

S U D A A N

Software for the Statistical Analysis of Correlated Data  
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2005

Release 9.0.1

Number of observations read	:	19759	Weighted count:	278652243
Number of observations skipped (WEIGHT variable nonpositive)	:	1245		
Observations in subpopulation	:	8495	Weighted count:	181112209
Observations used in the analysis	:	8495	Weighted count:	181112209
Denominator degrees of freedom	:	29		

Maximum number of estimable parameters for the model is 2

File ANALYSIS\_DATA contains 57 Clusters

57 clusters were used to fit the model

Maximum cluster size is 213 records

Minimum cluster size is 85 records

Weighted mean response is 51.254102

Multiple R-Square for the dependent variable LBDHDL: 0.077254

Date: 08-04-2008	Research Triangle Institute	Page : 1
Time: 10:25:57	The REGRESS Procedure	Table : 1

Variance Estimation Method: Taylor Series (WR)

SE Method: Robust (Binder, 1983)

Working Correlations: Independent

Link Function: Identity

Response variable LBDHDL: HDL-cholesterol (mg/dL)

For Subpopulation: ELIGIBLE = 1

Linear regression model for high density lipoprotein and body mass

index: NHANES 1999-2002

by: Independent Variables and Effects.

Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta
Intercept	70.54	1.10	68.30
Body Mass Index (kg/m**2)	-0.69	0.03	-0.76

Date: 08-04-2008  
Time: 10:25:57

Research Triangle Institute  
The REGRESS Procedure

Page : 2  
Table : 1

Variance Estimation Method: Taylor Series (WR)  
SE Method: Robust (Binder, 1983)  
Working Correlations: Independent  
Link Function: Identity  
Response variable LBDHDL: HDL-cholesterol (mg/dL)  
For Subpopulation: ELIGIBLE = 1  
Linear regression model for high density lipoprotein and body mass index: NHANES 1999-2002  
by: Independent Variables and Effects.

Independent Variables and Effects	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
Intercept	72.78	64.40	0.0000
Body Mass Index (kg/m**2)	-0.62	-20.27	0.0000

Date: 08-04-2008  
Time: 10:25:57

Research Triangle Institute  
The REGRESS Procedure

Page : 3  
Table : 1

Variance Estimation Method: Taylor Series (WR)  
SE Method: Robust (Binder, 1983)  
Working Correlations: Independent  
Link Function: Identity  
Response variable LBDHDL: HDL-cholesterol (mg/dL)  
For Subpopulation: ELIGIBLE = 1  
Linear regression model for high density lipoprotein and body mass index: NHANES 1999-2002  
by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	2	11020.44	0.0000
MODEL MINUS			
INTERCEPT	1	411.06	0.0000
INTERCEPT	1	4147.19	0.0000
BMXBMI	1	411.06	0.0000

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Number of observations read        : 19759      Weighted count:278652243  
 Number of observations skipped    : 1245  
 (WEIGHT variable nonpositive)  
 Observations in subpopulation    : 8495      Weighted count:181112209  
 Observations used in the analysis : 8495      Weighted count:181112209  
 Denominator degrees of freedom   : 29

Maximum number of estimable parameters for the model is 2

File ANALYSIS\_DATA contains 57 Clusters

57 clusters were used to fit the model

Maximum cluster size is 213 records

Minimum cluster size is 85 records

Weighted mean response is 51.254102

Multiple R-Square for the dependent variable LBDHDL: 0.090062

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and body mass  
 index: NHANES 1999-2002  
 by: Independent Variables and Effects.

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Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta
Intercept	67.53	0.81	65.87
BMI category	-5.55	0.21	-5.99

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Date: 08-04-2008                      Research Triangle Institute                      Page : 2  
 Time: 10:25:58                        The REGRESS Procedure                      Table : 1

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and body mass  
 index: NHANES 1999-2002  
 by: Independent Variables and Effects.

```
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```

Independent Variables and Effects	Upper 95% Limit Beta	T-Test B=0	P-value T-Test B=0
Intercept	69.19	83.07	0.0000
BMI category	-5.12	-25.89	0.0000

