```
data wide_lead;
input ID TRT $ PB1 - PB4;
datalines;
                1       P      30.8     26.9     25.8     23.8
                2       A      26.5     14.8     19.5     21.0
……..
               99       A      21.9      7.6     10.8     13.0
              100       A      20.7      8.1     25.7     12.3
;
 run;
```

```
proc mixed data=long_lead method=ml;
class ID TRT week;
model PB = TRT week/ s ;
repeated week/type=CSH subject=ID r=1,2 rcorr=1,2 GROUP=TRT;
lsmeans TRT/adjust=TUKEY alpha=0.05 cl;
lsmeans week/adjust=TUKEY alpha=0.05 cl;
run;
```

Model Information	
Data Set	WORK.LONG_LEAD
Dependent Variable	PB
Covariance Structure	Heterogeneous Compound Symmetry
Subject Effect	ID
Group Effect	TRT
Estimation Method	ML
Residual Variance Method	None
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information		
Class	**Levels**	**Values**
ID	100	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
TRT	2	A P
week	4	0 1 4 6

Dimensions	
Covariance Parameters	10
Columns in X	7
Columns in Z	0
Subjects	100
Max Obs per Subject	4

Number of Observations	
Number of Observations Read	400
Number of Observations Used	400
Number of Observations Not Used	0

Iteration History			
Iteration	**Evaluations**	**-2 Log Like**	**Criterion**
0	1	2684.44747411	
1	2	2468.11754002	0.01564796
2	1	2463.03027891	0.01015163
3	1	2452.22939188	0.00287332
4	1	2449.30785495	0.00051255
5	1	2448.81112064	0.00003225
6	1	2448.78198042	0.00000030
7	1	2448.78172433	0.00000000

Convergence criteria met.

Estimated R Matrix for ID 1				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	25.2976	22.2967	22.9084	23.1766
2	22.2967	29.6416	24.7974	25.0877
3	22.9084	24.7974	31.2902	25.7759
4	23.1766	25.0877	25.7759	32.0271

Estimated R Correlation Matrix for ID 1				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	1.0000	0.8142	0.8142	0.8142
2	0.8142	1.0000	0.8142	0.8142
3	0.8142	0.8142	1.0000	0.8142
4	0.8142	0.8142	0.8142	1.0000

Estimated R Matrix for ID 2				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	29.7110	43.5598	37.4744	32.1048
2	43.5598	187.16	94.0546	80.5778
3	37.4744	94.0546	138.52	69.3209
4	32.1048	80.5778	69.3209	101.67

Estimated R Correlation Matrix for ID 2				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	1.0000	0.5841	0.5841	0.5841
2	0.5841	1.0000	0.5841	0.5841
3	0.5841	0.5841	1.0000	0.5841
4	0.5841	0.5841	0.5841	1.0000

Covariance Parameter Estimates			
Cov Parm	**Subject**	**Group**	**Estimate**
Var(1)	ID	TRT A	29.7110
Var(2)	ID	TRT A	187.16
Var(3)	ID	TRT A	138.52
Var(4)	ID	TRT A	101.67
CSH	ID	TRT A	0.5841
Var(1)	ID	TRT P	25.2976
Var(2)	ID	TRT P	29.6416
Var(3)	ID	TRT P	31.2902

Covariance Parameter Estimates			
Cov Parm	Subject	Group	Estimate
Var(4)	ID	TRT P	32.0271
CSH	ID	TRT P	0.8142

Fit Statistics	
-2 Log Likelihood	2448.8
AIC (Smaller is Better)	2478.8
AICC (Smaller is Better)	2480.0
BIC (Smaller is Better)	2517.9

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
9	235.67	<.0001

Solution for Fixed Effects							
Effect	TRT	week	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept			23.5388	0.7869	98	29.91	<.0001
TRT	A		1.3105	1.0390	98	1.26	0.2102
TRT	P		0	.	.	.	.
week		0	3.0355	0.4342	297	6.99	<.0001
week		1	0.5374	0.4565	297	1.18	0.2400
week		4	-0.04860	0.4585	297	-0.11	0.9156
week		6	0	.	.	.	.

