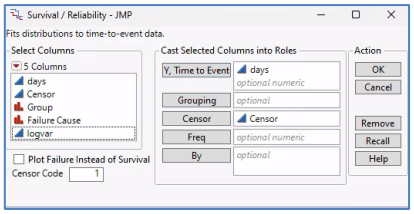
Survival Analysis (Kaplan-Meier Estimation)

Use to estimate survival (or failure) rates. Kaplan-Meier estimation methods (also known as a product limit estimation) is a non-parametric method and thus does not require many assumptions typically required in parametric methods (e.g., not needing to assume a specific probabiliy distribution to model the data). The method can be used with censored (incomplete) data.

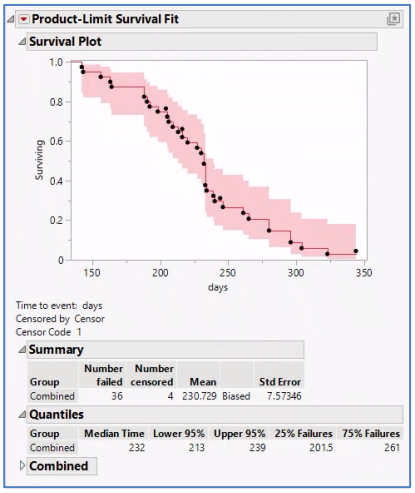
Note: Though frequently used to analyze time-to-event data, this analysis method can be used to model any continous variable with or without censoring (e.g., force-to-event).

Survival Analysis

Rats.jmp (Help > Sample Data Folder)



1. From an open JMP® data table, select **Analyze > Reliability and Survival > Survival.**
2. Select a continuous time variable from **Select Columns**, then click **Y, Time to Event**.
3. If there is censoring in the data, add the variable identifying which values are censored to the **Censor** role. Click **OK**.

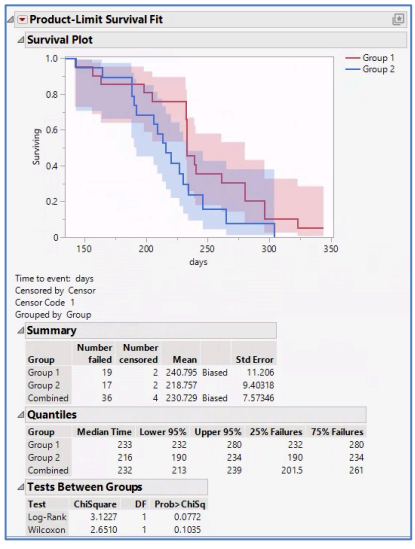


Report shows a survival plot and survival estimates including the average days to survive; the 25th, 50th (Median), 75% quantile; and a table displaying the percent survived, failed, number failed, and number at risk at each time value where the event occurred. The full Kaplan-Meier estimates are found in the Combined table.

Options are available to enhance the Surival Plot under the red triangle. Here we added Shaded Pointwise Confidence Intervals.

Group Comparative Analysis

1. From an open JMP® data table, select **Analyze > Reliability and Survival > Survival.**
2. Select a continuous time variable from **Select Columns**, then click **Y, Time to Event**.
3. If there is censoring in the data, add the variable identifying which values are censored to the **Censor** role.
4. Add the variable identifying the groups to the **Grouping** role. Click **OK**.



Report shows overlaid survival plots and survival estimates for each group, along with statistical tests testing the hypothesis that the survival rates are different between the groups.

Visit **Reliability and Survival Methods > Survival Analysis** in **JMP Help** to learn more.