




SEARCH
MEDLINE
on
Ovid

Ovid MEDLINE Manual

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KNOW HOW
TO FIND
RELEVANT
ARTICLES

1 ACCESSING THE DATABASE ▶▶

Using the resources provided by the University Library

To access MEDLINE, go to the **University Library of Bern website (ULib)** (www.ub.unibe.ch).

Click on **Research**, then **E-Media** and under **Databases** type in **Medline** and choose **MEDLINE ALL (via Ovid)**.

The screenshot shows the University Library of Bern website. The navigation menu includes Research, Services, Faculty libraries, and About us. Under Research, there is a sub-menu with E-Media, Databases, E-Journals, E-Books, and E-Newspapers. The Databases section is highlighted, and a search for 'Medline' is shown. The search results list MEDLINE (via PubMed.gov), MEDLINE ALL (via Ovid), and MedlinePlus - Trusted Health Information for All. A callout box provides details for MEDLINE ALL (via Ovid), including a link to the campus network Uni Bern/VPN and a description of the database's coverage.

▶▶ Click on **campus network Uni Bern/VPN**, to proceed to the Ovid main search page.

Side note: You may change the database (i.e. to Embase) by clicking on **Change**, then tick the desired database.

In this manual you don't need to do that - please continue with MEDLINE (see above).

The screenshot shows the Ovid search interface. The 'Basic Search' tab is selected. The search results show '1 resource selected' and a 'Change' button. The search criteria are set to 'Keyword'. The search box contains the text 'Enter keyword or phrase (* or \$ for truncation)'. The search options include 'Include Multimedia' and 'Map Term to Subject Heading'. The language is set to 'English'. A dropdown menu titled 'Select Resource(s) to search:' is open, showing a list of databases with checkboxes. The 'Embase' database is selected. The dropdown menu also includes buttons for 'Delete Group', 'Add Group', and 'Continue'.

The main search page

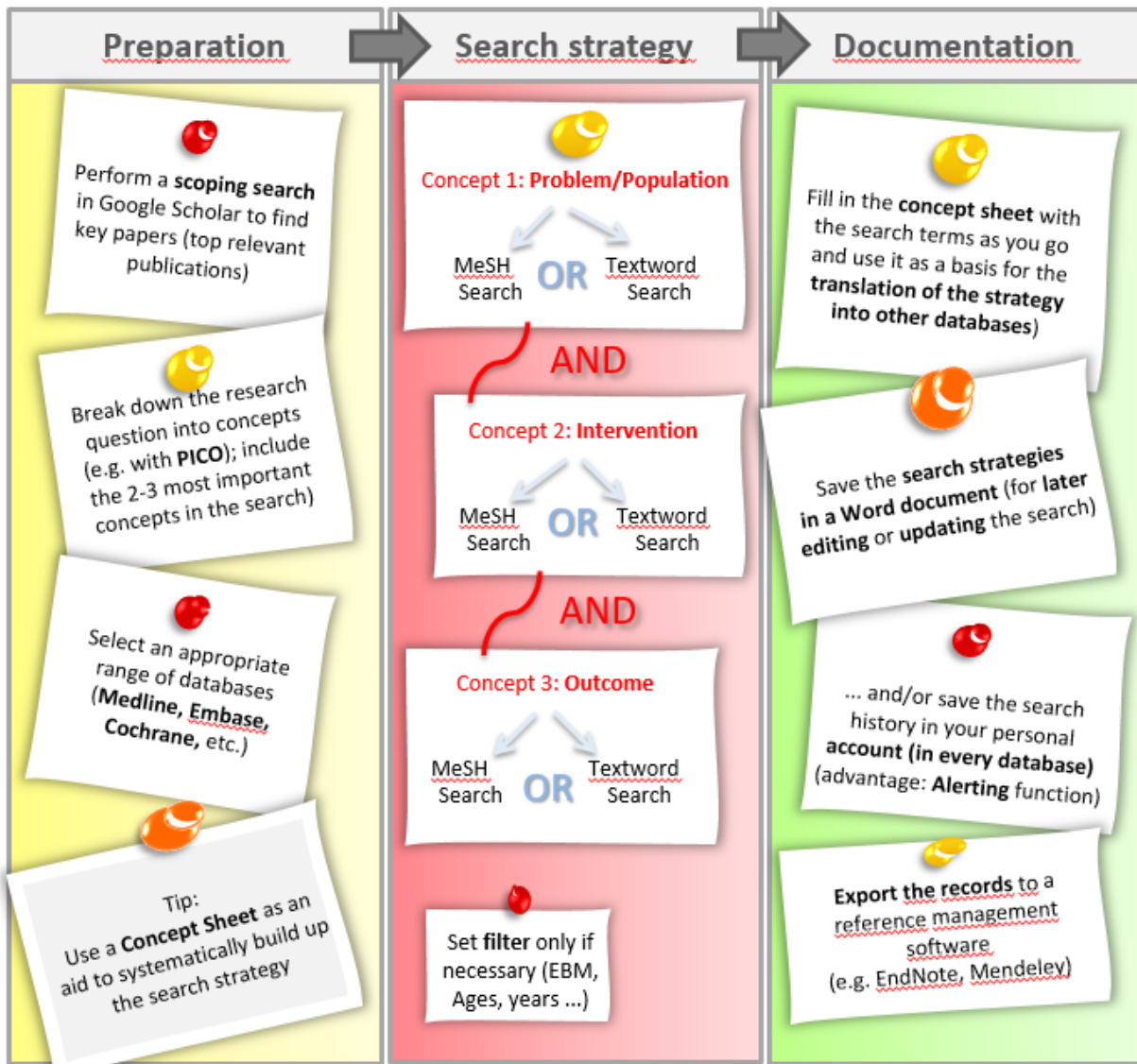
In MEDLINE you will see the following screen. See the main features:

