

```

%_mprintto;
options notes nosource;
proc datasets lib=work nolist memtype=data kill; quit;
%put NOTE:
=====;
%put NOTE: Covance Study Number : 000000106324;
%put NOTE: Client Protocol ID   : ZRHR-REXC-03-EU;
%put NOTE: Program Name        : f_mceq.sas;
%put NOTE: Purpose              : Figure of MCEQ Subscales FAS;
%put NOTE: ;
%put NOTE: Input Data           : ADAM.ADQSPA;
%put NOTE: Output               : f_15_1_2_37(mceq);
%put NOTE: Macros Called        : _MPRINTTO;
%put NOTE: ;
%put NOTE: Programmed by        : cvn_jhardman;
%put NOTE: Creation Date        : 2014-08-05;
%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: 06Aug2014   JMH       1) Added proc printto;
%put NOTE: 15Sep2014   JMH       2) Added XLS output;
%put NOTE: 16Sep2014   JMH       3) Amended title and footnotes;
%put NOTE: ;
%put NOTE:
=====;
options notes source source2 nofullstimer validvarname=upcase missing='
';
ods _all_ close;
ods listing;

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

/* 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=F_15_01_02_37(mceq);

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

/* Standard - leave this */

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

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/* Example of basic GTL syntax */
ods _all_ close;
%let temp=/cvn/projects/prj/development/000000106324/dev/macro/;

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```

/* Ensure ODS listing, html etc is turned off to prevent */
/* temporary or junk image files being produced */
options notes source source2 nofullstimer validvarname=upcase
nonumber nodate orientation=portrait papersize=&p_pgsz missing=' ';
ods graphics on; /* As we are effectively using ODS graphics we need to
ensure that it is turned on */
ods graphics / height=/*18*/14cm width=16cm noborder; /* Removes border
around the image */
ods path reset;
/* please include styles template */
%include "&temp.figtmpplt.sas";

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```

ods rtf toc_data
file="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part/&tflno..rtf"
style=t106324_g startpage=yes headery=1440 footery=1440 ;

```

```
ods exclude all;
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data qs01;
  set adam.adqspa(where=(anl01fl='Y' and pprotfl='Y' and fasfl='Y'
and index(paramcd,'MCEQ')));
  if ablfl='Y' then do; avisit='Baseline'; avisitn=100; end;
  if avisit ne 'Baseline' and avisitn lt 101 then delete;
run;

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```

data mean;
  set qs01;
  statval=aval;
run;

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proc sort data=mean; by parcat2n parcat2 paramn param trtan trta avisitn
avisit; run;

```

```

proc means data=mean alpha=0.05 noprint;
  output out=mean1 mean=mean std=std1 lclm=lci1 uclm=uci1;
  var statval;
  by parcat2n parcat2 paramn param trtan trta avisitn avisit;
run;

