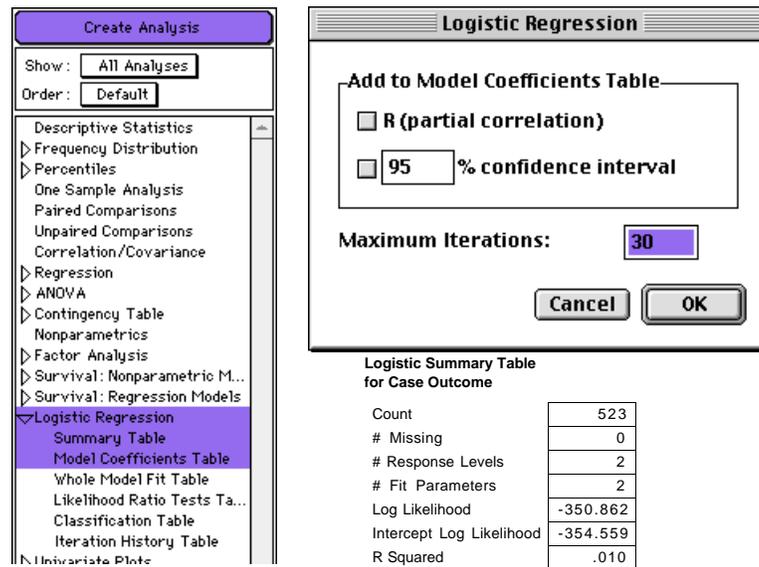


# What's new in StatView 5

## New features

### Logistic regression

StatView now computes logistic regression, a modeling technique analogous to linear regression or ANOVA except that the outcome variable is nominal rather than continuous. Typically the dependent variable is **binary**—that is, it has two possible values, such as a patient either getting cancer or not getting cancer. However, logistic regression can also model a **polytomous** (many-valued) nominal response variable. StatView can perform both dichotomous and polytomous logistic regression with one or more independent variables. Independent variables may be nominal, continuous, or both.



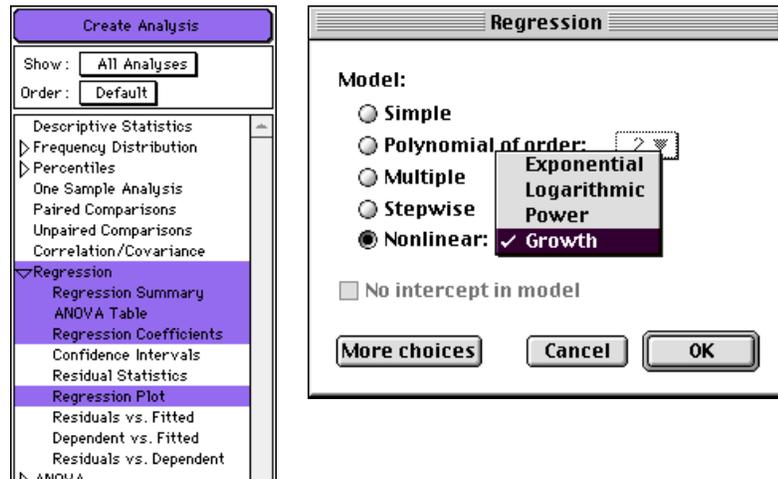
Logistic Model Coefficients Table for Case Outcome

	Coef	Std. Error	Coef/SE	Chi-Square	P-Value	Exp(Coef)
Pancreatic cancer: constant	-1.269	.377	-3.362	11.303	.0008	.281
Any Coffee: Some coffee	.984	.388	2.535	6.426	.0112	2.676

To learn more about logistic regression, see the new chapter [“Logistic regression,” p. 199 of StatView Reference.](#)

## Nonlinear regression

StatView now computes four commonly used nonlinear regression models: exponential, growth, logarithmic, and power regression. These models, which are available through StatView's familiar Regression dialog box, are estimated by linearizing the equation, doing the usual regression computations, and then back-transforming the estimates into the terms of the nonlinear model. Regression Plot can now draw the appropriate nonlinear fit on a bivariate scattergram of the model variables.



