

/*-----

Covance Study ID : COV-000000106343

Program Name : t_lb_bc_fas.sas

Purpose : Table 15.2.4.27.2(Descriptive Statistics of Blood Chemistry - FAS);

Author : cvn_pshe

Date of Creation : 14MAY2015

Input Data : ADAM.ADSL, ADAM.ADLB,

Output Data :

Macros Called :

Modification History

Modified by :

Modification Date :

Modification Description:

-----*/

proc datasets lib=work kill memtype=data nolist;

run;

%m_printto;

options notes nosource;

```
options notes source source2 nofullstimer validvarname=upcase missing=' ';
```

```
ods _all_ close;
```

```
ods listing;
```

```
*=====;
```

```
* START OF PROGRAM CODE ;
```

```
*=====;
```

```
%let tflno=T_15_02_04_27_02;
```

```
%let TFL_Part=%scan(&_SASPROGRAMFILE,-3,%str(/));
```

```
data _null_;
```

```
    tmp("&TFL_Part";
```

```
        if tmp not in ("dev" "qc") then call symput("TFL_Part", "prod");
```

```
        call symput('TFLpath', compress("&_SASPROGRAMFILE", ""));
```

```
        call  
symput('TFLprg',reverse(scan(strip(reverse(compress("&_SASPROGRAMFILE", ""))),1,"/")));
```

```
run;
```

```
*****,
```

```
* read in data ;
```

```
*****,
```

```
/*Use ADSL to get N values for column headers*/
```

```
data adsl;
```

```
    set adam.adsl(where=(fasfl='Y'));
```

```
run;
```

```
proc sort data=adsl nodupkey out=adsl1;
```

```
  by usubjid trt01an trt01a;
```

```
run;
```

```
proc freq data=adsl1(where=(not missing(trt01an))) noprint;
```

```
  table trt01an*trt01a/ out=tot(drop=percent rename=(count=total));
```

```
run;
```

```
data tot2;
```

```
  set tot;
```

```
  call symput('trt' || strip(put(trt01an,best.)),strip(put(total,best.)));
```

```
run;
```

```
/*Bring in parm raw value data from ADLB*/
```

```
%macro rawval (parmcd=,parm=, num=);
```

```
data adlb;
```

```
  set adam.adlb(where=(anl01fl='Y' and fasfl='Y' and parmcd in ("&parmcd")));
```

```
run;
```

```
data adlb ;
```

```
  set adlb ;
```

```
    if ablfl ='Y' then do; avisit='Baseline'; avisitn=98; end;
```

```
    if avisit='Screening' and ablfl =" then delete;
```

```

else if avisit='Day -2' and ablfl =" then delete;

else if avisit='Day -1' and ablfl =" then delete;

run;

proc sort data=adlb ;

    by trtan trta avisitn avisit;

run;

proc means data=adlb noprint;

    var aval;

    by trtan trta avisitn avisit;

    output out=bpstat n=n1 mean=mean1 std=sd1 median=median1 min=min1 max=max1 q1=q1 q3=q3
    lclm =lci1 uclm=uci1;

run;

data bpstat_&parmcd ;

    length paramcd $ 20;

    set bpstat (rename=(mean1=mean lci1=lclm uci1=uclm)) ;

        paramcd="&parmcd";

    keep  paramcd trta trtan avisit avisitn mean lclm uclm;

run;

proc sort data=bpstat;

    by avisitn avisit trta trtan;

run;

```

```
data adlb_blq;

    set adlb;

    where AVALC ? '<' and paramcd in ("CRP") ;

run;
```

```
proc freq data=adlb_blq noprint;

    table trta*trtan*avisitn*avisit*atptn*atpt / out =blq(drop=percent);

run;
```

```
proc sort data=blq;

    by avisitn avisit trta trtan;

run;
```

```
data bpstat;

    merge bpstat blq;

        by avisitn avisit trta trtan;

        rename count=blq;

run;
```

```
data bpstat1;

    set bpstat;

    attrib meansd minmax n median missc quart aci length=$20.;
```

```
        if trtan=3 and not missing(blq) then blq1=strip(put(blq, 8.)) || ' (' ||
strip(put(blq*100/n1, 8.1)) || ")";

    if trtan=4 and not missing(blq) then blq1=strip(put(blq, 8.)) || ' (' || strip(put(blq*100/n1, 8.1)) || ")";
```

```

        if trtan=5 and not missing(blq) then blq1=strip(put(blq, 8.)) || ' (' ||
strip(put(blq*100/n1, 8.1)) || ")";

