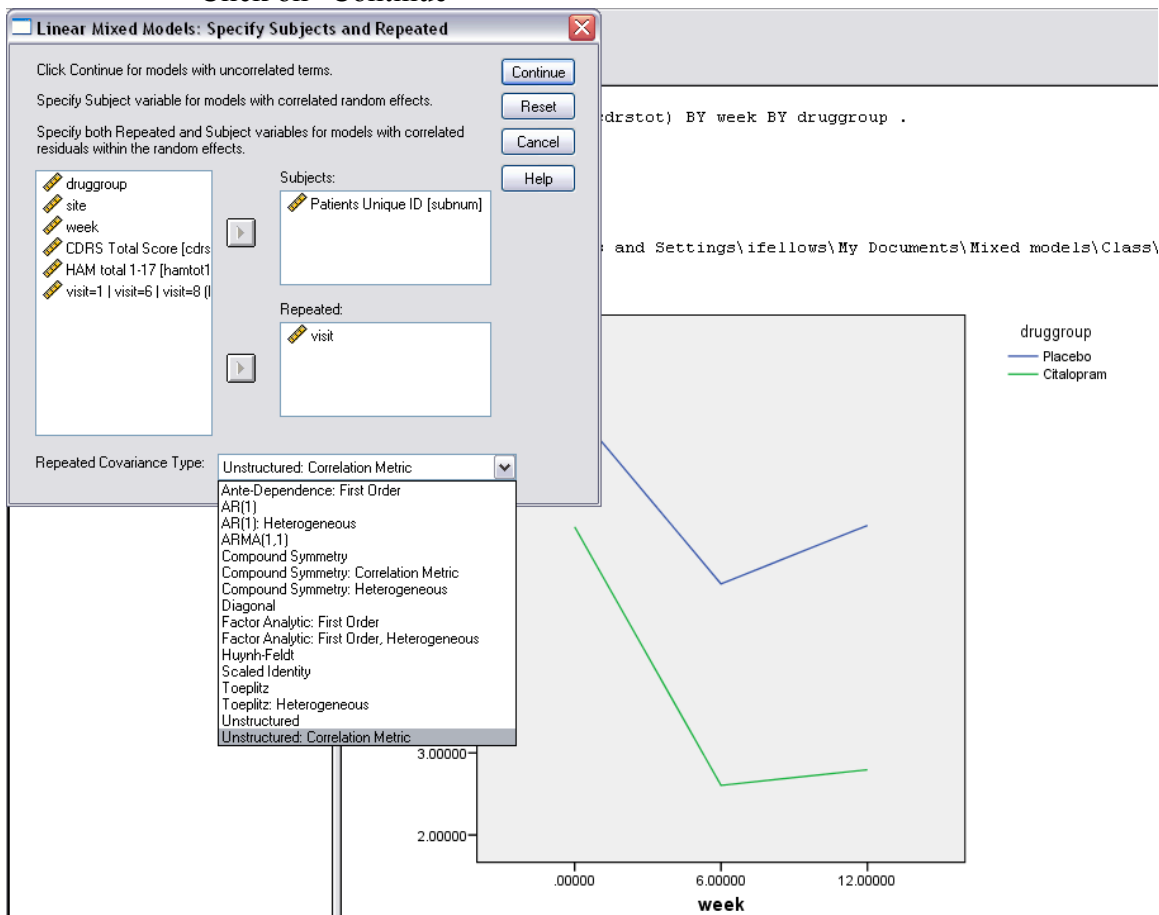
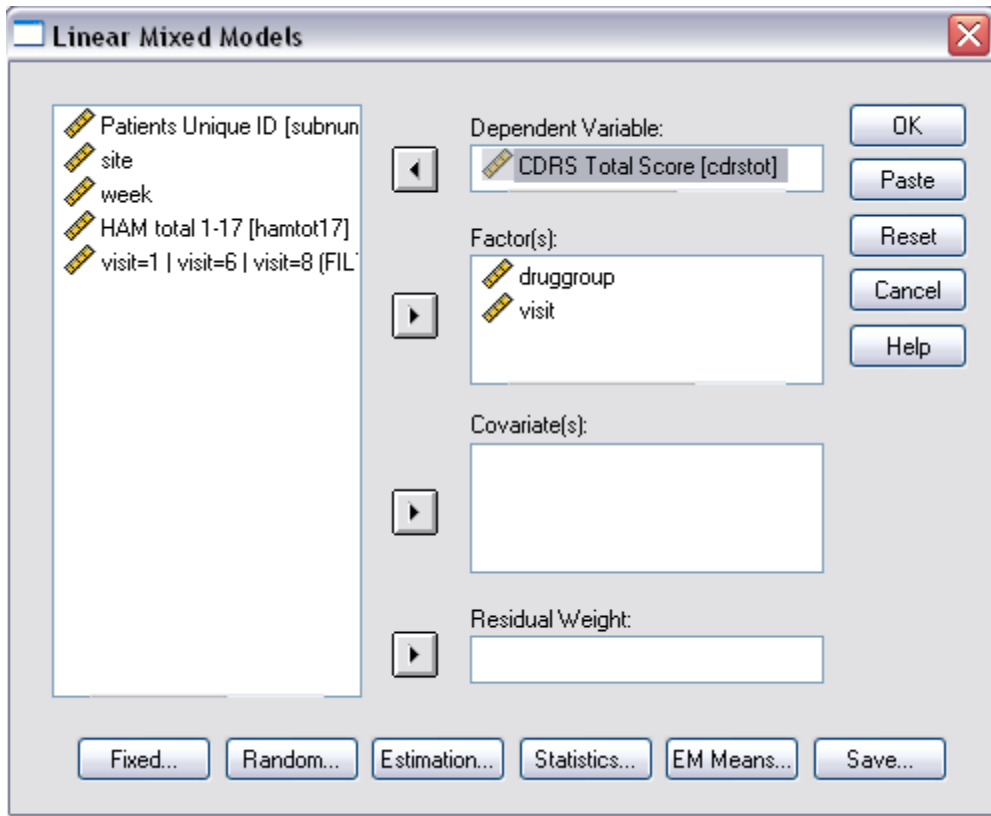


