

Workshop
**Systematic Literature
Retrieval in PubMed**

Who are we?



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intranet.erasmusmc.nl/medbib | medbib.erasmusmc.nl

Medische Bibliotheek Erasmus MC

2

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

vitamins and hormones within the field of clinical dermatology

Search

Advanced Create alert Create RSS User Guide

Found 1 result for vitamins and hormones within the field of clinical dermatology

Save Email Send to Display options

Review > J Am Acad Dermatol. 1997 Jun;36(6 Pt 2):S96-103.
doi: 10.1016/s0190-9622(97)70050-1.

FULL TEXT LINKS
ELSEVIER
FULLTEXT ARTICLES

ACTIONS

Cite

Pharmacology and chemistry of adapalene

B Shroot¹, S Michel

Affiliations + expand

PMID: 9204085 DOI: 10.1016/s0190-9622(

vitamins and hormones within the
field of clinical dermatology

Abstract

Background: Retinoid research in the field of topical tretinoin and oral isotretinoin in ti binding proteins for retinoic acid mediating hormones.

Objective: We sought molecules with an og tolerance for topical acne therapy.

1 result

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

vitamins hormones clinical dermatology

Search

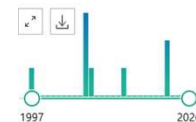
Advanced Create alert Create RSS User Guide

Found 7 results for vitamins hormones clinical dermatology

Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS
Edit custom filters

RESULTS BY YEAR



PUBLICATION DATE

- 1 year
- 5 years
- 10 years
- Custom Range

7 results

1 Management of Coexisting Bullous Pemphigoid and Psoriasis: A Review.
Hsieh CY, Tsai TF.
Cite Am J Clin Dermatol. 2022 Nov;23(6):869-879. doi: 10.1007/s40257-022-00719-7. Epub 2022 Aug 14.
PMID: 35964277 Review.
Antibiotics with anti-inflammatory properties and vitamins (niacinamide and acitretin) exert modest

vitamins hormones clinical
dermatology

2
Cite

7 results

NIH National Library of Medicine National Center for Biotechnology Information Log in

PubMed® vitamins hormones clinical dermatology Search

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Best match Display options

MY NCBI FILTERS 280 results Page 1 of 28

RESULTS BY YEAR

1989 2023

TEXT AVAILABILITY

Abstract

Free full text

Full text

ARTICLE ATTRIBUTE

1 Pathophysiology, **Clinical** Presentation, and Treatment of Psoriasis: A Review. Armstrong AW, Read C. JAMA. 2020 May 19;323(19):1945-1960. doi: 10.1001/jama.2020.4006. PMID: 32427307

2

280 results

(same search in 2023)
vitamins hormones clinical dermatology

280 results

NIH National Library of Medicine National Center for Biotechnology Information Log in

PubMed® hormones clinical dermatology vitamins Search

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS 492 results Page 1 of 50

RESULTS BY YEAR

1963 2026

PUBLICATION DATE

1 year

5 years

10 years

Custom Range

1 Molecular insights into the role of **vitamin D** in atopic dermatitis: pathogenesis, diagnosis, and emerging therapies. Liu P, Cui L, Peng G, Han X. Front Immunol. 2026 Mar 30;17:1739412. doi: 10.3389/fimmu.2026.1739412. eCollection 2026. PMID: 41983140 Free PMC article. Review.

2

492 results

hormones clinical dermatology
vitamins

492 results

NIH National Library of Medicine National Center for Biotechnology Information Log in

PubMed® hormones clinical vitamins dermatology Search

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS 544 results Page 1 of 55

RESULTS BY YEAR

1963 2026

PUBLICATION DATE

1 year

5 years

10 years

Custom Range

1 Molecular insights into the role of **vitamin D** in atopic dermatitis: pathogenesis, diagnosis, and emerging therapies. Liu P, Cui L, Peng G, Han X. Front Immunol. 2026 Mar 30;17:1739412. doi: 10.3389/fimmu.2026.1739412. eCollection 2026. PMID: 41983140 Free PMC article. Review.

2

544 results

hormones clinical vitamins dermatology

544 results

NIH National Library of Medicine National Center for Biotechnology Information Log in

PubMed® ("Vitamins"[Mesh]) AND "Hormones"[Mesh] AND "Dermatology"[Mesh] Search

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS No results were found.

