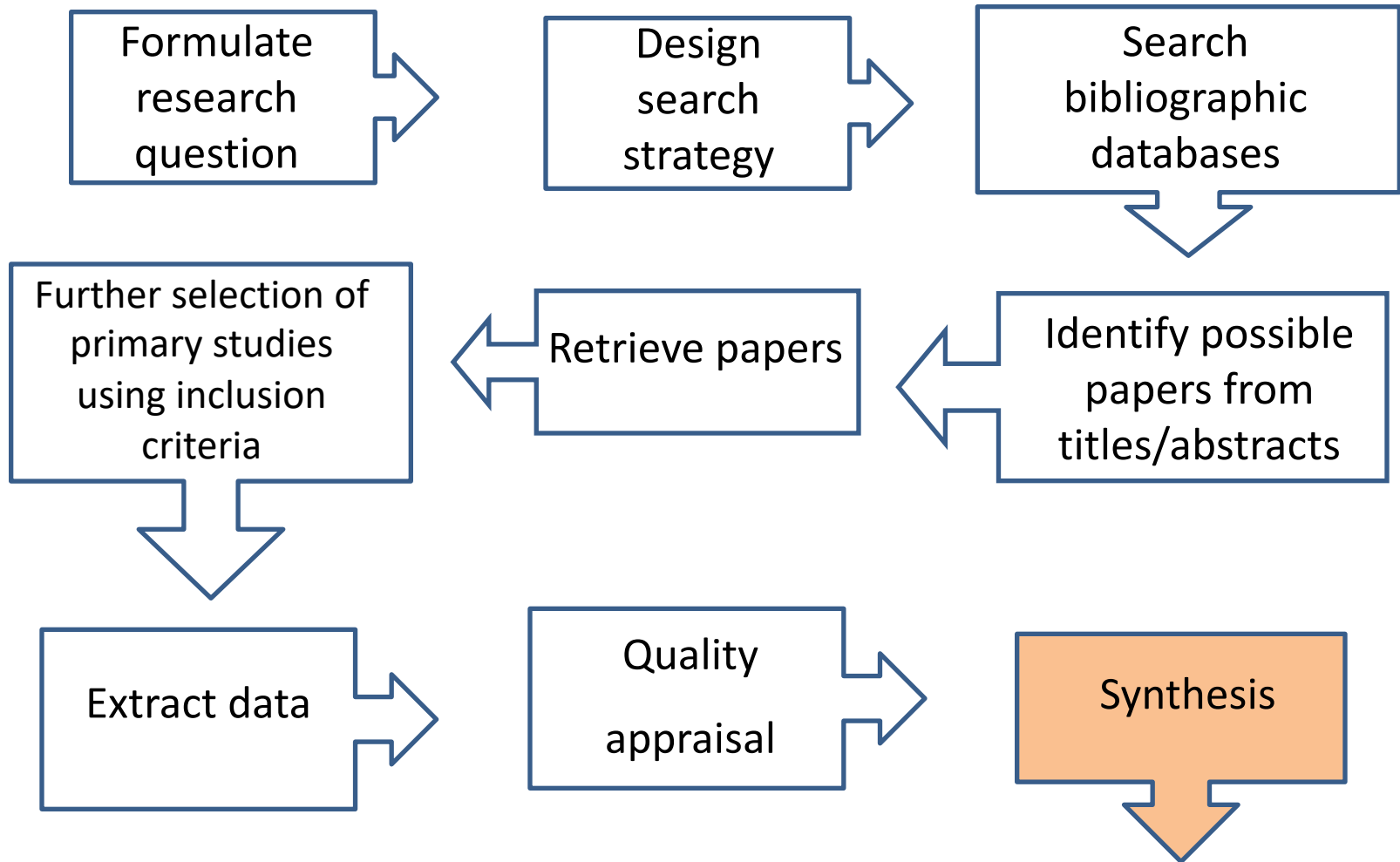


Introduction to meta-analysis in Review Manager (RevMan). 5.2

Xiaojin Yu

The systematic review process



Session overview

- Open Revman
- Adding studies
- Add comparison
- Add outcome
- Data entry
- Conducting meta-analysis
- Generating plots and graphs

Review Manager (RevMan)

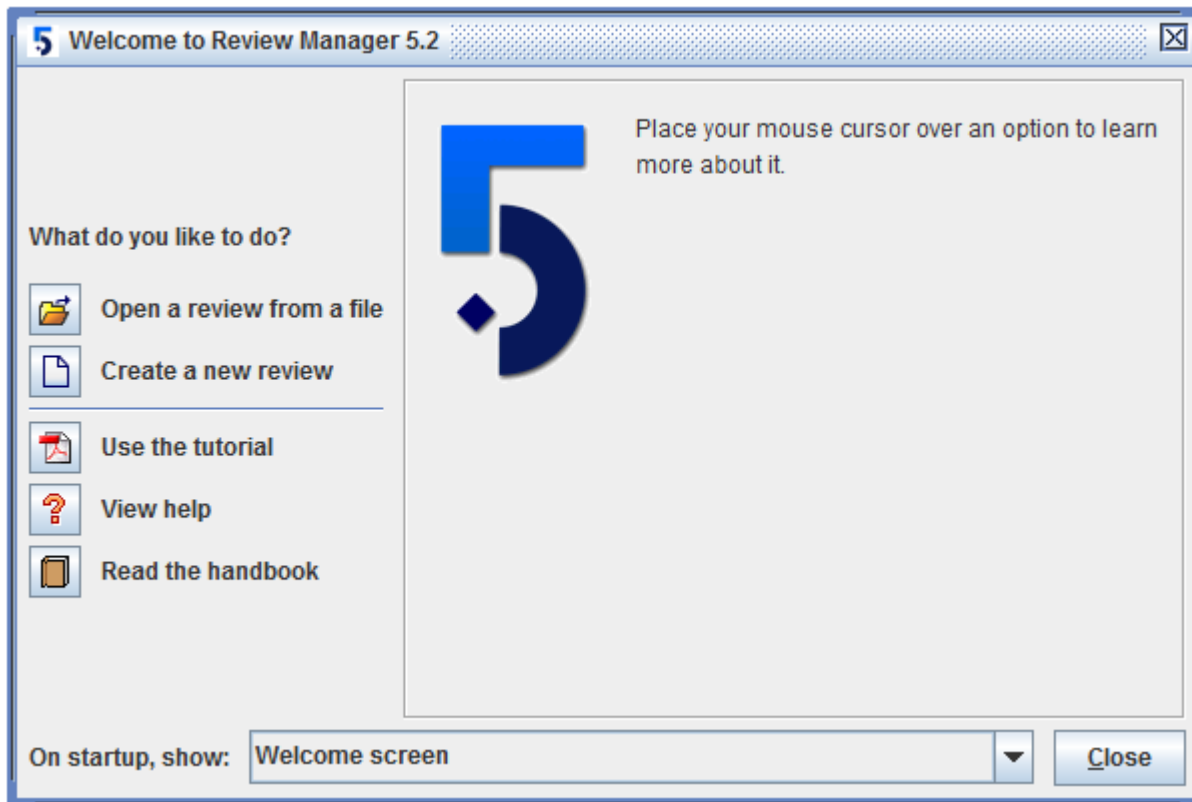
- ❑ A software FROM The Cochrane Collaboration for preparing and maintaining Cochrane reviews.
- ❑ RevMan facilitates preparation of protocols and full reviews
- ❑ It is most useful when you have formulated the question for the review and allows you to:
 - prepare the text,
 - build the tables showing the characteristics of studies and the comparisons in the review,
 - add study data,
 - perform meta-analyses and
 - present the results graphically.
- ❑ Download here: <http://ims.cochrane.org/revman/download>

