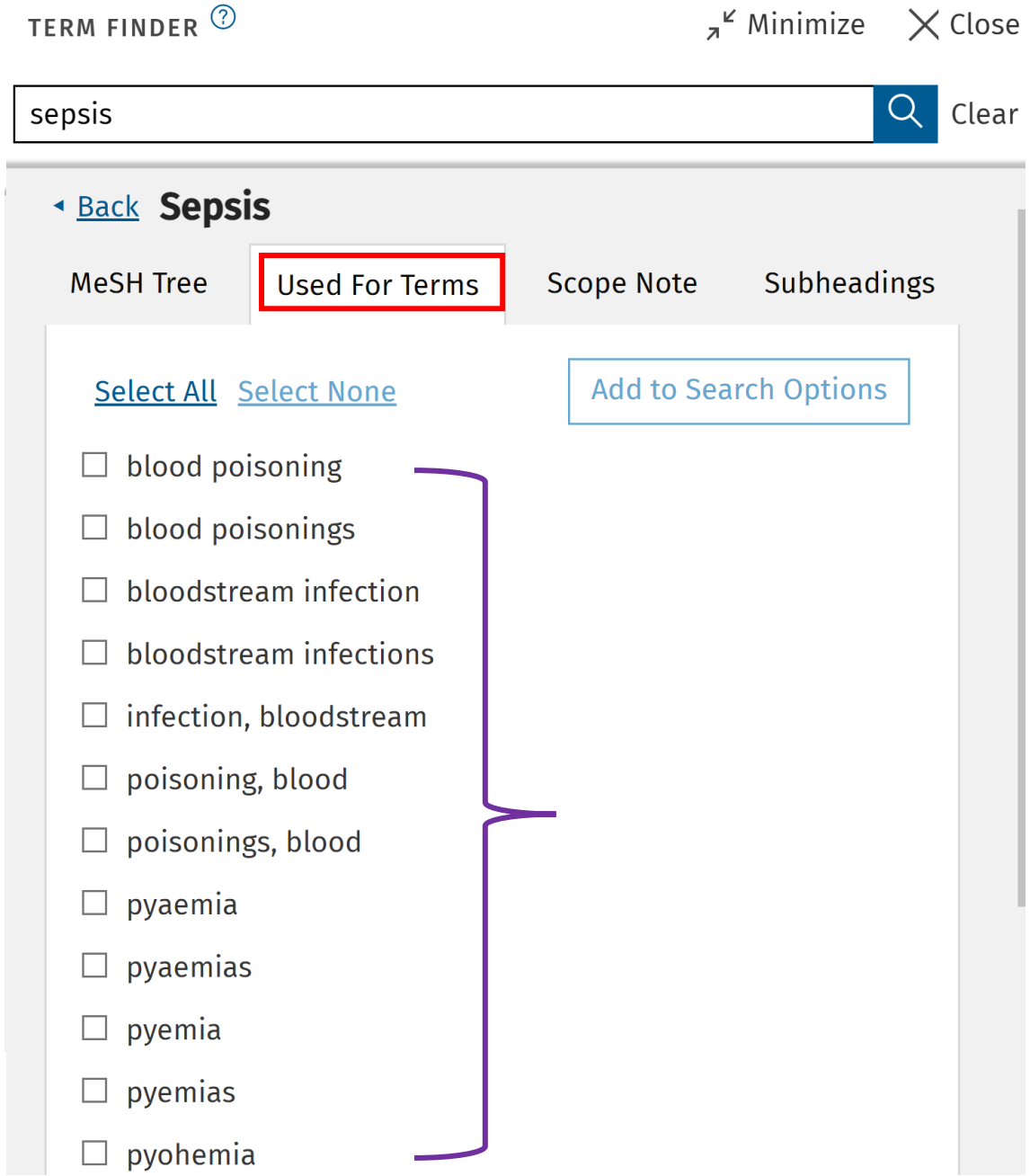
Books
What's New
Tree for Sepsis
Database: Ovid MEDLINE(R)
If we decided to select Neonatal Sepsis rather than searching the broader term, Sepsis, there is a chance we could miss potentially relevant and foundational articles.
Scope Note for: Neonatal Sepsis
MeSH HEADING: NEONATAL SEPSIS
SCOPE: Blood infection that occurs in an infant younger
een in the first week of life and most often appears within 24 hours of birth. Late-onset occurs after 1 week and before 3 months of age.
YEAR of ENTRY: 2017
PREVIOUS INDEXING: Sepsis (1964-2016)
REFERENCES:
Used For:
early-onset sepses, neonatal
early-onset sepsis, neonatal
late-onset sepses, neonatal
late-onset sepsis, neonatal
neonatal early onset sepsis
neonatal early-onset sepses
neonatal early-onset sepsis
neonatal late onset sepsis
neonatal late-onset sepses
neonatal late-onset sepsis
neonatal sepses
neonatal sepsis
sepses, neonatal
sepses, neonatal early-onset
sepses, neonatal late-onset
sepsis, neonatal
sepsis, neonatal early-onset
sepsis, neonatal late-onset
Why?
This term was only introduced as a separate concept for indexing in 2017 and was previously incorporated into the subject heading, Sepsis.
Using the broader term will ensure we capture any results that may not have been updated in the database with the tag, Neonatal Sepsis.

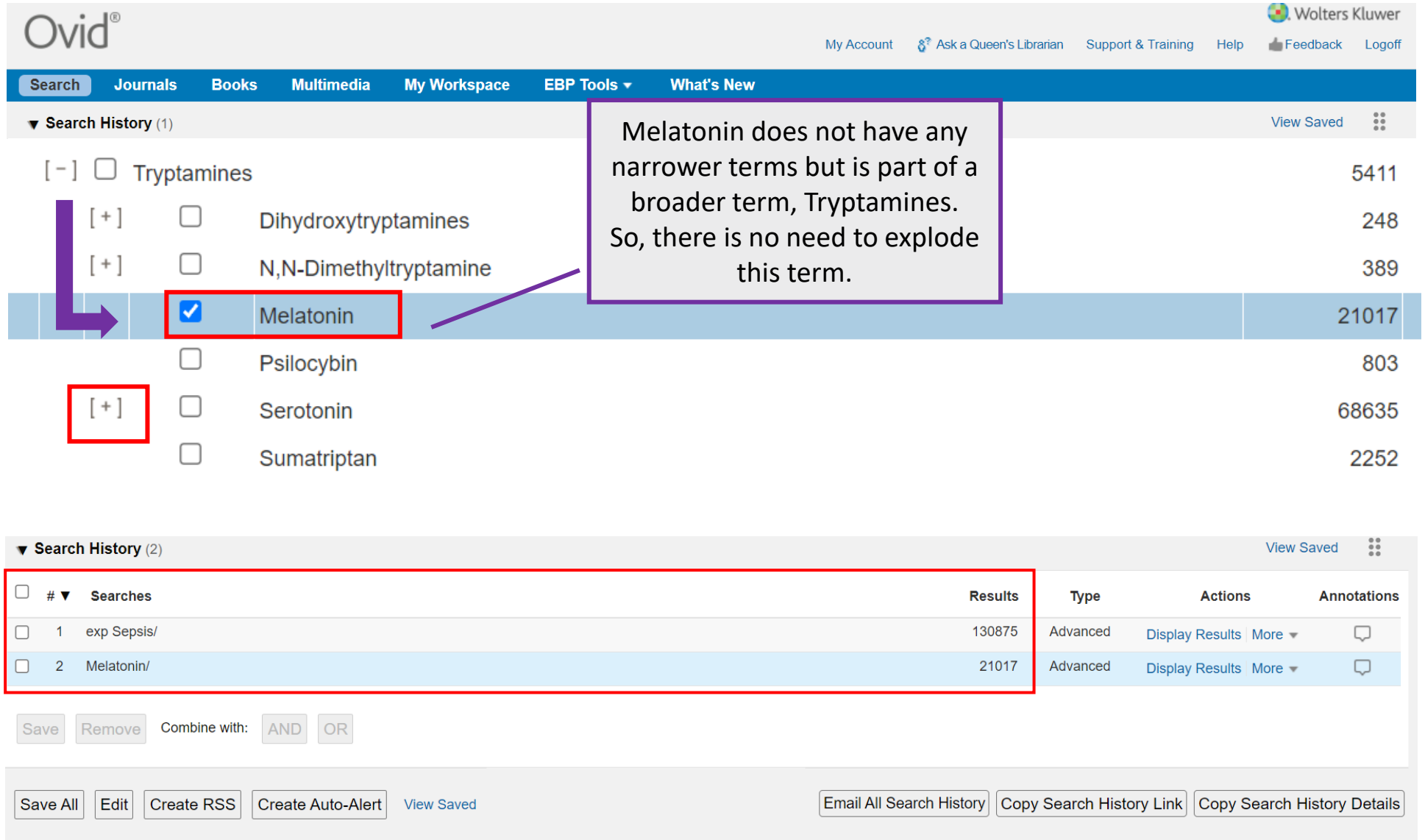


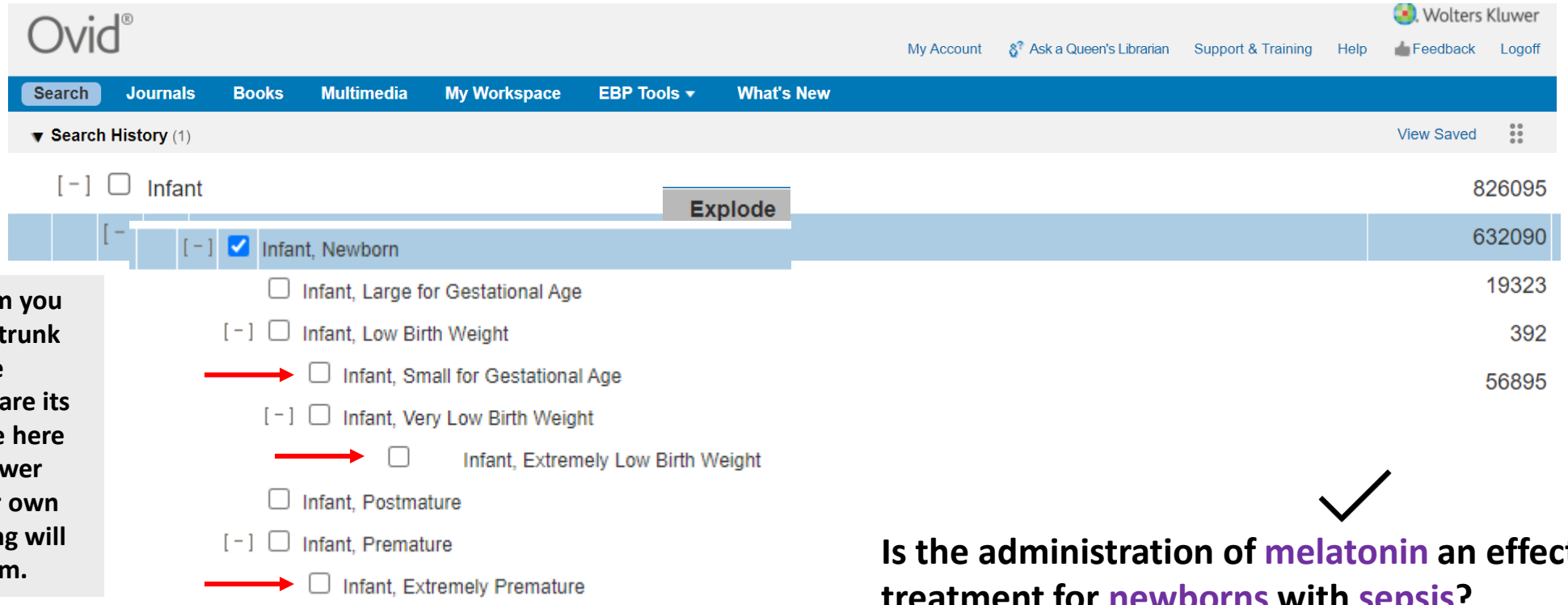
Is the administration of melatonin an effective treatment for newborns with sepsis? ✓


TERM FINDER
Minimize
Close
sepsis
Clear
Send Us Your Feedback
sepsis
sep'sis, -sēz
DEFINITIONS BY STEDMAN'S MEDICAL DICTIONARY
View Definition
3 Mapped MeSH Results
Select All
Select None
Add to Search Options
Neonatal Sepsis
MeSH Tree
Used For Terms
Scope Note
Subheadings
Sepsis
MeSH Tree
Used For Terms
Scope Note
Subheadings
Sepsis-Associated Encephalopathy
MeSH Tree
Used For Terms
Scope Note
Subheadings
Expand Te
Newer feature


TERM FINDER
Minimize
Close
sepsis
Clear
Back
Sepsis
MeSH Tree
Used For Terms
Scope Note
Subheadings
Select All
Select None
Add to Search Options
blood poisoning
blood poisonings
bloodstream infection
bloodstream infections
infection, bloodstream
poisoning, blood
poisonings, blood
pyaemia
pyaemias
pyemia
pyemias
pyohemia

The + indicates a term has a narrower term that belongs to it. Only when you want to capture all of these would you use the Explode function





