Universität Basel

Universitätsbibliothek

Basics in literature searching:

PubMed & other resources

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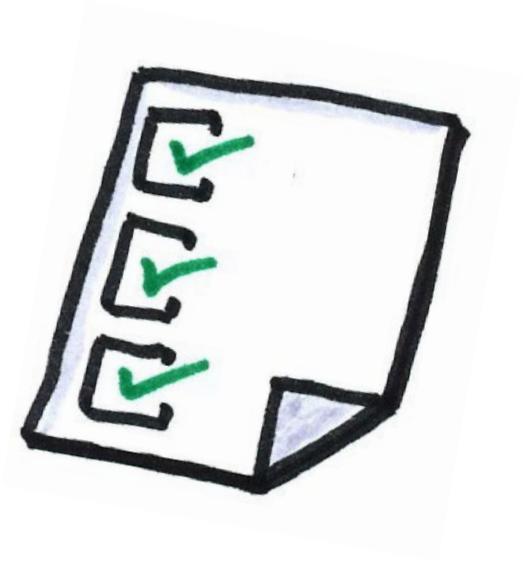
University Medical Library, SS 2025

Course attendance certificate for medical students

- **Now** in Zoom: please enter your correct name (we record the list of participants in Zoom as an attendance check)
- You will receive an email confirmation of your course participation in the next few days (e.g. for WIKO.flex)

Overview



Getting started…

Documentation

Aims

Research question (with exercises) 

Resources – where do I find what?

Boolean operators

PubMed: free-text searching (with interactive live demonstrations)

Side note Google Scholar

Side note AI tools (incl. LLMs, RAG tools, Consensus)

Precision and sensitivity 

Critical appraisal

Take home messages

Appendix

Getting started…

- You have an idea or a rough topic? Start with non-specific search to get acquainted with topic, for example
  - Internet/Webpages, Google/Google Scholar
  - Clinical Information Systems (e.g. UpToDate, AMBOSS)
  - AI Tool (preferably scientific Retrieval Augmented Generation (RAG) tool)
- Refine your question continuously
- Search for (systematic) reviews (see appendix)
  - Is the topic already covered or even relevant?
  - What search strategies are used in topic-related reviews?
  - Which terms are used by pertinent articles in the title or abstract?
- Build up a database search and adjust it continuously
- Document it!

→ Slides on all these points follow!

Jakeandlindsay; https://flic.kr/p/9qcnGe

Documentation

Ewald H, Appenzeller, C: First draft for https://covid-evidence.org/

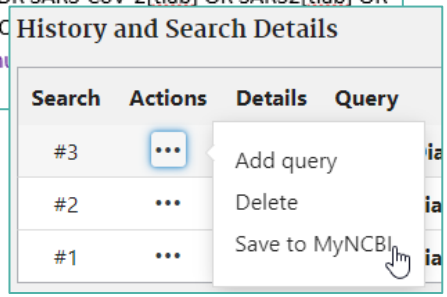
NEW PubMed

Suche 1 >> 858 Hits bzw. 733 mit Zeitfilter (orange); 12.3.2020

"severe acute respiratory syndrome coronavirus 2" [Supplementary Concept] OR "COVID-19" [Supplementary Concept] OR (wuhan[tiab] AND coronavirus[tiab]) OR (wuhan[tiab] AND pneumonia virus[tiab]) OR COVID19[tiab] OR COVID-19[tiab] OR coronavirus 2019[tiab] OR SARS-CoV-2[tiab] OR SARS2[tiab] OR SARS-2[tiab] OR "severe acute respiratory syndrome 2"[tiab] OR 2019-nCoV[tiab] OR (novel coronavirus[tiab] AND 2019[tiab]) NOT (animals[mesh] NOT humans[mesh]) AND ("2019/12/01"[EDAT] : "3000/12/31"[EDAT])

Suche 2 >> 805 Hits; wie 1, aber sensitiver (s. orange); 12.3.2020

corona[ti] OR covid*[ti] OR sars[ti] OR severe acute respiratory syndrome[ti] OR ncov*[ti] OR "severe acute respiratory syndrome coronavirus 2" [Supplementary Concept] OR "COVID-19" [Supplementary Concept] OR (wuhan[tiab] AND coronavirus[tiab]) OR (wuhan[tiab] AND pneumonia virus[tiab]) OR COVID19[tiab] OR COVID-19[tiab] OR coronavirus 2019[tiab] OR SARS-CoV-2[tiab] OR SARS2[tiab] OR SARS-2[tiab] OR "severe acute respiratory syndrome 2"[tiab] C
coronavirus[tiab] AND 2019[tiab]) NOT (animals[mesh] NOT hu
("2019/12/01"[EDAT] : "3000/12/31"[EDAT])



What to document?

- Where did you search
- Search terms, number of hits
- Date

How (for example)?

- In Word, Excel or the like: copy/paste your search
- Directly in the search interface: account needed (see appendix)

Further documentation, e.g. while screening the hits:

- Note thoughts, associations or ideas
- Author/Title/Year, what is it about, what can I use it for

→ Here in addition to Word or Excel possibly also Endnote etc.

Documentation: reference management software

Further information and courses on EndNote and Zotero by University Library:
https://ub.unibas.ch/de/service/tutorials/
https://ub.unibas.ch/de/schulungen/

Free, but no dedicated information and courses on Mendeley by University Library

Other softwares, like Citavi, but no (longer) licensed, dedicated information and courses by University Library

Aims:
Where do you want to go? – What will you learn today?

	Daily hospital routine	Literature search, master thesis	Systematic Review
Require ments	Fast, find specific answers	extensive, well built/solid background research	Reproducible, systematic and sensitive search
Ex. **sources**	– UpToDate – PubMed Clinical Queries	– Google Scholar – PubMed/Embase – Web of Science/Scopus	– PubMed/Embase/Cochrane Library – Web of Science/Scopus – Grey Literature – Supplemental search techniques
Ex. **search input** PubMed	Heart failure Spironolactone Mortality	Heart failure AND Spironolactone AND (Mortality OR Death)	(Heart failure[tiab] OR Cardiac Failure[tiab] OR Myocardial Failure[tiab] OR Heart Decompensation[tiab] OR Heart Failu…[Mesh] AND (Spironolactone[tiab] OR Aldactone[tiab] OR "Spironolactone"[Mesh]) AND (mortality[tiab] OR dead*[tiab] OR die[tiab] OR died[tiab] OR dying[tiab] OR mortal*[tiab] OR fatal*[tiab] OR …[Mesh]) AND (systematic[sb] OR (randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized[tiab] OR placebo[tiab] OR "clinical trials as topic"[MeSH Terms] OR random…[tiab] OR trial[ti] NOT ("animals"[MeSH Terms] NOT "humans"[MeSH Terms]))))

Today's topic

Advanced course topic

or more advanced

(Heart failure[tiab] OR Cardiac Failure[tiab] OR "Heart Failure"[Mesh]) AND (Spironolactone[tiab] OR Aldactone[tiab] OR "Spironolactone"[Mesh]) AND (mortality[tiab] OR death[tiab] OR died[tiab] OR "Mortality"[Mesh])

Let information specialists advise you! Use our free support service (https://ub.unibas.ch/en/locations/university-medical-library/support-for-literature-searching/)

Research question: clinical vs. scientific question

Clinical question for medical doctor

Detailed anamnesis directly relevant to the identified problem (i.e. your individual patient and his/her problem):

Treatment plan for Ms Müller, 88 years, widowed, living in her own house outside the village, mentally very fit, diabetic, tear of posterior horn inner meniscus right knee; patient wants to be able to garden again and sing in the local churche's choir with weekly gatherings in the village center

In evidence-based medicine, an answerable, precisely structured question is essential to facilitate the **search for an answer**.

Scientific question for clinical research/epidemiologists

Detailed anamnesis not directly applicable (i.e. perspective not directly on an individual patient, but a study population with certain "similar" characteristics):

Arthroscopic partial meniscus resection vs. physiotherapy for elderly with meniscus tear; pain ↓, independent mobility ↑, (quality of life (QoL) ↑) …

Research question: precise formulation, for instance with PICO or PECO

Consider	
Patient	What demographic characteristics such as age, gender and ethnicity does the patient have? Or what kind of problems are there?
Intervention / Exposure	What kind of intervention or exposure is being considered? For example, is it a type of medication, exercise or behaviour intervention? Or is it an exposure to chemicals or temperatures?
Control / Comparison	Is there a control intervention or an exposure comparison that should be considered? For example, is there a control group with a different dosage of the same drug, another drug or no drug? Or are populations with different levels of a certain exposure compared, including no exposure at all?
Outcome	What would be the desired effects you would like to identifiy? Which (side) effects, positive or negative, could you imagine/consider?

Research question: precise formulation, for instance with PICO or PECO

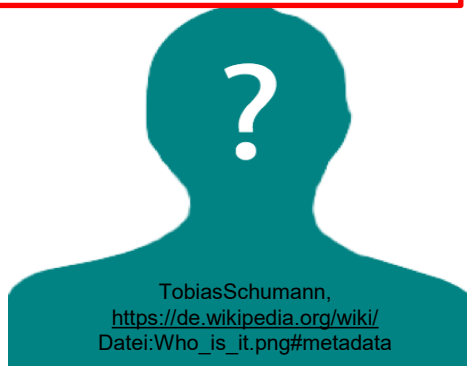
Do not unconditionally follow these frameworks, but use your own experience and brain!

Population: Adults with meniscus tear

Intervention: physiotherapy

Control: Arthroscopic partial meniscus resection

Outcome: Pain, independent mobility, (QoL)



TobiasSchumann, https://de.wikipedia.org/wiki/Datei:Who_is_it.png#metadata

PICO question: In adult patients with a meniscus tear, is physiotherapy or arthroscopic partial meniscus resection better to reduce pain and increase independent mobility (or overall quality of life)?

→ Besides PICO or PECO, numerous other systems exist, depending on context/setting, e.g. SPIDER, SPICE, ECLIPSE…

(see http://dx.doi.org/10.1136/bmjgh-2018-001107, for instance)

Exercise: Determine possible research questions

1. A friend of yours has severe asthma. After lunch with him you see an advertisement about the Hochgebirgsklinik Davos, a clinical rehabilitation center for diseases of the respiratory system situated in the mountains in Switzerland. You are wondering if a stay in a mountain climate might indeed reduce the asthmatic attacks of your friend.

2. After the newspaper "20 Minuten" reported on the difficulties of obese children in Bettingen, the municipality contacts you. They would like to reduce the risk of the children developing diabetes mellitus and ask what is better: increase recreational activities in the community or introduce educational programs for lifestyle changes.

3. Accurate and fast diagnosis of malaria is essential for the initiation of proper treatment. New molecular diagnostic based on PCR are available and you would like to know if they are more accurate than the currently used rapid diagnostic tests (RDTs).

4. Your grandfather is a long-time smoker. You would like him to quit but he argues that in his age it will not make a difference anymore. However, if you could proof to him that there are already health benefits after one year he would stop smoking.

5. You have a heated discussion with a sound engineer at a concert about the adherence to the 80dB threshold. He arguments that 5dB more or less is just nit-picking. You wonder if that is true.

Exercise: Possible solutions

Do not unconditionally follow these frameworks, but use your own experience and brain!

	P	I / E	C	O
1. Therapy	For adults with severe asthma, does	a stay in a mountain climate		reduce asthmatic attacks?
2. Prevention	For overweight children, does	an increase in community recreation	compared to educational programs	result in a reduced risk of diabetes mellitus?
3. Diagnosis (PIRD…?)	In the general population	are molecular diagnostics based on PCR	or rapid diagnostic tests (RDTs)	more accurate to diagnose malaria?
4. Prognosis (PFO…?)	Have elderly persons	who quit smoking	compared to still smoking	health benefits after one year?
5. Aetiology	Among concertgoer, what is the effect of	exposure to <80 dB	compared to ≥80 dB	on hearing impairment?

Resources – where do I find what?

- Internet/Webpages → “grey*” and other literature
- Study registers → completed/ongoing trials
- Clinical information systems → Basic knowledge and more
- Library catalogues → Monographs, dissertations
- Electronic databases → mainly journal articles

Focus

https://pixabay.com/images/id-3411617/

(* ”…materials and research produced by organization outside of the traditional commercial or academic publishing and distribution channels.”)

(https://en.wikipedia.org/wiki/Grey_literature)

Resources: Internet/Webpages

- "You can find many/all things in the internet…!"
- For scientific literature search especially relevant for *grey literature*
- Make the right choice with internet sources! Critically assess the quality & authenticity of the information.
- Important questions that arise for the evaluation of Internet sites:
  - **WHO** is the publisher of the website?
  - **WHY** is the website offered?
  - **HOW** is the website designed?

Resources: Internet/Webpages

WHO is the publisher of the website?

- Is the publisher known? Is it a reputable institution?
- If the publisher is not directly visible - look for information in the imprint or in “About us“.

WHY is the website offered?

- Is there an educational mandate, e.g. by a state or cantonal institution (research institute, university institution, office, authority etc.)?
- Are these advertising messages from providers with commercial, political or religious interests?

HOW is the website designed?

- Professional, up-to-date, well maintained: Contents with serious and complete bibliography & further links?
- Styled for high gloss - advertising purposes visible?
- Private providers, “offender by conviction"? partly "simply knitted", not always up to date, no or only few serious literature references.