Categorical data Example

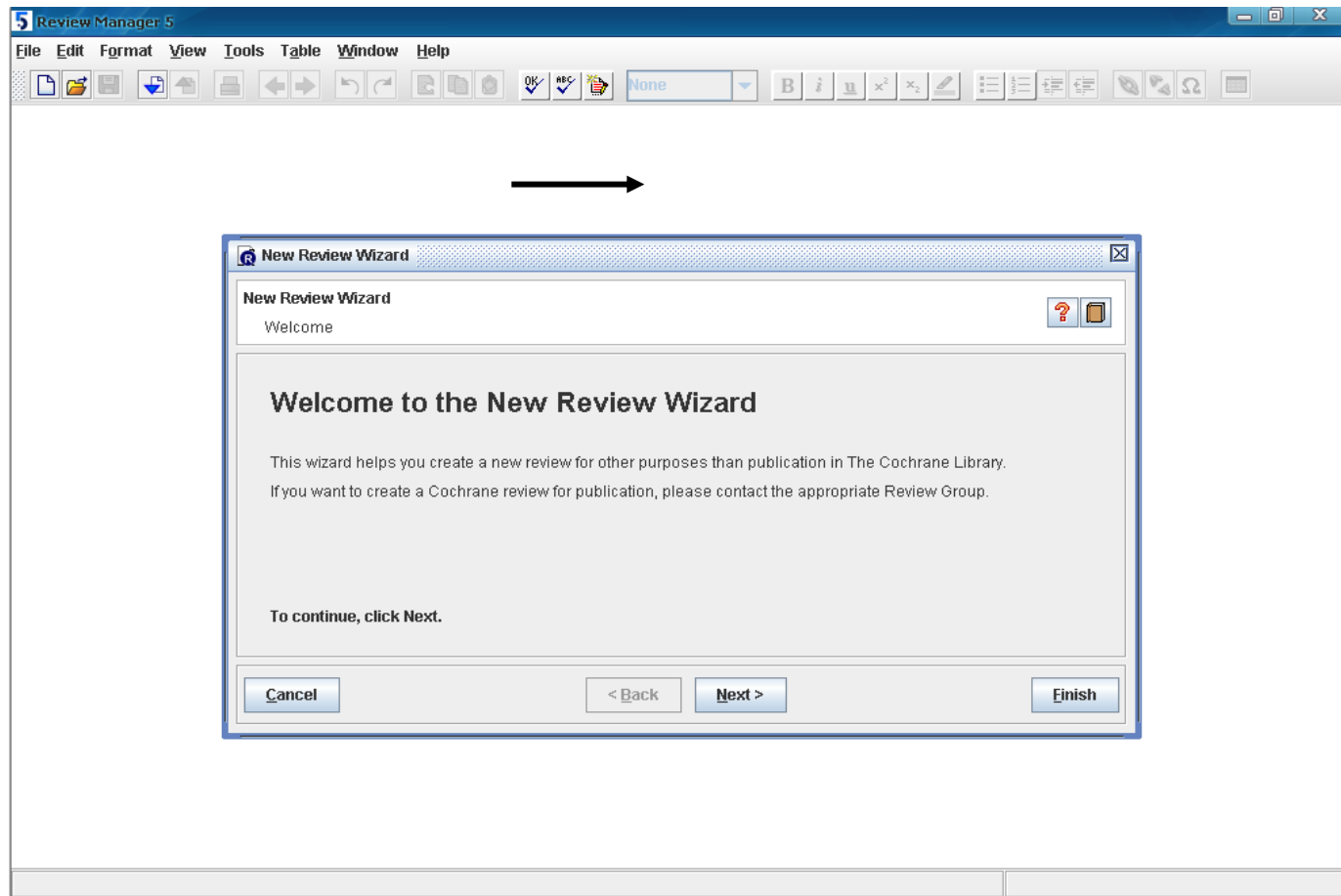
studies	ASprin		placebo	
	death (n)	total (N)	death (n)	total (N)
MRC-1 1974	49	615	67	624
CDP 1976	44	758	64	771
MRC-2 1979	102	832	126	850
GASP 1979	32	317	38	309
PARIS 1980	85	810	52	406
AMIS 1980	246	2267	219	2257
ISIS-2 1988	1570	8587	1720	8600

RevMan5.2 tour

- Building your review or protocol**
- Add studies**
- Assess studies**
- Data input**



Welcome page



Types of review

New Review Wizard

Which type of review do you want to create?

Type of Review:

- ☒ **I**ntervention review
- ☐ **D**iagnostic test accuracy review
- ☐ **M**ethodology review
- ☐ **O**verview of reviews

Cancel **< Back** **Next >** **Finish**

Title of your SR

New Review Wizard

New Review Wizard

What is the title of the review?

Title:

☒ [Intervention]

☐ [Intervention A]

☐ [Intervention]

☐ [Use if title does not fit a]

Cancel

New Review Wizard

New Review Wizard

What is the title of the review?

Title:

☒ asprin for myocardial infarction

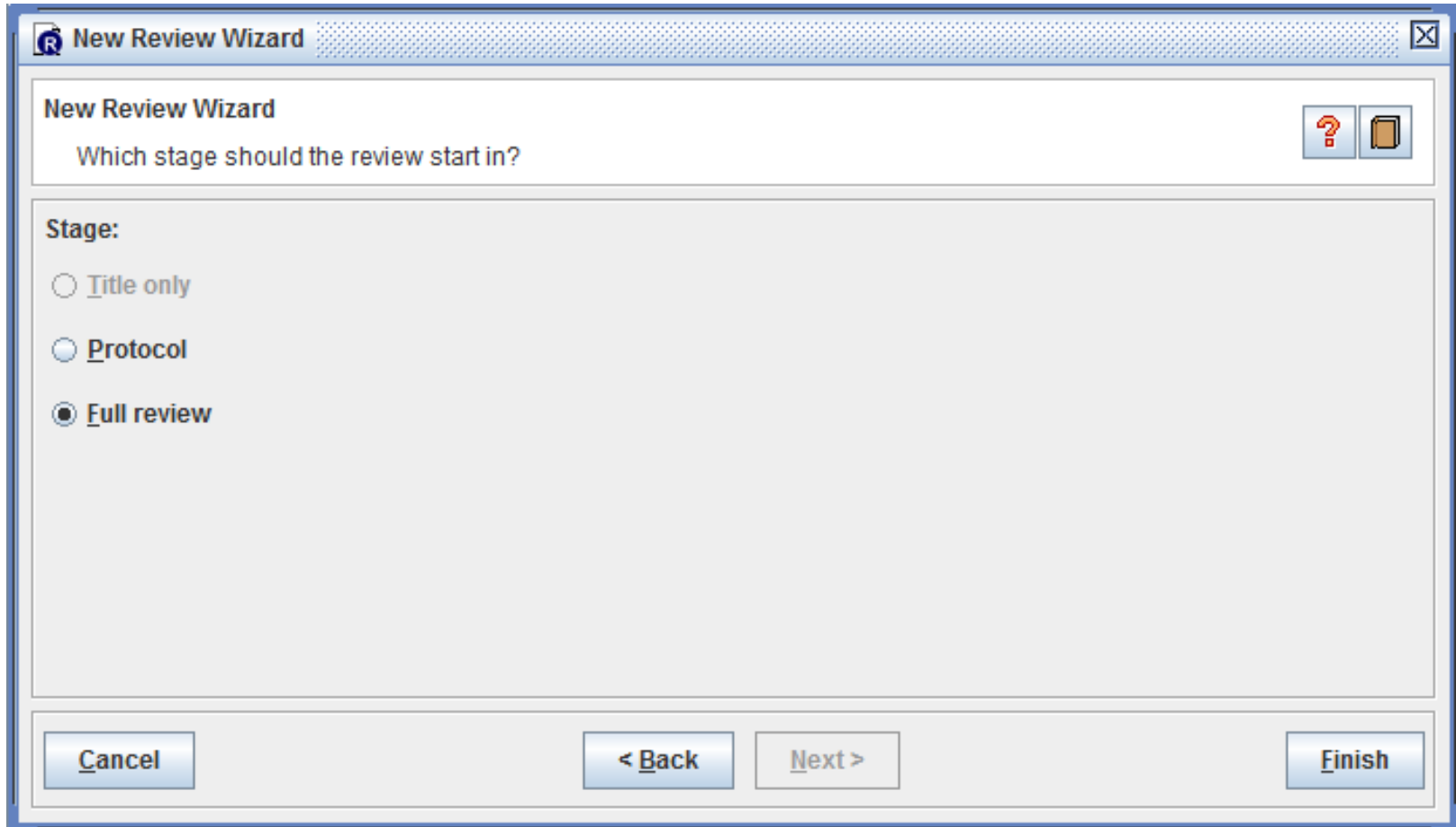
☐ [Intervention A] versus [intervention B] for [health problem]

