

Research on methodological aspects of evidence syntheses

Current insights

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**Decision-makers need
timely and reliable evidence syntheses**



Systematic Reviews

Considered most reliable
& valid support for
decision-making

Can take up to 24 months
to complete Ganann et al. 2010

Rapid Reviews

Produced in shorter
time frame

Often simplify certain
methodological aspects

Impact of shortcuts?

Current research projects on rapid review methods at Cochrane Austria



1. Impact of abbreviated searches on conclusions
2. Impact of including only English publications on conclusions
3. Accuracy of single abstract screening

Project 1: Abbreviated searches

Do bodies of evidence that are based on **abbreviated literature searches** lead to different conclusions compared with those based on **comprehensive, systematic literature searches?**

14 search approaches assessed

MEDLINE	EMBASE	Central	MEDLINE + EMBASE	MEDLINE + Central	Central + EMBASE	MEDLINE + Central + EMBASE
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+ Search of reference lists of relevant publications

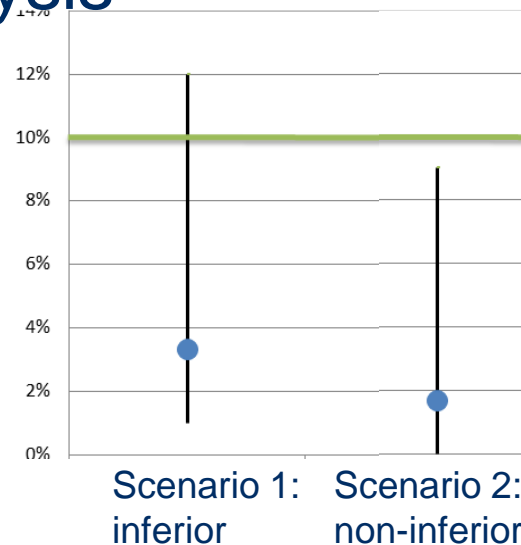


Sample:
60 randomly selected Cochrane reviews
(90% Power with significance level of 0.025)

