

McGoogan Sessions: Searching PubMed

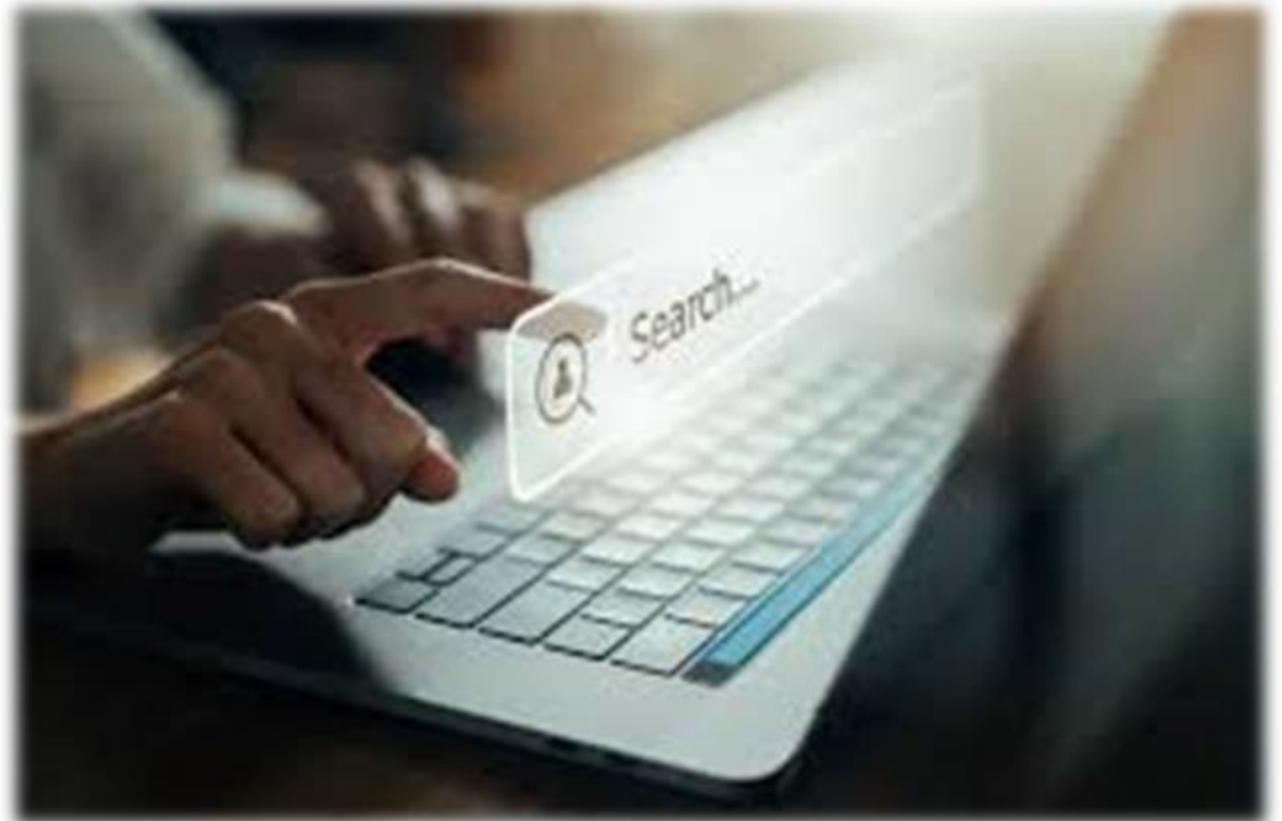
Kim Harp, MLS & Teresa Hartman, MLS

Leon S. McGoogan Health Sciences Library

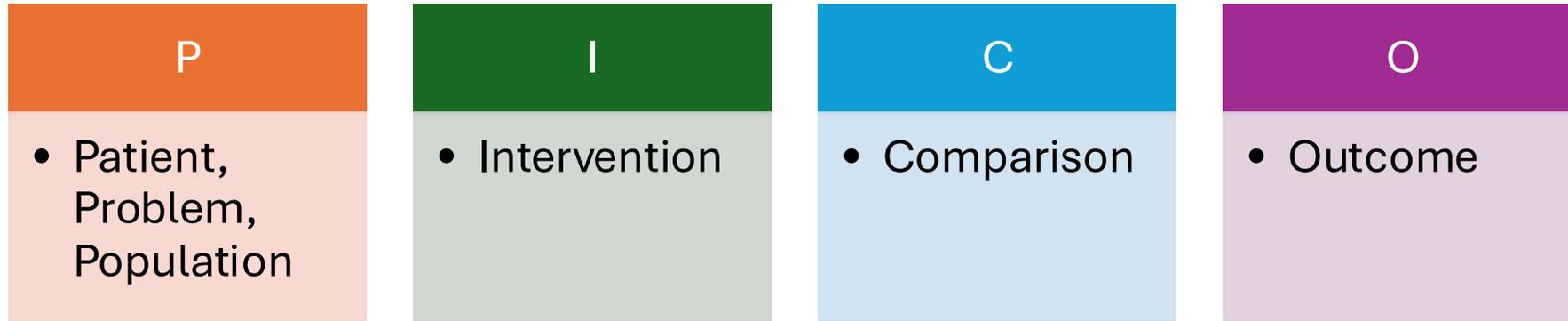
Objectives

By the end of today's session, you will be able to:

Create a search strategy in PubMed using a combination of keywords and subject headings and access full-text articles from the library's collection or via the interlibrary loan service.



PICO



P – How would you describe the problem/group of patients similar to your patient?

I – What intervention/prognostic factor/exposure are you considering? Can include tests/treatments/therapy/medication/products and procedures

C – Is there an alternative to compare with the intervention?

O – What do you hope to accomplish, measure, improve or affect? Outcomes should be measurable

Identifying Concepts for a Search

General curiosity: How can we improve health provider safety in patient turning?

Specific search question: In health providers, does the use of electronic patient lift devices reduce workplace injuries?

