

```
* SAS Analysis Examples Replication for ASDA 3rd Edition
* Berglund Winter 2025
* Chapter 7;
```

```
libname d "P:\ASDA3\Data Sets for Analysis Examples and Stata R Code";
ods listing ; ods graphics off ; options nodate nonumber ls=115 ps=69 ;
```

```
ods rtf style=minimal bodytitle ;
```

```
data c7_nhanes ;
  set d.nhanes1112;
  age18p=0 ; if age >= 18 then age18p=1 ;
  bpxdil 1=bpxdil ;
  if bpxdil=0 then bpxdil_1=. ;
  agec=age-46.36 ;
  agecsq=agec*agec ;
run ;
```

```
title " Section 7.5: Application of Linear Regression, Bivariate relationships " ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain age18p ;
  class ridreth1 (ref=first);
  model bpxdil_1=ridreth1 / solution ;
run ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain age18p ;
  class marcat (ref=first);
  model bpxdil_1=marcat / solution ;
run ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain age18p ;
  class riagendr (ref=first) ;
  model bpxdil_1=riagendr / solution ;
run ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain age18p ;
  model bpxdil_1=agec / solution ;
run ;
```

```
title "Table 7.2 Unweighted OLS Model" ;
```

```
proc surveyreg data=c7_nhanes ;
  where age18p=1 ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec / solution clparm ;
run ;
```

```
title "Table 7.3 Weighted regression analysis" ;
```

```
proc surveyreg data=c7_nhanes ;
  where age18p=1 ;
  weight wtmecl2yr ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec / solution clparm ;
run ;
```

```
title "Table 7.4 Design Based Model" ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec / solution clparm deff ;
run ;
```

```
title "Table 7.5 Design Based Approach, Test if Weights are Informative" ;
```

```
* use design variables but not the weight statement, add weight and interactions with the weight ;
```

```
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec wtmecl2yr ridreth1*wtmecl2yr riagendr*wtmecl2yr marcat*wtmecl2yr
  agec*wtmecl2yr / solution clparm deff ;
  contrast 'Weight and Weight Interactions' wtmecl2yr 1, ridreth1*wtmecl2yr 1 -1 0 0 0 , ridreth1*wtmecl2yr 1 0 -1 0 0 ,
  ridreth1*wtmecl2yr 1 0 0 -1 0 , ridreth1*wtmecl2yr 1 0 0 0 -1,
  riagendr*wtmecl2yr 1 -1, marcat*wtmecl2yr -1 1 0, marcat*wtmecl2yr -1 0 1, agec*wtmecl2yr 1 ;
run ;
```

```
* Initial model with diagnostics ;
```

```
title "Initial Model using Weights and Design Variables plus Diagnostics " ;
```

```

proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain agel8p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec / solution clparm deff ;
  output out=outdiag1 p=phat r=resid ;
run ;

*plot of residual v. age using output data set from previous step, among those age 18 + ;
title "Scatter Plot, Residual by Age" ;
proc sgplot data=outdiag1 ;
  where domain="age18p=1" ;
  scatter y=resid x=agec ;
run ;

title "Table 7.5 Analysis with Weights and Design Variables plus Agec and Age Squared" ;
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain agel8p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdil_1=ridreth1 riagendr marcat agec agecsq / solution clparm deff ;
  output out=outdiag2 p=phat2 r=resid2 ;
run ;

*plot of residual v. age centered using output data set from previous step, among those age 18 + ;
title "Scatter Plot, Residual by Age Centered with Agec Squared" ;
proc sgplot data=outdiag2 ;
  where domain="age18p=1" ;
  scatter y=resid2 x=agec ;
run ;

title "7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity X Centered Age" ;
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain agel8p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat(ref=first);
  model bpxdil_1=ridreth1 riagendr marcat agec agecsq ridreth1*agec ridreth1*agecsq / solution clparm deff ;
  contrast 'Race 4 levels' ridreth1 1 0 0 0 -1, ridreth1 0 1 0 0 -1, ridreth1 0 0 1 0 -1, ridreth1 0 0 0 1 -1 ;
  contrast 'Race X AgeC ' ridreth1*agec -1 1 0 0 0 , ridreth1*agec -1 0 1 0 0 , ridreth1*agec -1 0 0 1 0 , ridreth1*agec
-1 0 0 0 1 ;
  contrast 'Race X Agecsq' ridreth1*agecsq -1 1 0 0 0,ridreth1*agecsq -1 0 1 0 0 , ridreth1*agecsq -1 0 0 1 0 ,
ridreth1*agecsq -1 0 0 0 1 ;
  contrast 'Race X AgeC and Race X Agecsq' ridreth1*agec -1 1 0 0 0 , ridreth1*agec -1 0 1 0 0 , ridreth1*agec -1 0 0 1
0 , ridreth1*agec -1 0 0 0 1,
      ridreth1*agecsq -1 1 0 0 0,ridreth1*agecsq -1 0 1 0 0 , ridreth1*agecsq -1 0 0 1 0 , ridreth1*agecsq -1 0 0 0 1
;
run ;

title "7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity and Gender X Centered Age and Centered
Age Squared" ;
proc surveyreg data=c7_nhanes ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmecl2yr ;
  domain agel8p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat(ref=first);
  model bpxdil_1=ridreth1 riagendr marcat agec agecsq ridreth1*agec ridreth1*agecsq riagendr*agec riagendr*agecsq /
solution clparm deff ;

  contrast 'Race 4 levels' ridreth1 1 0 0 0 -1, ridreth1 0 1 0 0 -1, ridreth1 0 0 1 0 -1, ridreth1 0 0 0 1 -1 ;
  contrast 'Race X AgeC ' ridreth1*agec -1 1 0 0 0 , ridreth1*agec -1 0 1 0 0 , ridreth1*agec -1 0 0 1 0 , ridreth1*agec
-1 0 0 0 1 ;
  contrast 'Race X Agecsq' ridreth1*agecsq -1 1 0 0 0,ridreth1*agecsq -1 0 1 0 0 , ridreth1*agecsq -1 0 0 1 0 ,
ridreth1*agecsq -1 0 0 0 1 ;
  contrast 'Race X AgeC and Race X Agecsq' ridreth1*agec -1 1 0 0 0 , ridreth1*agec -1 0 1 0 0 , ridreth1*agec -1 0 0 1
0 , ridreth1*agec -1 0 0 0 1,
      ridreth1*agecsq -1 1 0 0 0,ridreth1*agecsq -1 0 1 0 0 , ridreth1*agecsq -1 0 0 1 0 , ridreth1*agecsq -1 0 0 0 1
;

  contrast 'Gender X agesq' riagendr*agecsq 1 -1 ;
  contrast 'Gender X agec' riagendr*agec 1 -1 ;
  contrast 'Gender X Agec and Gender X Agecsq ' riagendr*agec 1 -1 , riagendr*agecsq 1 -1 ;

run ;

title "Marginal predicted values by Race from model including significant interactions" ;
* rescale agec to avoid problem with ill-specified matrix when using LSMEANS, this does not affect the numbers, just a
rescaling approach;
data c7_nhanes_scale ;
  set c7_nhanes ;
  agec = agec/10;

```

```

agecsq=agec*agec ;
run;

* formats for race category ;
proc format ;
  value rf 1='Mexican' 2='Other Hispanic' 3='NH White' 4='NH Black' 5='Other' ;
  value gf 1='Male' 2='Female' ;
run ;

title "Final Model with Interactions, Produce Numbers for Margins Plots" ;
ods exclude all ; * exclude the detailed printouts from this model, save to ods output data set for plot;
proc surveyreg data=c7_nhanes_scale ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first);
  model bpxd1l1=ridreth1 riagendr marcat agec agec*agec ridreth1*agec ridreth1*agec*agec riagendr*agec
riagendr*agec*agec / solution clparm deff ;
  lsmeans ridreth1 / at agec=-3.0 e cl ;
  lsmeans ridreth1 / at agec=-2.5 e cl ;
  lsmeans ridreth1 / at agec=-2.0 e cl;
  lsmeans ridreth1 / at agec=-1.5 e cl;
  lsmeans ridreth1 / at agec=-1 e cl;
  lsmeans ridreth1 / at agec=-.5 e cl;
  lsmeans ridreth1 / at agec=0 e cl;
  lsmeans ridreth1 / at agec=.5 e cl;
  lsmeans ridreth1 / at agec=1.0 e cl;
  lsmeans ridreth1 / at agec=1.5 e cl;
  lsmeans ridreth1 / at agec=2.0 e cl;
  lsmeans ridreth1 / at agec=2.5 e cl;
  lsmeans ridreth1 / at agec=3 e cl;

  ods output lsmeans=lsmeans_est ;
  *output out=outp p=predicted ;
run ;
ods exclude none ;

title "Plot of Marginal Predicted Values by Age and Race: Figure 7.4" ;
proc sgplot data=lsmeans_est ;
  where domain eq 'age18p=1' ;
  format agec 2. ridreth1 rf. ;
  highlow x=agec high=upper low=lower / group=ridreth1 highcap=serif lowcap=serif;
  series x=agec y=estimate / group=ridreth1 ;
  xaxis label ='Centered Age' ; yaxis label='Marginal Predicted DBP' ;
run;

* Final Model, Second run Marginal Means by Gender ;
title "Final Model with Interactions, Produce Numbers for Marginal Means by Gender" ;
ods exclude all ; * exclude output of numbers in printout ;
proc surveyreg data=c7_nhanes_scale ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first);
  model bpxd1l1=ridreth1 riagendr marcat agec agec*agec ridreth1*agec ridreth1*agec*agec riagendr*agec
riagendr*agec*agec / solution clparm deff ;
  lsmeans riagendr / at (agec)=(-3.0) e cl ;
  lsmeans riagendr / at agec=-2.5 e cl ;
  lsmeans riagendr / at agec=-2.0 e cl;
  lsmeans riagendr / at agec=-1.5 e cl;
  lsmeans riagendr / at agec=-1 e cl;
  lsmeans riagendr / at agec=-.5 e cl;
  lsmeans riagendr / at agec=0 e cl;
  lsmeans riagendr / at agec=.5 e cl;
  lsmeans riagendr / at agec=1.0 e cl;
  lsmeans riagendr / at agec=1.5 e cl;
  lsmeans riagendr / at agec=2.0 e cl;
  lsmeans riagendr / at agec=2.5 e cl;
  lsmeans riagendr / at agec=3 e cl;
  ods output lsmeans=lsmeans_est ;
  *output out=outp p=predicted ;
run ;
ods exclude none ;

title "Plot of Marginal Predicted Values by Age and Gender: Figure 7.4 " ;
proc sgplot data=lsmeans_est ;
  where domain eq 'age18p=1' ;
  format agec 2. riagendr gf. ;
  highlow x=agec high=upper low=lower / group=riagendr highcap=serif lowcap=serif;
  series x=agec y=estimate / group=riagendr;
  xaxis label ='Centered Age' ; yaxis label='Marginal Predicted DBP' ;
run;

