





## **KNOWLEDGE 2 CONNECT**

## **Embase Seminar**





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## Agenda

- Embase content
- Embase indexing (inc. Emtree)
- Workshop with on-line examples

#### What is Embase?

## A biomedical literature database with the most comprehensive journal and conference coverage and indexing

#### Content: Be confident you aren't missing important information

Find all relevant articles that may not otherwise be found by using alternative databases

## Deep full-text indexing: Find relevant articles, no matter where a term is mentioned

All relevant, up-to-date, biomedical information from the research literature

#### **Precise retrieval: Pinpoint the most relevant results**

Deep and focused research using the most powerful retrieval tools

#### How does Embase deliver value?

...by including literature and information resources in a **timely manner** 

Conference proceedings



Scientific Journals



In Press (unpublished)



We make sure you don't miss any biomedical literature

...by reading full-text to identify drugs, diseases, adverse affects, clinical trials, drug trade names, etc.

Deep indexing using own taxonomy (EMTREE)

The only close alternative is reading all the articles

...by enabling advanced search filters to **drill down** a comprehensive search to a relevant and manageable record set

Very powerful search environment

Good precision and recall balance

...by allowing users to **automate searching** and result management



E-mail Alerting



API

QUOSA

Interoperability

Automation and documentation





## **Embase content**

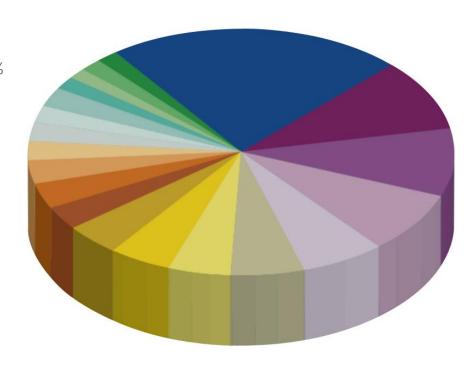
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## **Scope and coverage**

#### Extensive coverage of peer-reviewed biomedical literature



- General Clinical Medicine 11%
- Genetics, Biochemistry & Molecular Biology 10%
- Neurology & Behavioral Medicine 8%
- Microbiology & Infectious Disease 7%
- Cardiology & Hematology 6%
- Psychiatry & Mental Health 6%
- Oncology 5%
- Healthcare Policy & Management 4%
- Allergy & Immunology 4%
- Pediatrics 4%
- Endocrinology & Metabolism 3%
- Obstetrics & Gynecology 3%
- Biomedical Engineering & Medical Devices 3%
- Anesthesiology & Intensive Care 3%
- Gastroenterology 2%
- Respiratory Medicine 2%
- Nephrology & Urology 2%
- Dermatology 2%



Other topics 28%

Including public health, basic biomedical science and topics included from MEDLINE

## Comprehensive content coverage

On average > 5,000 records added each workday

Embase: Now covers over 8,500 journals/30 million records

**Indexed at Embase (over 5,700 titles)** 

Indexed by MEDLINE (e.g. on PubMed) (over 5,500 titles)

#### Over 2,700 journals

Indexed at Embase Unique to Embase

Search:

[embase]/lim

#### Over 3,000 journals

Indexed at Embase
Also covered by MEDLINE

Search:

[embase]/lim AND [medline]/lim

#### Over 2,500 journals

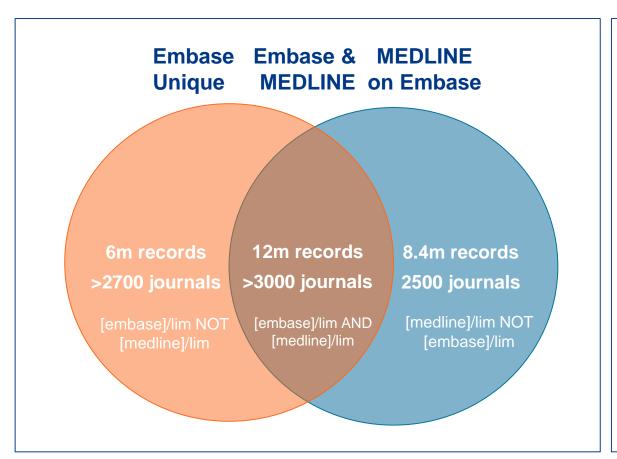
Indexed by MEDLINE Also in MEDLINE

Search:

[medline]/lim NOT [embase]/lim

## Comprehensive content coverage

Includes all of MEDLINE (PubMed) and much more



- Over 2,700 journals not available on MEDLINE
- Much more coverage of non-English content
- Unique coverage of 1.75m conference abstracts from >5,500 conferences (added since 2009)
- In-depth drug, disease & device indexing based on the Emtree Life Science thesaurus with >2x as many indexed terms as MEDLINE thesaurus (MeSH)





# Embase indexing and Emtree

## **Indexing principles**

Indexing for Embase is a manual process performed by trained indexers with a biomedical background, with the exception of articles designated for automatic indexing.



