Execution Environment

Author:	24msbi117@gcu.edu.in
File:	SAS Program 2.sas [temp]
SAS Context:	SAS Studio compute context
SAS Version:	V.04.00M0P030625
SAS Client:	SAS® Studio 6.0
SAS Locale:	
Submission Time:	Dec 27, 2025, 12:55:26 PM
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Code:SAS Program 2.sas

```
/* PRECLINICAL SAS PROJECT
   Body Weight Analysis - COMPANY READY VERSION
   Purpose: Educational project for SDTM, ADaM, Statistical Analysis + ANCOVA
   Date: December 2025
*/

/*-----------------------------------------------------------
 STEP 1: CREATE RAW BODY WEIGHT DATASET
-----------------------------------------------------------*/
data rawbodyweight;
    length TRTGRP $15 AnimalID $10;
    input TRTGRP $ AnimalID $ Day0 Final;
    datalines;
NC  NC1   267 269
NC  NC2   287 290
NC  NC3   312 315
NC  NC4   310 313
NC  NC5   282 285
NC  NC6   265 266
DC  DC1   322 278
DC  DC2   359 305
DC  DC3   327 268
DC  DC4   320 276
DC  DC5   354 300
DC  DC6   325 266
STD STD1  291 268
STD STD2  295 245
STD STD3  306 264
STD STD4  304 262
STD STD5  294 244
STD STD6  290 267
HECLD HLD1 311 264
HECLD HLD2 270 252
HECLD HLD3 272 248
HECLD HLD4 310 263
HECLD HLD5 269 251
HECLD HLD6 309 262
HECHD HHD1 321 278
HECHD HHD2 299 262
HECHD HHD3 339 285
HECHD HHD4 335 281
HECHD HHD5 294 257
HECHD HHD6 311 268
STDHECLD SHLD1 330 285
STDHECLD SHLD2 300 272
STDHECLD SHLD3 280 254
STDHECLD SHLD4 270 244
STDHECLD SHLD5 305 277
STDHECLD SHLD6 305 275
STDHECHD SHHD1 314 285
STDHECHD SHHD2 342 322
STDHECHD SHHD3 320 305
STDHECHD SHHD4 310 281
STDHECHD SHHD5 340 320
STDHECHD SHHD6 310 295
;
run;

/* Verify raw data */
proc print data=rawbodyweight (obs=10);
    title "Raw Body Weight Data - First 10 Records";
run;

/*-----------------------------------------------------------
 STEP 2: CREATE SDTM.VS VITAL SIGNS DATASET + SDTM VARS
-----------------------------------------------------------*/
data sdtmvs;
    set rawbodyweight;
    length STUDYID $20 DOMAIN $2 USUBJID $10 VSTPT $10 VSTEST $20 VISIT $10;
```

```
    STUDYID = "PRECLINICAL01";
    DOMAIN  = "VS";
    USUBJID = AnimalID;

    /* Day 0 record */
    VSTPT   = "Day0";
    VSTEST  = "Body Weight";
    VISIT   = VSTPT;
    VISITNUM = 1;
    VSORRES = Day0;
    output;

    /* Final day record */
    VSTPT   = "Final";
    VSTEST  = "Body Weight";
    VISIT   = VSTPT;
    VISITNUM = 2;
    VSORRES = Final;
    output;

    keep STUDYID DOMAIN TRTGRP USUBJID VISIT VISITNUM VSTPT VSTEST VSORRES;
run;

proc sort data=sdtmvs;
    by STUDYID TRTGRP USUBJID VISITNUM;
run;

proc print data=sdtmvs (obs=20);
    title "SDTM.VS Dataset - First 20 Records";
run;

/*-----------------------------------------------------------
 STEP 3: CREATE ADaM.ADVS ANALYSIS DATASET
-----------------------------------------------------------*/
proc sort data=sdtmvs out=sortedvs;
    by STUDYID TRTGRP USUBJID VISITNUM;
run;

data adamadvs;
    set sortedvs;
    by STUDYID TRTGRP USUBJID;

    length AVISIT $10 PARAM $20 PARAMCD $8 ABLFL $1;
    retain BASE;

    AVISIT  = VISIT;
    AVISITN = VISITNUM;
    PARAM   = "Body Weight";
    PARAMCD = "BW";
    AVAL = VSORRES;

    if first.USUBJID then BASE = .;
    if AVISITN = 1 then do;
        BASE  = AVAL;
        ABLFL = "Y";
    end;
    else ABLFL = " ";

    if AVISITN = 1 then do;
        CHG  = 0;
        PCHG = 0;
    end;
    else do;
        CHG  = AVAL - BASE;
        if BASE ne 0 then PCHG = 100 * (AVAL - BASE) / BASE;
        else PCHG = .;
    end;

    keep STUDYID TRTGRP USUBJID PARAM PARAMCD AVISIT AVISITN
         AVAL BASE CHG PCHG ABLFL;
run;

/* Carry forward baseline */
data adamadvs;
    set adamadvs;
    by STUDYID TRTGRP USUBJID;
    retain baselineval;

    if first.USUBJID then baselineval = .;
    if AVISITN = 1 then baselineval = AVAL;
    BASE = baselineval;

    if AVISITN = 1 then do;
        CHG  = 0;
        PCHG = 0;
    end;
```

```
    else do;
        CHG  = AVAL - BASE;
        if BASE ne 0 then PCHG = 100 * (AVAL - BASE) / BASE;
        else PCHG = .;
    end;
run;

proc sort data=adamadvs;
    by STUDYID TRTGRP USUBJID AVISITN;
run;

proc print data=adamadvs (obs=20);
    title "ADaM.ADVS Dataset - First 20 Records";
run;

/*-----------------------------------------------------------
 STEP 4: DESCRIPTIVE STATISTICS - MEAN BODY WEIGHT
-----------------------------------------------------------*/
proc means data=adamadvs n mean std maxdec=4;
    class TRTGRP AVISIT AVISITN;
    var AVAL;
    output out=meanbw n=N mean=MeanBW std=SD;
    where AVISIT in ("Day0", "Final");
run;

data meanbwclean;
    set meanbw;
    where _TYPE_ = 7;
    keep TRTGRP AVISIT AVISITN _FREQ_ MeanBW SD N;
run;

proc print data=meanbwclean noobs;
    title "Mean Body Weight by Treatment Group and Visit";
    var TRTGRP AVISIT AVISITN MeanBW SD N;
    format MeanBW SD 8.3;
run;

/*-----------------------------------------------------------
 STEP 5: CHANGE FROM BASELINE (FINAL DAY)
-----------------------------------------------------------*/
proc means data=adamadvs n mean std maxdec=4;
    class TRTGRP;
    var CHG;
    output out=chgbaseline n=N mean=MeanCHG std=SDCHG;
    where AVISITN = 2;
run;

data chgbaselineclean;
    set chgbaseline;
    where _TYPE_ = 1;
    keep TRTGRP _FREQ_ MeanCHG SDCHG N;
run;

proc print data=chgbaselineclean noobs;
    title "Change from Baseline Final Day by Treatment Group";
    var TRTGRP MeanCHG SDCHG N;
    format MeanCHG SDCHG 8.4;
run;

/*-----------------------------------------------------------
 STEP 6: SUMMARY TABLES
-----------------------------------------------------------*/
proc report data=meanbwclean nowd;
    column TRTGRP AVISIT MeanBW SD N;
    define TRTGRP / group "Treatment Group" width=15;
    define AVISIT / group "Visit" width=10;
    define MeanBW / analysis "Mean Body Weight (g)" format=8.2;
    define SD / analysis "Std Dev" format=8.2;
    define N / analysis "N" format=3.0;
    title "Table 1: Mean Body Weight by Treatment Group and Visit";
run;

proc report data=chgbaselineclean nowd;
    column TRTGRP MeanCHG SDCHG N;
    define TRTGRP / display "Treatment Group" width=15;
    define MeanCHG / analysis "Mean Change (g)" format=8.4;
    define SDCHG / analysis "Std Dev" format=8.4;
    define N / analysis "N" format=3.0;
    title "Table 2: Change from Baseline (Final Visit)";
run;

/*-----------------------------------------------------------
 STEP 7: FIGURES
-----------------------------------------------------------*/
proc sgplot data=meanbwclean;
    vbar TRTGRP / response=MeanBW group=AVISIT groupdisplay=cluster;
    yaxis label="Mean Body Weight (g)" grid;
```

```
    xaxis label="Treatment Group";
    keylegend / title="Visit";
    title "Figure 1: Mean Body Weight by Treatment Group and Visit";
run;

proc sgplot data=chgbaselineclean;
    vbar TRTGRP / response=MeanCHG fillattrs=(color=blue);
    yaxis label="Mean Change from Baseline (g)" grid;
    xaxis label="Treatment Group";
    refline 0 / axis=y lineattrs=(color=red pattern=dash);
    title "Figure 2: Mean Change from Baseline by Treatment Group";
run;

/*-----------------------------------------------------------
 STEP 9: ANCOVA STATISTICAL TEST (NEW!)
-----------------------------------------------------------*/
data analysis_final;
    set adamadvs;
    where AVISITN = 2;
    keep STUDYID TRTGRP USUBJID BASE AVAL CHG;
run;

proc glm data=analysis_final;
    class TRTGRP (ref="NC");
    model CHG = BASE TRTGRP / solution clparm;
    lsmeans TRTGRP / cl diff adjust=tukey pdiff;
    means TRTGRP / tukey;
    title "ANCOVA: Change from Baseline by Treatment Group";
    title2 "(Adjusted for Baseline Body Weight, NC as Reference)";
run;

/* Summary p-values table */
proc means data=analysis_final n mean std min max;
    class TRTGRP;
    var CHG;
    output out=pval_summary;
run;

proc print data=pval_summary noobs;
    title "Unadjusted Summary Statistics by Group (Final Visit)";
    var TRTGRP N Mean StdDev;
    format Mean 8.4 StdDev 8.4;
run;

/*-----------------------------------------------------------
 STEP 10: INTERPRETATION
-----------------------------------------------------------*/
data interpretation;
    length Group $15 Interpretation $100;
    input Group $ 1-15 Interpretation $ 17-100;
    datalines;
DC          Maximum weight loss -52.33g - Disease progression
HECHD       Second highest loss -44.67g - High dose effect
STD         Third highest loss -38.33g - Standard treatment
STDHECLD    Moderate loss -30.50g - Combined low dose
HECLD       Moderate loss -33.50g - Low dose effect
STDHECHD    Minimal loss -21.33g - Best combined treatment
NC          Weight gain 2.50g - Normal healthy control
;
run;

proc print data=interpretation noobs;
    title "Data Interpretation: Body Weight Change by Group";
run;

/*-----------------------------------------------------------
 COMPLETION MESSAGE
-----------------------------------------------------------*/
title;
data _null_;
    put;
    put "================================================";
    put "PRECLINICAL SAS PROJECT - COMPANY READY VERSION";
    put "================================================";
    put;
    put "SUCCESSFULLY GENERATED:";
    put "1. SDTM.VS Dataset (CDISC standards)";
    put "2. ADaM.ADVS Dataset (analysis ready)";
    put "3. Summary Tables 1-2";
    put "4. Figures 1-2";
    put "5. ANCOVA statistical test (p-values)";
    put "6. Data interpretation";
    put;
    put "KEY STATISTICAL OUTPUT: ANCOVA TABLE";
    put "Look for p-values < 0.05 vs NC control";
    put "================================================";
run;
```

