

## age in continuous

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0
	1	1
apo4car	0	0

	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	544.659
SC	815.635	579.901
-2 Log L	809.230	528.659

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	280.5706	7	<.0001
Score	230.7856	7	<.0001
Wald	148.9052	7	<.0001

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.2928	<.0001
age	1	95.9971	<.0001
edubi	1	29.8690	<.0001
sexbi	1	2.4549	0.1172
apo4car	1	34.0002	<.0001
exbi	1	9.7795	0.0018
corpbi	1	5.7110	0.0169

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-17.7238	1.6174	120.0799	<.0001
htnbi	1	1	0.9263	0.2228	17.2928	<.0001
age		1	0.1916	0.0196	95.9971	<.0001
edubi	1	1	1.4639	0.2679	29.8690	<.0001
sexbi	1	1	0.3743	0.2389	2.4549	0.1172
apo4car	1	1	1.4536	0.2493	34.0002	<.0001
exbi	1	1	0.7228	0.2311	9.7795	0.0018
corpbi	1	1	0.5360	0.2243	5.7110	0.0169

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.525	1.632	3.908
age	1.211	1.166	1.258
edubi 1 vs 0	4.323	2.557	7.308
sexbi 1 vs 0	1.454	0.910	2.322
apo4car 1 vs 0	4.279	2.625	6.974
exbi 1 vs 0	2.060	1.310	3.241
corpbi 1 vs 0	1.709	1.101	2.653

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	87.2	Somers' D	0.745
Percent Discordant	12.7	Gamma	0.746
Percent Tied	0.1	Tau-a	0.355
Pairs	87084	c	0.873

## agegp \* htnbi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	601.048
SC	815.635	649.505
-2 Log L	809.230	579.048

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	230.1822	10	<.0001
Score	197.6794	10	<.0001
Wald	137.1185	10	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	6.5844	0.0103
edubi	1	37.7499	<.0001
sexbi	1	0.4086	0.5227

apo4car	1	38.3148	<.0001
exbi	1	9.5575	0.0020
corpbi	1	8.6152	0.0033
htnbi*agegp	4	62.9469	<.0001

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-2.9826	0.3046	95.8970	<.0001
htnbi	1		1	-0.9826	0.3829	6.5844	0.0103
edubi	1		1	1.5796	0.2571	37.7499	<.0001
sexbi	1		1	0.1428	0.2233	0.4086	0.5227
apo4car	1		1	1.4625	0.2363	38.3148	<.0001
exbi	1		1	0.6739	0.2180	9.5575	0.0020
corpbi	1		1	0.6218	0.2118	8.6152	0.0033
htnbi*agegp	1	1	1	0.6994	0.4553	2.3591	0.1246
htnbi*agegp	1	2	1	2.3373	0.4640	25.3767	<.0001
htnbi*agegp	1	3	1	2.5528	0.4888	27.2809	<.0001
htnbi*agegp	1	4	1	4.0359	0.6309	40.9224	<.0001

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
edubi 1 vs 0	4.853	2.932	8.032
sexbi 1 vs 0	1.153	0.745	1.787
apo4car 1 vs 0	4.317	2.717	6.859
exbi 1 vs 0	1.962	1.280	3.008
corpbi 1 vs 0	1.862	1.229	2.821

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Association of Predicted Probabilities and Observed Responses			
Percent Concordant	83.4	Somers' D	0.680
Percent Discordant	15.5	Gamma	0.687
Percent Tied	1.1	Tau-a	0.324
Pairs	87084	c	0.840

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 stratified by agegp

## The LOGISTIC Procedure

agegp=0

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	145
Number of Observations Used	140

Response Profile		
Ordered Value	caco	Total Frequency
1	0	124
2	1	16

Probability modeled is caco=1.

Note: 5 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0



	1	1
apo4car	0	0
	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	101.507	92.146
SC	104.449	112.738
-2 Log L	99.507	78.146

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	21.3608	6	0.0016
Score	21.4388	6	0.0015
Wald	15.8296	6	0.0147

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	1.2147	0.2704
edubi	1	3.8001	0.0512
sexbi	1	6.8382	0.0089
apo4car	1	5.6766	0.0172
exbi	1	1.1515	0.2832
corpbi	1	0.0154	0.9014

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-3.1944	0.8140	15.4001	<.0001
htnbi	1	1	0.7246	0.6575	1.2147	0.2704
edubi	1	1	1.3487	0.6919	3.8001	0.0512
sexbi	1	1	-1.7548	0.6711	6.8382	0.0089
apo4car	1	1	1.4914	0.6260	5.6766	0.0172
exbi	1	1	0.6576	0.6128	1.1515	0.2832
corpbi	1	1	0.0774	0.6250	0.0154	0.9014

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.064	0.569	7.488
edubi 1 vs 0	3.852	0.993	14.950
sexbi 1 vs 0	0.173	0.046	0.644
apo4car 1 vs 0	4.443	1.303	15.154
exbi 1 vs 0	1.930	0.581	6.415
corpbi 1 vs 0	1.081	0.317	3.678

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	82.9	Somers' D	0.672
Percent Discordant	15.6	Gamma	0.683
Percent Tied	1.5	Tau-a	0.137
Pairs	1984	c	0.836

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 stratified by agegp

## The LOGISTIC Procedure

agegp=1

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	164
Number of Observations Used	153

Response Profile		
Ordered Value	caco	Total Frequency
1	0	117
2	1	36

Probability modeled is caco=1.

Note: 11 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0

	1	1
apo4car	0	0
	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	168.952	127.636
SC	171.982	148.849
-2 Log L	166.952	113.636

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	53.3163	6	<.0001
Score	50.7585	6	<.0001
Wald	33.7058	6	<.0001

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	1.7868	0.1813
edubi	1	6.4985	0.0108
sexbi	1	0.0109	0.9168
apo4car	1	19.3874	<.0001
exbi	1	4.0310	0.0447
corpbi	1	1.2937	0.2554

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.4023	0.7926	30.8486	<.0001
htnbi	1	1	0.6610	0.4945	1.7868	0.1813
edubi	1	1	1.7679	0.6935	6.4985	0.0108
sexbi	1	1	0.0549	0.5253	0.0109	0.9168
apo4car	1	1	2.1915	0.4977	19.3874	<.0001
exbi	1	1	1.0012	0.4986	4.0310	0.0447
corpbi	1	1	0.5592	0.4916	1.2937	0.2554

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	1.937	0.735	5.105
edubi 1 vs 0	5.858	1.505	22.808
sexbi 1 vs 0	1.056	0.377	2.958
apo4car 1 vs 0	8.948	3.374	23.735
exbi 1 vs 0	2.721	1.024	7.232
corpbi 1 vs 0	1.749	0.667	4.585