Indexers read and analyze the full text of articles in order to identify relevant concepts, and index them with the most specific Emtree terms.

Scientific Paper

- Comparison of multithomapy done with molichenopy plan special control of the paper of the of the pape

Index terms are controlled by the Emtree thesaurus resulting in consistent coverage of concepts that may be expressed in many different ways in the literature.



## **Embase indexing – what is Emtree?**

#### Easy to search

 Over 71,000 preferred terms and more than 300,000 synonyms that map to the preferred term when searched

# Comprehensive drug and Medical Device searching

- Chemical names, trade names, laboratory/research codes, and more than 31,000 generic drugs and chemicals (FDA, EMEA and WHO)
- Over 3,000 specific terms for general and medical devices (e.g. endoscopes, catheters, prostheses) as well as several thousand terms for related medical procedures, (e.g. endoscopy, catheterization)

#### **Up-to-date**

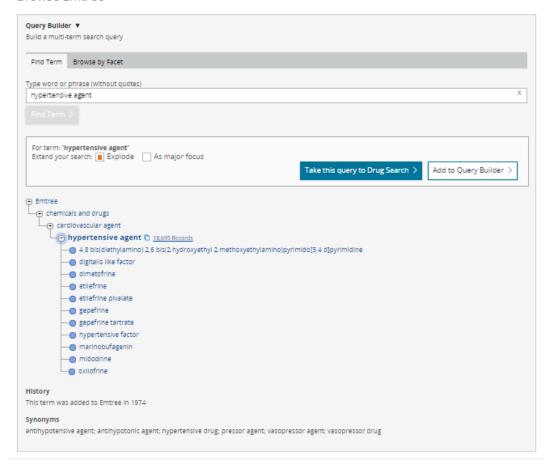
The latest drugs, diseases, organisms and procedures are indexed and added 3x per year (with back-posting of older records). Includes all drug generic names described by FDA and EMA, all International Non-Proprietary Names (INNs) described by WHO from 2000

## Inclusive terminology

• All MeSH terms, with links to more than 23,000 CAS registry numbers

## **Build powerful searches by browsing in Emtree**

#### Browse Emtree



Explore Emtree to see relationships between terms

Drug and disease terms are qualified by **searchable sub-headings** (e.g. **adverse drug reaction**) describing their precise role in the article

Mapping means that searchers get **the same results** regardless of which term they use, e.g. Vioxx (synonym) or rofecoxib (the preferred term) => **consistent coverage of concepts** 

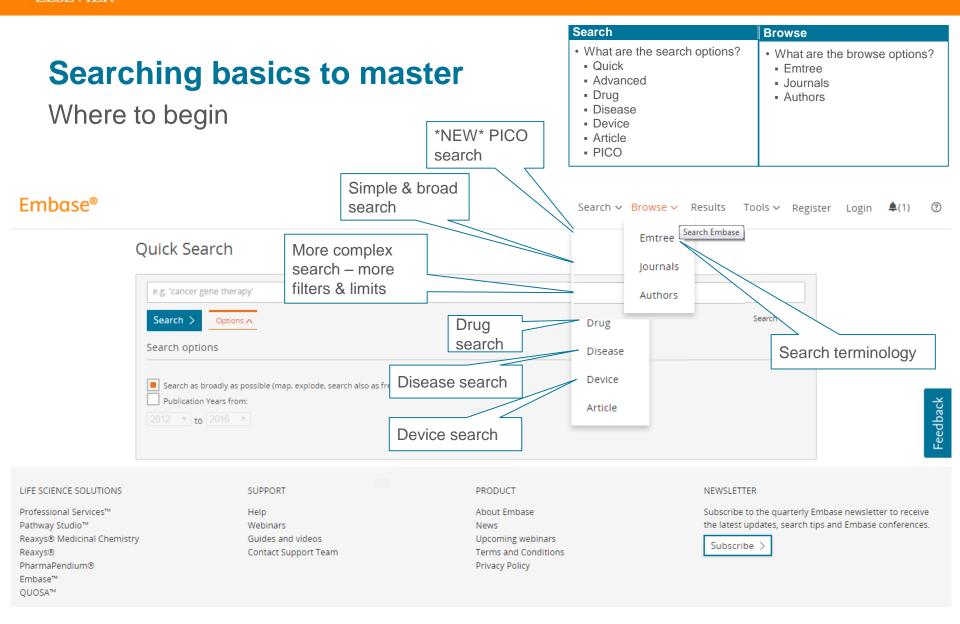




## Workshop

- Setting up search strategies
- Managing session results

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Top tip: start all searches in Emtree!

