

*/*Applied Regression Group Project - Away-From-Home Meals and Body Mass Index in the NHANES Dataset*/*

/ We are assessing the association between number of away-from-home meals and BMI while controlling for age, gender, race, education, income, physical activity, alcohol consumption, and history of blood pressure as potential confounders. Specifically, we hypothesize that an increase in the number of away-from-home meals is associated with an increase in BMI. We are using the 2015-2016 NHANES data as our data source for this research question.*

*/*Data Import and Cleaning*/*

*/*While looking through the 2015-2016 NHANES data, we identified six data files that contained the appropriate variables that we needed for our hypothesis: BPQ_I, DEMO_I, DBQ_I, BMX_I, PAQ_I, and ALQ_I. We imported the XPT data files into SAS and created temporary files in the work directory using the LIBNAME statement.*/*

```
libname final xport "/home/jmc23920/sasuser.v94/DEMO_I.XPT";  
  data DEMO_I; set final.DEMO_I;  
  run;
```

```
libname final xport "/home/jmc23920/sasuser.v94/BPQ_I.XPT";  
  data BPQ_I; set final.BPQ_I;  
  run;
```

```
libname final xport "/home/jmc23920/sasuser.v94/DBQ_I.XPT";  
  data DBQ_I; set final.DBQ_I;  
  run;
```

```
libname final xport "/home/jmc23920/sasuser.v94/BMX_I.XPT";  
  data BMX_I; set final.BMX_I;  
  run;
```

```
libname final xport "/home/jmc23920/sasuser.v94/ALQ_I.XPT";  
  data ALQ_I; set final.ALQ_I;  
  run;
```

```
libname final xport "/home/jmc23920/sasuser.v94/PAQ_I.XPT";  
  data PAQ_I; set final.PAQ_I;  
  run;
```

/*We then merged and sorted each of the six data files by a variable, SEQN, which is common in all six data files. SEQN is the respondent sequence number - an identifier for each respondent.*/

```
proc sort data = work.DEMO_I;  
  by SEQN;  
run;
```

```
proc sort data = work.BPQ_I;  
  by SEQN;  
run;
```

```
proc sort data = work.DBQ_I;  
  by SEQN;  
run;
```

```
proc sort data = work.BMX_I;  
  by SEQN;  
run;
```

```
proc sort data = work.ALQ_I;  
  by SEQN;  
run;
```

```
proc sort data = work.PAQ_I;  
  by SEQN;  
run;
```

/*Next, we merged the six data files using SEQN, and labeled our merged data file "complete."*/

```
data complete;  
  merge work.DEMO_I work.BPQ_I work.DBQ_I work.BMX_I work.ALQ_I work.PAQ_I;  
  by SEQN;  
run;
```

Total rows: 9971 Total columns: 234 Rows 1-100

	SEQN	SDDSRVYR	RIDSTATR
1	83732	9	2
2	83733	9	2
3	83734	9	2
4	83735	9	2
5	83736	9	2
6	83737	9	2
7	83738	9	2
8	83739	9	2
9	83740	9	2
10	83741	9	2
11	83742	9	2
12	83743	9	2
13	83744	9	2
14	83745	9	2

/*Using the PROC CONTENTS statement, we checked the contents of our merged data file to familiarize ourselves with the data. Our merged data file contained 9,971 observations and 234 variables. Next, we created a new dataset containing only our needed variables:

- SEQN (unique identifier for each respondent);
- RIAGENDR (gender);
- RIDAGEYR (age in years at screening);
- RIDRETH1 (race/ethnicity);
- INDFMPPIR (ratio of family income to poverty);
- WTINT2YR (full sample 2-year interview weight);
- WTMEC2YR (full sample 2-year MEC exam weight);
- SDMVPSU (pseudo-cluster/PSU, masked for confidentiality);
- SDMVSTRA (pseudo-strata, masked for confidentiality);
- BPQ020 (ever told that he/she had high blood pressure);
- DBD895 (number of meals not prepared at home in the last week);
- BMXBMI (BMI);
- DMDDEDUC2 (education level, adults 20+ only);
- PAQ665 (moderate-intensity recreational activities in a given week); and
- ALQ120Q (frequency of drinking alcohol in the past 12 months)

Keeping only these variables gave us 9,971 observations and 15 variables.*/

```
proc contents data = complete;
run;
```

The CONTENTS Procedure			
Data Set Name	WORK.COMPLETE	Observations	9971
Member Type	DATA	Variables	234
Engine	V9	Indexes	0
Created	12/20/2018 00:35:23	Observation Length	1872
Last Modified	12/20/2018 00:35:23	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

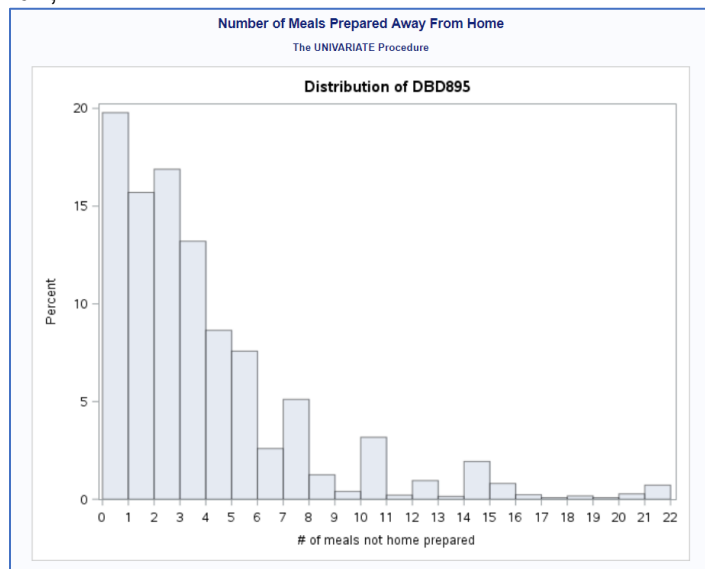
```
data final; set complete;
keep SEQN RIAGENDR RIDAGEYR RIDRETH1 INDFMPIR WTINT2YR WTMEC2YR SDMVPSU SDMVSTRA
    DBD895 DMDDEDUC2 BPQ020 BMXBMI ALQ120Q PAQ665;
run;
```

Total rows: 9971 Total columns: 15 Rows 1-10				
	SEQN	RIAGENDR	RIDAGEYR	
1	83732	1	62	
2	83733	1	53	
3	83734	1	78	
4	83735	2	56	
5	83736	2	42	
6	83737	2	72	
7	83738	2	11	
8	83739	1	4	
9	83740	1	1	
10	83741	1	22	
11	83742	2	32	
12	83743	1	18	
13	83744	1	56	
14	83745	2	45	

/*We then ran PROC UNIVARIATE on our exposure outcome, DMD895, to examine the distribution of the individuals who provided the number of their meals not prepared at home in a given week. We only ran the functions on respondents aged between 18 and

65, since our research question aims to focus only on adults and since we plan on analyzing only individuals meeting this age criteria. We excluded individuals who answered "Don't Know" (coded as 9999). We also excluded individuals who specified a number more than 21 meals (coded as 5555) because the dataset did not provide a specific number for them. PROC UNIVARIATE showed us that the distribution of DMD895 was right skewed.*/

```
proc univariate data = final;
var DBD895;
where (DBD895 < 22) and
      (18 <= RIDAGEYR <= 65);
histogram / endpoints = 0 to 22 by 1;
title 'Number of Meals Prepared Away From Home';
run;
```



/*We then ran PROC FREQ and PROC UNIVARIATE on our outcome variable, BMXBMI, to examine its distribution as well. Again, we only ran PROC UNIVARIATE on respondents aged between 18 and 65. PROC FREQ showed us that most individuals fell under the category of "Normal Weight." PROC UNIVARIATE showed us that the distribution of the responses was right skewed.*/

```
proc format;
value bmicatf 1 = "underweight"
```

```

2 = "normal weight"
3 = "overweight"
4 = "obese";

run;

data final; set final;
  if 0 < BMXBMI < 18.5 then BMICAT = 1;
  else if 18.5 <= BMXBMI < 25 then BMICAT = 2;
  else if 25 <= BMXBMI < 30 then BMICAT = 3;
  else if BMXBMI >= 30 then BMICAT = 4;
format BMICAT bmicatf.;
run;

proc freq data = final;
table bmicat;
run;

```

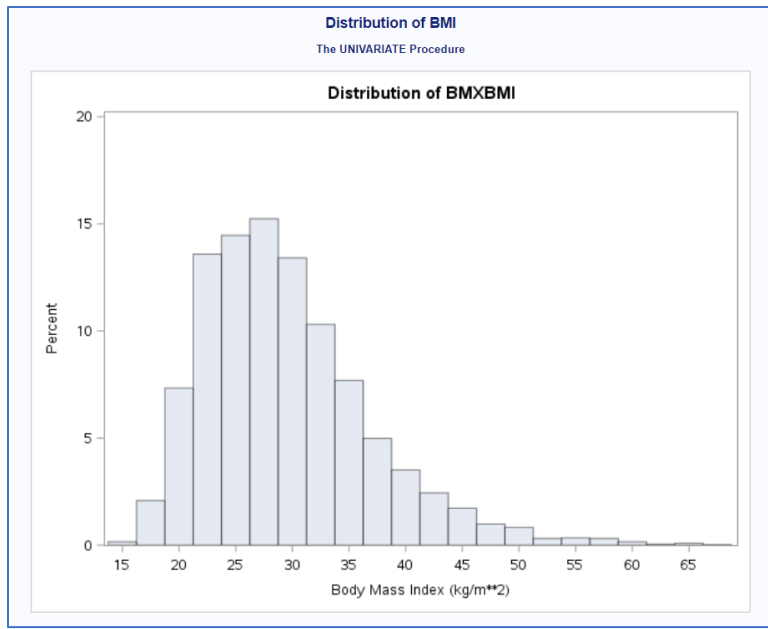
The FREQ Procedure

BMICAT	Frequency	Percent	Cumulative Frequency	Cumulative Percent
underweight	1716	19.60	1716	19.60
normal weight	2530	28.89	4246	48.49
overweight	2100	23.98	6346	72.48
obese	2410	27.52	8756	100.00
Frequency Missing = 1215				

```

proc univariate data = final;
var BMXBMI;
where 18 <= RIDAGEYR <= 65;
histogram;
title 'Distribution of BMI';
run;

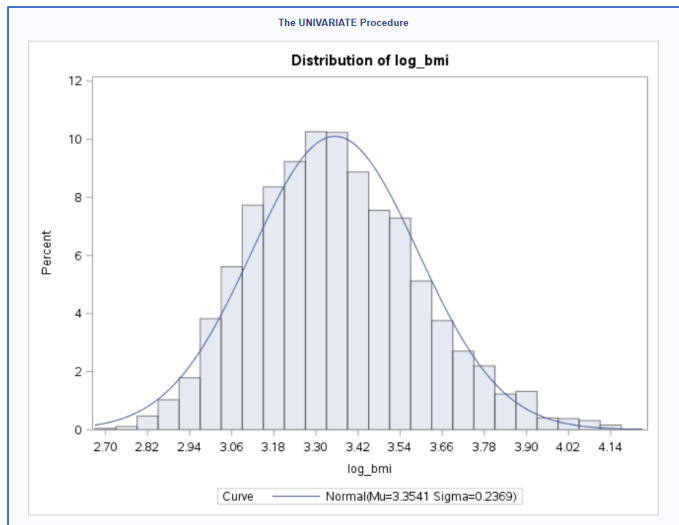
```



/*Since the outcome variable was slightly right skewed, we chose to run a log transformation and called the newly created variable log_bmi. We then ran another PROC UNIVARIATE function to check that our outcome variable was now normally distributed; based on the output, it seemed that the transformation worked.*/

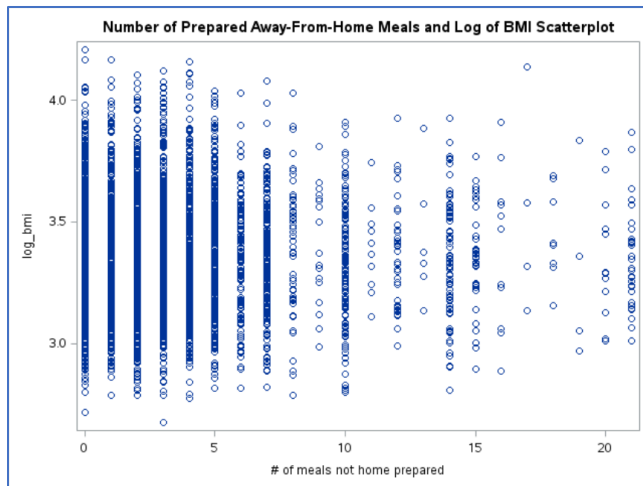
```
data final; set final;
log_bmi = log(BMXBMI);
run;
```

```
proc univariate data = final;
var log_bmi;
where 18 <= RIDAGEYR <= 65;
histogram/normal;
run;
```