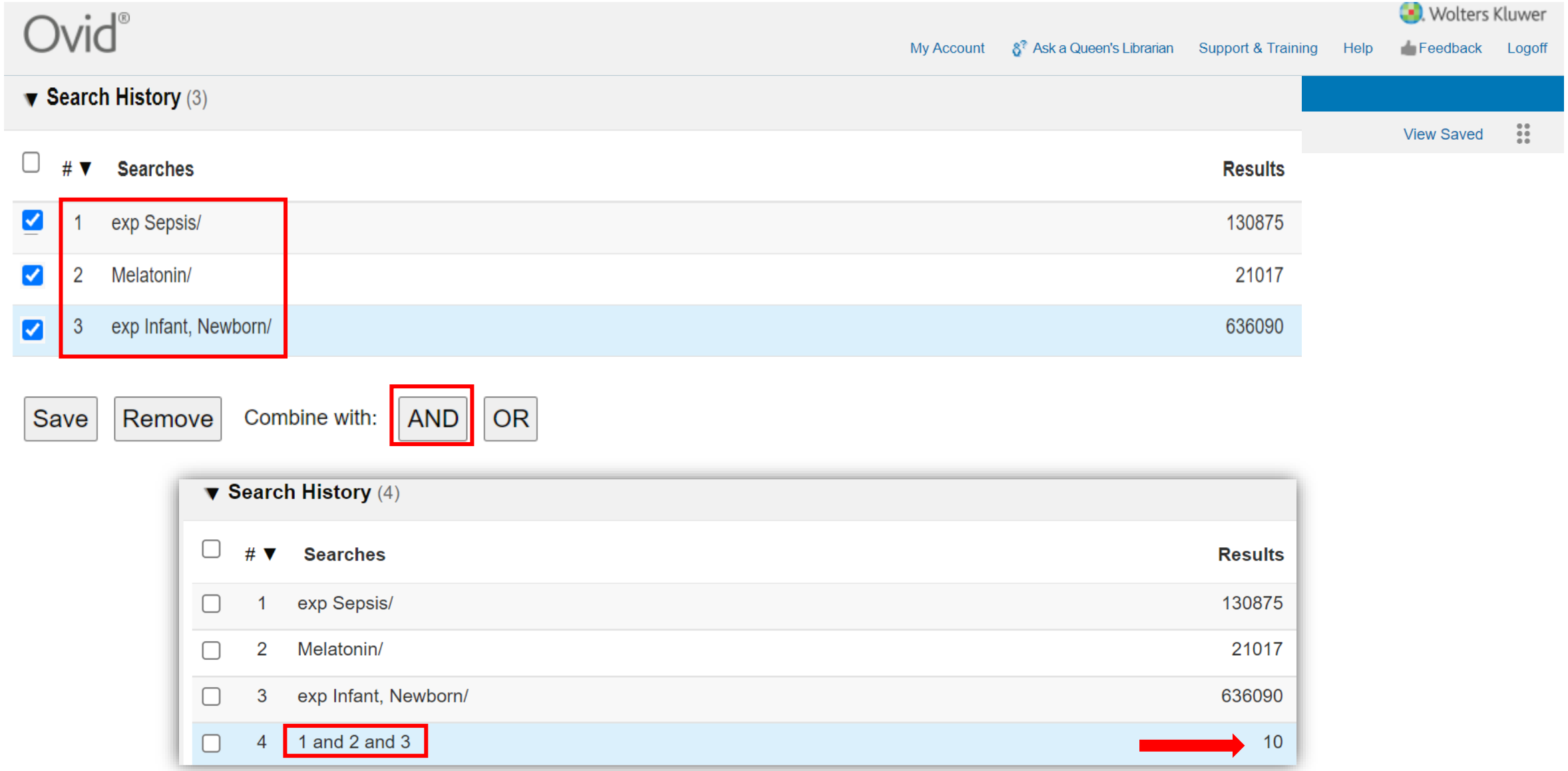
Think of the term you searched as the trunk of a tree and the narrower terms are its branches. Notice here that these narrower terms have their own as well. Exploding will also capture them.

Is the administration of melatonin an effective treatment for newborns with sepsis?

Search History (3)

	# ▼	Searches	Results
☐	1	exp Sepsis/	130875
☐	2	Melatonin/	21017
☐	3	exp Infant, Newborn/	636090

Is the administration of melatonin an effective treatment for newborns with sepsis?



▼ **Search History** (6)

Combining subject headings like MeSH with free text keywords (i.e. plain language or author supplied keywords) using *OR* is a way of developing a more comprehensive search strategy.

# ▼	Searches
1	exp Sepsis/
2	(sepsis or blood poisoning or septicemia).m [...] le, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]
3	1 or 2
4	Melatonin/
5	infant, newborn/
6	3 and 4 and 5

Then combine with AND

Using keywords in combination with MeSH means your search will also return records that have not yet been indexed – anything hot off the press!

▼ **Search History** (4) View Saved

	# ▼	Searches	Results	Type	Actions	Annotations
☐	1	exp Sepsis/	130875	Advanced	Display Results | More	
☐	2	Melatonin/	21017	Advanced	Display Results | More	
☐	3	exp Infant, Newborn/	636090	Advanced	Display Results | More	
☐	4	1 and 2 and 3	10	Advanced	Display Results | More	

Save Remove Combine with: AND OR

Save All | Edit | Create RSS | Create Auto-Alert | View Saved | Email All Search History | Copy Search History Link | Copy Search History Details

Beneficial effect of melatonin in the treatment of neonatal sepsis.

El-Gendy FM, El-Hawy MA, Hassan MG

Journal of Maternal-Fetal & Neonatal Medicine. 31(17):2299-2303, 2018 Sep.

[Controlled Clinical Trial. Journal Article]

UI: 28612668

Authors Full Name

El-Gendy, Fady M, El-Hawy, Mahmoud A, Hassan, Mohamed G

Abstract Reference

Complete Reference

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NLM Journal Code: 101136916

ISO Journal Abbreviation: J Matern Fetal Neonatal Med

Journal Subset: Index Medicus

Country of Publication: England

MeSH Subject Headings:
Anti-Bacterial Agents / tu [Therapeutic Use]
Case-Control Studies
Female
Gestational Age
Humans
Infant, Newborn
Intensive Care Units, Neonatal
Male
*Melatonin / tu [Therapeutic Use]
*Neonatal Sepsis / dt [Drug Therapy]
Treatment Outcome

A list of subject headings used to index the article.

Do you see any we used in our search?

Keyword Heading:
Melatonin
neonates
sepsis

Read through the abstract to determine relevancy

Abstract: **OBJECTIVE:** To study the effect of melatonin as an adjuvant therapy in the treatment of neonatal sepsis.

METHODS: This study is a prospective nonrandomized nonblind case-control study and was carried on 40 neonates with neonatal sepsis diagnosed by both clinical and laboratory criteria. They were enrolled from the Neonatal Intensive Care Unit, Menoufia University Hospitals. These cases were selected during the study period from November 2015 to May 2016 and were divided into two groups: intervention group (number 20 neonates) received melatonin 20 mg as single dose and antibiotics and control group (number 20 neonates) received antibiotics only and then both groups followed by physical examination, complete blood count (CBC), and high sensitive C-reactive protein (hs-CRP) to evaluate the improvement in both groups.

▼ Search History (4)

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The Journal of Maternal-Fetal & Neonatal Medicine / 31(17)

Beneficial effect of melatonin in the treatment of neonatal sepsis

Fady M. El-Gendy, Mahmoud A. El-Hawy, Mohamed G. Hassan

September 2018, 31(17), p.2299 - 2303 - The Journal of Maternal-Fetal & Neonatal Medicine

Cited 7
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Abstract Objective: To study the effect of melatonin as an adjuvant therapy in the treatment of neonatal sepsis. Methods: This study is a prospective nonrandomized nonblind case–control study and was carried on 40 neonates with neonatal sepsis diagnosed by both clinical and laboratory criteria. They were enrolled from the Neonatal Intensive Care Unit, Menoufia University Hospitals. These cases were selected during the study period from November 2015 to May 2016 and were divided into two groups: intervention group (number 20 neonates) received melatonin 20 mg as single dose and antibiotics and control group (number 20 neonates) received antibiotics only and then both groups followed by physical examination, complete blood count (CBC), and high sensitive C-reactive protein (hs-CRP) to evaluate the improvement in both groups. Results: Before melatonin administration, there was no significant difference between intervention group and control group with regard to clinical condition, hs-CRP, and other serum parameters. After 24 and 72 hours of melatonin administration, both groups improved with regard to clinical condition, hs-CRP, and serum parameters with significant improvement in intervention group than control group. Conclusion: Melatonin could be used in the treatment of neonatal sepsis in both preterm and full-term neonates beside the conventional treatment.

Melatonin | neonates | sepsis

Citations & Citation Managers

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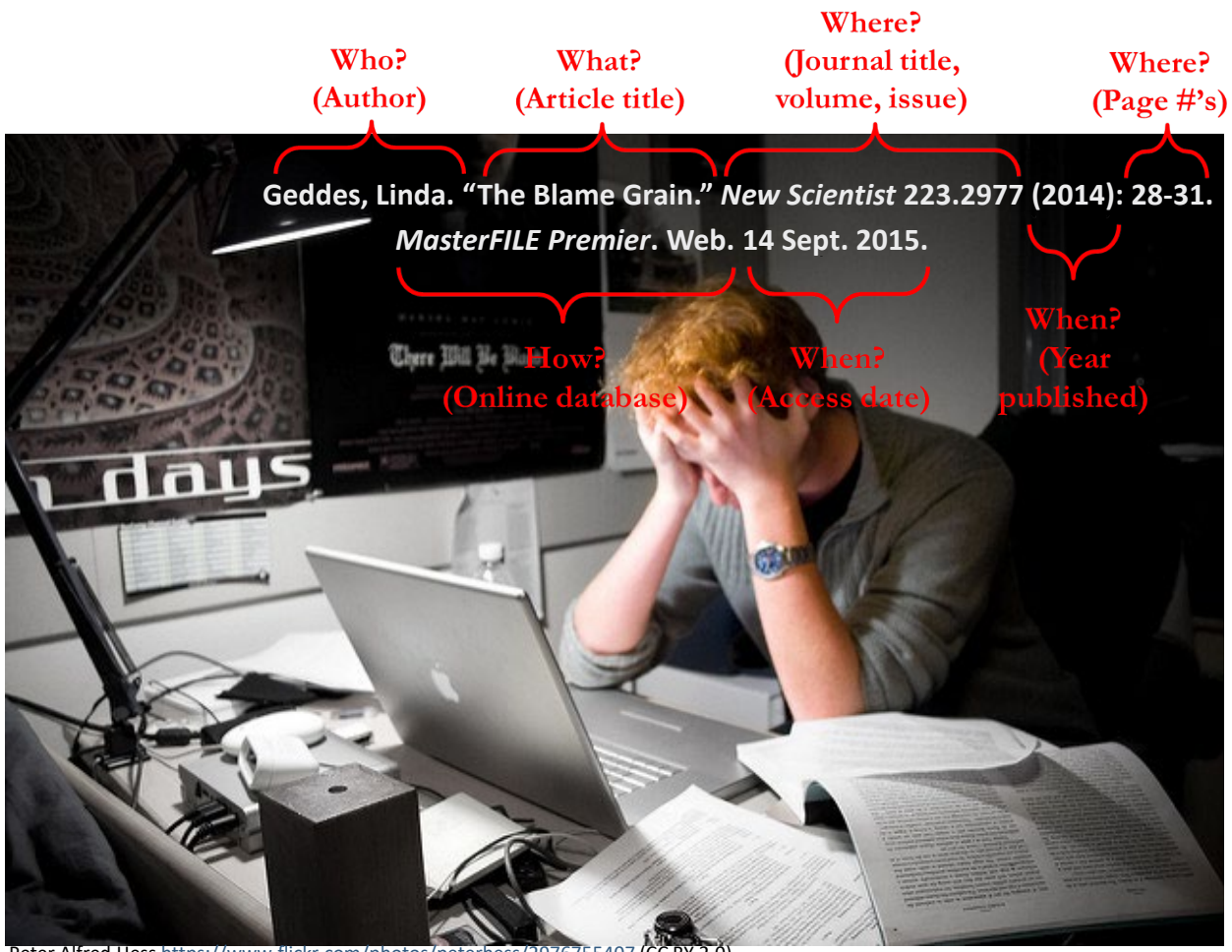
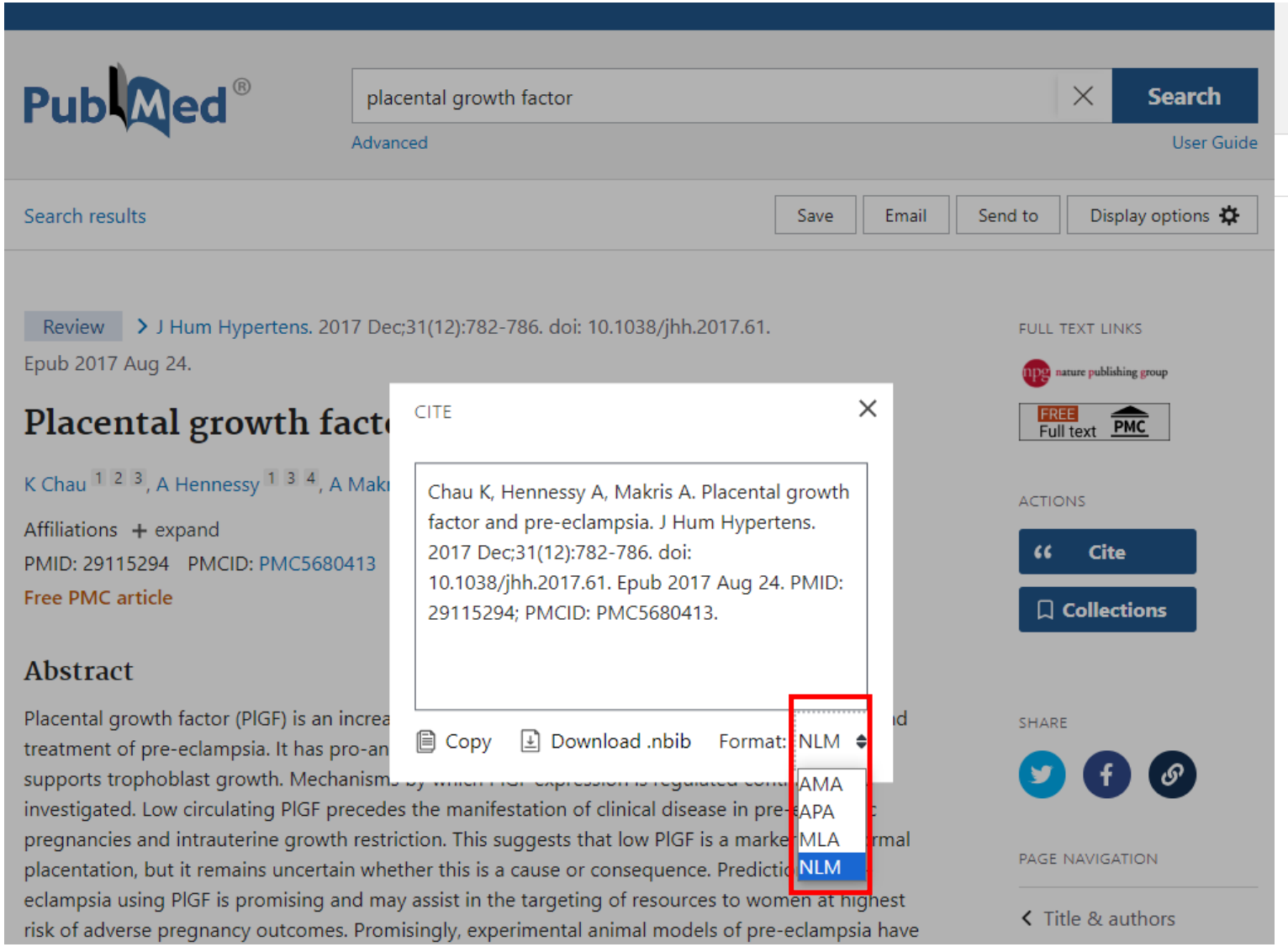
Citations & Citation Managers

