

Chapter 4

The Procedure Window

Introduction

This chapter discusses the operation of the **PASS Procedure Window**, one of the three main **PASS** windows. The other two windows are the *PASS Home Window* and the *Output Window*. These are described in other chapters. Each power analysis and sample size procedure in **PASS** has its own Procedure window, which contains all the settings, options, and parameters required to perform the calculation. These options are separated into groups called *tabs* or *panels*. A particular panel is viewed by pressing the corresponding tab that appears at the left side of the window. The tabs are organized into groups separated by a horizontal line. Tabs above the line (*Design* and *Options*) have input options specific to the procedure and determine specifically how the calculation is carried out. The options on **all** tabs above the separating line directly affect the calculation and accuracy of the results. Tabs below the line (usually *Reports* and *Plots*) have options common to all procedures that allow you to select and format reports and plots.

At most six procedure windows can be opened at a time. You can widen the window to increase the size of the immediate help window by dragging the corners of the window.

The Procedure Window is comprised of five main items: the *Input Options Tabs*, the *Calculate Button*, the *Help Pane*, the *Menu*, and the *Toolbar*. Each of these components will be described in the sections that follow.

Procedure Template Files

The values of all options available for a procedure are referred to as a *template*. A template may be stored for future use in a *template file*. By creating and saving template files (often referred to as *templates*), you can tailor each procedure to your own specific needs. Each time you use a procedure, you simply load your template and run the analysis you have preset. You do not have to set all the options every time. You can save and load template files anywhere on your computer or network.

Template files have the extension **.t[Procedure Number]*, where *[Procedure Number]* is replaced by the number of the procedure (e.g. **.t111* is the extension for all Two-Sample T-Test assuming Equal Variance (Enter Means) procedure templates). A complete list of all procedures by number is given at the end of this chapter. Each procedure's name and number is displayed near the bottom left of each procedure window when *Procedure Info* is selected to be shown. To display procedure info, click *View > Show Procedure Info* in the Procedure Window menu.

Default Template

Whenever you close a procedure, the current settings are automatically saved in a default template file. This template file is automatically loaded when the procedure is next opened. This allows you to continue using the template without resetting all of the options.

Input Options Tabs

Your settings and selections that control a procedure are entered on the *Input Options Tabs*. The panel consists of several types of windows objects such as text boxes, check boxes, list boxes, and buttons. These control the input used in an analysis, how the analysis is performed, and which reports and plots will be generated. Not all options are always required. The tabs are organized into groups separated by a horizontal line. Tabs above the line have input options specific to the procedure and determine specifically how the analysis is carried out. The options on **all** tabs above the separating line directly affect the calculation and accuracy of the results. Tabs below the line (usually *Reports* and *Plots*) have options common to all procedures that allow you to select and format reports and plots. Use the *Guide Me* panel in the lower right corner of the window to have the program show you which options are required by the procedure.

Entering Text

When text (either numeric or letters) is needed for a particular option, you will be allowed to type text in the box. Many of these text boxes also have a pull-down button on the right. Pressing this button will allow you to select an option from a list of typical values, rather than type in the value.

Options that allow multiple values have two types of drop-down entry tools. The first will allow you to select from a list of typical values. The second will help you enter a list or a series of values. If you enter a value for a parameter that allows multiple entries that is out of bounds, the input text will turn red.

Selecting from a List

Some options require you to select from a list. In this case, a dropdown list will allow you to choose from the selections available.

Design Tab

The Design tab displays most of the options specific to the procedure. This is where you set the values of power, sample size, alpha, etc. These options are described in detail in the chapters corresponding to each procedure. Once you have set the options, click the **Calculate** button to generate the output.

Entering Multiple Values

In most cases, boxes that are extra wide allow you to enter multiple values. When this is done, a separate analysis is done for each combination of all multiple values. For example, if you enter four sample sizes and three alpha values, the resulting report will contain $3 \times 4 = 12$ rows, one for each combination.

You can enter multiple options using list or the *to-by* syntax. The *to-by* syntax is most easily described by an example. Use the drop-down tools to help you enter lists.

The *to-by* phrase *20 to 100 by 20* is translated to the values: *20 40 60 80 100*.

Solve For

Specify the parameter that is to be solved for in terms of the other parameters. For example, you might want to solve for power or sample size.

In most cases, the algorithm for the calculating the power is programmed within *PASS*. When other parameters (such as sample size or difference) are selected, a binary search is conducted using the power algorithm.

Options Tab

Some procedures have an options tab. When present, this tab contains additional calculation options relevant to the analysis. The default values are usually sufficient for most calculations.

