



# Introduction to EMBASE on Ovid

EMBASE is a key resource for generating systematic reviews and supporting effective evidence-based medicine and drug and medical device searching



Wolters Kluwer

# EMBASE Facts

- Extensive EMTREE thesaurus structure with many synonyms used in mapping and Thesaurus displays include numbers of records
- Guided mapping and searching with easy access to all EMTREE thesaurus displays, including drug and disease subheading roles
- Clearer thesaurus (plain English, not inverted)
- Comprehensive early coverage of pharmaceuticals during drug development stages and clinical trials
- Easy to use interface, easy workflow – subjects, subheadings, limits integrated together
- Better “Rest of the World” journal coverage
- Searching multi-database with no loss of functionality and alerts with deduplication
- McMaster Clinical Queries
- Natural Language searching
- Full text linking

# Introduction to EMBASE on Ovid

- Special subjects, fields and subheadings for disease, drug or medical device searching
  - Disease, drug and device subheadings
  - Drug & Device trade name
  - Drug & Device manufacturer
  - CAS registry number
- Important database specific limits
  - Clinical Trial limits to refine results to records on clinical trials or a certain phase of drug development
  - Methodologies limit including Meta analysis and Systematic Review
  - Additional document types including conferences

▼ Search History (2)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	exp dengue/dt [Drug Therapy]	1206	Advanced
<input type="checkbox"/>	2	limit 1 to (conference abstract or conference paper or conference proceeding or "conference review")	55	Advanced

Save Remove Combine with: AND OR

# EMBASE Scope and Content

Embase has a broad biomedical scope, with in-depth coverage of pharmacology, pharmaceutical science and clinical research. Basic biomedical science, veterinary science and extensive allied health topics are also included.