**Residual Statistics**  
Weight vs. Trunk Girth  
 $Y = e^{(b_0 + b_1 \cdot X)}$

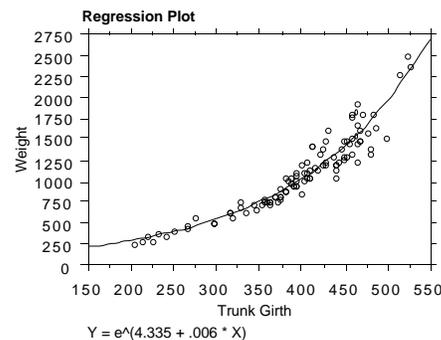
# >= 0	50
# < 0	54
SS[e(i) - e(i-1)]	2068860.063
Durbin-Watson	.
Serial Autocorrelation	.512

**Regression Summary**  
Weight vs. Trunk Girth  
 $Y = e^{(b_0 + b_1 \cdot X)}$

Count	104
Num. Missing	0
R	.
R Squared	.
Adjusted R Squared	.
RMS Residual	.

**Regression Coefficients**  
Weight vs. Trunk Girth  
 $Y = e^{(b_0 + b_1 \cdot X)}$

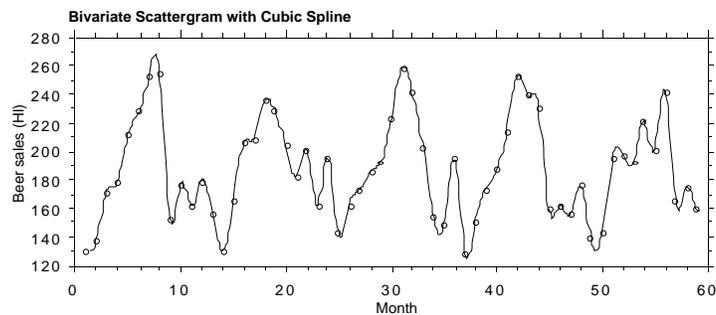
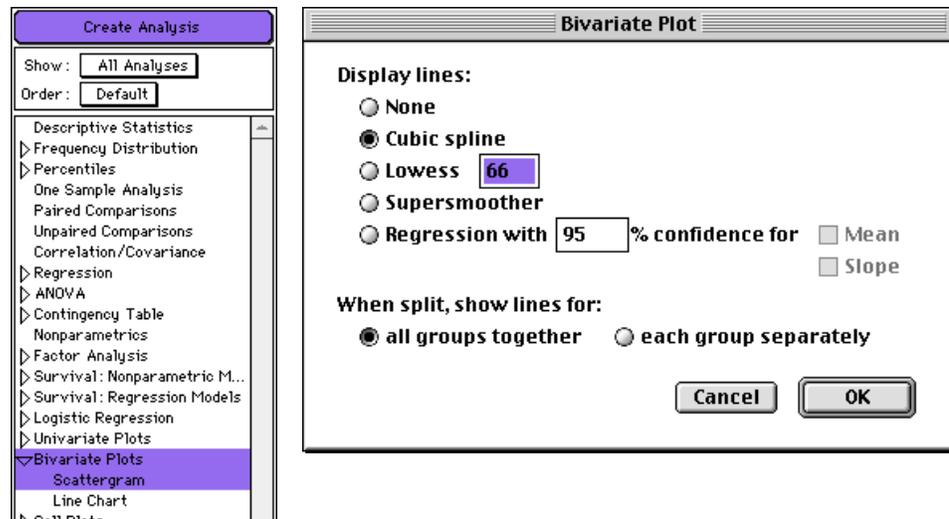
	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
b0	4.335	.063	4.335	68.920	<.0001
b1	.006	1.562E-4	.972	41.545	<.0001



To learn more about nonlinear regression, see the chapter [“Regression,” p. 51 of StatView Reference.](#)

## Bivariate plot smoothing

In addition to linear regression lines (with or without confidence bands), StatView now offers cubic spline, lowess, and supersmoother fitted lines for Bivariate Plots. Fitted lines can be drawn for all points together or separately for each group for plots including a Split By variable.



To learn more about cubic spline, lowess, and supersmoother, see the chapter [“Bivariate Plots,” p. 221 of StatView Reference.](#)

## ANOVA enhancements

StatView 5 has greatly enhanced ANOVA capabilities, now supporting control of depth of interactions, more than one within factor for repeated measures models, unbalanced repeated measures designs, analysis of covariance (ANCOVA), and multivariate analysis of variance and covariance (MANOVA and MANCOVA). StatView also now offers four more post hoc tests, in addition to Fisher's PLSD, Scheffé's F, and Bonferroni/Dunn: Dunnett's, Tukey-Kramer, Games-Howell, and Student-Newman-Keuls.