```

```

                                *for <missing, n(%)>;

                                if trtan=3 then do;

                                                if &trt3.=n1 then

missc="";

                                                else

missc=strip(put((&trt3.- n1), 8.)) || ' (' || strip(put(((&trt3.-n1)*100)/&trt3., 8.1)) || ")";

                                                end;

                                else if trtan=4 then do;

                                                if &trt4.=n1 then

missc="";

                                                else

missc=strip(put((&trt4.- n1), 8.)) || ' (' || strip(put(((&trt4.-n1)*100)/&trt4., 8.1)) || ")";

                                                end;

                                else if trtan=5 then do;

                                                if &trt5.=n1

then missc="";

                                                else

missc=strip(put((&trt5.-n1), 8.)) || ' (' || strip(put(((&trt5.-n1)*100)/&trt5., 8.1)) || ")";

                                                end;

```

```

        if &num =4 | &num =5 | &num =6 | &num =7 | &num=8 | &num=9 then do;

```

```

        n = left(compress(put(n1,8.)));

```

```

        IF NOT MISSING(MEDIAN1) THEN MEDIAN =
LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.1),10.1)));

```

```

        IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.1),10.1))) || " (" || STRIP(PUT(0.01*CEIL(SD1/0.01),10.2)) || ")";

```

```

IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.)) || ",
" || strip(put(max1, 10.));

IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.1),10.1))) || ', ' || LEFT(COMPRESS(PUT(ROUND(Q3,0.1),10.1))));

IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI = STRIP(PUT(0.1*FLOOR(LCI1/0.1),10.1)) || ',
' || STRIP(PUT(0.1*CEIL(UCI1/0.1),10.1));

end;

else if &num =3 then do;

n = left(compress(put(n1,8.)));

IF NOT MISSING(MEDIAN1) THEN MEDIAN = LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.1),10.1)));

IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.1),10.1))) || " (" || STRIP(PUT(0.01*CEIL(SD1/0.01),10.2)) || ")";

IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.)) || ",
" || strip(put(max1, 10.));

IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.1),10.1))) || ', ' || LEFT(COMPRESS(PUT(ROUND(Q3,0.1),10.1))));

IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI = STRIP(PUT(0.1*FLOOR(LCI1/0.1),10.1)) || ',
' || STRIP(PUT(0.1*CEIL(UCI1/0.1),10.1));

end;

else if &num =1 | &num =2 then do;

n = left(compress(put(n1,8.)));

IF NOT MISSING(MEDIAN1) THEN MEDIAN = LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.001),10.3)));

IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.001),10.3))) || "
(" || STRIP(PUT(0.0001*CEIL(SD1/0.0001),10.4)) || ")";

IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.2)) || ",
" || strip(put(max1, 10.2));

IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.001),10.3))) || ', ' ||
LEFT(COMPRESS(PUT(ROUND(Q3,0.001),10.3))));

