United Lincolnshire Hospitals NHS
NHS Trust
Knowledge and Information Service

Critical Appraisal Toolkit for Cohort Studies

Critical Appraisal Toolkit

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How to use this toolkit?

Three broad issues need to be considered when appraising the report of a systematic review:

- **Is the study valid?**
- **What are the results?**
- **Will the results help locally?**

The 12 questions on the following pages are designed to help you think about these issues systematically.
The first two questions are screening questions and can be answered quickly.

1. Did the review ask a clearly-focused question?

Consider if the question is "focused", in terms of the population studies, the risk factors, and the outcomes considered. Is it clear whether the study tried to detect a beneficial or harmful effect?

Yes ☐ Can't Tell ☐ No ☐

2. Did the authors use an appropriate method to answer their question?

Is a cohort study a good way of answering the question under the circumstances. Did it address the study question?

Yes ☐ Can't Tell ☐ No ☐

If you have answered "Yes" to both questions, it is worth continuing with the appraisal

3. Was the cohort recruited in an acceptable way?

Was the cohort representative of a defined population? Was there something special about the cohort? Was everybody included who should have been included?

Yes ☐ Can't Tell ☐ No ☐

4. Was the exposure accurately measures to minimise bias?

Consider if subjective or objective measurements were used. Have the measures been validated? Were all subjects classified into exposure groups using the same procedure?

Yes ☐ Can't Tell ☐ No ☐

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5. Was the outcome accurately measured to minimise bias?

Consider if subjective or objective measurements were used. Have the measures been validated? Has a reliable system been established for detecting all cases? Were the measurement methods similar for the different groups. Were the subjects/outcome assessors blinded to exposure (does this matter)?

Yes ☐ Can't Tell ☐ No ☐

6. Have the authors identified all important confounding factors? Have they taken account of confounding factors in design and/or analysis?

Look for restriction in design and techniques e.g. modeling, stratified-, regression or sensitivity analysis to correct, control or adjust confounding factors

Yes ☐ Can't Tell ☐ No ☐

7. Was the follow up of subjects complete and long enough?

Have good/bad effects have had long enough to reveal themselves; in an open or dynamic cohort, was there anything special about the outcome of the people leaving or the exposure of people entering the cohort?

Yes ☐ Can't Tell ☐ No ☐

8. What are the results of this study?

What are the bottom line results? Have they reported the rate or the proportion between the exposed/unexposed, the ratio/the rate difference? How strong is the association between exposure and outcome (RR)? What is the ARR?

9. How precise are the results/is the estimate of risk?

What is the size of the confidence intervals?

10. Do you believe the results?

Can the result be due to bias, chance or confounding? Are the study design and methods sufficiently flawed to make the results unreliable? Consider Bradford Hills criteria (e.g. time sequence, dose-response gradient, biological plausibility, consistency)

Yes ☐ Can't Tell ☐ No ☐

11. Can the results be applied to the local population?

Are the subjects of the study different from your population; is the local setting different? Can you quantify the local benefits and harms?

Yes ☐ Can't Tell ☐ No ☐

12. Do the results of this study fit with other available evidence?

Yes ☐ Can't Tell ☐ No ☐

For more information or assistance in using this toolkit, please contact the Knowledge and Informatics Trainer for the Knowledge and Information Service:
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