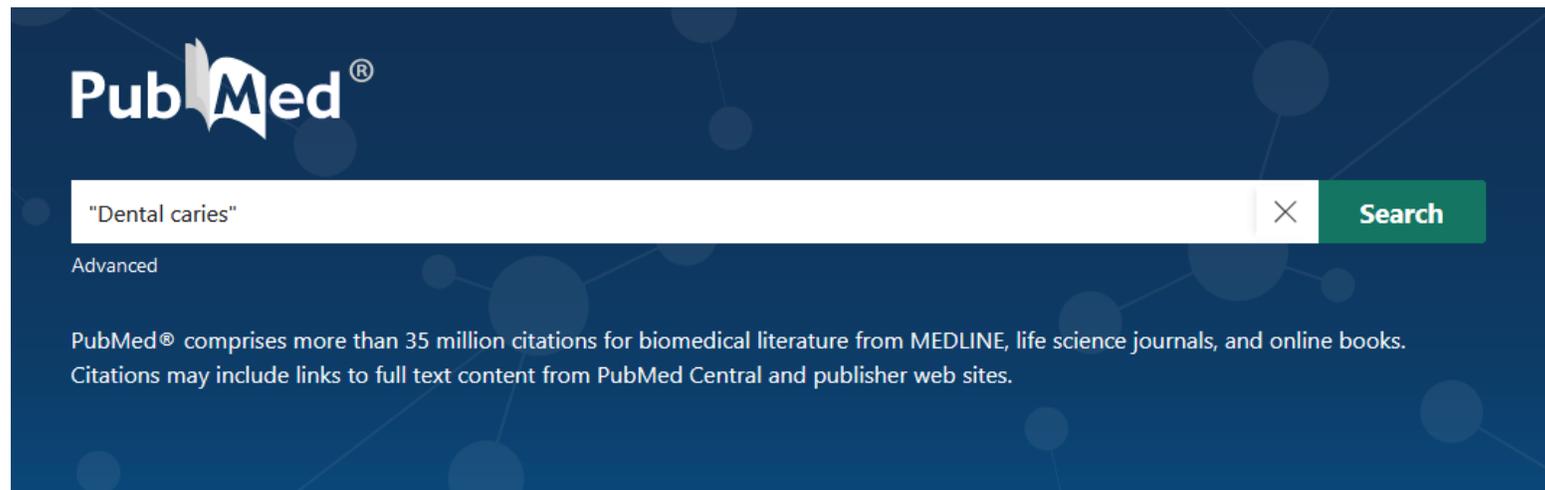
Concept	Keywords	Subject Headings
P:	"Health provider"	
I:	"electric lift device"	
C:	no lift devices	
O:	reduced workplace injury	

Table template: <https://go.unmc.edu/conceptable>

Keywords

- **Keywords are:**

- words/terms that describe your topic; think of synonyms (ex: dental caries, cavities)
- single words or phrases
- can be too broad or too narrow





National Library of Medicine
National Center for Biotechnology Information

Log in

PubMed[®]

"dental caries" AND toothbrush|



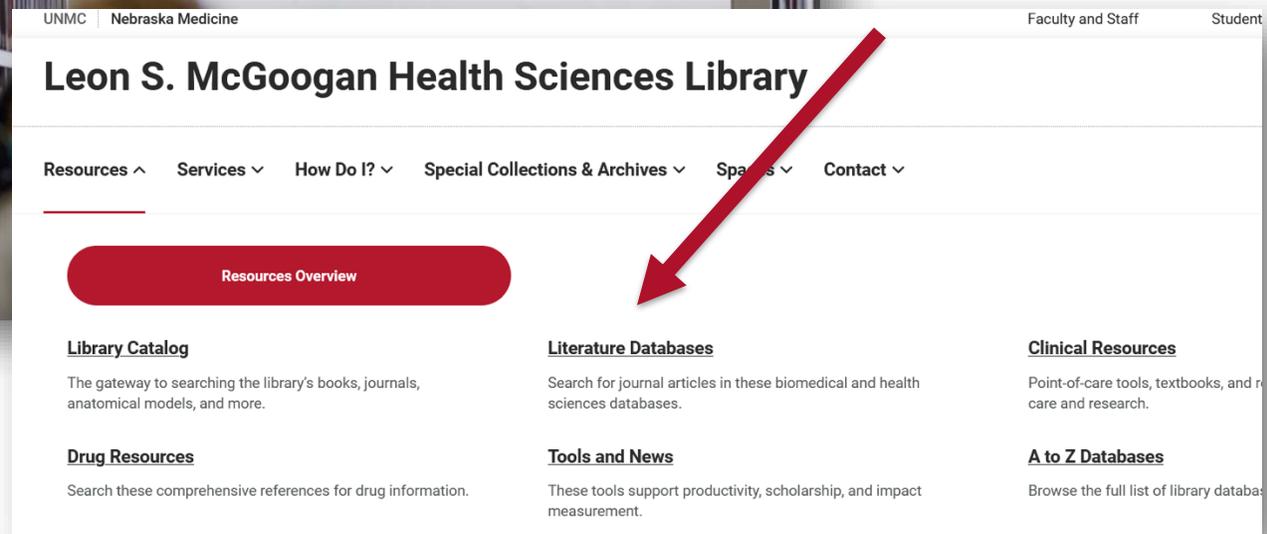
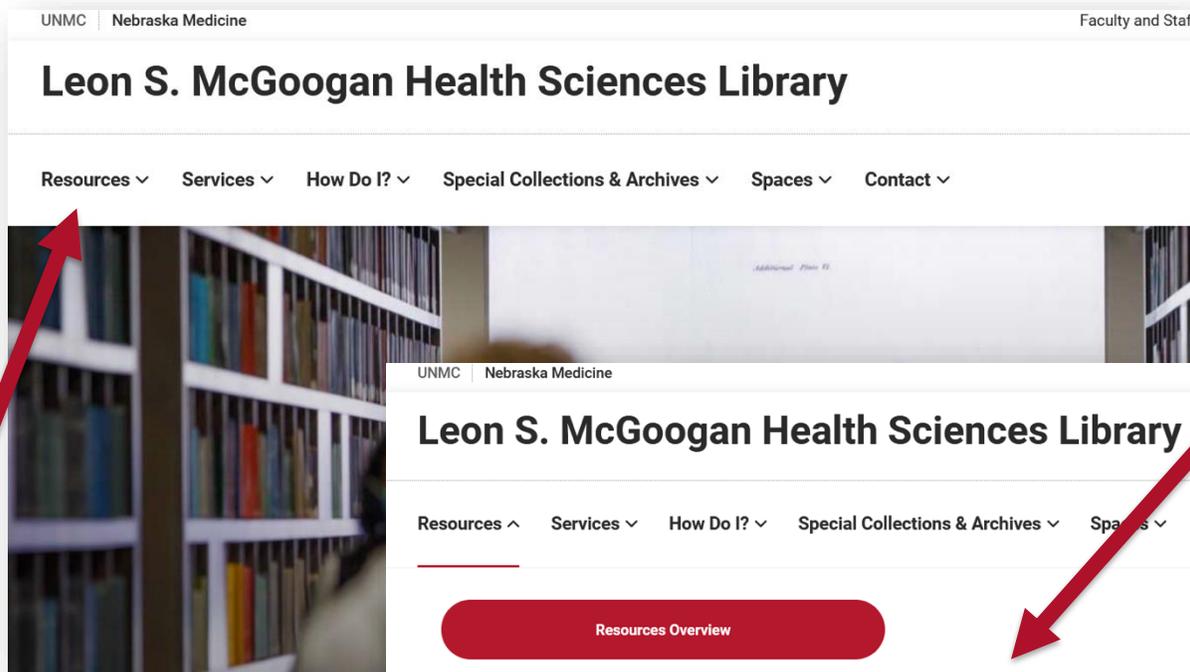
Search

