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## **Critical Appraisal Tools**

### **AGREE (Appraisal of Guidelines Research and Evaluation)**

AGREE is an international collaboration of researchers and policy makers who seek to improve the quality and effectiveness of clinical practice guidelines by establishing a shared framework for their development, reporting and assessment. The AGREE Instrument for the assessment of clinical practice guidelines is available on-line in several languages (including Russian).

**URL:** <http://www.agreecollaboration.org>

### **Center for Evidence-Based Medicine. University of Toronto. Critical Appraisal Worksheets**

“The goal of this web-site is to help develop, disseminate, and evaluate resources that can be used to practice and teach EBM for undergraduate, postgraduate and continuing education for health care professionals from a variety of clinical disciplines. This site also serves as a support for the book entitled, *Evidence-based Medicine: How to practice and teach EBM* by David L. Sackett, Sharon E. Straus, W. Scott Richardson, William Rosenberg, and R. Brian Haynes”. It provides training material for teaching Critical appraisal, including worksheets for Diagnosis, Harm, Prognosis, Therapy, and Systematic Review (of Therapy).

**URL:** <http://www.cebm.utoronto.ca/teach/materials/caworksheets.htm>

### **Critical Appraisal Skills Programme (CASP)**

Worksheets for systematic reviews, randomized controlled trials, qualitative research studies, economic evaluation studies, cohort studies, case control studies, diagnostic test studies. Translated into Russian by AIHA.

**URL:** [http://www.phru.nhs.uk/casp/critical\\_appraisal\\_tools.htm](http://www.phru.nhs.uk/casp/critical_appraisal_tools.htm)

**URL:** <http://lrc.aiha.com/Russian/Training/EBMCourse/Fall2005/index.htm>

### **Critical Appraisal Support System (DynaMed)**

“This online source is an amalgamation of several checklists and uses the same questions across study types when appropriate as well as study type-specific questions. Go to the web-site, click the "Click here to start the dialog" button. Click the "START" button for the DynaMed Processing dialog. Click on the third choice ("Use ") and click the "next" button. After you get past the acknowledgements page and enter a title for the article you are

evaluating, you will get to pick the kind of article to critically appraise. You will then follow a series of questions to answer guiding you through the critical appraisal. At the end, you will have a single page summarizing all of your answers”

**URL: <http://www.dianexus.org/Dynamed>**

### **Delfini Group Evidence Tool Set**

“Topics upon which Delfini has written and taught include evidence-based medicine, searching for valid clinical information, critical appraisal of the medical literature, evidence-based committee processes, technology assessment methods, population-based care, projecting economic and health outcomes, performance measurement, patient decision-making, facilitating provider behavior change, physician and patient communications, developing and implementing clinical practice guidelines, and the creating and implementation of information, decision and action aids for care”. The Resource Center includes tools for evaluating evidence and summarizing information.

**URL: <http://www.delfini.org/delfiniGood.htm#tools>**

### **DISCERN: Quality criteria for consumer health information on treatment choices**

The DISCERN web-site contains an online version of the DISCERN instrument and handbook. The handbook is designed to help you understand and use DISCERN effectively, and can be used to support training. It has been written from the perspective of a health consumer (or patient), but can be used by anyone interested in information about treatment choices. DISCERN may be used to assess a broad range of consumer health information on treatment in a variety of formats. DISCERN is a brief questionnaire which provides users with a valid and reliable way of assessing the quality of written information on treatment choices for a health problem. DISCERN can also be used by authors and publishers of information on treatment choices as a guide to the standard which users are entitled to expect. New DISCERN Genetics site (Summer 2006) provides a reliable way of assessing the quality of information on genetic testing and screening.

**URL: <http://www.discern.org.uk/index.php>**

**URL: <http://www.discern-genetics.org>**

### **GATE (Graphic /Generic Appraisal Tool for Epidemiology)**

Initially developed by Rod Jackson (New Zealand) for teaching medical students critical appraisal. “Essentially the GATE frame is the generic paradigm of all epidemiological studies (RCTs, cohort studies, case-control studies, diagnostic test studies) including systematic reviews but not qualitative studies...If you key the main study numbers into the GATE frame, it automatically calculates risk, risk ratios, risk differences and NNTs, as well as 95% confidence intervals for all estimates.”

