

```
/*=====
=====*
```

```
| Covance Study Number   : 000000106343          |
```

```
| Program Name           : f_lungf_saf.sas        |
```

```
| Purpose                 : Figure 15.1.2.30
|
```

```
| Input Data              : tflds.t_15_02_06_22_f
|
```

```
| Output Data             : F_15_01_02_30         |
```

```
| Macros Called           :                      |
```

```
| Originally Performed by :Jyothsna Reddy         |
```

```
| Date                    : 13JUN2015             |
```

```
|                      |
```

```
|=====
=====|
```

```
| Modification History    |
```

```
|-----|
```

```
| Modified by            :                      |
```

```
| Modification Date      :
|
```

```
| Modification Description :                      |
```

```
+=====
=====*/
```

```
options replace;
```

```
proc datasets lib=work kill memtype=data nolist;
```

```
run;
```

```
%m_printto;
```

```
%let tflno=F_15_01_02_31;
```

```
/* 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 &tflpath;
```

```
options notes /*source source2*/ nofullstimer validvarname=upcase
```

```
nonumber nodate orientation=portrait missing=' ';
```

```
ods graphics on; /* As we are effectively using ODS graphics we need to ensure that it is turned on */
```

```
ods graphics / height=12cm width=16cm noborder; /* Removes border around the image */
```

```
ods path reset;
```

```
/* please include styles template */
```

```
%include "/cvn/projects/prj/development/000000106343/dev/figures/figtmplt.sas";
```

```
ods rtf toc_data file="/cvn/projects/prj/data/000000106343/TFL/dev/Tables/&tflno..rtf"
```

```
style=t106343_g startpage=yes headery=1440 footery=1440 ;
```

```
ods exclude all;
```

```
/******to create dataset*****/
```

```
/******/
```

```
data forest;
```

```
set tflds.t_15_02_04_70_f;
```

```
if trtp="THSm2.2" then trtpN=4 ;
```

```
if trtp="mCC" then trtpN=5;
```

```
if trtp="SA" then trtpN=3;
```

```
if apuper ne 1 and avisitn=10 then delete;
```

```
run;
```

```
proc sort data=forest out=forest1;
```

```
by param;
```

```
run;
```

```
data dforest1(keep= param paramn avisit1 trtpn trtp avisitn avisit mean lclm uclm gmean tpt);
```

```
format gmean 6.2;
```

```
length tpt 3 avisit1 8;
```

```
set forest1 ;
```

```
IF avisitn=10 THEN avisit1=0;
```

```
IF avisitn=100 THEN avisit1=0;
```

```

        IF avisitn=101 THEN avisit1=1;

            IF avisitn=102 THEN avisit1=2;

                IF avisitn=103 THEN avisit1=3;

                    IF avisitn=104 THEN avisit1=4;

                        IF avisitn=106 THEN avisit1=5;

                            IF avisitn=130 THEN avisit1=6;

                                IF avisitn=160 THEN avisit1=7;

                                    IF avisitn=191 THEN avisit1=8;

                                        if not missing(lcil) then lclm = (lcil);

                                            if not missing(ucil) then uclm = (ucil);

                                                tpt=avisit1;

/* if not missing(MEAN ) then mean=(MEAN_ORIGINAL);*/

gmean=mean;IF AVISITN=99 THEN DELETE;

if avisit1 ne . ;

run;

proc sort data=dforest1;

    by param;

run;

/*Use a proc summary to find the maximum value of the Y axis which needs to be presented for the first
plot*/

proc summary data=dforest1;

    by param /*APUPER*/;

    var uclm;

    output out =axis1  max=max1 ;

```

```

run;

proc summary data=dforest1;

  by param /*APUPER*/;

  var lclm;

      output out =axis2  min=min1;

run;


data maxaxis1;

merge axis1 axis2(drop=_type__freq_);

by param ;

      max2=(ceil(max1));

      min2=floor(min1);

      /*Use mod 2 to ensure axis limit is an even number so the increment can be 2*/

      if mod(max2,2)=0 then max2=max2;

      else if mod(max2,2)=1 then max2=max2+1;


      if mod(min2,2)=0 then min2=min2;

      else if mod(min2,2)=1 then min2=min2-1;


      if not missing(min2) then min=put(min2,best.);else min="0";

      if not missing(max2) then max=put(max2,best.);else max="0";

      if not missing(max) then inc=put(ceil(max2-min2),8.);else inc="0";

      keep param max min inc;

run;