Advanced

PubMed[®] comprises more than 37 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full text content from PubMed Central and publisher web sites.

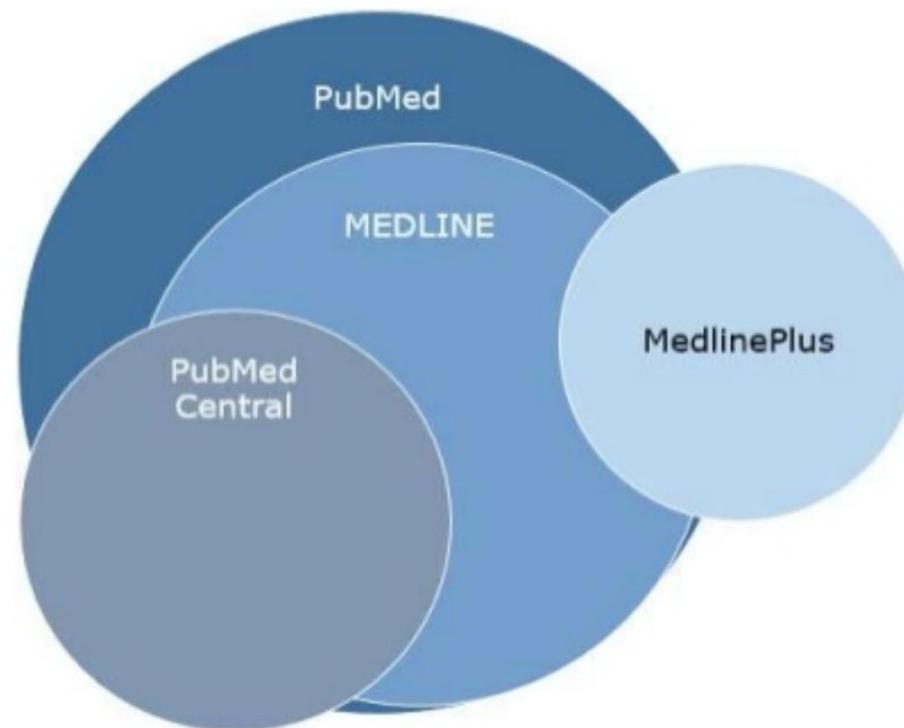
Access from library website:

unmc.edu/library



PubMed includes:

- **MEDLINE** database journals, chosen by NLM, indexed with MeSH
- **PubMed Central** – free access archive of biomedical & life sciences journals
- **Epub Ahead of Print** – precedes final publication of article
- **In-process citations**



Sort by:



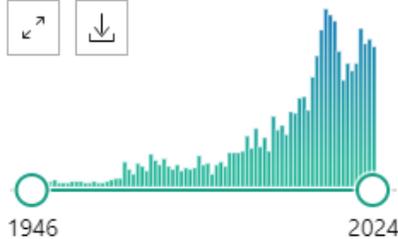


MY CUSTOM FILTERS

All (2,117)
[clinical trial \(284\)](#)
[English \(2,117\)](#)
[English & Humans \(1,958\)](#)
[Free Full Text \(659\)](#)
[Humans \(1,958\)](#)
[Review \(120\)](#)

— show fewer

RESULTS BY YEAR



PUBLICATION DATE

 1 year

2,117 results



Page

of 212


 Filters applied: English. [Clear all](#)

[Effects of interdental cleaning devices in preventing **dental caries** and periodontal diseases: a scoping review.](#)

1

Cite

Amarasena N, Gnanamanickam ES, Miller J.

Aust Dent J. 2019 Dec;64(4):327-337. doi: 10.1111/adj.12722. Epub 2019 Oct 18.

Share

 PMID: 31556125 [Free article.](#) [Review.](#)

To identify and map existing evidence on the effectiveness of interdental cleaning devices in preventing **dental caries** and periodontal diseases, a scoping review was carried out by electronically searching PubMed, Scopus and Embase. ...


[Consumption frequency of added sugars and UK children's **dental caries**.](#)

2

Cite

Hong J, Whelton H, Douglas G, Kang J.

Community Dent Oral Epidemiol. 2018 Oct;46(5):457-464. doi: 10.1111/cdoe.12413. Epub 2018 Aug 20.

Share

CONCLUSIONS: Consumption frequency of added sugars was associated with **dental caries** and a number of child demographic and lifestyle characteristics. Children who consume foods and drinks with added sugar more frequently are more likely to develop **dental c** ...