The Struggle Is Real!



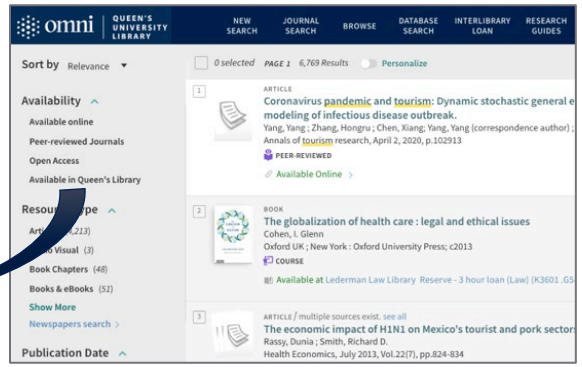
Cite Feature in Omni

Cite Feature in PubMed



Common Workflow

Database Search



RIS

Exporting Citations

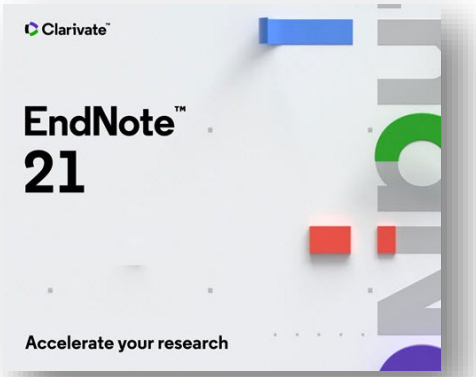
MS Word

Importing Citations

CWYW

Citation Manager

Choosing a Citation Manager



BibDesk

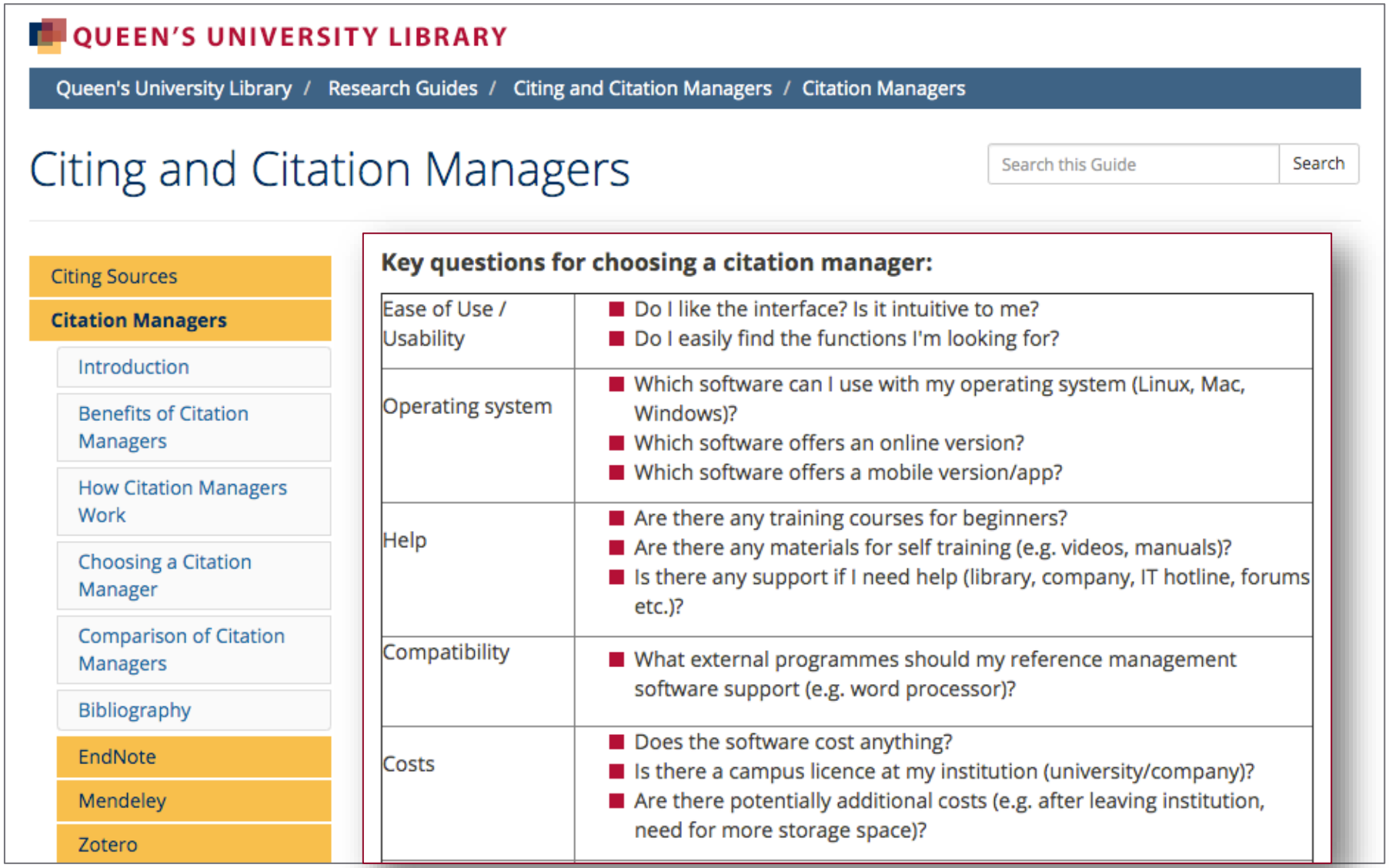
Zotero

MENDELEY

Papers

- ❑ Intended purpose
- ❑ Functionality & user experience
- ❑ Operating system
- ❑ Cloud storage capacity
- ❑ Cost
- ❑ Institutional license
- ❑ Technical support
- ❑ Collaboration

- https://guides.library.queensu.ca/citing-and-citation-managers/citation-managers



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Citing and Citation Managers

Search this Guide | Search

- Citing Sources
- **Citation Managers**
  - Introduction
  - Benefits of Citation Managers
  - How Citation Managers Work
  - Choosing a Citation Manager
  - Comparison of Citation Managers
  - Bibliography
  - EndNote
  - Mendeley
  - Zotero

Key questions for choosing a citation manager:

Ease of Use / Usability	■ Do I like the interface? Is it intuitive to me? ■ Do I easily find the functions I'm looking for?
Operating system	■ Which software can I use with my operating system (Linux, Mac, Windows)? ■ Which software offers an online version? ■ Which software offers a mobile version/app?
Help	■ Are there any training courses for beginners? ■ Are there any materials for self training (e.g. videos, manuals)? ■ Is there any support if I need help (library, company, IT hotline, forums etc.)?
Compatibility	■ What external programmes should my reference management software support (e.g. word processor)?
Costs	■ Does the software cost anything? ■ Is there a campus licence at my institution (university/company)? ■ Are there potentially additional costs (e.g. after leaving institution, need for more storage space)?

Evaluating journals

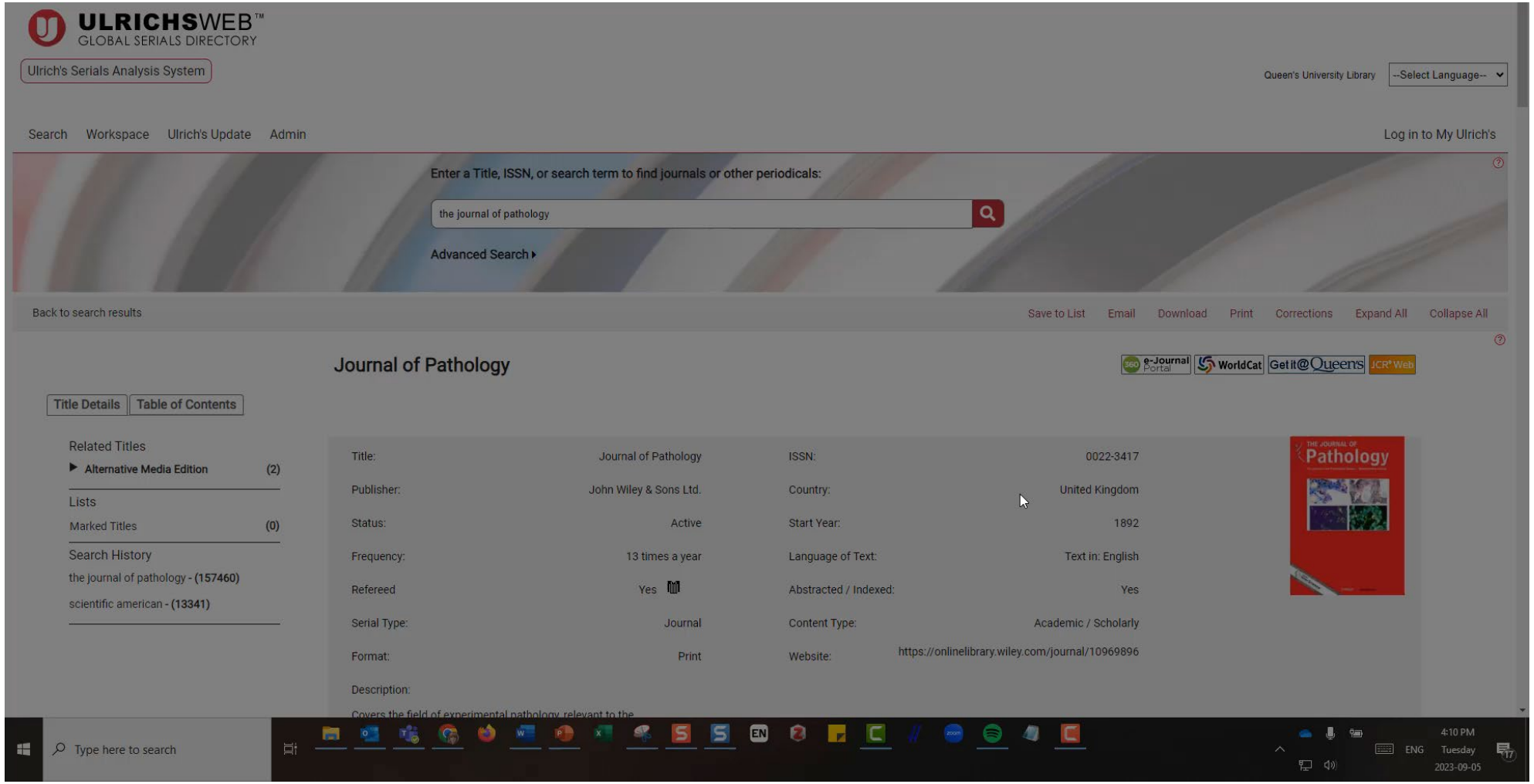
Journal of Pathology

Title:	Journal of Pathology	ISSN:	0022-3417
Publisher:	John Wiley & Sons Ltd.	Country:	United Kingdom
Status:	Active	Start Year:	1892
Frequency:	13 times a year	Language of Text:	Text in: English
Refereed	Yes	Abstracted / Indexed:	Yes
Serial Type:	Journal	Content Type:	Academic / Scholarly
Format:	Print	Website:	https://onlinelibrary.wiley.com/journal/10969896

Description:

Covers the field of experimental pathology, relevant to the understanding of human disease, and includes papers on the use of techniques such as immunology and molecular biology to elucidate disease mechanisms.