The screenshot shows the Ovid MEDLINE search interface. At the top, there is a navigation bar with 'Ovid' logo, 'My Account' (1), 'Bibliothek fragen', 'Ovid Search Engine', 'u^b', 'Help', 'Feedback', and 'Log Off'. Below this is a search bar with tabs for 'Search', 'Journals', 'Books', 'Multimedia', 'My Workspace', and 'What's New'. The main search area includes a 'Search History (0)' section (2) with a 'View Saved' link. Below the history is a table with columns for '#', 'Searches', 'Results', 'Type', 'Actions', and 'Annotations'. There are buttons for 'Save', 'Remove', and 'Combine with: AND OR'. Below these are links for 'Save All', 'Edit', 'Create RSS', 'Create Auto-Alert', 'View Saved', and 'Share Search History'. The search options section (3) includes 'Basic Search', 'Advanced Search' (highlighted with a red box), 'Multi-Field Search', 'Search Fields', 'Find Citation', and 'Search Tools'. Below this, it shows '1 resource selected' with 'Hide' and 'Change' links (4). The selected resource is 'Ovid MEDLINE(R) ALL 1946 to July 18, 2024'. There are radio buttons for 'Keyword' (selected), 'Author', 'Title', and 'Journal'. A search input box (5) contains the placeholder text 'Enter keyword or phrase (* or \$ for truncation)'. To the right of the input box are 'Search' and 'Term Finder' buttons. Below the input box are checkboxes for 'Include Multimedia' and 'Map Term to Subject Heading'. A 'Limits' dropdown menu (6) is also visible. At the bottom, there is a language selection bar (7) with 'English' highlighted in a red box, and other languages: 'Français', 'Italiano', 'Deutsch', '日本語', '繁體中文', 'Español', '简体中文', and '한국어'. Below the language bar are links for 'About Us', 'Contact Us', 'Privacy Policy', 'Terms of Use', and 'Manage Cookie Preferences'. The footer contains the copyright notice '© 2024 Ovid Technologies, Inc. All rights reserved. | OvidUI_05.12.01.001'.

1. My Account: **Create an account** right from the beginning and **sign in every time you start a search in Ovid Medline**. If you don't, the system might shut down unexpectedly during your search process and you lose all your steps!
2. The **Search History**. This area will expand as you enter your search terms
3. Tabs for different search options. Select the **Advanced Search** option, if it is not selected automatically (suitable for most comprehensive searches).
4. **Resource selected** – gives the names of the databases / database sections you have chosen. In this example you are searching all MEDLINE resources.
5. The **search box** where your search commands are entered.
6. The **Limits**, and [Additional Limits](#) to tailor your search results to your needs.
7. Choose the **platform language** you favor.

2 FORMING YOUR SEARCH STRATEGY ▶▶

Roadmap to systematic literature searching



Boolean Operators

- AND** All terms have to be included in a citation = **NARROWING DOWN**
- OR** At least one of the terms has to appear in the citation = **EXPANDING ("OR is more!")**
- NOT** The second term is excluded from the search results. This operator eliminates also results in which both of the terms appear! Be cautious about using NOT.

3 USING SUBJECT HEADINGS

What are Subject Headings?

Records on Medline are **indexed**.
This means that specialist information professionals have looked at each article in its full text and have **assigned headings from a set vocabulary to describe the subjects within the article**.

These headings are called **Medical Subject Headings (MeSH)** for short).

MeSH **headings** also have **subheadings** attached which provide **additional detail** on the content such as indicating that the article may be about etiology or therapy or surgery for a particular condition.

Some MeSH headings may be annotated as **reflecting the main focus of the article**, these are identified by an **asterisk (*)**.

Research Question: block-building approach to searching (i.e. PICO)

You want to find an overview of the literature about

“Insulin pump therapy in patients with type 2 diabetes”

Concepts (according to PICO):

1. *Problem/Population:* Type 2 diabetes
2. *Intervention:* Insulin pump therapy

Look up the citation of a core article to find relevant MeSH terms

Often you know already some relevant articles, which cover your topic. Look them up in Ovid Medline to see how they are indexed with MeSH.

1. Select **Find Citation** above the search field.

Basic Search Advanced Search Multi-Field Search Search Fields **Find Citation** Search Tools

1 resource selected Hide Change

① Ovid MEDLINE(R) ALL 1946 to July 18, 2024

Article Title

Journal Name Truncate Name (adds "***)

Author Surname Truncate Name (adds "***)

Publication Year Volume Issue Article First Page

Publisher

Unique Identifier

DOI

Fill in some information (expression in the title, the author's surname, the publication year and the first page of the article is enough). You should only find one result.

Search History (1) ^

▲ Searches

Results

1 "Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page] 1

2. With **Display Results** you see the reference. Click on **Complete Reference** to see the MeSH terms.

1. **Closed-Loop Insulin Delivery for Glycemic Control in Noncritical Care.** Abstract Reference

Bally L, Thabit H, Hartnell S, Andereggen E, Ruan Y, Wilinska ME, Evans ML, Wertli MM, Coll AP, Stettler C, Hovorka R **Complete Reference**

New England Journal of Medicine. 379(6):547-556, 2018 Aug 09. Find Similar

[Journal Article. Multicenter Study. Randomized Controlled Trial. Research Support, Non-U.S. Gov't] Find Citing Articles

UI: 29940126 Full Text

Digital Object Identifier

<https://dx.doi.org/10.1056/NEJMoa...>

Authors Full Name

Bally, Lia, Thabit, Hood, Hartnell, Sara, Andereggen, Eveline, Ruan, Yue, Wilinska, Malgorzata E, Evans, Mark L, Wertli, Maria M, Coll, Anthony P, Stettler, Christoph, Hovorka, Roman

Abstract

3. Write down relevant MeSH terms into a Word document, for later use.

MeSH Subject Headings:

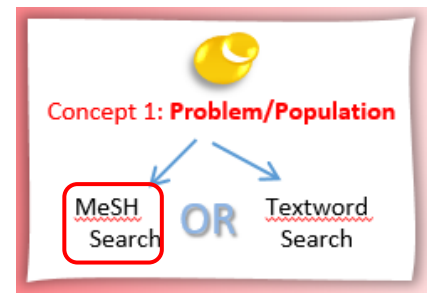
Aged
 *Blood Glucose / an [Analysis]
 Diabetes Mellitus, Type 2 / bl [Blood]
 *Diabetes Mellitus, Type 2 dt [Drug Therapy]
 Female
 Hospitalization
 Humans
 *Hypoglycemic Agents / ad [Administration & Dosage]
 Infusions, Subcutaneous
 *Insulin / ad [Administration & Dosage]
 Insulin Infusion Systems / ae [Adverse Effects]
 *Insulin Infusion Systems
 Male
 Middle Aged
 Pancreas, Artificial / ae [Adverse Effects]
 *Pancreas, Artificial

Diabetes Mellitus Type 2

Insulin Infusion Systems

Now we are ready to **start the search in Ovid Medline**.
Follow these steps:

The first concept is **Type 2 diabetes**



1. Go back to the start (click on **Search** in the upper left corner) and choose **Advanced Search**.
2. In the **Enter Keyword or phrase** box enter **type 2 diabetes**.
3. Make sure that the **Map Term to Subject Heading** box is ticked and click on **Search**.