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
TRT	1	98	1.59	0.2102
week	3	297	23.47	<.0001

Least Squares Means										
Effect	TRT	week	Estimate	Standard Error	DF	t Value	Pr > |t|	Alpha	Lower	Upper
TRT	A		25.7304	0.8071	98	31.88	<.0001	0.05	24.1288	27.3321
TRT	P		24.4199	0.7107	98	34.36	<.0001	0.05	23.0096	25.8302
week		0	27.2296	0.5135	297	53.03	<.0001	0.05	26.2191	28.2401
week		1	24.7315	0.6477	297	38.18	<.0001	0.05	23.4568	26.0062
week		4	24.1455	0.6547	297	36.88	<.0001	0.05	22.8570	25.4340
week		6	24.1941	0.6490	297	37.28	<.0001	0.05	22.9168	25.4714

Differences of Least Squares Means												
Effect	TRT	week	_TRT	_week	Estimate	Standard Error	DF	t Value	Pr > |t|	Adjustment	Adj P	Alpha
TRT	A		P		1.3105	1.0390	98	1.26	0.2102	Tukey-Kramer	0.2102	0.05
week		0		1	2.4981	0.4362	297	5.73	<.0001	Tukey-Kramer	<.0001	0.05
week		0		4	3.0841	0.4387	297	7.03	<.0001	Tukey-Kramer	<.0001	0.05
week		0		6	3.0355	0.4342	297	6.99	<.0001	Tukey-Kramer	<.0001	0.05
week		1		4	0.5860	0.4570	297	1.28	0.2007	Tukey-Kramer	0.5749	0.05
week		1		6	0.5374	0.4565	297	1.18	0.2400	Tukey-Kramer	0.6417	0.05
week		4		6	-0.04860	0.4585	297	-0.11	0.9156	Tukey-Kramer	0.9996	0.05

Differences of Least Squares Means								
Effect	TRT	week	_TRT	_week	Lower	Upper	Adj Lower	Adj Upper
TRT	A		P		-0.7513	3.3723	-0.7513	3.3723
week		0		1	1.6395	3.3566	1.3710	3.6252
week		0		4	2.2207	3.9475	1.9507	4.2175
week		0		6	2.1810	3.8900	1.9137	4.1573
week		1		4	-0.3133	1.4854	-0.5947	1.7668
week		1		6	-0.3610	1.4358	-0.6420	1.7169
week		4		6	-0.9509	0.8537	-1.2331	1.1359

```
proc mixed data=long_lead method=ml;
class ID TRT week;
model PB = TRT week week*TRT/ s ;
repeated week/type=CSH subject=ID r=1,2 rcorr=1,2 GROUP=TRT;
lsmeans TRT*week/adjust=TUKEY alpha=0.05;
```

```
run;
```

Model Information	
Data Set	WORK.LONG_LEAD
Dependent Variable	PB
Covariance Structure	Heterogeneous Compound Symmetry
Subject Effect	ID
Group Effect	TRT
Estimation Method	ML
Residual Variance Method	None
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information		
Class	**Levels**	**Values**
ID	100	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100
TRT	2	A P
week	4	0 1 4 6

Dimensions	
Covariance Parameters	10
Columns in X	15
Columns in Z	0
Subjects	100
Max Obs per Subject	4

Number of Observations	
Number of Observations Read	400
Number of Observations Used	400
Number of Observations Not Used	0

Iteration History			
Iteration	**Evaluations**	**-2 Log Like**	**Criterion**
0	1	2639.83625731	
1	2	2347.93527403	0.00001356
2	1	2347.92418045	0.00000001

Convergence criteria met.

