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Defining a review question and applying the framework for synthesis

SMG webinar series session 1: May 19, 2005

Sue Brennan

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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)

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PICO for the review

PICO for the review

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 *compared to no exercise* or *a different type of exercise* on pain, physical and psychosocial functioning, and quality of life?

PICO for the review

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

P Population(s)

I Intervention(s) ?

C Comparator(s)

O Outcomes

What exercise interventions would you include?

- 2-3 minutes to brainstorm interventions
- Add to the wordcloud

PICO for the review

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

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Protocol stage

Scope of the review

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

James Thomas, Dylan Kneale, Joanne E McKenzie, Sue E Brennan, Soumyadeep Bhaumik

Key Points:

- Systematic reviews should address answerable questions and fill important gaps in knowledge.
- Developing good review questions takes time, expertise and engagement with intended users of the review.
- Cochrane Reviews can focus on broad questions, or be more narrowly defined. There are advantages and disadvantages of each.
- Logic models are a way of documenting how interventions, particularly complex interventions, are intended to 'work', and can be used to refine review questions and the broader scope of the review.
- Using priority-setting exercises, involving relevant stakeholders, and ensuring that the review takes account of issues relating to equity can be strategies for ensuring that the scope and focus of reviews address the right questions.

Cite this chapter as: Thomas J, Kneale D, McKenzie JE, Brennan SE, Bhaumik S. Chapter 2: Determining the scope of the review and the questions it will address [last updated August 2023]. In: Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.5. Cochrane, 2024. Available from cochrane.org/handbook.

2.1 Rationale for well-formulated questions #section-2-1

Protocol stage

PICO eligibility criteria for including studies in the review

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

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

Key Points:

- 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

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)

Outcomes: what to specify

Outcome domain ('what' is measured)

Fatigue

Created by Lorie Shaull
from Noun Project

Pain

Weight

Created by Adrien Coquet
from Noun Project

Outcomes: what to specify

Outcome domain ('what' is measured)

Fatigue

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Weight

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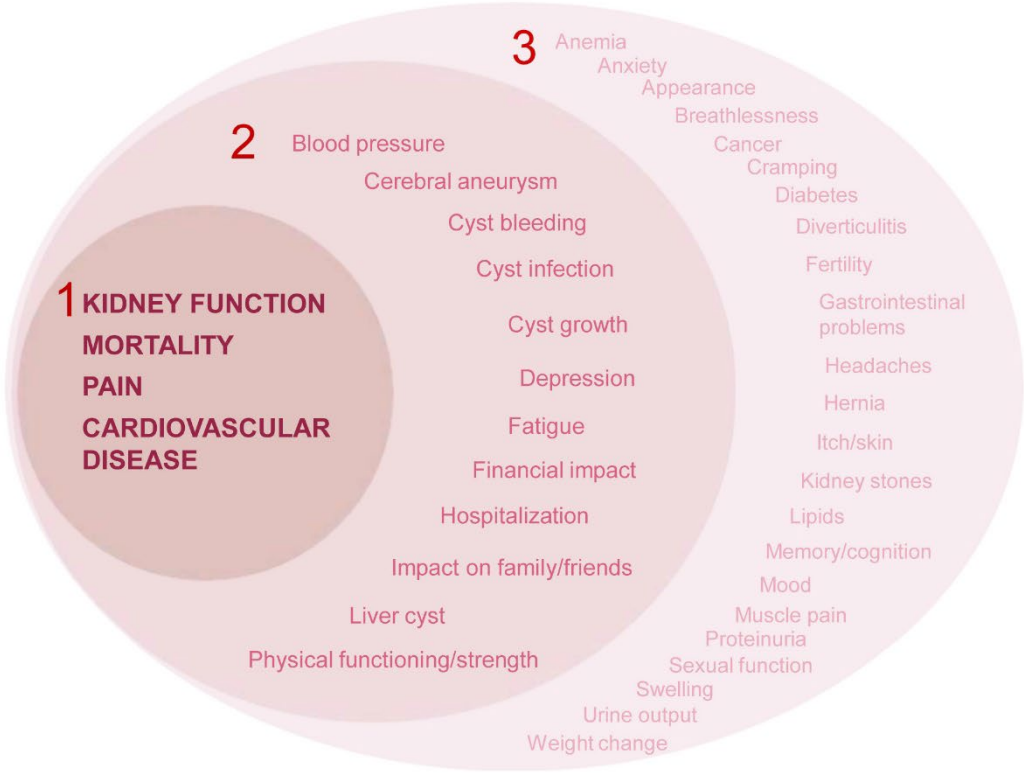
CONSIDER. Core outcome sets if available (or outcome taxonomies, outcomes in other reviews)

SONG-PKD

1 CORE OUTCOMES
Critically important to all stakeholder groups
Report in all trials

2 MIDDLE TIER
Critically important to some stakeholder groups
Report in some trials

3 OUTER TIER
Important to some or all stakeholder groups
Consider for trials



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

Outcomes: what to specify

Outcome domain ('what' is measured)

Fatigue

Created by Lorie Shaull from Noun Project

Weight

Created by Adrien Coquet from Noun Project

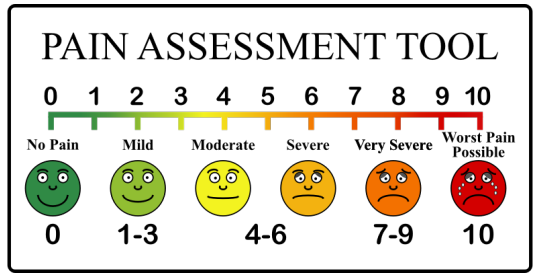
Measurement method ('how' it is measured)

During the past 7 days:

I feel fatigued

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

PROMIS® item bank v1.0 – fatigue



Numeric rating scale

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

Time points ('when' it is measured)

Outcomes: what to specify

Outcome domain ('what' is measured)

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Created by Lorie Shaull from Noun Project

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Measurement method ('how' the outcome is measured)

During the past 7 days:

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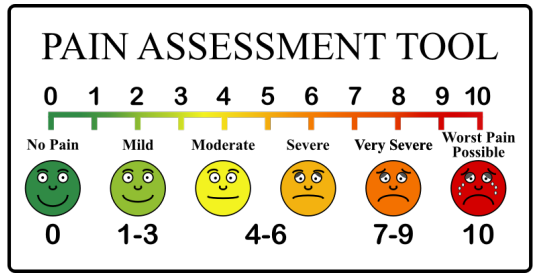

Numeric rating scale

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

Time frame ('when' the outcome is measured)

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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www.insynq.info

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- Commissioners of reviews who want to ensure that the planned synthesis aligns with their requirements
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Download the full InSynQ checklist and guide

Download the 2 page checklist for reporting

Review stage

Summarise study characteristics
&
Prepare for synthesis

Cochrane Training
Trusted evidence.
Informed decisions.
Better health.

