Power & Sample Size for Longitudinal Studies

- Known pilot estimates
  - » Linear mixed models of rate of change
  - » Mixed Model Repeated Measures (MMRM)
- ADNI-based pilot estimates
- About

Inputs

Analysis type: Sample size

Sample size (n): 100 — 1,000 (5,000)

Power (%): 0 — 50 — 95

Start time (years): 0

End time (years): 1.5

Time step (years): 0.5

Type I error (sig.level): 0.05 (1)

Type of test
- (•) two.sided
- ( ) one.sided

Effect size scale
- (•) Raw scale of the outcome
- ( ) Percent of placebo change

Pilot estimate of the placebo change (beta): 0.5

Percent change in the pilot estimate of the parameter of interest (pct.change): 0.3

Target treatment effect size (delta): 1.5

Pilot estimate of variance of random intercept (sig2.i): 55

Pilot estimate of variance of random slope (sig2.s): 22

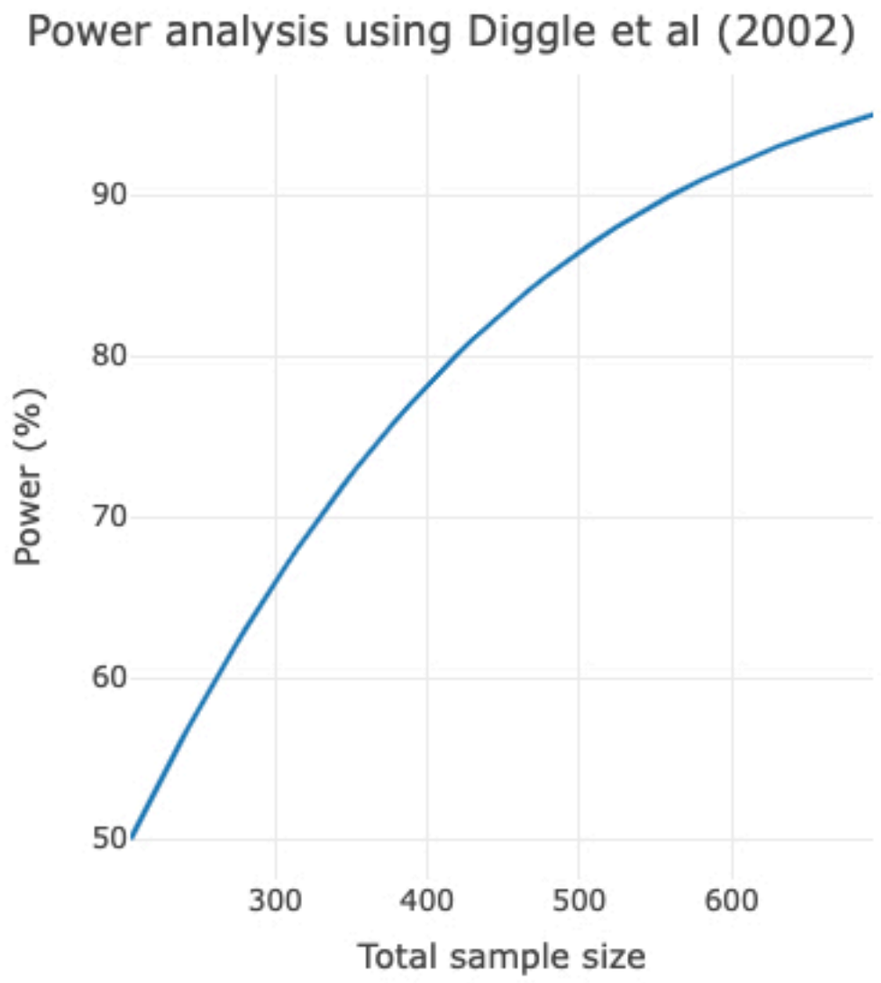
Pilot estimate of covariance of random slope and intercept(cov.s.i): 29

Pilot estimate of residual variance (sig2.e): 10

Method
- ( ) Liu and Liang (1997)
- (•) Diggle et al (2002)
- ( ) Edland (2009)

Allocation ratio (lambda): 1 (0 — 5)

Power analysis results



Sample size calculation for difference in slopes between two groups. See Diggle et al (2002) for parameter definitions and other details.

Summary	Value
Method	Diggle et al (2002)
Type of test	two.sided
Type I error	0.05
Placebo change	0.5
Effect size	1.5
Observation times	0, 0.5, 1, 1.5