

Table: Quality assessment of systematic reviews

	Type of Systematic Review Based on Primary Studies	Risk of Bias Assessment	Certainty of Evidence (Quality of Evidence)	Critical Appraisal (Quality Appraisal/Quality Assessment)	Reporting Guideline Based on Primary Studies
1	Prevalence/ Incidence	Assessing Risk of Bias in Prevalence Studies (Hoy et al.) ¹	Does not apply.	1. The JBI Critical Appraisal Tool ^{2, 3} 2. AHRQ 3. Giannakopoulos ⁴ Loney ⁵	STROBE and its extensions
2	Case Reports/ Case Series	Does not apply.	Does not apply.	The JBI Critical Appraisal Tools ⁶	CARE
3	Observational Studies	ROBINS-E ⁷	GRADE ⁸	1. NOS ⁵ 2. The JBI Critical Appraisal Tools ⁶ 3. The CASP checklist ⁹ 4. SIGN ⁹ 5. AXIS ¹⁰ 6. AHRQ ¹¹ 7. The NIH Critical Appraisal Tools ¹² 8. The Downs and Black Checklist ¹³	STROBE and its extensions
4	Randomized Controlled Trial	The Cochrane ROB tool versions 1 ¹⁴ and 2 ¹⁵	GRADE ⁸	1. The Downs and Black Checklist ¹³ 2. The CASP Checklist for RCT ⁹ 3. The NIH quality assessment tool ¹² 4. NICE ^{9, 16} 5. Jadad ^{9, 17} 6. SIGN ¹⁸	CONSORT ¹⁹ and its extensions
5	Non-Randomized Interventional Studies	ROBINS-I ²⁰	GRADE ⁸	1. The JBI Critical Appraisal tool ²¹ 2. The PEDro scale ²² 3. MINORS ⁹	
6	Diagnostic Accuracy and prediction model	1. QUADAS-2 ²³ (diagnostic accuracy studies) 2. PROBAST ²⁴ (prediction model studies)	GRADE ⁸	1. The JBI Critical Appraisal tool ²⁵ 2. QUADAS-1 ²⁶ & 2 ²³ 3. SIGN ¹⁸ 4. The CASP Checklist for diagnostic accuracy studies ⁹	STARD ²⁷ and its extensions, TRIPOD ²⁸
7	Animal/ <i>in vivo</i> pre-experimental/ preclinical	CAMARADES, ²⁹ SYRCLE's ³⁰	GRADE As applied by Hooijmans, de Vries et al. 2018 ³¹	1. STAIR ³² 2. Updated STAIR ³³	ARRIVE, ³⁴ VET-STROBE Checklist, ³⁵ REFLECT ³⁶
8	Qualitative	None	GRADE-CERQual ³⁷	1. The JBI Critical Appraisal tool ³⁸ 2. CASP for Qualitative Studies ^{9, 39} 3. NICE ⁹	SRQR, ⁴⁰ COREQ ⁴¹
9	Systematic Reviews	ROBIS	GRADE	1. AMSTAR 2. JBI	PRISMA
10	Guidelines	Does not apply.		1. AGREE II ^{42, 43}	AGREE Reporting Checklist ⁴⁴
11	General Tools (May be used flexibly for different study designs)	Does not apply.	GRADE	1. MERSQI(Medical Education) ⁴⁵ 2. MMAT (Mixed Methods) ⁴⁶ 3. The NIH quality assessment tool ¹²	-

AGREE: Appraisal of guidelines research and evaluation; AHRQ: Agency for healthcare research and quality; AMSTAR: Assessment of multiple systematic reviews; ARRIVE: Animal Research Reporting of *in vivo* experiments; AXIS: Appraisal tool for cross-sectional studies; CAMARADES: Collaborative approach to meta-analysis and review of experimental data from animal studies; CARE: Case reports; CASP: Critical appraisal skills program; COREQ: Consolidated criteria for reporting qualitative research; EQUATOR: Enhancing the quality and transparency of health research; GRADE: Grading of recommendations assessment, development, and evaluation; JBI: Joanna Briggs Institute; MERSQI: Medical education research study quality instrument; MINORS: Methodological index for non-randomized studies; MMAT: Mixed methods appraisal tool; NICE: National institute for health and care excellence; NOS-E: Newcastle–Ottawa scale-education; PEDro: Physiotherapy evidence database; PRISMA: Preferred reporting items for systematic reviews and meta-analyses; PROBAST: Prediction model risk of bias assessment tool; QUADAS: Quality assessment of diagnostic accuracy studies; REFLECT: Reporting guidelines for randomized control trials; ROBINS-E: Risk of bias in non-randomized studies-of exposures; ROBINS-I: Risk of Bias in non-randomized studies-of interventions; ROBIS: Risk of bias in systematic reviews; SRQR: Standards for reporting qualitative research; STAIR: Stroke therapy academic industry roundtable; STARD: Standards for the reporting of diagnostic accuracy; STROBE: Strengthening the reporting of observational studies in epidemiology; SYRCLE's: Systematic review center for laboratory animal experimentation

How to Use This Table: You can choose the appropriate tools for your systematic review by answering the following questions.

- Question 1: Which study design(s) did you include in your systematic review?
 - The answer to this question determines which row of the table you must proceed to.
 - If you included studies with different designs, you might choose the tools in row 11, or alternatively, you can select the appropriate tools for each study based on its design. When planning a meta-analysis or quantitative synthesis, the latter technique might be more appropriate because, in such situations, a risk-of-bias tool is chosen over a critical appraisal tool.
- Question 2: What is your strategy for synthesizing?
 - If your answer to this question is meta-analysis, then you would better select a tool from the “risk of bias” column. If not, a critical appraisal tool is an appropriate alternative.
- Question 3: Do you intend to include evaluations of the reporting quality of published papers as a part of a bibliometric study?
 - If yes, you may include data from the reporting guidelines column.

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Further resources

NIH Study Quality Assessment Tools:

<https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools>

JBI Critical Appraisal Tools

<https://jbi.global/critical-appraisal-tools>

Risk of Bias Tools

www.riskofbias.info

How to formulate appropriate review questions for systematic reviews in sports medicine and rehabilitation? <https://bjsm.bmj.com/content/55/22/1246.abstract>