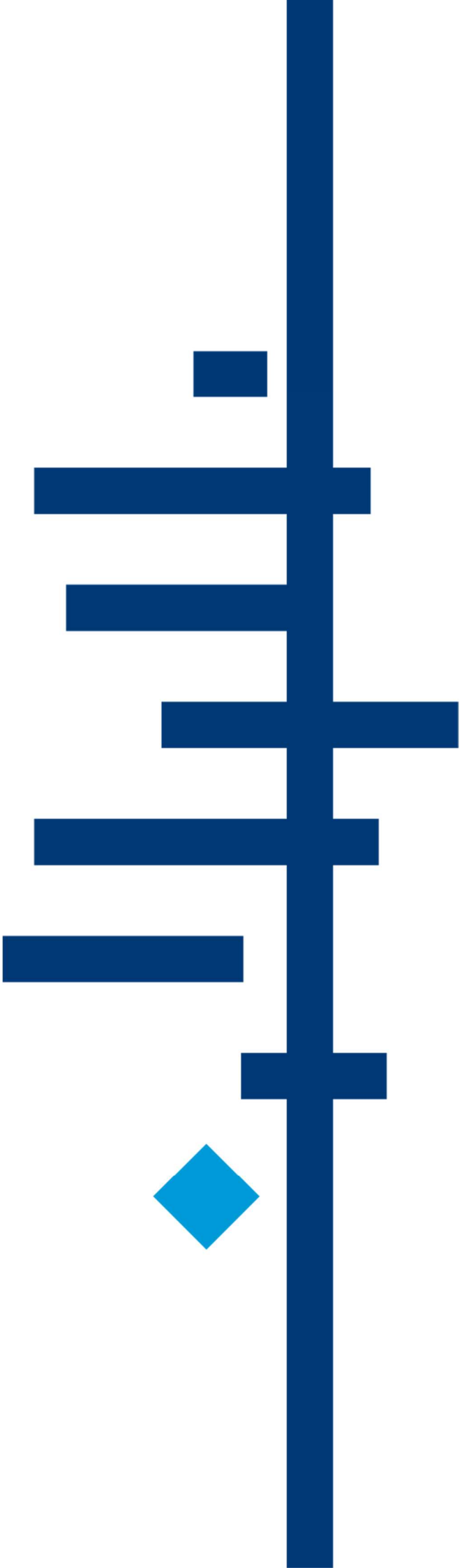
Cochrane Methods

Methodological Expectations of Cochrane Intervention Reviews (MECIR)

Standards for the conduct of new Cochrane Intervention Reviews and the planning and conduct of updates

Julian PT Higgins, Toby Lasserson, James Thomas, Ella Flemyng and Rachel Churchill

Version August 2023



Trusted evidence.
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Methodological Expectations of Cochrane Intervention Reviews

The Methodological Expectations of Cochrane Intervention Reviews (known as MECIR Standards) are available online. The online version includes links to the *Cochrane Handbook for Systematic Reviews of Interventions*, Cochrane Training and other Cochrane resources to provide additional explanation of how to implement the standard. The online version is kept up-to-date with amendments listed here.

Standards for Cochrane Reviews of interventions

The MECIR Standards are methodological standards to which all Cochrane Reviews, and Updates are expected to adhere. They are divided into two sections:

1. Standards for the **conduct** of new Cochrane Intervention Reviews (C1-C75).
2. Standards for planning and conducting **updates** of Cochrane Intervention Reviews (U1-U11).

These expectations are intended for both internal and external audiences. They provide authors and users of the Cochrane Library with clear and transparent expectations of review conduct and reporting.

Implementation

The MECIR Standards have been integrated into the following Cochrane systems:

- The RevMan guidance panel.
- Editorial checklists.
- The *Cochrane Handbook for Systematic Reviews of Interventions.*

Other key resources

- **Introducing new MECIR Standards for trainers (introductory videos via Cochrane Training).**
- **Version and changes to MECIR** - details on changes and developments to the MECIR Standards since 2016.
- *Cochrane Handbook for Systematic Reviews of Interventions.*
- Cochrane Interaction Learning e-learning modules: *Conducting an Intervention Review.*

URL: https://community.cochrane.org/mecir-manual

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Version August 2023

Standards for the conduct of new Cochrane Intervention Reviews, and the planning and conduct of updates

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These MECIR Standards present a guide to the conduct of Cochrane Intervention Reviews. Each set of Standards includes links to Cochrane Training resources, the *Cochrane Handbook for Systematic Reviews of Interventions* (the *Handbook*) and other available resources.

This online version will be kept up to date. A PDF of each section can be generated. All substantive changes will be noted here.

- If available, MECIR Standards link to the most up-to-date version of the *Handbook* chapters.
- Where links to external resources are included Cochrane Interactive Learning is referred to as '**CIL**'.
- We welcome your feedback on MECIR, or if you have any general queries related to the MECIR Standards, please contact support@cochrane.org.

Tabla de contenido

Key points and introduction

Key points:

- **The MECIR Standards represent a true collaborative effort across our community.**
- **They are an essential part of Cochrane's quality assurance strategy.**
- **The MECIR Standards represent a living programme of work, and will be adapted over time as methods, and expectations change.**

Ensuring that Cochrane Reviews represent the highest possible quality is critical if they are to inform decision making in clinical practice and health policy. Methodological Expectations of Cochrane Intervention Reviews (MECIR) are Standards that should guide the conduct of Cochrane Intervention Reviews. They are drawn from the *Cochrane Handbook for Systematic Reviews of Interventions* (the '*Handbook*'). The development of the Standards has been a collaborative effort over several years, involving review authors, editors and methodologists from all corners of our community. In this document we present a complete set of Standards for intervention reviews.

Development and consultation

We established working groups in 2011 to develop minimum standards based on early proposals and groundwork by many groups and individuals within Cochrane. We agreed the need to identify methodological expectations for Cochrane protocols, reviews and updates of reviews on the effects of interventions that could be implemented across Cochrane. Six Working Groups covered six core methodological aspects of Cochrane Intervention Reviews:

- developing a question and deciding the scope of the review,
- searching for studies,
- selecting studies and collecting data,
- assessing risk of bias in studies,
- analysing data and undertaking meta-analyses,
- interpretation and presenting results.

For each of these areas, we set out to identify the following in respect of intervention reviews:

A. essential minimum standards (*must do*);

B. desirable standards (*should do*);

C. common errors (*should not do*);

D. fatal flaws (*must not do*) and identification of any important methodological uncertainties.

The existing Standards address A and B. At least one methodologist and one Co-ordinating Editor (clinical specialist) jointly led each working group. We sought to ensure that groups reflected divergent views and had access to appropriate expertise. We co-opted other people from across Cochrane as necessary to ensure co-ordination and consistency of approach (training and knowledge translation). From an initial draft set of Standards based primarily on the 2011 version of the *Handbook*, we consulted widely throughout Cochrane, after which the MECIR co-ordinating author team collated responses to produce the full original set of Standards.

We have updated the standards regularly since their first publication. They now reflect the guidance available in the most up-to-date publicly available version of the *Handbook*.

Implementation of the Standards

The Methodological Expectations for Cochrane Intervention Review (MECIR) are the Standards that each Cochrane Intervention Review should meet. Review authors and Cochrane Review Groups are expected to adhere or oversee adherence to these Standards across different stages of the review process: protocols, reviews and updates.

All Standards are qualified with the status of 'mandatory' or 'highly desirable'. Mandatory Standards should always be met unless an appropriate justification for not doing so can be provided. Highly desirable Standards should generally be implemented but justification for not implementing them is unnecessary. We introduce each set of Standards with key points and where necessary additional explanatory notes. The MECIR conduct Standards (C1-C75) are included in the *Cochrane Handbook for Systematic Reviews of Interventions*.

Since the MECIR Standards were launched in 2011, technology has developed and changed how reviews are being produced. The development of web-based platforms such as Covidence, EPPI-Reviewer, and GRADEpro GDT, as well as tools supporting semi-automation, have changed the way that systematic reviews are produced. Whilst we can expect technology to develop and help improve efficiency in production of Cochrane Reviews, these Standards remain a fundamental element of the preparation and quality assurance of individual Cochrane Intervention Reviews.

The MECIR Standards represent a considerable amount of work from many people within the Cochrane community. The core team of Julian Higgins, Rachel Churchill, Toby Lasserson, Ella Flemyng and James Thomas have made substantial contributions to the process.

We continue to welcome feedback from all of you who are responsible for delivering the Standards, and hope that they are useful to you in producing and maintaining high quality, relevant reviews that can guide decision makers throughout the world, in pursuit of better health.

Karla Soares-Weiser
Editor in Chief
The Cochrane Library

Acknowledgements

We thank the following working group leads and contributors for their early development of the Standards: Doug Altman, **Mohammed Ansari (Methods lead),** Sally Bell-Syer, Patrick Bossuyt, Deborah Caldwell, Christopher Cates, **Jackie Chandler** (former Methods Co-ordinator), **Rachel Churchill (Co-ordinating Editors (Co-Eds) lead, Co-ordinating team)**, **Mike Clarke (Co-Eds co-lead)**, **Jan Clarkson (Co-Eds co-lead)**, Philippa Davies, **Marina Davoli (Co-Eds lead)**, Ruth Foxlee, Chantelle Garritty, **Davina Ghersi (Co-Eds co-lead)**, **Julie Glanville (Methods co-lead)**, Peter Herbison, Julian Higgins (Co-ordinating team), **Sophie Hill (Co-Eds lead)**, Toby Lasserson (Co-ordinating team), Edith Leclercq, **Carol Lefebvre (Methods co-lead)**, Jessie McGowan, Rachel Marshall, Ruth Mitchell, Donal O'Mathuna, Anna Noel-Storr, **Georgia Salanti (Methods lead)**, Doug Salzwedel, Margaret Sampson, Jelena Savovic, **Holger Schünemann (Methods lead)**, Ian Shemilt, Nandi Siegfried, **Jonathan Sterne (Methods lead)**, **Britta Tendal (Methods lead)**, David Tovey (Co-ordinating team), Peter Tugwell, Lucy Turner, Claire Vale, Julia Walters, **Helen Worthington (Co-Eds lead)**, and Janelle Yorke. We also thank all those Cochrane members of Review Groups, Methods Groups, Fields, Centres and Training who responded in some detail to MECIR Standards consultations, allowing us to improve these Standards to ensure relevance and comprehension.

URL: https://community.cochrane.org/mecir-manual/introduction-key-points/versions-and-changes-mecir

Versions and changes to MECIR

Process for updating MECIR

- For details on when and how updates to MECIR are made, please see here.

