

## Q. What is a summary of findings table?

A Summary of Findings (SoF) table is designed to summarize the key results of a Cochrane review and to evaluate your confidence in the estimates of effect produced by your analysis.

The approach, created by the GRADE working group, is designed to be explicit; that is to make clear the judgements that you (as the authors) have made in assessing the quality of the evidence, but it does not remove the need to make judgements and therefore is not entirely objective. It is therefore possible that different authors will make different judgements about the same body of evidence.

The key components of a SoF table are illustrated in figure 1.

Figure 1. Example SoF Table

A description of the question this table seeks to answer (PICO)

**Dihydroartemisinin-piperaquine compared to Artemether-lumefantrine for treating uncomplicated malaria**

**Patient or population:** patients with uncomplicated malaria  
**Settings:** Worldwide  
**Intervention:** Dihydroartemisinin-piperaquine  
**Comparison:** Artemether-lumefantrine

No of participants and studies contributing data to this outcome

Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk Artemether-lumefantrine	Corresponding risk Dihydroartemisinin-piperaquine				
Efficacy: Total Failure (P. falciparum) Day 42 PCR adjusted	92 per 1000	39 per 1000 (24 to 62)	RR 0.42 (0.26 to 0.67)	1186 (4 <sup>6</sup> )	⊕⊕⊕⊕ high <sup>1,2,3,4,5</sup>	Quality assessment per outcome
Efficacy: Total Failure (P. falciparum) Day 42 PCR	See comment	See comment	Not	14 (1)	⊕⊕○○ moderate <sup>1,4,7,8</sup>	

Each row presents the evidence for one Patient-important outcome. Listed in decreasing order of importance

Typical risk in control group

Absolute risk in intervention group

Relative risk (effect estimate) Imported from Cochrane Review forest plots

Several key features are worth noting from the beginning:

1. Each outcome is assessed individually for 'quality' defined as your confidence in the estimate of effect. (The GRADE approach works best for outcomes with available meta-analysis which include appropriate sensitivity and sub-group analyses)
2. Where possible (or appropriate) list outcomes as 'Patient important outcomes'. E.g. 'Cure: as assessed by 5-year survival' or 'Reduced malaria transmission: as assessed by gametocyte clearance' or 'Improved diabetes control': as assessed by low HbA1c'
3. The outcomes should be listed in order of importance with the most important first. The maximum is seven outcomes for each SOF table.
4. The outcome of your GRADE assessment results in one of four levels of 'quality', and these should express your confidence in the estimate of effect. It is worth returning to these definitions after completion of your SOF table to check you are happy with the result.

**High:** Further research is very unlikely to change our confidence in the estimate of effect.

**Moderate:** Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

**Low:** Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

**Very low:** Any estimate of effect is very uncertain.

## Q. How does the GRADE system work?

Your confidence in the estimate of effect will depend on many things and these are divided using the GRADE approach into 5 'quality' criteria.

1. **Limitations:** This incorporates the risk of bias assessment you have already conducted, but is a judgement about the overall risk of bias i.e. across all studies. Are there concerns about the way the studies were conducted which seriously reduce your confidence in the overall effect estimate?

*Tips: If you have major concerns about 1 or 2 studies then try removing them from the meta-analysis; if the effect estimate does not substantially change consider not downgrading. If trials are unblinded consider the subjectivity of the outcome; you might downgrade for subjective outcomes like nausea or pain but not for objective outcomes like death.*