```

```
IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI =  
STRIP(PUT(0.001*FLOOR(LCI1/0.001),10.3)) || ' ' || STRIP(PUT(0.001*CEIL(UCI1/0.001),10.3));
```

```
end;
```

```
drop n1 mean1 sd1 median1 min1 max1 q1 q3 lci1 uci1 _type_ _freq_ blq;
```

```
run;
```

```
proc sort data=bpstat1;
```

```
by trtan trta avisitn avisit;
```

```
run;
```

```
proc transpose data=bpstat1 out=t_bpstat1;
```

```
by trtan trta avisitn avisit;
```

```
var n missc meansd minmax median quart aci blq1;
```

```
run;
```

```
data sa ths mcc;
```

```
length stat rawval $50;
```

```
set t_bpstat1 (drop=trtan rename=(_name_=stat col1=rawval)) ;
```

```
if trta='SA' then output sa;
```

```
else if trta='THSm2.2' then output ths;
```

```
else if trta='mCC' then output mcc;
```

```
run;
```

```
proc sort data=sa (rename=(rawval=saval)) ;
```

```
by avisitn avisit stat;
```

```
run;
```



```
proc sort data=ths (rename=(rawval=thsvall));
```

```
  by avisitn avisit stat;
```

```
run;
```

```
proc sort data=mcc (rename=(rawval=mccval));
```

```
  by avisitn avisit stat;
```

```
run;
```

```
data stat_&parm;
```

```
  merge sa (drop=trta ) ths (drop=trta) mcc;
```

```
    by avisitn avisit stat;
```

```
    if stat='N' then do; stat='n'; sort=1; end;
```

```
    else if stat='BLQ1' then do; stat='BLOQ, n (%)'; sort=2; end;
```

```
    else if stat='MISSC'      then do; stat='Missing, n(%)'; sort=1.2; end;
```

```
  else if stat='MEANS'D then do; stat='Mean (SD)'; sort=2.2; end;
```

```
    else if stat='ACI' then do; stat='95% CI'; sort=3; end;
```

```
    else if stat='MEDIAN' then do; stat='Median'; sort=4; end;
```

```
    else if stat='QUART' then do; stat='Q25, Q75'; sort=5; end;
```

```
  else if stat='MINMAX' then do; stat='Min, Max'; sort=6; end;
```

```
    order=&num;
```

```
  if &num =1 | &num =2 | &num =3 then do;
```

```
    if stat='Mean (SD)' then delete;
```

```
    else if stat='95% CI' then delete;
```

```
  end;
```

```
run;
```

```
%mend rawval;
```

```
%rawval (parmcd=CRP,parm=crp, num=1);
```

```
%rawval (parmcd=HOMOCY,parm=homocys, num=2);
```

```
%rawval (parmcd=GLUC,parm=glucose, num=3);
```

```
%rawval (parmcd=LDL,parm=ldl, num=4);
```

```
%rawval (parmcd=HDL,parm=hdl, num=5);
```

```
%rawval (parmcd=TRIG,parm=trg, num=6);
```

```
%rawval (parmcd=CHOL,parm=tc, num=7);
```

```
%rawval (parmcd=APOA1,parm=aa1, num=8);
```

```
%rawval (parmcd=APOB,parm=ab, num=9);
```

```
/*%rawval (parmcd=HBA1C,parm=hba1c, num=8);*/
```

```
/*Bring in parm raw value data to log scale from ADLB*/
```

```
%macro rawval_l (parmcd=,parm=, num=);
```

```
data adlb_l;
```

```
    set adam.adlb(where=(anl01fl='Y' and fasfl='Y' and paramcd in ("&parmcd")));
```

```
    if nmiss(aval)=0 then aval=log(aval);
```

```
run;
```

```
data adlb_l ;
```

```

set adlb_l ;

        if ablfl ='Y' then do; avisit='Baseline'; avisitn=98; end;

        if avisit='Screening' and ablfl =" then delete;

        else if avisit='Day -2' and ablfl =" then delete;

        else if avisit='Day -1' and ablfl =" then delete;

run;


proc sort  data=adlb_l ;

    by trtan trta avisitn avisit;

run;


proc means data=adlb_l noprint;

    var aval;

    by trtan trta avisitn avisit;

    output out=bpstat_l mean=mean1 std=sd1 lclm =lci1 uclm=uci1 nmiss=miss;

run;


data bpstat_1_&parmcd ;

    length paramcd $ 20;

    set bpstat_l;

        paramcd="&parmcd";

    mean=exp(mean1);

    lclm=exp(lci1);

    uclm=exp(uci1);

    keep  paramcd trta trtan avisit avisitn mean lclm uclm;