Search...

Online learning | Learning events | Guides and handbooks | Trainers' Hub | Log in

Chapter 9: Summarizing study characteristics and preparing for synthesis

Search Handbook

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

Key Points:

- 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.

Cite this chapter as: McKenzie JE, Brennan SE, Ryan RE, Thomson HJ, Johnston RV. Chapter 9: Summarizing study characteristics and preparing for 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 www.training.cochrane.org/handbook.

9.1 Introduction #section-9-1

A framework for synthesis

Protocol stage

Plan your PICO for each synthesis
- Intervention groups
- Comparisons
- Outcome groups

+

Plan your methods for synthesis and structured summary

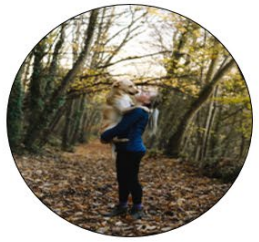
Review stage

Examine the PICO of each included study to decide which are eligible for each synthesis

Examine the data from each study to confirm which of your planned synthesis methods you can use (prac)

Conduct your synthesis

Study 1



Weight bearing?
Low force?

Study 2

Weight bearing?
Low force?

Study 3

Weight bearing?
Low force?

Etc ...

Cochrane handbook Chapter 9

www.insynq.info

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Download the 2 page checklist for reporting

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

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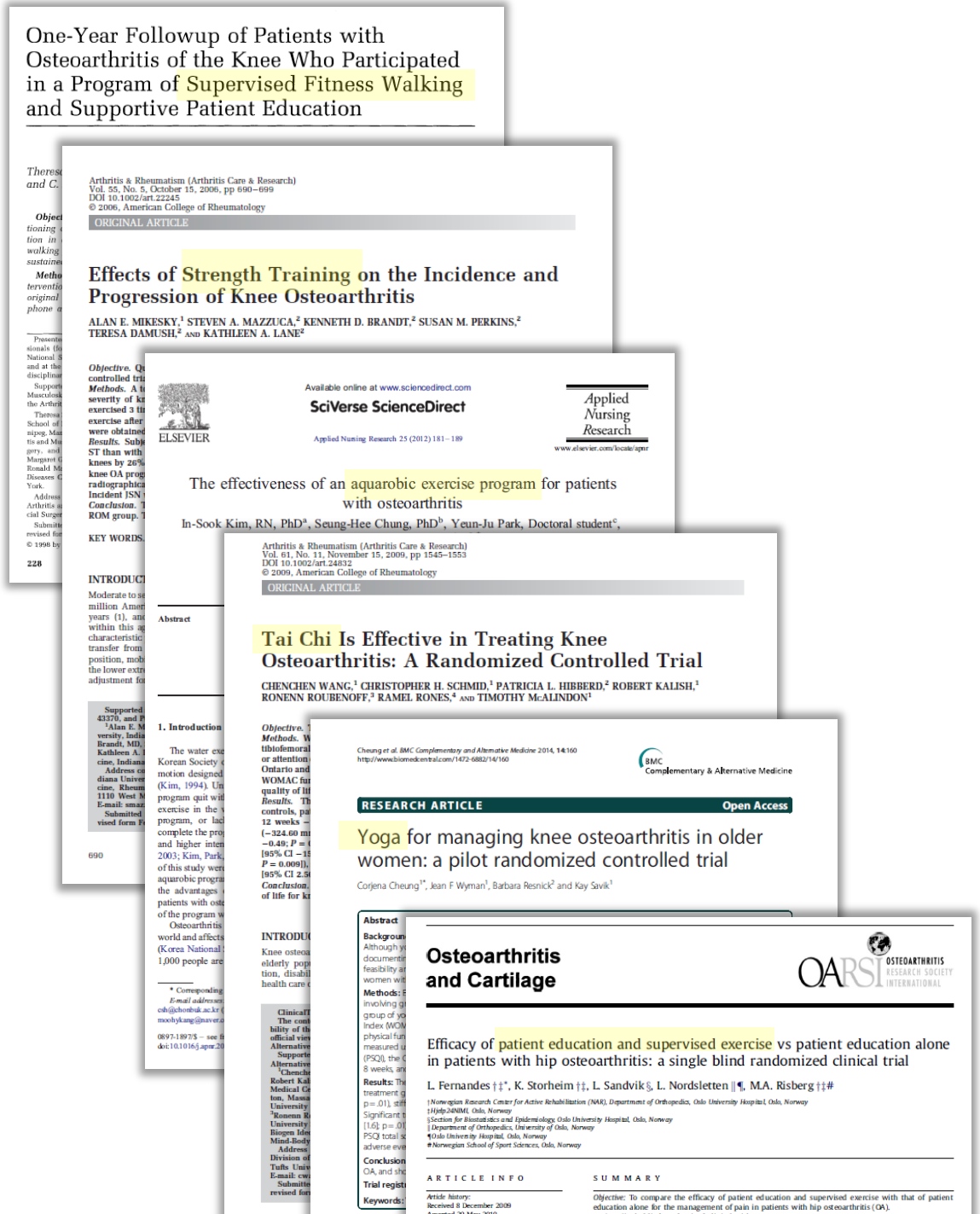