☐ [Intervention] for [health problem] in [participant group/location]

☐ [Use if title does not fit any of the formats above]

Cancel < Back Next > Finish

Protocol or Full review



A screenshot of a Windows-style dialog box titled "New Review Wizard". The dialog box has a title bar with a close button (X) in the top right corner. Below the title bar, the text "New Review Wizard" is displayed, followed by the question "Which stage should the review start in?". To the right of this text are two icons: a red question mark and a brown folder icon. Below the question, the word "Stage:" is followed by three radio button options: "Title only", "Protocol", and "Full review". The "Full review" option is selected, indicated by a filled black circle. At the bottom of the dialog box, there are four buttons: "Cancel", "< Back", "Next >", and "Finish".

New Review Wizard

Which stage should the review start in?

Stage:

☐ Title only

☐ Protocol

☒ Full review

Cancel < Back Next > Finish

There you are

The screenshot displays the Review Manager 5 software interface. The main window is titled 'aspirin for myocardial infarction' and is currently showing the 'Text of Review' tab. On the left, a navigation pane lists various sections: Intervention review, Title, Protocol information, Main text, Tables, Studies and references, Data and analyses, Figures, Sources of support, Feedback, and Appendices. The 'Protocol information' section is expanded, showing sub-sections for Authors, Contact person, and Dates. The 'Authors' section contains a text field for '[Empty name]¹', a field for '¹[Empty affiliation]', and a citation example: '[Empty name]. aspirin for myocardial infarction [Protocol]. Cochrane Database of Systematic Reviews [Year], Issue [Issue]'. Below this is an 'Add Author' button. The 'Contact person' section has a text field for '[Empty name]'. The 'Dates' section includes two text fields: 'Assessed as Up-to-date:' and 'Date of Search:', each with a small calendar icon to its right. The top of the window features a menu bar (File, Edit, Format, View, Tools, Table, Window, Help) and a toolbar with various icons for file operations and formatting.

Review Manager 5

File Edit Format View Tools Table Window Help

aspirin for myocardial infarction

Intervention review

- Title
- Protocol information
- Main text
- Tables
- Studies and references
- Data and analyses
- Figures
- Sources of support
- Feedback
- Appendices

Text of Review

aspirin for myocardial infarction

Protocol information

Authors

[Empty name]¹

¹[Empty affiliation]

Citation example: [Empty name]. aspirin for myocardial infarction [Protocol]. Cochrane Database of Systematic Reviews [Year], Issue [Issue].

Add Author

Contact person

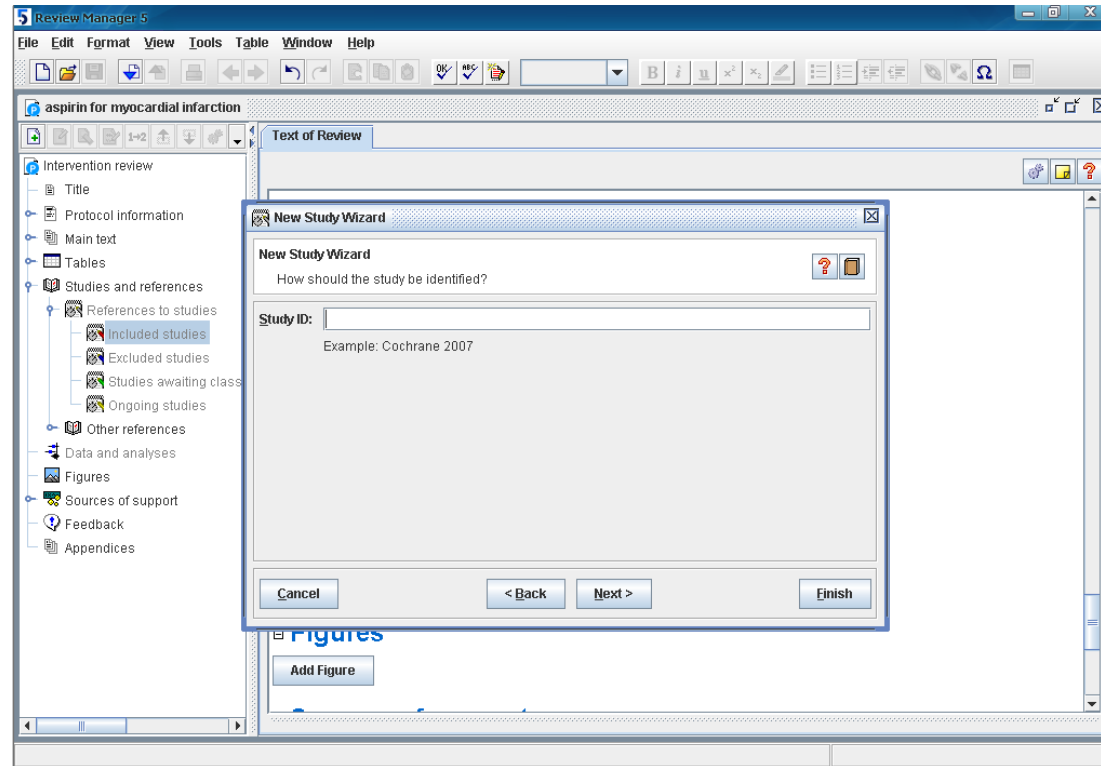
[Empty name]

Dates

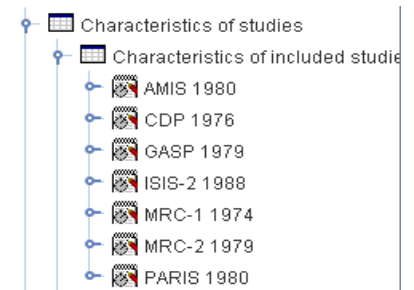
Assessed as Up-to-date: []

