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SEARCHING THE LITERATURE: SEARCH TECHNIQUES & CONSTRUCTION TO IDENTIFY STUDIES FOR A SYSTEMATIC REVIEW



Overview

- Why Search?
- Search construction
 - Concept building
 - Boolean logic
 - Vocabulary
 - Techniques
- Sources
 - PubMed
 - Ovid MEDLINE
 - EMBASE
 - ISI Web of Knowledge
 - Scopus
 - Grey literature
- Search completion
 - Documentation
 - Reporting
 - Citation management

Why search?

- A high-quality lit search is essential for a successful meta-analysis
- It is from the search results that data is gathered for analysis
- Failure to locate important studies can significantly affect results
- Remember the goal is to capture **every relevant** study
- Important to report search so your methodology can be reproduced

What to expect?

- Expect 1000s of results
- Expect to search multiple databases
 - ▣ Ovid, EMBASE, Cochrane, PubMed, etc.
 - ▣ Expect that full text may not always be available*
- Expect the search process to take weeks or months
- Expect to publish search strategy and search methodology
- Expect to consult a professional with search expertise (health sciences librarian)
- Expect that even refined search strategies will locate some irrelevant articles

Search construction

- Concept building
- Boolean logic
- Vocabulary
- Techniques
- Evaluating searches

Search construction: Concept building

- Identify major concepts of topic
- PICO helps for clinical questions
 - ▣ Patient/problem; Intervention; Comparison Intervention; Outcome

- Example: Is the incidence of breast cancer greater in people who are obese?

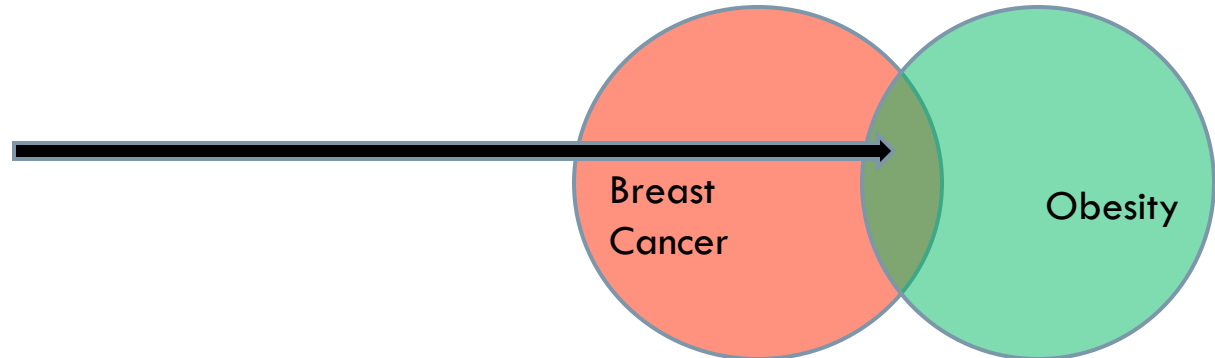
- What are the major concepts?
 - ▣ Breast cancer
 - ▣ Obesity
 - ▣ Incidence
 - ▣ People

Search construction: Concept building

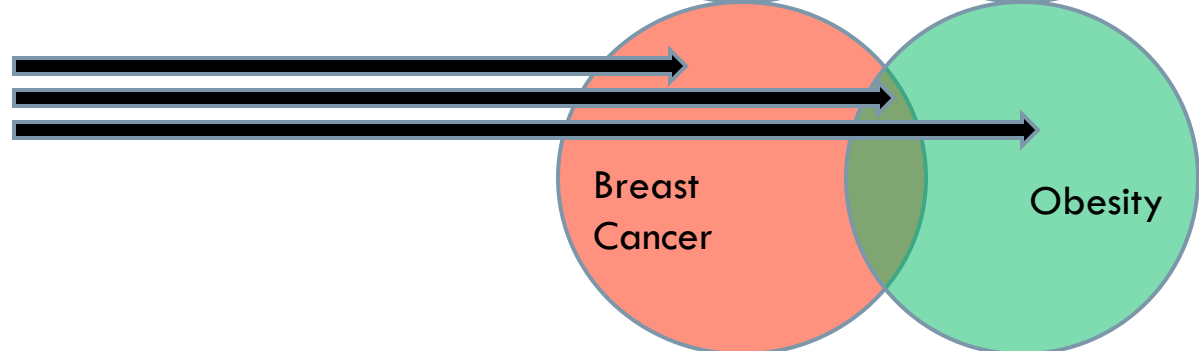
- Alternate words / Synonyms
 - ▣ Obesity, obese, overweight, BMI, etc.
 - ▣ Breast cancer, breast neoplasms, breast tumors, etc.
 - ▣ Incidence, epidemiology