```

```

* Table 7.6 with Model Diagnostics;
title "Numbers for Table 7.6" ;
proc surveyreg data=d.c7_nhanes plots=fit ;
  strata sdmvstra ; cluster sdmvpsu ; weight wtmec2yr ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first);
  model bpxdi1_1=ridreth1 riagendr marcat agec agec*agec ridreth1*agec ridreth1*agec*agec riagendr*agec
riagendr*agec*agec / solution clparm deff ;
  output out=outdiag p=pred r=resid ;
run ;

* Diagnostic Plots using PROC SGPLOT: Histogram and Scatter Plot using PROC SGPLOT ;
ods html5 ;
title "Histogram of Residuals Plot" ;
proc sgplot data=outdiag ;
  histogram resid ;
  density resid ;
  where domain="age18p=1" ;
run ;
title "Scatter Plot of Residual by Predicted" ;
proc sgplot data=outdiag ;
  where domain="age18p=1" ;
  scatter y=resid x=pred ;
run ;

* QQ plot from PROC UNIVARIATE ;
title "QQ Plot of Residuals " ;
proc univariate data=outdiag ;
  where domain="age18p=1" ;
  var resid ;
  qqplot resid ;
run;
ods html5 close ;

title " Use Pffeffermann method (Q weighted)" ;
title2 "Predict Weight by Main Effects and Interactions" ;
proc glm data=c7_nhanes ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first);
  where age18p=1 ;
  model wtmec2yr=ridreth1 riagendr marcat agec agec*agec ridreth1*agec ridreth1*agec*agec riagendr*agec
riagendr*agec*agec / solution ;
  output out=outq predicted=w_hat ;
run ;

* create new weight and re-run final model ;
data c7_nhanes_Q ;
  set outq ;
  if w_hat < 0 then w_hat=4809 ;* use 1% positive value ;
  q_wtmec2yr=wtmec2yr/w_hat ;
run ;

proc surveyreg data=c7_nhanes_Q ;
  strata sdmvstra ; cluster sdmvpsu ; weight q_wtmec2yr ;
  domain age18p ;
  class ridreth1 (ref=first) riagendr (ref=first) marcat (ref=first) ;
  model bpxdi1_1=ridreth1 riagendr marcat agec agec*agec ridreth1*agec ridreth1*agec*agec riagendr*agec
riagendr*agec*agec / solution ;
  run ;

*NOTE : Bayesian Approach not available in SAS ;

ods rtf close ;

```

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	6676
Sum of Weights	250508512
Weighted Mean of bpxdil_1	69.55356
Weighted Sum of bpxdil_1	1.74238E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.009411
Root MSE	12.4078
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	8.34	0.0006
Intercept	1	14971.8	<.0001
RIDRETH1	4	8.34	0.0006

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	66.3974418	0.56321000	117.89	<.0001
RIDRETH1 2	1.2060048	1.56274728	0.77	0.4509
RIDRETH1 3	3.8563043	0.83278066	4.63	0.0002
RIDRETH1 4	3.0642660	0.80084629	3.83	0.0014
RIDRETH1 5	2.7334240	0.64580616	4.23	0.0006
RIDRETH1 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=0

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	1564
Number of Observations Not in Domain	5112
Sum of Weights in Domain	37760598
Weighted Mean of bpxdil_1	57.97422
Weighted Sum of bpxdil_1	2189141217

Fit Statistics	
R-Square	0.007365
Root MSE	11.5760
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	2.14	0.1206
Intercept	1	6958.05	<.0001
RIDRETH1	4	2.14	0.1206

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	55.8381383	0.62761292	88.97	<.0001
RIDRETH1 2	1.7490988	1.46337396	1.20	0.2484
RIDRETH1 3	2.8288303	1.58948281	1.78	0.0930
RIDRETH1 4	1.5346097	0.85192960	1.80	0.0894
RIDRETH1 5	2.5456195	1.00084632	2.54	0.0210
RIDRETH1 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	5112
Number of Observations Not in Domain	1564
Sum of Weights in Domain	212747914
Weighted Mean of bpxdil_1	71.60877
Weighted Sum of bpxdil_1	1.52346E10

Fit Statistics	
R-Square	0.004955
Root MSE	11.4170
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	4	4.77	0.0092
Intercept	1	17079.4	<.0001
RIDRETH1	4	4.77	0.0092

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	69.8040886	0.45337163	153.97	<.0001
RIDRETH1 2	-0.1548915	1.45599533	-0.11	0.9165
RIDRETH1 3	2.1846975	0.74287741	2.94	0.0091
RIDRETH1 4	2.2902279	0.70322613	3.26	0.0046
RIDRETH1 5	1.3056136	0.70463842	1.85	0.0813
RIDRETH1 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.001496
Root MSE	11.3304
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	2	0.90	0.4243
Intercept	1	16732.6	<.0001
marcat	2	0.90	0.4243

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	72.1795504	0.51504280	140.14	<.0001
marcat 2	-0.1450875	0.69794643	-0.21	0.8378
marcat 3	-1.1210302	0.84384121	-1.33	0.2016
marcat 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.001496
Root MSE	11.3304
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	2	0.90	0.4243
Intercept	1	16732.6	<.0001
marcat	2	0.90	0.4243

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	72.1795504	0.51504280	140.14	<.0001
marcat 2	-0.1450875	0.69794643	-0.21	0.8378
marcat 3	-1.1210302	0.84384121	-1.33	0.2016
marcat 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix  $X'WX$  is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	6676
Sum of Weights	250508512
Weighted Mean of bpxdil_1	69.55356
Weighted Sum of bpxdil_1	1.74238E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.005168
Root MSE	12.4316
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
riagendr	Gender	2	2 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	13.12	0.0021
Intercept	1	16209.1	<.0001
riagendr	1	13.12	0.0021

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	70.4667737	0.64990231	108.43	<.0001
riagendr 2	-1.7920491	0.49466428	-3.62	0.0021
riagendr 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=0

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	1564
Number of Observations Not in Domain	5112
Sum of Weights in Domain	37760598
Weighted Mean of bpxdil_1	57.97422
Weighted Sum of bpxdil_1	2189141217

Fit Statistics	
R-Square	0.002453
Root MSE	11.6020
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	2.79	0.1135
Intercept	1	3471.67	<.0001
riagendr	1	2.79	0.1135

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	57.3739050	0.82767860	69.32	<.0001
riagendr 2	1.1515524	0.69002515	1.67	0.1135
riagendr 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	5112
Number of Observations Not in Domain	1564
Sum of Weights in Domain	212747914
Weighted Mean of bpxdil_1	71.60877
Weighted Sum of bpxdil_1	1.52346E10

Fit Statistics	
R-Square	0.009245
Root MSE	11.3898
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	15.01	0.0012
Intercept	1	20210.2	<.0001
riagendr	1	15.01	0.0012

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	72.7255304	0.59013132	123.24	<.0001
riagendr 2	-2.2004481	0.56797167	-3.87	0.0012
riagendr 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	6676
Sum of Weights	250508512
Weighted Mean of bpxdil_1	69.55356
Weighted Sum of bpxdil_1	1.74238E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.07882
Root MSE	11.9626
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	115.38	<.0001
Intercept	1	18687.3	<.0001
agec	1	115.38	<.0001

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	70.4172916	0.51511667	136.70	<.0001
agec	0.1734368	0.01614643	10.74	<.0001

The degrees of freedom for the t tests is 17.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=0

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	1564
Number of Observations Not in Domain	5112
Sum of Weights in Domain	37760598
Weighted Mean of bpxdil_1	57.97422
Weighted Sum of bpxdil_1	2189141217

Fit Statistics	
R-Square	0.05948
Root MSE	11.2655
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	47.81	<.0001
Intercept	1	418.64	<.0001
agec	1	47.81	<.0001

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	91.7923765	4.48629439	20.46	<.0001
agec	1.0013268	0.14482174	6.91	<.0001

The degrees of freedom for the t tests is 17.

Section 7.5: Application of Linear Regression, Bivariate relationships

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	6676
Number of Observations in Domain	5112
Number of Observations Not in Domain	1564
Sum of Weights in Domain	212747914
Weighted Mean of bpxdil_1	71.60877
Weighted Sum of bpxdil_1	1.52346E10

Fit Statistics	
R-Square	0.003612
Root MSE	11.4222
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	1	4.35	0.0523
Intercept	1	20485.9	<.0001
agec	1	4.35	0.0523

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	71.6036334	0.50027293	143.13	<.0001
agec	0.0394091	0.01888777	2.09	0.0523

The degrees of freedom for the t tests is 17.

Table 7.2 Unweighted OLS Model

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Mean of bpxdil_1	71.52776
Sum of bpxdil_1	346552.0

Fit Statistics	
R-Square	0.02071
Root MSE	11.6561
Denominator DF	4844

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	12.50	<.0001
Intercept	1	118694	<.0001
RIDRETH1	4	5.96	<.0001
riagendr	1	55.89	<.0001
marcat	2	13.67	<.0001
agec	1	2.89	0.0894

The denominator degrees of freedom for the F tests is 4844.

Estimated Regression Coefficients						
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval	
Intercept	72.1628219	0.53120862	135.85	<.0001	71.1214120	73.2042319
RIDRETH1 2	0.3770451	0.70863317	0.53	0.5947	-1.0121975	1.7662877
RIDRETH1 3	0.9420713	0.57775438	1.63	0.1030	-0.1905895	2.0747321
RIDRETH1 4	2.5090348	0.63263292	3.97	<.0001	1.2687872	3.7492825
RIDRETH1 5	1.7758163	0.63120807	2.81	0.0049	0.5383621	3.0132706
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
riagendr 2	-2.5323250	0.33873980	-7.48	<.0001	-3.1964088	-1.8682413
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
marcat 2	-0.6973075	0.45378805	-1.54	0.1244	-1.5869380	0.1923230
marcat 3	-2.4403512	0.47148973	-5.18	<.0001	-3.3646851	-1.5160174

Estimated Regression Coefficients						
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval	
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
agec	-0.0192501	0.01133245	-1.70	0.0894	-0.0414669	0.0029666

The degrees of freedom for the t tests is 4844.

Matrix X'X is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Table 7.3 Weighted regression analysis

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.01745
Root MSE	11.2465
Denominator DF	4844

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	7.50	<.0001
Intercept	1	89109.4	<.0001
RIDRETH1	4	6.73	<.0001
riagendr	1	31.47	<.0001
marcat	2	3.02	0.0487
agec	1	0.29	0.5892

The denominator degrees of freedom for the F tests is 4844.

Estimated Regression Coefficients						
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval	
Intercept	71.8061730	0.58699305	122.33	<.0001	70.6554002	72.9569457
RIDRETH1 2	-0.0949772	0.74063015	-0.13	0.8980	-1.5469484	1.3569941
RIDRETH1 3	1.9132786	0.62477087	3.06	0.0022	0.6884442	3.1381131
RIDRETH1 4	2.6191693	0.68095127	3.85	0.0001	1.2841957	3.9541428
RIDRETH1 5	1.2701360	0.71906656	1.77	0.0774	-0.1395608	2.6798328
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
riagendr 2	-2.5098112	0.44742525	-5.61	<.0001	-3.3869677	-1.6326546
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
marcat 2	0.2433065	0.61037667	0.40	0.6902	-0.9533087	1.4399218

Estimated Regression Coefficients						
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval	
marcat 3	-1.5110334	0.63940634	-2.36	0.0182	-2.7645600	-0.2575068
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000
agec	-0.0075366	0.01395606	-0.54	0.5892	-0.0348968	0.0198236

The degrees of freedom for the t tests is 4844.

