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Royal College of
Occupational
Therapists



Searching for evidence - literature searching: an overview of the process

This document provides a basic guide to literature searching and overview of the process and facilitates you to carry out your own literature search.

Starting with formulating a research question, the guide includes a brief overview of how to document your search and provides an outline of key occupational therapy databases.

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1. Formulate a research question to answer: define your question
2. Identify key subject terms/ concepts to search
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Literature searching: an overview of the process

Members need to be logged in to the RCOT website to access many of the RCOT resources referred to below

1. Formulate a research question to answer: define your question

Start by focusing on the question you want to research, the subject and type of material you are hoping to find. If you search without focus or do not articulate clearly what you want to research, your results may not be sufficiently well focused to be useful

- a) Thinking about the who, what, where why of your question may help you articulate what you're looking to find in the research.

Who	Who is the group or population you want to focus your research on: consider age, ethnicity, client group, gender
What	What condition are you interested in researching
Why	Why are you looking to research this? Is it to identify the effectiveness of an intervention or the health outcomes or benefits for a population?
Where	Where are your group/population? Are they in a particular healthcare setting, a specific region or country?

- b) **PICO model** – The PICO model is another helpful tool when thinking about your research question. PICO is a model to help you define your question in terms of a specific patient problem and to help in finding relevant evidence. Bear in mind that you may not need all the concepts in your search and you may not want to compare interventions.

PICO Model	
P	Patient, population, problem. What group do you want to look at?
I	Intervention, prognostic factor, exposure. Things to consider here would include occupational therapy, intervention, treatment, counselling etc
C	Comparison. Do you want to compare populations or interventions? This may not always be useful in formulating your research question and you can leave it blank.
O	Outcome. Use this to think about what you would like to measure or achieve through your research question.

Example1: Does energy conservation education (I) improve quality of life (O) for people with osteoarthritis (P) compared with standard arthritis education (C)?

PICO acronym	Example 1 translation
P: patient/ problem (main problem / clinical condition or the patient population)	Elderly people with osteoarthritis
I: Intervention you are considering (Drug, surgery, counselling, treatment OT intervention etc)	Energy conservation education
C: Comparison (alternative to the intervention) there may not always be a comparison	Standard arthritis education
O: Outcomes (what you hope to accomplish, measure, prove)	Quality of life

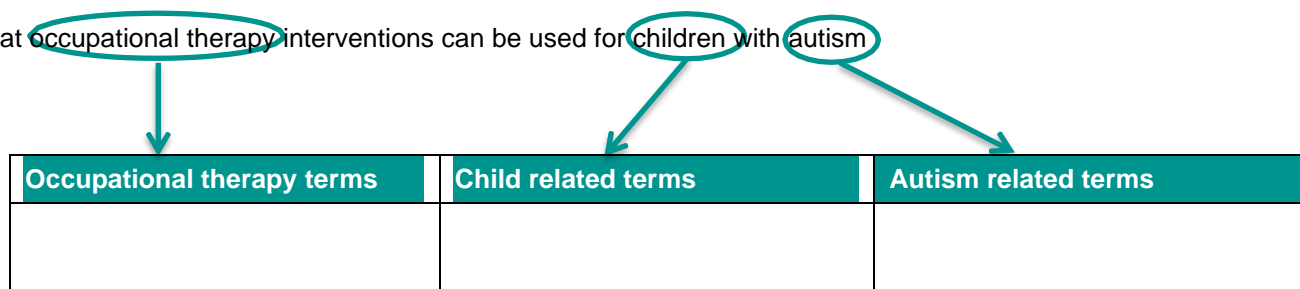
Example 2: What occupational therapy interventions can be used for children with autism?