Search construction: Boolean Logic

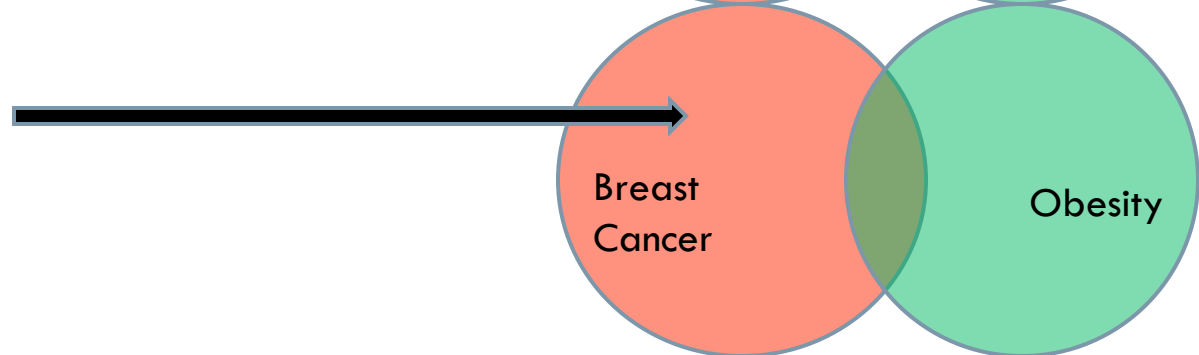
□ AND



□ OR



□ NOT



Search construction: Boolean Logic

Concept 1

a. Breast cancer

OR

b. Breast neoplasms

OR

c. Breast tumors

Concept 2

a. Obesity

OR

b. Obese

OR

c. Overweight

OR

d. BMI

Concept 3

a. Incidence

OR

b. Epidemiology

AND

AND

Resulting search built as:

(Concept 1a OR 1b OR 1c) AND (Concept 2a OR 2b OR 2c OR 2d) AND (Concept 3a OR 3b)

Search construction: Vocabulary

Keywords



Controlled
vocabularies

Search construction: Vocabulary

Keywords

What are they?

- Literal search
- Looks for occurrences of words

When to use?

- Current topics
- Not easy to describe concepts
- No vocabulary exists in database

Examples

- Drug names (Lipitor, Prozac)
- Slang
- Concepts (Swine flu, oil spill)

Controlled
vocabularies

Search construction: Vocabulary

Keywords

Pros

- Very current projects/topics
- No knowledge of controlled vocabulary necessary
- Slang
- Broad, difficult to describe concepts

Cons

- Not consistent (many variations)
- Burden on end-user to discover synonyms (might miss some)
- Too many (irrelevant) results
- Difficult to limit results

Controlled
vocabularies

Search construction: Vocabulary

Keywords

What are they?

- Set of words or phrases used to describe concepts
- Dictionary of accepted terms for a database

When to use?

- Searching a database that uses one

Examples

- MeSH (Medical Subject Headings)
- Emtree (Embase)

Controlled
vocabularies

Search construction: Vocabulary

Keywords

Pros

- ❑ Burden on database to discover variations in terms
- ❑ Consistency & reproducible searches
- ❑ Specific & targeted (increased relevancy)

Cons

- ❑ Restrictive
- ❑ Burden on end-user to learn vocabulary
- ❑ Vocabularies differ between databases (no consistency)

Controlled vocabularies

Search construction: Vocabulary

Keywords

Controlled
vocabularies

[All MeSH Categories](#)

[Chemicals and Drugs Category](#)

[Complex Mixtures](#)

[Biological Products](#)

Vaccines

[Alzheimer Vaccines](#)

[Bacterial Vaccines](#)

[Anthrax Vaccines](#)

[Autovaccines](#)

[Brucella Vaccine](#)

[Cholera Vaccines](#)

[Diphtheria-Tetanus-acellular Pertussis Vaccines](#)

[Diphtheria-Tetanus-Pertussis Vaccine](#)

[Diphtheria-Tetanus Vaccine](#)

[Escherichia coli Vaccines](#)

[Haemophilus Vaccines](#)

[Lyme Disease Vaccines](#)

[Meningococcal Vaccines](#)

[Pertussis Vaccine](#) +

[Plague Vaccine](#)

[Pseudomonas Vaccines](#)

[Rickettsial Vaccines](#)

[Salmonella Vaccines](#) +

[Shigella Vaccines](#)

[Staphylococcal Vaccines](#)

[Streptococcal Vaccines](#) +

[Tuberculosis Vaccines](#) +

[Cancer Vaccines](#)

[Fungal Vaccines](#)

MeSH

Search construction: Techniques

Technique	Example
Truncation	obes*
Wild cards	an?sthesiology
Adjacency	screen* adj10 cancer*
Phrases	“breast cancer”
Boolean	“vitamin d” AND cancer
Parentheses	(“breast cancer” OR “breast neoplasms”) AND obes*

Note: Techniques vary from database to database

Search construction: Techniques

- Limits – use sparingly (language, species, publication type)
 - Limits remain on search unless deactivated

The screenshot displays the PubMed.gov search interface. At the top, the PubMed logo is visible along with the text "U.S. National Library of Medicine" and "National Institutes of Health". A search bar contains the text "PubMed" and a dropdown arrow. To the right of the search bar are links for "Advanced search" and "Help". Below the search bar is a "Search" button and a "Clear" button.

