Medline & Embase via Ovid

Medline and Embase are online databases that index articles from medical, dental and biomedical international academic journals. Both can be accessed via the Ovid search interface.

Medline’s coverage includes approximately 5600 journals. It covers slightly more American journals than Embase. It indexes articles published since 1946 and is updated daily.

Embase’s coverage includes approximately 6100 journals. It is European in origin, and covers slightly more European journals than Medline; its coverage is particularly strong in pharmacological and toxicological subject areas. It indexes articles published since 1974 and is updated weekly.

If you have any queries following the workshop, please contact the Medical Sciences Liaison Team in the Walton Library, telephone: 0191 208 7722, e-mail: medliaison@newcastle.ac.uk.
Exercise 1  Accessing Medline

Open your web browser and start at the library homepage: http://www.ncl.ac.uk/library

Scroll down and select the Databases, e-journals and e-books link

Click Ovid (or Medline - they both link to the same page).

Most electronic resources can be used without any additional logging in when working from PCs 'on campus' (on the University network - in cluster rooms etc).

Click the Connect to Ovid (on campus connection) link.

You can now select which database you wish to search. Ovid provides access to several databases including Medline and Embase.

You can choose various year ranges for Medline back to 1946 (1946-present being the entirety).

You can limit your searches to specific years from within a database, but if you know you are only interested in certain years you can set that as a baseline by choosing the appropriate database at this point. For the purposes of this tutorial, select 1996 to as near to present as possible, i.e. click 'Ovid MEDLINE(R) Without Revisions 1996 to [the most recent week]'[The 'without revisions' just means that any pre-1996 records that subsequently got amended and re-added after 1996 wouldn't be included].
Exercise 2  Searching Medline

Suppose you have been set a question requiring that you find information about the GI Tract.

Click to remove the tick from the ‘Map Term to Subject Heading’ box.
Type ‘GI tract’ in the search box and click Search.
The search will run and you’ll get results where that phrase appears somewhere in the record (in one of the designated fields - generally the title, abstract and subject headings).
The details of the search will appear in the Search History and the first page of results will appear below.
Scroll down and have a quick look at the results.

Lots of these results seem to refer to the ‘gastrointestinal tract’ rather than just ‘GI tract’. Maybe there are other results that only use that phrase (and not ‘GI tract’) that we’ve missed so far.
Type ‘gastrointestinal tract’ in the search box and click Search.

Question 1 (answers are at the back of this booklet!)
Look at the number of results listed in your search history - which phrase has located more results?

Maybe there are other relevant article records that use other words? Can you think of anything else?
Try searching for ‘digestive tract’
And what about specific parts of the GI tract? Try searching for ‘intestines’
If we’re interested in any part of the GI tract, there’s scope for MANY more terms here - maybe having a think and preparing a list of potentially relevant terms would be useful. We’ll return to this idea later, but for now, let’s put all of our results so far into one set together.
Select (using the tickboxes on the left in the Search History) all four of the searches.
Now click Combine selections with: OR (under the search history).
['OR' rather than 'AND' because you want results that contain at least one of the terms, not necessarily all of them. This will be covered in more depth later].

Exercise 3  Viewing the results

Scroll down to view the results of your combination.
Each reference is displayed in a standard format including:
Article title, source (which is the journal title), volume, issue, page numbers, year and author(s).
Understanding what bits are the volume number, the issue/part number and the pages numbers is essential to being able to locate and reference articles. Ensure you understand what is what in your results!
Browse down through your results. Do they look useful?
Pick one and click the link for its ‘Complete Reference’ on the right.
This will provide all the information that’s on the database about the article. This will include an abstract if one is available. An abstract is a concise summary of the article, which is obviously useful in assessing the potential usefulness of an article.
You’ll also see a list of ‘MeSH Subject headings’ that the article has been classified with.
All records on Medline are indexed using a standardised set of subject headings. Whenever a new record is added to the Medline database, the subject matter of the article is analysed, and any appropriate subject headings (as many as are applicable) are added to the record.
We can use subject headings to make our search process easier and more effective!
Click Search (top left) to return to the main search page.