PUBLICATION DATE

1 year

5 years

10 years

Custom Range

TEXT AVAILABILITY

Abstract

Free full text

Full text

ARTICLE ATTRIBUTE

Associated data

Filters applied: Clinical Trial. Clear all

0 results

("Vitamins"[Mesh]) AND "Hormones"[Mesh] AND "Dermatology"[Mesh]
Filters: Clinical Trial

0 results

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

Search: ("Vitamins"[Mesh]) AND "Hormones"[Mesh] AND "Skin Diseases"[Mesh]

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS Edit custom filters

8 results

RESULTS BY YEAR

PUBLICATION DATE

1 year
 5 years
 10 years
 Custom Range

TEXT AVAILABILITY

Filters applied: Clinical Trial. Clear all

1 Supplementary zinc and vitamin D in management of symptomatic oral lichen planus: a three-arm randomized clinical trial.
Cite: Aboushousha A, Kamal Y, Ali S.

2 ("Vitamins"[Mesh]) AND "Hormones"[Mesh] AND "Skin Diseases"[Mesh]
Filters: Clinical Trial

3

8 results

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PubMed®

Search: #2 AND #6

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MY CUSTOM FILTERS Edit custom filters

No results were found.

PUBLICATION DATE

1 year
 5 years
 10 years
 Custom Range

TEXT AVAILABILITY

Abstract
 Free full text
 Full text

ARTICLE ATTRIBUTE

Associated data

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

Search: vitamin* hormon* clinic* skin* disease*

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MY CUSTOM FILTERS Edit custom filters

265 results

RESULTS BY YEAR

PUBLICATION DATE

1 year
 5 years
 10 years
 Custom Range

1 Molecular insights into the role of vitamin D in atopic dermatitis: pathogenesis, diagnosis, and emerging therapies.
Cite: Liu P, Cui L, Peng G, Han X.
Front Immunol. 2026 Mar 30;17:1739412. doi: 10.3389/fimmu.2026.1739412. eCollection 2026.
PMID: 41983140 Free PMC article. Review.

2 vitamin* hormon* clinic* skin* disease*

3

265 results

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

Search: vitamin* hormon* clinic* "skin* disease**"

Advanced Create alert Create RSS User Guide

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MY CUSTOM FILTERS Edit custom filters

61 results

RESULTS BY YEAR

PUBLICATION DATE

1 year
 5 years
 10 years
 Custom Range

1 Molecular insights into the role of vitamin D in atopic dermatitis: pathogenesis, diagnosis, and emerging therapies.
Cite: Liu P, Cui L, Peng G, Han X.
Front Immunol. 2026 Mar 30;17:1739412. doi: 10.3389/fimmu.2026.1739412. eCollection 2026.
PMID: 41983140 Free PMC article. Review.

2 vitamin* hormon* clinic* "skin* disease**"

3

61 results

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

Search: vitamin* OR hormon* clinic* "skin* disease**"

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MY CUSTOM FILTERS
Edit custom filters

RESULTS BY YEAR

1945 2026

PUBLICATION DATE

1 year 5 years 10 years Custom Range

2,610 results

Page 1 of 261

Drug repurposing for skin pigmentation disorders: Discovery of novel tyrosinase inhibitors.

Cite: Khan M, Liang T, Zheng F, Zhang H, Zhang T, Feng X, Gao P, Li J, Yang L. Bioorg Chem. 2026 May 2;178:109942. doi: 10.1016/j.bioorg.2026.109942. Online ahead of print. PMID: 42102696

vitamin* OR hormon* clinic* "skin disease**"

2,610 results

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PubMed®

Search: vitamin* OR hormon* clinical dermatology

Advanced Create alert Create RSS User Guide

Save Email Send to Sort by: Best match Display options

MY CUSTOM FILTERS
Edit custom filters

RESULTS BY YEAR

1913 2027

PUBLICATION DATE

1 year 5 years 10 years Custom Range

350,506 results

Page 1 of 35,051

Pathophysiology, Clinical Presentation, and Treatment of Psoriasis: A Review.