/*We were then ready to visualize our data. We first created a scatterplot between our exposure variable (DBD895) and our outcome variable (log_bmi). Our scatterplot did not tell us much, but from visual inspection, there appeared to be no association between our exposure and outcome variables.*/

```
proc sgplot data = final;
scatter x = DBD895 y = log_bmi;
where (DBD895 < 22) and
      (18 <= RIDAGEYR <= 65);
run;
```

/*Model Selection*/

/*We then ran a backward model selection process to determine what our best model would be, using an alpha level of 0.10. In running this model selection process, we made sure to account for the sampling weights, the data clustering, and the complex stratified study design. We also included individuals that met the age criteria; we excluded those that refused or answered "Don't Know" for the covariates. Our final model left us with 7 predictors.*/

/*Manual Backward Selection with SLS = 0.10*/

/*Step 1 -- All Covariates*/

```
proc surveyreg data = final;
strata SDMVSTRA;
cluster SDMVPSU;
class RIAGENDR RIDRETH1 (ref = '3') BPQ020 DMDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 INDFMPIR BPQ020
                DMDEDUC2 ALQ120Q PAQ665 DBD895*RIAGENDR / solution;
weight WTMEC2YR;
where 18 < RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
```

DMDEDUC2 NOT in (7, 9) and
 ALQ120Q NOT in (777, 999) and
 PAQ665 NOT in (7, 9) and
 INDFMPIR NOT in (77, 99);

run;

The SURVEYREG Procedure

Regression Analysis for Dependent Variable log_bmi

Data Summary	
Number of Observations	2907
Sum of Weights	142535701
Weighted Mean of log_bmi	3.35912
Weighted Sum of log_bmi	478794611

Design Summary	
Number of Strata	15
Number of Clusters	30

Fit Statistics	
R-Square	0.1030
Root MSE	0.2210
Denominator DF	15

Class Level Information			
CLASS Variable	Label	Levels	Values
RIAGENDR	Gender	2	1 2
RIDRETH1	Race/Hispanic origin	5	1 2 4 5 3
BPQ020	Ever told you had high blood pressure	2	1 2
DMDEDUC2	Education level - Adults 20+	5	1 2 3 4 5
PAQ665	Moderate recreational activities	2	1 2

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	15	1004.75	<.0001
Intercept	1	17808.8	<.0001
DBD895	1	2.97	0.1053
RIAGENDR	1	2.40	0.1421
RIDAGEYR	1	4.94	0.0421
RIDRETH1	4	16.16	<.0001
INDFMPIR	1	0.33	0.5724
BPQ020	1	84.77	<.0001
DMDEDUC2	4	3.56	0.0312
ALQ120Q	1	0.10	0.7511
PAQ665	1	12.20	0.0033
DBD895*RIAGENDR	1	0.23	0.6363

Note: The denominator degrees of freedom for the F tests is 15.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	3.2712751	0.02916019	112.18	<.0001
DBD895	0.0013143	0.00231168	0.57	0.5781
RIAGENDR 1	-0.0205982	0.01329186	-1.55	0.1421
RIAGENDR 2	0.0000000	0.00000000	.	.
RIDAGEYR	0.0010488	0.00047192	2.22	0.0421
RIDRETH1 1	0.0798150	0.01303765	6.12	<.0001
RIDRETH1 2	0.0327924	0.01711057	1.92	0.0746
RIDRETH1 4	0.0318847	0.01406518	2.27	0.0386
RIDRETH1 5	-0.0566730	0.01809964	-3.13	0.0069
RIDRETH1 3	0.0000000	0.00000000	.	.
INDFMPIR	0.0023188	0.00401812	0.58	0.5724
BPQ020 1	0.1154374	0.01253803	9.21	<.0001
BPQ020 2	0.0000000	0.00000000	.	.
DMDEDUC2 1	-0.0144039	0.02170636	-0.66	0.5170
DMDEDUC2 2	0.0127457	0.01723945	0.74	0.4711
DMDEDUC2 3	0.0272250	0.01671614	1.63	0.1242
DMDEDUC2 4	0.0452813	0.01407506	3.22	0.0058
DMDEDUC2 5	0.0000000	0.00000000	.	.
ALQ120Q	-0.0000887	0.00027453	-0.32	0.7511
PAQ665 1	-0.0432846	0.01239388	-3.49	0.0033
PAQ665 2	0.0000000	0.00000000	.	.
DBD895*RIAGENDR 1	0.0013278	0.00275097	0.48	0.6363
DBD895*RIAGENDR 2	0.0000000	0.00000000	.	.

Note: The degrees of freedom for the t tests is 15.
Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

/*Step 2 -- Dropped ALQ120Q (p = 0.7511)*/

```
proc surveyreg data = final;
strata SDMVSTRA;
```

```

cluster SDMVPSU;
class RIAGENDR RIDRETH1 (ref = '3') BPQ020 DMEDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 INDFMPIR BPQ020
                DMEDEDUC2 PAQ665 DBD895*RIAGENDR / solution;
weight WTMEC2YR;
where 18 < RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
      DMEDEDUC2 NOT in (7, 9) and
      ALQ120Q NOT in (777, 999) and
      PAQ665 NOT in (7, 9) and
      INDFMPIR NOT in (77, 99);
run;

```

The SURVEYREG Procedure

Regression Analysis for Dependent Variable log_bmi

Data Summary	
Number of Observations	3823
Sum of Weights	175060040
Weighted Mean of log_bmi	3.35679
Weighted Sum of log_bmi	587640279

Design Summary	
Number of Strata	15
Number of Clusters	30

Fit Statistics	
R-Square	0.1060
Root MSE	0.2195
Denominator DF	15

Class Level Information			
CLASS Variable	Label	Levels	Values
RIAGENDR	Gender	2	1 2
RIDRETH1	Race/Hispanic origin	5	1 2 4 5 3
BPQ020	Ever told you had high blood pressure	2	1 2
DMEDEDUC2	Education level - Adults 20+	5	1 2 3 4 5
PAQ665	Moderate recreational activities	2	1 2

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	15	144.45	<.0001
Intercept	1	24415.1	<.0001
DBD895	1	1.62	0.2223
RIAGENDR	1	1.79	0.2011
RIDAGEYR	1	3.75	0.0719
RIDRETH1	4	18.63	<.0001
INDFMPIR	1	0.66	0.4298
BPQ020	1	99.07	<.0001
DMDEDUC2	4	6.56	0.0029
PAQ665	1	13.45	0.0023
DBD895*RIAGENDR	1	0.02	0.8972

Note: The denominator degrees of freedom for the F tests is 15.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	3.2743397	0.02258802	144.96	<.0001
DBD895	0.0012270	0.00203270	0.60	0.5551
RIAGENDR 1	-0.0167854	0.01255313	-1.34	0.2011
RIAGENDR 2	0.0000000	0.00000000	.	.
RIDAGEYR	0.0008464	0.00043721	1.94	0.0719
RIDRETH1 1	0.0731557	0.01083162	6.75	<.0001
RIDRETH1 2	0.0420375	0.01724439	2.44	0.0277
RIDRETH1 4	0.0279247	0.01315624	2.12	0.0508
RIDRETH1 5	-0.0740807	0.01537365	-4.82	0.0002
RIDRETH1 3	0.0000000	0.00000000	.	.
INDFMPIR	0.0029483	0.00363304	0.81	0.4298
BPQ020 1	0.1171296	0.01176790	9.95	<.0001
BPQ020 2	0.0000000	0.00000000	.	.
DMDEDUC2 1	0.0019402	0.01444852	0.13	0.8950
DMDEDUC2 2	0.0160676	0.01257473	1.28	0.2208
DMDEDUC2 3	0.0353293	0.01257344	2.81	0.0132
DMDEDUC2 4	0.0484368	0.00955523	5.07	0.0001
DMDEDUC2 5	0.0000000	0.00000000	.	.
PAQ665 1	-0.0407687	0.01111554	-3.67	0.0023
PAQ665 2	0.0000000	0.00000000	.	.
DBD895*RIAGENDR 1	0.0003359	0.00255565	0.13	0.8972
DBD895*RIAGENDR 2	0.0000000	0.00000000	.	.

Note: The degrees of freedom for the t tests is 15.
Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

/*Step 3 -- Dropped ALQ120Q and DBD895*RIAGENDR (p = 0.8972)*/

```
proc surveyreg data = final;
strata SDMVSTRA;
cluster SDMVPSU;
class RIAGENDR RIDRETH1 (ref = '3') BPQ020 DMDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 INDFMPIR BPQ020
              DMDEDUC2 PAQ665 / solution;
weight WTMEC2YR;
where 18 <= RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
      DMDEDUC2 NOT in (7, 9) and
      ALQ120Q NOT in (777, 999) and
      PAQ665 NOT in (7, 9) and
      INDFMPIR NOT in (77, 99);
run;
```

The SURVEYREG Procedure

Regression Analysis for Dependent Variable log_bmi

Data Summary	
Number of Observations	3823
Sum of Weights	175060040
Weighted Mean of log_bmi	3.35679
Weighted Sum of log_bmi	587640279

Design Summary	
Number of Strata	15
Number of Clusters	30

Fit Statistics	
R-Square	0.1060
Root MSE	0.2195
Denominator DF	15

Class Level Information			
CLASS Variable	Label	Levels	Values
RIAGENDR	Gender	2	1 2
RIDRETH1	Race/Hispanic origin	5	1 2 4 5 3
BPQ020	Ever told you had high blood pressure	2	1 2
DMDEDUC2	Education level - Adults 20+	5	1 2 3 4 5
PAQ665	Moderate recreational activities	2	1 2

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	14	131.58	<.0001
Intercept	1	24590.9	<.0001
DBD895	1	1.91	0.1874
RIAGENDR	1	3.73	0.0727
RIDAGEYR	1	3.75	0.0720
RIDRETH1	4	18.99	<.0001
INDFMPIR	1	0.66	0.4281
BPQ020	1	99.48	<.0001
DMDEDUC2	4	6.63	0.0028
PAQ665	1	13.53	0.0022

Note: The denominator degrees of freedom for the F tests is 15.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	3.2736723	0.02130956	153.62	< .0001
DBD895	0.0014187	0.00102708	1.38	0.1874
RIAGENDR 1	-0.0155198	0.00803922	-1.93	0.0727
RIAGENDR 2	0.0000000	0.00000000	.	.
RIDAGEYR	0.0008461	0.00043710	1.94	0.0720
RIDRETH1 1	0.0731929	0.01073319	6.82	< .0001
RIDRETH1 2	0.0420813	0.01709086	2.46	0.0264
RIDRETH1 4	0.0279246	0.01316705	2.12	0.0510
RIDRETH1 5	-0.0740941	0.01536834	-4.82	0.0002
RIDRETH1 3	0.0000000	0.00000000	.	.
INDFMPIR	0.0029615	0.00363597	0.81	0.4281
BPQ020 1	0.1171259	0.01174307	9.97	< .0001
BPQ020 2	0.0000000	0.00000000	.	.
DMDEDUC2 1	0.0019391	0.01442702	0.13	0.8949
DMDEDUC2 2	0.0160194	0.01239734	1.29	0.2159
DMDEDUC2 3	0.0353088	0.01251892	2.82	0.0129
DMDEDUC2 4	0.0484286	0.00952198	5.09	0.0001
DMDEDUC2 5	0.0000000	0.00000000	.	.
PAQ665 1	-0.0407338	0.01107317	-3.68	0.0022
PAQ665 2	0.0000000	0.00000000	.	.

Note: The degrees of freedom for the t tests is 15.
Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

/*Step 4 -- Dropped ALQ120Q, DBD895*RIAGENDR, and INDFMPIR ($p = 0.4281$) -- Final Model*/
/*Our final model included 7 predictors, all of which met the alpha level of 0.10. The r-squared value was 0.1047. 4,204 observations were used in the final model.*/

```
proc surveyreg data = final;
strata SDMVSTRA;
cluster SDMVPSU;
class RIAGENDR RIDRETH1 (ref = '3') BPQ020 DMDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 BPQ020 DMDEDUC2 PAQ665 /
solution;
weight WTMEC2YR;
where 18 <= RIDAGEYR <= 65 and
BPQ020 NOT in (7, 9) and
DBD895 < 22 and
DMDEDUC2 NOT in (7, 9) and
ALQ120Q NOT in (777, 999) and
PAQ665 NOT in (7, 9) and
```


run;
INDFMPIR NOT in (77, 99);

The SURVEYREG Procedure

Regression Analysis for Dependent Variable log_bmi

Data Summary	
Number of Observations	4204
Sum of Weights	188067281
Weighted Mean of log_bmi	3.35503
Weighted Sum of log_bmi	630971355

Design Summary	
Number of Strata	15
Number of Clusters	30

Fit Statistics	
R-Square	0.1047
Root MSE	0.2190
Denominator DF	15

Class Level Information			
CLASS Variable	Label	Levels	Values
RIAGENDR	Gender	2	1 2
RIDRETH1	Race/Hispanic origin	5	1 2 4 5 3
BPQ020	Ever told you had high blood pressure	2	1 2
DMDEDUC2	Education level - Adults 20+	5	1 2 3 4 5
PAQ665	Moderate recreational activities	2	1 2

Tests of Model Effects			
Effect	Num DF	F Value	Pr > F
Model	13	333.58	<.0001
Intercept	1	30527.5	<.0001
DBD895	1	3.33	0.0880
RIAGENDR	1	4.38	0.0538
RIDAGEYR	1	7.14	0.0174
RIDRETH1	4	15.05	<.0001
BPQ020	1	98.43	<.0001
DMDEDUC2	4	5.61	0.0057
PAQ665	1	12.88	0.0027

Note: The denominator degrees of freedom for the F tests is 15.