Basic Search **Advanced Search** Multi-Field Search Search Fields Find Citation Search Tools

1 resource selected Hide Change

Ovid MEDLINE(R) ALL 1946 to July 18, 2024

Keyword Author Title Journal

type 2 diabetes

Include Multimedia Map Term to Subject Heading

Limits ▾

The system will try to help you map your search term to the correct subject heading, which is in this case **Diabetes Mellitus, Type 2**.

Your term mapped to the following Subject Headings:
Click on a subject heading to view more general and more specific terms within the tree.

Any term you select will automatically be exploded to include all narrower terms. To select a term without exploding, clear the Explode checkbox for that term.

See term mapped to thesaurus term

Include All Subheadings

Combine with: OR

Select	Subject Heading	Auto Explode	Focus	Scope
<input checked="" type="checkbox"/>	Diabetes Mellitus, Type 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="ⓘ"/>
<input type="checkbox"/>	type 2 diabetes.mp. search as Keyword			

Your original search term is also listed with the note **search as Keyword**. You could combine your term with the MEDLINE subject heading using **OR** to broaden your search.

→ We won't, since in most cases we will have more than one keyword/textword for a concept, and therefore it makes sense to keep the MeSH and textword searches separate in the beginning!

TIP: Click on the Scope ⓘ icon on the right to see an explanation of the term and a list of synonyms.

Search Journals Books Multimedia My Workspace What's New

Scope Note for: *Diabetes Mellitus, Type 2*

MeSH HEADING: DIABETES MELLITUS, TYPE 2

SCOPE: A subclass of DIABETES MELLITUS that is not INSULIN-responsive or dependent (NIDDM). It is characterized initially by INSULIN RESISTANCE and HYPERINSULINEMIA; and eventually by GLUCOSE INTOLERANCE; HYPERGLYCEMIA; and overt diabetes. Type II diabetes mellitus is no longer considered a disease exclusively found in adults. Patients seldom develop KETOSIS but often exhibit OBESITY.

YEAR of ENTRY: 2005 (1984)

PREVIOUS INDEXING: Diabetes Mellitus (1966-1983)

Scrolling down, you can see the **synonyms** covered by this MeSH term (in the **Used for** section).

Used For:

- adult-onset diabetes mellitus
- ~~diabetes, maturity-onset~~
- ~~diabetes mellitus, adult onset~~
- ~~diabetes mellitus, ketosis resistant~~
- ~~diabetes mellitus, maturity onset~~
- ~~diabetes mellitus, non insulin dependent~~
- ~~diabetes mellitus, slow onset~~
- ~~diabetes mellitus, stable~~
- ~~diabetes mellitus, type 2~~
- ~~diabetes mellitus, type ii~~
- ~~diabetes, type 2~~
- ketosis-resistant diabetes mellitus
- mody
- maturity onset diabetes
- maturity onset diabetes mellitus
- niddm
- non-insulin-dependent diabetes mellitus
- slow-onset diabetes mellitus
- stable diabetes mellitus
- type 2 diabetes

TIP: Ignore all terms, which contain a comma. They are a relic from the pre-internet era, when the terms were still published as a printed encyclopedia.

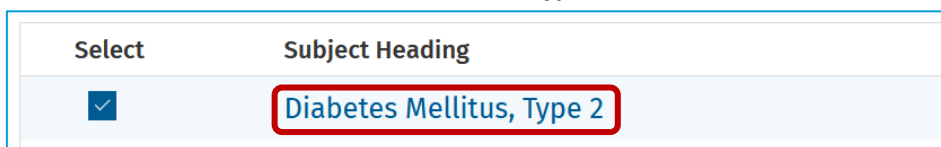
Use words from this list as an inspiration for building up your textword search later on.

▶▶ To check that Diabetes Mellitus, Type 2 is the best term to use, view the **tree structure**.

- Return to the previous screen with click on **Previous Page**.



Click on the search term **Diabetes Mellitus, Type 2**.



- This will take you to the part of the **MeSH tree structure** that includes the T2 Diabetes heading (you need to scroll down to the light blue line).

Here we see the section of the **tree for T2 Diabetes**.

Search Journals Books Multimedia My Workspace What's New

Tree for **Diabetes Mellitus, Type 2** Database: **Ovid MEDLINE(R)**

Combine with:

→ Scroll down for highlighted search term.

Select Term(s)	Subject Heading	Hits	Explode	Focus	Scope Note
<input type="checkbox"/>	Glucose Metabolism Disorders	929	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	Diabetes Mellitus	145500	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	Diabetes Mellitus, Experimental	52182	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	Diabetes Mellitus, Type 1	88558	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input checked="" type="checkbox"/>	Diabetes Mellitus, Type 2	181649	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>
<input type="checkbox"/>	Diabetes Mellitus, Lipoatrophic	203	<input type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="i"/>

TIP: Indexers are instructed always to index at the most specific level possible. When searching it is best to use the most specific word or phrase available that describes the subject in which you are interested. Searching using a broad heading will find very general articles on a topic.

▶▶ **Have a look at the headings above and below T2 Diabetes in the hierarchy.** Are they more appropriate? We are happy in this search that Diabetes Mellitus, Type 2 is the most appropriate heading, and we now move on to consider whether to **explode** and/or **focus** the heading.

Explode and Focus

DEFINITION: Explode
allows you to include all the narrower headings under the broad term automatically.

TIP: Only explode a broad heading when you are sure that you wish to retrieve all, or most of, the narrower headings which fall under it in the tree hierarchy.

DEFINITION: Focus
allows you to only retrieve articles where the heading has been deemed to describe the main focus of the article.

TIP: This aids searching when you want your search to be as relevant as possible to your topic.

1. You decide if you want to explode the heading Diabetes Mellitus, Type 2;
2. In this case you can see that there is one lower term, so to include the lower term in your search, you need to tick the column corresponding to **explode**.