#### How to balance comprehension and precision (mapping)

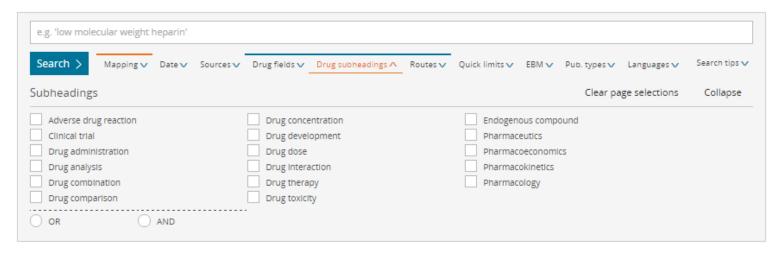
- To increase comprehension
  - Include sub-terms/derivatives with an <u>explosion</u> search
    - ✓ If a term has any more specific or narrower index terms within the Emtree thesaurus, they are also automatically retrieved as part of the search. That are searched together with a Boolean OR operation
  - Include synonyms in a <u>free text</u> search
- To increase precision
  - > Incorporate limits
    - Quick such as humans, with abstracts, only in English, records added from (dates)
    - ✓ Advanced for article language, gender, age groups, etc.
  - Restrict to records where your search term are indexed as the key point or major focus of the articles found
  - Use disease, drug and device <u>subheadings</u>

#### E.g. How to get drug profiles in Embase – use of subheadings

Embase contains information on: Adverse drug reaction, drug combination, drug comparison, drug interaction, drug therapy - easily accessible and searchable.

**Subheadings** are Emtree terms that are also used as concept qualifiers for drugs, diseases and devices, **providing a very precise idea of what an article covers**.

#### Drug Search



<sup>\*</sup>Triple linking also available on search results

#### **Boolean operators**

- The Boolean logical operators AND, OR, NOT, NEAR and NEXT can be used to combine search terms or query numbers in a variety of ways:
  - > Depression AND tricyclic Both words must be present in each record
  - Aged OR elderly OR geriatric At least one word must be mentioned in each record
- Boolean operators can be combined and nested with parentheses within a single search statement:
  - (aged OR elderly OR geriatric) AND (depression OR insomnia)

#### Notes:

- •If no other operator is specified, <u>AND</u> is the default operator; heart failure is searched as heart AND failure if not enclosed in quotation marks
- •Boolean operators can be used in any search form, including Quick Search
- •Phrases: searched in quotation marks; 'heart failure'

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## **Searching basics to master**

#### **Proximity operators**

Proximity operators let you search for words or phrases at any specified distance from each other

#### **NEAR/n:**

This requests terms which are within 'n' words of each other, in either direction.

#### cardiac NEAR/5 catheter retrieves:

"Despite complicated **cardiac** anatomy, **catheter** ablation of AT..."

"... patients undergoing **catheter** ablation for **cardiac** arrhythmias ..."

"...a continuous thermodilution cardiac output pulmonary artery catheter."

#### NEXT/n:

This requests terms which are within 'n' words of each other, in the order specified.

#### hip NEXT/3 prosthesis retrieves:

"... rheumatoid arthritis, joint surgery, **hip** or knee **prosthesis** ..."

"metal on metal **hip** resurfacing, **prosthesis** failure (complication, diagnosis)..."

#### Notes:

• The proximity operators NEAR and NEXT can be used with parentheses, truncation and field limits, for example: (symptom\* NEAR/5 (headache\* OR 'head ache')):TI,AB

#### Wildcard operators

- Wildcards (truncation characters) let you search for word roots, variations in spelling, many plural forms, etc.
  - Variable truncation: Use an asterisk (\*)
    - ✓ sul\*ur retrieves sulfur, sulphur
    - ✓ cat\* retrieves cat, cats, catalyst, catastrophe
  - ➤ A question mark (?) indicates exactly one variable character
    - ✓ sulf?nyl retrieves records that contain words like 'sulfonyl' and 'sulfinyl'
    - catheter? retrieves records that contain words like 'catheters', but not 'catheter' or 'catheterization'