```

```
run;
```

```
data bpstat_l;
```

```
set bpstat_l;
```

```
length gmean gcv $30 glci guci 8;
```

```
gmean1=exp(mean1);
```

```
if miss=0 and &num =3 then do;
```

```
gmean=left(compress(put(gmean1,10.1)));
```

```
if not missing(sd1) then gcv=strip(put(0.01*ceil((sqrt(exp(sd1*sd1)-1)*100)/0.01),10.2));
```

```
if not missing(lci1) then glci=exp(lci1);
```

```
if not missing(uci1) then guci=exp(uci1);
```

```
end;
```

```
if miss=0 and (&num =1 |&num =2) then do;
```

```
gmean=left(compress(put(gmean1,10.3)));
```

```
if not missing(sd1) then gcv=strip(put(0.0001*ceil((sqrt(exp(sd1*sd1)-1)*100)/0.0001),10.4));
```

```
if not missing(lci1) then glci=exp(lci1);
```

```
if not missing(uci1) then guci=exp(uci1);
```

```
end;
```

```
run;
```

```
data bpstat1_l;
```

```
set bpstat_l;
```

```
attrib meansd aci length=$20.;
```

```
if miss=0 and &num =3 then do;
```

```
if not missing(gcv) then meansd=left(trim(gmean)) || ' (' || left(trim(gcv)) || ')';
```

```

        else gmeancv=left(trim(gmean));

        if not missing(glci) and not missing(guci) then aci = strip(strip(put(0.1*floor(glci/0.1),10.1)) || ' ',
' || strip(put(0.1*ceil(guci/0.1),10.1)));

end;

        if miss=0 and (&num =1 |&num =2) then do;

        if not missing(gcv) then meansd=left(trim(gmean)) || ' (' || left(trim(gcv))||')';

        else gmeancv=left(trim(gmean));

        if not missing(glci) and not missing(guci) then aci = strip(strip(put(0.001*floor(glci/0.001),10.3))
|| ' , ' || strip(put(0.001*ceil(guci/0.001),10.3)));

end;

drop mean1 sd1 lci1 uci1 _type_ _freq_;

run;

```

```

proc sort data=bpstat1_l;

    by trtan trta avisitn avisit;

run;

```

```

proc transpose data=bpstat1_l out=t_bpstat1_l;

    by trtan trta avisitn avisit;

        var meansd aci;

run;

```

```

data sa ths mcc;

    length stat rawval $50;

    set t_bpstat1_l (drop=trtan rename=(_name_=stat col1=rawval)) ;

        if trta='SA' then output sa;

```

```

        else if trta='THSm2.2' then output ths;

        else if trta='mCC' then output mcc;

run;

proc sort data=sa (rename=(rawval=saval)) ;

    by avisitn avisit stat;

run;

proc sort data=ths (rename=(rawval=thsvall));

    by avisitn avisit stat;

run;

proc sort data=mcc (rename=(rawval=mccval));

    by avisitn avisit stat;

run;

data stat_&parm;

    merge sa (drop=trta ) ths (drop=trta) mcc;

        by avisitn avisit stat;

    if stat='MEANSd' then do; stat='Geometric Mean (CV%)'; sort=2.2; end;

        else if stat='ACI' then do; stat='95% CI of Geometric Mean'; sort=3; end;

        order=&num;

run;

%mend rawval_l;

%rawval_l (parmcd=CRP,parm=crp_l, num=1);

```

```
%rawval_l (parmcd=HOMOCY,parm=homocys_l, num=2);
```

```
%rawval_l (parmcd=GLUC,parm=glucose_l, num=3);
```

```
data stat_lb ;;
```

```
    set stat_crp stat_crp_l stat_homocys stat_homocys_l stat_glucose stat_glucose_l stat_ldl stat_hdl  
stat_tg stat_tc stat_aa1 stat_ab;
```

```
run;
```

```
proc sort data=stat_lb;
```

```
    by order avisitn avisit sort;
```

```
run;
```

```
data stat_lb_bc_fas ;
```

```
    length param $50;
```

```
    set bpstat_trig (where=(avisitn in (98 130 160 191)))
```

```
        bpstat_chol (where=(avisitn in (98 130 160 191)))
```

```
            bpstat_hdl (where=(avisitn in (98 130 160 190)))
```

```
            bpstat_ldl (where=(avisitn in (98 130 160 190)))
```

```
            bpstat_apoa1 (where=(avisitn in (98 130 160 190)))
```

```
            bpstat_apob (where=(avisitn in (98 130 160 190)))
```

```
            bpstat_1_gluc (where=(avisitn in (98 130 160 191)))
```

```
            bpstat_1_crp (where=(avisitn in (98 130 160 190)))
```

```
            bpstat_1_homocy (where=(avisitn in (98 130 160  
190)));
```

```

/*                                bpstat_hba1c (where=(avisitn in (98 190)));*/

                                if paramcd='TRIG' then do; paramn = 2012; param='Triglycerides (mg/dL)';
logf=0;end;

                                else if paramcd='CHOL' then do; paramn = 2013; param='Cholesterol (mg/dL)';
logf=0;end;

                                else if paramcd='HDL' then do; paramn = 2022; param='HDL Cholesterol
(mg/dL)'; logf=0;end;

                                else if paramcd='LDL' then do; paramn = 2023; param='LDL Cholesterol (mg/dL)';
logf=0;end;

                                else if paramcd='APOA1' then do; paramn = 2027; param='Apo A1 (mg/dL)';
logf=0;end;

                                else if paramcd='APOB' then do; paramn = 2028; param='Apo B (mg/dL)';
logf=0;end;

/*                                else if paramcd='HBA1C' then do; paramn = 2021; param='Hemoglobin A1C (%)';
logf=0;end;*/

                                else if paramcd='GLUC' then do; paramn = 2008; param='Glucose (mg/dL)';
logf=1;end;

                                else if paramcd='CRP' then do; paramn = 2020; param='C Reactive Protein
(mg/L)'; logf=1;end;

                                else if paramcd='HOMOCY' then do; paramn = 2024; param='Homocysteine
(umol/L)'; logf=1;end;

run;

%m_chglength(inds=stat_lb_bc_fas,varlist=param paramcd, lenlist= $60 $8);