Updates pending for the next version:

No updates pending**.**

Version August 2023 (PDF version):

- Updates made to MECIR authors' affiliations.
- Jacqueline Chandler and David Tovey have stepped down as authors of MECIR.
- Cochrane has retired its Protocol, Reporting and Update Reporting standards (MECIR items PR1 to PR44, R1 to R109 and UR1 to UR7) and now endorses PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analysis) reporting guidelines for use in Cochrane Reviews of interventions. This change does not affect the MECIR Conduct standards or the Planning or Conduct standards for Updates.
- Links to version 6.4 of the *Cochrane Handbook for Systematic Reviews of Interventions* added to all relevant standards.
- C34 updated to: "(...) but do not use filters in pre-filtered databases e.g. do not use a randomized trial filter in CENTRAL."
- C48 rationale updated to: "Some studies may have been found to be fraudulent or articles about them may have been retracted since publication for other reasons (…)"

Version February 2022 (PDF version):

- C52 and C56 will be merged into one assessing risk of bias Conduct Standard (C52: Assess the risk of bias for each study result contributing to an outcome in the 'Summary of findings' table. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in the *Handbook*); C57 to become C56, C58 to become C57, C59 to become C58, C60 to become C59 and there will no longer be a C60 MECIR Conduct Standard.
- C26 rationale updated to: Sometimes a review will address questions about adverse effects, economic issues or qualitative research using a different set of eligibility criteria from the main (effectiveness) component. In such situations, the searches for evidence must be suitable to identify relevant study designs for these questions. Different searches may need to be conducted for different types of evidence.
- C28 updated to: Search relevant grey literature sources such as reports, dissertations, theses and conference abstracts.
- C37 updated to: Rerun or update searches for all relevant sources…

Version February 2021 (PDF version)

- C56: Highly desirable -changed to- C56: Mandatory
- R106: 'Declarations of interest', updated to reflect Cochrane's new Conflict of interest policy.
- See *Handbook* (Version 6) Section xxx – changed to- See *Handbook* Section xxx

Version March 2020 (PDF version)

- During February and March 2020 edits were made to the PR, R, U and UR Standards in MECIR to update referencing to the new *Handbook* (version 6). All changes are reflected at the bottom of each page.
- PR14: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance outcomes that are critical to the review, and any additional important outcomes.
- PR27: Assess the risk of bias for each included study. For randomized trials, the Cochrane ' Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the *Handbook* (version 5 or later). -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in *Handbook* (version 6).
- PR28: If the Risk of Bias 2 tool (see *Handbook* Chapter 8) is to be used, state whether interest will be in the effect of assignment to intervention or the effect of adhering to intervention, and explain how results will be selected to be assessed for risk of bias (i.e. for which outcome domains, outcome measures, time points and analyses). ADDED
- PR35: according to summary risk of bias, or restricted to studies at low risk of bias. -changed to- according to summary risk of bias, restricted to studies at low risk of bias or restricted to low-and-some-concerns of risk of bias.
- R32: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance outcomes that are critical to the review, and any additional important outcomes.
- R45: Assess the risk of bias for each included study. For randomized trials, the Cochrane 'Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the Handbook (version 5 or later). -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in Handbook version 6.
- R53: according to summary risk of bias, or restricted to studies at low risk of bias. -changed to- according to summary risk of bias, restricted to studies at low risk of bias or restricted to low-and-some-concerns of risk of bias.
- R55: (Include a 'Summary of Findings' table according to recommendations described in Chapter 10 of the Cochrane Handbook (version 5 or later). Specifically:
  include results for one population group (with few exceptions);
  indicate the intervention and the comparison intervention;
  include seven or fewer patient-important outcomes;
  describe the outcomes (e.g. scale, scores, follow-up);
  indicate the number of participants and studies for each outcome;
  present at least one baseline risk for each dichotomous outcome (e.g. study population or median/medium risk) and baseline scores for continuous outcomes (if appropriate);
  summarize the intervention effect (if appropriate); and
  include a measure of the certainty of the body of evidence)
  -changed to-
  Justify and document all assessments of the certainty of the body of evidence (for example downgrading or upgrading if using GRADE).

- R55: MECIR conduct standard 76 (Use the five GRADE considerations (study limitations, consistency of effect, imprecision, indirectness and publication bias) to assess the certainty of the body of evidence for each outcome, and to draw conclusions about the certainty of evidence within the text of the review.) [PRISMA item 12] - changed to- MECIR conduct standard 74: Use the five GRADE considerations (risk of bias, consistency of effect, imprecision, indirectness and publication bias) to assess the certainty of the body of evidence for each outcome, and to draw conclusions about the certainty of evidence within the text of the review.
- R56: to complete a PRISMA type flow chart -changed to- to be able to complete a flow diagram
- R73: Present a 'Risk of bias' table for each included study -changed to- Present at least one 'Risk of bias' table for each study that is included in a synthesis
- R73: The 'Risk of bias' table in RevMan should be used, this is an extension of the table of 'Characteristics of included studies'. -changed to- 'Risk of bias' presentation tools in RevMan should be used wherever possible.
- R73: Assess the risk of bias for each included study. For randomized trials, the Cochrane 'Risk of bias' tool should be used, involving judgements and supports for those judgements across a series of domains of bias, as described in Chapter 8 of the *Handbook* (version 5 or later) -changed to- Assess the risk of bias in at least one specific result for each included study. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in *Handbook* (version 6).
- R74: Summarize the risk of bias -changed to- Present an overall risk of bias assessment
- R76: the heading hierarchy -changed to- any heading hierarchy
- R76: in RevMan5 ADDED
- R76: This standard will not be required when using the study-centric data structure of RevMan Web. ADDED
- R101: Consider the potential impact of reporting biases -changed to- Consider the potential impact of non-reporting biases
- U9: For randomized trials, they must be assessed using a currently accepted version of the Cochrane 'Risk of bias' tool. The separation of performance bias and detection bias in the evaluation of blinding is highly desirable. -changed to- If the previous version used the original risk of bias tool to assess randomised trials, consider whether or not to switch to the Risk of Bias 2 tool (see *Handbook* Chapter 8), including how many randomised trials were assessed in the previous version, how many new studies are expected for inclusion in the update, how well it was implemented in the previous version and whether it is feasible to switch.

Version October 2019

- Updates made to MECIR authors' affiliations
- Links to version 6 of the *Cochrane Handbook for Systematic Reviews of Interventions* added to all relevant standards (Conduct Standards C1-C75)
- Links to the Cochrane Editorial and Publishing Policy Resource updated
- James Thomas and Ella Flemyng added as co-authors
- Edits made to the MECIR Standards 'Key points and introduction' page (see 'Section info' on the page for details).
- Edits made to the 'Development and consultation' page (see 'Section info' on the page for details)
- New 'Implementation of the standards' section written by Karla Soares-Weiser (see 'Section info' on the page for details)
- Edits made to the 'Key points and introduction' pages for each of the four sections (see 'Section info' on the conduct, reporting of protocols, reporting and updates pages for details)
- Added a new 'Translations of the MECIR Standards' section
- Citation to the MECIR Manual as a whole and each section updated to reflect version October 2019

- U11, column 2: quality -changed to- certainty (x2)
- UR5, column 3: quality -changed to- certainty
- UR7, column 3: quality -changed to- certainty
- PR39 column 2 and 3: quality -changed to- certainty (x4)
- PR40 column 3: quality -changed to- certainty
- R12, column 3: quality -changed to- certainty
- R55: column 2 and 3: quality -changed to- certainty (x4)
- R96: column 3: quality -changed to- certainty
- R98: column 3: quality -changed to- certainty (x2)
- R99 column 2 and 3: quality -changed to- certainty (x5)
- R100, column 3: Quality -changed to- Certainty

Version July 2019

- Previous pages titled 'Latest substantive changes' and 'Versions' have been merged into one page titled 'Versions and changes to MECIR'
- Citation to the MECIR Manual as a whole and each section updated to reflect version July 2019
- C1: See Handbook 2.3.2, 2.3.4, 17.2, 20.2.2 -changed to- See Handbook (version 6), Section 2.1
- C2: See Handbook 5.1.1 -changed to- See Handbook (version 6), Section 2.3
- C3: See Handbook 5.4.3, 14.1.1, 14.3 -changed to- See Handbook Section 2.1
- C4: added: See Handbook (version 6), Section 2.4
- C5: Handbook 5.2 -changed to- Handbook (version 6), Section 3.2.1
- C6: Handbook 5.2 -changed to- Handbook (version 6), Section 3.2.1
- C7: Handbook 5.3 -changed to- Handbook (version 6), Section 3.2.2
- C8: Handbook 5.1.2 -changed to- Handbook (version 6), Section 3.2.4.1
- C9: Handbook 5.5, 13.2.2 -changed to- Handbook (version 6), Section 3.3
- C10: Handbook 5.5, 13.1.3 -changed to- Handbook (version 6), Section 3.3.1
- C11: Handbook 13.1.2 -changed to- Handbook (version 6), Section 3.3
- C12: Handbook 10.3.2 -changed to- Handbook (version 6), Section 3.4
- C13: Handbook 5.2, 5.7 -changed to- Handbook (version 6), Section 3.2.1
- C14, column 2: Define in advance which outcomes are primary outcomes and which are secondary outcomes. -changed to- Define in advance outcomes that are critical to the review, and any additional important outcomes.
- C14, column 3: The primary outcomes -changed to- The critical outcomes
- C14, column 3: It is important to identify up to seven outcomes from the primary and secondary outcomes that will form the basis of the GRADE assessment. -changed to- Additional important outcomes may also be specified. Up to seven critical and important outcomes will form the basis of the GRADE assessment and summarized in the review's abstract and other summary formats, although the review may measure more than seven outcomes.
- C14, column 4: Handbook 5.4.2 -changed to- Handbook (version 6), Section 3.2.4.1
- C15, column 2: that are important -changed to- that are critical or important
- C15, column 3: that are important -changed to- that are critical or important
- C15, column 3 new text: Any outcomes that would not be described as critical or important can be left out of the review.
- C15, column 4: Handbook 5.4.2 -changed to- Handbook (version 6), Section 3.2.4.1
- C16, column 4: Handbook 5.4.1 -changed to- Handbook (version 6), Section 3.2.4.1
- C19, column 4: Handbook 6.3, 6.4 -changed to- Handbook (version 6), Section 1.5; 4.3.1.1
- C20, column 3: ' Risk of bias' -changed to- 'risk of bias'
- C20, column 4: Handbook 8.3 -changed to- Handbook (version 6), Section 1.5
- C21, column 4:Handbook 9.1.2 -changed to- Handbook (version 6), Section 1.5
- C22, column 4:Handbook 9.6.5 -changed to- Handbook (version 6), Section 1.5

