



Cochrane Methods
Equity

Introduction to the new Cochrane Equity Content Strategy

February 19, 2019
Vivian Welch
Jennifer Petkovic

Trusted evidence.
Informed decisions.
Better health.

Objectives

- Understand health equity
- Learn about the new Cochrane equity content strategy
- Understand key ways to include equity in your reviews





1. Can you tell us where you're located?



- a) North America
- b) South America
- c) Europe
- d) Africa
- e) Asia or Australia



2. Have you ever considered equity in a review?

- a) YES
- b) NO

EQUITY



Campbell and Cochrane Equity Methods Group



Trusted evidence.
Informed decisions.
Better health.



[About us](#) [Projects](#) [Resources for Authors](#) [Contact us](#) [Our publications](#)

[Methods Groups](#)

[Past Issues of Newsletter](#)

<http://equity.cochrane.org>

The Campbell and Cochrane Equity Methods Group is registered with Cochrane and the Campbell Collaboration.

Cochrane's purpose is to ensure that relevant, accurate, and current research about health interventions is available worldwide. To meet this objective, Cochrane contributors conduct and distribute systematic reviews. Similarly, the Campbell Collaboration produces reviews with an aim to "help people make well-informed decisions about the effects Group is registered with the Campbell and Cochrane. Both Collaborations are international, not-for-profit, and independent organizations.

Our aim is to encourage authors of Campbell and Cochrane reviews to include explicit descriptions of the effect of the interventions not only on the whole population but to describe their effect upon the disadvantaged and/or their ability to reduce socioeconomic inequalities in health and to promote their use to the wider community. Ultimately, this will help build the evidence base on such interventions and increase our capacity to act on the health gap between rich and poor.

Attention review authors!

Are you interested in incorporating equity in your review? The **Equity Checklist** is a tool that can help!

Writing up your equity-focused review? Use the **PRISMA-E 2012 Reporting Guidelines**

Download a printable version of the PRISMA-E checklist reporting guidelines for equity

Latest tweets from @CochraneEquity

Tweets by @CochraneEquity

Cochrane Equity Retweeted



Our February newsletter is out. See all the news from Campbell and our partners: training opportunities, events and more - mailchi.mp/campbellcollab... #AWGS2019

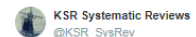
Feb 12, 2019



Job opportunity in Ottawa - Research Assistant II, systematic review experience preferred. bruyere.org/en/hr/?job=7089