# Fitting a mixed model with unstructured covariance, and unstructured time trend for a controlled trial

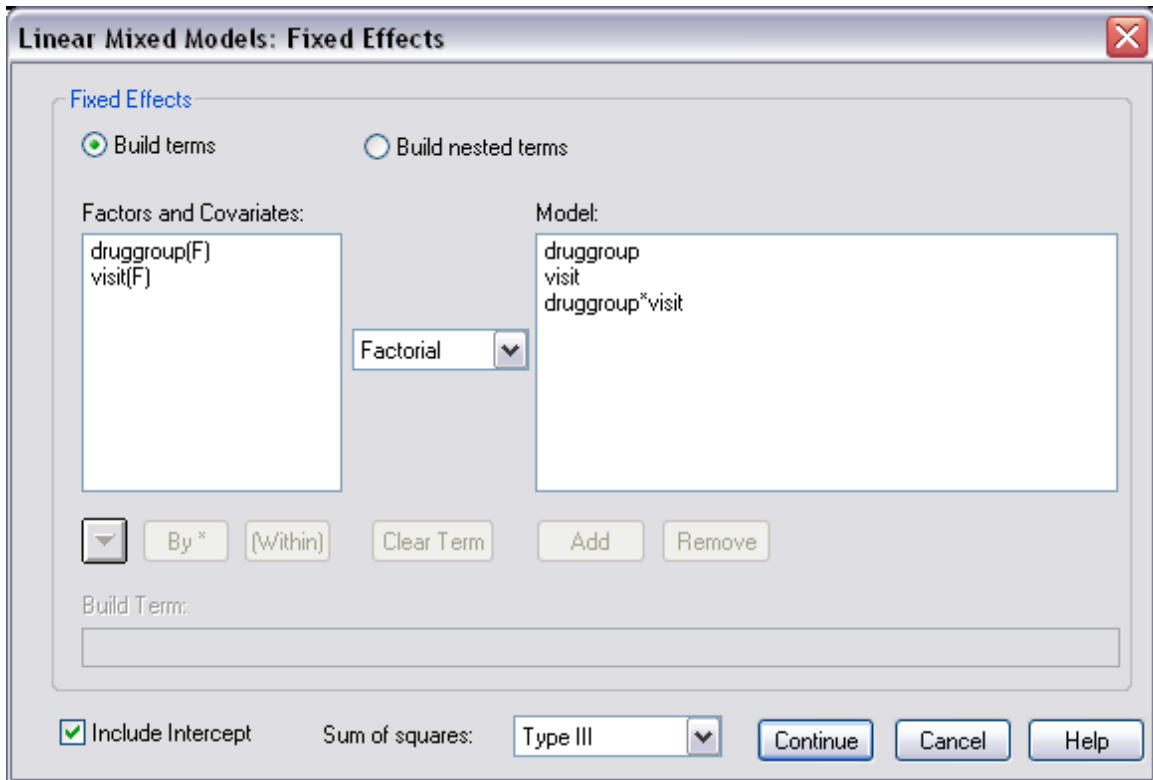
1. Select from menu bar: Analyze>Mixed Model>linear
  - Put the patient ID in the subjects box
  - Put visit # in the Repeated box
  - Select “Unstructured: Correlation Metric” from the “Repeated” drop down menu (note: is you want a different structure, just select it instead)
  - Click on “Continue”