Ulrichsweb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Journal of Pathology
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Table of Contents
Related Titles
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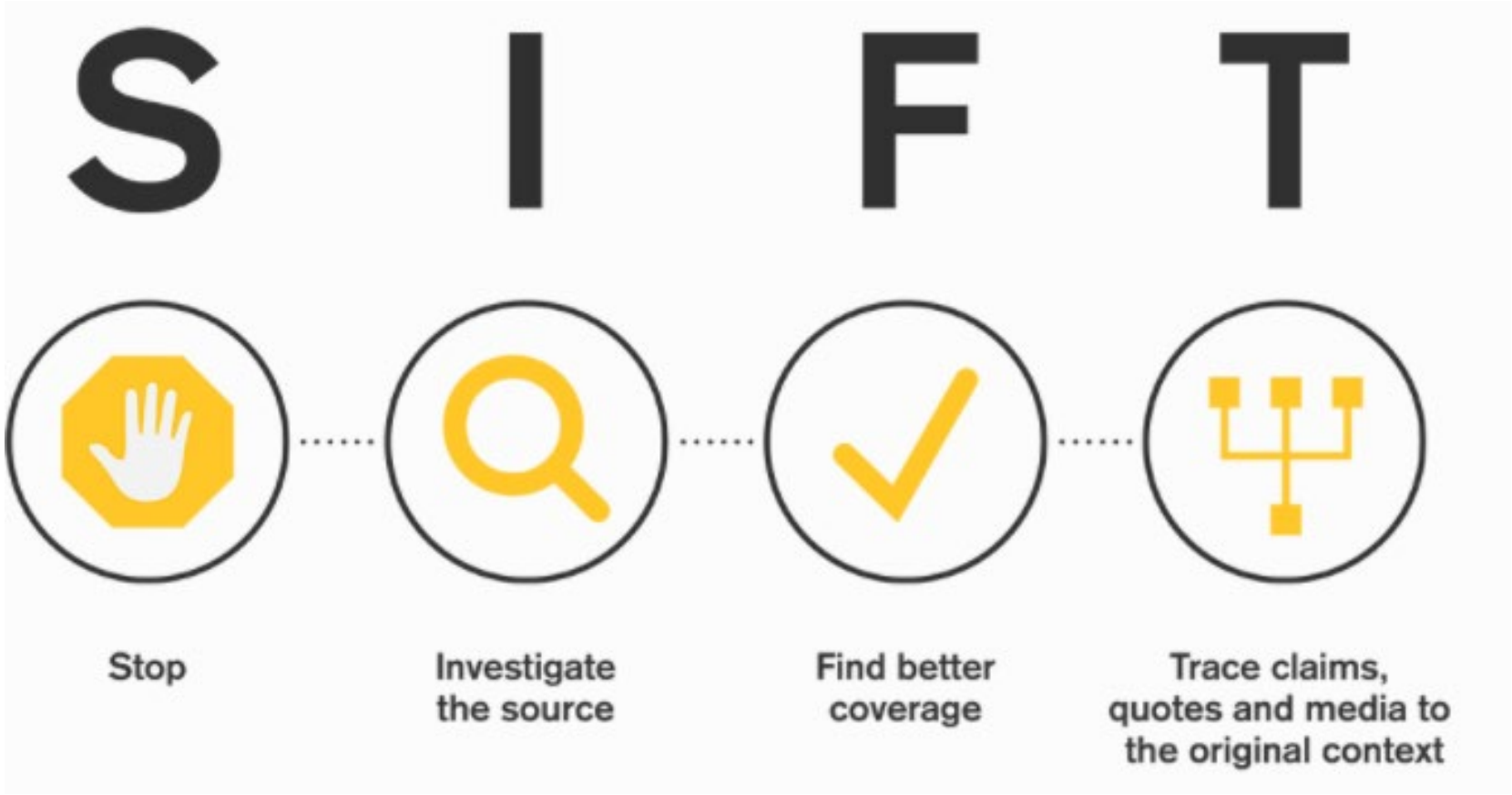
Lists
Marked Titles (0)
Search History
the journal of pathology - (157460)
scientific american - (13341)
Title: Journal of Pathology
ISSN: 0022-3417
Publisher: John Wiley & Sons Ltd.
Country: United Kingdom
Status: Active
Start Year: 1892
Frequency: 13 times a year
Language of Text: Text in: English
Refereed Yes
Abstracted / Indexed: Yes
Serial Type: Journal
Content Type: Academic / Scholarly
Format: Print
Website: https://onlinelibrary.wiley.com/journal/10969896
Description:
Covers the field of experimental pathology, relevant to the
Pathology
Type here to search
ENG
4:10 PM
Tuesday
2023-09-05

How do we evaluate what we find?



SIFT

Stop and consider:

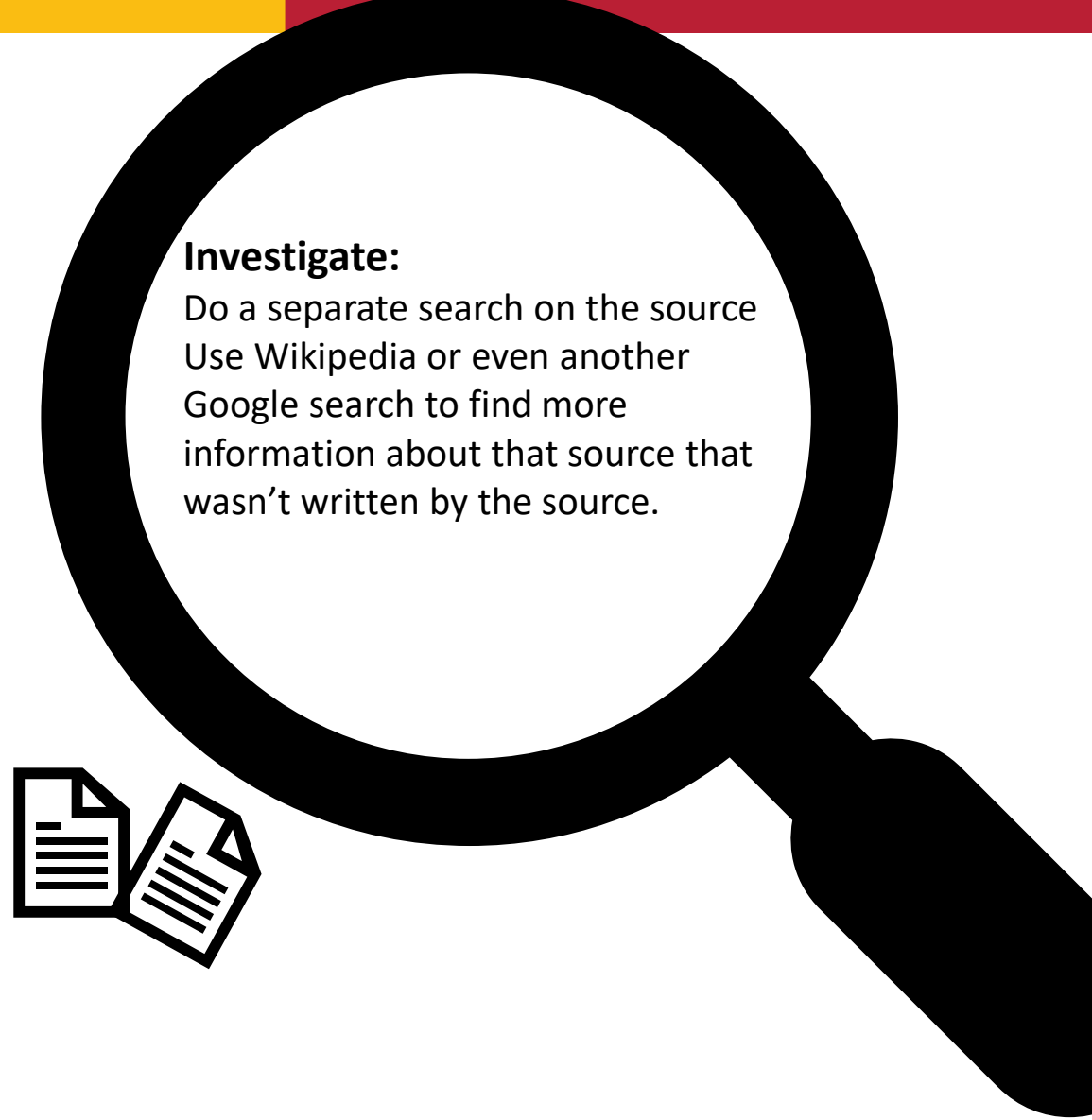
- Scan the contents.
- What do you know of the source?
- Is it reputable?
- What is its purpose? What is your purpose?
- Gauge your reaction to any claims.
- What is the coverage – in-depth or partial?
- When was it written?

Find other sources on the topic:

- See what other sources are reporting on this topic and the type of coverage provided.
- Does the information match what you were initially reading?

Trace the facts:

- Is evidence of any claims properly cited and accounted for?
- Can you trace these back to the original source and are these reputable?



Overview of Research Data Management

Queen's UNIVERSITY

What are research data?

Research data may include:

- **experimental**
- **observational**
- **operational**
- **third party data**
- **public sector data**
- **monitoring**
- **processed; or**
- **repurposed data**

"Data that are used as primary sources to support technical or scientific enquiry, research, scholarship, or artistic activity, and that are used as evidence in the research process and/or are commonly accepted in the research community as necessary to validate research findings and results."

CODATA Research Data Management Terminology, 2022

Research data are **contextual** and **discipline specific**

What is research data management (RDM)?

Processes applied throughout the **lifecycle of a research project** to guide the collection, documentation, storage, sharing, and preservation of research data.

Why is RDM important?

RDM practices are **integral to conducting responsible research** and can help you save resources by **ensuring your data are complete, understandable, and secure.**

(Source: Portage DMP Primer)

Why do I need RDM?

Some scenarios to consider:

- “PhD student offering $5,000 reward after car thief steals all his research” CTV News, 2017
- “Years of genomics research is riddled with errors thanks to a bunch of botched Excel spreadsheets” Quartz, 2017
- “Study of social media retracted when authors can’t provide data” Retraction Watch

What are the benefits of RDM?

For researchers

- **Efficiency** – minimizes waste and expense
- **Protection** – protect valuable data
- **Quality** – improves data excellence (e.g., reliability)
- **Impact** – increases visibility and effect of research
- **Compliance** – with ethics, journal requirements, funder policies, and legal, commercial and other obligations

…and beyond

- Accelerates research discovery and innovation
- Maximizes public investment
- Enhances collaboration and partnerships
- Increases ability to reproduce and validate research results

(Bishop, 2015; Alliance Research Data Management Working Group, 2020)

What's the first step? Planning!