Date of Search: []

Add Studies & references



- ❑ ① “Studies and references” “References to studies”;
- ❑ ② “References to studies” “Included studies”;
- ❑ ③ “Add Study”_ “New Study Wizard”
- ❑ ④ “New Study Wizard” , “Study ID”






[BJL1.RM4] aspirin for myocardial infarction



Intervention review

- Title
- Review information
- Main text
- Tables
 - Characteristics of studies
 - Characteristics of included studies
 - AMIS 1980
 - CDP 1976
 - GASP 1979
 - ISIS-2 1988
 - MRC-1 1974
 - MRC-2 1979
 - PARIS 1980
 - Characteristics of excluded studies
 - Characteristics of studies awaiting classification
 - Characteristics of ongoing studies
 - Summary of findings tables
 - Additional tables
- Studies and references
 - References to studies
 - Other references
- Data and analyses
 - Figures
 - Sources  support
 - Feedback
 - Appendices

Text of Review

References to studies

Included studies

AMIS 1980

[Empty]

CDP 1976

[Empty]

GASP 1979

[Empty]

ISIS 2 1988

[Empty]

MRC 1 1974

[Empty]

MRC 2 1979

[Empty]

PARIS 1980

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

[Empty]

Add new comparison

New Comparison Wizard

What name should the comparison have?

Name: aspirin vs placebo

Cancel < Back Next > Finish

Add Study

Excluded studies

Add Study

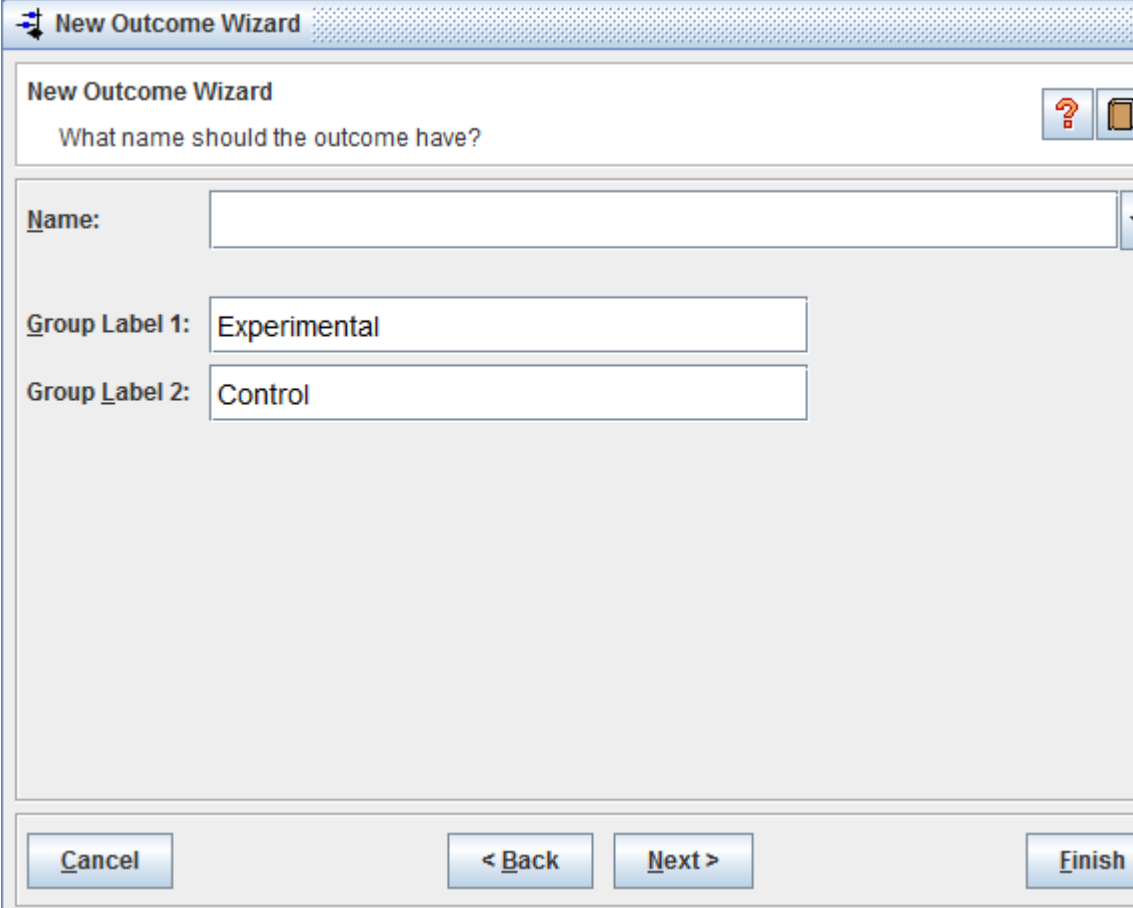
Studies awaiting classification

Add Study

Ongoing studies

Add outcome

- ❑ Mortality
- ❑ Blood pressure



The image shows a 'New Outcome Wizard' dialog box. The title bar says 'New Outcome Wizard'. Inside the dialog, the title is 'New Outcome Wizard' and the question is 'What name should the outcome have?'. There are three input fields: 'Name:' (empty), 'Group Label 1:' (containing 'Experimental'), and 'Group Label 2:' (containing 'Control'). At the bottom, there are four buttons: 'Cancel', '< Back', 'Next >', and 'Finish'.

New Outcome Wizard

What name should the outcome have?

Name:

Group Label 1:

Group Label 2:

Cancel < Back Next > Finish

Data & analyses

“Data and Analysis” add new comparison Outcome Wizard
“Dichotomous”

The image shows two overlapping windows titled "New Outcome Wizard".

The background window displays the "Data Type:" section with the following options:

- ☒ Dichotomous
- ☐ Continuous
- ☐ O-E and Variance
- ☐ Generic Inverse Variance
- ☐ Other Data

A "Cancel" button is at the bottom.

The foreground window displays the "Data Type:" section with the following options:

- ☐ Dichotomous
- ☒ Continuous
- ☐ O-E and Variance
- ☐ Generic Inverse Variance
- ☐ Other Data

The "Description:" field contains the text: "Enter mean, standard deviation and number of participants in experimental and control groups."

Navigation buttons at the bottom include: "Cancel", "< Back", "Next >", and "Finish".

Add data

Text of Review ☒ 1.1 mortality

Comparison: 1 a vs b, Outcome: 1.1 mortality

Study or Subgroup	Experimental		Control		Weight	Odds Ratio (M-H, Fixed, 95% CI)
	Events	Total	Events	Total		
Total (95% CI)		0		0		
Total events	0		0			
Heterogeneity: Not applicable						
Test for overall effect: Not applicable						

New Study Data Wizard

New Study Data Wizard

Which studies do you want to add data for?

Included Studies:

- a2007
- b2001
- c2008

Filter by:

Year range: to

Outcome text:

Bias:

Tip: hold down Ctrl/Command or Shift to select multiple items

Cancel < Back Next >

Appraise studies

Tables

- Characteristics of studies
 - Characteristics of included studies
 - a2007
 - Risk of bias table
- a2007**

Methods			
Participants			
Interventions			
Outcomes	Bias	Authors' judgement	Support for judgement
Notes	Random sequence generation (selection bias)	Unclear risk ▼	
	Allocation concealment (selection bias)	Unclear risk ▼	
	Blinding of participants and personnel (performance bias)	Unclear risk ▼	
	Blinding of outcome assessment (detection bias)	Unclear risk ▼	
	Incomplete outcome data (attrition bias)	Unclear risk ▼	
	Selective reporting (reporting bias)	Unclear risk ▼	
	Other bias	Unclear risk ▼	

Data input

- Choose studies you want to use

The screenshot displays the Review Manager 5 interface. The left pane shows a tree view of the review structure, with '1.1 Mortality' selected under 'Data and analyses'. The main window shows a forest plot for the comparison '1 aspirin vs placebo, Outcome: 1.1 Mortality'. The plot includes a table of study data and a graphical representation of the odds ratios.