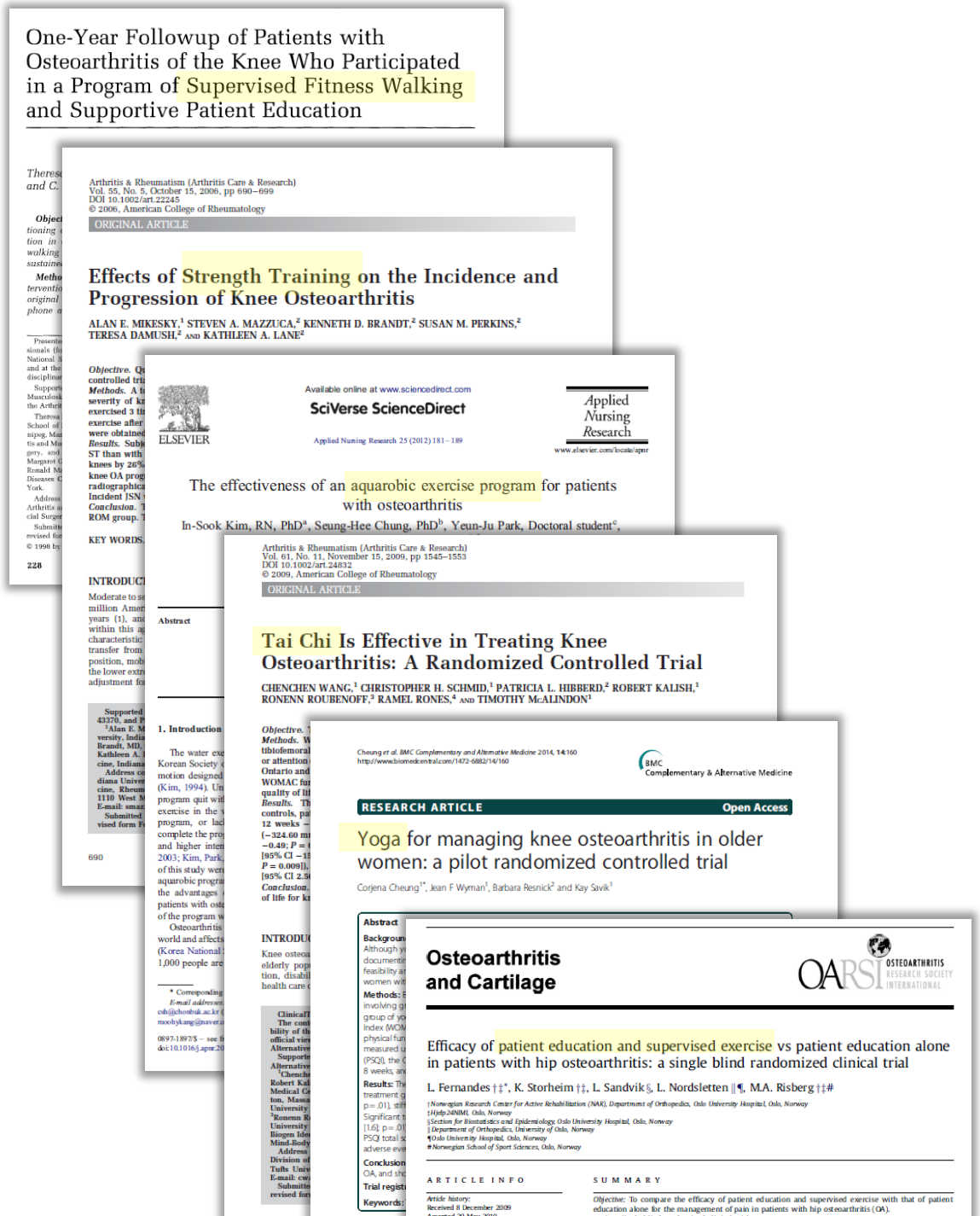
OUR EXAMPLE. Included studies examine <u>many</u> types of exercise

- 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

<u>ALL forms of exercise</u> for hip / knee osteoarthritis.



OUR EXAMPLE. The outcomes are diverse!

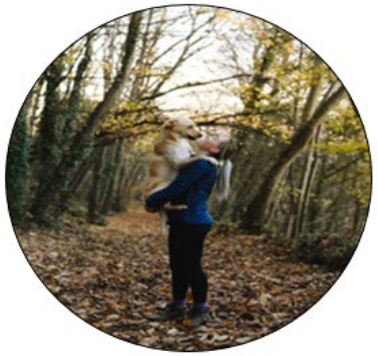
- pain intensity overall, on walking …
- specific aspects of physical function (e.g. gait, walking speed …) and psychosocial function
- different measures (e.g. 7 different scales for function, 5 for depression and anxiety)
- at different times (2 weeks, 6 weeks, 3 months ….)

All outcomes eligible for you synthesis. How would you handle them?

Combine all measures of a domain? Report each in a separate analysis?

Longest follow-up? Or specified timeframes?

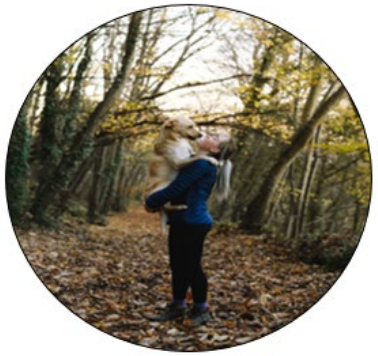
Example. Exercise for osteoarthritis of the knee or hip



Diverse interventions

What are your synthesis questions?

Example. Exercise for osteoarthritis of the knee or hip



One synthesis question: What is the effect of (<u>any</u>) **<u>exercise</u>** 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

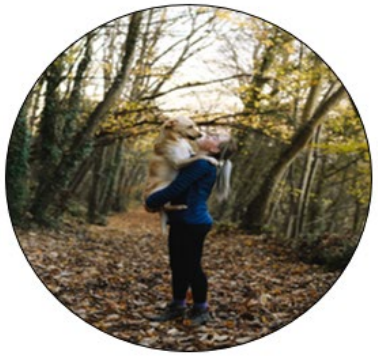
Study or subgroup	Exercise N	Mean(SD)	Control N	Mean(SD)	Std. Mean Difference IV,Fixed,95% CI	Weight	Std. Mean Difference IV,Fixed,95% CI
Aglamis 2008	16	5.4 (1.64)	9	6.4 (1.2)		1.5 %	-0.64 [-1.48, 0.20]
Baker 2001	22	462 (385.3)	22	664 (436.7)		2.9 %	-0.48 [-1.08, 0.12]
Bennell 2014	46	27.5 (12.9)	50	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% CI)	**951**		**648**		◆	**100.0 %**	**-0.27 [-0.37, -0.17]**

Heterogeneity: Chi² = 27.51, df = 15 (P = 0.02); I² =45%
Test for overall effect: Z = 5.20 (P < 0.00001)
Test for subgroup differences: Not applicable

