Use MANOVA (multivariate analysis of variance) for the analysis of repeated measures data. MANOVA tests between and within subject effects across the repeated measurements.

The example below involves 16 dogs assigned to different treatment groups. Blood concentration of histamine is measured at four points in time. The data are arranged in a wide format (log-histamine measures are in separate columns), which is needed for the MANOVA analysis.

Analysis ofRepeated Measures: MANOVA

1. From an open JMP® data table, select Analyze > Fit Model. Select Manova from the Personality drop-down menu.

2. Add the responses: From Select Columns, select the continuous response variables (continuous variables have blue triangles), and click Y.

3. Add model effects: Select variables and click Add (under Construct Model Effects). To specify an interaction term, select multiple columns, then click Cross.

4. Click Run.

5. In the resulting window, select Repeated Measures from the Choose Response drop-down menu.

6. Accept the defaults, then click OK.

By default, JMP will display the Parameter Estimates, Least Squares Means, Between Subjects and Within Subjects results and more. Additional options are available under the red triangles.

- **Within Subjects** results include the multivariate significance tests for the differences over time for both the whole model and each effect.
- **Between Subjects** results include the multivariate significance tests for the differences in the repeated measures across subjects for both the whole model and each effect.

Notes: For information on analyzing repeated measures data using mixed models, refer to the Mixed Model pages at jmp.com/learn. For additional details, search for “MANOVA” in the JMP Help or in the book, Fitting Linear Models (under Help > Books).