

Introduction to Cochrane Rapid Reviews

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École d'épidémiologie
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School of Epidemiology
and Public Health



Public Health
Agency of Canada
Agence de la santé
publique du Canada



CADTH Evidence
Driven.



Systematic Review Dilemma

Systematic Review

- Considered most reliable support for decision-making (1)
- Use rigorous methods
- Can take up to 24 months to complete (2)
- Creates dilemma for decision-makers who can not wait

Rapid Reviews

- Tool to get evidence-based answers faster to decision-makers
- Systematic approach but **simplifies** or **omits methods**
- Completion within weeks/months

1 Cook DJ, Mulrow CD, Haynes RB. Systematic reviews: synthesis of best evidence for clinical decisions. Ann Intern Med. 1997;126(5):376-80.

2 Ganann, R., D. Ciliska, and H. Thomas, *Expediting systematic reviews: methods and implications of rapid reviews*. Implement Sci, 2010. 5: p. 56.

Rise of Rapid Reviews

- COVID-19 pandemic worked as a catalyst for rapid reviews
- PubMed search for „rapid review“:
 - In 2010: 10 records
 - In 2025: 2700 records
- Increased request by health policy makers and organisations
- Variation in methods and definitions



Cochrane Rapid Review

Definition:

‘A type of evidence synthesis that brings together and summarises information from different research studies to produce evidence for people such as the public, healthcare providers, researchers, policymakers, and funders in a **systematic, resource-efficient** manner. This is done by speeding up the ways we plan, do and/or share the results of conventional structured (systematic) reviews, by **simplifying or omitting** a variety of methods that should be clearly defined by the authors.’

*Builds upon our original definition endorsed in the interim guidance (Garritty et al. 2021, Hamel et al. 2021). Definition has since been modified following the input of patient and public partners as part of a collaborative Priority Setting Partnership on rapid reviews (Beecher et al. 2022)

Garritty C, Gartlehner G, Nussbaumer-Streit B, et al. Cochrane Rapid Reviews Methods Group offers evidence-informed guidance to conduct rapid reviews. J Clin Epidemiol 2021;130:13–22.

doi:10.1016/j.jclinepi.2020.10.007

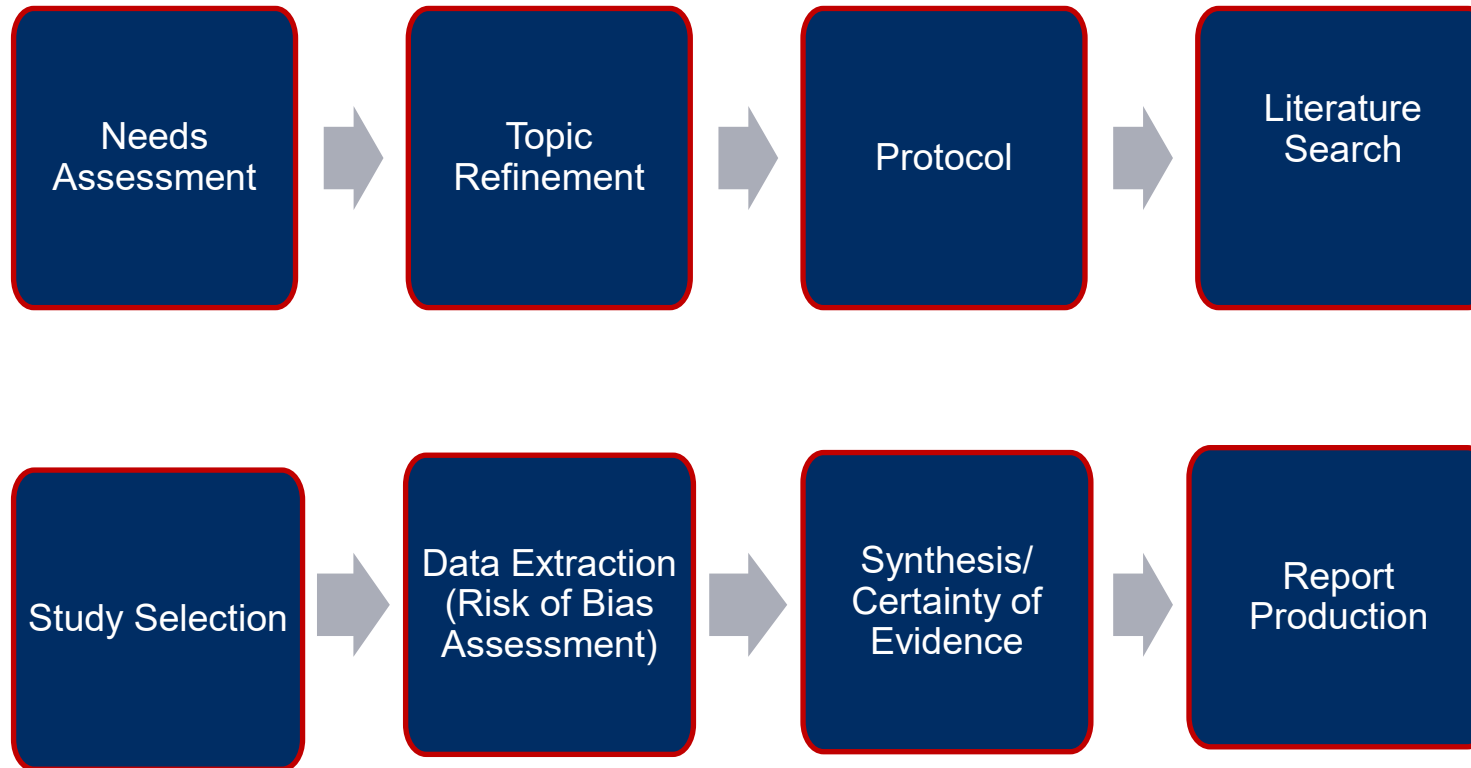
Hamel C, Michaud A, Thuku M, et al. Defining Rapid Reviews: a systematic scoping review and thematic analysis of definitions and defining characteristics of rapid reviews. J Clin Epidemiol 2020;0.