Estimated Regression Coefficients				
Parameter	Estimate	Standard Error	t Value	Pr > t
Intercept	3.2735648	0.02062548	158.71	<.0001
DBD895	0.0017306	0.00094819	1.83	0.0880
RIAGENDR 1	-0.0160467	0.00766799	-2.09	0.0538
RIAGENDR 2	0.0000000	0.00000000	.	.
RIDAGEYR	0.0010424	0.00039014	2.67	0.0174
RIDRETH1 1	0.0696378	0.01295999	5.37	<.0001
RIDRETH1 2	0.0330479	0.01490882	2.22	0.0425
RIDRETH1 4	0.0258019	0.01266856	2.04	0.0597
RIDRETH1 5	-0.0693726	0.01490006	-4.66	0.0003
RIDRETH1 3	0.0000000	0.00000000	.	.
BPQ020 1	0.1164255	0.01173516	9.92	<.0001
BPQ020 2	0.0000000	0.00000000	.	.
DMDEDUC2 1	-0.0028958	0.00966322	-0.30	0.7685
DMDEDUC2 2	0.0096248	0.01406314	0.68	0.5042
DMDEDUC2 3	0.0305075	0.01196697	2.55	0.0222
DMDEDUC2 4	0.0457547	0.01012270	4.52	0.0004
DMDEDUC2 5	0.0000000	0.00000000	.	.
PAQ665 1	-0.0377859	0.01052887	-3.59	0.0027
PAQ665 2	0.0000000	0.00000000	.	.

Note: The degrees of freedom for the t tests is 15.
Matrix X'WX is singular and a generalized inverse was used to solve the normal equations. Estimates are not unique.

/*Regression Diagnostics*/

/*We ran a series of regression diagnostics to test whether our model met the assumptions for linear regression models.*/

/*Normality of Residuals - We tested for normality of the residuals. Because the p-value for any of the tests (e.g., Kolmogorov-Smirnov, Anderson-Darling, etc.) was less than 0.05, we rejected the normal assumption of the residuals.*/

```
proc glm data = final;
class RIAGENDR RIDRETH1 BPQ020 DMDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 BPQ020 DMDEDUC2 PAQ665;
where 18 <= RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
      DMDEDUC2 NOT in (7, 9) and
      ALQ120Q NOT in (777, 999) and
      PAQ665 NOT in (7, 9) and
```

```
INDFMPIR NOT in (77, 99);  
output out=out p=pred r=r;  
run; quit;
```

```
proc univariate normal;  
var r;  
qqplot r;  
histogram r/normal kernel;  
run;
```

The GLM Procedure		
Class Level Information		
Class	Levels	Values
RIAGENDR	2	1 2
RIDRETH1	5	1 2 3 4 5
BPQ020	2	1 2
DMDEDUC2	5	1 2 3 4 5
PAQ665	2	1 2

Number of Observations Read	4689
Number of Observations Used	4204

The GLM Procedure
 Dependent Variable: log_bmi

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	13	29.5971233	2.2767018	47.05	<.0001
Error	4190	202.7373570	0.0483860		
Corrected Total	4203	232.3344803			

R-Square	Coeff Var	Root MSE	log_bmi Mean
0.127390	6.543751	0.219968	3.361500

Source	DF	Type I SS	Mean Square	F Value	Pr > F
DBD895	1	0.07127169	0.07127169	1.47	0.2249
RIAGENDR	1	0.85979097	0.85979097	17.77	<.0001
RIDAGEYR	1	3.42445582	3.42445582	70.77	<.0001
RIDRETH1	4	13.51617973	3.37904493	69.84	<.0001
BPQ020	1	10.37158155	10.37158155	214.35	<.0001
DMDEDUC2	4	1.21394061	0.30348515	6.27	<.0001
PAQ665	1	0.13990294	0.13990294	2.89	0.0891

Source	DF	Type III SS	Mean Square	F Value	Pr > F
DBD895	1	0.25524230	0.25524230	5.28	0.0217
RIAGENDR	1	0.71413119	0.71413119	14.76	0.0001
RIDAGEYR	1	0.13667022	0.13667022	2.82	0.0929
RIDRETH1	4	10.35758447	2.58939612	53.52	<.0001
BPQ020	1	9.81709748	9.81709748	202.89	<.0001
DMDEDUC2	4	1.19232977	0.29808244	6.16	<.0001
PAQ665	1	0.13990294	0.13990294	2.89	0.0891

The UNIVARIATE Procedure
Variable: r

Moments			
N	4204	Sum Weights	4204
Mean	0	Sum Observations	0
Std Deviation	0.21962774	Variance	0.04823634
Skewness	0.31541069	Kurtosis	0.15941815
Uncorrected SS	202.737357	Corrected SS	202.737357
Coeff Variation	.	Std Error Mean	0.00338732

Basic Statistical Measures			
Location		Variability	
Mean	0.00000	Std Deviation	0.21963
Median	-0.01166	Variance	0.04824
Mode	.	Range	1.53505
		Interquartile Range	0.28582

Tests for Location: Mu0=0				
Test		Statistic	p Value	
Student's t	t	0	Pr > t	1.0000
Sign	M	-83	Pr >= M	0.0109
Signed Rank	S	-144911	Pr >= S	0.0656

Tests for Normality				
Test		Statistic	p Value	
Kolmogorov-Smirnov	D	0.027588	Pr > D	<0.0100
Cramer-von Mises	W-Sq	0.922741	Pr > W-Sq	<0.0050
Anderson-Darling	A-Sq	6.053605	Pr > A-Sq	<0.0050

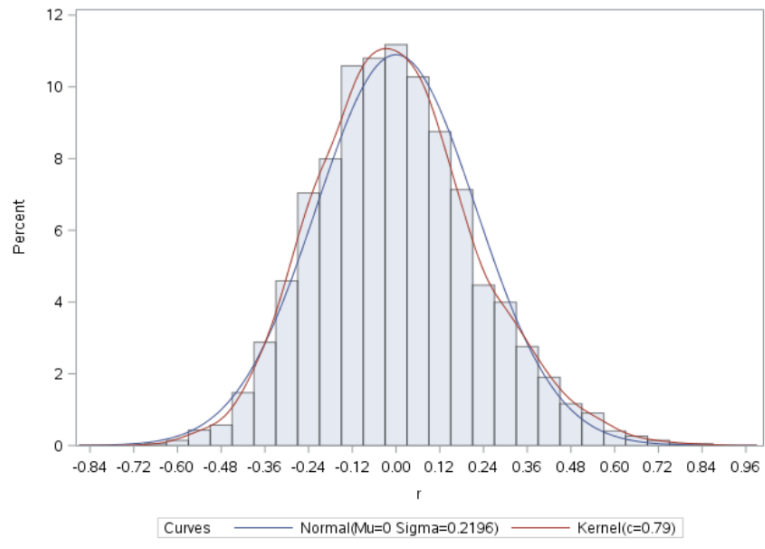
Quantiles (Definition 5)	
Level	Quantile
100% Max	0.8460183
99%	0.5672131
95%	0.3866235
90%	0.2954549
75% Q3	0.1343929
50% Median	-0.0116619
25% Q1	-0.1514251
10%	-0.2711146
5%	-0.3365480
1%	-0.4687371
0% Min	-0.6890338

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs
-0.689034	1795	0.741929	1702
-0.631191	1439	0.774580	4534
-0.612721	4493	0.778992	1410
-0.607936	1842	0.839722	2945
-0.593801	3992	0.846018	2448

Missing Values			
Missing Value	Count	Percent Of	
		All Obs	Missing Obs
.	485	10.34	100.00

The UNIVARIATE Procedure

Distribution of r

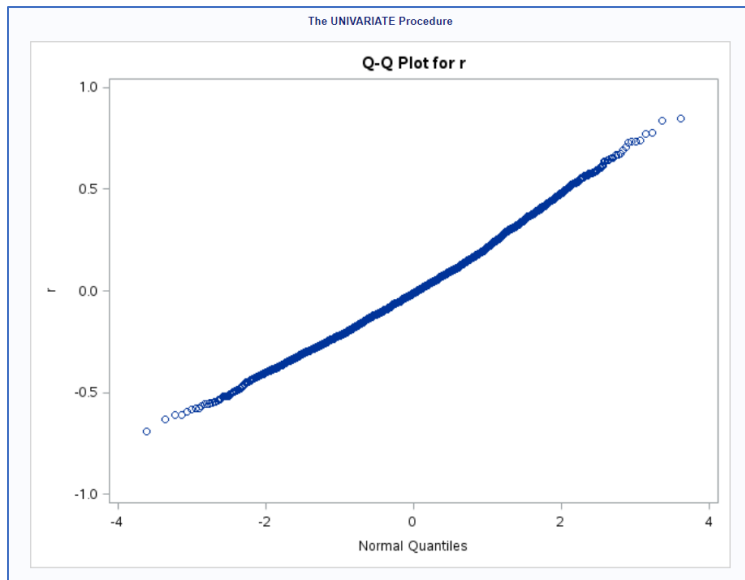


The UNIVARIATE Procedure
Fitted Normal Distribution for r

Parameters for Normal Distribution		
Parameter	Symbol	Estimate
Mean	Mu	0
Std Dev	Sigma	0.219628

Goodness-of-Fit Tests for Normal Distribution				
Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.02758803	Pr > D	<0.010
Cramer-von Mises	W-Sq	0.92274050	Pr > W-Sq	<0.005
Anderson-Darling	A-Sq	6.05360463	Pr > A-Sq	<0.005

Quantiles for Normal Distribution		
Percent	Quantile	
	Observed	Estimated
1.0	-0.46874	-0.51093
5.0	-0.33655	-0.36126
10.0	-0.27111	-0.28146
25.0	-0.15143	-0.14814
50.0	-0.01166	0.00000
75.0	0.13439	0.14814
90.0	0.29545	0.28146
95.0	0.38662	0.36126
99.0	0.56721	0.51093



/*Homogeneity of Residual Variance - We checked for homoscedasticity. Because the p-value for the test was less than 0.05, we rejected the homoscedasticity assumption.*/

```
proc reg data = final;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 BPQ020 DMDEDUC2 PAQ665/spec;
where 18 <= RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
      DMDEDUC2 NOT in (7, 9) and
      ALQ120Q NOT in (777, 999) and
      PAQ665 NOT in (7, 9) and
      INDFMPIR NOT in (77, 99);
run;
```

The REG Procedure
 Model: MODEL1
 Dependent Variable: log_bmi

Number of Observations Read	4689
Number of Observations Used	4204
Number of Observations with Missing Values	485

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	7	23.88906	3.41272	68.70	<.0001
Error	4196	208.44542	0.04968		
Corrected Total	4203	232.33448			

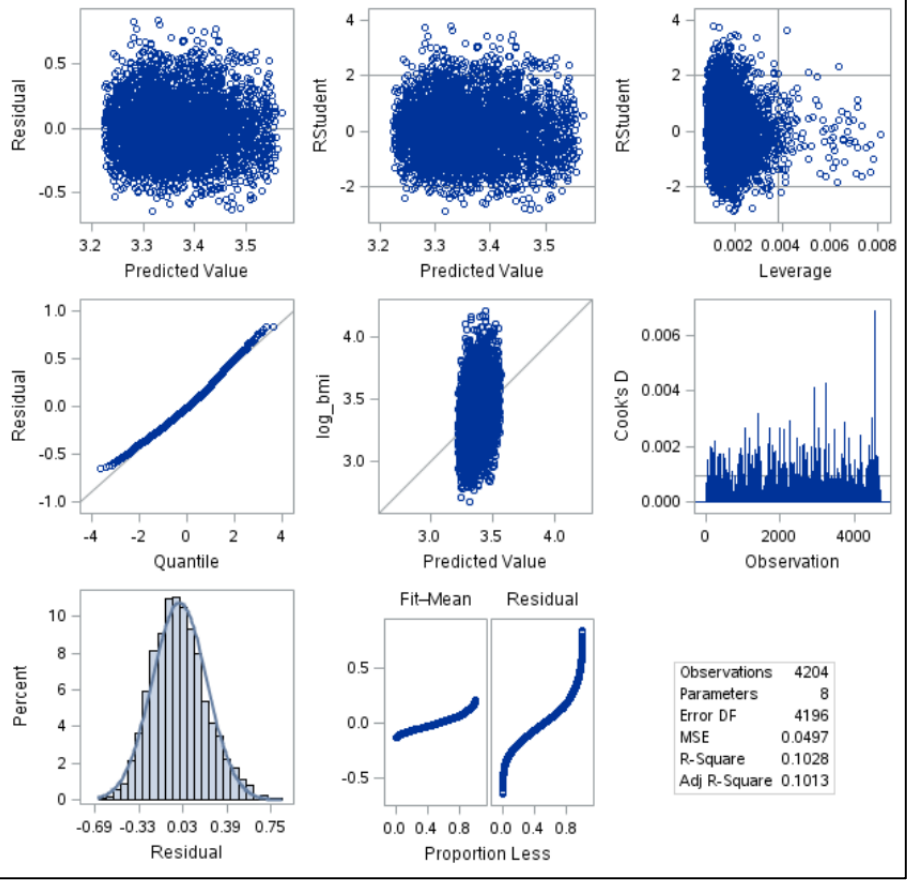
Root MSE	0.22288	R-Square	0.1028
Dependent Mean	3.36150	Adj R-Sq	0.1013
Coeff Var	6.63049		