Estimated R Matrix for ID 1				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	25.0727	22.2150	22.8374	23.2523
2	22.2150	29.3166	24.6947	25.1434
3	22.8374	24.6947	30.9824	25.8478
4	23.2523	25.1434	25.8478	32.1185

Estimated R Correlation Matrix for ID 1				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	1.0000	0.8194	0.8194	0.8194
2	0.8194	1.0000	0.8194	0.8194
3	0.8194	0.8194	1.0000	0.8194
4	0.8194	0.8194	0.8194	1.0000

Estimated R Matrix for ID 2				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	26.2599	18.9313	19.5584	23.4327
2	18.9313	55.2327	28.3652	33.9839
3	19.5584	28.3652	58.9527	35.1097
4	23.4327	33.9839	35.1097	84.6211

Estimated R Correlation Matrix for ID 2				
Row	**Col1**	**Col2**	**Col3**	**Col4**
1	1.0000	0.4971	0.4971	0.4971
2	0.4971	1.0000	0.4971	0.4971
3	0.4971	0.4971	1.0000	0.4971
4	0.4971	0.4971	0.4971	1.0000

Covariance Parameter Estimates			
Cov Parm	**Subject**	**Group**	**Estimate**
Var(1)	ID	TRT A	26.2599
Var(2)	ID	TRT A	55.2327
Var(3)	ID	TRT A	58.9527
Var(4)	ID	TRT A	84.6211
CSH	ID	TRT A	0.4971
Var(1)	ID	TRT P	25.0727
Var(2)	ID	TRT P	29.3166
Var(3)	ID	TRT P	30.9824
Var(4)	ID	TRT P	32.1185
CSH	ID	TRT P	0.8194

Fit Statistics	
-2 Log Likelihood	2347.9
AIC (Smaller is Better)	2383.9
AICC (Smaller is Better)	2385.7
BIC (Smaller is Better)	2430.8

Null Model Likelihood Ratio Test		
DF	**Chi-Square**	**Pr > ChiSq**
9	291.91	<.0001

Solution for Fixed Effects							
Effect	**TRT**	**week**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept			23.6460	0.8015	98	29.50	<.0001
TRT	A		-2.8840	1.5280	98	-1.89	0.0621
TRT	P		0	.	.	.	.
week		0	2.6260	0.4623	294	5.68	<.0001
week		1	1.0140	0.4722	294	2.15	0.0326
week		4	0.4240	0.4776	294	0.89	0.3754
week		6	0	.	.	.	.
TRT*week	A	0	3.1520	1.2223	294	2.58	0.0104
TRT*week	A	1	-8.2540	1.2887	294	-6.41	<.0001
TRT*week	A	4	-5.6720	1.3020	294	-4.36	<.0001
TRT*week	A	6	0	.	.	.	.
TRT*week	P	0	0	.	.	.	.
TRT*week	P	1	0	.	.	.	.
TRT*week	P	4	0	.	.	.	.
TRT*week	P	6	0	.	.	.	.

Type 3 Tests of Fixed Effects				
Effect	**Num DF**	**Den DF**	**F Value**	**Pr > F**
TRT	1	98	26.22	<.0001
week	3	294	86.14	<.0001
TRT*week	3	294	49.51	<.0001

Least Squares Means										
Effect	**TRT**	**week**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Alpha**	**Lower**	**Upper**
TRT*week	A	0	26.5400	0.7247	294	36.62	<.0001	0.05	25.1137	27.9663
TRT*week	A	1	13.5220	1.0510	294	12.87	<.0001	0.05	11.4535	15.5905
TRT*week	A	4	15.5140	1.0858	294	14.29	<.0001	0.05	13.3770	17.6510
TRT*week	A	6	20.7620	1.3009	294	15.96	<.0001	0.05	18.2017	23.3223
TRT*week	P	0	26.2720	0.7081	294	37.10	<.0001	0.05	24.8783	27.6657

Least Squares Means										
Effect	**TRT**	**week**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Alpha**	**Lower**	**Upper**
TRT*week	P	1	24.6600	0.7657	294	32.20	<.0001	0.05	23.1530	26.1670
TRT*week	P	4	24.0700	0.7872	294	30.58	<.0001	0.05	22.5208	25.6192
TRT*week	P	6	23.6460	0.8015	294	29.50	<.0001	0.05	22.0686	25.2234