Reports Tab

The Reports tab displays the options that control the output reports.

Select Numeric Report Output

Show Numeric Report

This option determines whether the numeric report is displayed in the output.

Show References

Check this box to cause the literature reference(s) to be displayed on the report.

Show Definitions

Check this box to show the definitions at the end of the numeric report. Although these definitions are helpful at first, they tend to clutter the output and this option lets you skip them.

Show Summary Statements

The program will output a text statement summarizing the results for each scenario. This option specifies the number of scenarios (rows) from the Numerical Report that will have a summary statement displayed.

Decimal Places for Numeric Reports

Decimals

These options set the number of decimal places in corresponding values of the numeric reports. Some of these decimal values also affect the decimal places for corresponding values in plot titles and legend labels.

Page Title

Page Title

This option allows you to enter an option title phrase that will appear in the heading of each page of the output.

Plots Tab

The Plots tab displays the options that control the output plots.

2D Plots

X-Y Plots

Check this box to display 2D X vs Y plots in the output.

Show

This option controls when plots are displayed. This option allows you to eliminate "uninformative" plots from the output. The options are:

The Procedure Window

If X Parameter Varies

The plot is displayed only if the parameter on the X-axis has more than one value.

Always

The plot is always displayed.

Plot Format Button

Click this button to edit the format of the plots with random data. The Scatter Plot chapter is devoted to the options available in this window.

Live Edit

This option controls whether the plot may be reformatted interactively after it has been generated but before it is written to the report. When checked, this option allows charts to be formatted interactively using a plot-editing window.

2D Plot – Axis and Legend Parameters

Y (Vertical) and X (Horizontal) Axis Parameters

This option selects which of the parameters is displayed on the horizontal axis. The vertical axis always contains the **Solve For** parameter, so you cannot select the parameter that was listed in the Find option. Also, you would normally only select a parameter that has multiple entries.

When this option is set to *Automatic*, the parameter with the most values is selected.

Legend Parameter

A separate line is drawn for each value of this parameter. The lines are labeled in the legend. When this option is set to *Automatic*, the parameter with the second most values is selected.

3D Plots

X-Y-Z Plots and X-Y-Z Plots with Groups

Check this box to display 3D X-Y-Z plots and/or X-Y-Z plots with groups in the output. These can display 3 variables and 4 variables, respectively, on a single plot.

Show

This option controls when plots are displayed. This option allows you to eliminate "uninformative" plots from the output. The options are:

If X, Z Parameters Vary (X-Y-Z Plots only)

The plot is displayed only if the parameters on both the X and Z axes have more than one value.

If X, Z, Legend Parameters Vary (X-Y-Z Plots with Groups only)

The plot is displayed only if the parameters on the X and Z axes and in the legend all have more than one value.

Always

The plot is always displayed.

Plot Format Button

Click this button to edit the format of the plots with random data. The Scatter Plot chapter is devoted to the options available in this window.

The Procedure Window

Live Edit/Rotate

This option controls whether the plot may be reformatted interactively after it has been generated but before it is written to the report. When checked, the procedure will stop while it is running to allow you to change this plot's 3D orientation and format. This is useful because the plot will be displayed with the actual values rather than randomly generated data.

3D Plot – Axis and Legend Parameters

Y (Vertical), X(Horizontal), and Z(Depth) Axis Parameters

This option selects which of the parameters are displayed on the X and Z axes. The vertical axis always contains the **Solve For** parameter, so you cannot select the parameter that was listed in the Solve For option. Also, you would normally only select a parameter that has multiple entries.

When this option is set to *Automatic*, the parameter with the most values that is not already displayed on another axis is assigned to this axis. When both are set to *Automatic*, the parameter with the most values is assigned to the X axis and the parameter with the second most values is assigned to the Z axis.

Legend Parameter (used only in X-Y-Z Plots with Groups)

A separate surface is drawn for each value of this parameter. The lines are labeled in the legend. When this option is set to *Automatic*, the parameter with the third most values is selected.

Plot Text Tab

The Plot Text tab displays the options that control the text displayed in plots.

Decimal Places for Plot Titles and Legend

Decimals

These options set the number of decimal places for corresponding values in plot titles and legend labels.

Abbreviations for Titles, Labels, and Legend

Parameter Abbreviations

These options specify the abbreviations that are used for the parameters in the titles of the plots and the axis labels. It is usually necessary to keep these abbreviations as short as possible since the titles may become very large if the abbreviations are large.

