Searching the Cochrane Library

Learning Objectives

1   Understand what is in the Cochrane Library and when to use it

2   Develop a search strategy in the Cochrane Library using key words, MeSH terms and Boolean logic

3   Navigate a Cochrane Systematic Review

4   Learn how to save searches and manage results
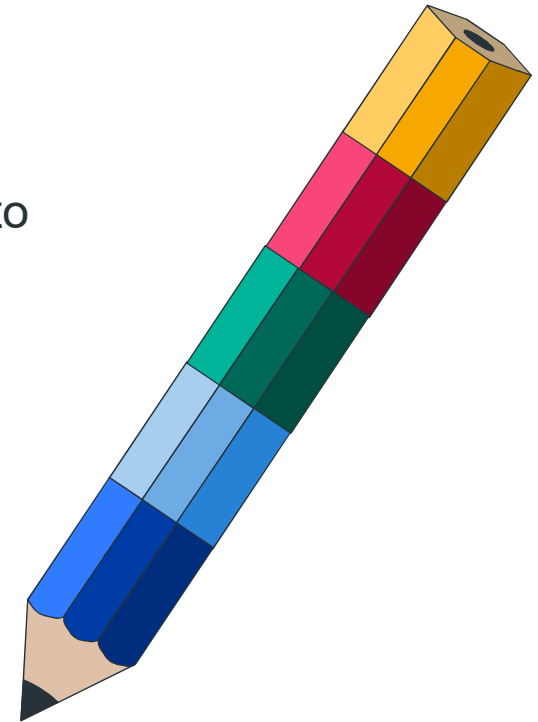
Technical considerations

1 — Use chat function for Q&A

2 — Participants have been muted

3 — Participants can turn off video

4 — Session is not being recorded

www.hselibrary.ie

Use Chrome / Firefox

Seirbhís Sláinte Níos Fearr á Forbairt | Building a Better Health Service

Programme

- **10.00-10.45** Introduction, format of a systematic review and undertaking a search

- **10.45-11.15** Practical search exercise using breakout rooms - with coffee

- **11.15-11.45** Feedback on the exercise

- **11.45-12.00** Saving searches, managing results and Q&A

The Cochrane Library

WHAT IS IT?

- Reliable evidence about the effectiveness of interventions
  - Treatment
  - Diagnosis and screening
  - Health promotion
  - Organisation of care
- Things you can do to people and can measure!

Setting it in Context

Types of information resources

- General Information (Background)
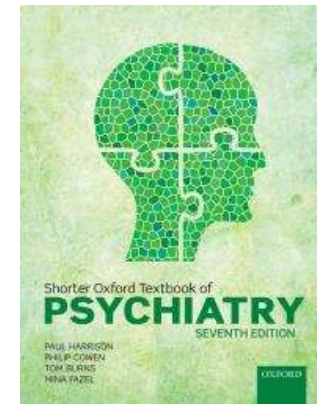- Filtered Resources (Secondary research)
- Unfiltered Resources (Primary research)

Background resources

- Usually in textbook format
- Do not usually integrate the most current research
- Example: print and electronic textbooks
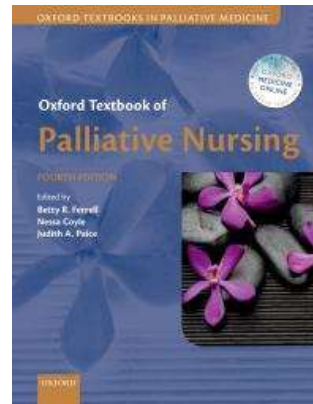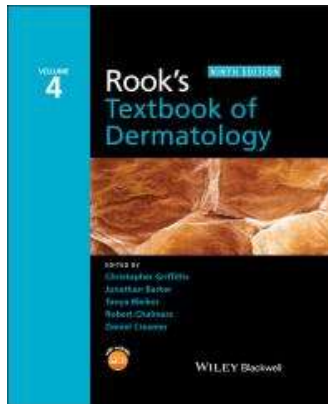
Filtered resources: secondary research