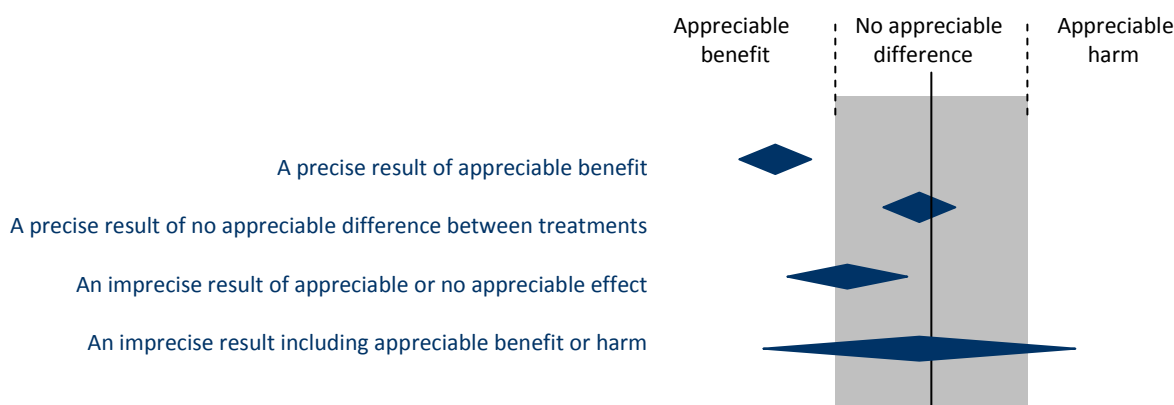
2. **Inconsistency:** This refers to unexplained heterogeneity. Is there substantial heterogeneity, which can't be explained by appropriate sub-group analyses, which seriously reduces your confidence in the overall effect estimate?

*Tips: Investigate any heterogeneity by conducting pre-specified subgroup analyses. If the heterogeneity can be explained and there are substantially different results in the different subgroups, then each subgroup should be assessed for quality individually, i.e. as separate outcomes. If despite subgroup analyses there is still substantial unexplained heterogeneity which makes you uncertain as to the direction or magnitude of effect then downgrade.*

3. **Indirectness:** This is an assessment of how well the available evidence matches the question you are actually asking. Are you seriously concerned that the intervention would perform differently in the population/situation you are actually interested in?

*Tips: Were the trials conducted in the right population (adults or children, what stage of disease etc?), did they use the correct intervention (in the correct dose), did they use an appropriate control group (standard care, next best option or placebo), have they measured the most important patient-centred outcomes (or is this a surrogate outcome e.g. HbA1c as a marker for reduced diabetic complications).*

4. **Imprecision:** How precise is your estimate? Look at the 95% confidence intervals of your relative effect estimate. Do you have serious doubts about whether the true effect is beneficial, of no benefit, or harmful? Do the confidence intervals include more than one of these three categories? (See figure 2)



*Tips: Also consider the 95% confidence interval of the absolute effect estimate: This is especially important if the event is rare. Also consider the number of events and the size of the trials and perform an optimal information size calculation if necessary. Consult the help section in GRADEpro for a more complete discussion on imprecision.*

5. **Other considerations:** Consider the possibility of publication bias using funnel plots. Is it a serious concern?

**Please note:** For these criteria you are asked to make a judgement as to whether there are serious or very serious factors which cause you to doubt your estimate, not trivial faults such as 1 trial out of 9 having poor allocation concealment (unless this is the only trial which showed an effect).

**GRADE uses a simple scoring system:**

**RCT evidence** starts as **High** quality evidence.

- Under each of the 5 categories you can downgrade by 1 level (if there are serious concerns), or 2 levels (if there are very serious concerns).

**Observational evidence** begins as **Low** quality evidence

- And can be downgraded in the same way as RCT evidence.
- But it is also possible to **upgrade evidence** by three additional criteria: 1) A very large treatment effect, 2) if all possible confounders would act to reduce the observed effect, or 3) if there is evidence of a dose-response gradient.

It is also possible to upgrade RCT evidence but this would be unusual especially if it had been previously downgraded for limitations or directness.

**Final tips before you start:**

1. GRADE does not remove the need to make judgements, it just makes these judgements explicit.
2. Downgrade if you think there are factors which seriously make you doubt the estimate of effect.
3. Once you have completed your SOF table review the definitions of High, Moderate, Low and Very low quality of evidence. Do they match your assessment?

## ***Q. How do I get started?***

### **Step 1: Install GRADEpro software**

Download GRADEpro for free from [www.gradeworkinggroup.org](http://www.gradeworkinggroup.org). This software is recommended as it allows you to import data from your RevMan5 file into Summary of Findings tables and so prevents data entry errors. It is also easy to use (once you get used to it).

The gradeworkinggroup website also has a helpful FAQ section and links to GRADE publications.