- C23, column 4:Handbook 11.5 -changed to- Handbook (version 6), Section 1.5
- C24 column 3: Supplementary searches should be performed as described in sections 6.3.2 and 6.3.3 of the Handbook. -changed to- DELETED
- C24: BLANK -changed to- See Handbook Section 4.3.1.1
- C25: Handbook 6.2.1.4, 6.2.1.5 -changed to- Handbook (version 6), Section 4.3.1.4
- C26: Handbook 13.3; 14.5; 15.3; 20.3.2.1 -changed to- Handbook (version 6), Section 4.4.1
- C27: Handbook 6.2.3.1, 6.2.3.2, 6.2.3.3 -changed to- Handbook (version 6), Section 4.4.3
- C28: Handbook 6.2.1.7, 6.2.1.8, 6.2. 2-changed to- Handbook (version 6), Section 4.3.5
- C29: Handbook 6.2.2.5 -changed to- Handbook (version 6), Section 4.3.5
- C30: Handbook 6.2.2.5 -changed to- Handbook (version 6), Section 4.3.5
- C31: Handbook 6.2.3-changed to- Handbook (version 6), Section 4.3.2
- C32: Handbook 6.4.2, 6.4.4, 6.4.7-changed to- Handbook (version 6), Section 4.4.2
- C33: Handbook 6.4.5, 6.4.6, 6.4.8 -changed to- Handbook (version 6), Section 4.4.4
- C34: Handbook 6.4.11, 6.4.2; 13.3.1.2; 14.5.2; 15.3.1; 17.5; 20.3.2.1 -changed to- Handbook (version 6), Section 4.4.7
- C35: Handbook 6.4.9 -changed to- Handbook (version 6), Section 4.4.5
- C36: Handbook 6.6.1 -changed to- Handbook (version 6), Section 4.5
- C37: BLANK -changed to- Handbook (version 6), Section 4.4.10
- C38: BLANK -changed to- Handbook (version 6), Section 4.4.10
- C39 column 4: Handbook 7.2.4 -changed to- Handbook (version 6), Section 4.6.4
- C40 column 4: Handbook 5.4.1 -changed to- Handbook (version 6), Section 4.6.3
- C41 column 3: A PRISMA type flow diagram and a table of 'Characteristics of excluded studies' will need to be completed in the final review. -changed to- DELETED
- C41 column 4: Handbook 6.6.1; 11.2.1 -changed to- Handbook (version 6), Section 4.6.4
- C42 column 4: Handbook 7.2.1, 7.2.2, 7.6.4 -changed to- Handbook (version 6), Section 4.6.2; 5.2.1
- C43 column 2: that has been -changed to- which has been
- C43 column 3: Piloting the form within the review team using a sample of included studies is highly desirable -changed to- Piloting the form within the review team is highly desirable.
- C43 column 4: Handbook 7.5 -changed to- Handbook (version 6), Section 5.4.1
- C44 column 3: Details of funding source for each study and the declarations of interest for the primary investigators should also be collected during this process. TiDieR (Hoffman 2014) will assist selection of which characteristics of interventions should be sought. -changed to- DELETED
- C44 column 4: Handbook 7.3; 11.2 -changed to- Handbook (version 6), Section 5.3.1
- C45 column 3: not a mandatory standard for study characteristics. -changed to- not a mandatory standard for the former.
- C45 column 4: Handbook 7.6.2, 7.6.5 -changed to- Handbook (version 6), Section 5.5.2
- C46 column 4: Handbook 7.6.2 -changed to- Handbook (version 6), Section 5.5.2
- C47 column 4: Handbook 7.7 -changed to- Handbook (version 6), Section 5.3.6
- C48 column 4: Handbook 6.4.10 -changed to- Handbook (version 6), Section 4.4.6; 5.2
- C49 column 3: Risk of bias -changed to- risk of bias
- C49 column 4: Handbook 7.4.2 -changed to- Handbook (version 6), Section 5.2.3
- C50 title: Choosing intervention groups in multi-arm studies -changed to- Choosing interventions in multi-arm studies
- C50 column 2: include in the review only the intervention and control groups that meet -changed to- include in the review only the interventions that meet
- C50 column 3: intervention groups (x2) -changed to- interventions (x2)
- C50 column 4: Handbook 16.5.2 -changed to- Handbook (version 6), Section 5.3.6
- C52 column 3: Recommendations for assessing bias in randomized studies included in Cochrane Reviews are now well established. -changed to- DELETED
- C52 column 3: as described in this Handbook -changed to- as described in Handbook version 6

- C52 column 4: See Handbook version 6 (Chapter 8) -changed to- See Handbook (version 6), Section 7.1.2; Chapter 8
- C53 column 2: risk of bias tool -changed to- risk-of-bias-tool
- C53 column 3: the risk of bias assessment -changed to- the risk-of-bias assessment
- C53 column 4: See Handbook 8.3.4 -changed to- See Handbook (version 6), Section 7.3.2; Chapter 8
- C54 column 2: risk of bias tables -changed to- risk-of bias tables
- C54 column 3: Items that are judged to be at an unclear risk of bias but are without accompanying information supporting the judgment appear as empty cells in the graphical plots based on the 'Risk of bias' tool in the published review. -changed to- DELETED
- C54 column 4: Handbook 8.5.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- C55 column 2: risk of bias judgement -changed to- risk-of-bias judgement
- C54 column 3: judgments -changed to- judgements
- C55 column 4: Handbook 8.5.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- C56 column 4: Handbook 8.5.1, 8.11.2, 8.12.2 -changed to- Handbook (version 6), Section 7.3.2; Chapter 8
- C57 title: Summarizing risk of bias assessments changed to- Summarizing risk-of-bias assessments
- C57 column 4: Handbook 8.5.1, 8.13.2 -changed to- Handbook (version 6), Section 7.5; Chapter 8
- C58 column 4: Handbook 8.7 -changed to- Handbook (version 6), Section 7.6.1; Chapter 8
- C59 column 4: Handbook version 6 (Chapter 8) -changed to- Handbook (version 6), Section 7.6.1; Chapter 8
- C60 column 3: "notable concern of conflicts of interest" -changed to- "notable concern about conflicts of interest"
- C60 column 4: Handbook 8.8.1 -changed to- Handbook (version 6), Section 7.8.6; Chapter 8
- C61 column 4: Handbook 9.2.3.2 -changed to- BLANK
- C62 column 4: See Handbook 9.1.4 -changed to- BLANK
- C63 column 4: See Handbook 9.5.2 -changed to- See Handbook (version 6), Section 10.10.2
- C64 column 3: Risk of bias tool -changed to- 'risk-of-bias' tool
- C64 column 4: See Handbook 16.2 -changed to- See Handbook (version 6), Section 10.12.1
- C65 column 4 See Handbook 9.4.5.3 -changed to- See Handbook (version 6), Section 10.5.3
- C66 column 3: and using multiple treatments meta-analysis. -changed to- and using network meta-analysis.
- C66 column 4: See Handbook 7.7.3.8, 16.5.4 -changed to- See Handbook (version 6), Section 6.2.9 and Chapter 11.
- C67 column 4:See Handbook 9.6.3.1 -changed to- See Handbook (version 6), Section 10.11.3.1
- C68 column 4: See Handbook 9.6.5.2 -changed to- See Handbook (version 6), Section 10.11.5.2
- C69 column 4: See Handbook 9.5.4 -changed to- See Handbook (version 6), Section 10.10.3
- C70 column 3: of the study, i.e., to give it (x2) -changed to- of the study, that is, to give it (x2)
- C70 column 4: see Handbook 9.3, 16.3, 16.4 -changed to- See Handbook (version 6), Section 6.2.1
- C71 column 4: see Handbook 9.7 -changed to- See Handbook (version 6), Section 10.14
- C72 column 2: Interpret a statistically non-significant P value (e.g. larger than 0.05) as a finding of uncertainty unless confidence intervals are sufficiently narrow to rule out an important magnitude of effect. -changed to- (Do not describe results as statistically significant or non-significant. Interpret the confidence intervals and their width.) Focus interpretation of results on estimates of effect and their confidence intervals, avoiding use of a distinction between "statistically significant" and "statistically non-significant".
- C72 column 4: See Handbook 12.4.2, 12.7.4 -changed to- See Handbook (version 6), Section 15.3.1
- C73 column 4: See Handbook 10.1, 10.2 -changed to- See Handbook (version 6), Section 13.4
- C74 column 2 title: Assessing the quality -changed to- Assessing the certainty
- C74 column 2: quality of the body of evidence -changed to -certainty of the body of evidence

- C74 column 2: quality of evidence -changed to- certainty of evidence
- C74 column 3: quality of the body of evidence -changed to -certainty of the body of evidence
- C74 column 4: See Handbook 12.2 -changed to- See Handbook Section 14.2.1
- C75 column 2 title: quality of the body of evidence -changed to -certainty of the body of evidence
- C75 column 2: quality of the body of evidence -changed to -certainty of the body of evidence
- C75 column 4: See Handbook 12.2.1 -changed to- See Handbook Section 14.2.1

Version 1.07

- C56: "assess RoB due to lack of blinding....." replaced with **NEW standard** "Ensuring results of outcomes included in SoF are assessed for RoB....."
- C57: "RoB due to incomplete outcome data...." replaced with "Summarizing RoB assessments...."
- C58: "Summarizing RoB assessments...." replaced with "Addressing RoB in the synthesis...."
- C59: "Addressing RoB in the synthesis...." replaced with "Incorporating assessments of RoB...."
- C60: "Incorporating assessments of RoB...." replaced with **NEW standard** "Addressing CoI in included trials....."

Version 1.06

- C73: Standard changed to: Consider the potential impact of non-reporting biases on the results of the review or the meta-analysis it contains. Rationale and elaboration changed to: There is overwhelming evidence of non-reporting biases of various types. These can be addressed at various points of the review. A thorough search, and attempts to obtain unpublished results, might minimize the risk. Analyses of the results of included studies, for example using funnel plots, can sometimes help determine the possible extent of the problem, as can attempts to identify study protocols, which should be a routine feature of Cochrane Reviews.
- C24: Standard changed from “Planning the search” to “Searching general bibliographic databases and CENTRAL”
- C41: Standard changed to: “Document the selection process in sufficient detail to be able to complete a flow diagram and a table of ‘Characteristics of excluded studies’. Change elaboration to read: “A PRISMA type flow diagram and a table of ‘Characteristics of excluded studies’ will need to be completed in the final review……..”
- R56: Standard changed to: Provide information on the flow of studies……., ideally using a PRISMA type flow diagram……..individual studies”.
- UR4: Elaboration changed to: “Provide information on the flow of studies into the updated review, ideally using a PRISMA type flow diagram.”
- R98: Status changed to mandatory – Mandating SoF tables.
- R102: Changed elaboration to: “When formulating implications for practice base conclusions only on findings from the synthesis (quantitative or narrative) of studies included in the review. The conclusions of the review should convey the essence of the synthesis of included studies, without selective reporting of particular findings on the basis of the result, and without drawing on data that were not systematically compiled and evaluated as part of the review.”