#### Notes:

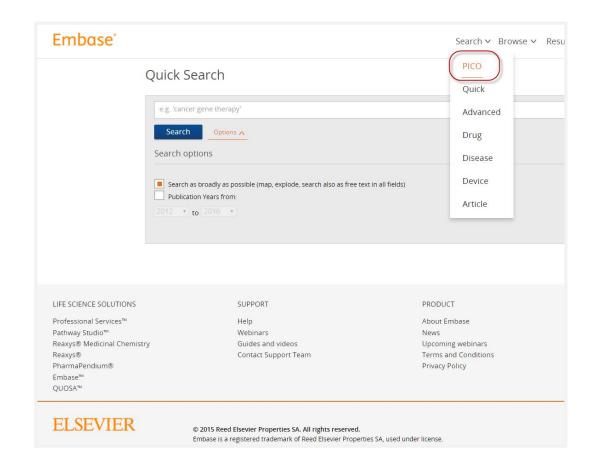
- Wildcards (\*, ?) are now searchable in phrases e.g. 'heart infarct\*' or "metabol\* disorder\*'
- The wildcard \* cannot be used with fewer than two characters e.g. 'm\* disorder' will not return results

W b

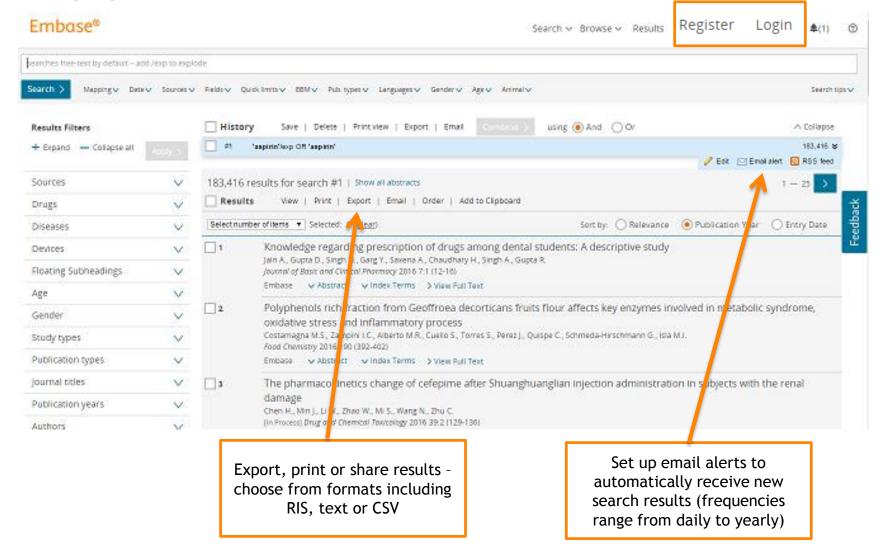
#### For systematic searching

Population
Intervention
Comparison
Outcome
(S)tudy design

e.g. To compare evolution in organ dysfunction (OD) between hematologic malignancy patients with and without bacterial infection (BI) precipitating intensive care unit (ICU) admission



#### **Managing session results**



#### **Managing session results**

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- P				9

**View Results** 

Edit

Copy to Advanced Search (or to whichever form you started your search)

Set email alert

Set RSS feed

#### **Session options**

Save

Delete

Print view

Export

**Email** 

## **Training and support**

- Help function within Embase
- E-Customer service
  - > Email: <u>nlinfo@elsevier.com</u>
- Training and consultation
  - Dr Rosalind Sankey
  - > Email: <u>r.sankey@elsevier.com</u>
  - Mobile: +44 (0)7467 330 330





## Thank you!



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## Extras





## Triple linking in Embase

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## **Indexing principles**

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Indexers read and analyze the full text of articles in order to identify relevant concepts, and index them with the most specific Emtree terms.

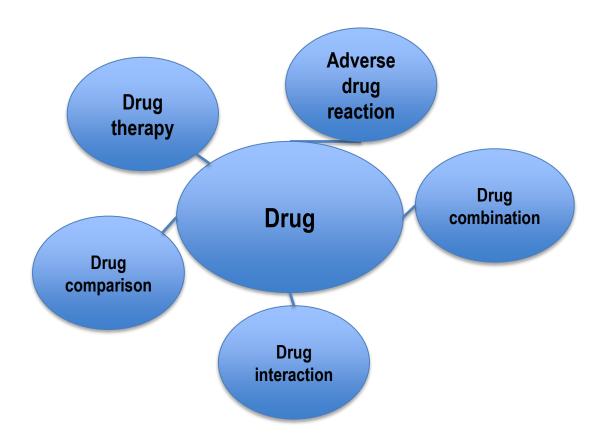


Index terms are controlled by the Emtree thesaurus resulting in consistent coverage of concepts that may be expressed in many different ways in the literature.



## **Indexing: subheadings**

**Subheadings** are Emtree terms that are also used as concept qualifiers for drugs, diseases and devices to refine their meaning, providing a very precise idea of what an article covers.



## **Indexing: key subheadings**

Nine subheadings are denoted key subheadings.