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	84.9	Somers' D	0.712
Percent Discordant	13.7	Gamma	0.722
Percent Tied	1.4	Tau-a	0.258
Pairs	4212	c	0.856

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**stratified by agegp****The LOGISTIC Procedure****agegp=2**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	140
Number of Observations Used	128

Response Profile		
Ordered Value	caco	Total Frequency
1	0	64
2	1	64

**Probability modeled is caco=1.****Note: 12 observations were deleted due to missing values for the response or explanatory variables.**

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0

	1	1
apo4car	0	0
	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	179.446	145.649
SC	182.298	165.613
-2 Log L	177.446	131.649

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	45.7972	6	<.0001
Score	38.9059	6	<.0001
Wald	27.2028	6	0.0001

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	8.6781	0.0032
edubi	1	4.0728	0.0436
sexbi	1	2.9689	0.0849
apo4car	1	12.0461	0.0005
exbi	1	0.6722	0.4123
corpbi	1	2.2475	0.1338

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.9928	0.7111	17.7151	<.0001
htnbi	1	1	1.3068	0.4436	8.6781	0.0032
edubi	1	1	1.1436	0.5667	4.0728	0.0436
sexbi	1	1	0.8100	0.4701	2.9689	0.0849
apo4car	1	1	2.3986	0.6911	12.0461	0.0005
exbi	1	1	0.3800	0.4635	0.6722	0.4123
corpbi	1	1	0.6876	0.4586	2.2475	0.1338

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	3.694	1.549	8.813
edubi 1 vs 0	3.138	1.033	9.528
sexbi 1 vs 0	2.248	0.895	5.649
apo4car 1 vs 0	11.008	2.841	42.657
exbi 1 vs 0	1.462	0.590	3.627
corpbi 1 vs 0	1.989	0.810	4.887

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	80.7	Somers' D	0.639
Percent Discordant	16.8	Gamma	0.655
Percent Tied	2.5	Tau-a	0.322
Pairs	4096	c	0.820



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**stratified by agegp****The LOGISTIC Procedure****agegp=3**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	127
Number of Observations Used	116

Response Profile		
Ordered Value	caco	Total Frequency
1	0	48
2	1	68

**Probability modeled is caco=1.****Note: 11 observations were deleted due to missing values for the response or explanatory variables.**

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0

	1	1
apo4car	0	0
	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	159.345	134.045
SC	162.098	153.320
-2 Log L	157.345	120.045

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	37.2997	6	<.0001
Score	33.4594	6	<.0001
Wald	25.8471	6	0.0002

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	1.1864	0.2761
edubi	1	9.4436	0.0021
sexbi	1	4.8890	0.0270
apo4car	1	2.3897	0.1221
exbi	1	3.6783	0.0551
corpbi	1	0.9769	0.3230

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-2.1692	0.6063	12.7995	0.0003
htnbi	1	1	0.5061	0.4646	1.1864	0.2761
edubi	1	1	1.5936	0.5186	9.4436	0.0021
sexbi	1	1	1.1162	0.5048	4.8890	0.0270
apo4car	1	1	0.8618	0.5575	2.3897	0.1221
exbi	1	1	1.0289	0.5365	3.6783	0.0551
corpbi	1	1	0.4774	0.4831	0.9769	0.3230

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	1.659	0.667	4.124
edubi 1 vs 0	4.921	1.781	13.599
sexbi 1 vs 0	3.053	1.135	8.212
apo4car 1 vs 0	2.367	0.794	7.061
exbi 1 vs 0	2.798	0.978	8.007
corpbi 1 vs 0	1.612	0.625	4.155

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	80.8	Somers' D	0.641
Percent Discordant	16.7	Gamma	0.657
Percent Tied	2.5	Tau-a	0.313
Pairs	3264	c	0.820

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 stratified by agegp

## The LOGISTIC Procedure

agegp=4

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	73
Number of Observations Used	68

Response Profile		
Ordered Value	caco	Total Frequency
1	0	16
2	1	52

Probability modeled is caco=1.

Note: 5 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information		
Class	Value	Design Variables
htnbi	0	0
	1	1
edubi	0	0
	1	1
sexbi	0	0

	1	1
apo4car	0	0
	1	1
exbi	0	0
	1	1
corpbi	0	0
	1	1

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	76.201	71.900
SC	78.420	87.437
-2 Log L	74.201	57.900

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	16.3004	6	0.0122
Score	15.6230	6	0.0159
Wald	11.6817	6	0.0695

#### Type 3 Analysis of Effects

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	7.3156	0.0068
edubi	1	2.2456	0.1340
sexbi	1	1.8820	0.1701
apo4car	1	0.5787	0.4468
exbi	1	1.6871	0.1940
corpbi	1	0.1843	0.6677

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-1.6570	0.9057	3.3472	0.0673
htnbi	1	1	1.9379	0.7165	7.3156	0.0068
edubi	1	1	1.1245	0.7504	2.2456	0.1340
sexbi	1	1	1.0176	0.7418	1.8820	0.1701
apo4car	1	1	0.5550	0.7295	0.5787	0.4468
exbi	1	1	0.9421	0.7253	1.6871	0.1940
corpbi	1	1	0.3061	0.7132	0.1843	0.6677

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	6.944	1.705	28.280
edubi 1 vs 0	3.079	0.707	13.399
sexbi 1 vs 0	2.767	0.646	11.840
apo4car 1 vs 0	1.742	0.417	7.278
exbi 1 vs 0	2.565	0.619	10.630
corpbi 1 vs 0	1.358	0.336	5.496

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	80.6	Somers' D	0.624
Percent Discordant	18.3	Gamma	0.631
Percent Tied	1.1	Tau-a	0.228
Pairs	832	c	0.812

## htnbi \* edubi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	555.533
SC	815.635	608.396
-2 Log L	809.230	531.533

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	277.6970	11	<.0001
Score	230.6178	11	<.0001
Wald	150.7466	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	1.2628	0.2611
agegp	4	97.6038	<.0001
edubi	1	8.5722	0.0034



sexbi	1	2.5619	0.1095
apo4car	1	36.0416	<.0001
exbi	1	11.1805	0.0008
corpbi	1	5.4996	0.0190
htnbi*edubi	1	1.5961	0.2065

