

```

%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

/* Standard - leave this */
data _null_;
    tmp="%TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106324;
%put NOTE: Client Protocol ID   : ZRHR-REXC-03-EU;
%put NOTE: Program Name        : tl_anlcyp.sas;
%put NOTE: Purpose              : Analysis of CYP activity - FAS;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADBX;
%put NOTE: Output               : L_15_04_04_50(CYP) T_15_02_04_50(CYP)
L_15_04_04_44(QSU) T_15_02_04_44(QSU);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_ahall;
%put NOTE: Creation Date        : 2014-06-11;
%put NOTE: SAS Version          : 9.3;
%put NOTE: ;
%put NOTE: == Latest Run
=====;
%put NOTE: Run by                : &sysuserid;
%put NOTE: Date/Time             :
%sysfunc(putn(%sysfunc(date()),e8601da.))T%sysfunc(putn(%sysfunc(time()),
e86011z.));
%put NOTE: ;
%put NOTE: == Modification History
=====;
%put NOTE: Date      Initials   No. Reason;
%put NOTE: 23JUN2014  APH        1) Add baseline footnote;
%put NOTE: 01Aug2014  AMH        2) Add where clause to data;
%put NOTE: 01Aug2014  AMH        3) Add additional appendix;
%put NOTE: 01Aug2014  AMH        4) center output;
%put NOTE: 11Sep2014  APH        5) Present LSMean (SE) in table;
%put NOTE:           :           6) Amend baseline footnote;
%put NOTE: 11Sep2014  APH        5) Present LSMean (SE) in table;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing=' '
NOQUOTELNMAX/*turn off warnings about quoted strings too long*/;
ods _all_ close;
ods listing;

*=====;

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* START OF PROGRAM CODE
*=====;

*****;
* read in data ;
*****;
*****;
/* Calculate totals for products */

%macro
table(paramcd,paramcd2,where,title,pop,popfl,tab,tabout,var,REFERENCE);

/*formats macro and appendix output macros*/
%include
"/cvn/projects/prj/development/000000106324/dev/adhoc/TMPLTMIX.sas";

/* Standard - leave this */
data _null_;
    tmp("&TFL_Part";
        if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
        call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

data adsl;
    set adam.adsl(where=(&popfl='Y'));
    if index(trt01a,'THS 2.2') then colord=1;
    output;
    if index(trt01a,'CC') then colord=2;
    output;
    if index(trt01a,'SA') then colord=3;
    output;
run;

proc sort data=adsl nodupkey out=adsl1;
    by colord subjid;
run;

proc freq data=adsl1(where=(not missing(colord))) noprint;
    table colord/ out =totals2(drop=percent rename=(count=total));
run;

data _null_;
    set totals2;
    call symput('tot'||strip(put(colord,best.)),strip(put(total,best.)));
run;

proc sort data=adam.adbx(where=(anl02fl='Y' and &popfl ='Y' and paramcd
in (&paramcd) &where))
    out=adbxin;
    by SUBJID;
run;

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data adbx1 missing;
  set adbxin;
  statval=chg;
  type=2;
  typelab='Change from baseline';
  output;
  type=1;
  statval=aval;
  typelab='Absolute';
  output;
run;

%fmt(datain=adbx1, start=trtan, label=trta, name=trt);
%fmt(datain=adbx1, start=type, label=typelab, name=typ);

data adbx;
  set adbx1;
  format trtan trt. type typ. ;
/*   if trta not in ('THS 2.2' 'SA') then delete;*/
run;

title1 j=1 "PAGESPLIT"; /*do not change*/
title2 j=1 'Proc Mixed Procedure';
TITLE3 J=L "The where clause used on the dataset adam.adbx: &popfl.='Y'
and anl02fl='Y'";      /* 2) AMH 01Aug2014 */
%let tflno=L_15_04&tabout(&paramcd2);

%mixout1(fileout=/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno);
options ps=20;

proc sort data=adbx;by paramcd type;run;

options byline;

proc mixed data=adbx method=reml maxiter=200 order=internal;
  by paramcd type;
  class trtan sexc ucpdgr1;
