

Defining a review question and applying the framework for synthesis

SMG webinar series session 1: May 19, 2005

Sue Brennan

Trusted evidence. Informed decisions. Better health. Acknowledgements. Co-authors on Cochrane handbook chapters (led by Jo McKenzie) Co-authors of InSynQ tool (co-leads Jo McKenzie and Miranda Cumpston)

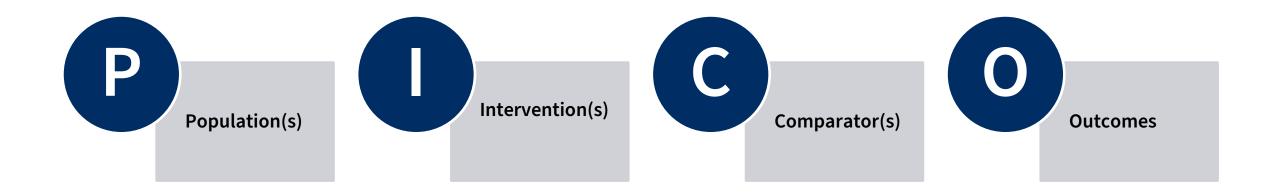
Outline

- 1. Planning PICO (population, interventions, comparisons, outcomes) eligibility criteria for a systematic review
- 2. What guidance and tools are available for planning your questions and preparing for synthesis?
 - Cochrane handbook for systematic reviews of interventions chapters 2, 3 and 9
 - InSynQ (Intervention Synthesis Questions) checklist and guide
- 3. Why plan your PICO questions and criteria for each synthesis?
- 4. Using InSynQ to plan and report your synthesis questions
- 5. Using the framework for synthesis to summarise studies and prepare for synthesis
- 6. Questions



1. Planning PICO eligibility criteria for a systematic review (recap)





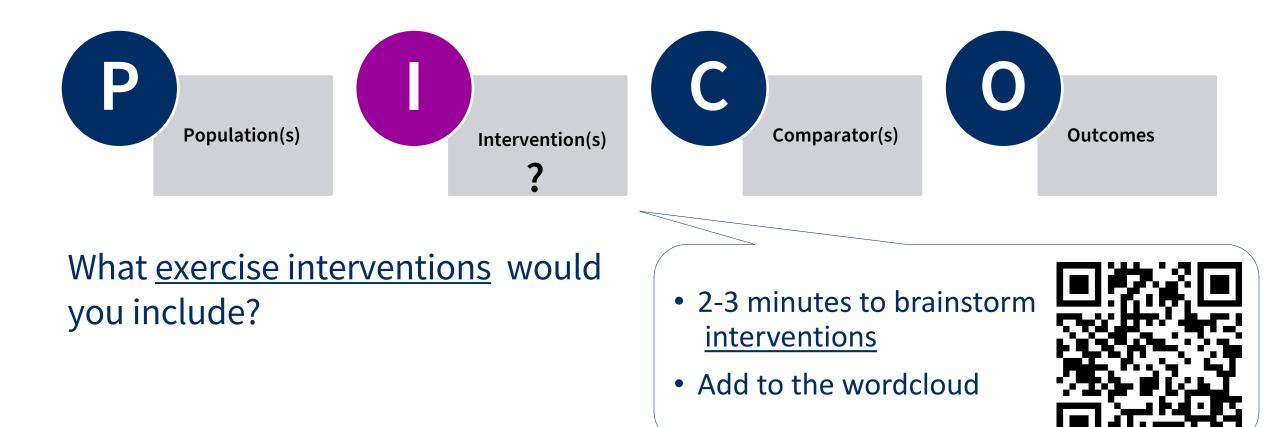
Our example: Exercise interventions for people with hip, knee or hip and knee osteoarthritis



Express this review topic as a question that includes all PICO components:

For people with osteoarthritis of the hip or knee, what is the effect of exercise <u>compared to no exercise</u> or <u>a different type of exercise</u> on <u>pain</u>, <u>physical</u> and <u>psychosocial functioning</u>, and <u>quality of life</u>?

Our example: Exercise interventions for people with hip, knee or hip and knee osteoarthritis



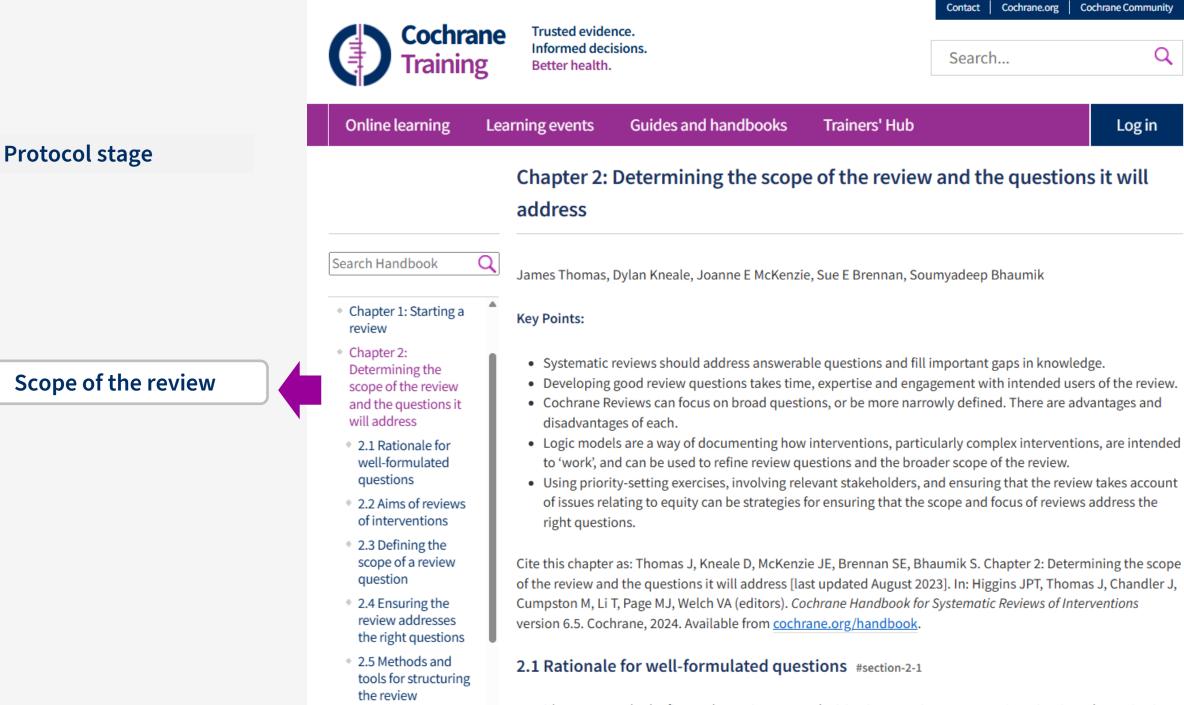
Our example: Exercise interventions for people with hip, knee or hip and knee osteoarthritis



What outcomes would be important to decision makers?

2. Guidance and tools





Q

Scope of the review



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Protocol stage

Chapter 3: Defining the criteria for including studies and how they will be grouped for the synthesis

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- Chapter 2: Determining the scope of the review and the questions it will address
- Chapter 3: Defining the criteria for including studies and how they will be grouped for the synthesis
- 3.1 Introduction
- 3.2 Articulating the review and comparison PICO
- 3.3 Determining which study designs to include
- 3.4 Eligibility based on publication status and language

Joanne E McKenzie, Sue E Brennan, Rebecca E Ryan, Hilary J Thomson, Renea V Johnston, James Thomas

Key Points:

Q

Learning events

- The scope of a review is defined by the types of population (participants), types of interventions (and comparisons), and the types of outcomes that are of interest. The acronym PICO (population, interventions, comparators and outcomes) helps to serve as a reminder of these.
- The population, intervention and comparison components of the question, with the additional specification
 of types of study that will be included, form the basis of the pre-specified eligibility criteria for the review. It
 is rare to use outcomes as eligibility criteria: studies should be included irrespective of whether they report
 outcome data, but may legitimately be excluded if they do not measure outcomes of interest, or if they
 explicitly aim to prevent a particular outcome.
- Cochrane Reviews should include all outcomes that are likely to be meaningful and not include trivial outcomes. Critical and important outcomes should be limited in number and include adverse as well as beneficial outcomes.
- Review authors should plan at the protocol stage how the different populations, interventions, outcomes and study designs within the scope of the review will be grouped for analysis.

Cite this chapter as: McKenzie JE, Brennan SE, Ryan RE, Thomson HJ, Johnston RV, Thomas J. Chapter 3: Defining the criteria for including studies and how they will be grouped for the synthesis. In: Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.4 (updated August 2023). Cochrane, 2023. Available from

PICO eligibility criteria for including studies in the review

Interventions – what to consider

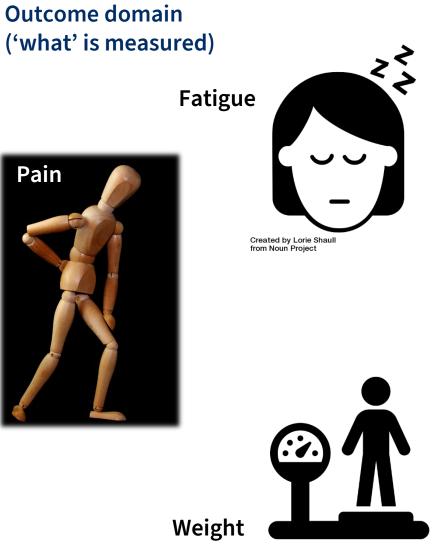
Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide

BMJ 2014 ; 348 doi: https://doi.org/10.1136/bmj.g1687 (Published 07 March 2014) Cite this as: *BMJ* 2014;348:g1687

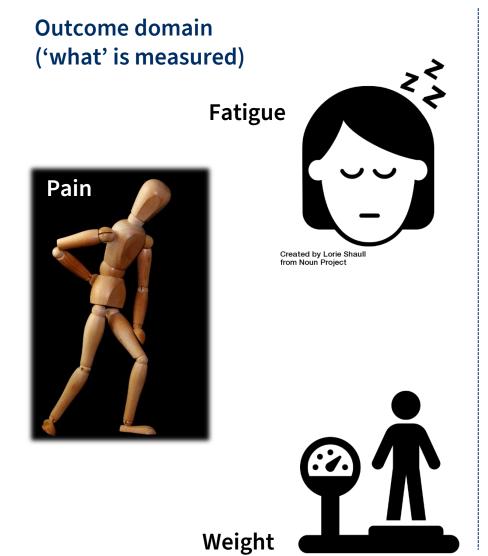
Your criteria might cover some (or all) of the following

- 'why' the rationale, theory or goal of the intervention
- 'what' materials and procedures are used (components, formulation, equipment)
- 'who provides' the intervention (personnel, qualifications, training)
- 'how' modes of delivery (face to face, group or individual)
- 'where' setting, location, context
- 'when and how much' (timing, frequency, duration, dose, intensity)
- alone or in combination with other intervention(s)





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CONSIDER. Core outcome sets if available (or outcome taxonomies, outcomes in other reviews)

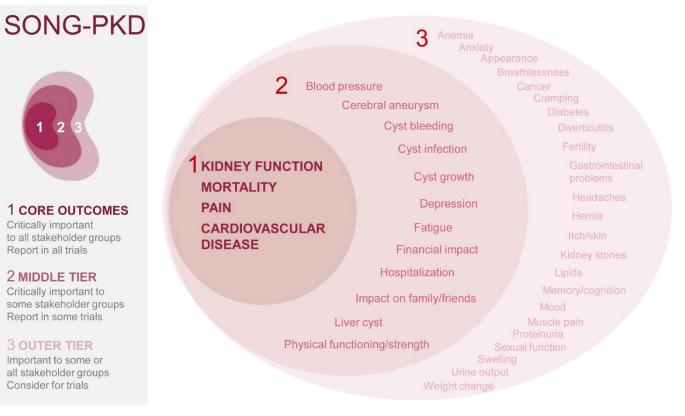
Critically important

Report in all trials

2 MIDDLE TIER

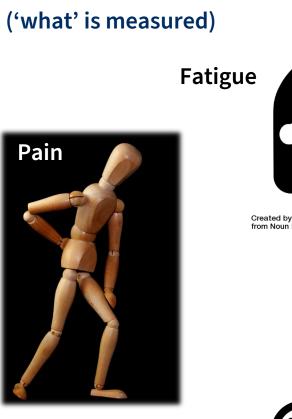
3 OUTER TIER

Consider for trials



Database of core outcomes. <u>https://www.comet-initiative.org/</u>

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Weight

Outcome domain





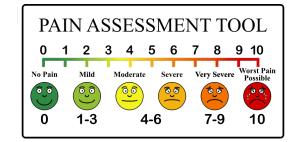
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Measurement method ('how' it is measured)

During the past 7 days:

I feel fatigued

- Not at all
- A little bit
- Somewhat
- Quite a bit
- Very much

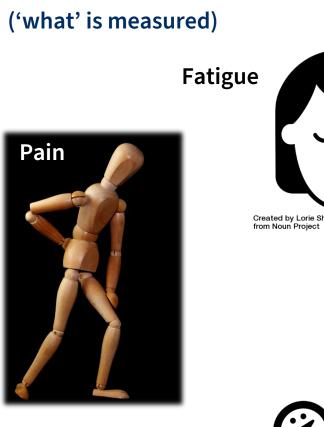


Numeric rating scale

PROMIS[®] item

bank v1.0 – fatigue

kilograms lost, achieved 10% weight loss, % weight loss, body mass index, waist to hip ratio ... Time points ('when' it is measured)



Outcome domain

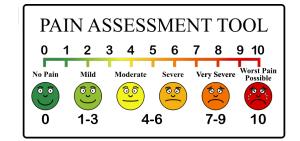


Created by Lorie Shaull from Noun Project



Measurement method ('how' the outcome is measured)

- During the past 7 days:
- I feel fatigued
- Not at all 0
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Numeric rating scale

PROMIS[®] item

bank v1.0 fatigue

kilograms lost, achieved 10% weight loss, % weight loss, body mass index, waist to hip ratio ...

