PHP 2517 Homework #1

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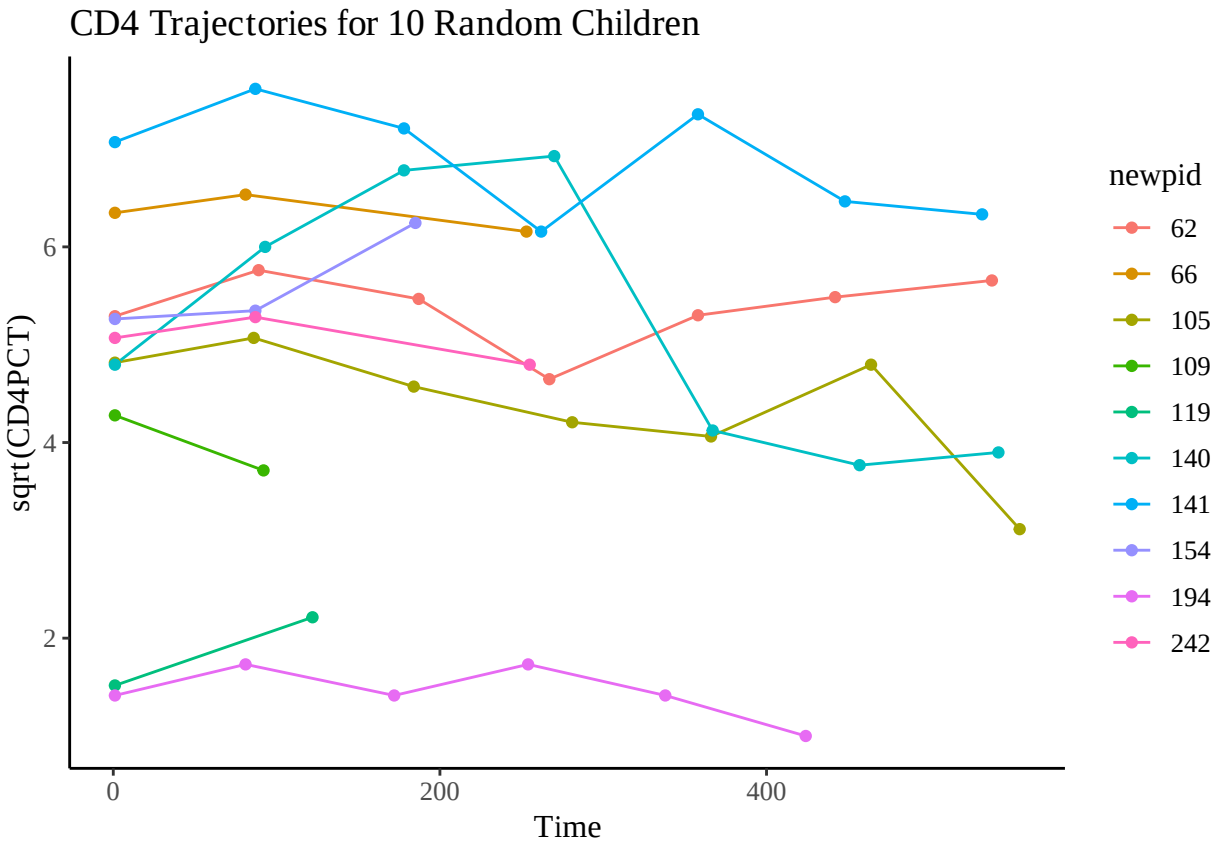
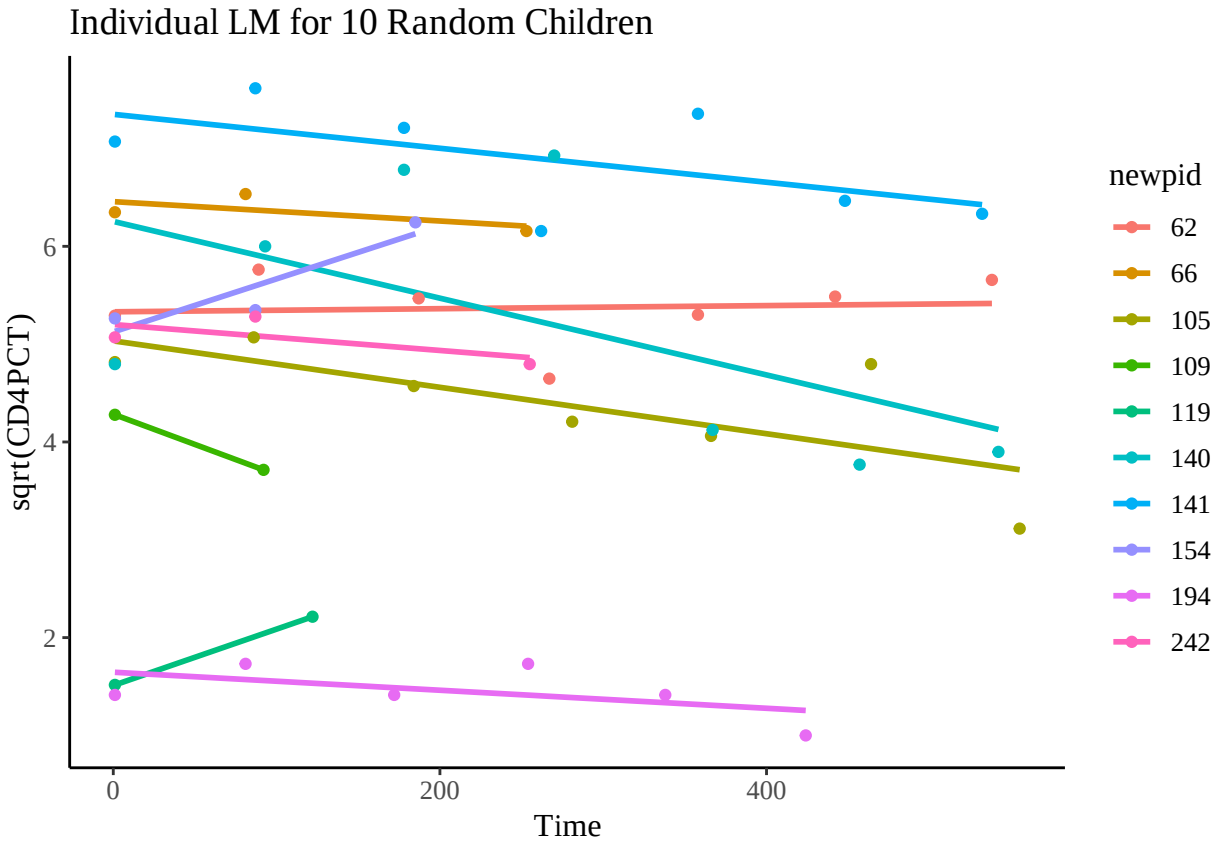
February 11, 2019

