Searching MEDLINE and Embase for surgery

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Introduction and objectives

This guide will provide you with the essential information you need to start searching MEDLINE and Embase via the Ovid interface.
After working through this guide, you should be able to:

- Understand the **differences between MEDLINE and Embase**.
- **Conduct a search** for surgical evidence using the Ovid interface.
- **Translate your search** from one Ovid database into another.
- Begin to **understand limits in Ovid databases** and how these affect your results.

Who this guide is for

- For members needing a printed guide (eg due to intermittent internet access).
- To supplement a 1-2-1 training session.

Contents

What are Ovid, MEDLINE and Embase?

What does 'Ovid' mean?

Ovid is a publisher that hosts the MEDLINE and Embase databases and provides a search interface. But Ovid is not a database itself. Some libraries offer access to MEDLINE and Embase via different hosts, with different search interfaces.
It's important to keep a record of the database host(s) you are using.

Databases available through Ovid at the College include:
- MEDLINE
- Embase
- ERIC (education-focussed)
- HMIC (health management-focussed)

What is MEDLINE?

MEDLINE is the National Library of Medicine's (NLM) bibliographic database. It contains over 31 million references for journal articles, dating back to 1946. MEDLINE records are indexed with NLM Medical Subject Headings (MeSH). Along with MEDLINE, the NLM provides access to PubMed. MEDLINE and PubMed are related but there are differences in coverage. MEDLINE is a key database for advanced literature searches like systematic reviews.

What is Embase?

Embase is an Elsevier database. It contains over 45 million references from more than 7,600 journals, dating back to 1947. Embase records are indexed using the EMTREE thesaurus, which is similar to MeSH. Embase's coverage includes around 2,000 journals not included in MEDLINE. The two databases complement each other. The Cochrane Handbook of Systematic Reviews recommends that all reviews should search both MEDLINE and Embase as standard.

Accessing Ovid databases

Access all the College's e-resources, including the Ovid databases, via our online discovery portal: Surgical Library.

Logging in to online resources

To access the online resources, you need to log in to the RCS England homepage.
- Click the green **Log in** button at the top right of the page. Enter your username and password and then navigate to Surgical Library.
- Click the green **Log in** button at the top right of the Surgical Library page. It will automatically log you in and enable access to online resources.

Accessing MEDLINE and Embase

- From the Surgical Library homepage, click the **Clinical Databases** tab.
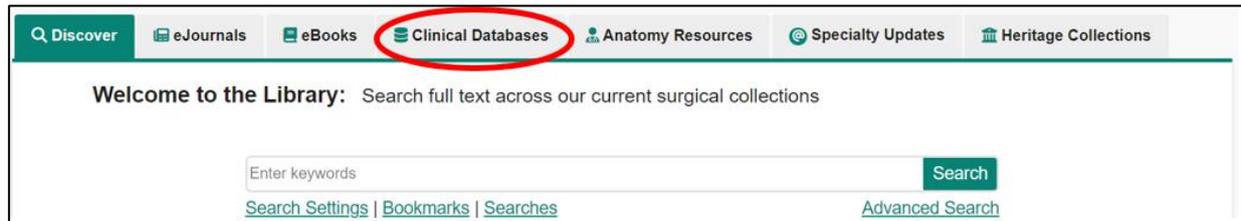
- Click the banner underneath the Ovid logo which reads **"The world's most trusted medical research platform"**.
- Then click **Go to Ovid MEDLINE/Embase/HMIC**.

Please note: ensure you have **logged in to both the College website and Surgical Library** before attempting to access the databases.

Ovid will open in a new tab. A menu will ask you to **Select Resource(s) to search:**


You should access just one database at a time.
We do not recommend searching more than one database simultaneously.

Searching MEDLINE and Embase

In Ovid, the MEDLINE and Embase search interfaces look very similar and work in the same way. The main difference for searching is that MEDLINE uses MeSH subject headings while Embase uses Emtree.