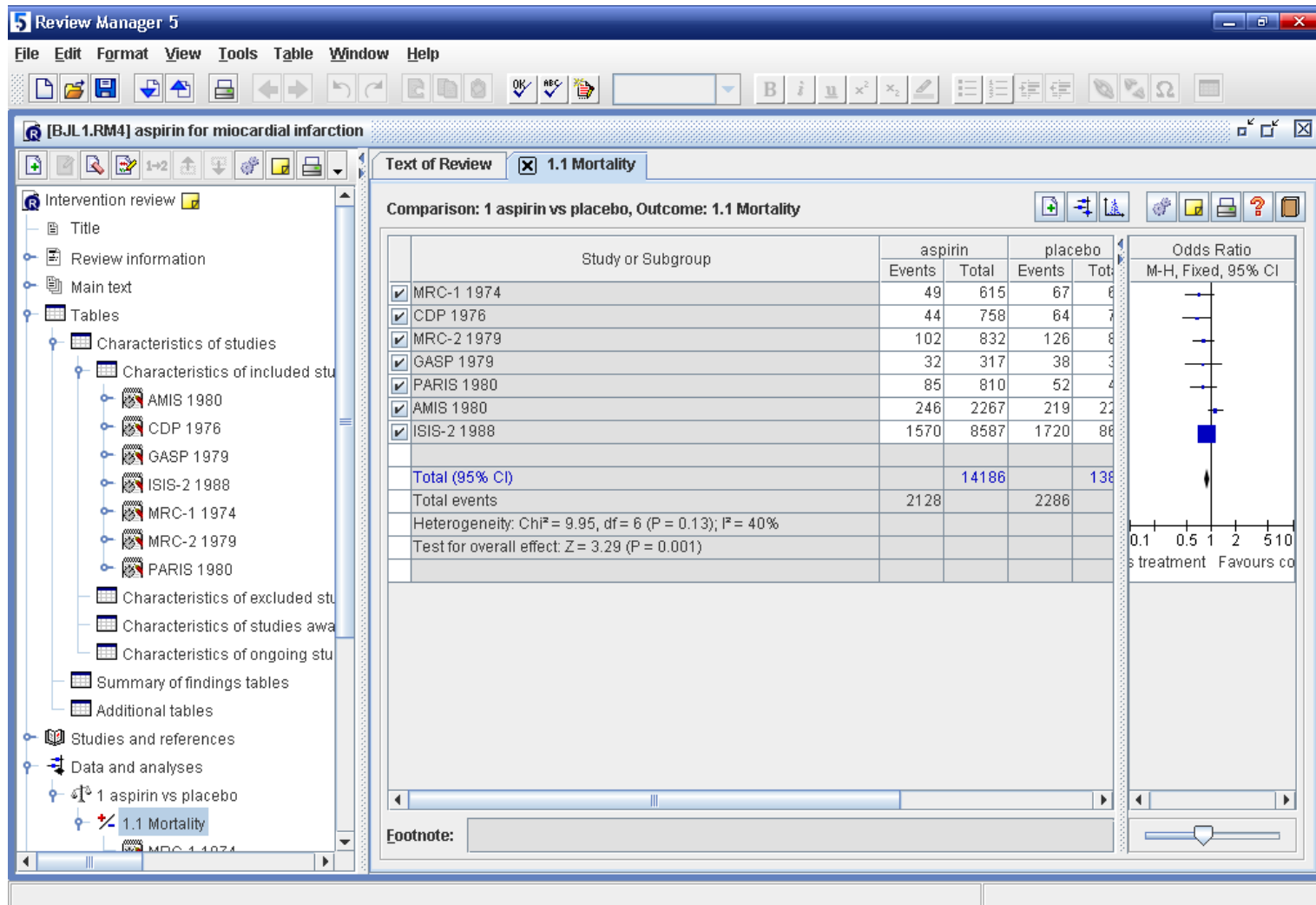
Study or Subgroup	aspirin		placebo		Weight	Odds Ratio M-H, Fixed, 95% CI
	Events	Total	Events	Total		
✓ MRC-1 1974	0	0	0	0		Not e
✓ CDP 1976	0	0	0	0		Not e
✓ MRC-2 1979	0	0	0	0		Not e
✓ GASP 1979	0	0	0	0		Not e
✓ PARIS 1980	0	0	0	0		Not e
✓ AMIS 1980	0	0	0	0		Not e
✓ ISIS-2 1988	0	0	0	0		Not e
Total (95% CI)		0		0		Not e
Total events	0		0			
Heterogeneity: Not applicable						
Test for overall effect: Not applicable						

The forest plot on the right shows the Odds Ratio for each study and the total. The x-axis is logarithmic, ranging from 0.1 to 10, with a vertical line at 1.0. The plot indicates that the total effect is not applicable, as all studies have zero events in both groups.

Categorical data Example

studies	ASprin		placebo	
	death(n)	total (N)	death(n)	total (N)
MRC-1 1974	49	615	67	624
CDP 1976	44	758	64	771
MRC-2 1979	102	832	126	850
GASP 1979	32	317	38	309
PARIS 1980	85	810	52	406
AMIS 1980	246	2267	219	2257
ISIS-2 1988	1570	8587	1720	8600