Subject Headings

- **Subject Headings are:**

- “controlled vocabulary” used to describe the concepts of the literature databases (Dentistry Source, CINAHL, PubMed, Embase, etc.)
- only searched for in the subject field of the record (does not search the title or abstract)
- less flexible

An official website of the United States government [Here's how you know](#) ↓

NIH National Library of Medicine
National Center for Biotechnology Information

MeSH [Help](#)

[Create alert](#) [Limits](#) [Advanced](#)

Summary ▾ 20 per page ▾

Search results
Items: 7 Selected: 1

[Health Personnel](#)

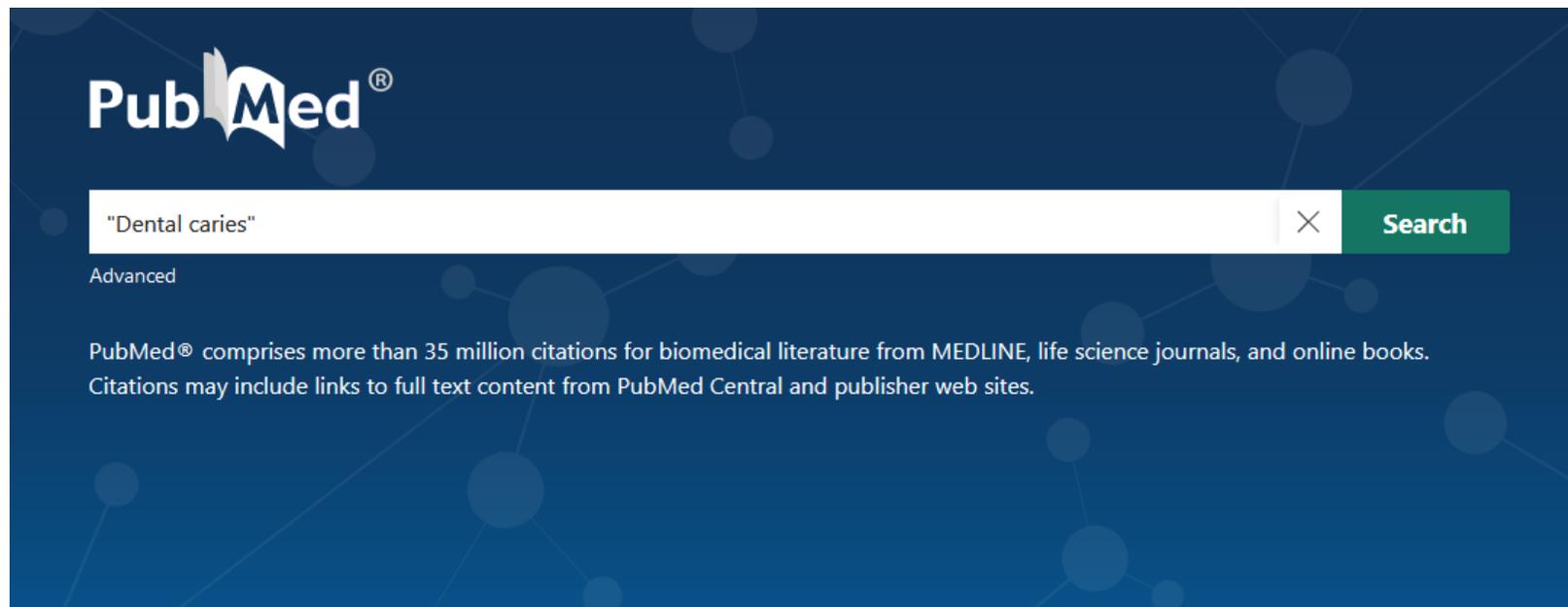
1. Men and women working in the provision of **health** services, whether as individual practitioners or employees of **health** institutions and programs, whether or not professionally trained, and whether or not subject to public regulation. (From A Discursive Dictionary of **Health** Care, 1976)
Year introduced: 1992

Send to: ▾

PubMed Search Builder ▾

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Find related data



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Explore

[MeSH Database](#)
[Journals](#)



- 1. Click the “MeSH database” link on the PubMed homepage



MeSH

MeSH

health provider

Search

Limits Advanced

Help



MeSH

MeSH (Medical Subject Headings) is the NLM controlled vocabulary thesaurus used for indexing articles for PubMed.

Using MeSH

[Help](#)

[Tutorials](#)

More Resources

[E-Utilities](#)

[NLM MeSH Homepage](#)

- 2. Search for your concept(s)

MeSH

MeSH

health provider

Search

[Create alert](#) [Limits](#) [Advanced](#)

[Help](#)

Summary ▾ 20 per page ▾

Send to: ▾

Search results

Items: 7 Selected: 1

[Health Personnel](#)

1. Men and women working in the provision of **health** services, whether as individual practitioners or employees of **health** institutions and programs, whether or not professionally trained, and whether or not subject to public regulation. (From A Discursive Dictionary of **Health** Care, 1976)
Year introduced: 1992

[Insurance, Health, Reimbursement](#)

2. Payment by a third-party payer in a sum equal to the amount expended by a **health** care **provider** or facility for **health** services rendered to an insured or program beneficiary. (From Facts on File Dictionary of **Health** Care Management, 1988)
Year introduced: 1982

[Patient Freedom of Choice Laws](#)

3. Laws requiring patients under managed care programs to receive services from the physician or other **provider** of their choice. Any willing **provider** laws take many different forms, but they typically prohibit managed-care organizations from having a closed panel of physicians, hospitals, or other providers.
Year introduced: 1999

[Competitive Medical Plans](#)

4. Alternative **health** care delivery mechanisms, such as PREFERRED **PROVIDER** ORGANIZATIONS or other **health** insurance services or prepaid plans (other than **HEALTH** MAINTENANCE ORGANIZATIONS) that meet Medicare qualifications for a risk

PubMed Search Builder

Add to search builder AND ▾

Search PubMed

[YouTube](#) [Tutorial](#)

Find related data

Database: Select ▾

Find items

Search details

```
("health"[MeSH Terms] OR health[Text Word]) AND provider[All Fields]
```

Search

[See more...](#)

- 3. If more than one option appears, select the best one for your topic

MeSH Limits Advanced

Full ▾

Send to: ▾

Health Personnel

Men and women working in the provision of health services, whether as individual practitioners or employees of health institutions and programs, whether or not professionally trained, and whether or not subject to public regulation. (From A Discursive Dictionary of Health Care, 1976)
Year introduced: 1992

PubMed search builder options

[Subheadings:](#)

- | | | |
|---|--|--|
| <input type="checkbox"/> classification | <input type="checkbox"/> history | <input type="checkbox"/> standards |
| <input type="checkbox"/> economics | <input type="checkbox"/> legislation and jurisprudence | <input type="checkbox"/> statistics and numerical data |
| <input type="checkbox"/> education | <input type="checkbox"/> organization and administration | <input type="checkbox"/> trends |
| <input type="checkbox"/> ethics | <input type="checkbox"/> psychology | |

Restrict to MeSH Major Topic.