Log:SAS Program 2.sas

```
1    /* region: Generated preamble */
2    /* Make sure the current directory is writable */
3    data _null_;
4        length rc 4;
5        %let tworkloc="%sysfunc(getoption(work))";
6        rc=dlgcdir(&tworkloc);
7    run;
NOTE: The current working directory is now
      "/opt/sas/viya/config/var/tmp/compsrv/default/ad14969a-80c4-49e7-bdc3-39da9936aa17/SAS_workEE5B00000219_sas-compute-server-105
      ee367-c7a5-41c5-b75b-dc7e4702ea2d-43825".
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

8
9    /* Setup options */
10   title;
11   footnote;
12   options validvarname=any;
13   options validmemname=extend;
14   options dtreset date number;
15   options device=png;
16
17   /* Setup macro variables */
18   %let syscc=0;
19   %let _clientapp = %nrquote(%nrstr(SAS Studio));
20   %let _clientappabbrev = %nrquote(%nrstr(Studio));
21   %let _clientappversion=2025.03;
22   %let _clientversion=;
23   %let _sasservername=&SYSHOSTNAME;
24   %let _sashostname=&SYSHOSTNAME;
25   %let _sasprogramfilehost=&SYSHOSTNAME;
26   %let _clientuserid = %nrquote(%nrstr(24msbi117@gcu.edu.in));
27   %let _clientusername = %nrquote(%nrstr(24msbi117@gcu.edu.in));
28   %let clientmachine = %nrquote(%nrstr());
29   %let _clientmachine = %nrquote(%nrstr());
30   %let _clientmode = %nrquote(%nrstr(viya));
31   %let sasworklocation="%sysfunc(getoption(work))/";
32   filename _cwd &sasworklocation;
33   data _null_;
34       call symput('_sasworkingdir',pathname('_cwd'));
35   run;
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

36   filename _cwd;
NOTE: Fileref _CWD has been deassigned.
37   %let _sasprogramfile = %nrquote(%nrstr());
38   %let _baseurl = %nrquote(%nrstr(https://vfl-041.engage.sas.com/SASStudio/));
39   %let _execenv = %nrquote(%nrstr(SASStudio));
40   %symdel _dataout_mime_type _dataout_name _dataout_url _dataout_table / nowarn;
41   %let _sasws_ = %bquote(%sysfunc(getoption(work)));
42   %let _saswstemp_ = %bquote(%sysfunc(getoption(work)));
43
44   /* Detect SAS/Graph and setup graph options */
45   data _null_;
46       length rc $255;
47       call symput("graphinit","");
48       call symput("graphterm","");
49       rc=tslvl('sasxgopt','n');
50       _error_=0;
51       if (rc^=' ') then do;
52           call symput("graphinit","goptions reset=all gsfname=_gsfname;");
53           call symput("graphterm","goptions noaccessible;");
54       end;
55   run;
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

56   data _null_;
57       length rc 4;
58       rc=sysprod("PRODNUM002");
59       if (rc^=1) then do;
60           call symput("graphinit","");
61           call symput("graphterm","");
62       end;
63   run;
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

64
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```
65   /* Setup ODS destinations */
66   ods _all_ close;
67   %studio_results_directory;
68   filename _htmlout "&_results_prefix_..html";
69   filename _listout "&_results_prefix_..lst";
70   filename _gsfname temp;
71   filename _dataout "&_results_prefix_..dat";
72   ods autonavigate off;
73   ods graphics on;
74   ods html5 (id=web) METATEXT='http-equiv="Content-Security-Policy" content="default-src ''none''; style-src ''unsafe-inline'';
74 ! img-src data: ;"' device=png gpath="&_saswstemp_" path="&_saswstemp_" encoding=utf8 file=_htmlout (title='Results:SAS Program
74 ! 2.sas') style=Illuminate options(bitmap_mode='inline' outline='on' svg_mode='inline' css_prefix=".ods_&SYS_COMPUTE_JOB_ID"
74 ! body_id="div_&SYS_COMPUTE_JOB_ID" );
NOTE: Writing HTML5(WEB) Body file: _HTMLOUT
75   ods listing file=_listout;
76   &graphinit;
77   %studio_initialize_custom_output;
78   /* endregion */
79
80   /* PRECLINICAL SAS PROJECT
81      Body Weight Analysis - COMPANY READY VERSION
82      Purpose: Educational project for SDTM, ADaM, Statistical Analysis + ANCOVA
83      Date: December 2025
84   */
85
86   /*-----------------------------------------------------------
87    STEP 1: CREATE RAW BODY WEIGHT DATASET
88   -----------------------------------------------------------*/
89   data rawbodyweight;
90       length TRTGRP $15 AnimalID $10;
91       input TRTGRP $ AnimalID $ Day0 Final;
92       datalines;
NOTE: The data set WORK.RAWBODYWEIGHT has 42 observations and 4 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

135  ;
136  run;
137
138  /* Verify raw data */
139  proc print data=rawbodyweight (obs=10);
140      title "Raw Body Weight Data - First 10 Records";
141  run;
NOTE: There were 10 observations read from the data set WORK.RAWBODYWEIGHT.
NOTE: The PROCEDURE PRINT printed page 21.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.00 seconds
      cpu time            0.01 seconds

142
143  /*-----------------------------------------------------------
144   STEP 2: CREATE SDTM.VS VITAL SIGNS DATASET + SDTM VARS
145  -----------------------------------------------------------*/
146  data sdtmvs;
147      set rawbodyweight;
148      length STUDYID $20 DOMAIN $2 USUBJID $10 VSTPT $10 VSTEST $20 VISIT $10;
149
150      STUDYID = "PRECLINICAL01";
151      DOMAIN  = "VS";
152      USUBJID = AnimalID;
153
154      /* Day 0 record */
155      VSTPT   = "Day0";
156      VSTEST  = "Body Weight";
157      VISIT   = VSTPT;
158      VISITNUM = 1;
159      VSORRES = Day0;
160      output;
161
162      /* Final day record */
163      VSTPT   = "Final";
164      VSTEST  = "Body Weight";
165      VISIT   = VSTPT;
166      VISITNUM = 2;
167      VSORRES = Final;
168      output;
169
170      keep STUDYID DOMAIN TRTGRP USUBJID VISIT VISITNUM VSTPT VSTEST VSORRES;
171  run;
NOTE: There were 42 observations read from the data set WORK.RAWBODYWEIGHT.
NOTE: The data set WORK.SDTMVS has 84 observations and 9 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

172
```

```
173  proc sort data=sdtmvs;
174      by STUDYID TRTGRP USUBJID VISITNUM;
175  run;
NOTE: There were 84 observations read from the data set WORK.SDTMVS.
NOTE: The data set WORK.SDTMVS has 84 observations and 9 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.00 seconds
      cpu time            0.01 seconds

176
177  proc print data=sdtmvs (obs=20);
178      title "SDTM.VS Dataset - First 20 Records";
179  run;
NOTE: There were 20 observations read from the data set WORK.SDTMVS.
NOTE: The PROCEDURE PRINT printed page 22.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.01 seconds
      cpu time            0.02 seconds

180
181  /*-----------------------------------------------------------
182   STEP 3: CREATE ADaM.ADVS ANALYSIS DATASET
183  -----------------------------------------------------------*/
184  proc sort data=sdtmvs out=sortedvs;
185      by STUDYID TRTGRP USUBJID VISITNUM;
186  run;
NOTE: Input data set is already sorted; it has been copied to the output data set.