Calculate Button

Click on the green *Calculate Button* located in the upper-left portion of the window to run the analysis or graphics procedure and obtain a report. While the procedure is running the green Calculate Button will change to a red *Abort* button. If the procedure is taking too long or you want to interrupt the calculations, click on the red button to immediately terminate the calculations. While a procedure is running, look for progress information in the Help Pane on the right.

Help Pane

The Help Pane is comprised of the Help Center, which contains links to useful help resources, and the Option Info display box, which displays information as you mouse over each input option.

Help Center

Click on the *Help Center* heading to expand or collapse the help options inside. The help center contains various links to procedure-specific help topics, examples, and validation as well as links to general training videos and documentation. It also contains an option to help you fill out the procedure input options by sequentially highlighting the primary options in the procedure. This is sometimes referred to as *Guide Me*.

Option Info

As you mouse over or set focus on each option on the Procedure Window, the *Option Info* box in the Help Pane on the right will be updated with important information about that option. Use this information to help you decide on how to complete each option. Look for option recommendations and descriptions of possible choices. While a procedure is running, look for progress information in the option info box.

Menus

We will now discuss the various options that appear in the Procedure Window menus.

File Menu

The File Menu is used for initializing, loading, and saving templates. Each set of options for a procedure, called a template, may be saved for future use. In this way, you do not have to set the options every time you use a procedure. Instead, you set the options once, save them as a template, and re-use the template whenever you re-use the procedure. You can save and load template files anywhere on your computer or network.

- **New Template (Reset)**
This menu item resets all options to their default values.
- **Open Template**
This menu item opens a file selection dialog from which you can select a template to open from anywhere on your computer.
- **Open Example Template**
This menu item opens a window from which you can select from the available example templates for that procedure. This is particularly useful when following tutorials in the procedure documentation.
- **Save Template As**
This menu item opens a window with which you can name and save the current procedure settings as a template.
- **System Options**
This menu item brings up the System Options window to set various system options.
- **Close This Procedure**
This menu item closes this procedure window. It does not terminate the **PASS** system.

The Procedure Window

- **Exit PASS**

This option terminates the **PASS** system. If you have unsaved data or report galleries, you will be prompted to save them before the program closes.

View Menu

The View Menu controls what objects are displayed on the Procedure Window. You can use this message to show or hide the toolbar and show or hide procedure info that contains procedure names and numbers and option numbers. This procedure information is particularly useful when writing macros.

Run Menu

The *Start Calculation* menu item runs the analysis, displaying the output in the Output document of the word processor. After you have set all options to their appropriate values, select this option to perform the analysis. The procedure may alternatively be run by pressing the *F9* function key or by pressing the green *Calculate Button* in the upper-left portion of the screen. While a procedure is running, look for progress information in the Help Pane on the right.

While the procedure is running this menu item will change to *Abort* and the green *Calculate Button* will change to a red *Abort* button. If the procedure is taking too long or you want to interrupt the calculations, click on the red button or select *Abort* from the *Run* menu to immediately terminate the calculations.

Procedures Menu

This menu can be used to load procedures.

Tools Menu

From this menu you can load various statistical calculators, data procedures, and the macro command center window. You can also play the active macro from this menu.

Window Menu

This menu lets you transfer to one of the other **PASS** windows such as the Output window or one of the currently open procedure windows.

Help Menu

From this menu you can launch the **PASS** Help System and view documentation, tutorials, videos, and references. From this menu you can also view licensing information.

Toolbar

The *Toolbar* is provided for single-click access to the most commonly used menu options. You will find that each of the options on the toolbar can also be found in the menus. The Toolbar is located at the top of the screen just under the menus. On the left, the toolbar contains buttons that allow you to reset, open, and save templates. On the right, the toolbar contains navigation buttons to help you quickly move among windows in the system and load new procedures.

List of Procedures by Number

The following is a list of all **PASS** procedures by their procedure number. Settings template files have the extension **.t[Procedure Number]*, where *[Procedure Number]* is replaced by the number of the procedure given below.

