

## MOOSE Guidelines for Meta-Analyses and Systematic Reviews of Observational Studies\*

<b>Title</b>	Identify the study as a meta-analysis (or systematic review) <a href="#">page 1</a>
<b>Abstract</b>	Use the journal's structured format <a href="#">page 3</a>
<b>Introduction</b>	<b>Present</b> <ul style="list-style-type: none"><li>• The clinical problem <a href="#">page 4</a></li><li>• The hypothesis <a href="#">page 4</a></li><li>• A statement of objectives that includes the study population, the condition of interest, the exposure or intervention, and the outcome(s) considered <a href="#">pages 4-5</a></li></ul>
<b>Sources</b>	<b>Describe</b> <ul style="list-style-type: none"><li>• Qualifications of searchers (eg, librarians and investigators) <a href="#">supplemental material</a></li><li>• Search strategy, including time period included in the synthesis and keywords</li><li>• Effort to include all available studies, including contact with authors</li><li>• Databases and registries searched <a href="#">page 9</a></li><li>• Search software used, name and version, including special features used (eg, explosion) <a href="#">page 9</a></li><li>• Use of hand searching (eg, reference lists of obtained articles) <a href="#">supplemental material</a></li><li>• List of citations located and those excluded, including justification</li><li>• Method of addressing articles published in languages other than English <a href="#">page 9</a></li><li>• Method of handling abstracts and unpublished studies <a href="#">supplemental material</a></li><li>• Description of any contact with authors <a href="#">supplemental material</a></li></ul>
<b>Study Selection</b>	<b>Describe</b> <ul style="list-style-type: none"><li>• Types of study designs considered <a href="#">page 9</a></li><li>• Relevance or appropriateness of studies gathered for assessing the hypothesis to be tested <a href="#">page 9</a></li><li>• Rationale for the selection and coding of data (eg, sound clinical principles or convenience)</li><li>• Documentation of how data were classified and coded (eg, multiple raters, blinding, and interrater reliability) <a href="#">supplemental material</a></li><li>• Assessment of confounding (eg, comparability of cases and controls in studies where appropriate)</li><li>• Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results <a href="#">supplemental material</a></li><li>• Assessment of heterogeneity <a href="#">supplemental material</a></li><li>• Statistical methods (eg, complete description of fixed or random effects models, justification of whether the chosen models account for predictors of study results, dose-response models, or cumulative meta-analysis) in sufficient detail to be replicated <a href="#">page 9</a></li></ul>
<b>Results</b>	<b>Present</b> <ul style="list-style-type: none"><li>• A graph summarizing individual study estimates and the overall estimate <a href="#">Figure 4</a></li><li>• A table giving descriptive information for each included study <a href="#">Tables S2-S3</a></li><li>• Results of sensitivity testing (eg, subgroup analysis) <a href="#">page 12</a></li><li>• Indication of statistical uncertainty of findings</li></ul>
<b>Discussion</b>	<b>Discuss</b> <ul style="list-style-type: none"><li>• Strengths and weaknesses <a href="#">page 15</a></li><li>• Potential biases in the review process (eg, publication bias) <a href="#">page 15</a></li><li>• Justification for exclusion (eg, exclusion of non-English-language citations)</li><li>• Assessment of quality of included studies <a href="#">table S3</a></li><li>• Consideration of alternative explanations for observed results <a href="#">page 15</a></li><li>• Generalization of the conclusions (ie, appropriate for the data presented and within the domain of the literature review) <a href="#">page 16</a></li><li>• Guidelines for future research <a href="#">page 16</a></li><li>• Disclosure of funding source <a href="#">page 17</a></li></ul>

\*Modified from Stroup DF, Berlin JA, Morton SC, Olkin I, Williamson GD, Rennie D, et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. JAMA 2000;283:2008–12. Copyrighted © 2000, American Medical Association. All rights reserved.