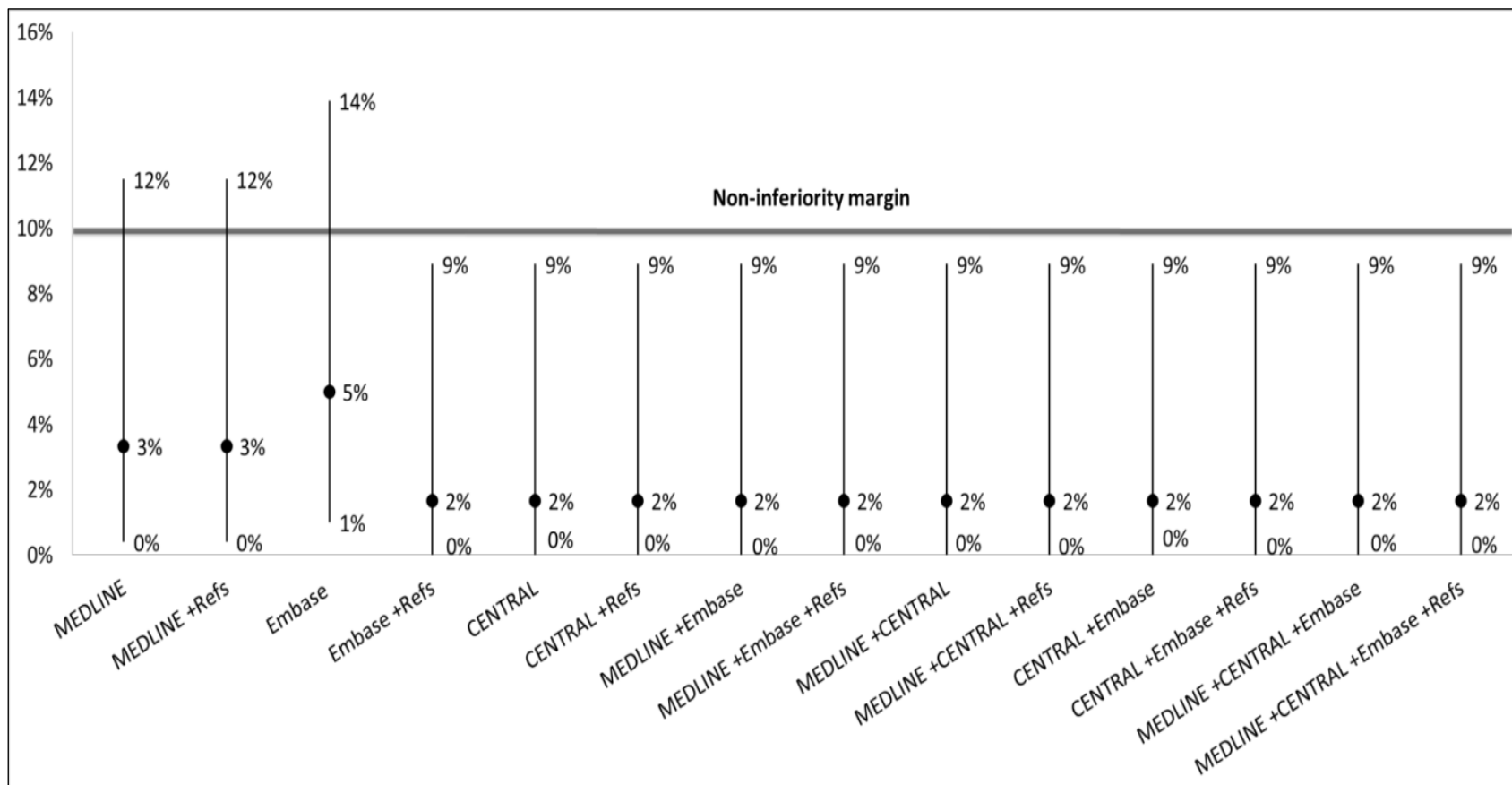
Methods

- Assess which studies are found by abbreviated searches
- Recalculate meta-analyses
- Survey authors of Cochrane reviews
- Non-inferiority analysis

Non-inferiority margin
(Wagner et al. 2017)



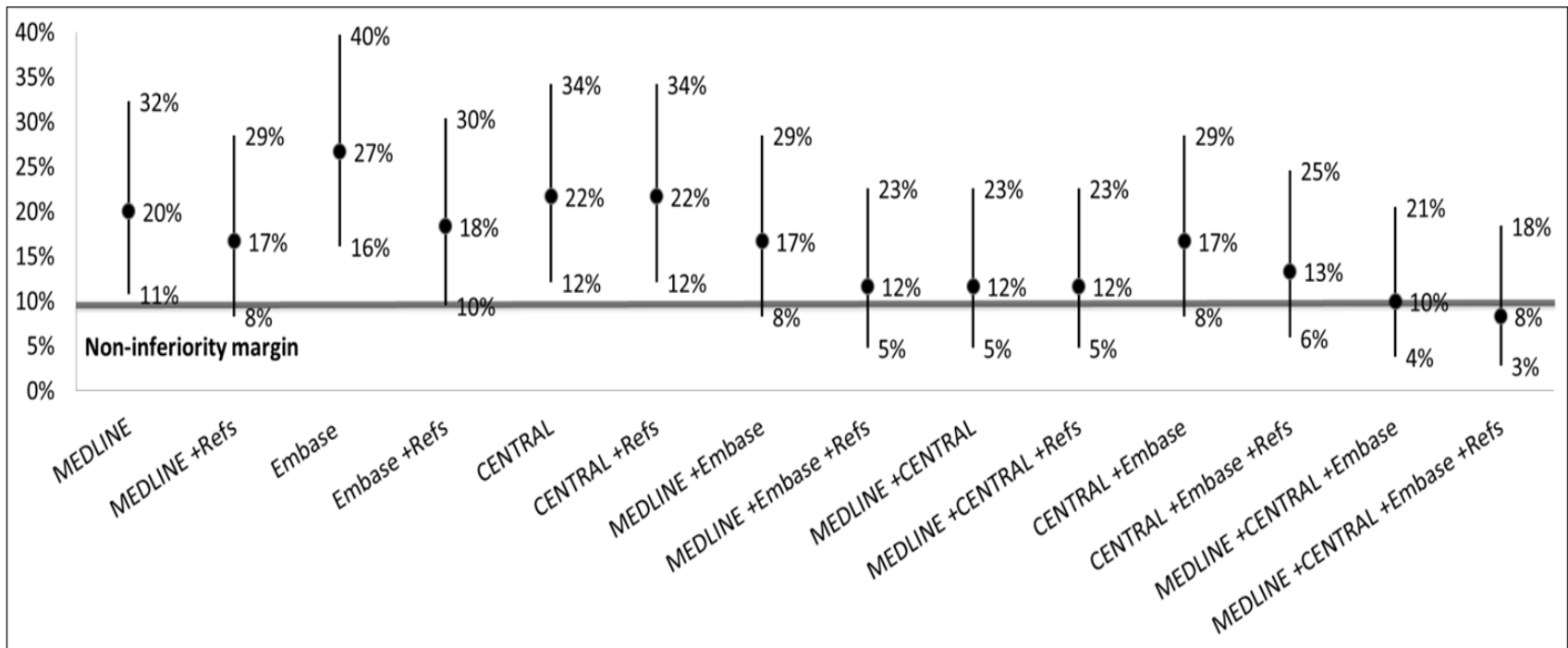
Proportion of conclusions that changed direction (95% CI) for each search (n= 60)



Nussbaumer-Streit et al. (2018) Abbreviated literature searches were viable alternatives to comprehensive searches: a meta-epidemiological study. *Journal of Clinical Epidemiology*, 102, 1-11. DOI: <https://doi.org/10.1016/j.jclinepi.2018.05.022>.