```

```
proc sort data=dforest1 out=par(keep= param paramn) nodupkey;
by paramn param;
run;
```

```
data par;
set par;
par=_n_;
p= length(param);
run;
```

```
proc sort;
by param;
run;
```

```
data adbx3;

merge dforest1 maxaxis1 par(drop=paramn);

by param ;

if par=1 then do;min="0";max="30";inc="3";end;
if par=2 then do;min="0";max="2";inc="0.5";end;
if par=3 then do;min="0";max="6";inc="1";end;
if par=4 then do;min="0";max="6";inc="1";end;
if par=5 then do;min="0";max="6";inc="1";end;
if par=6 then do;min="0";max="8";inc="1";end;
if par=7 then do;min="0";max="6";inc="1";end;
if par=8 then do;min="0";max="4";inc="1";end;
```

```
if par=9 then do;min="0";max="12";inc="2";end;

if par=10 then do;min="0";max="2";inc=".5";end;

if par=11 then do;min="0";max="120";inc="20";end;

if par=12 then do;min="0";max="120";inc="20";end;

run;
```

```
PROC SQL;
```

```
CREATE TABLE ADBX3_X AS
```

```
SELECT PARAM, trtp, AVISIT, MEAN, lclm, uclm
```

```
FROM ADBX3;
```

```
QUIT;
```

```
data tflds.&tflno.;
```

```
set adbx3_x;
```

```
run;
```

```
PROC EXPORT DATA=ADBX3_X DBMS=XLSX
```

```
OUTFILE="/cvn/projects/prj/data/000000106343/TFL/dev/Tables/&tflno..xlsx" REPLACE;
```

```
SHEET=Sheet1;
```

```
PROC FORMAT;
```

```
VALUE XAXIS
```

```
0='Baseline'
```

```
4.5='1'
```

```
9='2'
```

```
13.5='3'
```

```
18='4'
```

```
22.5='5'
```

```
45='30'

67.5='60'

90='90'

;

RUN;

title;

footnote;

proc sort data=adbx3;

by par;

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

set adbx3 end=last;

page = 1;

if trtpn=3 then trtord=3;

else if trtpn=4 then trtord=1;

else if trtpn=5 then trtord=2;

if tpt=1 then newvis=4.5;

else if tpt=2 then newvis=9;

else if tpt=3 then newvis=13.5;

else if tpt=4 then newvis=18;

else if tpt=5 then newvis=22.5;

else if tpt=6 then newvis=45;
```



```

        else if tpt=7 then newvis=67.5;

        else if tpt=8 then newvis=90;

        else newvis=tpt;

run;

proc sort data=paging out=uniqpar nodupkey;by paramn;run;

data uniqpar;

set uniqpar end=last;

if last then pg=put(_n_,best.);

call symput("maxpage", strip(pg));

run;

%put &maxpage;

%macro graph();

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

%do j=1 %to &maxpage %by 1;

data plot1;

set paging;

where par=&j;

param=compbl(param);

if index(param,"bronchodilator") >0 then flag="1";

run;

proc sql noprint;

```

```

select param into:param trimmed

    from plot1;

quit;

data plot;

    set plot1;

    call symput("max1",max);

        call symput("min1",min);

            call symput("inc1",inc);

                call symput("divide",flag);

run;

proc template;

    define statgraph splot ;

        begingraph ;

        layout lattice;

        %if &divide=1 or &j=1 %then %do;

            layout overlay / border=false

            xaxisopts=( linearopts=(tickvaluelist=(0 4.5 9 13.5 18 22.5 45 67.5 90)
TICKVALUEFITPOLICY=ROTATE )

                label="Study Day")

            yaxisopts=(linearopts=(tickvaluesequence=(start=0 end=&max1 increment=&inc1)

                viewmin=0 viewmax=&max1)

                label=" ") cycleattrs=false;

        %end;

        %else %do;

            layout overlay / border=false

```

```

        xaxisopts=( linearopts=(tickvaluelist=(0 4.5 9 13.5 18 22.5 45 67.5 90)
TICKVALUEFITPOLICY=ROTATE )

        label="Study Day")

        yaxisopts=(linearopts=(tickvaluesequence=(start=0 end=&max1 increment=&inc1)

        viewmin=0 viewmax=&max1)

        label="&param") cycleattrs=false;

    %end;

    seriesplot x=newvis y=gmean / index=trtpn primary=true group=trtp display=(markers)

        legendlabel="mean" name="series" ;

    scatterplot x=newvis y=gmean / index=trtpn group=trtp yerrorlower=lclm yerrorupper=uclm

        legendlabel="mean" name="scatter" ;

        discretelegend "series";

    endlayout;

%if &j=3 or &j=16 %then %do;

    rowaxes;

    rowaxis / griddisplay=on display=(tickvalues);

    endrowaxes;

    rowheaders;

    layout gridded / columns=2 ;

        entry "Best measured FEV1 value" / textattrs=GraphLabelText rotate=90 ;

        entry "(with bronchodilator) (L)" / textattrs=(size=11) rotate=90 ;

    endlayout;

    endrowheaders;