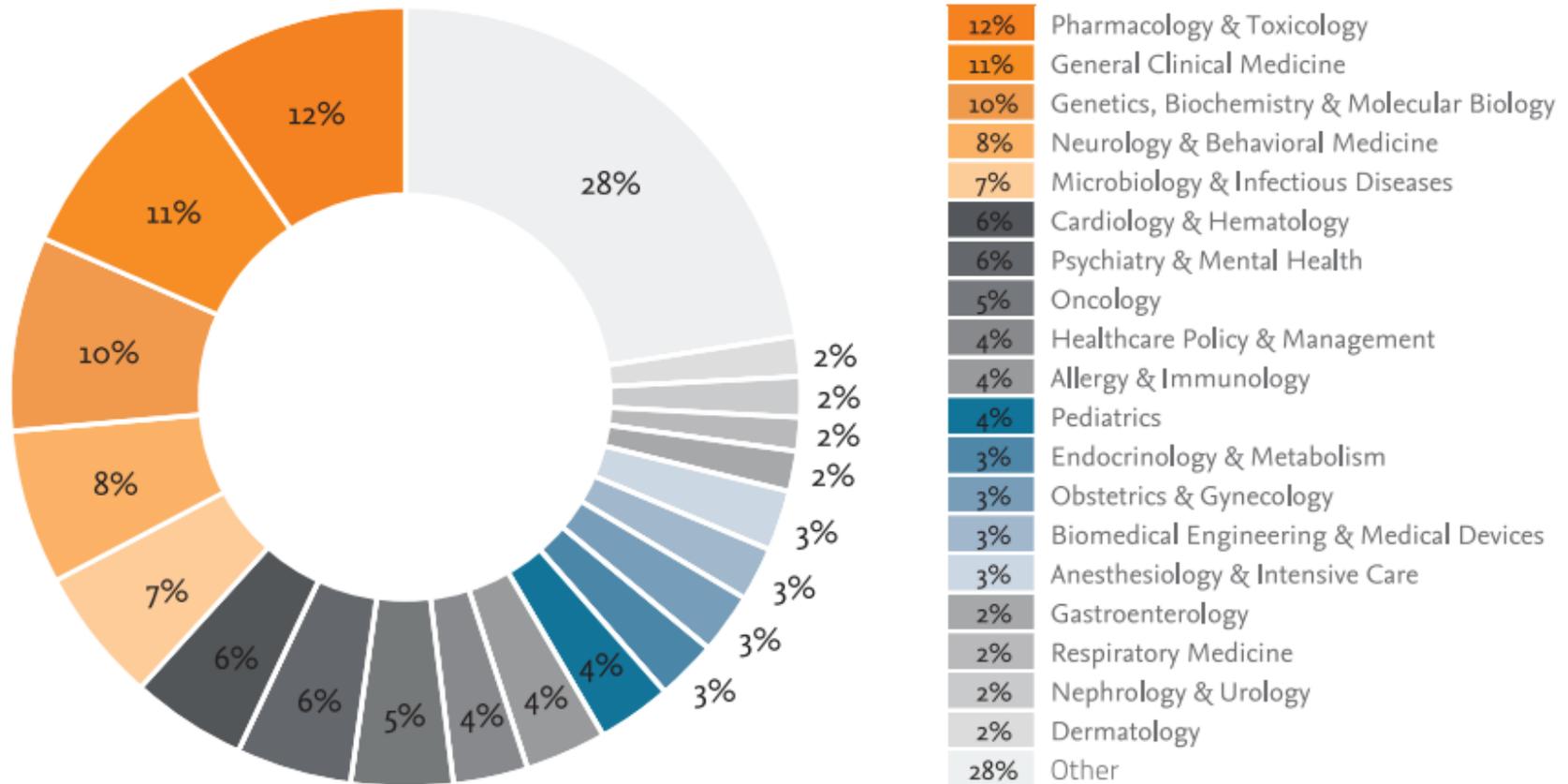


Figure 1 Coverage of core topics grouped into 19 super categories.

The focus of the database has greatly expanded due to the addition of all MEDLINE records

# EMTREE Thesaurus

The EMTREE thesaurus is an easy to use and comprehensive subject guide with an emphasis on drugs and chemicals and on diseases and health problems. It is different to MEDLINE's MeSH in many ways – it uses "plain English" not inverted terms, and it often uses singular rather than plural forms, even for multiple items, groups and categories. Even similar terms may vary from MeSH terms in the level of detail and position in the subject hierarchy.

As of January 2016, EMTREE contains:

- Over 73,000 preferred terms (more than 31,000 for drugs and chemicals)
- Over 310,000 synonyms (more than 190,000 for drugs and chemicals)
- Over 3,000 specific terms for general and medical devices (e.g., endoscopes, catheters, prostheses)
- Several thousand terms for related medical procedures (e.g., endoscopy, catheterization)
- 64 drug subheadings, including 47 routes of administration
- 4 medical device subheadings
- 14 disease subheadings
- 38 check tags for study types, including randomized controlled trial, systematic review, and diagnostic test accuracy study
- Access to over 23,000 CAS registry numbers

# Using EMBASE on Ovid

Ovid offers a wide variety of search modes which will suit both an experienced researcher or a beginner

- Search for whole topics or questions using **Basic Search**
- Search for subjects interactively using **Advanced Search**
- Search combinations of fields and subjects with **Multi-Field Searching**
- Find or check references with **Find Citation**
- Explore the subject structure of the EMTREE Thesaurus with **Search Tools**
- Browse or search one, more or all fields with **Search Fields**

▼ Search History (2)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	using cbt to treat depression {Including Related Terms}	10134	Basic
<input type="checkbox"/>	2	limit 1 to ("systematic review" and five stars)	541	Advanced

     Combine with:

# Advanced Search

**Advanced Search** is an interactive research style search offering:

- Mapping to subject headings (EMTREE) and to subheadings (drug, device and disease subheadings) for drug and disease topics
- Keyword searching (.mp.) including title, abstract, subject headings & other drug and device subject fields
- Author searching (interactive)
- Title searching (words or phrases)
- Journal searching (interactive)

▼ Search History (5)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	exp coronary artery disease/pc [Prevention]	12593	Advanced
<input type="checkbox"/>	2	exp diet/	250307	Advanced
<input type="checkbox"/>	3	exp obesity/	367742	Advanced
<input type="checkbox"/>	4	1 and 2 and 3	171	Advanced
<input type="checkbox"/>	5	limit 4 to (clinical trial or randomized controlled trial or controlled clinical trial or multicenter study or phase 1 clinical trial or phase 2 clinical trial or phase 3 clinical trial or phase 4 clinical trial)	35	Advanced

Combine with:

# Mapping

- **Entering an exact match** for an EMTREE term in the controlled vocabulary; the term will appear and be selected, but other similar subjects will be listed (often a prompt to choose “explode”)  
**e.g. coughing**
- **Entering a synonym for a term, will direct you to the EMTREE term** (“explode” if a category or group of subjects) – EMTREE to MeSH translation for example  
**e.g. aspirin > acetylsalicylic acid**
- **No match – Frequency based listing** If term is neither a direct match nor listed as a "used for" term ("see" reference or synonym) then:
  - Ovid looks at citation where terms occurs in title or abstract or other fields...
  - Algorithm counts the occurrence of subject headings tied to those citations.
  - The most frequently occurring subject headings are presented to the user as choices. Selected database segment selected is the sample.
  - In a frequency based list, one choice may be appropriate, or more than one, or a combination of choices, or you may choose to “search as a keyword”  
**e.g. cholera vaccination**
- **“Cannot map term to a subject heading”** – check spelling, or “search as a keyword” if very new or rare, this is an less usual response for a large database