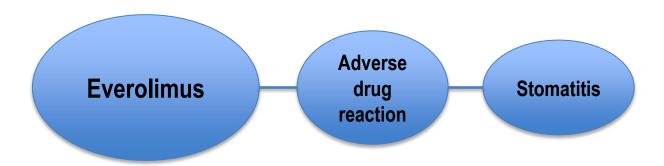
Term	Key Subheading		
drug	adverse drug reaction		
drug	drug combination		
drug	drug comparison		
drug	drug interaction		
drug	drug therapy		
device	adverse device effect		
device	device comparison		
disease	drug therapy		
disease	side effect		

## Indexing: triple-linking

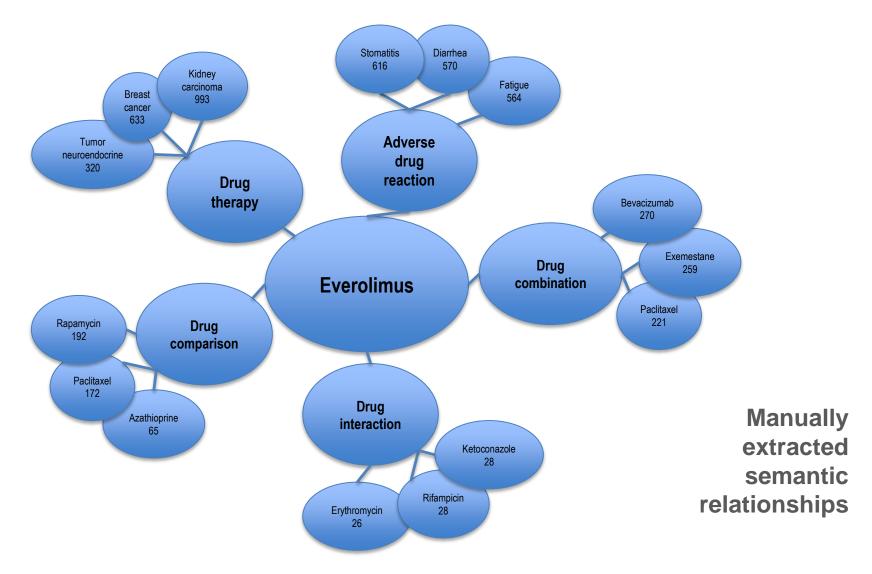
**Triple-indexing** is three level indexing of the full text of an article. It consists of:

- Term (drug or device or disease)
- Key subheading (relationship)
- Linked terms (e.g. stomatitis, hypertension, stroke, nausea, etc.)

Triple indexing has started in Q1 of 2007 for the **drug triples** (drug therapy from Q2 of 2009). **Devices** began in Q2 of 2014.

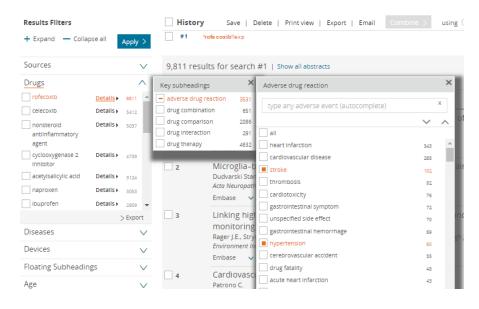


## E.g. Triple indexing can be used to identify relationships of the drug Everolimus



## **Triple linking**

#### 1. New filter options



For each drug, device and disease key subheadings and linked terms can be visualised and filtered

#### 2. New search query language

- 'vioxx'/'adverse drug reaction'/'hypertension','stroke','nausea','vomiting'
- 'vioxx'/dd\_ae/'hypertension','stroke"nausea','vomiting'