```



```

proc sort data=stat_lb_bc_fas out=tflds.T_15_02_04_27_02_f;

    by paramn avisitn ;

run;

/*Bring in parm percent change data from ADLB*/

%macro pchgval (parmcd=,parm=, num=);

data adlb;

    set adam.adlb(where=(anl01fl='Y' and fasfl='Y' and parmcd in ("&parmcd")));

run;

data adlb ;

    set adlb ;

        if ablfl ='Y' then do; avisit='Baseline'; avisitn=98; end;

        if avisit='Screening' and ablfl =" then delete;

        else if avisit='Day -2' and ablfl =" then delete;

        else if avisit='Day -1' and ablfl =" then delete;

run;

proc sort  data=adlb ;

    by trtan trta avisitn avisit;

run;

proc means data=adlb noprint;

    var pchg;

```

```

by trtan trta avisitn avisit;

output out=pbpstat n=n1 mean=mean1 std=sd1 median=median1 min=min1 max=max1 q1=q1 q3=q3
lclm =lci1 uclm=uci1;

run;

data pbpstat1;

set pbpstat;

attrib meansd minmax n median missc quart length=$20.;

                                *for <missing, n(%)>;

                                if trtan=3 then do;

                                    if &trt3.=n1 then

missc="";

                                else

missc=strip(put((&trt3.- n1), 8.)) || ' (' || strip(put(((&trt3.-n1)*100)/&trt3., 8.1)) || ")";

                                end;

                                else if trtan=4 then do;

                                    if &trt4.=n1 then

missc="";

                                else

missc=strip(put((&trt4.- n1), 8.)) || ' (' || strip(put(((&trt4.-n1)*100)/&trt4., 8.1)) || ")";

                                end;

                                else if trtan=5 then do;

                                    if &trt5.=n1

then missc="";

                                else

missc=strip(put((&trt5.-n1), 8.)) || ' (' || strip(put(((&trt5.-n1)*100)/&trt5., 8.1)) || ")";

                                end;