Proportion of conclusions with any change* (95% CI) for each search (n= 60)

* Change of certainty, direction, or conclusion not possible anymore



Nussbaumer-Streit et al. (2018) Abbreviated literature searches were viable alternatives to comprehensive searches: a meta-epidemiological study. Journal of Clinical Epidemiology, 102, 1-11. DOI: <https://doi.org/10.1016/j.jclinepi.2018.05.022>.

Conclusion

- Decisions requiring the **greatest possible certainty** should be based on **comprehensive searches**.
- Rapid reviews should at least use
 - **two electronic databases**
 - or combine a **single database** with a review of **reference lists**

! Results can not be generalized to other topics, such as diagnostic tests or public health.

Project 2: English-only publications

Does limiting the inclusion criteria to English-language publications affect the overall conclusions in a set of Cochrane reviews consisting of diverse interventional medical topics?

Methods

Dataset: 59 randomly selected Cochrane intervention reviews with no language restrictions

1. Studies excluded if:

- Only publication referring to it was non-English
- Main publication (in case of multiple publications of the same study) was non-English

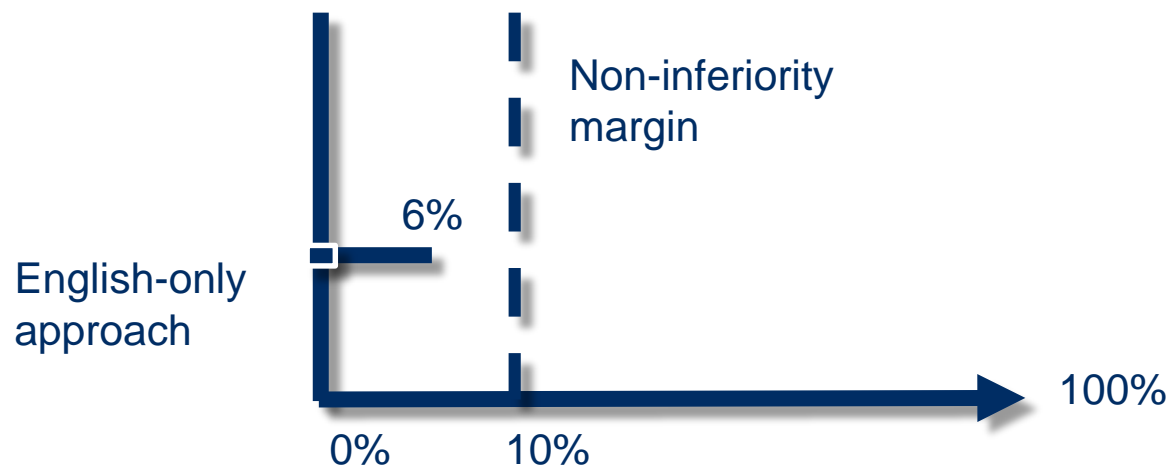
2. We re-calculated meta-analyses

3. If the direction of one effect estimate or the statistical significance changed => survey of authors

4. Non-inferiority analysis (margin 10%)

Excluding non-English publications

- Led to excluding 2% of included studies (31/1281)
- Was relevant to 27% (16/59) of the Cochrane reviews
- Did not markedly alter the size or direction of effect estimates or statistical significance





Conclusion

Exclusion of non-English publications seems to be a **viable option** for **rapid reviews** on medical intervention topics.

