

Ensure there is a **valid reason** for selecting the putative biomarker for investigation based on the pathophysiology of Parkinson's disease

Demonstrate the **reliability** of the biomarker by showing reproducibility of measurement in one centre by different personnel, and between centres

Examine the effect of **confounding factors** (e.g. age, sex, smoking status or symptomatic treatment) on the biomarker

Examine the **validity and reliability of the criterion** (e.g. clinical rating scale)

Undertake a **power calculation** to determine an appropriate sample size for the biomarker study

Perform biomarker study

- Longitudinal and prospective
- Biomarker and clinical measures recorded at several time points over several years
- Appropriate statistical modelling used (e.g. linear mixed models)
- Detailed and complete reporting of results