Time frame ('when' the outcome is measured)





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Protocol stage

Plan your PICO for each synthesis

- Intervention groups
- Comparisons
- Outcome groups

Plan your methods for synthesis and structured summary

Chapter 3: Defining the criteria for including studies and how they will be grouped for the synthesis

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Search Handbook 🛛 🔍

Chapter 2: Determining the scope of the review and the questions it

will address Chapter 3: Defining the criteria for

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www.insynq.info

InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

The InSynQ checklist and guide was developed to help review authors plan and report their synthesis questions in systematic reviews of interventions.

InSynQ provides a practical tool for implementing guidance in the <u>Cochrane Handbook of Systematic Reviews for</u> <u>Interventions</u> (in particular <u>Chapter 3</u> and <u>Chapter 9</u>). It is intended for use when developing a protocol and reporting the results of a review.

InSynQ was designed for use by:

- Authors of systematic reviews
- · Commissioners of reviews who want to ensure that the planned synthesis aligns with their requirements
- Editors and peer reviewers
- · Methodologists working with author teams to plan their synthesis

The most recent versions of InSynQ and the 2-page reporting template are here

Download the full InSynQ checklist and guide

Download the 2 page checklist for reporting





Online learning

• 9.2 A general

synthesis

steps of a

synthesis

9.5 Types of

synthesis

9.6 Chapter

information 9.7 References

framework for

• 9.3 Preliminary

9.4 Checking data before synthesis

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Chapter 9: Summarizing study characteristics and preparing for synthesis

Trainers' Hub

Review stage Chapter 9: Summarise study Summarizing study characteristics and characteristics preparing for synthesis & • 9.1 Introduction **Prepare for synthesis**

Q Search Handbook

Joanne E McKenzie, Sue E Brennan, Rebecca E Ryan, Hilary J Thomson, Renea V Johnston

Guides and handbooks

Key Points:

Learning events

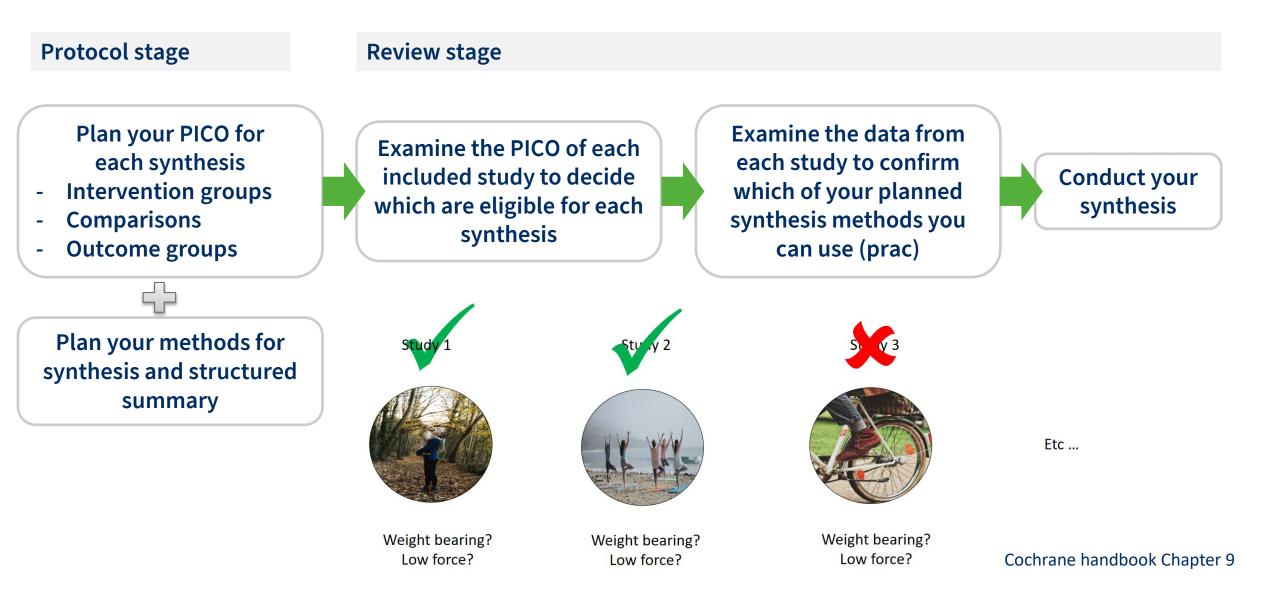
- Synthesis is a process of bringing together data from a set of included studies with the aim of drawing conclusions about a body of evidence. This will include synthesis of study characteristics and, potentially, statistical synthesis of study findings.
- A general framework for synthesis can be used to guide the process of planning the comparisons, preparing for synthesis, undertaking the synthesis, and interpreting and describing the results.
- · Tabulation of study characteristics aids the examination and comparison of PICO elements across studies, facilitates synthesis of these characteristics and grouping of studies for statistical synthesis.
- · Tabulation of extracted data from studies allows assessment of the number of studies contributing to a particular meta-analysis, and helps determine what other statistical synthesis methods might be used if meta-analysis is not possible.

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9.1 Introduction #section-9-1

 Chapter 10: Analysing data and

A framework for synthesis





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3. Why plan your PICO questions and criteria for each synthesis?



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OUR EXAMPLE. Included studies examine <u>many</u> types of exercise

- Supervised fitness walking
- Strength training
- Aquarobics exercise programs .
- Tai Chi
- Yoga
- Patient education and supervised exercise

They may be

- delivered in different ways (to groups or individual, unsupervised or supervised by physiotherapists ...)
 - of different durations and intensity

ALL forms of exercise for hip / knee osteoarthritis.

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OUR EXAMPLE. The outcomes are diverse!

- pain intensity overall, on walking ...
- specific aspects of physical function (e.g. gait, walking speed ...) and psychosocial function
- different measures (e.g. 7 different scales for function, 5 for depression and anxiety)
- at different times (2 weeks, 6 weeks, 3 months)

<u>All outcomes eligible for you synthesis.</u> How would you handle them?

Combine all measures of a domain? Report each in a separate analysis? Longest follow-up? Or specified timeframes?





Diverse interventions

What are your synthesis questions?







One synthesis question: What is the effect of (any) **exercise** on ...

Review: Exercise interventions and patient beliefs for people with hip, knee or hip and knee osteoarthritis: a mixed methods review Comparison: 1 Exercise versus control Outcome: 2 Physical function

Study or subgroup	Exercise N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV.Fixed.95% Cl	Weight	Std. Mean Difference IV,Fixed,95% Cl
Aglamis 2008	16	5.4 (1.64)	9	6.4 (1.2)		1.5 %	-0.64[-1.48,0.20]
Baker 2001	22	462 (385.3)	22	664 (436.7)		2.9 %	-0.48 [-1.08, 0.12]
Bennell 2014	46	27.5 (12.9)	50	26.4 (11.3)		6.5 %	0.09 [-0.31, 0.49]
Bennell 2016	68	15.4 (9.2)	66	23.5 (10.6)		8.4%	-0.81 [-1.17, -0.46]
Cheung 2014	18	22 (9.76)	18	26.2 (9.76)		2.4%	-0.42 [-1.08, 0.24]
Fernandes 2010	42	15.1 (13.7)	36	22.8 (18.6)		5.1%	-0.47 [-0.92, -0.02]
Focht 2005	76	17.8 (12.2)	39	22.6 (12.3)		6.9 %	-0.39 [-0.78, 0.00]
Focht 2005	80	21 (12.8)	39	22.6 (12.3)		7.1%	-0.13 [-0.51, 0.26]
Fransen 2007	56	36.6 (20.9)	41	49.9 (19)	_ 	6.1%	-0.66 [-1.07, -0.24]
French 2013	43	29.31 (17.06)	22	36.09 (16.41)	+	3.9 %	-0.40 [-0.92, 0.12]
French 2013	45	28.08 (15.48)	21	36.09 (16.41)		3.8 %	-0.50 [-1.03, 0.02]
Hurley 2007	121	22.36 (14.76)	56	23.4 (15.15)		10.4 %	-0.07 [-0.39, 0.25]
Hurley 2007	108	21.17 (14.1)	57	23.4 (15.15)		10.1%	-0.15 [-0.47, 0.17]
Mikesky 2006	82	26.4 (12.5)	80	25.1 (12.6)		10.9 %	0.10 [-0.21, 0.41]
Schlenk 2011	108	16.83 (12.54)	72	19.5 (11.52)		11.6 %	-0.22 [-0.52, 0.08]
Wang 2009	20	20.58 (14)	20	22.97 (14)		2.7 %	-0.17 [-0.79, 0.45]
Total (95% Cl) Heterogeneity: Chi ² = 2 Test for overall effect: Z Test for subgroup differ	= 5.20 (P <	0.00001)	648 45%		•	100.0 %	-0.27 [-0.37, -0.17]
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<u>all included studies</u> that report the outcome of interest <u>are eligible</u> for this meta-analysis irrespective of the type of exercise







Specific questions

- 1. What is the effect of **walking** on ...
- 2. What is the effect of **strength training** on ...
- 3. What is the effect of **Tai Chi** on ...

