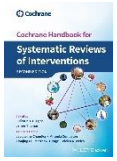
Cochrane Training

Reporting the review

Trusted evidence.
Informed decisions.
Better health.

Session outline

- Where we are starting from
- ‘Summary of findings’ table
- Writing up your results
- Discussing the evidence and drawing conclusions
- Abstract and Plain language summary



See Chapter III and 14 of the Handbook

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Where we are starting from

- Write your review based on your protocol
- Review questions & primary objectives – starting point
- Background – only minor revisions needed
- Methods:
  - Update information (e.g. dates of searches)
  - Adjust verb tense (future to past)
  - Describe and justify any changes to the planned methods
- Results (incl. GRADE assessment) prepared

Write up: bringing all the elements together!

‘Summary of findings’ table

- Useful table to organise, summarise and present important findings from your review
- Presents the results of the most important comparison(s) of your review and the evidence for important outcomes
- Created in GRADEpro and imported in RevMan
- Can be the basis for writing up the review

‘Summary of findings’ table

Context

Outcomes (up to 7)

What happened to people without treatment

What happened to people taking the treatment

No. of participants and studies

Certainty of evidence (GRADE)

Outcomes description

Relative effect

Comments

Footnotes – typically explanations of GRADE assessment

Treatment Z for Syndrome Y						
Patient or population: People with Syndrome Y **Settings:** Outpatient **Intervention:** Treatment Z **Comparison:** Placebo						
Outcomes	**Anticipated absolute effects* (95% CI)**		**Relative effect (95% CI)**	**No of Participants (studies)**	**Quality of the evidence (GRADE)**	**Comments**
	Risk with placebo[1]	**Risk with treatment Z**				
Nausea Self-reported Follow-up: 4-6 months	**Moderate risk** **40 per 1000**	**86 per 1000** (48 to 155)	**RR 2.17** (1.20 to 3.91)	825 (5 RCTs)	⊕⊕⊕⊖ **moderate** [2]	
Final pain score assessed with: Visual analogue scale (VAS) from 1 to 10; higher scores indicate more pain follow up: range 4 weeks to 16 weeks	The mean final pain score was **5.7**	MD **1.51** lower (2.06 lower to 0.96 lower)		723 (4 RCTs)	⊕⊕⊕⊖ **moderate** [2]	
Days without symptoms assessed with: Self-reported follow up: range 1 months to 6 months	Studies reported a range of 0 to 8 fewer days with treatment Z			258 (3 RCTs)	⊕⊕⊖⊖ **low** [2,3]	

Footnotes

[1] Median risk in control groups across the trials included in the analysis.

[2] Downgraded one level due to risk of bias. Participants and health care providers not blinded.

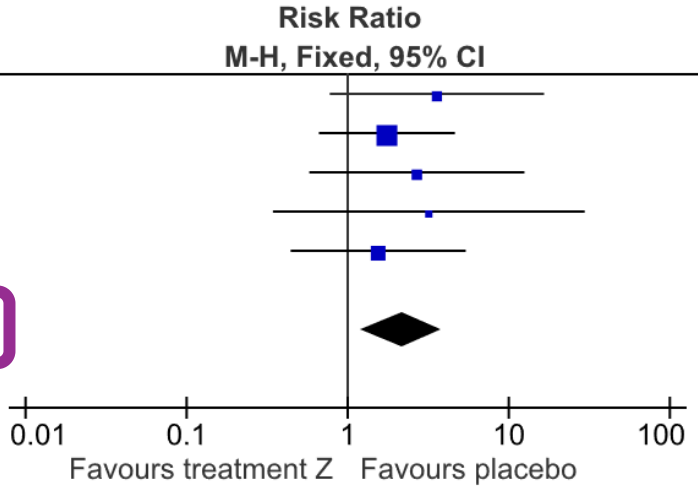
[3] Downgraded one level for imprecision due to few participants and wide range of results.