-2 -1 0 1 2
Favours exercise Favours control

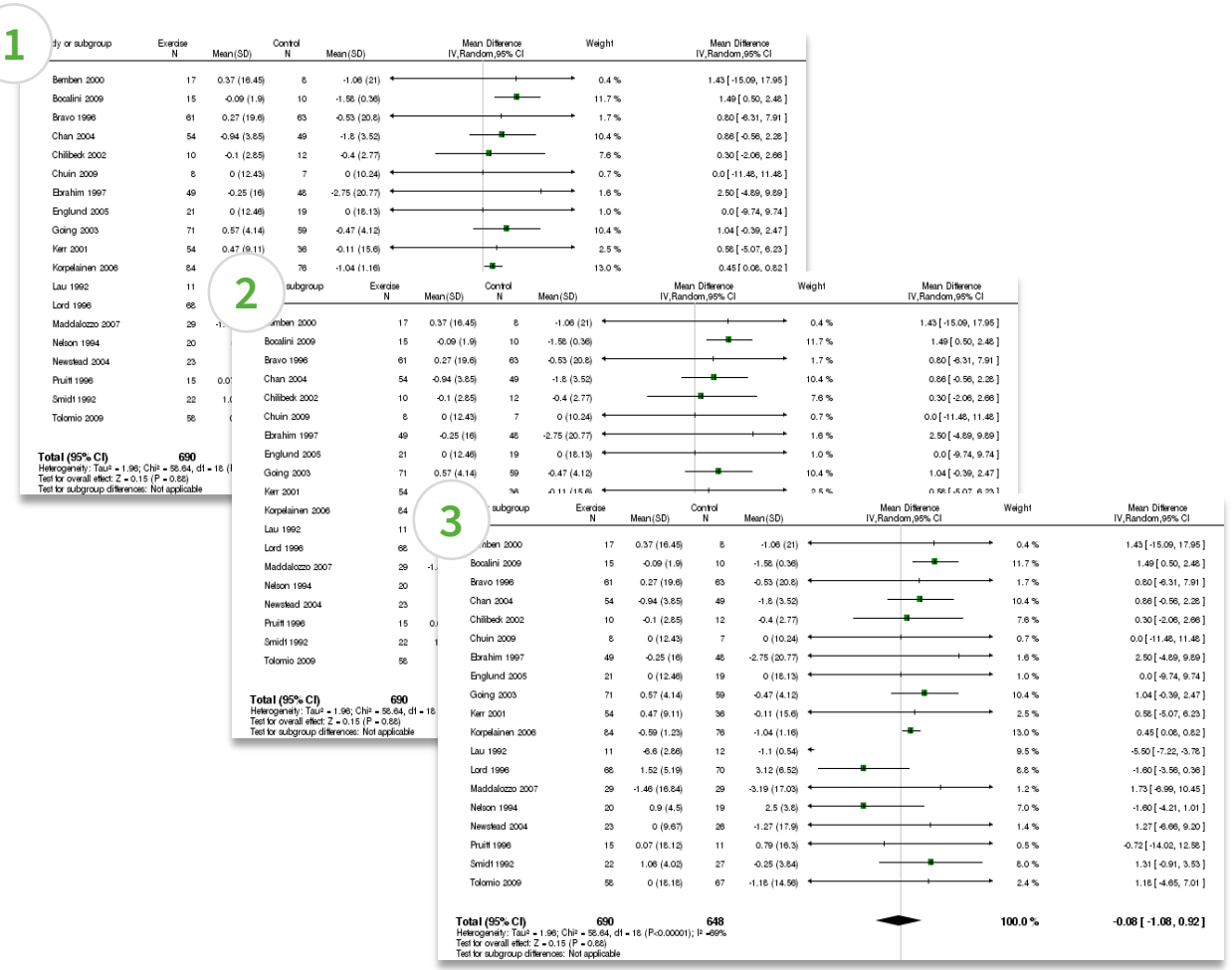
<u>all included studies</u> that report the outcome of interest <u>are eligible</u> for this meta-analysis irrespective of the type of exercise

Example. Exercise for osteoarthritis of the knee or hip



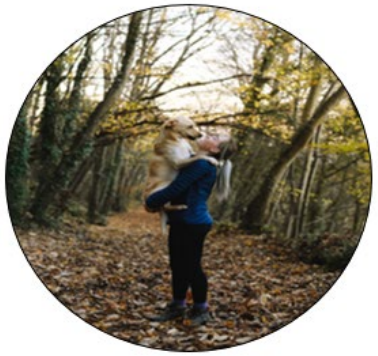
Specific questions

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 …



Example. Exercise for osteoarthritis of the knee or hip

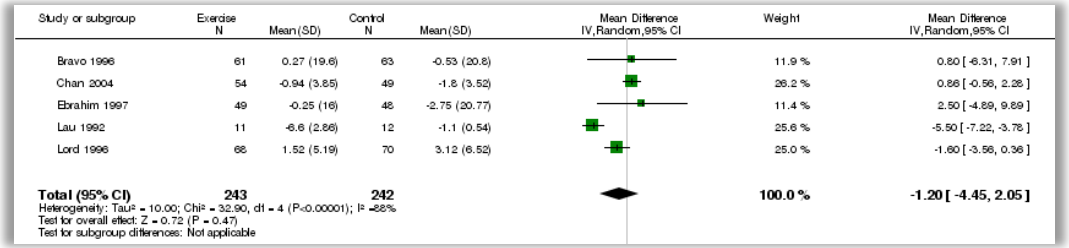
Interventions grouped by whether the exercise was **aerobic** or **not**. (for each outcomes - physical function, emotional wellbeing …)



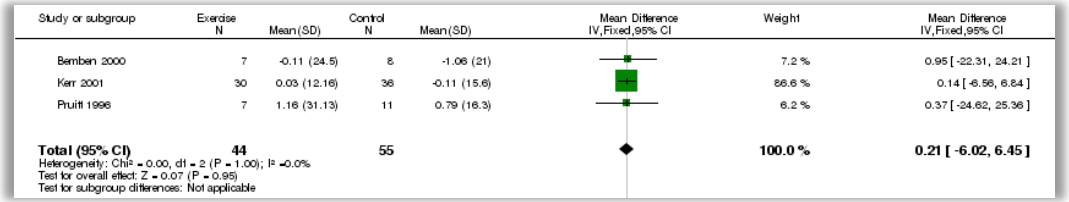
Each analysis answers a question!