Differences of Least Squares Means												
Effect	**TRT**	**week**	**_TRT**	**_week**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Adjustment**	**Adj P**	**Alpha**
TRT*week	A	0	A	1	13.0180	0.9341	294	13.94	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	0	A	4	11.0260	0.9602	294	11.48	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	0	A	6	5.7780	1.1315	294	5.11	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	**A**	**0**	**P**	**0**	**0.2680**	**1.0132**	**294**	**0.26**	**0.7916**	**Tukey-Kramer**	**1.0000**	**0.05**
TRT*week	A	0	P	1	1.8800	1.0543	294	1.78	0.0756	Tukey-Kramer	0.6320	0.05
TRT*week	A	0	P	4	2.4700	1.0700	294	2.31	0.0217	Tukey-Kramer	0.2925	0.05
TRT*week	A	0	P	6	2.8940	1.0805	294	2.68	0.0078	Tukey-Kramer	0.1334	0.05
TRT*week	A	1	A	4	-1.9920	1.0720	294	-1.86	0.0641	Tukey-Kramer	0.5807	0.05
TRT*week	A	1	A	6	-7.2400	1.1990	294	-6.04	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	1	P	0	-12.7500	1.2673	294	-10.06	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	**A**	**1**	**P**	**1**	**-11.1380**	**1.3004**	**294**	**-8.57**	**<.0001**	**Tukey-Kramer**	**<.0001**	**0.05**
TRT*week	A	1	P	4	-10.5480	1.3131	294	-8.03	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	1	P	6	-10.1240	1.3218	294	-7.66	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	4	A	6	-5.2480	1.2112	294	-4.33	<.0001	Tukey-Kramer	0.0005	0.05
TRT*week	A	4	P	0	-10.7580	1.2963	294	-8.30	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	4	P	1	-9.1460	1.3287	294	-6.88	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	**A**	**4**	**P**	**4**	**-8.5560**	**1.3412**	**294**	**-6.38**	**<.0001**	**Tukey-Kramer**	**<.0001**	**0.05**
TRT*week	A	4	P	6	-8.1320	1.3496	294	-6.03	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	A	6	P	0	-5.5100	1.4812	294	-3.72	0.0002	Tukey-Kramer	0.0058	0.05
TRT*week	A	6	P	1	-3.8980	1.5096	294	-2.58	0.0103	Tukey-Kramer	0.1666	0.05
TRT*week	A	6	P	4	-3.3080	1.5205	294	-2.18	0.0304	Tukey-Kramer	0.3697	0.05
TRT*week	**A**	**6**	**P**	**6**	**-2.8840**	**1.5280**	**294**	**-1.89**	**0.0601**	**Tukey-Kramer**	**0.5607**	**0.05**