- Pose questions and then synthesise evidence to state conclusions based on the available research
- The primary literature has already been searched and synthesised
- Search strategies are required to identify appropriate secondary sources
- Conclusions must still be evaluated for their appropriateness to the specific patient
- Examples: Cochrane Systematic Reviews, guidelines, other systematic reviews

Unfiltered resources: primary research

- Primary literature eg RCTs, cohort studies, qualitative studies etc
- Generally the most recent information
- Must be evaluated for appropriateness to the specific patient
- Effective search strategies are needed to identify relevant studies using databases eg PubMed, Medline, CINAHL, CENTRAL
- Studies must be critically appraised to determine the reliability of the author's conclusions
- Time consuming

Evidence Pyramid

The Cochrane Library – www.cochranelibrary.com

When should you use the Cochrane Library?

- For information about the effectiveness of treatments
- Questions should have 2 facets:
  - Named health care state (present or desired)
  - Named intervention or the idea of an intervention
    - Are fluoride toothpastes effective in preventing dental caries in children and adolescents?
    - What are the long term effects of weight reducing drugs in people with hypertension?
    - Which rehabilitation methods are effective following surgery for flexor tendon injuries of the hand?

When shouldn't you use the Cochrane Library?

- General healthcare questions
- Statistics (prevalence and incidence)
- Primary research other than Randomised Controlled Trials and Clinically Controlled Trials
- Current research (Cochrane is completed research)

What's in the Cochrane Library?

The Cochrane Library comprises three main sources of information:

- Reviews (CDSR – Cochrane Database of Systematic Reviews)
- Trials (CENTRAL – Cochrane Central Register of Controlled Trials)
- Clinical Answers

What's in the Cochrane Library (cont)

In addition, the following content is included:

- Special Collections/Supplements eg *Physical activity for healthy ageing*
- Editorials- eg *COVID-19: working together and making a difference for decision-makers*
- About Cochrane – information about the Cochrane Review Groups
- Podcasts – the latest evidence in under 5 minutes
- Epistemonikas - a collaborative, multilingual database of systematic reviews and other evidence
- McMaster Health Forum's repositories: Health Systems Evidence (HSE) and Social Systems Evidence (SSE)

Cochrane Database of Systematic Reviews (CDSR)

- CDSR includes **Cochrane Reviews** (completed systematic reviews) and **protocols** (reviews in progress) for Cochrane Reviews

- CDSR is owned and produced by Cochrane, a global, independent network of researchers, professionals, patients, carers and people interested in health

- CDSR covers any topic relevant to health care, including health services

- The database is updated on an ongoing basis

CDSR (cont)

- Each Cochrane Review is a systematic review that has been prepared and supervised by a Cochrane Review Group (editorial team). It attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a specific research question

- Researchers conducting systematic reviews use explicit, systematic methods that are selected with a view aimed at minimizing bias, to produce more reliable findings to inform decision-making

- Cochrane Reviews are updated to reflect the findings of new evidence when it becomes available because the results of new studies can change the conclusions of a review

Protocols

- Cochrane researchers use protocols to describe the proposed approach for a systematic review
- A protocol outlines the question that the review authors are addressing, detailing the criteria against which studies will be assessed for inclusion in the review and describing how the authors will manage the review process
- Protocols contain information that defines the health problem and the intervention under investigation, how benefits and harms will be measured, and the type of appropriate study design. The protocol also outlines the process for identifying, assessing, and summarizing studies in the review
- The protocol is a public record of how the review authors intend to answer their research question.