```
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```

Date: 08-04-2008                      Research Triangle Institute                      Page : 3  
 Time: 10:25:58                        The REGRESS Procedure                      Table : 1

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and body mass  
 index: NHANES 1999-2002  
 by: Contrast.

```

-----
Contrast                Degrees
                        of
                        Freedom          Wald F      P-value
                        Wald F
-----
OVERALL MODEL                2      10724.83    0.0000
MODEL MINUS
  INTERCEPT                1         670.46    0.0000
INTERCEPT                1      6900.30    0.0000
BMICAT                     1         670.46    0.0000
-----

```

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```

Number of observations read      : 19759      Weighted count:278652243
Number of observations skipped   : 1245
(WEIGHT variable nonpositive)
Observations in subpopulation   : 8495      Weighted count:181112209
Observations used in the analysis : 8495      Weighted count:181112209
Denominator degrees of freedom  : 29

```

Maximum number of estimable parameters for the model is 4

File ANALYSIS\_DATA contains 57 Clusters  
 57 clusters were used to fit the model  
 Maximum cluster size is 213 records  
 Minimum cluster size is 85 records

Weighted mean response is 51.254102

Date: 08-04-2008                      Research Triangle Institute                      Page : 1  
 Time: 10:25:59                          The REGRESS Procedure                      Table : 1

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and body mass  
 index: NHANES 1999-2002  
 by: Independent Variables and Effects.

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Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta
Intercept	57.18	0.53	56.10
BMI category			
underweight	3.26	1.41	0.37
normal weight	0.00	0.00	0.00
overweight	-7.48	0.50	-8.50
obese	-11.24	0.45	-12.17

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Date: 08-04-2008                      Research Triangle Institute                      Page : 2  
 Time: 10:25:59                          The REGRESS Procedure                      Table : 1

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and body mass  
 index: NHANES 1999-2002  
 by: Independent Variables and Effects.

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Independent Variables and	Upper 95%	P-value T-Test
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Effects	Limit Beta	T-Test B=0	B=0
Intercept	58.25	108.84	0.0000
BMI category			
underweight	6.15	2.31	0.0283
normal weight	0.00	.	.
overweight	-6.46	-15.05	0.0000
obese	-10.31	-24.80	0.0000

Date: 08-04-2008  
Time: 10:25:59

Research Triangle Institute  
The REGRESS Procedure

Page : 3  
Table : 1

Variance Estimation Method: Taylor Series (WR)  
SE Method: Robust (Binder, 1983)  
Working Correlations: Independent  
Link Function: Identity  
Response variable LBDHDL: HDL-cholesterol (mg/dL)  
For Subpopulation: ELIGIBLE = 1  
Linear regression model for high density lipoprotein and body mass  
index: NHANES 1999-2002  
by: Contrast.

Contrast	Degrees of Freedom	Wald F	P-value Wald F
OVERALL MODEL	4	5752.24	0.0000
MODEL MINUS INTERCEPT	3	227.53	0.0000
INTERCEPT	.	.	.
BMICAT	3	227.53	0.0000

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 Number of observations skipped : 1245  
 (WEIGHT variable nonpositive)  
 Observations in subpopulation : 8495 Weighted count:181112209  
 Observations used in the analysis : 8495 Weighted count:181112209  
 Denominator degrees of freedom : 29