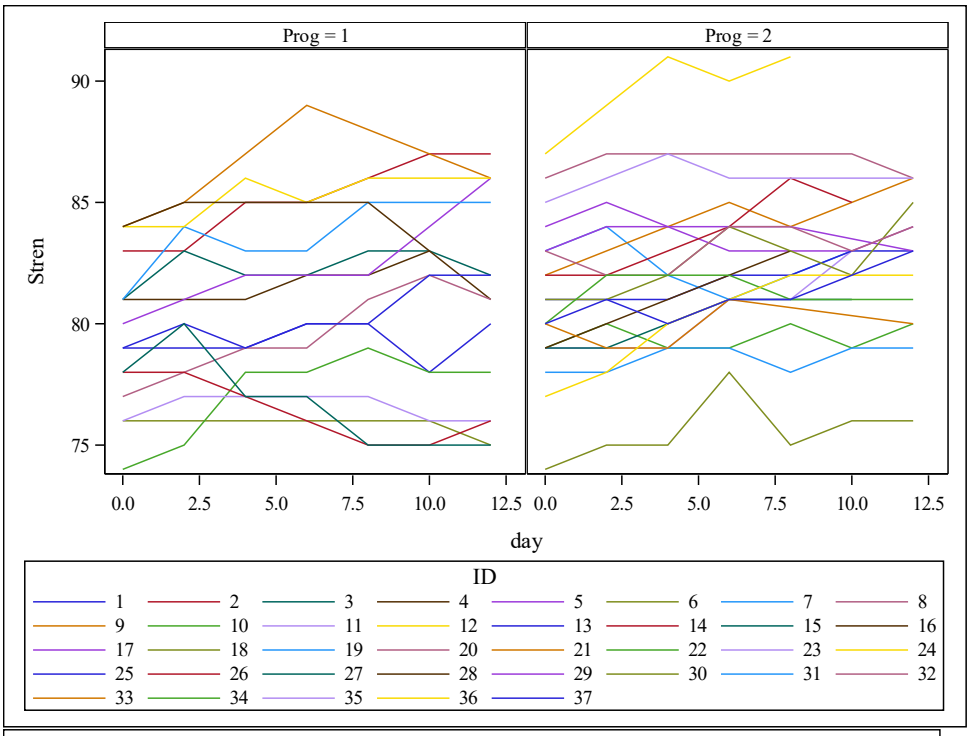
Differences of Least Squares Means												
Effect	**TRT**	**week**	**_TRT**	**_week**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**	**Adjustment**	**Adj P**	**Alpha**
TRT*week	P	0	P	1	1.6120	0.4463	294	3.61	0.0004	Tukey-Kramer	0.0085	0.05
TRT*week	P	0	P	4	2.2020	0.4556	294	4.83	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	P	0	P	6	2.6260	0.4623	294	5.68	<.0001	Tukey-Kramer	<.0001	0.05
TRT*week	P	1	P	4	0.5900	0.4671	294	1.26	0.2076	Tukey-Kramer	0.9116	0.05
TRT*week	P	1	P	6	1.0140	0.4722	294	2.15	0.0326	Tukey-Kramer	0.3871	0.05
TRT*week	P	4	P	6	0.4240	0.4776	294	0.89	0.3754	Tukey-Kramer	0.9870	0.05