```

```

if &num =4 | &num =5 |&num =6 | &num =7 | &num=8 | &num=9 then do;

    n = left(compress(put(n1,8.)));

    IF NOT MISSING(MEDIAN1) THEN MEDIAN =
LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.1),10.1)));

    IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.1),10.1))) || " (" || STRIP(PUT(0.01*CEIL(SD1/0.01),10.2)) || ")";

    IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.)) || ",
" || strip(put(max1, 10.));

    IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.1),10.1))) || ', ' || LEFT(COMPRESS(PUT(ROUND(Q3,0.1),10.1)));;

    IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI = STRIP(PUT(0.1*FLOOR(LCI1/0.1),10.1)) || ',
' || STRIP(PUT(0.1*CEIL(UCI1/0.1),10.1));

end;

else if &num =3 then do;

    n = left(compress(put(n1,8.)));

    IF NOT MISSING(MEDIAN1) THEN MEDIAN = LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.1),10.1)));

    IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.1),10.1))) || " (" || STRIP(PUT(0.01*CEIL(SD1/0.01),10.2)) || ")";

    IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.)) || ",
" || strip(put(max1, 10.));

    IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.1),10.1))) || ', ' || LEFT(COMPRESS(PUT(ROUND(Q3,0.1),10.1)));;

    IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI = STRIP(PUT(0.1*FLOOR(LCI1/0.1),10.1)) || ',
' || STRIP(PUT(0.1*CEIL(UCI1/0.1),10.1));

end;

else if &num =1 | &num =2 then do;

    n = left(compress(put(n1,8.)));

    IF NOT MISSING(MEDIAN1) THEN MEDIAN = LEFT(COMPRESS(PUT(ROUND(MEDIAN1,0.001),10.3)));;

```

```

    IF NOT MISSING(MEAN1) AND NOT MISSING(SD1) THEN meansd =
LEFT(COMPRESS(PUT(ROUND(MEAN1,0.001),10.3)))||"
("||STRIP(PUT(0.0001*CEIL(SD1/0.0001),10.4))||")";

    IF NOT MISSING(MIN1) AND NOT MISSING(MAX1) THEN minmax = strip(put(min1, 10.2))||",
"||strip(put(max1, 10.2));

    IF NOT MISSING(Q1) AND NOT MISSING(Q3) THEN QUART =
LEFT(COMPRESS(PUT(ROUND(Q1,0.001),10.3))) || ', ' ||
LEFT(COMPRESS(PUT(ROUND(Q3,0.001),10.3))));

    IF NOT MISSING(LCI1) AND NOT MISSING(UCI1) THEN ACI =
STRIP(PUT(0.001*FLOOR(LCI1/0.001),10.3)) || ', ' || STRIP(PUT(0.001*CEIL(UCI1/0.001),10.3));

    end;

    drop n1 mean1 sd1 median1 min1 max1 q1 q3 lci1 uci1 _type_ _freq_;

run;

proc sort data=pbpstat1;

    by trtan trta avisitn avisit;

run;

proc transpose data=pbpstat1 out=t_pbpstat1;

    by trtan trta avisitn avisit;

        var n missc meansd minmax median quart aci;

run;

data psa pths pmcc;

    length stat pchg $50;

    set t_pbpstat1 (drop=trtan rename=(_name_=stat col1=pchg)) ;

        if trta='SA' then output psa;

        else if trta='THSm2.2' then output pths;

```

```

        else if trta='mCC' then output pmcc;

run;

proc sort data=psa (rename=(pchg=sapchg));

    by avisitn avisit stat;

run;

proc sort data=pths (rename=(pchg=thspchg));

    by avisitn avisit stat;

run;

proc sort data=pmcc (rename=(pchg=mccpchg));

    by avisitn avisit stat;

run;

data stat_&parm;

    merge psa (drop=trta) pths (drop=trta) pmcc;

        by avisitn avisit stat;

        if stat='N' then do; stat='n'; sort=1; end;

        else if stat='MISSC'      then do; stat='Missing, n(%)'; sort=1.2; end;

    else if stat='MEANSD' then do; stat='Mean (SD)'; sort=2.2; end;

        else if stat='ACI' then do; stat='95% CI'; sort=3; end;

        else if stat='MEDIAN' then do; stat='Median'; sort=4; end;

        else if stat='QUART' then do; stat='Q25, Q75'; sort=5; end;

        else if stat='MINMAX' then do; stat='Min, Max'; sort=6; end;

    if &num =1 | &num =2 | &num =3 then do;