The following restrictions no longer hold for ANOVA in StatView:

1. Prior versions of StatView could solve only full interaction models. A **full interaction model** contains each factor as a main effect and every possible combination of the factors as interaction effects. This version of StatView lets you choose the **depth of interactions** to include in the model. However, you cannot control interactions individually; for example, you would not be able to include all main effects but only one of the two-factor interactions.
2. Repeated measures experiments could previously have no more than one within factor. Now StatView can compute repeated measures designs with multiple within factors.
3. Repeated measures experiments including two or more between or grouping factors no longer have to be balanced. A **balanced model** has equal numbers of cases in each combination of factors. In other words, a model whose two factors are group (I and II) and treatment (A and B) must have equal numbers of subjects in all four categories: group I

receiving treatment A, group I receiving treatment B, group II receiving treatment A and group II receiving treatment B. Now StatView can compute unbalanced models (where different combinations of factors might have different numbers of cases) as well.

The screenshot shows the 'Create Analysis' dialog box on the left, with 'ANOVA' selected in the list. The 'ANOVA' dialog box is open, showing 'Experiment type' set to 'Factorial', 'Include all interactions up to depth' set to 'Full', 'Alpha value' set to '5%', and 'Means tables and plots show information' set to 'Highest order effects only'. The 'Error bars indicate' dropdown is set to 'No error bars'. A 'Variables' dialog box is also open, showing 'Writing Scores' as the data source and 'Class score' as the dependent variable.

**ANOVA Table for Class score**

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
SAT score	1	49255.924	49255.924	15.652	.0016	15.652	.966
Major	2	7732.295	3866.148	1.229	.3246	2.457	.215
SAT score * Major	2	11580.897	5790.449	1.840	.1979	3.680	.306
Residual	13	40911.036	3147.003	.	.	.	.

StatView does not compute repeated measures ANCOVA, MANOVA, or MANCOVA designs.

To learn more about StatView's enhanced ANOVA capabilities, see the chapter ["ANOVA," p. 73 of StatView Reference.](#)

## Model any type of relationship

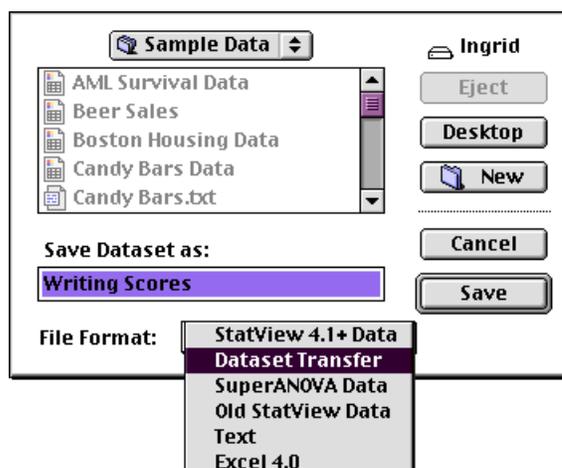
With the addition of logistic regression and the enhancements to ANOVA, StatView is now capable of modeling relationships between any combination of continuous or nominal dependent and independent variables:

StatView modeling procedures		Independent variable(s)		
		Continuous	Nominal	Both
Dependent variable(s)	Continuous	Regression (linear or nonlinear)	ANOVA or MANOVA	ANCOVA or MANCOVA
	Nominal	Logistic regression	Logistic regression Contingency tables	Logistic regression

## Cross-platform dataset

StatView 5 offers a new dataset format, DataSet Transfer, for transferring datasets between Windows and Macintosh versions of StatView. DataSet Transfer preserves all the information in a StatView dataset, including type, class, and format settings, category definitions, formula and criteria definitions, and the current row inclusion/exclusion state. Those who frequently

exchange datasets between Windows and Macintosh versions of StatView might want to use DataSet Transfer as their usual file format, although the platform-specific file formats are still most efficient.