Matrix  $X'WX$  is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Table 7.4 Design Based Model

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.01745
Root MSE	11.2465
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	19.92	<.0001
Intercept	1	16001.4	<.0001
RIDRETH1	4	7.57	0.0011
riagendr	1	21.62	0.0002
marcat	2	1.80	0.1951
agec	1	0.14	0.7124

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	71.8061730	0.57836356	124.15	<.0001	70.5859325	73.0264134	0.89
RIDRETH1 2	-0.0949772	1.27331496	-0.07	0.9414	-2.7814369	2.5914826	2.17
RIDRETH1 3	1.9132786	0.76352190	2.51	0.0227	0.3023882	3.5241690	1.49
RIDRETH1 4	2.6191693	0.60047231	4.36	0.0004	1.3522834	3.8860551	0.62
RIDRETH1 5	1.2701360	0.60474122	2.10	0.0509	-0.0057564	2.5460285	0.53

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.5098112	0.53974034	-4.65	0.0002	-3.6485637	-1.3710586	2.72
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2433065	0.67295619	0.36	0.7221	-1.1765069	1.6631200	2.31
marcat 3	-1.5110334	0.90011405	-1.68	0.1115	-3.4101080	0.3880412	3.93
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0075366	0.02010807	-0.37	0.7124	-0.0499609	0.0348877	3.41

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Table 7.4 Design Based Model

The SURVEYREG Procedure  
 age18p=1  
 Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.01745
Root MSE	11.2465
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	19.92	<.0001
Intercept	1	16001.4	<.0001
RIDRETH1	4	7.57	0.0011
riagendr	1	21.62	0.0002
marcat	2	1.80	0.1951
agec	1	0.14	0.7124

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	71.8061730	0.57836356	124.15	<.0001	70.5859325	73.0264134	0.89
RIDRETH1 2	-0.0949772	1.27331496	-0.07	0.9414	-2.7814369	2.5914826	2.17
RIDRETH1 3	1.9132786	0.76352190	2.51	0.0227	0.3023882	3.5241690	1.49
RIDRETH1 4	2.6191693	0.60047231	4.36	0.0004	1.3522834	3.8860551	0.62
RIDRETH1 5	1.2701360	0.60474122	2.10	0.0509	-0.0057564	2.5460285	0.53
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.5098112	0.53974034	-4.65	0.0002	-3.6485637	-1.3710586	2.72
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2433065	0.67295619	0.36	0.7221	-1.1765069	1.6631200	2.31
marcat 3	-1.5110334	0.90011405	-1.68	0.1115	-3.4101080	0.3880412	3.93
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0075366	0.02010807	-0.37	0.7124	-0.0499609	0.0348877	3.41

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Table 7.5 Design Based Approach, Test if Weights are Informative

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Mean of bpxdil_1	71.52776
Sum of bpxdil_1	346552.0

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.03202
Root MSE	11.6006
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	5	1.39	0.2769
Intercept	1	6703.00	<.0001
RIDRETH1	4	3.42	0.0316
riagendr	1	38.20	<.0001
marcat	2	9.86	0.0014
agec	1	2.51	0.1317
WTMEC2YR	1	0.00	1.0000
WTMEC2YR*RIDRETH1	4	7.25	0.0013
WTMEC2YR*riagendr	1	0.00	1.0000
WTMEC2YR*marcat	2	3.43	0.0559
agec*WTMEC2YR	0	.	.

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	73.3793050	1.89361661	38.75	<.0001	69.3841232	77.3744868	1.57

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
RIDRETH1 2	1.7081196	2.78972878	0.61	0.5484	-4.1776936	7.5939329	2.19
RIDRETH1 3	-2.3473283	1.76611972	-1.33	0.2014	-6.0735152	1.3788586	1.29
RIDRETH1 4	0.0920871	2.31152397	0.04	0.9687	-4.7848021	4.9689764	1.85
RIDRETH1 5	1.7184469	1.88499456	0.91	0.3747	-2.2585440	5.6954378	1.37
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.8525970	0.46155709	-6.18	<.0001	-3.8263973	-1.8787966	0.88
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	-1.3600012	0.72346842	-1.88	0.0774	-2.8863861	0.1663838	1.34
marcat 3	-3.6090847	0.81280952	-4.44	0.0004	-5.3239629	-1.8942065	1.42
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0313646	0.01980530	-1.58	0.1317	-0.0731501	0.0104209	1.17
WTMEC2YR	0.0062806	0.00000000	Infty	<.0001	0.0062806	0.0062806	.
WTMEC2YR*RIDRETH1 2	-0.0000529	0.00005240	-1.01	0.3272	-0.0001634	0.0000577	0.85
WTMEC2YR*RIDRETH1 3	0.0000529	0.00004631	1.14	0.2689	-0.0000448	0.0001506	1.24
WTMEC2YR*RIDRETH1 4	0.0001197	0.00006905	1.73	0.1011	-0.0000260	0.0002654	1.31
WTMEC2YR*RIDRETH1 5	-0.0000134	0.00005100	-0.26	0.7954	-0.0001210	0.0000942	1.16
WTMEC2YR*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
WTMEC2YR*riagendr 2	-0.0063086	0.00000000	-Infty	<.0001	-0.0063086	-0.0063086	.
WTMEC2YR*riagendr 1	-0.0063125	0.00000000	-Infty	<.0001	-0.0063125	-0.0063125	.
WTMEC2YR*marcat 2	0.0000248	0.00001203	2.06	0.0551	-0.0000006	0.0000501	1.18
WTMEC2YR*marcat 3	0.0000300	0.00001483	2.02	0.0593	-0.0000013	0.0000613	1.46
WTMEC2YR*marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*WTMEC2YR	0.0000004	0.00000030	1.48	0.1568	-0.0000002	0.0000011	0.85

The degrees of freedom for the t tests is 17.

Matrix X'X is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Weight and Weight Interactions	0	.	.

The denominator degrees of freedom for the F tests is 17.

Table 7.5 Design Based Approach, Test if Weights are Informative

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Mean of bpxdil_1	71.52776
Sum of bpxdil_1	346552.0

Fit Statistics	
R-Square	0.03202
Root MSE	11.6006
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	5	1.39	0.2769
Intercept	1	6703.00	<.0001
RIDRETH1	4	3.42	0.0316
riagendr	1	38.20	<.0001
marcat	2	9.86	0.0014
agec	1	2.51	0.1317
WTMEC2YR	1	0.00	1.0000
WTMEC2YR*RIDRETH1	4	7.25	0.0013
WTMEC2YR*riagendr	1	0.00	1.0000
WTMEC2YR*marcat	2	3.43	0.0559
agec*WTMEC2YR	0	.	.

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	73.3793050	1.89361661	38.75	<.0001	69.3841232	77.3744868	1.57
RIDRETH1 2	1.7081196	2.78972878	0.61	0.5484	-4.1776936	7.5939329	2.19
RIDRETH1 3	-2.3473283	1.76611972	-1.33	0.2014	-6.0735152	1.3788586	1.29
RIDRETH1 4	0.0920871	2.31152397	0.04	0.9687	-4.7848021	4.9689764	1.85
RIDRETH1 5	1.7184469	1.88499456	0.91	0.3747	-2.2585440	5.6954378	1.37
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.8525970	0.46155709	-6.18	<.0001	-3.8263973	-1.8787966	0.88
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	-1.3600012	0.72346842	-1.88	0.0774	-2.8863861	0.1663838	1.34

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
marcat 3	-3.6090847	0.81280952	-4.44	0.0004	-5.3239629	-1.8942065	1.42
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0313646	0.01980530	-1.58	0.1317	-0.0731501	0.0104209	1.17
WTMEC2YR	0.0062806	0.00000000	Infty	<.0001	0.0062806	0.0062806	.
WTMEC2YR*RIDRETH1 2	-0.0000529	0.00005240	-1.01	0.3272	-0.0001634	0.0000577	0.85
WTMEC2YR*RIDRETH1 3	0.0000529	0.00004631	1.14	0.2689	-0.0000448	0.0001506	1.24
WTMEC2YR*RIDRETH1 4	0.0001197	0.00006905	1.73	0.1011	-0.0000260	0.0002654	1.31
WTMEC2YR*RIDRETH1 5	-0.0000134	0.00005100	-0.26	0.7954	-0.0001210	0.0000942	1.16
WTMEC2YR*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
WTMEC2YR*riagendr 2	-0.0063086	0.00000000	-Infty	<.0001	-0.0063086	-0.0063086	.
WTMEC2YR*riagendr 1	-0.0063125	0.00000000	-Infty	<.0001	-0.0063125	-0.0063125	.
WTMEC2YR*marcat 2	0.0000248	0.00001203	2.06	0.0551	-0.0000006	0.0000501	1.18
WTMEC2YR*marcat 3	0.0000300	0.00001483	2.02	0.0593	-0.0000013	0.0000613	1.46
WTMEC2YR*marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*WTMEC2YR	0.0000004	0.00000030	1.48	0.1568	-0.0000002	0.0000011	0.85

The degrees of freedom for the t tests is 17.

Matrix X'X is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Weight and Weight Interactions	9	5.92	0.0008

The denominator degrees of freedom for the F tests is 17.

Initial Model using Weights and Design Variables plus Diagnostics

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.01745
Root MSE	11.2465
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	19.92	<.0001
Intercept	1	16001.4	<.0001
RIDRETH1	4	7.57	0.0011
riagendr	1	21.62	0.0002
marcat	2	1.80	0.1951
agec	1	0.14	0.7124

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	71.8061730	0.57836356	124.15	<.0001	70.5859325	73.0264134	0.89
RIDRETH1 2	-0.0949772	1.27331496	-0.07	0.9414	-2.7814369	2.5914826	2.17
RIDRETH1 3	1.9132786	0.76352190	2.51	0.0227	0.3023882	3.5241690	1.49
RIDRETH1 4	2.6191693	0.60047231	4.36	0.0004	1.3522834	3.8860551	0.62
RIDRETH1 5	1.2701360	0.60474122	2.10	0.0509	-0.0057564	2.5460285	0.53

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.5098112	0.53974034	-4.65	0.0002	-3.6485637	-1.3710586	2.72
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2433065	0.67295619	0.36	0.7221	-1.1765069	1.6631200	2.31
marcat 3	-1.5110334	0.90011405	-1.68	0.1115	-3.4101080	0.3880412	3.93
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0075366	0.02010807	-0.37	0.7124	-0.0499609	0.0348877	3.41

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Initial Model using Weights and Design Variables plus Diagnostics

The SURVEYREG Procedure  
 age18p=1  
 Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.01745
Root MSE	11.2465
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	8	19.92	<.0001
Intercept	1	16001.4	<.0001
RIDRETH1	4	7.57	0.0011
riagendr	1	21.62	0.0002
marcat	2	1.80	0.1951
agec	1	0.14	0.7124

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	71.8061730	0.57836356	124.15	<.0001	70.5859325	73.0264134	0.89
RIDRETH1 2	-0.0949772	1.27331496	-0.07	0.9414	-2.7814369	2.5914826	2.17
RIDRETH1 3	1.9132786	0.76352190	2.51	0.0227	0.3023882	3.5241690	1.49
RIDRETH1 4	2.6191693	0.60047231	4.36	0.0004	1.3522834	3.8860551	0.62
RIDRETH1 5	1.2701360	0.60474122	2.10	0.0509	-0.0057564	2.5460285	0.53
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.5098112	0.53974034	-4.65	0.0002	-3.6485637	-1.3710586	2.72
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2433065	0.67295619	0.36	0.7221	-1.1765069	1.6631200	2.31
marcat 3	-1.5110334	0.90011405	-1.68	0.1115	-3.4101080	0.3880412	3.93
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	-0.0075366	0.02010807	-0.37	0.7124	-0.0499609	0.0348877	3.41

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Scatter Plot, Residual by Age