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Our 2001 1 0.112.81 0 1.012.91 0.012.90 0.012.91 0.012.91 0.012.90 0.012.91 0.012.90 0.012.90 0.012.91 0.012.91 0.012.91 0.012.90 0.012.90 0.012.91		Bocalini 2009	15	-0.09 (1.9)	10	-1.58 (0.36)				_	11.7 %		1.4	9 [0.50, 2.48]					
Olders 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		Bravo 1996	61	0.27 (19.6)	63	-0.53 (20.8)	•			+	1.7%		0.80	[-6.31, 7.91]					
Other 200 0 0.216 0 <		Chan 2004	54	-0.94 (3.85)	49	-1.8 (3.52)		_	-	-	10.4 %		0.86	[-0.56, 2.28]					
Basks 100* 4		Chilibedk 2002	10	-0.1 (2.85)	12	-0.4 (2.77)					7.6 %		0.30	[-2.06, 2.66]					
$\frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{1000} \frac{1}{10000} \frac{1}{10000000000000000000000000000000000$		Chuin 2009	8	0 (12.43)	7	0 (10.24)	•		-		0.7%		0.0[11.48, 11.48]					
Gang 200 100 100 100 100 100 100 100 100 100		Ebrahim 1997	49	-0.25 (16)	48	-2.75 (20.77)	•				1.6 %		2.50	[-4.89, 9.89]					
Norman All 100		Englund 2005	21	0 (12.46)	19	0 (18.13)	•			·	1.0 %		0.0	[-9.74, 9.74]					
Noplann 200 H 10 100 K 100 K 0.40 (20.021) Lind 100 H 100 K 100 K 100 K 100 K 100 K Maddacco 2007 100 K 100 K 100 K 100 K 100 K 100 K Maddacco 2007 100 K		Going 2003	71	0.57 (4.14)	59	-0.47 (4.12)		_		_	10.4 %		1.04	[-0.39, 2.47]					
$\frac{1}{100} \frac{1}{100} \frac{1}$		Kerr 2001	54	0.47 (9.11)	36	-0.11 (15.6)	•				2.5 %		0.58	[-5.07, 6.23]					
Und 1996 N Man(20) II Man(20) III Part (20) III Part (20) III Part (20) III Part (20)		Korpelainen 2006	84	1	78	-1.04 (1.16)					13.0 %		0.4	5 [0.08, 0.82]					
Lid 1996 6 Micro 1996 10 Nerv 1996 10 Terr 1996 10 Ter		Lau 1992	11	2	subgroup					Hara (CD)		Med	an Difference		Neight		Mean Difference		
Network 1984 D Bearlin 2000 11 0 10 0 1.0 0 1.0 0 1.7.5 0.00 [4.00, 1.00] Network 2000 20 100 0 0.00 [4.00, 1.00] 0 0.00 [4.00, 1.00] 0 0.00 [4.00, 1.00] Smith 1000 10 0.00 [1.00, 1.00] 0 0.1 (2.65 12 0.4 (2.07) 7.7.5 0.00 [4.00, 0.00] Beachin 1007 40 0.01 (2.65 12 0.4 (2.07) 7.7.5 0.00 [4.00, 0.00] Beachin 1007 40 0.01 (2.07) 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] Beachin 1007 40 0.21 (1.00) 0.01 (1.00) 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] Beachin 1007 40 0.01 (1.00) 0.01 (1.00) 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] 0.00 [4.00, 0.01] <t< th=""><th></th><th>Lord 1996</th><th>68</th><th>\ ∠</th><th></th><th></th><th>W</th><th>lean(SD)</th><th>n</th><th>mean(SD)</th><th></th><th>iv,nari</th><th>dan,95% C</th><th>4</th><th></th><th></th><th>v,nandom,95% Ci</th><th>-</th><th></th></t<>		Lord 1996	68	\ ∠			W	lean(SD)	n	mean(SD)		iv,nari	dan,95% C	4			v,nandom,95% Ci	-	
Newsind 2001 0 Bwo 196 0.027 (98) 0.021 (98) 0.025 (98) <		Maddalozzo 2007	29	-1	mben 2000		17	0.37 (16.45)	8	-1.06 (21)	+				0.4 %		1.43 [-15.09, 17.95]		
Production 100 100 Char 2004 64 0.94 (2.58)		Nelson 1994	20		Bocalini 2009		15	-0.09 (1.9)	10	-1.58 (0.36)					11.7 %		1.49 [0.50, 2.48]		
Sind 1192 2 1 1 Childed 2022 10 0.1 (2.8) 12 0.4 (2.7) 7.8 % 0.00 (2.0), 2.61 0.01 (2.8), (1.8), (1.8) Testing (5% C) 600 600 0.1 (2.8) 12 0.4 (2.7) 10.6 0.00 (2.0), 2.61 Grag 2000 10 0.1 (2.8) 10 0.1 (2.8) 10 10.6 0.00 (2.1,8,1,18) Grag 2000 10 0.1 (2.8) 10 0.1 (2.8) 10 0.1 (2.8) 10.6 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.4), (2.8) 0.0 (2.8), (2.8) 0.0 (2.8), (Newstead 2004	23		Bravo 1996		61	0.27 (19.6)	63	-0.53 (20.8)	+			· ·	1.7%		0.80 [-6.31, 7.91]		
Takini 2000 10 0 <t< th=""><th></th><th>Pruitl 1996</th><th>15</th><th>0.0</th><th>Chan 2004</th><th></th><th>54</th><th>-0.94 (3.85)</th><th>49</th><th>-1.8 (3.52)</th><th></th><th>-</th><th></th><th>_</th><th>10.4 %</th><th></th><th>0.86 [-0.56, 2.28]</th><th></th><th></th></t<>		Pruitl 1996	15	0.0	Chan 2004		54	-0.94 (3.85)	49	-1.8 (3.52)		-		_	10.4 %		0.86 [-0.56, 2.28]		
Brainin 1997 40 0.23 (19 42 25 (20.7) 1.5 % 2.20 (4.9, 9.9) Brainin 1997 40 0.23 (19 42 25 (20.7) 1.6 % 2.20 (4.9, 9.9) Gring 023 70 71 0.1 (12.6) 1.0 % 0.0 (4.24, 9.4) Gring 023 71 0.1 (12.6) 1.0 % 0.0 (4.24, 9.4) Hair 1997 40 0.23 (19 42 0.1 (12.6) 1.0 % 0.0 (4.24, 9.4) Gring 023 71 0.01 (12.6) 71 0.01 (12.6) 1.0 % 0.01 (12.6), 71 1.0 % 0.01 (12.6), 72 Haddieco 07 60 10 0.01 (12.6) 1.0 (12.6) 1.0 (12.6), 72 0.01 (12		Smidt 1992	22	1.0	Chilibedk 2002		10	-0.1 (2.85)		-0.4 (2.77)			•		7.6 %		0.30 [-2.06, 2.66]		
Table (55° C) 000 (15° 200) 000 (15° 200) 000 (12° 20) 000 (12° 40)		Tolomio 2009	58				8			0 (10.24)	•		-		0.7 %		0.0 [-11.48, 11.48]		
Hercognistly: Table 1: 60; Cp1 = 50; Cd1 = 60; Cd1 = 60																			
The for overall refer 2 - 0.15 (P - 0.8); Control was and the formation of the second of the sec		Total (95% CI)	690	10.11		5		· · ·					-						
Korpkinn 2000 Exercise N Name (5) Mann (50) Mann (50) Wight Mann (50) Wann (50) Lut 1992 11 3 Info 30 17 0.37 (16.45) 6 -1.06 (21) -0.45% -1.45 (15.00, 17.65) Maddadcez 2007 20 1 Bonini 2000 17 0.37 (16.45) 6 -1.06 (21) -0.45% -1.45 (16.50, 17.65) Maddadcez 2007 20 1 Bonini 2000 15 0.09 (1.9) 0 -1.86 (2.0) -0.45% -1.45 (16.50, 17.65) Nersted 2004 23 Chain 2004 54 0.42 (2.7) -0.45% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.44, 1.42) -0.45% 1.04.5% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.02 (1.45%, 1.42) -0.35% 0.0		Test for overall effect: Z = 0.15	5 (P = 0.88)		-		71	0.57 (4.14)											
International cost N Man(SD) N Man(SD) IV/Random,gets. Cl V/Random,gets. Cl Lor 1996 Baseline 2001 10 0.007 (16.49) 6 1.00 (21) 0.4 %, 1.45 [45.00, 17.96] Madou 1996 Baseline 2004 23 China 2004 54 0.09 (1.6) 10 -1.56 (0.36) -1.17.75, 0.00 [4.00, 2.26] Mexistrad 2004 23 China 2004 54 0.94 (16.5) 49 -1.85 (0.36) -1.17.75, 0.00 [4.00, 2.26] Smint 1906 15 0.00 (1.24) 10 -1.25 (0.27) -1.05 (3.0) -1.06 (2.0)		Test for subgroup differences:	: Not applicable										Countral I	•	25%				New Difference
Lord 1996 ee Aber 2000 17 0.37 (16.46) 6 1.00 (21) 0.4 % 1.45 [-16.00, 17.95] Meddaldcoz 2007 29 -1 Boodin 1000 15 0.00 (16) 10 1.45 (0.06) 11.7 % 1.46 [-0.00, 2.82] Neerstad 2001 23 Chan 2004 54 0.04 (12.65) 49 -1.85 (0.26) -1.7 % 0.06 [-0.00, 2.22] Putit 1996 15 0 Childed 2002 10 0.1 (2.65) 12 0.42 (2.7) -7.6 % 0.02 (-0.6, 2.62] Smidt 1902 22 Chan 2004 54 0.25 (16) 46 2.75 (20.7) -1.6 % 2.50 (-0.6, 2.62] Gring 2003 71 0.57 (-1.44) 9 0.11 (1.56) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.47 (4.12) -0.45 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2) -0.48 (-0.6, 0.2)						06		2	subgroup	Exer		Mean (SD)		Mean (SD)				Weight	
Model deces 2007 41 Social i 2009 15 0.09 (1.6) 10 4.18 (0.35) 41.17.% 1.48 [0.20, 2.6] Near 1984 20 Brave 1986 61 0.27 (19.6) 63 0.55 (0.6) 11.7.% 0.00 [0.6, 0.6, 2.5] Putt 1996 15 0.04 (1.65) 12 0.4 (2.7) 7.6% 0.00 [0.6, 0.6, 2.5] Smidt 1992 22 1 Ohin 2009 8 0 (12.48) 7 0 (10.24) 0.7% 0.02 [-1.48, 11.48] Total (95% CI) 600 Herrogramity: Table + 100 (10.19 - 50.84, d1 = 18 Figure 1 and 2003 71 0.57 (4.14) 9 0.47 (4.13) 10.4 % 1.02 [4.6, 0.62] Wer 2001 54 0.29 (19 - 40 0.29 (19 - 40 0.21 (14.8) 10.4 (1.6) 10.4 % 1.04 [0.30, 2.47] Wer 2001 54 0.47 (9.11) 30 0.11 (15.6) 10.5 % 0.02 [-4.8, 0.7] Wer 2001 54 0.47 (9.11) 30 0.11 (16.6) 10.5 % 0.86 [-0.0, 0.2] Wer 201 14 64 (2.84) 10 10.4 % 1.04 [0.30, 0.2] 1.04 [0.3, 0.2] Wer 201<								5			17	0.07 (10.45)		1.08.(01)				0.18	1 43 [15 00 17 05]
Nielon 1964 20 Brau o 1996 61 0.27 (19.6) 63 0.53 (20.5) 1.7% 0.00 [6.31, 79] Nextead 2004 23 Chan 2004 54 0.04 (255) 49 4.8 (253) 10.4 % 0.08 [6.38, 202] Putil 1996 15 0 Chin 2009 6 0.1 (258) 12 0.4 (2.7) 7.7% 0.00 [4.31, 19.1] Total (55% Cf) 600 11000 6 0.12.48 7 0.10.24 10.4 % 0.02 (46, 268, 22) Total (55% Cf) 600 Herogonisty: Table - 1.50, Chin - 25.64, d1 - 18 10.5 % 0.00 [4.74, 674] 10.4 % 1.04 % 1.04 %, 674] Gring 2003 71 0.57 (14.49 9 0.417 (4.19) 0.417 (4.16) 10.4 % 1.04 %, 674] Gring 2003 71 0.57 (14.49 9 0.417 (4.16) 10.4 % 1.04 %, 674] Mino 1964 2.05 (16) 2.05 (16) 2.05 (12) 76 1.04 (1.16) 1.05 % 0.06 (4.7, 67.2) Mino 1964 2.05 (12) 76 1.04 (1.16) 10.04 % 1.06 (5.00, 0.22) 1.06 (5.00, 0.26) 1.10 (5.00, 0.22)								-					-				_		
New law of the set into the set intothe set inthe set inthe set into the set into the set i						007									•				
International address 23 Chilbed: 2002 10 0.1 (265) 12 0.4 (277) 7.6 % 0.0 [2.06, 266] Smidt 1992 22 Chilbed: 2002 10 0.1 (265) 12 0.4 (277) 0.6 (2.48) 0.7 % 0.0 [1.48, 14.8] Total (65% C) Going 2003 71 0.57 (4.14) 99 0.47 (4.12) 0.1 (1.48) 1.04 % 1.04 % 0.0 [2.48, 266] Metropointly: Table 7: -0.15 (P = 0.8.4) 10 0.57 (4.14) 99 0.47 (4.12) 0.41 (1.66) 2.5 % 0.08 [2.40, 2.67] Metropointly: Table 7: -0.15 (P = 0.8.4) 10 600 2.1 (1.60) 40 0.47 (4.12) 0.44 (1.61) 10.4 % 1.04 (3.69, 0.22) Test for adagroup difference: Net applicable Ker 2001 54 0.47 (4.11) 64 (2.65) 12 1.1 (0.54) 40.6 (1.66) 40.6 (2.66) 12 1.1 (0.54) 40.6 (1.60) 40.6 (2.66) 12 1.1 (0.54) 40.6 (1.60) 40.6 (1.60) 40.6 (2.66) 12 1.1 (0.54) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (1.60) 40.6 (_	•		
International control of the set of						1								, ,					
Total rise: Table 1000 Table 10000 Table 10000 Table 10000 Table 10000 Table 10								0.						, ,	•				
Total (25% C) 600 Henggenity: That = 1.03 (Chi = 0.68 (d) = 1.05 Test for swall effect 2 = 0.15 (P = 0.88) </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>1</th> <th></th> <th></th> <th></th> <th></th> <th>42.</th> <th></th> <th>•</th> <th></th> <th></th> <th></th> <th></th>								1					42.		•				
Total (95% C)) 600 Heleogranely: Tau* = 100; Ch* = 52.64; d1 = 10 Feet to subgroup difference: Not applicable Going 2003 71 0.57 (4.14) 99 0.47 (4.12) 10.4 % 1.04 (5.02, 2.47) Yer zoon 54 0.47 (9.11) 30 0.11 (16.6) 2.5 % 0.88 (-50, 6.22) Yer zoon 54 0.47 (9.11) 30 0.11 (16.6) 40.5 % 0.45 (0.0, 6.22) Yer zoon 54 0.47 (9.11) 30 0.11 (16.6) 40.5 % 0.88 (-50, 6.2) Yer zoon 54 0.47 (9.11) 30 0.11 (16.6) 40.5 % 0.86 (-50, 6.2) Yer zoon 54 0.49 (9.12) 70 1.04 (1.6) 10.0 % 0.46 (0.0, 6.2) Yer zoon 54 0.49 (9.12) 70 10.4 (1.6) 10.4 % 0.46 (0.0, 6.2) Yer zoon 54 0.29 (1.2) 70 1.04 (1.6) 10.0 % 0.46 (0.0, 6.2) Heid opponenties 10.0 (1.6) 10.0 (1.6) 10.0 % 10.0 % 0.46 (0.0, 6.2) Not opponenties 10.0 (1.6) 10.0 % 10.0 % 10.6 (0.0, 6.2) 10.0 % 0.08 (-1.0.0) 10.4 (0.0, 6.0)					Tolomio 2009		80						19						
Hendgagendy, Tale - 108 (CH = 0.83, (J = 0.83), [CH = 0.83, (J = 0.83, (J = 0.83), [CH = 0.83, (J = 0.83, (J = 0.83), [CH = 0.83, (J =							c00		-				59					10.4 %	
Tet for subgroup difference: Nor applicible For plaining 2006 64 0.59 (1.28) 76 1.04 (1.16) ************************************				Het	arogeneity: Tau	i ² - 1.96; Chi ² - 58	.64. d1 - 1	8 Ke	r 2001		54	0.47 (9.11)	36	-0.11 (15.6)	•		••	2.5 %	0.58 [-5.07, 6.23]
Lord 1996 68 1.52 (5.19) 70 3.12 (6.53) 68.5% -1.60 (5.56, 0.36) Maddiazzo 2007 39 -1.46 (16.84) 39 3.19 (17.05) -1.2% 1.73 (4.90, 10.81) Neison 1994 20 0.9 (4.8) 19 2.5 (0.8) -7.5% -1.00 (4.21, 101) Nerestand 2004 23 0 (66.7) 51 -1.27 (17.9) -1.4% 1.27 (4.66, 9.20) Pruit 1996 15 0.07 (16.13) 11 0.79 (16.3) -0.5% -0.72 (14.02, 12.8) Smidt 1992 22 1.06 (4.02) 27 -0.25 (3.64) -6.5% 1.31 (-01, 5.35) Tokin (927): Ch 600 0 (16.18) 67 -1.18 (14.96) -2.4% 1.18 (-4.68, 7.01) Tokin (927): Ch 600 -1.18 (14.96) -0.08 (1-16, 0.022) Fiber 50.84 -0.08 (1-3.60, 0.92) Text (927): Ch -1.90 (16.1 + 16 (P-0.00001); 15 -49% -1.18 (14.96) -0.08 (1-3.60, 0.92) -0.08 (1-3.60, 0.92)								Ко	pelainen 200	6	84	-0.59 (1.23)	76	-1.04 (1.16)		-	-	13.0 %	0.45[0.08, 0.82]
Maddalozzo 2007 29 -1.46 (18.24) 29 -3.19 (17.03) + 1.2% 1.75 [4.36] (0.45] Neison 1994 20 0.9 (4.5) 19 2.5 (3.6) + - 7.0% -1.00 [4.21, 101] Neestead 2004 25 0 (8.67) 25 -1.27 (17.6) + 1.4% 1.27 [4.66, 5.02] Pruit 1990 15 0.07 (16.13) 11 0.79 (16.3) + 0.5% 0.72 [-14.02, 12.58] Smid1 1992 22 1.06 (4.02) 2.05 (3.64) + + 0.60% 1.37 [-4.02, 12.58] Total (95% Cf) 690 648 + 1.16 (14.58) + + 0.08 [-1.68, 0.52] Henogramity: Table 106 (10.62 (2.7.0.0000); 15 - 59%. 648 + 100.0% -0.08 [-1.68, 0.52]				-				Lai	1992		11	-6.6 (2.86)	12	-1.1 (0.54)	+			9.5 %	-5.50 [-7.22, -3.78]
Netion 1994 20 0.9 (4.5) 19 2.5 (3.5) 7.0 % 1.40 [4.21, 10] Neteristical 3004 23 0 (8.67) 26 -1.27 (17.9) -1.4 % 1.27 (4.60, 6.00] Putit 1996 15 0.07 (16.13) 11 0.79 (16.3)								Lor	d 1996		68	1.52 (5.19)	70	3.12 (6.52)		-		8.8 %	-1.60 [-3.56, 0.36]
Newstand 2004 23 0 (9.87) 26 -1.27 (17.5) -1.4% 1.27 [4.69, 9.0] Phuti 1996 15 0.07 (16.13) 11 0.79 (19.3) -1.05 (19.3) -								Ma	ddalozzo 200	07	29	-1.46 (16.84)	29	-3.19 (17.03)	•		· · ·	1.2 %	1.73 [-6.99, 10.45]
Pruift 1998 15 0.07 (18.12) 11 0.79 (18.3) → 0.5 % 0.72 [-14.02, 12.82] Smidt 1992 2.2 1.06 (4.02) 27 -0.25 (3.84) → 0.5 % 0.72 [-14.02, 12.82] Totamic 2009 58 0 (18.18) 67 -1.18 (14.58) → 2.4 % 1.18 [-4.65, 7.01] Total (95% Cf) 690 648 → 100.0 % -0.08 [-1.08, 0.92] Hearogranety: Task their 2-0.51 (190.0001); IP -09%. 59% -0.08 -0.08 [-1.08, 0.92]								Ne	son 1994		20	0.9 (4.5)	19	2.5 (3.8)	•		_	7.0 %	-1.60 [-4.21, 1.01]
3mid11992 22 1.06 (4.02) 27 -0.25 (3.24) ■ 6.0 % 1.31 (-0.4, 3.55) Totamio 2009 58 0 (16.18) 67 -1.18 (14.58) ● 2.4 % 1.18 [-4.65, 7.01] Total (95% CD) -600 648 ● 100.0 % -0.08 [-1.68, 0.52] Hencognetity: Task Chile - 18 (Ph-0.88) Total (-16 (P-0.88)) ● 100.0 % -0.08 [-1.68, 0.52]								Ne	wstead 2004		23	0 (9.67)	26	-1.27 (17.9)	•		_, ,	1.4 %	1.27 [-6.66, 9.20]
Totomio 2009 58 0 (18.18) 67 -1.18 (14.58) → 2.4 % 1.18 [-4.65, 7.0] Total (95%-CD) -600 -648 → 100.0 % -0.08 [-1.66, 0.92] Henorganaty: Table 1.00: Chile - str. (b): -str. (b):								Pn	iff 1996		15	0.07 (18.12)	11	0.79 (16.3)	•	+	•	0.5 %	-0.72 [-14.02, 12.58]
Total (95% CI) 690 - 16 (P-0.0001); I - 49% 100.0 % -0.08 [-1.08, 0.92] Heterogrametry: East -1.16; Chil: -80.84, di -16 (P-0.00001); I - 49% Test for venall effect: -0.080								Sm	id1 1992		22	1.06 (4.02)	27	-0.25 (3.84)				8.0 %	1.31 [-0.91, 3.53]
Heterogenisty:								Tol	omio 2009		58	0 (18.18)	67	-1.18 (14.56)	•		-	2.4 %	1.18 [-4.65, 7.01]
Heterogenisty:																			
Test for overall effect: Z = 0.15 (P = 0.88)								Tota	(95% CI)	t ee Ohk -	690	10 (D a a	648			-	-	100.0 %	-0.08 [-1.08, 0.92]
Test for subgroup differences: Not applicable								Test to	overall effect:	Z = 0.15 (P = 0	(88)	- 18 (P<0.00001); l² - 69%						
								Test to	subgroup d	merences: Not ap	plicable	_	_	_	_	_			