GH Chapter 11: Exercise 4

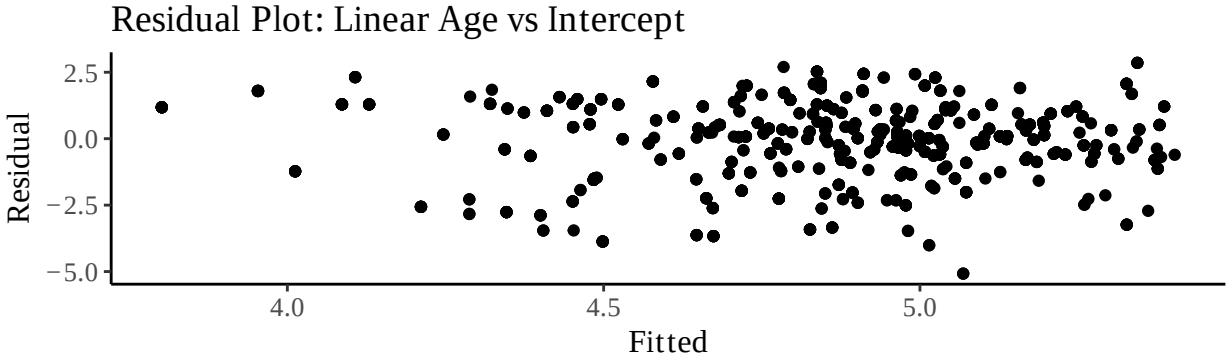
a.) Graph the outcome (the CD4 percentage, on the square root scale) for 10 children as a function of time.