PICO acronym	Example 2 translation
P: patient/ problem (main problem / clinical condition or the patient population)	children with autism
I: Intervention you are considering (Drug, surgery, counselling, treatment OT intervention etc)	Occupational therapy
C: Comparison (alternative to the intervention) there may not always be a comparison	Not applicable in our specific example
O: Outcomes (what you hope to accomplish, measure, prove)	Not applicable in our specific example (examples might include: quality of life, cost effectiveness etc)

Then identify the key concepts for your search

For example:

What occupational therapy interventions can be used for children with autism



2. Identify key subject terms to search

Once you have formulated the question you want to research and noted the main concepts, it is useful to map out your concepts using a Word document or a spreadsheet. You can then note alternative search terms, spellings and synonyms to combine in the search. You can also note the number of results for each search or detail if any terms return zero results or return a large number of irrelevant results. You can then remove those terms from your search strategy. Label the columns with your main concepts as shown below and list synonyms, plurals, alternative/ American spellings, acronyms, abbreviations for these terms and enter these in the appropriate column.

It might be helpful to use a dictionary, medical dictionary or thesaurus to spark ideas for terms. Your aim is to think of alternative terms and to group together those terms which are to do with the same subject.

What occupational therapy interventions can be used for children with autism

OT terms	Child related terms	Autism related terms
Occupational Therapy Occupational therap ist Occupational therap ists	Child Child ren Young people Young person Young person s Teenager Teenager s Teen Teens Adolescent Adolescent s Adolescent ce Paediatric Paediatric s Pediatric Pediatric s	Autistic Autism Asperger Asperger s (Development disorder MESH)?

Truncation: See what your strings of letters (the terms) look like. Those letters in the table above in red, show those letters you can delete and where you can truncate (add the truncation symbol) instead when you search the database. e.g.

- Child* is the truncation for children/ child's/ children's etc
- Using truncation is useful when you need to broaden your search. For example, occupational therap* will search for occupational therapy, occupational therapists and occupational therapist this saves you doing three separate searches

Some database platforms use the symbol * some use \$ to truncate; check which you need to use before beginning your search.

In some cases it may be advisable not to truncate search terms, for example if one of your terms has a string of letters which are often found together. For example, searching hip* may also find words such as Hippocratic, hippocampus and hippopotamus. If you were only interested in articles about hip(s), searching the terms in full (i.e. hip OR hips) would be preferable.

Remember to check your spellings when writing down search terms or entering these on the databases

3. Create the search strategy

Draw up a 2nd table as shown below (a Word template is provided in Appendix 1), or use a spreadsheet, and insert the terms. Select where to add the Boolean operators *OR* and *AND*. Decide which fields within the databases to search. You can also list the databases you are thinking about searching.

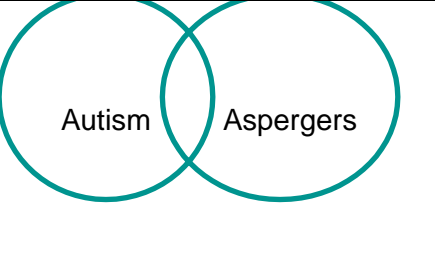
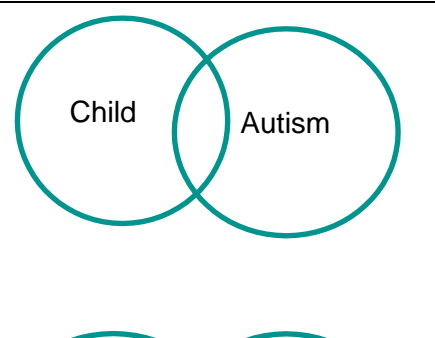
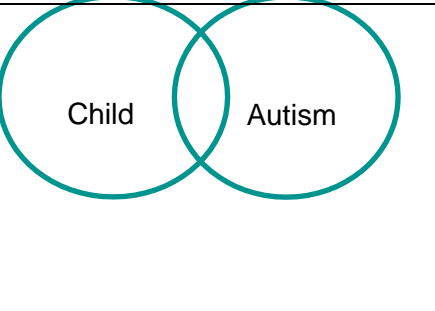
An example of some of the key databases to consider are shown in the table below. Your table or spreadsheet should provide your blueprint for the search you'll carry out.