Cite: Armstrong AW, Read C. JAMA. 2020 May 19;323(19):1945-1960. doi: 10.1001/jama.2020.4006. PMID: 32427307 Review.

For patients with mild psoriasis, topical agents remain the mainstay of treatment, and they include topical corticosteroids, vitamin D analogues, calcineurin inhibitors, and tazarotene. The American

vitamin* OR hormon* clinical dermatology

350,506 results

NIH National Library of Medicine
National Center for Biotechnology Information

PubMed®

Search: vitamin* OR hormon* AND clinic* AND "skin* disease**"

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MY CUSTOM FILTERS
Edit custom filters

RESULTS BY YEAR

1945 2026

PUBLICATION DATE

1 year 5 years 10 years Custom Range

1,529 results

Page 1 of 153

Drug repurposing for skin pigmentation disorders: Discovery of novel tyrosinase inhibitors.

Cite: Khan M, Liang T, Zheng F, Zhang H, Zhang T, Feng X, Gao P, Li J, Yang L. Bioorg Chem. 2026 May 2;178:109942. doi: 10.1016/j.bioorg.2026.109942. Online ahead of print. PMID: 42102696

vitamin* OR hormon* AND clinic* AND "skin disease**"

1,529 results

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Search: clinic* AND "skin* disease**" AND (vitamin* OR hormon*)

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Save Email Send to Sort by: Most recent Display options

MY CUSTOM FILTERS
Edit custom filters

RESULTS BY YEAR

1945 2026

PUBLICATION DATE

1 year 5 years 10 years Custom Range

1,529 results

Page 1 of 153

clinic* AND "skin* disease**" AND (vitamin* OR hormon*)

1,529 results

clinic* AND "skin* disease**" AND vitamin* OR hormon*

902,436 results

How to search systematically?



1. What is your research question?
2. Which concepts are in this research question?
3. **Group the concepts into elements**

Elements : demarcation / delimitation



Multiple concepts often form one element:

Palliative Care / Terminal illness / Terminally ill / Hospice

Recurrence / Survival / Mortality

How to search systematically?



1. What is your research question?
2. Which concepts are in this research question?
3. Group the concepts into elements
4. **Determine which elements to use**

Reasons not to use an element:

- Too specific element (*only found in full text*)
- Negative elements (*A without B*)
- Order between elements (*A prior to B*)
- Too many elements (*no more than 4*)
- Bias
- Duplicate elements

Elements : bias



specific characteristics

→ **Duration of** breastfeeding and intelligence

judgement

→ **Poor** family functioning, **harsh** parenting and **bullying** behavior of children/adolescent