Interventions grouped by whether the exercise was <u>aerobic</u> or <u>not</u>. (for each outcomes - physical function, emotional wellbeing ...)

Q1. Does <u>aerobic</u> <u>exercise</u> increase physical function...

	Mean (SD)	N	Mean (SD)	IV,Random,95% CI		IV,Random,95% C
61	0.27 (19.6)	63	-0.53 (20.8)	_	11.9 %	0.80[-6.31, 7
54	-0.94 (3.85)	49	-1.8 (3.52)	#	26.2 %	0.86 [-0.56, 2
49	-0.25 (16)	48	-2.75 (20.77)		11.4 %	2.50 [-4.89, 9
11	-6.6 (2.86)	12	-1.1 (0.54)	-	25.6 %	-5.50 [-7.22, -3
68	1.52 (5.19)	70	3.12 (6.52)	-	25.0 %	-1.60 [-3.56, 0
243	1 / / P-0 00001\	242		•	100.0 %	-1.20 [-4.45, 2
	54 49 11 68 243	54 -0.94 (3.85) 49 -0.25 (16) 11 -6.6 (2.86) 68 1.52 (5.19) 243 - 32.90, dt - 4 (P<0.00001)	54 -0.94 (3.85) 49 49 -0.25 (16) 48 11 -6.6 (2.86) 12 68 1.52 (5.19) 70 243 -242 - 32.90, d1 - 4 (Pc0.00001); I≈ -82%	54 0.94 (3.85) 49 1.8 (3.82) 49 0.25 (16) 48 2.75 (20.77) 11 6.8 (2.86) 12 1.1 (0.54) 68 1.52 (5.19) 70 3.12 (6.52) 243 242 - 32.90, d1 - 4 (P<0.00001); 1= -26%	54 -0.94 (3.85) 49 -1.8 (3.52) 49 -0.25 (16) 48 -2.75 (20.77) 11 -6.6 (2.86) 12 -1.1 (0.54) 68 1.52 (5.19) 70 3.12 (6.52) 243 - 323.90, d1 - 4 (P=0.00001); P=-28%	54 -0.94 (3.85) 49 -1.8 (3.52) ■ 28.2 % 49 -0.25 (16) 48 -2.75 (20.77) ■ 11.4 % 11 -6.6 (2.86) 12 -1.1 (0.54) ■ 25.6 % 68 1.52 (5.19) 70 3.12 (6.52) ■ 25.0 % 243 242 ● 100.0 %

Each analysis answers a question!

But it is common that the questions aren't reported, even in the final review



Q2. Does <u>non-aerobic</u> exercise increase physical function ...