<input checked="" type="checkbox"/>	Diabetes Mellitus, Type 2	181649	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Diabetes Mellitus, Lipoatrophic	203	<input type="checkbox"/>	<input type="checkbox"/>

3. Scroll **to the top** of the screen and select .

Subheadings

As mentioned previously we may also choose particular **subheadings**. There are over 80 subheadings describing particular aspects of, or particular ways of looking at, the subject concerned.

After selecting a subject heading, the system takes us to the subheadings display:

Subheadings for: **exp Diabetes Mellitus, Type 2**

Combine with:

OR

Include All Subheadings

or choose one or more of these subheadings

- | | | | |
|--|---|---|---|
| <input type="checkbox"/> /bl - Blood | <input type="checkbox"/> /dt - Drug Therapy | <input type="checkbox"/> /im - Immunology | <input type="checkbox"/> /px - Psychology |
| <input type="checkbox"/> /cf - Cerebrospinal Fluid | <input type="checkbox"/> /ec - Economics | <input type="checkbox"/> /me - Metabolism | <input type="checkbox"/> /rt - Radiotherapy |
| <input type="checkbox"/> /ci - Chemically Induced | <input type="checkbox"/> /em - Embryology | <input type="checkbox"/> /mi - Microbiology | <input type="checkbox"/> /rh - Rehabilitation |
| <input type="checkbox"/> /cl - Classification | <input type="checkbox"/> /en - Enzymology | <input type="checkbox"/> /mo - Mortality | <input type="checkbox"/> /su - Surgery |
| <input type="checkbox"/> /co - Complications | <input type="checkbox"/> /ep - Epidemiology | <input type="checkbox"/> /nu - Nursing | <input type="checkbox"/> /th - Therapy |
| <input type="checkbox"/> /cn - Congenital | <input type="checkbox"/> /eh - Ethnology | <input type="checkbox"/> /ps - Parasitology | <input type="checkbox"/> /tm - Transmission |
| <input type="checkbox"/> /di - Diagnosis | <input type="checkbox"/> /et - Etiology | <input type="checkbox"/> /pa - Pathology | <input type="checkbox"/> /ur - Urine |
| <input type="checkbox"/> /dg - Diagnostic Imaging | <input type="checkbox"/> /ge - Genetics | <input type="checkbox"/> /pp - Physiopathology | <input type="checkbox"/> /ve - Veterinary |
| <input type="checkbox"/> /dh - Diet Therapy | <input type="checkbox"/> /hi - History | <input type="checkbox"/> /pc - Prevention & Control | <input type="checkbox"/> /vi - Virology |

Therapy or Rehabilitation would be possible subheadings relevant to our question and our topic would be sufficiently broad to try this approach. **HOWEVER - when first trying to build up a search strategy - it is wise to include all subheadings (in case you get too many irrelevant results in the end, you may still go back and narrow down this concept by choosing specific subheadings later).**

In this case you won't select a specific subheading and **include them all** by clicking on on the top of the screen.

After the subheadings screen, you are returned to the **Main Search page**, where you can see the **history**:

Copy-paste the MeSH term from here into the concept sheet; you will build-up your Medline search strategy in a Word document (concept sheet)

"Insulin pump therapy in patients with type 2 diabetes"

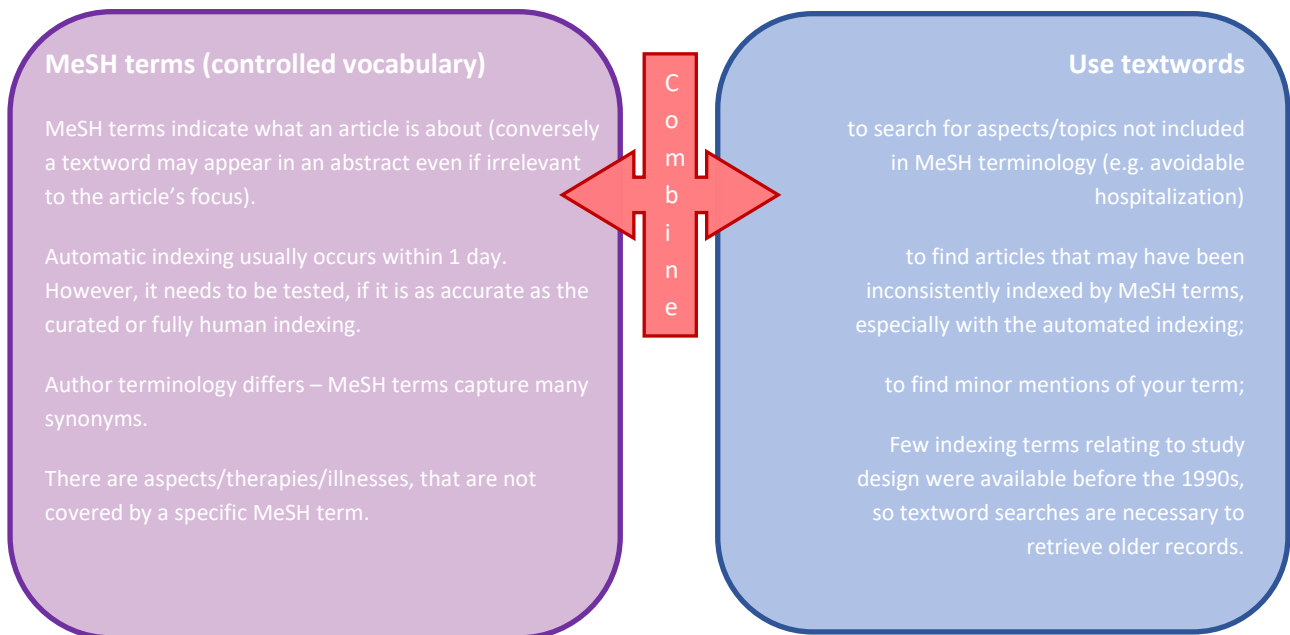
Concept 1: P (Population/Problem) Type 2 diabetes	Subject Heading (MeSH) exp Diabetes Mellitus, Type 2/ OR Textwords [Title/Abstract]
AND	
Concept 2: I (Intervention/Exposure) Insulin pump	Subject Heading (MeSH) OR Textwords [Title/Abstract]
AND	
Limits/Filters: S / T Study Type / Time frame	

4 TEXTWORD SEARCH ▶▶

Why adding a textword search?