All EMTREE terms have an equivalent MeSH term (in the scope note), but the term may not be at the same level or be associated with the same definition or have the same narrower terms

# Subheadings

- **Disease Subheadings** from **1988 (or later)**

eg complication, diagnosis, drug therapy, epidemiology, etiology, prevention, side effect, surgery, therapy etc

- **Drug Subheadings** from **1988 (or later)**

eg. Adverse drug reaction , Clinical trial, Drug administration, Drug combination, Drug comparison, Drug development, Drug dose, Drug interaction , Drug therapy , Drug toxicity, Pharmacokinetics, Pharmacology etc

- **Route of Drug Administration Subheadings** from **2000**

eg. Buccal drug administration, Epidural drug administration, Inhalational drug administration, Intraarterial drug administration, Intrabronchial drug administration, Intracardiac drug administration, Intracavernous drug administration etc

- **Device Subheadings** from **2012**

eg adverse device effect, device comparison, device economics etc

▼ Search History (3)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	rofecoxib/ae [Adverse Drug Reaction]	3572	Advanced
<input type="checkbox"/>	2	exp infarction/si [Side Effect]	12748	Advanced
<input type="checkbox"/>	3	1 and 2	1085	Advanced

Save Remove Combine with: AND OR

# Subheadings

Subheadings are often paired in practice – “adverse drug reaction” and “side effect” for example

Subheading Exceptions

**Disease subheadings** all from **1988** except:

drug resistance – **1996**

disease management - **1997**

**Drug subheadings** all from **1988** except:

endogenous compound – **1991**,

pharmaceutics – **1991**

pharmacoeconomics – **1997**

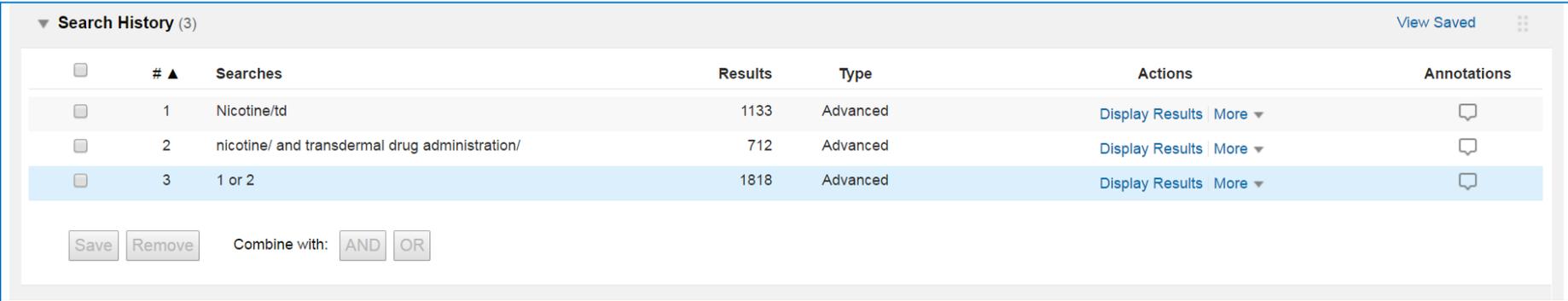
▼ Search History (3)				
<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	exp tuberculosis/dm and exp tuberculosis/dr [Disease Management,Drug Resistance]	350	Advanced
<input type="checkbox"/>	2	exp linezolid/pe [Pharmacoeconomics]	321	Advanced
<input type="checkbox"/>	3	1 and 2	9	Advanced

# Advanced Search including Subheadings

Because the subheadings are only available in the database since **1988**, applying a subheading limits a search to a period of time, as well as a subject\*

To perform a search for a subject/subheading combination retrospectively, use a subject/subheading and OR the corresponding subject/subject pair (and possible synonyms)

Nicotine/td or (nicotine/ and transdermal drug administration/)



<input type="checkbox"/>	# ▲	Searches	Results	Type	Actions	Annotations
<input type="checkbox"/>	1	Nicotine/td	1133	Advanced	Display Results More ▾	
<input type="checkbox"/>	2	nicotine/ and transdermal drug administration/	712	Advanced	Display Results More ▾	
<input type="checkbox"/>	3	1 or 2	1818	Advanced	Display Results More ▾	

Save Remove Combine with: AND OR

\* Added MEDLINE records and retrospective indexing are exceptions.

# Triple Subheadings

## *Adding to the subheading role*

When we search in EMBASE on Ovid at the moment, we can find subject and subheading combinations. Sometimes we can assume that one is a cause and the other an effect, or that they are connected, this is the point of the new field in EMBASE, it will allow you to see groups of connected subjects. Triple subheadings only use key subheadings.