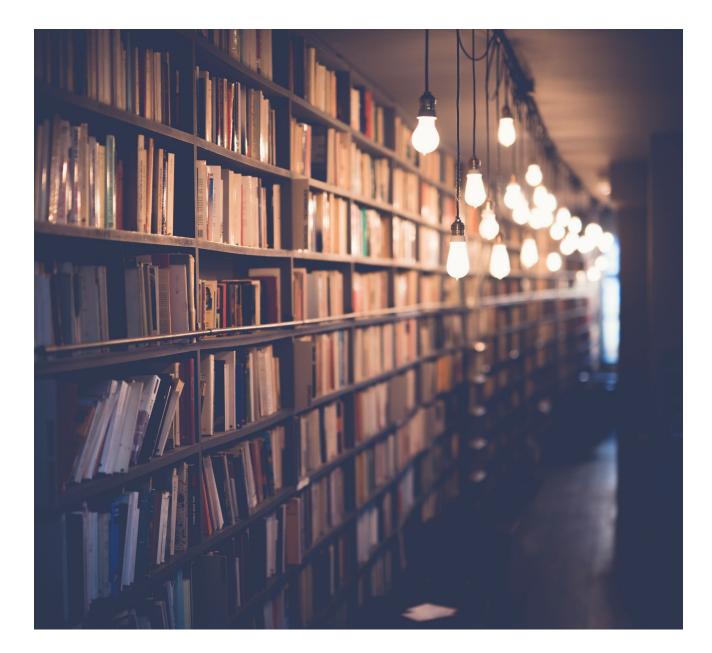
Study or subgroup	Exercise N	Mean (SD)	Control N	Mean (SD)	Mean Difference IV, Fixed, 95% CI	Weight	Mean Difference IV, Fixed, 95% CI
Bemben 2000	7	-0.11 (24.5)	8	-1.06 (21)		7.2 %	0.95[-22.31, 24.2
Kerr 2001	30	0.03 (12.16)	36	-0.11 (15.6)		88.6 %	0.14 [-6.56, 6.8
Pruitl 1996	7	1.16 (31.13)	11	0.79 (16.3)		6.2 %	0.37 [-24.62, 25.36
Total (95% CI) Heterogeneity: Chi ² = 0.00, o Test for overall effect: Z = 0.0	44 d1 = 2 (P = 1.00	; l² =0.0%	55		•	100.0 %	0.21 [-6.02, 6.4

Q3. Does <u>aerobic</u> <u>exercise</u> improve emotional wellbeing...

Study or subgroup	Exercise N	Mean (SD)	Control N	Mean (SD)		n Ditterence d,95% Cl	Weight	Mean Difference IV,Fixed,95% Cl
Bemben 2000	10	0.77 (22.6)	8	-1.06 (21)	•		0.2%	1.83 [-18.37, 22.03]
Bocalini 2009	15	-0.09 (1.9)	10	-1.58 (0.36)			64.7 %	1.49 [0.50, 2.48]
Chilibeck 2002	10	-0.1 (2.85)	12	-0.4 (2.77)		-	11.3 %	0.30 [-2.06, 2.66]
Chuin 2009	8	0 (12.43)	7	0 (10.24)	+	-	→ 0.5 %	0.0 [-11.48, 11.48]
Kerr 2001	24	1.04 (13.77)	36	-0.11 (15.6)		+	1.1%	1.15[-8.35, 8.65]
Nelson 1994	20	0.9 (4.5)	19	2.5 (3.8)		-	9.3 %	-1.60 [-4.21, 1.01]
Pruitt 1996	8	-0.49 (22.28)	11	0.79 (16.3)	+			-1.28 [-19.48, 16.92]
Smidt 1992	22	1.06 (4.02)	27	-0.25 (3.84)	-	•	12.8 %	1.31 [-0.91, 3.53]
Total (95% CI) Heterogeneity: Chi² = 5.28, Test for overall effect: Z = 2. Test for subgroup differeno	54 (P = 0.011)	; lº =0.0%	130			•	100.0 %	1.03 [0.24, 1.82]

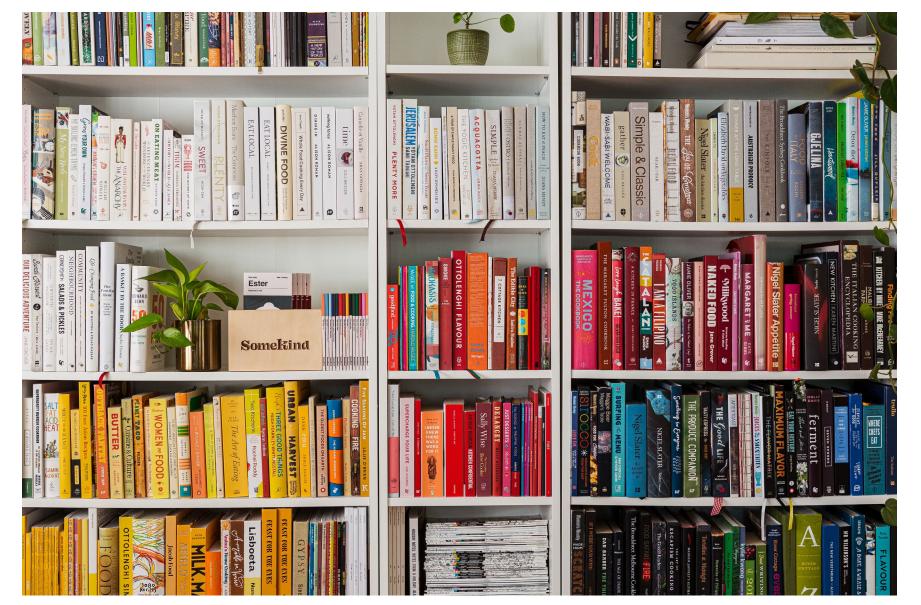
Q4. Does <u>non-aerobic</u> exercise improve emotional wellbeing...

Study or subgroup	Exercise N	Mean (SD)	Control N	Mean(SD)	Mean Difference IV,Fixed,95% Cl	Weight	Mean Difference IV, Fixed, 95% CI
Going 2003	71	0.57 (4.14)	59	-0.47 (4.12)		94.4 %	1.04 [-0.39, 2.47]
Maddalozzo 2007	29	-1.46 (16.84)	29	-3.19 (17.03)		2.5 %	1.73 [-6.99, 10.45]
Newstead 2004	23	0 (9.67)	26	-1.27 (17.9)		3.0 %	1.27 [-6.66, 9.20]
Fotal (95% CI) Heterogeneity: Chi ² = 0.03, Test for overall effect: Z = 1. Test for subgroup difference	51 (P=0.13)		114		•	100.0 %	1.06 [-0.32, 2.45]



A systematic review is much like a bookshelf

There are many ways to organise studies for the synthesis within a review



Just as there are many ways to organise books on a bookshelf

...by colour

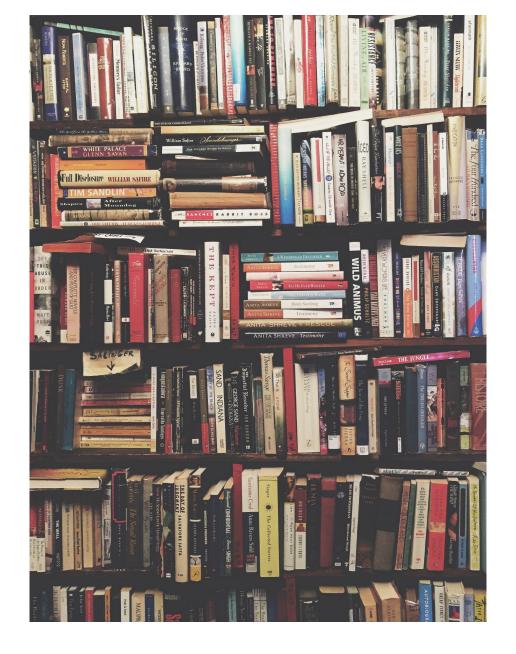


by topic (using an agreed system? or a system you made up?)

Photo by Zaini Izzuddin on Unsplash https://unsplash.com/photos/55btQzyDiO8?utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink



or a system that evolved as you added each book to the shelf?



If we don't use a system to organise our books, we will end up with a mess

...and it may be impossible for others to find what they are looking for

A systematic review is much the same ...

4. Using InSynQ to develop and report your synthesis questions





www.insynq.info

InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

The InSynQ checklist and guide was developed to help review authors plan and report their synthesis questions in systematic reviews of interventions.

InSynQ provides a practical tool for implementing guidance in the <u>Cochrane Handbook of Systematic Reviews for</u> <u>Interventions</u> (in particular <u>Chapter 3</u> and <u>Chapter 9</u>). It is intended for use when developing a protocol and reporting the results of a review.

InSynQ was designed for use by:

- Authors of systematic reviews
- · Commissioners of reviews who want to ensure that the planned synthesis aligns with their requirements
- Editors and peer reviewers
- · Methodologists working with author teams to plan their synthesis

The most recent versions of InSynQ and the 2-page reporting template are here

Download the full InSynQ checklist and guide

Download the 2 page checklist for reporting



InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- Specify population and intervention groups to be used in the synthesis **Protocol** 1.
- & review 2. Specify outcome groups to be used in the synthesis
 - Give a rationale for the groups 3.
 - Identify the role of each group in the synthesis 4.
 - 5. Specify the pairwise comparisons that will be made between intervention groups
 - Ensure that the Objectives align with the questions addressed in the synthesis 6.
 - Specify methodological groups to be used in the synthesis 7.
 - Identify how patients, the public and other stakeholders informed the development of 8. questions to be addressed in the synthesis
 - Describe the processes used to decide which studies were eligible for each synthesis 9.
- Review 10. Identify changes made at review stage to the groups or comparisons reported in the protocol only 11. Report the results in accordance with the groups and comparisons specified in the methods





InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- **Protocol** 1. Specify population and intervention groups to be used in the synthesis
- & review 2. Specify outcome groups to be used in the synthesis
 - 3. Give a rationale for the groups
 - 4. Identify the role of each group in the synthesis



- Identify which of the specified groups will form the basis of comparisons and any groups that will be used to stratify studies within the comparisons.
- If applicable, identify which of the specified groups will be used to explore possible causes of variation in the effects of an intervention (e.g. in subgroup analyses or meta-regression).
- If applicable, identify which of the specified groups will be used in sensitivity analyses to test the robustness of the findings to the decisions or assumptions made in the analysis.
- Identify any other roles the specified groups have in the synthesis or summary (e.g. to structure text, tables or figures).
- If a logic model or figure is used to display groups, be explicit about the role of these groups in the synthesis.







InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- Specify population and intervention groups to be used in the synthesis Protocol 1.
- & review Specify outcome groups to be used in the synthesis 2.
 - Give a rationale for the groups 3.
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InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

Protocol & review

- **1.** Specify population and intervention groups to be used in the synthesis
 - 2. Specify outcome groups to be used in the synthesis
 - 3. Give a rationale for the groups
 - 4. Identify the role of each group in the synthesis
 - 5. Specify the pairwise comparisons that will be made between intervention groups
 - 6. Ensure that the Objectives align with the questions addressed in the synthesis
 - 7. Specify methodological groups to be used in the synthesis
 - 8. Identify how patients, the public and other stakeholders informed the development of questions to be addressed in the synthesis
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www.insynq.info



Q. Which of the following provides the most complete information for deciding which intervention group a study belongs in?

A. We will include all interventions for motor rehabilitation following below-knee amputations. These may include motor imagery (MI), virtual environments (VE), proprioceptive neuromuscular facilitation (PNF) and traditional strength training (TST) plus usual care.