- From the **Select Resource(s) to search** menu, scroll down to **Medline** or **Embase**.
- Select **Ovid MEDLINE(R) ALL**, or **Embase 1974 to [current year] Week xx** and click **Continue**.
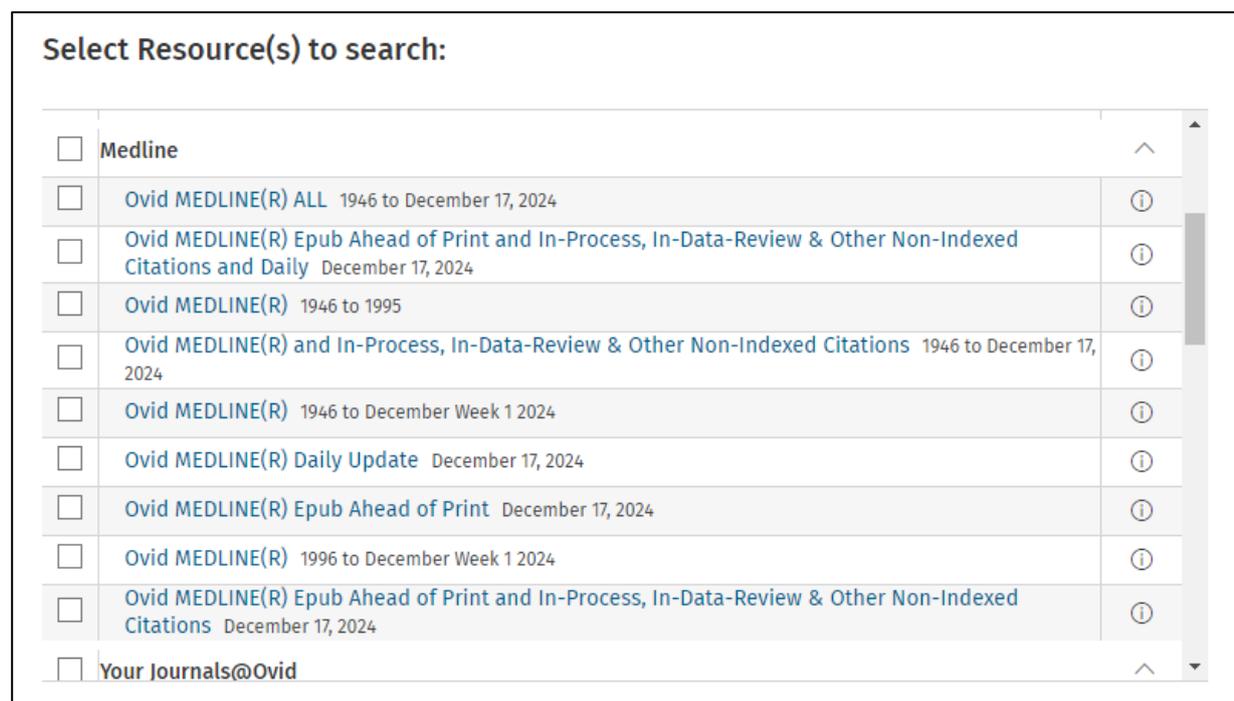
You will be taken to the MEDLINE or Embase homepage.

This guide covers the **Advanced Search** option, but the other tabs in the menu may be more suitable for your information needs. The **Basic Search** or **Find Citation** options can be used for a quick search or to find a specific article.

Please note: Before doing an advanced search, you should have:

- An understanding of subject headings (MeSH for Medline, or Emtree for Embase).
- An understanding of Boolean operators.
- Developed your search question.
- Investigated a range of keywords, alternative terms and MeSH or Emtree subject headings.

You may wish to revisit the **Basics of literature searching for surgery** guide before proceeding.

