

Assessing Heterogeneity Across Studies

This 4-item tool for assessing heterogeneity across studies was adapted from an 11-item instrument that was developed and validated for assessing the methodological quality of systematic reviews, called the “assessment of multiple systematic reviews” or AMSTAR.¹ To assess heterogeneity across studies, ask yourself these questions.

Checklist

Questions	Your Answers
<p>1. Were the studies presented graphically to allow readers to visualize heterogeneity among the study results?</p> <ul style="list-style-type: none"> • For example, a forest plot showing each study’s point estimate and the pooled point estimate, with confidence intervals. • For the forest plot, do the studies look the same (eyeball test) and do the confidence intervals overlap? 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't answer <input type="checkbox"/> Not applicable
<p>2. Were the methods used to combine the findings of studies appropriate?</p> <ul style="list-style-type: none"> • Tested pooled results to ensure the studies were combinable, to assess their homogeneity (i.e. Chi-squared test for homogeneity, I^2). • Uses random effects model if heterogeneity exists, and/or justifies the clinical appropriateness of combining (i.e. is it sensible to combine?). 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't answer <input type="checkbox"/> Not applicable
<p>3. Was the likelihood of publication bias assessed?</p> <ul style="list-style-type: none"> • Includes a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test). 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't answer <input type="checkbox"/> Not applicable
<p>4. Were the characteristics of the included studies provided?</p> <ul style="list-style-type: none"> • Aggregates data from the original studies (e.g., table) on the participants, interventions, and outcomes • Analyzes and reports the ranges of characteristics in all studies (e.g. age, race, sex, relevant socioeconomic data, disease status, duration, severity, comorbidities). 	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't answer <input type="checkbox"/> Not applicable

Adapted from: Shea et al. J Clin Epidemiol. 2009;62:1013-20. PMID: 19230606.

¹ Shea BJ, Hamel C, Wells GA, Bouter LM, Kristjansson E, Grimshaw J, Henry DA, Boers M. AMSTAR is a reliable and valid measurement tool to assess the methodological quality of systematic reviews. J Clin Epidemiol. 2009;62:1013-20. PMID: 19230606.