C. We will include any interventions for motor rehabilitation following below-knee amputations (e.g. traditional strength training, motor imagery) B. See Table 1 for intervention groups

Intervention	Definition
Traditional	Should include exercises for
strength	 the surrounding hip muscles (particularly the
training (TST)	hip abductor and hip extensor groups for
	pelvic stabilization), and
	 quadriceps/hamstring of the transtibial
	residual limb (crucial role in knee stability,
	which will be needed when a prosthetic
	device is used)
Motor imagery	 simulated movement or mentally rehearsing
(MI)	the action without really performing the
	movement;
	 individuals feel themselves accomplishing the
	movement
Virtual	 computer-generated simulations that are
environments	interactive and immersible
(VEs)	 amputees practice daily tasks in addition to
	the ones that, for safety reasons, are difficult
	to actually practice
Proprioceptive	 stretching the muscles to achieve maximal
neuromuscular	static flexibility,
facilitation	 usually performed with a trainer or partner
(PNF)	 uses a series of contractions/relaxations with
	enforced stretching during relaxation phase

InSynQ item 1. Specify population and <u>intervention groups</u> to be used in the synthesis

Interventions for motor rehabilitation following below-knee amputations

Intervention Traditional strength training (TST)	 Definition Should include exercises for the surrounding hip muscles (particularly the hip abductor and hip extensor groups for pelvic stabilization), and quadriceps/hamstring of the transtibial residual limb (crucial role in knee stability, which will be needed when a prosthetic device is used) 	The groups are defined in enough detail to replicate decisions about which intervention group each study is eligible for
Motor imagery (MI)	 simulated movement or mentally rehearsing the action without really performing the movement; individuals feel themselves accomplishing the movement 	Presenting these definitions in
Virtual environments (VEs)	 computer-generated simulations that are interactive and immersible amputees practice daily tasks in addition to the ones that, for safety reasons, are difficult to actually practice 	a table (or logic model/figure) ensures the text remains concise, but detail is available and well structured
Proprioceptive neuromuscular facilitation (PNF)	 stretching the muscles to achieve maximal static flexibility, usually performed with a trainer or partner uses a series of contractions/relaxations with enforced stretching during relaxation phase 	
	Traditional strength training (TST) Motor imagery (MI) Virtual environments (VEs) Proprioceptive neuromuscular facilitation	Traditional strength training (TST)Should include exercises for•the surrounding hip muscles (particularly the hip abductor and hip extensor groups for pelvic stabilization), and•quadriceps/hamstring of the transtibial residual limb (crucial role in knee stability, which will be needed when a prosthetic device is used)Motor imagery (MI)•Virtual environments (VES)•Virtual environments (VES)•Proprioceptive neuromuscular facilitation (PNF)•stretching the uses a series of contractions/relaxations with

InSynQ item 1. Specify population and <u>intervention groups</u> to be used in the synthesis

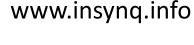
Quiz question 1

Α.

- We will include all interventions for motor rehabilitation following below-knee amputations. These may include motor imagery (MI), virtual environments (VE), proprioceptive neuromuscular facilitation (PNF) and traditional strength training (TST) plus usual care.
- C. We will include any interventions for motor rehabilitation following below-knee amputations (e.g. traditional strength training, motor imagery)

Options A and C are common, but do not provide the detail needed to replicate decisions about which intervention group each study is eligible for InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- **Protocol** 1. Specify population and intervention groups to be used in the synthesis
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 - 7. Specify methodological groups to be used in the synthesis
 - 8. Identify how patients, the public and other stakeholders informed the development of questions to be addressed in the synthesis
 - 9. Describe the processes used to decide which studies were eligible for each synthesis
- Review
only10. Identify changes made at review stage to the groups or comparisons reported in the protocol11. Report the results in accordance with the groups and comparisons specified in the methods







Your turn. Which option <u>best describes</u> how you think the authors will handle the 'health behaviour' outcomes in their synthesis?

The primary outcomes are health behaviours, physical health, well-being,

• Health behaviours include alcohol consumption, blood/organ donation, breastfeeding, dietary changes, levels of physical activity, medication adherence, illicit drug use, sexual behaviours, smoking, sun protection...

A. Can't tell because the description is	B. Separate meta-analyses for each of the
missing information	listed health behaviours? (alcohol
	consumption, smoking etc)

- C. A meta-analysis stratified by the listed health behaviours, with an estimate for each health behaviour and an overall effect estimate?
- D. A single meta-analysis including studies that measure any health behaviour outcome

InSynQ item 2. Specify outcome groups to be used in the synthesis

Recommendations are similar to item 1 – label and define groups

Also report measurement methods (tools/scales) and time frame

The primary outcomes are health behaviours, physical health, well-being,

 Health behaviours include alcohol consumption, blood/organ donation, breastfeeding, dietary changes, levels of physical activity, medication adherence, illicit drug use, sexual behaviours, smoking, sun protection...

From this information alone, it is not clear how outcomes will be grouped for synthesis (or what will be reported in summary of findings tables)

This is typical reporting for outcomes, where a list is provided without specifying the level at which outcomes will be grouped for synthesis

InSynQ item 2. Specify outcome groups to be used in the synthesis

Elsewhere in the methods, the authors report which results will be reported in summary of findings tables

Summary of findings and assessment of the certainty of the evidence

We prepared GRADE summary of findings tables (see summary of findings Table 1; summary of findings Table 2; summary of findings Table 3), which present a tabular overview of the primary outcomes of importance to decision makers. For the comparisons of parenting interventions compared to inactive controls, psychological interventions to inactive controls, and service system approaches to inactive controls, we have presented the findings (where data are available) for CPTSD symptoms, psychological wellbeing, substance use, parents' relationship quality, parental self-harm, parent-child relationship and parenting skills, at post-intervention at the first available time point. Where outcomes were assessed using both dichotomous and continuous measures, we selected the measure with the greater number of studies contributing data. GRADEpro was used to construct the tables (GRADEpro GDT), including the number of studies, the statistical results, an interpretation of each result using informative statements to communicate the size of effect and certainty of evidence (Schünemann 2019b), and explanations for downgrading or borderline decisions.

InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- **Protocol** 1. Specify population and intervention groups to be used in the synthesis
- & review 2. Specify outcome groups to be used in the synthesis
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 - 5. Specify the pairwise comparisons that will be made between intervention groups
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 - 7. Specify methodological groups to be used in the synthesis
 - 8. Identify how patients, the public and other stakeholders informed the development of questions to be addressed in the synthesis
 - 9. Describe the processes used to decide which studies were eligible for each synthesis
- Review
only10. Identify changes made at review stage to the groups or comparisons reported in the protocol11. Report the results in accordance with the groups and comparisons specified in the methods





Q. Which is the clearest statement of the comparisons?

- A. We will include all interventions for motor rehabilitation following below-knee amputations. These may include studies that compare interventions for motor rehabilitation, such as traditional strength training (TST), motor imagery (MI), virtual environments (VE), and proprioceptive neuromuscular facilitation (PNF) against each other.
- We will include all interventions for B. motor rehabilitation following below-knee amputations (see Table 1) Eligible comparisons are: 1) TST versus MI 2) TST versus VE 3) TST versus PNF 4) TST versus any combination of MI/VEs/PNF 5) TST versus any other intervention

C. A and B are equally clear

Q. Which is the clearest statement of the comparisons?

- A. We will include all interventions for motor rehabilitation following below-knee amputations. These may include studies that compare interventions for motor rehabilitation, such as traditional strength training (TST), motor imagery (MI), virtual environments (VE), and proprioceptive neuromuscular facilitation (PNF) against each other.
- C. A and B are equally clear

We will include all interventions for B. motor rehabilitation following below-knee amputations (see Table 1) **Eligible comparisons are:** 1) TST versus MI 2) TST versus VE 3) TST versus PNF 4) TST versus any combination of **MI/VEs/PNF** 5) TST versus any other intervention

> The comparisons are clearly specified. And each of the interventions were defined (Table shown for InSynQ item 1)

InSynQ (Intervention Synthesis Questions) checklist and guide for developing and reporting the questions addressed in systematic reviews of interventions

- **Protocol** 1. Specify population and intervention groups to be used in the synthesis
- & review 2. Specify outcome groups to be used in the synthesis
 - 3. Give a rationale for the groups
 - 4. Identify the role of each group in the synthesis
 - 5. Specify the pairwise comparisons that will be made between intervention groups
 - 6. Ensure that the Objectives align with the questions addressed in the synthesis
 - 7. Specify methodological groups to be used in the synthesis
 - 8. Identify how patients, the public and other stakeholders informed the development of questions to be addressed in the synthesis
 - 9. Describe the processes used to decide which studies were eligible for each synthesis
- Review
only10. Identify changes made at review stage to the groups or comparisons reported in the protocol11. Report the results in accordance with the groups and comparisons specified in the methods



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Your turn. Which option (A to D) most completely describes the information the authors have reported?

We will include any type of exercise (static or dynamic, weight bearing or non-weight bearing, low or high force; delivered by any mode, over any duration, frequency or intensity).

We will include the following comparisons (see Table X for outcome groups addressed in each comparison)

- 1. any aerobic exercise (e.g. cycling, jogging, aqua-aerobics) versus an inactive intervention (no intervention, usual care, wait list)
- 2. any non-aerobic exercise (e.g. general physical activity, yoga, flexibility) versus an inactive intervention
- 3. any aerobic exercise versus any non-aerobic exercise
- A. enough information to decide which studies belong to each meta-analysis (assume the outcomes are reported)
- B. the intervention groups to be used in the synthesis and their role in the synthesis

- C. the pairwise comparisons that will be made between intervention groups
- D. the intervention groups to be used for comparisons, but not the comparisons

InSynQ item 4. Identify the role of each group in the synthesis

InSynQ item 5. Specify the pairwise comparisons that will be made between intervention groups

Groups may be used for comparisons, in subgroup and sensitivity analyses, to structure text ... Item 4 asks you to identify which of these roles each group will be used for

We will include the following comparisons (see Table X for outcome groups addressed in each comparison)

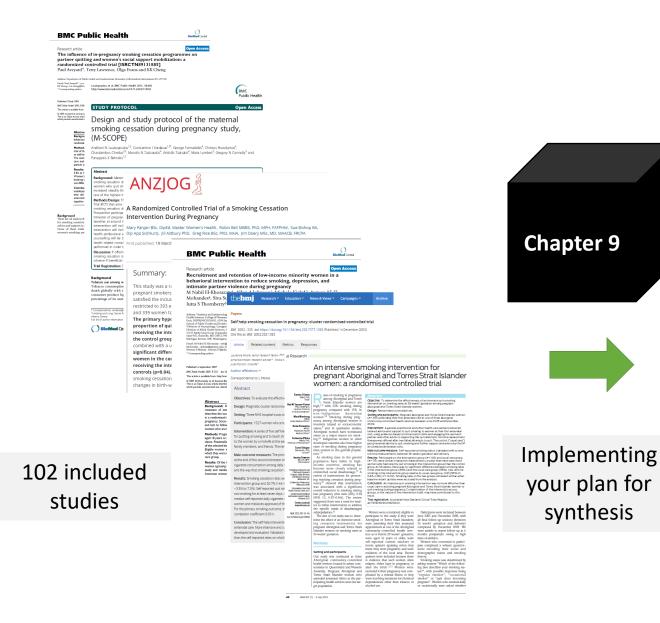
- any aerobic exercise (e.g. cycling, jogging, aqua-aerobics) versus an inactive intervention (no intervention, usual care, wait list)
- any non-aerobic exercise (e.g. general physical activity, yoga, flexibility) versus an inactive intervention
- any aerobic exercise versus any non-aerobic exercise

The comparisons (and the role of groups within) are clearly specified. By specifying the comparisons, item 4 is also met for this role.

Is this enough information to decide which studies belong to each meta-analysis? Yes, if we think the groups are 'defined' in enough detail 5. Using the framework for synthesis to summarise studies and prepare for synthesis



Have your included studies. Now what?