- A **Data Management Plan (DMP)** is a formal, but living*, document that outlines the strategies and tools being used to manage data throughout the lifecycle of the research project
- Components of a DMP include:
  - Data Collection
  - Documentation and Metadata
  - Storage and Backup
  - Preservation
  - Sharing and Reuse
  - Responsibilities and Resources
  - Ethical and Legal Compliance

DMPs are starting to be required for certain grant opportunities in Canada and internationally (see Tri-Agency RDM Policy and our DMP Primer)

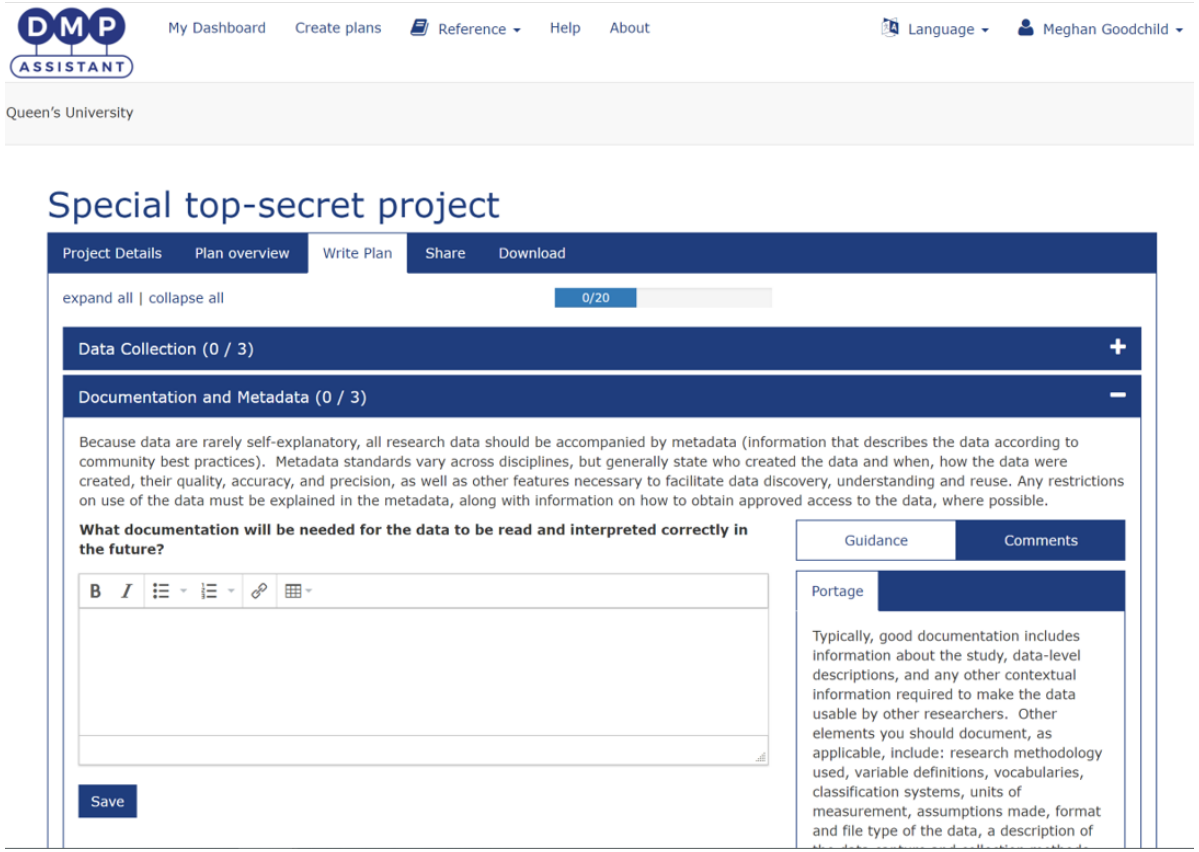
Sources: Portage DMP Primer

Data Management Plan (DMP) – Tool

Walks you through a series of questions

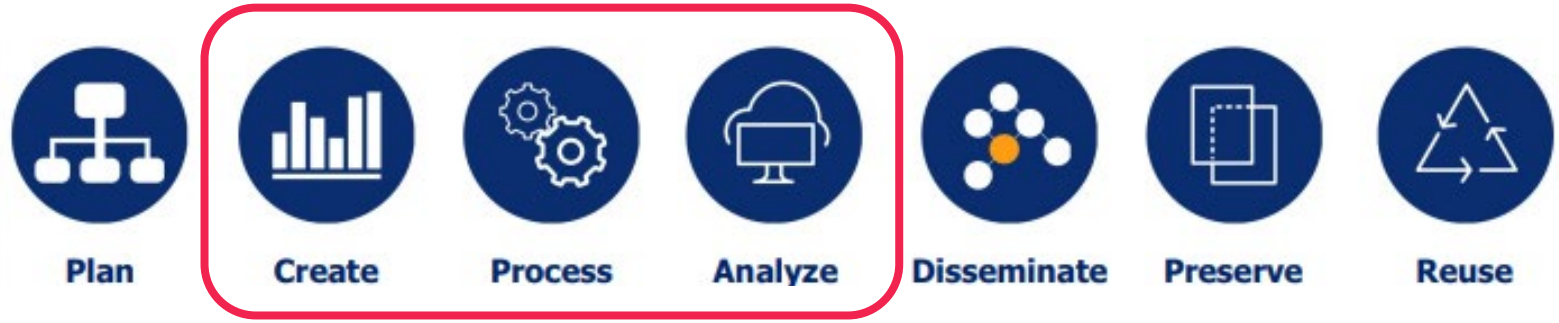
Provides guidance along the way

- Free and easy to use
- National tool
- Share and collaborate with others
- Export options
- Public DMPs & templates



assistant.portagenetwork.ca

Active data management



- **Active data management** relates to the phases for which data is in use and evolving
- RDM practices can help to prevent:
  - Research becoming *useless* because of little to no documentation (e.g., codebooks, metadata)
  - Research becoming *lost* because of improper storage and backup
  - Research not properly managed to meet security, legal or ethical obligations

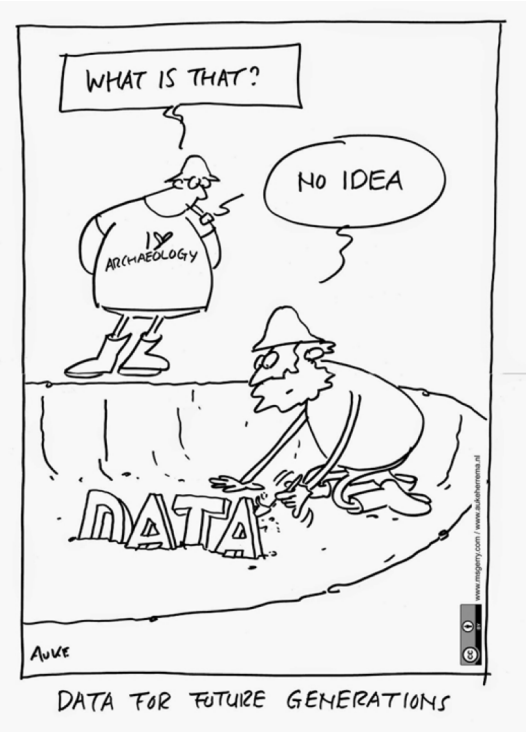


Image credit: http://aukeherrema.nl

Active data management – Quick tips and tricks

What can you do to improve data (and file) management?

- File naming conventions
  - e.g., TestName_InstrumentName_ImageID_YYYY-MM-DD.xxx
- Documentation
  - Include descriptive details (e.g., README files, codebooks) so that your data is independently understandable
- Storage and backup best practices
  - 3-2-1 rule: 3 separate copies, on 2 different media types, at least one copy offsite

Review best practices and resources (Queen's University Library)

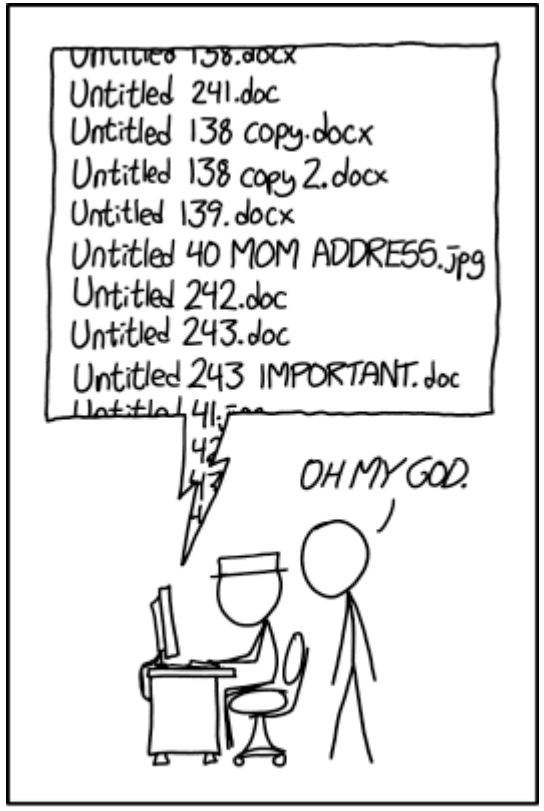


Image credit: https://xkcd.com/1459/

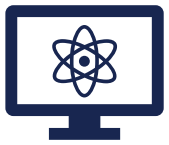
Data deposit, sharing, and reuse

- **Data deposit, sharing and reuse** relate to the final stages of a research lifecycle where research data are deposited into a research data repository for long-term preservation and discovery, and, if possible, shared to support research findings and promote reuse.
- “Research data collected through the use of public funds should be responsibly and securely managed and be, where ethical, legal and commercial obligations allow, available for reuse by others.” (Tri-Agency Research Data Management Policy, 2021)
- Appropriate steps must be built into the planning process (e.g., ethics approval, consent from participants, appropriate data management and storage) for this stage

Policies and practices

Funder Policies

- Funding agencies around the world developing policies to support access to publicly funded research:
  - Tri-Agency RDM Policy (2021); Tri-Agency Statement of Principles of Digital Data Management (2016)
  - International funders, including NIH, NSF, UK Research and Innovation Funders, Horizon 2020
- Mandates have been shown to strongly influence researcher behaviour



Journal policies and disciplinary practices

- **Mandated data sharing or archiving policies** have been found to significantly increase the likelihood of finding the data online
- Data sharing practices and data availability in journals **differ strongly by discipline**
- Reported results are not always fully reproducible from the shared data, often due to the lack of adequate dataset documentation and metadata

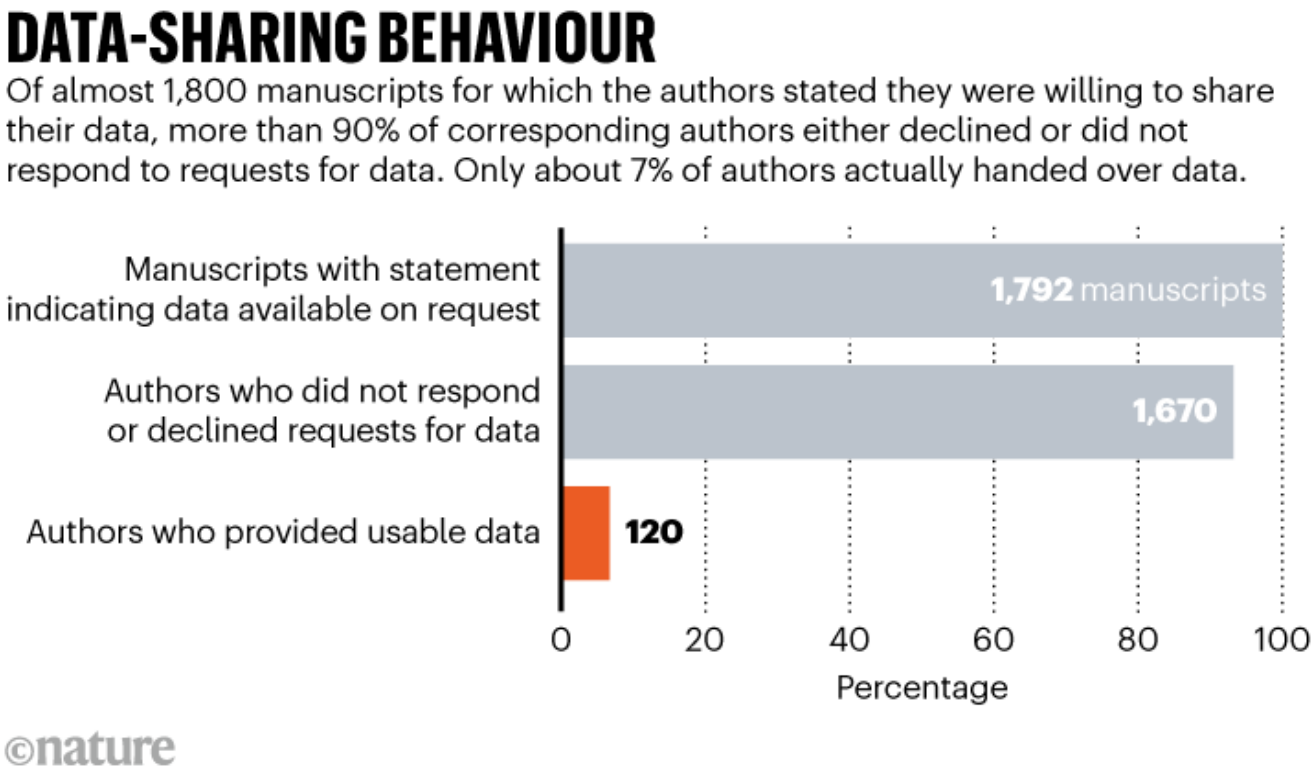
(Sources: Alliance RDM WG, 2020; Riesberg et al., 2021; Tendersoo et al., 2021; Vines et al., 2013)

Data deposit – Why deposit in a repository?