Feb 8, 2019

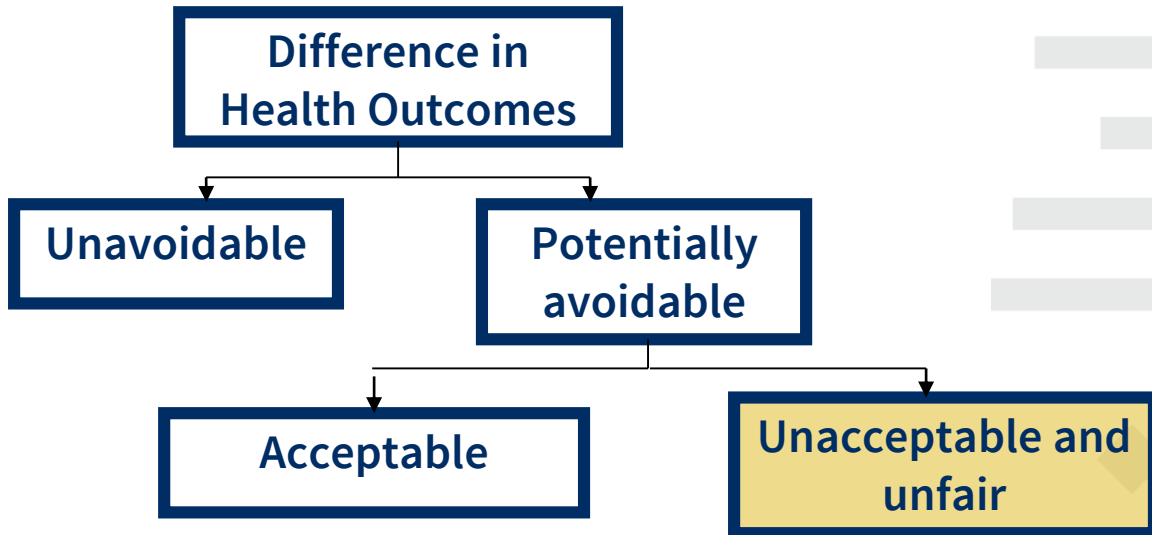
Cochrane Equity Retweeted

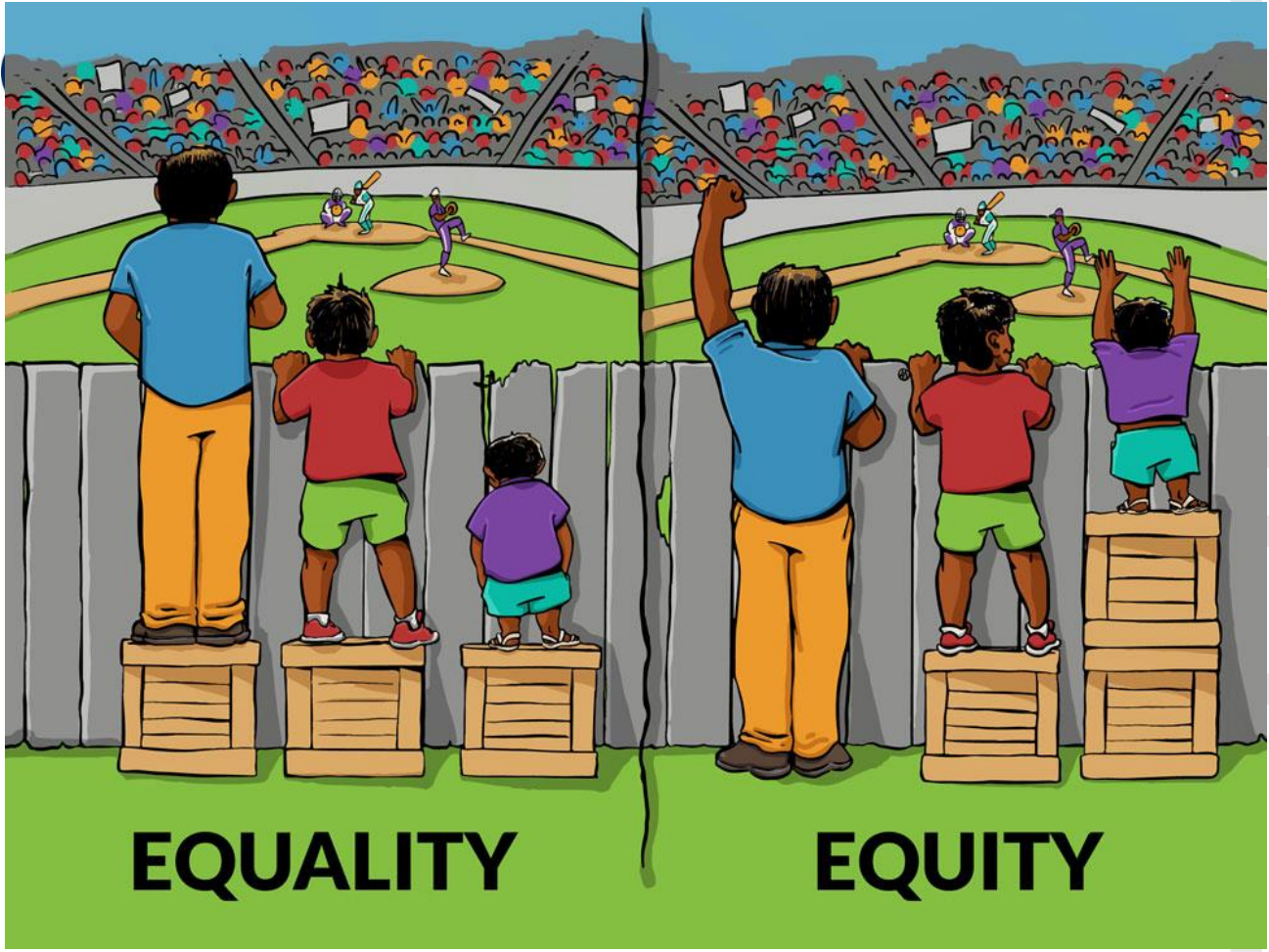


Campbell and Cochrane Equity Methods Group

- Apply an 'Equity Lens' to Campbell, Cochrane and other systematic reviews
- Encourages authors of Campbell and Cochrane systematic reviews to consider equity
- Increase consideration of equity in systematic reviews

What is health inequity?





EQUALITY

EQUITY

PROGRESS



Place of residence



Race/ethnicity/culture/language



Occupation



Gender/sex



Religion



Education



Socioeconomic Status



Social Capital



PROGRESS-Plus



- 1. Personal characteristics** associated with discrimination and/or exclusion (e.g. age, disability);
- 2. Features of relationships** (e.g. smoking parents, excluded from school);
- 3. Time-dependant relationships** (e.g. leaving the hospital, respite care, other instances where a person may be temporarily at a disadvantage).

Why is equity important?

- Cochrane reviews aim to improve decision-making globally
 - Authors need to consider the applicability of their results to other settings
- Average results may hide differences in effects between population groups
 - Planning to extract and analyze data that can provide information about these differences can help us understand who really benefits from an intervention

Why equity?

“Equity in health matters. It matters in life-and-death ways.”

– Margaret Chan, former Director-General of WHO



GRADE --- considering equity in guideline development

Prompts to assess whether a guideline question is sensitive to health equity:

- Are there groups or settings that might be disadvantaged in relation to the problem/intervention of interest?
- Are there reasons for anticipating differences in the relative effectiveness of the intervention for disadvantaged groups or settings?
- Are there different baseline conditions across groups or settings that affect the absolute impact of the intervention or the importance of the problem for disadvantaged groups or settings?
- Are there important considerations that people implementing the intervention should consider to ensure that inequities are reduced, if possible, and that they are not increased?