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

Tree Number(s): M01.526.485, N02.360

MeSH Unique ID: D006282

Entry Terms:

- Personnel, Health
- Healthcare Workers
- Healthcare Worker
- Health Care Providers
- Health Care Provider
- Provider, Health Care
- Healthcare Providers
- Healthcare Provider
- Provider, Healthcare
- Health Care Professionals
- Health Care Professional
- Professional, Health Care

Previous Indexing:

- [Health Manpower \(1966-1991\)](#)

PubMed Search Builder

"Health Personnel"[Mesh]

AND ▾

[YouTube](#) [Tutorial](#)

Related information

- PubMed
- PubMed - Major Topic
- Clinical Queries
- NLM MeSH Browser

Recent Activity

[Turn Off](#) [Clear](#)

- Health Personnel MeSH
- health provider (7) MeSH
- Patients MeSH
- patients (14) MeSH
- surgery (90) MeSH

[See more...](#)

- 4. Click **Add to Search Builder** to get the text
- 5. Click **Search PubMed** to find articles.



"Health Personnel"[Mesh]

[Advanced](#) [Create alert](#) [Create RSS](#)

[User Guide](#)

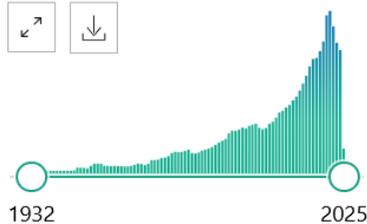
Sort by:

MY CUSTOM FILTERS

652,881 results

- All (652,881)**
- Review (44,225)
- systematic rev.+ meta-analyses + guidelines (23,302)

RESULTS BY YEAR



1 [Healthcare professionals' knowledge, attitudes, and practice of podoconiosis management and associated factors in Ilu Ababor and Buno Bedelle zones, Southwest Ethiopia: a cross-sectional study.](#)
Cite Tamiru S, Lulu Y, Bidira K, Amsalu B, Duguma A, Nigusu Y, Gezimu W.
Share Front Public Health. 2025 Feb 24;13:1454979. doi: 10.3389/fpubh.2025.1454979. eCollection 2025.
PMID: 40066015 **Free PMC article.**

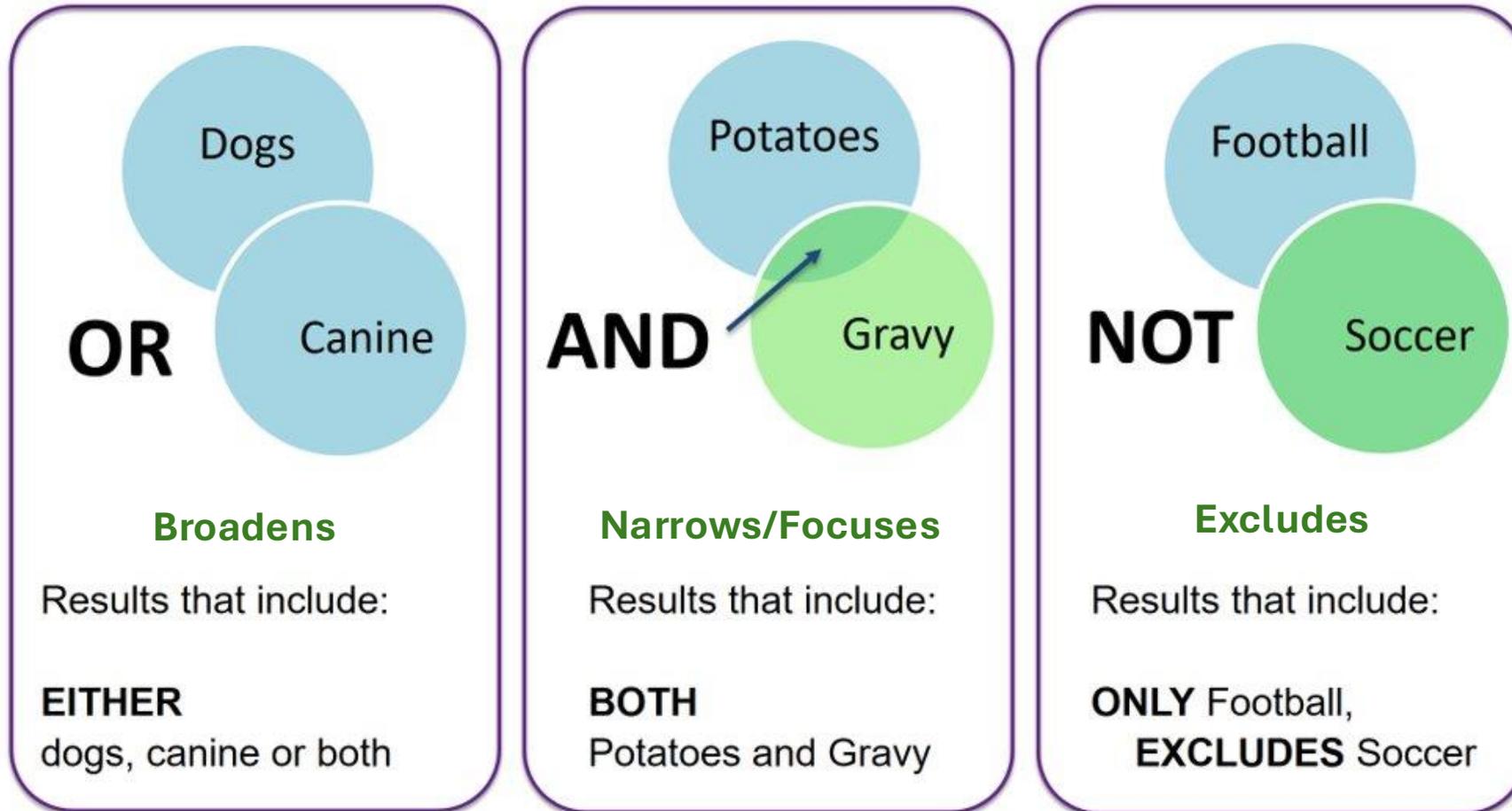
2 [Integrating Systems Thinking in Nutrition and Dietetics Education.](#)
Cite Bergquist E, Buyckingham-Schutt L, Smalley S, Campbell CG, Dollisso A, Qu S.
Share J Hum Nutr Diet. 2025 Apr;38(2):e70036. doi: 10.1111/jhn.70036.
PMID: 40065542