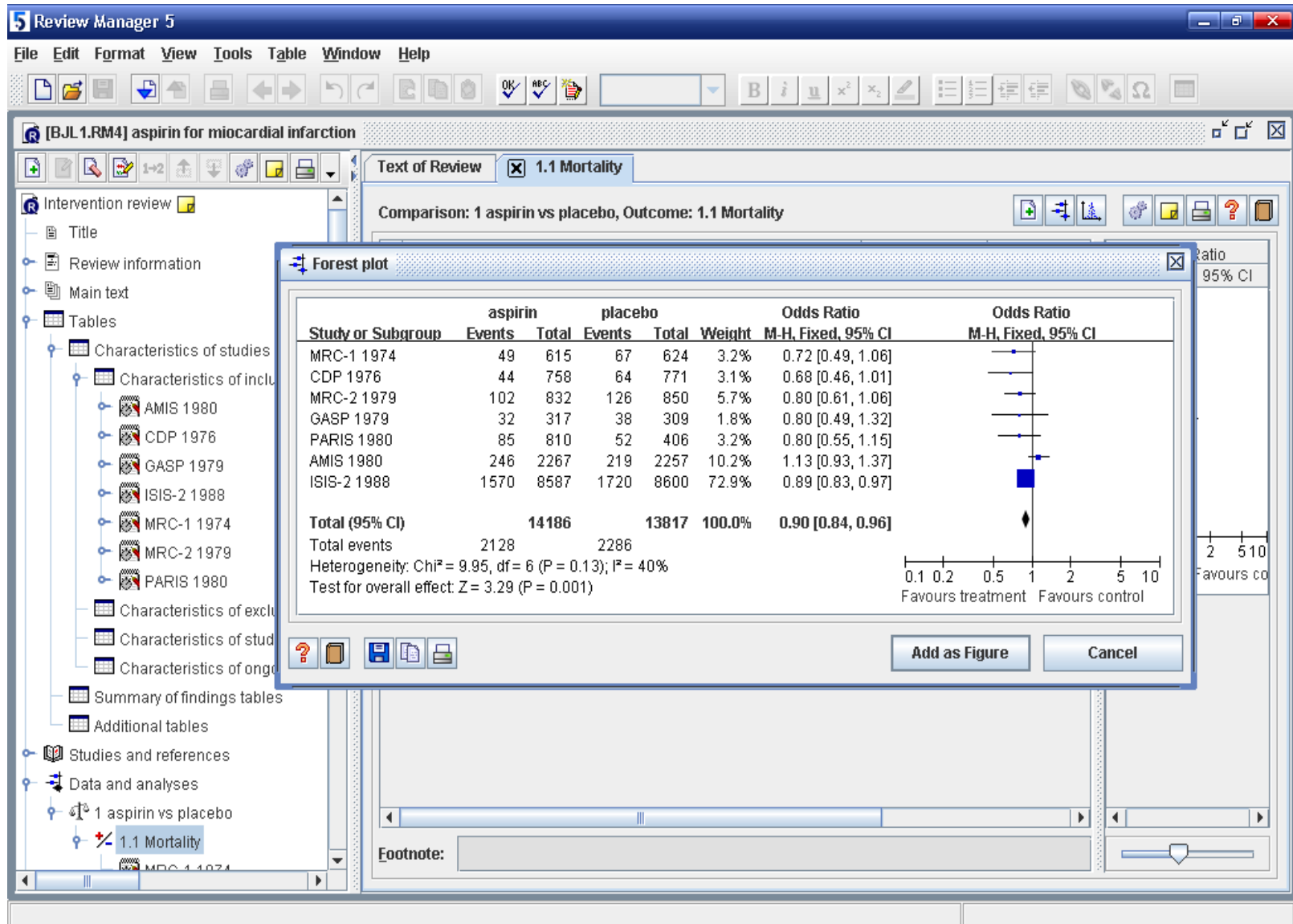
Data input



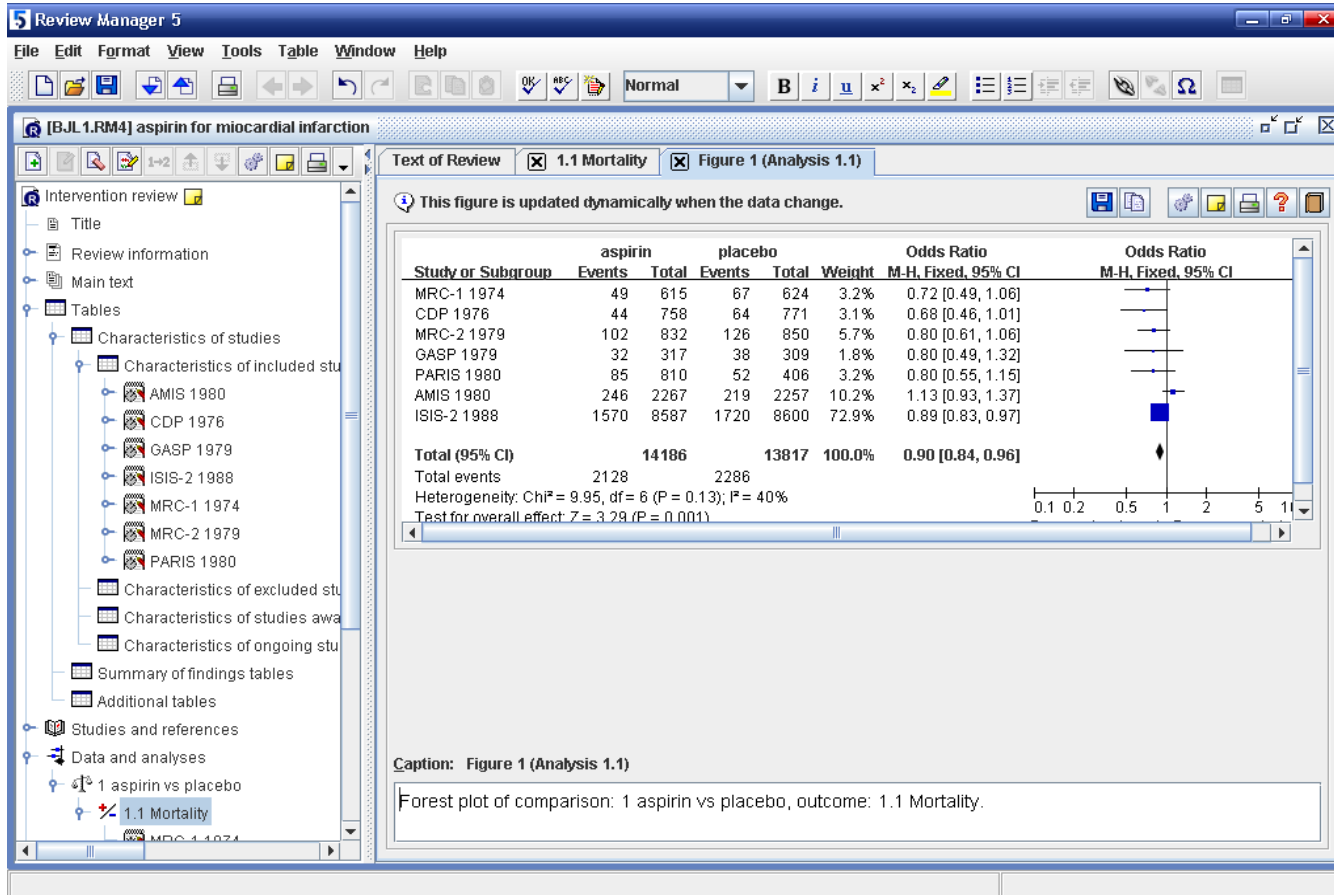
outcome

□ all done!