GRADE --- considering equity in guideline development

GRADE equity guidelines 1: considering health equity in GRADE guideline development: ***introduction and rationale***

GRADE equity guidelines 2: considering health equity in GRADE guideline development: ***equity extension of the guideline development checklist***

GRADE equity guidelines 3: considering health equity in GRADE guideline development: ***rating the certainty of synthesized evidence***

GRADE equity guidelines 4: considering health equity in GRADE guideline development: ***evidence to decision process***

New Cochrane Handbook Chapter

Chapter 16: Equity and specific populations

Vivian Welch, Jennifer Petkovic, Janet Jull, Lisa Hartling, Terry Klassen, Elizabeth Kristjansson, Jordi Pardo Pardo, Mark Petticrew, David J Stott, Denise Thomson, Erin Ueffing, Katrina Williams, Camilla Young, Peter Tugwell

This draft version of this chapter is made available for personal use of Cochrane members only, and is not for general distribution. All content remains the copyright of Cochrane.

Key Points

- Health equity is the absence of avoidable and unfair differences in health.
- Health inequity may be experienced across characteristics defined by PROGRESS-Plus (Place of residence, Race/ethnicity/culture/language, Occupation, Gender/sex, Religion, Education, Socio-economic status, Social capital, and other characteristics ('Plus') such as sexual orientation, age, and disability).
- Cochrane Reviews can inform decision making by considering the distribution of effects in the population and implications for equity.
- To address health equity in Cochrane Reviews, review authors may: consider health equity at the question formulation stage, possibly using a logic model; decide what methods will be used to identify and appraise evidence related to equity and specific populations; consider implications for 'Summary of findings' tables (e.g. separate tables for disadvantaged populations, separate rows for differences in risk of events); and interpret findings related to health equity in the discussion.