Resources: Study registers

- Trials usually have to be registered. Many countries have their own registers, see https://en.wikipedia.org/wiki/List_of_clinical_trial_registries
- References to planned, ongoing and completed studies. Partly not (yet) published study results.
- Mostly independent databases, similar features and functions as specialist electronic databases (see following slides).
- The best known are probably in clinical research:
  - WHO International Clinical Trials Registry Platform (international)
    https://www.who.int/clinical-trials-registry-platform
  - ClinicalTrials.gov (USA)
    https://clinicaltrials.gov/
  - EU Clinical Trials Register (Europe)
    https://www.clinicaltrialsregister.eu/

Shots for all https://www.dvidshub.net/image/1836493

Resources: Clinical information systems, e.g. UpToDate & AMBOSS as examples

UpToDate

- Fee-based database (license for **local** use in the University Medical Library and University Hospital Basel, no VPN access)
- Material prepared by experts for everyday clinical use (**medical, peer-reviewed "Wiki"**)
- Patient information

AMBOSS

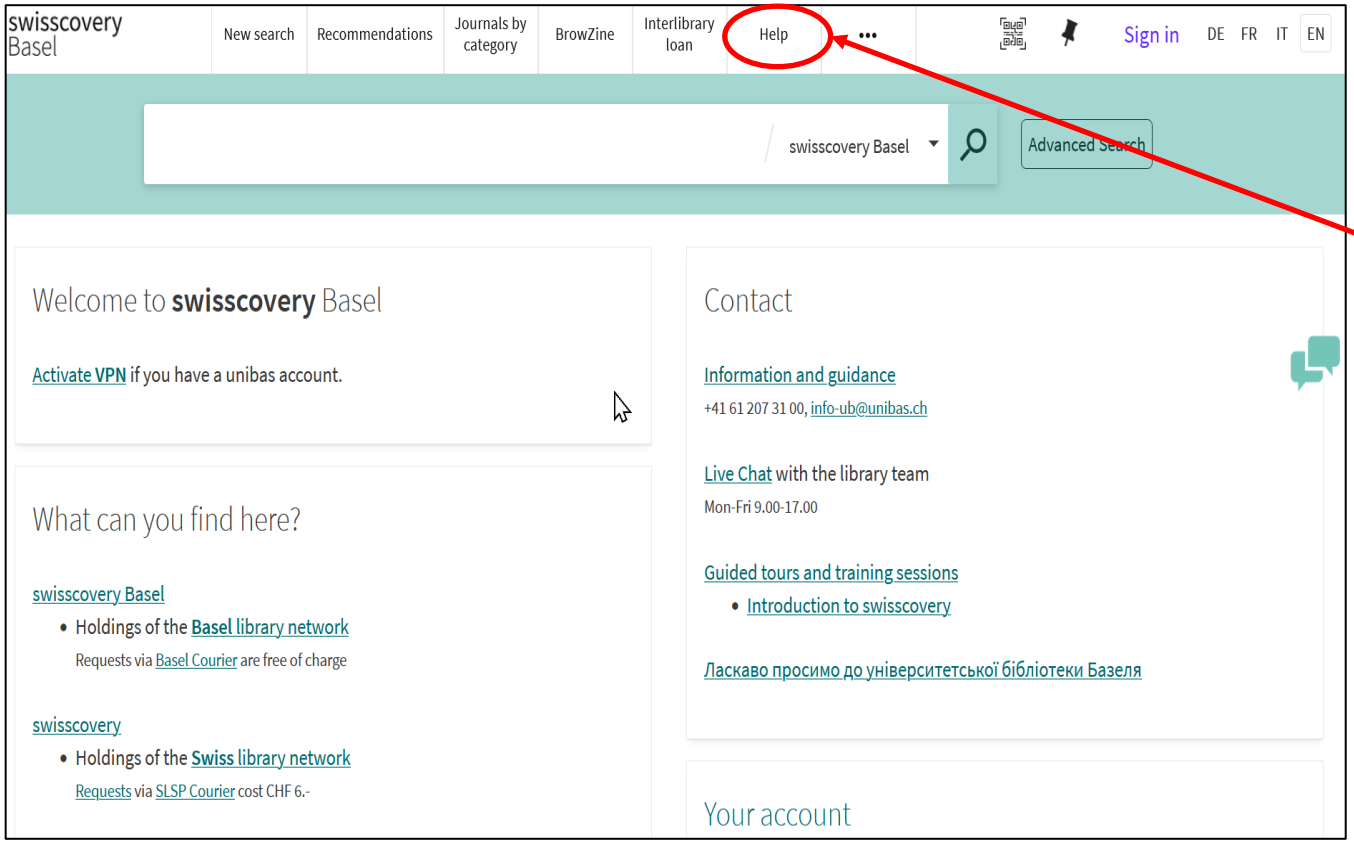
- **Reference work** & learning program (basic campus license at the University of Basel)
- Knowledge app (mobile & offline)
- Guidelines-compliant and cross-disciplinary

→ Clinical information systems, tools & apps accessible via https://ub.unibas.ch/en/ub-medizin/electronic-resources/#c41995

Resources: Library catalogues

https://basel.swisscovery.org/

- National library platform providing access to holdings of currently 490 scientific libraries in Switzerland
- Especially relevant for books/e-books and dissertations

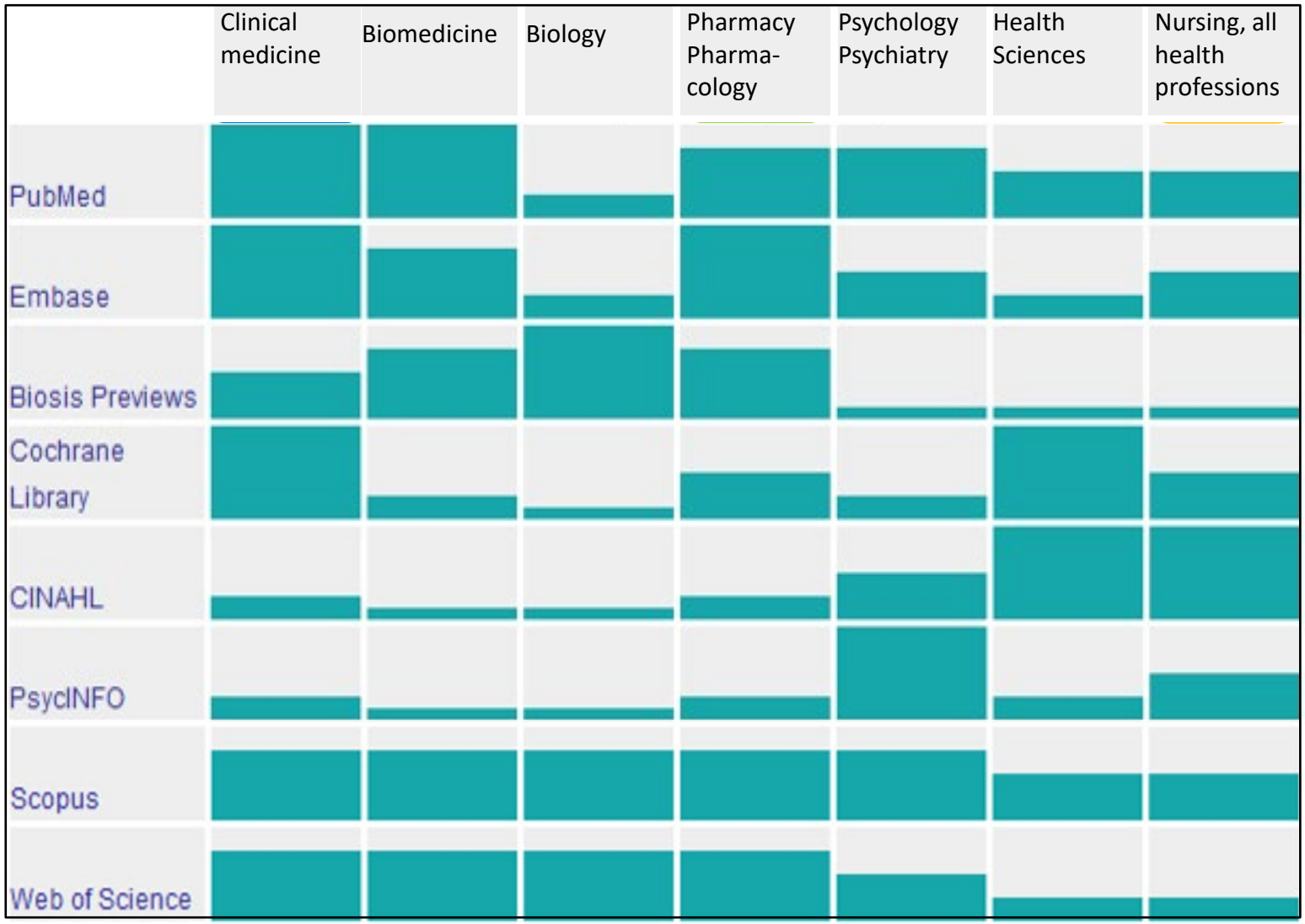


Try it out yourself!

There is an online help!

If need be, ask your librarian!

Resources: Electronic databases



Adapted, table by Martina Gosteli

Resources: Electronic databases

Article databases

PubMed
- Medline via PubMed
- Medline via OVID

Embase
- Embase via Elsevier
- Embase via OVID

Cochrane Library
- Cochrane Library

EBM literature database
Also available for laypersons

SPORTDiscus
- SPORTDiscus

Leading database in sport and sports medicine

PsycInfo
- PsycInfo

One of the most comprehensive databases for psychological literature.

Psyndex
- Psyndex

Psychological literature database in German.

Web of Science (WoS)
- Web of Science (WoS)

Multi-disciplinary literature database.
More information

Scopus
- Scopus

Multi-disciplinary literature database.
More information

PEDro
- PEDro

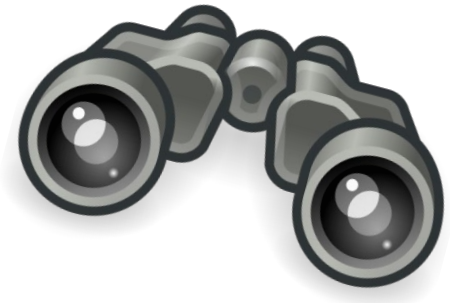
Physiotherapy Evidence Database (open access)

LIVIVO
- LIVIVO

Search portal of the ZB MED Cologne with references from several data sources, including medicine (e.g. PubMed), nutrition, environment and agriculture.

Further databases
- Further databases

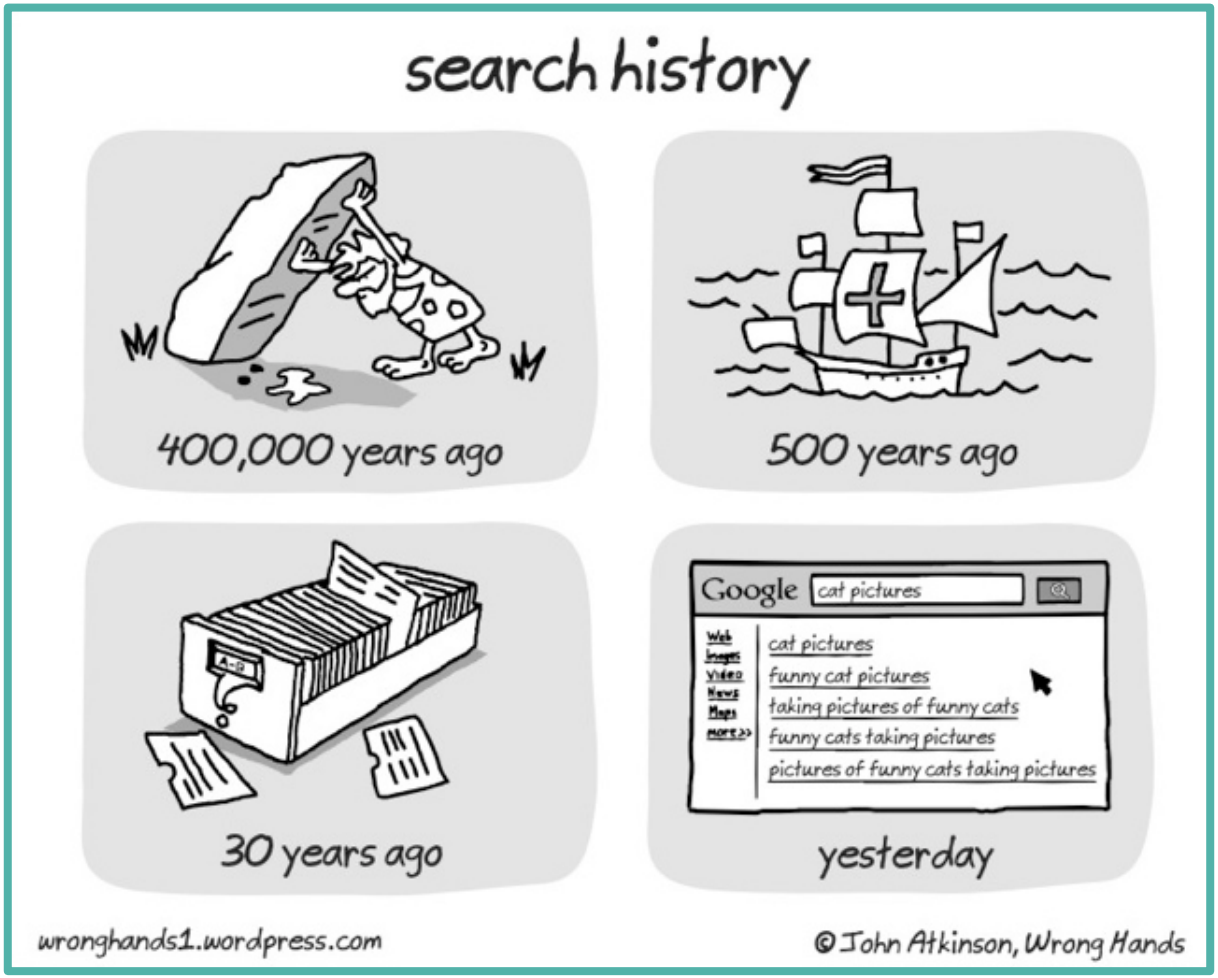
Licenced access within the network of the university and the University Hospital Basel.