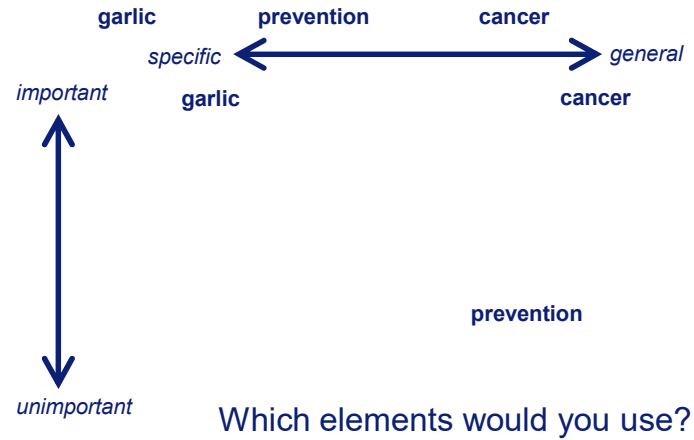
Elements : duplication



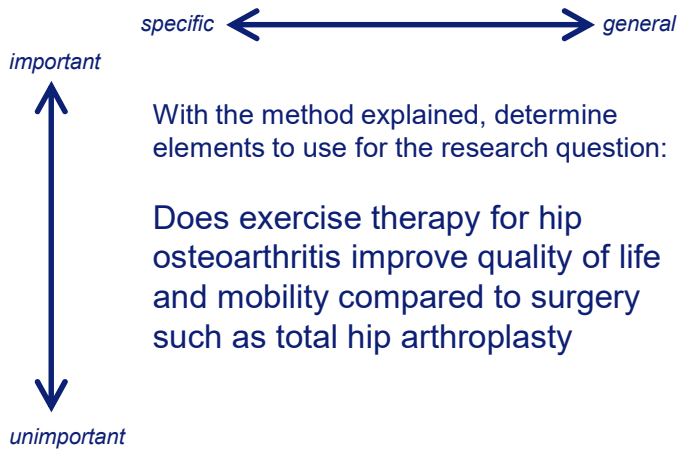
Pre-eclampsia AND pregnant AND women

Lichtenstein therapy AND inguinal hernias

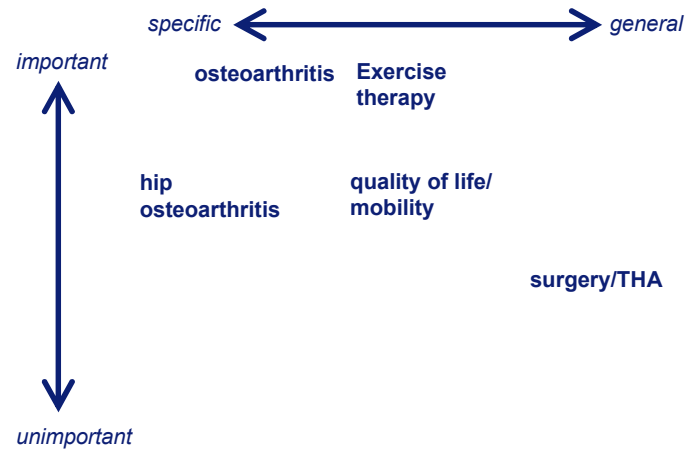
Research question:
Does eating garlic help in the prevention of cancer?



PRACTICUM : elements (10 min)



**exercise therapy | (hip) osteoarthritis |
quality of life/mobility | surgery/THA**



How to search systematically?



1. What is your research question?
2. Which concepts are in this research question?
3. Group the concepts into elements
4. Determine which elements to use

5. Create a *Word document*

- Research question
- Date of search
- Databases used
- Elements
- Synonyms

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Start searching in the MeSH database



For each concept take the most relevant MeSH term(s)
(*don't use MeSH terms that are too general or too specific*)

Neoplasms[mesh]
Cancer Care Facilities[mesh]
Hereditary Breast and Ovarian Cancer Syndrome[mesh]

From the MeSH interface you use:

The **MeSH term** itself → Copy the **exact phrasing** (*including commas*) and add [mesh]

Entry terms → Choose the most relevant terms

- Truncate to find word ending (e.g. neoplas*) also within a phrase
- Use hyphens to search (truncated) phrases (alli*-sativum*)
- Only use terms that are relevant for your question (~~bening~~)
- Skip inversions (~~neoplasms, malignant~~)
- Don't search phrases with words already in search (~~malignant neoplasm~~)

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Hip Osteoarthritis

Osteoarthritis, Hip[mesh]
Hip-Osteoarthritis*
Osteoarthritis-of-Hip*
Coxarthros*
Osteoarthritis-of-the-Hip*

Exercise Therapy

Exercise Therapy[mesh]
Exercise-Prescription*
Rehabilitation-Exercis*
Remedial-Exercis*
Exercise-Therap*
Physical-Activit*-Intervention*

Osteoarthritis

Osteoarthritis[mesh]
Osteoarthr*
Degenerative-Arthrit*
Arthrosis
Arthroses (*Arthros**)
Coxarthros*

Exercise

Exercise [mesh]
Exercis*
Physical-Activit*
Activ*-Break*
Exercise Therapy[mesh]



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Finding more search terms



From the MeSH interface:

Terms from the **Tree** → use as words in title/abstract searching
Colorectal neoplasms

Previous indexing

MeSH added only recently? → previous indexing
Plaque, Atherosclerotic

See also

Related items that partially overlap
Pregnancy – pregnant women

Broader

Kidney transplantation – Organ transplantation

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Finding more search terms



To think about yourself:

Spelling differences (USA/UK)

- Tumor / Tumour
- Organization / Organisation
- Pediatrics/ Paediatrics
- Fetus/ Foetus

Abbreviations

- Partial abbreviations: *sentinel-LN hip-OA*

Opposites:

- Mortality / survival
- Recurrence / disease free

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Finding the right search terms: complications



Combination of multiple MeSH terms in AND relationship:

Bennett's fracture:

(fractures, bone[mesh] AND thumb[mesh] AND metacarpal bones[mesh])

MeSH terms too broad:

Right Ventricle → Heart Ventricles *also includes Left Ventricle*

MeSH terms or narrower terms irrelevant:

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Finding the right search terms



No good MeSH available? What can you do?

