

Critical Appraisal Resources



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What is Critical Appraisal?

Critical appraisal is the assessment of evidence by systematically reviewing its relevance, validity and results to specific situations. Chambers, R. (1998).

Critical appraisal is <u>not</u>:	Critical appraisal is:
× Negative dismissal of any piece of research	✓ Balanced assessment of benefits and strengths of research against its flaws and weaknesses
× Assessment of results	✓ Assessment of research process and results
× Based entirely on detailed statistical analysis	✓ Consideration of quantitative and qualitative aspects of research
× To be undertaken by only researchers/statisticians	✓ To be undertaken by <u>all health professionals</u> as part of their work

Why Should We Critically Appraise?

- Published research is not always reliable – we cannot take conclusions for granted, even if the article is published in a peer-reviewed journal.
- Published research is not always relevant – the abstract may indicate relevance but you will need to read the complete article to judge its applicability to your own practice/circumstances.
- To improve clinical effectiveness, we need a systematic framework to interpret research, rather than relying on a haphazard or casual approach.

Key Steps to Effective Critical Appraisal

When critically appraising a piece of research, you are addressing 3 broad questions:

- 1. Are the Results valid?**
- 2. What are the results?**
- 3. How will these results help me work with my patients?**

Appraisal Tools

[Critical Appraisal Skills Program \(CASP\)](#) appraisal tools developed by CASP for seven types of research papers including systematic reviews, RCTs and cohort studies.

Tools are available to download and are for personal use.

<http://www.casp-uk.net/>

- [CASP Randomised Controlled Trial](#)
- [CASP Systematic Review](#)
- [CASP Cohort Study](#)
- [CASP Case Control Study](#)
- [CASP Qualitative Research](#)
- [CASP Economic Evaluations](#)
- [CASP Diagnostic Test](#)
- [CASP Clinical Prediction Rule](#)

General Resources

[Best Bets](#) a database of critically appraised research papers including systematic reviews, RCTs and cohort studies. <http://www.bestbets.org>

[Evidence-Based Medicine Toolkit](#) - a collection of tools for identifying, assessing and applying relevant evidence for better health care decision-making. <http://www.ebm.med.ualberta.ca/>

Evidence-Based Medicine (Athens password required) - surveys a wide range of international medical journals applying strict criteria for the quality and validity of research. <http://ebm.bmj.com/>

How to read a paper - a set of ten guides from the BMJ
<http://www.bmj.com/about-bmj/resources-readers/publications/how-read-paper>

[Oxford Centre for Evidence-based Medicine - Levels of Evidence](#) - for ranking the validity of evidence about the value of preventive manoeuvres: systematic reviews/meta-analyses and well conducted randomised controlled trials (RCTs) are usually seen as the best form of "evidence".
<http://www.cebm.net/?o=1025>

[User's guides to evidence based practice](#) - based on a set of Users' Guides originally published as a series in the Journal of the American Medical Association (JAMA). <http://www.cche.net/usersguides/main.asp>

Teaching Resources

[Critical appraisal tutorial](http://www.shef.ac.uk/scharr/ir/units/critapp/index.htm) - a step-by-step introduction from ScHARR
<http://www.shef.ac.uk/scharr/ir/units/critapp/index.htm>

[Teaching materials from the Centre for Evidence Based Medicine \(University of Toronto\)](http://www.cebm.utoronto.ca/teach/) - includes teaching materials and useful tips.
<http://www.cebm.utoronto.ca/teach/>

[Useful glossary of terms from Bandolier](http://www.medicine.ox.ac.uk/bandolier/glossary.html) The glossary includes terms used in epidemiology, in clinical trials, in diagnosis, in statistics, and in health economics. <http://www.medicine.ox.ac.uk/bandolier/glossary.html>

Further Reading (Athens password required)

Statistics for the non-statistician. Trisha Greenhalgh
<http://bmj.bmjournals.com/cgi/content/full/315/7104/364>

Statistics for the non-statistician. II: "Significant" relations and their pitfalls. Trisha Greenhalgh
<http://bmj.bmjournals.com/cgi/content/full/315/7105/422>

Assessing the methodological quality of published papers. Trisha Greenhalgh
<http://bmj.bmjournals.com/cgi/content/full/315/7103/305>

Getting your bearings (deciding what the paper is about). Trisha Greenhalgh
<http://bmj.bmjournals.com/cgi/content/full/315/7102/243>

Setting up a Critical Appraisal Workshop A Practical Guide to Setting Up a Critical Appraisal Workshop in 5 Stages from ScHARR.
http://sites.duke.edu/ebmworkshop/files/2013/04/EBM_teaching_guide.doc

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