  model statval = base trtan sexc ucpdgr1 / outp=pred;
  lsmeans trtan / pdiff=control('SA') alpha=0.05 cl;
  lsmeans trtan / pdiff=control('CC') alpha=0.05 cl;

  ods output lsmeans=lsmeans;
  ods output diffs=diffs(where=(trtan=1));

run;

/*Residual Plots*/
title4 j=1 'Residual Plots';
options ps=27; /*change this for proc plot*/

proc rank data=pred out=resid normal=vw ;

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by paramcd type;
ranks nscore;
var resid;
run;

proc plot data=resid hpercent=50;
by paramcd type;
plot resid*pred / vref=0;
plot resid*nscore;
run;
quit;

%mixout2(blankn=60, halfblnk=N,title=Listing 15.4.&tab &title - &pop);

ods rtf close;
ods results on;
ods path reset;

/*data counts*/
/*timepoints*/
proc univariate data=adbx noprint;
by paramcd type;
class trtan;
var statval;
output out=num1 n=n1;
run;

/*Manipulate datasets for output all relevent stats on each row*/
/*_____*/
data tabout;
length out $100 stat $100;
set lsmeans(in=a) diffs(in=b) num1(in=c) ;
/*ordering columns of treatmnts*/
colord=trtan;
if _trtan=2 then colord=4;
if _trtan=3 then colord=5;
/* N row*/
if c then do;
ord=1;
stat='n';
out=compress(put(n1,best.));
output;
end;
/*mean (se) row*/
if a or b then do;
ord=2;
stat='LS Mean (SE)'; /* 5) APH 11SEP2014 */
out=compress(put(round(estimate,0.01),8.2));
if colord>3 then out=compress(out)||'
'||compress(put(ceil(1000*stderr)/1000,8.3))||')';
output;

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/*95% CI row*/
    ord=3;
    stat='95% CI';
    out=compress(put(floor(100*lower)/100,8.2))||',
'||compress(put(ceil(100*upper)/100,8.2));
    output;
end;
run;

/*Add labels for all number variables*/
/*_____*/
data tabout1;
    set tabout;
run;

/*transpose for output*/
proc sort data=tabout1 nodupkey;
    by paramcd type ord colord out stat;
run;

proc transpose data=tabout1 out=ttabout(drop=_NAME_) prefix=col;
    by paramcd type ord stat;
    id colord;
    var out;
run;

/* Standard - macro for paging */
%macro outrtf(blankn=60, halfblnk=N, ref=);

%if &halfblnk=N %then %let halfblnk=;
%else %if &halfblnk=Y %then %let halfblnk=\~;

/* Standard - just change the number to match the listing you're working
on. Also change the letters in the*/
/* bracket, eg ccb = current cigarette brands. Make sure to do this at
the top of the code too. */

    %let tflno=T_15_02&tabout(&paramcd2);

/* Standard - leave this */
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));

/* Standard - leave this */
data _null_;
    tmp="&TFL_Part";
    if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
    call symput('TFLpath', compress("&_SASPROGRAMFILE",""));
run;

/*page numbers*/
data paging;
    set ttabout;

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page=1;
%let tpage=1;
run;

/* Standard - leave this */
options number nodate orientation=landscape papersize=&p_pgsz missing='
' NOQUOTELNMAX/*turn off warnings about quoted strings too long*/;
ods escapechar='`';
%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated
in twips (1/20 pt) ;
%let linebot = \brdrb\brdrs\brdrw30;
%let linebot2 = \brdrb\brdrs\brdrw15;

ods path stdlib.tl06324 (read) ;
ods results off;
ods rtf toc_data/* contents*/
file="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno..rtf"
style=tl06324 startpage=yes headery=1440 footery=1440 ;
ods noproctitle;

%do i=1 %to 1;

ODS PROCLABEL = ' ';
title ;
footnote;
%let wd=0;

proc sort data=paging;by paramcd type ord;run;

data comp;
  set paging end=eof;
  by paramcd type ord;
  where page=&i;
  flag=1;
  _firtitl="Table 15.2.&tab &title - &pop";
  _upcas=(length(_firtitl)-
length(compress(_firtitl,'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
  len=&blankn.-length("(Page &i of &tpage)");
  if eof then do;
