

## **Decision thresholds for composite endpoints: Guide to the online calculator**

This online calculator tool (<https://compositedt.med.up.pt/>) computes decision thresholds for composite endpoints.

The calculator requires the upload of an Excel file, following the template available here. Users should download the template and adapt it accordingly. When adapting the template, users should not change the names or order of the variables (columns). The Excel file includes the following columns:

- **Outcome:** Name of each outcome that is part of the composite endpoint (mandatory);
- **N\_events:** Number of events for each outcome that is part of the composite endpoint (mandatory);
- **LB\_proportion** and **UB\_proportion:** Lower and upper bounds of the 95% confidence interval of the meta-analytical pooled estimate of the relative occurrence of each outcome (i.e., how frequently each outcome occurs among all outcomes being considered). They should be presented as proportions. Optional but recommended (if not provided, disutilities for composite endpoints will be computed based on the raw frequencies of events – Figure 1).
- **Mean\_disutility** and **SD\_disutility:** Mean and standard-deviation of the **disutilities** for each outcome (mandatory);
- **Duration:** Time duration of the outcome. For all outcomes, durations should be provided in the same units (e.g., all durations should be presented in days, weeks, months, years...), with only integers being accepted. Optional (if not provided, decision thresholds will be computed without accounting for potential differences in duration between outcomes that are part of the composite endpoint – Figure 1).

After uploading the Excel file, it is possible to indicate whether the outcomes that are part of the composite endpoint are desirable or undesirable. Desirable outcomes are those whose increase corresponds to something beneficial/desired (e.g., achieving tolerance to an allergen). Undesirable outcomes (default option) are those whose increase corresponds to something harmful/undesired (e.g., death, headache).

**Figure 1. Algorithm for computation of decision thresholds for composite endpoints in the online calculator tool**