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	Intercept	1	3.58895	0.03040	118.06	<.0001
DBD895	# of meals not home prepared	1	0.00243	0.00093453	2.60	0.0094
RIAGENDR	Gender	1	0.03005	0.00697	4.31	<.0001
RIDAGEYR	Age in years at screening	1	0.00034694	0.00028635	1.21	0.2257
RIDRETH1	Race/Hispanic origin	1	-0.03227	0.00276	-11.68	<.0001
BPQ020	Ever told you had high blood pressure	1	-0.12876	0.00823	-15.65	<.0001
DMDEDUC2	Education level - Adults 20+	1	0.00054427	0.00302	0.18	0.8571
PAQ665	Moderate recreational activities	1	0.01354	0.00716	1.89	0.0585

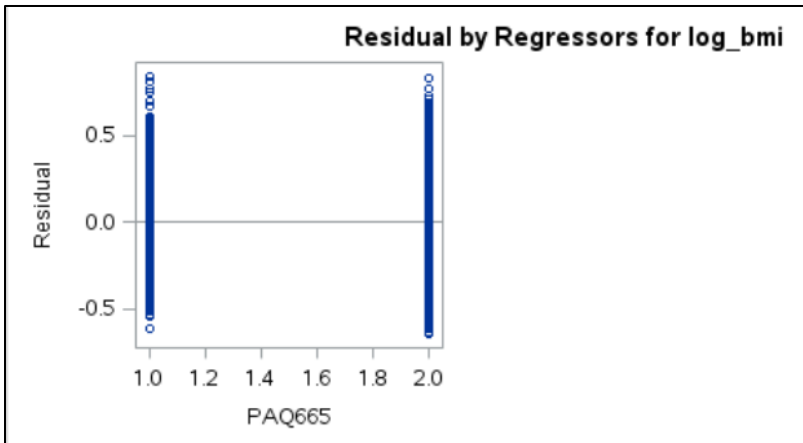
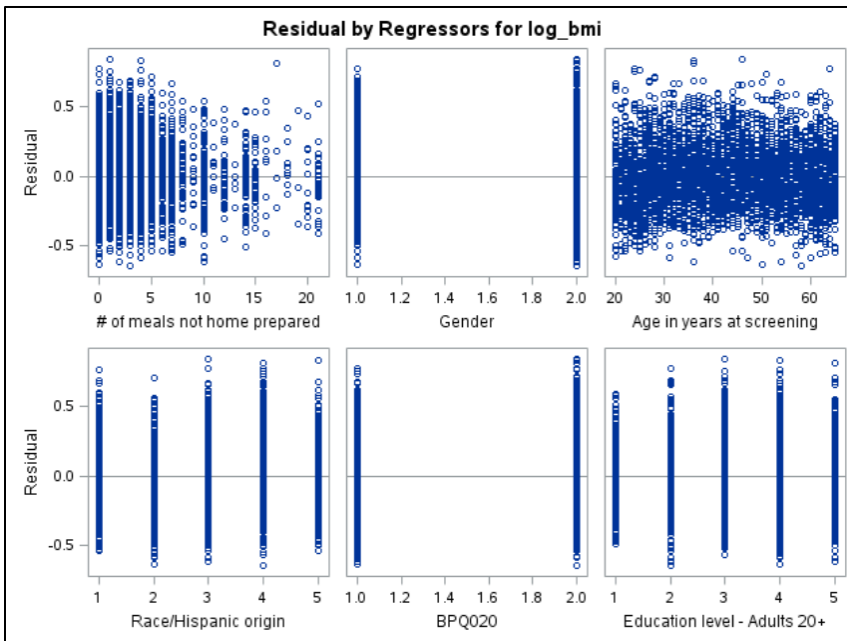
The REG Procedure
 Model: MODEL1
 Dependent Variable: log_bmi

Test of First and Second Moment Specification		
DF	Chi-Square	Pr > ChiSq
32	194.30	<.0001

Fit Diagnostics for log_bmi



Observations	4204
Parameters	8
Error DF	4196
MSE	0.0497
R-Square	0.1028
Adj R-Square	0.1013



/*Multicollinearity - We tested for multicollinearity among the predictors. Upon examination of the Type II tolerance values, none of them were below 0.1, suggesting that we may not need to be as concerned with multicollinearity.*/

```

proc glm data = final;
class RIAGENDR RIDRETH1 BPQ020 DMDEDUC2 PAQ665;
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 BPQ020 DMDEDUC2 PAQ665 /
      tolerance;
where 18 <= RIDAGEYR <= 65 and
      BPQ020 NOT in (7, 9) and
      DBD895 < 22 and
      DMDEDUC2 NOT in (7, 9) and
      ALQ120Q NOT in (777, 999) and
      PAQ665 NOT in (7, 9) and
      INDFMPIR NOT in (77, 99);
run;

```

The GLM Procedure		
Dependent Variable: log_bmi		
Tolerances		
Variable	Type I Tolerance	Type II Tolerance
Intercept	4204	189.04245353
DBD895	1	0.926621934
RIAGENDR 1	0.9868230062	0.9692692994
RIAGENDR 2	-4.33826E-16	0
RIDAGEYR	0.9654273751	0.8142543108
RIDRETH1 1	0.9990766803	0.5184691351
RIDRETH1 2	0.9618345716	0.6075751566
RIDRETH1 3	0.8101054943	0.5029356257
RIDRETH1 4	0.5523339344	0.5212850523
RIDRETH1 5	-2.877E-16	0
BPQ020 1	0.8422778904	0.8364637494
BPQ020 2	-2.64116E-16	0
DMDEDUC2 1	0.8739599347	0.658045778
DMDEDUC2 2	0.9387067695	0.696508297
DMDEDUC2 3	0.8894029219	0.6349308807
DMDEDUC2 4	0.6335913326	0.6263293479
DMDEDUC2 5	0	0
PAQ665 1	0.9354938806	0.9354938806
PAQ665 2	4.409585E-16	0

/*Outliers/Influential Points - We tested for outliers and influential observations. PROC GLM used 4,204 observations.*/

```
proc glm data = final;  
class RIAGENDR RIDRETH1 BPQ020 DMDEDUC2 PAQ665;  
model log_bmi = DBD895 RIAGENDR RIDAGEYR RIDRETH1 BPQ020 DMDEDUC2 PAQ665;  
where 18 <= RIDAGEYR <= 65 and  
      BPQ020 NOT in (7, 9) and  
      DBD895 < 22 and  
      DMDEDUC2 NOT in (7, 9) and  
      ALQ120Q NOT in (777, 999) and  
      PAQ665 NOT in (7, 9) and  
      INDFMPIR NOT in (77, 99);  
output out=out r=r rstudent=rs h=leverage cookd=cook covratio=covratio dffits=dffit;  
run;
```

The GLM Procedure		
Class Level Information		
Class	Levels	Values
RIAGENDR	2	1 2
RIDRETH1	5	1 2 3 4 5
BPQ020	2	1 2
DMDEDUC2	5	1 2 3 4 5
PAQ665	2	1 2

Number of Observations Read	4689
Number of Observations Used	4204

The GLM Procedure

Dependent Variable: log_bmi

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	13	29.5971233	2.2767018	47.05	<.0001
Error	4190	202.7373570	0.0483860		
Corrected Total	4203	232.3344803			

R-Square	Coeff Var	Root MSE	log_bmi Mean
0.127390	6.543751	0.219968	3.361500

Source	DF	Type I SS	Mean Square	F Value	Pr > F
DBD895	1	0.07127169	0.07127169	1.47	0.2249
RIAGENDR	1	0.85979097	0.85979097	17.77	<.0001
RIDAGEYR	1	3.42445582	3.42445582	70.77	<.0001
RIDRETH1	4	13.51617973	3.37904493	69.84	<.0001
BPQ020	1	10.37158155	10.37158155	214.35	<.0001
DMDEDUC2	4	1.21394061	0.30348515	6.27	<.0001
PAQ665	1	0.13990294	0.13990294	2.89	0.0891

Source	DF	Type III SS	Mean Square	F Value	Pr > F
DBD895	1	0.25524230	0.25524230	5.28	0.0217
RIAGENDR	1	0.71413119	0.71413119	14.76	0.0001
RIDAGEYR	1	0.13667022	0.13667022	2.82	0.0929
RIDRETH1	4	10.35758447	2.58939612	53.52	<.0001
BPQ020	1	9.81709748	9.81709748	202.89	<.0001
DMDEDUC2	4	1.19232977	0.29808244	6.16	<.0001
PAQ665	1	0.13990294	0.13990294	2.89	0.0891

/*Outliers - In examining outliers specifically, we looked for observations that had an RStudent value that was greater than or equal to the absolute value of 2.5. 64 observations met this criterion.*/

```
proc print data = out n;
where (rs >= 2.5 OR rs <= -2.5) AND rs ne .;
run;
```

/*Influential Points - In examining influential points specifically, we looked for observations that had a Cook's D value greater than (4/4,206). 200 observations met this criterion.*/

```
proc print data = out n;
where cook > (4/4206);
run;
```

OUTPUT FOR OUTLIERS:

Obs	SEQN	RIAGEHDR	RIDAGEYR	RIDRETH1	DMDEDUC2	WTINT2YR	WTMEC2YR	SDMVPSU	SDMVSTRA	INDFMPIR	BPQ020	DBD895	BMXBMI	ALQ120Q	PAQ665	BMICAT	log_bmi	r	rs	leverage	cook	covratio	dffit
134	84026	1	44	5	4	18120.56	17830.15	2	132	0.35	2	1	44.7	2	2	obese	3.79997	0.56581	2.57768	.002868982	.001363702	0.98415	0.13827
236	84230	2	28	2	5	19688.80	19991.72	1	124	2.30	2	1	57.8	.	1	obese	4.05699	0.73237	3.33923	.003460024	.002758660	0.97005	0.19676
254	84277	2	28	1	1	37201.91	39379.67	1	132	0.46	2	0	51.5	.	1	obese	3.94158	0.57635	2.62745	.004152496	.002053271	0.98457	0.16967
309	84396	2	38	1	3	22901.51	23955.67	1	120	1.65	2	1	59.4	2	2	obese	4.08429	0.67800	3.08977	.002823979	.001927214	0.97463	0.16443
363	84493	2	44	4	3	22512.21	22560.54	1	126	0.68	1	5	56.7	2	1	obese	4.03777	0.55905	2.54710	.003097054	.001437781	0.98489	0.14197
441	84658	2	22	4	4	34632.16	33910.73	2	128	1.65	2	5	16.7	1	2	underweight	2.81541	-0.56908	-2.59213	.002523106	.001212343	0.98357	-0.13037
495	84767	1	20	4	4	28107.71	27829.55	1	126	1.65	2	3	50.4	8	2	obese	3.91999	0.56721	2.58416	.002936936	.001403117	0.98411	0.14025
571	84914	2	52	3	2	53672.75	56385.56	2	130	0.87	1	3	56.2	1	2	obese	4.02892	0.57934	2.64075	.003892018	.001943456	0.98408	0.16507
619	85003	2	57	1	1	13960.78	14348.35	1	122	1.35	2	1	54.5	0	2	obese	3.99820	0.60495	2.75733	.003609201	.001964026	0.98174	0.16595
859	85531	1	37	5	4	24267.99	25681.05	2	120	2.12	2	0	45.5	1	2	obese	3.81771	0.58901	2.68368	.002954949	.001522387	0.98241	0.14610
868	85552	2	61	3	3	95505.55	95404.28	1	131	3.77	1	3	57.4	0	2	obese	4.05004	0.58289	2.65568	.002916369	.001471326	0.98286	0.14363
933	85716	2	33	1	4	24386.55	26317.47	1	128	.	2	7	59.1	.	2	obese	4.07923	0.64161	2.92361	.002825509	.001726852	0.97788	0.15563
985	85819	2	40	2	5	17982.22	20450.80	1	119	1.65	2	5	49.8	.	1	obese	3.90801	0.56918	2.59329	.003064774	.001474729	0.98408	0.14379
1005	85859	2	35	3	5	60750.37	61813.31	1	126	1.43	2	0	48.2	2	1	obese	3.87536	0.57560	2.62144	.002169710	.001065832	0.98272	0.12224
1183	86212	2	32	1	3	31115.35	32227.31	1	124	0.25	1	2	60.7	2	1	obese	4.10594	0.59568	2.71571	.004145473	.002189557	0.98302	0.17522
1243	86336	2	62	3	4	34134.47	33815.80	1	131	2.09	1	3	58.9	0	1	obese	4.07584	0.59927	2.73021	.002764747	.001473855	0.98140	0.14376
1341	86553	1	35	1	2	33182.95	34156.09	1	122	4.18	1	4	58.8	0	2	obese	4.07414	0.58594	2.67138	.004240357	.002167478	0.98389	0.17432
1396	86649	2	32	1	3	24386.55	25509.06	1	128	0.17	2	3	54.0	1	1	obese	3.98898	0.59336	2.70360	.003034722	.001586876	0.98213	0.14916
1410	86677	1	24	3	2	100445.27	106919.56	2	132	1.83	2	0	57.6	2	1	obese	4.05352	0.77899	3.55403	.004349135	.003930129	0.96614	0.23489
1439	86737	1	50	2	4	23892.13	26853.76	1	127	.	1	0	17.2	1	2	underweight	2.84491	-0.63119	-2.87734	.003741915	.002217295	0.97966	-0.17634
1444	86746	2	53	3	3	63030.02	65357.23	1	127	.	2	2	50.4	1	2	obese	3.91999	0.57554	2.62164	.002539297	.001248038	0.98308	0.13228
1461	86782	2	23	4	4	22994.28	24269.22	1	124	0.95	2	2	16.6	.	1	underweight	2.80940	-0.55716	-2.53781	.002570397	.001103977	0.98453	-0.12883
1492	86855	2	39	2	4	20564.70	22193.00	1	119	1.03	1	2	57.2	.	1	obese	4.04655	0.55700	2.53846	.003655322	.001686413	0.98559	0.15375
1702	87277	2	25	1	4	21468.94	21799.25	2	124	2.33	2	4	63.9	1	1	obese	4.15732	0.74193	3.38203	.002918964	.002385858	0.96859	0.18299
1795	87476	2	58	4	2	25407.28	25461.84	2	130	.	2	3	14.5	2	2	underweight	2.67415	-0.68903	-3.14200	.003980811	.002812350	0.97470	-0.19864
1830	87539	2	31	2	2	27134.00	31711.76	2	119	1.25	2	10	16.6	0	2	underweight	2.80940	-0.55432	-2.52805	.005063030	.002320058	0.98716	-0.18034
1842	87577	2	57	4	3	26294.50	26702.38	2	126	1.79	1	3	17.9	2	2	underweight	2.88480	-0.60794	-2.76964	.002669038	.001464010	0.98059	-0.14328
1851	87596	2	60	3	5	132549.33	130222.96	1	123	5.00	1	0	18.0	4	2	underweight	2.89037	-0.55013	-2.50639	.003092507	.001390203	0.98556	-0.13960
1934	87802	2	27	4	5	26377.58	26442.36	2	126	2.02	2	2	52.6	.	1	obese	3.96272	0.63505	2.89340	.002673624	.001600248	0.97831	0.14981
1977	87903	1	54	5	2	28290.59	29012.87	1	130	0.60	1	0	57.4	0	2	obese	4.05004	0.73072	3.33323	.004357809	.003465141	0.97105	0.22052
1994	87942	2	32	4	3	23043.22	22859.87	1	126	0.92	2	5	53.3	0	2	obese	3.97594	0.60766	2.76818	.002526705	.001384281	0.98048	0.13932

2059	88083	2	46	4	5	22585.84	23927.28	2	131	3.43	2	3	52.8	2	2	obese	3.96651	0.61560	2.80456	.002617800	.001472196	0.97990	0.14368
2156	88298	2	63	3	4	153707.76	152272.77	2	125	0.37	1	0	57.4	0	2	obese	4.05004	0.56731	2.58439	.002758505	.001317869	0.98393	0.13592
2241	88480	2	22	5	4	36161.39	36408.11	2	130	1.15	1	2	55.4	2	2	obese	4.01458	0.64553	2.94380	.004379930	.002718122	0.97902	0.19525
2249	88503	2	48	4	2	20555.85	21494.38	2	129	1.23	1	4	61.1	.	2	obese	4.11251	0.63522	2.89571	.003701108	.002221056	0.97927	0.17649
2276	88561	1	45	3	2	41255.17	43398.92	2	130	0.87	2	3	53.1	5	2	obese	3.97218	0.66921	3.05031	.003265805	.002173253	0.97585	0.17460
2296	88592	1	41	5	5	34977.43	35635.61	1	127	5.00	1	6	49.4	1	2	obese	3.89995	0.58066	2.64592	.003247969	.001627155	0.98336	0.15104
2438	88875	2	60	3	3	31497.61	31464.21	1	131	1.40	2	1	50.0	1	1	obese	3.91202	0.57839	2.63551	.003189675	.001585331	0.98348	0.14908
2448	88891	2	36	5	4	19102.33	21383.27	1	119	4.25	2	4	60.9	2	2	obese	4.10923	0.84602	3.85754	.002631118	.002794733	0.95727	0.19813
2454	88898	1	30	3	3	123735.04	127563.36	1	130	2.85	2	7	49.8	2	2	obese	3.90801	0.59046	2.68961	.002468985	.001277020	0.98183	0.13381
2527	89054	1	49	4	1	14664.73	14429.70	1	123	.	1	1	53.8	15	2	obese	3.98527	0.54923	2.50425	.004632751	.002082269	0.98713	0.17085
2644	89290	1	36	1	4	28259.34	28412.38	1	120	2.06	2	3	57.8	2	2	obese	4.05699	0.65293	2.97553	.002980369	.001886923	0.97704	0.16269
2734	89508	2	20	2	4	28590.62	29030.50	2	125	.	2	10	16.7	10	2	underweight	2.81541	-0.57732	-2.63163	.003955191	.001961541	0.98430	-0.16583
2819	89652	2	50	4	5	24427.40	24479.84	2	131	1.68	1	3	61.7	0	2	obese	4.12228	0.65270	2.97440	.002927989	.001852257	0.97701	0.16118
2892	89810	2	24	4	3	27666.60	27734.55	2	131	0.60	1	1	64.6	2	1	obese	4.16821	0.70752	3.22673	.004112493	.003064210	0.97308	0.20735
2945	89935	2	46	3	3	44264.09	43787.62	2	131	0.56	2	1	64.5	0	1	obese	4.16667	0.83972	3.82862	.002574653	.002693901	0.95793	0.19452
3003	90067	2	62	2	4	8459.54	8214.56	1	124	1.32	1	0	19.2	.	2	normal weight	2.95491	-0.55343	-2.52211	.003594236	.001636879	0.98580	-0.15148
3022	90106	2	52	2	2	18333.13	18842.09	1	126	0.40	1	0	56.7	.	2	obese	4.03777	0.56846	2.59192	.004507849	.002169966	0.98553	0.17442
3053	90182	1	20	3	3	86480.89	92969.95	1	125	1.65	2	1	53.0	.	2	obese	3.97029	0.67024	3.05483	.003158593	.002107903	0.97565	0.17196
3077	90244	2	54	3	5	138963.57	138098.60	2	127	1.36	1	2	17.3	0	1	underweight	2.85071	-0.57913	-2.63817	.002671341	.001329688	0.98292	-0.13654
3236	90591	1	20	3	3	48394.47	51911.14	2	131	0.56	2	1	50.1	.	2	obese	3.91402	0.61397	2.79785	.003158593	.001768816	0.98056	0.15749
3282	90669	1	27	1	2	33425.61	35322.63	2	133	2.23	2	4	58.0	2	2	obese	4.06044	0.69282	3.15872	.003602697	.002571350	0.97399	0.18994
3367	90859	2	50	2	2	17511.54	17997.69	1	125	0.43	2	0	50.3	.	2	obese	3.91801	0.56641	2.58206	.004143503	.001978746	0.98534	0.16655
3467	91078	2	36	3	2	46648.85	47465.06	1	126	1.41	1	10	17.7	2	2	underweight	2.87356	-0.58322	-2.66018	.005163776	.002619877	0.98500	-0.19165
3867	91912	1	41	2	3	30050.63	30837.08	1	127	0.99	1	4	55.4	1	1	obese	4.01458	0.56732	2.58609	.004036207	.001933303	0.98516	0.16463
3992	92199	1	47	2	4	44543.56	44734.79	2	123	3.72	2	4	16.0	1	2	underweight	2.77259	-0.59380	-2.70570	.003083569	.001614992	0.98215	-0.15048
3994	92202	2	65	4	3	19396.53	20752.81	2	132	.	1	2	18.7	1	1	normal weight	2.92852	-0.55387	-2.52386	.003391214	.001546235	0.98557	-0.14722
4090	92410	2	55	3	4	122590.25	126542.70	2	123	3.62	2	0	49.8	.	1	obese	3.90801	0.55791	2.54108	.002448429	.001130562	0.98435	0.12589
4363	92978	1	64	3	5	162731.06	162531.14	2	130	5.00	1	7	54.0	1	2	obese	3.98898	0.55824	2.54363	.003253934	.001506734	0.98511	0.14533
4368	92988	2	51	4	4	18830.73	19539.42	2	133	2.38	1	0	64.5	3	2	obese	4.16667	0.66217	3.01696	.002482697	.001615009	0.97574	0.15051
4427	93097	1	28	4	3	27284.53	27282.98	2	129	2.29	2	5	54.1	.	2	obese	3.99083	0.65098	2.96610	.002640041	.001660327	0.97688	0.15260
4449	93142	2	64	4	2	20089.26	20010.75	2	132	1.10	1	0	67.3	.	2	obese	4.20916	0.73271	3.34158	.003911474	.003124395	0.97044	0.20940

4493	93245	2	63	4	4	21903.35	21817.75	2	128	1.23	1	7	18.4	5	2	underweight	2.91235	-0.61272	-2.79197	.003020000	.001683882	0.98053	-0.15366
4534	93345	2	36	4	5	21639.78	20968.91	2	119	3.03	2	17	62.7	6	1	obese	4.13836	0.77458	3.53586	.005479789	.004907061	0.96765	0.26246

N = 64

OUTPUT FOR INFLUENCE POINTS:

Obs	SEQN	RIAGENDR	RIDAGEYR	RIDRETH1	DMDEDUC2	WTINT2YR	WTMEC2YR	SDMVPSU	SDMVSTRA	INDFMPJR	BPQ020	DBD895	BMXBMI	ALQ120Q	PAQ665	BMICAT	log_bmi	r	rs	leverage	cook	covratio	dffit
53	83865	2	21	3	2	62298.24	63044.87	2	126	2.14	2	4	16.3	2	1	underweight	2.79117	-0.51693	-2.35649	.004408901	.001754607	0.98927	-0.15682
86	83934	2	27	4	3	22943.61	23177.37	2	126	0.86	2	3	17.2	.	2	underweight	2.84491	-0.51674	-2.35353	.002641699	.001046825	0.98756	-0.12113
113	83993	2	41	4	3	27155.84	27214.15	2	124	2.10	2	7	49.8	2	2	obese	3.90801	0.53120	2.41955	.002699859	.001130717	0.98658	0.12589
115	83995	1	43	4	4	23983.82	24624.06	2	129	5.00	2	16	43.2	5	1	obese	3.76584	0.38655	1.76216	.005011058	.001116488	0.99799	0.12505
120	84005	1	26	4	5	27415.32	27144.01	2	126	1.85	1	3	45.7	2	1	obese	3.82210	0.40254	1.83414	.003978069	.000959170	0.99610	0.11591
125	84012	1	24	1	3	38173.67	40340.16	1	124	2.39	1	6	21.9	.	2	normal weight	3.08649	-0.41397	-1.88672	.004426414	.001129797	0.99589	-0.12580
131	84022	2	60	1	4	8626.10	8376.29	2	129	2.88	1	2	58.7	2	2	obese	4.07244	0.51577	2.35011	.003478854	.001375717	0.98845	0.13886
134	84026	1	44	5	4	18120.56	17830.15	2	132	0.35	2	1	44.7	2	2	obese	3.79997	0.56581	2.57768	.002868982	.001363702	0.98415	0.13827
186	84130	2	26	3	3	97314.05	98480.35	2	123	4.49	2	20	20.5	1	2	normal weight	3.02042	-0.34930	-1.59401	.007197920	.001315336	1.00208	-0.13573
198	84168	1	61	5	1	18735.67	21947.76	2	132	1.09	2	0	16.4	.	2	underweight	2.79728	-0.39977	-1.82257	.005108855	.001217728	0.99737	-0.13060
227	84219	1	31	3	2	139038.18	143339.98	1	130	1.81	1	5	48.9	2	2	obese	3.88978	0.47250	2.15372	.004417981	.001468994	0.99231	0.14347
236	84230	2	28	2	5	19688.80	19991.72	1	124	2.30	2	1	57.8	.	1	obese	4.05699	0.73237	3.33923	.003460024	.002758660	0.97005	0.19676
241	84241	1	50	3	1	24610.05	32162.12	1	122	.	1	5	47.1	0	2	obese	3.85227	0.43477	1.98178	.004627616	.001303321	0.99487	0.13513
247	84256	1	63	3	2	28343.91	28074.33	2	126	2.14	1	5	19.9	1	2	normal weight	2.99072	-0.44185	-2.01336	.003924919	.001140089	0.99375	-0.12638
254	84277	2	28	1	1	37201.91	39379.67	1	132	0.46	2	0	51.5	.	1	obese	3.94158	0.57635	2.62745	.004152496	.002053271	0.98457	0.16967
309	84396	2	38	1	3	22901.51	23955.67	1	120	1.65	2	1	59.4	2	2	obese	4.08429	0.67800	3.08977	.002823979	.001927214	0.97463	0.16443
363	84493	2	44	4	3	22512.21	22560.54	1	126	0.68	1	5	56.7	2	1	obese	4.03777	0.55905	2.54710	.003097054	.001437781	0.98489	0.14197
441	84658	2	22	4	4	34632.16	33910.73	2	128	1.65	2	5	16.7	1	2	underweight	2.81541	-0.56908	-2.59213	.002523106	.001212343	0.98357	-0.13037
495	84767	1	20	4	4	28107.71	27829.55	1	126	1.65	2	3	50.4	8	2	obese	3.91999	0.56721	2.58416	.002936936	.001403117	0.98411	0.14025
524	84825	2	41	4	4	17291.67	17887.16	2	131	1.41	1	6	56.4	1	1	obese	4.03247	0.53207	2.42355	.002718645	.001142364	0.98654	0.12654
571	84914	2	52	3	2	53672.75	56385.56	2	130	0.87	1	3	56.2	1	2	obese	4.02892	0.57934	2.64075	.003892018	.001943456	0.98408	0.16507
611	84982	1	26	1	1	29671.14	31666.69	1	120	1.24	2	3	45.0	1	2	obese	3.80666	0.45049	2.05272	.003847565	.001161610	0.99314	0.12757
619	85003	2	57	1	1	13960.78	14348.35	1	122	1.35	2	1	54.5	0	2	obese	3.99820	0.60495	2.75733	.003609201	.001964026	0.98174	0.16595
701	85200	2	46	1	4	22960.16	23024.93	2	133	4.44	2	3	51.5	1	2	obese	3.94158	0.50624	2.30579	.002761192	.001050419	0.98842	0.12133
850	85511	1	25	3	5	61314.41	70029.93	2	119	3.03	2	2	45.6	10	1	obese	3.81991	0.54720	2.49228	.002489329	.001105837	0.98520	0.12450
859	85531	1	37	5	4	24267.99	25681.05	2	120	2.12	2	0	45.5	1	2	obese	3.81771	0.58901	2.68368	.002954949	.001522387	0.98241	0.14610
868	85552	2	61	3	3	95505.55	95404.28	1	131	3.77	1	3	57.4	0	2	obese	4.05004	0.58289	2.65568	.002916369	.001471326	0.98286	0.14363
890	85611	2	20	5	3	14403.04	14561.17	1	133	2.06	2	10	16.4	.	2	underweight	2.79728	-0.45003	-2.05112	.004334048	.001307078	0.99365	-0.13533
898	85631	2	20	2	3	27816.41	28244.38	2	129	3.70	2	1	18.7	2	1	normal weight	2.92852	-0.41209	-1.87784	.004110379	.001038960	0.99569	-0.12064

911	85663	1	62	2	4	9135.13	8947.86	2	132	0.35	2	3	18.9	1	2	normal weight	2.93916	-0.43227	-1.96957	0.03793876	0.01054510	0.99420	-0.12155
916	85674	1	61	4	4	15613.12	15515.03	2	130	4.96	1	3	54.2	3	2	obese	3.99268	0.50356	2.29350	.002702725	.001017200	0.98855	0.11940
919	85678	1	30	3	4	75295.82	77454.49	1	131	5.00	1	12	50.7	2	1	obese	3.92593	0.47206	2.15119	0.03914879	0.01298004	0.99184	0.13486
923	85692	2	25	1	5	20356.52	20669.71	2	133	3.09	2	5	17.4	1	1	underweight	2.85647	-0.52024	-2.37018	0.03207165	0.01289657	0.98787	-0.13444
927	85706	2	28	1	2	25281.93	25670.91	2	124	5.00	2	2	18.1	0	2	underweight	2.89591	-0.49445	-2.25299	0.03595873	0.01307189	0.99004	-0.13535
932	85714	2	52	4	3	20341.84	21270.60	2	133	2.61	1	2	19.5	1	2	normal weight	2.97041	-0.51781	-2.35838	0.02594682	0.01032379	0.98744	-0.12029
933	85716	2	33	1	4	24386.55	26317.47	1	128	.	2	7	59.1	.	2	obese	4.07923	0.64161	2.92361	0.02825509	0.01726852	0.97788	0.15563
969	85790	1	60	4	4	12459.29	12381.01	1	119	0.42	2	0	18.5	5	1	normal weight	2.91777	-0.43571	-1.98484	0.03390419	0.00956636	0.99360	-0.11577
985	85819	2	40	2	5	17982.22	20450.80	1	119	1.65	2	5	49.8	.	1	obese	3.90801	0.56918	2.59329	0.03064774	0.01474729	0.98408	0.14379
1005	85859	2	35	3	5	60750.37	61813.31	1	126	1.43	2	0	48.2	2	1	obese	3.87536	0.57560	2.62144	0.02169710	0.01065832	0.98272	0.12224
1040	85947	1	22	2	2	39416.87	42067.87	1	130	2.25	2	8	17.9	.	1	underweight	2.88480	-0.43183	-1.96896	0.05202497	0.01447183	0.99562	-0.14239
1043	85951	1	25	1	3	38664.73	43018.90	2	122	1.76	2	21	20.3	3	2	normal weight	3.01062	-0.40537	-1.85043	0.07605322	0.01873262	0.99954	-0.16199
1069	85992	1	31	5	4	27818.98	28679.69	2	124	1.03	2	10	40.5	4	1	obese	3.70130	0.46630	2.12448	0.03494174	0.01129475	0.99180	0.12580
1116	86071	2	38	1	3	27701.59	28976.69	2	121	1.23	1	0	56.6	.	1	obese	4.03601	0.52712	2.40256	0.04041207	0.01671077	0.98818	0.15304
1174	86195	2	61	2	3	9215.11	8948.25	2	122	.	1	21	25.4	0	2	overweight	3.23475	-0.29667	-1.35557	0.09941527	0.01317717	1.00722	-0.13584
1176	86197	1	62	2	2	7921.49	9698.65	1	129	1.53	2	7	19.0	2	2	normal weight	2.94444	-0.40122	-1.82900	0.04908958	0.01178098	0.99709	-0.12846
1183	86212	2	32	1	3	31115.35	32227.31	1	124	0.25	1	2	60.7	2	1	obese	4.10594	0.59568	2.71571	0.04145473	0.02189557	0.98302	0.17522
1209	86272	2	22	4	4	26774.13	27106.62	2	131	.	2	0	16.9	.	1	underweight	2.82731	-0.53453	-2.43490	0.02832990	0.01201713	0.98647	-0.12978
1243	86336	2	62	3	4	34134.47	33815.80	1	131	2.09	1	3	58.9	0	1	obese	4.07584	0.59927	2.73021	0.02764747	0.01473855	0.98140	0.14376
1252	86354	1	37	1	3	25064.11	26055.54	1	120	1.65	1	2	54.7	2	1	obese	4.00186	0.51572	2.35050	0.04008038	0.01586359	0.98897	0.14911
1256	86360	1	50	2	2	25056.12	25450.10	1	125	0.43	2	0	41.2	0	2	obese	3.71844	0.39336	1.79245	0.04160511	0.00958279	0.99678	0.11586
1281	86425	2	25	1	3	24259.12	27521.27	1	128	0.13	2	3	49.1	.	2	obese	3.89386	0.48953	2.22992	0.03044716	0.01083707	0.98983	0.12323
1303	86479	2	21	3	4	51404.49	52020.56	2	132	5.00	2	15	19.7	5	1	normal weight	2.98062	-0.38506	-1.75477	0.04335530	0.00957251	0.99740	-0.11579
1341	86553	1	35	1	2	33182.95	34156.09	1	122	4.18	1	4	58.8	0	2	obese	4.07414	0.58594	2.67138	0.04240357	0.02167478	0.98389	0.17432
1348	86564	1	64	4	5	16249.22	16147.14	1	132	5.00	1	12	19.9	6	2	normal weight	2.99072	-0.47812	-2.17952	0.04533286	0.01543795	0.99205	-0.14708
1381	86621	1	48	3	2	41104.92	40904.27	1	130	0.76	1	2	48.5	0	2	obese	3.88156	0.46253	2.10748	0.03722502	0.01184400	0.99227	0.12882
1396	86649	2	32	1	3	24386.55	25509.06	1	128	0.17	2	3	54.0	1	1	obese	3.98898	0.59336	2.70360	0.03034722	0.01586876	0.98213	0.14916
1399	86658	1	26	1	5	25196.75	26891.37	2	133	3.70	2	10	47.4	.	1	obese	3.85862	0.49734	2.26633	0.03743320	0.01377128	0.98999	0.13892

1410	86677	1	24	3	2	100445.27	106919.56	2	132	1.83	2	0	57.6	2	1	obese	4.05352	0.77899	3.55403	004349135	003930129	0.96614	0.23489
1439	86737	1	50	2	4	23892.13	26853.76	1	127	.	1	0	17.2	1	2	underweight	2.84491	-0.63119	-2.87734	003741915	002217295	0.97966	-0.17634
1444	86746	2	53	3	3	63030.02	65357.23	1	127	.	2	2	50.4	1	2	obese	3.91999	0.57554	2.62164	002539297	001248038	0.98308	0.13228
1461	86782	2	23	4	4	22994.28	24269.22	1	124	0.95	2	2	16.6	.	1	underweight	2.80940	-0.55716	-2.53781	002570397	001183977	0.98453	-0.12883
1492	86855	2	39	2	4	20564.70	22193.00	1	119	1.03	1	2	57.2	.	1	obese	4.04655	0.55700	2.53846	003655322	001686413	0.98559	0.15375
1497	86868	2	22	2	5	27816.41	28244.38	2	129	2.60	2	3	18.1	1	1	underweight	2.89591	-0.43009	-1.95943	003615551	000994454	0.99416	-0.11803
1579	87050	2	46	5	4	21931.47	22686.74	1	129	0.75	1	0	46.0	1	2	obese	3.82864	0.45237	2.06079	003350985	001019139	0.99254	0.11949
1629	87158	2	65	4	4	18745.89	18672.63	2	119	0.72	2	7	18.9	0	1	normal weight	2.93916	-0.45806	-2.08738	003967733	001238789	0.99279	-0.13175
1663	87209	2	62	4	4	23374.89	23283.54	1	126	0.00	1	0	19.9	0	1	normal weight	2.99072	-0.50699	-2.30940	002934371	001119986	0.98853	-0.12528
1676	87235	1	43	4	3	18120.56	17830.15	2	132	0.87	1	21	22.2	7	1	normal weight	3.10009	-0.38558	-1.76055	008201383	001829850	1.00122	-0.16010
1693	87260	1	61	4	3	12148.88	11801.10	2	123	.	1	2	52.4	0	2	obese	3.95891	0.49289	2.24493	002765696	000997392	0.98934	0.11822
1702	87277	2	25	1	4	21468.94	21799.25	2	124	2.33	2	4	63.9	1	1	obese	4.15732	0.74193	3.38203	002918964	002385858	0.96859	0.18299
1708	87289	2	37	4	3	14639.43	15132.10	1	119	1.19	1	0	19.3	0	2	normal weight	2.96011	-0.51672	-2.35393	003059321	001213230	0.98797	-0.13040
1714	87298	1	28	3	2	48943.13	52097.80	2	132	0.98	2	10	40.6	5	2	obese	3.70377	0.39408	1.79572	004144859	000958145	0.99673	0.11585
1734	87343	2	62	5	5	20012.98	19934.77	2	124	0.81	1	4	46.0	2	2	obese	3.82864	0.47705	2.17332	003356549	001135241	0.99097	0.12612
1737	87346	2	32	4	3	23967.47	24013.05	2	131	1.38	2	0	49.1	4	2	obese	3.89386	0.53619	2.44227	002673325	001140669	0.98619	0.12644
1745	87365	1	30	4	5	23071.51	24361.13	2	132	2.10	2	0	43.9	2	1	obese	3.78191	0.48356	2.20277	003106739	001079114	0.99029	0.12297
1795	87476	2	58	4	2	25407.28	25461.84	2	130	.	2	3	14.5	2	2	underweight	2.67415	-0.68903	-3.14200	003980811	002812350	0.97470	-0.19864
1830	87539	2	31	2	2	27134.00	31711.76	2	119	1.25	2	10	16.6	0	2	underweight	2.80940	-0.55432	-2.52805	005063030	002320058	0.98716	-0.18034
1842	87577	2	57	4	3	26294.50	26702.38	2	126	1.79	1	3	17.9	2	2	underweight	2.88480	-0.60794	-2.76964	002669038	001464010	0.98059	-0.14328
1850	87594	2	35	4	1	29934.42	29696.23	1	126	.	1	0	20.7	0	2	normal weight	3.03013	-0.42361	-1.93149	005254569	001406698	0.99615	-0.14038
1851	87596	2	60	3	5	132549.33	130222.96	1	123	5.00	1	0	18.0	4	2	underweight	2.89037	-0.55013	-2.50639	003092507	001390203	0.98556	-0.13960
1925	87783	2	59	2	4	13005.54	14790.93	2	132	1.57	1	3	21.7	0	1	normal weight	3.07731	-0.42392	-1.93129	003600453	000962070	0.99450	-0.11609
1934	87802	2	27	4	5	26377.58	26442.36	2	126	2.02	2	2	52.6	.	1	obese	3.96272	0.63505	2.89340	002673624	001600248	0.97831	0.14981
1944	87824	2	54	1	4	11709.11	13256.02	1	120	.	2	1	49.5	1	2	obese	3.90197	0.46705	2.12751	003151434	001021246	0.99142	0.11962
1977	87903	1	54	5	2	28290.59	29012.87	1	130	0.60	1	0	57.4	0	2	obese	4.05004	0.73072	3.33323	004357809	003465141	0.97105	0.22052
1994	87942	2	32	4	3	23043.22	22859.87	1	126	0.92	2	5	53.3	0	2	obese	3.97594	0.60766	2.76818	002526705	001384281	0.98048	0.13932
1997	87945	1	36	2	4	26689.38	27745.10	1	128	2.11	2	10	49.0	.	1	obese	3.89182	0.53000	2.41521	003620541	001512276	0.98757	0.14559
2012	87971	1	34	1	2	26689.38	28924.26	1	128	.	2	0	48.8	.	2	obese	3.88773	0.52525	2.39360	003671349	001506285	0.98796	0.14530