Key Equity Considerations – for all Cochrane reviews



Key Equity Considerations

1. Different baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity





Key Equity Considerations

1. Different baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity





1. Different baseline risk for the outcomes of interest

- a higher baseline risk of a condition may lead to a greater absolute effect of an intervention
- a higher baseline risk of adverse events may also lead to a greater absolute harm.

Example: Vitamin A supplementation for preventing morbidity and mortality in children from six months to five years of age

- Vitamin A deficiency is common in low- and middle-income countries which can impair body functions

In 2011, WHO recommended vitamin A supplementation in areas with vitamin A deficiency based on a Cochrane review which showed a relative risk for all-cause mortality of 0.76 (95% CI: 0.69, 0.83):

The baseline risk of all-cause mortality was estimated at 0/1,000 in low-risk populations and 90/1,000 in high-risk populations (with vitamin A deficiency), based on control group event rates in the trials. Thus, the absolute effects in terms of numbers of deaths prevented with vitamin A compared to the control group were 0/1,000 for low-risk and 22/1,000 for high-risk populations.

Key Equity Considerations

1. Different baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity





2. Differential effectiveness of the intervention

- E.g. literacy issues
- E.g. adherence
- additional analysis methods include subgroup analyses and meta-regression. We recommend defining *a priori* any subgroup analyses to avoid spurious effects.

Example: Carotid endarterectomy for symptomatic carotid stenosis

- Assessed the risk by sex (females vs. males)

“For participants with 50% to 99% stenosis, the estimates of the number of people needed to undergo surgery to prevent one ipsilateral stroke in five years from the pooled data were nine for men versus 36 for women”

“in people with only 50% to 69% stenosis, there was no evidence of benefit in women”



Example: Food supplementation for improving the physical and psychosocial health of socio-economically disadvantaged children aged three months to five years

Subgroups:

“children who were more undernourished at baseline were more likely to gain more skinfold thickness than controls...”

“supplementary feeding was more effective for children living in areas of moderate socio-economic status than for children living in slums.”

Credibility of subgroups

1. Is the subgroup variable a characteristic measured at baseline or after randomisation?
2. Is the effect suggested by comparisons within rather than between studies?
3. Was the hypothesis specified a priori?
4. Was the direction of the subgroup effect specified a priori
5. Was the subgroup effect one of a small number of hypothesised effects tested?
6. Does the interaction test suggest a low likelihood that chance explains the apparent subgroup effect?
7. Is the significant subgroup effect independent?
8. Is the size of the subgroup effect large?
9. Is the interaction consistent across studies?
10. Is the interaction consistent across closely related outcomes within the study?
11. Is there indirect evidence that supports the hypothesised interaction (biological rationale)?

Key Equity Considerations

1. Different baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity



3. Outcomes may have different importance for specific populations

- E.g. return to work
- E.g. satisfaction
- Consider the relative importance of outcomes based on input from stakeholders, including those representing disadvantaged populations (including all those involved in or potentially affected by the intervention).

Example: Workplace interventions to prevent work disability in workers on sick leave

“Employment rates of people with disability are 40% below the overall level.

It is furthermore important to involve key stakeholders in the [return to work] RTW process. It has been shown that RTW interventions involving workplace adaptations and stakeholder involvement are more effective on RTW than workplace-linked interventions such as exercise.”