Exercise 4  Searching by subject heading

We can use subject headings to find results about the gastrointestinal tract regardless of the specific words used in the record.

Click to tick the ‘Map Term to Subject Heading’ box.

In the ‘Enter keyword or phrase’ box, type ‘GI tract’ and click Search.
There are three steps in the subject heading selection process:

**Step 1: The Mapping Display**

When you search with the 'map term to subject heading' option ticked, Medline tries to match ('map') what you’ve entered to its list of subject headings. If it doesn't match exactly, it displays a list of subjects to choose from which might be appropriate choices for your search.

(At the bottom of this list, you'll always get the option to 'search as Keyword' if none of the subject headings match and you do just want the search to locate results containing your specific word/phrase).

The main advantage of using subject headings instead of just searching for words/phrases as keywords is that if you find a suitable subject heading, you'll get the vast majority of relevant results in a single search - whereas keyword searching relies on you searching all potentially relevant terms (in cases such as trying to cover all terms related to all areas of the gastrointestinal tract, this would be difficult!).

Furthermore, results located using subject headings should all, to some extent, be about the selected subjects, and (unlike keyword searches) won't include results that mention the terms but aren't really about the concept. In other words, using a subject heading search ensures context in your search results.

As you can see, in this instance, your search has mapped to a single term: 'Gastrointestinal Tract'.

Click on Gastrointestinal Tract (the words themselves) to see the subject index tree.

**STEP 2: The Subject Index**

Medline shows your chosen subject in the context of the subject index 'tree' structure, with 'broader' terms on the left of the screen and 'narrower' (more specific) terms indenting towards the right.

You can see that the 'Gastrointestinal Tract' is a narrower term of the 'Digestive System'.

You can view or hide narrower terms by clicking + (to view) or - (to hide) icons to the left of terms. If a term has a '+' beside it, it has narrower terms that are not showing at the moment, if it has a '-' then it has narrower terms which are showing at the moment. If a term has neither a '+' nor a '-' then it doesn't have any narrower terms. Other tips about using the subject index tree appear at the bottom of the page.
Question 2
Which of these is NOT a narrower term of 'Gastrointestinal Tract'?

- Upper Gastrointestinal Tract
- Pharynx
- Liver
- Intestines

Question 3
Which narrower term of 'Gastrointestinal Tract' has no narrower terms of its own?

The number or 'hits' (articles on each subject) is shown for each term. Note that the results for a broad term do not necessarily include any of the results of its narrower terms - e.g. the hits for 'Gastrointestinal Tract' are articles about the gastrointestinal tract in general (rather than specific parts of it).

Often, when the subject heading that you're interested in has narrower terms, you'll want to include the results for those narrower terms (and narrower terms of narrower terms and so on). Selecting the 'explode' function for your main term will do this.

Ensure that the box to the left of 'Gastrointestinal Tract' is ticked and tick the box in the Explore column to the right. This will also include all results about any specific part of the gastrointestinal tract (narrower terms).

(The column beside 'explode' is for 'focus'. Although this could also be applied, do not do so for this search - we will examine this function later).

Click Continue at the top of the screen.

**STEP 3: Subheadings**

You are now offered a list of 'subheadings'. These are aspects of the chosen subject(s), rather than broader/narrower terms, and can be used to locate the most relevant results when you’re only interested in particular aspects of a subject

(e.g. if we were interested specifically in radiography or radionuclide imaging of the gastrointestinal tract, we could select those options to only get results relevant to those areas)

If you aren't interested in any specific aspect, you can just select 'include all subheadings'.

Select Include all subheadings and continue to complete the search.
Question 4
How does the number of results compare with your previous combined keyword search?

Exercise 5  Focusing

All the results found by the search will have been classified as being *about* the gastrointestinal tract (or one of its component elements) in some way. However, suppose you decide you have too many results and only want the articles where that is the main focus of the article.

Search again for 'GI tract' (or 'gastrointestinal tract' would be fine too)
Click on the 'Gastrointestinal Tract' subject heading to view the subject tree.
Select 'explode' again to include the narrower terms.
However, this time, also select 'Focus' too.

