# EmbRaceR: Data Preparation with R

## Module 00 Lesson 00 (Course intro text)

In the third course of the EmbRaceR collection, the most tedious task in a project, the data preparation task, in covered. Attendees learn about many of the basic and also more advanced techniques, and why and how to use them.

## Module 01: Working with data frames

The first module teaches you how to manipulate the data frames. You learn how to make a projection, how to filter, join, bind, and sort data frames. Then the module deals with missing values and shows how to crate derived variables.

### Lessons

1. Manipulating data frames
2. Missing values and derived variables

## Module 02: Manipulating data

Package dplyr is bringing a modern way for data manipulation. You will learn how to use it successfully. Then the module shows how to smooth and normalize data. The last lesson of the second module is dealing with numerous ways of aggregating, pivoting, and unpivoting data in R.

### Lessons

1. Package dplyr
2. Smoothing and normalizing data
3. Aggregations and pivoting

## Module 03: Recoding and graphing

### In this module, you learn how to create numerical variables from strings, and how to create discrete variables from numerical ones. Data preparation interleaves with data overview. In the last lesson of this course, the most popular graphical function ggplot is introduced.

### Lessons

1. Recoding variables
2. Advanced graphing with ggplot