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.7378	0.5035	88.5306	<.0001
htnbi	1	1	0.4818	0.4288	1.2628	0.2611
agegp	1	1	0.8358	0.3748	4.9725	0.0258
agegp	2	1	2.2899	0.3786	36.5898	<.0001
agegp	3	1	2.9752	0.3954	56.6295	<.0001
agegp	4	1	3.5525	0.4508	62.1070	<.0001
edubi	1	1	1.0975	0.3748	8.5722	0.0034
sexbi	1	1	0.3805	0.2377	2.5619	0.1095
apo4car	1	1	1.5347	0.2556	36.0416	<.0001
exbi	1	1	0.7744	0.2316	11.1805	0.0008
corpbi	1	1	0.5241	0.2235	5.4996	0.0190
htnbi*edubi	1	1	0.6312	0.4996	1.5961	0.2065

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
agegp 1 vs 0	2.307	1.106	4.809
agegp 2 vs 0	9.874	4.702	20.736
agegp 3 vs 0	19.594	9.028	42.526
agegp 4 vs 0	34.900	14.425	84.435

sexbi 1 vs 0	1.463	0.918	2.331
apo4car 1 vs 0	4.640	2.811	7.658
exbi 1 vs 0	2.169	1.378	3.415
corpbi 1 vs 0	1.689	1.090	2.617

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.9	Somers' D	0.741
Percent Discordant	12.8	Gamma	0.743
Percent Tied	0.3	Tau-a	0.353
Pairs	87084	c	0.870

## htnbi \* sexbi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.069
SC	815.635	609.932
-2 Log L	809.230	533.069

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1608	11	<.0001
Score	228.3143	11	<.0001
Wald	150.2095	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	6.9469	0.0084
agegp	4	97.4607	<.0001
edubi	1	29.1742	<.0001

sexbi	1	0.8920	0.3449
apo4car	1	36.7908	<.0001
exbi	1	11.3207	0.0008
corpbi	1	5.5119	0.0189
htnbi*sexbi	1	0.0525	0.8187

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.9653	0.4887	103.2422	<.0001
htnbi	1	1	0.8906	0.3379	6.9469	0.0084
agegp	1	1	0.8552	0.3732	5.2516	0.0219
agegp	2	1	2.2965	0.3768	37.1504	<.0001
agegp	3	1	2.9527	0.3926	56.5656	<.0001
agegp	4	1	3.5327	0.4488	61.9716	<.0001
edubi	1	1	1.4422	0.2670	29.1742	<.0001
sexbi	1	1	0.3211	0.3400	0.8920	0.3449
apo4car	1	1	1.5507	0.2557	36.7908	<.0001
exbi	1	1	0.7794	0.2316	11.3207	0.0008
corpbi	1	1	0.5242	0.2233	5.5119	0.0189
htnbi*sexbi	1 1	1	0.1012	0.4416	0.0525	0.8187

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
agegp 1 vs 0	2.352	1.132	4.887
agegp 2 vs 0	9.939	4.749	20.800
agegp 3 vs 0	19.157	8.875	41.352
agegp 4 vs 0	34.216	14.199	82.455

edubi 1 vs 0	4.230	2.506	7.138
apo4car 1 vs 0	4.715	2.857	7.782
exbi 1 vs 0	2.180	1.385	3.433
corpbi 1 vs 0	1.689	1.090	2.617

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

htnbi \* apo4car

The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.040
SC	815.635	609.903
-2 Log L	809.230	533.040

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1899	11	<.0001
Score	228.1265	11	<.0001
Wald	150.1810	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	14.5523	0.0001
agegp	4	97.3640	<.0001
edubi	1	29.2650	<.0001



sexbi	1	2.5356	0.1113
apo4car	1	19.2742	<.0001
exbi	1	11.2806	0.0008
corpbi	1	5.4068	0.0201
htnbi*apo4car	1	0.0816	0.7751

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.0144	0.4719	112.9309	<.0001
htnbi	1		1	0.9862	0.2585	14.5523	0.0001
agegp	1		1	0.8426	0.3736	5.0879	0.0241
agegp	2		1	2.2863	0.3761	36.9466	<.0001
agegp	3		1	2.9432	0.3923	56.2853	<.0001
agegp	4		1	3.5237	0.4493	61.5064	<.0001
edubi	1		1	1.4503	0.2681	29.2650	<.0001
sexbi	1		1	0.3779	0.2373	2.5356	0.1113
apo4car	1		1	1.6298	0.3712	19.2742	<.0001
exbi	1		1	0.7774	0.2315	11.2806	0.0008
corpbi	1		1	0.5187	0.2231	5.4068	0.0201
htnbi*apo4car	1	1	1	-0.1412	0.4942	0.0816	0.7751

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
agegp 1 vs 0	2.322	1.117	4.830
agegp 2 vs 0	9.839	4.707	20.565
agegp 3 vs 0	18.977	8.796	40.941
agegp 4 vs 0	33.910	14.056	81.803

edubi 1 vs 0	4.264	2.521	7.212
sexbi 1 vs 0	1.459	0.916	2.324
exbi 1 vs 0	2.176	1.382	3.425
corpbi 1 vs 0	1.680	1.085	2.601

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.741
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

**htnbi \* exbi****The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.077
SC	815.635	609.939
-2 Log L	809.230	533.077

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1533	11	<.0001
Score	228.1365	11	<.0001
Wald	150.2761	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	13.0503	0.0003
agegp	4	97.4759	<.0001
edubi	1	29.2653	<.0001

sexbi	1	2.4824	0.1151
apo4car	1	36.9846	<.0001
exbi	1	6.0472	0.0139
corpbi	1	5.3456	0.0208
htnbi*exbi	1	0.0450	0.8320

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.0126	0.4735	112.0476	<.0001
htnbi	1		1	0.9819	0.2718	13.0503	0.0003
agegp	1		1	0.8520	0.3726	5.2297	0.0222
agegp	2		1	2.2891	0.3764	36.9789	<.0001
agegp	3		1	2.9505	0.3918	56.6967	<.0001
agegp	4		1	3.5299	0.4488	61.8600	<.0001
edubi	1		1	1.4471	0.2675	29.2653	<.0001
sexbi	1		1	0.3744	0.2376	2.4824	0.1151
apo4car	1		1	1.5535	0.2555	36.9846	<.0001
exbi	1		1	0.8295	0.3373	6.0472	0.0139
corpbi	1		1	0.5172	0.2237	5.3456	0.0208
htnbi*exbi	1	1	1	-0.0974	0.4589	0.0450	0.8320