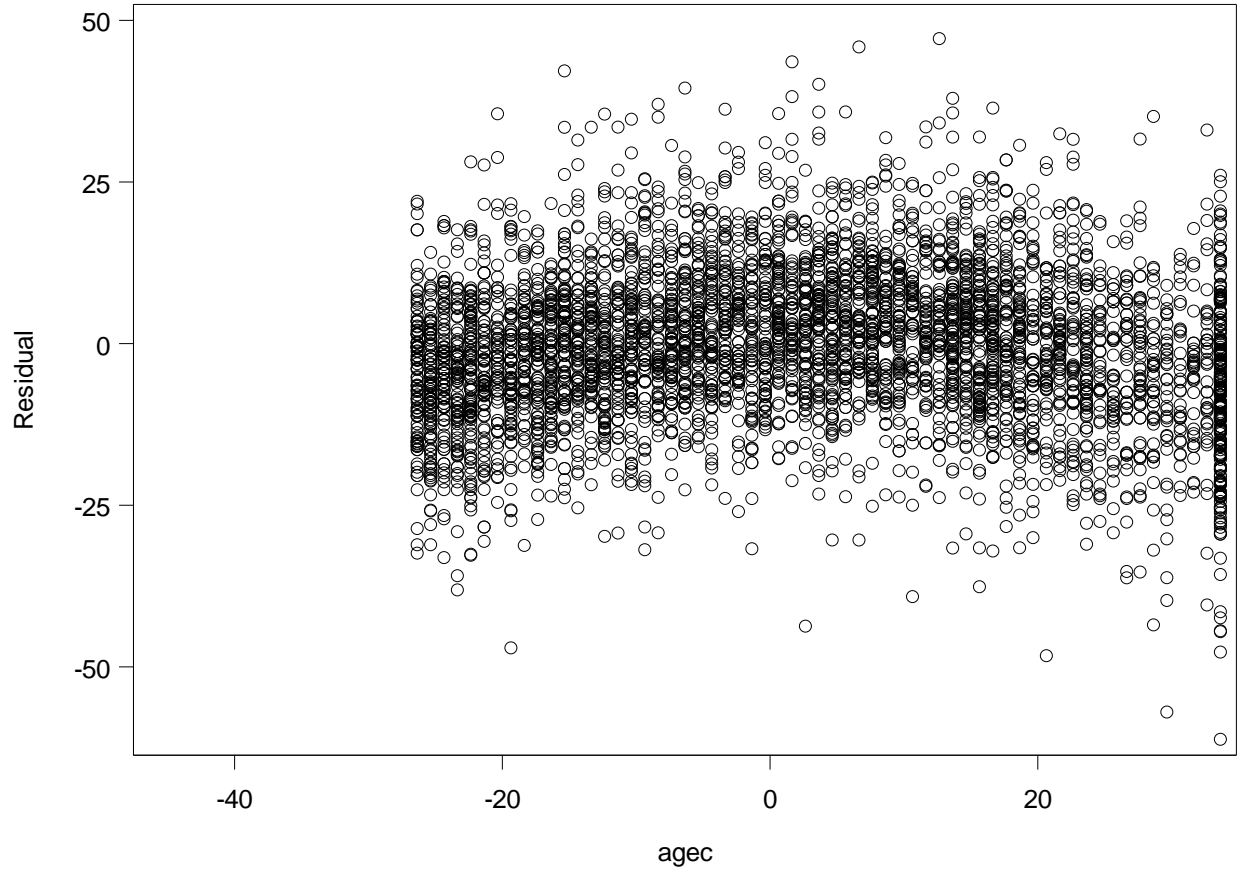


Table 7.5 Analysis with Weights and Design Variables plus Agec and Age Squared

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.09845
Root MSE	10.7741
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	9	144.86	<.0001
Intercept	1	18480.3	<.0001
RIDRETH1	4	4.05	0.0174
riagendr	1	18.87	0.0004
marcat	2	1.39	0.2750
agec	1	14.15	0.0016
agecsq	1	185.84	<.0001

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.4613657	0.61569041	120.94	<.0001	73.1623725	75.7603590	1.05
RIDRETH1 2	0.0145334	1.11481540	0.01	0.9898	-2.3375215	2.3665883	1.81
RIDRETH1 3	1.8217232	0.79371789	2.30	0.0347	0.1471248	3.4963215	1.75
RIDRETH1 4	2.0635973	0.61265496	3.37	0.0036	0.7710083	3.3561863	0.70

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
RIDRETH1 5	1.0978333	0.58446922	1.88	0.0776	-0.1352890	2.3309556	0.54
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.2143152	0.50977968	-4.34	0.0004	-3.2898563	-1.1387741	2.63
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.5558885	0.60823622	0.91	0.3735	-0.7273778	1.8391547	2.05
marcat 3	1.1353283	0.75843123	1.50	0.1527	-0.4648217	2.7354783	2.80
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0771555	0.02050785	3.76	0.0016	0.0338877	0.1204233	3.35
agecsq	-0.0116650	0.00085567	-13.63	<.0001	-0.0134703	-0.0098597	2.34

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Table 7.5 Analysis with Weights and Design Variables plus Agec and Age Squared

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.09845
Root MSE	10.7741
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	9	144.86	<.0001
Intercept	1	18480.3	<.0001
RIDRETH1	4	4.05	0.0174
riagendr	1	18.87	0.0004
marcat	2	1.39	0.2750
agec	1	14.15	0.0016
agecsq	1	185.84	<.0001

The denominator degrees of freedom for the F tests is 17.

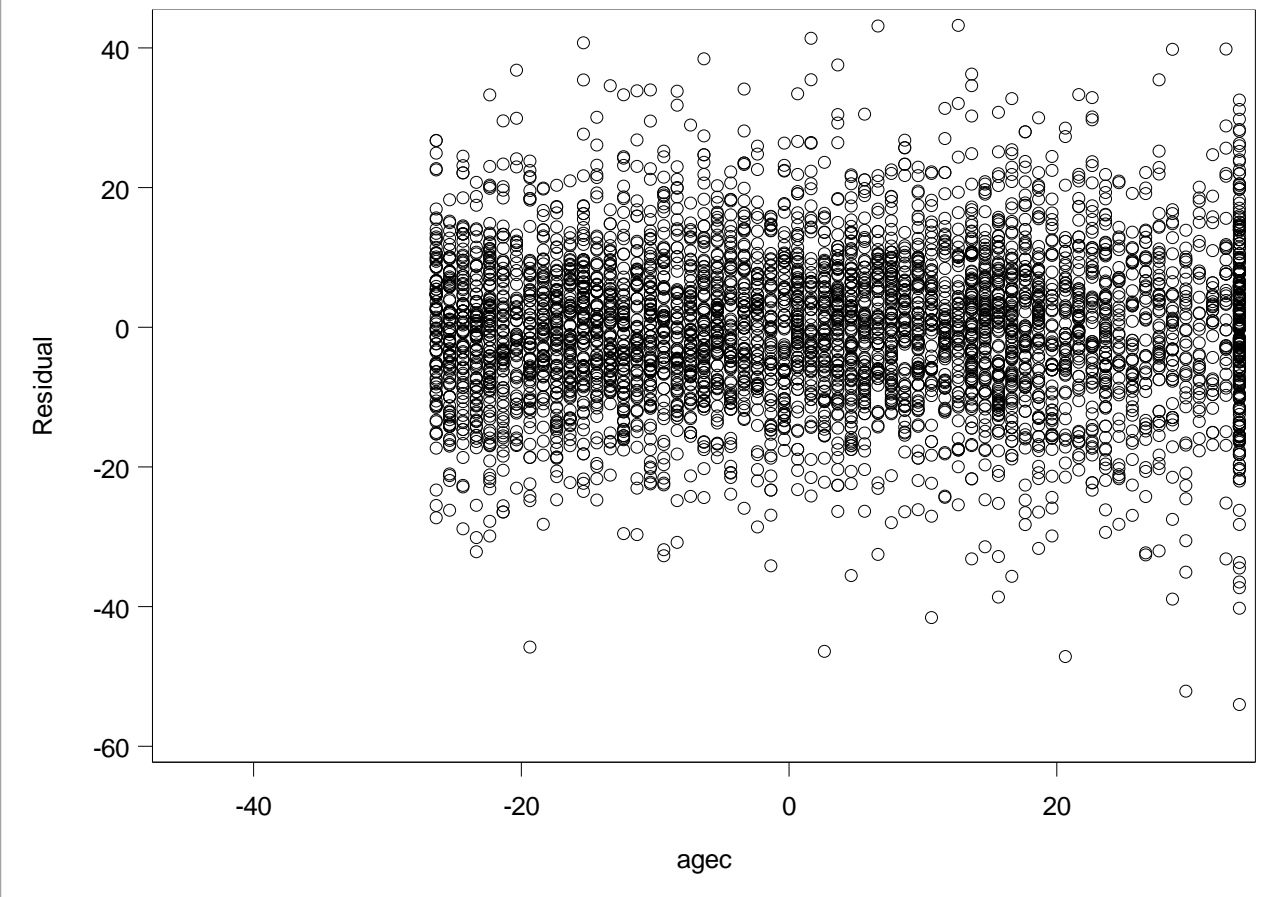
Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.4613657	0.61569041	120.94	<.0001	73.1623725	75.7603590	1.05
RIDRETH1 2	0.0145334	1.11481540	0.01	0.9898	-2.3375215	2.3665883	1.81
RIDRETH1 3	1.8217232	0.79371789	2.30	0.0347	0.1471248	3.4963215	1.75
RIDRETH1 4	2.0635973	0.61265496	3.37	0.0036	0.7710083	3.3561863	0.70
RIDRETH1 5	1.0978333	0.58446922	1.88	0.0776	-0.1352890	2.3309556	0.54
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.2143152	0.50977968	-4.34	0.0004	-3.2898563	-1.1387741	2.63
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.5558885	0.60823622	0.91	0.3735	-0.7273778	1.8391547	2.05
marcat 3	1.1353283	0.75843123	1.50	0.1527	-0.4648217	2.7354783	2.80
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0771555	0.02050785	3.76	0.0016	0.0338877	0.1204233	3.35

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
agecsq	-0.0116650	0.00085567	-13.63	<.0001	-0.0134703	-0.0098597	2.34

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Scatter Plot, Residual by Age Centered with Agec Squared



7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity X Centered Age

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.1013
Root MSE	10.7662
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	797.28	<.0001
Intercept	1	16602.1	<.0001
RIDRETH1	4	4.66	0.0101
riagendr	1	19.14	0.0004
marcat	2	1.39	0.2756
agec	1	20.95	0.0003
agecsq	1	163.16	<.0001
agec*RIDRETH1	4	4.00	0.0183
agecsq*RIDRETH1	4	8.23	0.0007

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.4546993	0.84441754	88.17	<.0001	72.6731340	76.2362645	1.06
RIDRETH1 2	0.3457130	0.98561249	0.35	0.7301	-1.7337476	2.4251736	0.68

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
RIDRETH1 3	1.5524238	0.94092869	1.65	0.1173	-0.4327622	3.5376098	1.24
RIDRETH1 4	3.3935610	0.99289270	3.42	0.0033	1.2987405	5.4883815	0.92
RIDRETH1 5	1.3799756	0.87965924	1.57	0.1351	-0.4759431	3.2358944	0.61
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.2142228	0.50610907	-4.37	0.0004	-3.2820197	-1.1464260	2.60
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.5488372	0.63060197	0.87	0.3962	-0.7816167	1.8792910	2.20
marcat 3	1.1882195	0.77978911	1.52	0.1460	-0.4569917	2.8334308	2.93
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0502370	0.03506666	1.43	0.1701	-0.0237472	0.1242212	0.70
agecsq	-0.0124453	0.00221403	-5.62	<.0001	-0.0171165	-0.0077741	0.83
agec*RIDRETH1 2	0.0662619	0.05034873	1.32	0.2056	-0.0399647	0.1724884	0.82
agec*RIDRETH1 3	0.0111186	0.05403503	0.21	0.8394	-0.1028854	0.1251225	1.56
agec*RIDRETH1 4	0.0693963	0.03710782	1.87	0.0788	-0.0088944	0.1476870	0.55
agec*RIDRETH1 5	0.0438456	0.05912415	0.74	0.4685	-0.0808955	0.1685866	1.20
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*RIDRETH1 2	0.0000510	0.00335592	0.02	0.9880	-0.0070293	0.0071314	1.04
agecsq*RIDRETH1 3	0.0018498	0.00179447	1.03	0.3171	-0.0019362	0.0056358	0.51
agecsq*RIDRETH1 4	-0.0039116	0.00221270	-1.77	0.0950	-0.0085800	0.0007568	0.58
agecsq*RIDRETH1 5	-0.0001547	0.00225147	-0.07	0.9460	-0.0049049	0.0045955	0.51
agecsq*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Race 4 levels	4	4.66	0.0101
Race X AgeC	4	4.00	0.0183
Race X Agecsq	4	8.23	0.0007
Race X AgeC and Race X Agecsq	8	10.03	<.0001

The denominator degrees of freedom for the F tests is 17.

