

AUTOFOREST User Study Guidelines

TL;DR

- You will complete **4 forest plots**: 2 fully manual, 2 using AUTOFOREST.
- For each forest plot, each participant is requested to:
 - Read the studies
 - Extract numerical data (manual or assisted)
 - Perform a Risk-of-Bias assessment (manual or assisted)
 - Generate the final forest plot
 - Report the **total time taken per forest plot**
- Submit everything using this [form](#) (one submission per forest plot).
- After finishing all 4, complete the [post-study usability survey](#).

Study Overview

You will participate in the evaluation of AUTOFOREST, a tool that automates the end-to-end generation of forest plots from scientific studies.

Structure. Each participant is provided with a zip file containing:

- PDFs of the studies included in 4 forest plots.
- One assigned I-C-O triplet per forest plot.
- Desired metrics (effect type, metric, CI level) to be used when creating the forest plot.
- Risk of Bias (RoB) domains to assess.

The 4 forest plots are divided into:

- 2 **manual** forest plots
- 2 **AUTOFOREST-assisted** forest plots.

This study will therefore be divided into two parts accordingly.

Time Monitoring. For most steps, you will be requested to record the time taken. However please notice that this is only for your own convenience and **you will NOT be requested to deliver partial times, but only the final time taken to complete each forest plot.**

Tool Access. AUTOFOREST is available at the following URL: <https://autoforest.s3.eu-de.cloud-object-storage.appdomain.cloud/index.html>.

Results Reporting. Results are reported filling out the two annotation forms accessible [here](#) (main user study; **submit it once for each forest plot**) and [here](#) (post-study usability evaluation). We recommend checking them out upfront to familiarize yourselves with the reporting structure.

Part I: Manual Evidence Synthesis

For each study included in the two "manual" forest plot, participants are requested to complete the following steps:

1. **Read the study.** Record the time taken. ⌚
 2. **Numerical data extraction.** Manually extract numerical data from the studies for the assigned I-C-O triplet. These are the event and totals if the outcome is binary or the mean, standard deviations and group sizes if the outcome is continuous. Record the time taken. ⌚
 3. **Risk-of-bias assessment.** For each I-C-O triplet, assess the risk of bias using the tool indicated in the file you received (either **RoB1** or **RoB2**). The corresponding domains for each tool are listed below for reference:
 - **RoB1 domains**
 - Bias arising from the randomization process (A)
 - Bias due to allocation concealment (B)
 - Bias due to blinding of participants and personnel (C)
 - Bias due to blinding of outcome assessment (D)
 - Bias due to incomplete outcome data (E)
 - **RoB2 domains**
 - Bias arising from the randomization process (A)
 - Bias due to deviations from intended interventions (B)
 - Bias due to missing outcome data (C)
 - Bias in measurement of the outcome (D)
 - Bias in selection of the reported result (E)
- Record the time taken. ⌚
4. **Forest Plot Generation** Using [RevMan](#), draw the forest plot corresponding to the results of the previous 2 steps and submit it. Make sure to use the metrics provided in the zip file (effect model type, metric, CI level) and upload it in the provided form (Figure 1). Record the time taken. ⌚
 5. **Time reporting** Sum all the collected times for this part and report the total in the corresponding section of the provided Google Form.

Example

Suppose the forest plot shown in Figure 2 (left) was obtained as a result of your manual evaluation. Consider the first study (Frost 2021), which has 1 event out of 24 for the intervention arm and 0/6 for the control, and low risk of bias for all types. Then you would fill the form as shown in Figure 2 (right) and repeat the process for all the studies in the forest plot.

AutoForest Userstudy

Il nome, l'indirizzo email e la foto associati al tuo Account Google verranno registrati quando caricherai i file e invierai questo modulo

* Indica una domanda obbligatoria

Final Forest Plot (Manual)

Upload your final forest plot obtained with RevMan *

Carica 1 file supportato: PDF o image. Massimo 10 MB.

[↗ Aggiungi file](#)

Figure 1: Upload final forest in the annotation form.