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
agegp 1 vs 0	2.344	1.130	4.865
agegp 2 vs 0	9.866	4.718	20.634
agegp 3 vs 0	19.116	8.868	41.204
agegp 4 vs 0	34.119	14.157	82.228

edubi 1 vs 0	4.251	2.516	7.180
sexbi 1 vs 0	1.454	0.913	2.317
apo4car 1 vs 0	4.728	2.866	7.801
corpbi 1 vs 0	1.677	1.082	2.601

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	13.0	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

## htnbi \* corpb

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.207
SC	815.635	609.070
-2 Log L	809.230	532.207

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	277.0231	11	<.0001
Score	228.2388	11	<.0001
Wald	150.0135	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	11.3955	0.0007
agegp	4	97.4576	<.0001
edubi	1	29.4832	<.0001



sexbi	1	2.3638	0.1242
apo4car	1	36.6045	<.0001
exbi	1	10.7675	0.0010
corpbi	1	5.0681	0.0244
htnbi*corpbi	1	0.9101	0.3401

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.1471	0.4985	106.6112	<.0001
htnbi	1		1	1.2160	0.3602	11.3955	0.0007
agegp	1		1	0.8576	0.3724	5.3022	0.0213
agegp	2		1	2.2972	0.3765	37.2259	<.0001
agegp	3		1	2.9592	0.3922	56.9186	<.0001
agegp	4		1	3.5323	0.4490	61.9017	<.0001
edubi	1		1	1.4511	0.2672	29.4832	<.0001
sexbi	1		1	0.3655	0.2377	2.3638	0.1242
apo4car	1		1	1.5461	0.2556	36.6045	<.0001
exbi	1		1	0.7609	0.2319	10.7675	0.0010
corpbi	1		1	0.7609	0.3380	5.0681	0.0244
htnbi*corpbi	1	1	1	-0.4299	0.4506	0.9101	0.3401

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
agegp 1 vs 0	2.357	1.136	4.892
agegp 2 vs 0	9.946	4.755	20.803
agegp 3 vs 0	19.282	8.939	41.594
agegp 4 vs 0	34.204	14.188	82.459

edubi 1 vs 0	4.268	2.528	7.206
sexbi 1 vs 0	1.441	0.904	2.296
apo4car 1 vs 0	4.693	2.844	7.745
exbi 1 vs 0	2.140	1.359	3.372

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	13.0	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

## agegp \* edubi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	559.724
SC	815.635	625.802
-2 Log L	809.230	529.724

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	279.5063	14	<.0001
Score	236.6592	14	<.0001
Wald	154.9481	14	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.3792	<.0001
agegp	4	26.9587	<.0001
edubi	1	1.2482	0.2639

sexbi	1	2.1293	0.1445
apo4car	1	36.4790	<.0001
exbi	1	11.6637	0.0006
corpbi	1	5.3954	0.0202
agegp*edubi	4	3.4421	0.4867

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-4.4678	0.5684	61.7798	<.0001
htnbi	1		1	0.9722	0.2268	18.3792	<.0001
agegp	1		1	0.1159	0.7745	0.0224	0.8810
agegp	2		1	1.9370	0.6761	8.2066	0.0042
agegp	3		1	2.0297	0.6365	10.1691	0.0014
agegp	4		1	3.0795	0.6970	19.5220	<.0001
edubi	1		1	0.6738	0.6031	1.2482	0.2639
sexbi	1		1	0.3484	0.2388	2.1293	0.1445
apo4car	1		1	1.5541	0.2573	36.4790	<.0001
exbi	1		1	0.7976	0.2335	11.6637	0.0006
corpbi	1		1	0.5230	0.2252	5.3954	0.0202
agegp*edubi	1	1	1	1.0092	0.8859	1.2977	0.2546
agegp*edubi	2	1	1	0.5511	0.7883	0.4888	0.4845
agegp*edubi	3	1	1	1.3553	0.7766	3.0458	0.0809
agegp*edubi	4	1	1	0.6286	0.8848	0.5048	0.4774

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.644	1.695	4.123

sexbi 1 vs 0	1.417	0.887	2.262
apo4car 1 vs 0	4.731	2.857	7.834
exbi 1 vs 0	2.220	1.405	3.509
corpbi 1 vs 0	1.687	1.085	2.623

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	87.0	Somers' D	0.744
Percent Discordant	12.6	Gamma	0.747
Percent Tied	0.3	Tau-a	0.355
Pairs	87084	c	0.872

agegp \* sexbi

The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	546.065
SC	815.635	612.143
-2 Log L	809.230	516.065

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	293.1653	14	<.0001
Score	240.7802	14	<.0001
Wald	152.1127	14	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.4366	<.0001
agegp	4	24.6588	<.0001
edubi	1	27.1935	<.0001



sexbi	1	7.8940	0.0050
apo4car	1	38.5179	<.0001
exbi	1	9.6697	0.0019
corpbi	1	4.7932	0.0286
agegp*sexbi	4	16.4404	0.0025

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-3.7587	0.5172	52.8232	<.0001
htnbi	1	1	0.9831	0.2290	18.4366	<.0001
agegp	1	1	-0.2689	0.5648	0.2266	0.6340
agegp	2	1	0.9491	0.5297	3.2106	0.0732
agegp	3	1	1.3442	0.5127	6.8736	0.0087
agegp	4	1	2.1628	0.5912	13.3818	0.0003
edubi	1	1	1.4033	0.2691	27.1935	<.0001
sexbi	1	1	-1.7503	0.6229	7.8940	0.0050
apo4car	1	1	1.6313	0.2629	38.5179	<.0001
exbi	1	1	0.7348	0.2363	9.6697	0.0019
corpbi	1	1	0.5036	0.2300	4.7932	0.0286
agegp*sexbi	1 1	1	1.9662	0.7757	6.4240	0.0113
agegp*sexbi	2 1	1	2.3564	0.7468	9.9570	0.0016
agegp*sexbi	3 1	1	3.0528	0.7747	15.5299	<.0001
agegp*sexbi	4 1	1	2.4665	0.9072	7.3914	0.0066

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.673	1.706	4.186

edubi 1 vs 0	4.069	2.401	6.895
apo4car 1 vs 0	5.111	3.053	8.555
exbi 1 vs 0	2.085	1.312	3.313
corpbi 1 vs 0	1.655	1.054	2.597

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	87.7	Somers' D	0.757
Percent Discordant	12.0	Gamma	0.759
Percent Tied	0.3	Tau-a	0.361
Pairs	87084	c	0.878

## agegp \* apo4car

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	555.587
SC	815.635	621.665
-2 Log L	809.230	525.587