doi:10.1016/j.jclinepi.2020.09.041

Beecher C, Toomey E, Maeso B, et al. Priority III: Top 10 rapid review methodology research priorities identified using a James Lind Alliance Priority Setting Partnership. J Clin Epidemiol 2022;0.

doi:10.1016/j.jclinepi.2022.08.002

Simplifying or Omitting Methods



Follows the same path as a systematic review but:
simplified methods, more focused, faster

Not part of the
“family”

Evidence Synthesis Family

Narrative
Reviews

Systematic
Reviews

Qualitative
Evidence
Synthesis

Mixed
Methods
Reviews

Overviews
of Reviews

Big Picture
Reviews

Rapid review mode

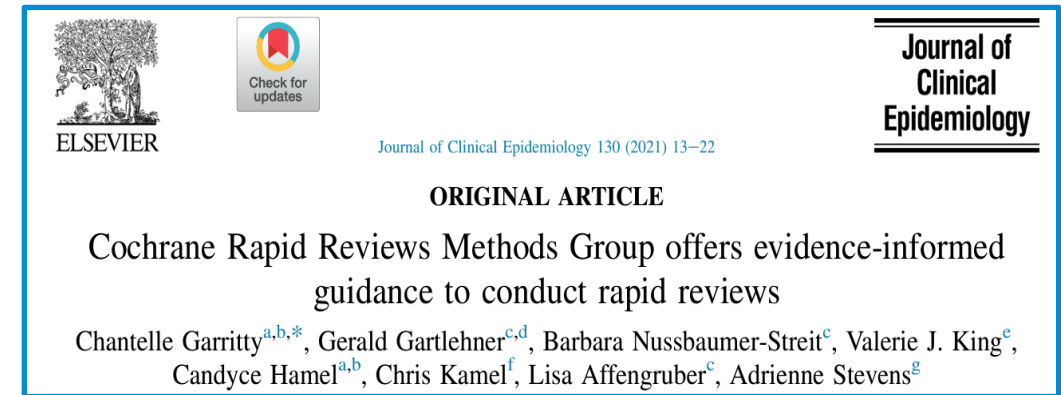
Living review mode

Formal methods used throughout the evidence synthesis process

Cochrane RR Interim Methods Guidance

Interim guidance informed by:

- A scoping review of the underlying evidence
- Primary methods studies conducted
- A survey sent to 119 representatives from 20 Cochrane entities, who were asked to rate and rank RR methods across stages of review conduct
- Discussions among RR methods experts