See https://ub.unibas.ch/en/ub-medizin/electronic-resources/#c43710

Important: there are many other and also open access electronic databases, e.g. the more regional AJOL (https://www.ajol.info/) or LILACS (https://lilacs.bvsalud.org/en/), etc.

Okay, but how do I search?

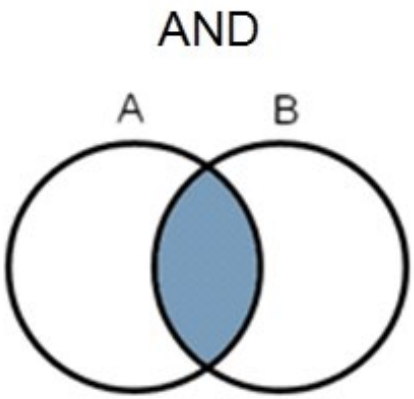


Boolean operators

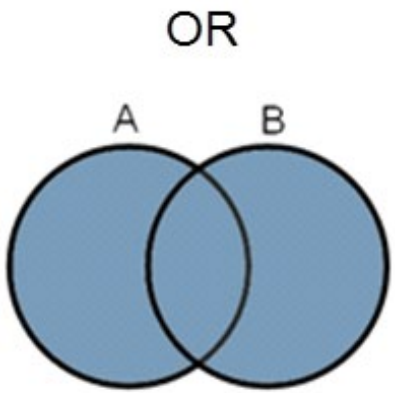
AND = both search terms occur

OR = at least one of the two search terms occurs

NOT = without this search term



Radiation AND Cancer



Cancer OR Neoplasm

Attention: 'NOT' usually leads to unwanted exclusions. Best to contact an information specialist

Boolean operators: Combination of PECO elements with AND

P AND **E** AND **C** AND **O**

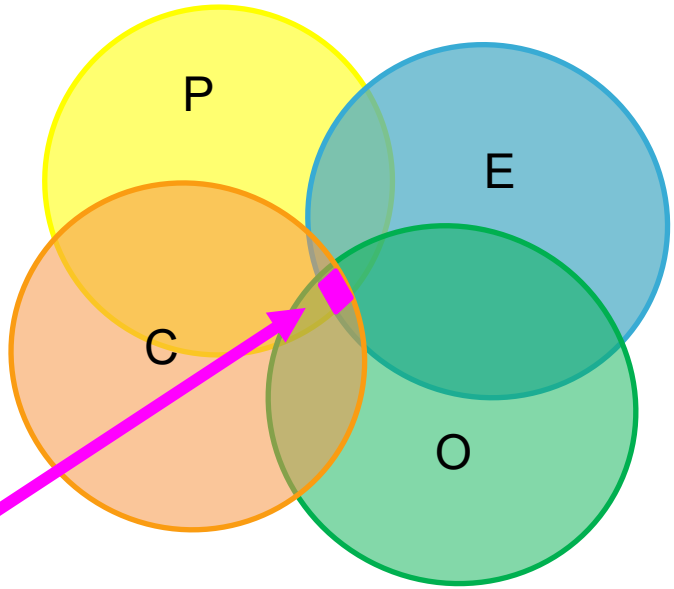
resp. with synonyms:

(**Population 1** OR **Population 2** OR …) AND

(**Exposure 1** OR **Exposure 2** OR …) AND

(**Comparison 1** OR **Comparison 2** OR …) AND

(**Outcome 1** OR **Outcome 2** OR …)



Intersection = final relevant hits

Hint: Not all elements of PECO need to be considered as search blocks in a search strategy. For instance, if you want to explore all potential health outcomes caused by a certain exposure, you should not include an outcome search block in your search strategy (you would only find what you look for…!).
Credo: "As many search blocks as needed, but as few as possible!"

Boolean operators: Combination of PECO elements – Attention: Brackets!

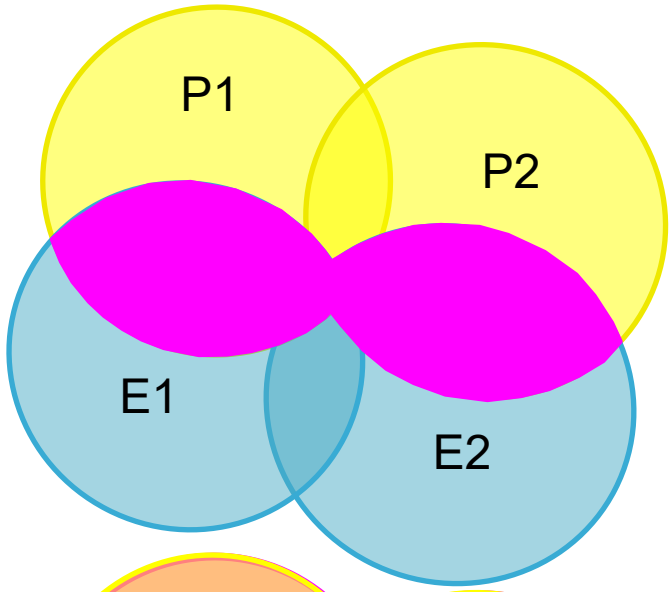
(P1 OR P2) AND (E1 OR E2)

With brackets: “nesting” → commands in brackets are executed first!

(Population 1 OR **Population 2)** AND

(Exposure 1 OR **Exposure 2)**

= final hits 1

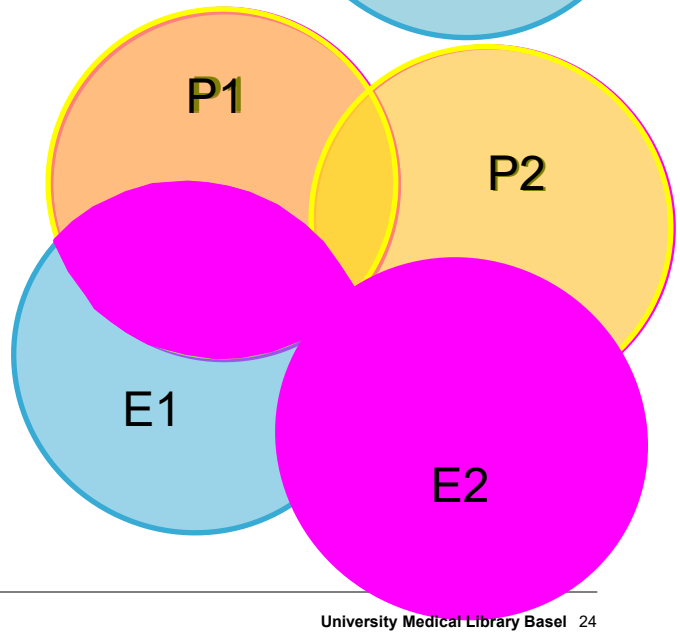


Without brackets: commands strictly executed from left to right!

Population 1 OR **Population 2** AND

Exposure 1 OR **Exposure 2**

= final hits 2



PubMed

- **Pub**lic access to **Med**line database
- Most comprehensive medical search interface
- Fundamental redesign in 2020 (New PubMed)
- Publisher: US National Library of Medicine (NLM)
- Daily updates
- Annually ~1 Mio new citations
- Search in full text not possible! (abstracts freely accessible)

PubMed: Useful Links

PubMed access via Uni Basel
https://pubmed.ncbi.nlm.nih.gov/?otool=unibaslib

PubMed Online Training:
https://learn.nlm.nih.gov/rest/training-packets/T0042010P.html

PubMed User Guide
https://pubmed.ncbi.nlm.nih.gov/help/

Training courses at the University Medical Library (not only on PubMed)
https://ub.unibas.ch/de/ub-medizin/#c10083

Free-text search

Intelligent search engine:

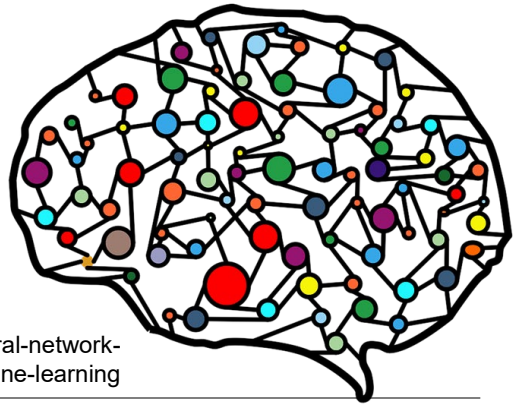
PubMed is capable of intelligent implementation of a "simple search query" (= free-text search); (= automatic term mapping (ATM) → details advanced course!)

Free-text search terms are compared with the indexed standard vocabulary (=MeSH → details advanced course!) and different spellings are taken into account (e.g. singular/plural, American/British English).

For example, you can enter one term for each aspect of the PICO question.

Without the manual input of Boolean operators an **'AND'** is assumed between the words entered.

e.g.: exercise translates to:
"exercise"[MeSH Terms] OR "exercise"[All Fields] OR "exercises"[All Fields] OR "exercise therapy"[MeSH Terms] OR ("exercise"[All Fields] AND "therapy"[All Fields]) OR "exercise therapy"[All Fields] OR "exercise's"[All Fields] OR "exercised"[All Fields] OR "exerciser"[All Fields] OR "exercisers"[All Fields] OR "exercising"[All Fields]



https://www.needpix.com/photo/1637259/artificial-neural-network-ann-neural-network-neural-network-brain-mind-computer-machine-learning

PubMed Live! What do I find where?

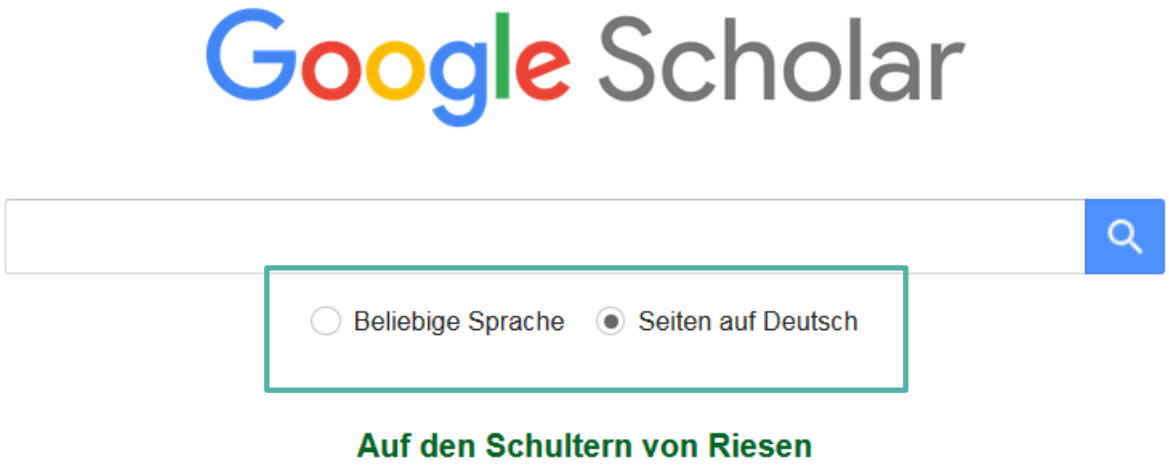
Live demonstration in the course

Documented by screenshots in the handout (appendix)

(Example: neck pain massage exercise)

Side note Google Scholar

https://scholar.google.ch/



Side note Google Scholar: Advantages

Suitable for fast, simple searches

- Freely accessible, simple search
- Large amount of scientific data
- Includes various document types such as journals and conference proceedings, reports, patents, etc.
- Searches full texts
- Link to articles that cite a specific article ("Cited by")
- "Cited by" option also searches citations in books
- Scientific literature partly freely accessible and library links to licensed full text

Side note Google Scholar: Disadvantages

Less suitable for systematic and reproducible searches

- Search algorithms not comprehensible, searches only conditionally reproducible
- Only 1000 results visible
- Only one reference exportable at a time
- No advanced search, few filters
- Boolean operators incorrect (https://www.ncbi.nlm.nih.gov/pubmed/27076802)
- Author, title and journal search functions do not work properly (missing metadata, wrong field recognition)
- Too many hits and relevance not reliable

Side note AI tools: Large Language Models (LLMs)