NOTE: There were 84 observations read from the data set WORK.SDTMVS.
NOTE: The data set WORK.SORTEDVS has 84 observations and 9 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

187
188  data adamadvs;
189      set sortedvs;
190      by STUDYID TRTGRP USUBJID;
191
192      length AVISIT $10 PARAM $20 PARAMCD $8 ABLFL $1;
193      retain BASE;
194
195      AVISIT  = VISIT;
196      AVISITN = VISITNUM;
197      PARAM   = "Body Weight";
198      PARAMCD = "BW";
199      AVAL = VSORRES;
200
201      if first.USUBJID then BASE = .;
202      if AVISITN = 1 then do;
203          BASE  = AVAL;
204          ABLFL = "Y";
205      end;
206      else ABLFL = " ";
207
208      if AVISITN = 1 then do;
209          CHG  = 0;
210          PCHG = 0;
211      end;
212      else do;
213          CHG  = AVAL - BASE;
214          if BASE ne 0 then PCHG = 100 * (AVAL - BASE) / BASE;
215          else PCHG = .;
216      end;
217
218      keep STUDYID TRTGRP USUBJID PARAM PARAMCD AVISIT AVISITN
219           AVAL BASE CHG PCHG ABLFL;
220  run;
NOTE: There were 84 observations read from the data set WORK.SORTEDVS.
NOTE: The data set WORK.ADAMADVS has 84 observations and 12 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

221
222  /* Carry forward baseline */
223  data adamadvs;
224      set adamadvs;
225      by STUDYID TRTGRP USUBJID;
226      retain baselineval;
227
228      if first.USUBJID then baselineval = .;
229      if AVISITN = 1 then baselineval = AVAL;
230      BASE = baselineval;
231
232      if AVISITN = 1 then do;
233          CHG  = 0;
234          PCHG = 0;
```

```
235      end;
236      else do;
237          CHG  = AVAL - BASE;
238          if BASE ne 0 then PCHG = 100 * (AVAL - BASE) / BASE;
239          else PCHG = .;
240      end;
241  run;
NOTE: There were 84 observations read from the data set WORK.ADAMADVS.
NOTE: The data set WORK.ADAMADVS has 84 observations and 13 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

242
243  proc sort data=adamadvs;
244      by STUDYID TRTGRP USUBJID AVISITN;
245  run;
NOTE: There were 84 observations read from the data set WORK.ADAMADVS.
NOTE: The data set WORK.ADAMADVS has 84 observations and 13 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.00 seconds
      cpu time            0.01 seconds

246
247  proc print data=adamadvs (obs=20);
248      title "ADaM.ADVS Dataset - First 20 Records";
249  run;
NOTE: There were 20 observations read from the data set WORK.ADAMADVS.
NOTE: The PROCEDURE PRINT printed page 23.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.02 seconds
      cpu time            0.02 seconds

250
251  /*-----------------------------------------------------------
252   STEP 4: DESCRIPTIVE STATISTICS - MEAN BODY WEIGHT
253  -----------------------------------------------------------*/
254  proc means data=adamadvs n mean std maxdec=4;
255      class TRTGRP AVISIT AVISITN;
256      var AVAL;
257      output out=meanbw n=N mean=MeanBW std=SD;
258      where AVISIT in ("Day0", "Final");
259  run;
NOTE: There were 84 observations read from the data set WORK.ADAMADVS.
      WHERE AVISIT in ('Day0', 'Final');
NOTE: The data set WORK.MEANBW has 56 observations and 8 variables.
NOTE: The PROCEDURE MEANS printed page 24.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.02 seconds
      cpu time            0.03 seconds

260
261  data meanbwclean;
262      set meanbw;
263      where _TYPE_ = 7;
264      keep TRTGRP AVISIT AVISITN _FREQ_ MeanBW SD N;
265  run;
NOTE: There were 14 observations read from the data set WORK.MEANBW.
      WHERE _TYPE_=7;
NOTE: The data set WORK.MEANBWCLEAN has 14 observations and 7 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

266
267  proc print data=meanbwclean noobs;
268      title "Mean Body Weight by Treatment Group and Visit";
269      var TRTGRP AVISIT AVISITN MeanBW SD N;
270      format MeanBW SD 8.3;
271  run;
NOTE: There were 14 observations read from the data set WORK.MEANBWCLEAN.
NOTE: The PROCEDURE PRINT printed page 25.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.01 seconds
      cpu time            0.01 seconds

272
273  /*-----------------------------------------------------------
274   STEP 5: CHANGE FROM BASELINE (FINAL DAY)
275  -----------------------------------------------------------*/
276  proc means data=adamadvs n mean std maxdec=4;
277      class TRTGRP;
278      var CHG;
279      output out=chgbaseline n=N mean=MeanCHG std=SDCHG;
280      where AVISITN = 2;
281  run;
NOTE: There were 42 observations read from the data set WORK.ADAMADVS.
```

```
      WHERE AVISITN=2;
NOTE: The data set WORK.CHGBASELINE has 8 observations and 6 variables.
NOTE: The PROCEDURE MEANS printed page 26.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.01 seconds
      cpu time            0.01 seconds

282
283  data chgbaselineclean;
284      set chgbaseline;
285      where _TYPE_ = 1;
286      keep TRTGRP _FREQ_ MeanCHG SDCHG N;
287  run;
NOTE: There were 7 observations read from the data set WORK.CHGBASELINE.
      WHERE _TYPE_=1;
NOTE: The data set WORK.CHGBASELINECLEAN has 7 observations and 5 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

288
289  proc print data=chgbaselineclean noobs;
290      title "Change from Baseline Final Day by Treatment Group";
291      var TRTGRP MeanCHG SDCHG N;
292      format MeanCHG SDCHG 8.4;
293  run;
NOTE: There were 7 observations read from the data set WORK.CHGBASELINECLEAN.
NOTE: The PROCEDURE PRINT printed page 27.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.00 seconds
      cpu time            0.01 seconds

294
295  /*----------------------------------------------------------
296   STEP 6: SUMMARY TABLES
297  ----------------------------------------------------------*/
298  proc report data=meanbwclean nowd;
299      column TRTGRP AVISIT MeanBW SD N;
300      define TRTGRP / group "Treatment Group" width=15;
301      define AVISIT / group "Visit" width=10;
302      define MeanBW / analysis "Mean Body Weight (g)" format=8.2;
303      define SD / analysis "Std Dev" format=8.2;
304      define N / analysis "N" format=3.0;
305      title "Table 1: Mean Body Weight by Treatment Group and Visit";
306  run;
NOTE: There were 14 observations read from the data set WORK.MEANBWCLEAN.
NOTE: The PROCEDURE REPORT printed page 28.
NOTE: PROCEDURE REPORT used (Total process time):
      real time           0.01 seconds
      cpu time            0.02 seconds

307
308  proc report data=chgbaselineclean nowd;
309      column TRTGRP MeanCHG SDCHG N;
310      define TRTGRP / display "Treatment Group" width=15;
311      define MeanCHG / analysis "Mean Change (g)" format=8.4;
312      define SDCHG / analysis "Std Dev" format=8.4;
313      define N / analysis "N" format=3.0;
314      title "Table 2: Change from Baseline (Final Visit)";
315  run;
NOTE: There were 7 observations read from the data set WORK.CHGBASELINECLEAN.