    call symput('_FSRTITL', trim(left(_firtitl)));
    call symput('_blankn', compress(put(len,best.)));
  end;
  drop _firtitl _upcas len;
run;

ods listing close;

* most set up in template others below;
* title arial 12pt bold with 12pt paragraph space below;
* all headers to be arial 11pt bold;
* data arial 10pt;

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* headers to be central, text values left aligned and numeric centered
around decimal point;
/* Update with your variables as needed */
proc report data = comp headline headskip missing nowd spanrows split =
'#'
%IF &I=1 %THEN %DO; CONTENTS=' ' %END; %ELSE %DO; CONTENTS='' %END;;
    column flag page type
    ord stat col1 col2 col3 col4 col5;

define flag / order noprint;
    define page          / order order = internal noprint;
    define type          / group style={just=left cellwidth=2.5cm}
"Parameter";
    define ord           / order order=internal noprint;
    define stat          / display style={just=left cellwidth=3.5cm}
"Statistic";
    define col1          / display style={just=C/*d*/ cellwidth=2.1cm}
style(header)={just=center} "THS 2.2#(N=&tot1)";
    define col2          / display style={just=C/*d*/ cellwidth=2.1cm}
style(header)={just=center} "CC#(N=&tot2)";
    define col3          / display style={just=C/*d*/ cellwidth=2.1cm}
style(header)={just=center} "SA#(N=&tot3)";
    define col4          / display style={just=C/*d*/ cellwidth=2.1cm}
style(header)={just=center} "THS - CC";
    define col5          / display style={just=C/*d*/ cellwidth=2.1cm}
style(header)={just=center} "THS - SA"; /* 4) AMH 01Aug2014 */

break after page / page;

break before flag / page %IF &I=1 %THEN %DO;
    CONTENTS="&_FSRTITL" %END; %ELSE %DO; CONTENTS='' %END;;

compute before page / style={protectspecialchars=off};
    line "&linetop";
endcomp;

compute before _page_ / style={just=left protectspecialchars=off};
    line "\b\fs24\sa24&_FSRTITL." ; * \b = bold, \fs24 is font
size 12pt, \sa24 is space after 12pt;
    line "&linebot";
endcomp;

compute after type;
    line ' ';
endcomp;

compute after _page_ / style={just=left protectspecialchars=off}
pretext="&linetop.";

    line "Note: CC = Conventional cigarettes; SA = Smoking
abstinence; THS = Tobacco Heating System.";
    line "Note: Adjusted least squares (LS) means and confidence
intervals (CIs) from an ANOVA model with baseline value, study arm, sex
and CC consumption reported at screening as fixed effect factors.";

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/*      line "Baseline is defined as the last assessment prior to
06:29 AM on Day 1"; */ /* 1) APH 23JUN2014 */ /* 6) APH 11SEP2014 */
      line "Baseline is defined as the last assessment prior to Day 1
product use for THS 2.2 and CC subjects and prior to 06:29 AM on Day 1
for SA subjects."; /* 6) APH 11SEP2014 */
      line "";
      line "Appendix &ref.";
      line "Path: &TFLpath." &_blankn.*"\~\~" "(Page &i of
&tpage)";
      line "Program Run: &sysdate   &sysuserid   Program Status:
&status";
      endcomp;

run;
%end;
ods rtf close;
ods results on;
ods path reset;

%mend outrtf;

%outrtf(blankn=60, halfblnk=N, ref=&REFERENCE./*15.4.&tab*/); /* 3) AMH
01Aug2014 */

%mend table;

%table(paramcd=%str('CYP1A2'),paramcd2=CYP,where=%str(and
avisitn=105),title=%str(Analysis of CYP1A2 Activity (%%) on Day 5),
pop=FAS,popfl=fasfl,tab=4.50,tabout=_04_50,REFERENCE=15.4.4.50 and
15.3.4.1); /* 3) AMH 01Aug2014 */

%table(paramcd=%str('CYP2A6'),paramcd2=CYP,where=%str(and
avisitn=106),title=%str(Analysis of CYP2A6 Activity (%%) on Day 5),
pop=FAS,popfl=fasfl,tab=4.52,tabout=_04_52,REFERENCE=15.4.4.52 and
15.3.6.11); /* 3) AMH 01Aug2014 */

*=====;
* END OF PROGRAM CODE                               ;
*=====;

```