Limits

Dates
Published in the Last: Any date

Type of Article
 Clinical Trial
 Editorial
 Letter
 Meta-Analysis
 Practice Guideline

Languages
 English
 French
 German
 Italian
 Japanese

Species
 Humans
 Animals

Sex
 Male
 Female

Subsets
 AIDS
 Bioethics
 Cancer
 Complementary Medicine
 Core clinical journals

Ages
 All Infant: birth-23 months
 All Child: 0-18 years
 All Adult: 19+ years
 Newborn: birth-1 month
 Infant: 1-23 months

PD-GOV

Search construction: Techniques

- Exploding subject headings
 - Use differs across databases

<input checked="" type="checkbox"/>	Vaccines	12631
<input type="checkbox"/>	Alzheimer Vaccines	225
<input type="checkbox"/>	Bacterial Vaccines	15171
<input type="checkbox"/>	Anthrax Vaccines	543
<input type="checkbox"/>	Autovaccines	7
<input type="checkbox"/>	Brucella Vaccine	992
<input type="checkbox"/>	Cholera Vaccines	1205
<input type="checkbox"/>	Diphtheria-Tetanus-acellular Pertussis Vaccines	511
<input type="checkbox"/>	Diphtheria-Tetanus-Pertussis Vaccine	2147
<input type="checkbox"/>	Diphtheria-Tetanus Vaccine	290
<input type="checkbox"/>	Escherichia coli Vaccines	253
<input type="checkbox"/>	Haemophilus Vaccines	2241
<input type="checkbox"/>	Lyme Disease Vaccines	167
<input type="checkbox"/>	Meningococcal Vaccines	1911
<input type="checkbox"/>	Pertussis Vaccine	4100
<input type="checkbox"/>	Plague Vaccine	412
<input type="checkbox"/>	Pseudomonas Vaccines	57
<input type="checkbox"/>	Rickettsial Vaccines	107
<input type="checkbox"/>	Salmonella Vaccines	345

Search construction: Techniques

□ Subheadings

The screenshot shows the MeSH (Medical Subject Heading) interface. At the top left, it says "MeSH NLM Controlled Vocabulary". In the center, there is a search bar with "MeSH" entered and a dropdown arrow. To the right of the search bar are links for "Limits", "Advanced search", and "Help". Below the search bar are "Search" and "Clear" buttons. Underneath the search bar, there is a "Display Settings" dropdown set to "Full" and a "Send to" dropdown. The main content area is titled "Vaccines" and includes a definition: "Suspensions of killed or attenuated microorganisms (bacteria, viruses, fungi, protozoa, or rickettsiae), antigenic proteins derived from them, or synthetic constructs, administered for the prevention, amelioration, or treatment of infectious and other diseases." Below the definition, there are "PubMed search builder options" and a link for "Subheadings:". A grid of 15 subheading options is listed, each with an unchecked checkbox: administration and dosage, adverse effects, analysis, biosynthesis, blood, chemical synthesis, chemistry, classification, complications, contraindications, diagnostic use, economics, genetics, history, immunology, isolation and purification, legislation and jurisprudence, metabolism, microbiology, pharmacokinetics, pharmacology, poisoning, radiation effects, standards, supply and distribution, therapeutic use, toxicity, and virology. At the bottom left, there are two more options: "Restrict to MeSH Major Topic." and "Do not include MeSH terms found below this term in the MeSH hierarchy." At the bottom right, there is a "PD-GOV" logo.

"Vaccines/economics"[majr] AND "public health"[majr]

Search construction: Techniques

□ Floating subheadings

Ovid MEDLINE (part of a search)

1. exp Arthritis, Rheumatoid/
2. exp Inflammatory Bowel Diseases/
3. cuc.tw.
4. chronic ulcerative colitis.tw.
5. crohn*.tw.
6. ibd.tw.
7. rheumatoid arthritis.tw.
8. or/1-7
9. exp Postoperative Complications/
10. exp Perioperative Care/
- 11. su.fs.**
12. or/9-11
13. 8 and 12

PubMed (part of a search)

("inflammatory bowel diseases"[mesh] OR "chronic ulcerative colitis" OR cuc[title/abstract] OR crohn[title/abstract] OR "crohn's" [title/abstract] OR crohns[title/abstract] OR ibd[title/abstract] OR "rheumatoid arthritis" [title/abstract]) AND ("postoperative complications"[mesh] OR "perioperative care"[mesh] OR **"surgery"**[Subheading] OR "post operative"[title/abstract] OR "postoperative"[title/abstract])

Search construction: Filters

- A predefined search designed to target specific study methodologies (RCTs, Cohort, Systematic Reviews)
- Use a validated filter (whenever possible)

- Example: PubMed Clinical Queries – Specific, Therapy
 - ▣ (randomized controlled trial[Publication Type] OR (randomized[Title/Abstract] AND controlled[Title/Abstract] AND trial[Title/Abstract]))
 - ▣ 93% Sensitive
 - ▣ 97% Specific

Search construction: Evaluation

- Important to validate your search in each database
- Make sure search captures all seminal articles
 - ▣ Err on the side of overinclusion – once a study is eliminated from the search process, it is unlikely to be reconsidered
- How:
 - ▣ Cross search set of sentinel papers with your final search
 - ▣ (Set of Papers) NOT (Final Search) Dfis
- Save searches for reporting
 - ▣ Many databases have the option to create accounts to save searches/article collections

