Steps to Complete an Umbrella Review

A practical reference guide to synthesising existing reviews, assessing their quality, and reporting overlap transparently.

- AMSTAR-2 quality assessment
- Overlap & the corrected covered area
- Reconciling certainty across reviews

Written from practitioner experience across published systematic reviews and meta-analyses, including network meta-analyses registered on INPLASY.

For educational and personal reference use.

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HOW TO USE THIS GUIDE

Work through this guide sequentially for a new umbrella review, or jump to the relevant section when you need specific methodological guidance. Each section is self-contained. This guide assumes an umbrella review has already been confirmed as the right approach. Section 2 covers that upstream decision if you have not made it yet.

SCOPE

This guide covers **umbrella reviews** (overviews of reviews) specifically. It assumes familiarity with systematic review fundamentals (protocol registration, PICO, risk-of-bias assessment) covered in the companion systematic review guide. It does not cover meta-analysis or network meta-analysis directly; see the companion guides for those designs.

1 What an Umbrella Review Is

Confirming the unit of synthesis before you start

An umbrella review (also called an overview of reviews) synthesises evidence from multiple existing systematic reviews on a topic, rather than from primary studies directly. It sits one level up the evidence hierarchy from a standard systematic review: the unit of inclusion is a review, not a trial or cohort study.

This approach is most useful when a body of systematic reviews already exists on overlapping or related questions, and a reader would benefit from a single, structured map of what that evidence base collectively shows, including where reviews agree, where they conflict, and where the evidence remains genuinely thin.

A NOTE ON SOURCING FOR THIS GUIDE

Unlike the pairwise and network meta-analysis guides in this series, the methodology here is drawn from established, published standards for umbrella reviews (AMSTAR-2, the PRIOR reporting statement, and the corrected covered area method) rather than from a single practitioner's own completed umbrella review. The guidance is no less rigorous for that; it reflects current methodological consensus in the field.

The Umbrella Review Pathway

Confirm an umbrella review is the right approach

Existing reviews identified & screened for eligibility — *Sections 3–4*

Each included review quality-rated with AMSTAR-2 — *Section 5*

Overlap of primary studies assessed & reported — *Section 6*

Review-level data extracted & synthesised — *Section 7*

Certainty reconciled across reviews, per outcome — *Section 8*

2 Umbrella Review vs Systematic Review

Choosing your approach before anything else

An umbrella review is the right tool for a specific situation: enough good-quality systematic reviews already exist that re-reviewing every primary study directly would largely duplicate work already done well. It is the wrong tool when that is not the case.

Table 2.1: Systematic Review vs Umbrella Review

	SR / META-ANALYSIS	UMBRELLA REVIEW
Unit of inclusion	Primary studies (trials, cohorts)	Existing systematic reviews
When to choose it	No adequate existing review covers the question, or the question requires fresh primary-study-level pooling	Multiple existing reviews already cover the question or closely related questions, and a structured comparison adds value
Quality assessment tool	RoB 2 / ROBINS-I at the primary study level	AMSTAR-2 at the review level
Key added complexity	Standard heterogeneity, publication bias, and model-selection decisions	Overlap of primary studies across included reviews, and reconciling conflicting certainty ratings between reviews

CHECK BEFORE COMMITTING TO THIS APPROACH

Search for existing reviews on your question before finalising the protocol. If very few reviews exist, are outdated, or are of poor quality with little primary-study overlap between them, a fresh systematic review or meta-analysis of primary studies may serve readers better than an umbrella review built on a thin or unreliable base of existing reviews.

3 Identifying & Selecting Reviews

Searching for reviews, not primary studies

The search strategy for an umbrella review targets existing systematic reviews as its unit of retrieval, which means standard primary-study search filters are the wrong tool. A handful of databases specialise in, or filter well for, systematic reviews specifically.

Table 3.1: Databases for Locating Existing Reviews

SOURCE	WHY IT IS USED
Cochrane Database of Systematic Reviews	The largest single collection of systematic reviews, all produced to a consistent methodological standard
Epistemonikos	Purpose-built for evidence synthesis, explicitly mapping which primary studies each review includes, directly useful for the overlap assessment in Section 6
PROSPERO	The international register of systematic review protocols; useful for finding completed reviews and checking whether an overlapping umbrella review is already underway
PubMed/MEDLINE, SR-filtered	Broad biomedical coverage; apply a validated systematic review search filter rather than a standard primary-study search string
Discipline-specific databases	Captures reviews published in field-specific journals not always indexed in general medical databases

✓ **SEARCH REVIEWS, THEN CHECK THEIR PRIMARY STUDIES**

Once candidate reviews are identified, each review's own reference list and included-study table becomes a data source in its own right. This is where the overlap assessment (Section 6) begins. Epistemonikos in particular can shortcut a substantial amount of this manual cross-referencing work.

FURTHER READING

You can read the following for more detailed rationale:

- Lunny, C., Brennan, S. E., McDonald, S., & McKenzie, J. E. (2017). Toward a comprehensive evidence map of overview of systematic review methods: paper 1—purpose, eligibility, search and data extraction. Systematic reviews, 6(1), 231. doi: 10.1186/s13643-017-0617-1