Scenario: Conducting an Analysis of Covariance

The previous lesson showed how to use ANOVA to analyze data gathered in a clinical trial. The goal was to analyze the effect of four different drugs on blood pressure. Using the data in the **pressure2** data set, the ANOVA compared the average change in blood pressure (as indicated by the continuous response variable **BPChange**) for each of the four drugs (as indicated by the categorical predictor variable **Treatment**).

Now suppose you have been asked to do another analysis for a clinical trial. In this clinical trial, each subject's blood pressure was taken prior to administering one of three drug treatments: an approved drug, a new drug, or a placebo. After treatment, the subject's blood pressure was measured again and the change in blood pressure was calculated. The data for this analysis is stored in the **trials** data set. You want to examine the change in blood pressure (the continuous response **BPChange**) that is related to two predictor variables, one categorical and one continuous. The categorical predictor, **Treatment**, indicates which of the three drug treatments the subject received. The continuous predictor, **BaselineBP**, indicates the subject's baseline blood pressure—that is, the blood pressure level prior to treatment.

Specifically, you want to answer this question: Do the treatments differ in their ability to change blood pressure depending on a person's baseline blood pressure? This analysis could help to determine, for example, whether a particular treatment is better for people with high blood pressure or low blood pressure. You can use ANCOVA for this analysis. To see details about the **trials** data set, click the Information button.

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