#### More info:

http://help.elsevier.com/app/answers/detail/a\_id/6197/p/9754/c/9863,10681

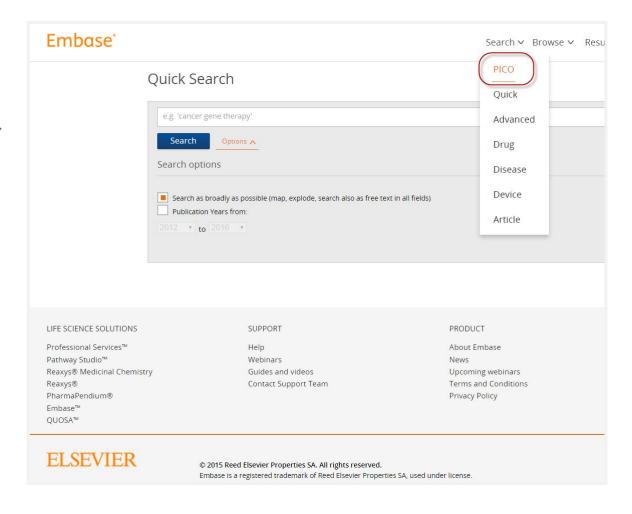




# PICO search in Embase

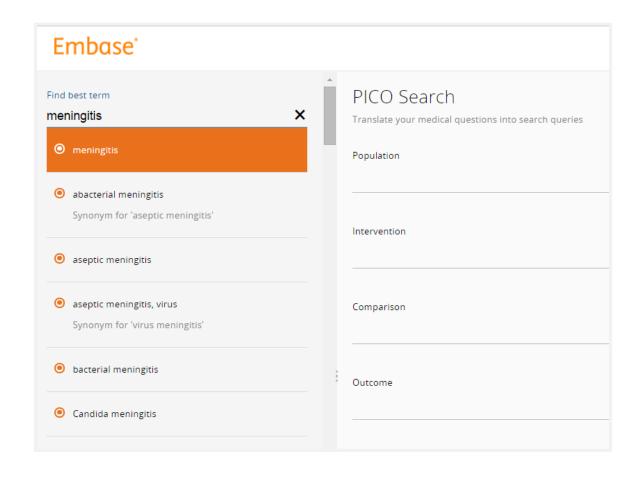
## Using the new PICO search form

Select **PICO** from the drop down menu under **Search** in the main navigation bar.



## Using the new PICO search form

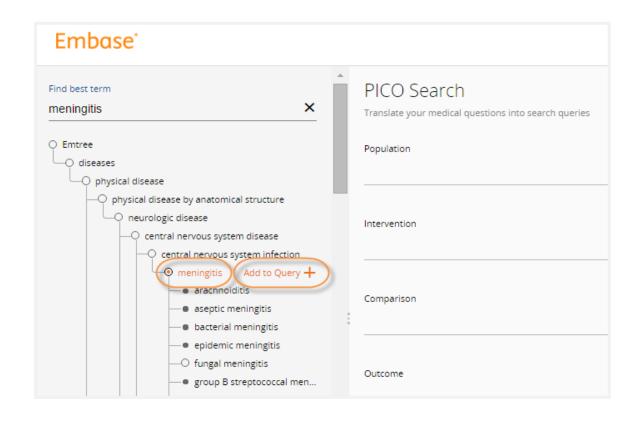
On the left-hand side of the page, type a keyword under 'Find best term' and choose one of the terms from the suggested list.



## Using the new PICO search form

Emtree will appear on the left-hand side of the page with the selected term highlighted.

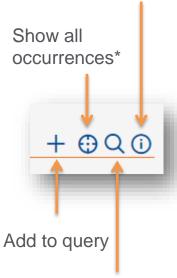
Hover the mouse beside the term and click 'Add to Query' when it appears. The term will be added to the query as an orange token.



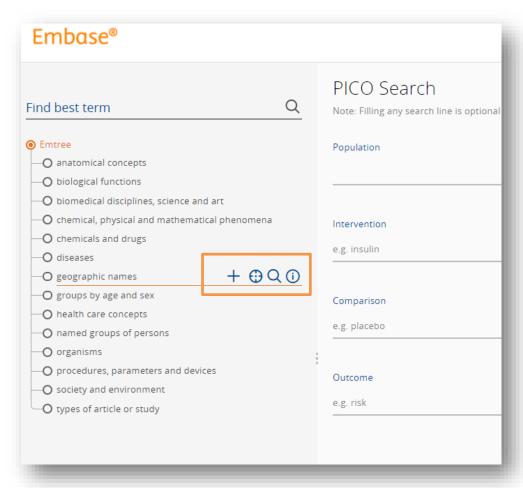
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# New symbols make it easy to add terms to a PICO or advanced/drug/disease/device search

Information (e.g., synonyms, history, scope notes and Dorland's definition



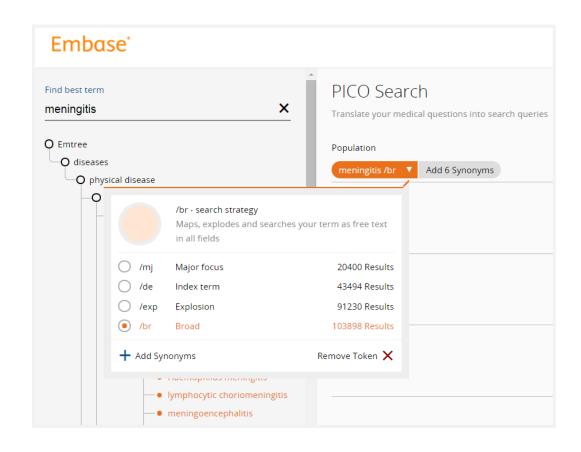
Take this term to drug/disease/device/advanced search (depends on term)



\* Emtree terms can often be found in multiple locations. "Show all occurrences" indicates everywhere the term is found in Emtree.