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

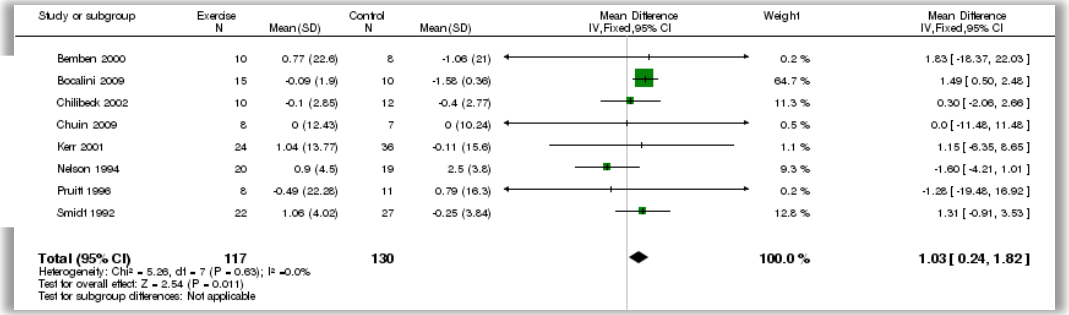
Q1. Does **aerobic exercise** increase physical function…



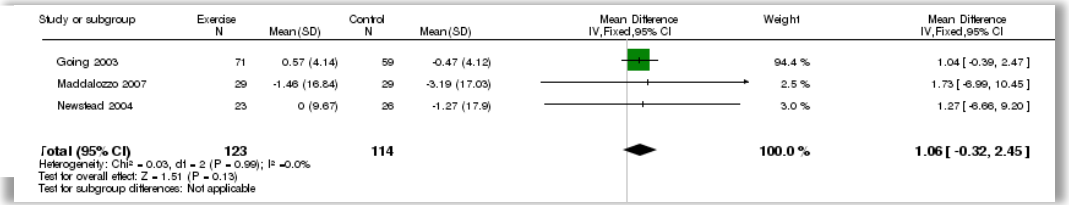
Q2. Does **non-aerobic** exercise increase physical function …



Q3. Does **aerobic exercise** improve emotional wellbeing…



Q4. Does **non-aerobic** exercise improve emotional wellbeing…



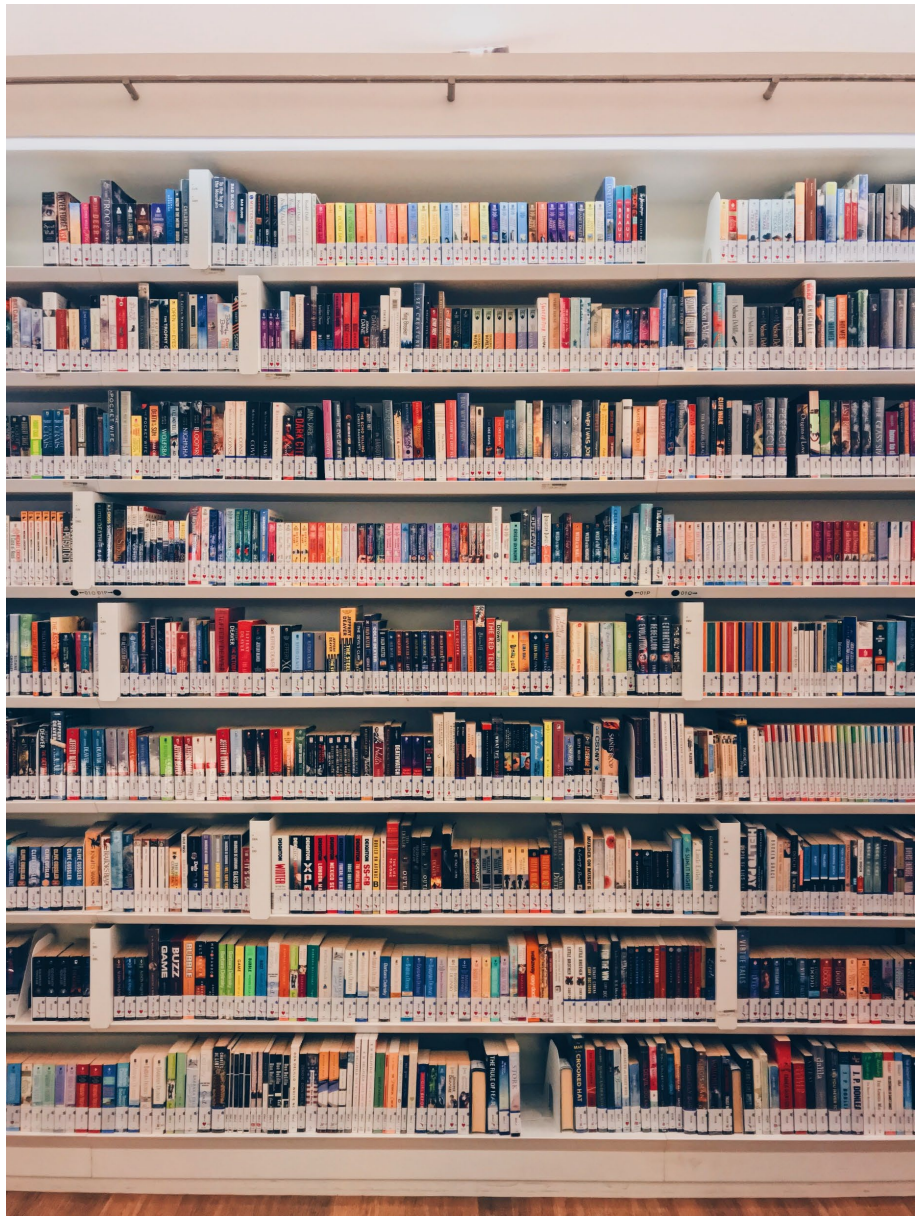
A systematic review is much like a bookshelf

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

Photo by Luisa Brimble on Unsplash
https://unsplash.com/photos/VfHoMBagDPc?utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink



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

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

Photo by Ayman Yusuf on Unsplash
https://unsplash.com/photos/mvrSnn9RVQI?utm_source=unsplash&utm_medium=referral&utm_content=creditShareLink

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 …

Photo by Ashim D'Silva on Unsplash
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4. Using InSynQ to develop and report your synthesis questions

Cochrane

www.insynq.info

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www.insynq.info

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 9. Describe the processes used to decide which studies were eligible for each synthesis
Review only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol 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

www.insynq.info

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

Item 4. Essential and additional elements

- 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

www.insynq.info

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
	9. Describe the processes used to decide which studies were eligible for each synthesis
Review only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol
	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

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	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 only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol
	11. Report the results in accordance with the groups and comparisons specified in the methods

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 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)	• simulated movement or mentally rehearsing the action without really performing the movement; • individuals feel themselves accomplishing the movement
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
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