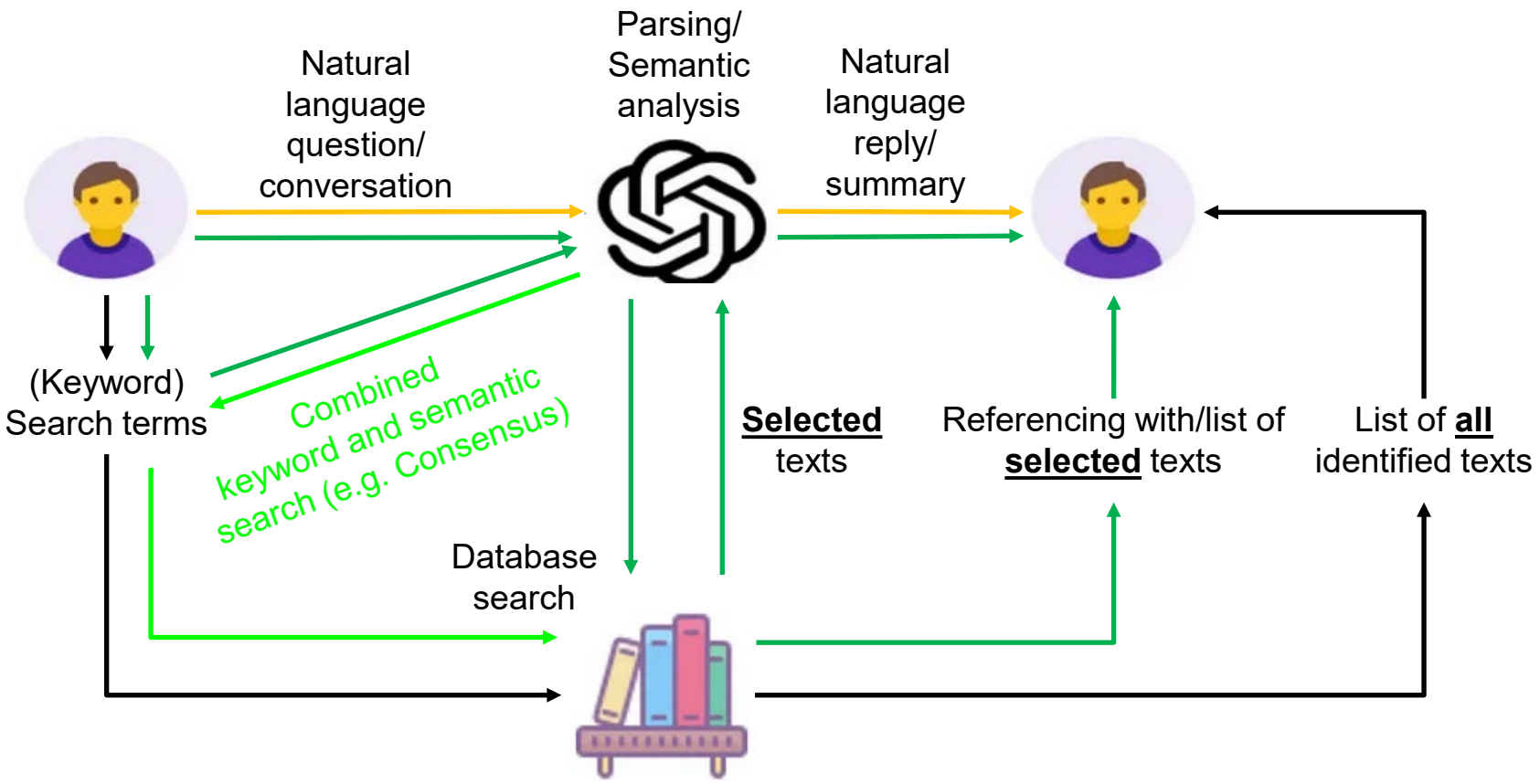
Strengths

- Efficient processing of large amount of data
- Efficient processing of language
  - Semantic search, i.e. search by use of natural language
  - Answer in natural language
  - Summary of complex information in natural language

Weaknesses

- “Constructed”/“finally defined” on large amount of unspecific, static training data
- Issue with potential hallucination (invented or misrepresented “facts”, e.g. “over-confident”)
- Sources of the information very difficult/ impossible to identify
- Ecological footprint

Side note AI tools: Retrieval Augmented Generation (RAG) tools



RAG: an LLM interacts with a specified set of documents and generates answers to user queries preferentially from the **selected** documents

RAG Output: Summary of literature on a specific question + **selected** references

Side note AI tools: Retrieval Augmented Generation (RAG) tools

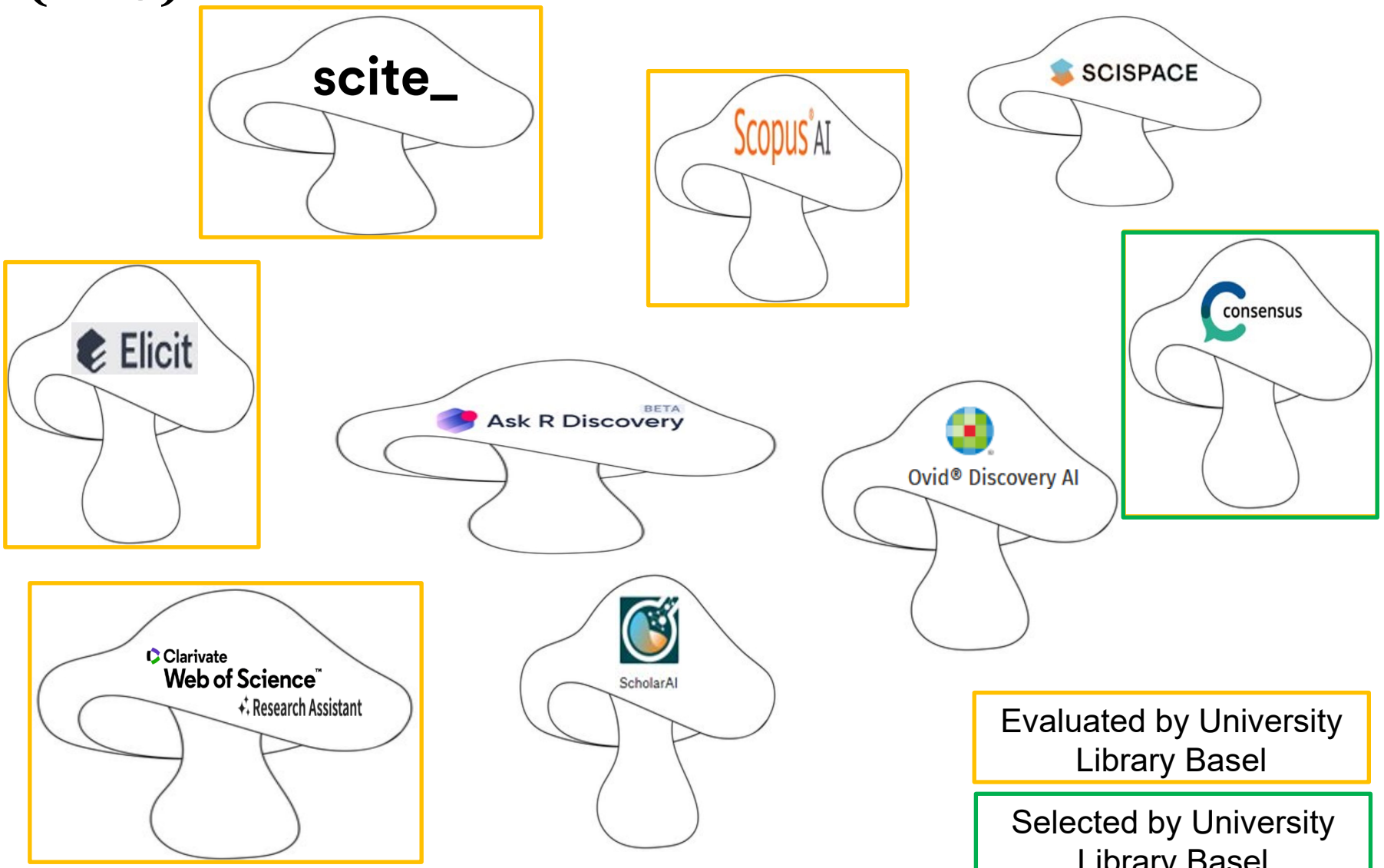
Strengths (particularly in comparison to “simple” LLMs)

- Context- and topic-specific access to informationand hence – usually – more precise and more correct output
- Less hallucination
- Information in underlying database can be updated and thus dynamic reflection of current knowledge possible (in contrast to LLMs with their static training data)
- Source of information identifiable as referenced in output

Weaknesses (particularly in comparison to “simple” LLMs)

- Still, resulting answer is not necessarily correct
  - Misinterpretation of natural language question
  - Mis-selection of texts in underlying database
  - Mis-interpretation/incorrect summary of selected texts/provided references
- Selection process of texts unclear, not reproducible – and maybe only small snippet of all available (and maybe also ambiguous) evidence
- Ecological footprint

Side note AI tools: Retrieval Augmented Generation (RAG) tools

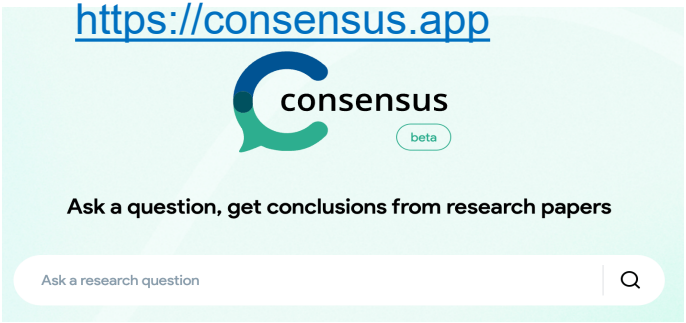


Evaluated by University Library Basel

Selected by University Library Basel

Side note AI tools: Consensus

https://consensus.app



- Uses Semantic Scholar Database in the background, which has >200 million publications from all scientific disciplines (see www.semanticscholar.org)
- "Freemium" model
  - Free limited version with „20 AI Credits per month"
  - Premium unlimited version, also with additional functionalities for USD 8.99/months

SEMANTIC SCHOLAR

Consensus freely available for all students and staff of University of Basel

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"Sign up" identification via unibas email domain

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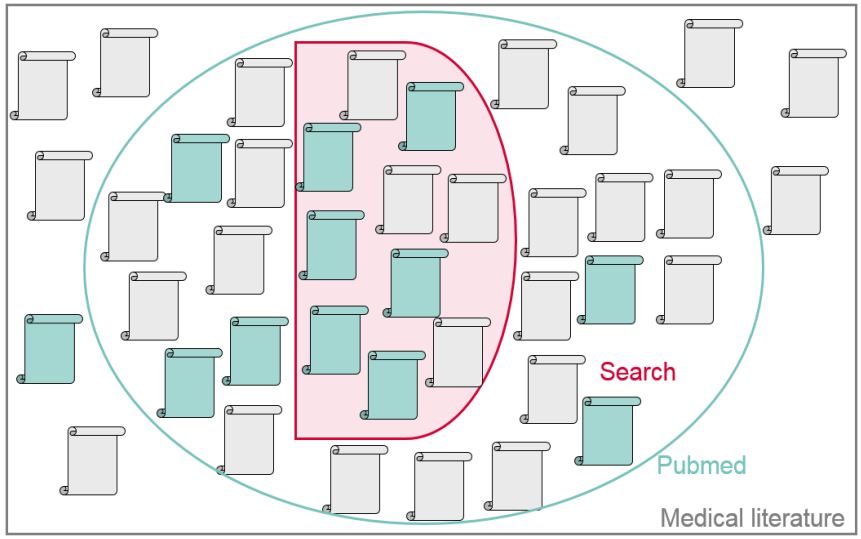
Official information and training opportunities in next few weeks

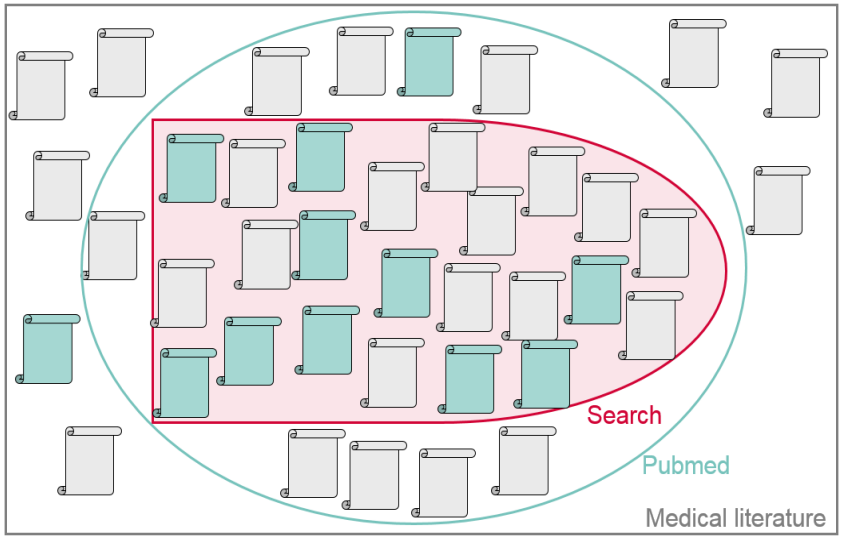
Precision vs. sensitivity

Precision: specific, narrow; few hits (only a few of the relevant hits found but little noise)



e.g. for daily hospital routine, master thesis?

Sensitivity: complete, broad; many hits (almost all of the relevant hits found but among lots of noise)



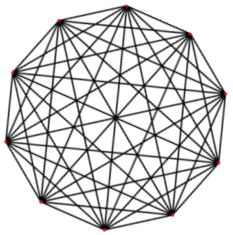
e.g. for Systematic Reviews, Health Technology Assessments, …

→ Try different strategies and observe how this changes the results!

