

# Package ‘robvis’

October 14, 2022

**Title** Visualize the Results of Risk-of-Bias (ROB) Assessments

**Version** 0.3.0

**Description** Helps users in quickly visualizing risk-of-bias assessments performed as part of a systematic review. It allows users to create weighted bar-plots of the distribution of risk-of-bias judgments within each bias domain, in addition to traffic-light plots of the specific domain-level judgments for each study. The resulting figures are of publication quality and are formatted according the risk-of-bias assessment tool use to perform the assessments. Currently, the supported tools are ROB2.0 (for randomized controlled trials; Sterne et al (2019) <[doi:10.1136/bmj.i4898](https://doi.org/10.1136/bmj.i4898)>), ROBINS-I (for non-randomised studies of interventions; Sterne et al (2016) <[doi:10.1136/bmj.i4919](https://doi.org/10.1136/bmj.i4919)>), and QUADAS-2 (for diagnostic accuracy studies; Whiting et al (2011) <[doi:10.7326/0003-4819-155-8-201110180-00009](https://doi.org/10.7326/0003-4819-155-8-201110180-00009)>).

**License** MIT + file LICENSE

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**Depends** R (>= 2.10)

**Imports** ggplot2, tidyr, scales

**Suggests** knitr, rmarkdown, covr, testthat

**VignetteBuilder** knitr, rmarkdown

**BugReports** <https://github.com/mcguinlu/robvis>

**URL** <https://github.com/mcguinlu/robvis>

**NeedsCompilation** no

**Author** Luke McGuinness [aut, cre],  
Emily Kothe [ctb]

**Maintainer** Luke McGuinness <[luke.mcguinness@bristol.ac.uk](mailto:luke.mcguinness@bristol.ac.uk)>

**Repository** CRAN

**Date/Publication** 2019-11-22 15:00:02 UTC

## R topics documented:

data_quadas . . . . .	2
data_rob1 . . . . .	3
data_rob2 . . . . .	3
data_robins . . . . .	4
robvis . . . . .	5
rob_summary . . . . .	5
rob_tools . . . . .	6
rob_traffic_light . . . . .	6
<b>Index</b>	<b>8</b>

---

data_quadas	<i>Example QUADAS-2 assessment</i>
-------------	------------------------------------

---

### Description

#' @format A data frame:

**Study** Study details

**D1** Domain 1

**D2** Domain 2

**D3** Domain 3

**D4** Domain 4

**Overall** Overall risk of bias

**Weight** Weight measure for each study

### Usage

data\_quadas

### Format

An object of class `data.frame` with 12 rows and 7 columns.

### Source

Created for this package

---

data_rob1	<i>Example ROB1 assessment</i>
-----------	--------------------------------

---

**Description**

#' @format A data frame:

**Study** Study details

**D1** Domain 1

**D2** Domain 2

**D3** Domain 3

**D4** Domain 4

**D5** Domain 5

**D6** Domain 6

**D7** Domain 7

**Overall** Overall risk of bias

**Weight** Weight measure for each study

**Usage**

data\_rob1

**Format**

An object of class `data.frame` with 9 rows and 10 columns.

**Source**

Created for this package

---

data_rob2	<i>Example ROB2.0 assessment</i>
-----------	----------------------------------

---

**Description**

#' @format A data frame:

**Study** Study details

**D1** Domain 1

**D2** Domain 2

**D3** Domain 3

**D4** Domain 4

**D5** Domain 5

**Overall** Overall risk of bias

**Weight** Weight measure for each study

**Usage**

data\_rob2

**Format**

An object of class `data.frame` with 9 rows and 8 columns.

**Source**

Created for this package

---

data\_robins

*Example ROBINS-I assessment*

---

**Description**

#' @format A data frame:

**Study** Study details

**D1** Domain 1

**D2** Domain 2

**D3** Domain 3

**D4** Domain 4

**D5** Domain 5

**D6** Domain 6

**D7** Domain 7

**Overall** Overall risk of bias

**Weight** Weight measure for each study

**Usage**

data\_robins

**Format**

An object of class `data.frame` with 12 rows and 10 columns.

**Source**

Created for this package

---

robvis	<i>robvis: A package for producing risk-of-bias assessment figures.</i>
--------	---

---

### Description

The robvis package is designed to help users produce publication quality risk-of-bias assessment figures.