Version 1.05

- C48: Upgraded from 'highly desirable' to 'mandatory'.

Version 1.04

- R55: New Standard inserted. There is subsequent renumbering of all Standards in section up to R108.(23/01/2018)

- C28: Changed from 'mandatory' to 'highly desirable'.(23/01/18)
- Links to Cochrane Interactive Learning modules have been added where needed.

How to cite the MECIR Standards

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URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-75

STANDARDS FOR THE CONDUCT OF NEW COCHRANE INTERVENTION REVIEWS

Julian PT Higgins, Toby Lasserson, James Thomas, Ella Flemyng and Rachel Churchill

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-systematic-reviews/key-points-introduction

Key points and introduction

Key points:

- **The conduct Standards should be consulted during preparation of the protocol for a Cochrane Intervention Review.**
- **They describe the methods that should be implemented throughout the review process.**
- **Few specific methods are mandatory, one notable exception being use of the Cochrane tool for assessing risk of bias when randomized trials are included in the review.**

The MECIR Standards for conduct of a Cochrane Intervention Review provide expectations for the general methodological approach to be followed from designing the review up to interpreting the findings at the end. They should be consulted particularly when preparing the protocol for the review. The protocol describes the review question, the criteria for considering studies for the review, and the methods that will be followed to identify, appraise, summarize and synthesize the studies. Cochrane led the way in making protocols available to readers of the Cochrane Library. They ensure transparency in how reviews are prepared and allow the planned methods to be critiqued. Specification of the review question (through setting the review's objectives) and the criteria for including studies are critical to the success of the review and the first two sections of the standards address these tasks. The following section addresses selection of the outcomes of interest, an important aspect that should be prespecified carefully to avoid the need for post hoc decisions that could be influenced by the data.

The remaining Standards address the detailed methodology that will be followed during the review, covering the search for studies, selection of studies into the review, data collection, risk of bias assessment, synthesis (including any meta-analysis approaches), and overall assessment of the evidence. With few exceptions (such as use of the Cochrane Risk of Bias 2 tool for randomized trials), the precise methods to be used are not prescribed. For example, authors are free to use any meta-analysis method, although there is a potential convenience to both authors and readers if those implemented in Review Manager (RevMan) software are used.

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Developing the protocol for the review

Cochrane Training resource: writing a protocol and common errors and best practice: writing review protocols

Cochrane Interactive Learning (CIL): module 2 - writing the review protocol

1.1 Setting the research question(s) to inform the scope of the review

Cochrane Training resource: defining the review question

Cochrane Interactive Learning (CIL): module 1 - introduction to conducting systematic reviews

Standard	Rationale and elaboration
C1 Formulating review questions	**Mandatory**
Ensure that the review question and particularly the outcomes of interest, address issues that are important to review users such as healthcare consumers, health professionals and policy makers.	Cochrane Reviews are intended to support clinical practice and policy, not just scientific curiosity. The needs of consumers play a central role in Cochrane Reviews and they can play an important role in defining the review question. Qualitative research, i.e. studies that explore the experience of those involved in providing and receiving interventions, and studies evaluating factors that shape the implementation of interventions, might be used in the same way. See *Handbook* Section 2.1
C2 Predefining objectives	**Mandatory**
Define in advance the objectives of the review, including participants, interventions, comparators and outcomes (PICO).	Objectives give the review focus and must be clear before appropriate eligibility criteria can be developed. If the review will address multiple interventions, clarity is required on how these will be addressed (e.g. summarized separately, combined or explicitly compared). See *Handbook* Section 2.3
C3 Considering potential adverse effects	**Mandatory**
Consider any important potential adverse effects of the intervention(s) and ensure that they are addressed.	It is important that adverse effects are addressed in order to avoid one-sided summaries of the evidence. At a minimum, the review will need to highlight the extent to which potential adverse effects have been evaluated in any included studies. Sometimes data on adverse effects are best obtained from non-randomized studies, or qualitative research studies. This does not mean however that all reviews must include non-randomized studies. See *Handbook* Section 2.1

C4	Considering equity and specific populations	**Highly desirable**

Consider in advance whether issues of equity and relevance of evidence to specific populations are important to the review, and plan for appropriate methods to address them if they are. Attention should be paid to the relevance of the review question to populations such as low-socioeconomic groups, low- or middle-income regions, women, children and older people.

Where possible reviews should include explicit descriptions of the effect of the interventions not only upon the whole population, but also on the disadvantaged, and/or the ability of the interventions to reduce socioeconomic inequalities in health, and to promote use of the interventions to the community.
See *Handbook* Section 2.4

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-75/developing-protocol-review-c1-23/setting-eligibility-criteria-including-studies-review-c5-13

1.2 Setting eligibility criteria for including studies in the review

Cochrane Training resource: defining the review question

Cochrane Interactive Learning (CIL): module 2 - writing the review protocol

Standard		Rationale and elaboration
C5	Predefining unambiguous criteria for participants	**Mandatory**
Define in advance the eligibility criteria for participants in the studies.		Predefined, unambiguous eligibility criteria are a fundamental prerequisite for a systematic review. The criteria for considering types of people included in studies in a review should be sufficiently broad to encompass the likely diversity of studies, but sufficiently narrow to ensure that a meaningful answer can be obtained when studies are considered in aggregate. Considerations when specifying participants include setting, diagnosis or definition of condition and demographic factors. Any restrictions to study populations must be based on a sound rationale, since it is important that Cochrane Reviews are widely relevant. See *Handbook* Section 3.2.1
C6	Predefining a strategy for studies with a subset of eligible participants	**Highly desirable**
Define in advance how studies that include only a subset of relevant participants will be addressed.		Sometimes a study includes some 'eligible' participants and some 'ineligible' participants, for example when an age cut-off is used in the review's eligibility criteria. If data from the eligible participants cannot be retrieved, a mechanism for dealing with this situation should be prespecified. See *Handbook* Section 3, 3.2.1
C7	Predefining unambiguous criteria for interventions and comparators	**Mandatory**
Define in advance the eligible interventions and the interventions against which these can be compared in the included studies.		Predefined, unambiguous eligibility criteria are a fundamental prerequisite for a systematic review. Specification of comparator interventions requires particular clarity: are the experimental interventions to be compared with an inactive control intervention (e.g. placebo, no treatment, standard care, or a waiting list control), or with an active control intervention (e.g. a different variant of the same intervention, a different drug, a different kind of therapy)? Any restrictions on interventions and comparators, for example, regarding delivery, dose, duration,

	intensity, cointerventions and features of complex interventions should also be predefined and explained. See *Handbook* Section 3, 3.2.2

C8 Clarifying role of outcomes	**Mandatory**
Clarify in advance whether outcomes listed under 'Criteria for considering studies for this review' are used as criteria for including studies (rather than as a list of the outcomes of interest within whichever studies are included).	Outcome measures should not always form part of the criteria for including studies in a review. However, some reviews do legitimately restrict eligibility to specific outcomes. For example, the same intervention may be studied in the same population for different purposes (e.g. hormone replacement therapy, or aspirin); or a review may address specifically the adverse effects of an intervention used for several conditions. If authors do exclude studies on the basis of outcomes, care should be taken to ascertain that relevant outcomes are not available because they have not been measured rather than simply not reported. See *Handbook* Section 3, 3.2.4.1

C9 Predefining study designs	**Mandatory**
Define in advance the eligibility criteria for study designs in a clear and unambiguous way, with a focus on features of a study's design rather than design labels.	Predefined, unambiguous eligibility criteria are a fundamental prerequisite for a systematic review. This is particularly important when non-randomized studies are considered. Some labels commonly used to define study designs can be ambiguous. For example a 'double blind' study may not make it clear who was blinded; a 'case control' study may be nested within a cohort, or be undertaken in a cross-sectional manner; or a 'prospective' study may have only some features defined or undertaken prospectively. See *Handbook* Section 3, 3.3

C10 Including randomized trials	**Mandatory**
Include randomized trials as eligible for inclusion in the review, *if it is feasible to conduct them to evaluate interventions and outcomes of interest.*	Randomized trials are the best study design for evaluating the efficacy of interventions. If it is feasible to conduct them to evaluate questions that are being addressed by the review, they must be considered eligible for the review. However, appropriate exclusion criteria may be put in place, for example regarding length of follow-up. See *Handbook* Section 3, 3.3.1

C11 Justifying choice of study designs	**Mandatory**
Justify the choice of eligible study designs.	It might be difficult to address some interventions or some outcomes in randomized trials. Authors should be able to justify why they have chosen either to restrict the review to randomized trials or to include non-randomized studies. The particular study designs included should be justified with regard to appropriateness to the review question and with regard to potential for bias. See *Handbook* Section 3, 3.3

C12	Excluding studies based on publication status	Mandatory

Include studies irrespective of their publication status, unless exclusion is explicitly justified.	Obtaining and including data from unpublished studies (including grey literature) can reduce the effects of publication bias. However, the unpublished studies that can be located may be an unrepresentative sample of all unpublished studies. See *Handbook* Section 3, 3.4

C13	Changing eligibility criteria	Mandatory

Justify any changes to eligibility criteria or outcomes studied. In particular, post hoc decisions about inclusion or exclusion of studies should keep faith with the objectives of the review rather than with arbitrary rules.	Following prespecified eligibility criteria is a fundamental attribute of a systematic review. However, unanticipated issues may arise. Review authors should make sensible post hoc decisions about exclusion of studies, and these should be documented in the review, possibly accompanied by sensitivity analyses. Changes to the protocol must not be made on the basis of the findings of the studies or the synthesis, as this can introduce bias. See *Handbook* Section 3, 3.2.1

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-75/developing-protocol-review-c1-23/selecting-outcomes-be-addressed-studies-included-review-c14-18

