# Example Use

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## Introduction

This R Markdown document shows the usage of the package `cino1`.

```
# Install local package
install.packages("~/Documents/Masterarbeit/Package/nofone/", repos = NULL, type="source")
```

```
## Installing package into '/home/thgaertner/R/x86_64-pc-linux-gnu-library/3.6'
## (as 'lib' is unspecified)
```

```
# load package
library(cinof1)
```

### Data

In this package, a sample data frame is included. It contains data for 300 patients within an n of 1 study. The data has the following structure:

- *patient_id*: Unique patient identifier
- *date*: Date of data points
- *day*: Day in study
- *Block*: identifies treatment block
- *Activity*: Dummy variable for steps per day
- *treatment*: Dummy variable for 2 treatments as factors
- *Uncertain_Low_Back_Pain*: Dummy variable for Uncertain loq back pain on scale 1-15

```
# Load Example Data frame
load("data/simpatdat.rda")
# Summarize Data
summary(simpatdat)
```

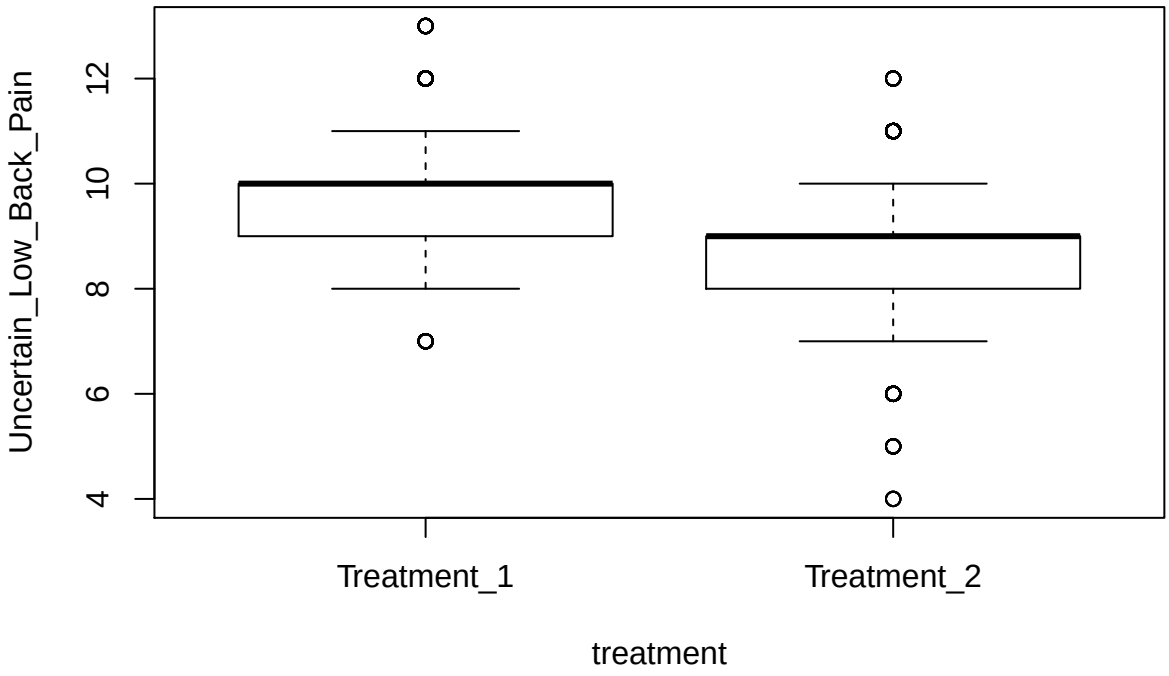
```
##    patient_id             date            day             block
##  Min.   :  0.00   2018-01-01:  300   Min.   :  1.00   Min.   :1.00
##  1st Qu.: 74.75   2018-01-02:  300   1st Qu.: 28.75   1st Qu.:1.75
##  Median :149.50   2018-01-03:  300   Median : 56.50   Median :2.50
##  Mean   :149.50   2018-01-04:  300   Mean   : 56.50   Mean   :2.50
##  3rd Qu.:224.25   2018-01-05:  300   3rd Qu.: 84.25   3rd Qu.:3.25
##  Max.   :299.00   2018-01-06:  300   Max.   :112.00   Max.   :4.00
##                   (Other)   :31800
##        treatment     Uncertain_Low_Back_Pain    Activity
##  Treatment_1:16800   Min.   : 4.000          Min.   :-2671
##  Treatment_2:16800   1st Qu.: 9.000          1st Qu.: 4640
##                      Median : 9.000          Median : 5995
##                      Mean   : 9.401          Mean   : 6006
```

```
##                     3rd Qu.:10.000          3rd Qu.: 7343
##                     Max.   :13.000          Max.   :14455
##
```

## Basic Analysis

Basic functions for analyse N-of-1 studys are for example wilcox test or comparative plots. These two functions are provided in this package.

```
outcome <- "Uncertain_Low_Back_Pain"
exposure <- "treatment"
comparative.plot(simpatdat, exposure = exposure, outcome = outcome)
```




```
wilcox.nofone(simpatdat, exposure = exposure, outcome = outcome)
```

```
##
##  Wilcoxon rank sum test
##
## data:  Uncertain_Low_Back_Pain by treatment
## W = 228329144, p-value < 2.2e-16
## alternative hypothesis: true location shift is not equal to 0
```

## G-Estimation