Key Equity Considerations

1. Different baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity



4. Discuss implications for equity

- Applicability to other settings
 - E.g. context in which the studies were conducted
- The burden of the intervention for the patient and the provider
 - E.g. inconvenience, cost, time



Example: Directly observed therapy for treating tuberculosis

DOTS: *“An ‘observer’ acceptable to the patient and the health system observes the patient taking every dose of their medication, and records this for the health system to monitor.”*

- 6 months treatment required
 - Review assessed self-administered vs DOT, DOT at home vs. a health facility, DOT administered by a family member vs. a community health worker
- In this review DOT *“did not provide a solution to poor adherence in TB treatment”*
- Since this is a resource-intensive treatment, policy makers might want to consider other strategies



Example: Lay health workers in primary and community health care for maternal and child health and the management of infectious diseases

- *“A substantial proportion of the included studies (33%, n = 27) were conducted in LMICs or were directed at low income groups in high income countries... it may be concluded that these interventions could potentially be extrapolated to other settings, be effective in reaching low income groups, and contribute to reducing health inequalities. However, the degree to which the findings from studies in high income settings can be generalised to low income settings remains unclear and requires further empirical research. This is a particularly important consideration in the context of the two subgroups (LHWs providing support to mothers of sick children; and LHWs to prevent child abuse), where all of the studies were conducted in the United States”*

Key Equity Considerations

1. Greater baseline risk for the outcomes of interest
2. Differential effectiveness of the intervention
3. Outcomes may have different importance for specific populations
4. Discuss implications for equity

**Poll 3: Which of these are relevant to your work?
(multiple options can be chosen)**





What about equity-focused reviews?



Consider:

- Are there populations experiencing health inequities from the condition or problem in which you're interested?
- Are there populations who might experience disadvantage related to the intervention you're assessing?
- Are there social gradients in the burden of disease? Are there likely to be different absolute or relative effects of the intervention for different populations?

What is an ‘equity-focused’ systematic review?

Those designed to:

- Assess effects of interventions targeted at disadvantaged or at-risk populations (e.g., school feeding for disadvantaged children).
 - These may not include equity outcomes but by targeting disadvantaged populations will reduce inequities.
- Assess effects of interventions aimed at reducing social gradients across populations or among subgroups of the population (e.g., interventions to reduce the social gradient in smoking, obesity prevention in children, interventions delivered by lay health workers)

Considering Equity in Systematic reviews

1. Define the conceptual approach to health equity
2. Community effectiveness when considering the implementation of the intervention
3. Develop a theory-based approach
4. Frame the health equity question
5. Include relevant study designs to address health equity
6. Identify information sources for health equity questions
7. Define search terms for health equity questions
8. Develop data extraction tools for health equity
9. Modified Summary of Findings Tables
10. Assess indirectness

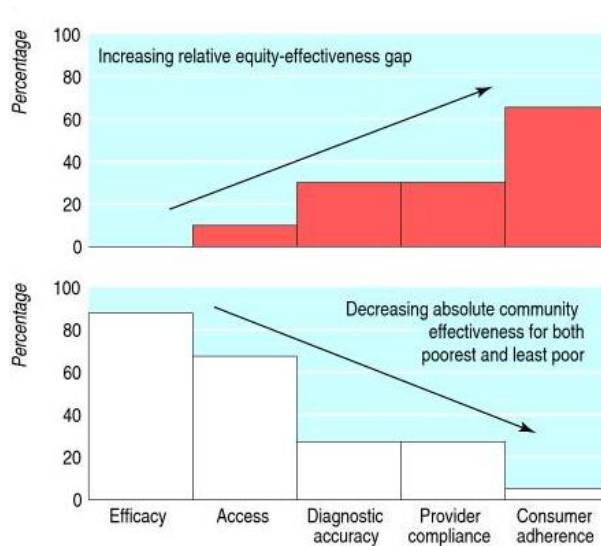
1. Define the conceptual approach to health equity

Example: Food supplementation for improving the physical and psychosocial health of socio-economically disadvantaged children aged three months to five years