If the 'Focus' box for a subject is ticked, the search will only find references that list the subject(s) as a major focus of the article. Focus and Explode are separate functions: you can use neither, either of them individually, or both - depending on what is most appropriate for your search.

If you select neither, you will get all results for the one selected subject heading.
If you just select explode, you will get all results of the selected subject heading plus any of its narrower terms (including narrower terms of narrower terms, etc.).
If you only select focus, you will get results where the one selected subject heading is the main focus of the article.
If you select both explode and focus, you will get results where either the selected subject or any of its narrower terms are the main focus of the article.

Finish the search, **including all subheadings**. The focused search will appear in the Search History (the asterisk on the left of the term indicates that it is focused).

Of course, all of the results from the focused search will be within the unfocused search results.

Question 5
Is the number of results returned by the focused search **approximately**: 'the same', 
'slightly more', 'slightly less', 'three-fifths', or a 'tenth' of the number of results found by the unfocused search?

Focusing, and/or using subheadings (if any are appropriate), can get the best results from your search, but can substantially reduce the number of results found - particularly if you're going to be combining several subjects.

When making decisions about what options to use in your own searches, you need to tread a fine line between quantity and quality of results - if you're too specific, you may miss useful results, but if you're not specific enough, you risk wasting time sifting through large numbers of results.

**Exercise 6  Limiting your search**

If you are only interested in articles within certain parameters, you might decide to use limits on your search.

*Suppose you wish to limit the focused 'Gastrointestinal Tract' search to material published since 2014 in English.*

Below the search box, click Limits (expand) to see the most commonly used limits - these can be applied to the most recent search (leave the search box blank and click 'Search').

However, for a wider range of search options, click the ‘Additional Limits’ button (do so now).

You can choose the results set you wish to apply limits to - the default is the most recent. Ensure that the focused exploded Gastrointestinal Tract search is selected. Have a look at the limiting options available.

Click the tickbox beside ‘English Language’ (or alternatively, scroll down and select English from the Languages box).

Choose the publication years 2014 to 2019 (or 'Current')

Click on 'Limit A Search' at the top or bottom of the screen. The limited search will appear in the Search History. Note that the number of search results will be significantly reduced with these limitations applied.
**Exercise 7  Search by keyword and using truncation**

Suppose you wanted to locate material on bungee jumping injuries.

Perform a search for 'bungee jumping'

None of the suggested subject headings are an exact match so we'll have to use keywords

Select 'bungee jumping.mp. search as Keyword' then Continue.

You'll be returned to the main search page. The search will have located results with the specific phrase 'bungee jumping' in the title, abstract or subject fields.

Keyword searching allows you to search for topics that don't have suitable subject headings. When using keyword searching, it's important to remember: it may include results that aren't actually that relevant, where the search term is just mentioned briefly in the abstract; conversely, it may miss results that are on that topic but which don't include the specific search term (to get around this, you may need to search for several alternative terms and/or use truncation).

**Truncation operators**

When keyword searching, you often need to search for a range of terms to cover the topics you're interested in. You can simply search for every relevant term and combine with 'or', but if some of the terms are similar (i.e. start with the same root of the word) you can use truncation to cover multiple terms in one search.

In this example, 'bungee jumping' is a fairly specific term, but there might be some relevant articles that, for example, use the phrase 'bungee jump' but not 'bungee jumping'.

On the main search page, take the tick out of the Map Term to Subject Heading box (since you know there are no relevant subject headings, this will stop the search trying to map to subject headings and will just run a keyword search straight away).

Search for 'bungee jump$' (with the dollar sign at the end).

This search will find articles containing the term 'bungee jump', 'bungee jumper', 'bungee jumping' etc.

This is called 'truncation' and the dollar sign is a 'truncation symbol' - it can be used to represent any number of letters (including zero), so you can cover multiple similar terms with a single keyword.
**Question 6**
How many *extra* results have you found?

There are other truncation/wild card options, including '#' (represents any one letter) and '?' (represents either one or zero letters) - both useful for alternate UK/USA spellings.

