SMDM AM10 - Combining Randomized and Non-Randomized Studies in Evidence Synthesis: Why, How, and When?

Required Software

# Installing R

Download R from <http://cran.us.r-project.org/>

* Click on “**Download R for Windows/OS X/Linux**”
* Click on “**base**”
  + Click on **“Download R 3.X.X for Windows/OS X/Linux”**
  + Install R. Leave all default settings in the installation options.

# Installing RStudio

Download RStudio from <https://www.rstudio.com/products/rstudio/download/>

* Select the version that matches your operating system

# Installing JAGS

Download JAGS from <https://sourceforge.net/projects/mcmc-jags/files/>

* Click on Download latest version and install

# Resources to learn basics of R

<https://www.datacamp.com/courses/free-introduction-to-r>

<https://github.com/swirldev/swirl_courses#swirl-courses>

# Basic Syntax in R

|  |  |
| --- | --- |
| Syntax | Description |
| <- or = | Assigning values to variables |
| +, -, /, or \* | Arithmetic operators for addition, subtraction, division, and multiplication, respectively |
| ^ | Taking the power of a number (eg, 2^3 is 2 to the power of 3) |
| ‘string value’ | Using double quotations produces a string value |
| T or F | T = TRUE, F = FALSE |
| %\*% | Matrix multiplication |
| NA | Assigns empty value |
| $ | Specifies a columns (variable) from a dataset stored in R  Eg, Your\_data$Age retrieves Age variable from your dataset |
| read.csv(“your file.csv”, header=T) | Reads csv files into R |
| c(A,B,C,…) | A generic function which combines a sequence of variables |
| matrix(data=X, nrow=Y, ncol=Z) | Creates a matrix from the given set of values   * X is the data you want to store * Y is the number of rows * Z is the number of columns |
| cbind(A,B,C,…) | Takes a sequence of variables and combines by columns |
| paste(…) | Returns values as a string |
| round(X, digits=Y) | Round variable X to Y decimal places |
| exp(X) | Exponentiate a value X |
| log(X) | Natural logarithm of X |
| summary() | Produces result summaries of the results of various model fitting functions |