NOTE: The PROCEDURE REPORT printed page 29.
NOTE: PROCEDURE REPORT used (Total process time):
      real time           0.01 seconds
      cpu time            0.00 seconds

316
317  /*----------------------------------------------------------
318   STEP 7: FIGURES
319  ----------------------------------------------------------*/
320  proc sgplot data=meanbwclean;
321      vbar TRTGRP / response=MeanBW group=AVISIT groupdisplay=cluster;
322      yaxis label="Mean Body Weight (g)" grid;
323      xaxis label="Treatment Group";
324      keylegend / title="Visit";
325      title "Figure 1: Mean Body Weight by Treatment Group and Visit";
326  run;
NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.13 seconds
      cpu time            0.07 seconds

NOTE: Listing image output written to
      /opt/sas/viya/config/var/tmp/compsrv/default/ad14969a-80c4-49e7-bdc3-39da9936aa17/SAS_workEE5B00000219_sas-compute-server-105e
      e367-c7a5-41c5-b75b-dc7e4702ea2d-43825/SGPlot4.png.
NOTE: There were 14 observations read from the data set WORK.MEANBWCLEAN.
327
328  proc sgplot data=chgbaselineclean;
```

```
329      vbar TRTGRP / response=MeanCHG fillattrs=(color=blue);
330      yaxis label="Mean Change from Baseline (g)" grid;
331      xaxis label="Treatment Group";
332      refline 0 / axis=y lineattrs=(color=red pattern=dash);
333      title "Figure 2: Mean Change from Baseline by Treatment Group";
334  run;
NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.08 seconds
      cpu time            0.04 seconds

NOTE: Listing image output written to
      /opt/sas/viya/config/var/tmp/compsrv/default/ad14969a-80c4-49e7-bdc3-39da9936aa17/SAS_workEE5B00000219_sas-compute-server-105e
      e367-c7a5-41c5-b75b-dc7e4702ea2d-43825/SGPlot5.png.
NOTE: There were 7 observations read from the data set WORK.CHGBASELINECLEAN.
335
336  /*----------------------------------------------------------
337   STEP 9: ANCOVA STATISTICAL TEST (NEW!)
338  ----------------------------------------------------------*/
339  data analysis_final;
340      set adamadvs;
341      where AVISITN = 2;
342      keep STUDYID TRTGRP USUBJID BASE AVAL CHG;
343  run;
NOTE: There were 42 observations read from the data set WORK.ADAMADVS.
      WHERE AVISITN=2;
NOTE: The data set WORK.ANALYSIS_FINAL has 42 observations and 6 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

344
345  proc glm data=analysis_final;
346      class TRTGRP (ref="NC");
347      model CHG = BASE TRTGRP / solution clparm;
348      lsmeans TRTGRP / cl diff adjust=tukey pdiff;
349      means TRTGRP / tukey;
350      title "ANCOVA: Change from Baseline by Treatment Group";
351      title2 "(Adjusted for Baseline Body Weight, NC as Reference)";
352  run;
NOTE: Means from the MEANS statement are not adjusted for other terms in the model.  For adjusted means, use the LSMEANS statement.
353
354  /* Summary p-values table */
NOTE: The PROCEDURE GLM printed pages 30-34.
NOTE: PROCEDURE GLM used (Total process time):
      real time           0.71 seconds
      cpu time            0.32 seconds

355  proc means data=analysis_final n mean std min max;
356      class TRTGRP;
357      var CHG;
358      output out=pval_summary;
359  run;
NOTE: There were 42 observations read from the data set WORK.ANALYSIS_FINAL.
NOTE: The data set WORK.PVAL_SUMMARY has 40 observations and 5 variables.
NOTE: The PROCEDURE MEANS printed page 35.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.01 seconds
      cpu time            0.02 seconds

360
361  proc print data=pval_summary noobs;
362      title "Unadjusted Summary Statistics by Group (Final Visit)";
363      var TRTGRP N Mean StdDev;
ERROR: Variable N not found.
ERROR: Variable MEAN not found.
ERROR: Variable STDDEV not found.
364      format Mean 8.4 StdDev 8.4;
365  run;
NOTE: The SAS System stopped processing this step because of errors.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

366
367  /*----------------------------------------------------------
368   STEP 10: INTERPRETATION
369  ----------------------------------------------------------*/
370  data interpretation;
371      length Group $15 Interpretation $100;
372      input Group $ 1-15 Interpretation $ 17-100;
373      datalines;
NOTE: LOST CARD.
RULE:----+----1----+----2----+----3----+----4----+----5----+----6----+----7----+----8----+----9----+----0
381  ;
Group=NC          Wei Interpretation=  _ERROR_=1 _N_=4
NOTE: SAS went to a new line when INPUT statement reached past the end of a line.
NOTE: The data set WORK.INTERPRETATION has 3 observations and 2 variables.
```

```
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

381  ;
382  run;
383
384  proc print data=interpretation noobs;
385      title "Data Interpretation: Body Weight Change by Group";
386  run;
NOTE: There were 3 observations read from the data set WORK.INTERPRETATION.
NOTE: The PROCEDURE PRINT printed page 36.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.00 seconds
      cpu time            0.01 seconds

387
388  /*-----------------------------------------------------------
389   COMPLETION MESSAGE
390  -----------------------------------------------------------*/
391  title;
392  data _null_;
393      put;
394      put "================================================";
395      put "PRECLINICAL SAS PROJECT - COMPANY READY VERSION";
396      put "================================================";
397      put;
398      put "SUCCESSFULLY GENERATED:";
399      put "1. SDTM.VS Dataset (CDISC standards)";
400      put "2. ADaM.ADVS Dataset (analysis ready)";
401      put "3. Summary Tables 1-2";
402      put "4. Figures 1-2";
403      put "5. ANCOVA statistical test (p-values)";
404      put "6. Data interpretation";
405      put;
406      put "KEY STATISTICAL OUTPUT: ANCOVA TABLE";
407      put "Look for p-values < 0.05 vs NC control";
408      put "================================================";
409  run;
==============================================
PRECLINICAL SAS PROJECT - COMPANY READY VERSION
==============================================
SUCCESSFULLY GENERATED:
1. SDTM.VS Dataset (CDISC standards)
2. ADaM.ADVS Dataset (analysis ready)
3. Summary Tables 1-2
4. Figures 1-2
5. ANCOVA statistical test (p-values)
6. Data interpretation
KEY STATISTICAL OUTPUT: ANCOVA TABLE
Look for p-values < 0.05 vs NC control
==============================================
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds

410
411
412  /* region: Generated postamble */
413  /* Close ODS destinations */
414  &graphterm; ;*';*";*/;run;quit;
415  quit;run;
416  ods html5 (id=web) close;
417  ods listing close;
418  %if %sysfunc(fileref(_gsfname)) lt 0 %then %do;
419      filename _gsfname clear;
NOTE: Fileref _GSFNAME has been deassigned.
420  %end;
421  %studio_capture_custom_output;
422  /* endregion */
423
```