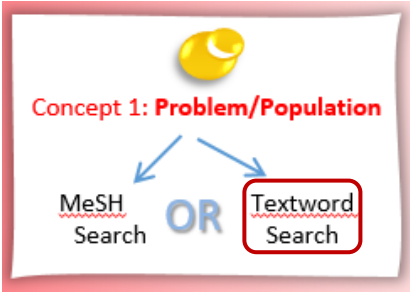
Always search with MeSH (Medical Subject Headings) and textwords (free text terms in title/abstract) - why?

To be comprehensive you need to combine the MeSH with a textword search (with OR):



Adding a textword search for type 2 diabetes

▶▶ Returning to the search for articles on T2 diabetes, we will look for articles that contain alternative ways of describing this concept (synonyms).



TIP: How to find synonyms:

Look at the **scope note of the MeSH Term** (here: Diabetes Mellitus, Type 2): **Used for**
Perform a **scoping search** and note synonyms and other relevant textwords from **core articles**.

1. Always start and end the textword search with **parentheses**, before adding the field codes!
2. Type **all textwords you have found** into the *Enter Keyword or phrase box*:
(diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.
3. Always carry out textword searches in the **title and abstract fields**.
After entering your search term you need to manually type in **.ti,ab**
4. Select 🔍 Search. You can see the Search History on top of the page.

[Basic Search](#) [Advanced Search](#) [Multi-Field Search](#) [Search Fields](#) [Find Citation](#) [Search Tools](#)

1 resource selected [Hide](#) [Change](#)

📄 Ovid MEDLINE(R) ALL 1946 to July 18, 2024

Keyword
 Author
 Title
 Journal

onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.

🔄 Search

Search History (3) ^		View Saved	🔗		
<input type="checkbox"/>	# ▲ Searches	Results	Type	Actions	Annotations
<input type="checkbox"/>	1 "Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page]	1	Advanced	Display Results More ▾	🗨
<input type="checkbox"/>	2 exp Diabetes Mellitus, Type 2/	181838	Advanced	Display Results More ▾	🗨
<input type="checkbox"/>	3 (diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	212774	Advanced	Display Results More ▾	🗨

TIP: Most fields in MEDLINE can be searched. Each field has a two-letter code, which can be typed directly into the *keyword or phrase box*, preceded by a dot. Fields commonly searched are: **.au** (author) **.ti** (title), and **.ab** (abstract)

If you do not add a field code, Ovid will by default search in the **.mp** field, comprising title, abstract, original title, name of substance word, subject heading word, keyword heading word, protocol supplementary concept word, rare disease supplementary concept word and unique identifier.

Using textword search limited to Title and Abstract should reduce the number of results which are retrieved in error or are only on the periphery of your subject. If you do this you need to include relevant subject headings in your search strategy, otherwise you risk missing out on useful results.

TIP: Use proximity operators (adj) to shorten textword search strings

You can see above that in the t2 diabetes search string, there are a lot of redundant search terms. To avoid this, you can use proximity (see “Tricks to find alternative spellings...” on page 13). This may even result in more term combinations as you would have been able to think of:

((type 2 or type ii or non-insulin or noninsulin or adult onset or slow onset or maturity onset) **adj3** diabet*) or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.

<input type="checkbox"/>	3	(diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	212774	Advanced	Display Results	More ▾	
<input type="checkbox"/>	4	((type 2 or type ii or non-insulin or noninsulin or adult onset or slow onset or maturity onset) adj3 diabet*) or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	218315	Advanced	Display Results	More ▾	

Decide which version (3 or 4) you would like to include in your search strategy and delete the other.

Deleting a search step

You can always delete a step by ticking it and clicking on **Remove**:

The screenshot shows two search steps. Step 3 is selected with a checked checkbox. Below the steps are buttons for 'Save', 'Remove', and 'Combine with: AND OR'. A red arrow points to the 'Remove' button.

Editing a search step

You can **add, remove or change terms** in a step by clicking on **More – Edit** anytime:

The screenshot shows search step 3 with the 'More' dropdown menu open. The 'Edit' option is highlighted with a red arrow. Other options in the menu include Save, Create Auto-Alert, Create RSS, and Remove.

Choose the step you want to edit and click on the little **pen icon** . Make the changes and confirm with **OK**. Then **Run search again**.

The screenshot shows search step 3 with a red arrow pointing to the pen icon in the bottom right corner of the step's interface.

Truncation and wildcards to find alternative spellings, plurals and phrases



is used to search for a particular word stem with any of a number of possible endings.

For example: **practi*.ti,ab** retrieves *practice, practices, practitioners, as well as other words you may not want like practicalities or practised.*

You may also specify how many characters you are willing to accept after your basic word stem by adding a number after the * character.

i.e.: **ovar*3.ti,ab** retrieves items where the word stem **ovar** is followed by 0-3 more characters.



is the mandatory wildcard character and can be used within or at the end of a search term to substitute for **one required** character.

i.e.: **wom#n.ti,ab** retrieves items with titles containing the word **woman** or **women**.



is the optional wildcard character and may be used within or at the end of a search term to substitute for **one or no** characters.

i.e.: **gyn?ecology.ti,ab** Retrieves items with titles containing the word **gynecology** or **gynaecology**.



is the adjacency command. Add a number after **adj** to specify how many additional words you are prepared to accept in between those you are searching for (**adj3 = up to 2 words in-between; n-1**), **regardless of word order**.

i.e.: **(home* adj3 care).ti** retrieves *home care, home-based care, home-based palliative care, home health care, care homes, etc.*

Note: Certain words with little intrinsic meaning like 'the' 'is' 'an' are not counted by the system in most fields (these are called 'stop words').



are used to search for an exact phrase and **must be used where a number or a combination**

term (and, or, not) is used.

i.e. combination term: **"sensitivity and specificity".ti,ab**

COMBINING SUBJECT HEADINGS & TEXTWORDS

5



Completing the search strategy

To be comprehensive you need to **combine textwords with MeSH terms for each concept (with OR).**

Other examples of comprehensive searching:

- Textwords breast cancers, with the exploded MeSH term Breast Neoplasms;
- Textwords SIDS, cot death, with the exploded MeSH term Sudden Infant Death Syndrome;

TIP: MEDLINE has an American bias so when searching for the topic **general practitioners** if you need to be comprehensive and include the American equivalents, include headings and textwords for family practice and family physicians.

In our example: combine the textwords for t2 diabetes* with the MeSH term *Diabetes Mellitus, Type 2*.