From meta-analysis to a 'Summary of findings' table: dichotomous outcomes

Study or Subgroup	Treatment Z Events	Total	Placebo Events	Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Study 1	8	76	2	68	13.5%	3.58 [0.79, 16.27]
Study 3	12	169	6	148	40.8%	1.75 [0.67, 4.55]
Study 4	7	56	2	43	14.4%	2.69 [0.59, 12.29]
Study 6	3	32	1	34	6.2%	3.19 [0.35, 29.09]
Study 7	6	98	4	101	25.1%	1.55 [0.45, 5.31]
Total (95% CI)		**431**		**394**	**100.0%**	**2.17 [1.20, 3.91]**
Total events	36		15			

Heterogeneity: Chi² = 1.09, df = 4 (P = 0.90); I² = 0%

Test for overall effect: Z = 2.58 (P = 0.010)

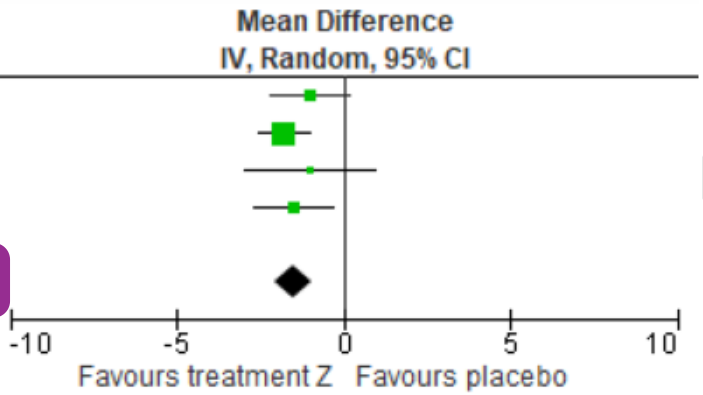


What does the RR of 2.17 (95%CI 1.20 to 3.91) mean?

From meta-analysis to a 'Summary of findings' table: continuous outcomes

Study or Subgroup	Treatment Z Mean	SD	Total	Placebo Mean	SD	Total	Weight	Mean Difference IV, Random, 95% CI
Study 1	3.8	3.9	73	4.8	3.5	72	20.5%	-1.00 [-2.21, 0.21]
Study 3	4.2	3.3	167	6	3.6	147	50.7%	-1.80 [-2.57, -1.03]
Study 6	4	4	32	5	4	33	7.9%	-1.00 [-2.95, 0.95]
Study 7	5.5	4.4	98	7	4.2	101	20.9%	-1.50 [-2.70, -0.30]
Total (95% CI)			**370**			**353**	**100.0%**	**-1.51 [-2.06, -0.96]**

Heterogeneity: Tau² = 0.00; Chi² = 1.50, df = 3 (P = 0.68); I² = 0%
Test for overall effect: Z = 5.42 (P < 0.00001)



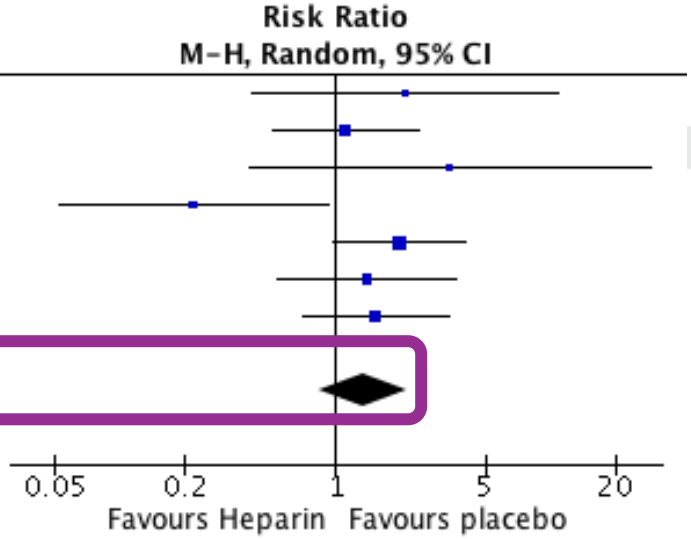
What does the Mean Difference of -1.51 (95%CI -2.06 to -0.96) mean?

A side note: Caution when interpreting effects!

Study or Subgroup	Heparin Events	Heparin Total	Placebo Events	Placebo Total	Weight	Risk Ratio M-H, Random, 95% CI
Arnold1998	4	35	2	37	7.0%	2.11 [0.41, 10.83]
Dane 2004	10	40	9	40	20.5%	1.11 [0.51, 2.44]
Every 1998	3	15	1	17	4.3%	3.40 [0.39, 29.31]
Mamar 2000	2	31	10	34	8.7%	0.22 [0.05, 0.92]
Norse 1998	19	68	9	64	22.7%	1.99 [0.97, 4.07]
Patter 2003	8	35	6	37	16.1%	1.41 [0.54, 3.65]
Reese1999	12	53	9	61	20.6%	1.53 [0.70, 3.35]
Total (95% CI)		**277**		**290**	**100.0%**	**1.34 [0.84, 2.14]**
Total events	58		46			