Results:SAS Program 2.sas

Raw Body Weight Data - First 10 Records

Obs	TRTGRP	AnimalID	Day0	Final
1	NC	NC1	267	269
2	NC	NC2	287	290
3	NC	NC3	312	315
4	NC	NC4	310	313
5	NC	NC5	282	285
6	NC	NC6	265	266
7	DC	DC1	322	278

Obs	TRTGRP	AnimalID	Day0	Final
8	DC	DC2	359	305
9	DC	DC3	327	268
10	DC	DC4	320	276

SDTM.VS Dataset - First 20 Records

Obs	TRTGRP	STUDYID	DOMAIN	USUBJID	VSTPT	VSTEST	VISIT	VISITNUM	VSORRES
1	DC	PRECLINICAL01	VS	DC1	Day0	Body Weight	Day0	1	322
2	DC	PRECLINICAL01	VS	DC1	Final	Body Weight	Final	2	278
3	DC	PRECLINICAL01	VS	DC2	Day0	Body Weight	Day0	1	359
4	DC	PRECLINICAL01	VS	DC2	Final	Body Weight	Final	2	305
5	DC	PRECLINICAL01	VS	DC3	Day0	Body Weight	Day0	1	327
6	DC	PRECLINICAL01	VS	DC3	Final	Body Weight	Final	2	268
7	DC	PRECLINICAL01	VS	DC4	Day0	Body Weight	Day0	1	320
8	DC	PRECLINICAL01	VS	DC4	Final	Body Weight	Final	2	276
9	DC	PRECLINICAL01	VS	DC5	Day0	Body Weight	Day0	1	354
10	DC	PRECLINICAL01	VS	DC5	Final	Body Weight	Final	2	300
11	DC	PRECLINICAL01	VS	DC6	Day0	Body Weight	Day0	1	325
12	DC	PRECLINICAL01	VS	DC6	Final	Body Weight	Final	2	266
13	HECHD	PRECLINICAL01	VS	HHD1	Day0	Body Weight	Day0	1	321
14	HECHD	PRECLINICAL01	VS	HHD1	Final	Body Weight	Final	2	278
15	HECHD	PRECLINICAL01	VS	HHD2	Day0	Body Weight	Day0	1	299
16	HECHD	PRECLINICAL01	VS	HHD2	Final	Body Weight	Final	2	262
17	HECHD	PRECLINICAL01	VS	HHD3	Day0	Body Weight	Day0	1	339
18	HECHD	PRECLINICAL01	VS	HHD3	Final	Body Weight	Final	2	285
19	HECHD	PRECLINICAL01	VS	HHD4	Day0	Body Weight	Day0	1	335
20	HECHD	PRECLINICAL01	VS	HHD4	Final	Body Weight	Final	2	281

ADaM.ADVS Dataset - First 20 Records

Obs	TRTGRP	STUDYID	USUBJID	AVISIT	PARAM	PARAMCD	ABLFL	BASE	AVISITN	AVAL	CHG	PCHG	baselineval
1	DC	PRECLINICAL01	DC1	Day0	Body Weight	BW	Y	322	1	322	0	0.0000	322
2	DC	PRECLINICAL01	DC1	Final	Body Weight	BW		322	2	278	-44	-13.6646	322
3	DC	PRECLINICAL01	DC2	Day0	Body Weight	BW	Y	359	1	359	0	0.0000	359
4	DC	PRECLINICAL01	DC2	Final	Body Weight	BW		359	2	305	-54	-15.0418	359
5	DC	PRECLINICAL01	DC3	Day0	Body Weight	BW	Y	327	1	327	0	0.0000	327
6	DC	PRECLINICAL01	DC3	Final	Body Weight	BW		327	2	268	-59	-18.0428	327
7	DC	PRECLINICAL01	DC4	Day0	Body Weight	BW	Y	320	1	320	0	0.0000	320
8	DC	PRECLINICAL01	DC4	Final	Body Weight	BW		320	2	276	-44	-13.7500	320
9	DC	PRECLINICAL01	DC5	Day0	Body Weight	BW	Y	354	1	354	0	0.0000	354
10	DC	PRECLINICAL01	DC5	Final	Body Weight	BW		354	2	300	-54	-15.2542	354
11	DC	PRECLINICAL01	DC6	Day0	Body Weight	BW	Y	325	1	325	0	0.0000	325
12	DC	PRECLINICAL01	DC6	Final	Body Weight	BW		325	2	266	-59	-18.1538	325
13	HECHD	PRECLINICAL01	HHD1	Day0	Body Weight	BW	Y	321	1	321	0	0.0000	321
14	HECHD	PRECLINICAL01	HHD1	Final	Body Weight	BW		321	2	278	-43	-13.3956	321
15	HECHD	PRECLINICAL01	HHD2	Day0	Body Weight	BW	Y	299	1	299	0	0.0000	299
16	HECHD	PRECLINICAL01	HHD2	Final	Body Weight	BW		299	2	262	-37	-12.3746	299
17	HECHD	PRECLINICAL01	HHD3	Day0	Body Weight	BW	Y	339	1	339	0	0.0000	339
18	HECHD	PRECLINICAL01	HHD3	Final	Body Weight	BW		339	2	285	-54	-15.9292	339
19	HECHD	PRECLINICAL01	HHD4	Day0	Body Weight	BW	Y	335	1	335	0	0.0000	335
20	HECHD	PRECLINICAL01	HHD4	Final	Body Weight	BW		335	2	281	-54	-16.1194	335