7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity X Centered Age

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.1013
Root MSE	10.7662
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	797.28	<.0001
Intercept	1	16602.1	<.0001
RIDRETH1	4	4.66	0.0101
riagendr	1	19.14	0.0004
marcat	2	1.39	0.2756
agec	1	20.95	0.0003
agecsq	1	163.16	<.0001
agec*RIDRETH1	4	4.00	0.0183
agecsq*RIDRETH1	4	8.23	0.0007

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.4546993	0.84441754	88.17	<.0001	72.6731340	76.2362645	1.06
RIDRETH1 2	0.3457130	0.98561249	0.35	0.7301	-1.7337476	2.4251736	0.68
RIDRETH1 3	1.5524238	0.94092869	1.65	0.1173	-0.4327622	3.5376098	1.24
RIDRETH1 4	3.3935610	0.99289270	3.42	0.0033	1.2987405	5.4883815	0.92
RIDRETH1 5	1.3799756	0.87965924	1.57	0.1351	-0.4759431	3.2358944	0.61
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-2.2142228	0.50610907	-4.37	0.0004	-3.2820197	-1.1464260	2.60
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.5488372	0.63060197	0.87	0.3962	-0.7816167	1.8792910	2.20
marcat 3	1.1882195	0.77978911	1.52	0.1460	-0.4569917	2.8334308	2.93

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0502370	0.03506666	1.43	0.1701	-0.0237472	0.1242212	0.70
agecsq	-0.0124453	0.00221403	-5.62	<.0001	-0.0171165	-0.0077741	0.83
agec*RIDRETH1 2	0.0662619	0.05034873	1.32	0.2056	-0.0399647	0.1724884	0.82
agec*RIDRETH1 3	0.0111186	0.05403503	0.21	0.8394	-0.1028854	0.1251225	1.56
agec*RIDRETH1 4	0.0693963	0.03710782	1.87	0.0788	-0.0088944	0.1476870	0.55
agec*RIDRETH1 5	0.0438456	0.05912415	0.74	0.4685	-0.0808955	0.1685866	1.20
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*RIDRETH1 2	0.0000510	0.00335592	0.02	0.9880	-0.0070293	0.0071314	1.04
agecsq*RIDRETH1 3	0.0018498	0.00179447	1.03	0.3171	-0.0019362	0.0056358	0.51
agecsq*RIDRETH1 4	-0.0039116	0.00221270	-1.77	0.0950	-0.0085800	0.0007568	0.58
agecsq*RIDRETH1 5	-0.0001547	0.00225147	-0.07	0.9460	-0.0049049	0.0045955	0.51
agecsq*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Race 4 levels	4	4.66	0.0101
Race X AgeC	4	4.00	0.0183
Race X Agecsq	4	8.23	0.0007
Race X AgeC and Race X Agecsq	8	10.03	<.0001

The denominator degrees of freedom for the F tests is 17.

7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity and Gender X Centered Age and Centered Age Squared

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.1049
Root MSE	10.7467
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	852.29	<.0001
Intercept	1	16853.0	<.0001
RIDRETH1	4	5.07	0.0071
riagendr	1	16.77	0.0008
marcat	2	1.05	0.3706
agec	1	20.06	0.0003
agecsq	1	164.50	<.0001
agec*RIDRETH1	4	3.60	0.0267
agecsq*RIDRETH1	4	7.51	0.0011
agec*riagendr	1	3.46	0.0802
agecsq*riagendr	1	3.13	0.0950

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.9279514	0.93458305	80.17	<.0001	72.9561535	76.8997493	1.27
RIDRETH1 2	0.4060606	0.98163693	0.41	0.6843	-1.6650123	2.4771335	0.67
RIDRETH1 3	1.6140818	0.94593190	1.71	0.1061	-0.3816600	3.6098237	1.25
RIDRETH1 4	3.5198661	0.99291115	3.54	0.0025	1.4250067	5.6147255	0.93
RIDRETH1 5	1.4164313	0.86349126	1.64	0.1193	-0.4053760	3.2382387	0.59
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-3.1027738	0.75761132	-4.10	0.0008	-4.7011939	-1.5043536	3.05
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2905908	0.64112083	0.45	0.6561	-1.0620559	1.6432375	2.23
marcat 3	1.1076855	0.77732220	1.43	0.1723	-0.5323210	2.7476920	2.91
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0281912	0.03984572	0.71	0.4888	-0.0558759	0.1122583	0.88
agecsq	-0.0138641	0.00238207	-5.82	<.0001	-0.0188898	-0.0088384	0.93
agec*RIDRETH1 2	0.0605772	0.05208989	1.16	0.2609	-0.0493229	0.1704772	0.88
agec*RIDRETH1 3	0.0076904	0.05657132	0.14	0.8935	-0.1116647	0.1270454	1.71
agec*RIDRETH1 4	0.0646497	0.03921162	1.65	0.1176	-0.0180796	0.1473790	0.61
agec*RIDRETH1 5	0.0390183	0.06217648	0.63	0.5386	-0.0921626	0.1701992	1.33
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*RIDRETH1 2	-0.0003224	0.00362310	-0.09	0.9301	-0.0079664	0.0073217	1.22
agecsq*RIDRETH1 3	0.0015388	0.00195671	0.79	0.4424	-0.0025895	0.0056671	0.61
agecsq*RIDRETH1 4	-0.0042949	0.00238750	-1.80	0.0898	-0.0093321	0.0007423	0.67
agecsq*RIDRETH1 5	-0.0003766	0.00248087	-0.15	0.8811	-0.0056108	0.0048575	0.62
agecsq*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*riagendr 2	0.0484726	0.02604951	1.86	0.0802	-0.0064870	0.1034323	1.81
agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*riagendr 2	0.0030105	0.00170246	1.77	0.0950	-0.0005814	0.0066023	2.48
agecsq*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Race 4 levels	4	5.07	0.0071
Race X AgeC	4	3.60	0.0267
Race X Agecsq	4	7.51	0.0011
Race X AgeC and Race X Agecsq	8	9.06	<.0001
Gender X agesq	1	3.13	0.0950
Gender X agec	1	3.46	0.0802
Gender X Agec and Gender X Agecsq	2	4.33	0.0302

The denominator degrees of freedom for the F tests is 17.



7.5.6: Test of Interactions for Preliminary Model: Test Race/Ethnicity and Gender X Centered Age and Centered Age Squared

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.1049
Root MSE	10.7467
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	852.29	<.0001
Intercept	1	16853.0	<.0001
RIDRETH1	4	5.07	0.0071
riagendr	1	16.77	0.0008
marcat	2	1.05	0.3706
agec	1	20.06	0.0003
agecsq	1	164.50	<.0001
agec*RIDRETH1	4	3.60	0.0267
agecsq*RIDRETH1	4	7.51	0.0011
agec*riagendr	1	3.46	0.0802
agecsq*riagendr	1	3.13	0.0950

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.9279514	0.93458305	80.17	<.0001	72.9561535	76.8997493	1.27
RIDRETH1 2	0.4060606	0.98163693	0.41	0.6843	-1.6650123	2.4771335	0.67
RIDRETH1 3	1.6140818	0.94593190	1.71	0.1061	-0.3816600	3.6098237	1.25
RIDRETH1 4	3.5198661	0.99291115	3.54	0.0025	1.4250067	5.6147255	0.93
RIDRETH1 5	1.4164313	0.86349126	1.64	0.1193	-0.4053760	3.2382387	0.59
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-3.1027738	0.75761132	-4.10	0.0008	-4.7011939	-1.5043536	3.05

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2905908	0.64112083	0.45	0.6561	-1.0620559	1.6432375	2.23
marcat 3	1.1076855	0.77732220	1.43	0.1723	-0.5323210	2.7476920	2.91
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0281912	0.03984572	0.71	0.4888	-0.0558759	0.1122583	0.88
agecsq	-0.0138641	0.00238207	-5.82	<.0001	-0.0188898	-0.0088384	0.93
agec*RIDRETH1 2	0.0605772	0.05208989	1.16	0.2609	-0.0493229	0.1704772	0.88
agec*RIDRETH1 3	0.0076904	0.05657132	0.14	0.8935	-0.1116647	0.1270454	1.71
agec*RIDRETH1 4	0.0646497	0.03921162	1.65	0.1176	-0.0180796	0.1473790	0.61
agec*RIDRETH1 5	0.0390183	0.06217648	0.63	0.5386	-0.0921626	0.1701992	1.33
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*RIDRETH1 2	-0.0003224	0.00362310	-0.09	0.9301	-0.0079664	0.0073217	1.22
agecsq*RIDRETH1 3	0.0015388	0.00195671	0.79	0.4424	-0.0025895	0.0056671	0.61
agecsq*RIDRETH1 4	-0.0042949	0.00238750	-1.80	0.0898	-0.0093321	0.0007423	0.67
agecsq*RIDRETH1 5	-0.0003766	0.00248087	-0.15	0.8811	-0.0056108	0.0048575	0.62
agecsq*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*riagendr 2	0.0484726	0.02604951	1.86	0.0802	-0.0064870	0.1034323	1.81
agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agecsq*riagendr 2	0.0030105	0.00170246	1.77	0.0950	-0.0005814	0.0066023	2.48
agecsq*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Analysis of Contrasts			
Contrast	Num DF	F Value	Pr > F
Race 4 levels	4	5.07	0.0071
Race X AgeC	4	3.60	0.0267
Race X Agecsq	4	7.51	0.0011
Race X AgeC and Race X Agecsq	8	9.06	<.0001
Gender X agesq	1	3.13	0.0950
Gender X agec	1	3.46	0.0802
Gender X Agec and Gender X Agecsq	2	4.33	0.0302

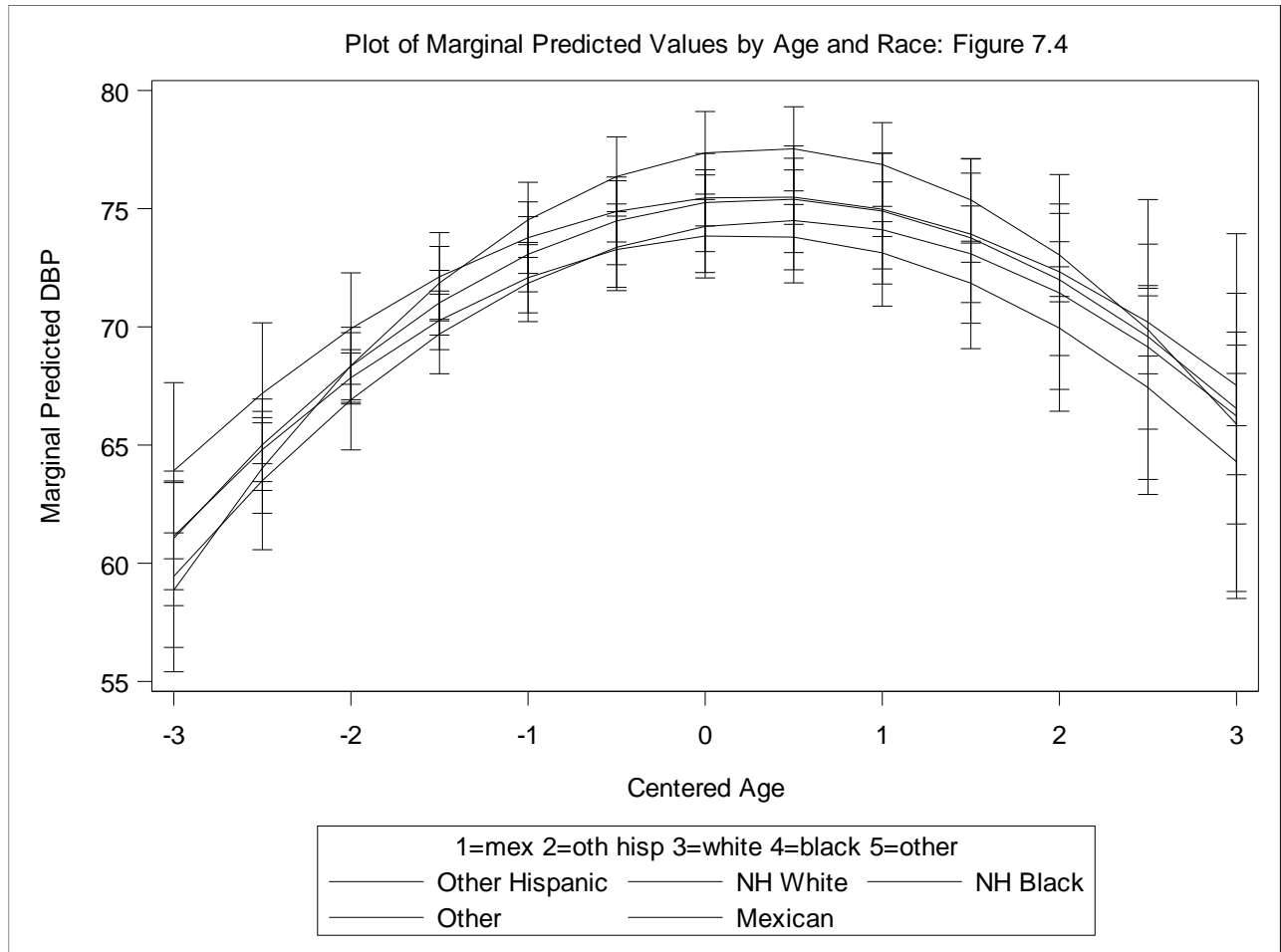
The denominator degrees of freedom for the F tests is 17.