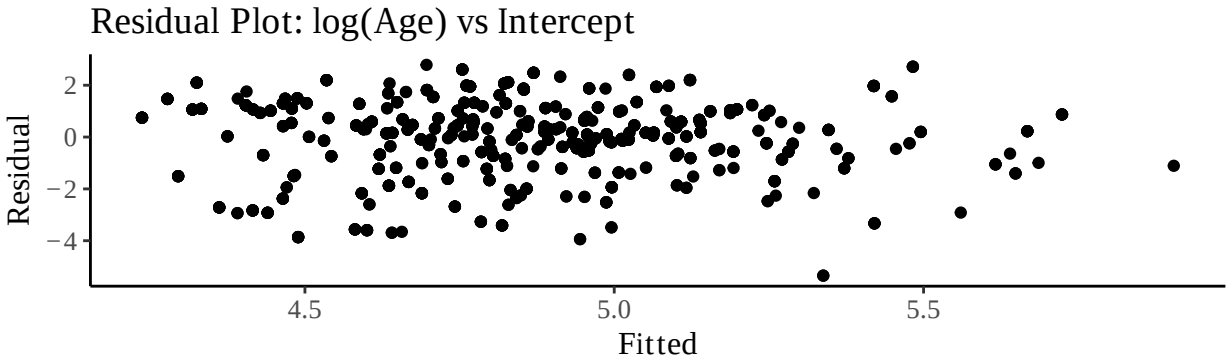


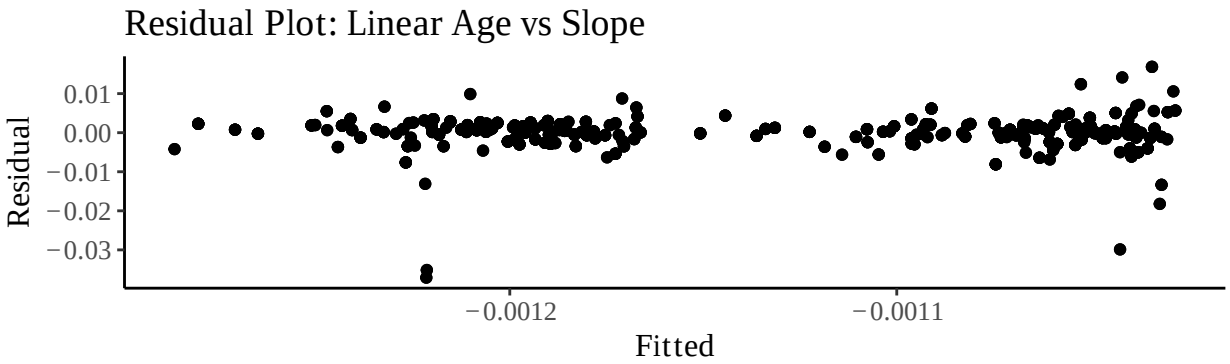
b.) Each child's data has a time course that can be summarized by a linear fit. Estimate these lines and plot them for 10 children.



c.) Set up a model for the children's slopes and intercepts as a function of the treatment and age at baseline. Estimate this model using the two-step procedure–first estimate the intercept and slope separately for each child, then fit the between-child models using the point estimates from the first step.







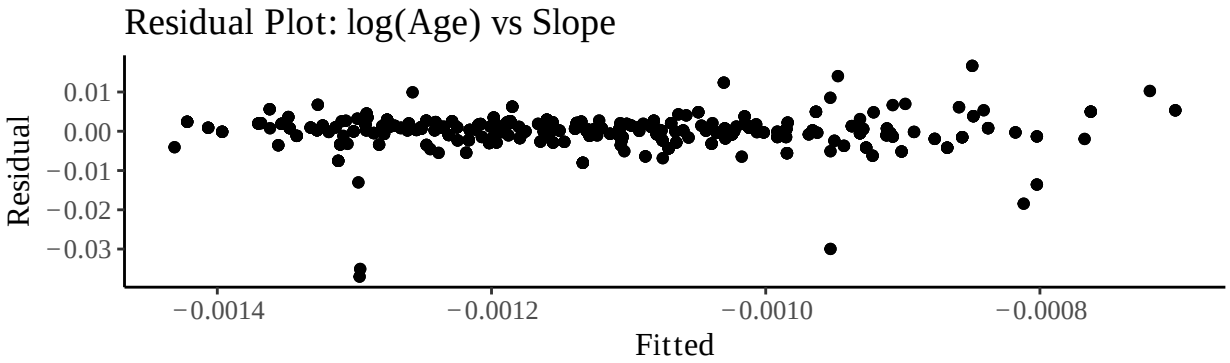


Table 1: Regression on Intercept and Slope

	Dependent variable:	
	beta0	beta1
	(1)	(2)
Treatment = 2	0.319^{***}	-0.0001
	(0.088)	(0.0003)
log(baseage)	-0.335^{***}	-0.0002
	(0.061)	(0.0002)
Constant	5.051^{***}	-0.001^{***}
	(0.087)	(0.0003)
Observations	1,055	1,028
R^2	0.040	0.001
Adjusted R^2	0.038	-0.001
Residual Std. Error	1.424 (df = 1052)	0.004 (df = 1025)
F Statistic	21.734^{***} (df = 2; 1052)	0.645 (df = 2; 1025)
Note:		*p<0.1; **p<0.05; ***p<0.01
	Individuals with only one observation do not have a slope estimate.	