Triple Indexing is the three level indexing of the full text of an article, it consists of three elements:

- An Emtree Term: Often a drug, disease or device
- Key Subheadings: see list below
- A linked Emtree Term:

Drug Subheading	<a href="#">AE Adverse Drug Reaction</a>
Drug Subheading	CM Drug Comparison
Drug Subheading	CB Drug Combination
Drug Subheading	DI Drug Interaction (Drug-Drug)
Drug Subheading	DT Drug Therapy
Disease Subheading	DT Drug Therapy
Disease Subheading	<a href="#">SI Side Effect</a>
Device Subheading	AM Adverse Device Effect
Device Subheading	DC Device Comparison

e.g. fentanyl/drug therapy/abdominal pain

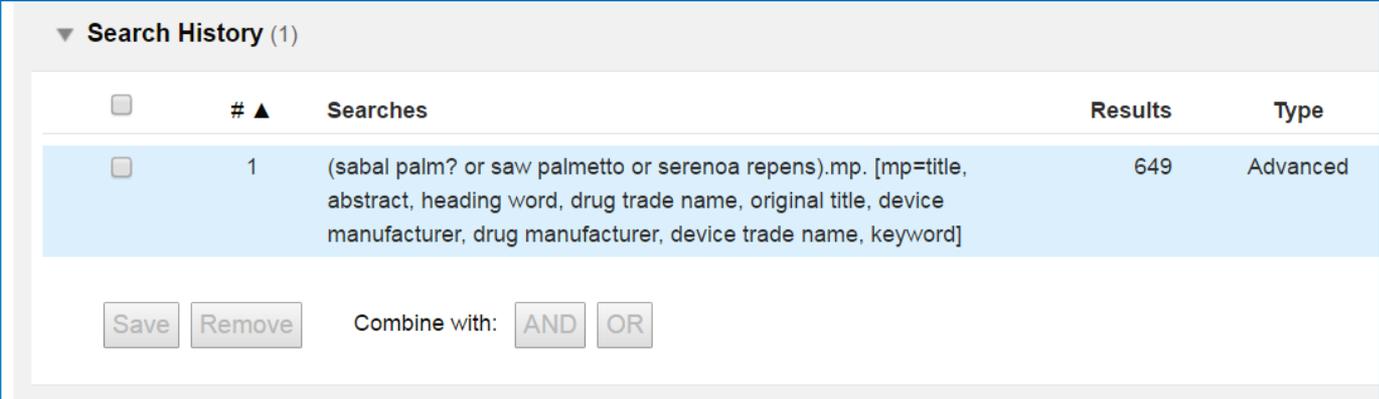
# Advanced Search – Keyword Searching

Because you sometimes want to search outside the EMTREE thesaurus terms, it is possible to untick the mapping tool, it's also possible to select “search as a keyword from within the mapping process.

Selecting either of these options will search across a group of fields which represent subjects, and include the title and abstract provided by the author and other subject fields from the database.

In EMBASE these include:

**mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword**



▼ Search History (1)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	(sabal palm? or saw palmetto or serenoa repens).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]	649	Advanced

Save Remove Combine with: AND OR

# Advanced Search – Keywords

▼ Search History (4)				
<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	nicotine gum/	2546	Advanced
<input type="checkbox"/>	2	nicotine gum?.mp.	2814	Advanced
<input type="checkbox"/>	3	nicotine gum?.mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]	2814	Advanced
<input type="checkbox"/>	4	1 or 2	2814	Advanced

When searching with keywords, use all synonyms, and include truncation and wildcards to disguise singular and plural and spelling variants. Use as many synonyms as possible since often you are trying to match with the author's words.

<input type="checkbox"/>	# ▲	Searches	Results
<input type="checkbox"/>	1	nicotine gum/	2546
<input type="checkbox"/>	2	nicotine gum?.mp.	2814
<input type="checkbox"/>	3	(Nicorette or nicotine chewing gum or polacrilex or nicotinell).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]	1010
<input type="checkbox"/>	4	1 or 2 or 3	3072

# Basic Search

The purpose of **Basic Search** is to provide a useful number of highly relevant documents drawn from the most recent part of the database

- Add **related terms** to include plurals and synonyms from the Ovid lexicon (often including MeSH)
- Offers most relevant ranked results first (not most recent)
- Can be limited (to Year or Full Text for example)

Note: Use Sorting option or year limit to select recent publications

▼ Search History (2)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	preventing zika transmission in brazil {Including Related Terms}	14074	Basic
<input type="checkbox"/>	2	limit 1 to (five stars or four stars)	759	Advanced

Combine with:

# Search Tools

The **Search Tools** menu offers different ways of selecting subjects from the database subject structure