**URL: <http://www.health.auckland.ac.nz/population-health/epidemiology-biostats/epiq/index.html>**

### **Oxford Centre for Evidence-Based Medicine. Critical Appraisal**

“Critical appraisal is the process of deciding whether a piece of research can help you in answering your clinical question. There are three questions you need to ask about any kind of research: Is it valid? Is it important? Is it applicable to the patient? Clearly, different kinds of research are different in terms of methodological validity, how they present their results and how they translate to an individual patient.” The Centre has developed worksheets that take

you through the most important questions for each type of research: Diagnosis, Prognosis, Harm/Aetiology, Therapy, Systematic Reviews of Therapy). You can access them separately, or you can download all as one PDF document.

**URL:** [http://www.cebm.net/critical\\_appraisal.asp](http://www.cebm.net/critical_appraisal.asp)

### **Resources for Critical Appraisal. School of Health and Related Research (University of Sheffield, UK)**

The *ScHARR Guide on Critical Appraisal and Using the Literature* includes an annotated list of web-based publications on critical appraisal tools and methods.

**URL:** <http://www.shef.ac.uk/scharr/ir/units/critapp/resources.htm>

### **Standard Quality Assessment Criteria for Evaluating Primary Research Papers from a Variety of Fields.** (Alberta Heritage Foundation for Medical Research/Institute of Health Economics - Canada)

The Institute performs research in Health Economics and synthesizes evidence in Health Technology Assessment to assist health policymaking and best medical practice. This appraisal tool is specifically developed for HTA type activities. It includes two generic checklists – one for quantitative and one for qualitative studies, and also Manuals for quality Scoring of Qualitative and Quantitative studies. They developed those generic quality scoring tools for both quantitative (epidemiology studies, etc.) and qualitative (focus groups, etc.) studies as part of a broad review of genetic cancer risk assessment studies.

**URL:** <http://www.ihe.ca/documents/hta/HTA-FR13.pdf>

### **STROBE Statement**

STROBE stands for an international, collaborative initiative of epidemiologists, methodologists, statisticians, researchers and editors involved in the conduct and dissemination of observational studies, with the common aim of **ST**rengthening the **R**eporting of **OB**servational studies in **E**pidemiology. “Since epidemiological research comprises several study designs and many topic areas, we considered it reasonable to initially restrict the STROBE recommendations to the three study designs, cohort, case-control, and cross-sectional studies, and to keep recommendations in a generic format. Later extensions to other study designs, for example nested case-control studies, and specific topic areas, for example, genetic and molecular epidemiology, may be desirable”.

**URL:** <http://www.strobe-statement.org/>

### **TREND Statement**

“Evidence-based public health decisions are based on evaluations of intervention studies with randomized and nonrandomized designs. Transparent reporting is crucial for assessing the validity and efficacy of these intervention studies, and, it facilitates synthesis of the findings for evidence-based recommendations. Therefore, the mission of the Transparent Reporting of Evaluations with Nonrandomized Designs (TREND) group is to improve the reporting standards of nonrandomized evaluations of behavioral and public health interventions. The TREND statement is a 22-item checklist specifically developed to guide standardized reporting of nonrandomized controlled trials.”