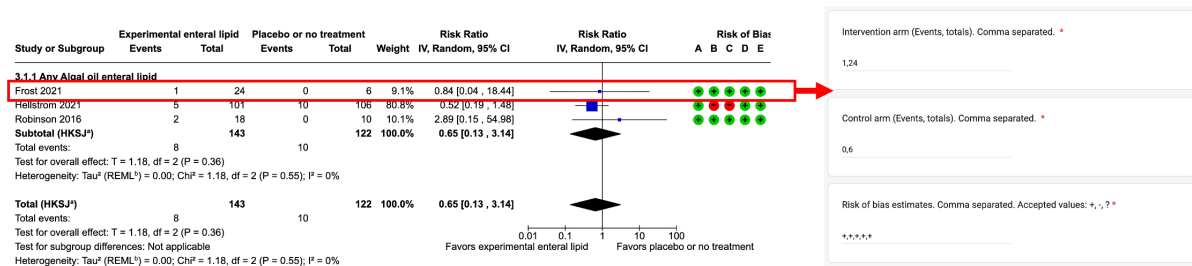


Figure 2: Example manual form filling.

Part II: Assisted Evidence Synthesis with AutoForest

For each study of forest plot, each participant is requested to complete the following steps using **AUTOFOREST**:

1. **Read the study.** Record the time taken. 🕒
2. **Input the studies.** Upload the provided studies to AUTOFOREST(Figure 3). If a study consists of multiple papers, upload them all at once from the input modal. Clicking on the study papers, you will be shown both the pdf and the markdown conversion (Figure 4).

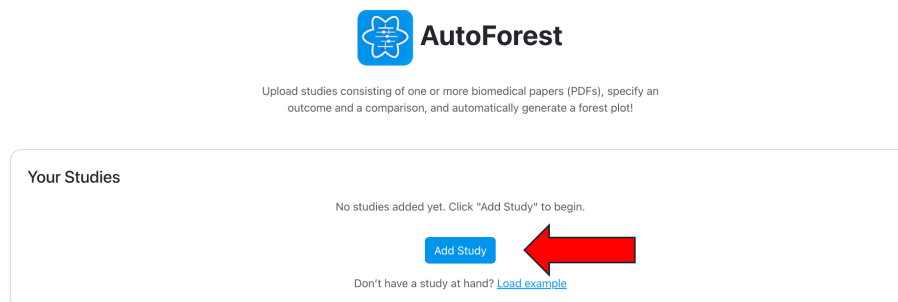


Figure 3: Inputting studies into AUTOFOREST.

3. **Assisted numerical data extraction.** Select the requested RoB type (RoB1 or RoB2) and click on “Extract Data”.
 - Export the automatically extracted numerical data displayed in the first table using the “Export” functionality (Figure 5) and upload the downloaded .txt file to the

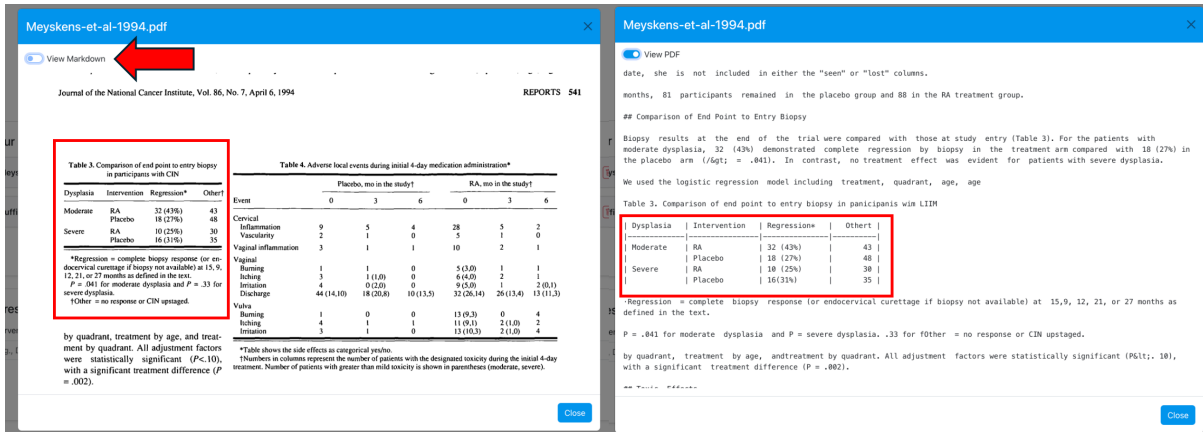


Figure 4: AUTOFOREST automatically converts PDFs into Markdowns. Left: original PDF; right: markdown conversion.

provided Google form.