Proc. #	Name
5	Non-Inferiority Logrank Tests
6	Confidence Intervals for One Mean with Tolerance Probability
7	Confidence Intervals for One Mean
8	Confidence Intervals for Paired Means with Tolerance Probability
9	Confidence Intervals for Paired Means
10	Confidence Intervals for the Difference Between Two Means with Tolerance Probability
11	Confidence Intervals for the Difference Between Two Means
12	Confidence Intervals for One Standard Deviation using Standard Deviation
13	Confidence Intervals for One Standard Deviation using Relative Error
14	Confidence Intervals for the Ratio of Two Variances using Variances
15	Confidence Intervals for the Ratio of Two Variances using Relative Error
16	Confidence Intervals for One Proportion
18	Confidence Intervals for One Standard Deviation with Tolerance Probability
19	Confidence Intervals for One Variance using Variance
20	Confidence Intervals for One Variance using Relative Error
21	Confidence Intervals for One Variance with Tolerance Probability
22	Confidence Intervals for the Difference Between Two Proportions
23	Confidence Intervals for the Ratio of Two Proportions
24	Confidence Intervals for the Odds Ratio of Two Proportions
25	Confidence Intervals for Linear Regression Slope
26	Confidence Intervals for Pearson's Correlation
27	Two-Level Designs
28	Fractional Factorial Designs
29	Balanced Incomplete Block Designs
30	Latin Square Designs
31	Response Surface Designs
32	Screening Designs
33	Taguchi Designs
34	D-Optimal Designs
35	Design Generator
40	Cochran-Armitage Test for Trend in Proportions
41	Kappa Test for Agreement Between Two Raters
42	Randomization Lists
43	Group-Sequential Tests for Two Means (Simulation)
44	Group-Sequential Non-Inferiority Tests for Two Means (Simulation)
45	Group-Sequential Tests for Two Means Assuming Normality (Simulation)
46	Group-Sequential Tests for Two Proportions (Simulation)
51	Group-Sequential Non-Inferiority Tests for the Difference of Two Proportions (Simulation)
52	Group-Sequential Non-Inferiority Tests for the Ratio of Two Proportions (Simulation)
53	Group-Sequential Non-Inferiority Tests for the Odds Ratio of Two Proportions (Simulation)
55	Group-Sequential Superiority by a Margin Tests for the Difference of Two Proportions (Simulation)
56	Group-Sequential Superiority by a Margin Tests for the Ratio of Two Proportions (Simulation)
57	Group-Sequential Superiority by a Margin Tests for the Odds Ratio of Two Proportions (Simulation)
63	Control Charts for Means (Simulation)
64	Control Charts for Variability (Simulation)
67	Probit Analysis

The Procedure Window

Proc. #	Name
68	Lin's Concordance Correlation Coefficient
69	Logrank Tests Accounting for Competing Risks
70	Installation Validation Tool for Installation Qualification (IQ)
71	Procedure Validation Tool for Operational Qualification (OQ)
72	Probability Calculator
75	Standard Deviation of Means Calculator
80	Kappa Estimator
92	Tests for Two Survival Curves Using Cox's Proportional Hazards Model
93	Non-Inferiority Tests for Two Survival Curves Using Cox's Proportional Hazards Model
94	Superiority by a Margin Tests for Two Survival Curves Using Cox's Proportional Hazards Model
95	Equivalence Tests for Two Survival Curves Using Cox's Proportional Hazards Model
96	Equivalence Tests for the Difference of Two Hazard Rates Assuming an Exponential Model
97	Superiority by a Margin Tests for the Difference of Two Hazard Rates Assuming an Exponential Model
98	Non-Inferiority Tests for the Difference of Two Hazard Rates Assuming an Exponential Model
99	Tests for the Difference of Two Hazard Rates Assuming an Exponential Model
100	Conditional Power of Logrank Tests
101	Conditional Power of Two Proportions Tests
102	Conditional Power of One Proportion Tests
103	Conditional Power of 2x2 Cross-Over Designs
104	Conditional Power of Paired T-Tests
105	Conditional Power of Two-Sample T-Tests
106	Conditional Power of One-Sample T-Tests
107	Analysis of Covariance
108	Tests for Two Groups of Pre-Post Scores
109	Tests for One Mean
114	Chi-Square Tests
115	Tests for Two Correlated Proportions in a Matched Case-Control Design
117	One-Way Analysis of Variance F-Tests
119	Logrank Tests (Lachin and Foulkes)
120	Pearson's Correlation Tests
121	Tests for Two Correlations
123	Logistic Regression (Retired)
124	Factorial Analysis of Variance
125	Randomized Block Analysis of Variance
128	Tests for Intraclass Correlation
131	Confidence Intervals for One Proportion from a Finite Population
132	Post-Marketing Surveillance
133	Linear Regression
134	Two-Stage Phase II Clinical Trials
135	Logrank Tests (Freedman)
137	Standard Deviation Estimator
138	Chi-Square Effect Size Estimator
139	Group-Sequential Tests for Two Means
140	Group-Sequential Tests for Two Proportions
141	Group-Sequential Logrank Tests
142	Tests for One Variance
143	Tests for Two Variances
144	Odds Ratio and Proportions Conversion Tool
146	Superiority by a Margin Tests for the Difference of Two Proportions in a Cluster-Randomized Design
147	Superiority by a Margin Tests for the Ratio of Two Proportions in a Cluster-Randomized Design
148	Superiority by a Margin Tests for One Mean (One-Sample or Paired T-Test)
149	Superiority by a Margin Tests for the Difference Between Two Means
150	Superiority by a Margin Tests for the Ratio of Two Means