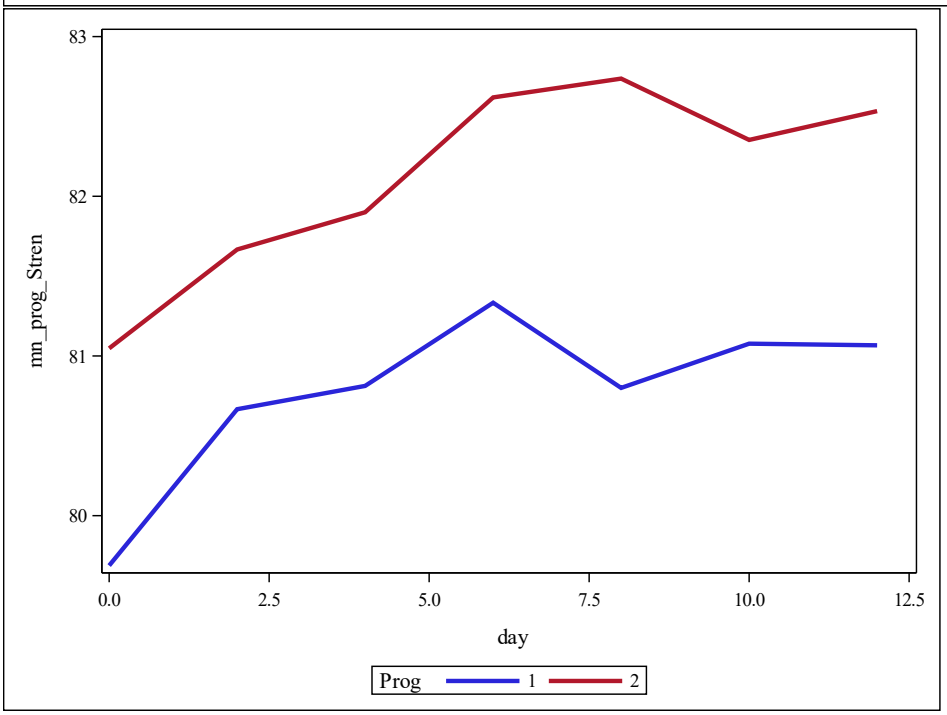
Differences of Least Squares Means								
Effect	**TRT**	**week**	**_TRT**	**_week**	**Lower**	**Upper**	**Adj Lower**	**Adj Upper**
TRT*week	A	0	A	1	11.1796	14.8564	.	.
TRT*week	A	0	A	4	9.1363	12.9157	.	.
TRT*week	A	0	A	6	3.5511	8.0049	.	.
TRT*week	A	0	P	0	-1.7261	2.2621	.	.
TRT*week	A	0	P	1	-0.1949	3.9549	.	.
TRT*week	A	0	P	4	0.3642	4.5758	.	.
TRT*week	A	0	P	6	0.7674	5.0206	.	.
TRT*week	A	1	A	4	-4.1017	0.1177	.	.
TRT*week	A	1	A	6	-9.5998	-4.8802	.	.
TRT*week	A	1	P	0	-15.2442	-10.2558	.	.
TRT*week	A	1	P	1	-13.6972	-8.5788	.	.
TRT*week	A	1	P	4	-13.1323	-7.9637	.	.
TRT*week	A	1	P	6	-12.7253	-7.5227	.	.
TRT*week	A	4	A	6	-7.6318	-2.8642	.	.
TRT*week	A	4	P	0	-13.3093	-8.2067	.	.
TRT*week	A	4	P	1	-11.7609	-6.5311	.	.
TRT*week	A	4	P	4	-11.1955	-5.9165	.	.
TRT*week	A	4	P	6	-10.7881	-5.4759	.	.
TRT*week	A	6	P	0	-8.4250	-2.5950	.	.
TRT*week	A	6	P	1	-6.8689	-0.9271	.	.
TRT*week	A	6	P	4	-6.3005	-0.3155	.	.
TRT*week	A	6	P	6	-5.8912	0.1232	.	.

Differences of Least Squares Means								
Effect	**TRT**	**week**	**_TRT**	**_week**	**Lower**	**Upper**	**Adj Lower**	**Adj Upper**
TRT*week	P	0	P	1	0.7336	2.4904	.	.
TRT*week	P	0	P	4	1.3053	3.0987	.	.
TRT*week	P	0	P	6	1.7161	3.5359	.	.
TRT*week	P	1	P	4	-0.3293	1.5093	.	.
TRT*week	P	1	P	6	0.08469	1.9433	.	.
TRT*week	P	4	P	6	-0.5160	1.3640	.	.

Exercise Therapy Study

```
Description: The data are from a study of exercise therapies, where 37
patients were assigned to one of two weightlifting programs. In the first
program (treatment 1), the number of repetitions was increased as subjects
became stronger. In the second program (treatment 2), the number of
repetitions was fixed but the amount of weight was increased as subjects
became stronger. Measures of strength were taken at baseline (day 0), and on
days 2, 4, 6, 8, 10, and 12.;

*Variable List: ID, PROGRAM (1=Repetitions Increase, 2=Weights Increase),
Response at Time 1, Response at Time 2, Response at Time 3, Response at Time
4, Response at Time 5, Response at Time 6, Response at Time 7.;

data Exercise_wide;
input ID Prog S1-S7;
datalines;
      1      1      79      .     79     80     80     78     80
      2      1      83     83     85     85     86     87     87
     37      2      80     81     80     81     81     82     83
       ;
       run;

data Exercise;
  set Exercise_wide;
run;

* Here we'll do separate plots (panels) for each TRT group;
Proc SGpanel data = Exercise;
PanelBy Prog / columns=2;
series x=day y=Stren / group =ID LineAttrs= (pattern=1);
run;
```






```
proc mixed data=Exercise method=ml;
class ID Prog day;
model Stren = Prog day/ s ;
repeated day/type=CS subject=ID r rcorr;
```

```
run;
```