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**Exercise 8   Locating and accessing documents**

Browse to find the following reference within the results of the search you’ve just done (if results are arranged reverse-chronologically, it should be within the first ten results):

Zhou W. Huynh TT. Kougiass P. El Sayed HF. Lin PH.
Traumatic carotid artery dissection caused by bungee jumping.

Beside the reference click the 'Find@Newcastle' icon.

[Pop-up blocking settings may prevent the window opening. If so, just override it by choosing to ‘always allow pop-ups from this site’ or click the ‘click this link to open document’ link.]

Find @ Newcastle opens a new window offering options for accessing the document. If the document is available electronically, there will be links to any e-journal providers. If not, but the journal is held in print, there should be info about library holdings in print.

In this case, the document is available electronically, via Elsevier Science Direct Open Access Journals.

Provider websites have slightly different interfaces, but should offer the option to view the full text article (either in HTML or PDF or both).

Click the link to ‘Elsevier Science Direct Open Access Journals’ to access the article. Click the link to ‘Download PDF’.

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**Question 7**
According to the Case Report section, how old was the male subject?
Now close the e-journal window, but keep the Library Search window open. Click the ‘Newcastle University’ icon to move to the library homepage.

Some articles will not be available through online subscriptions but will be available in print in the library.

Suppose this article wasn't available electronically.

Search Library Search for ‘Journal of vascular surgery’.
You’ll see from the top record that this is available in multiple versions. Click to see all versions. Click the title of the non-online record and scroll down.

**Question 8**
Which *year* do the holdings start?

**Question 9**
Which *volume* is that?

Compare the article details (volume: 46, issue: 5, year: 2007) to the print holdings.

**Question 10**
Does the library hold a print copy of this article?

You’ll see that all the print holdings are listed as being in the ‘Research Reserve’ – because we’ve stopped subscribing to the print journal, we’ve moved all the stock to our off site store, the Research Reserve.

If you find that a volumes or copy of an article is held in Research Reserve, you can request a scanned copy or transfer of the print item via the *Desktop Delivery Service* - dds.ncl.ac.uk. You’ll simply need full details of what you want, including the shelfmark.

Close the Library Search window, return to the ‘Ovid’ window and click ‘Search’ to return to the main search page.
Note - One of the limiting options is the ‘Full Text’ limit. Be aware that using it will NOT locate all available articles. The articles found using this limit will be electronically available, but it only locates articles available through Ovid itself or a limited number of other providers, thus missing many articles the University subscribes to via other e-journal providers. If a search returns a lot of results, it can be a quick way of getting access to some information, but be aware that you will ‘lose’ a significant proportion of potentially relevant results so it is usually not good practice.

Exercise 9 Complex searches

Often your research topics will require the use of several topics which you should search for separately, then combine appropriately, then apply limits to.

Imagine that you have been asked to find if any original research articles have been published on the causes of metabolic disease in premature babies.

There are several elements to this question and it is good practice to break it down into those elements before you begin your search.

In this case:

- Subject 1: Metabolic disease - cause
- Subject 2: Premature babies
- Publication type: Original research articles (i.e. primary literature, not reviews)

You could then think about alternative ways of phrasing each subject - so (and this would require some preliminary reading around the subject) you might include various types of specific metabolic diseases, and also variations on ‘premature babies’ - ‘premature infants’, ‘prematurity’, ‘premature’.

If you end up searching by keyword, the more terms you have prepared, the easier it is. If you find matching subject headings, it’s less essential but still useful to have considered terms.

Let’s start searching: before searching, ensure ‘Map Term to Subject Heading’ is selected.

First search for ‘metabolic disease’

This should match neatly to a subject heading - click it.
Then when viewing it in the tree you need decide whether Explode is appropriate (i.e. are there narrower terms and, if so, do you want to include them? If unsure PLEASE ASK).

For subheadings, it is specifically the ‘cause’ aspect of metabolic diseases that is of interest, so select Etiology (American spelling of ‘aetiology’) to get the most relevant results.

Now search for ‘premature’ - this is slightly more complicated. You should see both ‘Infant, Premature’ and ‘Infant, Premature, Diseases’ suggested among the subjects (plus ‘Infant, Extremely Premature’).