Sharing data by request has many downfalls (discoverability, long-term storage, transfer mechanism, license/citation)

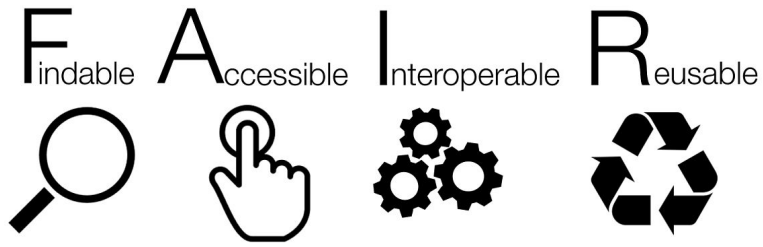
Personal websites are ephemeral

Journal supplementary material is not easily discoverable and can be paywalled



(Source: Watson, 2022)

Data Deposit – Why deposit in a repository?



https://www.go-fair.org/fair-principles/

Findable

- Digital Object Identifier (DOI)
- Indexed in a searchable resource

Accessible

- Ensure controlled access, where appropriate

Interoperable

- Integrate with other data (metadata standards)

Reusable

- Clear and accessible data usage license
- Data are well-described

Repositories also offer secure storage and long-term stewardship

What kind of research data repository?

Disciplinary Repository	Queen's Dataverse Collection	Federated Research Data Repository (FRDR)
• Built to handle specialized datasets • Storage likely outside of Canada • Eligibility, pricing, repository functionality vary • May only accept certain file types	• Multi-disciplinary • Canadian storage • File size <5 GB • Open to Queen's researchers • File-level restrictions possible • Supports versioning	• Multi-disciplinary • Canadian storage • Big data support • Open to faculty at Canadian institutions • No file restrictions • Limited versioning

re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES

borealis
The Canadian Dataverse Repository
Le dépôt Dataverse canadien

FRDR
FEDERATED RESEARCH DATA REPOSITORY

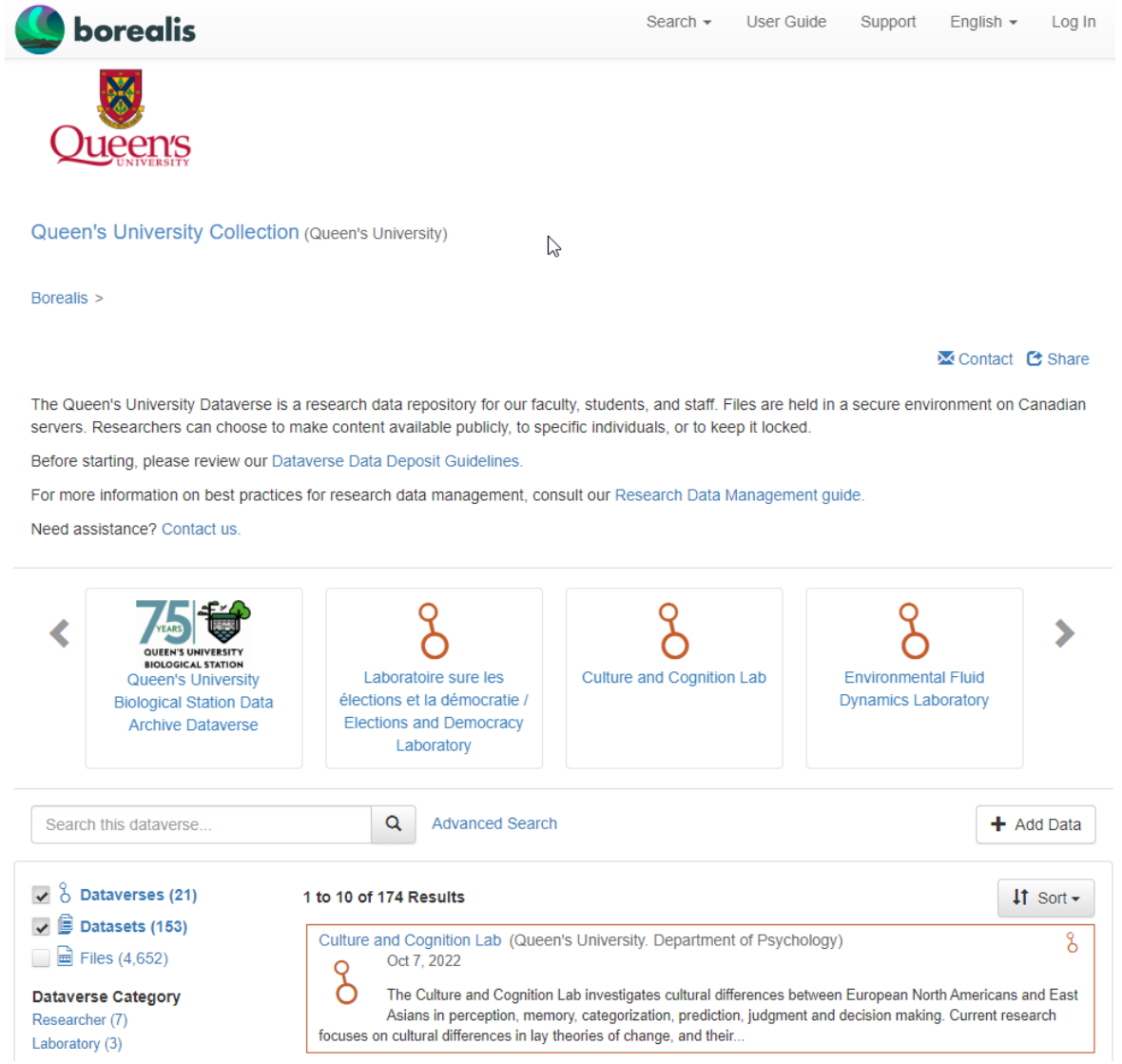
Data Deposit – What is Borealis?

- **Borealis, the Canadian Dataverse Repository,** is a bilingual, multidisciplinary, secure, Canadian research data repository
- Shared service provided in partnership with Canadian regional academic library consortia, institutions, research organizations, and the Digital Research Alliance of Canada
- 65+ subscribing institutions across Canada
- Technical infrastructure hosted by Scholars Portal and the University of Toronto Libraries.
- Data stored on the Ontario Library Research Cloud (OLRC)
- Indexed in Datacite search, Google dataset search, FRDR for discoverability

Production: borealisdata.ca
Demo: demo.borealisdata.ca

Data Deposit – What is Queen's Dataverse Collection?

- **Queen's Dataverse Collection** is managed by your library!
- We provide data curation services to support dataset deposit and sharing
- Check it out at borealisdata.ca/dataverse/queens



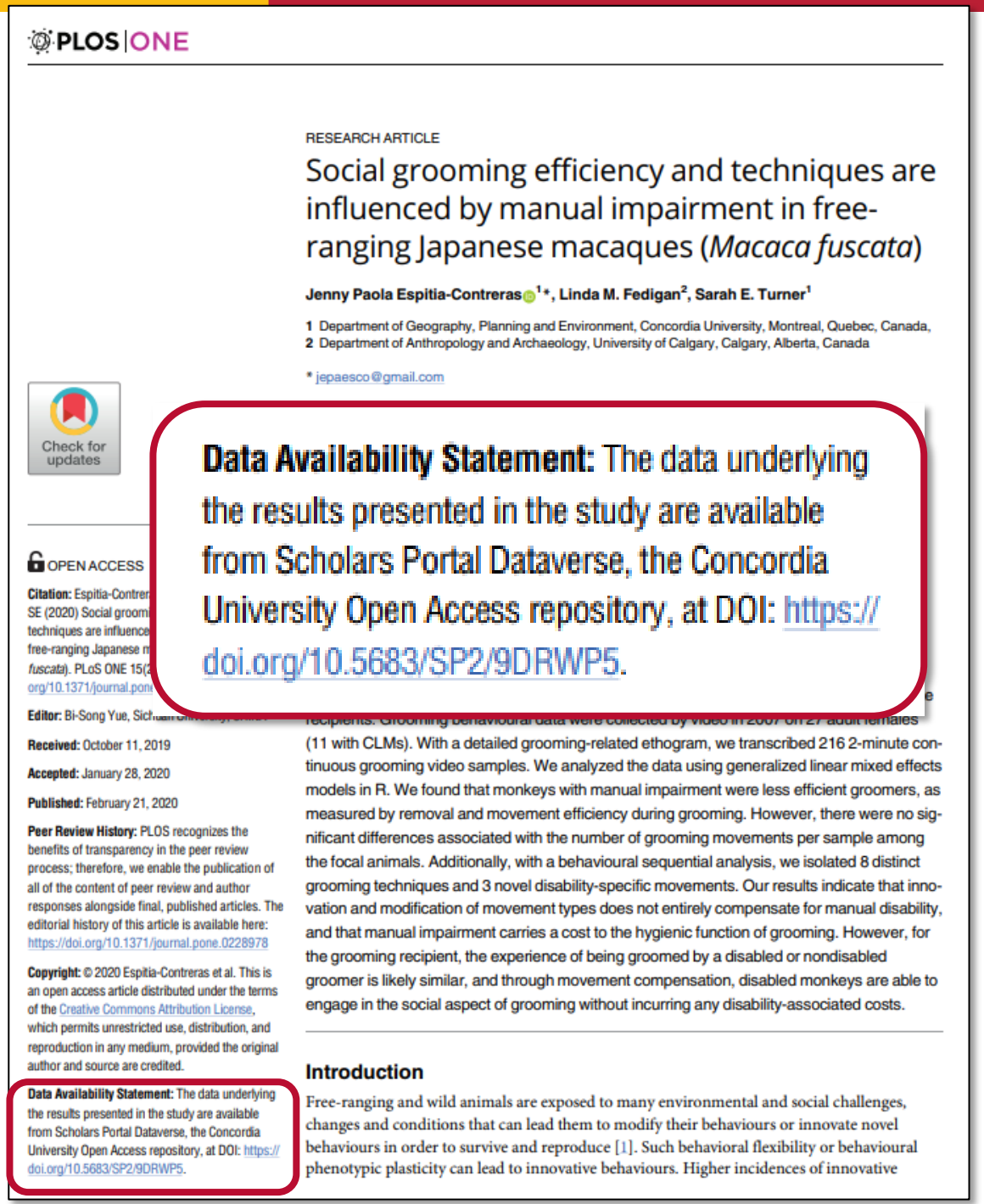
Data Deposit – What is Queen's Dataverse Collection?

Data Citation

- Automatic DataCite Canada DOI reservation and minting
- DOI used in standard data citations
- Cross-reference research outputs
    - Establish unbreakable links between scholarly output and associated data

Data availability statements

- Brief statements indicating whether there are dataset(s) supporting the research findings available, and if so, where the readers may access them
- Journal publishers are increasingly requiring a data availability statement and/or data citation for all data sources
- Types of statements:
  - Data available in a repository with a link to a DOI
  - Data available under certain conditions
  - Data available within article and supplementary files
  - Data available upon request
  - Data not available due to nature of research (e.g., ethical/legal/commercial reasons)
  - Article does not report data



PLOS ONE

RESEARCH ARTICLE

Social grooming efficiency and techniques are influenced by manual impairment in free-ranging Japanese macaques (*Macaca fuscata*)

Jenny Paola Espitia-Contreras[1]*, **Linda M. Fedigan**[2], **Sarah E. Turner**[1]

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Check for updates

Data Availability Statement: The data underlying the results presented in the study are available from Scholars Portal Dataverse, the Concordia University Open Access repository, at DOI: https://doi.org/10.5683/SP2/9DRWP5.

OPEN ACCESS

Citation: Espitia-Contreras JP, Fedigan LM, Turner SE (2020) Social grooming efficiency and techniques are influenced by manual impairment in free-ranging Japanese macaques (*Macaca fuscata*). PLoS ONE 15(2): e0228978. https://doi.org/10.1371/journal.pone.0228978

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Peer Review History: PLOS recognizes the benefits of transparency in the peer review process; therefore, we enable the publication of all of the content of peer review and author responses alongside final, published articles. The editorial history of this article is available here: https://doi.org/10.1371/journal.pone.0228978

Data Availability Statement: The data underlying the results presented in the study are available from Scholars Portal Dataverse, the Concordia University Open Access repository, at DOI: https://doi.org/10.5683/SP2/9DRWP5.

recipients. Grooming behavioural data were collected by video in 2007 on 27 adult females (11 with CLMs). With a detailed grooming-related ethogram, we transcribed 216 2-minute continuous grooming video samples. We analyzed the data using generalized linear mixed effects models in R. We found that monkeys with manual impairment were less efficient groomers, as measured by removal and movement efficiency during grooming. However, there were no significant differences associated with the number of grooming movements per sample among the focal animals. Additionally, with a behavioural sequential analysis, we isolated 8 distinct grooming techniques and 3 novel disability-specific movements. Our results indicate that innovation and modification of movement types does not entirely compensate for manual disability, and that manual impairment carries a cost to the hygienic function of grooming. However, for the grooming recipient, the experience of being groomed by a disabled or nondisabled groomer is likely similar, and through movement compensation, disabled monkeys are able to engage in the social aspect of grooming without incurring any disability-associated costs.