When you are ready to start, choose **Advanced Search** from the tabbed menu.
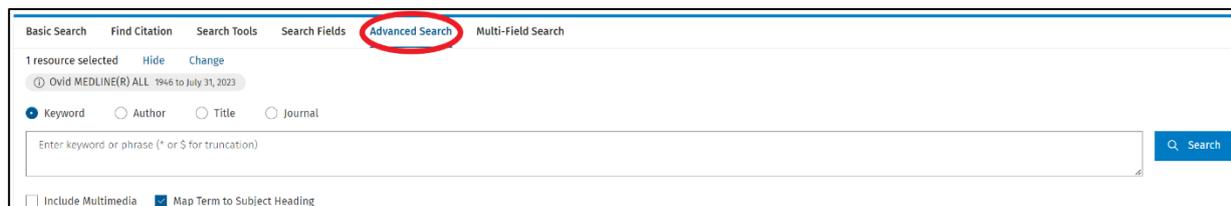
Map Term to Subject Heading is automatically ticked. This will help you identify and include MeSH or Emtree subject headings for your search.

Building your search strategy

Before searching, you should have prepared your research question and identified keywords and MeSH or Emtree terms for each topic/theme. We will use these terms to build and run your search strategy in MEDLINE or Embase.

Example research question: **Does listening to music pre-operatively reduce anxiety?**

Example scoping work: Does listening to music pre-operatively reduce anxiety?

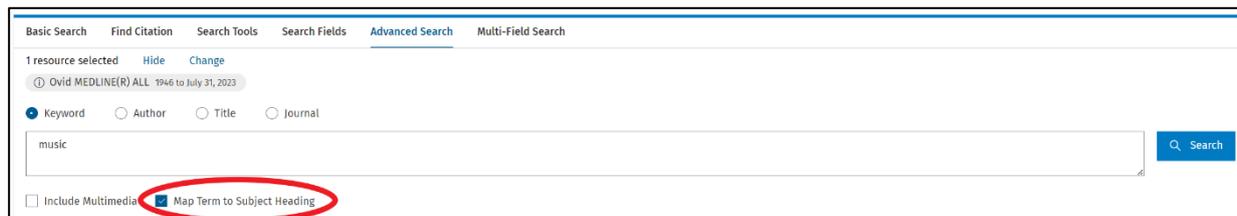| Key topics	Keyword	Alternative terms	Subject headings (MeSH)	Subject headings (EMTREE)
Listening to music	Music	Music* Song* Sound* Sing	Music/	music/
Pre-operative patients	Pre-operative	Preop* Pre-op* Presurg* Pre-surg*	Preoperative Care/	preoperative care/
Reduce anxiety	Anxiety	Anxi* Fear* Nerv* Stress*	Anxiety/	anxiety/

Reminders:

- Placing an asterisk (*) at the end of a word (truncation) allows searching for different word endings at once (eg fear, fearful, fearfulness etc.)
- MeSH and Emtree subject headings are followed by a slash, e.g. **General Surgery/**

Step 1: Searching with MeSH or EMTREE

We begin by searching the MeSH or Emtree thesaurus for our first topic. You may have already found relevant MeSH or Emtree terms in the planning stage, but MEDLINE/Embase can also help you identify them:

- Ensure you're in the **Advanced Search** tab and the **Map Term to Subject Heading** box is ticked.
- Enter the keyword for your first topic and click search. In our example, this is **music**.

- A list of potentially relevant subject headings will appear. Review each heading and select the one most appropriate to your topic.
- To find out more about a heading, click the **"i"** icon in the **Scope** column.
- Clicking on the term of interest will show its position within the tree