Cochrane Systematic Reviews

- The authors identify an intervention for a specific disease or other problem in health care, and then ask whether or not this intervention works.
- To do this they locate, appraise and synthesise evidence from as many relevant scientific studies as possible.
- They summarise conclusions about effectiveness, and provide a unique collation of the known evidence on a given topic, so that others can easily review the primary studies for intervention
- Comprehensive search methods are used to find, select and assess the quality of relevant research.
- Unpublished and non-English studies are included
- A diagrammatic analysis is included (odds-ratio diagram) which show whether a particular intervention is effective or not

Cochrane CENTRAL Register of Controlled Trials

- This is the world's largest database of published randomised controlled trials (RCTs)
- RCTs are identified using bibliographic databases and other published sources eg *PubMed, Embase, CINAHL*
- Records are also derived from other published and unpublished sources including *ClinicalTrials.gov* and the *WHO's International Clinical Trials Registry Platform.*
- They represent second level evidence for decision making
- They are not quality assessed

CENTRAL (cont)

- Records are bibliographic only ie title of article, information on where it was published and, in many cases, the abstract
- It is used by Cochrane reviewers to identify studies for a Cochrane review and researchers wishing to identify studies in different disciplines

Cochrane Clinical Answers

- Cochrane Clinical Answers (CCAs) provide a readable, digestible, clinically-focused entry point to rigorous research from Cochrane Reviews

- Designed to be actionable and to inform point-of-care decision-making. Each CCA contains a clinical question, a short answer, and data for the outcomes from the Cochrane Review deemed most relevant to practising healthcare professionals

- The evidence is displayed in a user-friendly tabulated format that includes narratives, data, and links to graphics

Cochrane Library – in brief

- Premier resource for information on effectiveness
- Includes the full text of maintained systematic reviews
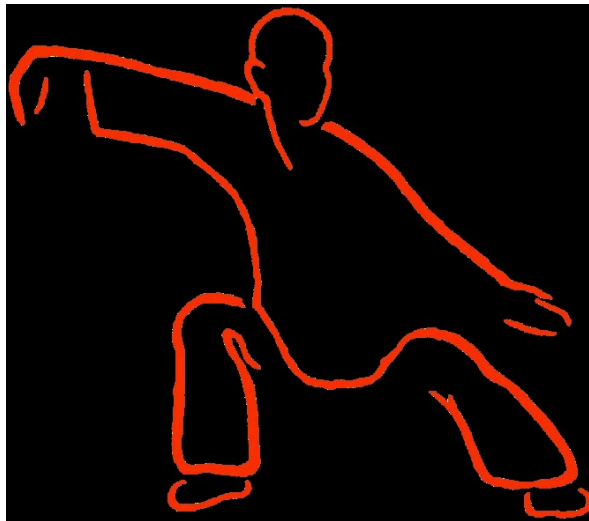- Regarded as the single best source for references to Randomised Controlled Trials

Our intervention topic

You have heard that Tai Chi could be helpful in reducing the risk of developing cardiovascular disease

Using PICO(T) - a reminder

P	Patient/population/problem
I	Intervention (or test/exposure)
C	Comparison intervention, exposure or test (if there is one)
O	Outcome (what we want to happen or stop happening
T	Time element or type of study (if appropriate)