Final Model with Interactions, Produce Numbers for Margins Plots

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxd11\_1

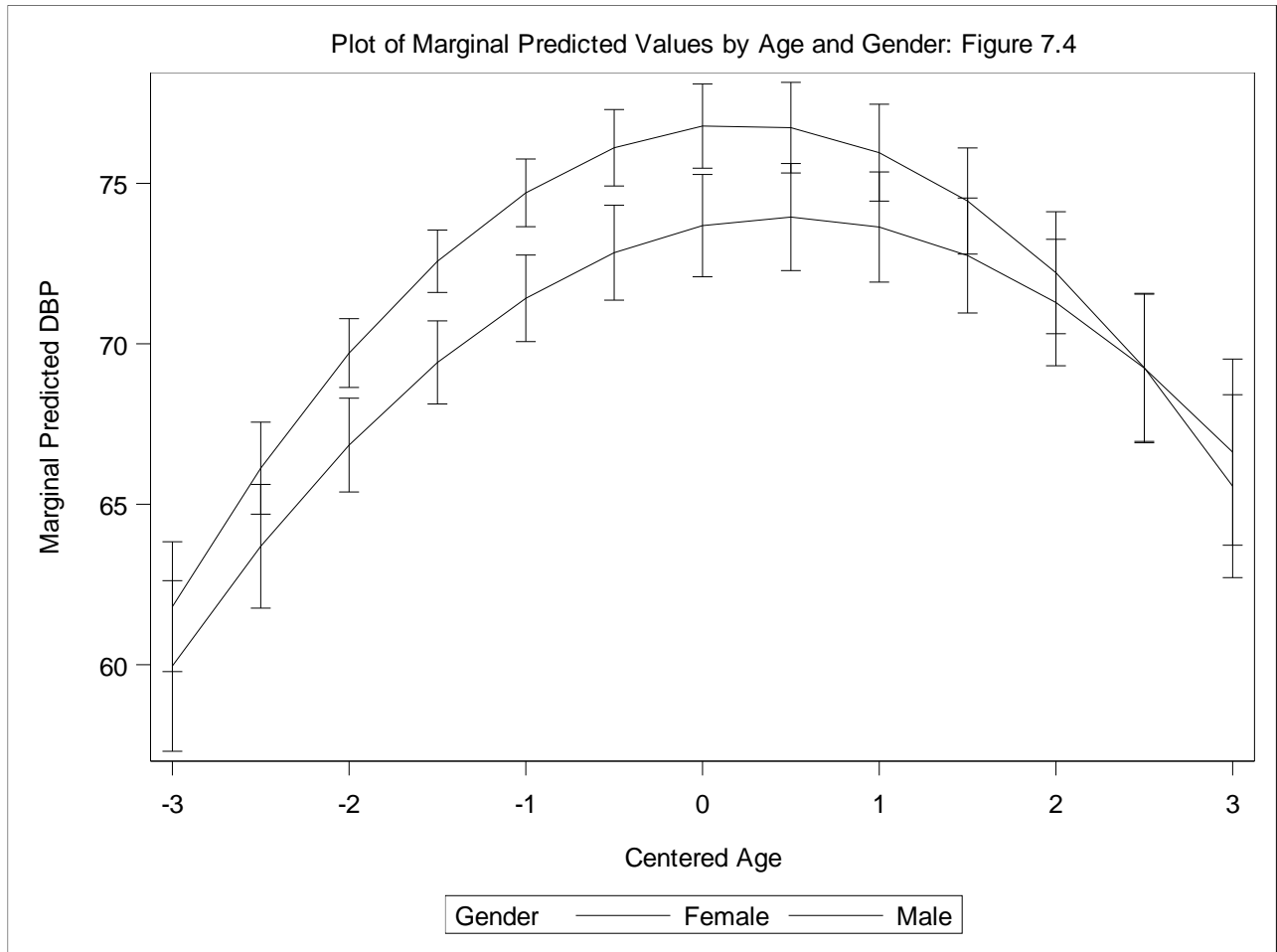


Final Model with Interactions, Produce Numbers for Marginal Means by Gender

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxd11\_1



Numbers for Table 7.6

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.1049
Root MSE	10.7467
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	852.29	<.0001
Intercept	1	16853.0	<.0001
RIDRETH1	4	5.07	0.0071
riagendr	1	16.77	0.0008
marcat	2	1.05	0.3706
agec	1	20.06	0.0003
agec*agec	1	164.50	<.0001
agec*RIDRETH1	4	3.60	0.0267
agec*agec*RIDRETH1	4	7.51	0.0011
agec*riagendr	1	3.46	0.0802
agec*agec*riagendr	1	3.13	0.0950

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.9279514	0.93458305	80.17	<.0001	72.9561535	76.8997493	1.27
RIDRETH1 2	0.4060606	0.98163693	0.41	0.6843	-1.6650123	2.4771335	0.67
RIDRETH1 3	1.6140818	0.94593190	1.71	0.1061	-0.3816600	3.6098237	1.25
RIDRETH1 4	3.5198661	0.99291115	3.54	0.0025	1.4250067	5.6147255	0.93
RIDRETH1 5	1.4164313	0.86349126	1.64	0.1193	-0.4053760	3.2382387	0.59
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-3.1027738	0.75761132	-4.10	0.0008	-4.7011939	-1.5043536	3.05
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2905908	0.64112083	0.45	0.6561	-1.0620559	1.6432375	2.23
marcat 3	1.1076855	0.77732220	1.43	0.1723	-0.5323210	2.7476920	2.91
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0281912	0.03984572	0.71	0.4888	-0.0558759	0.1122583	0.88
agec*agec	-0.0138641	0.00238207	-5.82	<.0001	-0.0188898	-0.0088384	0.93
agec*RIDRETH1 2	0.0605772	0.05208989	1.16	0.2609	-0.0493229	0.1704772	0.88
agec*RIDRETH1 3	0.0076904	0.05657132	0.14	0.8935	-0.1116647	0.1270454	1.71
agec*RIDRETH1 4	0.0646497	0.03921162	1.65	0.1176	-0.0180796	0.1473790	0.61
agec*RIDRETH1 5	0.0390183	0.06217648	0.63	0.5386	-0.0921626	0.1701992	1.33
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*agec*RIDRETH1 2	-0.0003224	0.00362310	-0.09	0.9301	-0.0079664	0.0073217	1.22
agec*agec*RIDRETH1 3	0.0015388	0.00195671	0.79	0.4424	-0.0025895	0.0056671	0.61
agec*agec*RIDRETH1 4	-0.0042949	0.00238750	-1.80	0.0898	-0.0093321	0.0007423	0.67
agec*agec*RIDRETH1 5	-0.0003766	0.00248087	-0.15	0.8811	-0.0056108	0.0048575	0.62
agec*agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*riagendr 2	0.0484726	0.02604951	1.86	0.0802	-0.0064870	0.1034323	1.81
agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*agec*riagendr 2	0.0030105	0.00170246	1.77	0.0950	-0.0005814	0.0066023	2.48
agec*agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Numbers for Table 7.6

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	205481295
Weighted Mean of bpxdil_1	71.92817
Weighted Sum of bpxdil_1	1.47799E10

Fit Statistics	
R-Square	0.1049
Root MSE	10.7467
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	852.29	<.0001
Intercept	1	16853.0	<.0001
RIDRETH1	4	5.07	0.0071
riagendr	1	16.77	0.0008
marcat	2	1.05	0.3706
agec	1	20.06	0.0003
agec*agec	1	164.50	<.0001
agec*RIDRETH1	4	3.60	0.0267
agec*agec*RIDRETH1	4	7.51	0.0011
agec*riagendr	1	3.46	0.0802
agec*agec*riagendr	1	3.13	0.0950

