

```

1      %let progname = tlc012.sas;
2      %let pdfout   = tlc012.pdf;
3
4      * input: tlc.dat
5      * output:
6      * xref:
7      * does: The TLC Trial
8              A mixed model with random intercept and slope
9
10     *****;
11     title1 "&progname Treatment of Lead Exposed Children (TLC) Trial";
12
13     filename INF   "tlc.dat";
14     ods pdf file = "&pdfout";
NOTE: Writing ODS PDF output to DISK destination "c:\bios\667\tlc012.pdf", printer "PDF".
15
16     *****;
17
18     data A;
19         infile INF firstobs=2;
20         input id group $ lead0 lead1 lead4 lead6;
21         baseline = lead0;
22         lead = lead0; time = 0; output;
23         lead = lead1; time = 1; output;
24         lead = lead4; time = 4; output;
25         lead = lead6; time = 6; output;
26         keep id group time lead;
27         label lead = "Blood lead level (ug/dL)";
28         label time = "Time (week)";
29         run;

```

NOTE: The infile INF is:
 Filename=c:\bios\667\tlc.dat,
 RECFM=V,LRECL=32767,File Size (bytes)=4546,
 2 The SAS System

17:40 Monday, November 19, 2018

Last Modified=01Feb2017:13:56:55,
 Create Time=06Sep2017:12:01:47

NOTE: 100 records were read from the infile INF.
 The minimum record length was 43.
 The maximum record length was 43.
 NOTE: The data set WORK.A has 400 observations and 4 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.01 seconds
 cpu time 0.00 seconds

```

30
31     data A;
32         set A;
33         timefactor = time;
34         run;

```

NOTE: There were 400 observations read from the data set WORK.A.
 NOTE: The data set WORK.A has 400 observations and 5 variables.
 NOTE: DATA statement used (Total process time):
 real time 0.00 seconds

cpu time 0.00 seconds

35

36 proc sort data = A; by group id time; run;

NOTE: There were 400 observations read from the data set WORK.A.

NOTE: The data set WORK.A has 400 observations and 5 variables.

NOTE: PROCEDURE SORT used (Total process time):

real time 0.00 seconds

cpu time 0.01 seconds

37

38 *****;

39

40 title2 "1. Mixed model, random intercept, by group";

41 proc mixed data = A;

42 class id timefactor;

43 model lead = timefactor / s ;

44 random intercept / subject = id type = un g gcorr v vcorr;

45 by group;

46 run;

NOTE: Convergence criteria met.

NOTE: The above message was for the following BY group:

group=A

NOTE: Convergence criteria met.

NOTE: The above message was for the following BY group:

group=P

NOTE: The PROCEDURE MIXED printed pages 1-6.

NOTE: PROCEDURE MIXED used (Total process time):

real time 0.08 seconds

cpu time 0.07 seconds

47

48 *****;

49

50 title2 "2. Mixed model, random intercept and slope, by group";

51 proc mixed data = A;

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52 class id timefactor;

53 model lead = timefactor / s ;

54 random intercept time / subject = id type = un g gcorr v vcorr;

55 by group;

56 run;

NOTE: Convergence criteria met.

NOTE: Estimated G matrix is not positive definite.

NOTE: The above message was for the following BY group:

group=A

NOTE: Convergence criteria met.

NOTE: The above message was for the following BY group:

group=P

NOTE: The PROCEDURE MIXED printed pages 7-12.

NOTE: PROCEDURE MIXED used (Total process time):

real time	0.06 seconds
cpu time	0.06 seconds