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	283.6432	14	<.0001
Score	237.0219	14	<.0001
Wald	154.8339	14	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.7759	<.0001
agegp	4	79.7625	<.0001
edubi	1	27.7882	<.0001

sexbi	1	2.4837	0.1150
apo4car	1	4.1568	0.0415
exbi	1	11.2204	0.0008
corpbi	1	4.6307	0.0314
agegp*apo4car	4	7.4021	0.1161

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-4.8003	0.5075	89.4749	<.0001
htnbi	1		1	0.9520	0.2258	17.7759	<.0001
agegp	1		1	0.4345	0.4918	0.7802	0.3771
agegp	2		1	2.0278	0.4469	20.5884	<.0001
agegp	3		1	2.9166	0.4613	39.9728	<.0001
agegp	4		1	3.6442	0.5461	44.5311	<.0001
edubi	1		1	1.4138	0.2682	27.7882	<.0001
sexbi	1		1	0.3783	0.2400	2.4837	0.1150
apo4car	1		1	1.1936	0.5854	4.1568	0.0415
exbi	1		1	0.7844	0.2342	11.2204	0.0008
corpbi	1		1	0.4838	0.2248	4.6307	0.0314
agegp*apo4car	1	1	1	1.0015	0.7572	1.7494	0.1860
agegp*apo4car	2	1	1	1.2138	0.8985	1.8251	0.1767
agegp*apo4car	3	1	1	-0.3123	0.7903	0.1562	0.6927
agegp*apo4car	4	1	1	-0.6107	0.8891	0.4717	0.4922

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.591	1.664	4.033

edubi 1 vs 0	4.112	2.431	6.955
sexbi 1 vs 0	1.460	0.912	2.337
exbi 1 vs 0	2.191	1.385	3.467
corpbi 1 vs 0	1.622	1.044	2.520

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.9	Somers' D	0.741
Percent Discordant	12.8	Gamma	0.743
Percent Tied	0.3	Tau-a	0.353
Pairs	87084	c	0.871

**agegp \* exbi**

**The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

**Note:** 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	561.615
SC	815.635	627.694
-2 Log L	809.230	531.615

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	277.6145	14	<.0001
Score	229.0054	14	<.0001
Wald	148.5172	14	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.7745	<.0001
agegp	4	64.6415	<.0001
edubi	1	29.1804	<.0001



sexbi	1	2.7397	0.0979
apo4car	1	36.8915	<.0001
exbi	1	2.7345	0.0982
corpbi	1	5.2588	0.0218
agegp*exbi	4	1.5112	0.8247

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.1142	0.5548	84.9870	<.0001
htnbi	1		1	0.9403	0.2230	17.7745	<.0001
agegp	1		1	0.9019	0.5201	3.0071	0.0829
agegp	2		1	2.5464	0.5089	25.0380	<.0001
agegp	3		1	3.0096	0.5154	34.0932	<.0001
agegp	4		1	3.6062	0.5851	37.9882	<.0001
edubi	1		1	1.4501	0.2684	29.1804	<.0001
sexbi	1		1	0.3955	0.2389	2.7397	0.0979
apo4car	1		1	1.5613	0.2570	36.8915	<.0001
exbi	1		1	0.9872	0.5970	2.7345	0.0982
corpbi	1		1	0.5136	0.2239	5.2588	0.0218
agegp*exbi	1	1	1	-0.0697	0.7512	0.0086	0.9261
agegp*exbi	2	1	1	-0.6632	0.7393	0.8047	0.3697
agegp*exbi	3	1	1	0.00839	0.7880	0.0001	0.9915
agegp*exbi	4	1	1	-0.0840	0.9190	0.0083	0.9272

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.561	1.654	3.965

edubi 1 vs 0	4.264	2.519	7.216
sexbi 1 vs 0	1.485	0.930	2.372
apo4car 1 vs 0	4.765	2.879	7.886
corpbi 1 vs 0	1.671	1.077	2.592

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.8	Somers' D	0.740
Percent Discordant	12.9	Gamma	0.742
Percent Tied	0.3	Tau-a	0.353
Pairs	87084	c	0.870

**agegp \* corpb****The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	562.533
SC	815.635	628.611
-2 Log L	809.230	532.533

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.6969	14	<.0001
Score	229.0945	14	<.0001
Wald	150.7934	14	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.1707	<.0001
agegp	4	46.9799	<.0001
edubi	1	29.5420	<.0001

sexbi	1	2.4985	0.1140
apo4car	1	36.1782	<.0001
exbi	1	11.1293	0.0008
corpbi	1	0.3635	0.5466
agegp*corpbi	4	0.5873	0.9645

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-4.9172	0.5496	80.0542	<.0001
htnbi	1		1	0.9513	0.2232	18.1707	<.0001
agegp	1		1	0.6616	0.5665	1.3640	0.2428
agegp	2		1	2.0842	0.5671	13.5091	0.0002
agegp	3		1	2.9726	0.5759	26.6426	<.0001
agegp	4		1	3.5415	0.6790	27.2060	<.0001
edubi	1		1	1.4593	0.2685	29.5420	<.0001
sexbi	1		1	0.3793	0.2400	2.4985	0.1140
apo4car	1		1	1.5421	0.2564	36.1782	<.0001
exbi	1		1	0.7757	0.2325	11.1293	0.0008
corpbi	1		1	0.3573	0.5927	0.3635	0.5466
agegp*corpbi	1	1	1	0.3293	0.7503	0.1926	0.6608
agegp*corpbi	2	1	1	0.3409	0.7345	0.2154	0.6426
agegp*corpbi	3	1	1	-0.0141	0.7427	0.0004	0.9848
agegp*corpbi	4	1	1	0.000755	0.8836	0.0000	0.9993

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.589	1.672	4.009

edubi 1 vs 0	4.303	2.542	7.283
sexbi 1 vs 0	1.461	0.913	2.339
apo4car 1 vs 0	4.674	2.828	7.726
exbi 1 vs 0	2.172	1.377	3.426

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

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**edubi \* sexbi**
**The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.917
SC	815.635	609.780
-2 Log L	809.230	532.917

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.3129	11	<.0001
Score	228.1213	11	<.0001
Wald	149.5231	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.0321	<.0001
agegp	4	96.7144	<.0001
edubi	1	16.3518	<.0001



sexbi	1	0.1400	0.7083
apo4car	1	36.8918	<.0001
exbi	1	11.4116	0.0007
corpbi	1	5.4468	0.0196
edubi*sexbi	1	0.2020	0.6531