When deciding which subjects to use, check the ‘scope notes’, by clicking the ‘i’ icons on the right, to get info about what the subject means and covers. In this case, though, the scope notes are not much help with your decision.

You could click on each term to check if they were connected somehow (e.g. ‘Infant, Extremely Premature’ is a narrower term of ‘Infant, Premature’ so one exploded search can cover both), however, you’d see that ‘Infant, Premature, Diseases’ is not directly connected to ‘Infant, Premature’.

It looks like both headings may be appropriate. Although it’s possible to select multiple terms from the subject heading mapping list, it’s better practice to complete each search separately then combine (otherwise you don’t get subheading options and are restricted in your combining choices).

So, complete a search for ‘Infant, Premature’, following through the steps – remember to use Explode if appropriate (so in this case, we can include the Extremely results), then Include All Subheadings.

Next search again (either just ‘premature’ again or ‘infant, premature, diseases’ - it doesn’t matter, as long as you can select the subject you want from the mapping screen) and choose ‘Infant, Premature, Diseases’ - again, check for narrower terms (and if there are some, decide if they’re relevant for what you want) to decide if Explode is required, then Include All Subheadings.

(Since we’ve found satisfactory subject headings we wouldn’t need to try any other alternative phrasing of our subjects, since hopefully the articles located by the subject headings will cover all relevant articles (regardless of the words used in the articles themselves.)

Your three subject searches should now be listed in the Search History - and can be combined. Select your two Premature Infants searches, and click the button at the
bottom of the search history to combine the selection with Or - since either would be sufficient to represent that aspect of the search.

You’ll get a set of results in your Search History representing this combination.

Now combine that results set with the Metabolic Diseases search, using And.

You can now apply limits to that combination to get the final results. If looking for primary literature (i.e. articles directly reporting research findings), you can identify and eliminate review articles from your search results to leave (mostly) original research articles.

Apply the limit of review articles to the combined results set to get another set that are just the reviews.

For this exercise, these are the results you don’t want. So you want the prior set of results except for the ones in that limited set.

Remove the review article results from the main search results by typing (in the search box): the set number of your penultimate search, then ‘NOT’, then the number of your last search, for example ‘10 NOT 11’

This will eliminate the review articles from your search results, leaving you with a set of original references.

**Exercise 10  Changing database**

Embase is another database (with different journal coverage and different subject headings) available via Ovid. You could have chosen Embase instead of Medline when initially logging in. To change database whilst logged in, click Change just above your current database choice (above the search box on the main search page).

The functionality is very similar on both databases, therefore the functions explained in the Medline section of this tutorial will be available when using Embase. The most notable difference is that the subject heading index in Embase is displayed differently to that in Medline.

From the list of databases (that comes up when you click Change), select the Embase coverage from 1996 to present, e.g. EMBASE 1996 to 2018 [most recent week!!]
When changing database, you can either re-run the search you've already done or clear it. To clear it, tick a database and click 'OK'. To re-run, click 'Run Search' or just click on the name of the database.

For now, try re-executing your Medline search on Embase. It may take a few moments.

Note – Re-executing the search history in a new database:
This can be very useful if you've performed a complex search and want to quickly run exactly the same searches on another database to look for more results.
However, if you have time, it's better to start from scratch, because the different databases use different subject heading lists and limiting options, so sometimes they will not be recognised when re-executed on another database (plus there may be relevant subject headings that weren't available on the first database). Always search only ONE database at a time. In this instance note that the “review articles” limit used in Medline is not valid in Embase.

**Exercise 11 Keyword and Subject Searching in Embase**

Suppose you want to find information published since 2006 on the use of Dermagraft in the treatment of diabetic foot ulcers. Your search would have the following parameters:

- Subject 1: Dermagraft
- Subject 2: Diabetic foot ulcers
- Date: Since 2006
- Publication type: None specified

Begin by searching for 'Dermagraft'

Embase is unable to map this to a specific useful Subject Heading, so select 'dermagraft.mp.search as Keyword' and Continue to perform a keyword search.