The Procedure Window

Proc. #	Name
151	Superiority by a Margin Tests for the Difference of Two Means in a 2x2 Cross-Over Design
152	Superiority by a Margin Tests for the Ratio of Two Means in a 2x2 Cross-Over Design
153	Superiority by a Margin Tests for the Difference of Two Means in a Higher-Order Cross-Over Design
154	Superiority by a Margin Tests for the Ratio of Two Means in a Higher-Order Cross-Over Design
155	Tests for Paired Means
157	Multiple Comparisons
158	Tests for One ROC Curve
159	Tests for Two ROC Curves
160	Single-Stage Phase II Clinical Trials
161	Cox Regression
162	Three-Stage Phase II Clinical Trials
163	Poisson Regression
164	Tests for One Exponential Mean
165	Tests for Two Exponential Means
167	Multivariate Analysis of Variance (MANOVA)
169	Hotelling's Two-Sample T2
175	Mann-Whitney-Wilcoxon Tests (Simulation)
181	Tests for Paired Sensitivities
182	Tests for One-Sample Sensitivity and Specificity
183	Tests for Two Independent Sensitivities
184	Tests for Two Ordered Categorical Variables
185	Williams' Test for the Minimum Effective Dose
186	Tests for the Ratio of Two Poisson Rates
187	Tests for One Poisson Rate
198	Tests for One Mean (Simulation)
199	Data Simulator
200	Tests for Paired Means (Simulation)
201	Equivalence Tests for Paired Means (Simulation)
202	Tests for Two Means (Simulation)
203	Equivalence Tests for Two Means (Simulation)
204	Non-Inferiority Tests for One Mean
205	Non-Inferiority Tests for the Difference Between Two Means
206	Tests for the Difference Between Two Means in a 2x2 Cross-Over Design
207	Non-Inferiority Tests for the Difference Between Two Means in a 2x2 Cross-Over Design
220	Superiority by a Margin Tests for the Difference Between Two Proportions
221	Superiority by a Margin Tests for the Ratio of Two Proportions
222	Superiority by a Margin Tests for the Odds Ratio of Two Proportions
223	Non-Inferiority Tests for the Difference Between Two Proportions
224	Non-Inferiority Tests for the Ratio of Two Proportions
225	Non-Inferiority Tests for the Odds Ratio of Two Proportions
226	Equivalence Tests for the Difference Between Two Proportions
227	Equivalence Tests for the Ratio of Two Proportions
228	Equivalence Tests for the Odds Ratio of Two Proportions
231	Non-Inferiority Tests for the Difference of Two Proportions in a Cluster-Randomized Design
232	Non-Inferiority Tests for the Ratio of Two Proportions in a Cluster-Randomized Design
233	Equivalence Tests for the Difference of Two Proportions in a Cluster-Randomized Design
234	Equivalence Tests for the Ratio of Two Proportions in a Cluster-Randomized Design
235	Non-Inferiority Tests for the Difference Between Two Correlated Proportions
236	Non-Inferiority Tests for the Ratio of Two Correlated Proportions
237	Equivalence Tests for the Difference Between Two Correlated Proportions
238	Equivalence Tests for the Ratio of Two Correlated Proportions
242	Pair-Wise Multiple Comparisons (Simulation)
243	Multiple Comparisons of Treatments vs. a Control (Simulation)