MeSH terms
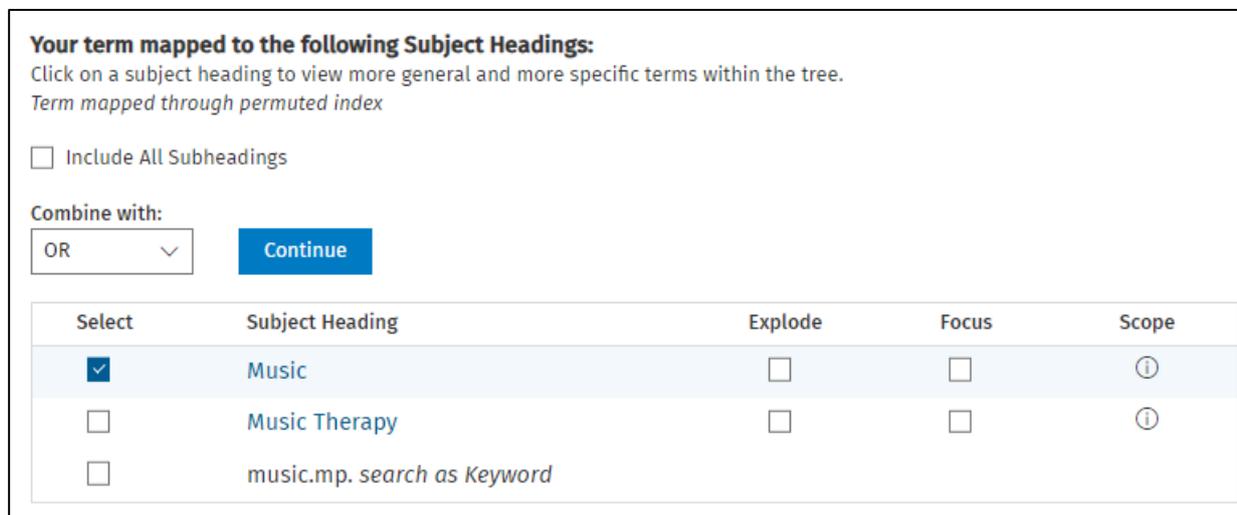
EMTREE terms

Your term mapped to the following Subject Headings:
Click on a subject heading to view more general and more specific terms within the thesaurus.
Term mapped through permuted index

☐ Include All Subheadings

Combine with:
[OR ▾]   [Continue]

Select	Subject Heading	Explode	Focus	Scope
☑	music	☐	☐	ⓘ
☐	music therapy	☐	☐	ⓘ
☐	active music therapy	☐	☐	ⓘ
☐	music-specific disorder	☐	☐	ⓘ
☐	receptive music therapy	☐	☐	ⓘ
☐	music.mp. *search as Keyword*			

Scope gives you more information about the term

Select	Subject Heading	Explode	Focus	Scope
☑	Music	☐	☐	ⓘ
☐	Music Therapy	☐	☐	ⓘ

Scope note information

Scope Note for: *Music*

MeSH HEADING: MUSIC

SCOPE: Sound that expresses emotion through rhythm, melody, and harmony.

NOTE: MUSIC THERAPY is also available

YEAR of ENTRY: 1966; for SONGS and VOCAL MELODY, use SINGING 2013

REFERENCES:
See Related:
   SINGING

Used For:
    classical music
    hip hop music
    hop music, hip
    jazz music
    melodies, vocal
    melody, vocal
    music
    music, classical
    music, hip hop
    music, jazz
    music, rap
    rap music
    rock and roll music
    song
    songs
    vocal melodies
    vocal melody

Subject headings in detail

Subject headings (like MeSH and Emtree) are organised hierarchically:
more general terms are higher up the tree whilst narrower terms are lower down.
Let's review an example of a MeSH tree for older people.

The MeSH term for older people is "Aged". Clicking on the i icon tells you that "Aged" refers to people 65 years of age or older.