Sources*

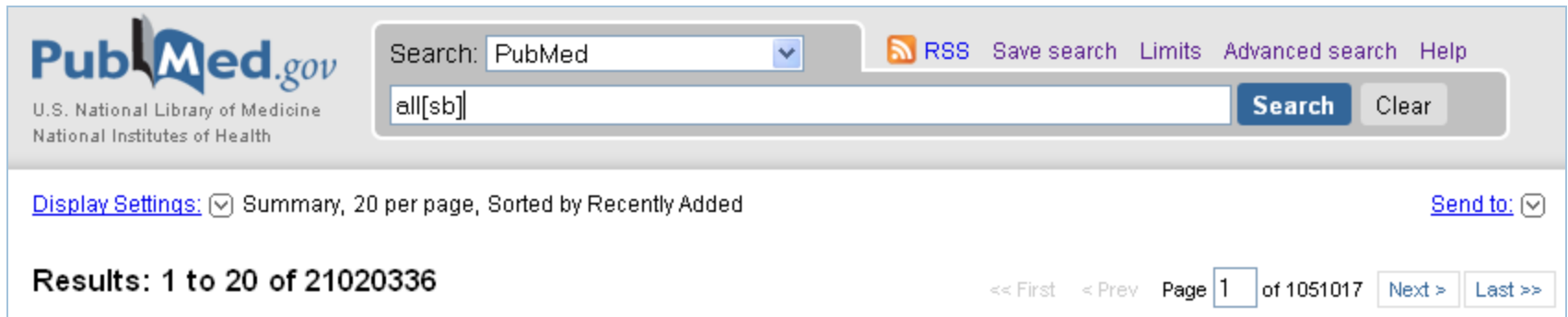
- PubMed
- Ovid MEDLINE
- EMBASE
- Scopus
- ISI Web of Knowledge
- PsycINFO
- CINAHL
- Cochrane Database of Systematic Reviews
- Conference Papers Index
- ClinicalTrials.gov
- Proquest Theses & Dissertations
- CABI
- Google Scholar
- Sociological Abstracts
- And others...

Sources: Things to Consider

- Database coverage in terms of:
 - Dates and currency
 - Language(s)
 - Geographic area(s)
 - Material types (journals, books, reports)
 - Sources Indexed

Sources: PubMed (pubmed.gov)

- Primary biomedical database
- 20+ million citations
- Native interface for MEDLINE dataset
- Citations indexed with MeSH



PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

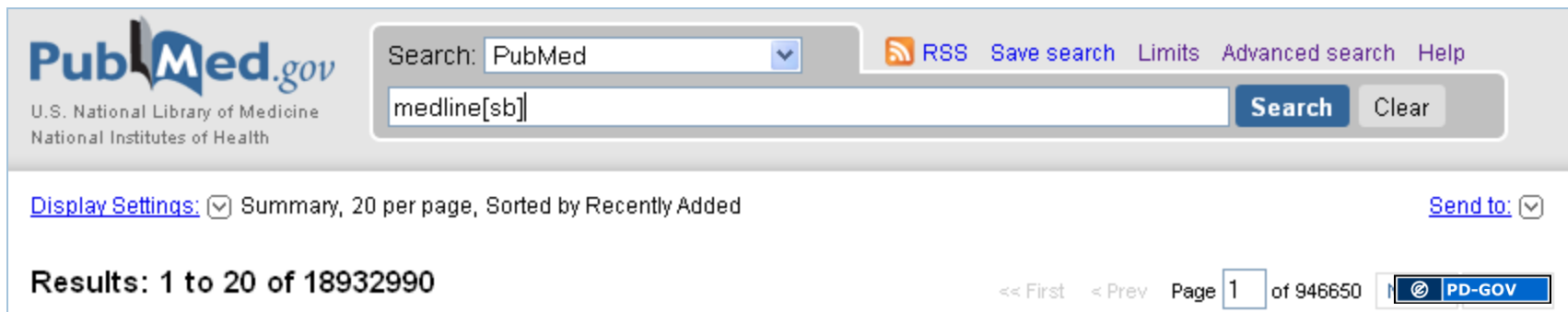
Search: PubMed [v]
all[sb] [Search] [Clear]

RSS Save search Limits Advanced search Help

Display Settings: [v] Summary, 20 per page, Sorted by Recently Added [Send to: v]

Results: 1 to 20 of 21020336

<< First < Prev Page 1 of 1051017 Next > Last >>



PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed [v]
medline[sb] [Search] [Clear]

RSS Save search Limits Advanced search Help

Display Settings: [v] Summary, 20 per page, Sorted by Recently Added [Send to: v]

Results: 1 to 20 of 18932990

<< First < Prev Page 1 of 946650 [PD-GOV]

Display Settings: Summary, 20 per page, Sorted by Recently Added

Send to:

Filter your results:

Results: 1 to 20 of 179559

<< First < Prev Page 1 of 8978 Next > Last >>

All (179559)

Free Full Text (31403)

Review (22206)

Manage Filters

[The role of cardiac magnetic resonance in the evaluation of patients presenting with suspected or confirmed acute coronary syndrome.](#)

