

## Intro — Introduction to power, precision, and sample-size analysis

[Description](#)    [Also see](#)

### Description

Sample-size determination is important for planning a study. It helps allocate necessary resources to the study. When a study uses hypothesis testing to make inference about parameters of interest, power and sample-size (PSS) analysis is used to investigate the optimal allocation of study resources to increase the likelihood of detecting the desired magnitude of the effect of interest. PSS analysis estimates the sample size required to achieve the desired power of a test in a future study. When a study uses confidence intervals (CIs) for inference, precision and sample-size (PrSS) analysis is used to estimate the required sample size to achieve the desired precision of a CI in a future study.

This manual describes the `power` command that provides PSS analysis for hypothesis testing (see [PSS-2] [power](#)) and the `ciwidth` command that provides PrSS analysis for CIs (see [PSS-3] [ciwidth](#)). Users can provide a list of parameters and perform sensitivity analysis. The results can be displayed in a table and in a graph; see [PSS-2] [power, table](#) and [PSS-2] [power, graph](#) for the `power` command and [PSS-3] [ciwidth, table](#) and [PSS-3] [ciwidth, graph](#) for the `ciwidth` command. You can also add your own methods to `power` ([PSS-2] [power usermethod](#)) and `ciwidth` ([PSS-3] [ciwidth usermethod](#)).

See [PSS-2] [Intro \(power\)](#) for a general introduction to PSS analysis and [PSS-3] [Intro \(ciwidth\)](#) for PrSS analysis.

Sample-size calculations for group sequential designs can be performed with the `gsdesign` command; see [ADAPT] [GSD intro](#) for a general introduction to group sequential designs, and see [ADAPT] [gs](#) for an introduction to the `gsdesign` command.

### Also see

[PSS-2] [Intro \(power\)](#) — Introduction to power and sample-size analysis for hypothesis tests

[PSS-2] [power](#) — Power and sample-size analysis for hypothesis tests

[PSS-3] [Intro \(ciwidth\)](#) — Introduction to precision and sample-size analysis for confidence intervals

[PSS-3] [ciwidth](#) — Precision and sample-size analysis for CIs

[PSS-5] [Glossary](#)

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