```

```

if stat='Mean (SD)' then do; stat='Geometric Mean (CV%)'; sapchg=""; thspchg=""; mcpchg=""; end;

else if stat='95% CI' then do; stat='95% CI of Geometric Mean'; sapchg=""; thspchg=""; mcpchg=""; end;

end;

order=&num;

run;

%mend;

%pchgval (parmcd=CRP,parm=crpch, num=1);
%pchgval (parmcd=HOMOCY,parm=homocyschg, num=2);
%pchgval (parmcd=GLUC,parm=glucosechg, num=3);
%pchgval (parmcd=LDL,parm=ldlchg, num=4);
%pchgval (parmcd=HDL,parm=hdlchg, num=5);
%pchgval (parmcd=TRIG,parm=trgchg, num=6);
%pchgval (parmcd=CHOL,parm=tcchg, num=7);
%pchgval (parmcd=APOA1,parm=aa1chg, num=8);
%pchgval (parmcd=APOB,parm=abchg, num=9);

data stat_lbpchg ;

set stat_crpch stat_homocyschg stat_glucosechg stat_ldlchg stat_hdlchg stat_trgchg stat_tcchg
stat_aa1chg stat_abchg;

run;

proc sort data=stat_lbpchg ;

by order avisitn avisit sort stat;

```

```
run;
```

```
proc sort data=stat_lb ;
```

```
  by order avisitn avisit sort stat;
```

```
run;
```

```
data stat;
```

```
  merge stat_lb (drop=trta) stat_lbpchg;
```

```
    by order avisitn avisit sort stat;
```

```
run;
```

```
proc sort data=stat;
```

```
  by order avisitn sort;
```

```
run;
```

```
data stat;
```

```
  set stat;
```

```
    length param $50;
```

```
    if sapchg='0' then sapchg="";
```

```
    if thspchg='0' then thspchg="";
```

```
    if mccpchg='0' then mccpchg="";
```

```
    if avisit='Day 0' then avisit='Baseline';
```

```

        if order=1 then param='C Reactive Protein (mg/L)';
else if order=2 then param='Homocysteine (umol/L)';

        else if order=3 then param='Glucose (mg/dL)';

        else if order=4 then param='LDL Cholesterol (mg/dL)';

        else if order=5 then param='HDL Cholesterol (mg/dL)';

        else if order=6 then param='Triglycerides (mg/dL)';

        else if order=7 then param='Cholesterol (mg/dL)';

        else if order=8 then param='Apo A1 (mg/dL)';

        else if order=9 then param='Apo B (mg/dL)';

if sort=. then delete;

if stat='BLOQ, n (%)' and saval="" and mccval="" and thsval="" then delete;

if stat='Missing, n(%)' and avisit='Baseline' then do;

    if saval="" then saval='0';

        if mccval="" then mccval='0';

            if thsval="" then thsval='0';

                sapchg="";

                mccpchg="";

                thspchg="";

end;

else if stat='Missing, n(%)' and avisit ^='Baseline' then do;

    if saval="" then saval='0';

        if mccval="" then mccval='0';

            if thsval="" then thsval='0';

```



```

        if sapchg="" then sapchg='0';

        if mccpchg="" then mccpchg='0';

        if thspchg="" then thspchg='0';

    end;

    if stat='BLOQ, n (%)' then do;

        if r3="" then r3='0';

        if r2="" then r2='0';

        if r1="" then r1='0';

    end;


    if avisit='Baseline' and saval='0' and mccval='0' and thsval='0' then delete;

    if avisit^='Baseline' and saval='0' and mccval='0' and thsval='0' and sapchg='0'
and mccpchg='0' and thspchg='0' then delete;


run;


* output dataset*;

proc sql noprint;

    create table tflds.&tflno as

    select param as parameter, avisit as timepoint, stat, thsval, thspchg, mccval, mccpchg, saval,
sapchg

    from stat

    order by param, order, avisitn, sort;;

quit;


data paging;

```

```

set stat;

by order avisitn sort;

if first.avisitn then ln=1; /*Amend to look presentable, and avoid page overflows*/

else ln+1;

if ln=1 then page+1;

call symput("page",compress(put(page,best.)));

run;


data paging;

set paging;

by page;

if first.page then param=param;

else param="";

run;


options number nodate orientation=landscape papersize=Letter /*papersize=&p_pgsize*/ missing=' ';

ods escapechar='$';

%let linetop = \brdrt\brdrs\brdrw30; * needs to be 1.5pt so calculated in twips (1/20 pt) ;

%let linebot = \brdrb\brdrs\brdrw30;


%macro outrtf(blankn=, halfblnk=);


%if &halfblnk=N %then %let halfblnk=;

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