Heterogeneity: Tau² = 0.12; Chi² = 8.66, df = 6 (P = 0.19); I² = 31%

Test for overall effect: Z = 1.24 (P = 0.22)



- 'Not statistically significant' does not equal 'no effect'
- Don't describe results as 'not statistically significant' or 'non-significant'

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From meta-analysis to a 'Summary of findings' table

Outcomes	effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)
Nausea Self-reported Follow-up: 4-6 months	**RR 2.17** (1.20 to 3.91)	825 (5 RCTs)	⊕⊕⊕⊖ **moderate** [2]
Final pain score assessed with: Visual analogue scale (VAS) from 1 to 10; higher scores indicate more pain follow up: range 4 weeks to 16 weeks	MD -1.51 [-2.06, -0.96]	723 (4 RCTs)	⊕⊕⊕⊖ **moderate** [2]

From meta-analysis to a ‘Summary of findings’ table

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)
	Risk with placebo[1]	Risk with treatment Z	
Nausea Self-reported Follow-up: 4-6 months	Moderate risk		RR 2.17 (1.20 to 3.91)
	40 per 1000	86 per 1000 (48 to 155)	

From meta-analysis to a 'Summary of findings' table

Treatment Z for Syndrome Y

Patient or population: People with Syndrome Y
Settings: Outpatient
Intervention: Treatment Z
Comparison: Placebo

Outcomes	Anticipated absolute effects* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Risk with placebo[1]	Risk with treatment Z				
Nausea Self-reported Follow-up: 4-6 months	**Moderate risk** **40 per 1000**	**86 per 1000** (48 to 155)	**RR 2.17** (1.20 to 3.91)	825 (5 RCTs)	⊕⊕⊕⊖ **moderate**[2]	
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Days without symptoms assessed with: Self-reported follow up: range 1 months to 6 months	Studies reported a range of 0 to 8 fewer days with treatment Z			258 (3 RCTs)	⊕⊕⊖⊖ **low**[2,3]	

Footnotes

[1] Median risk in control groups across the trials included in the analysis.

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Assumed risk in the control group

- Important for presenting absolute effects in your 'Summary of findings' table
- This value can come from:
  - the mean of the risks in the control groups of the included studies,
  - the control group risk of a representative study, or
  - a well-conducted, non-randomized study

Outcomes with no meta-analysiss

- Meta analysis may not be possible (e.g. due to limited evidence, incomplete reporting, different effect measures used, or bias in the evidence)
- Follow the guidance for how to synthesise and summarise this evidence
- Cochrane Handbook Chapter 12)
  - reporting synthesis without meta-analysis (online learning module)
- Plan in advance (protocol)
- Use specific format for narrative outcomes in GRADEPro

Days without symptoms assessed with: Self-reported follow up: range 1 months to 6 months	Studies reported a range of 0 to 8 fewer days with treatment Z		258 (3 RCTs)	⊕⊕⊖⊖ **low** [2,3]	

‘Summary of findings’ table

Treatment Z for Syndrome Y					
Patient or population: People with Syndrome Y **Settings:** Outpatient **Intervention:** Treatment Z **Comparison:** Placebo					
Outcomes	**Anticipated absolute effects* (95% CI)**		**Relative effect (95% CI)**	**No of Participants (studies)**	**Quality of the evidence (GRADE)**	**Comments**
	Risk with placebo[1]	**Risk with treatment Z**				
Nausea Self-reported Follow-up: 4-6 months	**Moderate risk** **40 per 1000**	**86 per 1000** (48 to 155)	**RR 2.17** (1.20 to 3.91)	825 (5 RCTs)	⊕⊕⊕⊖ **moderate** [2]	
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Writing up the results

- Summary of your search: PRISMA flow diagram
- Risk of bias assessment (summarized by outcome)
- Findings:
  - Present the effects of interventions
  - Avoid any inferences or interpretation
  - Report all the planned outcomes
  - Organize the outcomes in a consistent order
  - Check the consistency of data

Writing up a discussion

1. Summary of main results
2. Overall completeness and applicability of evidence
3. Certainty of the evidence
4. Potential biases in the review process
   - your thresholds for inclusion of studies
   - your search (e.g. non-English studies)
   - contacting authors
5. Agreements and disagreements with other studies or reviews