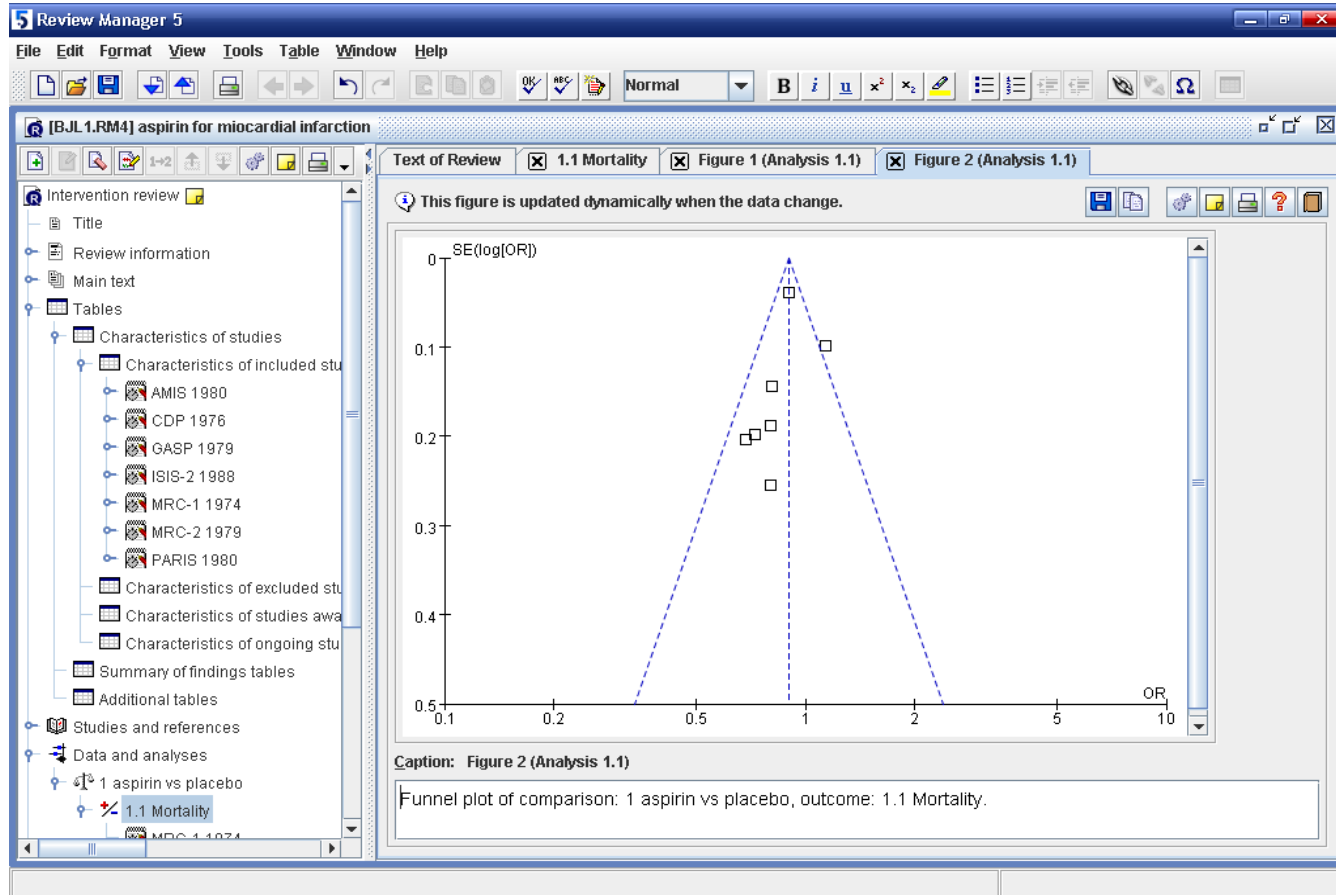
forest plot



results



Funnel plot



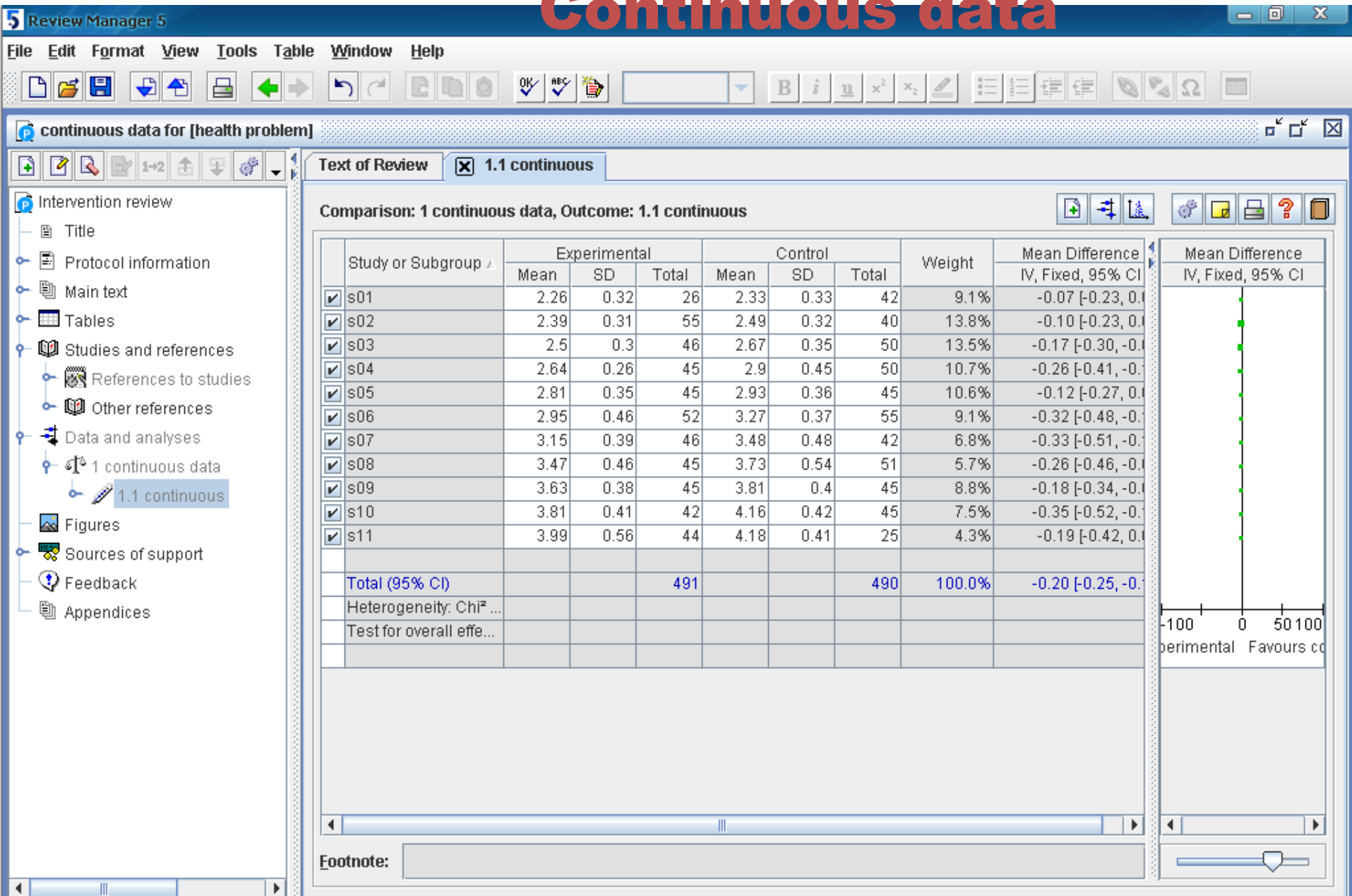
result for Meta analysis

- Effect size & 95%CI 0.90(0.84-0.96)
- Fixed effect model or random effect model
 - test for heterogeneity, χ^2 , P, ($\chi^2=9.55$, $P=0.13$, $I^2=40\%$)
- Test for overall effect, Z and P ($Z=3.29$, $P=0.001$)