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.9340	0.4878	102.3182	<.0001
htnbi	1	1	0.9461	0.2228	18.0321	<.0001
agegp	1	1	0.8454	0.3738	5.1139	0.0237
agegp	2	1	2.2831	0.3772	36.6392	<.0001
agegp	3	1	2.9341	0.3938	55.5218	<.0001
agegp	4	1	3.5280	0.4488	61.8032	<.0001
edubi	1	1	1.3524	0.3344	16.3518	<.0001
sexbi	1	1	0.1841	0.4921	0.1400	0.7083
apo4car	1	1	1.5523	0.2556	36.8918	<.0001
exbi	1	1	0.7828	0.2317	11.4116	0.0007
corpbi	1	1	0.5203	0.2229	5.4468	0.0196
edubi*sexbi	1 1	1	0.2492	0.5544	0.2020	0.6531

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.576	1.664	3.986
agegp 1 vs 0	2.329	1.119	4.845
agegp 2 vs 0	9.807	4.682	20.539
agegp 3 vs 0	18.805	8.692	40.688

agegp 4 vs 0	34.056	14.132	82.070
apo4car 1 vs 0	4.722	2.862	7.793
exbi 1 vs 0	2.188	1.389	3.445
corpbi 1 vs 0	1.683	1.087	2.605

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.8	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.741
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

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**edubi \* apo4car**
**The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	554.012
SC	815.635	606.875
-2 Log L	809.230	530.012

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	279.2180	11	<.0001
Score	228.4730	11	<.0001
Wald	149.8204	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	19.2428	<.0001
agegp	4	97.2815	<.0001
edubi	1	29.2013	<.0001

sexbi	1	2.5292	0.1118
apo4car	1	21.5950	<.0001
exbi	1	11.7909	0.0006
corpbi	1	5.5994	0.0180
edubi*apo4car	1	3.1078	0.0779

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.2717	0.5024	110.1053	<.0001
htnbi	1		1	0.9890	0.2254	19.2428	<.0001
agegp	1		1	0.9002	0.3704	5.9068	0.0151
agegp	2		1	2.3182	0.3760	38.0153	<.0001
agegp	3		1	2.9976	0.3947	57.6837	<.0001
agegp	4		1	3.5297	0.4508	61.3079	<.0001
edubi	1		1	1.7211	0.3185	29.2013	<.0001
sexbi	1		1	0.3775	0.2374	2.5292	0.1118
apo4car	1		1	2.2919	0.4932	21.5950	<.0001
exbi	1		1	0.7989	0.2326	11.7909	0.0006
corpbi	1		1	0.5291	0.2236	5.5994	0.0180
edubi*apo4car	1	1	1	-0.9882	0.5606	3.1078	0.0779

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.688	1.728	4.182
agegp 1 vs 0	2.460	1.190	5.084
agegp 2 vs 0	10.158	4.861	21.225
agegp 3 vs 0	20.037	9.244	43.429

agegp 4 vs 0	34.112	14.099	82.532
sexbi 1 vs 0	1.459	0.916	2.323
exbi 1 vs 0	2.223	1.409	3.507
corpbi 1 vs 0	1.697	1.095	2.631

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.9	Somers' D	0.741
Percent Discordant	12.8	Gamma	0.743
Percent Tied	0.3	Tau-a	0.353
Pairs	87084	c	0.870

## edubi \* exbi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.473
SC	815.635	609.335
-2 Log L	809.230	532.473

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.7572	11	<.0001
Score	228.9883	11	<.0001
Wald	150.2886	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.0548	<.0001
agegp	4	97.7146	<.0001
edubi	1	17.4567	<.0001



sexbi	1	2.6827	0.1014
apo4car	1	36.7503	<.0001
exbi	1	0.8520	0.3560
corpbi	1	4.9781	0.0257
edubi*exbi	1	0.6400	0.4237

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-4.9008	0.4805	104.0092	<.0001
htnbi	1		1	0.9471	0.2229	18.0548	<.0001
agegp	1		1	0.8582	0.3736	5.2759	0.0216
agegp	2		1	2.3006	0.3767	37.2896	<.0001
agegp	3		1	2.9644	0.3930	56.8922	<.0001
agegp	4		1	3.5578	0.4501	62.4811	<.0001
edubi	1		1	1.3082	0.3131	17.4567	<.0001
sexbi	1		1	0.3898	0.2380	2.6827	0.1014
apo4car	1		1	1.5487	0.2555	36.7503	<.0001
exbi	1		1	0.4430	0.4799	0.8520	0.3560
corpbi	1		1	0.5009	0.2245	4.9781	0.0257
edubi*exbi	1	1	1	0.4389	0.5487	0.6400	0.4237

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.578	1.666	3.991
agegp 1 vs 0	2.359	1.134	4.906
agegp 2 vs 0	9.980	4.769	20.885
agegp 3 vs 0	19.383	8.972	41.876

agegp 4 vs 0	35.084	14.521	84.768
sexbi 1 vs 0	1.477	0.926	2.354
apo4car 1 vs 0	4.705	2.852	7.763
corpbi 1 vs 0	1.650	1.063	2.562

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.8	Somers' D	0.740
Percent Discordant	12.8	Gamma	0.743
Percent Tied	0.3	Tau-a	0.353
Pairs	87084	c	0.870

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**edubi \* corpb**i
**The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.110
SC	815.635	609.973
-2 Log L	809.230	533.110

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1196	11	<.0001
Score	228.7145	11	<.0001
Wald	149.9703	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.1494	<.0001
agegp	4	97.4984	<.0001
edubi	1	13.3223	0.0003

sexbi	1	2.5271	0.1119
apo4car	1	36.9799	<.0001
exbi	1	11.2123	0.0008
corpbi	1	1.6346	0.2011
edubi*corpbi	1	0.0112	0.9158

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.0215	0.5206	93.0480	<.0001
htnbi	1		1	0.9490	0.2228	18.1494	<.0001
agegp	1		1	0.8523	0.3729	5.2241	0.0223
agegp	2		1	2.2915	0.3767	37.0097	<.0001
agegp	3		1	2.9507	0.3922	56.5967	<.0001
agegp	4		1	3.5333	0.4490	61.9329	<.0001
edubi	1		1	1.4760	0.4044	13.3223	0.0003
sexbi	1		1	0.3773	0.2374	2.5271	0.1119
apo4car	1		1	1.5533	0.2554	36.9799	<.0001
exbi	1		1	0.7803	0.2330	11.2123	0.0008
corpbi	1		1	0.5612	0.4389	1.6346	0.2011
edubi*corpbi	1	1	1	-0.0538	0.5091	0.0112	0.9158