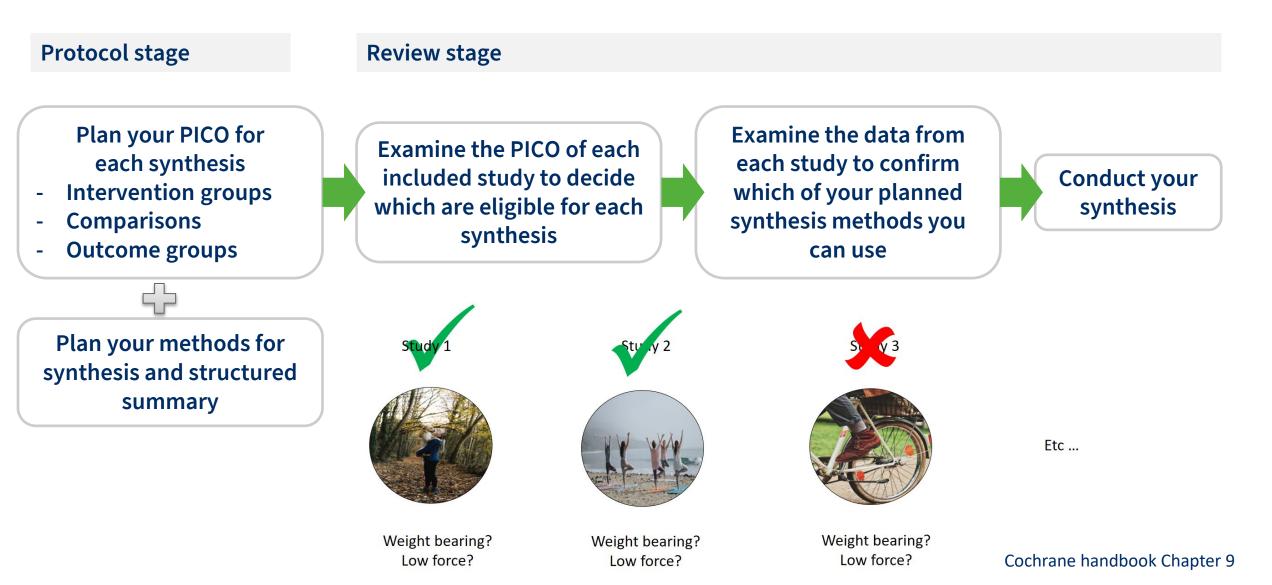


Study or subgroup	Experimental n/N	Control n/N	Risk Ratio M-H,Random,95% Cl
1 Single interventions Baric 1976	9/63	2/47	
Dunkley 1997	4/50	0/50	
Haug 1994	42/229	8/93	+
Lawrence 2003 (AvB)	13/297	2/141	
McLeod 2004	37/163	14/109	
Moore 2002	88/523	108/567	-
Panjari 1999	33/476	31/537	
Pbert 2004	5/26	2/18	
Price 1991 (AvB)	2/52	0/35	
Price 1991 (AvC)	4/71	1/35	
Tappin 2000	2/48	2/49	
Tappin 2005	17/347	19/409	_
Valbo 1996	5/52	8/78	
Subtota I (95% CI) Total events: 261 (Experiment Heterogeneity: Tau ² – 0.05; C Test for overall effect: Z – 2.06	hi² = 16.38, d1 = 12 (P	2168 • 0.17); l² - 27%	•
2 Multiple interventions Gielen 1997	12/193	11/198	— -
Harimann 1996	27/113	16/106	
Kendrick 1995	48/822	65/1063	-
Lawrence 2003 (AvC)	17/311	2/141	
Lillington 1995	7/16	4/18	
Mayer 1990 (AvC)	8/72	2/77	+
Secker-Walker 1994	29/255	26/258	
Stotts 2004	3/24	5/30	
Tsoh 2010	6/23	2/19	
Windsor 1985 (AvB)	6/103	1/52	
Windsor 1985 (AvC)	14/102	1/52	
Subtotal (95% CI) Total events: 177 (Experiment Heterogeneity: Tau ² – 0.06; Ci Test for overall effect: Z – 2.21	hí≊ = 13.81, d1 = 10 (P	2014 - 0.18); l ² -28%	•
3 Tailored interventions Eades 2012	1/124	2/107	
Hajek 2001	80/365	73/367	+
Hegaard 2003	23/327	7/320	

Synthesis is a process of bringing together data from a set of included studies with the aim of drawing conclusions about a body of evidence.

This will include *synthesis of study characteristics* and, potentially, *statistical synthesis of study findings*.

Cochrane Handbook 2019, Chapter 9



1. Protocol stage (Chapters 2 & 3) 1.1 Set up PICO questions for each synthesis. Specify all

- intervention groups and comparisons
- outcome groups (domains, measures, time points)
- any other groups (population subgroups, study designs, ...)

2. Summarising included studies & preparing for synthesis (Chapter 9)

1. Protocol stage	1.1 Set up PICO questions for each synthesis. Specify all
(Chapters 2 & 3)	- intervention groups and comparisons
	- outcome groups (domains, measures, time points)
	- any other groups (population subgroups, study designs,)

2. Summarising included studies & preparing for synthesis (Chapter 9) 2.1 Summarise characteristics of each study

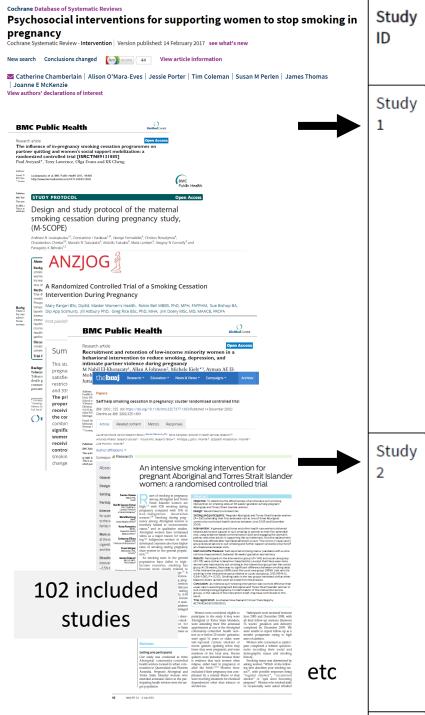
		Character	istics of included studies [ordered by study ID]				
1. Protocol stage (Chapters 2 & 3)	1.1	scolaris.cdsr.refere Albrecht 1998	es.label.jump.to excluded studies ongoing studies				
		Methods	3-armed randomised-controlled trial (pilot study) evaluated 2 different interventions provided to 'pregnant teens' to reduce smoking in pregnancy and relapse postpartum. The hypothesis was that an intervention including peer support would be more effective than the intervention alone.				
2. Summarising included studies & preparing for synthesis (Chapter 9)	2.1	Participants	 Inclusion criteria: 12 to 20 years of age; 4 to 28 weeks' gestation; reported smoking at least 1 cigarette a day; single marital status; no previous live birth; able to read and write English. Exclusion criteria: Pregnancy complications preventing attendance at group sessions or participation in a home study program. Recruitment: Participants were recruited through local prenatal clinics and public schools. 84 women recruited (not known how many were eligible or approached) and randomised (C = 29, 11 = 29, 12 = 26). Baseline characteristics: Mean cigarettes/day at first visit: C = 6.44; 11 (TFS) = 5.87; 12 (TFSB) = 6.81. 63% African-American heritage, 37% European-American heritage. Progress + coding: Coded as single (low social capital) and young age (less than 20). 				
		Interventions	 A: Control: 30 mins individual educational session with project nurse including information about the risks of smoking to the mother and the fetus and brochures on smoking and pregnancy. B: Intervention 1 (TFS): Cognitive behavioural group model designed specifically for adolescents based on problem-behaviour theory: 8 modules to heighten awareness and attention to smoking messages; build and enhance smoking cessation skills; teach skills for maintenance of smoking control; includes experiential learning and round robin discussion. TFS was modified to include additional information on smoking and the fetus, body image changes and overall health. The intervention also included social activities, immediate rewards/incentives and adult modelling. 				

* Chapter 9, 2019 Cochrane Handbook

A familiar step to systematic review authors! But some (newer) suggestions

- 1. Standardise terminology across studies
 - use labels and terminology from your PICO for synthesis (especially for interventions and outcomes)
 - overcomes varied terminology used across studies
 - helps compare your synthesis PICO(s) to the PICO of included studies
 - helps compare across studies
- 2. Use of the TIDIeR checklist to structure intervention description





Study Precis of intervention description from study

- Assessment of smoking motivation and ٠ intention to quit.
 - Bilingual health educators (Spanish and English) with bachelors degrees provided 15 minutes of individual counselling that included risk information and quit messages or reinforcement. Participants were asked to select a quit date and nominate a significant other as a 'quit buddy'.
 - Self-help guide 'Time for a change' with an ٠ explanation of how to use it and behavioural counselling.
 - Explanation of how to win prizes (\$100) by completing activity sheets.
 - Booster postcard one month after study entry.

Routine prenatal advice on a range of health issues, from midwives and obstetricians plus:

- Structured one-to-one counselling by a trained facilitator (based on stages of change theory).
- Partners invited to be involved in the program.
- An information pack (developed in ٠ collaboration with a focus group of women), which included a self-help booklet.
- Invited to join a stop smoking support group.

	Compare the <u>PICO for each study</u>
	to your <u>PICO for each synthesis</u>
	your <u>rico for cach synthesis</u>
ab	le 9.3.a Example of categorizing interventions into pre-defined groups
Det	finition of (selected) intervention groups from the PICO for each synthesis
•	 Counselling: "provide[s] motivation to quit, support to increase problem solving an coping skills, and may incorporate 'transtheoretical' models of change includes motivational interviewing, cognitive behaviour therapy, psychotherapy, relaxation, problem solving facilitation, and other strategies."* Incentives: "women receive a financial incentive, contingent on their smoking cessation; these incentives may be gift vouchers Interventions that provided 'chance' of incentive (e.g. lottery tickets) combined with counselling were coded as counselling." Social support: "interventions where the intervention explicitly included provision of support from a peer (including self-nominated peers, 'lay' peers trained by
	↓
	Categorise the intervention from each study according to your pre-specified intervention groups

(+ outcomes etc)

Cochrane Database of Systematic Reviews Psychosocial interventions for supporting women to stop smoking in pregnancy Cochrane Systematic Review - Intervention Version published: 14 February 2017 see what's new New search Conclusions changed View article information Catherine Chamberlain Alison O'Mara-Eves Jessie Porter Tim Coleman Susan M Perlen James Thomas Joanne E McKenzie View authors' declarations of interest	Study ID	Precis of intervention description from study	Main intervention strategy	Other intervention components	PICO for each study		
<section-header><section-header></section-header></section-header>	Study 1	 Assessment of smoking motivation and intention to quit. Bilingual health educators (Spanish and English) with bachelors degrees provided 15 minutes of individual counselling that included risk information and quit messages or reinforcement. Participants were asked to select a quit date and nominate a significant other as a 'quit buddy'. Self-help guide 'Time for a change' with an explanation of how to use it and behavioural counselling. Explanation of how to win prizes (\$100) by completing activity sheets. Booster postcard one month after study entry. 		Incentive	to for each synthesis for each synthesis we eventions into pre-defined groups roups from the PICO for each synthesis on to quit, support to increase problem solving and rate 'transtheoretical' models of change viewing, cognitive behaviour therapy, blem solving facilitation, and other strategies."* ncial incentive, contingent on their smoking y be gift vouchers Interventions that provided a ry tickets) combined with counselling were coded ere the intervention explicitly included provision of self-nominated peers, 'lay' peers trained by		
<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>	Study 2	 Routine prenatal advice on a range of health issues, from midwives and obstetricians plus: Structured one-to-one counselling by a trained facilitator (based on stages of change theory). Partners invited to be involved in the program. An informat collaboratio which inclu Invited to jo group. 	and it's ma		intervention from rding to your pre- rvention groups omes etc)		

1. Protocol stage	1.1 Set up comparisons (PICO for each synthesis). Specify:							
(Chapters 2 & 3)	 intervention groups and comparisons for each synthesis 							
	 outcome groups (domains, measures, time points) 							
	 any other groups (population subgroups, study designs,) 							
2. Summarising	2.1 Summarise characteristics of each study							
included studies	2.2 Determine which studies are eligible for each comparison							
& preparing for								
synthesis (Chapter 9)								

Stud	y ¹ Comparator	Self-management intervention components							Outcome domain	Outcome measure	Time points (time frame) ²	Data ³	Effect &
1	Attention control	BEH			MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short), 8 mths (long)	M	h level summary of <u>O</u> across studies
Studies ordered l comparat	ру								Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe⁴
2	Acupuncture	BEH		EMO		CON	SKL	NAV	Pain	Pain on walking VAS	1 mth (short), 12 mths (long)	MD from ANCOVA model, 95%CI	Yes
									Function	Dutch AIMS-SF	1 mth (short), 12 mths (long)	Median, range, N / group	Maybe⁴
4	Information	BEH	ENG	EMO	MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short)	MD, SE	Yes
									Function	Dutch AIMS-SF	1 mth (short)	Mean, SD, N / group	Yes
12	Information	BEH					SKL		Pain	WOMAC pain subscore	12 mths (long)	MD from ANCOVA model, 95%CI	Yes

Study ¹	Comparator	Self-m	anager	ment inf	terventi	on com	ponent	s	Outcome domain	Outcome measure	Time points (time frame)²	Data ³	Effect & SE
1	Attention control	BEH		•	MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short), 8 mths (long)	Mean, N / group	Yes⁴
interv	elected vention onents								Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe⁴
	gorised oded)	BEH		EMO		CON	SKL	NAV	Pain	Pain on walking VAS	1 mth (short), 12 mths (long)	MD from ANCOVA model, 95%CI	Yes
									Function	Dutch AIMS-SF	1 mth (short), 12 mths (long)	Median, range, N / group	Maybe⁴
4	Information	BEH	ENG	EMO	MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short)	MD, SE	Yes
									Function	Dutch AIMS-SF	1 mth (short)	Mean, SD, N / group	Yes
12	Information	ВЕН					SKL		Pain	WOMAC pain subscore	12 mths (long)	MD from ANCOVA model, 95%CI	Yes

