Orygen
The National Centre of Excellence in Youth Mental Health

A quick reference guide to evidence translation

What are sources of evidence?

A central principle in evidence translation is that all evidence must be critically appraised, regardless of its source.

Evidence is published across a variety of sources, including scientific or academic journals, books, conference proceedings, websites, and news reports. Academic publications in scientific journals are generally considered to be of higher quality due to the independent, peer-review process. There are a number of ways to determine the quality of a journal, though these measures are not necessarily a good proxy of the quality of *individual articles* within the journal. A central principle in evidence translation is that all evidence must be critically appraised, regardless of its source.

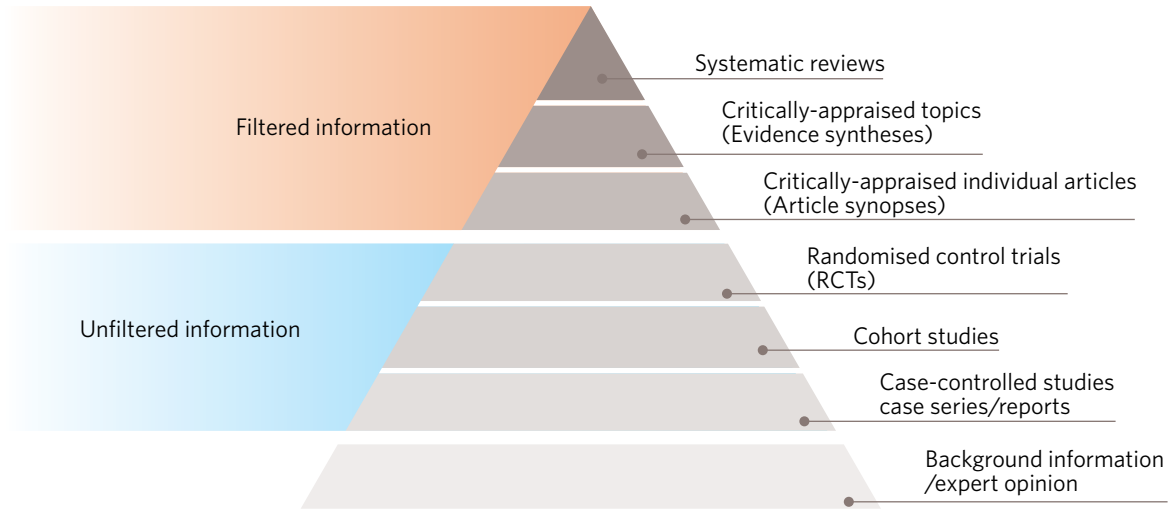
What are 'levels of evidence'?

The Levels of Evidence Pyramid can be utilised to weigh the quality of different types of evidence when engaging in evidence translation, with the highest level of evidence at the top.

TIP

Use Journal Rank to **check a journal's 'impact factor'** – the more citations the articles in a journal receive, the higher its impact factor and ranking.

Levels of Evidence Pyramid



'Levels of Evidence Pyramid'. Trustees of Dartmouth College and Yale University. Produced by Jan Glover, Dave Izzo, Karen Odato, and Lei Wang.

NHMRC evidence hierarchies

The National Health and Medical Research Council in Australia has also developed an evidence hierarchy specifically for intervention studies.[1]

Level	Evidence from
I	Systematic review of RCTs
II	Randomised controlled trial (RCT)
III	Pseudo-randomised controlled trial, or comparative study with or without concurrent control group – includes cohort study, case-control study, historical control study
IV	Case series

Evidence hierarchies can provide you with a 'best bet' in terms of the quality of work, but individual articles should still be critically appraised. For example, a robust cohort study might provide stronger evidence than a poorly conducted RCT. While expert opinion and consensus sit at the bottom of the Levels of Evidence Pyramid, and does not feature in the NHMRC's evidence hierarchy, this may nonetheless be an important aspect of having research findings implemented in clinical practice, and should be given due consideration in evidence translation. Methods such as Delphi studies can also be used to aggregate expert opinions.

Maximise your time by consulting up-to-date, reliable sources that provide clinical recommendations following critical appraisal of the evidence in a particular area

I have limited time to search for and appraise evidence. Where do I start?

Maximise your time by consulting up-to-date, reliable sources that provide clinical recommendations following critical appraisal of the evidence in a particular area (i.e. filtered resources at the top of the Levels of Evidence Pyramid). Systematic reviews and meta-analyses attempt to bring together all the relevant studies on a particular topic, sometimes with conflicting findings, and synthesise their results. A well done systematic review is conducted in a transparent and objective manner, and includes critical appraisal of the quality of individual studies in order to minimise error and bias.[2]

Cochrane Database of Systematic Reviews

- Widely recognised as the 'gold standard' in systematic reviews due to the rigorous methodology used.
- Reviews feature a 'plain language summary' that provides a quick, easy-to-understand overview of findings.
- Reviews are periodically updated to reflect new evidence.
- Australians currently have free access to all full-text articles in the library through a government-funded national subscription.

