


# Finding a way through the review maze: systematic, scoping, or an overview

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Methodically conducted literature reviews aim to consolidate information from various sources about a particular topic. The goal is to comprehensively evaluate research data in a meticulous and organized manner, facilitating their utilization in evidence-based practices and informed decision-making. As the top review journal in reproductive medicine *Human Reproduction Update* (HRU) needs to keep up to date with new developments. Besides systematic reviews, two additional types of systematically approached reviews have been considered in HRU; scoping reviews and overviews of systematic reviews. We had to educate ourselves as a team as it is not always clear which review design is best to answer a certain question. Therefore, we prepared a table to highlight some distinctive characteristics of and expected methodology for systematically approached reviews (Table 1). We thought that what helps us is probably helping our authors and readers as well.

It is easiest to start with what we all know: *systematic reviews* (SR). They are designed to address a specific question regarding specific outcomes of a treatment or practice in a specific population. In a SR, the included studies are appraised on quality and reliability in relation to the review question. If possible, SRs include meta-analysis to summarize quantitative outcomes. The classical question is: 'How do interventions compare in terms of certain outcomes in a specific population'.

*Scoping reviews* were developed to provide an overview or map of the available evidence. The review questions are broad and go beyond effectiveness of treatments or interventions. An example of a question could be: barriers toward access to ART in infertile couples.

The advantage of a scoping review is that it provides knowledge on what evidence has been evaluated, the quantity of this evidence and what evidence is lacking, i.e. the knowledge gaps. Scoping reviews can be used as a precursor for future research.

The research question of a recently published scoping review in HRU was 'to summarize all published studies in humans and laboratory animals that have investigated the innate immune sensing and response of the endometrium to bacteria and viruses, and the signaling mechanisms involved' (Lindsay et al., 2023). The authors of this review provided a clear overview on this research area, mapped the evidence, and reported on research gaps.

The *overview of reviews* or *umbrella review*, synthesizes findings from multiple SRs in order to provide a broad evidence-based overview of a particular subject (e.g. quality of life), disorder (e.g. polycystic ovary syndrome (PCOS)), or intervention (e.g. ART). The advantage of this type of review is that a broad area can be addressed, making it particularly useful for guidelines and policy-makers. One could for instance think of an overview on the effectiveness of interventions in PCOS, including SRs that evaluated the effectiveness of ovulation induction, ovarian stimulation and IVF.

Overview of reviews may also integrate evidence from additional primary studies, particularly when existing systematic reviews are deficient or outdated. However, care should be taken not to include systematic reviews comparing the same thing in the same population; on many subjects, there are multiple SRs and including them would result in multiplication of results. Only the most updated SRs of the best quality should be included in the overview of reviews.

Whether a review is systematic, scoping, or overviews, HRU requires you to register the protocol, do a systematic literature search and follow the particular PRISMA or PRIOR reporting guidelines. We hope our characteristics table (Table 1) can serve as a first step in the development of your next review.

## References

- Belbasis L, Bellou V, Ioannidis JPA. Conducting umbrella reviews. *BMJ Med* 2022;**1**:e000071.
- Gates M, Gates A, Pieper D, Fernandes RM, Tricco AC, Moher D, Brennan SE, Li T, Pollock M, Lunny C et al. Reporting guideline for overviews of reviews of healthcare interventions: development of the PRIOR statement. *BMJ* 2022;**378**:e070849.
- Lindsay CV, Potter JA, Grimshaw AA, Abrahams VM, Tong M. Endometrial responses to bacterial and viral infection: a scoping review. *Hum Reprod Update* 2023;**29**:675–693.
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**Table 1.** Characteristics of and methodology for systematic reviews

	Systematic review	Scoping review	Overview of reviews/umbrella <sup>a</sup>
<b>Objective</b>	Summarize evidence from primary studies	Provide an overview/map of available evidence from primary studies	Summarize evidence from systematic reviews (SR)
<b>Protocol registry</b>	Required <sup>b</sup>	Required <sup>b</sup>	Required <sup>b</sup>
<b>Synthesis</b>	Often quantitative synthesis (e.g. meta-analysis)	More qualitative, charting table, a logical diagram, or other descriptive form. May have a numerical summary and qualitative thematic analysis	Use the synthesis of the most recent SR, the SR including most studies, or best quality SR
<b>Research question</b>	Focused/precise	Broad, based on characteristics and concepts	Broad
<b>Systematic search</b>	Yes, for primary studies	Yes, for primary studies	Yes, for systematic reviews. Check <a href="https://www.epistemonikos.org">https://www.epistemonikos.org</a> <sup>c</sup>
<b>Based on in- and exclusion criteria</b>	Yes	Yes, but more flexible due to iterative nature	Yes
<b>Risk of bias</b>	Yes	Usually not	Yes
<b>Reporting guideline</b>	PRISMA	PRISMA-ScR <sup>d</sup>	PRIOR
<b>Flow diagram</b>	PRISMA	PRISMA-ScR <sup>d</sup>	PRIOR flow chart
<b>Quality of evidence</b>	Yes, for included studies and preferably grading the evidence (GRADE)	Recommended but not always feasible	Yes for included reviews (e.g. AMSTAR) and preferably grade the evidence (GRADE)
<b>Aim</b>	To answer a focused question on feasibility, usefulness, effectiveness of an intervention	Identify types of evidence, concepts and definition, evidence gaps. Investigate design and conduct of research. Map the literature.	To provide an evidence-based overview of a broad area
<b>Complication/risk</b>	Quality depends on value of clinical question and how the data were dealt with.	May require multiple searches, can lead to many citations, result may not be of clinical relevance	Overlap in included studies within systematic reviews should be prevented.
<b>Example</b>	Effectiveness of specific interventions to quit smoking	To identify and map smoking cessation interventions	An overview of the effectiveness of all smoking cessation interventions

<sup>a</sup> See for further key steps (Belbasis et al., 2022).<sup>b</sup> HRU requires you to register all systematically type of reviews, this became mandatory in 2024 (van Wely et al., 2023).<sup>c</sup> Database to search for systematic reviews.<sup>d</sup> See <http://www.prisma-statement.org/Extensions/ScopingReviews>.PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analysis (see <https://www.prisma-statement.org/>).

PRIOR, Preferred Reporting Items for Overviews of Reviews (see Gates et al., 2022).