**URL:** <http://www.trend-statement.org/asp/trend.asp>.

Articles

**Katrak P, Bialocerkowski AE, Massy-Westropp N, Kumar VSS, Grimmer K. A systematic review of the content of critical appraisal tools. *BMC Medical Research Methodology* 2004, 4:22 (16 September 2004)**

“Consumers of research (researchers, administrators, educators and clinicians) frequently use standard critical appraisal tools to evaluate the quality of published research reports. However, there is no consensus regarding the most appropriate critical appraisal tool for allied health research. We summarized the content, intent, construction and psychometric properties of published, currently available critical appraisal tools to identify common elements and their relevance to allied health research. A systematic review was undertaken of 121 published critical appraisal tools sourced from 108 papers located on electronic databases and the Internet... Few critical appraisal tools had documented evidence of validity of their items, or reliability of use. Guidelines regarding administration of the tools were provided in 43% of cases. There was considerable variability in intent, components, construction and psychometric properties of published critical appraisal tools for research reports. There is no 'gold standard' critical appraisal tool for any study design, nor is there any widely accepted generic tool that can be applied equally well across study types. No tool was specific to allied health research requirements”.

**URL: <http://www.biomedcentral.com/1471-2288/4/22/abstract>**

**Deeks JJ, Dinnes J, D'Amico R, Sowden AJ, Sakarovitch C, Song F, et al. Evaluating non-randomized intervention studies. *Health Technology Assessment* 2003;7(27).**

The authors evaluated 194 tools for appraising non-randomized designs, and recommend six checklists which are suitable when systematically reviewing non-randomized evidence. “Results of non-randomized studies sometimes, but not always, differ from results of randomized studies of the same intervention. Non-randomized studies may still give seriously misleading results when treated and control groups appear similar in key prognostic factors...Although many quality assessment tools exist and have been used for appraising non-randomized studies, most omit key quality domains. Six tools were considered potentially suitable for use in systematic reviews, but each requires revision to cover all relevant quality domains.”

**URL: <http://www.ncchta.org/execsumm/summ727.htm>**

**Lindsay Glynn. A critical appraisal tool for library and information research. *Library Hi Tech Volume 24 Issue 3 2006, pp. 387-399***

“ As the interest in evidence-based librarianship increases, so does the need for a standardized practice methodology. One of the most essential components of EBL, critical appraisal, has not been fully established within the library literature. The purpose of this paper is to outline and describe a thorough critical appraisal tool and process that can be applied to library and information research in an evidence based setting...To create a critical appraisal tool for EBL, it was essential to look at other models. Exhaustive searches were carried out in several databases. Numerous articles were retrieved which provided “evidence” or “best practice” based on a critical appraisal. The initial tool, when created, was distributed to several librarians who provided comments to the author regarding its exhaustiveness, ease of use and applicability and was subsequently revised to reflect their suggestions and comments”.

**URL:**

**<http://www.emeraldinsight.com/Insight/viewContentItem.do?contentType=Article&contentId=1571817>**

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**Related Eurasia Health Knowledge Network / AIHA links:**

**Critically Appraised Topics (CATs) (December 2005)**

URL: <http://wwwold.eurasiahealth.org/index.jsp?sid=1&id=9509&pid=7116>

**Teaching and Learning Evidence-Based Practice (May 2005)**

URL: <http://wwwold.eurasiahealth.org/index.jsp?sid=1&id=9170&pid=7116>

**Training Resources in Evidence-Based Medicine and Health Care (January 2003)**

URL: <http://wwwold.eurasiahealth.org/index.jsp?sid=1&id=7125&pid=7116>

**Quality of Health Information on the Internet (January 2002)**

URL: <http://wwwold.eurasiahealth.org/index.jsp?sid=1&id=7142&pid=7116>

**Evidence-Based Practice Guidelines, Workplan, and Reference Manual (2004)**

URL: <http://lrc.aiha.com/English/ProjectInfo/EBMmanual-Eng.pdf>

**EBP Training Module: Critical Appraisal, Implementation, and Evaluation (2004)**

URL: <http://lrc.aiha.com/English/Training/EBP3-Eng.pdf>

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**Health Resources Digest Forthcoming Topics**

[Provisional]

Electronic Patient Records; Medical Calculators; Genetics Resources; Web-based Archiving

If you have a suggestion for a Digest topic, or would like to contribute information about Internet resources, then please contact [ibra@zadar.net](mailto:ibra@zadar.net)

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and at  
<http://groups-beta.google.com/group/eurasiamedinfo?hl=en>

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