ADaM.ADVS Dataset - First 20 Records

The MEANS Procedure

Analysis Variable : AVAL						
TRTGRP	AVISIT	AVISITN	N Obs	N	Mean	Std Dev
DC	Day0	1	6	6	334.5000	17.2829
	Final	2	6	6	282.1667	16.4732

Analysis Variable : AVAL						
TRTGRP	AVISIT	AVISITN	N Obs	N	Mean	Std Dev
HECHD	Day0	1	6	6	316.5000	18.5014
	Final	2	6	6	271.8333	11.1967
HECLD	Day0	1	6	6	290.1667	21.7570
	Final	2	6	6	256.6667	7.0899
NC	Day0	1	6	6	287.1667	20.3117
	Final	2	6	6	289.6667	20.9539
STD	Day0	1	6	6	296.6667	6.7429
	Final	2	6	6	258.3333	10.9301
STDHECHD	Day0	1	6	6	322.6667	14.6788
	Final	2	6	6	301.3333	17.3743
STDHECLD	Day0	1	6	6	298.3333	21.1345
	Final	2	6	6	267.8333	15.5360

Mean Body Weight by Treatment Group and Visit

TRTGRP	AVISIT	AVISITN	MeanBW	SD	N
DC	Day0	1	334.500	17.283	6
DC	Final	2	282.167	16.473	6
HECHD	Day0	1	316.500	18.501	6
HECHD	Final	2	271.833	11.197	6
HECLD	Day0	1	290.167	21.757	6
HECLD	Final	2	256.667	7.090	6
NC	Day0	1	287.167	20.312	6
NC	Final	2	289.667	20.954	6
STD	Day0	1	296.667	6.743	6
STD	Final	2	258.333	10.930	6
STDHECHD	Day0	1	322.667	14.679	6
STDHECHD	Final	2	301.333	17.374	6
STDHECLD	Day0	1	298.333	21.134	6
STDHECLD	Final	2	267.833	15.536	6

Mean Body Weight by Treatment Group and Visit

The MEANS Procedure

Analysis Variable : CHG				
TRTGRP	N Obs	N	Mean	Std Dev
DC	6	6	-52.3333	6.8313
HECHD	6	6	-44.6667	7.7115
HECLD	6	6	-33.5000	14.9499
NC	6	6	2.5000	0.8367
STD	6	6	-38.3333	12.4043
STDHECHD	6	6	-21.3333	6.3456
STDHECLD	6	6	-30.5000	7.2595

Change from Baseline Final Day by Treatment Group

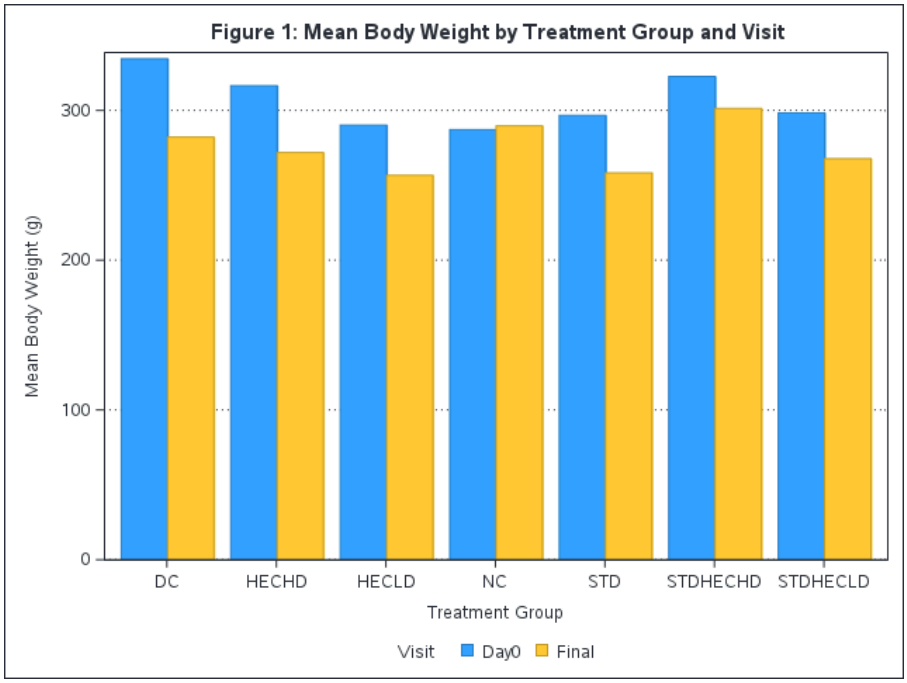
TRTGRP	MeanCHG	SDCHG	N
DC	-52.3333	6.8313	6
HECHD	-44.6667	7.7115	6
HECLD	-33.5000	14.9499	6
NC	2.5000	0.8367	6
STD	-38.3333	12.4043	6
STDHECHD	-21.3333	6.3456	6
STDHECLD	-30.5000	7.2595	6

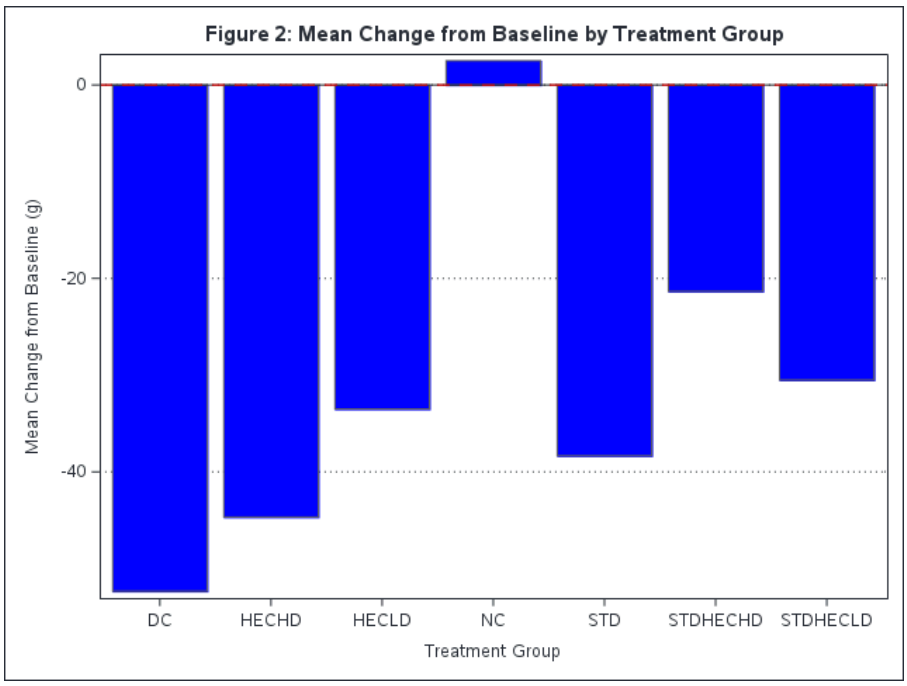
Table 1: Mean Body Weight by Treatment Group and Visit

Treatment Group	Visit	Mean Body Weight (g)	Std Dev	N
DC	Day0	334.50	17.28	6
	Final	282.17	16.47	6
HECHD	Day0	316.50	18.50	6
	Final	271.83	11.20	6
HECLD	Day0	290.17	21.76	6
	Final	256.67	7.09	6
NC	Day0	287.17	20.31	6
	Final	289.67	20.95	6
STD	Day0	296.67	6.74	6
	Final	258.33	10.93	6
STDHECHD	Day0	322.67	14.68	6
	Final	301.33	17.37	6
STDHECLD	Day0	298.33	21.13	6
	Final	267.83	15.54	6

