

Project/Topic of your Clinical Question: \_\_\_\_\_  
 Reviewer: \_\_\_\_\_ Today's Date: \_\_\_\_\_ Final Evidence Level: \_\_\_\_\_  
 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:

**Is a case-control study congruent with the author's study aim/purpose/objectives above?**  
 Yes  No  Unknown  
 Comments: \_\_\_\_\_

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: <http://groups/ce/NewEBC/EBDMHelp.htm>  
 Unfamiliar terms can be found in the LEGEND Glossary: <http://groups/ce/NewEBC/EBCFiles/GLOSSARY-EBDM.pdf>

**VALIDITY: ARE THE RESULTS OF THE CASE–CONTROL STUDY VALID OR CREDIBLE?**

**1. Are the study methods clearly described and appropriate for the question?**  
 Yes  No  Unknown  
 • Is the setting clearly described and appropriate?  
 Comments: \_\_\_\_\_

**2. Were there clearly defined groups of patients, matched on factors or exposures other than the hypothesized association?**  
 Yes  No  Unknown  
 • Were cases and controls at similar risk of developing the outcome?  
 • Were all potentially important prognostic factors assessed?  
 • Are there subgroups in the sample with very different prognoses compared to other subgroups in the study?  
 Comments: \_\_\_\_\_

**3. Was the assessment of prognostic factors made independent of knowledge of outcomes?**  
 Yes  No  Unknown  
 • Were the prognostic factors quantifiable and precisely measurable?  
 • Were treatments/exposures and clinical outcomes measured in the same way in both groups?  
 Comments: \_\_\_\_\_

4. Were all participants accounted for at the conclusion of the study?  Yes  No  Unknown
- Were missing data explained?
- Comments:

5. Was there freedom from conflict of interest?  Yes  No  Unknown
- Sponsor/Funding Agency or Investigators
- Comments:

**RELIABILITY: ARE THESE VALID STUDY RESULTS IMPORTANT?**

6. Were the statistical analysis methods appropriate?  Yes  No  Unknown
- Were the statistical analysis methods clearly described?
  - If subgroups in the sample had different prognostic factors (*e.g., demographics, disease specifics, comorbidity*), was an adjustment made for the differences between groups?
- Comments:

7. Did the study have a sufficiently large sample size?  Yes  No  Unknown
- Was a power analysis described?
  - Did the sample size achieve or exceed that resulting from the power analysis?
  - Did each subgroup also have sufficient sample size (*e.g., at least 6 to 12 participants*)?
- Comments:

8. What are the main results of the study? (*e.g., Helpful data: Page #, Table #, Figures, Graphs*)
- Is there a strong association between exposure and outcome? (*What is the estimate of risk?*)
  - What were the measures of statistical uncertainty (*e.g., precision*)?  
(*Were the results presented with Confidence Intervals or Standard Deviations?*)

9. Were the results statistically significant?  Yes  No  Unknown
- Comments:

10. Were the results clinically significant?  Yes  No  Unknown
- If potential confounders were identified, were they discussed in relationship to the results?
- Comments:

**APPLICABILITY: CAN I APPLY THESE VALID, IMPORTANT STUDY RESULTS TO TREATING MY PATIENTS?**
**11. Can the results be applied to my population of interest?**  Yes  No  Unknown

- Is the setting of the study applicable to my population of interest?
- Do the patient outcomes apply to my population or question of interest?
- Were the patients in this study similar to my population of interest?

*Comments:*
**12. Are my patient's and family's values and preferences satisfied by the knowledge gained from this study (such as outcomes considered)?**  Yes  No  Unknown

*Comments:*
**13. Would you include this study/article in development of a care recommendation?**  Yes  No  Unknown

*Comments:*
**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 Case-Control Study** [4a]  
 **Lesser Quality Case-Control Study** [4b]  
 **Not Valid, Reliable, or Applicable**

Table of Evidence Levels													
DOMAIN OF CLINICAL QUESTION	TYPE OF STUDY / STUDY DESIGN												
	Systematic Review Meta-Analysis	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
Prognosis	1a 1b	2a 2b	3a 3b	4a 4b	4a 4b	4a 4b	2/3/4 a/b	5a 5b	5a 5b	5a 5b	5a 5b	5a 5b	5

Development for this appraisal form is based on:

1. 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
2. Melnyk, B. M. and E. Fineout-Overholt (2005). Evidence-based practice in nursing & healthcare : a guide to best practice. Philadelphia, Lippincott Williams & Wilkins.
3. 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>.
4. Fineout-Overholt and Johnston: Teaching EBP: asking searchable, answerable clinical questions. *Worldviews Evid Based Nurs*, 2(3): 157-60, 2005.