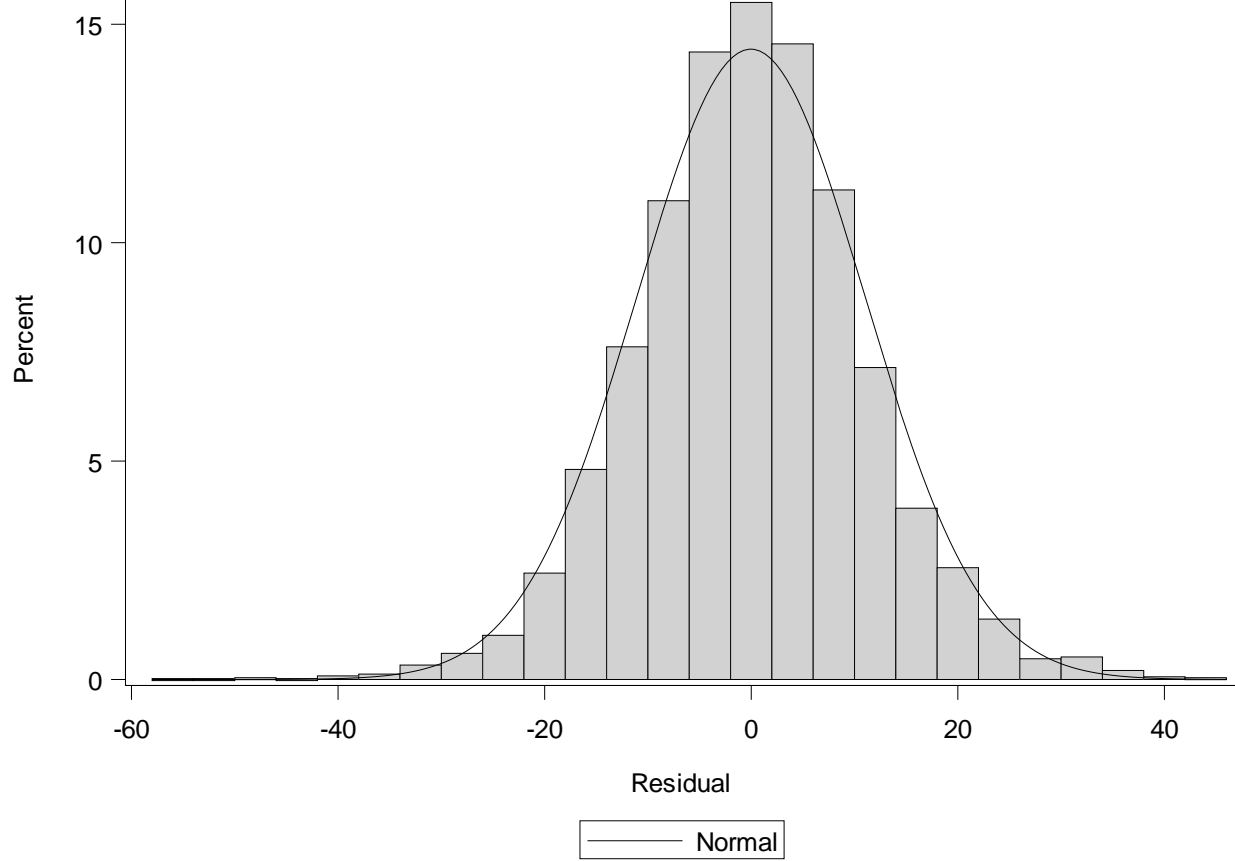
The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients							
Parameter	Estimate	Standard Error	t Value	Pr >  t	95% Confidence Interval		Design Effect
Intercept	74.9279514	0.93458305	80.17	<.0001	72.9561535	76.8997493	1.27
RIDRETH1 2	0.4060606	0.98163693	0.41	0.6843	-1.6650123	2.4771335	0.67
RIDRETH1 3	1.6140818	0.94593190	1.71	0.1061	-0.3816600	3.6098237	1.25
RIDRETH1 4	3.5198661	0.99291115	3.54	0.0025	1.4250067	5.6147255	0.93
RIDRETH1 5	1.4164313	0.86349126	1.64	0.1193	-0.4053760	3.2382387	0.59
RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
riagendr 2	-3.1027738	0.75761132	-4.10	0.0008	-4.7011939	-1.5043536	3.05
riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
marcat 2	0.2905908	0.64112083	0.45	0.6561	-1.0620559	1.6432375	2.23
marcat 3	1.1076855	0.77732220	1.43	0.1723	-0.5323210	2.7476920	2.91
marcat 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec	0.0281912	0.03984572	0.71	0.4888	-0.0558759	0.1122583	0.88
agec*agec	-0.0138641	0.00238207	-5.82	<.0001	-0.0188898	-0.0088384	0.93
agec*RIDRETH1 2	0.0605772	0.05208989	1.16	0.2609	-0.0493229	0.1704772	0.88
agec*RIDRETH1 3	0.0076904	0.05657132	0.14	0.8935	-0.1116647	0.1270454	1.71
agec*RIDRETH1 4	0.0646497	0.03921162	1.65	0.1176	-0.0180796	0.1473790	0.61
agec*RIDRETH1 5	0.0390183	0.06217648	0.63	0.5386	-0.0921626	0.1701992	1.33
agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*agec*RIDRETH1 2	-0.0003224	0.00362310	-0.09	0.9301	-0.0079664	0.0073217	1.22
agec*agec*RIDRETH1 3	0.0015388	0.00195671	0.79	0.4424	-0.0025895	0.0056671	0.61
agec*agec*RIDRETH1 4	-0.0042949	0.00238750	-1.80	0.0898	-0.0093321	0.0007423	0.67
agec*agec*RIDRETH1 5	-0.0003766	0.00248087	-0.15	0.8811	-0.0056108	0.0048575	0.62
agec*agec*RIDRETH1 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*riagendr 2	0.0484726	0.02604951	1.86	0.0802	-0.0064870	0.1034323	1.81
agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.
agec*agec*riagendr 2	0.0030105	0.00170246	1.77	0.0950	-0.0005814	0.0066023	2.48
agec*agec*riagendr 1	0.0000000	0.00000000	.	.	0.0000000	0.0000000	.

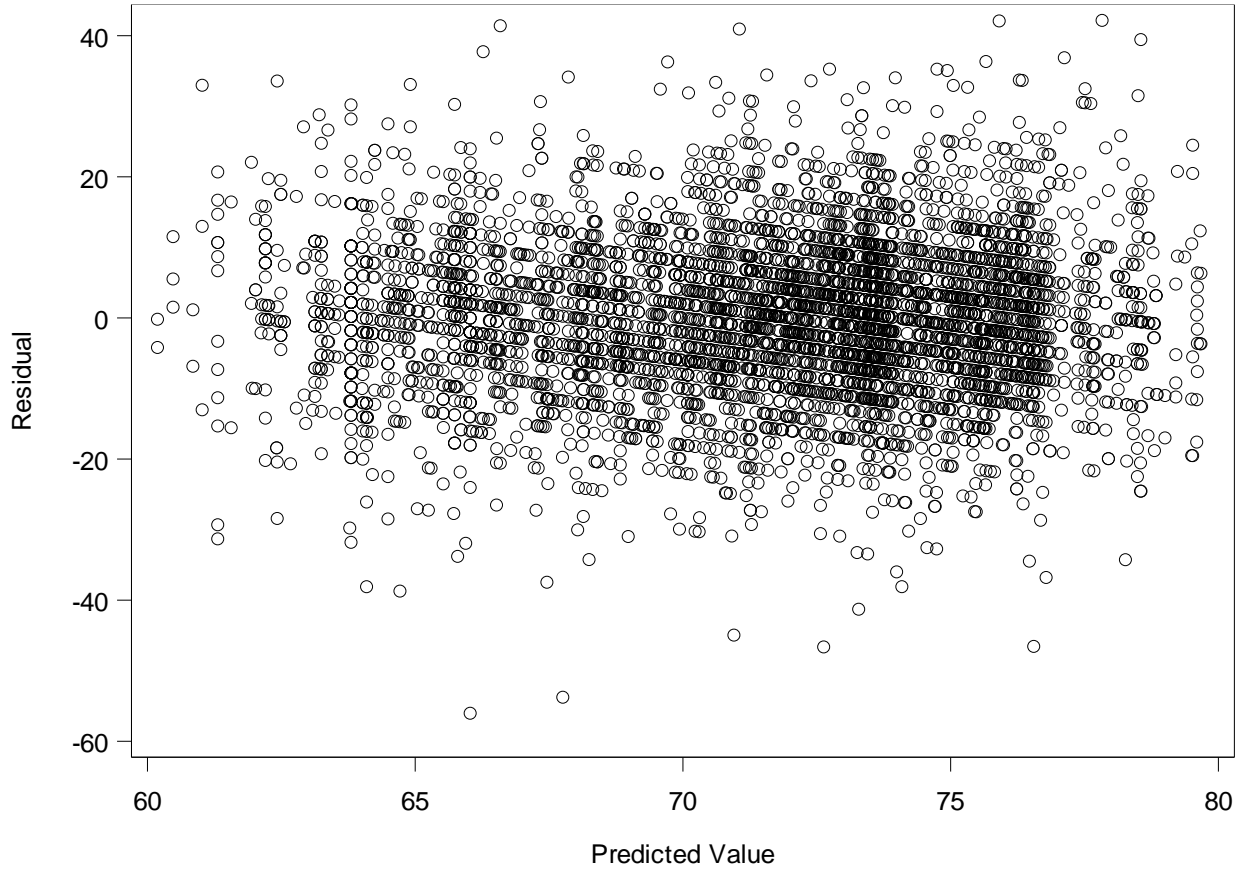
The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Histogram of Residuals Plot



Scatter Plot of Residual by Predicted



QQ Plot of Residuals

The UNIVARIATE Procedure  
Variable: resid (Residual)

Moments			
N	4845	Sum Weights	4845
Mean	-0.0351782	Sum Observations	-170.43825
Std Deviation	11.0579491	Variance	122.278237
Skewness	0.00824772	Kurtosis	0.85796353
Uncorrected SS	592321.777	Corrected SS	592315.781
Coeff Variation	-31434.119	Std Error Mean	0.15886481

Basic Statistical Measures			
Location		Variability	
Mean	-0.03518	Std Deviation	11.05795
Median	-0.02639	Variance	122.27824
Mode	-2.02639	Range	98.19863
		Interquartile Range	13.64837

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	-0.22143	Pr >  t	0.8248
Sign	M	-6.5	Pr >=  M	0.8631
Signed Rank	S	-46656.5	Pr >=  S	0.6319

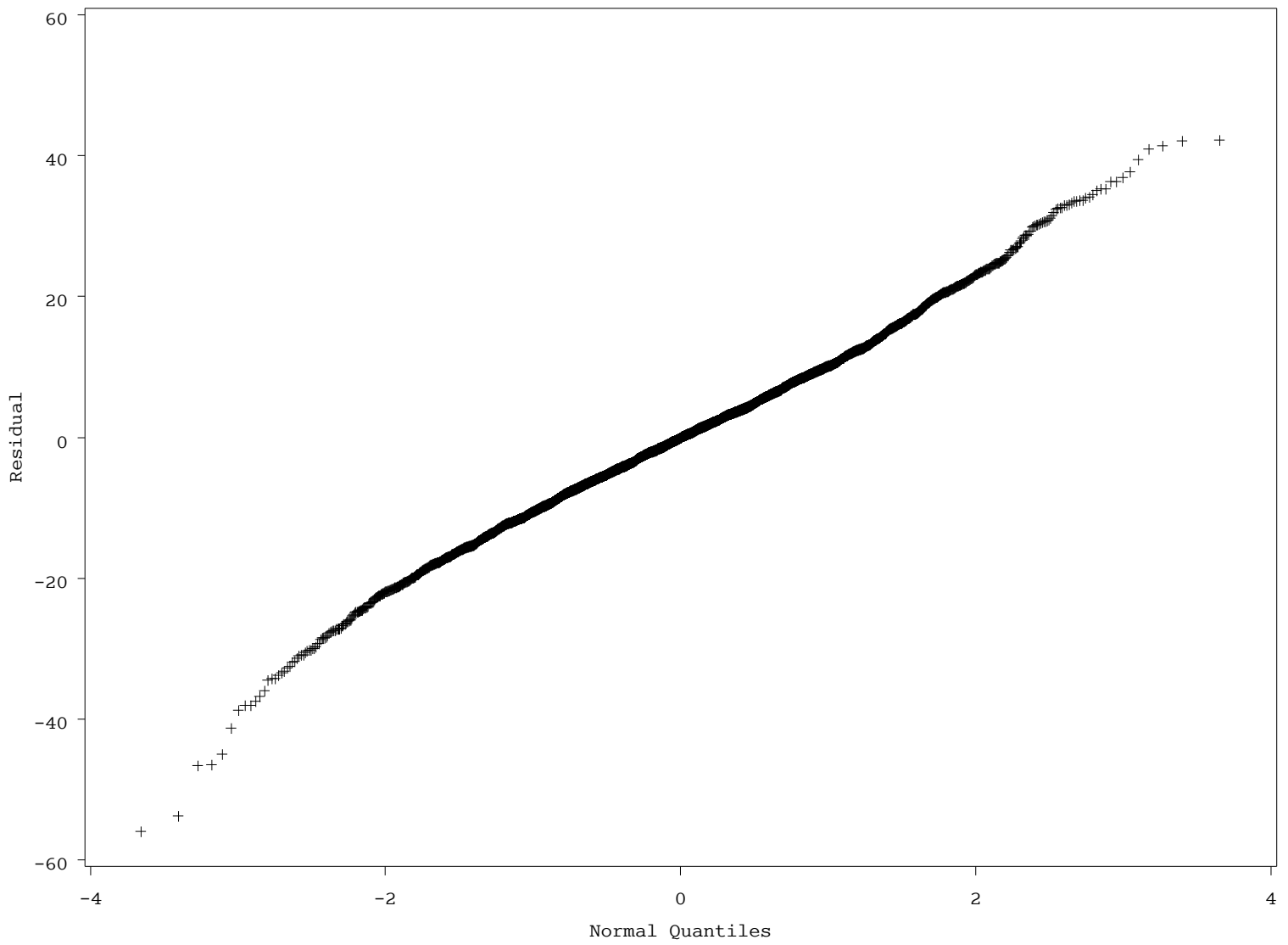
Quantiles (Definition 5)	
Level	Quantile
100% Max	42.1722361
99%	28.4630076
95%	18.4634093
90%	13.2567280
75% Q3	6.7401201
50% Median	-0.0263924
25% Q1	-6.9082529
10%	-13.6004232
5%	-17.7351072
1%	-27.2598799
0% Min	-56.0263924