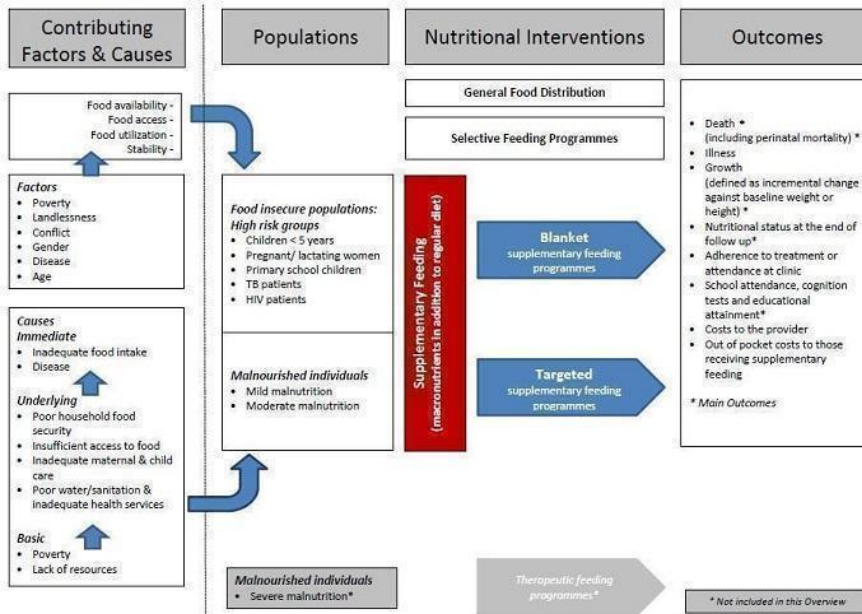
“Definition of socio-economic disadvantage for low- and middle-income countries and high-income countries:

Low- and middle-income countries: from rural areas, villages, provinces, or deprived urban areas OR parents have low average education (primary school or below) OR parents were manual workers (including small farmers) or unemployed OR families were materially disadvantaged or of low socio-economic status (SES) OR children were described as low-income, malnourished, undernourished, underweight or stunted.

2. Community effectiveness when considering the implementation of the intervention



3. Develop a theory-based approach



Community-based supplementary feeding for food insecure, vulnerable and malnourished populations – an overview of systematic reviews
Visser et al, 2018

6. Identify information sources for health equity questions

E.g. list of databases, web sites and journals relevant to
Low- and Middle-Income Countries

<https://epoc.cochrane.org/lmic-databases>



8. Develop data extraction tools for health equity

Example: Food supplementation for improving the physical and psychosocial health of socio-economically disadvantaged children aged three months to five years

“We extracted data on study design, description of the intervention (including process), details about participants (including number in each group, age, and socio-economic status), length of intervention and follow-up, definition of disadvantage, all primary and secondary outcomes, the process factors listed below, costs and resource use, risk of bias, and statistical analysis.”

8. Modified Summary of Findings table

Example: Probiotics for the prevention of *Clostridium difficile*-associated diarrhea in adults and children

Probiotics compared to control for preventing *C. difficile* associated diarrhea

Outcomes	Anticipated absolute effects (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with control	Risk with probiotics				
Incidence CDAD: complete case	Study population		RR 0.40 (0.30 to 0.52)	8672 (31 RCTs)	⊕⊕⊕⊖ MODERATE ¹	Note: Risk with control calculated by pooled event rate across control groups.
	40 per 1,000	16 per 1,000 (12 to 21)				
CDAD (baseline risk 0-2%)	Study population		RR 0.77 (0.45 to 1.32)	5845 (15 RCTs)	⊕⊕⊕⊖ MODERATE ²	
	11 per 1,000	8 per 1,000 (5 to 14)				
CDAD (baseline risk 3-5%)	Study population		RR 0.53 (0.16 to 1.77)	373 (3 RCTs)	⊕⊕⊕⊖ LOW ^{3,4}	
	38 per 1,000	20 per 1,000 (6 to 67)				
CDAD (baseline risk >5%)	Study population		RR 0.30 (0.21 to 0.42)	2454 (13 RCTs)	⊕⊕⊕⊖ MODERATE ⁵	Goldenberg et al. 2017
	116 per 1,000	35 per 1,000 (24 to 49)				