### **Step 2: Create your new file**

Start GRADEpro. You will be given five options. Select the first option 'New Profile', give your file a name and save it.

### **Step 3: Import the data from your Cochrane review RevMan file**

Click on 'Import from RevMan' at the top-right of your screen then browse and select your RevMan file which should be saved to your desktop (figure 3).

### **Step 4: Tidy the imported outcomes**

Note the imported comparisons down the left hand side of your screen (see figure 3). Left-click on the '+' sign next to the first comparison to expand it and reveal the outcomes (a process similar to used in RevMan5). You can select and drag the vertical central divide to enable you to see the outcomes clearly. Every subgroup included in your review has its own outcome.

There is a maximum of seven outcomes per SoF table. If you are certain that an outcome is not needed you can right-click and delete it. If you are uncertain it is better to keep them for now as you can only import data once. If you make errors or accidentally delete you will have to begin again or re-input data manually.

You can re-order outcomes by dragging and dropping. This function however is a bit temperamental. There is an 'undo all changes' function at the top of the screen which will undo everything since you last saved the file. It is therefore sensible to save regularly.

### **Step 5: Adjust the PICO format of your summary of findings table**

Select (left-click) the first comparison from the list down the left hand side of the screen (see figure 4). The screen will change to reveal the PICO question. The wording of the question, the population, the intervention, health problem and setting can be adjusted.

### **Step 6: Familiarise your self with the GRADEpro format**

Now select (left-click) the heading for your first outcome in the window at the bottom of the screen. Your screen should now appear similar to figure 4.

There are several different view options available by clicking on 'view' at the top. The default is 'GRADE profile (two rows)'; this is recommended as it keeps all the details on screen.

This page (see figure 4) is the 'Quality assessment'. You can flip between the 'Quality assessment' and the 'Summary of findings' by clicking on 'Go to summary of findings' and then 'Go to quality assessment'. You can also preview your SOF table by clicking on 'Preview SoF table' at the top-right of the screen (see figure 4). This brings up a second window. There are three formats for the preview and you can flip between them: 'GRADE evidence profile', 'Summary of Findings table', and 'Overview of Reviews table'. If you have more than one SoF table you can flip between them by selecting the one you want from the list at the top-left. Click on 'Close' to close this preview window.

Make sure you are in the 'Quality assessment' section (your screen should look similar to figure 4).

Reading across the top there is the 'Outcome', then you can choose between 'dichotomous' or 'continuous', then you can select whether it is: 'pooled', 'not pooled', 'not measured', 'not reported' or 'single study' from a drop-down menu. Then you must rate the importance of the outcome from a 9 point scale. This will be used to order the outcomes in order of importance. Ratings 7-9 will be labelled 'critical', 4-6 'important' and 1-3 are 'unimportant' and will not be included in the table.

Now reading down the page there is the 'No. of studies' which contains the number in the meta-analysis for this outcome. Next is 'Study design' and if you select 'randomised trials' from the drop-down menu the 5 quality criteria will appear. For each quality criteria you must select from a drop down menu: 'no', 'serious' or 'very serious'. If you choose 'serious' or 'very serious' you will be prompted to add a compulsory footnote to explain your decision. You can however add footnotes wherever the symbol of a pin appears. If a footnote is attached the pin appears red and if you hover near a red pin the attached footnotes will pop-up.

### **Step 7: Note the very useful 'Help' function**

The help section is indeed very useful. You will note that if you hover the cursor near headings such as 'Outcome' or 'No. of studies' or 'Study design' a small question mark appears next to the cursor. This means that you can click on the heading and a window will appear with the appropriate section from the GRADE manual. You can also select 'help' then 'contents' at the top of the screen and search for the item you are having problems with.

### **Step 8: Check the summary of findings section**

This can be done outcome by outcome. Click on 'Go to summary of findings'. If your first outcome is dichotomous the screen should appear similar to figure 5. Two points are worth making on this page:

Firstly you must choose an appropriate control group risk. This might be the simple total number of events/participants from all trials (this is ticked as default). This may however be inappropriate. A median of the included trials may be more appropriate (again ticked as default and labelled 'medium'), or you might want to define high and low risk control group rates (if appropriate). At least one, and a maximum of three control group rates must be selected.