PATIENT / POPULATION / PROBLEM

MH Cardiovascular Disease

Cardiovascular disease

Heart disease

P

INTERVENTION

MH Tai Ji

Tai chi

Taichi

Taijiquan

Tai ji quan

Taiji

T'ai chi

I

Create the search strategy

#1 MH Cardiovascular Disease

#2 Cardiovascular next disease* or heart next disease*

#3 #1 OR #2

#4 MH Tai Ji

#5 "Tai chi" OR taichi OR "t'ai chi" OR taijiquan OR "tai ji quan" OR taiji

#6 #4 OR #5

#7 #3 AND #6

Apply limits if required

#1   MH Cardiovascular Disease

#2   Cardiovascular next disease* or heart next disease*

#3   #1 OR #2

#4   MH Tai Ji

#5   "Tai chi" OR taichi OR "t'ai chi" OR taijiquan OR "tai ji quan" OR taiji

#6   #4 OR #5

#7   #3 AND #6

#8   2010 - 2021

Suggested search strategy for the Cochrane Library

Advanced Search

Search | **Search manager** | Medical terms (MeSH) | PICO search^{BETA}

Save this search ▾   👁 View saved searches   ? Search help

View fewer lines   Print

−	+	#1	MeSH descriptor: [Cardiovascular Diseases] explode all trees	MeSH ▾	108943
−	+	#2	Cardiovascular NEXT disease* or heart NEXT disease*	Limits	52100
−	+	#3	#1 OR #2	Limits	142300
−	+	#4	MeSH descriptor: [Tai Ji] explode all trees	MeSH ▾	365
−	+	#5	"Tai chi" OR taichi OR "t'ai chi" OR taijiquan OR "tai ji quan" OR taiji	Limits	1547
−	+	#6	#4 OR #5	Limits	1557
−	+	#7	#3 AND #6	Limits	161
−	+	#8	#3 AND #6	Limits	148

with Cochrane Library publication date from Jan 2010 to Mar 2021

A reminder

OR

always broadens the search

= more results
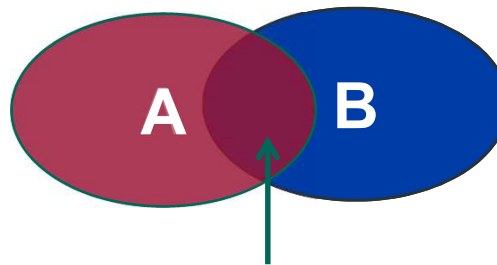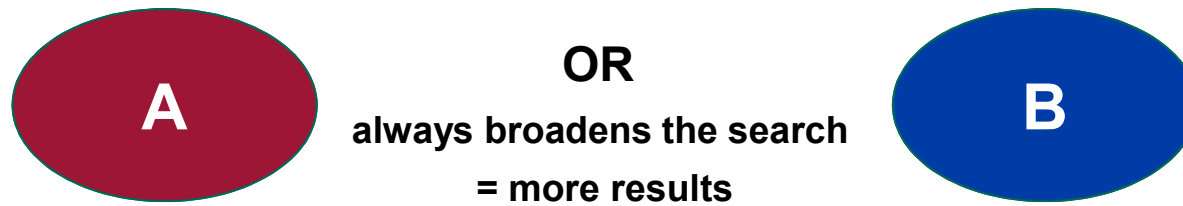
AND always narrows the search

= fewer results

Searching the Cochrane Library

There are three levels of search:

Simple search (on the home page) which allows single line searching only

Advanced Search – this allows multiple search lines to be combined

Search Manager – this allows complex search strategies to be developed, including subject heading (MeSH) searches. Searches can be combined as required

Search techniques - truncation

- Truncation – looks for words beginning with a particular root
- Cochrane uses a * to replace one or more characters
- The * can be placed to the left or right of the term or in the middle
  - eg transplant* looks for transplant, transplants, transplantation*, transplantable
  - eg *glycaemia looks for hyperglycaemia or hypoglycaemia
  - eg leuk*mia looks for leukemia or leukaemia

Search techniques – truncation (cont)

- Cochrane uses **?** to replace a single unknown character

  – eg wom?n looks for woman or women
  – eg system? looks for system or systems but not systemic or systematic

Search techniques – phrase searching

- To search a phrase in Cochrane you must use double quotes.
  eg "teenage pregnancy"
  Otherwise it will search for teenage AND pregnancy but not necessarily as a phrase
- If you also wish to use truncation you must use NEXT
  eg teenage NEXT pregnanc* will find teenage pregnancy and teenage pregnancies
- If you wish to search for a phrase that includes *and,or,not* then using double quotes will find it eg "health and safety"

Search techniques – proximity searching

- Proximity searching looks for two or more words in close proximity to each other. You choose the number of words.
- **NEAR** finds the terms within 6 words of each other in either order
- **NEAR/X** finds the terms within X words of each other ie the number of words between search terms

    eg teen* NEAR/**3** pregnan* looks for teenage pregnancy, pregnant teenager, pregnancy in teenagers, teenagers who become pregnant, teenagers who may be pregnant etc