Introduction

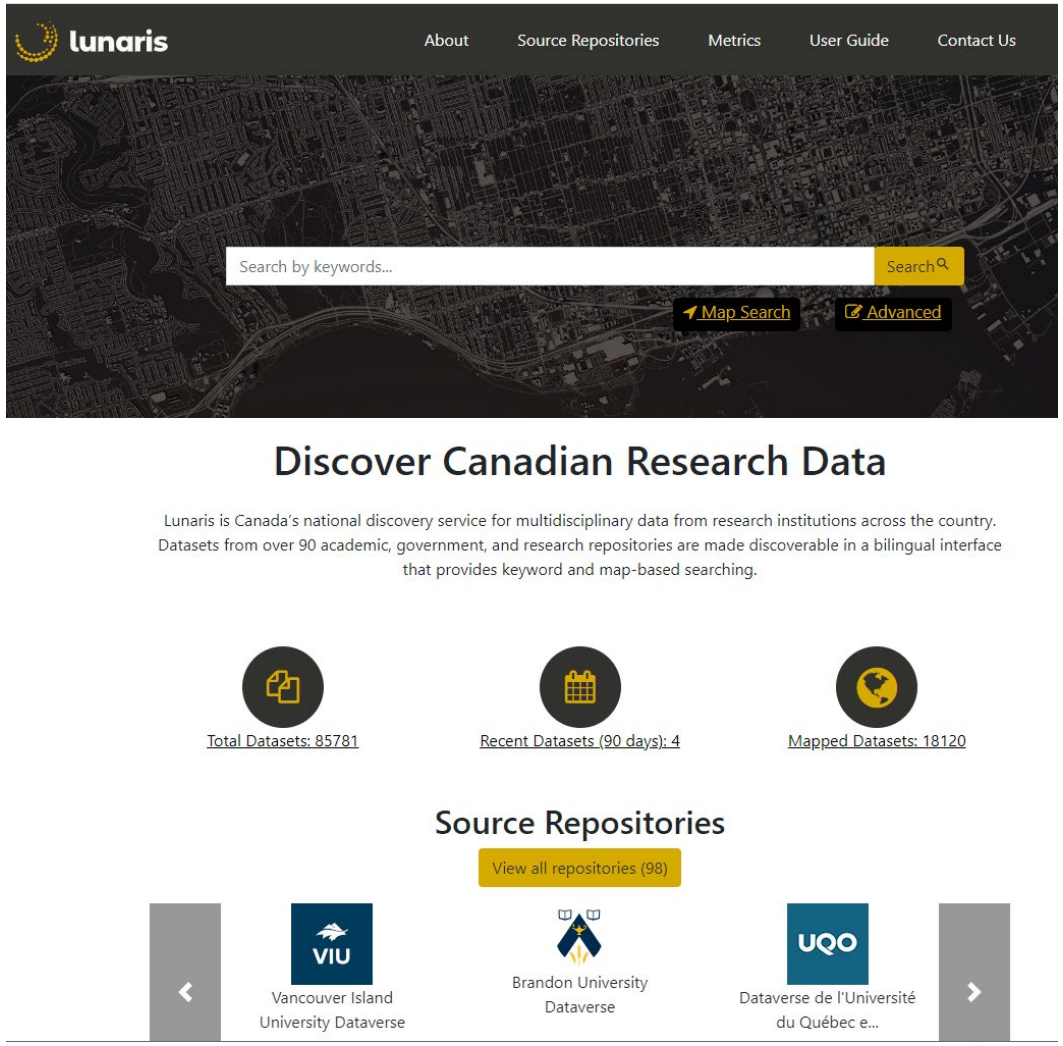
Free-ranging and wild animals are exposed to many environmental and social challenges, changes and conditions that can lead them to modify their behaviours or innovate novel behaviours in order to survive and reproduce [1]. Such behavioral flexibility or behavioural phenotypic plasticity can lead to innovative behaviours. Higher incidences of innovative

How do I find research data?

lunaris

Discover Canadian Research Data

- Lunaris is the national discovery portal for Canadian research data
- Includes links to datasets within Queen's Dataverse Collection!



lunaris.ca/

RDM Resources at Queen's

Policies

- Tri-Agency Research Data Management Policy (2021)
- Tri-Agency RDM Policy FAQs
- Tri-Agency Statement of Principles on Digital Data Management (2016)

Tools

- DMP Assistant
- re3data.org
- Queen's Dataverse Collection in Borealis
- Borealis Demo– Try it out!
- FRDR
- Lunaris

Resources

- Queen's Library RDM Guide and RDM Resources List
- Queen's Data Champions
- FAIR principles
- The First Nations Principles of OCAP®
- CARE Principles (Indigenous Data Governance)

Summary resource document:
https://guides.library.queensu.ca/rdm/RDM-Resources-List

An Introduction to Scholarly Publishing

Mark Swartz, Scholarly Publishing Librarian

Queen's University Library

9/11/2023

Who am I and what do I do?

- What is a scholarly publishing librarian?
- I support scholarly communications
  - Advice and teaching
  - Services like QSpace, Open Journals and Monographs, Orcid)
  - Granting programs for OERs and Monographs, agreements that allow researchers to publish Open Access for free
  - All in support of Open Access Publishing

Scholarly communications in 2 minutes (or less)

- **ALL ABOUT SHARING YOUR WORK:** A way for scholars to share their research beyond immediate acquaintances
    - The system of scholarly communications has been built around sharing and the evaluation of research
    - For journals: submission, rejection, peer review, rejection, and then impact after publication
- All sorts of ways that impact is calculated after publication, but most of it revolves around what is known as the “citation economy”

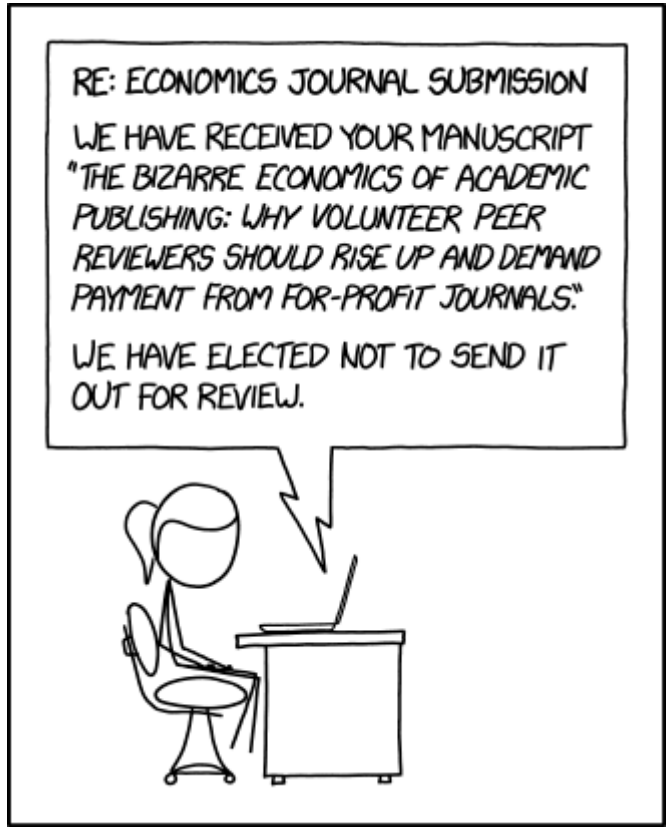
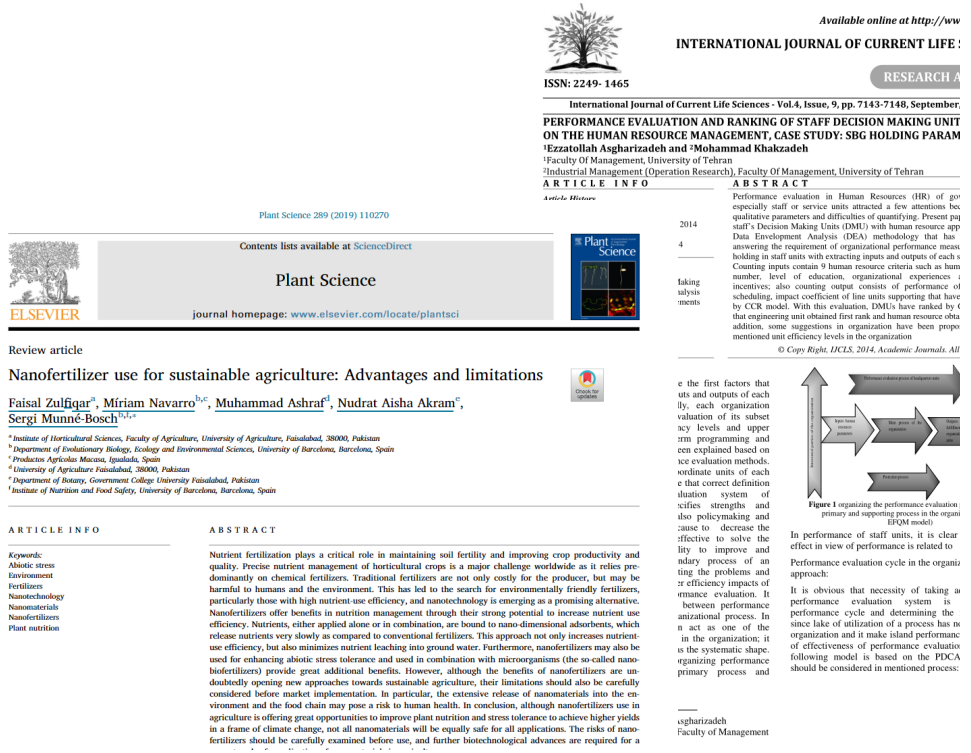


Image: CC-BY-NC @ xkcd: Peer Review
Context: 2025: Peer Review - explain xkcd

The commercialization of the scholarly publishing market

- Since the 50s, there has been widespread commercialization of the scholarly publishing market
  - Five major publishing companies account for more than 50% of papers published (CBC News, 2015)
  - Commercialization = Growth
  - Serials Crisis



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journal homepage: www.elsevier.com/locate/plantsci

Review article

Nanofertilizer use for sustainable agriculture: Advantages and limitations

Faisal Zulfiqar[a], Míriam Navarro[b,c], Muhammad Ashraf[d], Nudrat Aisha Akram[e], Sergi Munné-Bosch[b,f,*]

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ARTICLE INFO

Keywords:
Abiotic stress
Environment
Fertilizers
Nanotechnology
Nanomaterials
Nanofertilizers
Plant nutrition

ABSTRACT

Nutrient fertilization plays a critical role in maintaining soil fertility and improving crop productivity and quality. Precise nutrient management of horticultural crops is a major challenge worldwide as it relies predominantly on chemical fertilizers. Traditional fertilizers are not only costly for the producer, but may be harmful to humans and the environment. This has led to the search for environmentally friendly fertilizers, particularly those with high nutrient-use efficiency, and nanotechnology is emerging as a promising alternative. Nanofertilizers offer benefits in nutrition management through their strong potential to increase nutrient use efficiency. Nutrients, either applied alone or in combination, are bound to nano-dimensional adsorbents, which release nutrients very slowly as compared to conventional fertilizers. This approach not only increases nutrient-use efficiency, but also minimizes nutrient leaching into ground water. Furthermore, nanofertilizers may also be used for enhancing abiotic stress tolerance and used in combination with microorganisms (the so-called nano-biofertilizers) provide great additional benefits. However, although the benefits of nanofertilizers are undoubtedly opening new approaches towards sustainable agriculture, their limitations should also be carefully considered before market implementation. In particular, the extensive release of nanomaterials into the environment and the food chain may pose a risk to human health. In conclusion, although nanofertilizers use in agriculture is offering great opportunities to improve plant nutrition and stress tolerance to achieve higher yields in a frame of climate change, not all nanomaterials will be equally safe for all applications. The risks of nanofertilizers should be carefully examined before use, and further biotechnological advances are required for a

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PERFORMANCE EVALUATION AND RANKING OF STAFF DECISION MAKING UNIT ON THE HUMAN RESOURCE MANAGEMENT, CASE STUDY: SBG HOLDING PARAM

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[1]Faculty Of Management, University of Tehran
[2]Industrial Management (Operation Research), Faculty Of Management, University of Tehran

ARTICLE INFO

ABSTRACT

Performance evaluation in Human Resources (HR) of go especially staff or service units attracted a few attentions be qualitative parameters and difficulties of quantifying. Present pa staff's Decision Making Units (DMU) with human resource app Data Envelopment Analysis (DEA) methodology that has answering the requirement of organizational performance meas holding in staff units with extracting inputs and outputs of each s Counting inputs contain 9 human resource criteria such as hum number, level of education, organizational experiences incentives; also counting output consists of performance of scheduling, impact coefficient of line units supporting that have by CCR model. With this evaluation, DMUs have ranked by (that engineering unit obtained first rank and human resource obta addition, some suggestions in organization have been propo mentioned unit efficiency levels in the organization

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Figure 1 organizing the performance evaluation primary and supporting process in the organi EFQM model)

In performance of staff units, it is clear effect in view of performance is related to

Performance evaluation cycle in the organiz approach:

It is obvious that necessity of taking a performance evaluation system is performance cycle and determining the since lake of utilization of a process has n organization and it make island performanc of effectiveness of performance evaluatio following model is based on the PDCA should be considered in mentioned process:

REVIEW Open Access

X-ray computed tomography in life sciences

Shelley D. Rawson, Jekaterina Maksimcuka, Philip J. Withers and Sarah H. Cartmell*

Abstract

Recent developments within micro-computed tomography (μCT) imaging have combined to extend our capacity to image tissue in three (3D) and four (4D) dimensions at micron and sub-micron spatial resolutions, opening the way for virtual histology, live cell imaging, subcellular imaging and correlative microscopy. Pivotal to this has been the development of methods to extend the contrast achievable for soft tissue. Herein, we review the new capabilities within the field of life sciences imaging, and consider how future developments in this field could further benefit the life sciences community.

