Literature Searches & PubMed.

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Characteristics of a literature search

The key is to conduct a comprehensive search and to include a variety of source types.

- **Comprehensive:** all types of published literature are part of the search
- **Systematic:** all potential sources are part of the search
- **Thorough:** the goal is to find as many items as possible on your topic
Most researchers will conduct an initial phase of background reading to clarify the research question or topic.

The steps to a successful Literature Search

Step 1: Define the topic or research question

For example: Medication management of Parkinson’s disease in nursing homes.
The steps to a successful Literature Search

Step 2: Identify concepts

For example:

Medication management of Parkinson’s disease in nursing homes

Once you have determined your research question it is important to establish your key concepts. You may find that you identify several concepts depending on how complex your research question is.
The steps to a successful Literature Search

Step 3: Identify the search terms for each concept

- For example:
  - Medication management OR Medication Therapy Management
  - Parkinson’s disease OR Parkinsonian Disorders
  - nursing homes OR residential facilities OR intermediate care facilities etc.

Once you have your concepts you will then be able to think about the search terms that you could use when searching for literature on your research question.

Once you have some terms you need to think about how you will combine these terms utilising Boolean logic.

- Will you combine the terms with AND?
- Do you have any phrases?
- Have you identified any synonyms that require you to utilise the OR operator?
- Do you have any terms where using truncation or wildcard operators will be useful?
The steps to a successful Literature Search

☐ Step 4: Establish the relationships between the terms. For example:

“Medication management” OR “Medication Therapy Management”
AND “Parkinson’s disease” OR “Parkinsonian Disorders”
AND “nursing homes” OR “residential facilities” OR “intermediate care facilities”
Formulate search strategies:

- Boolean logic (AND, OR, NOT)
- truncation * (eg. medic* = medicine, medical, medicinal)
- phrases (words together treated as phrase “tension headache”)

Truncation is also called lemmatization. Some databases do it automatically.
Before looking at individual databases we will look at how databases “react” to the information that you put into a search.

You need to understand this to construct a search.
AND

An AND search will find results with information common to both search terms.

Eg. obesity AND diabetes

Remember AND search gives a smaller number of results because it looks only for items which contain BOTH words.

Databases automatically AND terms.
An OR search will find information which includes either search term

Eg. obesity OR diabetes

OR search gives a large number of results because it looks for items that have both words and either word.
So you might use OR to search paediatrics OR pediatric OR child
A **NOT** search will exclude words from your search results.

Eg. obesity NOT diabetes
Searching PubMed:
Can’t control where the search is of i.e. abstract unless you use “advanced search”. If you do use Abstract/title reduce results from 38 to 27.

Quite a lot of filters, remember with PubMed the filters remain until they are turned off.

Some useful features on the right, articles where the search terms are in the title, full text articles (PubMed Central collection), search details
Need to “open” article to check for full text in PubMed.

If no link to full text of the link does not work, use the “check for Full text @ UTAS” button

These are not articles that cite the article you have open but usually are articles referenced in the article

Review Articles can be very important as they summarize the research up to that time.
Systematic searching using alternate search terms example:

Silo 1

Skin cancer
OR
Skin neoplasm
OR
Basal cell carcinoma
OR
Melanoma
OR skin lesions
OR skin ulcers
OR squamous cell carcinoma

This will return results relating to all concepts and synonyms in silo 1

Silo 2

UV light
OR
Sun exposure
OR
actinic keratosis

This will return results relating to all concepts and synonyms in silo 2
Once you have all the information relating to each concept in your question you can then join them together.

Silo 1
Search results

AND

Silo 2
Search results

Eg. In our example combining information from our OR searches with an AND search will find information common to both sets of results.

TIP: Use the search history within a database to combine searches.
Finding the information

First search

Second search
Select your OR searches from the search history #2 & #3 and join them with AND.
Now use filters on left side to limit as needed.
In this slide I have tried to visually illustrate the results of going through the steps in the previous slides. Once you have reached this stage you should have something similar to the table above.

In the sample search strategy I have used several alternative terms with the aim of maximising the number of results achieved. The strategy has also included additional terms in relation to an aspect that the research question is focusing on. Keep in mind though that this is a simplification and the strategy is not comprehensive. There are many other alternative terms that could be used here.
In this step it is important to define what you consider to be inside and outside the scope of your search and how you will use the limit functions of databases to specify these limits.