- Split one element into two elements and search separately
Postpartum psychosis → 1) psychotic disorders 2) postpartum period
- Try to find (several) specific MeSH terms for broad topics
cardiovascular events → e.g. heart ischemia
- Try [PubReminer](#) to find MeSH terms with relevant references or free text search
second primary tumor

If all this fails: **Start with your own terms and optimize later**

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Finding the right search terms



Special types of MeSH terms:

When found in the MeSH database searching for an element copy these including the field indication between square brackets

[subheading]

Prevention and control [subheading]

[Pharmacological action]

Vitamins [pharmacological action]

[Supplementary concept]

Rimexolone [supplementary concept]

[Publication type]

Evaluation Study [Publication Type]

Do not add [mesh] behind these terms.

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Renal Dialysis [mesh] *Haemodialy**
Renal-Dialy* *Haemodiafiltrat**
Hemodialy*
Extracorporeal-Dialy* *(Dialysis [mesh] AND (Kidney [mesh]*
Kidneys, Artificial [mesh] *OR Kidney Diseases[mesh]))*
Artificial-Kidney*
Blood-Dialy* *Kidney-dialy**
Hemodiafiltration*
Peritoneal-Dialy*
Acetate-Free-Biofiltrat*
CAPD
Renal Replacement Therapy[mesh]
Renal-Replace*
Kidney-Replace*

Homework (in confirmation mail)

- Word document (**max 1 sheet**)
- Choose **one clear and focused** research question
- Group related concepts into Elements
- Decide which elements to use (Important / less important - Specific / general)
- For each **important** element (**max 4 elements; max 10 terms** per element): a list of search terms that are synonyms for that element
 - MeSH terms
 - Entry terms
 - Narrower terms (terms from the tree)
- Use the recommended lay-out (no tables, no punctuation, no extra text, no complete searches)

Homework example

Garlic

Garlic [MeSH]
Allium-sativum*

Cancer

Neoplasms [MeSH]
Cancer*
Tumor*
Carcinom*

Prevention

Prevention and control [subheading]
Preventive medicine [MeSH]
Prophylia*
Protect*

See you next course

Systematic Literature Retrieval in PubMed – part 2

Efficient ways to create a search query from the homework

(AND, OR, (), fieldcodes etc.)

How to reduce or increase number of hits

Workshop

Systematic Literature Retrieval in PubMed (2)

Frequent mistakes

Does exercise therapy for hip osteoarthritis improve quality of life and mobility compared to surgery (such as THA)

Exercise Therapy[mesh]

- Exercise Therapies
- Exercise

Exercise Therapy

- Exercise Therapy[mesh]
- Exercise-therap*
- Therapeutic-exercise*

Osteoarthritis [mesh]

- Osteoarthritis, Hip/therapy [mesh]
- Osteoarthritis, Hip*

Hip Osteoarthritis

- Osteoarthritis, Hip [mesh]
- Hip-Osteoarthr*
- Coxarthros*

Quality of Life[mesh]

- Quality of Life*[mesh]
- Quality* (entry term)

Quality of Life / Mobility

- Quality of Life[mesh]
- Quality-of-Li*
- Mobility Limitation[mesh]
- Mobilit*

Mobility Limitation[mesh]

- Mobi*

Therapeutics[mesh]

Total Hip Replacement*

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How to search systematically?