Your Turn: Subject Headings

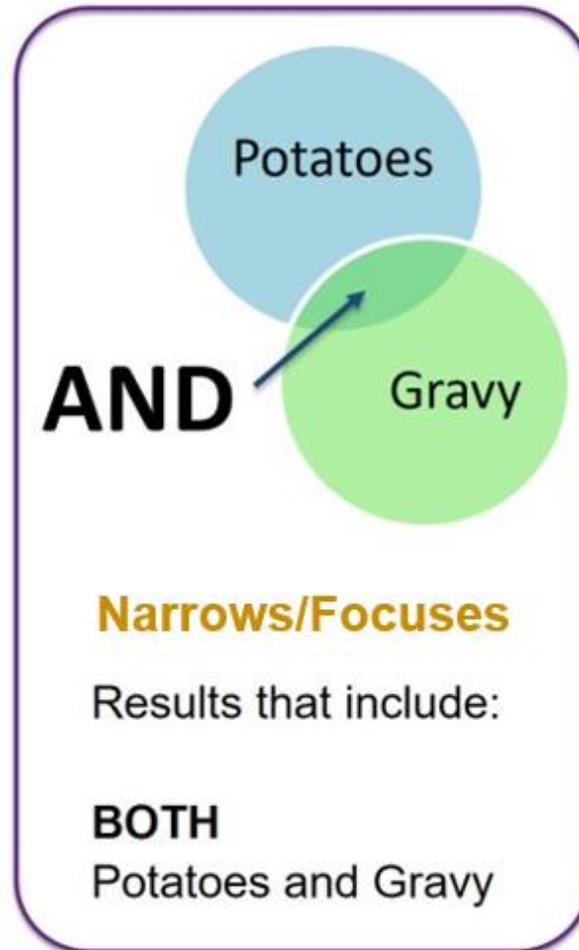
Concept	Keywords	Subject Headings
P: Health provider	"health provider"	"Health Personnel"[Mesh]
I: electric patient lift devices	"electric lifts"	
C: Standard care		
O: fewer injuries	"workplace injury"	

Not every concept/topic/PICO will have a subject heading. That's OK! Continue to use keywords for that piece.

Boolean Operator (Connecting the Search)



Boolean Operators

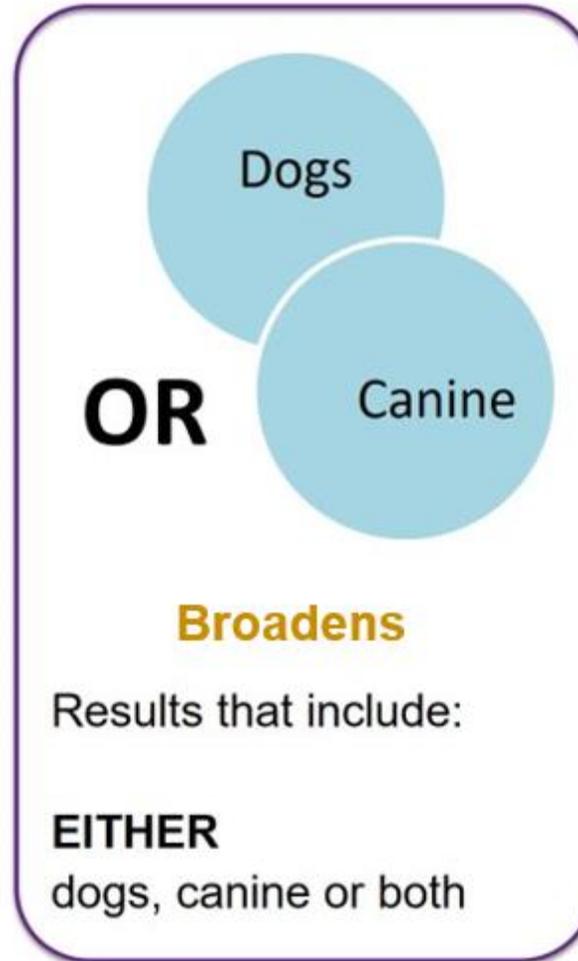


Connecting Your Search - AND

Concept	Keywords	Subject Headings
P: Health provider	"health provider"	"Dental Caries"[Mesh]
I: electric patient lift devices	"electric lifts"	
C: Standard care		
O: fewer injuries	"workplace injury"	

"health provider" **AND** "electric lifts" **AND**
"workplace injury"

Boolean Operators



Connecting Your Search - OR

Concept	Keywords	Subject Headings
P: Health provider	"health provider" OR "health providers" OR "general practitioner" OR nurs* OR "advanced practice" OR "physical therapist" OR physician*	"Health Personnel"[Mesh]
I: electric patient lift devices	"electric lifts" OR "electric lifting devices" OR "lift device"	
C: Standard care		
O: fewer injuries	"workplace injury" OR "workplace injuries" OR "staff injury" OR "disability compensation" OR "injury report" OR "worker's compensation"	"Workers' Compensation"[Mesh] OR "Insurance, Disability"[Mesh]

"health provider" OR "health providers" OR "general practitioner" OR nurs* OR "advanced practice" OR "physical therapist" OR physician* OR "Health Personnel"[Mesh] AND "electric lifts" OR "electric lifting devices" OR "lift device" AND "workplace injury" OR "workplace injuries" OR "staff injury" OR "disability compensation" OR "injury report" OR "worker's compensation" OR "Workers' Compensation"[Mesh] OR "Insurance, Disability"[Mesh]

Techniques	Definition	Example
Parentheses	When using the OR Boolean operator, enclose the terms in parentheses	(toothbrush OR toothbrushes)
Quotation Marks	Quotation marks tell the database to take the phrase as a whole, and search for the words together and in order	“dental caries” AND “electric toothbrush”
Proximity Searching	Many databases allow you to specify that the words you are searching are within a certain proximity of each other. (Does not work in PubMed)	Dentistry Source/EBSCO: (Toothbrush* N2 (electronic OR sonic OR power)) Embase: (toothbrush* NEAR/2 (electronic OR sonic OR power))
Truncation	A technique that broadens your search to include various word endings and spellings; use an asterisk behind the root word	Toothbrush* (this searches for toothbrush, toothbrushes, toothbrushing)
Field Tags – Title, and Title/Abstract	Use when you want to narrow, or focus, your search to keywords and phrases	PubMed: (plaque[title]) , plaque[tiab] Dentistry Source/EBSCO: TI(plaque) OR AB(plaque) Google Scholar: intitle:plaque

Your Turn: Create Your Search

- Create your search using the keywords and subject headings from your table
 - Remember the Boolean Operators (AND OR)
 - Use Parenthesis with OR
 - (“dental caries” OR cavity) AND toothbrush
 - Use quotation marks for phrases
 - “electric toothbrush” OR “dental caries”

Getting to Full-Text - PubMed

> J Clin Periodontol. 2019 Jul;46(7):713-722. doi: 10.1111/jcpe.13126. Epub 2019 May 22.