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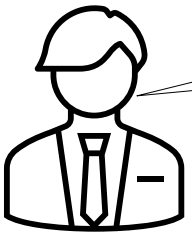
Summary of main results:

Avoid positive spin and framing of conclusions

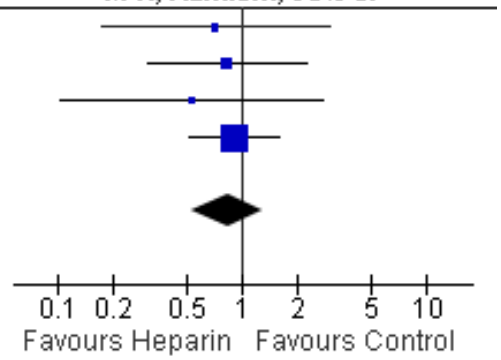


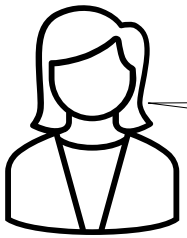
The effect of heparin on the risk of cancer is promising!

Study or Subgroup	Heparin Events	Heparin Total	Control Events	Control Total	Weight	Risk Ratio M-H, Random, 95% CI
Abdelkefi 2004	3	38	4	36	9.8%	0.71 [0.17, 2.96]
Karthaus 2006	10	294	6	145	20.2%	0.82 [0.30, 2.22]
Monreal 1996	2	40	4	43	7.4%	0.54 [0.10, 2.78]
Verso 2005	20	155	22	155	62.7%	0.91 [0.52, 1.60]
Total (95% CI)		**527**		**379**	**100.0%**	**0.84 [0.54, 1.31]**
Total events	35		36			

Heterogeneity: Tau² = 0.00; Chi² = 0.41, df = 3 (P = 0.94); I² = 0%

Test for overall effect: Z = 0.78 (P = 0.43)





There is no difference in side effects.

Summary of main results:

Use narrative statements to write conclusions

Table 15.6.b Suggested narrative statements for phrasing conclusions

Size of the effect estimate	Suggested statements for conclusions *(replace X with intervention, choose 'reduce' or 'increase' depending on the direction of the effect, replace 'outcome' with name of outcome, include 'when compared with Y' when needed)*
High certainty of the evidence	
Large effect	X results in a large reduction/increase in outcome
Moderate effect	X reduces/increases outcome X results in a reduction/increase in outcome
Small important effect	X reduces/increases outcome slightly X results in a slight reduction/increase in outcome
Trivial, small unimportant effect or no effect	X results in little to no difference in outcome X does not reduce/increase outcome
Moderate certainty of the evidence	

- Statements are based on size of the effect and e certainty of the evidence

- For example, if the effect is a small but important increase, based on high certainty evidence, you could write: **"the intervention increases the outcome slightly"**

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Narrative statem

Pooling of data from 14 studies (11,808 partic
for a small reduction in hip fracture risk (risk
fewer people (95% CI, from 20 fewer to 0) p

Inclusion of all eligible randomised and quasi-randomised studies continues to indicate that providing hip protectors probably slightly reduces the incidence of hip fractures in older people in institutional settings, with little or no effect on falls, other fractures (not including pelvic) and adverse events, such as skin irritation. However, the current best evidence, which is of low qual-

idence
t is 11

	Important benefit or harm	Less important benefit or harm	No important benefit or harm or null effect
High certainty	increases/ decreases	increase/ decrease slightly	little to no difference
Moderate certainty	probably decreases	probably increases/ decreases slightly	probably little to no difference
Low certainty	may increase/ decrease	may increase/ decrease slightly	may make little to no difference
Very low certainty	We are uncertain whether intervention increases/ decreases outcome		

Beware: ‘No evidence of effect’ vs ‘evidence of no effect’

Results

Combining the results of six randomised clinical trials including 710 patients with chronic alcoholic liver disease demonstrated no significant effects of propylthiouracil versus placebo on all-cause mortality (relative risks (RR) 0.93, 95% confidence interval (CI) 0.66 to 1.30), liver-related mortality (RR 0.80, 95% CI 0.50 to 1.29), complications of the liver disease, or liver histology.

Authors' conclusions

..... there is **no evidence** for an effect on mortality....

DO NOT USE

“no evidence of effect”

versus “evidence of no effect”

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Instead, use GRADE levels of evidence

‘There is low certainty evidence for little to no difference in mortality when people with chronic alcoholic liver disease take propylthiouracil.’

Implications for practice

Avoid recommendations!