Table 2: Change from Baseline (Final Visit)

Treatment Group	Mean Change (g)	Std Dev	N
DC	-52.3333	6.8313	6
HECHD	-44.6667	7.7115	6
HECLD	-33.5000	14.9499	6
NC	2.5000	0.8367	6
STD	-38.3333	12.4043	6
STDHECHD	-21.3333	6.3456	6
STDHECLD	-30.5000	7.2595	6





ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
TRTGRP	7	DC HECHD HECLD STD STDHECHD STDHECLD NC

Number of Observations Read	42
Number of Observations Used	42

ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The GLM Procedure

Dependent Variable: CHG

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	12398.24480	1771.17783	30.21	<.0001
Error	34	1993.58853	58.63496		
Corrected Total	41	14391.83333			

R-Square	Coeff Var	Root MSE	CHG Mean
0.861478	-24.56903	7.657347	-31.16667

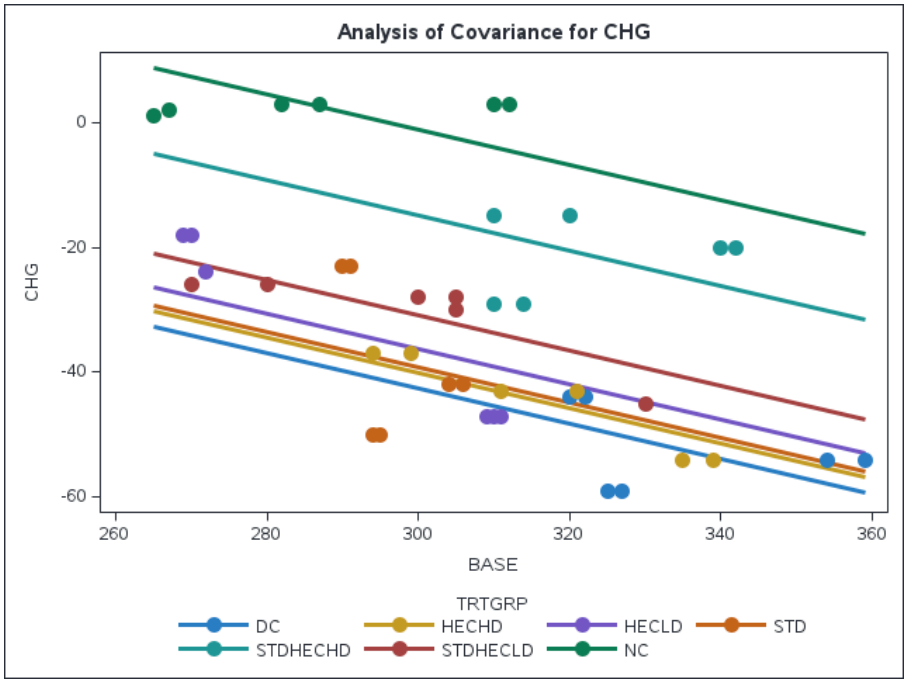
Source	DF	Type I SS	Mean Square	F Value	Pr > F
BASE	1	4247.836380	4247.836380	72.45	<.0001
TRTGRP	6	8150.408424	1358.401404	23.17	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
BASE	1	892.244804	892.244804	15.22	0.0004
TRTGRP	6	8150.408424	1358.401404	23.17	<.0001

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	83.65169958	B	21.03694677	3.98	0.0003	40.89948002	126.40391915
BASE	-0.28259443		0.07244358	-3.90	0.0004	-0.42981749	-0.13537137
TRTGRP DC	-41.45719713	B	5.59490830	-7.41	<.0001	-52.82741880	-30.08697546
TRTGRP HECHD	-38.87723014	B	4.90516664	-7.93	<.0001	-48.84572812	-28.90873217
TRTGRP HECLD	-35.15221672	B	4.42630978	-7.94	<.0001	-44.14756046	-26.15687298

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
TRTGRP STD	-38.14868628	B	4.47421770	-8.53	<.0001	-47.24139064	-29.05598192
TRTGRP STDHECHD	-13.80123118	B	5.11457408	-2.70	0.0108	-24.19529628	-3.40716608
TRTGRP STDHECLD	-29.84436223	B	4.49437326	-6.64	<.0001	-38.97802761	-20.71069686
TRTGRP NC	0.00000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.



ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey-Kramer

TRTGRP	CHG LSMEAN	LSMEAN Number
DC	-44.4408747	1
HECHD	-41.8609077	2
HECLD	-38.1358943	3
STD	-41.1323638	4
STDHECHD	-16.7849087	5
STDHECLD	-32.8280398	6
NC	-2.9836776	7

Least Squares Means for effect TRTGRP
Pr > |t| for H0: LSMean(i)=LSMean(j)