Long-term Impact of Powered Toothbrush on Oral Health: 11-year Cohort Study

Vinay Pitchika¹, Christiane Pink¹, Henry Völzke², Alexander Welk¹, Thomas Kocher¹, Birte Holtfreter¹

Affiliations + expand
PMID: 31115952 PMID: PMC6619286 DOI: 10.1111/jcpe.13126
[Free PMC article](#)

Abstract

Aims: This study aimed to assess 11-year longitudinal effects of powered toothbrush on periodontal health, caries and tooth loss in an adult population.

Materials and methods: Participants of Study of Health in Pomerania (SHIP) cohort with dental examinations and interview data at SHIP-1, SHIP-2 or SHIP-3 examinations were included. Mixed-effects linear regression models were constructed between the exposure (manual versus powered toothbrush) and outcome variables (periodontal status using mean probing depth (PD) and mean clinical attachment loss (CAL), caries status using DMFS and DFS scores, and tooth loss), adjusting for potential baseline covariates.

Results: Final baseline (SHIP-1) study sample comprised of 2,819 participants. Powered toothbrush users increased from 18.3% (SHIP-1) to 36.9% (SHIP-3); were younger; had significantly less mean PD [β : -0.09 (95% CI: -0.16; -0.02)] and mean CAL [β : -0.19 (95% CI: -0.32; -0.07)] progressions; and had 17.7% less DMFS progression and 19.5% more teeth retained than the manual toothbrushers.

Conclusions: In the long-term, powered toothbrush seems to be effective in reducing mean PD and mean CAL progressions, besides increasing the number of teeth retained.

Keywords: caries; gingivitis; oral hygiene; periodontitis; tooth loss; toothbrush.

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Conflict of interest statement

Prof. Dr. Thomas Kocher had received grants from Procter and Gamble Co. to pay the salary for a scientist for 6 months, which did not have any influence on the study design, data analysis and interpretation of the results. The authors declare no potential conflicts of interest with respect to the authorship and publication of this article, and this includes financial interests.

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PAGE NAVIGATION

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Abstract

Conflict of interest statement

Figures

Comment in

Similar articles

References

Publication types

MeSH terms

LinkOut - more

Getting Full-Text



The efficacy of powered toothbrushes: A systematic review and network meta-analysis

Thomassen, Tim M J A; Van der Weijden, Fridus G A; Slot, Dagmar E

ISSN: 1601-5029 , 1601-5037; DOI: 10.1111/idh.12563

International journal of dental hygiene. , 2022, Vol.20(1), p.3-17

[Available Online >](#)

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EXPORT RIS



ENDNOTE



PRINT



CITATION



PERMALINK



REFWORKS



EMAIL

View Online _____

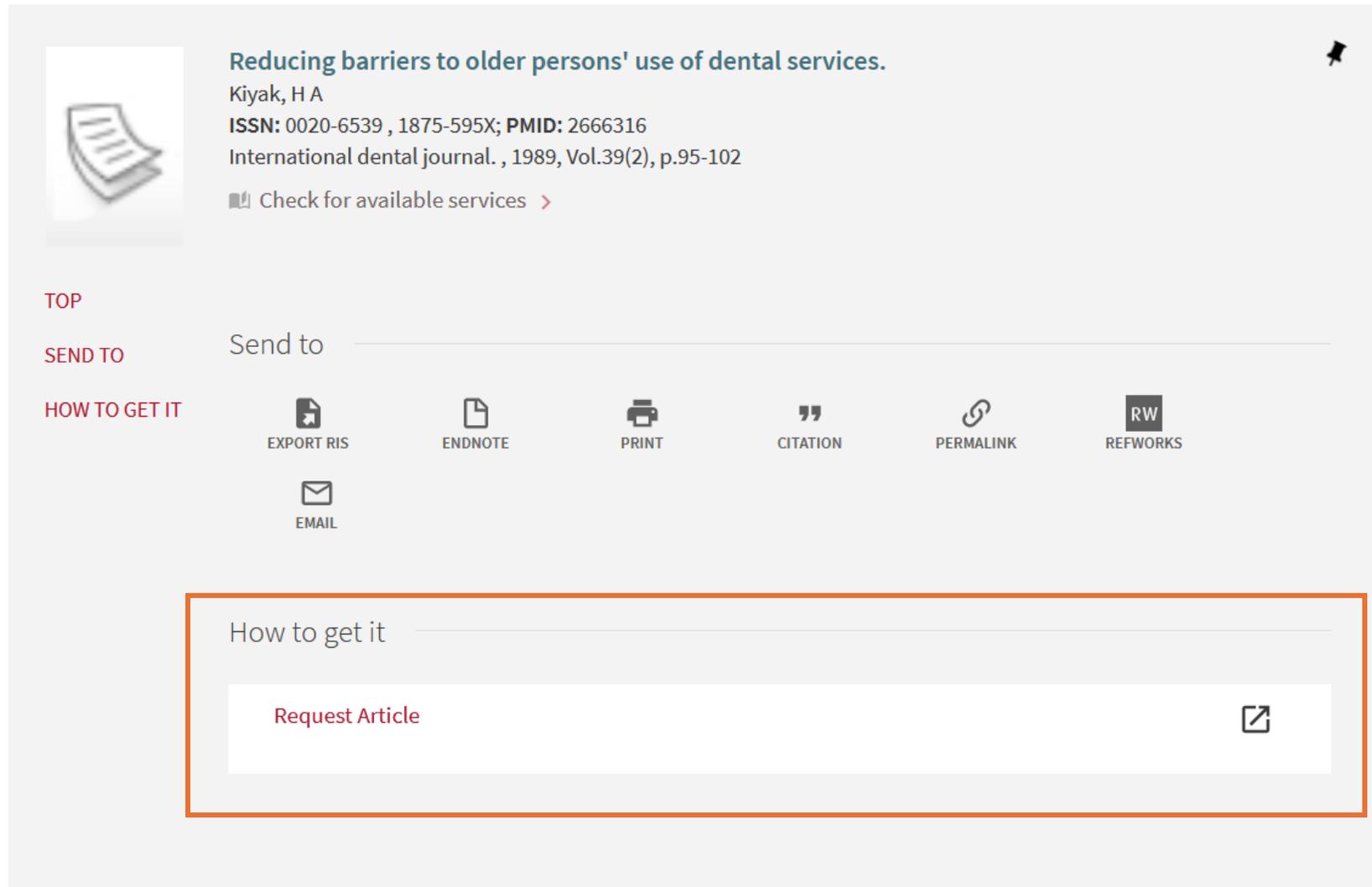
Full text availability - click link below to log in

Wiley Online Library Database Model 2022

Available from 2003 volume: 1 issue: 1.