Going up the tree, you can choose the broader term of "Adult". Or, go down the tree for more specific terms like "Aged, 80 and over" or, even narrower, "Centenarians".
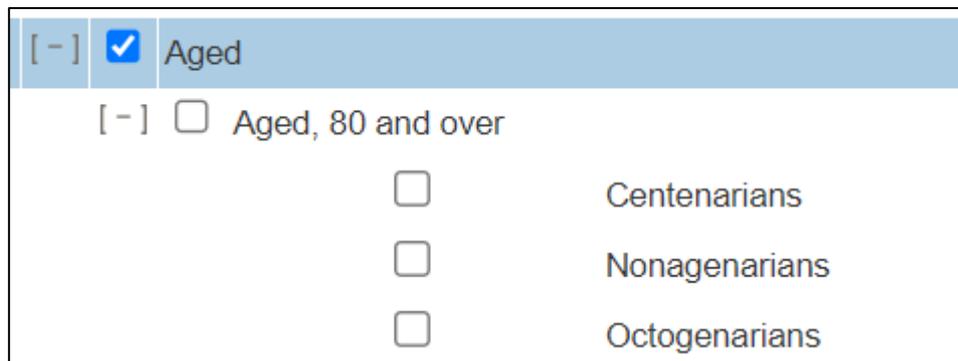
Each MeSH term has an Explode option. Choosing Explode asks the database to find articles indexed with that MeSH or with any of the narrower MeSH that sit underneath it in that tree.
Searching "Aged" with the **Explode** option finds articles indexed with "Aged" as well as articles indexed with "Aged, 80 and over", "Centenarians", "Nonagenarians" and "Octogenarians" headings.

For Emtree, subject heading hierarchy looks like this:
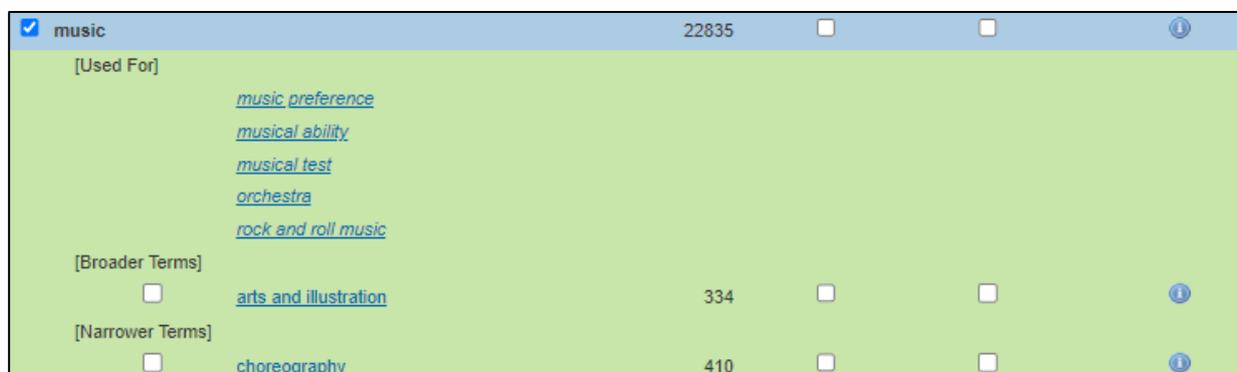
Carefully review the trees of the subject headings you are considering and decide which level of heading is most appropriate for your search.

If in doubt, the Information Specialists can advise and assist.

- Choose the most appropriate subject heading for your search and decide whether to tick the explode option (to include more precise terms) or not. Then click **Continue**.
- A list of subheadings will appear. You can ignore these and click **Continue.**

For more information about subheadings, [email](#) the Evidence Support team.

You've now conducted the subject heading search for your first topic. Your search appears in Search History at the top of the page. The results are displayed under the search box.

Step 2: Searching with keywords

After subject heading searching, you should search with the keywords (freetext) for your topic. Using both subject headings and keywords ensures your search is comprehensive.

Enter the keywords and alternative terms for your first topic in the search box. Enclose all the keywords in brackets and combine them with **OR**.

Example:
(music* or song* or sound* or sing*)

Before clicking search, tell the database where to look for your keywords eg only in the title or abstract. To do this, enter some **Search Fields**. For comprehensive searches, we recommend the title and abstract fields. To add these to your search, add .ti,ab after your brackets. You can also use kw,kf which instruct searches within subject headings and author-assigned tags.

Example:
(music* or song* or sound* or sing).ti,ab,kw,kf

Now click **Search**.

Your keyword search has now been conducted. The search will appear in the search history at the top of the page and your results are displayed under the search box.