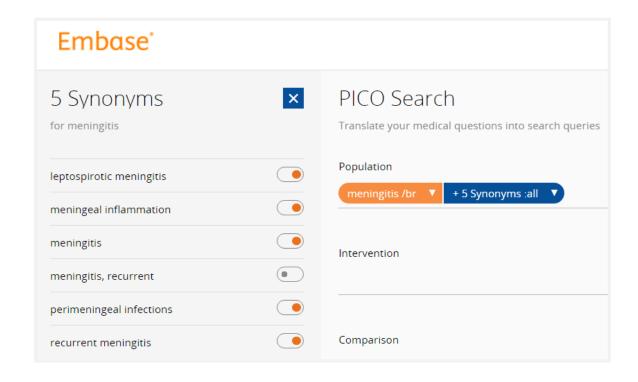
The term will be searched as **broadly as possible** by default, meaning it will be mapped to Emtree, narrower terms will also be searched and free text in all fields will be searched.

To only search the index term, search as a major focus or perform an explosion search, click on the orange token to select another search option from the list that appears.



Once an Emtree term is added, a grey (ghost) token will appear next to the orange one. Click on the grey token to add all synonyms of that term to your query.

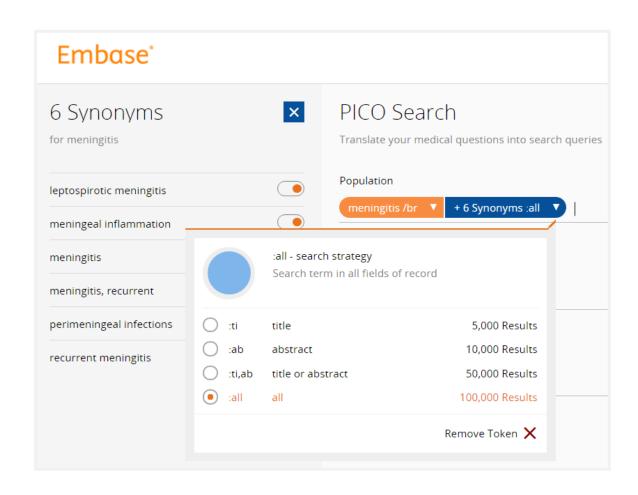
- Added synonyms are searched in all fields by default.
- Individual synonyms can be selected by clicking the orange radio buttons beside the synonyms in the left-side panel.



Added synonyms are searched in **all fields** by default.

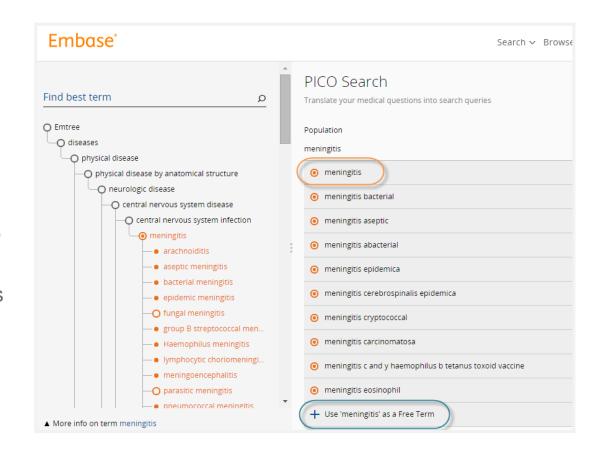
Click on the drop-down arrow or right-click to change the fields where the free-text term is searched.

 Note: a search of all fields searches titles, abstracts, author keywords, brand names, manufacturer name etc.)



You can also add a term to the search by typing a keyword in a query line and selecting a term from the drop-down list.

- Terms with an orange bullet are Emtree terms.
- Click on the blue + sign to add a 'free' term.
  - When an indexed term is selected, it will be added to the query as an orange token.
  - A free term is searched in all fields by default.

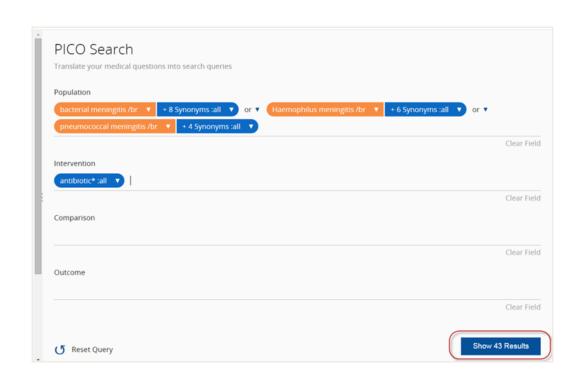


Embase automatically adds the OR connector (Boolean operator) between terms *within* an individual PICO element.

