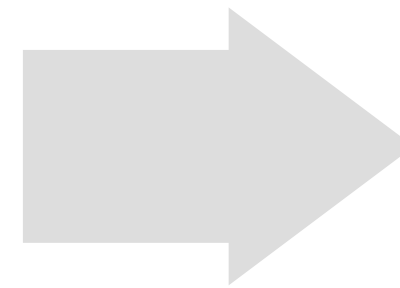


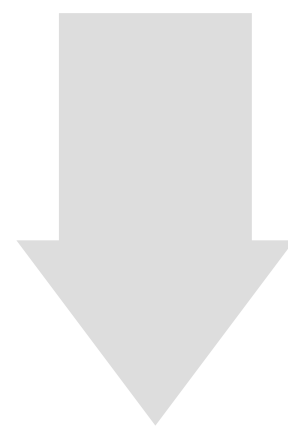
# Design of study

Work in progress

25 clinical features

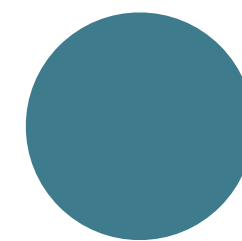
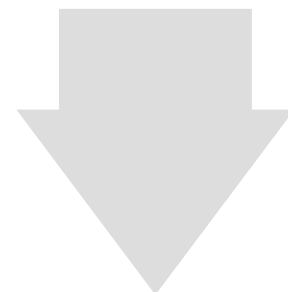


**Baseline PCA**

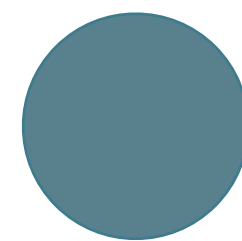


**Feature selection using Shapley value reconstruction error model.**  
Identifying features causing the supra threshold reconstruction error (x)

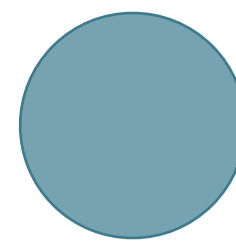
25 - x clinical features



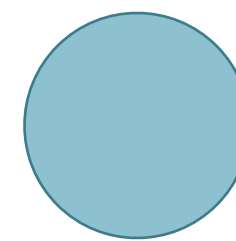
PC1



PC2

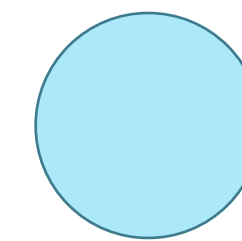


PC3



PC4

...



PCn

# Design of study

Work in progress

## Surgical response

“**Duration of response**” was calculated based on patient’s **surgery date** and **self-reported time of pain recurrence**. Patients with no pain recurrence were followed for a maximum of 5 years.

- “**Responder**” = Patient with  $\geq 50\%$  reduction in pain, assessed by the pain numeric ranking scale (NRS), and a score of I-III on the BNI scale.
- “**Non-responder**” = Patient with  $< 50\%$  reduction in pain, assessed by the pain numeric ranking scale (NRS), and a score of IV-V on the BNI scale.
- “**Pain recurrence**” was defined as reversion of pain to a score of IV-V on the BNI scale.

## Pain grade

Selection of **principal components** was conducted in consecutive manner (highest to lowest  $\lambda$ ) to account for a 95% threshold of cumulative explained variance.

- Statistical testing (Spearman correlations) of PCs and duration of response to determine the best ‘pain grade’.
- PC weights provided insight on important variables.

*NB!* PCA and surgical response data are independent, so there is no leaking of information about the outcome !