The Procedure Window

Proc. #	Name
244	Multiple Contrasts (Simulation)
245	Equivalence Tests for the Difference Between Two Means
246	Equivalence Tests for the Difference Between Two Means in a 2x2 Cross-Over Design
247	Equivalence Tests for the Ratio of Two Means in a 2x2 Cross-Over Design
248	Non-Inferiority Tests for the Ratio of Two Means in a 2x2 Cross-Over Design
249	Equivalence Tests for the Ratio of Two Means
250	Non-Inferiority Tests for the Ratio of Two Means
251	Tests for the Ratio of Two Means
252	Tests for the Ratio of Two Means in a 2x2 Cross-Over Design
253	Tests for Two Proportions in a Stratified Design (Cochran/Mantel-Haenszel Test)
254	Tests for One Coefficient Alpha
255	Tests for Two Coefficient Alphas
256	Equivalence Tests for the Difference of Two Means in a Higher-Order Cross-Over Design
257	Equivalence Tests for the Ratio of Two Means in a Higher-Order Cross-Over Design
258	Non-Inferiority Tests for the Difference of Two Means in a Higher-Order Cross-Over Design
259	Non-Inferiority Tests for the Ratio of Two Means in a Higher-Order Cross-Over Design
288	Mixed Models (Simulation)
289	Normality Tests (Simulation)
291	Tests for Two Means in a Repeated Measures Design
292	Multiple One-Sample or Paired T-Tests
293	Multiple Two-Sample T-Tests
296	Tests for Two Proportions in a Repeated Measures Design
297	Hotelling's One-Sample T2
300	Power Comparison of Tests of Means in One-Way Designs (Simulation)
301	One-Way Analysis of Variance F-Tests (Simulation)
302	Kruskal-Wallis Tests (Simulation)
303	Terry-Hoeffding Normal-Scores Tests of Means (Simulation)
304	Van der Waerden Normal Quantiles Tests of Means (Simulation)
305	Survival Parameter Conversion Tool
306	Bartlett Test of Variances (Simulation)
307	Levene Test of Variances (Simulation)
308	Brown-Forsythe Test of Variances (Simulation)
309	Conover Test of Variances (Simulation)
310	Power Comparison of Tests of Variances (Simulation)
311	Pearson's Correlation Tests (Simulation)
312	Spearman's Rank Correlation Tests (Simulation)
313	Kendall's Tau-b Correlation Tests (Simulation)
314	Power Comparison of Correlation Tests (Simulation)
315	Point Biserial Correlation Tests
316	Confidence Intervals for Spearman's Rank Correlation
317	Confidence Intervals for Kendall's Tau-b Correlation
318	Confidence Intervals for Point Biserial Correlation
319	Confidence Intervals for Intraclass Correlation
320	Confidence Intervals for Coefficient Alpha
321	Confidence Intervals for Kappa
322	Confidence Intervals for the Area Under an ROC Curve
323	Confidence Intervals for Michaelis-Menten Parameters
324	Tests for Two Means in a Multicenter Randomized Design
325	Confidence Intervals for Cp
326	Confidence Intervals for Cpk
327	Confidence Intervals for the Exponential Lifetime Mean
328	Confidence Intervals for an Exponential Lifetime Percentile
329	Confidence Intervals for Exponential Reliability

The Procedure Window

Proc. #	Name
330	Confidence Intervals for the Exponential Hazard Rate
340	Reference Intervals for Clinical and Lab Medicine
341	Tests for Two Means in a Cluster-Randomized Design
342	Non-Inferiority Tests for Two Means in a Cluster-Randomized Design
343	Superiority by a Margin Tests for Two Means in a Cluster-Randomized Design
344	Equivalence Tests for Two Means in a Cluster-Randomized Design
345	Logrank Tests in a Cluster-Randomized Design
346	Tests for the Ratio of Two Negative Binomial Rates
347	Tests for the Difference Between Two Poisson Rates in a Cluster-Randomized Design
348	One-Sample Logrank Tests
349	Tests for the Difference Between Two Poisson Rates
350	One-Way Repeated Measures Contrasts
351	Tests for One Proportion
352	Non-Inferiority Tests for One Proportion
353	Equivalence Tests for One Proportion
354	Superiority by a Margin Tests for One Proportion
355	Confidence Intervals for One-Way Repeated Measures Contrasts
356	One-Way Repeated Measures
357	MxM Cross-Over Designs
358	M-Period Cross-Over Designs using Contrasts
359	Tests for Two Proportions
360	One-Way Analysis of Variance Contrasts
361	Tests for the Difference Between Two Linear Regression Slopes
362	Tests for the Difference Between Two Linear Regression Intercepts
363	One-Sample Cure Model Tests
364	Equivalence Tests for the Difference Between Two Paired Means
365	Tests for Two Correlated Proportions (McNemar Test)
366	Tests for Two Proportions in a Cluster-Randomized Design
367	Mendelian Randomization with a Continuous Outcome
368	Mendelian Randomization with a Binary Outcome
369	Equivalence Tests for One Mean
370	Acceptance Sampling for Attributes
371	Operating Characteristic Curves for Acceptance Sampling for Attributes
380	Tests for the Difference of Two Means in a Higher-Order Cross-Over Design
381	Tests for the Ratio of Two Means in a Higher-Order Cross-Over Design
382	Tests for Fold Change of Two Means
383	Group-Sequential Tests for One Proportion in a Fleming Design
384	Tests for the Odds Ratio in Logistic Regression with One Binary X (Wald Test)
385	Tests for the Odds Ratio in Logistic Regression with Two Binary X's (Wald Test)
386	Tests for the Interaction Odds Ratio in Logistic Regression with Two Binary X's (Wald Test)
388	Two-Sample T-Tests Assuming Equal Variance
389	Two-Sample T-Tests Allowing Unequal Variance
390	Repeated Measures Analysis
391	Confidence Intervals for the Odds Ratio in Logistic Regression with One Binary X
392	Confidence Intervals for the Odds Ratio in Logistic Regression with Two Binary X's
393	Confidence Intervals for the Interaction Odds Ratio in Logistic Regression with Two Binary X's
394	Two-Sample Z-Tests Assuming Equal Variance
395	Two-Sample Z-Tests Allowing Unequal Variance
396	Logrank Tests
397	Group-Sequential Logrank Tests (Simulation)
399	Two-Sample T-Tests using Effect Size
400	Tests for One Mean using Effect Size
401	Tests for Paired Means using Effect Size