1.3 Selecting outcomes to be addressed for studies included in the review

Cochrane Training resource: defining the review question

Cochrane Interactive Learning: module 2 - writing the review protocol

Standard		Rationale and elaboration	
C14	Predefining outcome domains		**Mandatory**
Define in advance outcomes that are critical to the review, and any additional important outcomes.		Full specification of the outcomes includes consideration of outcome domains (e.g. quality of life) and outcome measures (e.g. SF-36). Predefinition of outcome reduces the risk of selective outcome reporting. The *critical outcomes* should be as few as possible and should normally reflect at least one potential benefit and at least one potential area of harm. It is expected that the review should be able to synthesize these outcomes if eligible studies are identified, and that the conclusions of the review will be based largely on the effects of the interventions on these outcomes. Additional important outcomes may also be specified. Up to seven critical and important outcomes will form the basis of the GRADE assessment and summarized in the review's abstract and other summary formats, although the review may measure more than seven outcomes See *Handbook* Section 3, 3.2.4.1	
C15	Choosing outcomes		**Mandatory**
Choose only outcomes that are critical or important to users of the review such as healthcare consumers, health professionals and policy makers.		Cochrane Reviews are intended to support clinical practice and policy, and should address outcomes that are critical or important to consumers. These should be specified at protocol stage. Where available, established sets of core outcomes should be used. Patient-reported outcomes should be included where possible. It is also important to judge whether evidence of resource use and costs might be an important component of decisions to adopt the intervention or alternative management strategies around the world. Large numbers of outcomes, while sometimes necessary, can make reviews unfocussed, unmanageable for the user, and prone to selective outcome reporting bias. Biochemical, interim and process outcomes should be considered where they are important to decision makers. Any outcomes that would not be described as critical or important can be left out of the review. See *Handbook* Section 3, 3.2.4.1	

C16	Predefining outcome measures	Highly desirable
Define in advance details of what will constitute acceptable outcome measures (e.g. diagnostic criteria, scales, composite outcomes).	Having decided what outcomes are of interest to the review, authors should clarify acceptable ways in which these outcomes can be measured. It may be difficult, however, to predefine adverse effects. See *Handbook* Section 3, 3.2.4.1	

C17	Predefining choices from multiple outcome measures	Highly desirable
Define in advance how outcome measures will be selected when there are several possible measures (e.g. multiple definitions, assessors or scales).	Prespecification guards against selective outcome reporting, and allows users to confirm that choices were not overly influenced by the results. A predefined hierarchy of outcomes measures may be helpful. It may be difficult, however, to predefine adverse effects. A rationale should be provided for the choice of outcome measure. See *Handbook* Section 3, 3.2.4.1	

C18	Predefining time points of interest	Highly desirable
Define in advance the timing of outcome measurement.	Prespecification guards against selective outcome reporting, and allows users to confirm that choices were not overly influenced by the results. Authors may consider whether all time frames or only selected time points will be included in the review. These decisions should be based on outcomes important for making healthcare decisions. One strategy to make use of the available data could be to group time points into prespecified intervals to represent 'short-term', 'medium-term' and 'long-term' outcomes and to take no more than one from each interval from each study for any particular outcome. See *Handbook* Section 3, 3.2.4.1	

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-75/developing-protocol-review-c1-23/planning-review-methods-protocol-stage-c19-23

1.4 Planning the review methods at protocol stage

Standard	Rationale and elaboration
C19 Planning the search	**Mandatory**
Plan in advance the methods to be used for identifying studies. Design searches to capture as many studies as possible that meet the eligibility criteria, ensuring that relevant time periods and sources are covered and not restricted by language or publication status.	Searches should be motivated directly by the eligibility criteria for the review, and it is important that all types of eligible studies are considered when planning the search. If searches are restricted by publication status or by language of publication, there is a possibility of publication bias, or language bias (whereby the language of publication is selected in a way that depends on the findings of the study), or both. Removing language restrictions in English language databases is not a good substitute for searching non-English language journals and databases. See *Handbook* Section 1, 1.5; Section 4, 4.3.1.1
C20 Planning the assessment of risk of bias in included studies	**Mandatory**
Plan in advance the methods to be used for assessing risk of bias in included studies, including the tool(s) to be used, how the tool(s) will be implemented, and the criteria used to assign studies, for example, to judgements of low risk, high risk and unclear risk of bias.	Predefining the methods and criteria for assessing risk of bias is important since analysis or interpretation of the review findings may be affected by the judgements made during this process. For randomized trials, use of the Cochrane 'risk of bias' tool is Mandatory, so it is sufficient (and easiest) simply to refer to the definitions of low risk, unclear risk and high risk of bias provided in the *Handbook*. See *Handbook* Section 1, 1.5
C21 Planning the synthesis of results	**Mandatory**
Plan in advance the methods to be used to synthesize the results of the included studies, including whether a quantitative synthesis is planned, how heterogeneity will be assessed, choice of effect measure (e.g. odds ratio, risk ratio, risk difference or other for dichotomous outcomes), and methods for meta-analysis (e.g. inverse variance or Mantel	Predefining the synthesis methods, particularly the statistical methods, is important, since analysis or interpretation of the review findings may be affected by the judgements made during this process. See *Handbook* Section 1, 1.5

Haenszel, fixed-effect or random-effects model).

C22	Planning subgroup analyses	Mandatory
Predefine potential effect modifiers (e.g. for subgroup analyses) at the protocol stage; restrict these in number, and provide rationale for each.	Pre-specification reduces the risk that large numbers of undirected subgroup analyses will lead to spurious explanations of heterogeneity. See *Handbook* Section 1, 1.5	

C23	Planning the GRADE assessment and 'Summary of findings' table	Mandatory
Plan in advance the methods to be used for assessing the certainty of the body of evidence, and summarizing the findings of the review.	Methods for assessing the certainty of evidence for the most important outcomes in the review need to be pre-specified. In 'Summary of findings' tables the most important feature is to predefine the choice of outcomes in order to guard against selective presentation of results in the review. The table should include the essential outcomes for decision making (typically up to seven), which generally should not include surrogate or interim outcomes. The choice of outcomes should not be based on any anticipated or observed magnitude of effect, or because they are likely to have been addressed in the studies to be reviewed. See *Handbook* Section 1, 1.5	

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-c75/performing-review-c24-75

Performing the review

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-c75/performing-review-c24-75/searching-studies-c24-38

1.5 Searching for studies

Cochrane Training resource: searching for studies

Cochrane Interactive Learning (CIL): module 3 - searching for studies

Standard	Rationale and elaboration
C24 Searching general bibliographic databases and CENTRAL	**Mandatory**
Search the Cochrane Review Group's (CRG's) Specialized Register (internally, e.g. via the Cochrane Register of Studies, or externally via CENTRAL). Ensure that CENTRAL, MEDLINE (e.g. via PubMed) and Embase (if Embase is available to either the CRG or the review author), have been searched (either for the review or for the Review Group's Specialized Register).	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. The minimum databases to be covered are the CRG's Specialized Register (if it exists and was designed to support reviews in this way), CENTRAL, MEDLINE and Embase (if Embase is available to either the CRG or the review author). Expertise may be required to avoid unnecessary duplication of effort. Some, but not all, reports of eligible studies from MEDLINE, Embase and the CRGs' Specialized Registers are already included in CENTRAL. See *Handbook* Section 4, 4.3.1.1
C25 Searching specialist bibliographic databases	**Highly desirable**
Search appropriate national, regional and subject-specific bibliographic databases.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. Databases relevant to the review topic should be covered (e.g. CINAHL for nursing-related topics, PsycINFO for psychological interventions), and regional databases (e.g. LILACS) should be considered. See *Handbook* Section 4, 4.3.1.4
C26 Searching for different types of evidence	**Mandatory**
If the review has specific eligibility criteria around study design to address adverse effects, economic issues or qualitative research questions, undertake searches to address them.	Sometimes a review will address questions about adverse effects, economic issues or qualitative research using a different set of eligibility criteria from the main (effectiveness) component. In such situations, the searches for evidence must be suitable to identify relevant study designs for these questions. Different searches may need to be conducted for different types of evidence. See Handbook Section 4, 4.4.1
C27 Searching trials registers	**Mandatory**

Search trials registers and repositories of results, where relevant to the topic, through ClinicalTrials.gov, the WHO International Clinical Trials Registry Platform (ICTRP) portal and other sources as appropriate.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. Although ClinicalTrials.gov is included as one of the registers within the WHO ICTRP portal, it is recommended that both ClinicalTrials.gov and the ICTRP portal are searched separately due to additional features in ClinicalTrials.gov. See *Handbook* Section 4, 4.3.3

C28	Searching for grey literature	**Highly desirable**
Search relevant grey literature sources such as reports, dissertations, theses and conference abstracts.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. See *Handbook* Section 4, 4.3.5	

C29	Searching within other reviews	**Highly desirable**
Search within previous reviews on the same topic.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. See *Handbook* Section 4, 4.3.5	

C30	Searching reference lists	**Mandatory**
Check reference lists in included studies and any relevant systematic reviews identified.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. See *Handbook* Section 4, 4.3.5	

C31	Searching by contacting relevant individuals and organizations	**Highly desirable**
Contact relevant individuals and organizations for information about unpublished or ongoing studies.	Searches for studies should be as extensive as possible in order to reduce the risk of publication bias and to identify as much relevant evidence as possible. It is important to identify ongoing studies, so that these can be assessed for possible inclusion when a review is updated. See *Handbook* Section 4, 4.3.2	

C32	Structuring search strategies for bibliographic databases	**Mandatory**

Inform the structure of search strategies in bibliographic databases around the main concepts of the review, using appropriate elements from PICO and study design. In structuring the search, maximize sensitivity whilst striving for reasonable precision. Ensure correct use of the 'AND' and 'OR' operators.	Inappropriate or inadequate search strategies may fail to identify records that are included in bibliographic databases. Expertise may need to be sought, in particular from the CRG's Information Specialist. The structure of a search strategy should be based on the main concepts being examined in a review. In general databases, such as MEDLINE, a search strategy to identify studies for a Cochrane Review will typically have three sets of terms: 1) terms to search for the health condition of interest, i.e. the population; 2) terms to search for the intervention(s) evaluated; and 3) terms to search for the types of study design to be included (typically a 'filter' for randomized trials). There are exceptions, however. For instance, for reviews of complex interventions, it may be necessary to search only for the population or the intervention. Within each concept, terms are joined together with the Boolean 'OR' operator, and the concepts are combined with the Boolean 'AND' operator. The 'NOT' operator should be avoided where possible to avoid the danger of inadvertently removing records that are relevant from the search set. See *Handbook* Section 4, 4.4.2

C33	Developing search strategies for bibliographic databases	**Mandatory**
Identify appropriate controlled vocabulary (e.g. MeSH, Emtree, including 'exploded' terms) and free-text terms (considering, for example, spelling variants, synonyms, acronyms, truncation and proximity operators).	Inappropriate or inadequate search strategies may fail to identify records that are included in bibliographic databases. Search strategies need to be customized for each database. It is important that MeSH terms are 'exploded' wherever appropriate, in order not to miss relevant articles. The same principle applies to Emtree when searching Embase and also to a number of other databases. The controlled vocabulary search terms for MEDLINE and Embase are not identical, and neither is the approach to indexing. In order to be as comprehensive as possible, it is necessary to include a wide range of free-text terms for each of the concepts selected. This might include the use of truncation and wildcards. Developing a search strategy is an iterative process in which the terms that are used are modified, based on what has already been retrieved. See *Handbook* Section 4, 4.4.4	