InSynQ item 1. Specify population and intervention groups to be used in the synthesis

Quiz question 1

Interventions for motor rehabilitation following below-knee amputations

Intervention	Definition
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)	• simulated movement or mentally rehearsing the action without really performing the movement; • individuals feel themselves accomplishing the movement
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
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

Each group is labelled (named)

The groups are defined in enough detail to replicate decisions about which intervention group each study is eligible for

Presenting these definitions in a table (or logic model/figure) ensures the text remains concise, but detail is available and well structured

InSynQ item 1. Specify population and intervention groups to be used in the synthesis

Quiz question 1

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)

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

www.insynq.info

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 9. Describe the processes used to decide which studies were eligible for each synthesis
Review only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol 11. Report the results in accordance with the groups and comparisons specified in the methods

Your turn. Which option best describes 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 missing information

B. Separate meta-analyses for each of the 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.

eing outcomes);

and

nsiveness)

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

www.insynq.info

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 9. Describe the processes used to decide which studies were eligible for each synthesis
Review only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol 11. 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.

B. We will include all interventions for 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.

B. We will include all interventions for 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

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

www.insynq.info

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 9. Describe the processes used to decide which studies were eligible for each synthesis
Review only	10. Identify changes made at review stage to the groups or comparisons reported in the protocol 11. Report the results in accordance with the groups and comparisons specified in the methods

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 <u>which of these roles</u> 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

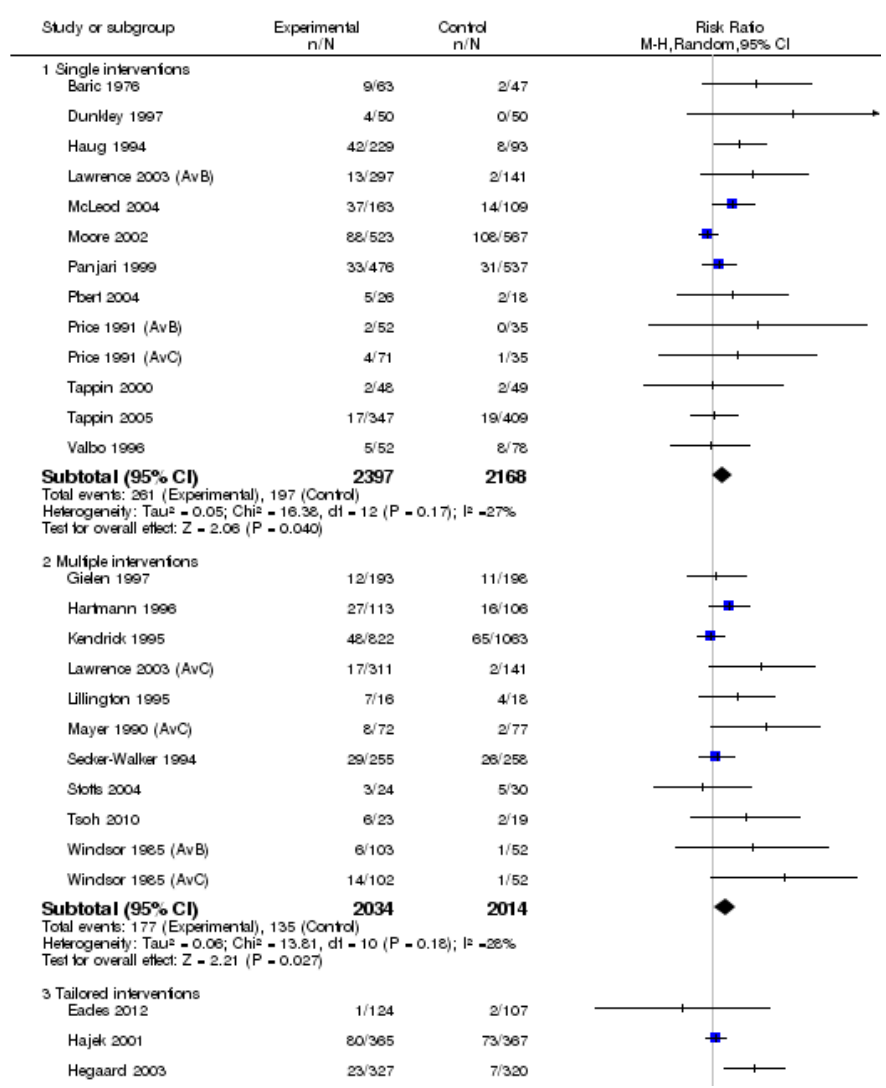
Cochrane

Have your included studies. Now what?

102 included studies

Chapter 9

Implementing your plan for synthesis



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

A framework for synthesis

Protocol stage

Plan your PICO for each synthesis
- Intervention groups
- Comparisons
- Outcome groups

+

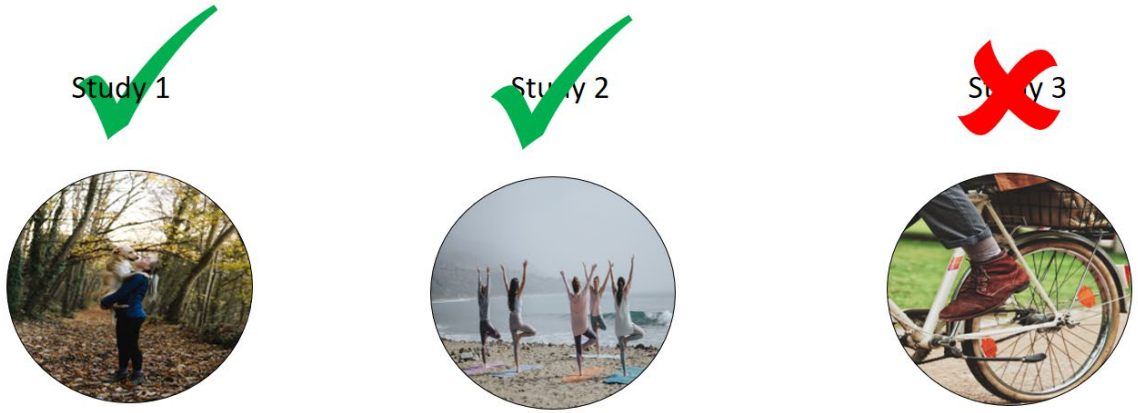
Plan your methods for synthesis and structured summary

Review stage

Examine the PICO of each included study to decide which are eligible for each synthesis

Examine the data from each study to confirm which of your planned synthesis methods you can use

Conduct your synthesis



Etc ...