Where available, clinical practice guidelines with evidence-based recommendations are another form of filtered information, and can assist with decision-making in specific clinical circumstances.

- NHMRC Australian Clinical Practice Guidelines Portal allows you to search for guidelines relevant to the Australian context that are current and freely available.
- National Institute for Health and Care Excellence (NICE) guidelines (UK) based on the best available evidence that is regularly updated as well as input from service users and clinicians.
- The Agency for Healthcare Research and Quality (USA) National Guideline Clearinghouse provides summaries of clinical practice guidelines. Guidelines range from expert opinion to higher levels of evidence.

Which academic databases should I use to find peer-reviewed publications?

PubMed is a user-friendly search interface that provides free online access to the MEDLINE database of published academic literature.

- Offers advanced options, such as the ability to 'build' comprehensive search strategies or to limit search results by age group or article type.
- Clinical Queries is a special feature that allows you to filter results to specific clinical study categories such as aetiology, diagnosis, therapy, or prognosis.
- Study abstracts can be freely viewed but obtaining the full article still usually requires a paid subscription.

Access to the other major academic databases require paid subscriptions:

- CINAHL: nursing and allied health focused.
- Embase: medical focused.
- PsychINFO: psychology and psychiatry focused.

Are there free search engines that can help me locate evidence?

Google Scholar

- Basic search interface that is fast gaining popularity for quick and comprehensive clinical searches.
- Generally performs well in head-to-head comparisons with major academic databases and may provide greater access to free full-text articles.[3–5]
- Improvements in recent iterations address some previous criticisms, though shortcomings remain and it should not be used in isolation for systematic review searches.[6]
- In addition to peer-reviewed publications, also retrieves 'grey literature' (i.e. documents not catalogued by commercial publishers, like non-peer reviewed articles, theses and dissertations, and academic books). While this can broaden the search results, bear in mind that some of the articles retrieved through this platform may not have gone through a stringent peer-review process.

Sign up for Google Scholar alerts to stay up to date with emerging research via emails whenever newly published articles match your search criteria.

There are a number of other clinical search engines available, though these might not be as comprehensive as Google Scholar or the academic databases listed above. The following search engines aim to link to high quality evidence, with full text articles freely available in some cases. Search results can range from systematic reviews and evidence summaries to broader sources of evidence like guidance, policy documents, and decision aids.

- NICE Evidence Search
- PDQ-Evidence
- Trip Database offers advanced search option that allows for input based on the PICO framework. See the section below on 'How do I build an effective search strategy?'

Where can I find evidence specific to young people's mental health?

The Orygen Evidence Finder provides access to the best available evidence for the prevention and treatment of mental ill-health in young people. The Evidence Finder is:

- a shared initiative with headspace that is freely available
- a comprehensive research database of all controlled intervention studies and systematic reviews published in youth mental health since 1980
- links to abstracts provided, with full-text articles freely available in some cases
- updated (usually annually) with the latest research.

How do I best target my search for evidence? Is there a useful strategy?

PICO framework

Locating relevant studies in large databases can be a time-consuming task. You can streamline the process by utilising the PICO framework to compose a well-defined clinical question. This framework helps determine your:

- Population of interest
- Intervention or treatment you're interested in
- Comparison that's important or relevant to consider
- Outcome of interest.

Completing a PICO helps you refine your area of interest or question so you can search more efficiently. The table on the next page has some examples of this process.

	P	I	C	O
	Patient, problem, or population	**Intervention or exposure**	**Comparison (if relevant)**	**Outcome**
Therapy	In adolescents with anxiety	is group therapy more effective	than individual therapy	at reducing symptoms?
Prevention	For high school students	does participation in school-based programs with	or without a parent education component	prevent bullying?
Diagnosis	In rural communities	does screening for suicidal ideation		accurately identify risk?
Prognosis	In first-episode psychosis	how does maintenance treatment	versus discontinuation of medication	affect functional outcomes?
Aetiology	Do young people	exposed to alcohol advertising		increase their consumption of alcohol?

Are 'filtered' resources sufficient or should I also consult primary research studies?

Primary research refers to experimental research studies conducted by the authors of a publication. Scenarios where primary research studies might be more informative than filtered resources (e.g. summaries of studies interpreted by others) include the following:

- There is no recent, robust systematic review available. Existing reviews or guidelines may be out-dated and no longer reflect current evidence or best practice.
- In emerging research areas with a small evidence base, there may not be any systematic reviews, so a large, well-conducted RCT may provide the best evidence (or better evidence than a systematic review of smaller, low quality RCTs).
- The findings from existing reviews may not be generalisable to your client or circumstances. For example, your workplace may not currently have the resources to provide the intervention recommended in a systematic review. Or you work with young people from culturally and linguistically diverse (CALD) backgrounds, but the majority of studies summarised in the best-available systematic review recruited non-CALD populations.