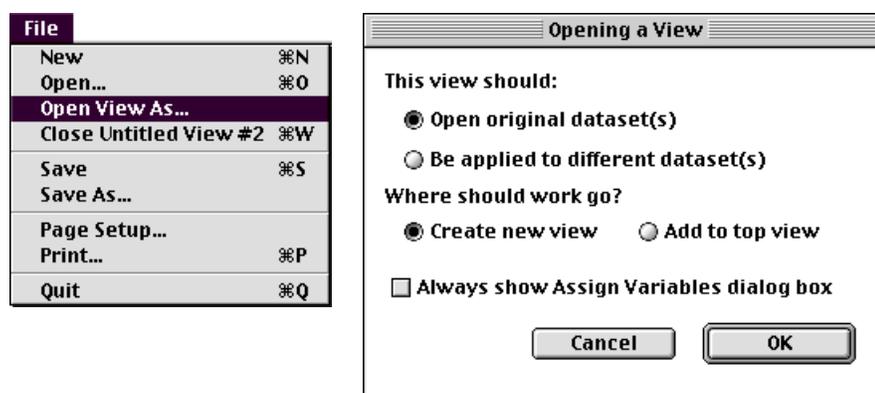


When moving datasets from Macintosh to Windows, you must specify a filename ending with the extension .ssd; StatView for Windows recognizes the DataSet Transfer format from this extension. For more details, see the [“Datasets” chapter](#), specifically the section [“Save datasets,” p. 70 of Using StatView](#).

## New way of opening views

Now when you open a saved view by selecting Open from the File menu, StatView automatically opens the view with its original dataset(s). This makes it quick and easy to resume work where you left off.

If you want to open a view with a different dataset, simply select Open View As from the File menu. You will then see the familiar dialog box that allows you to choose a different dataset or apply different variables to the analyses in the view:



As before, you may save views in the template folder for quick access through the Analyze menu.

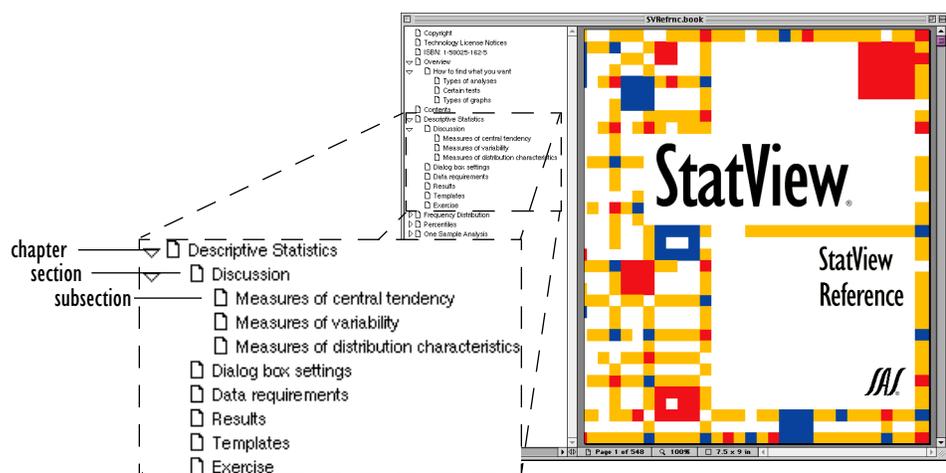
To learn more about opening views or using them as templates, see the [“Analyses” chapter](#) and particularly the section [“Reopen your work,” p. 157 of Using StatView](#)

## Online manuals

Complete documentation for StatView—*Using StatView*, *StatView Reference*, and the *StatView Shortcuts* quick reference card—are now provided as searchable Acrobat® documents. To use these documents, you must have version 3.0 or later of the free Adobe Acrobat Reader. The installer for Acrobat Reader is included on the StatView 5 CD-ROM.

### Navigating the manuals

The bookmarks along the left window are a browser-style outline of the contents of the current book. Click any item to jump to that text. Click triangle controls to reveal or hide sub-items.



Items in the table of contents and page numbers in the index are hypertext links. Cross-references in chapter text are also hypertext links. In short, anything in [green and underlined](#) (except this!) is a link. Click any link to jump to that text.

Here are some useful starting points:

[“Contents,” p. ix of \*Using StatView\*](#)

[“Contents,” p. xi of \*StatView Reference\*](#)

The same comprehensive Index appears in each volume.

If you are new to StatView, we strongly encourage you to begin by working through the [“Tutorial,” p. 1 of \*Using StatView\*](#). The tutorial gives you a chance to study the nutritional benefits of seventy-five popular candy bars while learning everything you need to know about working with StatView.

The online manuals and printed manuals have exactly the same content and pagination, so you can easily switch back and forth between them, using whichever form is most convenient.

## SAS Institute’s award-winning support

StatView is now offered by the prestigious SAS Institute Inc., known worldwide for its outstanding technical support and professional training.

### Technical support

Technical support is available from 9am to 5pm Eastern Time.