2020	87997	1	25	4	2	39897.57	49156.80	1	132	.	1	7	20.4	.	2	normal weight	3.01553	-0.43062	-1.96299	.004776041	.001319961	0.99527	-0.13599
2041	88050	2	58	5	3	11912.96	12100.23	2	121	1.72	1	2	18.5	.	2	normal weight	2.91777	-0.44748	-2.03889	.003728677	.0011110474	0.99321	-0.12473
2059	88083	2	46	4	5	22585.84	23927.28	2	131	3.43	2	3	52.8	2	2	obese	3.96651	0.61560	2.80456	.002617800	.001472196	0.97990	0.14368
2083	88132	1	42	3	5	38189.35	39473.89	2	125	2.37	2	20	44.3	0	2	obese	3.79098	0.45994	2.09842	.006312507	.001996447	0.99498	0.16725
2104	88182	2	38	5	4	56641.62	57632.67	2	121	1.56	2	15	43.3	1	2	obese	3.76815	0.48065	2.19180	.005192359	.001789384	0.99253	0.15835
2120	88215	2	22	3	3	79044.34	79204.54	2	132	1.85	2	7	16.8	1	1	underweight	2.82138	-0.50683	-2.30884	.003085062	.001177109	0.98869	-0.12844
2129	88231	2	62	4	4	24278.34	24183.46	1	132	1.83	1	1	19.7	1	1	normal weight	2.98062	-0.51921	-2.36508	.002874789	.001150647	0.98762	-0.12699
2156	88298	2	63	3	4	153707.76	152272.77	2	125	0.37	1	0	57.4	0	2	obese	4.05004	0.56731	2.58439	.002758505	.001317869	0.98393	0.13592
2160	88304	2	65	2	2	8158.61	9902.70	2	123	0.54	1	1	19.9	.	2	normal weight	2.99072	-0.48692	-2.21980	.004649996	.001642736	0.99158	-0.15172
2241	88480	2	22	5	4	36161.39	35408.11	2	130	1.15	1	2	55.4	2	2	obese	4.01458	0.64553	2.94380	.004379930	.002718122	0.97902	0.19525
2249	88503	2	48	4	2	20555.85	21494.38	2	129	1.23	1	4	61.1	.	2	obese	4.11251	0.63522	2.89571	.003701108	.002221056	0.97927	0.17649
2250	88504	2	22	3	2	75140.76	75293.05	2	120	0.66	2	3	42.6	2	1	obese	3.75185	0.44540	2.03003	.004342440	.001282849	0.99395	0.13406
2257	88524	1	24	5	4	44356.66	47684.94	1	125	1.11	2	8	16.2	3	2	underweight	2.78501	-0.45444	-2.07005	.003171750	.000973128	0.99223	-0.11677
2267	88542	2	28	4	5	38261.74	38355.70	1	132	3.98	1	10	21.5	1	1	normal weight	3.06805	-0.39382	-1.79455	.004138193	.000955356	0.99674	-0.11568
2276	88561	1	45	3	2	41255.17	43398.92	2	130	0.87	2	3	53.1	5	2	obese	3.97218	0.66921	3.05031	.003265805	.002173253	0.97585	0.17460
2294	88590	1	45	2	1	29547.22	29433.26	1	119	1.26	1	14	23.2	.	2	normal weight	3.14415	-0.31614	-1.44258	.007152158	.001070513	1.00357	-0.12244
2296	88592	1	41	5	5	34977.43	35635.61	1	127	5.00	1	6	49.4	1	2	obese	3.89995	0.58066	2.64592	.003247969	.001627155	0.98336	0.15104
2329	88653	2	31	1	5	34128.79	35348.44	1	122	5.00	2	3	49.9	1	1	obese	3.91002	0.53468	2.43588	.003043617	.001292366	0.98666	0.13459
2341	88674	2	27	4	2	26774.13	27046.92	2	131	0.08	2	1	44.3	7	2	obese	3.79098	0.44685	2.03611	.003841124	.001140980	0.99336	0.12643
2373	88732	1	22	1	4	39066.59	41694.03	1	128	2.61	2	14	20.1	1	2	normal weight	3.00072	-0.41998	-1.91423	.004551879	.001196065	0.99567	-0.12944
2377	88742	1	24	3	3	73773.28	79308.82	2	127	2.56	2	10	16.9	4	2	underweight	2.82731	-0.49374	-2.24915	.003081430	.001115782	0.98959	-0.12504
2438	88875	2	60	3	3	31497.61	31464.21	1	131	1.40	2	1	50.0	1	1	obese	3.91202	0.57839	2.63551	.003189675	.001585331	0.98348	0.14908
2447	88890	2	21	3	1	68998.88	69138.72	2	132	1.83	2	3	45.6	2	2	obese	3.81991	0.51074	2.32903	.005069881	.001972286	0.99035	0.16626
2448	88891	2	36	5	4	19102.33	21383.27	1	119	4.25	2	4	60.9	2	2	obese	4.10923	0.84602	3.85754	.002631118	.002794733	0.95727	0.19813
2454	88898	1	30	3	3	123735.04	127563.36	1	130	2.85	2	7	49.8	2	2	obese	3.90801	0.59046	2.68961	.002468985	.001277020	0.98183	0.13381
2457	88903	2	22	3	5	96436.21	109037.68	2	122	4.04	2	6	16.7	1	2	underweight	2.81541	-0.50290	-2.29054	.002729643	.001024712	0.98862	-0.11984
2527	89054	1	49	4	1	14664.73	14429.70	1	123	.	1	1	53.8	15	2	obese	3.98527	0.54923	2.50425	.004632751	.002082269	0.98713	0.17085
2549	89104	2	43	5	4	26613.41	28198.84	1	128	.	2	1	43.6	.	2	obese	3.77506	0.51486	2.34506	.002714559	.001068053	0.98777	0.12235

2619	89241	2	44	4	5	26185.83	27087.61	1	129	5.00	1	14	50.8	7	1	obese	3.92790	0.44990	2.05099	.004800052	.001448111	0.99412	0.14244
2626	89256	1	35	5	4	24532.14	25903.42	2	126	3.73	1	1	44.4	4	1	obese	3.79324	0.45866	2.09001	.003877369	.001213507	0.99266	0.13039
2644	89290	1	36	1	4	28259.34	28412.38	1	120	2.06	2	3	57.8	2	2	obese	4.05699	0.65293	2.97553	.002980369	.001886923	0.97704	0.16269
2681	89371	1	63	4	2	14080.10	17337.24	1	126	0.17	1	0	48.9	1	1	obese	3.88978	0.45236	2.06181	.004381107	.001335131	0.99355	0.13677
2710	89446	2	61	5	2	21456.41	20891.98	1	122	1.14	2	7	38.7	.	2	obese	3.65584	0.40858	1.86299	.005353584	.001333557	0.99712	0.13668
2730	89499	2	57	5	4	55467.87	58271.41	2	130	.	1	1	47.9	0	1	obese	3.86912	0.49751	2.26703	.003664758	.001348957	0.98990	0.13749
2734	89508	2	20	2	4	28590.62	29030.50	2	125	.	2	10	16.7	10	2	underweight	2.81541	-0.57732	-2.63163	.003955191	.001961541	0.98430	-0.16583
2749	89534	1	20	5	2	50452.43	53704.38	2	125	0.00	2	4	37.2	.	2	obese	3.61631	0.42151	1.92105	.004396211	.001163226	0.99543	0.12765
2818	89651	2	26	2	4	24259.12	24632.36	1	128	1.32	1	3	21.7	1	1	normal weight	3.07731	-0.40816	-1.86012	.004350358	.001079238	0.99615	-0.12296
2819	89652	2	50	4	5	24427.40	24479.84	2	131	1.68	1	3	61.7	0	2	obese	4.12228	0.65270	2.97440	.002927989	.001852257	0.97701	0.16118
2871	89768	1	36	4	2	15557.37	20285.09	2	126	.	2	1	44.3	1	2	obese	3.79098	0.46906	2.13711	.003536535	.001156834	0.99166	0.12732
2872	89774	2	32	3	5	115989.20	119191.51	1	130	2.85	2	0	47.2	5	2	obese	3.85439	0.54403	2.47796	.002596144	.001140209	0.98554	0.12642
2892	89810	2	24	4	3	27666.60	27734.55	2	131	0.60	1	1	64.6	2	1	obese	4.16821	0.70752	3.22673	.004112493	.003064210	0.97308	0.20735
2945	89935	2	46	3	3	44264.09	43787.62	2	131	0.56	2	1	64.5	0	1	obese	4.16667	0.83972	3.82862	.002574653	.002693901	0.95793	0.19452
2952	89953	2	65	3	4	40692.55	40649.39	1	130	.	1	13	48.6	.	2	obese	3.88362	0.37237	1.69721	.004711537	.000973556	0.99844	0.11677
3003	90067	2	62	2	4	8459.54	8214.56	1	124	1.32	1	0	19.2	.	2	normal weight	2.95491	-0.55343	-2.52211	.003594236	.001636879	0.98580	-0.15148
3010	90081	2	45	3	4	124256.65	127676.91	2	131	2.98	1	8	56.3	30	2	obese	4.03069	0.53960	2.45792	.002754395	.001190449	0.98602	0.12918
3015	90093	2	24	1	4	22817.66	22407.83	1	133	1.36	2	4	48.7	0	1	obese	3.88568	0.47077	2.14425	.002957427	.000973306	0.99099	0.11678
3016	90095	1	22	1	1	32574.19	33623.25	1	129	0.75	2	5	18.5	2	2	normal weight	2.91777	-0.44073	-2.00847	.004108458	.001187829	0.99400	-0.12900
3019	90099	1	22	2	4	36216.79	38652.57	1	128	4.74	2	16	49.9	3	2	obese	3.91002	0.53012	2.41809	.005537238	.002322849	0.98942	0.18044
3022	90106	2	52	2	2	18333.13	18842.09	1	126	0.40	1	0	56.7	.	2	obese	4.03777	0.56846	2.59192	.004507849	.002169966	0.98553	0.17442
3053	90182	1	20	3	3	86480.89	92969.95	1	125	1.65	2	1	53.0	.	2	obese	3.97029	0.67024	3.05483	.003158593	.002107903	0.97565	0.17196
3059	90189	2	23	1	3	22691.17	24478.60	1	121	1.59	1	2	21.1	10	2	normal weight	3.04927	-0.46874	-2.13670	.004543943	.001487304	0.99267	-0.14436
3066	90210	2	53	4	3	28136.91	29421.56	1	129	5.00	2	1	49.0	5	1	obese	3.89182	0.53404	2.43294	.003057766	.001295273	0.98672	0.13474
3070	90223	2	65	2	4	7672.77	7872.95	2	125	1.12	1	2	19.5	2	2	normal weight	2.97041	-0.54360	-2.47728	.003612623	.001587387	0.98656	-0.14917
3077	90244	2	54	3	5	138963.57	138098.60	2	127	1.36	1	2	17.3	0	1	underweight	2.85071	-0.57913	-2.63817	.002671341	.001329688	0.98292	-0.13654
3163	90436	1	59	4	1	20765.98	20537.64	1	125	4.08	1	4	19.2	0	2	normal weight	2.95491	-0.49227	-2.24424	.004671431	.001686844	0.99124	-0.15375
3165	90439	1	31	4	4	22779.76	24106.16	2	131	1.38	1	3	54.0	1	1	obese	3.98898	0.52623	2.39747	.003166059	.001302517	0.98740	0.13511
3175	90463	2	44	3	4	90320.31	92806.44	1	131	1.10	1	1	18.9	3	2	normal	2.93916	-0.53661	-2.44404	.002521303	.001077195	0.98602	-0.12288

