Lab 6: Longitudinal data

Data: dfmo.csv (see the dfmo.pdf file for data dictionary/useful information).

Practical objective: To gain experience with exploration of longitudinal data and writing down models suitable for longitudinal analyses.

Scientific objective: To understand the effect of DFMO on mean spermidine over time.

Exercises: Let's go through these together!

Exercise 1: Load the DFMO data set into Stata. Without actually fitting any models, spend some time graphically exploring the longitudinal nature of spermidine in each DFMO group over time.

Exercise 2: Before even writing down a mean model, let's talk about some of the key decisions we have to make when we *do* develop a model. Here are some things to think about:

- How are we going to handle the variable doses of DFMO?
- How are we going to handle time?
- How are we going to handle baseline variables?

Before we make any decisions and writing down a mean model, let's weigh the relative advantages and disadvantages of each approach. We should be able to concede at least *one* limitation of each decision you make.

Exercise 3: Write down a mean model based on the decisions you made in Exercise 2.

Exercise 4: Let's use generalized estimating equations to estimate the parameters of the model we wrote down in Exercise 3. Let's talk briefly about any choices specific to the estimation procedure.