The screenshot shows a search interface with a navigation bar (Search, Journals, Books, Multimedia, My Workspace, What's New) and a search history table. The table has columns for #, Searches, Results, Type, Actions, and Annotations. Three search entries are listed, with checkboxes for selection. Below the table, there are buttons for 'Save', 'Remove', and 'Combine with: AND OR'. The 'OR' button is highlighted with a red box. Below the table, a search bar shows '4 2 or 3' with a result count of 256279.

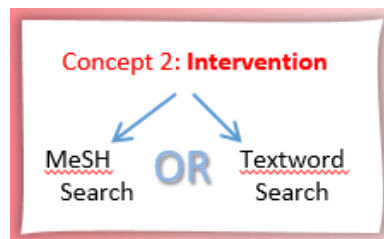
#	Searches	Results	Type	Actions	Annotations
1	"Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page]	1	Advanced	Display Results More ▾	🗨
<input checked="" type="checkbox"/>	2 exp Diabetes Mellitus, Type 2/	181838	Advanced	Display Results More ▾	🗨
<input checked="" type="checkbox"/>	3 (diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	212774	Advanced	Display Results More ▾	🗨

Save Remove Combine with: AND **OR**

4 2 or 3 256279 Advanced Display Results More ▾ 🗨

Hint: You can see from the number of results that **with the combined search you get more results than just with an exclusive textword respectively MeSH term search.** This means, you have found records indexed with Diabetes Mellitus, Type 2 but not mentioning one of the textwords you chose. And you have found records with one of your textwords, that have not been indexed with the MeSH term Diabetes Mellitus, Type 2.

Adding the second concept (intervention)



► In our example the other concept is **insulin pump therapy**.

1. In the **Enter Keyword or phrase** box on the Main Search page type **insulin pump**.
2. Make sure that the **Map Term to Subject Heading** box is ticked.
3. Select .
4. Click on the MeSH **Insulin Infusion Systems** to see the tree structure. Insulin Infusion Systems is at the bottom of the structure, with no [+] in front, so there are no narrower MeSH terms. This means, you don't need to tick the Explode function.

<input type="checkbox"/>	Drug Delivery Systems	81037	<input type="checkbox"/>
<input type="checkbox"/>	Abuse-Deterrent Formulations	89	<input type="checkbox"/>
<input type="checkbox"/>	Delayed-Action Preparations	41501	<input type="checkbox"/>
<input type="checkbox"/>	Drug Carriers	52982	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Insulin Infusion Systems	6672	<input type="checkbox"/>

5. Take a look at the **Scope Note**: you will find a lot of terms in the '**Used For**' section, which you may want to add to the upcoming textword search. Go back with [<< Previous Page](#).
6. Select (on the top of the page).
7. You decide to include all subheadings so simply select (it is not necessary to select the 'all subheadings' box).

►► Now let's **go on to the textword search**. Since authors may also write about insulin pump in plurals, we will use the wildcard character * at the end of the search terms. Copy/paste the following search strings (one at a time) into the keyword search box:

(insulin infus or insulin pump* or insulin deliver* or CSII or continuous subcutaneous insulin).ti,ab.
(artificial adj3 (pancrea* or beta cell*)).ti,ab.*

1. To finish the search for insulin pump therapy, combine the MeSH and the textword searches with **OR**. You might need to **expand the search history to see all search steps**: click on .
2. **Now combine both concepts (t2 diabetes and insulin pump therapy) with AND.**

Search History (9) ^

<input type="checkbox"/>	# ▲	Searches	Results
<input type="checkbox"/>	1	"Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page]	1
<input type="checkbox"/>	2	exp Diabetes Mellitus, Type 2/	181838
<input type="checkbox"/>	3	(diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	212774
<input type="checkbox"/>	4	2 or 3	256279
<input type="checkbox"/>	5	Insulin Infusion Systems/	6672
<input type="checkbox"/>	6	(insulin infus* or insulin pump* or insulin deliver* or CSII or continuous subcutaneous insulin).ti,ab.	13159
<input type="checkbox"/>	7	(artificial adj3 (pancrea* or beta cell*)).ti,ab.	1891
<input type="checkbox"/>	8	5 or 6 or 7	16241
<input type="checkbox"/>	9	4 and 8	2102

6 REFINING THE SEARCH ▶▶

Applying filters for languages, publication years etc.

You can refine your search by applying various limits and filters. Limit your search to **language, years etc.** by making your selection from the options in the Limits section of the screen.

Keyword Author Title Journal [Find out more ▶](#)

Enter keyword or phrase (* or \$ for truncation) [Search](#) [Term Finder ↗](#)

Include Multimedia Map Term to Subject Heading

Limits ^

Abstracts Structured Abstracts English Language
 No Language Specified Full Text Review Articles
 Humans Clinically Useful Journals (JMLA July 2023) Latest Update
 Pharmacologic Actions Remove Preprint Records German
 COVID-19

Publication Year - -

Clinical Queries - Star Ranking -

[Additional Limits](#) [Edit Limits](#)

TIP: Select **Additional Limits** to obtain the most important filters. Then click on [Limit a Search](#).

① Publication Year
2018 - Current

You can add or remove as many items as you'd like from the lists below by clicking once to select and again to remove.

① Age Groups
-

① Journal Subsets
-

① Animal Types
-

① Languages
3 X Languages
 Danish
 Dutch
 English
 Esperanto
 Estonian
 Finnish
 Flemish
 French
 Gaelic, Scots
 Georgian
 German
 Greek
 Hausa
 Hebrew

① Publication Types
-

① Status
-

① Special Ovid Filters for MEDLINE
-

① Year Published
-

[Limit a Search](#)

History

<input type="checkbox"/>	9	4 and 8	2102	Advanced	Display Results	More ▾	
<input type="checkbox"/>	10	limit 9 to (yr="2018 -Current" and (english or french or german))	574	Advanced	Display Results	More ▾	

Applying filters for RCTs (primary studies)

TIP: Don't use the database filters for publication types, if you do a search for writing a systematic review! Applying the database filters to limit to certain publication types, you will lose the recent, not yet indexed articles. This is because most of these filters are based on MeSH terms (with the exception of the filter for Systematic Reviews). You can find validated methodological filters on [ISSG Search Filters Resource](#).