- Cited more than 1000 times since 2020

**Focus on reviews of
intervention**

Updated RR Methods Guidance

➤ [BMJ. 2024 Feb 6;384:e076335. doi: 10.1136/bmj-2023-076335.](#)

Updated recommendations for the Cochrane rapid review methods guidance for rapid reviews of effectiveness

Chantelle Garritty^{1 2}, Candyce Hamel^{3 4}, Marialena Trivella^{5 6 7}, Gerald Gartlehner^{5 8},
Barbara Nussbaumer-Streit⁵, Declan Devane⁹, Chris Kamel¹⁰, Ursula Griebler⁵, Valerie J King¹¹;
Cochrane Rapid Reviews Methods Group



Updated RR Methods Guidance

- Builds upon the previously published interim guidance (**foundation**)
- Comprehensive **literature scan** to identify relevant publications related to RR methodology
- Incorporates findings from **a formal evaluation** that looked into aspects of adherence, comprehensibility, usability, and usefulness⁴
- Collaborated with a **broader group of RR methodologists**, led by the Cochrane RRMG, so modifications were well-informed and collectively endorsed
- Resulted in the publication of a **multi-part series in BMJ Evidence-Based Medicine** – takes an in-depth exploration of various methodological decisions throughout the RR process

BMJ Evidence-based Medicine - Cochrane Rapid Reviews Methods Series

> [BMJ Evid Based Med.](#) 2023 Apr 19;bmjebm-2022-112070. doi: 10.1136/bmjebm-2022-112070.
Online ahead of print.

Rapid Reviews Methods Series: Involving patient and public partners, healthcare providers and policymakers as knowledge users

Chantelle Garritty^{1 2}, Andrea C Tricco^{3 4}, Maureen Smith⁵, Danielle Pollock⁶, Chris Kamel⁷, Valerie J King⁸; [Cochrane Rapid Reviews Methods Group](#)

Affiliations + expand
PMID: 37076265

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> [BMJ Evid Based Med.](#) 2023 Nov 22;28(6):412-417. doi: 10.1136/bmjebm-2022-112079.

Rapid reviews methods series: Guidance on literature search

Irma Klerings¹, Shannon Robalino², Andrew Booth³, Camila Micaela Escobar-Liquitay⁴, Isolde Sommer⁵, Gerald Gartlehner^{5 6}, Declan Devane^{7 8}, Siw Waffenschmidt⁹; [Cochrane Rapid Reviews Methods Group](#)

> [BMJ Evid Based Med.](#) 2023 Apr 19;bmjebm-2022-112185. doi: 10.1136/bmjebm-2022-112185.
Online ahead of print.

Rapid reviews methods series: Guidance on team considerations, study selection, data extraction and risk of bias assessment

Barbara Nussbaumer-Streit¹, Isolde Sommer², Candyce Hamel^{3 4}, Declan Devane^{5 6 7}, Anna Noel-Stolt⁸; [Cochrane Rapid Reviews Methods Group](#)

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PMID: 37076265
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> [BMJ Evid Based Med.](#) 2024 Jan 19;bmjebm-2023-112530. doi: 10.1136/bmjebm-2023-112530.
Online ahead of print.

Rapid review methods series: Guidance on the use of supportive software

Lisa Affengruber^{1 2}, Barbara Nussbaumer-Streit³, Candyce Hamel^{4 5}, Miriam Van der Maten⁶, James Thomas⁷, Chris Mavergames⁸, Rene Spijker⁹, Gerald Gartlehner^{3 10}; [Cochrane Rapid Reviews Methods Group](#)

Affiliations + expand
PMID: 38242566 DOI: [10.1136/bmjebm-2023-112530](#)
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> [BMJ Evid Based Med.](#) 2023 Apr 19;bmjebm-2022-112111. doi: 10.1136/bmjebm-2022-112111.
Online ahead of print.

