**Newcastle Critical Appraisal Worksheet**

For each of the 11 items, you can write in your findings below each question

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| **Item** | **Can you find this information in the paper?** | **Is the way this was done a problem?** | **Does this problem threaten the validity of****the study?** |
| 1. What is the research question? |  | Is it concerned with the impact of anintervention, causality or determining themagnitude of a health problem? | Is it a well stated research question/hypothesis? |
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| 2. What is the study type? |  | Is the study type appropriate to the researchquestion? | If not, how useful are the results produced bythis type of study? |
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| 3. What are the outcome factors and how are they measured? |  | a) are all relevant outcomes assessedb) is there measurement error? | a) how important are omitted outcomesb) is measurement error an important source ofbias? |
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| 4. What are the study factors (exposure or intervention) and how are theymeasured? |  | Is there measurement error? | Is measurement error an important source ofbias? |
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| 5. What important confounders are considered? |  | Are potential confounders examined andcontrolled for? | Is confounding an important source of bias? |
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| 6. What are the sampling frame and sampling method? |  | Is there selection bias? | Does this threaten the **external validity** of the study? |
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| 7. Questions of internal validity |  | In an experimental study, how were the subjectsassigned to groups?In a longitudinal study, how many reached follow-up?In a case control study, are the controls appropriate? Note: You can add your own questions, and also designyour own questions for other study types such as crosssectional studies and systematic reviews | Does this threaten the **internal validity** of the study? |
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| 8. Are statistical tests considered? |  | Were the tests appropriate for the data?– Are confidence intervals given?– Is the power given if a null result?– In a trial, are results presented as absolute riskreduction as well as relative risk reduction? | If not, how useful are the results? |
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| 9. Are the results clinically/socially significant? |  | Was the sample size adequate to detect aclinically/socially significant result?– Are the results presented in a way to help inhealth policy decisions? | Is the study useful? |
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| 10. Are ethical issues considered? |  | Does the paper indicate ethics approval?Can you identify potential ethical issues? | Are the results or their applicationcompromised? |
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| 11. What conclusions did the authors reach about the study question? |  | Do the results apply to the population in whichyou are interested? | Will you use the results of the study? |
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