C34	Using search filters	**Highly desirable**
Use specially designed and tested search filters where appropriate including the Cochrane Highly Sensitive Search Strategies for identifying randomized trials in MEDLINE, but do not use filters in pre-filtered databases e.g. do not	Inappropriate or inadequate search strategies may fail to identify records that are included in bibliographic databases. Search filters should be used with caution. They should be assessed not only for the reliability of their development and reported performance, but also for their current accuracy, relevance and effectiveness given the frequent interface and indexing changes affecting databases.	

use a randomized trial filter in CENTRAL.	See *Handbook* Section 4, 4.4.7

C35	Restricting database searches	**Mandatory**
Justify the use of any restrictions in the search strategy on publication date and publication format.	Date restrictions in the search should only be used when there are date restrictions in the eligibility criteria for studies. They should be applied only if it is known that relevant studies could only have been reported during a specific time period, for example if the intervention was only available after a certain time point. Searches for updates to reviews might naturally be restricted by date of entry into the database (rather than date of publication) to avoid duplication of effort. Publication format restrictions (e.g. exclusion of letters) should generally not be used in Cochrane Reviews, since any information about an eligible study may be of value. See *Handbook* Section 4, 4.4.5	

C36	Documenting the search process	**Mandatory**
Document the search process in enough detail to ensure that it can be reported correctly in the review.	The search process (including the *sources* searched, when, by whom, and using which terms) needs to be documented in enough detail throughout the process to ensure that it can be reported correctly in the review, to the extent that all the searches of all the databases are reproducible. See *Handbook* Section 4, 4.5	

C37	Rerunning searches	**Mandatory**
Rerun or update searches for all relevant sources within 12 months before publication of the review or review update, and screen the results for potentially eligible studies.	The published review should be as up to date as possible. The search must be rerun close to publication, if the initial search date is more than 12 months (preferably six months) from the intended publication date, and the results screened for potentially eligible studies. Ideally the studies should be incorporated fully in the review. If not, then the potentially eligible studies will need to be reported, at a minimum as a reference under 'Studies awaiting classification' (or 'Ongoing studies' if they have not yet completed). See *Handbook* Section 4, 4.4.10	

C38	Incorporating findings from rerun searches	**Highly desirable**
Fully incorporate any studies identified in the rerun or update of the search within 12 months before publication of the review or review update.	The published review should be as up to date as possible. After the rerun of the search, the decision whether to incorporate any new studies fully into the review will need to be balanced against the delay in publication. See *Handbook* Section 4, 4.4.10	

1.6 Selecting studies to include in the review

Cochrane Training resources: selecting studies and Covidence webinar (online tool for review production)

Cochrane Interactive Learning (CIL): module 4 - selecting studies and collecting data

Standard	Rationale and elaboration
C39 Making inclusion decisions	**Mandatory**
Use (at least) two people working independently to determine whether each study meets the eligibility criteria, and define in advance the process for resolving disagreements.	Duplicating the study selection process reduces both the risk of making mistakes and the possibility that selection is influenced by a single person's biases. The inclusion decisions should be based on the full texts of potentially eligible studies when possible, usually after an initial screen of titles and abstracts. It is desirable, but not mandatory, that two people undertake this initial screening, working independently. See *Handbook* Section 4, 4.6.4
C40 Excluding studies without useable data	**Mandatory**
Include studies in the review irrespective of whether measured outcome data are reported in a 'usable' way.	Systematic reviews typically should seek to include all relevant participants who have been included in eligible study designs of the relevant interventions and had the outcomes of interest measured. Reviews must not exclude studies solely on the basis of reporting of the outcome data, since this may introduce bias due to selective outcome reporting and risk undermining the systematic review process. While such studies cannot be included in meta-analyses, the implications of their omission should be considered. Note that studies may legitimately be excluded because outcomes were not measured. Furthermore, issues may be different for adverse effects outcomes, since the pool of studies may be much larger and it can be difficult to assess whether such outcomes were measured. See *Handbook* Section 4, 4.6.3
C41 Documenting decisions about records identified	**Mandatory**

Document the selection process in sufficient detail to complete a flow diagram and a table of 'Characteristics of excluded studies'.	Decisions should be documented for all records identified by the search. Numbers of records are sufficient for exclusions based on initial screening of titles and abstracts. Broad categorizations are sufficient for records classed as potentially eligible during an initial screen. Studies listed in the table of 'Characteristics of excluded studies' should be those that a user might reasonably expect to find in the review. At least one explicit reason for their exclusion must be documented. Authors will need to decide for each review when to map records to studies (if multiple records refer to one study). Lists of included and excluded studies must be based on studies rather than records. See *Handbook* Section 4, 4.6.4

C42 Collating multiple reports	**Mandatory**
Collate multiple reports of the same study, so that each study, rather than each report, is the unit of interest in the review.	It is wrong to consider multiple reports of the same study as if they are multiple studies. Secondary reports of a study should not be discarded, however, since they may contain valuable information about the design and conduct. Review authors must choose and justify which report to use as a source for study results. See *Handbook* Section 4, 4.6.2; Section 5, 5.2.1

1.7 Collecting data from included studies

Cochrane Training resources: collecting data and Covidence webinar (online tool for review production)

Cochrane Interactive Learning (CIL): module 4 - selecting studies and collecting data

Standard	Rationale and elaboration
C43 Using data collection forms	**Mandatory**
Use a data collection form, which has been piloted.	Review authors often have different backgrounds and level of systematic review experience. Using a data collection form ensures some consistency in the process of data extraction, and is necessary for comparing data extracted in duplicate. The completed data collection forms should be available to the CRG on request. Piloting the form within the review team is highly desirable. At a minimum, the data collection form (or a very close variant of it) must have been assessed for usability. See Handbook Section 5, 5.4.1
C44 Describing studies	**Mandatory**
Collect characteristics of the included studies in sufficient detail to populate a table of 'Characteristics of included studies'.	Basic characteristics of each study will need to be presented as part of the review, including details of participants, interventions and comparators, outcomes and study design. See Handbook Section 5, 5.3.1
C45 Extracting study characteristics in duplicate	**Highly desirable**
Use (at least) two people working independently to extract study characteristics from reports of each study, and define in advance the process for resolving disagreements.	Duplicating the data extraction process reduces both the risk of making mistakes and the possibility that data selection is influenced by a single person's biases. Dual data extraction may be less important for study characteristics than it is for outcome data, so it is not a mandatory standard for the former. See *Handbook* Section 5, 5.5.2
C46 Extracting outcome data in duplicate	**Mandatory**
Use (at least) two people working independently to extract outcome data from reports of each study, and define in advance the process for resolving disagreements.	Duplicating the data extraction process reduces both the risk of making mistakes and the possibility that data selection is influenced by a single person's biases. Dual data extraction is particularly important for outcome data, which feed directly into syntheses of the evidence, and hence to the conclusions of the review. See *Handbook* Section 5, 5.5.2

C47	Making maximal use of data	**Mandatory**
Collect and utilize the most detailed numerical data that might facilitate similar analyses of included studies. Where 2×2 tables or means and standard deviations are not available, this might include effect estimates (e.g. odds ratios, regression coefficients), confidence intervals, test statistics (e.g. t, F, Z, Chi^2) or P values, or even data for individual participants.	Data entry into RevMan is easiest when 2×2 tables are reported for dichotomous outcomes, and when means and standard deviations are presented for continuous outcomes. Sometimes these statistics are not reported but some manipulations of the reported data can be performed to obtain them. For instance, 2×2 tables can often be derived from sample sizes and percentages, while standard deviations can often be computed using confidence intervals or P values. Furthermore, the inverse-variance data entry format can be used even if the detailed data required for dichotomous or continuous data are not available, for instance if only odds ratios and their confidence intervals are presented. The RevMan calculator facilitates many of these manipulations. See *Handbook* Section 5, 5.3.6	

C48	Examining errata	**Mandatory**
Examine any relevant retraction statements and errata for information.	Some studies may have been found to be fraudulent or articles about them may have been retracted since publication for other reasons. Errata can reveal important limitations, or even fatal flaws, in included studies. All of these may lead to the potential exclusion of a study from a review or meta-analysis. Care should be taken to ensure that this information is retrieved in all database searches by downloading the appropriate fields, together with the citation data. See *Handbook* Section 4, 4.4.5	

C49	Obtaining unpublished data	**Highly desirable**
Seek key unpublished information that is missing from reports of included studies.	Contacting study authors to obtain or confirm data makes the review more complete, potentially enhances precision and reduces the impact of reporting biases. Missing information includes details to inform risk of bias assessments, details of interventions and outcomes, and study results (including breakdowns of results by important subgroups). See *Handbook* Section 5, 5.2.3	

C50	Choosing interventions in multi-arm studies	**Mandatory**
If a study is included with more than two intervention arms, include in the review only the interventions that meet the eligibility criteria.	There is no point including irrelevant interventions in the review. Authors, however, should make it clear in the 'Table of characteristics of included studies' that these interventions were present in the study. See *Handbook* Section 5, 5.3.6	

C51	Checking accuracy of numeric data in the review	**Mandatory**

Compare magnitude and direction of effects reported by studies with how they are presented in the review, taking account of legitimate differences.	This is a reasonably straightforward way for authors to check a number of potential problems, including typographical errors in studies' reports, accuracy of data collection and manipulation, and data entry into RevMan. For example, the direction of a standardized mean difference may accidentally be wrong in the review. A basic check is to ensure the same qualitative findings (e.g. direction of effect and statistical significance) between the data as presented in the review and the data as available from the original study. Results in forest plots should agree with data in the original report (point estimate and confidence interval) if the same effect measure and statistical model is used. See *Handbook* Section 5, 5.2.6

1.8 Assessing risk of bias in included studies

Cochrane Training resources: assessing RoB and RoB 2.0 webinar

Cochrane Interactive Learning (CIL): module 5 - introduction to study quality and risk of bias