Rapid reviews methods series: Guidance on assessing the certainty of evidence

Gerald Gartlehner^{1 2}, Barbara Nussbaumer-Streit³, Declan Devane^{4 5}, Leila Kahwati², Meera Viswanathan², Valerie J King⁶, Amir Oaseem⁷, Elie Akl⁸, Holder J Schuenemann^{9 10}; [Cochrane Rapid Reviews Methods Group](#)

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PMID: 37076264
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> [BMJ Evid Based Med.](#) 2024 Mar 14;bmjebm-2023-112722. doi: 10.1136/bmjebm-2023-112722.
Online ahead of print.

Rapid reviews methods series: assessing the appropriateness of conducting a rapid review

Chantelle Garritty^{1 2}, Barbara Nussbaumer-Streit³, Candyce Hamel^{4 5}, Declan Devane⁶; [Cochrane Rapid Reviews Methods Group](#)

> [BMJ Evid Based Med.](#) 2024 Mar 7;bmjebm-2023-112620. doi: 10.1136/bmjebm-2023-112620.
Online ahead of print.

Rapid reviews methods series: guidance on rapid qualitative evidence synthesis

Andrew Booth^{1 2}, Isolde Sommer^{3 4}, Jane Noyes^{2 5}, Catherine Houghton^{2 6}, Fiona Campbell^{7 8}; [Cochrane Rapid Reviews Methods Group and Cochrane Qualitative and Implementation Methods Group \(CQIMG\)](#)

Affiliations + expand
PMID: 38355285 DOI: [10.1136/bmjebm-2023-112620](#)
[Free article](#)



Updated Cochrane RR Methods Guidance

- Refined list of **24 recommendations**, with supporting examples, and provides best practice considerations and practical tips for RR teams to increase efficiencies

Key Considerations:

- Cochrane RRs should be **driven by the need for timely evidence for decision-making purposes**, including addressing urgent and emergent health issues and questions deemed high priority
- RRs may follow **various methodological paths**; tailored based on time, resources, restrictions, and evidence (not a 'one size fits' all approach)
- **Not all recommended restricted methods must be followed**; stricter methods can be used if feasible
- Despite the term “rapid” in it, **time is not the sole defining feature** of RRs (restricted SR methods used)
- **RR timelines will vary and depend on several factors** (e.g., complexity of the topic, urgency of the decision-maker to meet a timeline, which are often short) (Cochrane RRs $\leq$ 6 months)

Assess appropriateness

> [BMJ Evid Based Med](#). 2024 Mar 14:bmjebm-2023-112722. doi: 10.1136/bmjebm-2023-112722.
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[Cochrane Rapid Reviews Methods Group](#)

Collaborators, Affiliations + expand

PMID: 38485206 DOI: [10.1136/bmjebm-2023-112722](#)

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Garritty C, Nussbaumer-Streit B, Hamel C, Devane D; Cochrane Rapid Reviews Methods Group. Rapid reviews methods series: assessing the appropriateness of conducting a rapid review. *BMJ Evid Based Med*. 2024 Mar 14:bmjebm-2023-112722. doi: 10.1136/bmjebm-2023-112722. Epub ahead of print. PMID: 38485206.



Instances when it would be appropriate:

- Urgent decision-making (e.g., pandemic, time sensitive clinical decision-making)
- Rapidly evolving research field (e.g., infectious diseases, digital health interventions)
- New intervention with potential clinical implications
- As justification for new primary studies
- When resources are limited (e.g., LMIC)
- Time-sensitive requirements (e.g., short funding opportunities, client's request)
- RR as a precursor to a SR



Instances when it would be inappropriate:

- When those conducting the RR lack of experience in conducting SRs
- Motivation is to achieve quick publication; less work
- Primarily driven by the desire to save money
- It would duplicate efforts when up-to-date full SRs are already available
- Conducting solely for academic purposes without immediate practical implications



Team considerations

- Experienced review team
- Team size (ideally 3-5 people) depending on the task
- Use collaborative platforms or SR-tailored software
- Parallelisation of tasks
- Do data extraction and RoB assessment by same people in one step
- Direct line of communication





Recommendations

Topic refinement



Topic Refinement



Recommendation 1: Involve knowledge users to set and refine the review question, eligibility criteria, and the outcomes of interest, with consultation at various stages of the RR.