Step 3: Combining your MeSH/Emtree and keyword searches with OR

You now need to combine the MeSH and keyword searches for your first topic.

- Go to your Search History and tick the boxes next to the MeSH search and keyword search for your first topic.
- Click **Combine with: OR**.

You have now completed the search for the initial topic of your research question. You now repeat this process for all remaining topics. For each:

1. Find, select and search all relevant subject headings (MeSH or EMTREE).

2. Search for all your keywords, including your alternative terms.

3. Combine your subject heading and keyword searches using OR.

For our example, adding in the remaining elements would look like this:

1   Music/
2   (music* or song* or sound* or sing).ti,ab,kw,kf.
3   1 or 2
4   Preoperative Care/
5   (preop* or pre-op* or presurg* or pre-surg*).ti,ab,kw,kf.
6   4 or 5
7   Anxiety/
8   (anxi* or fear* or nerv* or stress*).ti,ab,kw,kf.
9   7 or 8

Step 4: Combining your search elements with AND

Once you have entered all the different topics of your search into MEDLINE, it is time to combine them into your final search using **AND**.

Looking at your Search History, identify the lines you want to combine with AND. These will be the lines where you combined your MeSH and keyword searches for each topic using **OR**.

In our example search, these are lines 3, 6 and 9.

Once you have identified the lines you want to combine with AND, tick these in the Search History and click **Combine with: AND**.

This combines all the topics of your research question. This means that any articles in the results should be about **music** AND **pre-operative patients** AND **anxiety**, i.e. all three topics should be present in the results.

Step 5: Adding limits

To add limits to your search, click the **Additional Limits** box under the search results.

On this screen you can choose to add limits to your search. We recommend using **Publication Year** and **English Language**, as these are the most reliable.

Once you have selected your limits, click **Limit A Search** from the top of the screen.

Step 6: Saving your search

Before you move on to searching other databases, take the time to save your search strategy and results.

To save your search strategy, click the **Share Search History** box under your search history.

This will give you the option to email yourself your search history, copy a link to your search or copy your full search strategy by choosing copy search history details.

To save your search results, you can choose to **Print**, **Email** or **Export** your results to a reference manager. If you have created an Ovid Personal Account, you can also save your search strategy and results to your account space.

Iterative searching

While you are searching one database, you may discover further terms or improve the search in some way. Make sure you investigate how to adapt the search in the other database, using this new knowledge. For example, Emtree gives you many synonyms, which can help you think of new keyword terms to add to the search.

Narrower terms for anxiety show that 'fear of…' could be a useful phrase

anxiety	307755

[Broader Terms]

☐	fear	84377

[Narrower Terms]

☐	anticipatory anxiety	753
☐	dental anxiety [+NT]	3327
☐	eco-anxiety	117
☐	fear of childbirth	540
☐	fear of death	633
☐	fear of falling	1493
☐	fear of missing out	197
☐	fear of pain	89
☐	math anxiety	28
☐	performance anxiety	516
☐	school anxiety	17
☐	social anxiety	1658
☐	test anxiety	210

Library services

RCS England members and fellows can get free help and advice on literature searching from: evidencesupport@rcseng.ac.uk

Literature search help

- Ask one of our experienced Information Specialists to search the literature on your behalf. Choose from a quick search, comprehensive search, or search to support systematic review.
- Have your search strategy reviewed by an Information Specialist, with helpful feedback.
- Book 1-2-1 online sessions on literature searching tailored to your experience and needs. We can train you on searching databases, including MEDLINE, Embase, and the Cochrane Library.

For literature search or training enquiries, email evidencesupport@rcseng.ac.uk

Other searching training guides

- Getting started with Surgical Library
- Basics of literature searching for surgery
- Searching Cochrane Library for surgery
- Reporting surgical search results

Contact details

Library and Archives Team
The Royal College of Surgeons of England
38-43 Lincoln's Inn Fields
London WC2A 3PE

General library enquiries: Library@rcseng.ac.uk or 020 7869 6555 (9am - 5pm)
Or Contact us via a web form.