Standard	Rationale and elaboration
C52 Assessing risk of bias	**Mandatory**
Assess the risk of bias for each study result contributing to an outcome in the 'summary of findings' table. For randomized trials, the RoB 2 tool should be used, involving judgements and support for those judgements across a series of domains of bias, as described in the *Handbook*.	Risk of bias in individual study results for the included studies should be explicitly considered to determine the extent to which findings of the studies can be believed. Risks of bias might vary by result. It may not be feasible to assess the risk of bias in every single result available across the included studies, particularly if a large number of studies and results are available. Review author should therefore assess risk of bias in the results of outcomes included in their 'summary of findings' tables, which present the findings of seven or fewer outcomes that are most important to patients. The RoB 2 tool – as described in the *Handbook*– is the preferred tool for all randomized trials in new reviews. The Cochrane Evidence Production and Methods Directorate is, however, aware that there remain challenges in learning and implementation of the tool, and use of the original Cochrane risk of bias tool is acceptable for the time being. See *Handbook* Section 7, 7.1.2
C53 Assessing risk of bias in duplicate	**Mandatory**
Use (at least) two people working independently to apply the risk-of-bias tool to each result in each included study, and define in advance the process for resolving disagreements.	Duplicating the risk-of-bias assessment reduces both the risk of making mistakes and the possibility that assessments are influenced by a single person's biases. See *Handbook* Section 7, 7.3.2
C54 Supporting judgements of risk of bias	**Mandatory**
Justify judgements of risk of bias (high, low and some concerns) and provide this information in the risk-of-bias tables (as 'Support for judgement').	Providing support for the judgement makes the process transparent. See *Handbook* Section 7, 7.3.2
C55 Providing sources of information for risk-of-bias assessments	**Mandatory**
Collect the source of information for each risk-of-bias judgement	Readers, editors and referees should have the opportunity to see for themselves from where supports for judgements have

(e.g. quotation, summary of information from a trial report, correspondence with investigator etc.). Where judgements are based on assumptions made on the basis of information provided outside publicly available documents, this should be stated.	been obtained. See *Handbook* Section 7, 7.3.2

C56	Summarizing the risk-of-bias assessments	**Highly desirable**
Summarize the risk of bias for each key outcome for each study	This reinforces the link between the characteristics of the study design and their possible impact on the results of the study, and is an important prerequisite for the GRADE approach to assessing the certainty of the body of evidence. See *Handbook* Section 7, 7.5	

C57	Addressing risk of bias in the synthesis	**Highly desirable**
Address risk of bias in the synthesis (whether quantitative or non-quantitative). For example, present analyses stratified according to summary risk of bias, restricted to studies at low risk of bias, or restricted to low-and-some-concerns of bias.	Review authors should consider how study biases affect results. This is useful in determining the strength of conclusions and how future research should be designed and conducted. See *Handbook* Section 7, 7.6.1	

C58	Incorporating assessments of risk of bias	**Mandatory**
If randomized trials have been assessed using one or more tools in addition to the RoB 2 tool, use the RoB 2 tool as the primary assessment of bias for interpreting results, choosing the primary analysis, and drawing conclusions.	For consistency of approach across Cochrane Intervention Reviews, the RoB 2 tool should take precedence when two or more tools are used for assessing risk of bias in randomized trials. The RoB 2 tool also feeds directly into the GRADE approach for assessing the certainty of the body of evidence. See *Handbook* Section 7, 7.6.1	

C59	Addressing conflicts of interest in included trials	**Highly desirable**
Address conflict of interests in included trials, and reflect on possible impact on: a) differences in study design; b) risk of bias in trial result, and c) risk of bias in synthesis result	Review authors should consider assessing whether they judge a trial to be of "notable concern about conflicts of interest". This assessment is useful for exploration of possible heterogeneity between trials (e.g. in a subgroup analysis), and for reflection on relevant mechanisms for how conflict of interest may have biased trial results and synthesis results. Concerns about conflicts of interest can be reported in the 'Characteristics of included studies' table. See *Handbook* Section 7, 7.8.6	

C60	Not applicable

1.9 Synthesizing the results of included studies

Cochrane Interactive Learning (CIL): module 6 - analysing the data

Standard	Rationale and elaboration
C61 Combining different scales	**Mandatory**
If studies are combined with different scales, ensure that higher scores for continuous outcomes all have the same meaning for any particular outcome; explain the direction of interpretation; and report when directions are reversed.	Sometimes scales have higher scores that reflect a 'better' outcome and sometimes lower scores reflect 'better' outcome. Meaningless (and misleading) results arise when effect estimates with opposite clinical meanings are combined. See *Handbook* Section 6, 6.5.1.2
C62 Ensuring meta-analyses are meaningful	**Mandatory**
Undertake (or display) a meta-analysis only if participants, interventions, comparisons and outcomes are judged to be sufficiently similar to ensure an answer that is clinically meaningful.	Meta-analyses of very diverse studies can be misleading, for example where studies use different forms of control. Clinical diversity does not indicate necessarily that a meta-analysis should not be performed. However, authors must be clear about the underlying question that all studies are addressing. See *Handbook* Section 10, 10.10.1
C63 Assessing statistical heterogeneity	**Mandatory**
Assess the presence and extent of between-study variation when undertaking a meta-analysis.	The presence of heterogeneity affects the extent to which generalizable conclusions can be formed. It is important to identify heterogeneity in case there is sufficient information to explain it and offer new insights. Authors should recognize that there is much uncertainty in measures such as I^2 and Tau^2 when there are few studies. Thus, use of simple thresholds to diagnose heterogeneity should be avoided. See *Handbook* Section 10, 10.10.2
C64 Addressing missing outcome data	**Highly desirable**
Consider the implications of missing outcome data from individual participants (due to losses to follow-up or exclusions from analysis).	Incomplete outcome data can introduce bias. In most circumstances, authors should follow the principles of intention-to-treat analyses as far as possible (this may not be appropriate for adverse effects or if trying to demonstrate equivalence). Risk of bias due to incomplete outcome data is addressed in the Cochrane risk-of-bias tool. However, statistical analyses and careful interpretation of results are additional ways in which the

	issue can be addressed by review authors. Imputation methods can be considered (accompanied by, or in the form of, sensitivity analyses). See *Handbook* Section 10, 12.1

C65 Addressing skewed data	**Highly desirable**
Consider the possibility and implications of skewed data when analysing continuous outcomes.	Skewed data are sometimes not summarized usefully by means and standard deviations. While statistical methods are approximately valid for large sample sizes, skewed outcome data can lead to misleading results when studies are small. See *Handbook* Section 10, 10.5.3

C66 Addressing studies with more than two groups	**Mandatory**
If multi-arm studies are included, analyse multiple intervention groups in an appropriate way that avoids arbitrary omission of relevant groups and double-counting of participants.	Excluding relevant groups decreases precision and double-counting increases precision spuriously; both are inappropriate and unnecessary. Alternative strategies include combining intervention groups, separating comparisons into different forest plots and using network meta-analysis. See *Handbook* Section 6.2.9 and Section 11.

C67 Comparing subgroups	**Mandatory**
If subgroup analyses are to be compared, and there are judged to be sufficient studies to do this meaningfully, use a formal statistical test to compare them.	Concluding that there is a difference in effect in different subgroups on the basis of differences in the level of statistical significance within subgroups can be very misleading. See *Handbook* Section 10, 10.11.3.1

C68 Interpreting subgroup analyses	**Mandatory**
If subgroup analyses are conducted, follow the subgroup analysis plan specified in the protocol without undue emphasis on particular findings.	Selective reporting, or over-interpretation, of particular subgroups or particular subgroup analyses should be avoided. This is a problem especially when multiple subgroup analyses are performed. This does not preclude the use of sensible and honest post hoc subgroup analyses. See *Handbook* Section 10, 10.11.5.2

C69 Considering statistical heterogeneity when interpreting the results	**Mandatory**
Take into account any statistical heterogeneity when interpreting the results, particularly when there is variation in the direction of effect.	The presence of heterogeneity affects the extent to which generalizable conclusions can be formed. If a fixed-effect analysis is used, the confidence intervals ignore the extent of heterogeneity. If a random-effects analysis is used, the result pertains to the mean effect across studies. In both cases, the implications of notable heterogeneity should be addressed. It may be possible to understand the reasons for the heterogeneity if there are sufficient studies. See *Handbook* Section 10, 10.10.3

C70	Addressing non-standard designs	Mandatory
Consider the impact on the analysis of clustering, matching or other non-standard design features of the included studies.	Cluster-randomized trials, cross-over trials, studies involving measurements on multiple body parts, and other designs need to be addressed specifically, since a naive analysis might underestimate or overestimate the precision of the study. Failure to account for clustering is likely to overestimate the precision of the study, that is, to give it confidence intervals that are too narrow and a weight that is too large. Failure to account for correlation is likely to underestimate the precision of the study, that is, to give it confidence intervals that are too wide and a weight that is too small. See *Handbook* Section 6, 6.2.1	

C71	Sensitivity analysis	Highly desirable
Use sensitivity analyses to assess the robustness of results, such as the impact of notable assumptions, imputed data, borderline decisions and studies at high risk of bias.	It is important to be aware when results are robust, since the strength of the conclusion may be strengthened or weakened. See *Handbook* Section 10, 10.14	

C72	Interpreting results	Mandatory
Focus interpretation of results on estimates of effect and their confidence intervals, avoiding use of a distinction between “statistically significant” and “statistically non-significant.	Authors commonly mistake a lack of evidence of effect as evidence of a lack of effect. See *Handbook* Section 15, 15.3.1	

C73	Investigating risk of bias due to missing results	Highly desirable
Consider the potential impact of non-reporting biases on the results of the review or the meta-analyses it contains.	There is overwhelming evidence of non-reporting biases of various types. These can be addressed at various points in the review. A thorough search, and attempts to obtain unpublished results, might minimize the risk. Analyses of the results of included studies, for example using funnel plots, can sometimes help determine the possible extent of the problem, as can attempts to identify study protocols, which should be a routine feature of Cochrane Reviews. See *Handbook* Section 13, 13.4	

1.10 Assessing the certainty of evidence and summarizing the findings

Cochrane Training resource: GRADE approach to evaluating evidence quality

Cochrane Interactive Learning: module 7 - interpreting the findings

Standard	Rationale and Elaboration
C74 Assessing the certainty of the body of evidence	**Mandatory**
Use the five GRADE considerations (risk of bias, consistency of effect, imprecision, indirectness and publication bias) to assess the certainty of the body of evidence for each outcome, and to draw conclusions about the certainty of evidence within the text of the review.	GRADE is the most widely used approach for summarizing confidence in effects of interventions by outcome across studies. It is preferable to use the online GRADEpro tool, and to use it as described in the help system of the software. This should help to ensure that author teams are accessing the same information to inform their judgments. Ideally, two people working independently should assess the certainty of the body of evidence and reach a consensus view on any downgrading decisions. The five GRADE considerations should be addressed irrespective of whether the review includes a 'Summary of findings' table. It is helpful to draw on this information in the Discussion, in the Authors' conclusions and to convey the certainty in the evidence in the Abstract and Plain language summary. See *Handbook* Section 14, 14.2.1
C75 Justifying assessments of the certainty of the body of evidence	**Mandatory**
Justify and document all assessments of the certainty of the body of evidence (for example downgrading or upgrading if using GRADE).	The adoption of a structured approach ensures transparency in formulating an interpretation of the evidence, and the result is more informative to the user. See *Handbook* Section 14, 14.2.1