- Because RRs are conducted to answer a specific and urgent health question, the involvement of knowledge users (KUs) is typical as decision-makers usually commission RRs
- Consider other important KUs (e.g., patient and public partners, healthcare providers, and policymakers) to shape the RR
- In collaboration with commissioners and KUs, the scope of the RR should be narrowed to answer a focused question

> [BMJ Evid Based Med](#). 2023 Apr 19;bmjebm-2022-112070. doi: 10.1136/bmjebm-2022-112070. Online ahead of print.

Rapid Reviews Methods Series: Involving patient and public partners, healthcare providers and policymakers as knowledge users

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PMID: 37076265 DOI: [10.1136/bmjebm-2022-112070](#)

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Garritty C, Tricco AC, Smith M, *et al*. Rapid Reviews Methods Series: Involving patient and public partners, healthcare providers and policymakers as knowledge users. *BMJ EBM* 2023;:bmjebm-2022-112070. doi:10.1136/bmjebm-2022-112070

Topic Refinement



Recommendation 2: Develop a **(brief)** protocol that includes the review question(s), description of the population, intervention(s), comparator(s), outcome(s), and methods of conducting the review

- As you would for a SR, developing a protocol supports the principles of transparency and reproducibility
- Protocols should include:
 - Research question(s)
 - Eligibility criteria (i.e., details around relevant participants, interventions, comparators, outcomes, study design, timing, setting)
 - Methods around how the review team will perform the search, study selection, DE, RoB, synthesis
- Protocols should follow **PRISMA-P**, be peer-reviewed (or internally reviewed), and be made available (e.g., Open Science Framework)

Topic Refinement



Recommendation 3: Clearly define the eligibility criteria, including any restrictions/limits

- To ensure RRs are manageable and timely, one or several restrictions can be applied
 - Limit the number of interventions and comparators
 - Limit the number of outcomes
 - focus on the most important outcomes for decision making
 - Consider restriction of the search date of the evidence base
 - with clinical or methodological justification
 - Limit the setting
 - with clinical or methodological justification
 - Limit the publication language to English
 - with other languages added when justified
 - Place emphasis on including high-quality study designs relevant to the research question/objective

Searching



Searching



Recommendation 4: Involve an information specialist to develop the search strategy, and to consider search methods, resources, and search limits

- Planning the search is part of the RR protocol
- At minimum: consult information specialist (e.g. librarian) for selecting information sources and providing feedback on the primary search strategy
- Perform preliminary searches during topic refinement to help inform eligibility criteria

Searching



Recommendation 5: Select a small number (but at least 2) bibliographic databases that are likely to retrieve relevant literature

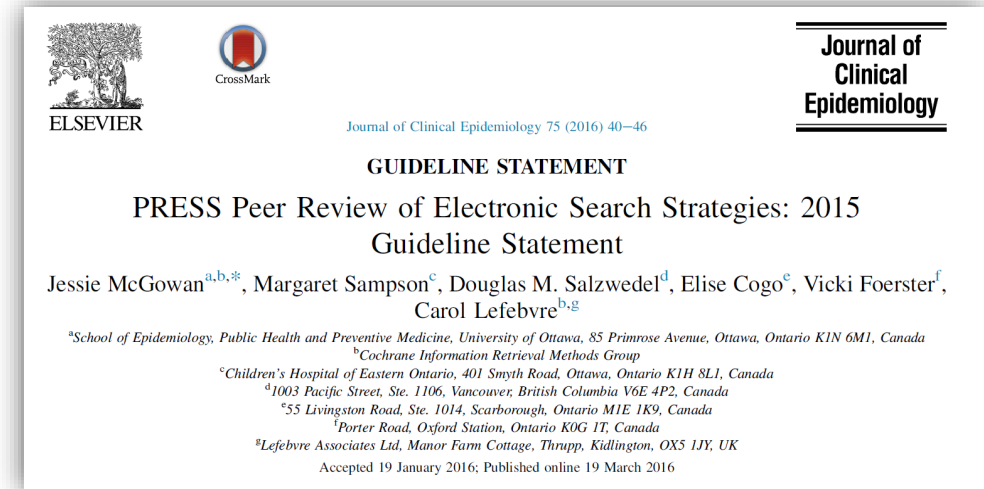
- For RRs focused on RCTs only: Choose 2 of those: Medline, CENTRAL, Embase.
- Cochrane rapid reviews of health interventions: Use CENTRAL as the primary database. Additional searches of Medline/Embase may be limited to the previous two months.
- For RR including non-randomized studies: Database selection depending on available time and resources