Search techniques – proximity searching

- **NEXT** find the terms when they appear next to each other and in the order specified.
- **NEXT** is required when using truncation/wildcards
    - eg "hearing aid" looks for hearing aid but not hearing aids
    - hearing NEXT aid* looks for hearing aid and hearing aids
    - **BUT** hearing NEXT aid* will not find aids to hearing

Search techniques – using Subject Headings (MeSH)

- Keyword searching is **fast and easy** and usually finds records
- However, using subject headings for a search can provide **focus and precision**
- Subject headings retrieve **subjects** rather than **words**
- A subject heading search will generally retrieve fewer results than a keyword search but they may be more relevant
- Cochrane uses Medical Subject Headings (MeSH) and these are also used in PubMed and Medline

MeSH in the Cochrane Library

- MeSH headings are used to index Cochrane Systematic Reviews but it can take 6 months for a new review to receive its headings
- Cochrane Protocols do not have MeSH headings
- CENTRAL – articles that have been imported from Medline have MeSH headings but not records sourced from EMBASE

Examples of MeSH headings

| Topic	MeSH heading
Type 1 diabetes	Diabetes Mellitus, Type 1
Autism	Autism Spectrum Disorder
Pet therapy	Animal Assisted Therapy

Saving searches

Step 1

Click on Save Search

Step 2

Log into your Wiley account. If you don't have one you can register for one at this stage

Step 3

Click on Save search again and choose Save As. Give your search a name and click on Save As again.
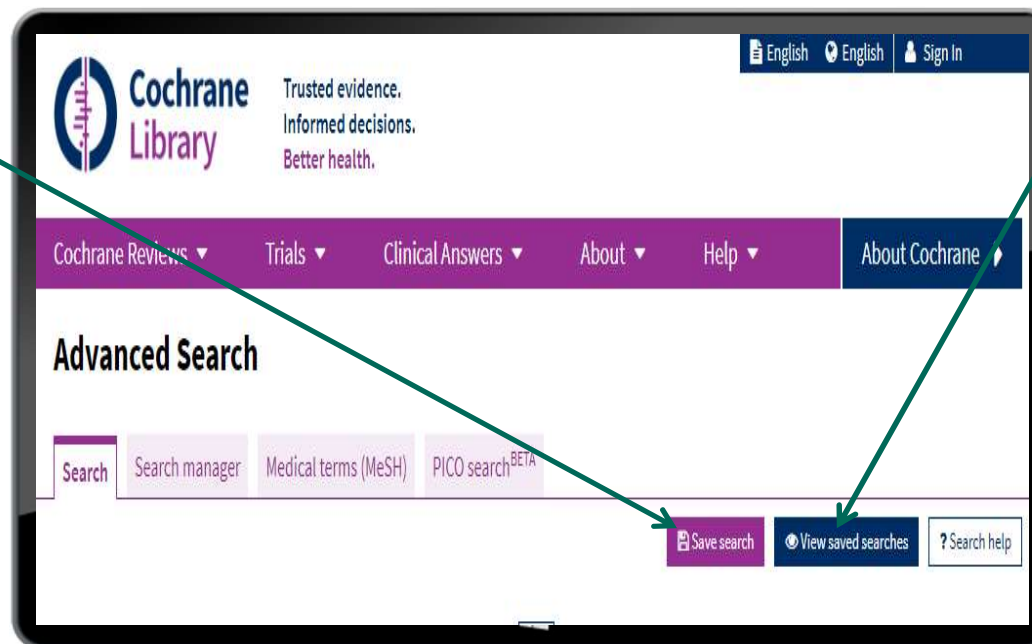
Step 4

You can see all your saved searches by clicking on View Saved Searches. If you make changes to an existing search you can choose to Save (which changes the original search) or Save As which saves it as a new search.