	Search terms Group 1	AND	Search terms Group 2	AND	Search terms Group 3	AND	Search terms Group 4	Databases to search include:
	Child* OR Teen OR Teens OR Teenager* OR Youth* OR adolescen* OR pediatric* OR paediatric*		Autism OR Autistic OR Asperger*		Occupational therap*	n/a	n/a	<p>At RCOT library/ university/ hospital or health library (Athens account may be necessary at some organisations):</p> <ul style="list-style-type: none"> • CINAHL • AMED • APA PsycINFO • Social Policy and Practice • HMIC • Medline • NICE Evidence /HDAS (in NHS only) <p>(above may be searched through ProQuest, EBSCO or OVID platforms)</p> <ul style="list-style-type: none"> • OTDBASE (stand alone) <p>RCOT library</p> <ul style="list-style-type: none"> • OT search (stand alone) • RCOT Library catalogue <p>Internet</p> <ul style="list-style-type: none"> • OTseeker • Cochrane • NHS Evidence • OTseeker • PubMed
Database fields	Ti, de, ab		Ti, de, ab		Ti, de, ab		Ti, de, ab	

Ti=Title field; de=descriptor/ subject field; ab=abstract fields

Boolean operators

Shade in those areas in the diagrams below which reflect the action of the operator described -
Answers in Appendix 2

OR	<p>autism OR Aspergers</p> <p>Retrieves records containing either term</p> <p>Broadens a search</p>	
AND	<p>e.g. child AND autism</p> <p>Retrieves records containing both terms</p> <p>Narrows a search</p>	
NOT	<p>Child NOT autism</p> <p>Excludes records containing the second term</p> <p><i>NOT should be used with caution as it could exclude potentially useful articles from your search results</i></p>	
ADJ	<p>Using a proximity operator such as ADJ or NEAR will allow you to search for terms in close proximity to one another.</p> <p>For example, ADJ3 between two terms will search for matches where the terms are found within three words of each other</p> <p>Hand ADJ3 splint</p>	
Phrase searching	<p>“manual handling”</p> <p>Finds only the exact term ‘manual handling’</p>	

Database fields to search

It can often be helpful to initially choose title, descriptor/ subject and abstract fields in which to search your terms. After looking at the number and content of results, decide then whether you need to amend choice of terms or fields to narrow or broaden your search or make your results more specific. For example, choosing to search a term in the title or subject fields will focus and limit

the set of results by finding articles where these terms are found in the title *or* subject fields but not in the abstract field.

You might also limit results further by applying a date range or only searching articles in a specific language. Decisions for amending searches or limiting search results can only be made by looking at the results of your search combinations and thinking about the implications of any changes made or limiters applied.

4. Identify appropriate databases to search

At the RCOT library, university, hospital or health libraries you can usually search a selection of the following although some organisations may require users to register for an OpenAthens account to search the resources.

Database	Content
CINAHL	'An American database covering nursing and allied health literature'
AMED	'Coverage is UK with some information from European countries. Subjects covered include: complementary medicine, occupational therapy, physiotherapy, podiatry, acupuncture, homeopathy, hypnosis, chiropractic, osteopathy, rehabilitation, herbalism, holistic treatments and Chinese medicine'
APA PsycINFO	'An American database particularly useful if searching for psychiatric or psychological information'
Social Policy and Practice	Mainly UK in focus with some material from the USA and Europe. Many references are to grey literature and UK government publications. Coverage includes: public and social policy, public health, social care, community development, mental & community health, homelessness, housing, crime, law & order, families, children and older people'
HMIC	'A UK database including information from the King's Fund and Department of Health - official publications, journal articles and grey literature on: health service policy, management and administration of health and social care services'
Medline	Includes medical information for medicine, nursing, dentistry, veterinary medicine, the health care system, pre-clinical science topics
<i>The databases above may be searched through the ProQuest, EBSCO or OVID platforms</i>	
NICE Evidence/ HDAS	Includes selected evidence in the fields of health, social care and public health from sources such as SIGN, the Cochrane Library and Royal Colleges, Social Care Online and GOV.UK.