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-systematic-reviews/performing-review/reference

Reference

Hoffmann TC, Glasziou PP, Boutron I, Milne R, Perera R, Moher D, et al. (2014) Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. BMJ 2014;348:g1687. doi: 10.1136/bmj.g1687

URL: https://community.cochrane.org/mecir-manual/standards-conduct-new-cochrane-intervention-reviews-c1-75/citation

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STANDARDS FOR THE PLANNING AND CONDUCT OF UPDATES OF COCHRANE INTERVENTION REVIEWS

Toby Lasserson, Julian PT Higgins, James Thomas, Ella Flemyng and Rachel Churchill

Key points and introduction

Key points:

- **Before undertaking an update, authors should consider the currency and relevance of the question, as well as the methodology used to address it.**
- **A new protocol will be required if important changes are made to the review question or the general methodology.**
- **An update should be conducted according to the standards required for any review, with the following additional requirements to ensure that any changes are managed appropriately and reported clearly to readers.**

Since its inception, Cochrane has advocated for the routine updating of systematic reviews, in order to take account of new evidence. However, before undertaking an update, it is important to consider carefuly whether an update is warranted. See *Handbook* Chapter IV, section 2 for a framework and checklist on deciding whether or when to update a Cochrane Review. All CRGs are encouraged to classify their reviews by their update status , to denote whether the review is up to date, an update is pending or no update is planned (see the Updating Classification System).

Several important decisions are required at the beginning of the planning of an update. The first is whether the original review question is still relevant. The second is whether the general methodological approach is still appropriate to answer the review question: this will need a review of the original protocol. Third, authors need to address whether the scope of the review is appropriate, whether it should be split into two or more reviews, or whether it should be merged with other reviews. Important changes of this nature indicate a need for a new protocol.

The following updating standards reflect two key stages: planning and conducting the update. Expectations are that review authors will consider each of these sections before updating a review. Authors should examine and address any feedback on the original review before embarking on an update or a new derivative review. Planning an update should involve discussion with the Cochrane Review Group (CRG) over the adoption of new methods or changes to the review question proposed. The following standards for updates should be used in conjunction with the conduct and reporting standards for new Cochrane Reviews and these are cited where necessary.

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Methods Co-ordinator (2011-2018)
Editorial and Methods Department

URL: https://community.cochrane.org/mecir-manual/standards-planning-and-conduct-updates-cochrane-intervention-reviews-u1-u11/deciding-and-performing-update-u1-u11

Deciding on and performing an update

1.11 Planning the update

	Standard	Rationale and elaboration	
U1	Reconsidering review questions		**Mandatory**
Confirm or amend review question (PICO) and objectives.		Consider whether it is important to modify or add new objectives to make the review relevant to its users. Consider whether the review will be split, merged with another review or otherwise changed substantially. If so, a new protocol might be warranted and the *MECIR conduct standards* should be followed rather than these *update standards*. It will be necessary to agree the approach to updating the review with the CRG. *MECIR conduct standards C1, C2* See explanatory note 1 See *Handbook* Section IV.3.1, Section 2.1 and Section 2.3	
U2	Reconsidering outcomes		**Mandatory**
Confirm or amend outcomes of interest.		Consider whether it is necessary to modify or add outcomes to ensure all user-important outcomes, including adverse effects, are addressed. Define which outcomes are primary outcomes and which are secondary outcomes. Keep the total number of outcomes as small as possible. Consider core outcome sets where available. Prioritize outcomes that will be assessed with the GRADE considerations. *MECIR conduct standards C3, C14-C18, C23* See *Handbook* Section 1.5, Section 2.1, Section 3.2.4.1, Section 5.4.1	
U3	Reconsidering eligibility criteria		**Mandatory**
Confirm or amend eligibility criteria.		Changes to the review objectives (e.g. additional consideration of rare adverse effects, economic issues or qualitative issues) may require modification of the eligibility criteria, possibly extending the scope to additional types of studies.	
U4	Planning the search		**Mandatory**
Decide appropriate search methods.		There are four considerations in planning search methods for updates: 1. Changes to eligibility criteria may require the search methods to be modified, or additional search strategies to be developed. 2. Additional sources might need to be searched (e.g. trials registers) if not searched for the last published version of the review. Consideration should also be given to the importance of	

searching data repositories and information available from regulatory agencies.

3. The update search (for unchanged eligibility criteria) will normally be limited to material added or indexed after the date of the previous search. The yield of the previous searches may be useful to decide whether the full search is repeated or whether only a subset of sources should be searched for the update.
4. The original database search strategies may need to be modified, for example by adding search terms, adding new database subject headings, or by removing unhelpful search terms that identified many irrelevant studies in the original search.

MECIR update standards U6 and UR3
See Handbook Section IV.3.4

U5	Reconsidering data collection and analysis methods	**Mandatory**
Consider whether methods for data collection and analysis (including a GRADE assessment) need to be amended in the light of recent methodological developments.	Decide if changes are required to make better use of existing data or to incorporate new data by referring to the current version of the *Handbook*. Recent developments in 'Risk of bias' assessment, statistical methods or narrative synthesis approaches may lead to more inclusive or more robust synthesis of the evidence. The GRADE assessment will require evaluation of risk of bias, inconsistency, imprecision, indirectness and publication bias. See *MECIR update standard U11* If a 'Summary of findings' table is not included in the current version, decide on the main outcomes and comparisons to be included and ensure that the relevant data have been (or will be) collected. See *MECIR update standard UR5* *MECIR update standards U9-U10*	

1.12 Conduct standards specific to updates

Standard	Rationale and elaboration
U6 Searching	**Mandatory**
Undertake a new search.	An updated review must include an update search for new (or additional) studies. For issues to consider in planning the search, see *MECIR update standard U4.* The most recent search must be no more than 12 months (preferably six months) from the intended publication date, and the results screened for potentially eligible studies. See *MECIR conduct standard C37:* Rerun or update searches for all relevant databases within 12 months before publication of the review or review update, and screen the results for potentially eligible studies. See *Handbook* Section IV.4 and Section 4.4.10
U7 Including new studies	**Mandatory**
Implement conduct standards for study selection and data collection for any newly identified studies (with updated criteria or methods as determined above).	*MECIR conduct standards C39-C51* See *Handbook* Section 4.4.6, Section 5.3.6, Section 4.6.3, Section 4.6.4, Section 4.6.2, Section 5.2, Section 5.2.1, Section 5.2.3, Section 5.3.1, Section 5.3.6, Section 5.4.1 and Section 5.5.2
U8 Reconsider previously identified studies	**Mandatory**
Consider studies previously identified as included, awaiting classification, ongoing and excluded, and collect additional information from them if necessary.	Ensure appropriate methodology is followed to select included studies and collect information from them. It will be necessary to establish whether any studies previously identified as ongoing have now been completed. Ensure that reasons for excluding studies are consistent with current eligibility criteria and methodological standards. A redesign of the data collection form may be required if review questions or objectives have been modified.
U9 Assessing risk of bias	**Mandatory**
Ensure all studies are consistently assessed for risk of bias.	The updated review must include a 'Risk of bias' assessment of all new and previously included studies. If the previous version used the original risk of bias tool to assess randomised trials, consider whether or not to switch to the Risk of Bias 2 tool (see *Handbook* Chapter 8), including how many randomised trials were assessed in

		the previous version, how many new studies are expected for inclusion in the update, how well it was implemented in the previous version and whether it is feasible to switch. *MECIR conduct standards C52-C60* See *Handbook* , Section 7.1.2, Section 7.3.2, Section 7.5, Section 7.6.1, Section 7.8.6 and Chapter 8
U10	Synthesizing results	**Mandatory**
Implement review synthesis methods (possibly revised for the update) according to conduct standards for synthesis, across all included studies.		*MECIR conduct standards C61-C73* See *Handbook* Section 6.2.1, Section 6.2.9, Section 10.5.3, Section 10.10.2, Section 10.10.3, Section 10.11.3.1, Section 10.11.5.2, Section 10.12.1, Section 10.14, Chapter 11, Section 13.4, Section 15.3.1
U11	Assessing certainty of the evidence	**Mandatory**
Assess certainty of evidence using GRADE considerations of risk of bias, inconsistency, imprecision, indirectness and publication bias.		This must be applied to the full body of evidence for the key outcomes included in the updated review. The most convenient way to present GRADE assessments is in a 'Summary of findings' table. *MECIR conduct standards C74-C75 and MECIR reporting standard R97* See *Handbook* Section 14.2.1

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URL: https://community.cochrane.org/mecir-manual/translations-mecir-standards

TRANSLATIONS OF THE MECIR STANDARDS

URL: https://community.cochrane.org/mecir-manual/translations-mecir-standards/key-points-and-introduction

Key points and introduction

- Cochrane encourages translations of the MECIR Manual in order to support the engagement of people with different native languages in Cochrane Review production.
- Full details on the conditions and process for translating the MECIR Manual can be found in the Cochrane MECIR translations guidance
- If you are interested in translating the MECIR Manual, contact support@cochrane.org.

The Cochrane Evidence Production and Methods Directorate, Knowledge Translation Department and authors of the MECIR Standards encourage translations of the MECIR Standards in order to support the engagement of people with different native languages in Cochrane Review production.

The MECIR Standards are the 'how-to' guides for conducting and updating Cochrane Intervention Reviews. The MECIR Standards for the conduct of new Cochrane Intervention Reviews are embedded throughout the *Cochrane Handbook for Systematic Reviews of Interventions*.

Translation proposals will be assessed and approved by the Cochrane Evidence Production and Methods Directorate and the Translations Coordinator. Please see the Cochrane MECIR translations guidance for full details on the conditions that must be met for MECIR translations, how to initiate a MECIR translation and keeping it up-to-date.

If you are interested in translating the MECIR Manual, or have any questions about the process or other general queries, please contact support@cochrane.org.

1 Japanese translation

MECIR is available in Japanese.

The current, August 2023 version, is not yet available

Previous versions:

- February 2022 version, is available here
- February 2021 Japanese translation here
- March 2020 Japanese translation here

2 Russian translation

MECIR is available in Russian.

The current August 2023 version is yet available here.

Previous versions:

- February 2022 Russian translation here
- February 2021 Russian translation here

3 Spanish translation

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