Step 5

You can then rerun a search you have saved before or combine two searches together if you wish.
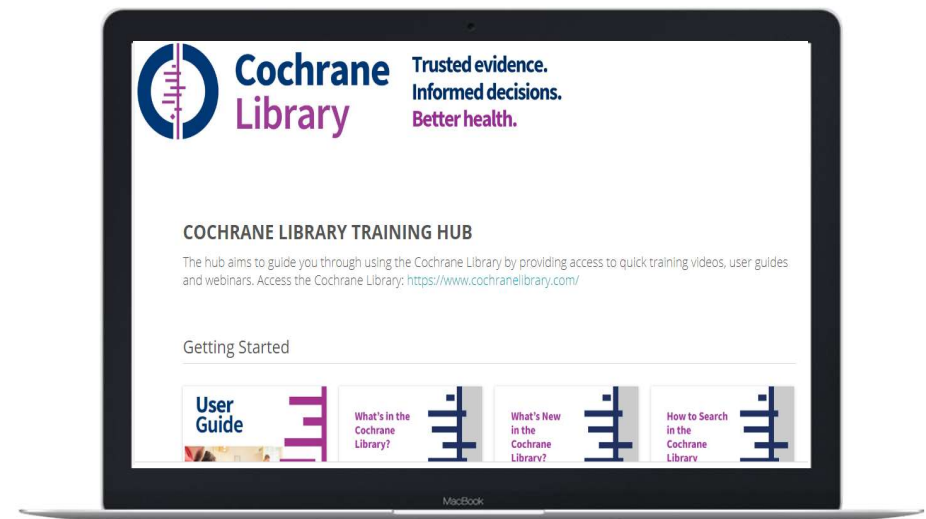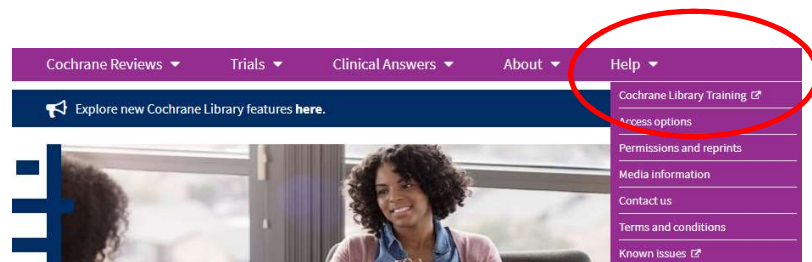
Note

You can also add an alert to your saved search so that you are alerted when new content that matches your search strategy is added to the Cochrane Library

Help for using the Cochrane Library

https://www.wiley.com/network/cochranelibrarytraining

Other sources of systematic reviews

- Databases eg MEDLINE/PUBMED etc
- TRIP database
- Campbell Collaboration -Crime and justice, education, international development and social welfare
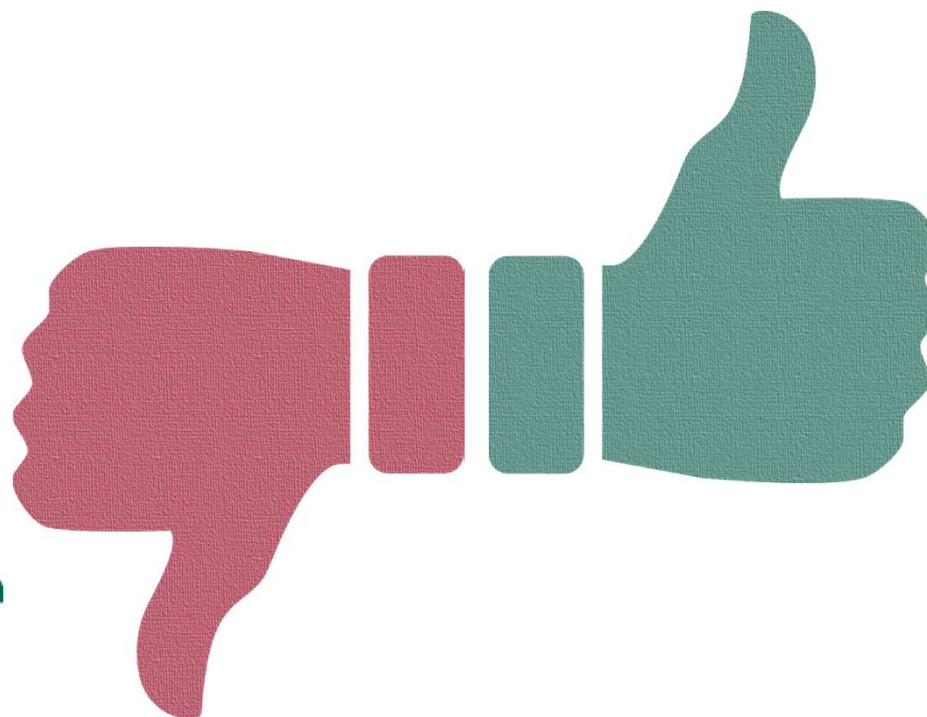- PROSPERO – International prospective register of systematic reviews