Cochrane handbook Chapter 9

A framework for synthesis*

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)	

* Chapter 9, 2019 Cochrane Handbook

A framework for synthesis*

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

* Chapter 9, 2019 Cochrane Handbook

A framework for synthesis*

1. Protocol stage
(Chapters 2 & 3)

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

1.1

2.1

Characteristics of included studies [ordered by study ID]

scolaris.cdsr.references.label.jump.to **excluded studies** | **ongoing studies**

Albrecht 1998

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. Study conducted in Pittsburgh, USA. Data collection dates not reported.
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, **I1** = 29, **I2** = 26). **Baseline characteristics**: Mean cigarettes/day at first visit: C = 6.44; **I1** (TFS) = 5.87; **I2** (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

Practical approaches for preparing for synthesis*

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

*Cochrane Handbook, Chapter 9

Cochrane

Cochrane Database of Systematic Reviews

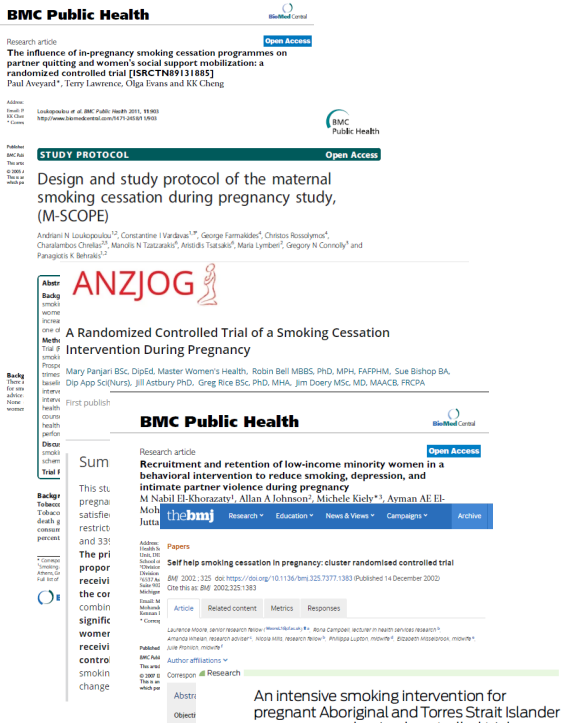
Psychosocial interventions for supporting women to stop smoking in pregnancy

Cochrane Systematic Review - Intervention | Version published: 14 February 2017 see what's new

New search Conclusions changed Am score 44 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


BMC Public Health

Research article

The influence of in-pregnancy smoking cessation programmes on partner quitting and women's social support mobilization: a randomized controlled trial [ISRCTN89131885]

Paul Aveyard*, Terry Lawrence, Olga Evans and KK Cheng

STUDY PROTOCOL Open Access

Design and study protocol of the maternal smoking cessation during pregnancy study, (M-SCOPE)

ANZJOG

A Randomized Controlled Trial of a Smoking Cessation Intervention During Pregnancy

Mary Panjari BSc, DipEd, Master Women's Health, Robin Bell MBBS, PhD, MPH, FAFPHM, Sue Bishop BA, Dip App Sci(Nurs), Jill Astbury PhD, Greg Rice BSc, PhD, MHA, Jim Doery MSc, MD, MAACB, FRCPA

BMC Public Health

Research article

Recruitment and retention of low-income minority women in a behavioral intervention to reduce smoking, depression, and intimate partner violence during pregnancy

M Nabil El-Khorazaty, Allan A Johnson, Michele Kiely*, Ayman AE El-

thebmj Research Education News & Views Campaigns Archive

Papers

Self help smoking cessation in pregnancy: cluster randomised controlled trial

BMJ 2002;325 doi https://doi.org/10.1136/bmj.325.7377.1383 (Published 14 December 2002)

Cite this as: BMJ 2002;325:1383

Article Related content Metrics Responses

An intensive smoking intervention for pregnant Aboriginal and Torres Strait Islander women: a randomised controlled trial

102 included studies

etc

Study ID	Precis of intervention description from study
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.
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 information pack (developed in collaboration with a focus group of women), which included a self-help booklet. • Invited to join a stop smoking support group.

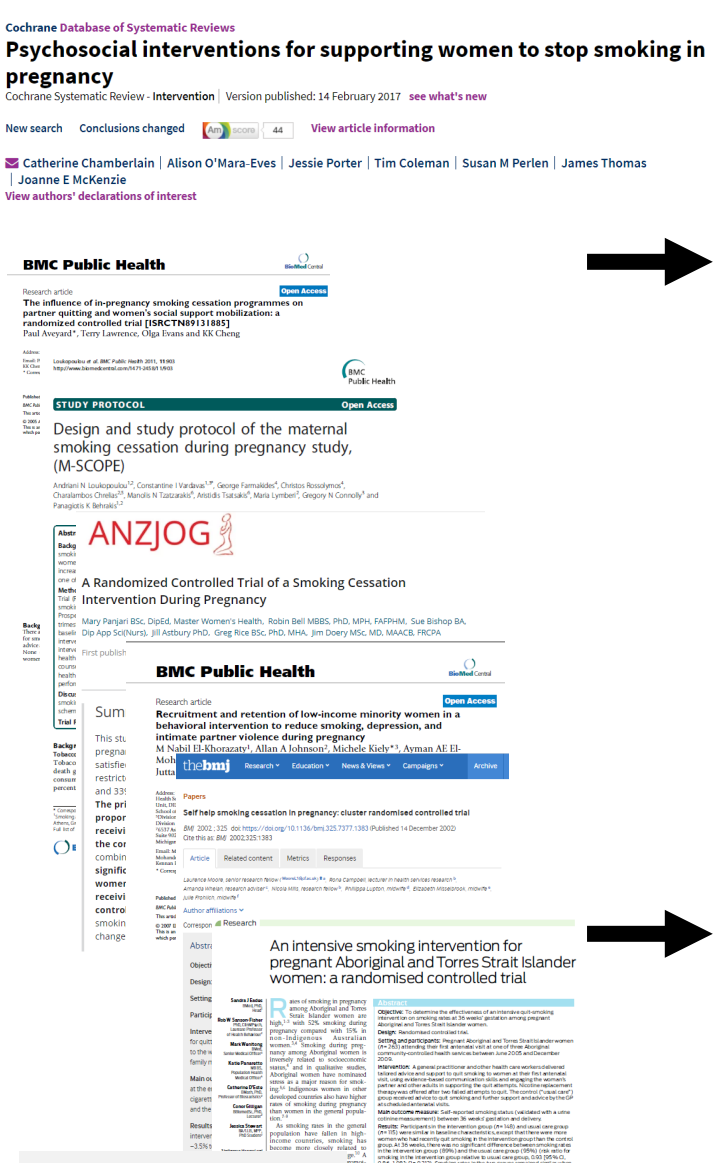
Compare the PICO for each study to your PICO for each synthesis

