

Modified Newcastle-Ottawa scale for appraisal of non-randomized controlled studies

This scale was adapted from the original Newcastle-Ottawa instrument by the University of Pennsylvania Health System Center for Evidence-based Practice. It was modified to enable more efficient, objective, and reproducible assessments that can be incorporated into rapid systematic reviews. The items are designed to be answered as “Yes” or “No”. The scale does not require calculation of a numeric score, but can be used to visually map the characteristics of non-randomized studies, as demonstrated in the sample table.

Study population:

1. All study groups derived from similar source/reference populations?
2. Attrition not significantly different across study groups?

Study validity:

3. The measure of exposure is valid?
4. The measure of outcome is valid?
5. Investigators blinded to endpoint assessment?

Confounders:

6. Potential confounders identified (e.g., comorbidities, multicomponent interventions, etc.)?
7. Statistical adjustment for potential confounders done?
8. Funding source(s) disclosed and no obvious conflict of interest?

Reference: Wells G, Shea B, O’Connell J, Robertson J, Peterson V, Welch V, et al. The Newcastle-Ottawa scale (NOS) for assessing the quality of nonrandomised studies in meta-analysis. Available at http://www.ohri.ca/programs/clinical_epidemiology/oxfordasp. Accessed June 21, 2016.

Sample study appraisal table

Domain	Study A	Study B	Study C
1. Study groups	Y	Y	N
2. Attrition	Y	Y	NR
3. Exposure measure	N	N	Y
4. Outcome measure	Y	Y	Y
5. Investigators blinded	N	Y	N
6. Confounders identified	Y	N	NR
7. Statistical adjustment	N	Y	Y
8. Funding source	Y	NR	Y