Precision vs. sensitivity

Precision ↑ (fewer results)

vs. **Sensitivity** ↑ (more results)



Precise terms (e.g. diabetes mellitus type 2)	General terms (e.g. Diabetes)
Targeted, no (or few) synonyms and word variations per search block	More synonyms and word variations per search block
Set filters (e.g. publication type, year)	Do not set filters (e.g. publication type, year)
Combine more PICO aspects with AND, e.g. P AND I AND C AND O	Combine fewer PICO aspects with AND, e.g. P AND I P AND I AND C I AND C

Precision and sensitivity in free-text searching: Exercise

In adult patients with a meniscus tear, is physiotherapy or arthroscopic partial meniscus resection better to reduce pain and increase quality of life?

Search, PubMed, 30.04.2025	**Hits**
Meniscus tear Physiotherapy Arthroscopic partial meniscus resection Pain	1
Meniscus tear Physiotherapy Arthroscopy Pain	51
Meniscus tear Physiotherapy Arthroscopy Pain Filters: Systematic Reviews	9

1) Implement the above searches. Explanation why getting more or less hits by the respective changes in the searches?
2) You can find more studies (sensitivity ↑) if you add synonyms!
   (See also the Word Document as extra handout)

Precision and sensitivity in free-text searching: Exercise

In adult patients with a meniscus tear, is physiotherapy or arthroscopic partial meniscus resection better to reduce pain and increase quality of life?

Search, PubMed, 30.04.2025	**Hits**
Meniscus tear Physiotherapy Arthroscopic partial meniscus resection Pain	1
Meniscus tear Physiotherapy Arthroscopy Pain	51
Meniscus tear Physiotherapy Arthroscopy Pain Filters: Systematic Reviews	9

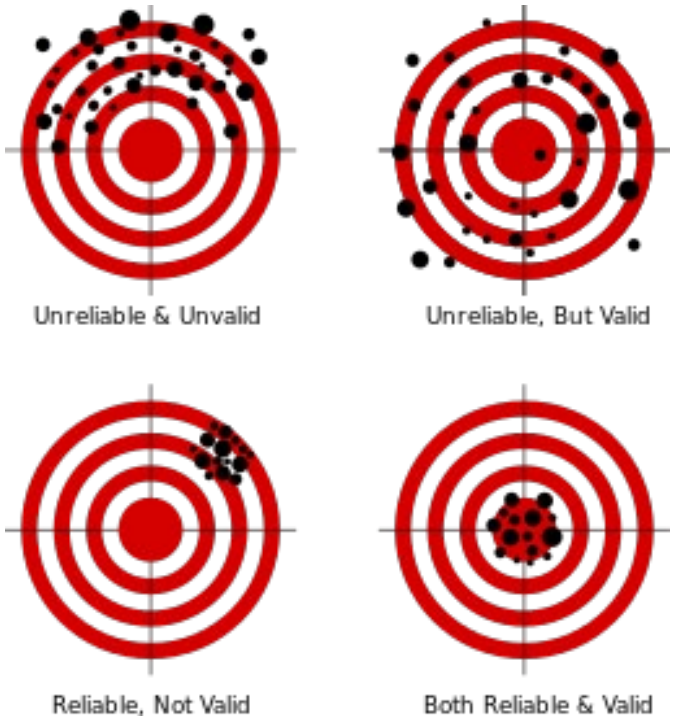
1) Implement the above searches. Explanation why getting more or less hits by the respective changes in the searches?
2) You can find more studies (sensitivity ↑) if you add synonyms!

(Meniscus tear OR Meniscal tear) AND (Physiotherapy OR Physical therapy OR Manual therapy OR exercise therapy OR non-surgical intervention) AND (Arthroscopy OR meniscectomy OR meniscus resection OR meniscal resection) AND (Pain)	126 15 SRs

Critical Appraisal

Essential for any kind of literature review (e.g. master thesis) or if you want to apply study results (e.g. on patients)!

Are the results **valid** *(Objectives clearly described? Methods adequate to explore the objectives? Sources of bias?)*, **reliable** *(Analyses and results clearly described and precise?)* and **relevant** *(Were all relevant outcomes measured? Can the results be transferred to other settings? Is the study population comparable to the patient in practice?)*?



https://commons.wikimedia.org/wiki/File:Reliability_and_validity.svg

→ Short, simple introduction: https://youtu.be/ikuVmCtBvF0

→ Overview of different tools, for instance: https://guides.temple.edu/systematicreviews/criticalappraisal

→ Understanding the numbers: https://youtu.be/3ZYSyZyqxjE

Take Home Messages

https://catalog.archives.gov/id/535413

- Just start – and continuously refine!
- Document!
- A well-defined (re)search question is essential!
- There is no all-encompassing database – search for evidence from different sources, e.g. PubMed, other electronic databases, study registers, grey literature … !
- In database searches, combine search terms (subject headings and textwords) with Boolean operators AND and OR and pay attention to brackets!
- Depending on the project (e.g. quick search in clinical practice? narrative review? systematic review?), get the trade-off between precision and sensitivity right!
- Critically appraise identified literature/information!
- Take time for the first steps >> then it will go faster later!

Final announcement

Upcoming courses & events

07 MAY 2025 12:30 - 12:45 / COFFEE LECTURE

The Ethics of AI

From the series "Coffee Lectures Medical Library"

07 MAY 2025 13:00 - 13:30

Kaffi & Gutzi

07 MAY 2025 14:00 - 16:00 / ONLINE, SCHULUNG, MEDIZIN

Basics in Literature Searching: PubMed and Other Resources

14 MAY 2025 12:30 - 12:45 / COFFEE LECTURE

Writing with AI

From the series "Coffee Lectures Medical Library"

14 MAY 2025 14:00 - 16:00 / ONLINE, SCHULUNG, MEDIZIN

Literature Searching with PubMed - Advanced

ALL UBM COURSES & EVENTS

Coffee Lectures Medical Library

Coffee Lectures Medical Library

Kaffi & Gutzi

Universität Basel

Universitätsbibliothek

Thank you for your attention

Further information:
https://ub.unibas.ch/en/locations/university-medical-library/

Contact: thomas.fuerst@unibas.ch

Evaluation/Feedback:
https://evasys.unibas.ch/evasys/online.php?p=9TPS2

Overview Handout Appendix (for your information)

- Systematic, Scoping and Narrative Reviews
- PubMed: What do I find where?
- PubMed: My NCBI Account/log in
- PubMed: Get full text

Systematic Reviews

⇒ Umbrella term for systematic, quality-assessed, synthesis of study results on a research question

Individual steps of a Systematic Review:

- Defining a scientific question
- Set inclusion/exclusion criteria
- Search for studies / evidence
- Select studies / evidence and extract data
- Assess the risk of bias of included studies
- Synthesis of the results, meta-analysis
- Interpret results and draw conclusions

Cochrane reviews are systematic reviews that follow the methodology given in the **Cochrane Handbook**
(https://training.cochrane.org/handbook/current)

Scoping Reviews

⇒ Usually answer broader questions than classic systematic reviews. No risk of bias assessment.

From: Munn et al. (2018) '*Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach*', *BMC Med Res Methodol*, vol. 18, no. 1, pp. 143.

Indications for a Scoping Review:

- As a precursor to a systematic review.
- To identify and analyze knowledge gaps.
- To identify the types of available evidence in a given field.
- To clarify key concepts/ definitions in the literature.
- To examine how research is conducted on a certain topic or field.
- To identify key characteristics or factors related to a concept.

Further guidance:

- Joanna Briggs Institute Manual for Evidence Synthesis: (https://jbi.global/ebp#jbi-manuals)

Narrative Review and other review types

⇒ Describes and appraises previous work but does not describe specific methods by which the reviewed studies were identified, selected and evaluated

Indications:

- As part of introduction/ background or discussion section
- For editorials, viewpoints, …
- To use as rationale for new research

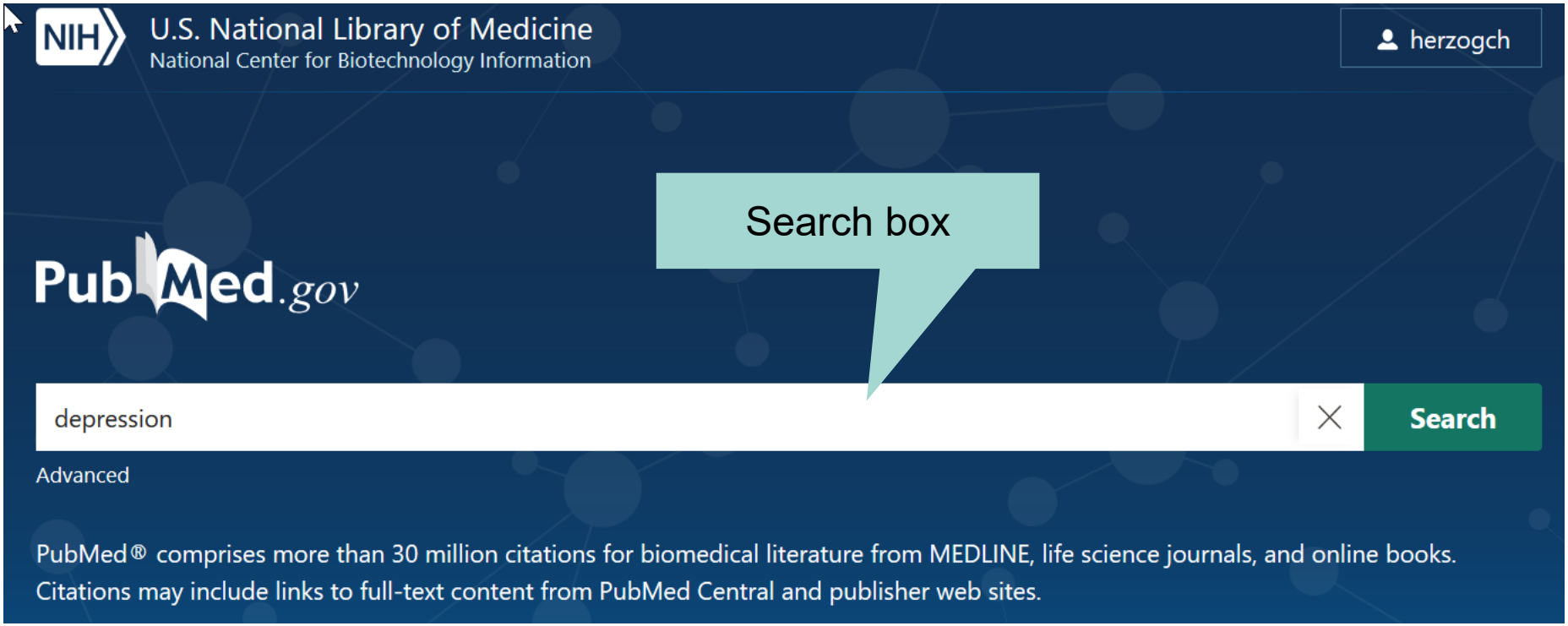
Limitations:

- Underlying assumptions and agenda often unknown
- High risk for bias in selecting and assessing the literature
- Cannot be replicated

Further reading – also on other review types:

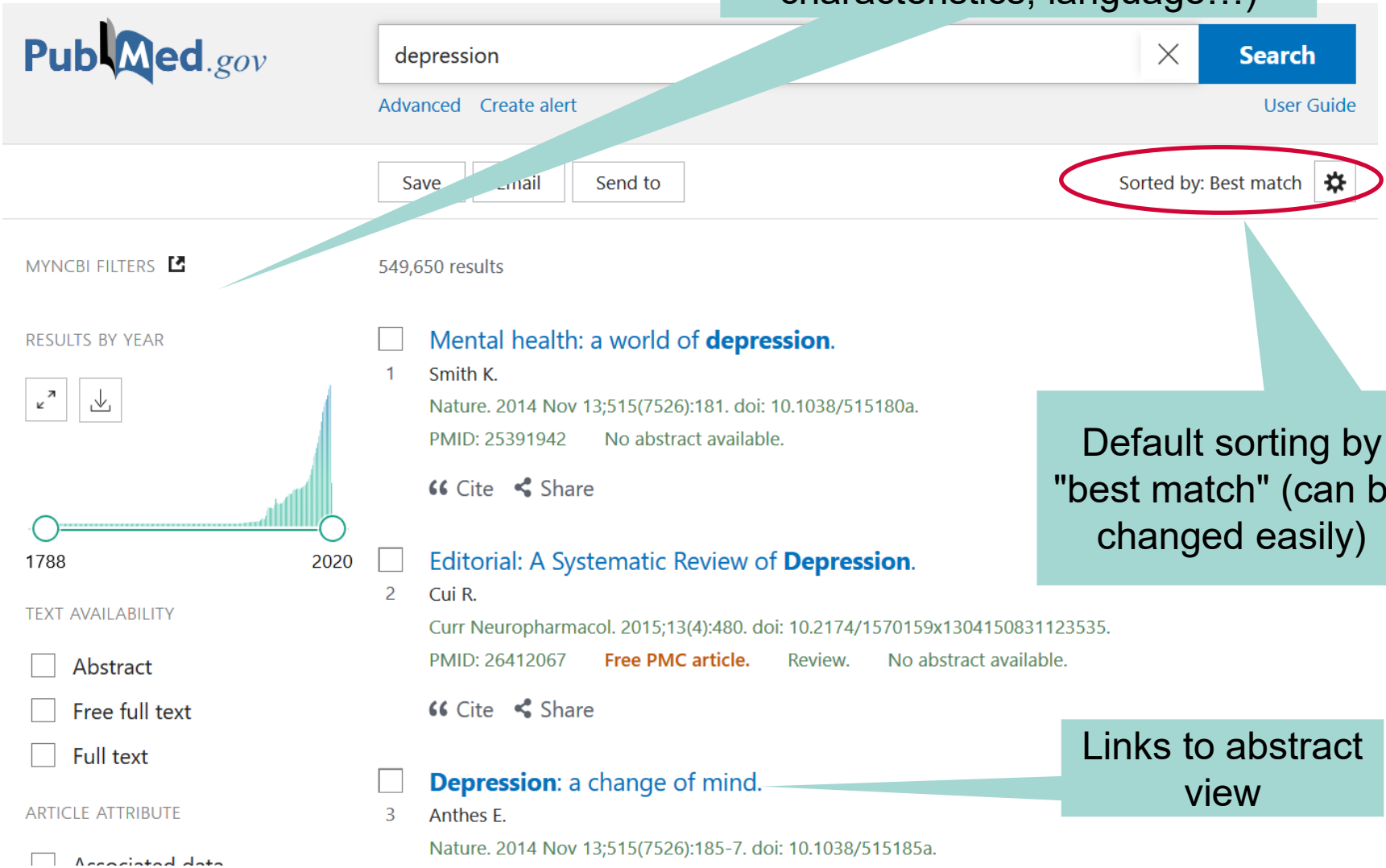
- Temple University Lib Guide (https://guides.temple.edu/c.php?g=78618&p=4156607)
- Sutton et al. (2019) Meeting the review family: exploring review types and associated information retrieval requirements. (doi:10.1111/hir.12276)
- Grant & Booth (2009) A typology of reviews: an analysis of 14 review types and associated methodologies. (doi:10.1111/j.1471-1842.2009.00848.x.)