- Mapping – suggesting subjects from the thesaurus
- Tree – displaying the subject structure
- **Permuted Index – variations on a single word or theme**
- Subheadings – what subheadings are available
- Explode – searches a subject and all of it's parts or types

<input checked="" type="checkbox"/>	antibiotic agent	145166	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	[Used For]				
	<a href="#">antibiotic</a>				
	<a href="#">antibiotic combination</a>				
	<a href="#">antibiotic drug</a>				
	<a href="#">antibiotic ointment</a>				
	<a href="#">antibiotic residue</a>				
	<a href="#">antibiotic spectrum</a>				
	<a href="#">antibiotics</a>				
	<a href="#">antibiotics and their derivatives</a>				
	<a href="#">antibiotics, combined</a>				
	<a href="#">combined antibiotic</a>				
	[Broader Terms]				
<input type="checkbox"/>	<a href="#">antimicrobial agent [-NT]</a>	125233	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	[Narrower Terms]				
<input type="checkbox"/>	<a href="#">12 hydroxy 13 hydroxymethyl 3,5,7 trimethyltetradeca 2,4 dienedioic acid 12,14 lactone</a>	45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">2,4 diamino 6,7 diisopropylpteridine</a>	55	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">26 deoxyaldomycin</a>	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">3 acetyl 7 [2 (2 amino 4 thiazolyl) 2 methoxyiminoacetamido] 8 oxo 1,5 diazabicyclo[3.3.0]oct 2 ene 2 carboxylic acid</a>	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">3,4 dihydro 3 hydroxy 8 methoxy 3 methyl 2h benz[a]anthracene 1,7,12 trione</a>	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">6 cyclooctylamino 5,8 quinolinedione</a>	8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">7 [2 (2 amino 4 thiazolyl) 2 methoxyiminoacetamido] 3 methoxycarbonyl 8 oxo 1,5 diazabicyclo [3.3.0]oct 2 ene 2 carboxylic acid</a>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">acetomycin</a>	19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">actinorhodine</a>	309	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>

## Permuted Index for crystal

Database: EMBASE

Combine selections with:

Select Term(s)	Subject Heading	Hits	Explode	Focus	Scope Note
	calcium oxalate crystal				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">CALCIUM OXALATE</a>	3297	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	cholesterol crystal embolism				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">CHOLESTEROL EMBOLISM</a>	231	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">CRYSTAL</a>	8307	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	crystal growth				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">CRYSTALLIZATION</a>	36183	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	crystal lattice				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">CRYSTAL STRUCTURE</a>	57236	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">CRYSTAL STRUCTURE</a>	57236	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">CRYSTAL VIOLET</a>	2317	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	crystal, zinc oxide				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">ZINC OXIDE</a>	4128	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	cystine crystal				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">CYSTINE</a>	5350	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
	electrochemical quartz crystal microbalance				<input type="button" value="i"/>
<input type="checkbox"/>	see <a href="#">QUARTZ CRYSTAL MICROBALANCE</a>	325	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	<a href="#">LIQUID CRYSTAL</a>	3244	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>

# Search Fields

**Search Fields** searching or browsing across one or more (or **All**) fields within a database

- Display Indexes to select from a list of choices
- Choose Search to search without browsing
- Clear Selections to make different field choices

**?** Use the Back in Index and Forward in Index buttons to scroll through an index in which a term displays. To enter a new start term, type a term into the box and click the Go button. To navigate to the top of a new index, click a number tab or letter tab.

SEARCH FOR SELECTED TERMS >> Enter a new start term:  GO

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R  
S T U V W X Y Z

<< BACK IN INDEX FORWARD IN INDEX >>

<input checked="" type="checkbox"/> restinosis.ab. Postings: 4	<input type="checkbox"/> restistin.ab. Postings: 1
<input checked="" type="checkbox"/> restinosis.ti. Postings: 4	<input type="checkbox"/> restitivity.ab. Postings: 1
<input type="checkbox"/> restinotic.ti. Postings: 1	<input type="checkbox"/> restitch.ab. Postings: 1
<input type="checkbox"/> restinrsf.ab. Postings: 1	<input type="checkbox"/> restitched.ab. Postings: 1
<input type="checkbox"/> restins.ab. Postings: 1	<input type="checkbox"/> restitches.ti. Postings: 1
<input type="checkbox"/> restinsol.sh. Postings: 1	<input type="checkbox"/> restitching.ab. Postings: 1
<input type="checkbox"/> restinsol.tn. Postings: 1	<input type="checkbox"/> restitching.ti. Postings: 1

**?** Use the Back in Index and Forward in Index buttons to scroll through an index in which a term displays. To enter a new start term, type a term into the box and click the Go button. To navigate to the top of a new index, click a number tab or letter tab.