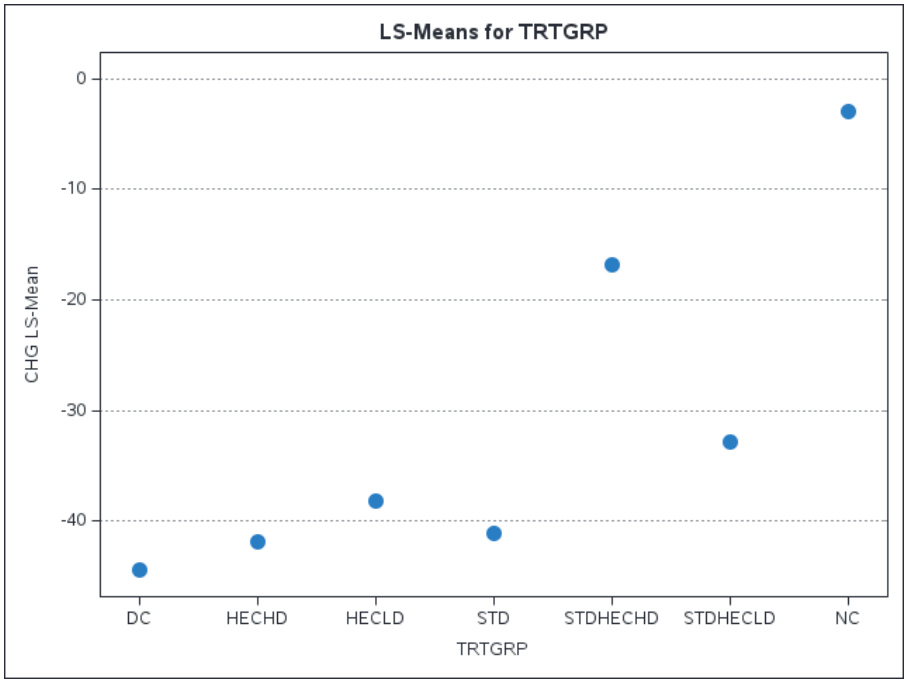
Dependent Variable: CHG

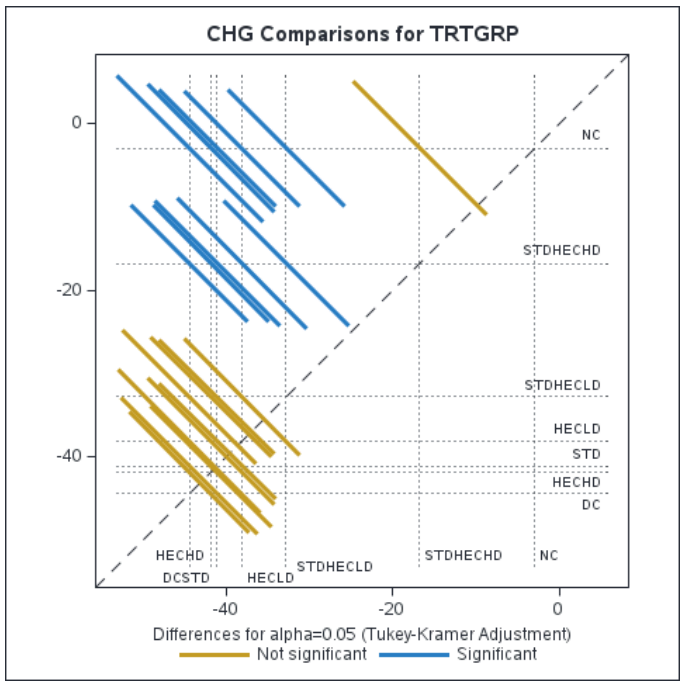
i/j	1	2	3	4	5	6	7
1		0.9975	0.9062	0.9950	<.0001	0.2923	<.0001
2	0.9975		0.9860	1.0000	<.0001	0.4582	<.0001
3	0.9062	0.9860		0.9932	0.0026	0.8931	<.0001
4	0.9950	1.0000	0.9932		0.0003	0.5080	<.0001
5	<.0001	<.0001	0.0026	0.0003		0.0281	0.1296
6	0.2923	0.4582	0.8931	0.5080	0.0281		<.0001
7	<.0001	<.0001	<.0001	<.0001	0.1296	<.0001	

TRTGRP	CHG LSMEAN	95% Confidence Limits	
DC	-44.440875	-52.008364	-36.873386
HECHD	-41.860908	-48.379894	-35.341922
HECLD	-38.135894	-44.932479	-31.339310
STD	-41.132364	-47.650565	-34.614163

TRTGRP	CHG LSMEAN	95% Confidence Limits	
STDHECHD	-16.784909	-23.565434	-10.004383
STDHECLD	-32.828040	-39.295771	-26.360309
NC	-2.983678	-9.949454	3.982099

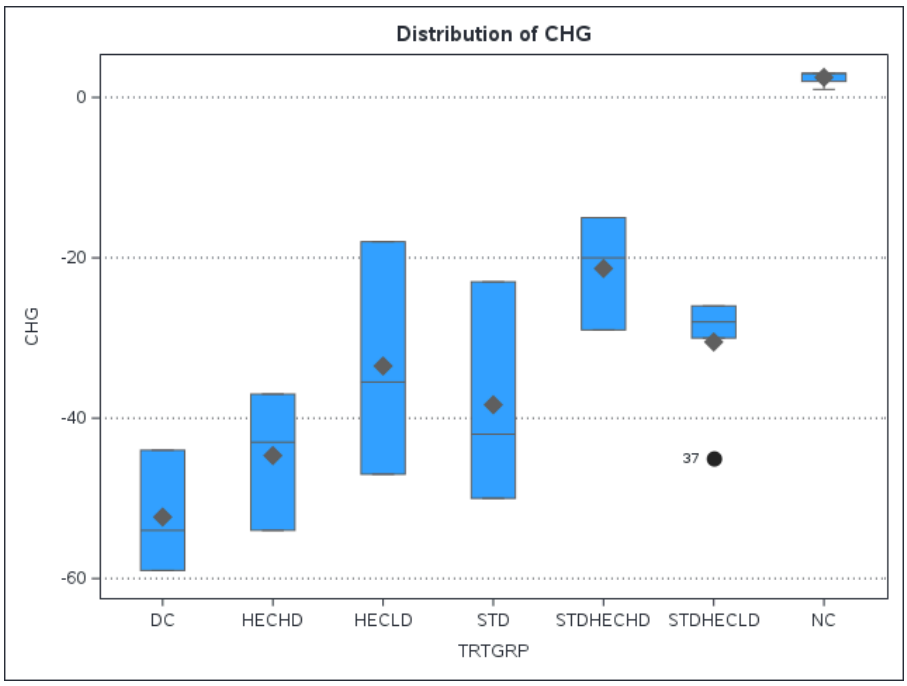
Least Squares Means for Effect TRTGRP				
i	j	Difference Between Means	Simultaneous 95% Confidence Limits for LSMean(i)-LSMean(j)	
1	2	-2.579967	-17.013119	11.853185
1	3	-6.304980	-23.415864	10.805903
1	4	-3.308511	-19.596517	12.979496
1	5	-27.655966	-41.757347	-13.554585
1	6	-11.612835	-27.704839	4.479169
1	7	-41.457197	-58.976714	-23.937681
2	3	-3.725013	-18.802380	11.352353
2	4	-0.728544	-15.284818	13.827730
2	5	-25.075999	-38.990026	-11.161972
2	6	-9.032868	-23.476762	5.411026
2	7	-38.877230	-54.236936	-23.517524
3	4	2.996470	-10.925363	16.918302
3	5	-21.350986	-37.035260	-5.666711
3	6	-5.307854	-19.274791	8.659082
3	7	-35.152217	-49.012463	-21.291970
4	5	-24.347455	-39.395024	-9.299887
4	6	-8.304324	-22.153015	5.544367
4	7	-38.148686	-52.158948	-24.138424
5	6	16.043131	1.139691	30.946571
5	7	-13.801231	-29.816662	2.214199
6	7	-29.844362	-43.917738	-15.770987





ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The GLM Procedure



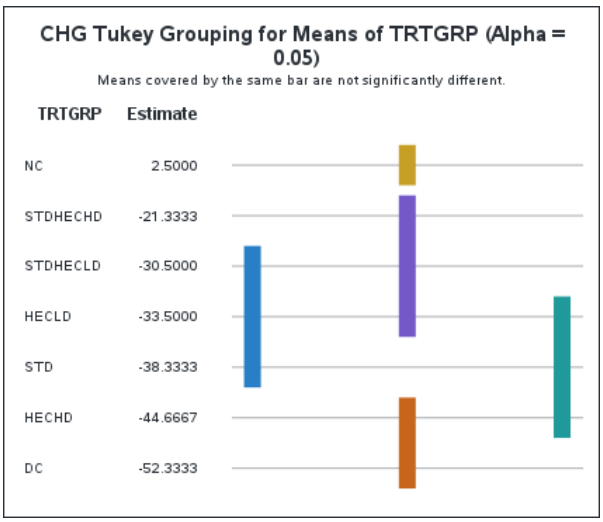
ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The GLM Procedure

Tukey's Studentized Range (HSD) Test for CHG

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

Alpha	0.05
Error Degrees of Freedom	34
Error Mean Square	58.63496
Critical Value of Studentized Range	4.42837
Minimum Significant Difference	13.844



ANCOVA: Change from Baseline by Treatment Group (Adjusted for Baseline Body Weight, NC as Reference)

The MEANS Procedure

Analysis Variable : CHG						
TRTGRP	**N Obs**	**N**	**Mean**	**Std Dev**	**Minimum**	**Maximum**
DC	6	6	-52.3333333	6.8313005	-59.0000000	-44.0000000
HECHD	6	6	-44.6666667	7.7114633	-54.0000000	-37.0000000
HECLD	6	6	-33.5000000	14.9499164	-47.0000000	-18.0000000
NC	6	6	2.5000000	0.8366600	1.0000000	3.0000000
STD	6	6	-38.3333333	12.4043003	-50.0000000	-23.0000000
STDHECHD	6	6	-21.3333333	6.3456022	-29.0000000	-15.0000000
STDHECLD	6	6	-30.5000000	7.2594766	-45.0000000	-26.0000000

Data Interpretation: Body Weight Change by Group

Group	Interpretation
DC Max	HECHD Second highest loss -44.67g - High dose effect
STD Thi	STDHECLD Moderate loss -30.50g - Combined low dose
HECLD Mod	STDHECHD Minimal loss -21.33g - Best combined treatment