Maximum number of estimable parameters for the model is 14

File ANALYSIS\_DATA contains 57 Clusters  
 57 clusters were used to fit the model  
 Maximum cluster size is 213 records  
 Minimum cluster size is 85 records

Weighted mean response is 51.254102

Multiple R-Square for the dependent variable LBDHDL: 0.232413

Date: 08-04-2008 Research Triangle Institute Page : 1  
 Time: 10:26:00 The REGRESS Procedure Table : 1

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and selected  
 covariates: NHANES 1999-2002  
 by: Independent Variables and Effects.

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Independent Variables and Effects	Beta Coeff.	SE Beta	Lower 95% Limit Beta
Intercept	46.31	0.57	45.14
Gender			
Male	0.00	0.00	0.00
Female	9.98	0.32	9.32
Race/ethnicity			
Mexican Americans	0.67	0.55	-0.46
Other Hispanic	-2.24	0.66	-3.59
Non-Hispanic white	0.00	0.00	0.00
Non-Hispanic black	4.95	0.66	3.61
Other multi/racial	-0.56	1.11	-2.83

SMOKER



Never smoker	1.22	0.71	-0.22
Past smoker	2.33	0.65	1.00
Current smoker	0.00	0.00	0.00
Education			
< HS	-3.03	0.55	-4.16
HS/GED	-1.85	0.55	-2.98
> HS	0.00	0.00	0.00
BMI category			
underweight	2.30	1.34	-0.44
normal weight	0.00	0.00	0.00
overweight	-6.55	0.41	-7.38
obese	-12.00	0.38	-12.79
Age in years	0.11	0.01	0.09

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Variance Estimation Method: Taylor Series (WR)  
SE Method: Robust (Binder, 1983)  
Working Correlations: Independent  
Link Function: Identity  
Response variable LBDHDL: HDL-cholesterol (mg/dL)  
For Subpopulation: ELIGIBLE = 1  
Linear regression model for high density lipoprotein and selected  
covariates: NHANES 1999-2002  
by: Independent Variables and Effects.

-----			
Independent			P-value
Variables and	Upper 95%	T-Test	T-Test
Effects	Limit Beta	B=0	B=0
-----			
Intercept	47.48	80.77	0.0000
Gender			
Male	0.00	.	.
Female	10.64	30.90	0.0000
Race/ethnicity			
Mexican Americans	1.80	1.21	0.2346
Other Hispanic	-0.89	-3.40	0.0020
Non-Hispanic white	0.00	.	.
Non-Hispanic black	6.29	7.56	0.0000
Other multi/racial	1.71	-0.50	0.6194
SMOKER			
Never smoker	2.66	1.73	0.0945
Past smoker	3.66	3.59	0.0012
Current smoker	0.00	.	.
Education			
< HS	-1.90	-5.47	0.0000

HS/GED	-0.73	-3.36	0.0022
> HS	0.00	.	.
BMI category			
underweight	5.04	1.72	0.0969
normal weight	0.00	.	.
overweight	-5.71	-16.01	0.0000
obese	-11.22	-31.30	0.0000
Age in years	0.14	8.83	0.0000

Date: 08-04-2008                      Research Triangle Institute                      Page : 3  
Time: 10:26:00                      The REGRESS Procedure                      Table : 1

Variance Estimation Method: Taylor Series (WR)  
SE Method: Robust (Binder, 1983)  
Working Correlations: Independent  
Link Function: Identity  
Response variable LBDHDL: HDL-cholesterol (mg/dL)  
For Subpopulation: ELIGIBLE = 1  
Linear regression model for high density lipoprotein and selected  
  covariates: NHANES 1999-2002  
by: Contrast.

Contrast	Degrees of Freedom	S_waite Adj DF	S_waite Adj F	P-value S_waite Adj F
OVERALL MODEL	14	6.36	4829.33	0.0000
MODEL MINUS INTERCEPT	13	6.89	123.87	0.0000
INTERCEPT	.	.	.	.
RIAGENDR	1	1.00	954.86	0.0000
RIDRETH1	4	3.05	22.11	0.0000
SMOKER	2	1.58	6.04	0.0101
DMDEDUC	2	1.58	17.57	0.0000
BMICAT	3	2.88	288.19	0.0000
RIDAGEYR	1	1.00	77.94	0.0000
Never smoker vs. past smoker	1	1.00	7.24	0.0117

Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
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 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and selected  
 covariates: NHANES 1999-2002  
 by: Contrast.

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Contrast	S_waite		P-value	