SEARCH FOR SELECTED TERMS >> Enter a new start term:  GO

0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R  
S T U V W X Y Z

<< BACK IN INDEX FORWARD IN INDEX >>

<input checked="" type="checkbox"/> nicorette.tn. Postings: 497	<input type="checkbox"/> nicotrans.tn. Postings: 3
<input type="checkbox"/> nicorrete.tn. Postings: 2	<input type="checkbox"/> nicotrim.tn. Postings: 1
<input type="checkbox"/> nicosan.tn. Postings: 4	<input type="checkbox"/> nicotrol.tn. Postings: 210
<input type="checkbox"/> nicosol.tn. Postings: 1	<input type="checkbox"/> nicoumalone.tn. Postings: 13
<input type="checkbox"/> nicosolvens.tn. Postings: 1	<input type="checkbox"/> nicoven.tn. Postings: 2
<input type="checkbox"/> nicospan.tn. Postings: 3	<input type="checkbox"/> nicovitrol.tn. Postings: 1

# Fields of Note

- CAS Registry Number – a number specific to individual chemical. Salts and variants may take a different number (includes a checksum)
- Drug Trade Name – only used where that specific brand or dose form is important
- Drug Manufacturer Name – for competitive information or disambiguation
- Device Name – for medical devices
- Device Manufacturer Name
- Institution – academic institution or company name

▼ Search History (4)

<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	exp inhaler/	10907	Advanced
<input type="checkbox"/>	2	Astra Zeneca.mf.	14712	Advanced
<input type="checkbox"/>	3	1 and 2	290	Advanced
<input type="checkbox"/>	4	Turbuhaler.dv.	828	Advanced

Combine with:

# What searching tools are available ?

## Combining

- AND – both (or all) terms present
- OR – either (or both) terms present
- NOT – removes a term
- ADJ# - ADJ6 within six words

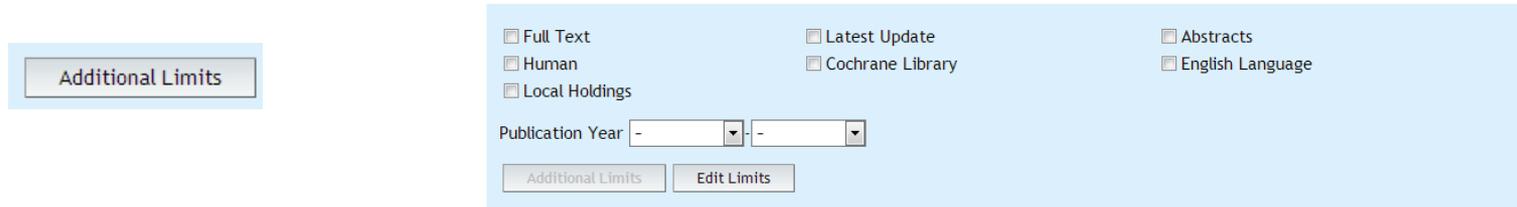
## Truncation

- \* or \$ - unlimited characters at the end of a word
- \*6 or \$6 – six characters after a word
- ? – one or zero characters at the end of or within a word
- # - one variable character within a word

▼ Search History (3)				
<input type="checkbox"/>	# ▲	Searches	Results	Type
<input type="checkbox"/>	1	(e cigarette? or electronic cigarette?).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]	1742	Advanced
<input type="checkbox"/>	2	(nicotine adj3 (patch* or transderm* or transcut*)).mp. [mp=title, abstract, heading word, drug trade name, original title, device manufacturer, drug manufacturer, device trade name, keyword]	3078	Advanced
<input type="checkbox"/>	3	1 and 2	117	Advanced

# Limits

- Two Types:
- Commonly used limits – publication year, abstract, full text



The screenshot shows a search interface with a light blue background. On the left, there is a button labeled 'Additional Limits'. To its right, there are several checkboxes for filtering results: 'Full Text', 'Human', 'Local Holdings', 'Latest Update', 'Cochrane Library', 'Abstracts', and 'English Language'. Below these checkboxes is a 'Publication Year' field with two dropdown menus separated by a hyphen. At the bottom of the interface, there are two buttons: 'Additional Limits' and 'Edit Limits'.