Study ¹	Comparator	Self-m	anager	ment in	terventi	on com	ponent	S	Outcome domain	Outcome measure	Time points (time frame) ²	Data ³	Effect & SE	
1	Attention control	BEH			MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short), 8 mths (long)	Mean, N / group	Yes⁴	
						don	utcom nains, asures		Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe⁴	
2	Acupuncture	BEH		EMO		and time points (each categorised)		Pain	Pain on walking VAS	1 mth (short), 12 mths (long)	MD from ANCOVA model, 95%CI	Yes		
									Function	Dutch AIMS-SF	1 mth (short), 12 mths (long)	Median, range, N / group	Maybe⁴	
4	Information	BEH	ENG	EMO	MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short)	MD, SE	Yes	
									Function	Dutch AIMS-SF	1 mth (short)	Mean, SD, N / group	Yes	
12	Information	BEH					SKL		Pain	WOMAC pain subscore	12 mths (long)	MD from ANCOVA model, 95%CI	Yes	

1. Protocol stage (Chapters 2 & 3)	1.1 Set up comparisons (PICO for each synthesis). Specify:				
	 intervention groups and comparisons for each synthesis 				
	 outcome groups (domains, measures, time points) 				
	 any other groups (population subgroups, study designs,) 				
2. Summarising	2.1 Summarise characteristics of each study				

included studies & preparing for synthesis (Chapter 9) 2.1 Summarise characteristics of each study
2.2 Determine *which studies are eligible for* each comparison
2.3 Determine *what data are available* for synthesis

Study ¹	Comparator	Self-m	nanagement intervention components				Outcome domain	Outcome measure	Time points (time frame)²	Data ³	Effect & SE	
1	Attention control	BEH		MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short), 8 mths (long)	Mean, N / group	Yes⁴
								Function	HAQ disability sul	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe⁴
2	Acupuncture	BEH	EMO		CON	SKL	NAV	Pain	wa avail	B Data able for othesis	MD from ANCOVA model, 95%CI	Yes
								Function	Dutch AIMS-SF	12 mths (long)	Median, range, N / group	Maybe⁴
4	Information	BEH	ENG EMO	MON	CON	SKL	NAV	Pain	Pain VAS	1 mth (short)	MD, SE	Yes
								Function	Dutch AIMS-SF	1 mth (short)	Mean, SD, N / group	Yes
12	Information	BEH				SKL		Pain	WOMAC pain subscore	12 mths (long)	MD from ANCOVA model, 95%CI	Yes

1. Protocol stage (Chapters 2 & 3)	1.1 Set up comparisons (PICO for each synthesis). Specify:			
	 intervention groups and comparisons for each synthesis 			
	- outcome groups (domains, measures, time points)			
	- any other groups (population subgroups, study designs,)			

2. Summarising
included studies
& preparing for
synthesis (Chapter 9)2.1 Summarise characteristics of each study
2.2 Determine which studies are eligible for each comparison
2.3 Determine what data are available for synthesis
2.4 Determine if modification to planned comparisons or outcomes is needed

For example, the previous steps may reveal

- important variations in the intervention are identified (different or modified groups)
- you have few studies or sparse date (consider grouping more broadly? grouping differently? – plan for this at protocol stage)

If you need to change the planned comparisons, always report these changes to your planned methods with a rationale (post-hoc decisions)



1. Protocol stage (Chapters 2 & 3)	1.1 Set up comparisons (PICO for each synthesis). Specify:				
	 intervention groups and comparisons for each synthesis 				
	 outcome groups (domains, measures, time points) 				
	 any other groups (population subgroups, study designs,) 				

2. Summarising
 2.1 Summarise characteristics of each study
 2.2 Determine which studies are eligible for each comparison
 & preparing for
 Synthesis (Chapter 9)
 2.4 Determine if modification to planned comparisons or outcomes is needed
 2.5 Synthesise the characteristics of studies contributing to each comparison

Included studies

Participants

Over 26,000 pregnant women participating in 88 trials (106 study arms) with outcomes included in the meta-analysis were assessed as current or recent 'smokers' at recruitment. The criteria used to assess a woman as a 'smoker' varied substantially between trials, and are detailed for each study in the Characteristics of included studies table. There were 1766 women who reported they had 'spontaneously quit' smoking when they became pregnant, and had outcomes reported separately from women who continued to smoke. In one study only one third of the study population smoked commercial cigarettes, while two thirds chewed traditional or commercial smokeless tobacco (Patten 2009).

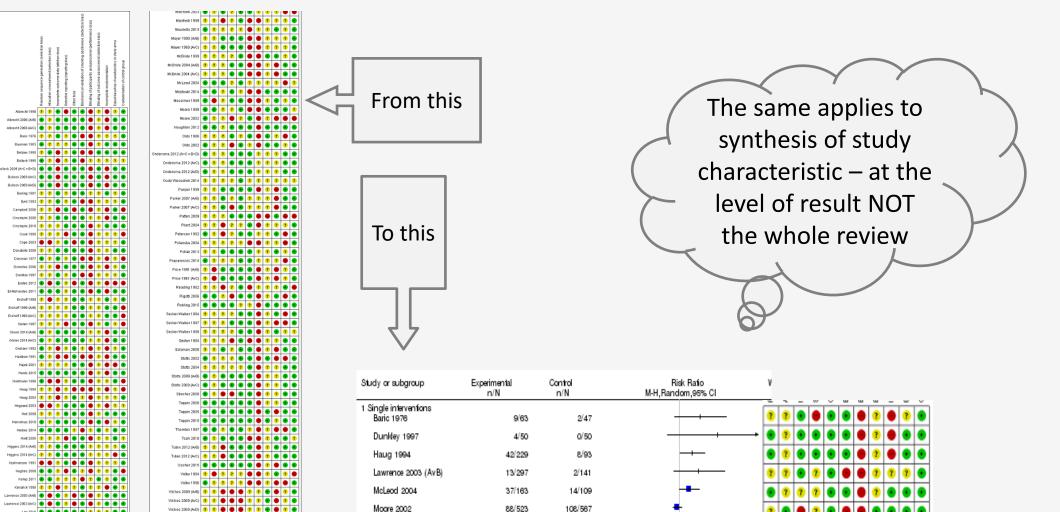
Participants were generally healthy pregnant adult women over 16 years of age, with 23 trials explicitly excluding women with medical and/or psychological complications. While smoking in pregnancy is recognised as a strong marker of low socio-economic status, approximately half the trials (n = 52 trials, 66 study arms) explicitly included women categorised as having low socio-economic status; 51 of these measured the primary outcome. Most trials included women over 16 years of age, with only two trials explicitly targeting young women under 20 years (Albrecht 1998; Albrecht 2006 (AvB); Albrecht 2006 (AvC)) and several broader maternal health programs targeting 'young mothers' as at least one criteria (Olds 1986; Kemp 2011; Mejdoubi 2014; Robling 2016). Eight trials were specifically targeted towards women with 'psychosocial risk factors' (Graham 1992; Belizan 1995; Albrecht 1998; El-Mohandes 2011; Albrecht 2006 (AvB); Albrecht 2006 (AvC); Kemp 2011; Mejdoubi 2014; Olds 1986), and two trials were conducted among women requiring methadone treatment for opioid addiction (Haug 2004; Tuten 2012 (AvB); Tuten 2012 (AvC)). Most trials recruited women at the first antenatal clinic visit and during the second trimester of pregnancy, excluding women in the last trimester due to limited time remaining to receive the intervention. However, four trials were explicitly targetec towards women who continued to smoke in late pregnancy ('heavy smokers') (Valbo 1994; Valbo 1996; Stotts 2002; Stotts 2009 (AvC)). Ten studies included mainly (> 50%) women belonging to an ethnic minority population (Graham 1992; Lillington 1995; Gielen 1997; Manfredi 1999; Cinciripini 2000; Malchodi 2003; Dornelas 2006; El-Mohandes 2011; Ondersma 2012 (A+C v B+D); Lee 2015). Three trials were conducted in indigenous communities (Oxford Dictionary 2016) among Aboriginal women in Australia

Great for describing and 'mapping' characteristics of available evidence! (what research has been done)

But how helpful is this for **interpreting findings?**



*Cochrane Handbook, Chapter 9



31/537

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Pbert 2004



Synthesize characteristics at the level of each synthesis result

- Important for interpreting each result (e.g. GRADE assessment of indirectness)
- Focus on
 - PICO criteria that show how directly the evidence applies to your question (anything important not addressed by included studies?)
 - Any important diversity in PICO across studies (<u>characteristics pre-specified</u> as potential effect modifiers)

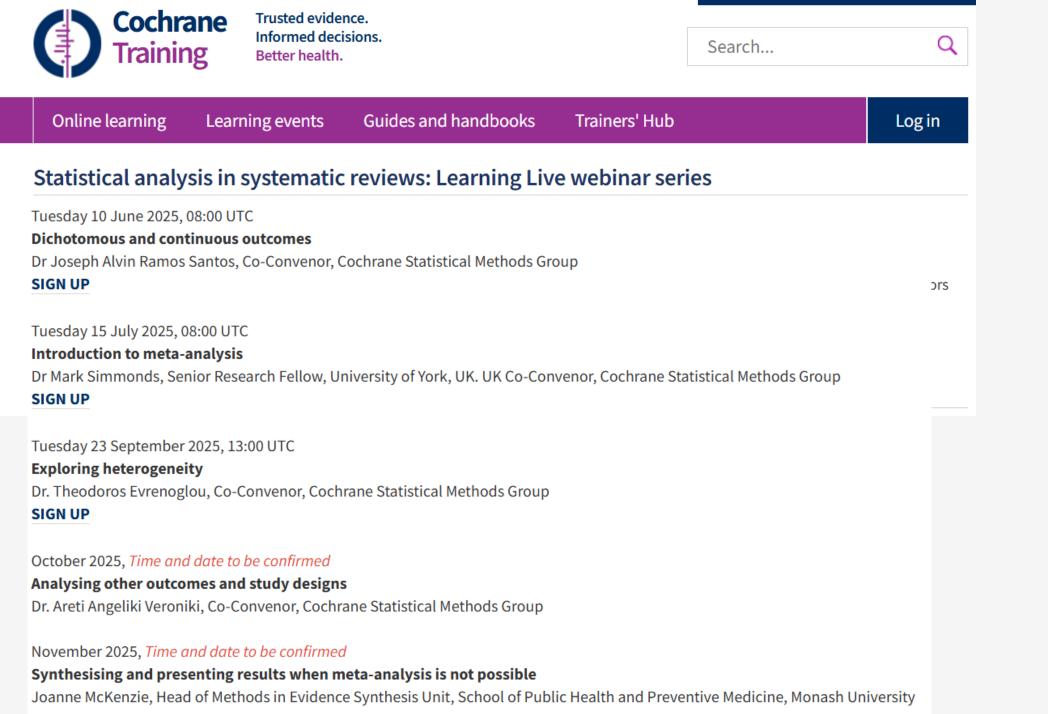
Use tabulation

- More concise and structured than text (faster for readers to scan)
- Ensures studies excluded from synthesis are accounted for

1. Protocol stage (Chapters 2 & 3)	1.1 Set up PICO questions for each synthesis. Specify all			
	 intervention groups and comparisons 			
	 outcome groups (domains, measures, time points) 			
	- any other groups (population subgroups, study designs,)			
2. Summarising included studies & preparing for synthesis (Chapter 9)	2.1 Summarise characteristics of each study			
	2.2 Determine <i>which studies are eligible for</i> each comparison			
	2.3 Determine what data are available for synthesis			
	2.4 Determine if modification to planned comparisons or outcomes is needed			
	2.5 Synthesise the characteristics of studies contributing to each comparison			

3. The synthesis	3.1 Perform a statistical synthesis or provide structured reporting of effects
(Chapters 10-12)	3.2 Interpret and describe the results

* Chapter 9, 2019 Cochrane Handbook





6. Questions