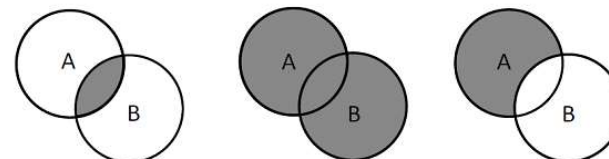
1. What is your research question?
2. Which concepts are in these articles / question?
3. Group the concepts into elements
4. Determine which elements to use
5. Create a *Word document*
6. **Combine synonyms to search strategy**

Boolean operators

Parentheses

Field codes

Boolean operators



garlic
AND
cancer

garlic
OR
allium-sativum

#2
NOT
#1

ALWAYS USE CAPITALS FOR BOOLEAN OPERATORS

priority parentheses: (garlic OR allium-sativum) AND (cancer OR neoplasm)

Parentheses might go wrong when using the interface of PubMed.

demo

Field codes

MeSH terms:

[mesh] exact mesh term (with narrower terms)

Other terms:

[tiab] the exact word or phrase in title or abstract

Advice:

Do not use [all fields]

Too much noise!

From search terms to search strategy

Garlic

Garlic [mesh]

Garlic*

allium-sativum*

(Garlic[mesh] OR Garlic*[tiab] OR
allium-sativum*[tiab]) AND
(neoplasms[mesh] OR
neoplas*[tiab] OR cancer*[tiab]
OR tumor*[tiab] OR tumour*[tiab])

Cancer

Neoplasms [mesh]

Neoplas*

Cancer*

Tumor*

PRACTICUM (together): syntax

Go to medbib.erasmusmc.nl and click the link
Download the document Garlic Cancer Search terms.

Manual search strategy creation:

1. Add field codes [tiab] for non-MeSH terms
2. Remove line breaks and add OR between terms within an element
3. Add parentheses around each element
4. Combine elements with AND
5. Copy and paste the search in PubMed
6. Check if the number of references matches that of the teacher

PRACTICUM (together+individually): syntax (+ break)

Semi-automatic search strategy creation:

Open the word document sent to you by e-mail and copy your own term list in a further blank word document.

1. Use Ctrl-H (find and replace):
 - ****** → ****[tiab]**
 - *Optional repair: (Replace [tiab]- with -)*
 - Manually add [tiab] after each untruncated non-mesh term in your search
2. Select one-by-one each element and replace **^p** → **OR**
 - *Alternative to Word: Google Docs, replace \n (reguliere expressies)*
3. Put parentheses around each element
4. Combine into one search by adding AND between elements
5. Execute the search
6. Write down the number and evaluate: too few/ too many/ just right
7. E-mail the search strategy and your evaluation to info.mb@erasmusmc.nl

How to search systematically?



1. What is your research question?
2. Which concepts are in these articles / question?
3. Group the concepts into elements
4. Determine which elements to use
5. Create a *Word document*
6. Combine synonyms to search strategy
7. **Analyse the results and optimize your query**
 - Errors?
 - Too few or too many?

Analyse the results: check for errors



How do you *know* an error occurred?

Sometimes: **More or fewer hits than expected**

Too often: **NOT!**

Check your query for mistakes

Go to Advanced search. Open the search details and use **Ctrl-F** to search

“ AND ”

“all fields”

Search each element separately to check for errors in parentheses

Sensitive or specific search?



	Sensitive search	Specific search
Goal	Finding as many relevant articles as possible	Most of the found articles are relevant
# of hits	High	Much lower
% noise	~95%	~50%
# of relevant articles missed	Low	Much higher

Too few results?



- Add extra terms
 - Scan results
 - Use Pubreminer
 - OR study type
 - OR Broad Filter
- Generalize specific elements
- Drop less important elements
- 2 elements → 1 element
(A) AND (B) → (A OR B)
- 1 element → 2 elements
(A-B*) → (A) AND (B)
- Use proximity [tiab:~3]

Which articles can answer your question?

Facilitators and barriers in preconception care

Evaluation studies of preconception care

(Preconception Care[mh] OR Preconception-Care*[tiab]) AND
(Facilitator*[tiab] OR barrier*[tiab])

→ **116 results**

(Preconception Care[mh] OR Preconception-Care*[tiab]) AND
(Facilitator*[tiab] OR barrier*[tiab] **OR Evaluation Study [Publication Type]
OR Evaluation*[tiab]**)

→ **279 results**

Which articles can answer your question?