Recap & Questions
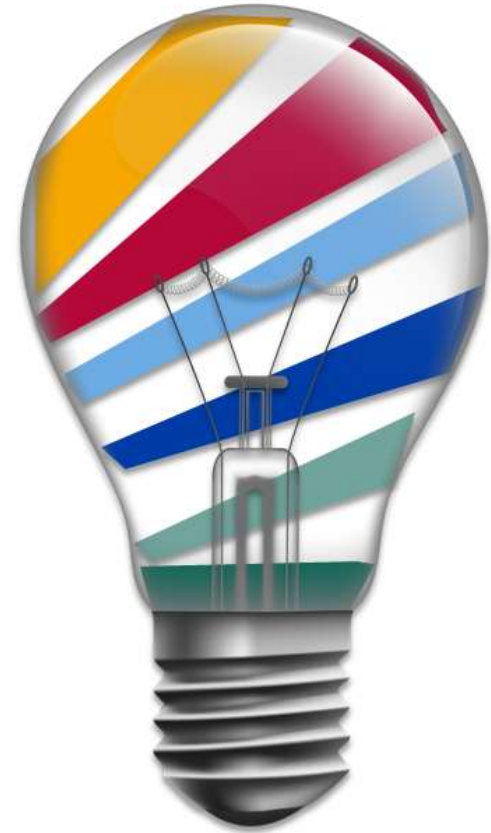
Feedback

We will send you an email requesting feedback to help us improve our training

Leabharlann Sláinte na hÉireann
Health Library Ireland
Ár nAcmhainn Náisiúnta | Our National Resource

Contact your [Local Library](#)

Adult Mental Health Services (AMHS) Library, Cork	Bantry General Hospital, Cork	Cavan General Hospital
Cherry Orchard Hospital, Dublin 10	Connolly Hospital, Blanchardstown Dublin	Cork University Hospital
Dr. Steevens' Hospital Library Dublin	University Hospital Galway	Mallow General Hospital, Cork
Mayo University Hospital	Galway University Hospitals	Midland Regional Hospital, Mullingar, Co. Westmeath
Midland Regional Hospital, Portlaoise, Co. Laois	Midland Regional Hospital, Tullamore, Offaly	Naas General Hospital
Our Lady of Lourdes Hospital, Drogheda	Our Lady's Hospital, Navan	Portiuncula University Hospital, Galway
Roscommon University Hospital	Sligo University Hospital	South Tipperary General Hospital
St. Columcille's Hospital, Loughlinstown	St. Conal's Hospital Library, Letterkenny	St. Luke's General Hospital, Kilkenny
St. Luke's Radiation Oncology Network (SLRON) Dublin	University Hospital Kerry	University Hospital Limerick
University Hospital Waterford	Wexford General Hospital	