

LEGEND: Evidence Appraisal of a Single Study

Etiology, Risk Factors, Prevalence, Incidence

Systematic Review / Meta-Analysis

Reviewer:

Today's Date:

Final Evidence Level:

Project/Topic of your Clinical Question:

Article Title:

Year:

First Author:

Journal:

Do the study aim/purpose/objectives and inclusion/exclusion criteria assist in answering your clinical question?

☐ Yes ☐ No ☐ Unknown

• Study Aim/Purpose/Objectives:

• Inclusion Criteria:

• Exclusion Criteria:

When reading the bolded questions, consider the bulleted questions to help answer the main question.

If you are uncertain of your skills in evidence evaluation, please consult a local evidence expert for assistance:

- [CCHMC Evidence Experts](#)

Unfamiliar terms can be found in the [LEGEND Glossary](#).

Validity

Are the results of the systematic review or meta-analysis valid?

- | | | | | |
|----|---|------------------------------|-----------------------------|----------------------------------|
| 1. | Did the overview address a focused clinical question? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 2. | Was the search for relevant studies detailed and exhaustive?
• Was it <i>unlikely</i> that important, relevant studies were missed? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 3. | Were the included studies appraised and assigned a high level of quality? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 4. | Were the methods consistent or homogeneous from study to study?
• Did the overview describe the study populations at a well-defined point in the course of disease?
• Were the participants sufficiently similar (<i>homogeneous</i>) with respect to known factors of interest (e.g., demographic, exposure, risk, treatment, or etiology)?
• Were similar objective and unbiased outcome criteria used? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 5. | Was there freedom from conflict of interest?
• Sponsors, Funding Agency, Investigators | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |

Comments on Study Validity:

Reliability

Are these valid study results important?

- | | | | | |
|----|--|------------------------------|-----------------------------|----------------------------------|
| 6. | Were the statistical analysis methods appropriate?
• Were the statistical analysis methods clearly described?
• If subgroups were evaluated, was a statistical adjustment made for the differences? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 7. | What were the main results of the systematic review/meta-analysis? (e.g., Helpful data: Page #, Table #, Figures, Graphs)
• For an Etiology Study: How strong is the association/correlation between exposure and outcome?
• For a Prevalence or Incidence Study: What is the rate?
(e.g., number per population [prevalence] or number per population per year or other time period [incidence])?
• What were the measures of statistical uncertainty (e.g., precision)?
(Were the results presented with Confidence Intervals or Standard Deviations?) | | | |
| 8. | Were the results statistically significant? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |
| 9. | Were the results clinically significant?
• If potential confounders were identified, were they discussed in relationship to the results? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Unknown |

Comments on Study Reliability:

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Applicability

Can I apply these valid, important study results to my patients?

10. Can the results be applied to my population of interest? ☐ Yes ☐ No ☐ Unknown
- Do the exposures or outcomes apply to my population or question of interest?
 - Were the participants or populations in this study similar to my population of interest?
11. Are my patient's and family's values and preferences satisfied by knowledge gained from this study (such as outcomes considered)? ☐ Yes ☐ No ☐ Unknown
12. Would you include this study/article in development of a care recommendation? ☐ Yes ☐ No ☐ Unknown

Comments on Study Applicability:

Additional Comments or Conclusions ("Take-Home Points")

Quality Level / Evidence Level

- Consider each "No" answer and the degree to which this limitation is a threat to the validity of the results, then check the appropriate box to assign the level of quality for this study/article.
- Consider an "Unknown" answer to one or more questions as a similar limitation to answering "No," if the information is not available in the article.

The Evidence Level is:

- ☐ Good Quality Systematic Review [1a]
- ☐ Lesser Quality Systematic Review [1b]
- ☐ Not Valid, Reliable, or Applicable

Table of Evidence Levels															
DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN														
	Systematic Review Meta-Analysis	RCT +	CCT +	Cohort – Prospective	Cohort – Retrospective	Case – Control	Cross – Sectional	Descriptive Study Epidemiology Case Series	Mixed Methods Study	Decision Analysis Economic Analysis Computer Simulation	Guidelines	Case Reports N-of-1 Study	Bench Study	Published Expert Opinion	Local Consensus Published Abstracts
Etiology / Risk Factors	1a 1b	2a 2b	3a 3b	3a 3b	4a 4b	4a 4b	4a 4b	4a 4b	2/3/4 a/b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5
Incidence	1a 1b			2a 2b	3a 3b			4a 4b			5a 5b	5a 5b	5a 5b	5a 5b	5
Prevalence	1a 1b					3a 3b	3a 3b	4a 4b			5a 5b	5a 5b	5a 5b	5a 5b	5

* RCT = Randomized Controlled Trial; CCT = Controlled Clinical Trial

Development for this appraisal form is based on:

- Guyatt, G.; Rennie, D.; Evidence-Based Medicine Working Group.; and American Medical Association.: Users' guides to the medical literature : a manual for evidence-based clinical practice. *Users' guides to the medical literature : a manual for evidence-based clinical practice*. JAMA & archives journals. Chicago, IL, 2002
- Melnyk, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
- Phillips, et al: Oxford Centre for Evidence-based Medicine Levels of Evidence, 2001. Last accessed Nov 14, 2007 from <http://www.cebm.net/index.aspx?o=1025>.
- Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.
- Lohr, K. N. and T. S. Carey (1999). "Assessing "best evidence": issues in grading the quality of studies for systematic reviews." *Joint Commission Journal on Quality Improvement* 25(9): 470-9.
- Jerosch-Herold, C. (2005). "An evidence-based approach to choosing outcome measures: a checklist for the critical appraisal of validity, reliability and responsiveness studies." *British Journal of Occupational Therapy* 68(8): 347-53.
- Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.
- Clark, E., Burkett, K., & Stanko-Lopp, D. (2009, Dec). Let Evidence Guide Every New Decision (LEGEND): an evidence evaluation system for point-of-care clinicians and guideline development teams [CCHMC LEGEND development]. *J Eval Clin Pract*, 15(6), 1054-1060.