	Adj	ChiSq	ChiSq	Wald F
OVERALL MODEL	30703.43	0.0000	16434.37	0.0000
MODEL MINUS				
INTERCEPT	852.88	0.0000	374.72	0.0000
INTERCEPT	.	.	.	.
RIAGENDR	954.86	0.0000	954.86	0.0000
RIDRETH1	67.42	0.0000	32.14	0.0000
SMOKER	9.53	0.0051	8.61	0.0012
DMDEDUC	27.84	0.0000	15.25	0.0000
BMICAT	829.87	0.0000	364.45	0.0000
RIDAGEYR	77.94	0.0000	77.94	0.0000
Never smoker vs. past smoker	7.24	0.0073	7.24	0.0117

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Variance Estimation Method: Taylor Series (WR)  
 SE Method: Robust (Binder, 1983)  
 Working Correlations: Independent  
 Link Function: Identity  
 Response variable LBDHDL: HDL-cholesterol (mg/dL)  
 For Subpopulation: ELIGIBLE = 1  
 Linear regression model for high density lipoprotein and selected  
 covariates: NHANES 1999-2002  
 by: LS MEAN #1.

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LS MEAN #1	LS Mean	SE	T:Marg=0	P-value
Gender				

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Male	46.08	0.29	160.19	0.0000
Female	56.06	0.41	136.48	0.0000
Race/ethnicity				
Mexican Americans	51.55	0.37	140.22	0.0000
Other Hispanic	48.64	0.53	92.63	0.0000
Non-Hispanic white	50.88	0.42	121.12	0.0000
Non-Hispanic black	55.83	0.50	112.62	0.0000
Other multi/racial	50.32	1.07	47.16	0.0000
SMOKER				
Never smoker	51.27	0.37	138.22	0.0000
Past smoker	52.38	0.42	125.30	0.0000
Current smoker	50.05	0.63	79.37	0.0000
Education				
< HS	49.34	0.45	108.98	0.0000
HS/GED	50.52	0.51	98.44	0.0000
> HS	52.37	0.38	138.57	0.0000
BMI category				
underweight	59.40	1.36	43.52	0.0000
normal weight	57.10	0.40	142.24	0.0000
overweight	50.55	0.38	134.49	0.0000
obese	45.10	0.39	116.84	0.0000

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 (WEIGHT variable nonpositive)  
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 Denominator degrees of freedom : 29

Date: 08-04-2008

Page : 1

Variance Estimation Method: Taylor Series (WR)

Table : 1

For Subpopulation: ELIGIBLE = 1

by: Variable, BMI category.

Variable	Sample Size	Crude Mean	Standard Error
HDL-cholesterol (mg/dL)			
Total	8495	51.25	0.378
underweight	137	60.44	1.497
normal weight	2580	57.18	0.525
overweight	3092	49.69	0.370
obese	2686	45.94	0.438

Date: 08-04-2008

Page : 2

Variance Estimation Method: Taylor Series (WR)

Table : 2

For Subpopulation: ELIGIBLE = 1

by: Variable, Gender.

Variable	Sample Size	Crude Mean	Standard Error
HDL-cholesterol (mg/dL)			
Total	8495	51.25	0.378
Male	4009	45.91	0.337
Female	4486	56.21	0.494

Date: 08-04-2008

Page : 3

Variance Estimation Method: Taylor Series (WR)

Table : 3

For Subpopulation: ELIGIBLE = 1

by: Variable, Race/ethnicity.

Variable	Sample Size	Crude Mean	Standard Error
HDL-cholesterol (mg/dL)			
Total	8495	51.25	0.378
Mexican Americans	2070	48.92	0.295

Other Hispanic	444	47.71	0.666
Non-Hispanic white	4173	51.38	0.505
Non-Hispanic black	1541	54.50	0.514
Other multi/racial	267	50.91	1.408

Date: 08-04-2008

Page : 4

Variance Estimation Method: Taylor Series (WR)

Table : 4

For Subpopulation: ELIGIBLE = 1

by: Variable, SMOKER.

Variable	Sample Size	Crude Mean	Standard Error
HDL-cholesterol (mg/dL)			
Total	8495	51.25	0.378
Never smoker	4420	52.04	0.424
Past smoker	2247	51.59	0.563
Current smoker	1828	49.28	0.625

Date: 08-04-2008

Page : 5

Variance Estimation Method: Taylor Series (WR)

Table : 5

For Subpopulation: ELIGIBLE = 1

by: Variable, Education.

Variable	Sample Size	Crude Mean	Standard Error
HDL-cholesterol (mg/dL)			
Total	8495	51.25	0.378
< HS	2838	49.37	0.467
HS/GED	1956	50.29	0.543
> HS	3701	52.47	0.449

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