1. Budge LP, Salerno M.
Cardiol Res Pract. 2011;2011:605785. Epub 2011 Oct 19.
PMID: 22028981 [PubMed - in process]

[Neighborhood Variation in Rate of Revascularization among Acute Myocardial Infarction Patients in New York City.](#)

2. Negassa A, Fang J.
Cardiol Res Pract. 2011;2011:348527. Epub 2011 Oct 19.
PMID: 22028980 [PubMed - in process]

[Hypertension as a risk factor: is it different in ischemic stroke and acute myocardial infarction comparative cross-sectional study?](#)

3. Hasan ZN, Hussein MQ, Haji GF.
Int J Hypertens. 2011;2011:701029. Epub 2011 Oct 20.
PMID: 22028953 [PubMed - in process]

[Five-year prognosis in an incident cohort of people presenting with acute myocardial infarction.](#)

4. Simpson CR, Buckley BS, McLernon DJ, Sheikh A, Murphy A, Hannaford PC.
PLoS One. 2011;6(10):e26573. Epub 2011 Oct 20.
PMID: 22028911 [PubMed - in process]

[Quantifying the evolution of vascular barrier disruption in advanced atherosclerosis with semipermeant nanoparticle contrast agents.](#)

5. Zhang H, Zhang L, Myerson J, Bibee K, Scott M, Allen J, Sicard G, Lanza G, Wickline S.
PLoS One. 2011;6(10):e26385. Epub 2011 Oct 18.

Related searches

Titles with your search terms

10964 free full-text articles in PubMed Central

Find related data

Search details

"myocardial infarction"[MeSH Terms] OR ("myocardial"[All Fields] AND "infarction"[All Fields]) OR "myocardial infarction"[All Fields] OR ("heart"[All Fields] AND

Search

PD-GOV

See more

Search: PubMed

Limits Advanced search Help

Search Clear

Display Settings: Abstract

Send to:



J Am Coll Health. 2010 Nov-Dec;59(3):151-8.

Screening and brief interventions for alcohol use in college health centers: a review.

Seigers DK, Carey KB.

Center for Health and Behavior, Syracuse University, Syracuse, New York 13244-2340, USA. dkseiger@syr.edu

Abstract

OBJECTIVES: to provide a critical review of the efficacy of brief interventions for **alcohol** use in college health centers.

METHODS: studies were included if (a) they examined brief intervention trials that were conducted in college- or university-based student health centers or **emergency departments**, and (b) they provided pre-post data to estimate change.

RESULTS: twelve studies suggested that **screening** and brief interventions in these settings are acceptable, feasible, and promote risk reduction.

CONCLUSIONS: findings support continued use of time-limited, single-session interventions with motivational interviewing and feedback components.

PMID: 21186444 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms

Publication Types

Review

MeSH Terms

Adolescent

Adult

Alcohol Drinking/epidemiology*

Alcoholism/epidemiology*

Female

Humans

Male

Mass Screening/methods*

Mass Screening/statistics & numerical data

Public Health

Risk-Taking*

Student Health Services/statistics & numerical data*

United States/epidemiology

Young Adult

LinkOut - more resources

Related citations

Brief screening and intervention for alcohol and drug use in a college str [J Am Coll Health. 2010]

Alcohol use in students seeking primary care treatment at university h [J Am Coll Health. 2010]

Screening for high-risk drinking in a college student health [J Stud Alcohol Drugs Suppl. 2009]

Review Screening and brief intervention for underage drinkers. [Mayo Clin Proc. 2010]

Review Heavy drinking in college students: who is at risk and what is being [J Gen Psychol. 2006]

See reviews...

See all...

Recent activity

Turn Off Clear

Screening and brief interventions for alcohol use in college health centers: a r... PubMed

("Alcoholism"[mh] OR "Alcoholic Intoxication"[mh] OR "Alcohol Dri... (9 PubMed

A randomised controlled trial of extended brief intervention for alcohol depende PubMed

medline[sb] (18932990) PubMed

all[sb] (21020336) PubMed

See more...

Search: MeSH Save search Limits Advanced search Help

Search Clear

Display Settings: Summary [Send to:](#)

Results: 2

- [Alcoholism](#)
 1. A primary, chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is often progressive and fatal. It is characterized by impaired control over drinking, preoccupation with the drug alcohol, use of alcohol despite adverse consequences, and distortions in thinking, most notably denial. Each of these symptoms may be continuous or periodic. (Morse & Flavin for the Joint Commission of the National Council on **Alcoholism** and Drug Dependence and the American Society of Addiction Medicine to Study the Definition and Criteria for the Diagnosis of **Alcoholism**: in JAMA 1992;268:1012-4)

- [National Institute on Alcohol Abuse and Alcoholism \(U.S.\)](#)
 2. Component of the NATIONAL INSTITUTES OF HEALTH. It conducts research focused on improving the treatment and prevention of **alcoholism** and alcohol-related problems to reduce the health, social, and economic consequences of this disease. NIAAA, NIMH, and NIDA were created as coequal institutes within the Alcohol, Drug Abuse and Mental Health Administration in 1974. It was established within the NATIONAL INSTITUTES OF HEALTH in 1992.
Year introduced: 2008

PubMed search builder

Add to search builder AND ▼

Search PubMed

Find related data

Database: Select ▼

Find items

Search details

```
"alcoholism"[MeSH Terms] OR
alcoholism[Text Word]
```

Search See more...