8. Modified Summary of Findings table

Example: Probiotics for the prevention of *Clostridium difficile*-associated diarrhea in adults and children

Probiotics compared to control for preventing *C. difficile* associated diarrhea

Outcomes	Anticipated absolute effects (95% CI)		Relative effect (95% CI)	No of participants (studies)	Certainty of the evidence (GRADE)	Comments
	Risk with control	Risk with probiotics				
Incidence CDAD: complete case	Study population		RR 0.40 (0.30 to 0.52)	8672 (31 RCTs)	⊕⊕⊕⊖ MODERATE ¹	Note: Risk with control calculated by pooled event rate across control groups.
	40 per 1,000	16 per 1,000 (12 to 21)				
CDAD (baseline risk 0-2%)	Study population		RR 0.77 (0.45 to 1.32)	5845 (15 RCTs)	⊕⊕⊕⊖ MODERATE ²	
	1 per 1,000	8 per 1,000 (5 to 14)				
CDAD (baseline risk 3-5%)	Study population		RR 0.53 (0.16 to 1.77)	373 (3 RCTs)	⊕⊕⊕⊖ LOW ^{3,4}	
	38 per 1,000	20 per 1,000 (6 to 67)				
CDAD (baseline risk >5%)	Study population		RR 0.30 (0.21 to 0.42)	2454 (13 RCTs)	⊕⊕⊕⊖ MODERATE ⁵	Goldenberg et al. 2017
	116 per 1,000	35 per 1,000 (24 to 49)				

Resources

PRISMA-Equity

GRADE-Equity

Equity Checklist

Sex/gender Planning Tool

COMING SOON: Cochrane Training Modules! (Fall 2019)

<https://methods.cochrane.org/equity/our-publications>





Resources for Authors

<https://methods.cochrane.org/equity/resources-review-authors>

- Resources for planning, conducting, reporting your review

Key Messages

- Think about equity early in the review process
- Plan how you will address four considerations
 - 1. baseline risk
 - 2. differential effectiveness
 - 3. outcomes
 - 4. implications for equity



Poll 4. Will you consider equity in your next review?

- a) YES
- b) NO
- c) Maybe



References

- Evans, T., Brown, H. Road traffic crashes: operationalizing equity in the context of health sector reform. *Inj Control Saf Promot.* 2003;10:11–12.
- O'Neill J, Tabish H, Welch V, Petticrew M, Pottie K, Clarke M, Evans T, et al. Applying an equity lens to interventions: using PROGRESS ensures consideration of socially stratifying factors to illuminate inequities in health. *Journal of Clinical Epidemiology.* 2014, 67 (1), pg. 56-64. doi:10.1016/j.jclinepi.2013.08.005
- Oxman A.D., Schunemann H.J., Fretheim A. Improving the use of research evidence in guideline development: 12. Incorporating considerations of equity. *Health Res Policy Syst.* 2006;4:24
- Sun et al. Is a subgroup effect believable? Updating criteria to evaluate the credibility of subgroup analyses. *BMJ.* 2010;340:c117. doi: 10.1136/bmj.c117.
- Welch, V., Petticrew, M., Tugwell, P., Moher, D., O'Neill, J., Waters, E. et al, PRISMA-Equity 2012 Extension: reporting guidelines for systematic reviews with a focus on health equity. *PLoS Med.* 2012;9:e1001333.
- Welch VA, et al. GRADE equity guidelines 1: health equity in guideline development-introduction and rationale. *J Clin Epidemiol.* 2017 Apr 12
- Whitehead, M. The concepts and principles of equity and health. *Int J Health Serv.* 1992;22:429–445.