- Additional Limits
  - Broad subject areas – clinical queries
  - Languages (most English language)
  - Types of publication – review, book, conference paper
    - Clinical Trials and Evidence Based Medicine
  - Parts of the population – age groups, gender
  - Special database subjects –
    - experimental subjects, routes of drug administration

# Limits

Additional Limits

## Limits

<input type="checkbox"/> Ovid Full Text Available	<input type="checkbox"/> Full Text	<input type="checkbox"/> Latest Update
<input type="checkbox"/> Priority Journals	<input type="checkbox"/> Abstracts	<input type="checkbox"/> Human
<input type="checkbox"/> Animals	<input type="checkbox"/> Animal Studies	<input type="checkbox"/> Cochrane Library
<input type="checkbox"/> Male	<input type="checkbox"/> Female	<input type="checkbox"/> English Language
<input type="checkbox"/> Local Holdings	<input type="checkbox"/> Exclude MEDLINE Journals	

Publication Year - -

To select or remove multiple items from a list below, hold down the Shift, Ctrl, or "Apple" key while selecting.

<input type="checkbox"/> Records From - Embase MEDLINE	<input type="checkbox"/> EBM-Evidence Based Medicine - Evidence Based Medicine Concensus Development Meta Analysis Outcomes Research
<input type="checkbox"/> Clinical Trials - Clinical Trial Randomized Controlled Trial Controlled Clinical Trial Multicenter Study Phase 1 Clinical Trial	<input type="checkbox"/> Clinical Queries - Reviews (maximizes sensitivity) Reviews (maximizes specificity) Reviews (best balance of sensitivity and specificity) Therapy (maximizes sensitivity) Therapy (maximizes specificity)
<input type="checkbox"/> Languages - Afrikaans Albanian Arabic Armenian Azerbaijani	<input type="checkbox"/> Publication Types - Article Book Book Series Conference Abstract Conference Paper
<input type="checkbox"/> Human Age Groups - Embryo <first trimester> Infant <to one year> Child <unspecified age> Preschool Child <1 to 6 years> School Child <7 to 12 years>	<input type="checkbox"/> Experimental Subjects - ....Virus Invertebrates <Category Heading> ....Arthropod ....Cestode ....Nematode ....Trematode
<input type="checkbox"/> Routes of Drug Administration - Buccal Epidural Inhalational Intraarterial Intraarticular	<input type="checkbox"/> Star Ranking - ***** Five Stars (0) **** Four Stars (0) *** Three Stars (0) ** Two Stars (0)

# EMBASE specific Limits

- Priority Journals – fast track indexing
- Human, Animals and Animal Studies
- Records From MEDLINE or EMBASE: To distinguish records coming from MEDLINE or native EMBASE records. Based on the Copyright field
- Exclude MEDLINE Journals (EMBASE Unique) based on a journals list

**L I M I T S**

<input type="checkbox"/> Ovid Full Text Available	<input type="checkbox"/> Full Text	<input type="checkbox"/> Latest Update
<input type="checkbox"/> Priority Journals	<input type="checkbox"/> Abstracts	<input type="checkbox"/> Human
<input type="checkbox"/> Animals	<input type="checkbox"/> Animal Studies	<input checked="" type="checkbox"/> Cochrane Library
<input type="checkbox"/> Male	<input type="checkbox"/> Female	<input type="checkbox"/> English Language
<input type="checkbox"/> Local Holdings	<input checked="" type="checkbox"/> Exclude MEDLINE Journals	

Publication Year - [ ] - [ ]

To select or remove multiple items from a list below, hold down the Shift, Ctrl, or "Apple" key while selecting.

<input type="checkbox"/> Records From	<input type="checkbox"/> EBM-Evidence Based Medicine
<ul style="list-style-type: none"><li>-</li><li>Embase</li><li>MEDLINE</li></ul>	<ul style="list-style-type: none"><li>-</li><li>Evidence Based Medicine</li><li>Concensus Development</li><li>Meta Analysis</li><li>Outcomes Research</li></ul>

# Putting it together to create a search

- Usually a search will consist of several steps, including subject heading searches, keyword searches, combinations and some limits, and then a saving or output step.

Randomized controlled trial to evaluate tooth stain reduction with nicotine replacement gum during a smoking cessation program.

Whelton H., Kingston R., O'Mullane D., Nilsson F.

BMC oral health. 12 (pp 13), 2012. Date of Publication: 2012.

[Journal: Article]