On Ovid Medline, the **Cochrane RCT filters** (sensitivity max. version and precision max. version) are saved in the **Expert Searches** section (findable with **View Saved**, if you're logged into your account):

The screenshot shows the Ovid Medline user interface. At the top, there is a navigation bar with 'Ovid' logo, 'My Account', 'Bibliothek fragen', 'Ovid Search Builder', 'u^b', 'Help', 'Feedback', 'Log Off', and the user name 'Beatrice Minder Wyssmann'. Below this is a search bar with 'Search' and tabs for 'Journals', 'Books', 'Multimedia', 'My Workspace', and 'What's New'. The main content area shows 'Search History (10)' with a dropdown arrow and a 'View Saved' button highlighted with a red box and a red arrow pointing to it from the text above.

Search History (10) ^					View Saved
<input type="checkbox"/>	# ▲ Searches	Results	Type	Actions	Annotations
<input type="checkbox"/>	1 "Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page]	1	Advanced	Display Results More ▾	
<input type="checkbox"/>	2 exp Diabetes Mellitus, Type 2/	181838	Advanced	Display Results More ▾	
<input type="checkbox"/>	3 (diabetes mellitus type 2 or type 2 diabet* or diabetes mellitus type ii or type ii diabet* or adult-onset diabetes mellitus or maturity-onset diabetes or slow-onset diabetes or non-insulin dependent diabetes mellitus or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.	212774	Advanced	Display Results More ▾	
<input type="checkbox"/>	4 2 or 3	256279	Advanced	Display Results More ▾	
<input type="checkbox"/>	5 Insulin Infusion Systems/	6672	Advanced	Display Results More ▾	
<input type="checkbox"/>	6 (insulin infus* or insulin pump* or insulin deliver* or CSII or continuous subcutaneous insulin).ti,ab.	13159	Advanced	Display Results More ▾	
<input type="checkbox"/>	7 (artificial adj3 (pancrea* or beta cell*)).ti,ab.	1891	Advanced	Display Results More ▾	
<input type="checkbox"/>	8 5 or 6 or 7	16241	Advanced	Display Results More ▾	
<input type="checkbox"/>	9 4 and 8	2102	Advanced	Display Results More ▾	
<input type="checkbox"/>	10 limit 9 to (yr="2018 -Current" and (english or french or german))	574	Advanced	Display Results More ▾	

1. Click on **View Saved** to get to the Cochrane RCT filter.
2. Click on **Expert Searches**, tick the **Cochrane RCT filter** and click on **Run**.

PERMANENT SEARCHES 104 EXPERT SEARCHES 5 AUTOALERT (SDI) SEARCHES 1 Favorites

Run Copy Delete

Expert Searches 5

- Cochrane Handbook RCT filter MEDLINE sensitivity max. version (2008) Source <https://training.cochrane.org/handbook/current/chapter-04#section-4-4-7> Expert Search ☆ ✉
- Cochrane Handbook RCT filter MEDLINE_2 precision max. version (2008) Source <https://training.cochrane.org/handbook/current/chapter-04#section-4-4-7> Expert Search ☆ ✉

3. The RCT filter search will be executed and added to the diabetes/insulin pump search strategy. Now you need to **combine the last step of the search strategy (10) and the last step of the RCT filter search (20) with AND**.

<input type="checkbox"/>	10 limit 9 to (yr="2018 -Current" and (english or french or german))	574
<input type="checkbox"/>	11 randomized controlled trial.pt.	617722
<input type="checkbox"/>	12 controlled clinical trial.pt.	95578
<input type="checkbox"/>	13 randomi?ed.ab.	779577
<input type="checkbox"/>	14 placebo.ab.	250151
<input type="checkbox"/>	15 clinical trials as topic.sh.	202819
<input type="checkbox"/>	16 randomly.ab.	438007
<input type="checkbox"/>	17 trial.ti.	313988
<input type="checkbox"/>	18 11 or 12 or 13 or 14 or 15 or 16 or 17	1662981
<input type="checkbox"/>	19 exp animals/ not humans.sh.	5240835
<input type="checkbox"/>	20 18 not 19	1534507
<input type="checkbox"/>	21 10 and 20	92

7

HANDLING THE RESULTS ►►

Check if the key paper is included in the search results

- If your search strategy is well done, the key paper you started out with, should be found by it. You can check this if you **combine step 1 (key paper) with the last step of your search (21) with AND**. If the key paper is included in the search results, the result should be 1, if not, it will be 0.

Search History (22) ^

<input type="checkbox"/>	# ▲	Searches	Results
<input type="checkbox"/>	1	"Bally\$" [Author Surname] and "insulin delivery" [Article Title] and "2018" [Publication Year] and "547" [Article First Page]	1
<input type="checkbox"/>	21	10 and 20	92
<input type="checkbox"/>	22	1 and 21	1

Accessing the full text

- To see the results list, click on **Display Results**

<input type="checkbox"/>	21	10 and 20	92	Advanced	Display Results	More ▾	🗨
--------------------------	----	-----------	----	----------	---------------------------------	--------	---

- MEDLINE is not a full text database. Where the full text of an article is available to download, please use the [Full Text](#) link or – if displayed – the Article as PDF link to gain full text access:

1. **Closed-Loop Insulin Delivery for Glycemic Control in Noncritical Care.** [Abstract Reference](#)
[Complete Reference](#)
[Find Similar](#)
[Find Citing Articles](#)
[Full Text](#)

Bally L, Thabit H, Hartnell S, Andereggen E, Ruan Y, Wilinska ME, Evans ML, Wertli MM, Coll AP, Stettler C, Hovorka R
New England Journal of Medicine. 379(6):547-556, 2018 Aug 09.
[Journal Article. Multicenter Study. Randomized Controlled Trial. Research Support, Non-U.S. Gov't]
UI: 29940126
Digital Object Identifier
<https://dx.doi.org/10.1056/NEJMo...>

Authors Full Name
Bally, Lia, Thabit, Hood, Hartnell, Sara, Andereggen, Eveline, Ruan, Yue, Wilinska, Malgorzata E, Evans, Mark L, Wertli, Maria M, Coll, Anthony P, Stettler, Christoph, Hovorka, Roman

Abstract ▾ [PDF Article as PDF \(213KB\)](#) [Cite](#)

If the full text link is not displayed, you will still find the link **UniBe Fulltext Services** instead, which brings you to LibKey, checking for the University Library's print collection and providing a document delivery form.