Predictive factors for oronasal fistulas in children treated for cleft lip

Follow up studies of children treated for cleft lip

(Prognosis[mh] OR Risk Factors[mh] OR prognos*[tiab] OR predict*[tiab] OR
risk-factor*[tiab]) AND (Oral Fistula[mh] OR fistula*[tiab]) AND (Cleft Lip[mh]
OR Cleft-Lip*[tiab])

→ **128 results**

(Prognosis[mh] OR Risk Factors[mh] OR prognos*[tiab] OR predict*[tiab] OR
risk-factor*[tiab] **OR Follow-Up Studies[mh] OR Follow-Up[tiab]**) AND
(Oral Fistula[mh] OR fistula*[tiab]) AND (Cleft Lip[mh] OR Cleft-Lip*[tiab])

→ **186 results**

FILTERS

Clinical queries in PubMed

Published and validated filters (search-filter* AND *topic*)

Queries from good systematic reviews

→ Check number of references (~1,000,000)

→ Translating a filter between different interfaces is
difficult

Proximity search in PubMed (advanced)

Hip-osteoarthrit*[tiab] OR osteoarthritis-of-hip*[tiab] OR osteoarthritis-of-the-
hip*[tiab]

5080 results

"Hip osteoarthritis"[tiab:~3]

7642 results

16 missing: Hip-osteoarthrit*[tiab] OR osteoarthritis-of-hips[tiab]

Problematic:

"colorectal neoplasms"[tiab:~3] OR "colorectal cancer"[tiab:~3] OR "colorectal
tumor"[tiab:~3] OR "rectal neoplasms"[tiab:~3] OR "rectal cancer"[tiab:~3] OR
"rectal tumor"[tiab:~3] OR "colon neoplasms"[tiab:~3] OR "colon cancer"[tiab:~3]
OR "colon tumor"[tiab:~3] OR "colonic neoplasms"[tiab:~3] OR "colonic cancer..."

Too few results?

- Add extra terms
 - Scan results
 - Use Pubreminer
 - OR study type
 - OR Broad Filter
- Generalize specific elements
- Drop less important elements
- 2 elements → 1 element
(A) AND (B) → (A OR B)
- 1 element → 2 elements
(A-B*) → (A) AND (B)
- Phrases → proximity [tiab:~3]

Save relevant hits on clipboard

Too many results?

- Remove too general terms
- Specify general elements
- Add an extra element
 - AND study type
 - AND Narrow Filter
- 1 element → 2 elements
(A OR B) → (A) AND (B)
- 2 elements → 1 element
(A) AND (B) → (A-B* OR "A B"[tiab:~3])
- [mesh:noexp]
- Filter for date or language?
- [mj] and [ti]
- Remove noise with NOT

Use of NOT in a search strategy

An extra element with NOT on your query

~~(garlic [mh] OR garlic* [tiab] OR allium-sativum [tiab])
AND
(neoplasms [mh] OR neoplasia* [tiab] OR cancer* [tiab]
OR tumor* [tiab])
NOT
(therapy [sh] OR therap* [tiab] OR treat* [tiab])~~

Safe use of NOT

Be specific:

NOT (neoplasms/therapy[majr] OR cancer-therap*[ti])

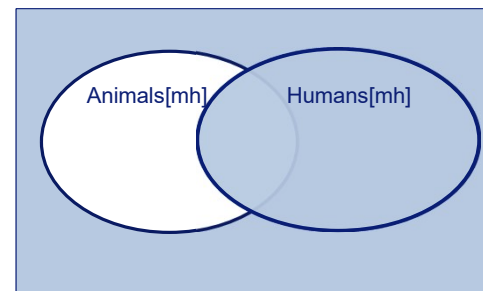
NOT out noise only on a specific term:

- ... hiv[tiab] OR (aids[tiab] NOT hearing-aids[tiab]) OR ...