Recent activity

- [Turn Off](#) [Clear](#)
- 🔍 alcoholism (2) MeSH

 - 🔍 vaccines (61) MeSH

 - 📄 Screening and brief interventions for alcohol use in college health centers: a r... PubMed

 - 🔍 ("Alcoholism"[mh] OR "Alcoholic Intoxication"[mh] OR "Alcohol Dri... PubMed

Sources: Ovid MEDLINE

- Different interface to search MEDLINE dataset
- Heavily used for systematic reviews
- Provides additional search functionality (adjacency)
- Uses MeSH (like PubMed)

The screenshot displays the Ovid MEDLINE search interface. At the top, there are navigation tabs: "Search" (selected), "Journals", "Books", and "My Workspace". Below these are links for "Basic Search", "Find Citation", "Search Tools", "Search Fields", "Advanced Search", and "Multi-Field Search". A section titled "Change Ovid Resources" shows "Ovid Resources: Ovid MEDLINE(R) 1948 to June Week 5 2011". Search options include "Keyword" (selected), "Author", "Title", and "Journal". A search input field and a "Search" button are present. A "Limits" section is expanded, showing a checked "Map Term to Subject Heading" option and several unchecked filters: "Abstracts", "Review Articles", "English Language", "Humans", and "Evidence Based Medicine Reviews". A "Publication Year" range is set with dropdown menus. At the bottom of the limits section are "Additional Limits" and "Edit Limits" buttons.

[Search](#)
[Journals](#)
[Books](#)
[My Workspace](#)

Your term mapped to the following Subject Headings:

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

i Any term you select will automatically be exploded to include all narrower terms. To select a term without exploding, clear the Explode checkbox for that term.

Term mapped through permuted index

Include All Subheadings

Combine selections with:

Select	Subject Heading	Auto Explode	Focus	Scope
<input checked="" type="checkbox"/>	Alcoholism	<input checked="" type="checkbox"/>	<input type="checkbox"/>	i
<input type="checkbox"/>	"National Institute on Alcohol Abuse and Alcoholism (U.S.)"	<input type="checkbox"/>	<input type="checkbox"/>	i
<input type="checkbox"/>	alcoholism.mp. <i>search as Keyword</i>			

? Hints:




- Click on a Subject Heading 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).
- If you wish to see the scope note for any term or heading, click on the information [i](#) icon, when available.

Sources: Ovid MEDLINE

Search Journals Books My Workspace

▼ Search History (3 searches) (Click to close)

View Saved

<input type="checkbox"/>	# ▲	Searches	Results	Search Type	Actions
<input type="checkbox"/>	1	((glycosylated or glycated) adj hemoglobin).mp.	5835	Advanced	 Display More >>
<input type="checkbox"/>	2	((sugar or glucose) adj3 blood).mp.	136431	Advanced	 Display More >>
<input type="checkbox"/>	3	((glucose or sugar) adj (control or level)).mp.	13101	Advanced	 Display More >>

Remove Selected

Save Selected

Combine selections with:

Save Search History

[Basic Search](#) | [Find Citation](#) | [Search Tools](#) | [Search Fields](#) | [Advanced Search](#) | [Multi-Field Search](#)

▼ [Change Ovid Resources](#)