---

rob_summary	<i>Produce summary weighted barplots of risk-of-bias assessments.</i>
-------------	---

---

### Description

A function to convert standard risk-of-bias output to tidy data and plot a summary barplot.

### Usage

```
rob_summary(data, tool, overall = FALSE, weighted = TRUE,
  colour = "cochrane", quiet = FALSE)
```

### Arguments

data	A dataframe containing summary (domain) level risk-of-bias assessments, with the first column containing the study details, the second column containing the first domain of your assessments, and the final column containing a weight to assign to each study. The function assumes that the data includes a column for overall risk-of-bias. For example, a ROB2.0 dataset would have 8 columns (1 for study details, 5 for domain level judgments, 1 for overall judgements, and 1 for weights, in that order).
tool	The risk of bias assessment tool used. RoB2.0 (tool='ROB2'), ROBINS-I (tool='ROBINS-I'), and QUADAS-2 (tool='QUADAS-2') are currently supported.
overall	An option to include a bar for overall risk-of-bias in the figure. Default is FALSE.
weighted	An option to specify whether weights should be used in the barplot. Default is TRUE, in line with current Cochrane Collaboration guidance.
colour	An argument to specify the colour scheme for the plot. Default is 'cochrane' which used the ubiquitous Cochrane colours, while a preset option for a colour-blind friendly palette is also available (colour = 'colourblind').
quiet	An option to quietly produce the plot without displaying it.

### Value

Risk of bias assessment barplot figure.

**Examples**

```

data <- data.frame(stringsAsFactors=FALSE,
  Study = c("Study 1", "Study 2"),
  D1 = c("Low", "Some concerns"),
  D2 = c("Low", "Low"),
  D3 = c("Low", "Low"),
  D4 = c("Low", "Low"),
  D5 = c("Low", "Low"),
  Overall = c("Low", "Low"),
  Weight = c(33.33333333, 33.33333333)
)

rob_summary(data, "ROB2")

```

---

rob\_tools

*List tools covered by rob\_summary().*


---

**Description**

rob\_tools() will list the tools that can currently be plotted using the rob\_summary() function.

**Usage**

```
rob_tools()
```

**Examples**

```
rob_tools()
```

---

rob\_traffic\_light

*Produce traffic-light plots of risk-of-bias assessments.*


---

**Description**

A function to take a summary table of risk of bias assessments and produce a traffic light plot from it.

**Usage**

```
rob_traffic_light(data, tool, colour = "cochrane", psize = 20,
  quiet = FALSE)
```

**Arguments**

data	A dataframe containing summary (domain) level risk-of-bias assessments, with the first column containing the study details, the second column containing the first domain of your assessments, and the final column containing a weight to assign to each study. The function assumes that the data includes a column for overall risk-of-bias. For example, a ROB2.0 dataset would have 8 columns (1 for study details, 5 for domain level judgments, 1 for overall judgements, and 1 for weights, in that order).
tool	The risk of bias assessment tool used. RoB2.0 (tool='ROB2'), ROBINS-I (tool='ROBINS-I'), and QUADAS-2 (tool='QUADAS-2') are currently supported.
colour	An argument to specify the colour scheme for the plot. Default is 'cochrane' which used the ubiquitous Cochrane colours, while a preset option for a colour-blind friendly palette is also available (colour = 'colourblind').
psize	Control the size of the traffic lights. Default is 20.
quiet	An option to quietly produce the plot without displaying it.

**Value**

Risk-of-bias assessment traffic light plot (ggplot2 object)

**Examples**

```
data <- data.frame(stringsAsFactors=FALSE,
  Study = c("Study 1", "Study 2"),
  D1 = c("Low", "Some concerns"),
  D2 = c("Low", "Low"),
  D3 = c("Low", "Low"),
  D4 = c("Low", "Low"),
  D5 = c("Low", "Low"),
  Overall = c("Low", "Low"),
  Weight = c(33.33333333, 33.33333333)
)

rob_traffic_light(data, "ROB2")
```

# Index

## \* datasets

data\_quadas, 2

data\_rob1, 3

data\_rob2, 3

data\_robins, 4

data\_quadas, 2

data\_rob1, 3

data\_rob2, 3

data\_robins, 4

rob\_summary, 5

rob\_tools, 6

rob\_traffic\_light, 6

robvis, 5

robvis-package (robvis), 5