The Procedure Window

Proc. #	Name
402	Tests for Two Proportions using Effect Size
403	Tests for One Proportion using Effect Size
404	One-Way Analysis of Variance F-Tests using Effect Size
405	Factorial Analysis of Variance using Effect Size
406	Multiple Regression using Effect Size
407	Multiple Regression
408	Multiple Comparisons of Proportions for Treatments vs. a Control
410	Two-Group Survival Comparison Tests (Simulation)
411	Tolerance Intervals for Normal Data
412	Tolerance Intervals for Any Data (Nonparametric)
413	Tolerance Intervals for Exponential Data
414	Tolerance Intervals for Gamma Data
415	Tests for Two Proportions in a Stepped-Wedge Cluster-Randomized Design
416	Tests for Two Means in a Stepped-Wedge Cluster-Randomized Design
417	Tests for Two Poisson Rates in a Stepped-Wedge Cluster-Randomized Design
418	Tests for the Odds Ratio in a Matched Case-Control Design with a Binary X
419	Tests for the Odds Ratio in a Matched Case-Control Design with a Quantitative X
420	Confidence Intervals for One-Sample Sensitivity
421	Confidence Intervals for One-Sample Specificity
422	Confidence Intervals for One-Sample Sensitivity and Specificity
424	Reliability Demonstration Tests of One Proportion
425	Reliability Demonstration Tests of One Proportion with Adverse Events
430	Non-Inferiority Tests for the Ratio of Two Poisson Rates
431	Superiority by a Margin Tests for the Ratio of Two Poisson Rates
432	Non-Inferiority Tests for the Ratio of Two Negative Binomial Rates
433	Superiority by a Margin Tests for the Ratio of Two Negative Binomial Rates
434	Equivalence Tests for the Ratio of Two Poisson Rates
435	Equivalence Tests for the Ratio of Two Negative Binomial Rates
436	Tests for the Matched-Pair Difference of Two Event Rates in a Cluster-Randomized Design
437	Tests for the Matched-Pair Difference of Two Proportions in a Cluster-Randomized Design
438	Tests for the Matched-Pair Difference of Two Means in a Cluster-Randomized Design
439	Confidence Intervals for a Percentile of a Normal Distribution
440	Tests for the Odds Ratio in Logistic Regression with One Normal X (Wald Test)
441	Tests for the Odds Ratio in Logistic Regression with One Normal X and Other Xs (Wald Test)
442	Tests for the Odds Ratio in Logistic Regression with One Binary X and Other Xs (Wald Test)
443	GEE Tests for the Slope of Two Groups in a Repeated Measures Design (Continuous Outcome)
444	GEE Tests for the Slope of Two Groups in a Repeated Measures Design (Binary Outcome)
445	GEE Tests for the Slope of Two Groups in a Repeated Measures Design (Count Outcome)
446	GEE Tests for the TAD of Two Groups in a Repeated Measures Design (Continuous Outcome)
447	GEE Tests for the TAD of Two Groups in a Repeated Measures Design (Binary Outcome)
448	GEE Tests for the TAD of Two Groups in a Repeated Measures Design (Count Outcome)
449	Mixed Models Tests for the Slope Diff. in a 3-Level Hier. Design with Fixed Slopes (Level-2 Rand.)
450	Tests for the Odds Ratio of Two Proportions in a 2x2 Cross-Over Design
451	Non-Inferiority Tests for the Odds Ratio of Two Proportions in a 2x2 Cross-Over Design
452	Superiority by a Margin Tests for the Odds Ratio of Two Proportions in a 2x2 Cross-Over Design
453	Equivalence Tests for the Odds Ratio of Two Proportions in a 2x2 Cross-Over Design
454	Tests for the Difference of Two Proportions in a 2x2 Cross-Over Design
455	Non-Inferiority Tests for the Difference of Two Proportions in a 2x2 Cross-Over Design
456	Superiority by a Margin Tests for the Difference of Two Proportions in a 2x2 Cross-Over Design
457	Equivalence Tests for the Difference of Two Proportions in a 2x2 Cross-Over Design
458	Tests for the Ratio of Two Poisson Rates in a 2x2 Cross-Over Design
459	Non-Inferiority Tests for the Ratio of Two Poisson Rates in a 2x2 Cross-Over Design
460	Superiority by a Margin Tests for the Ratio of Two Poisson Rates in a 2x2 Cross-Over Design