Table 9.3.a Example of categorizing interventions into pre-defined groups

Definition of (selected) intervention groups from the PICO for each synthesis

- *Counselling*: "provide[s] motivation to quit, support to increase problem solving and 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 a '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)



102 included studies

etc

Study ID	Precis of intervention description from study	Main intervention strategy	Other intervention components
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.	Counselling	Incentive
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 collaboratic which inclu • Invited to jo group.	Counselling	Social support

Standardise the name of each intervention type and it's main components

PICO for each study
to
for each synthesis

erventions into pre-defined groups

oups from the PICO for each synthesis

n 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

intervention from
rding to your pre-
rvention groups
omes etc)

A framework for synthesis*

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

* Chapter 9, 2019 Cochrane Handbook

Table 9.3.b Table of study characteristics illustrating similarity of PICO elements across studies

Study[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	
									Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe[4]
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	Maybe[4]
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

Studies ordered by comparator

2.2 High level summary of PICO across studies

Table 9.3.b Table of study characteristics illustrating similarity of PICO elements across studies

Study[1]	Comparator	Self-management 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	Yes[4]
									Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe[4]
e		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	Maybe[4]
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

2.2 Selected intervention components (categorised & coded)

Table 9.3.b Table of study characteristics illustrating similarity of PICO elements across studies

Study[1]	Comparator	Self-management 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	Yes[4]
									Function	HAQ disability subscale	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe[4]
2	Acupuncture	BEH		EMO					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	Maybe[4]
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

2.2 Outcome domains, measures and time points (each categorised)

A framework for synthesis*

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

* Chapter 9, 2019 Cochrane Handbook

Table 9.3.b Table of study characteristics illustrating similarity of PICO elements across studies

Study[1]	Comparator	Self-management 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	Yes[4]
									Function	HAQ disability su	1 mth (short), 8 mths (long)	Median, IQR, N / group	Maybe[4]
2	Acupuncture	BEH		EMO		CON	SKL	NAV	Pain	Pa wa VA	g)	MD from ANCOVA model, 95%CI	Yes
									Function	Dutch AIMS-SF	1 mth (short), 12 mths (long)	Median, range, N / group	Maybe[4]
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

2.3 Data available for synthesis

A framework for synthesis*

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

* Chapter 9, 2019 Cochrane Handbook

Practical approaches for preparing for synthesis*

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)

*Cochrane Handbook, Chapter 9

Cochrane

A framework for synthesis*

1. Protocol stage (Chapters 2 & 3)	**1.1 Set up comparisons (PICO for each synthesis). Specify:**
	- intervention groups and comparisons for each synthesis
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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
	2.5 Synthesise the characteristics of studies contributing to each comparison

* Chapter 9, 2019 Cochrane Handbook

Practical approaches for preparing for synthesis*

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 targeted 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)

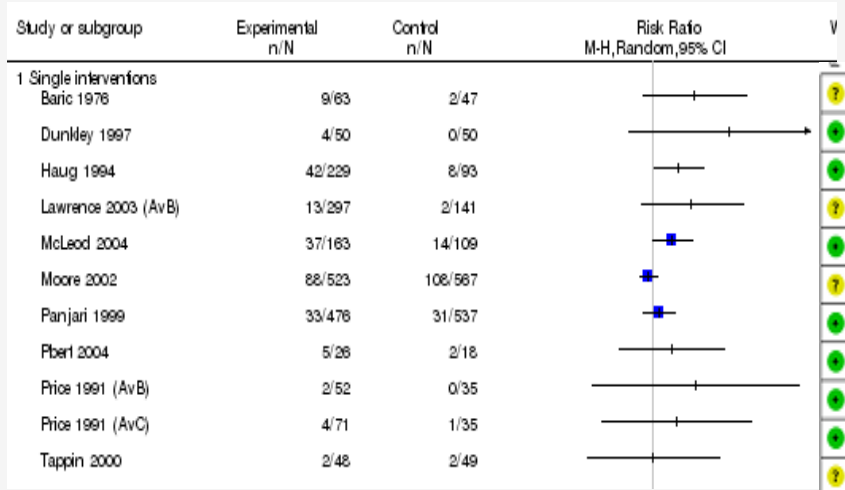
But how helpful is this for **interpreting findings?**

*Cochrane Handbook, Chapter 9

Practical approaches for preparing for synthesis*

From this

To this



The same applies to synthesis of study characteristic – at the level of result NOT the whole review

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Practical approaches for preparing for synthesis*

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 (characteristics pre-specified 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

*Cochrane Handbook, Chapter 9

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A framework for synthesis*

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 *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
	2.5 Synthesise the characteristics of studies contributing to each comparison
3. The synthesis (Chapters 10-12)	3.1 Perform a statistical synthesis or provide structured reporting of effects
	3.2 Interpret and describe the results

* Chapter 9, 2019 Cochrane Handbook

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Dichotomous and continuous outcomes
Dr Joseph Alvin Ramos Santos, Co-Convenor, Cochrane Statistical Methods Group
SIGN UP

Tuesday 15 July 2025, 08:00 UTC
Introduction to meta-analysis
Dr Mark Simmonds, Senior Research Fellow, University of York, UK. UK Co-Convenor, Cochrane Statistical Methods Group
SIGN UP

Tuesday 23 September 2025, 13:00 UTC
Exploring heterogeneity
Dr. Theodoros Evrenoglou, Co-Convenor, Cochrane Statistical Methods Group
SIGN UP

October 2025, *Time and date to be confirmed*
Analysing other outcomes and study designs
Dr. Areti Angeliki Veroniki, Co-Convenor, Cochrane Statistical Methods Group

November 2025, *Time and date to be confirmed*
Synthesising and presenting results when meta-analysis is not possible
Joanne McKenzie, Head of Methods in Evidence Synthesis Unit, School of Public Health and Preventive Medicine, Monash University

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6. Questions

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