Searching



Recommendation 6: Use the PRESS checklist to peer review the primary search strategy

- at minimum: double check for typographical errors, missed keywords, and overall structure



<http://dx.doi.org/10.1016/j.jclinepi.2016.01.021>

Searching

✓ **Recommendation 7:** Assess the need for grey literature and supplemental searching. Justify the sources to be searched

- Limit to a minimum (e.g., trial registries, review SR bibliographies, reference list checking of included studies)
- extent depends on the RR topic

More information on searching in RR

➤ [BMJ Evid Based Med.](#) 2023 Apr 19;bmjebm-2022-112079. doi: 10.1136/bmjebm-2022-112079.
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Study selection, data extraction, and risk of bias



Study selection

(title/abstract and full-text screening)



Recommendation 8: Employ piloting exercises on abstract and full-text levels to allow team members to test the study selection process on a small proportion of records to ensure that all team members apply a consistent approach to screening



Recommendation 9: Conduct dual and independent screening of a proportion of records (e.g., 20%) and assess reviewer agreement. If agreement is good (e.g., kappa 0.8), proceed with single screening

Data extraction



Recommendation 10: For data extraction, employ a piloting exercise to allow team members to test this task on a small proportion of records to ensure that all team members perform it consistently and correctly



Recommendation 11: Have one person extract the data, with a second person to verify the data for accuracy and completeness



Recommendation 12: Limit data extraction to only the most important data fields relevant to address the RR question



Recommendation 13: Where available, extract data directly from existing SRs rather than from primary studies

Risk of Bias (RoB) Assessment



Recommendation 14: Use validated and study design–specific tools to assess the RoB of the included studies



Recommendation 15: Limit the RoB assessment to only the most important outcomes

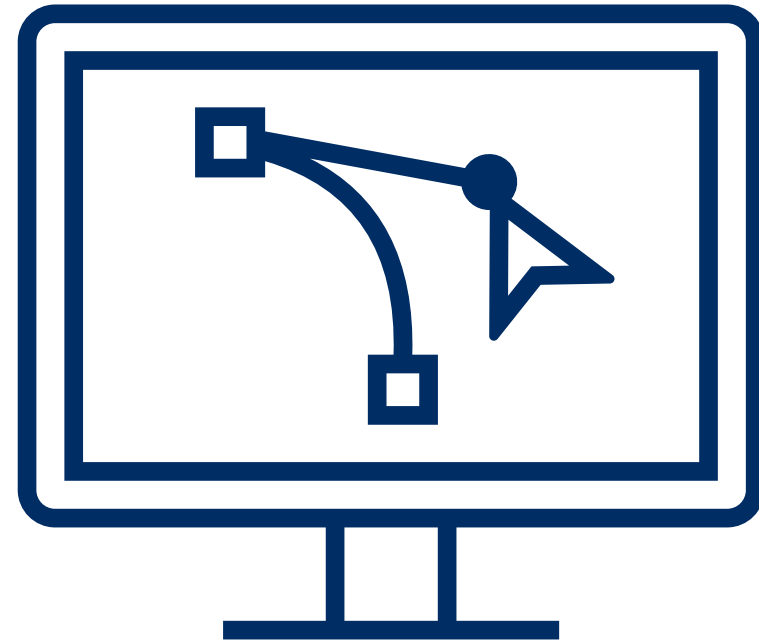


Recommendation 16: Have one person perform the RoB assessment, with a second person to verify the judgements

We do not recommend omission of RoB assessment!

Use supportive software

- Wide range of software exists (www.systematicreviewtools.com)
- Several applications have artificial intelligence incorporated (e.g., DistillerSR, Eppi-Reviewer, Covidence, etc.)
- Semi-automation can be implemented in RRs
- Full-automation is not working well yet



Common pitfalls

- Study selection (i.e., Screening)
 - Teams move on to single screening while not having enough agreement – risk of missing relevant studies (or overinclusiveness)
- Data extraction
 - Data extraction form is not standardized across reviewers – inconsistencies if multiple data extractors
 - Second person "verifying" data extraction just checks data that was extracted, but does not extract relevant data that was missed by the first extractor