Model Information	
Data Set	WORK.EXERCISE
Dependent Variable	Stren
Covariance Structure	Compound Symmetry
Subject Effect	ID
Estimation Method	ML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information		
Class	**Levels**	**Values**
ID	37	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
Prog	2	1 2
day	7	0 2 4 6 8 10 12

Dimensions	
Covariance Parameters	2
Columns in X	10
Columns in Z	0
Subjects	37
Max Obs per Subject	7

Number of Observations	
Number of Observations Read	259
Number of Observations Used	239
Number of Observations Not Used	20

Iteration History			
Iteration	**Evaluations**	**-2 Log Like**	**Criterion**
0	1	1250.64067752	
1	2	863.82933371	0.00023724
2	1	863.77588621	0.00000234
3	1	863.77538633	0.00000000

Convergence criteria met.

Estimated R Matrix for ID 1						
Row	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
1	11.1931	10.0284	10.0284	10.0284	10.0284	10.0284
2	10.0284	11.1931	10.0284	10.0284	10.0284	10.0284
3	10.0284	10.0284	11.1931	10.0284	10.0284	10.0284
4	10.0284	10.0284	10.0284	11.1931	10.0284	10.0284
5	10.0284	10.0284	10.0284	10.0284	11.1931	10.0284
6	10.0284	10.0284	10.0284	10.0284	10.0284	11.1931

Estimated R Correlation Matrix for ID 1						
Row	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
1	1.0000	0.8959	0.8959	0.8959	0.8959	0.8959
2	0.8959	1.0000	0.8959	0.8959	0.8959	0.8959
3	0.8959	0.8959	1.0000	0.8959	0.8959	0.8959
4	0.8959	0.8959	0.8959	1.0000	0.8959	0.8959
5	0.8959	0.8959	0.8959	0.8959	1.0000	0.8959
6	0.8959	0.8959	0.8959	0.8959	0.8959	1.0000

Covariance Parameter Estimates		
Cov Parm	**Subject**	**Estimate**
CS	ID	10.0284
Residual		1.1647

Fit Statistics	
-2 Log Likelihood	863.8
AIC (Smaller is Better)	883.8
AICC (Smaller is Better)	884.7
BIC (Smaller is Better)	899.9

Null Model Likelihood Ratio Test		
DF	Chi-Square	Pr > ChiSq
1	386.87	<.0001

Solution for Fixed Effects							
Effect	Prog	day	Estimate	Standard Error	DF	t Value	Pr > |t|
Intercept			82.7725	0.7231	35	114.46	<.0001
Prog	1		-1.3691	1.0604	35	-1.29	0.2051
Prog	2		0	.	.	.	.
day		0	-1.7210	0.2676	196	-6.43	<.0001
day		2	-0.9952	0.2697	196	-3.69	0.0003
day		4	-0.7020	0.2690	196	-2.61	0.0097
day		6	-0.2357	0.2697	196	-0.87	0.3833
day		8	-0.1752	0.2735	196	-0.64	0.5225
day		10	-0.08484	0.2829	196	-0.30	0.7645
day		12	0	.	.	.	.

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
Prog	1	35	1.67	0.2051
day	6	196	11.62	<.0001

```
proc mixed data=Exercise method=ml;
class ID Prog day;
model Stren = Prog day day*Prog/ s ;
```

```
repeated day/type=CS subject=ID r rcorr;
run;
```

Model Information	
Data Set	WORK.EXERCISE
Dependent Variable	Stren
Covariance Structure	Compound Symmetry
Subject Effect	ID
Estimation Method	ML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Between-Within

Class Level Information		
Class	**Levels**	**Values**
ID	37	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
Prog	2	1 2
day	7	0 2 4 6 8 10 12

Dimensions	
Covariance Parameters	2
Columns in X	24
Columns in Z	0
Subjects	37
Max Obs per Subject	7

Number of Observations	
Number of Observations Read	259
Number of Observations Used	239
Number of Observations Not Used	20

Iteration History			
Iteration	**Evaluations**	**-2 Log Like**	**Criterion**
0	1	1250.20772041	
1	2	862.36684092	0.00027152
2	1	862.30567472	0.00000303
3	1	862.30502869	0.00000000

Convergence criteria met.