The Boolean 'AND' operator will be used to combine search terms/strategies *between* the different elements.

While a search is being built, Embase calculates the number of results and displays the number in the lower rightcorner of the page.

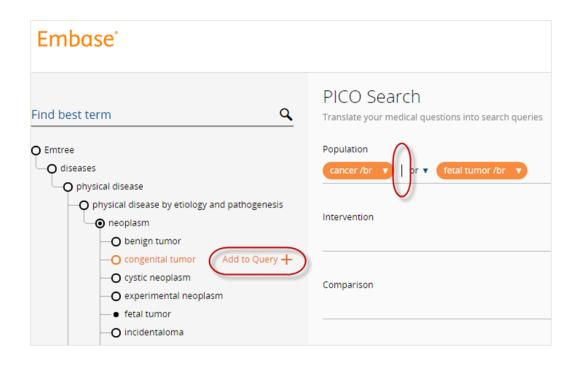
Select 'Show # results' to perform the search and view the results.



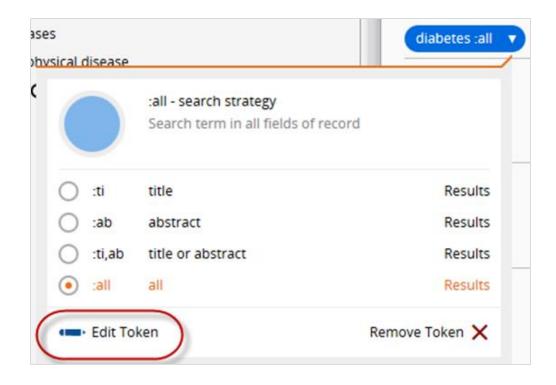
More information is available in the Help file: <a href="http://help.elsevier.com/app/answers/detail/a\_id/4635/p/7794">http://help.elsevier.com/app/answers/detail/a\_id/4635/p/7794</a>

Terms can be added anywhere in the search line. Place the cursor in front or behind any term and begin typing to add a new term or parenthesis.

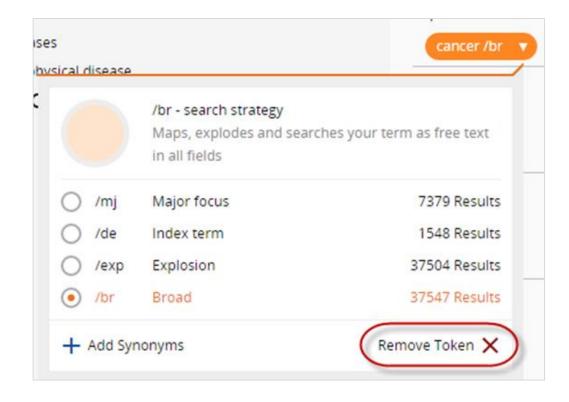
Alternatively, place the cursor at the appropriate position in the search query, and select a term from the Emtree panel on the left-hand side of the page to add the term to that position.



Double-click on a token or select the 'Edit Token' button in the fly-out menu to edit or modify your search term.



Remove a token by pressing the delete key on your keyboard in front or after the token or by expanding the fly-out and selecting 'Remove Token'.







Mapping levels in Embase

#### Advanced search

- What do the mapping levels mean?
- What mapping option should we recommend?

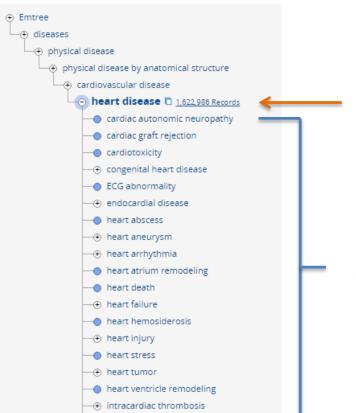
#### Advanced Search



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#### Advanced search

What do the mapping levels mean?



Preferred term (/de)

Embase mapping options

Map to preferred term in Emtree

Search also as free text in all fields Explode using narrower Emtree terms Search as broadly as possible

Narrower terms – included in an /exp search

Which mapping level to use...?

Users must decide how they wish to balance comprehensiveness with relevance!

Limit to terms indexed in article as 'major focus'

#### Synonyms are also mapped and searched

#### Synonyms

cardiac anomaly; cardiac disease; cardiac disturbance; cardiopathy; heart deficiency; heart deformity; heart diseases; heart disorder; heart dysfunction; major adverse cardiac event