

The Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomised studies in meta-analyses

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Nonrandomised studies, including case-control and cohort studies, can be challenging to implement and conduct. Assessment of the quality of such studies is essential for a proper understanding of nonrandomised studies. The Newcastle-Ottawa Scale (NOS) is an ongoing collaboration between the Universities of Newcastle, Australia and Ottawa, Canada. It was developed to assess the quality of nonrandomised studies with its design, content and ease of use directed to the task of incorporating the quality assessments in the interpretation of meta-analytic results. A 'star system' has been developed in which a study is judged on three broad perspectives: the selection of the study groups; the comparability of the groups; and the ascertainment of either the exposure or outcome of interest for case-control or cohort studies respectively. The goal of this project is to develop an instrument providing an easy and convenient tool for quality assessment of nonrandomised studies to be used in a systematic review.

The face/content validity of the NOS has been established based on a critical review of the items by several experts in the field who evaluated its clarity and completeness for the specific task of assessing the quality of studies to be used in a meta-analysis. Also, the NOS has been refined based on experience using it in several projects, in particular, a project assessing the association of CHD with hormone replacement therapy in postmenopausal women and a project assessing the association of connective tissue disease with silicone breast implants.

The evaluation of the NOS is currently in progress. Its content validity and inter-rater reliability have been established. Its criterion validity with comparisons to more comprehensive but cumbersome scales and its intra-rater reliability are currently being examined. An assessment plan is being formulated for evaluating its construct validity with consideration of the theoretical relationship of the NOS to external criteria and the internal structure of the NOS components.

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Scale: [MS Word](#), [.PDF](#) (Adobe Acrobat)