Estimated R Matrix for ID 1						
Row	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
1	11.1840	10.0276	10.0276	10.0276	10.0276	10.0276
2	10.0276	11.1840	10.0276	10.0276	10.0276	10.0276
3	10.0276	10.0276	11.1840	10.0276	10.0276	10.0276
4	10.0276	10.0276	10.0276	11.1840	10.0276	10.0276
5	10.0276	10.0276	10.0276	10.0276	11.1840	10.0276
6	10.0276	10.0276	10.0276	10.0276	10.0276	11.1840

Estimated R Correlation Matrix for ID 1						
Row	**Col1**	**Col2**	**Col3**	**Col4**	**Col5**	**Col6**
1	1.0000	0.8966	0.8966	0.8966	0.8966	0.8966
2	0.8966	1.0000	0.8966	0.8966	0.8966	0.8966
3	0.8966	0.8966	1.0000	0.8966	0.8966	0.8966
4	0.8966	0.8966	0.8966	1.0000	0.8966	0.8966
5	0.8966	0.8966	0.8966	0.8966	1.0000	0.8966
6	0.8966	0.8966	0.8966	0.8966	0.8966	1.0000

Covariance Parameter Estimates		
Cov Parm	**Subject**	**Estimate**
CS	ID	10.0276
Residual		1.1563

Fit Statistics	
-2 Log Likelihood	862.3
AIC (Smaller is Better)	894.3
AICC (Smaller is Better)	896.8
BIC (Smaller is Better)	920.1

Null Model Likelihood Ratio Test		
DF	**Chi-Square**	**Pr > ChiSq**
1	387.90	<.0001

Solution for Fixed Effects							
Effect	**Prog**	**day**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Intercept			82.8684	0.7474	35	110.88	<.0001
Prog	1		-1.5574	1.1239	35	-1.39	0.1746
Prog	2		0	.	.	.	.
day		0	-1.8208	0.3690	190	-4.93	<.0001
day		2	-1.2017	0.3690	190	-3.26	0.0013
day		4	-0.8871	0.3720	190	-2.38	0.0181
day		6	-0.2493	0.3690	190	-0.68	0.5000
day		8	-0.2158	0.3775	190	-0.57	0.5682
day		10	-0.1757	0.3875	190	-0.45	0.6508
day		12	0	.	.	.	.
Prog*day	1	0	0.1973	0.5351	190	0.37	0.7127
Prog*day	1	2	0.4556	0.5404	190	0.84	0.4002
Prog*day	1	4	0.3886	0.5372	190	0.72	0.4703
Prog*day	1	6	-0.01009	0.5404	190	-0.02	0.9851
Prog*day	1	8	0.06419	0.5464	190	0.12	0.9066
Prog*day	1	10	0.1780	0.5660	190	0.31	0.7535
Prog*day	1	12	0	.	.	.	.
Prog*day	2	0	0	.	.	.	.
Prog*day	2	2	0	.	.	.	.
Prog*day	2	4	0	.	.	.	.

Solution for Fixed Effects							
Effect	**Prog**	**day**	**Estimate**	**Standard Error**	**DF**	**t Value**	**Pr > |t|**
Prog*day	2	6	0	.	.	.	.
Prog*day	2	8	0	.	.	.	.
Prog*day	2	10	0	.	.	.	.
Prog*day	2	12	0	.	.	.	.

Type 3 Tests of Fixed Effects				
Effect	**Num DF**	**Den DF**	**F Value**	**Pr > F**
Prog	1	35	1.68	0.2031
day	6	190	11.33	<.0001
Prog*day	6	190	0.25	0.9605