```

```
%end;
```

```
%else %if &j=9 or &j=22 %then %do;
```

```
rowaxes;
```

```
rowaxis / griddisplay=on display=(tickvalues);
```

```
endrowaxes;
```

```
rowheaders;
```

```
layout gridded / columns=2 ;
```

```
entry "Mid expiratory flow 25-75" / textattrs=GraphLabelText rotate=90 ;
```

```
entry "(with bronchodilator) (L/s)" / textattrs=(size=11) rotate=90 ;
```

```
endlayout;
```

```
endrowheaders;
```

```
%end;
```

```
%else %if &j=12 or &j=22 %then %do;
```

```
rowaxes;
```

```
rowaxis / griddisplay=on display=(tickvalues);
```

```
endrowaxes;
```

```
rowheaders;
```

```
layout gridded / columns=2 ;
```

```
entry "Percent of predicted FVC value" / textattrs=GraphLabelText rotate=90 ;
```

```
entry "(with bronchodilator) (%)" / textattrs=(size=11) rotate=90 ;
```

```
endlayout;
```

```
endrowheaders;
```

```
%end;
```

```
%else %if &j=11 or &j=25 %then %do;
```

```
rowaxes;
```

```
rowaxis / griddisplay=on display=(tickvalues);
```

```
endrowaxes;
```

```
rowheaders;
```

```
layout gridded / columns=2 ;
```

```
entry "Percent of predicted FEV1 value" / textattrs=GraphLabelText rotate=90 ;
```

```
entry "(with bronchodilator) (%)" / textattrs=(size=11) rotate=90 ;
```

```
endlayout;
```

```
endrowheaders;
```

```
%end;
```

```
%if &j=4 %then %do;
```

```
rowaxes;
```

```
rowaxis / griddisplay=on display=(tickvalues);
```

```
endrowaxes;
```

```
rowheaders;
```

```
layout gridded / columns=2 ;
```

```
entry "Best measured FEV1 value" / textattrs=GraphLabelText rotate=90 ;
```

```

    entry "(with bronchodilator) (L)" / textattrs=(size=11) rotate=90 ;

endlayout;

endrowheaders;

%end;

%if &j=1 %then %do;

rowaxes;

rowaxis / griddisplay=on display=(tickvalues);

endrowaxes;


rowheaders;

layout gridded / columns=2 ;

    entry "Diffusion Capacity for Lung CO" / textattrs=GraphLabelText rotate=90 ;

    entry "(mL/min/mmHg)" / textattrs=(size=11) rotate=90 ;

endlayout;

endrowheaders;

%end;


endlayout;

endgraph;

end;

run;

ods select all;


ODS ESCAPECHAR='^';

```

```
ODS RTF PREPAGE="{outputwidth=100% just=l font_size=12pt font_weight=bold background=white foreground=black font_face=arial}"^R/RTF'\QL' Figure 15.1.2.31 Full Lung Function Results Arithmetic Mean and 95% CI - PP Set";
```

```
ods rtf style=t106343_g;
```

```
proc sort data=plot; by trtord;run;
```

```
proc sgrender data=plot template=spplot; /* applies the above template to the specified data */
```

```
FORMAT newvis XAXIS.;
```

```
run;
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL'";
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL' Note: Baseline is summarized using the baseline data from the PP Set for Period 1.";
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL' Note: mCC = Menthol conventional cigarettes; SA = Smoking abstinence; THSm2.2 = Tobacco Heating System 2.2 Menthol.";
```

```
ODS RTF TEXT="{outputwidth=100% just=l 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 mCC/THS 2.2 arms on Day 1 or last assessment prior to 10:00 AM in SA arm on Day 1.";
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL'";
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL' Appendix 15.2.4.70";
```

```
ODS RTF TEXT="{outputwidth=100% just=l font_size=9pt background=white foreground=black font_face=arial}"^R/RTF'\QL' Study ID: ZRHM-REXA-08-US Program: f_lungf_pp.sas &sysdate Status: &status. (Page &j of &maxpage)";
```

```
%end;
```

```
%end;
```

```
%mend graph;
```

```
%graph;
```

```
ods _all_ close;
```

```
ods graphics / reset;
```

```
%m_logchk;
```