Keywords: X-ray computed tomography, Correlative microscopy, Phase contrast, Lightsheet, Time-lapse tomography, 3D imaging, 3D histology, Elemental mapping, Quantitative tomography, Water window

Non-invasive 3D microscopy over multiple scales

A range of 2D imaging tools, from optical microscopy to transmission electron microscopy, underpin much of what we know about structure–functionality relationships in biology, aided by a marked increase in the labels and markers available to identify certain features. To some extent, light and electron microscopy workflows have been developed to enable 3D imaging. However, they are limited by optical transparency (required for confocal and lightsheet), technically demanding sample preparation (e.g. freezing or fixing and embedding in resin followed by serial sectioning) and a limited field of view (as in transmission electron microscopy). Computed tomography (CT) exploiting the penetrating power of X-rays, on the other hand, allows non-invasive imaging of a large field of view, even for optically opaque materials, across a range of resolutions (Fig. 1), and sample preparation is comparatively straightforward. Micro-computed tomography (μCT; ~ 1 μm to > 100 μm spatial resolution) was first introduced for research applications in 1982 when Elliott et al. [6] imaged the interior of a *Biomphalaria glabrata* snail shell (Fig. 2a). Subsequent advances in μCT are evident from the corresponding image in Fig. 2b showing early stage biomineralisation of aragonite taken more recently by synchrotron μCT. These advances, alongside nano-computed tomography (nCT; down to ~ 10 nm voxel size), now allow 3D imaging from the organism level all the way down to the level of the organelles within the cell.

In essence, CT imaging involves taking many (typically over 1000) X-ray projections (digital radiographs) from different angles around a sample (typically through 360° or 180°). The X-ray projections reveal the attenuation of X-rays as they pass through the sample. The data are then computationally reconstructed, producing a greyscale virtual 3D volume of the attenuation capability of the sample. Once the 3D data set has been reconstructed, virtual slices view (as in transmission electron microscopy). Computed tomography (CT) exploiting the penetrating power of X-rays, on the other hand, allows non-invasive imaging of a large field of view, even for optically opaque materials, across a range of resolutions (Fig. 1), and sample preparation is comparatively straightforward. Micro-computed tomography (μCT; ~ 1 μm to > 100 μm spatial resolution) was first introduced for research applications in 1982 when Elliott et al. [6] imaged the interior of a *Biomphalaria glabrata* snail shell (Fig. 2a). Subsequent advances in μCT are evident from the corresponding image in Fig. 2b showing early stage biomineralisation of aragonite taken more recently by synchrotron μCT. These advances, Regarding the optimal magnification and resolution for imaging a given subject, it should be noted that the spatial resolution is not equal to the voxel (3D pixel) size, but is often ~ 2–3 times larger [12]. Further, while

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BMC

The rise of Open Access publishing

- Access to knowledge is a public good!
- Funding agencies around the world, including the Tri-Agency in Canada, require that funded publications are made Open Access
- Exposure (Higher Citation Impact)
- Faster Access to Results
- Enabling new and innovative usage
- Retain control over your work

There is now consensus that Open Access is the future of scholarly publishing, in that “those who are most closely involved in scholarly publishing—be they researchers, librarians, funders, academic institutions generally, or large corporate publishers and small scholarly societies—have reached a rare point of agreement on the internet’s significant contribution to the circulation of research. They concur that OA to research promotes the progress of science”(Willinsky, 2022, p. 29).

Article Processing Charges (APCs)

- One way that OA publishers have paid for publications costs is through APCs
- How has this caused issues? It has led to:
  - high-cost gold journals and hybrid journals run by for-profit publishers
  - Average cost to publish an article:
    - Gold OA = $1800
    - Hybrid journals = $2900
    - Most expensive = Nature ($11690)

Image: David Parkins (modified by Bjoern Brems)

"The Oligopoly's Shift to Open Access Publishing: How for-Profit Publishers Benefit from Gold and Hybrid Article Processing Charges." *CAIS2022*, January 1, 2022. https://www.cais2022.ca/talk/12.butler/.

Low Quality Publishers

- Deceptive, or “predatory” publishers charge APCs, but do not follow best practices in publishing.
- There are many calling cards of predatory publishers, but there are a few that are more useful than others.
- Resources for avoiding Predatory Publishers and Conferences

Predatory Publishers & Conferences

Predatory publishers claim to publish high quality academic research but do not follow scholarly publishing best practices. Similarly, predatory conferences use deceptive websites to lead authors to believe they are submitting their work to a legitimate conference.

The ultimate goal of predatory publishers and conferences is to profit, not publish quality research.

Being associated with a deceptive publisher or conference can lead to financial loss as a result of inappropriate fees and be harmful to your reputation and that of the university.

Think. Check. Submit. and **Think. Check. Attend.** provide checklists and resources to help researchers find trusted forums for their research.

More Information

- **How to Assess a Journal: AKA How Not to Publish in an Undesirable Journal**
- **How to avoid deceptive publishers and conferences**
- **Identifying Predatory Publishers A Checklist** (PDF)
- **Queen's Senate Policy on Academic Integrity**
- **Researcher Training Program: Getting Published**

Contact your **Scholarly Publishing Librarian** or your **Subject Librarian** for more information.

General rules

1. Do **not** rely on blacklists or whitelists of journals
2. Do check to see if the journal is part of the Directory of Open Access Journals and is available in the library catalogue
3. Watch for emails soliciting submissions for journals and conferences
4. Do not pay an APC or agree to publish in a journal without doing your homework

Same Name, Different Game

- Intentionally use familiar/generic sounding names:
  - Computer Science Chronicle
  - Computer Science Journal
  - European Journal of Advanced Computer Science
- International Journal of Advanced Research in Computer Science & Technology
- ****Sometimes have the exact same name as reputable journals** - Journal of Mathematical Sciences**

Image: David Parkins

Publishing Process

- Is there an editorial board?
- Who is on the editorial board?
  - Did they have to pay to be on it
- How fast do they conduct peer review?
  - If the answer is in 7 days or less, that is probably bad
- Do they have a retraction policy?

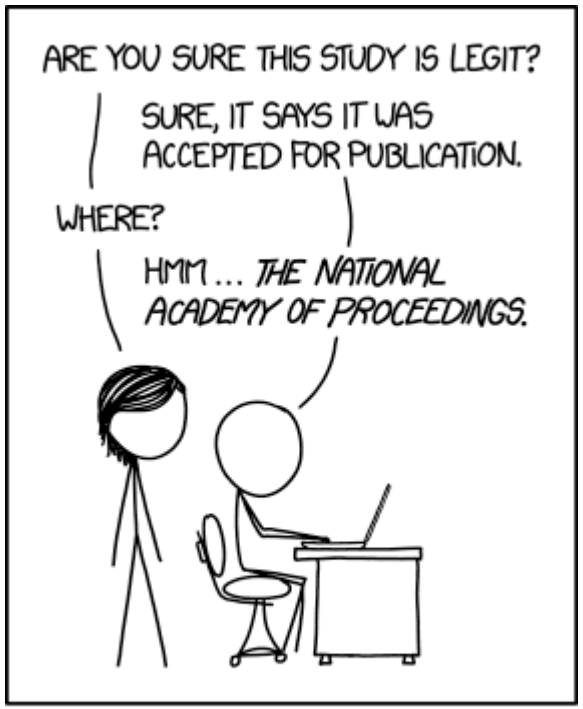
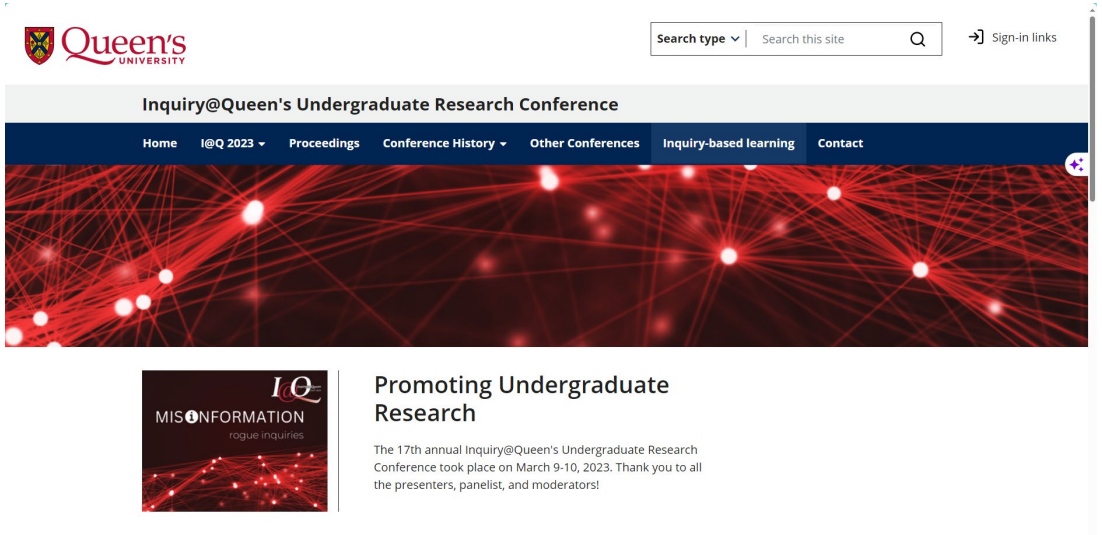


Image: CC-BY-NC @ xkcd: Dubious Study
Context: 1847: Dubious Study - explain xkcd

How do you determine where to publish?

- Is it a reputable journal, reputable publisher, high-impact factor, appropriate scope, good for career
- Does it have a path to Open Access? Do you have to pay to publish?
- For students: consider an undergraduate student journal that is managed by a university.
  - Undergraduate student journals at Queen's (Health Sciences: Queen's Qapsule)
  - Inquiry@Queen's Conference
  - Student Journal Forum



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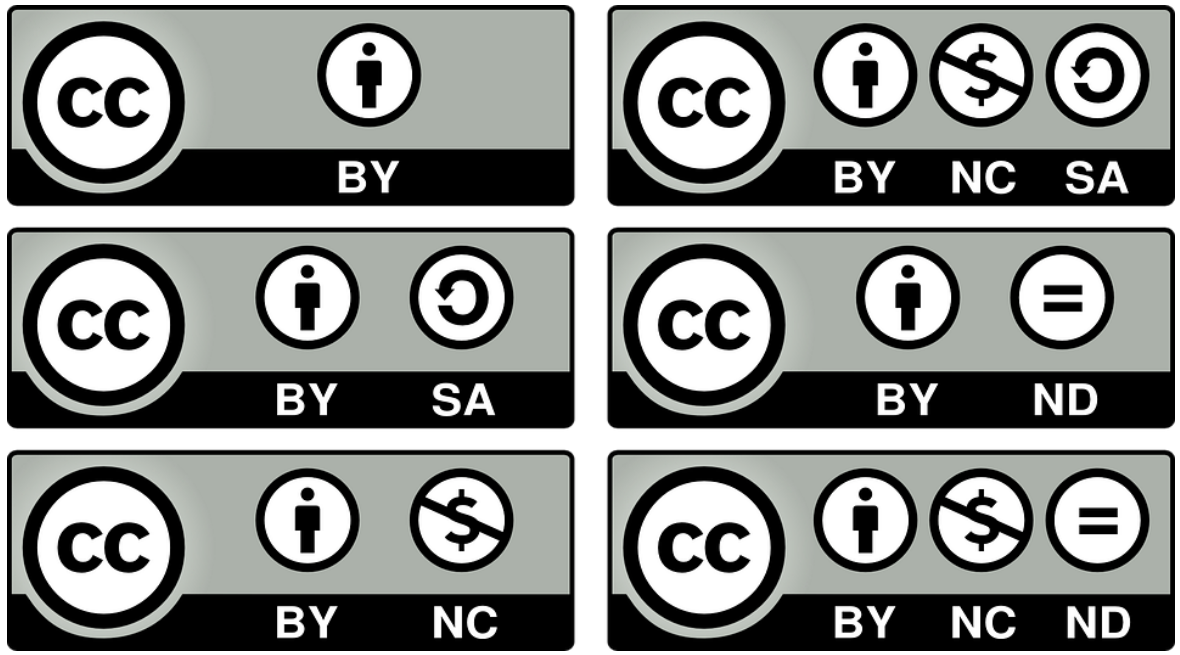
- When publishing Open Access, you will likely license your work using a Creative Commons license:
  - CC licenses let readers know how they can use your work
  - Journals may give you a choice, or they may require you use a license that they specify



Questions?

Please feel free to contact us if you have additional questions

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