

Test-retest Reliability

! Important

Before submission, please set `eval: true` in YAML.

You will use data from this paper: <https://www.sciencedirect.com/science/article/pii/S1053811921011150>, which contains person-level fMRI data from 120 participants with chronic back pain. The participants received pressure pain stimulation across two time points.

Q1: Download the data and show a descriptive table of the `rating` (subjective pain ratings) and `nps` (Neurological Pain Signature) variables.

```
# Import data Study10.csv from https://osf.io/v9px7/
```

Q2: What construct does the `nps` variable measure?

Q3: Show the summary statistics of the `rating` and `nps` variables across the two time points.

Q4: Does it appear that `nps` across two time points are parallel measurement?

Q5: Show a scatterplot of the `nps` variables across the two time points (sessions).

```
# Include your code
```

Q6: What is the test-retest reliability of the `rating` and `nps` variables across the two time points? Use the `psych::cor.ci()` function to also obtain the confidence interval.

```
# Insert your R code
```

Q7: Using the Spearman-Brown formula, what is the estimated reliability if one obtain the mean of `nps` across three time points?