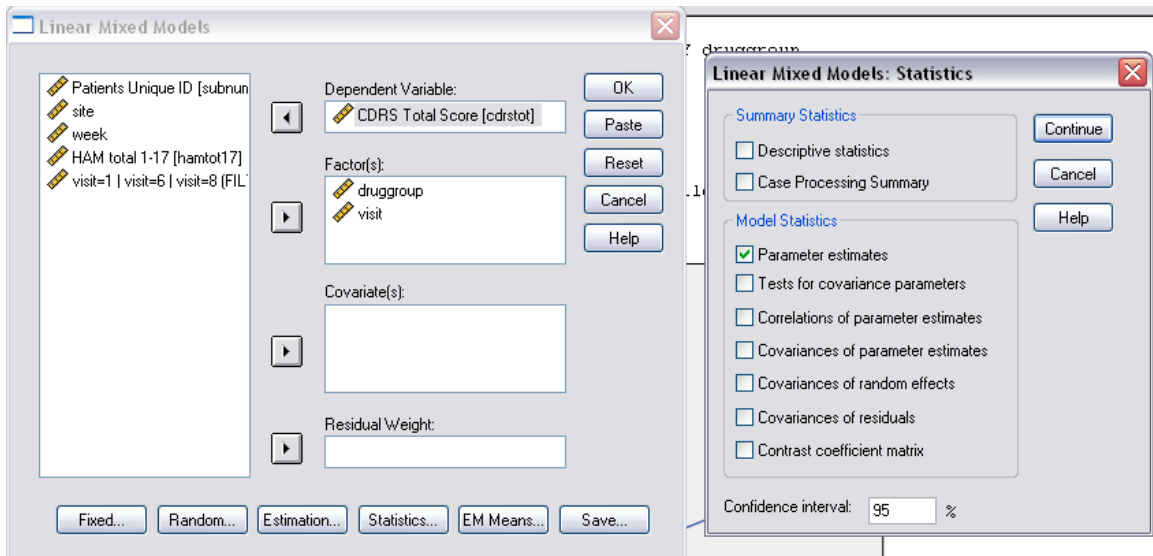
2. Define your variables of interest
  - Put your outcome variable in the “Dependent Variable” box
  - Put Treatment group, and visit # in the “Factor” box