Some of the simpler limits to apply include date ranges, language limits and exclusion of certain non-scholarly formats such as news articles. You may also find that your research question will yield results in several disciplines and you need to decide which disciplines are within your scope and which are outside it. For example, in this sample search the focus of the research question is pharmacy and other disciplines such as nursing are considered to be outside of the scope.

Some databases will have more comprehensive limiting functions than others. You will need to apply your limits in accordance with the features available in each database.
When deciding on what databases to search there will be some obvious choices that will yield relevant results. However there may also be databases that are not immediately obvious especially if your research question contains multi-disciplinary aspects.

It is important to try out the search in different relevant databases. You will find that some databases yield better results for your topic than others.
The steps to a successful Literature Search

Step 8: Conduct preliminary searches
Step 9: Review and revise the search strategy based on the preliminary search results
Step 10: If you revise the strategy make sure you then record the details of it

Step 9: You may need to slightly adjust your searches for different databases as they all operate differently and usually have different features and functions
Literature Search: Recapping

- Develop a search strategy and write it down – keep a record of it and how it evolves. You will probably need to do this for each database you search.
  - Use Boolean operators.
  - An OR search will expand your results.
- Use the search history function to analyse the results of searches you have conducted in databases
- Keep a record of your search strategy – this will help you remember the various ways you have conducted your searches
- Try to start with the most recent literature
- Check bibliographies and reference lists of relevant sources you have already found. These may lead to you to other useful material on your topic. Citation databases are also useful for this reason.
Literature Search: Recapping

- Repeat searches with substitute terms and in different databases
- Refine the search statement if necessary
- Fine tune the topic if necessary
- Evaluate the information you find – be discerning and critical
Software linking database results to UTAS full text locations:

The link to full text can vary and might take some searching till you get familiar with the database.

Some links are more helpful than others.
If full text is not available direct from the database then this is what you are hoping to find.

This is a link (2 actually) to the article where library provides access.
If we do have it in paper you can do an “article request” and have it scanned and emailed to you.
Controlled Vocabularies

Also called thesauri (thesaurus), subject headings, subject descriptors, identifiers or descriptors.

What is a controlled vocabulary? It is a list of set terms (words and phrases) used in databases and other publications to describe the subject matter within articles, books etc. Examples of a controlled vocabulary include MeSH (Medical Subject Headings).

Many electronic sources such as library catalogues and databases usually include controlled vocabularies.
Document Delivery:
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New clients who are eligible for the Document Delivery Service must complete this online registration form before placing requests. The Document Delivery Service is only available to University of Tasmania staff and students and staff of the Royal Hobart Hospital. If you receive an expired access message please contact us and we will reactivate your account as soon as possible.

Once you have registered you will be emailed your access details within 1 working day.

If you experience any difficulty using this form, please contact the Document Delivery Service.
Books on Lit reviews and research

Finding information: a guide to research in academic libraries / by Ruben, Roberta Lynne.; Bemert, Julie E.
Location: MLSD M1493 1991

Health sciences literature review made easy: the matrix method / by Garrard, Judith
Location: LSA Call No.: 616.72 02308 2004

The literature review: a step-by-step guide for students / by Ridley, Diana Dr.
Location: Science Call No.: LB 2369 .R53 2008

The literature review: six steps to success / by Machi, Lawrence A., McNer, Brenda T.
Location: LSA Call No.: 001.4 M1491 2000

Research methodology: a step-by-step guide for beginners / by Hamzi, Husnij
Location: LSA Call No.: 001.4 H973x 1996

This is only a selection of items on this topic.
For more books try searching the library catalogue as in the above screenshot.
# Books on Lit reviews and research

- **Research strategies : finding your way through the information fog /**
  - by Riche, William R., 1945-
  - Location: Morris Miller
  - Call No.: $ 700 .R13 2008

- **The survivor's guide to library research /**
  - by Riche, William R., 1945-
  - Location: Morris Miller
  - Call No.: $ 700 .R23 1999

- **Techniques for student research : a practical guide /**
  - by Lane, Nancy B. (Nancy Diane), 1946-
  - Location: Morris Miller
  - Call No.: $ 700 .L36 1996

- **Your student research project /**
  - by Luff, Martin, 1952-
  - Location: ABC
  - Call No.: LC 2369 .L75 1979

- **Successful scientific writing [electronic resource] : a step-by-step guide for the biological and medical sciences /**
  - Location: Online
  - Collection: eBook
Endnote, next week – thank you.