```

```

data mean2;
  set mean1;
  by parcat2n parcat2 paramn param trtan trta avisitn avisit;

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        attrib tpt format = best.
                paramc length=$100.;

        avisit1=left(strip(tranwrd(avisit,'Day ','')));

        if avisit='Baseline' then tpt=0;
        else if avisit='Day 6/Discharge' then tpt=6;
        else tpt=input(avisit1,best.);

        paramc=param;

        keep paramn paramc trtan trta avisitn avisit mean lci1 uci1 tpt ;
run;

/*This will find the highest value to be plotted to make it easier to set
axis limits and intervals*/
proc sort data=mean2 out=max;
        by descending uci1;
run;

        /* 2) start JMH 15Sep2014 */
PROC SQL;
CREATE TABLE MEAN2_X AS
SELECT PARAMC, TRTA, AVISIT, MEAN, LCI1, UCI1
FROM MEAN2;
QUIT;

PROC EXPORT
DATA=MEAN2_X
DBMS=XLSX
OUTFILE="/cvn/projects/prj/data/000000106324/TFL/&TFL_Part./&tflno..xlsx"
REPLACE;
SHEET=Sheet1;
        /* 2) end JMH 15Sep2014 */

proc format;
        value xaxis
                0='Baseline'
                1='1'
                2='2'
                3='3'
                4='4'
                5='5'
                6='6';

run;

title;
footnote;

proc sort data=mean2; by paramn; run;

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```

data paging; /* paging is derived normally as with RTF type TFL */

    set mean2 end=last;
        by paramn;
        if first.paramn then ln=1;
        else ln+1;

        if ln=1 then page+1;

    if last then call symput("maxpage", compress(page));
run;

%macro graph();

%do i=1 %to &maxpage; /* paging can either be done through a do loop or
multiple macro calls */

    data plot;
        set paging;
        where page = &i;
            call symput("param",left(trim(paramc)));
    run;

    proc template;
        define statgraph splot /store = work.templat;
            begingraph /;
/* 3) start JMH 16Sep2014 */
/*          entrytitle halign=left "Figure 15.1.2.37 MCEQ Subscales
Arithmetic Mean and 95% CI - FAS";*/
/*          entrytitle halign=left " " /*;*/
/*          entrytitle halign=left "&param." /*;*/
/*          entrytitle halign=left " " /*;*/
/* 3) end JMH 16Sep2014 */
                layout overlay / border=false
xaxisopts=(linearopts=(tickvaluefitpolicy=rotate
tickvaluesequence=(start=0 end=5 increment=1)) label="Study Day")
yaxisopts=(linearopts=(tickvaluesequence=(start=0 end=6 increment=1)
viewmin=0 viewmax=6) label="Score") cycleattrs=false;
                    seriesplot x=tpt y=mean / index=trtan primary=true
group=trta display=(markers) legendlabel="mean" name="series";
                    scatterplot x=tpt y=mean / index=trtan group=trta
yerrorlower=lci1 yerrorupper=uci1
                        legendlabel="mean" name="scatter" ;
                        discretelegend "series";
                    endlayout;
                /* footnotes work using the same option as the entrytitle
statement */
/* 3) start JMH 16Sep2014 */
/*          entryfootnote halign=left " " /*;*/
/*          entryfootnote halign=left "Note: CC = Conventional
cigarettes; SA = Smoking abstinence; THS = Tobacco Heating System."/*;*/
/*          entryfootnote halign=left " " /*;*/
/*          entryfootnote halign=left
"Appendix 15.2.4.47"; */

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/*          entryfootnote halign=left "Path: &TFLpath."
halign=right "(Page &i of &maxpage)"; */
/*          entryfootnote halign=left "Program Run: &sysdate
&sysuserid   Program Status: &status";*/
/* 3) end JMH 16Sep2014 */
    endgraph;
    end;
run;

ods select all;

/* 3) start JMH 16Sep2014 */
ODS ESCAPECHAR='^';
ODS RTF PREPAGE="^S={outputwidth=100% just=1 font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' Figure 15.1.2.37 MCEQ Subscales Arithmetic
Mean and 95% CI - FAS";
ODS RTF PREPAGE="^S={outputwidth=100% just=1 font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' ";
ODS RTF PREPAGE="^S={outputwidth=100% just=1 font_size=12pt
font_weight=bold background=white foreground=black
font_face=arial}^R/RTF'\QL' &param.";
/* 3) end JMH 16Sep2014 */

proc sgrender data=plot template=plot; /* applies the above
template to the specified data */
    format tpt xaxis.;
run;

/* 3) start JMH 16Sep2014 */
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: CC = Conventional
cigarettes; SA = Smoking abstinence; THS = Tobacco Heating System.";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Note: Baseline is the last
assessment prior to first product use in CC/THS 2.2 arms on Day 1 or last
assessment prior to 06:29 AM in SA arm on Day 1.";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL'";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Appendix 15.2.4.47";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Path: &TFLpath.
(Page &i of &maxpage)";
ODS RTF TEXT="^S={outputwidth=100% just=1 font_size=9pt background=white
foreground=black font_face=arial}^R/RTF'\QL' Program Run: &sysdate
&sysuserid   Program Status: &status";
/* 3) end JMH 16Sep2014 */

%end;
%mend graph;

```

```
%graph;  
PROC PRINTTO; RUN; /* 1) JMH 06Aug2014 */  
ods exclude all;  
ods _all_ close;  
ods graphics / reset;
```