- For every entry, check its value and corresponding thought process, and correct any that you find incorrect. Once done, export again the data again and upload it to the google form. **If no change is needed, upload the same file again.**

Record the time taken. ⌚

Numerical Data

Study Name	Outcome Type	0.372% RA cream		Placebo cream	
		Events	Total	Events	Total
Meyskens 1994	binary	32	75	18	66
Ruffin 2004	binary	17	34	21	24

Risk of Bias

Study Name	Bias A	Bias B	Bias C	Bias D	Bias E
Meyskens 1994	Concerns (?)	Concerns (?)	Concerns (?)	Low (+)	High (-)
Ruffin 2004	Concerns (?)	Concerns (?)	Low (+)	Low (+)	High (-)

AutoForest User Study

1. Indica una domanda obbligatoria

2. Carica 1 file supportato: document. Massimo 10 MB.

4. Carica 1 file supportato: document. Massimo 10 MB.

Edits (if needed)

Figure 5: Automatically extracted numerical data using AUTOFOREST and reporting procedure.

4. **Assisted risk-of-bias assessment** Check the Risk of Bias table displayed in the same tab obtained in the previous step (Figure 6).

- Similarly to the previous step, export the automatically extracted bias assessments using the “Export” functionality (Figure 5) and upload the downloaded .txt file to the provided Google form.
- For every entry, check its value and corresponding thought process, and correct any that you find incorrect. Once done, export again the data again and upload it to the google form. **If no change is needed, upload the same file again.**

Record the time taken. ⌚

5. **Forest plot generation** Set the provided metric, effect type and CI level from the bottom-left toggles and click on “Generate Forest Plot” to obtain the final forest plot (Figure 7). Play around with the toggles to see if the tool offers satisfactory customization

Numerical Data

Study Name	Outcome Type	0.372% RA cream		Placebo cream		Export
		Events	Total	Events	Total	
Meyskens 1994	binary	32	75	18	66	Reasoning
Ruffin 2004	binary	17	34	21	24	Reasoning

Risk of Bias

Study Name	Bias A	Bias B	Bias C	Bias D	Bias E	Export
Meyskens 1994	Concerns (?)	Concerns (?)	Concerns (?)	Low (+)	High (-)	Reasoning
Ruffin 2004	Concerns (?)	Concerns (?)	Low (+)	Low (+)	High (-)	Reasoning

Generate Forest Plot

Metric: RR | Effect: Random | Level: 95%

Figure 6: Automatically estimated risk of bias using AUTOFOREST

options.

Record the time taken. ⌚

Finally, upload the final forest plot in the form.

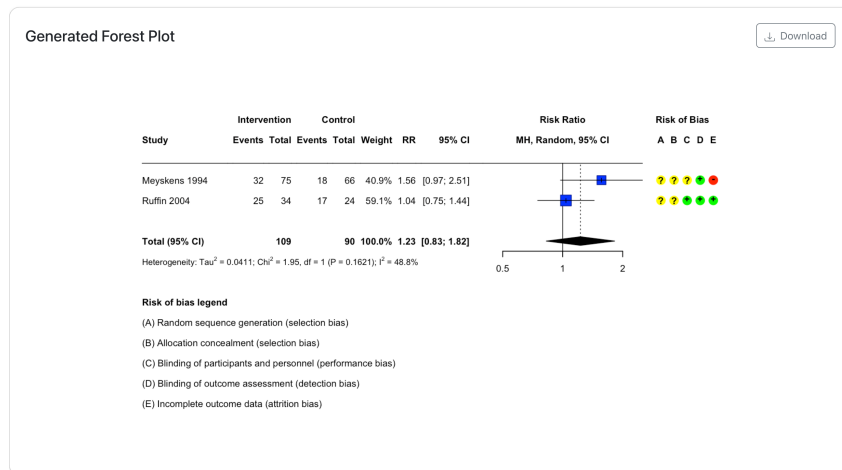


Figure 7: Generated forest plot tab.

- Time reporting** Sum all the collected times for this part and report the total in the corresponding section of the provided Google Form.

Part III: Post-study Usability Evaluation

After completing the user study, each participant is asked to fill out a post-study usability evaluation, available [here](#).

Participants are requested to provide a score on a **Linkert scale** to the following statements regarding their subjective experience using AUTOFOREST and how useful or potentially so they found it.

- The system was easy to use. (1-5)
- The thought process in the data extraction step was useful to understand how each numerical value was derived and to verify or correct the automatically extracted data. (1-5)

- The thought process in the risk of bias step was useful to understand the rationale behind each judgement and to verify or correct the automatically assigned risk-of-bias assessments. (1-5)
- The tool could be used in a professional context with minor improvements. (1-5)
- The tool could significantly reduce the time and number of professional required to conduct a systematic review. (1-5)