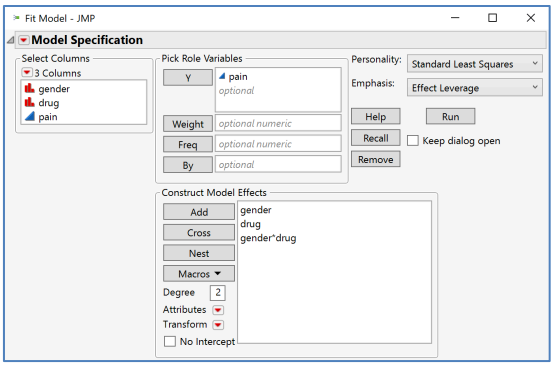
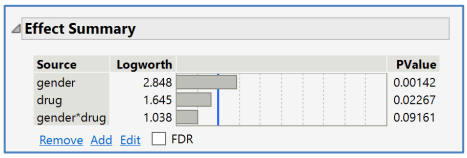
Two-Way (Factorial) ANOVA

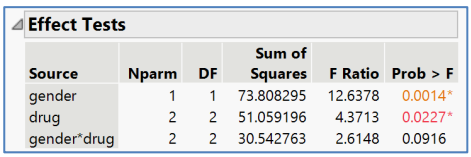
Use to test and estimate the effect that two categorical factors and their interaction have on the population mean.

1. From an open JMP® data table, select **Analyze > Fit Model**.
2. Click on a continuous variable from **Select Columns**, and click **Y, Response** (continuous variables have blue triangles).
3. Click on two categorical variables from **Select Columns**, and click **Macros, Full Factorial** (categorical variables have red or green bars). This adds each main effect and the interaction between the factors as model effects. Click **Run**.
   The Fit Model output window will display.
   The **Effect Summary** table shows p-values for statistical tests for the significance of each model term. More details in these tests are provided in the **Effect Tests** table.

Analgesics.jmp (Help > Sample Data Folder)

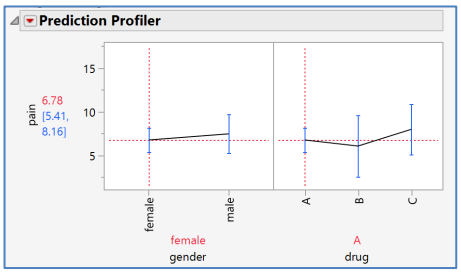


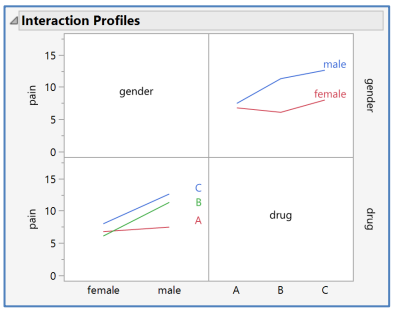




- Terms can be removed from the model by selecting them in the **Effect Summary** table and clicking **Remove**.
- The Null Hypothesis in these tests is that the term has no effect on the outcome and the alternative hypothesis is that the term does have an effect.
- The accepted approach is to examine the test for the interaction(s) first. If not significant, remove them from the model and proceed to testing the main effects.
  Note: if an interaction is included in the model, the main effects must also be included regardless if the tests for the main effects are significant or not.
- Here we'll choose to keep all terms in the model (interaction term is significant at the 0.10 level).

Many options are available under the **Red Triangle** such as **Show Predicted Expression**, **Model Diagnostics**, **Multiple Comparisons**, **Saving results to the data table**, and **Factor Profilers** (shown below)





Visit **Discovering JMP > Analyze Your Data > Compare Averages for Multiple Factors** and **Fitting Linear Models** in **JMP Help** to learn more.