Selecting your results

▶▶ To select **all the results** in a set, click on the “All” option at the top of your results list.

To select **items one at a time**, tick the box to the left of each reference.

Print Email Export + My Projects Keep Selected Analyze

Range: All Ex: 1-4, 7 Clear View: — [List Icon] [Menu Icon] Results per page: 100

1. **Hypoglycemia and Hyperglycemia According to Type of Diabetes: Observations During Fully Closed-Loop Insulin Delivery in Adults With Type 1 and Type 2 Diabetes.** Abstract Reference Complete Reference Find Similar Find Citing Articles

Kadiyala N, Wilinska ME, Daly AB, Nwokolo M, Lakshman R, Hartnell S, Ware J, Allen JM, Cezar A, Evans ML, Hovorka R, Boughton CK
Journal of Diabetes Science & Technology. 19322968241242803, 2024 Apr 13.
[Journal Article]
UI: 38613227
Digital Object Identifier
<https://dx.doi.org/10.1177/19322...>

Printing, emailing and exporting results

Print Email Export + My Projects Keep Selected Analyze

Range: All Ex: 1-4, 7 Clear View: — [List Icon] [Menu Icon] Results per page: 100

Export Citation(s)

92 Selected: 1-92

Fields: Complete Reference

Citation Style: Vancouver

Includes:
 Link to External Resolver
 URL
 Search History
 Annotations

Cancel Export

Print, allows you to select the format and fields for your selected references and will load a print preview copy in a new window on your computer ready for you to print.

Email also allows you to select the format and fields for your selected references and brings up a screen for you to enter the email account details to send your results.

Export allows you to export your results through to your **reference manager software** or into a **Word document** and again allows you to select the format and fields for your selected references.

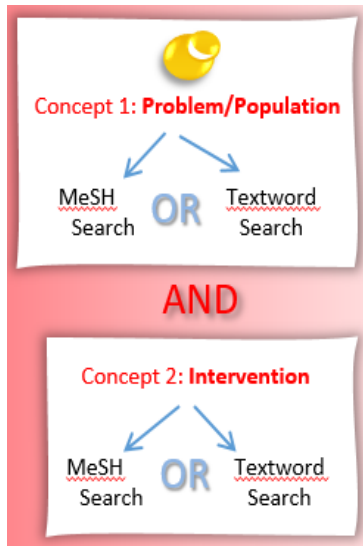
TIP: Include the Search History where possible!

8

DOCUMENTING THE SEARCH ▶▶

Concept Sheet (transparency, discussion with supervisor)

▶▶ We have now completed our search strategy according to the **PICO scheme** (see below). If not yet done it is high time to fill in the **concepts sheet** with your chosen subject headings and textwords, so the search strategy will be easier to **adapt to other medical databases** (EMBASE, CINAHL etc.).



<p>Concept 1:</p> <p>Population/Patient/Problem</p> <p>Type 2 Diabetes</p>	<p>exp Diabetes Mellitus, Type 2/</p> <p>OR</p> <p>((type 2 or type ii or non-insulin or noninsulin or adult onset or slow onset or maturity onset) adj3 diabet*) or T2DM or dmt2 or dm2 or T2-DM or dm-t2 or dm-2 or NIDDM or NID-DM or MODY).ti,ab.</p>
AND	
<p>Concept 2:</p> <p>Intervention</p> <p>Insulin pump therapy</p>	<p>Insulin Infusion Systems/</p> <p>OR</p> <p>((insulin infus* or insulin pump* or insulin deliver* or CSII or continuous subcutaneous insulin).ti,ab. or (artificial adj3 (pancrea* or beta cell*)).ti,ab.</p>

Documenting your search in the Appendix of a paper, Master thesis, PhD thesis)

1. **Export** the search strategy from Ovid Medline into a **Word document** by clicking on [Share Search History](#) and selecting **“Copy Search History Details”**. Open a Word document and paste.

21 10 and 20 92 Advanced Display Results More

22 1 and 21 1 Advanced Display Results More

Save Remove Combine with: AND OR Contract

Save All Edit Create RSS Create Auto-Alert View Saved Share Search History

Basic Search **Advanced Search** Multi-Field Search Search Fields Find Citation

1 resource selected Hide Change

Ovid MEDLINE(R) ALL 1946 to July 18, 2024

Email All Search History

Copy Search History Link

Copy Search History Details

2. Add the information about **“Date last searched”** to the strategy.

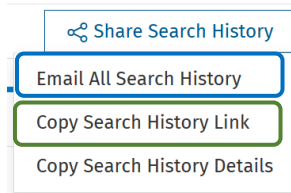
E-mailing the search history (with direct link to replicate the search anytime)

▶▶ A very handy option of sending the search history to someone else (or yourself) is provided below the search history section: By clicking on

Email All Search History,

a mailing form opens up, where you can fill in all necessary information and send it. The recipient will be able to click on a link in the e-mail message and the whole search strategy will automatically be performed in Ovid Medline (the recipient needs to be on the campus or connected to VPN when clicking on the link).

Another option to send a link to someone else is to simply use **Copy Search History Link** and include it in an e-mail message.



Recipient(s) Email *

Add multiple emails by separating them with a comma.

Your Email Your Name

While the email will be sent from Ovid, we will add your name so recipients will know this is from you.

Email Subject *

Message

Saving the search in your database account (Alerting, Updating)

▶▶ Since a research paper respectively master or PhD thesis is not written in a few weeks, the search strategy should be executed again shortly before the submission of the work. New relevant publications must be included, so that the paper/thesis is up-to-date.

Search histories can be saved on the Ovid server either as **temporarily** (24 hours) or **permanently** and can be **re-run** at any time. It is also possible to set up your search history as an **auto alert**, which will run each time MEDLINE is updated and the results emailed through to you.

Go to the **Search History** and click on **Save All**.

<input type="checkbox"/>	21	10 and 20
<input type="checkbox"/>	22	1 and 21

[Save All](#) [Edit](#) [Create RSS](#)

1. **Name your search strategy** and indicate **how you want it saved (Type)**.

Save Your Search or Create an Alert

Search name	Comment
<input type="text" value="Insulin Pump T2 Diabetes"/>	<input type="text" value="Medline 19.07.2024"/>

Type

- AutoAlert (SDI) ▾
- Temporary (24 hours)
- Permanent**
- AutoAlert (SDI)
- My Projects