3202	90527	2	38	5	1	17185.03	18243.18	2	129	2.88	1	1	19.5	.	2	normal weight	2.97041	-0.36105	-1.64624	.005521690	.001074385	0.99982	-0.12267
3233	90586	2	24	4	4	34850.60	35205.68	2	132	1.28	2	21	47.8	7	2	obese	3.86703	0.44765	2.04345	.007428671	.002230588	0.99685	0.17678
3236	90591	1	20	3	3	48394.47	51911.14	2	131	0.56	2	1	50.1	.	2	obese	3.91402	0.61397	2.79785	.003158593	.001768816	0.98056	0.15749
3262	90633	2	42	1	4	27165.00	27241.64	1	128	0.89	2	1	49.5	3	1	obese	3.90197	0.48482	2.20825	.002865911	.001000178	0.98997	0.11839
3282	90669	1	27	1	2	33425.61	35322.63	2	133	2.23	2	4	58.0	2	2	obese	4.06044	0.69282	3.15872	.003602697	.002571350	0.97399	0.18994
3299	90701	2	57	4	2	22609.87	22658.42	1	126	1.27	2	2	16.7	0	2	underweight	2.81541	-0.54518	-2.48479	.003889502	.001719901	0.98671	-0.15527
3367	90859	2	50	2	2	17511.54	17997.69	1	125	0.43	2	0	50.3	.	2	obese	3.91801	0.56641	2.58206	.004143503	.001978746	0.98534	0.16655
3467	91078	2	36	3	2	46648.85	47465.06	1	126	1.41	1	10	17.7	2	2	underweight	2.87356	-0.58322	-2.66018	.005163776	.002619877	0.98500	-0.19165
3511	91165	1	26	2	4	32573.81	34688.02	1	127	0.74	2	0	43.2	3	2	obese	3.76584	0.41796	1.90430	.003773103	.000980420	0.99502	0.11719
3534	91211	2	40	1	4	21710.09	21771.34	1	120	2.68	1	2	52.8	7	1	obese	3.96651	0.43144	1.96553	.003554293	.000983635	0.99401	0.11739
3656	91455	1	26	3	1	94353.30	101433.05	2	131	2.23	1	7	19.9	7	2	normal weight	2.99072	-0.41956	-1.91378	.006041142	.001589030	0.99717	-0.14920
3661	91475	2	24	2	3	23295.98	22877.56	1	122	1.96	1	5	55.5	2	2	obese	4.01638	0.53657	2.44667	.004817037	.002067198	0.98825	0.17022
3677	91507	2	53	4	1	23510.29	23560.77	2	131	0.55	2	1	45.6	.	2	obese	3.81991	0.47220	2.15262	.004633695	.001539480	0.99254	0.14687
3683	91519	2	20	3	3	51642.14	64393.21	1	131	.	2	3	17.1	.	2	underweight	2.83908	-0.49173	-2.23982	.002932994	.001053095	0.98958	-0.12148
3705	91566	2	25	3	4	52776.29	53291.18	1	125	1.63	2	19	46.4	4	1	obese	3.83730	0.46123	2.10403	.006056439	.001925198	0.99464	0.16424
3731	91624	1	39	1	1	37138.42	38227.56	2	130	0.62	1	6	21.7	1	2	normal weight	3.07731	-0.40819	-1.86022	.004294935	.001065547	0.99609	-0.12217
3735	91630	2	29	1	2	22756.45	23055.69	1	127	1.65	2	3	45.2	0	1	obese	3.81110	0.43017	1.96014	.003930496	.001082205	0.99446	0.12313
3844	91858	1	33	1	1	26689.38	27745.10	1	128	0.17	2	0	45.5	1	2	obese	3.81771	0.46456	2.11677	.003725223	.001195724	0.99214	0.12944
3851	91869	2	25	1	4	31760.84	32249.50	2	129	1.49	2	14	18.3	2	1	underweight	2.90690	-0.52970	-2.41501	.004595572	.001921092	0.98854	-0.16409
3854	91887	2	28	1	3	16764.66	17746.05	2	133	0.67	2	5	48.6	.	1	obese	3.88362	0.48567	2.21241	.003156509	.001106062	0.99020	0.12450
3867	91912	1	41	2	3	30050.63	30837.08	1	127	0.99	1	4	55.4	1	1	obese	4.01458	0.56732	2.58609	.004036207	.001933303	0.98516	0.16463
3877	91932	2	51	4	2	20578.36	20897.58	1	125	.	1	0	21.3	1	1	normal weight	3.05871	-0.39949	-1.82050	.004265548	.001013553	0.99655	-0.11915
3880	91945	2	39	2	5	30356.08	31440.91	1	123	1.38	1	21	44.7	6	2	obese	3.79997	0.29888	1.36516	.009179597	.001233037	1.00636	0.13140
3940	92083	2	23	5	2	33430.37	32733.99	1	129	0.75	2	2	37.9	2	2	obese	3.63495	0.41644	1.89800	.004430752	.001144462	0.99576	0.12662
3951	92107	2	38	5	1	25548.96	28274.80	2	120	0.70	2	0	36.0	.	2	obese	3.58352	0.37094	1.69069	.004714965	.000966809	0.99852	0.11637
3981	92166	1	34	1	3	25474.25	26481.91	1	120	1.76	2	0	46.3	.	2	obese	3.83514	0.45939	2.09267	.003232930	.001013741	0.99198	0.11918
3992	92199	1	47	2	4	44543.56	44734.79	2	123	3.72	2	4	16.0	1	2	underweight	2.77259	-0.59380	-2.70570	.003083569	.001614992	0.98215	-0.15048
3994	92202	2	65	4	3	19396.53	20752.81	2	132	.	1	2	18.7	1	1	normal weight	2.92852	-0.55387	-2.52386	.003391214	.001546235	0.98557	-0.14722
3996	92206	2	20	1	4	35188.96	35378.76	2	127	1.85	2	7	18.0	2	2	underweight	2.89037	-0.54104	-2.46507	.003223340	.001401889	0.98637	-0.14018

4066	92363	2	27	4	3	31445.36	31765.74	2	131	0.09	2	3	47.8	1	1	obese	3.86703	0.51742	2.35692	.002875139	.001142876	0.98774	0.12656
4090	92410	2	55	3	4	122590.25	126542.70	2	123	3.62	2	0	49.8	.	1	obese	3.90801	0.55791	2.54108	.002448429	.001130562	0.98435	0.12589
4099	92423	2	37	1	4	31115.35	32547.59	1	127	0.42	2	1	50.9	6	2	obese	3.92986	0.50306	2.29132	.002781799	.001045054	0.98866	0.12102
4107	92438	2	34	2	4	29489.06	30846.43	1	127	3.17	2	2	17.9	1	1	underweight	2.88480	-0.48561	-2.21188	.002917856	.001021706	0.98997	-0.11965
4116	92463	1	31	5	5	26047.04	27020.31	1	126	5.00	1	12	41.8	4	2	obese	3.73290	0.40565	1.84888	.004531198	.001110765	0.99647	0.12474
4122	92478	2	20	2	4	28027.59	28458.81	2	123	3.42	2	3	48.3	1	2	obese	3.87743	0.49955	2.27605	.003442582	.001276980	0.98954	0.13377
4131	92503	1	36	1	1	31576.09	32502.11	2	132	0.84	2	21	21.4	.	2	normal weight	3.06339	-0.33573	-1.53349	.009077212	.001538175	1.00461	-0.14677
4150	92539	2	61	2	4	9440.21	9166.83	1	129	.	2	1	18.7	0	2	normal weight	2.92852	-0.46470	-2.11722	.003544938	.001138141	0.99195	-0.12628
4170	92573	2	42	3	2	36588.37	36194.53	1	122	1.25	2	3	41.9	3	1	obese	3.73529	0.41928	1.91036	.003813294	.000997210	0.99498	0.11819
4171	92579	1	63	2	1	7052.70	6811.96	1	119	5.00	1	0	53.6	7	2	obese	3.98155	0.54235	2.47302	.004801192	.002104922	0.98780	0.17177
4299	92840	1	35	4	5	36170.61	37019.67	1	132	3.09	1	4	48.4	.	2	obese	3.87950	0.44148	2.01125	.003500178	.001014148	0.99336	0.11920
4330	92898	1	42	5	4	15331.31	15571.68	1	123	2.06	1	8	43.9	2	1	obese	3.78191	0.42914	1.95535	.003836175	.001050983	0.99443	0.12134
4333	92904	2	34	4	2	27119.34	26903.56	1	126	0.75	2	9	45.1	2	2	obese	3.80888	0.44444	2.02550	.004222563	.001241729	0.99389	0.13190
4363	92978	1	64	3	5	162731.06	162531.14	2	130	5.00	1	7	54.0	1	2	obese	3.98898	0.55824	2.54363	.003253934	.001506734	0.98511	0.14533
4368	92988	2	51	4	4	18830.73	19539.42	2	133	2.38	1	0	64.5	3	2	obese	4.16667	0.66217	3.01696	.002482697	.001615009	0.97574	0.15051
4427	93097	1	28	4	3	27284.53	27282.98	2	129	2.29	2	5	54.1	.	2	obese	3.99083	0.65098	2.96610	.002640041	.001660327	0.97688	0.15260
4449	93142	2	64	4	2	20089.26	20010.75	2	132	1.10	1	0	67.3	.	2	obese	4.20916	0.73271	3.34158	.003911474	.003124395	0.97044	0.20940
4493	93245	2	63	4	4	21903.35	21817.75	2	128	1.23	1	7	18.4	5	2	underweight	2.91235	-0.61272	-2.79197	.003020000	.001683882	0.98053	-0.15366
4517	93303	1	63	5	1	33236.95	33473.42	1	130	0.70	1	0	17.7	0	1	underweight	2.87356	-0.42916	-1.95739	.005824704	.001602298	0.99639	-0.14982
4534	93345	2	36	4	5	21639.78	20968.91	2	119	3.03	2	17	62.7	6	1	obese	4.13836	0.77458	3.53586	.005479789	.004907061	0.96765	0.26246
4539	93354	2	64	2	4	6940.91	7121.99	1	124	1.06	2	0	17.7	1	1	underweight	2.87356	-0.50693	-2.31035	.003968348	.001517450	0.98955	-0.14583
4550	93375	2	36	3	2	53511.46	54867.74	2	130	0.92	2	2	17.9	2	2	underweight	2.88480	-0.43826	-1.99656	.003484210	.000994824	0.99354	-0.11806
4568	93429	2	26	1	3	25991.91	27228.19	1	128	1.00	2	7	18.7	1	2	normal weight	2.92852	-0.48476	-2.20827	.003136798	.001095032	0.99024	-0.12387
4575	93445	1	38	4	4	20091.08	23755.68	2	129	0.69	1	0	52.3	0	1	obese	3.95700	0.49727	2.26531	.003151429	.001157650	0.98941	0.12737
4620	93535	2	31	2	2	27279.54	27598.08	2	132	0.88	2	3	47.7	0	2	obese	3.86493	0.51605	2.35223	.004192507	.001662108	0.98912	0.15263
4621	93536	2	63	5	1	15910.87	15848.69	1	119	2.95	2	0	37.5	.	2	obese	3.62434	0.39982	1.82301	.005344688	.001274849	0.99760	0.13363
4623	93547	1	48	4	4	25971.61	27015.18	1	132	2.49	2	14	42.8	0	1	obese	3.75654	0.37910	1.72770	.004460841	.000954904	0.99784	0.11565
4655	93614	2	60	3	3	45113.91	44322.11	2	127	1.49	1	3	55.1	0	2	obese	4.00915	0.54248	2.47122	.002883854	.001260071	0.98593	0.13290

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