PubMed: What do I find where?



Presentation of the results

Filters to filter the retrieved hits (e.g. by year of publication, article type, study population characteristics, language…)



Default sorting by "best match" (can be changed easily)

Links to abstract view

Abstract view

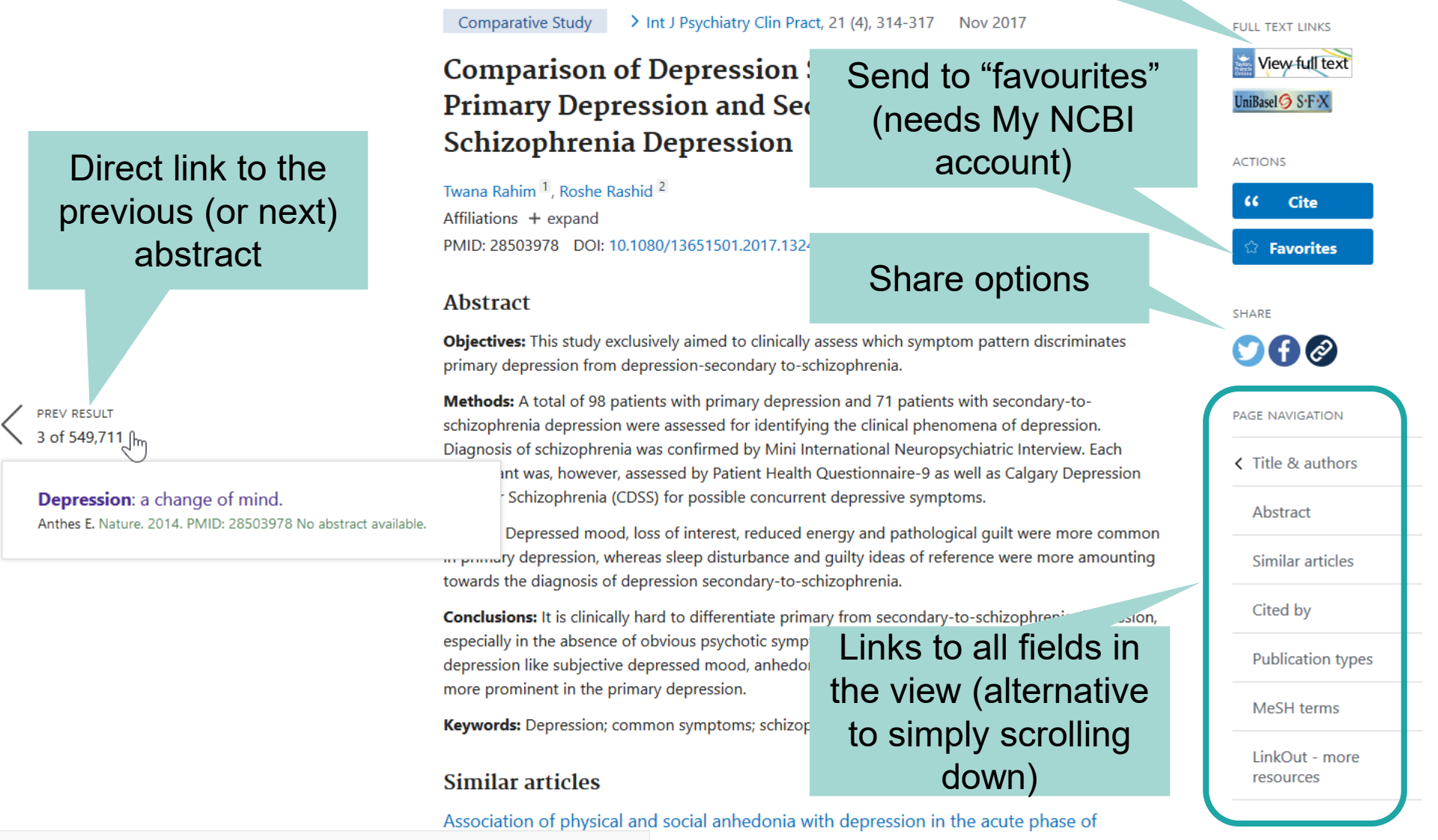
Links to full text

Send to “favourites” (needs My NCBI account)

Share options

Direct link to the previous (or next) abstract

Links to all fields in the view (alternative to simply scrolling down)



Abstract view: hint for finding additional articles on a topic

Daily administration of low-dose aspirin has proved to be beneficial in preventing recurrent cardiovascular events. However, the role of aspirin for primary prevention in patients with no overt cardiovascular disease is more controversial. In fact, in lower risk patients, the modest benefit in reducing serious vascular events can be offset by the increased risk of bleeding, including intracranial and gastrointestinal hemorrhage. Diabetes mellitus has been associated with a substantially increased risk of both first and recurrent atherothrombotic events, which makes aspirin therapy of potential value in these subjects. Moving from general aspects of aspirin pharmacology and specific issues in diabetes mellitus, this article reviews the literature on the topic of aspirin for primary prevention in general, and in subjects with diabetes mellitus in particular, to culminate with arguments pro and con and a practical risk-based algorithm for aspirin initiation in daily practice.

Keywords: acetylsalicylic acid; aspirin; diabetes mellitus; primary prevention.

© 2016 American Heart Association, Inc.

Similar articles

Low-dose aspirin for primary prevention of cardiovascular events in patients with diabetes: Benefit or risk?

Leggio M, Bendini MG, Caldarone E, Lombardi M, Severi P, D'Emidio S, Stavri DC, Armeni M, Bravi V, Mazza A.

Diabetes Metab. 2018 Jun;44(3):217-225. doi: 10.1016/j.diabet.2017.11.002. Epub 2017 Nov 14.

PMID: 29257747 Review.

Aspirin therapy and primary prevention of cardiovascular disease in diabetes mellitus.

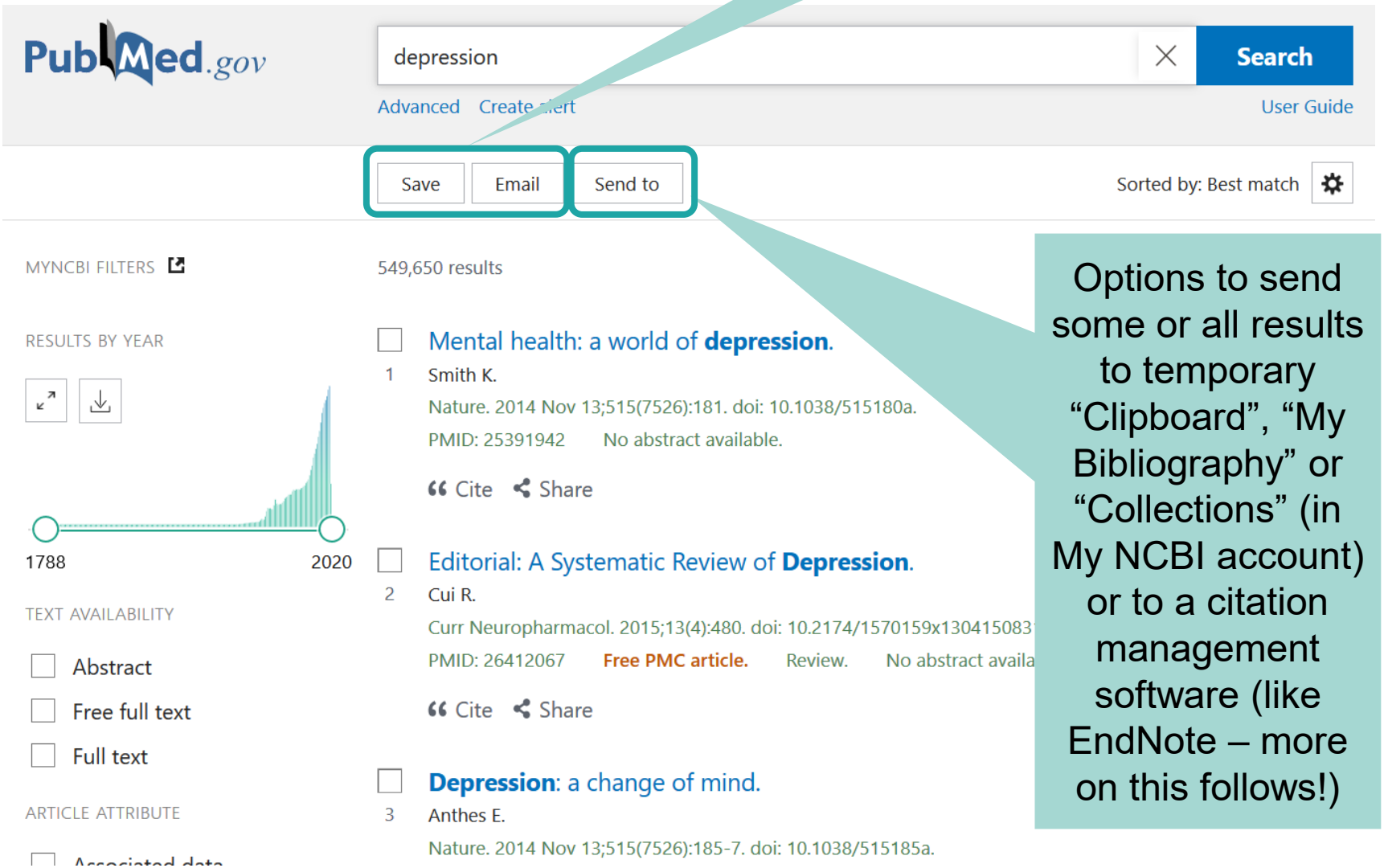
Younis N, Williams S, Soran H.

Diabetes Obes Metab. 2009 Nov;11(11):997-1000. doi: 10.1111/j.1463-1326.2009.01068.x. Epub 2009 Jun 16.

PMID: 19531055 Review.