At the RCOT library, in addition to those databases listed above you can also search:

Database	Content
OT search	This is the catalogue and database of the American Occupational Therapy Association.
OTDBASE	A small stand-alone database covering all Occupational Therapy English language journals
Library Catalogue	The catalogue of the RCOT library holdings and electronic resources

Internet

Provides access to many freely available databases, including:

Database	Content
OTseeker	'Contains abstracts of systematic reviews and randomised controlled trials relevant to occupational therapy. Trials have been critically appraised and rated to assist in evaluation of validity and interpretability.'
Cochrane Library	A suite of four research databases which include systematic reviews and randomised controlled trials.
NHS Evidence	This "virtual" library is available through the Internet, providing an equitable library service to all NHS staff, patients, the public, students and staff working partly in the HE/FE sector
PubMed	Comprises more than 32 million citations for biomedical literature from MEDLINE, life science journals, and online books. Citations may include links to full text content from PubMed Central and publisher web sites.
Social Care Online	Previously known as Care Data, Social Care Online provides social care information including research briefings, reports, government documents, journal articles and websites
TRIP database	Trip is a clinical search engine designed to allow users to quickly and easily find and use high-quality research evidence to support their practice and/or care.

Choose those databases most suitable for your search topic (Usually begin with CINAHL, AMED and, if your topic is related to mental health, also ensure you search APA PsycINFO)

5. Access the databases

Options include accessing and searching databases at the RCOT library (onsite only) or through NHS, hospital, health, university libraries

RCOT members working in the NHS, in a private hospital, working in universities, working independently or as a private practitioner can:

- search the databases onsite at RCOT
- search free databases on the internet. See the information sheet listing these titles at <https://www.rcot.co.uk/practice-resources/library-resources/search-cinahl-and-medline> (scroll down to the end of the web page)

RCOT members working in the NHS can also search via NICE Evidence/ HDAS. Check with your hospital, health librarian

RCOT members working in universities can also search databases via your university portal. Check with your university librarian

6. Search the databases

You're now ready to begin searching using your Word table or spreadsheet as a guide.

It can be helpful when carrying out a search, to search each group of terms separately in the database (see search group 1, search group 2 and search group 3 in the table at point 3 above) and then combine/ mix and match the combinations of individual searches to produce the final set of search results.

Remember to check your spellings when typing in search terms. You may want to set up a word document with all your terms so you can copy and paste these when searching. This helps minimise spelling errors which can affect results

The following is a brief overview of a possible approach to begin searching which can be used with the EBSCOHOST and OVID platforms. These platforms, and the databases you can access through these platforms, allow for sophisticated searching. Search approaches for other databases will vary. Some databases have much more restrictive searching capabilities and are less flexible. Use the help functions provided within the databases or contact the RCOT library or your health, hospital or university library for further advice on how to search specific databases.

Begin by:

- a) Setting yourself up with a folder for whichever platform/ database you are searching. Log in to this each time you are using the platform/ database. This way you can save your search histories and article references. Exporting to reference management software from the databases, if available to you, is also helpful as this means all your results, found from different databases, can be stored in one place, rather than being saved between several platforms or databases

Then, using the table and included terms at point 3 above as an example:

- b) Enter the terms in search group 1 with OR between each term – execute this 1st search
- c) Enter the terms in search group 2 with OR between each term – execute this 2nd search
- d) Enter the terms in search group 3 with OR between each term – execute this 3rd search
- e) After conducting the 3 separate searches – go to the search history
- f) Select the 3 completed searches and execute a 4th combined search using the 'Search with AND' option

Broadening or narrowing a search Depending on the numbers of articles returned you may need to narrow or broaden your search terms and combinations, use search filters or add limiters available on the search platforms. You can only make decisions about narrowing or broadening a search once you see your results. It can be helpful to narrow only by date at the end of your search so you don't miss any useful articles.

- g) Look through the articles and add those of interest to the platform folder
- h) Print, email and/ or save your list of references together with the search history

Ensure you have saved your search history, if the database or platform allows you to do this. You can then refer back to details of your searches and rerun the searches at a later date when new articles may have been published

7. Get help to search the databases

Each of the databases and platforms are slightly different to search. Guidance sheets to help you search the OVID and EBSCOHOST platforms and databases can be downloaded from the library information skills web page at: <https://www.rcot.co.uk/practice-resources/library-resources/information-skills> Alternatively, contact your health or university librarian and/ or use the help guides provided within each database.