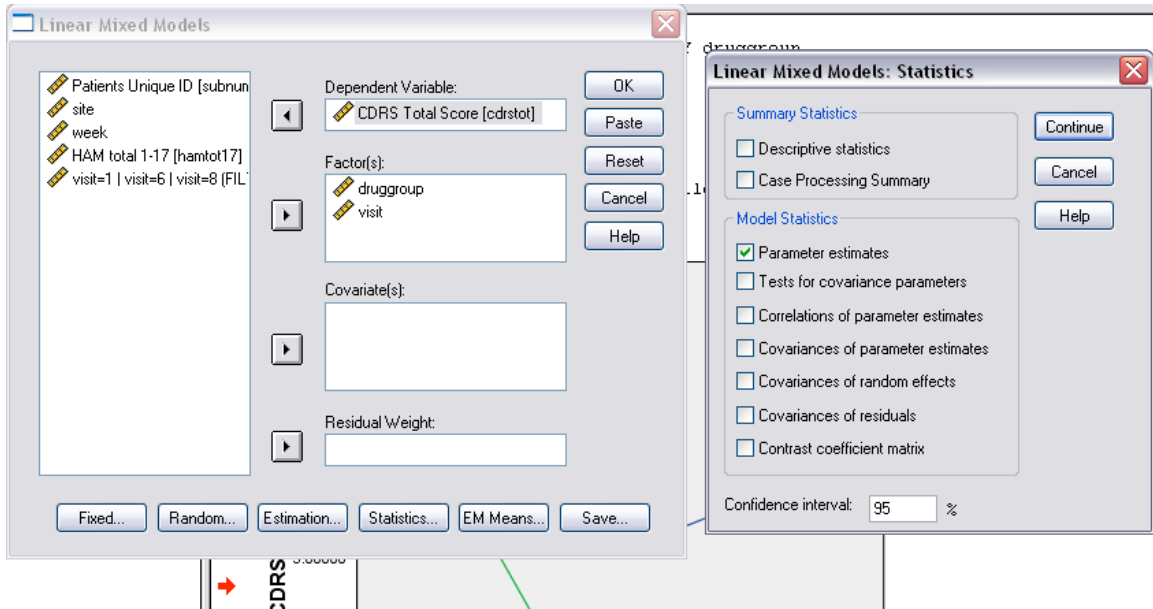


3. Click on fixed effects
  - Put treatment group, visit # and their interaction into the model
  - Click continue



4. Click on “Statistics”
  - Check the Parameter estimates box
  - Click “Continue” and the “OK”





## The Output

### 1. F-tests of fixed effects

**Type III Tests of Fixed Effects(a)**

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	91.487	246.581	.000
druggroup	1	91.487	14.096	.000
visit	2	79.042	23.274	.000
druggroup * visit	2	79.042	1.876	.160

a. Dependent Variable: CDRS Total Score.

- Drug group is significant ( $<0.001$ ): thus there is an overall difference between the groups
- Visit is significant ( $<0.001$ ): Subjects change over time.
- The interaction of drug group and time is not significant (0.160): There is not enough evidence to conclude that the treatment groups progress differently over time. (Note: the interaction is the most important test when considering a treatment effect because the placebo and treatments should progress differently. The treatment should improve relative to the placebo)

### 2. Parameter estimates

**Estimates of Fixed Effects(b)**

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
Intercept	2.787863	.546934	78.889	5.097	.000	1.699195	3.876531
[druggroup=1.00000]	3.032488	.800008	78.132	3.791	.000	1.439837	4.625139
[druggroup=2.00000]	0(a)	0	.	.	.	.	.
[visit=1.00000]	2.966854	.576155	86.204	5.149	.000	1.821534	4.112174
[visit=6.00000]	-.147509	.455714	70.537	-.324	.747	-1.056281	.761262
[visit=8.00000]	0(a)	0	.	.	.	.	.
[visit=1.00000] * [druggroup=1.00000]	-1.603531	.841622	85.810	-1.905	.060	-3.276674	.069612
[visit=6.00000] * [druggroup=1.00000]	-.466091	.669651	70.355	-.696	.489	-1.801549	.869366
[visit=8.00000] * [druggroup=1.00000]	0(a)	0	.	.	.	.	.
[visit=1.00000] * [druggroup=2.00000]	0(a)	0	.	.	.	.	.
[visit=6.00000] * [druggroup=2.00000]	0(a)	0	.	.	.	.	.
[visit=8.00000] * [druggroup=2.00000]	0(a)	0	.	.	.	.	.

a This parameter is set to zero because it is redundant.

b Dependent Variable: CDRS Total Score.

- All tests of parameters are relative to the reference categories (i.e. the redundant parameters)
- Druggroup=1 (placebo) is significant, and it is relative to Druggroup=2, and visit=8, so, the groups are significantly different at the endpoint (visit 8)