Ovid Resources:  **Ovid MEDLINE(R)** 1948 to October Week 4 2011

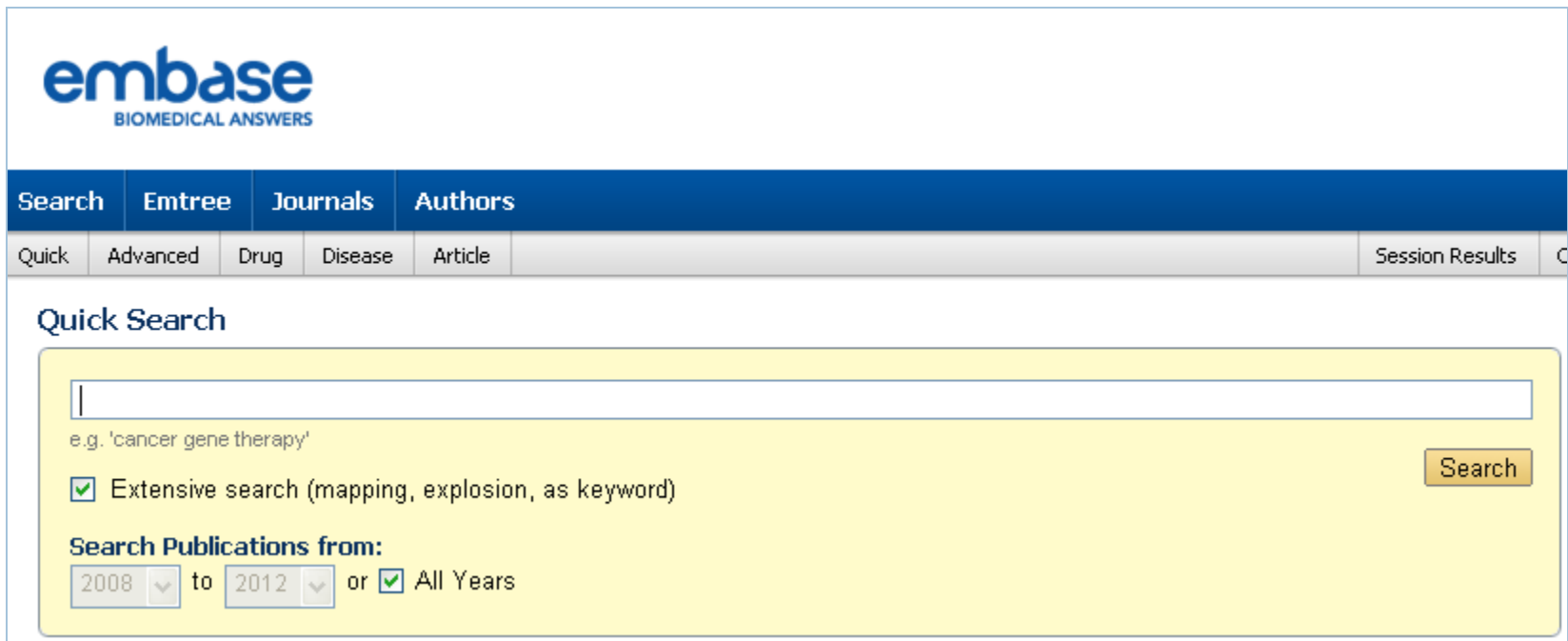
Keyword Author Title Journal

▼ **Limits** (Click to close)

Map Term to Subject Heading

Sources: EMBASE

- Similar to PubMed, Ovid
- Indexes many more international journals than MEDLINE
- Uses Emtree
- Includes MEDLINE, unless you NOT out



The screenshot displays the EMBASE website interface. At the top left is the logo "embase BIOMEDICAL ANSWERS". Below the logo is a navigation bar with tabs for "Search", "Emtree", "Journals", and "Authors". Under the "Search" tab, there are sub-tabs for "Quick", "Advanced", "Drug", "Disease", and "Article". To the right of these sub-tabs are "Session Results" and a partial "C" tab. The main content area is titled "Quick Search" and features a large search input field. Below the input field is a text prompt "e.g. 'cancer gene therapy'". There is a checked checkbox for "Extensive search (mapping, explosion, as keyword)". Below this is a section titled "Search Publications from:" with two dropdown menus showing "2008" and "2012", followed by "to" and "or" with a checked checkbox for "All Years". A "Search" button is located to the right of the input field.



Emtree

Query Builder

Build a multi-term search query

Find Term **Browse by Facet**

vaccine

Type word or phrase (without quotes)

Find Term

For term: **'vaccine'**

Extend your search: Explosion As major focus

[Take this query to Drug Search](#) or [Add to Query Builder](#) ↗

[Emtree](#)

- chemicals and drugs
 - biologic factors and agents acting on the immune system
 - biological product
 - vaccine 227,062 Records
 - [acellular vaccine](#)
 - [Alzheimer disease vaccine](#)
 - [amebiasis vaccine](#)
 - [autovaccine](#)
 - [bacterial vaccine](#)
 - [cancer vaccine](#)
 - [canvaxin](#)
 - [chorionic gonadotropin vaccine](#)
 - [contraceptive vaccine](#)
 - [dendritic cell vaccine](#)
 - [diploid cell vaccine](#)
 - [DNA vaccine](#)
 - [edible vaccine](#)
 - [encephalitis vaccine](#)



Drug Search

Drug Name:

e.g. 'low molecular weight heparin'

Map to preferred terminology (with spell check)
 Also search as free text
 Include sub-terms/derivatives (explosion search)
 Search terms must be of major focus in articles found

Drug Subheadings:

- None
- Adverse drug reaction
- Clinical trial
- Drug administration

Routes of Drug Administration:

- None
- Buccal drug administration
- Epidural drug administration
- Inhalational drug administration

Or And

Hold down the Shift, Ctrl, or "Apple" key to select or deselect multiple items

Search Publications from:

2008 to 2012 or All Years

Records from:

Embase Embase Classic MEDLINE

Quick Limits:

Humans With abstract Priority journals Only in English Article in Press
 Animals In Process With molecular sequence number With clinical trial number
 Records added from to

(dd/mm/yyyy) (dd/mm/yyyy)

Advanced Limits:

[+ expand all](#) [- collapse all](#)

+ Evidence Based Medicine:

Limits selected: none

+ Publication Types:

Limits selected: none

Sources: ISI Web of Knowledge

- Includes Science Citation Index*, Social Science Citation Index, and Arts & Humanities Citation Index
- Includes conference proceedings for Science and Social Science
- Includes 38 million + citations from 1900 – present
- Good for searches expanding beyond medical field

Sources: ISI Web of Knowledge

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141. Title: **Testing the reliability and validity of the Self-Efficacy for Exercise Scale**
Author(s): Resnick B; Jenkins LS
Source: NURSING RESEARCH Volume: 49 Issue: 3 Pages: 154-159 DOI: 10.1097/00006199-200005000-00007
Published: **MAY-JUN 2000**
Times Cited: **57** (from All Databases)