8. Find the journal articles

See the RCOT guide 'Where to locate/get a journal article' <https://www.rcot.co.uk/practice-resources/library-resources/information-skills>

This includes a practical section to help you identify where the best place is to get a copy of the article you need, based on your work or study setting

Articles may be available in print and/or electronic format from any/ all of the following:

- University/ hospital/ health/ public library – contact these organisations directly about their print journal holdings and electronic access
- RCOT ejournals at: <https://www.rcot.co.uk/practice-resources/library-resources/journals-and-e-journals>
- RCOT print journals – photocopies can be requested. Full details at: <https://www.rcot.co.uk/practice-resources/library-resources/photocopying-and-document-supply>
The RCOT A-Z journal Holdings List lists those titles we have in print and electronic format
- Check the internet for the title of the article. An open access copy may be freely available
- If not available through any of the above, request an Interlibrary loan through university/ hospital/ health/ public library/ RCOT library
- Public libraries also may provide access to academic articles through the Access to Research project <http://www.accesstoresearch.org.uk/> Please contact your public library directly to see if they are participating

9. Appraise the articles

Critical appraisal is outside the scope of this guide but checklists produced by CASP and McMaster may help you read articles in an active and structured way, facilitating critical appraisal of journal article content:

- a. **Critical Appraisal Skills Programme (CASP)** <https://casp-uk.net/casp-tools-checklists/>
- b. **McMaster** quantitative and qualitative guidelines and review forms <https://healthsci.mcmaster.ca/srs/research/evidence-based-practice-research-group> (scroll down to access the McMaster review forms)

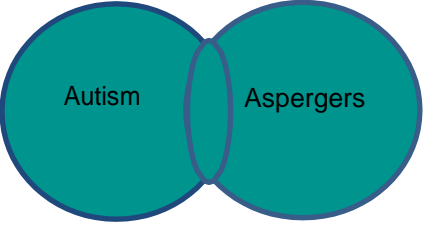
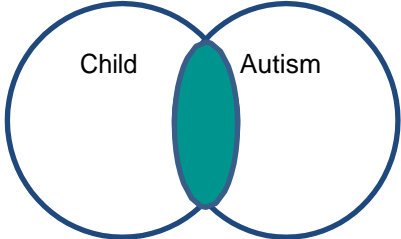
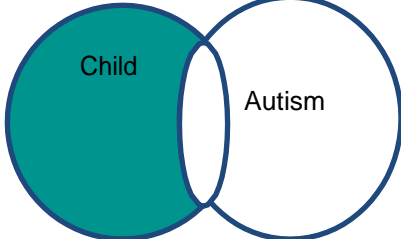
Appendix 1

Please photocopy for use

	Search terms Group 1	AND	Search terms Group 2	AND	Search terms Group 3	AND	Search terms Group 4	Databases to search include:
							Add as many additional columns as necessary	<p>At RCOT library/ university/ hospital or health library (Athens account may be necessary at some organisations):</p> <ul style="list-style-type: none"> • CINAHL • AMED • APA PsycINFO • Social Policy and Practice • HMIC • Medline • NICE Evidence /HDAS (in NHS only) <p>(above may be searched through ProQuest, EBSCO or OVID platforms)</p> <ul style="list-style-type: none"> • OTDBASE (stand alone) <p>RCOT library</p> <ul style="list-style-type: none"> • OT search (stand alone) • RCOT Library catalogue <p>Internet</p> <ul style="list-style-type: none"> • OTseeker • Cochrane • NHS Evidence • PubMed
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Appendix 2

<p>OR</p>	<p>autism OR Aspergers</p> <p>Retrieves records containing either term</p> <p>Broadens a search</p>	
<p>AND</p>	<p>e.g. child AND autism</p> <p>Retrieves records containing both terms</p> <p>Narrows a search</p>	
<p>NOT</p>	<p>Child NOT autism</p> <p>Excludes records containing the second term</p>	
<p>" "</p> <p>Phrase searching</p>	<p>"manual handling"</p> <p>Finds only the exact term 'manual handling'</p>	