Secondly the absolute risk reduction is calculated by multiplying the risk ratio by the control group risk (GRADEpro makes this calculation automatically).

Continuous outcomes are slightly more difficult and require more details to be inputted to allow the reader to understand the outcome, such as: The scale and range of values possible, whether lower or higher is better.

### **Step 9: Complete the GRADE Quality Assessment**

Include the justification for each decision as a footnote. The GRADE "quality" will automatically be downgraded by one, two or three levels from high to moderate to low or to very low quality.

See pages 1 and 2 for an introduction to the Quality assessment. The GRADEpro help section now contains more detailed advice on downgrading with many examples of judgements that have been made by other authors. Precision is perhaps the most difficult criteria and so will be discussed at the end of this document.

The SoF table lumps all footnotes together for an outcome so it is good to be explicit about which category you are downgrading under and why. E.g:

'Serious limitations: Two out of the five trials had unclear allocation concealment, sensitivity analysis removing these two trials removed the significance of the result so we downgraded by one point.'

Or:

'Downgraded for serious limitations in study design as two out of five trials had.....'

### **Step 10: Export back to Revman**

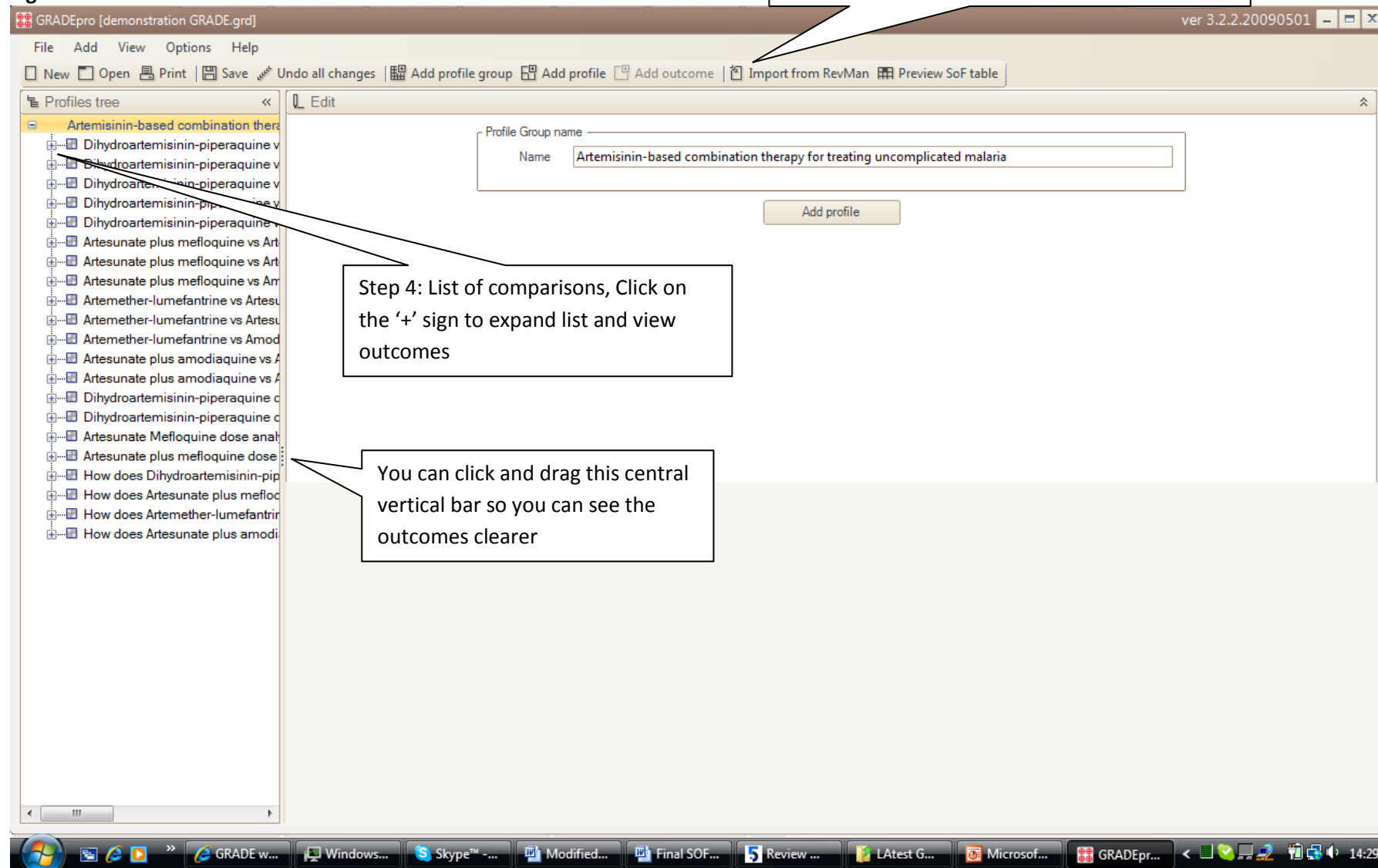
This is a two-stage process. First export to your desktop: Left-click 'File' then 'Export as' then 'Review Manager SoF' and save to desktop. Then import to RevMan. Open your RevMan file and left-click 'File' then 'Import' then 'Summary of findings table'. Browse to your saved SoF file and open.