The Procedure Window

Proc. #	Name
461	Equivalence Tests for the Ratio of Two Poisson Rates in a 2x2 Cross-Over Design
462	Tests for the Generalized Odds Ratio for Ordinal Data in a 2x2 Cross-Over Design
463	Non-Inferiority Tests for the Generalized Odds Ratio for Ordinal Data in a 2x2 Cross-Over Design
464	Superiority by a Margin Tests for the Gen. Odds Ratio for Ordinal Data in a 2x2 Cross-Over Design
465	Equivalence Tests for the Generalized Odds Ratio for Ordinal Data in a 2x2 Cross-Over Design
466	Tests for Pairwise Proportion Differences in a Williams Cross-Over Design
467	Non-Inferiority Tests for Pairwise Proportion Differences in a Williams Cross-Over Design
468	Superiority by a Margin Tests for Pairwise Proportion Differences in a Williams Cross-Over Design
469	Equivalence Tests for Pairwise Proportion Differences in a Williams Cross-Over Design
470	GEE Tests for the TAD of Multiple Groups in a Repeated Measures Design (Continuous Outcome)
471	GEE Tests for the TAD of Multiple Groups in a Repeated Measures Design (Binary Outcome)
472	GEE Tests for the TAD of Multiple Groups in a Repeated Measures Design (Count Outcome)
473	GEE Tests for the Slope of Multiple Groups in a Repeated Measures Design (Continuous Outcome)
474	Mixed Models Tests for the Slope Diff. in a 3-Level Hier. Design with Random Slopes (Level-2 Rand.)
475	GEE Tests for the Slope of Multiple Groups in a Repeated Measures Design (Count Outcome)
476	Mixed Models Tests for Two Means in a 2-Level Hierarchical Design (Level-2 Randomization)
477	Mixed Models Tests for Two Means in a 2-Level Hierarchical Design (Level-1 Randomization)
478	Mixed Models Tests for Two Proportions in a 2-Level Hierarchical Design (Level-2 Randomization)
479	Mixed Models Tests for Two Proportions in a 2-Level Hierarchical Design (Level-1 Randomization)
480	Mixed Models Tests for the Slope Difference in a 2-Level Hierarchical Design with Fixed Slopes
481	Mixed Models Tests for the Slope Difference in a 2-Level Hierarchical Design with Random Slopes
482	Mixed Models Tests for Two Means in a 3-Level Hierarchical Design (Level-3 Randomization)
483	Mixed Models Tests for Two Means in a 3-Level Hierarchical Design (Level-2 Randomization)
484	Mixed Models Tests for Two Means in a 3-Level Hierarchical Design (Level-1 Randomization)
485	Mixed Models Tests for Two Proportions in a 3-Level Hierarchical Design (Level-3 Randomization)
486	Mixed Models Tests for Two Proportions in a 3-Level Hierarchical Design (Level-2 Randomization)
487	Mixed Models Tests for Two Proportions in a 3-Level Hierarchical Design (Level-1 Randomization)
488	Mixed Models Tests for the Slope Diff. in a 3-Level Hier. Design with Fixed Slopes (Level-3 Rand.)
489	Mixed Models Tests for the Slope Diff. in a 3-Level Hier. Design with Random Slopes (Level-3 Rand.)
490	Tests for Pairwise Mean Differences in a Williams Cross-Over Design
491	Non-Inferiority Tests for Pairwise Mean Differences in a Williams Cross-Over Design
492	Superiority by a Margin Tests for Pairwise Mean Differences in a Williams Cross-Over Design
493	Equivalence Tests for Pairwise Mean Differences in a Williams Cross-Over Design
494	Tests for Multiple Correlated Proportions (McNemar-Bowker Test of Symmetry)