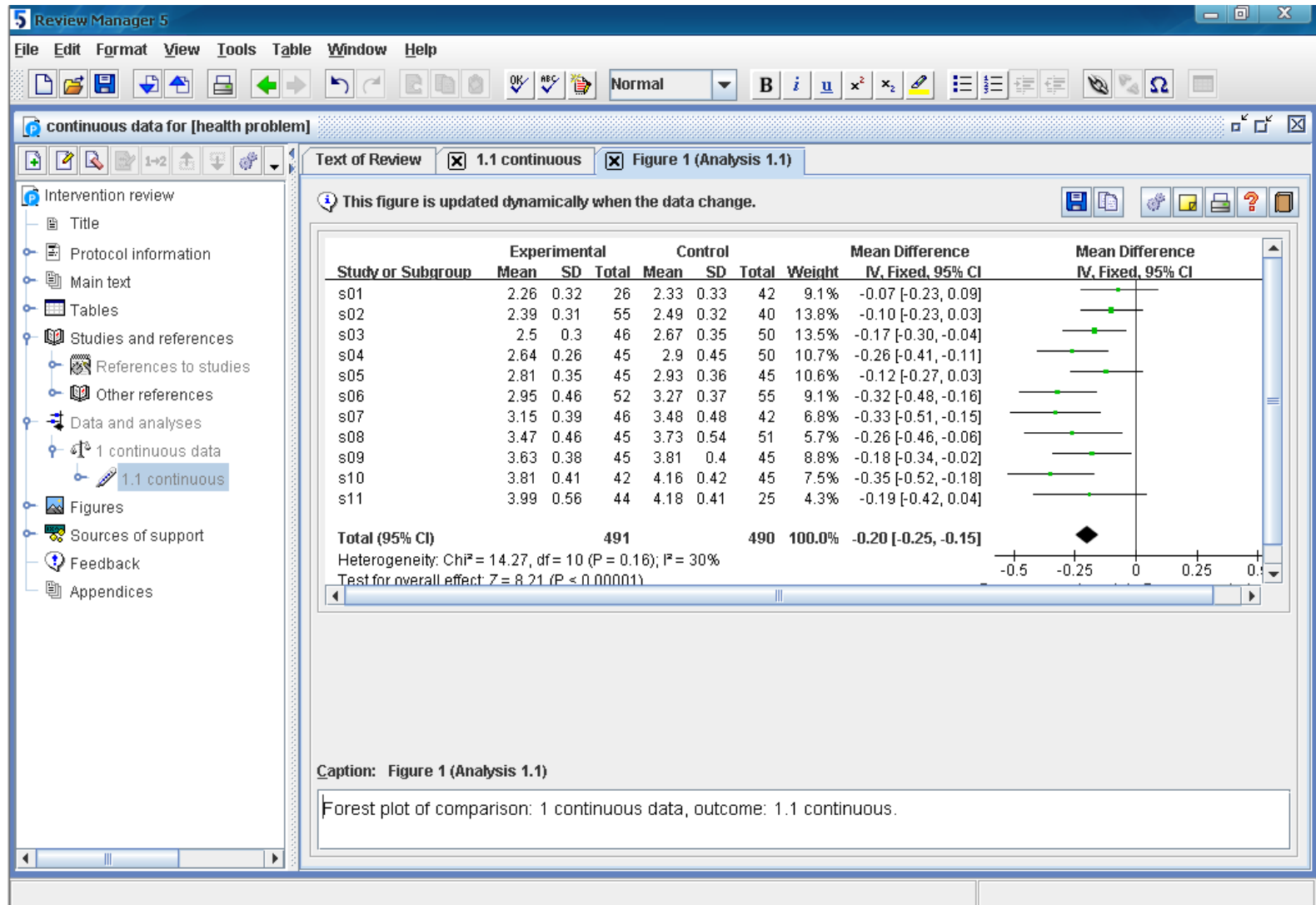
Questions For you

- ❑ 1. How many types of studies can be pooled?
- ❑ 2. What does mean by comparison in Revman?
- ❑ 3. What does mean by outcome?
- ❑ 4. How many types of data can be ?
- ❑ 5. what results do you get from Revman?
- ❑ 6. can you assess the quality of studies in Revman?

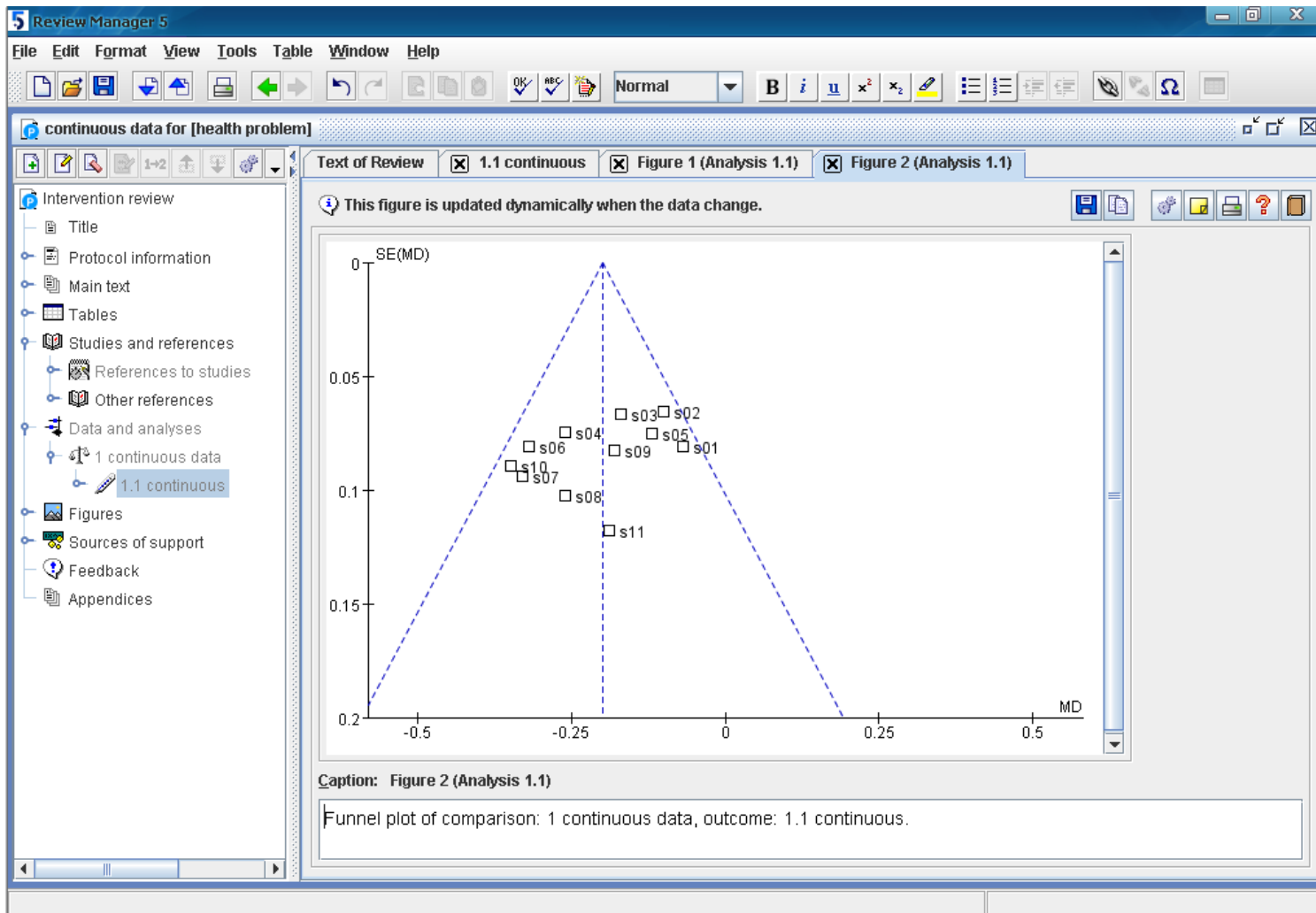
Continuous data



Continuous data



Continuous data



Questions ?

- ❑ Time for Practice
- ❑ Questions any time!