More Guidance

➤ [BMJ Evid Based Med. 2023 Apr 19;bmjebm-2022-112185. doi: 10.1136/bmjebm-2022-112185.](#)
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Anna Noel-Storr⁸, Livia Puljak⁹, Marialena Trivella^{2 10}, Gerald Gartlehner^{2 11};
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Affiliations + expand

PMID: 37076266 DOI: [10.1136/bmjebm-2022-112185](#)

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Evidence synthesis and certainty of evidence



Synthesis of the Evidence



Recommendation 17: Provide a descriptive summary of the included studies

- Present characteristics and data of included studies in tables
- Provide an overview of the main study characteristics at the beginning of the results



Recommendation 18: Provide a narrative synthesis of the findings

- If meta-analyses are not possible, provide a narrative synthesis.
- Do not catalogue studies (e.g., the first study showed, the second study...)
- Adhere to SWiM (Synthesis without Metaanalysis) and current Cochrane guidance

Synthesis of Evidence



Recommendation 19: Consider a meta-analysis if appropriate and resources permit



Recommendation 20: Consider how to synthesize evidence when including one or more SRs

- Building on an existing review is challenging
- Do not use reviews deemed as high risk of bias
- Make sure research questions, PICOTs, and risk of bias tools have maximum overlap
- Check search strategy and whether it can be adapted for rapid review
- It is sometimes easier to start from scratch than to build on an existing review because reporting is sometimes not ideal
- An alternative is to use identified studies of reviews but conduct your own risk of bias ratings and evidence synthesis

Certainty of Evidence (COE)



Recommendation 21: Use the full GRADE approach to assess the certainty of the evidence, if time and resources allow

- Do not omit rating the certainty of evidence.
- Maintain consistency with GRADE. Do not modify the definition of COE or the domains that determine the COE for an outcome when using GRADE
- Use GRADEpro to increase efficiency and consistency when rating COE.
- Use evidence profiles and summary of findings tables with explanatory footnotes that provide reasons for uprating and downrating to present the COE of outcomes.

Certainty of Evidence (how to accelerate GRADE)



Recommendation 22: Limit the certainty of the evidence ratings to the main intervention and comparator, and focus on critical outcomes only

- If effect estimates of a well-conducted systematic review are incorporated, use existing COE grades from such reviews.
- GRADE recommends a literature review or a Delphi-like approach involving knowledge users and people with the condition to rate the importance of outcomes for decision making. To accelerate the process, use informal judgments of knowledge users, topic experts, or internal team members if a formal Delphi approach is not feasible.
- Consider rating fewer than seven outcomes and focus on the main interventions and comparators.

Certainty of Evidence (how to accelerate GRADE)

✓ **Recommendation 23:** Have one person complete the GRADE assessment, with a second person to verify assessments

- GRADE recommends that two reviewers independently rate the COE and then agree on a final rating. Consider using a single reviewer to rate the certainty of evidence, and verify all decisions (and footnoted rationales) by a second reviewer.
- For network meta-analyses, GRADE recommends rating the COE for direct and indirect estimates separately. To accelerate the process, rate only the COE of the direct estimate. If there is incoherence with the indirect estimate,
- If a network meta-analysis presents only indirect estimates, rate the COE and then rate down further for indirectness.

More Guidance

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Other best practice considerations



Recommendation 24: Provide clear description of the selected review approach, which includes outlining the restricted methods used. Additionally, discuss the potential limitations of these chosen methods and how they may influence the interpretation of the research findings

- RR authors should be experienced SR authors
- RR need a protocol
- Deviations from the protocol are okay but need to be documented
- SR-Software should be used
- Reporting Guidelines should be followed (PRISMA-P, PRISMA-S, PRISMA)

Take home message

- Teams need SR experience
- Piloting is essential if steps are done by one person
- Not necessary to employ shortcuts at all steps
- Always provide a narrative interpretation of findings
- Don't be discouraged by increased workload when using supportive software for the first time – learning curve!

RAISE (Responsible AI use in evidence SynthEsis)

In brief:

- AI should be used as a companion to humans, not as a replacement
- The authors of the evidence synthesis are ultimately responsible for the review
- Use AI as long as you can demonstrate that it will not compromise the methodological rigor or integrity of the review
- Make any AI use transparent

Thank you!

Contact:

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RR
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