

- G*Power covers statistical power analyses for many different statistical tests such as: t test, F test, χ^2 -test, z test and some exact tests.
- G*Power offers five different types of statistical power analysis:
 - A priori (sample size N is computed as a function of power level $1-\beta$, significance level α , and the to-be-detected population effect size)
 - Compromise (both α and $1-\beta$ are computed as functions of effect size, N, and an error probability ratio $q = \beta/\alpha$)
 - Criterion (α and the associated decision criterion are computed as a function of $1-\beta$, the effect size, and N)
 - Post-hoc ($1-\beta$ is computed as a function of α , the population effect size, and N)
 - Sensitivity (population effect size is computed as a function of α , $1-\beta$, and N)
- G*Power is available for Mac OS X and Windows. **G*Power is free.**

Faul, F., Erdfelder, E.,
Lang, A.G., & Buchner, A.
(2007). G*Power 3: A
flexible statistical power
analysis program for the
social, behavioral, and
biomedical sciences.
*Behavior Research
Methods*, 39, 175-191.

The screenshot shows the G*Power 3 software interface. At the top, there are two tabs: 'Central and noncentral distributions' and 'Protocol of power analyses'. The 'Protocol of power analyses' tab is selected. Below the tabs, there are several sections for configuring the power analysis.

Test family: A dropdown menu showing 't tests'.

Statistical test: A dropdown menu showing 'Correlation: Point biserial model'.

Type of power analysis: A dropdown menu showing 'A priori: Compute required sample size - given α , power, and effect size'.

Input parameters: A section containing a 'Determine' button and three input fields: 'Tail(s)' set to 'One', 'Effect size |r|' set to '0.3', ' α err prob' set to '0.05', and 'Power (1- β err prob)' set to '0.95'.

Output parameters: A section containing five output fields, each followed by a question mark: 'Noncentrality parameter δ ', 'Critical t', 'Df', 'Total sample size', and 'Actual power'.

At the bottom right, there are two buttons: 'X-Y plot for a range of values' and 'Calculate'.