View Abstract

AB In addition to its general and periodontal health effects smoking causes tooth staining. Smoking cessation support interventions with an added stain removal or tooth whitening effect may increase motivation to quit smoking. Oral health professionals are well placed to provide smoking cessation advice and support to patients. The objective of the present study was to evaluate the effect of Nicorette() Freshmint Gum used in a smoking cessation programme administered in a dental setting, on extrinsic stain and tooth shade among smokers. An evaluator-blinded, randomized, 12-week parallel-group controlled trial was conducted among 200 daily smokers motivated to quit smoking. Participants were randomised to use either the Nicorette() Freshmint Gum or Nicorette() Microtab (tablet). Tooth staining and shade were rated using the modified Lobene Stain Index and the Vita() Shade Guide at baseline, weeks 2, 6 and 12. To maintain consistency with other whitening studies, the primary end-point was the mean change in stain index between baseline and week 6. Secondary variables included changes in stain measurements and tooth shade at the other time points: the number of gums or tablets used per day and throughout the trial period; and the number of cigarettes smoked per day. Treatments were compared using analysis of covariance (ANCOVA), using treatment and nicotine dependence as factors and the corresponding baseline measurement as a covariate. Each comparison (modified intention-to-treat) was tested at the 0.05 level, two-sided. Within-treatment changes from baseline were compared using a paired t-test. At week 6, the gum-group experienced a reduction in mean stain scores whilst the tablet-group experienced an increase with mean changes of -0.14 and +0.12 respectively, ( $p = 0.005$ , ANCOVA). The change in mean tooth shade scores was statistically significantly greater in the gum-group than in the tablet group at 2 ( $p = 0.015$ ), 6 ( $p = 0.011$ ) and 12 weeks ( $p = 0.003$ ) with greater lightening in the gum-group at each examination period. These results support the efficacy of the tested nicotine replacement gum in stain reduction and shade lightening. These findings may help dentists to motivate those wishing to quit smoking using a nicotine replacement gum. NCT01440985.

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Emerging technologies for monitoring drug-resistant tuberculosis at the point-of-care<sup>☆</sup>

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**ABSTRACT**

Infectious diseases are the leading cause of death worldwide. Among them, tuberculosis (TB) remains a major threat to public health, exacerbated by the emergence of multiple drug-resistant (MDR) and extensively drug-resistant (XDR) *Mycobacterium tuberculosis* (Mtb). MDR-Mtb strains are resistant to first-line anti-TB drugs such as isoniazid and rifampicin; whereas XDR-Mtb strains are resistant to additional drugs including at least to any fluoroquinolone and one of the second-line anti-TB injectable drugs such as kanamycin, capreomycin, or amikacin. Clinically, these strains have significantly impacted the management of TB in high-incidence developing countries, where systemic surveillance of TB drug resistance is lacking. For effective management of TB on-site, early detection of drug resistance is critical to initiate treatment, to reduce mortality, and to thwart drug-resistant TB transmission. In this review, we discuss the diagnostic challenges to detect drug-resistant TB at the point-of-care (POC). Moreover, we present the latest advances in nano/microscale technologies that can potentially detect TB drug resistance to improve on-site patient care.

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Contents

## Risk Factors for Acquisition of Drug Resistance during Multidrug-Resistant Tuberculosis Treatment, Arkhangelsk Oblast, Russia, 2005–2010

Sarah E. Smith, Julia Ershova, Natalia Vlasova, Elena Nikishova, Irina Tarasova, Platon Eliseev, Andrey O. Maryandyshhev, Igor G. Shemyakin, Ekaterina Kurbatova, J. Peter Cegielski

Acquired resistance to antituberculosis drugs decreases effective treatment options and the likelihood of treatment success. We identified risk factors for acquisition of drug resistance during treatment for multidrug-resistant tuberculosis (MDR TB) and evaluated the effect on treatment outcomes. Data were collected prospectively from adults from Arkhangelsk Oblast, Russia, who had pulmonary MDR TB during 2005–2008. Acquisition of resistance to capreomycin and of extensively drug-resistant TB were more likely among patients who received <3 effective drugs than among patients who received ≥3 effective drugs (9.4% vs. 0% and 8.6% vs. 0.8%, respectively). Poor outcomes were more likely among patients with acquired capreomycin resistance (100% vs. 25.9%), acquired ofloxacin resistance (83.6% vs. 22.7%), or acquired extensive drug resistance (100% vs. 24.4%). To prevent acquired drug resistance and poor outcomes, baseline susceptibility to first- and second-line drugs should be determined quickly, and treatment should be adjusted to contain ≥3 effective drugs.

agents are essential for treatment of MDR TB because of their bactericidal activity relative to other second-line drugs (2,3). The second-line companion drugs are bacteriostatic and are used mainly to prevent amplification of resistance to the 2 key bactericidal drugs (4–6).

*Mycobacterium tuberculosis* drug resistance occurs by 2 mechanisms: initial infection with a resistant strain (primary resistance) or emergence of a resistant population of bacilli in a patient who initially had drug-susceptible TB (acquired resistance). Acquired drug resistance develops when inadequate treatment kills drug-susceptible *M. tuberculosis* bacilli while allowing bacilli with spontaneously occurring mutations that confer drug resistance to flourish until they predominate (7). Inadequate treatment can be a consequence of insufficient dosing, poor gastrointestinal absorption of oral medications, substandard quality of drugs, poor adherence to treatment, unsatisfactory duration of treatment, or treatment with a regimen containing >1 drugs to which the organism is

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