

Homework on Repeated Measures

A researcher is interested in the effects of different therapeutic treatment methods and how they interact with varying dosages of a drug. Patients in a study are assigned to one of four therapeutic treatment methods (A, B, C) and are given a drug before each of four different office visits. The dosage is varied across visits. In other words, each participant receives four different dosages of the drug. However, the order of dosage is randomized across time. Each patient is measured on a key response indicator at each office visit.

The data set **doses** contains the data for 48 patients. The following variables are in the data set:

Method therapeutic treatment method A, B, or C

D1 response at 10 mg dosage of the drug

D2 response at 20 mg dosage of the drug

D3 response at 50 mg dosage of the drug

D4 response at 100 mg dosage of the drug

Perform multivariate repeated measures analysis on the **doses** data using **Method** as a between-subjects variable and **D1-D4** as the repeated measurements variables. Use polynomial contrasts with the numeric values 10, 20, 50, and 100 to set the spacing for the orthogonal polynomial contrasts.

Provide a means plot, displaying the mean on the vertical axis, the dose on the horizontal axis, with different symbols for each of the three methods. Connect the means for each method with straight lines.