Presentation of the results

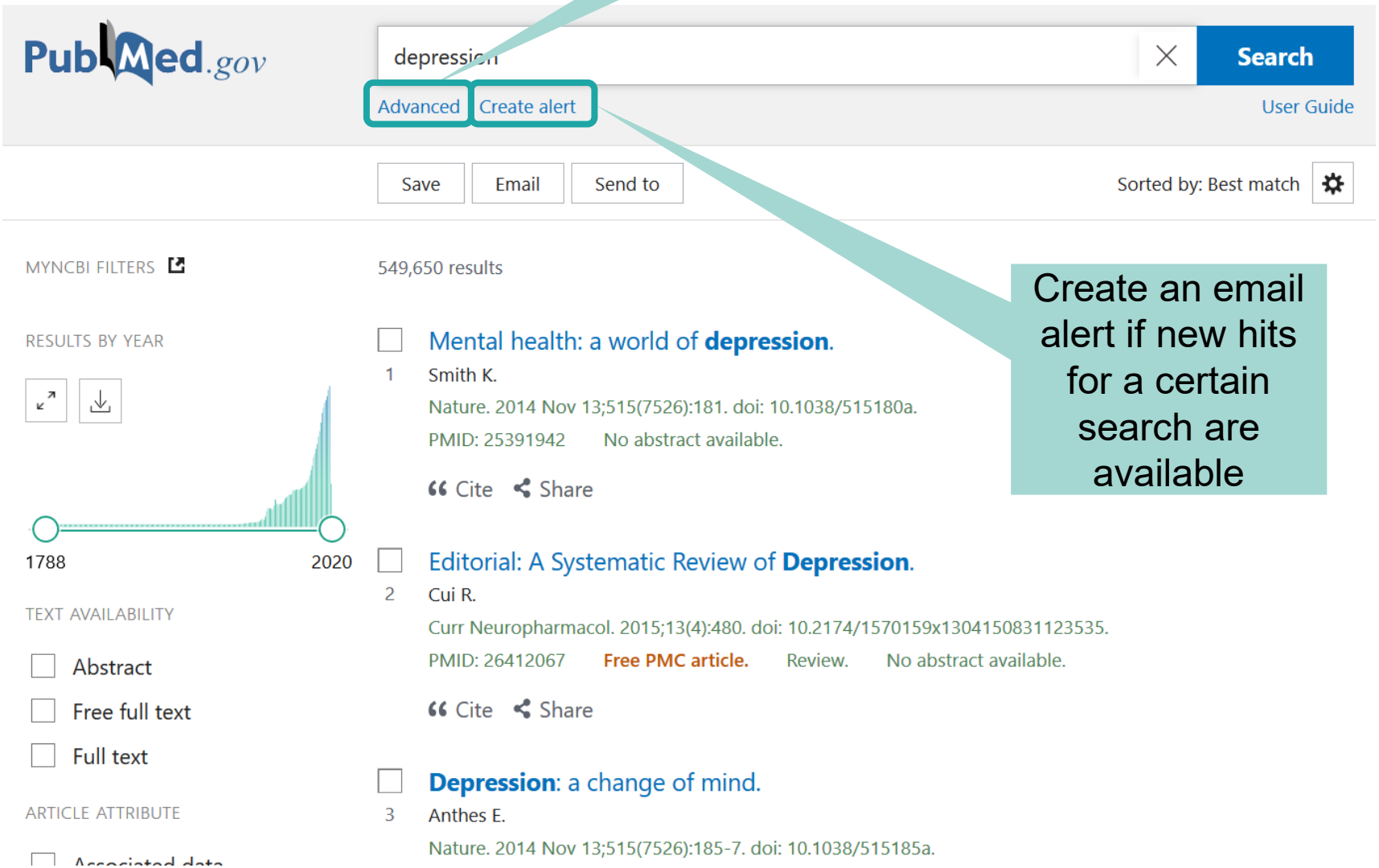
Options to save or email some or all results



Options to send some or all results to temporary "Clipboard", "My Bibliography" or "Collections" (in My NCBI account) or to a citation management software (like EndNote – more on this follows!)

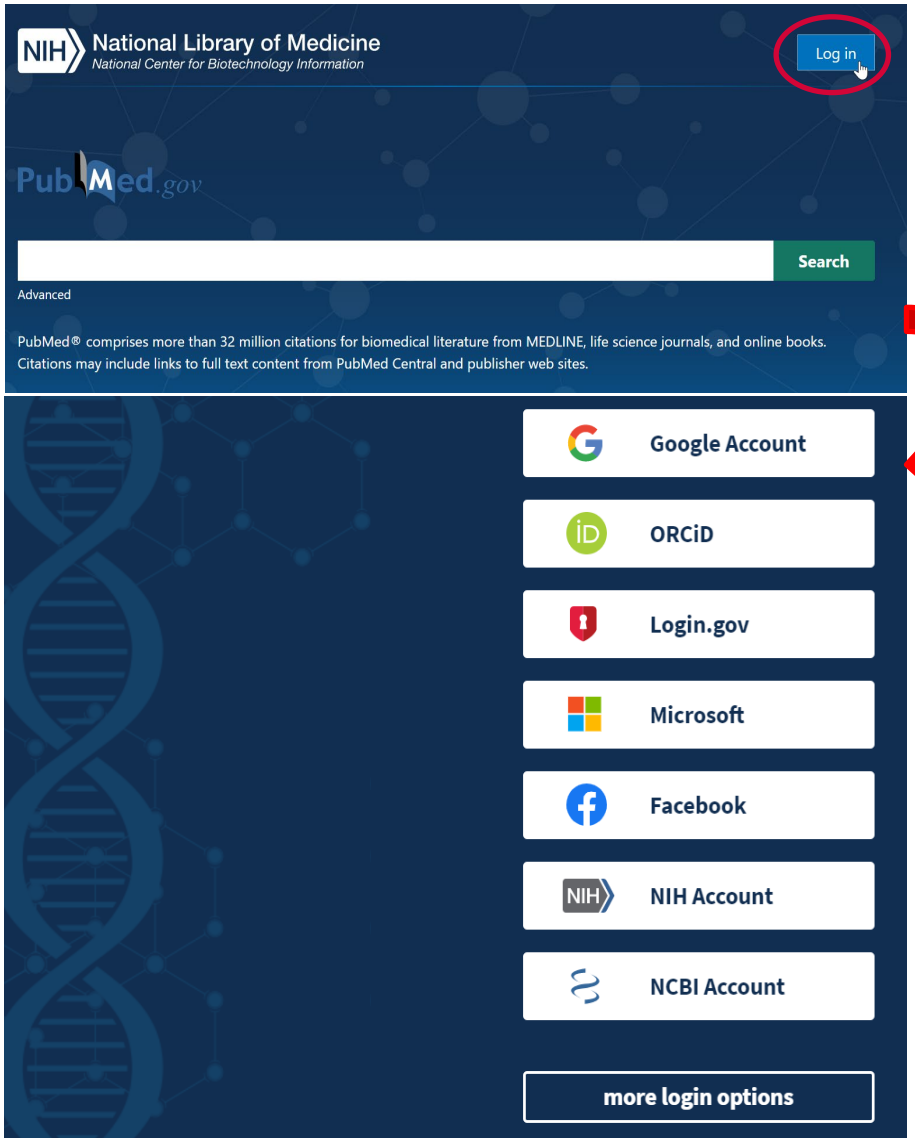
Presentation of the results

Access to the Advanced PubMed search interface



Create an email alert if new hits for a certain search are available

PubMed: My NCBI account/log in



Create/Login Account for free

Create/Login with various options

Click on «more login options» to connect with your Unibas Account.

For longer-term access, it may be useful to connect also with another, non-unibas account (possible when logged n under Account Settings).

PubMed: My NCBI dashboard

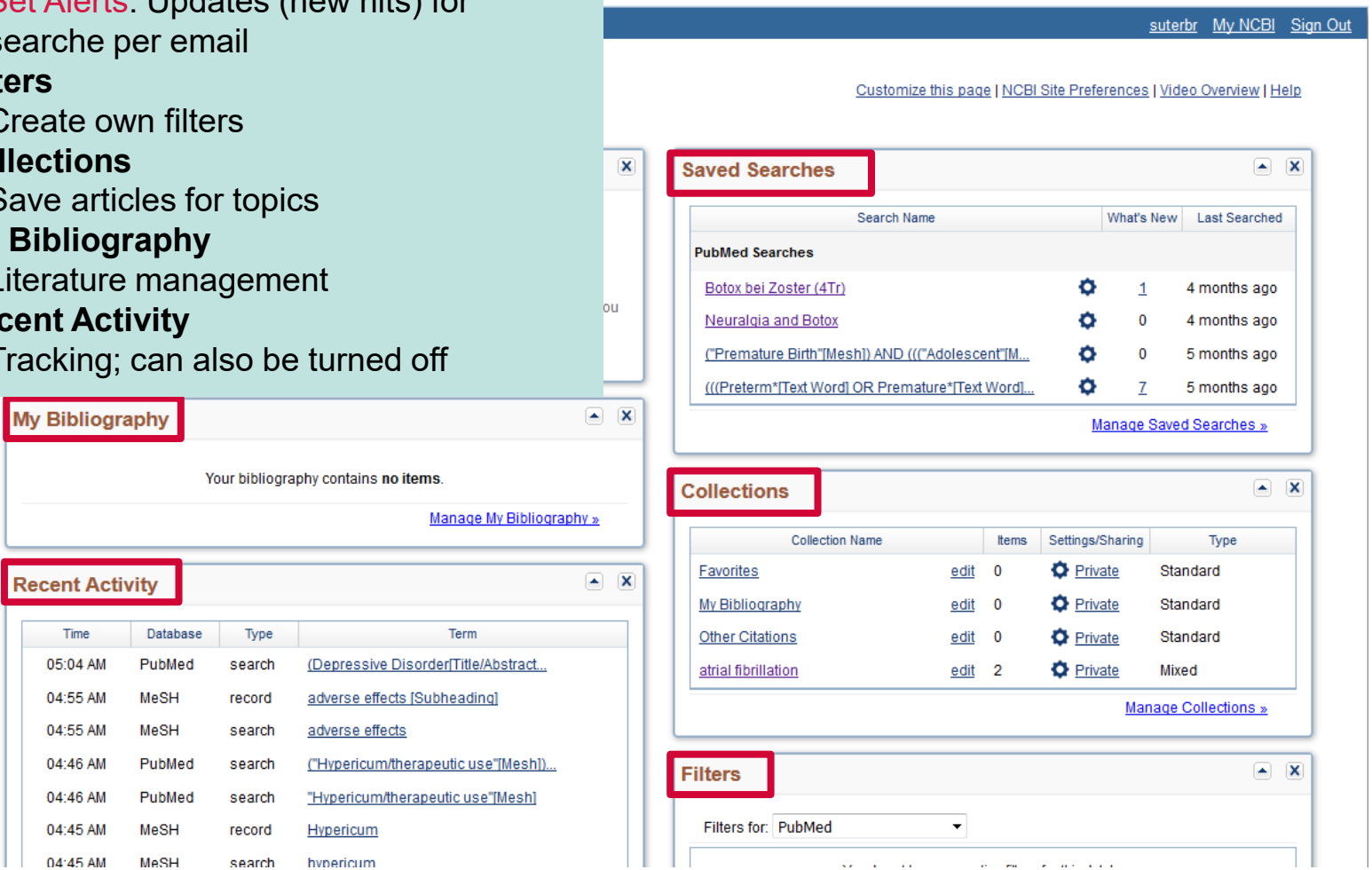
Saved Searches
- Reproduce searches
- Set Alerts: Updates (new hits) for searche per email

