

2. Methodological Quality Assessment Tools

Newcastle-Ottawa Scale

The Newcastle-Ottawa Scale is a validated and widely used tool that has been recommended by the Cochrane Handbook Section 13.5,⁵ and used in the assessment of bias in quantitative papers in previous Cochrane reviews^{6,7}. Cohort studies are assessed on 3 similar criteria: selection, comparability, and outcome. Selection is split into 4: 1) representativeness of the exposed cohort, 2) selection of the non-exposed cohort, 3) ascertainment of exposure, and 4) demonstration that outcome of interest was not present at start of study. Comparability asks whether there is comparability of cohorts on the basis of the design or analysis. Outcome considers 3 factors: 1) assessment of outcome, 2) was follow-up long enough for outcomes to occur, and 3) adequacy of cohorts. It uses a star system, where stars are allocated per question/factor; the more stars a paper gets, the more reliable and valid it is and the lower the risk of bias. Stars allocated per paper can be displayed to demonstrate strengths and weaknesses between papers.

Risk Of Bias 2

Risk of Bias 2 (RoB 2) is the Cochrane Collaboration designed and approved tool for the assessment of randomised trials⁸. RoB 2 was used to assess randomised studies. RoB 2 examines five domains: randomisation process, deviation from intended intervention, missing outcome data, measurement of the outcome, and reporting selection⁸. Each domain includes several signalling questions prompting the researcher to consider the risk of bias associated with that domain. Based on the answers to each question, the researcher can assign 'low risk of bias', 'some concerns', or 'high risk of bias' for that domain. The overall risk of bias is determined by the researchers; if one or more domains is rated at 'high risk of bias', then the overall risk for that paper is high. If more than one domain is rated at 'some concerns', this will prompt the researcher to review that paper and potentially assign the overall paper a high risk of bias⁸.