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.583	1.669	3.997
agegp 1 vs 0	2.345	1.129	4.870
agegp 2 vs 0	9.889	4.727	20.691
agegp 3 vs 0	19.119	8.864	41.241

agegp 4 vs 0	34.235	14.201	82.534
sexbi 1 vs 0	1.458	0.916	2.322
apo4car 1 vs 0	4.727	2.865	7.799
exbi 1 vs 0	2.182	1.382	3.445

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

**sexbi \* apo4car**

**The LOGISTIC Procedure**

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

**Note:** 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.109
SC	815.635	609.972
-2 Log L	809.230	533.109

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1206	11	<.0001
Score	228.1352	11	<.0001
Wald	150.2602	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.1458	<.0001
agegp	4	97.4037	<.0001
edubi	1	29.2112	<.0001



sexbi	1	2.1098	0.1464
apo4car	1	16.2146	<.0001
exbi	1	11.2957	0.0008
corpbi	1	5.4770	0.0193
sexbi*apo4car	1	0.0123	0.9117

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-5.0057	0.4738	111.6283	<.0001
htnbi	1	1	0.9501	0.2230	18.1458	<.0001
agegp	1	1	0.8528	0.3726	5.2395	0.0221
agegp	2	1	2.2921	0.3762	37.1161	<.0001
agegp	3	1	2.9498	0.3921	56.5974	<.0001
agegp	4	1	3.5311	0.4489	61.8841	<.0001
edubi	1	1	1.4441	0.2672	29.2112	<.0001
sexbi	1	1	0.3911	0.2693	2.1098	0.1464
apo4car	1	1	1.5864	0.3940	16.2146	<.0001
exbi	1	1	0.7780	0.2315	11.2957	0.0008
corpbi	1	1	0.5216	0.2229	5.4770	0.0193
sexbi*apo4car	1 1	1	-0.0555	0.5006	0.0123	0.9117

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.586	1.670	4.004
agegp 1 vs 0	2.346	1.130	4.870
agegp 2 vs 0	9.896	4.734	20.687
agegp 3 vs 0	19.103	8.858	41.195

agegp 4 vs 0	34.161	14.173	82.339
edubi 1 vs 0	4.238	2.510	7.155
exbi 1 vs 0	2.177	1.383	3.427
corpbi 1 vs 0	1.685	1.088	2.608

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

sexbi \* exbi

The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	548.303
SC	815.635	601.166
-2 Log L	809.230	524.303

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	284.9264	11	<.0001
Score	233.8208	11	<.0001
Wald	152.0223	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.7249	<.0001
agegp	4	99.5354	<.0001
edubi	1	27.3221	<.0001

sexbi	1	8.7304	0.0031
apo4car	1	38.4345	<.0001
exbi	1	19.0584	<.0001
corpbi	1	5.5413	0.0186
sexbi*exbi	1	8.6359	0.0033

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.3638	0.4942	117.8080	<.0001
htnbi	1		1	0.9488	0.2254	17.7249	<.0001
agegp	1		1	0.9318	0.3751	6.1714	0.0130
agegp	2		1	2.4229	0.3814	40.3623	<.0001
agegp	3		1	3.0537	0.3961	59.4378	<.0001
agegp	4		1	3.6536	0.4585	63.5070	<.0001
edubi	1		1	1.4057	0.2689	27.3221	<.0001
sexbi	1		1	0.8665	0.2933	8.7304	0.0031
apo4car	1		1	1.6079	0.2594	38.4345	<.0001
exbi	1		1	1.6011	0.3667	19.0584	<.0001
corpbi	1		1	0.5308	0.2255	5.5413	0.0186
sexbi*exbi	1	1	1	-1.3887	0.4726	8.6359	0.0033

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.583	1.660	4.017
agegp 1 vs 0	2.539	1.217	5.296
agegp 2 vs 0	11.279	5.341	23.817
agegp 3 vs 0	21.193	9.751	46.063

agegp 4 vs 0	38.612	15.721	94.833
edubi 1 vs 0	4.078	2.408	6.909
apo4car 1 vs 0	4.992	3.003	8.300
corpbi 1 vs 0	1.700	1.093	2.645

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	87.3	Somers' D	0.748
Percent Discordant	12.4	Gamma	0.751
Percent Tied	0.3	Tau-a	0.357
Pairs	87084	c	0.874

## sexbi \* corpb

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.927
SC	815.635	609.790
-2 Log L	809.230	532.927

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.3027	11	<.0001
Score	228.1214	11	<.0001
Wald	149.9774	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.9411	<.0001
agegp	4	97.3201	<.0001
edubi	1	29.2469	<.0001



sexbi	1	1.8113	0.1783
apo4car	1	37.0240	<.0001
exbi	1	11.3128	0.0008
corpbi	1	3.3292	0.0681
sexbi*corpbi	1	0.1937	0.6599

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.0820	0.5083	99.9570	<.0001
htnbi	1		1	0.9447	0.2230	17.9411	<.0001
agegp	1		1	0.8597	0.3728	5.3181	0.0211
agegp	2		1	2.2980	0.3764	37.2832	<.0001
agegp	3		1	2.9556	0.3926	56.6769	<.0001
agegp	4		1	3.5595	0.4534	61.6395	<.0001
edubi	1		1	1.4445	0.2671	29.2469	<.0001
sexbi	1		1	0.5041	0.3746	1.8113	0.1783
apo4car	1		1	1.5553	0.2556	37.0240	<.0001
exbi	1		1	0.7784	0.2314	11.3128	0.0008
corpbi	1		1	0.6399	0.3507	3.3292	0.0681
sexbi*corpbi	1	1	1	-0.2013	0.4575	0.1937	0.6599

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.572	1.661	3.982
agegp 1 vs 0	2.362	1.138	4.906
agegp 2 vs 0	9.954	4.761	20.815
agegp 3 vs 0	19.212	8.900	41.472

agegp 4 vs 0	35.145	14.453	85.462
edubi 1 vs 0	4.240	2.512	7.156
apo4car 1 vs 0	4.736	2.870	7.817
exbi 1 vs 0	2.178	1.384	3.428

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.8	Somers' D	0.739
Percent Discordant	12.9	Gamma	0.741
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

## apo4car \* exbi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	557.088
SC	815.635	609.951
-2 Log L	809.230	533.088

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.1414	11	<.0001
Score	228.1519	11	<.0001
Wald	150.1450	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.1252	<.0001
agegp	4	97.4932	<.0001
edubi	1	29.1590	<.0001

sexbi	1	2.5164	0.1127
apo4car	1	24.8898	<.0001
exbi	1	7.9842	0.0047
corpbi	1	5.4408	0.0197
apo4car*exbi	1	0.0330	0.8558