Now search for ‘diabetic foot ulcers’

Decide which subject heading is most appropriate. Although it doesn’t specifically mention ulcers, you should see that ‘diabetic foot’ is the subject to go for (since it’s ‘used for: foot ulcer, diabetic’). Click it.

Important: You will see that Embase does not display the subject heading in a ‘tree’ format the same way that Medline does.
However, the Thesaurus display contains the same information, just shown in a slightly different way. For each term, it will list:

- ‘Used For’ terms: as would be found in the scope note, these just represent other ways of describing your chosen subject.
- ‘Broader terms’: the direct broader concept that you’d find displayed above and to the left of your term in Medline - with the additional benefit that if your term is actually a narrower term of several different broader terms, they can all be listed.
- ‘Narrower terms’: just as you'd find indented below your term in Medline. These are what you need to look for to decide whether or not to explode your term. Any marked with ‘[+NT]’ have narrower terms of their own.
- ‘Related terms’ are those that are not broader or narrower but which have some link to the term you’re looking at and might be worth considering too.

Examine your subject. You’ll see that ‘skin ulcer’ is a broader term – click on it to view that subject.

You’ll obviously find that one of its narrower terms is ‘diabetic foot’ – click on it to return to that subject.

You’ll need to decide whether or not to explode diabetic foot, then continue, then include all subheadings.

**Question 11**
Does the subject require exploding?

Combine these searches (this works the same as in Medline).

Apply a publication year limit to the combination (the range of limits is slightly different but the process is the same as in Medline).

**Exercise 12 Optional: exporting references into EndNote**

If you use EndNote bibliographic management software and would like to export results directly from Ovid databases into an EndNote library, open the EndNote library, then while viewing your Medline or Embase results, select a few (by clicking the tickboxes) and examine the options at the top of the list.

Click ‘Export’.

In the box that appears, choose to export to EndNote, choose to include ‘Citation + Abstract’, then click ‘Export Citation(s)’.

*(If prompted to select an import filter, select EMBASE (Ovid))
The selected references from Embase will be imported automatically into your EndNote library.

Double click on one of these references and look through it to see that the information has been imported into the correct fields (then close the reference).

To see the complete list of all references now in your library, select ‘All References’ from the options down the left of your library.

Exporting from Medline works in exactly the same way.

**Exercise 13 Optional: Saving searches on Medline and Embase**

As well as saving references (select the ones you’re interested in then, at the top of the results list, you should find the options for what you can do with your results - e.g. print, e-mail or export to EndNote), you can also save your actual Search History so that you can re-run the search later.

First, ensure your Search History contains only the searches you wish to keep (you can select any you wish to remove and click ‘Remove’).

To save searches, you will need an Ovid personal account. To create one, click ‘My Account’ at the top of the page, then click ‘Create Account’.

Enter details in the required fields. Then click Create.

When you’re logged in to your personal account you can save searches.

From the main search page, click ‘Save All’ just below the Search History.

Type something as your ‘Search Name’

You don’t have to put anything in the ‘Comments’ field but you could add notes to remind you what your search was about.

The ‘Type’ box gives you three choices:

- ‘Temporary’ keeps your search for 24 hours
- ‘Permanent’ keeps it indefinitely
‘AutoAlert’ saves such that when the database you ran the search in is updated with new references, details of any new material matching your final search set will be e-mail
‘My projects’ allows you to save multiple searches within the same ‘project’ (you can also add your own notes to references while using this function).
Select ‘Permanent’ and click ‘Save’.
You will be returned to the main Search page.
To view your saved searches, click the ‘My Workspace’ tab above the search history then select ‘Saved Searches/Alerts’. (To run one, select it and click ‘Run’ - you don’t need to do this now).

This concludes the tutorial.

**Answers to questions**

Q1 - gastrointestinal tract
Q2 – Liver
Q3 – Pharynx
Q4 - much greater
Q5 – three-fifths
Q6 - 7
Q7 – 28 years old
Q8 – 1993
Q9 - 17
Q10 – No, print holdings end in 2006
Q11 – no – it has no narrower terms

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