```

```
ods path stdlib.t106343 (read) ;
```

```
ods results off;
```

```
ods rtf toc_data file="/cvn/projects/prj/data/000000106343/TFL/&TFL_Part./Tables/&tflno..rtf"  
style=t106343 startpage=yes headery=1440 footery=1440 ;
```

```
ods noproctitle;
```

```
%do i=1 %to &page;
```

```
title ;
```

```
footnote;
```

```
ods proclabel = ' ';
```

```
data comp;
```

```
    set paging end=eof;
```

```
        where page=&i;
```

```
/* Amend title as needed */
```

```
    _firtitl="Table 15.2.4.27.2 Descriptive Statistics of hs-CRP (mg/L), homocysteine (umol/L), blood  
glucose (mg/dL),
```

```
    LDL (mg/dL), HDL (mg/dL), TG (mg/dL), TC (mg/dL), Apo A1 (mg/dL), and Apo B (mg/dL) - FAS";
```

```
    _upcas=(length("Path: &TFLpath.")-  
length(compress("Path:&TFLpath.",'ABCDEFGHIJKLMNOPQRSTUVWXYZ')))/2;
```

```
    len=&blankn.-length("(Page &i of &page)");
```

```
    if eof then do;
```

```
        call symput('_FSRTITL', trim(left(_firtitl)));
```

```
        call symput('_blankn', compress(put(len,best.)));
```

```
    end;
```

```

drop _firtitl _upcas len;

run;

ods proclabel = ' ';

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;

* headers to be central, text values left aligned and numeric centered around decimal point;

proc report data = comp headline headskip nowd split = '#' %if &i=1 %then %do; contents=' ' %end;
%else %do; contents="" %end;;

        column order page avisitn param avisit stat

                ("THSm2.2#(N=&trt4)&linebot" thsval thspchg) ("mCC#(N=&trt5)&linebot" mccval
mccpchg) ("SA#(N=&trt3)&linebot" saval sapchg);

        define order      / order order = internal noprint;

define page      / order order = internal noprint;

define avisitn   / order order=internal noprint;


define param      / "Parameter (units)" style={just=left cellwidth=2.5cm} style(header)={just=left} ;

                define avisit      / group "Timepoint" style={just=left cellwidth=2.9cm}
style(header)={just=left} ;

define stat      / display "Statistic" style={just=left cellwidth=3cm} style(header)={just=left} ;

define thsval      / display "Raw value" style={just=c cellwidth=2.4cm} ;

define thspchg      / display "% Change(*)" style={just=c cellwidth=2.2cm} ;

```

```

define mccval    / display "Raw value" style={just=c cellwidth=2.4cm} ;
define mccpchg   / display "% Change(*)" style={just=c cellwidth=2.2cm} ;
define saval     / display "Raw value" style={just=c cellwidth=2.4cm} ;
define sapchg    / display "% Change(*)" style={just=c cellwidth=2.2cm} ;

```

```

break after page / page;

```

```

compute after avisitn;

```

```

    line " ";

```

```

endcomp;

```

```

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

```

```

    line 'Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 =
Tobacco Heating System 2.2 Menthol.';

```

```

    line "Note: 'Missing' percentages are based on the number of subjects indicated in the
column header (N), while 'BLOQ' percentages are based on the number of subjects being summarized
(n).";

```

```
line 'Note: * % change from baseline, where baseline is defined as the last assessment  
prior to first randomized product use in mCC / THS 2.2 Menthol arms or the ';
```

```
line 'last assessment prior to 10 AM on Day 1 in the SA arm.';
```

```
line ' ';
```

```
line "Appendix 15.3.3.2 and 15.3.6.6";
```

```
line "Study ID:ZRHM-REXA-08-US Program:&TFLprg Status: &status" &_blankn.*"\~\~"  
"&sysdate" &_blankn.*"\~\~" "(Page &i of &page)";
```

```
endcomp;
```

```
run;
```

```
%end;
```

```
ods rtf close;
```

```
ods results on;
```

```
ods path sashelp.tmplmst (read);
```

```
%mend ;
```

```
%outrtf(blankn=36, halfblnk=N);
```

```
ods listing close;
```

```
proc printto ; run;
```

```
%m_logchk;
```

```
*=====;
```

```
* END OF PROGRAM CODE ;
```

```
*=====;
```