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-56.0264	13488	39.4488	18513
-53.7562	15571	40.9464	9996
-46.6282	12491	41.4117	17402

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-46.5509	12894	42.0939	14245
-44.9520	10914	42.1722	19315

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	4911	50.34	100.00

QQ Plot of Residuals



Use Pfeffermann method (Q weighted)  
 Predict Weight by Main Effects and Interactions

The GLM Procedure

Class Level Information		
Class	Levels	Values
RIDRETH1	5	2 3 4 5 1
riagendr	2	2 1
marcat	3	2 3 1

Number of Observations Read	5864
Number of Observations Used	5553

Use Pfeffermann method (Q weighted)  
 Predict Weight by Main Effects and Interactions

The GLM Procedure

Dependent Variable: WTMEC2YR Full sample 2 year MEC exam weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	19	4.3054236E12	226601240345	258.28	<.0001
Error	5533	4.8542759E12	877331630.43		
Corrected Total	5552	9.1596995E12			

R-Square	Coeff Var	Root MSE	WTMEC2YR Mean
0.470040	73.45559	29619.78	40323.39

Source	DF	Type I SS	Mean Square	F Value	Pr > F
RIDRETH1	4	3.5292256E12	882306397211	1005.67	<.0001
riagendr	1	12129803571	12129803571	13.83	0.0002
marcat	2	113031192065	56515596032	64.42	<.0001
agec	1	147575393276	147575393276	168.21	<.0001
agec*agec	1	186548961768	186548961768	212.63	<.0001
agec*RIDRETH1	4	54134477780	13533619445	15.43	<.0001
agec*agec*RIDRETH1	4	246215561116	61553890279	70.16	<.0001
agec*riagendr	1	8283860012.3	8283860012.3	9.44	0.0021
agec*agec*riagendr	1	8278728124.9	8278728124.9	9.44	0.0021

Source	DF	Type III SS	Mean Square	F Value	Pr > F
RIDRETH1	4	2.8348035E12	708700862519	807.79	<.0001
riagendr	1	824013043.06	824013043.06	0.94	0.3325
marcat	2	47853721405	23926860702	27.27	<.0001
agec	1	43245363313	43245363313	49.29	<.0001
agec*agec	1	30582278657	30582278657	34.86	<.0001
agec*RIDRETH1	4	114388542676	28597135669	32.60	<.0001
agec*agec*RIDRETH1	4	244318779789	61079694947	69.62	<.0001
agec*riagendr	1	2228906884.6	2228906884.6	2.54	0.1110

Source	DF	Type III SS	Mean Square	F Value	Pr > F
agec*agec*riagendr	1	8278728124.9	8278728124.9	9.44	0.0021

Parameter		Estimate		Standard Error	t Value	Pr >  t
Intercept		32315.18290	B	1895.411804	17.05	<.0001
RIDRETH1	2	-4653.54773	B	2554.045200	-1.82	0.0685
RIDRETH1	3	59412.63335	B	2057.361081	28.88	<.0001
RIDRETH1	4	-11703.61979	B	2148.990496	-5.45	<.0001
RIDRETH1	5	-13289.52225	B	2283.051870	-5.82	<.0001
RIDRETH1	1	0.00000	B	.	.	.
riagendr	2	1115.57550	B	1151.102026	0.97	0.3325
riagendr	1	0.00000	B	.	.	.
marcat	2	-7724.56387	B	1070.552699	-7.22	<.0001
marcat	3	235.52872	B	1161.446575	0.20	0.8393
marcat	1	0.00000	B	.	.	.
agec		-661.50610	B	85.570761	-7.73	<.0001
agec*agec		-5.29310	B	5.288776	-1.00	0.3170
agec*RIDRETH1	2	73.79500	B	111.960371	0.66	0.5098
agec*RIDRETH1	3	827.26387	B	92.571373	8.94	<.0001
agec*RIDRETH1	4	478.21231	B	94.884483	5.04	<.0001
agec*RIDRETH1	5	625.82484	B	101.333166	6.18	<.0001
agec*RIDRETH1	1	0.00000	B	.	.	.
agec*agec*RIDRETH1	2	4.06945	B	6.793924	0.60	0.5492
agec*agec*RIDRETH1	3	-46.97763	B	5.567961	-8.44	<.0001
agec*agec*RIDRETH1	4	-2.37028	B	5.808526	-0.41	0.6832
agec*agec*RIDRETH1	5	0.22115	B	6.210219	0.04	0.9716
agec*agec*RIDRETH1	1	0.00000	B	.	.	.
agec*riagendr	2	78.30835	B	49.129690	1.59	0.1110
agec*riagendr	1	0.00000	B	.	.	.
agec*agec*riagendr	2	8.22324	B	2.676968	3.07	0.0021
agec*agec*riagendr	1	0.00000	B	.	.	.

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.

Use Pfeffermann method (Q weighted)  
 Predict Weight by Main Effects and Interactions

The SURVEYREG Procedure

Regression Analysis for Dependent Variable bpxdil\_1

Data Summary	
Number of Observations	4845
Sum of Weights	5257.3
Weighted Mean of bpxdil_1	71.42965
Weighted Sum of bpxdil_1	375525.8

Design Summary	
Number of Strata	14
Number of Clusters	31

Fit Statistics	
R-Square	0.1293
Root MSE	11.1087
Denominator DF	17

Class Level Information			
CLASS Variable	Label	Levels	Values
RIDRETH1	1=mex 2=oth hisp 3=white 4=black 5=other	5	2 3 4 5 1
riagendr	Gender	2	2 1
marcat	1=married 2=prev married 3=never married	3	2 3 1

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	1101.96	<.0001
Intercept	1	24655.4	<.0001
RIDRETH1	4	3.68	0.0245
riagendr	1	29.25	<.0001
marcat	2	0.83	0.4548
agec	1	21.14	0.0003
agec*agec	1	125.75	<.0001
agec*RIDRETH1	4	5.51	0.0049
agec*agec*RIDRETH1	4	3.28	0.0362
agec*riagendr	1	1.14	0.3014
agec*agec*riagendr	1	2.34	0.1445

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	75.4368178	0.96942072	77.82	<.0001
RIDRETH1 2	0.7328702	0.97780642	0.75	0.4638
RIDRETH1 3	1.4061444	1.06995774	1.31	0.2062
RIDRETH1 4	3.4063892	1.05201137	3.24	0.0048
RIDRETH1 5	1.1733746	1.00124212	1.17	0.2574
RIDRETH1 1	0.0000000	0.00000000	.	.
riagendr 2	-3.4370648	0.63550149	-5.41	<.0001
riagendr 1	0.0000000	0.00000000	.	.
marcat 2	-0.2501659	0.51670812	-0.48	0.6345
marcat 3	0.5494005	0.59248384	0.93	0.3668
marcat 1	0.0000000	0.00000000	.	.
agec	0.0410982	0.04311872	0.95	0.3539
agec*agec	-0.0140742	0.00280844	-5.01	0.0001
agec*RIDRETH1 2	0.0231397	0.06318301	0.37	0.7187
agec*RIDRETH1 3	-0.0015387	0.05977033	-0.03	0.9798
agec*RIDRETH1 4	0.0712220	0.03910169	1.82	0.0862
agec*RIDRETH1 5	0.0397136	0.05961101	0.67	0.5142
agec*RIDRETH1 1	0.0000000	0.00000000	.	.
agec*agec*RIDRETH1 2	-0.0031420	0.00486729	-0.65	0.5272
agec*agec*RIDRETH1 3	0.0020717	0.00229824	0.90	0.3800
agec*agec*RIDRETH1 4	-0.0031053	0.00304195	-1.02	0.3217
agec*agec*RIDRETH1 5	0.0009378	0.00293890	0.32	0.7536
agec*agec*RIDRETH1 1	0.0000000	0.00000000	.	.
agec*riagendr 2	0.0313806	0.02944131	1.07	0.3014
agec*riagendr 1	0.0000000	0.00000000	.	.
agec*agec*riagendr 2	0.0028660	0.00187391	1.53	0.1445
agec*agec*riagendr 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

Use Pfeffermann method (Q weighted)  
 Predict Weight by Main Effects and Interactions

The SURVEYREG Procedure

age18p=1

Domain Regression Analysis for Variable bpxdil\_1

Domain Summary	
Number of Observations	4845
Number of Observations in Domain	4845
Number of Observations Not in Domain	0
Sum of Weights in Domain	5257.3
Weighted Mean of bpxdil_1	71.42965
Weighted Sum of bpxdil_1	375525.8

Fit Statistics	
R-Square	0.1293
Root MSE	11.1087
Denominator DF	17

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	17	1101.96	<.0001
Intercept	1	24655.4	<.0001
RIDRETH1	4	3.68	0.0245
riagendr	1	29.25	<.0001
marcat	2	0.83	0.4548
agec	1	21.14	0.0003
agec*agec	1	125.75	<.0001
agec*RIDRETH1	4	5.51	0.0049
agec*agec*RIDRETH1	4	3.28	0.0362
agec*riagendr	1	1.14	0.3014
agec*agec*riagendr	1	2.34	0.1445

The denominator degrees of freedom for the F tests is 17.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
Intercept	75.4368178	0.96942072	77.82	<.0001
RIDRETH1 2	0.7328702	0.97780642	0.75	0.4638
RIDRETH1 3	1.4061444	1.06995774	1.31	0.2062
RIDRETH1 4	3.4063892	1.05201137	3.24	0.0048
RIDRETH1 5	1.1733746	1.00124212	1.17	0.2574
RIDRETH1 1	0.0000000	0.00000000	.	.
riagendr 2	-3.4370648	0.63550149	-5.41	<.0001

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr >  t
riagendr 1	0.0000000	0.00000000	.	.
marcat 2	-0.2501659	0.51670812	-0.48	0.6345
marcat 3	0.5494005	0.59248384	0.93	0.3668
marcat 1	0.0000000	0.00000000	.	.
agec	0.0410982	0.04311872	0.95	0.3539
agec*agec	-0.0140742	0.00280844	-5.01	0.0001
agec*RIDRETH1 2	0.0231397	0.06318301	0.37	0.7187
agec*RIDRETH1 3	-0.0015387	0.05977033	-0.03	0.9798
agec*RIDRETH1 4	0.0712220	0.03910169	1.82	0.0862
agec*RIDRETH1 5	0.0397136	0.05961101	0.67	0.5142
agec*RIDRETH1 1	0.0000000	0.00000000	.	.
agec*agec*RIDRETH1 2	-0.0031420	0.00486729	-0.65	0.5272
agec*agec*RIDRETH1 3	0.0020717	0.00229824	0.90	0.3800
agec*agec*RIDRETH1 4	-0.0031053	0.00304195	-1.02	0.3217
agec*agec*RIDRETH1 5	0.0009378	0.00293890	0.32	0.7536
agec*agec*RIDRETH1 1	0.0000000	0.00000000	.	.
agec*riagendr 2	0.0313806	0.02944131	1.07	0.3014
agec*riagendr 1	0.0000000	0.00000000	.	.
agec*agec*riagendr 2	0.0028660	0.00187391	1.53	0.1445
agec*agec*riagendr 1	0.0000000	0.00000000	.	.

The degrees of freedom for the t tests is 17.

Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.