Filters
- Create own filters

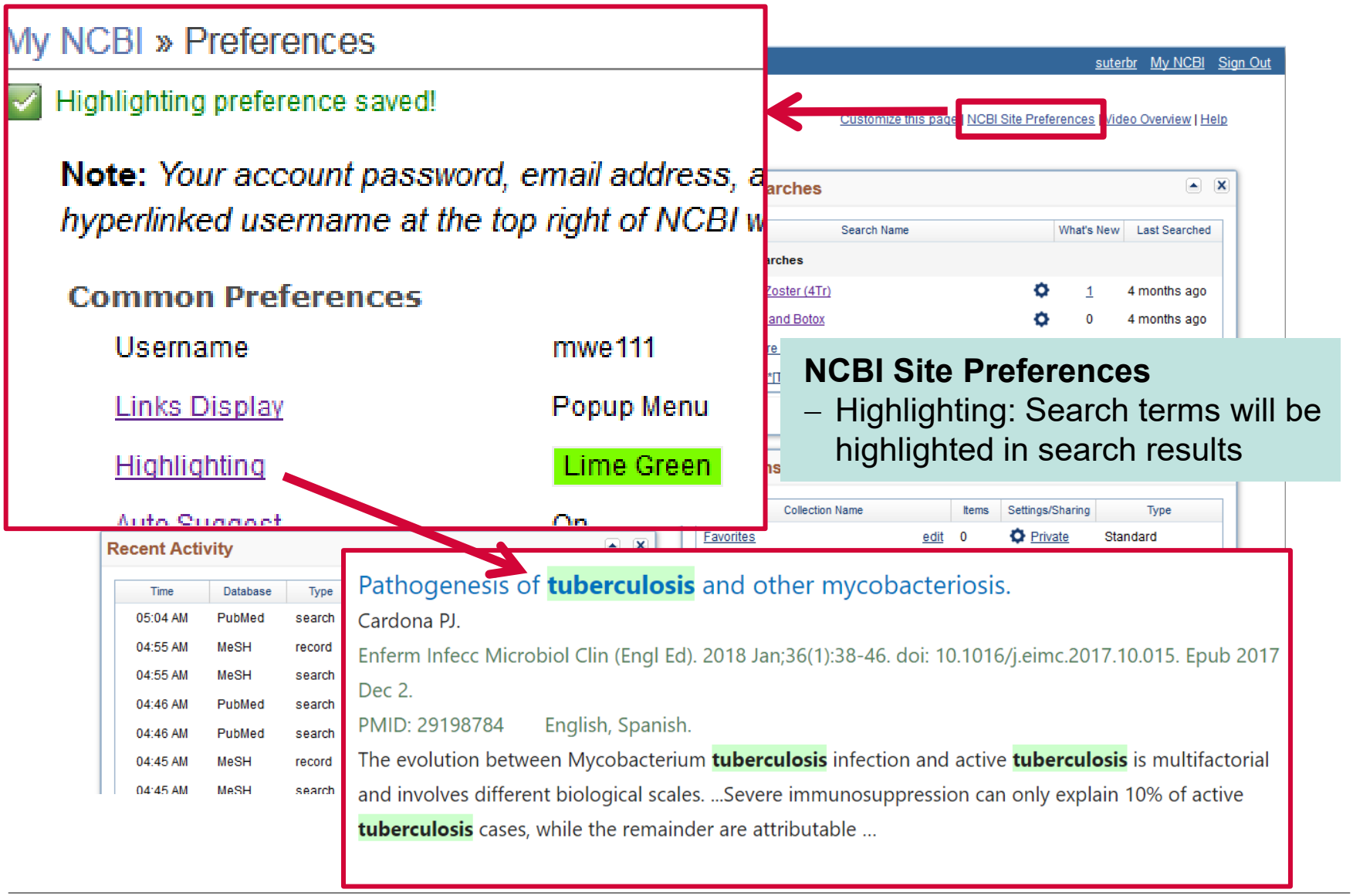
Collections
- Save articles for topics

My Bibliography
- Literature management

Recent Activity
- Tracking; can also be turned off



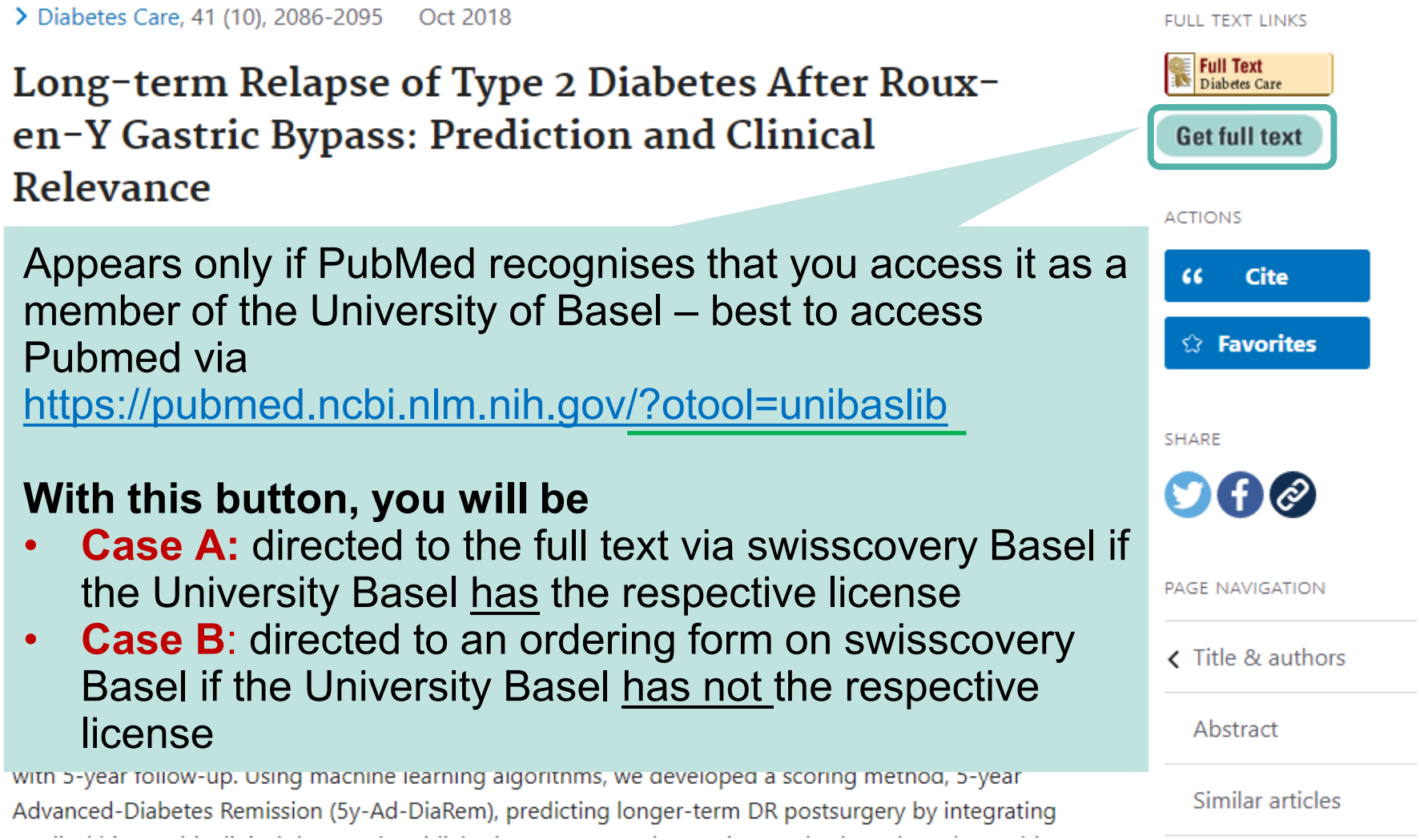
PubMed: My NCBI site preferences



NCBI Site Preferences

- Highlighting: Search terms will be highlighted in search results

PubMed: Get full text -- directly from database to full text (A) or ordering via swisscovery (B)



Appears only if PubMed recognises that you access it as a member of the University of Basel – best to access Pubmed via https://pubmed.ncbi.nlm.nih.gov/?otool=unibaslib

With this button, you will be

- **Case A:** directed to the full text via swisscovery Basel if the University Basel has the respective license
- **Case B**: directed to an ordering form on swisscovery Basel if the University Basel has not the respective license

PubMed: Get full text
Case A: University Basel has the respective license

Malaria Elimination: Time to Target All Species.

Lover, Andrew A; Baird, J Kevin; Gosling, Roly; Price, Ric N

ISSN: 0002-9637 , 1476-1645; **DOI:** 10.4269/ajtmh.17-0869; **PMID:** 29761762

The American journal of tropical medicine and hygiene : official journal of the American Society of Tropical Medicine and Hygiene. , 2018, Vol.99(1), p.17-23

Full text | Online verfügbar

BrowZine

Links

Kopienbestellung

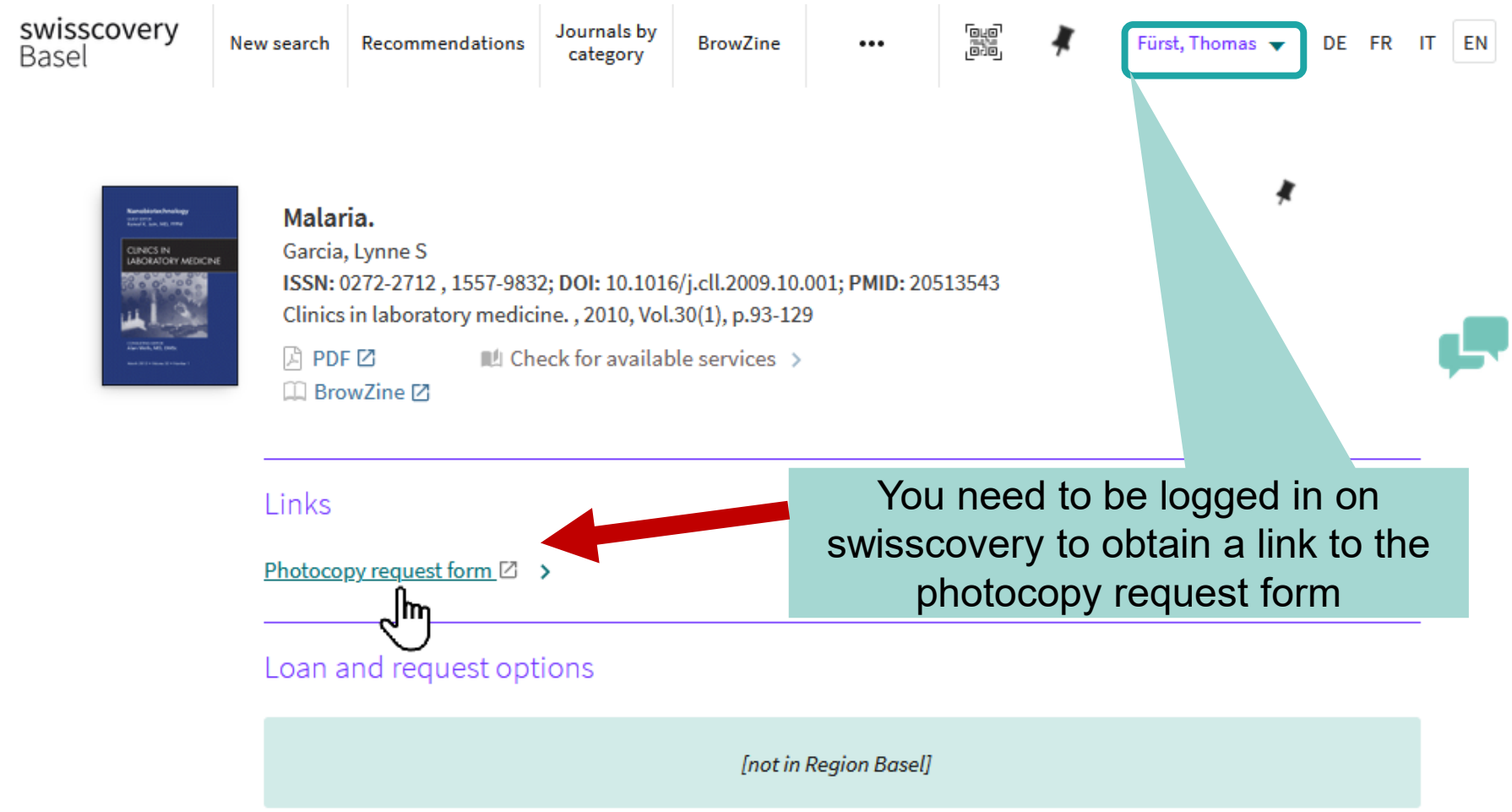
Online ansehen

Open-Access-Version gefunden über: Unpaywall

Full text link to click on

Requirement: Unibas/Swiss TPH internet or from home with Swiss TPH laptop or VPN activated!

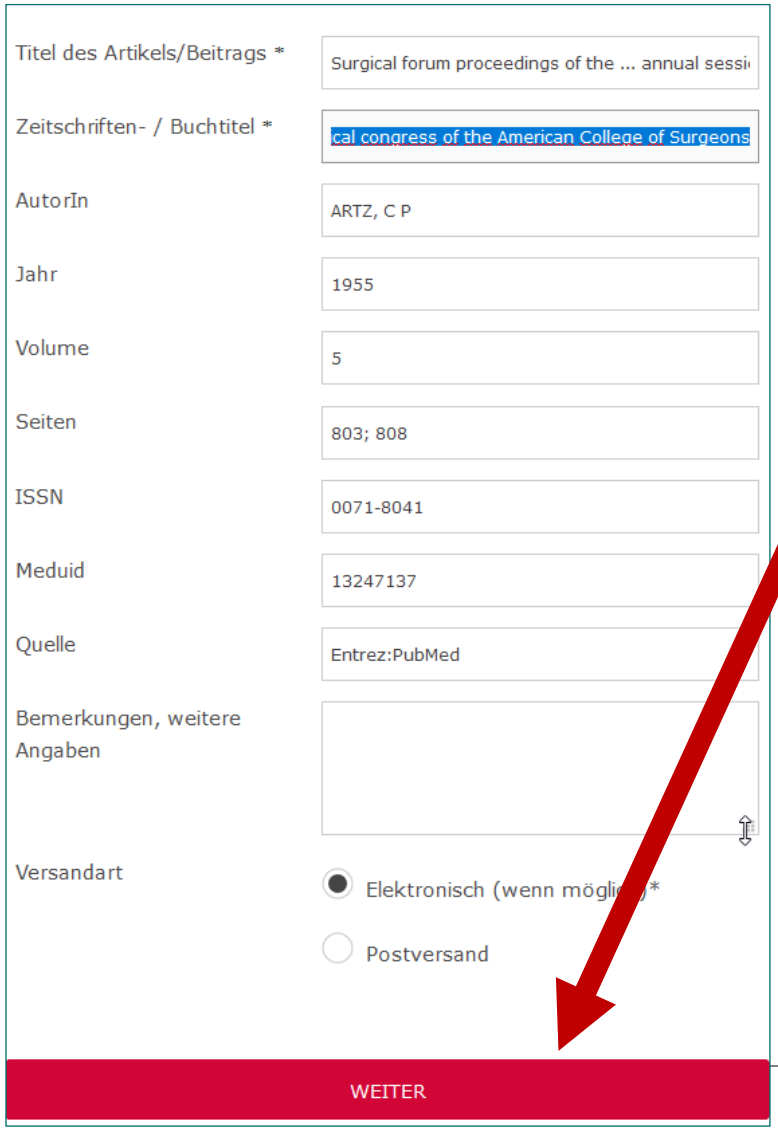
PubMed: Get full text
Case B: University Basel has not the respective license, ordering via swisscovery Basel (1)



PubMed: Get full text
Case B: University Basel has not the respective license, ordering via swisscovery Basel (2)

You need to register again with your Switch Edu-ID (upper button) to get to the request form

PubMed: Get full text
Case B: University Basel has not the respective license, ordering via swisscovery Basel (3)



Now, you will see the request form with all the prepopulated fields from PubMed; click on continue.

In the following window, check again all details and definitively send your request.
Please also consider the fees (5-12 CHF/article) and delivery times (usually 1-2 days)

PubMed: Get full text
Fall B: Summary -- ordering via swisscovery Basel (4)

You need a swisscovery account, which is linked to your Switch Edu-ID!

Request:

1. Got to PubMed via the University of Basel link (see again below), find the respective article and click on «Get full text» 

2. Log in on swisscovery
3. Click on the «photocopy request form» link
4. You need to register again with your Switch Edu-ID
5. Check again all details and definitively send your request

University of Basel PubMed-Link
(see also University Library Medicine Basel website):
https://pubmed.ncbi.nlm.nih.gov/?otool=unibaslib

Guidance for registering on swisscovery/Switch Edu-ID:
https://ub.unibas.ch/en/services/register-borrow-order/
or help via **info-medb@unibas.ch** / **061 207 32 00**

OR ASK YOUR LOCAL LIBRARY TEAM !!!