Instead, describe the pros and cons that patients and clinicians may need to consider when making a decision

✗ "Based on the results from this review and our clinical experience, patients at our hospital are recommended a diet high in fruit and vegetables, increased intake of fiber, low in saturated fat, and calorie restriction for patient over their ideal body weight."

✓ "Patients with a high preference for a potential survival prolongation, limited aversion to potential bleeding, and who do not consider heparin (both UFH or LMWH) therapy a burden may opt to use heparin, while those with aversion to bleeding may not."

Implications for research

- Be explicit and specific about the need for future research – you know the state of the literature now

- Use your GRADE assessments to inform what research should be done

High risk of bias	**Identify how studies could be improved**
Indirectness or inconsistency concerns	**Indicate what populations, interventions, comparisons, or outcomes should be included or changed**
Serious imprecision	**More studies or studies with larger sample sizes**
Publication bias detected	**Call for transparent and greater publication of results**

Implications for future research: example

This review shows that the question of the effects on symptomless DVT of wearing versus not wearing compression stockings in the types of people studied in these trials should now be regarded as answered. Further research may be justified to investigate the relative effects of different strengths of stockings or of stockings compared to other preventative strategies. Further randomized trials to address the remaining uncertainty about the effects of wearing versus not wearing compression stockings on outcomes such as death, pulmonary embolus and symptomatic DVT would need to be large. As suggested by Adi and colleagues, a study to assess whether airline travel itself is associated with an increased risk of symptomatic DVT might require several tens of thousands of participants (Adi 2004) and so, a randomized trial to investigate a preventative strategy would probably require a sample size at least this large.

Clarke MJ, Hopewell S, Juszczak E, Eisinga A, Kjeldstrøm M. Compression stockings for preventing deep vein thrombosis in airline passengers. Cochrane Database of Systematic Reviews 2006, Issue 2. Art. No.: CD004002.

Summary versions of your review

- ‘Summary of findings’ tables
- Abstract
- Plain language summary (PLS)

- Consistency is essential!
- Avoid any information or conclusions not supported by the review
- Avoid focusing on only some of the findings (e.g. significant results)
- Comment on certainty of evidence

Writing an abstract

- Format similar to abstracts of scientific papers
- Organised under subheadings:
  - Background
  - Objectives
  - Search methods
  - Selection criteria
  - Data collection
  - Main results
  - Authors' conclusions
- Make sure it's brief, accurate, complete and stands on its own
- Avoid jargon and abbreviations

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Plain language summary

- For anyone who needs brief, accurate and easy-to-read information to help them make a healthcare decision (e.g. consumers)
- Uses simpler, conversational-style language
- Does not report statistical data such as summary statistics and confidence intervals
- Does not follow the set structure of Cochrane abstracts
- Shorter (850 words maximum, compared to 1000 words for abstracts)
- Does not feature on PubMed

Writing a Plain language summary

- PLS includes:
  1. **Title**
  2. Section that summarizes the **key messages** of the review
  3. Brief explanation of the review **topic and aims**
  4. Brief description of the review **methods**
  5. Summary of the **review results** (whatever the strength of the evidence for them)
  6. Summary of the **limitations** of the evidence
  7. Statement about **how current** the evidence is

Guidance and a template for writing PLSs available at:
https://training.cochrane.org/pls-template-and-guide-user-testing

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Take home message

- ‘Summary of findings’ table – basis for writing up your review
- Consider your results alongside the certainty of evidence
- Follow the predefined structure for Results and Discussion sections
- Avoid recommendations when discussing implications for practice
- Be specific when discussing implications for research
- Ensure consistency of all the summary versions with the review findings

References

- Page MJ, Cumpston M, Chandler J, Lasserson T. Chapter III: Reporting the review.
- Schünemann HJ, Higgins JPT, Vist GE, Glasziou P, Akl EA, Skoetz N, Guyatt GH. Chapter 14: Completing 'Summary of findings' tables and grading the certainty of the evidence.
- In: Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). Cochrane Handbook for Systematic Reviews of Interventions version 6.2 (updated February 2021). Cochrane, 2021. Available from www.training.cochrane.org/handbook.

Acknowledgements

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Sambunjak D, Cumpston M, Watts C, Lasserson T, Livingstone N, Santesso N. Module 8: Reporting the review. In: Cochrane Interactive Learning: Conducting an intervention review. Cochrane, 2017. Available from https://training.cochrane.org/interactivelearning/module-8-reporting-review.