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142. Title: **Exercise-related injuries among women: Strategies for prevention from civilian and military studies**
Author(s): Gilchrist Julie; Jones Bruce H.; Sleet David A.; et al.
Source: Morbidity and Mortality Weekly Report Volume: 49 Issue: RR-2 Pages: 15-33 Published: **March 31, 2000**
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- SOCIAL SCIENCES
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Subject Areas Refine

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- PUBLIC ENVIRONMENTAL

Sources: Scopus

- Nearly 19,000 titles
 - ▣ 18,000 peer-reviewed
 - ▣ 1,800+ open access
 - ▣ 400 trade publications
- 45.5 million records
 - ▣ 24.5 million with references dating to 1996
 - ▣ 21 million dating back to 1823
- Updated daily
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- Citation Tracker
- Author Identifier
 - ▣ Affiliation search
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Sources: Scopus

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 FAIR USE

Sources: Grey literature

- “Information produced on all levels of government, academic, business and industry in electronic and print formats not controlled by commercial publishing, i.e., where publishing is not the primary activity of the producing body”
- Types
 - ▣ Conference abstracts (Conference Papers Index)
 - ▣ Clinical trials (ClinicalTrials.gov)
 - ▣ Government reports, documents (.gov, CABI)
 - ▣ Dissertations (ProQuest Dissertations and Theses)
 - ▣ Unpublished manuscripts
 - Unpublished studies can be a good source of unreported negative results

Sources: Other options

- Examine the references of articles of relevance
 - ▣ Included studies and relevant reviews
- Use cited by features
- Contact authors
- Snowballing (esp for complex questions or interventions)
- Contact companies, organizations, societies, etc
- Hand search important journals (by Impact Factor, perhaps)
- Search for ongoing studies (prelim data)
 - ▣ Clinicaltrials.gov ; controlled-trials.com (ISRCTN)
- Citation tracking

Search Completion

- Documentation
- Reporting
- Citation Management

Search completion: Reporting

- See PRISMA statement
 - “The aim of the PRISMA Statement is to help authors report a wide array of systematic reviews to assess the benefits and harms of a health care intervention. PRISMA focuses on ways in which authors can ensure the transparent and complete reporting of systematic reviews and meta-analyses.”



PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	



Search completion: Reporting

- See Cochrane Handbook
 - <http://www.cochrane-handbook.org/>
 - Part 2, Chapter 6, Section 6.1: “Documenting the Search Process”:

- “It should be borne in mind at the outset that the full search strategies for each database will need to be included in an Appendix of the review.”

Search completion: Reporting

- See Cochrane Handbook
 - <http://www.cochrane-handbook.org/>
 - Section 6.6

- In study flow diagram:
 - number of unique records identified by the searches;
 - number of records excluded after preliminary screening (e.g. of titles and abstracts); and
 - number of records retrieved in full text

Search completion: Reporting

- See Cochrane Handbook
 - <http://www.cochrane-handbook.org/>
 - Section 6.6

- In abstract:
 - List all databases searched.
 - Note the dates of the last search for each database or the period searched.
 - Note any language or publication status restrictions (but refer to Section [6.4.9](#)).
 - List individuals or organizations contacted.”

Search completion: Reporting

- See Cochrane Handbook

- <http://www.cochrane-handbook.org/>

- Section 6.6

- In methods:

- List all databases searched.

- Note the dates of the last search for each database AND the period searched.

- Note any language or publication status restrictions

- List grey literature sources.

- List individuals or organizations contacted.

- List any journals and conference proceedings specifically handsearched for the review.

- List any other sources searched (e.g. reference lists, the internet).

Search completion: Citation mgmt

	Endnote	Refworks	Zotero
Cost	\$105	\$100*	\$0
Web-based	No (and yes)	Yes	Yes (Firefox, Chrome, others)
Database imports	700+	800+	Some (not EMBASE, but YouTube, Amazon)
Output styles	3700+ (customize)	800+ (customize)	1250+ (customize)
References	Unlimited (100000)	Unlimited	Unlimited
Learning curve	High	Lowish	Low
File attachments	Yes	Yes (limited space)	Yes (not easy to share)
Collaborate	Best for single users; Endnote web	Shared account	Public groups

Source: <http://guides.lib.umich.edu/citationmanagement>

Search completion: Citation mgmt

Distinguishing Characteristics

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Source: <http://guides.lib.umich.edu/citationmanagement>

Search completion: Citation mgmt

□ Customization:

- ▣ Most citation management products allow for varying levels of customization. If key elements of articles (such as the reason why they are important to the systematic review) do not appear in the standard citation formation, you can edit/annotate for key data.

Recap

- Spend time developing your search
- Search multiple databases
- Test your searches
- Take notes during process to facilitate reporting
- Manage citations
- Consult an expert searcher
- Search again:
 - ▣ Locate comments on & reviews of studies found
 - ▣ Find subsequent studies which confirm, refute or refine earlier ones
 - ▣ Identify authors of studies so their other work can be searched and evaluated