Telephone 919.677.8008

Fax 919.677.4444

Email [support@sas.com](mailto:support@sas.com)

Internet <http://www.sas.com/ts/>

**EMITS** Technical support is also available through EMITS, the Electronic Mail Interface to Technical Support. EMITS allows you to track a tech support problem or add information to a previous report. To learn about EMITS, send email to support@sas.com with “help” as the body of the message.

**Student StatView** Technical support for Student StatView is available by email, fax, and www only (no telephone support) for sixty (60) days after registration.

## Professional training

SAS Institute's Professional Services Division is proud to announce training for StatView. For more information on upcoming courses, call 919.677.8000 x7312.

# System requirements

StatView's system requirements are detailed below:

<b>Windows</b>	Operating system	Windows 3.1 (requires Win32s, provided), Windows 95, or Windows NT v3.5 or 4
	Minimum CPU	80486
	Math coprocessor	not required
	Minimum RAM	8 Mb physical RAM for Windows 3.1 or 95 12 Mb physical RAM for Windows NT
	Recommended RAM	16–32Mb for maximum performance
	Hard disk space needed	18Mb, +2Mb for Win32s
<b>Macintosh and Power Macintosh</b>	Minimum CPU	any Macintosh or Power Macintosh, 68040 or better recommended Power Macintosh version is 100% native for Power Macintosh.
	Minimum system v	7.1 StatView 5 is fully compatible with Mac OS 8.
	Math coprocessor	recommended but not required
	Minimum RAM	4Mb free (7Mb for Power Macintosh with Virtual Memory turned off)
	Recommended RAM	8Mb or more free RAM (11Mb for Power Macintosh with Virtual Memory turned off)

## Cross-platform compatibility

StatView comes in the following versions:

1. “Windows” for Windows 3.1, Windows 95, and Windows NT 3.5 and 4.0 (Win) for x86-based machines with or without numeric coprocessors
2. “PowerPC-native” (PPC) for optimal performance on Power Macintosh-based machines
3. “FPU” for optimal performance on a 68020-, 68030-, or 68040-based machine that has a 68881 or 68882 math coprocessor, or floating point unit (FPU)
4. “No FPU” universal version for any Macintosh, including the above machines (noFPU)

## Numerical precision

Users may need to consider differences in numerical precision among platforms. Win and PPC StatView operate in double precision, which means that calculations are performed in 64 bits, and numbers may be as large as  $\pm 1.7E308$  with fractional parts as small as  $\pm 2.3E-308$ . Also in double precision are datasets saved in the Dataset Transfer (.SSD) format. FPU and noFPU StatView operate in “extended precision,” where calculations are performed in 80 and 96 bits, and numbers may be as large as  $\pm 1.1E4932$  with fractional parts as small as  $\pm 1.9E-4951$ .

Most users would not worry about any of this, since data measurements rarely approach such extremes. Remember, though, that statistics are based on principles of continuous mathematics and real numbers, while computers work with discrete approximations to real numbers. It is important to understand that variation even that far to the right of the decimal point can eventually affect the results of complicated computations.

In other words, results from different versions of StatView (Win, PPC, FPU, noFPU) can be different. These differences are very small. Usually they are not even visible. Rarely, if ever, are the differences statistically significant.

## Calculations

All dataset summary pane statistics and views saved in FPU or noFPU StatView are recalculated when they are opened in Win and PPC StatView, and vice versa. This way, all statistics are computed with the maximum precision allowed by the version you are using.

By default, dynamic formulas are also recalculated, but you may instead set a Preference to convert dynamic formulas to static formulas; see [“Dataset preferences,” p. 227](#).

## File formats

### Microsoft Excel files

StatView reads and writes Excel version 4 files. StatView reads but does not write Excel version 3 files. From Excel version 5 or higher, please save version 4 Excel files.

### Compatibility among platforms

See [“Save datasets,” p. 70](#), for detailed information on transferring datasets among Macintosh and Windows versions of StatView through the DataSet Transfer file format. This cross-platform dataset format is a new feature announced above in the section [“Cross-platform dataset,” p. 4](#).

### Earlier versions

Views containing ANOVA, Bivariate Plot, Logistic Regression, or Regression items and saved in StatView version 5 cannot be opened in earlier versions.

Datasets saved in the DataSet Transfer format cannot be opened in earlier versions of StatView. Datasets saved in the usual StatView Dataset format can be opened by all versions of StatView *after* 4.02 (i.e., StatView 4.1 and 4.5).