Note that once imported, you can not edit your table. There are alternatives to this whole process such as creating SoF tables from scratch using the RevMan 'add table' function.

Please also send your SOF table to [davesinkers@yahoo.com](mailto:davesinkers@yahoo.com) along with any feedback on this guidance or the GRADEpro software.

# Introduction to Summary of Findings (SoF) Tables for Cochrane authors

Figure 3



Introduction to Summary of Findings (SoF) Tables for Cochrane authors

Figure 4

The screenshot shows the GRADEpro software interface. The 'Profiles tree' on the left lists various comparisons. The main panel shows the 'Outcome' selected as 'alciparum) Day 63 PCR unadjusted - Asia'. The 'Study design' dropdown menu is set to '-- choose --'. The 'Quality criteria' table is displayed below, showing results for 'Total Failure (P. falciparum) Day 63 PCR unadjusted - Asia | 3' and 'Total Failure (P. falciparum) Day 63 PCR unadjusted - South America | 1'. The 'Footnotes' section is at the bottom.

**Step 5: Select first comparison**

**Step 6: Select first outcome**

Click here to preview SoF table

These are the 'pins' that can be used to attach footnotes

Once you select 'randomised trials' from the drop-down menu the 5 quality criteria will appear

Click here to flip between 'Summary of findings' and 'Quality assessment'

Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Importance
no methodology chosen						
none						
Patients (Dihydroartemisinin-piperaquine)		Control (Artesunate plus mefloquine)		Relative effect		Absolute effect
73/667 (10.9%)		78/515 (15.1%)		RR 0.73 (0.54 to 0.98)		41 fewer per 1000 (from 3 fewer to 70 fewer)
		17.2%				46 fewer per 1000 (from 3 fewer to 79 fewer)

Figure 5

The screenshot shows the GRADEpro interface for setting up an outcome. The outcome is "Total Failure (P. falciparum) Day 63 PCR unadjusted - Asia". The control group risk is set to 17.2% (Medium). The table below shows the resulting summary of findings.

Design	Limitations	Inconsistency	Indirectness	Imprecision	Other considerations	Importance
no methodology chosen						
none						
Patients (Dihydroartemisinin-piperazine)	Control (Artesunate plus mefloquine)	Relative effect		Absolute effect		Quality
73/667 (10.9%)	78/515 (15.1%)	RR 0.73 (0.54 to 0.98)		41 fewer per 1000 (from 3 fewer to 70 fewer)		
	17.2%			46 fewer per 1000 (from 3 fewer to 79 fewer)		

Callout 1: "This control group risk is a median" points to the 17.2% risk value.

Callout 2: "This control group risk is simply the total events divided by total participants" points to the 15.1% risk value.

Callout 3: "If you select two control group risks then two separate absolute risk reductions will appear" points to the two absolute risk reduction values in the table.