Or use a double NOT

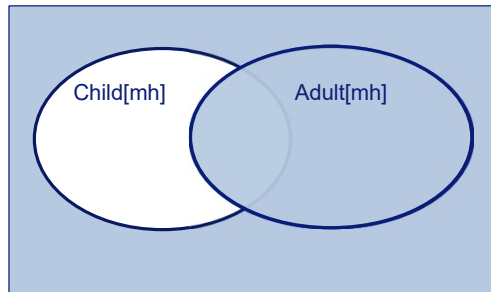
Use a double NOT

NOT (animals[mh] NOT humans[mh])



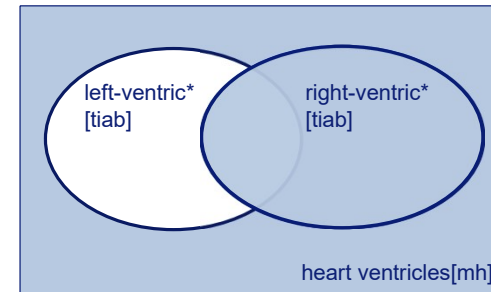
Use a double NOT

NOT (child[mh] NOT adult[mh])



Use a double NOT

AND (heart ventricles[mh] NOT (left-ventric*[tiab] NOT right-ventric*[tiab]))



How to search systematically?

1. What is your research question?
2. Which concepts are in these articles / question?
3. Group the concepts into elements
4. Determine which elements to use
5. Create a *Word document*
6. Combine synonyms to search strategy
7. Use the syntax of the chosen database
8. Analyse the results and optimize your query
9. **Adapt the query to other databases**
 - change the syntax
 - compare other keyword systems and synonyms

Other important databases

PubMed (Medline)

Embase

Medline (Ovid)

Cochrane Central

Web-of-Science

Google Scholar

Use at least these databases for systematic reviews

Scopus

PsycInfo

Cinahl

...

One database is not enough

How to search systematically?



1. What is your research question?
2. Which concepts are in these articles / question?
3. Group the concepts into elements
4. Determine which elements to use
5. Create a *Word document*
6. Combine synonyms to search strategy
7. Use the syntax of the chosen database
8. Analyse the results and optimize your query
9. Adapt the query to other databases

10. Did you find all relevant articles?

- **Yes:** stop searching
- **No:** change your research question and start again

Try to find this article in PubMed:



Dankner R, Agay N, Olmer L, Murad H, Keinan Boker L, Balicer RD, Freedman L. Metformin Treatment and Cancer Risk: Cox Regression Analysis, With Time-Dependent Covariates, of 320,000 Persons With Incident Diabetes Mellitus. *Am J Epidemiol.* 2019;188(10):1794-1800.

1

Did you find enough relevant articles?



Depending on:

1. The absolute number of relevant articles
2. The contents of the databases available and used
3. The quality of indexing by the databases
4. The quality and characteristics of the search engine
5. The quality and presence of an abstract
6. **The quality of the search and experience of the searcher**

Try to find this article in PubMed:



Dankner R, Agay N, Olmer L, Murad H, Keinan Boker L, Balicer RD, Freedman L. Metformin Treatment and Cancer Risk: Cox Regression Analysis, With Time-Dependent Covariates, of 320,000 Persons With Incident Diabetes Mellitus. *Am J Epidemiol.* 2019;188(10):**1794**-1800.

But...

Jones SG. Taking HAART in the fight against HIV/AIDS. Nurs Manage. 2002 May;33(5):25-30.

Jones[1au] 25[pg] 2002[dp]

Summarized (menti)

1. Start your search in a **text document** (MS-Word)
2. Write down the **date** of the search
3. Write down your clear and focused **research question**
4. List the **databases** used
5. Determine which **elements (concepts)** are in the research question
6. Decide whether elements are **important** or **unimportant** and **specific** or more **general**
7. Decide **which elements you should use** for the best search results
8. Open the **MeSH database** and search for the best MeSH term(s) for those elements
9. For those MeSH terms use at least the **MeSH term** and a selection of the **entry terms**, including **narrower terms** as free text search terms and paste them in Word
10. Also use **your own words**, especially if no good MeSH is available
11. Create the syntax with **field codes** [mesh], [tiab] and others, **parentheses** around the elements and **Boolean operators**
12. After you have translated all important elements into a search strategy in this way, open the **PubMed database** and perform your first test search for references
13. Try to **optimize** your search by evaluating and comparing the results until satisfied (*Roadmap*)
14. Save your word document and check for **errors**

Final advice

Practice! Practice! Practice!

Use the method for all questions

Attend other workshops

Embase / reviews / EndNote

Make an appointment