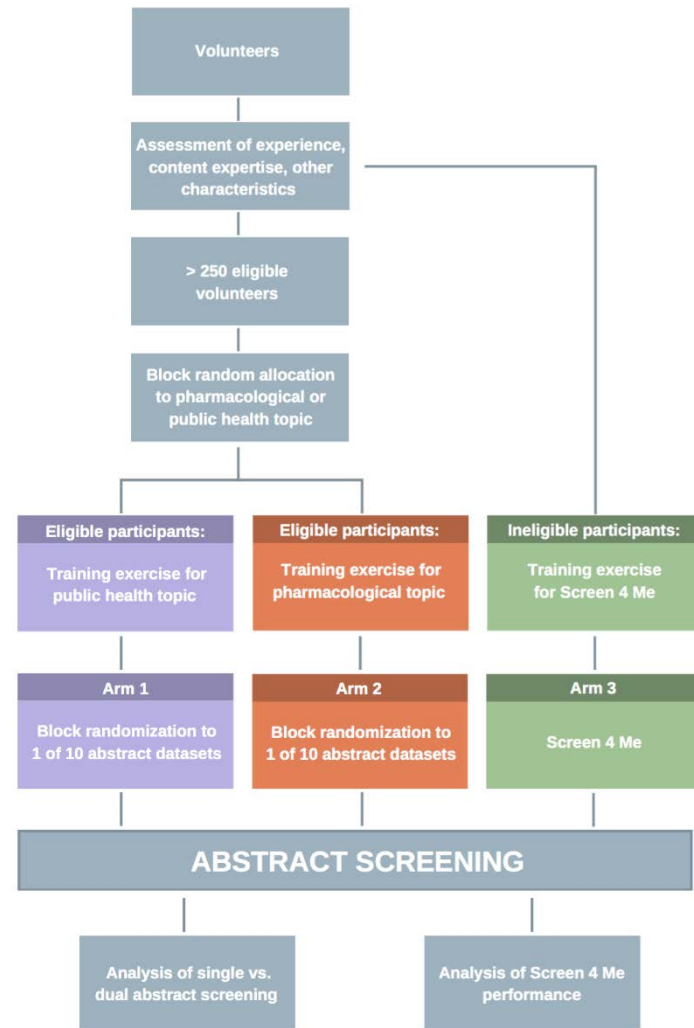
! Results can not be generalized to other topics, such as diagnostic tests or public health.

Project 3: Single vs. dual abstract screening

How accurately does single-reviewer screening correctly classify abstracts as relevant or irrelevant for literature reviews?

Methods

- Crowd-based, online, parallel-group RCT
- Included studies of 2 published systematic reviews as reference standards
- Cochrane Crowd platform for abstract screening
- 1:1 random assignment of participants to 100 abstracts of a pharmacological or public health topic



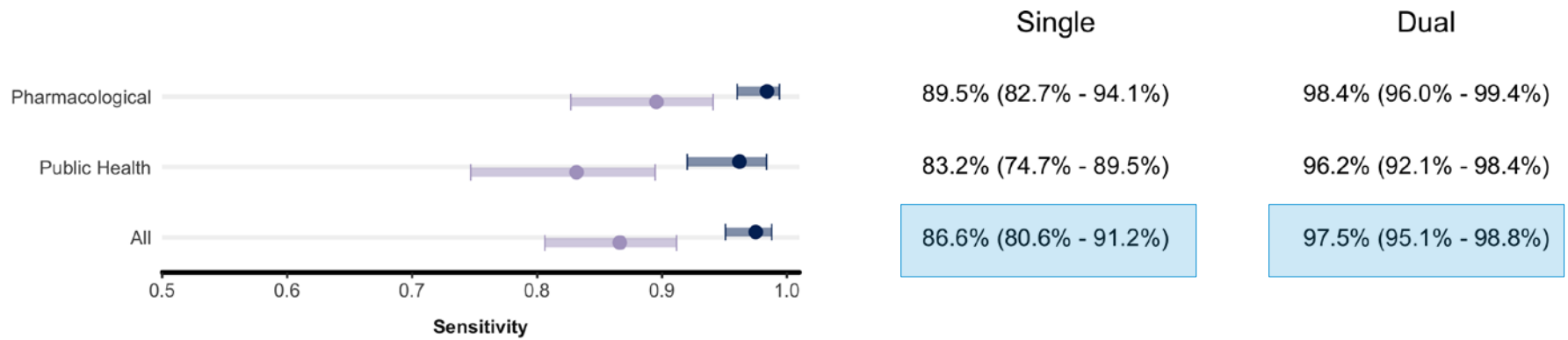
Results

- Of 491 volunteers from 60 countries, 280 met eligibility criteria
- 24,942 screening decisions
- Each abstract was screened 12 times, on average

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Results



Results

Regression analyses detected no statistically significant impact of native speaker status, domain knowledge, or experience with literature reviews on the correctness of decisions.



Conclusion

- **Single-reviewer screening may not fulfill the high expectations** that decisionmakers have in the methodological standards **of systematic reviews.**
- **Single screening could be a viable approach for rapid reviews.**

Take home message

Abbreviating searches, limiting rapid reviews to English-publications, and single screening of abstracts can be viable methodological shortcuts for rapid reviews on medical interventions.

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