Should I only trust the findings from clinical or controlled trials (RCTs)?

Consider your clinical question, as other study designs may be more appropriate for answering this than an RCT. RCTs and systematic reviews of RCTs are commonly considered the 'gold standard' for providing the most unbiased guidance on *whether an intervention works*. The highest level of evidence for answering questions related to prognosis or aetiology, for example, is based on prospective cohort studies – refer to the NHMRC's Evidence Hierarchy for more information. In some cases, the clinical question might best lend itself to a qualitative study in which clinicians or clients have been interviewed about their attitudes or experiences – for example, what are barriers to help-seeking in a specific population?

What if I don't have a paid subscription to academic journals?

Many authors are now choosing to make their publications *open access*, which in most cases mean they pay a publishing fee to a journal so that digital copies of their research are freely available to view and distribute. Be aware that 'predatory' open access journals with questionable ethics and quality control are on the rise, and the standard of peer-review before an article is accepted for publication can vary dramatically, and in some cases, not involve any peer review, while charging the authors a fee to publish the article.[7,8] Here are some reputable sources for open access journals:

- Directory of Open Access Journals **(DOAJ)** is currently the best source for accessing open access articles. It is a not-for-profit, 'community-curated' online catalogue of articles published in open access, peer-reviewed journals of established quality.
- PubMed Central **(PMC)** is a repository of freely available full-text articles. While PubMed is considered a world leading resource, recent surveys[9] suggest that some predatory journals have crept into their database, making critical appraisal of individual research articles crucial.

TIP

Check DOAJ's public list to see if an open access journal you're interested in appears on it. Journals are assessed against stringent criteria and only included on the list if they have a high level of compliance to best practices and publishing standards.

TIP

The reference list at the end of an article can provide some indication of whether it is evidence-based and up to date. If there is no reference list or declaration of the sources of evidence – such as for expert reviewers – you cannot assume that the information it contains is based on the best available evidence.

Free youth mental health resources for professionals

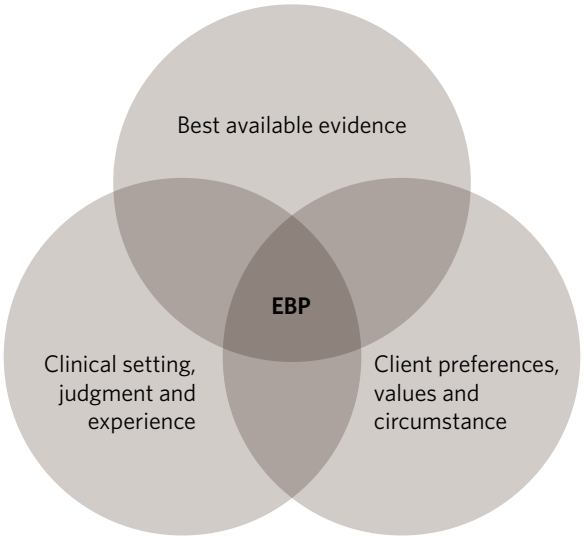
There is a wealth of free youth mental health resources for professionals available online. While often appealing due to their readability and focus on clinical application, the methodology utilised in developing these resources is at times unclear.

- **Orygen's** education and training includes an extensive collection of evidence-based Evidence Summaries, Fact Sheets, Mythbusters, Clinical Practice Guides, Research Bulletins, and Toolkits.
- **headspace's** Resource Library and Clinical Practice Guidelines have been approved by the headspace Clinical Reference Group.
- **beyondblue**: Adolescents and Young Adults Clinical Practice Guidelines.
- Black Dog Institute: Resources to assist with diagnosis, treatment and capacity building.
- ReachOut: Practical resources that address current topics, such as the use of technology in youth mental health and working with young people in rural areas, who are homeless, or who identify as LGBTQI.

Is there room in evidence-based practice for clinical judgment?

Evidence-based practice (EBP) is not about rigidly trying to replicate interventions tested in research studies; rather, the integration of clinical expertise and a client's preferences, values and circumstances are key components of EBP.[10] External evidence can inform, but cannot replace, sound clinical reasoning and your client's preferences and choice in their treatment. It is imperative to take an individualised approach in practice, consider cultural factors and thoughtfully integrate these aspects in every client–clinician encounter. Keep in mind that the purpose of most research is to determine better or more effective treatments and interventions, so keeping up with the evidence is a key part of offering 'best practice' to young people and their families.

Components of evidence-based practice



External evidence can inform, but cannot replace, sound clinical reasoning and your clients' preferences and choice in their treatment.

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Disclaimer

Orygen
The National Centre of Excellence in Youth Mental Health

Orygen, The National Centre of Excellence in Youth Mental Health is the world's leading research and knowledge translation organisation focusing on mental ill-health in young people.

For more details about Orygen visit orygen.org.au

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