Interlibrary Loan



 **Reducing barriers to older persons' use of dental services.** 
Kiyak, H A
ISSN: 0020-6539 , 1875-595X; **PMID:** 2666316
International dental journal. , 1989, Vol.39(2), p.95-102
 Check for available services >

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HOW TO GET IT

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[Request Article](#) 

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Interlibrary Loan

A service of the Leon S. McGoogan Health Sciences Library

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Username

Password

Logon to ILLiad

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[+ Create an Account for non-unmc.edu users](#)

- Log in with your UNMC NetID and Password

Create a PubMed Account

The screenshot shows the PubMed website interface. At the top, the NIH National Library of Medicine logo is on the left, and a "Log in" button is on the right, with a red arrow pointing to it. Below the logo is the PubMed logo. The search bar contains the query "ing) AND ("Burnout, Professional"[Mesh] OR burnout[title] OR fatigue[title])" and a "Search" button. Below the search bar are links for "Advanced", "Create alert", "Create RSS", and "User Guide". Below the search bar are buttons for "Save", "Email", and "Send to", and a "Sort by:" dropdown menu set to "Publication date". To the right of the sort menu is a "Display options" button with a gear icon. Below the search bar is a "MY NCBI FILTERS" section with a link icon. Below that is a "RESULTS BY YEAR" section with a bar chart showing results from 2014 to 2024, with a "Reset" button. Below the bar chart is a "TEXT AVAILABILITY" section. In the center, there are "88 results" and a pagination control showing "Page 1 of 5". Below the results is a green box with a checkmark icon and the text "Filters applied: Randomized Controlled Trial, Systematic Review, in the last 10 years, English. [Clear all](#)". Below the filters is a search result for "The effect of **yoga exercise** on improving depression, anxiety, and **fatigue** in women with breast cancer: a randomized controlled trial." with a "Demonstration" button. Below the title is the citation: "Taso CJ, Lin HS, Lin WL, Chen SM, Huang WT, Chen SW. J Nurs Res. 2014 Sep;22(3):155-64. doi: 10.1097/jnr.0000000000000044." Below the citation is the PMID: "PMID: 25111109" and the text "Clinical Trial." Below the PMID is the text "RESULTS: Analysis using the Johnson-Neuman procedure found that the **voaa** exercise reduced".

- Create a PubMed account to set up search alerts, change settings, etc. (3rd party sign up, not linked to your UNMC account).

Create a PubMed Account

The screenshot displays the PubMed website interface. At the top left, the NIH National Library of Medicine logo is visible. The PubMed logo is prominently displayed in the center. A search bar contains the query: "ing) AND ("Burnout, Professional"[Mesh] OR burnout[title] OR fatigue[title])". Below the search bar, there are buttons for "Advanced", "Create alert", and "Create RSS". A red arrow points to the "Create alert" button. To the right, a user account menu is open, showing options: "Dashboard", "Publications", "Account settings", and "Log out". A red arrow points to the "Account settings" option. Below the search bar, there are buttons for "Save", "Email", and "Send to". The search results show 88 results on page 1 of 5. A filter bar indicates: "Filters applied: Randomized Controlled Trial, Systematic Review, in the last 10 years, English. [Clear all](#)". The first result is titled "The effect of yoga exercise on improving depression, anxiety, and fatigue in women with breast cancer: a randomized controlled trial." by Taso CJ, Lin HS, Lin WL, Chen SM, Huang WT, Chen SW. The citation is: J Nurs Res. 2014 Sep;22(3):155-64. doi: 10.1097/jnr.0000000000000044. PMID: 25111109. Clinical Trial. RESULTS: Analysis using the Johnson-Neyman procedure found that the yoga exercise reduced...

- Click on your account name to access settings and dashboard to manage searches.

Not Finding Enough on Your Topic?

- Consider your topic
 - You may need to broaden or narrow your topic. Need help? [Review some PICO examples.](#)
- Try various terms that describe your topic
 - Use the Boolean operator **OR** to add synonyms to your concepts
- Explore different databases
 - Try searching a variety of resources, such as Scopus, CINAHL, and Embase.

Contact Your Librarian!

Generative AI & Large Language Models (LLMs)

Cannot be cited and are not authoritative sources of information

Cannot find information hidden behind paywalls

Do not always provide citations or their sources

Do not provide the search terms it actually utilized to perform your search

Often "hallucinates" (makes up things) especially in terms of academic references or citations

Has not been trained on the newest information, so has limited knowledge of current information and the current world

Does not have equal knowledge of all topics. For example, has more knowledge of STEM topics than humanities topics.

Does not cite sources or otherwise indicate what in training data has led to the response

Cannot make future predictions

Lacks creativity or "out of the box thinking"



Assessing the Literature

Currency

- How recent is this information?
- When was it last updated?

Authority

- Who is the creator or author?
- What are their credentials?
- Who is the sponsor or who funded the study?

Relativity

- Is this content provided ethically or is there evidence of bias?
- Does the author provide references?
- What kind of information is included?

Purpose

- Is this fact or an opinion?
- Who is the intended audience?
- Is the author trying to sell you something?

Resources - Searching

- Database Searching: <https://unmc.libguides.com/tutorials>
- Accessing Databases: <https://unmc.libguides.com/az.php>

Assessment holder slide

Do you feel like you are equipped to search PubMed?

What further questions do you have?

McGoogan Health Sciences Library

- askus@unmc.edu
- 402-559-6221
- www.unmc.edu/library