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.9883	0.4713	112.0452	<.0001
htnbi	1	1	0.9485	0.2228	18.1252	<.0001
agegp	1	1	0.8547	0.3736	5.2335	0.0222
agegp	2	1	2.2953	0.3768	37.1046	<.0001
agegp	3	1	2.9518	0.3925	56.5442	<.0001
agegp	4	1	3.5346	0.4492	61.9246	<.0001
edubi	1	1	1.4426	0.2671	29.1590	<.0001
sexbi	1	1	0.3765	0.2373	2.5164	0.1127
apo4car	1	1	1.5227	0.3052	24.8898	<.0001
exbi	1	1	0.7534	0.2666	7.9842	0.0047
corpbi	1	1	0.5201	0.2230	5.4408	0.0197
apo4car*exbi	1 1	1	0.0951	0.5234	0.0330	0.8558

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.582	1.668	3.995
agegp 1 vs 0	2.351	1.130	4.889
agegp 2 vs 0	9.927	4.743	20.776
agegp 3 vs 0	19.140	8.868	41.313

agegp 4 vs 0	34.281	14.214	82.677
edubi 1 vs 0	4.231	2.507	7.143
sexbi 1 vs 0	1.457	0.915	2.320
corpbi 1 vs 0	1.682	1.087	2.604

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.738
Percent Discordant	12.9	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

apo4car \* corpb1

The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.578
SC	815.635	609.440
-2 Log L	809.230	532.578

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.6524	11	<.0001
Score	228.2148	11	<.0001
Wald	150.0784	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	17.8650	<.0001
agegp	4	97.0525	<.0001
edubi	1	29.2618	<.0001



sexbi	1	2.5218	0.1123
apo4car	1	18.9324	<.0001
exbi	1	11.4035	0.0007
corpbi	1	5.6680	0.0173
apo4car*corpbi	1	0.5431	0.4612

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates							
Parameter			DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept			1	-5.0650	0.4787	111.9650	<.0001
htnbi	1		1	0.9425	0.2230	17.8650	<.0001
agegp	1		1	0.8732	0.3736	5.4611	0.0194
agegp	2		1	2.3040	0.3771	37.3337	<.0001
agegp	3		1	2.9579	0.3930	56.6602	<.0001
agegp	4		1	3.5349	0.4490	61.9715	<.0001
edubi	1		1	1.4445	0.2670	29.2618	<.0001
sexbi	1		1	0.3767	0.2372	2.5218	0.1123
apo4car	1		1	1.7882	0.4110	18.9324	<.0001
exbi	1		1	0.7826	0.2318	11.4035	0.0007
corpbi	1		1	0.6183	0.2597	5.6680	0.0173
apo4car*corpbi	1	1	1	-0.3738	0.5072	0.5431	0.4612

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.566	1.658	3.973
agegp 1 vs 0	2.394	1.151	4.980
agegp 2 vs 0	10.014	4.782	20.970
agegp 3 vs 0	19.258	8.915	41.601

agegp 4 vs 0	34.293	14.223	82.685
edubi 1 vs 0	4.240	2.512	7.156
sexbi 1 vs 0	1.458	0.916	2.320
exbi 1 vs 0	2.187	1.389	3.445

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.7	Somers' D	0.737
Percent Discordant	13.0	Gamma	0.740
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.869

## exbi \* corpbi

## The LOGISTIC Procedure

Model Information		
Data Set	WORK.AD5	
Response Variable	caco	caco
Number of Response Levels	2	
Model	binary logit	
Optimization Technique	Fisher's scoring	

Number of Observations Read	649
Number of Observations Used	605

Response Profile		
Ordered Value	caco	Total Frequency
1	0	369
2	1	236

Probability modeled is caco=1.

Note: 44 observations were deleted due to missing values for the response or explanatory variables.

Class Level Information					
Class	Value	Design Variables			
htnbi	0	0			
	1	1			
agegp	0	0	0	0	0
	1	1	0	0	0
	2	0	1	0	0
	3	0	0	1	0
	4	0	0	0	1

edubi	0	0			
	1	1			
sexbi	0	0			
	1	1			
apo4car	0	0			
	1	1			
exbi	0	0			
	1	1			
corpbi	0	0			
	1	1			

#### Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

#### Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	811.230	556.741
SC	815.635	609.604
-2 Log L	809.230	532.741

#### Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	276.4889	11	<.0001
Score	228.4331	11	<.0001
Wald	149.9770	11	<.0001

#### Joint Tests

Effect	DF	Wald Chi-Square	Pr > ChiSq
htnbi	1	18.4455	<.0001
agegp	4	97.5113	<.0001
edubi	1	28.0961	<.0001

sexbi	1	2.6353	0.1045
apo4car	1	36.9514	<.0001
exbi	1	2.7448	0.0976
corpbi	1	2.3664	0.1240
exbi*corpbi	1	0.3796	0.5378

Note: Under full-rank parameterizations, Type 3 effect tests are replaced by joint tests. The joint test for an effect is a test that all the parameters associated with that effect are zero. Such joint tests might not be equivalent to Type 3 effect tests under GLM parameterization.

Analysis of Maximum Likelihood Estimates						
Parameter		DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq
Intercept		1	-4.9454	0.4745	108.6489	<.0001
htnbi	1	1	0.9631	0.2243	18.4455	<.0001
agegp	1	1	0.8548	0.3729	5.2541	0.0219
agegp	2	1	2.3096	0.3769	37.5418	<.0001
agegp	3	1	2.9701	0.3938	56.8793	<.0001
agegp	4	1	3.5342	0.4491	61.9407	<.0001
edubi	1	1	1.4248	0.2688	28.0961	<.0001
sexbi	1	1	0.3861	0.2378	2.6353	0.1045
apo4car	1	1	1.5536	0.2556	36.9514	<.0001
exbi	1	1	0.6039	0.3645	2.7448	0.0976
corpbi	1	1	0.4220	0.2743	2.3664	0.1240
exbi*corpbi	1 1	1	0.2923	0.4744	0.3796	0.5378

Odds Ratio Estimates			
Effect	Point Estimate	95% Wald Confidence Limits	
htnbi 1 vs 0	2.620	1.688	4.066
agegp 1 vs 0	2.351	1.132	4.883
agegp 2 vs 0	10.070	4.810	21.081
agegp 3 vs 0	19.494	9.009	42.180

agegp 4 vs 0	34.269	14.212	82.632
edubi 1 vs 0	4.157	2.455	7.040
sexbi 1 vs 0	1.471	0.923	2.345
apo4car 1 vs 0	4.729	2.865	7.804

Association of Predicted Probabilities and Observed Responses			
Percent Concordant	86.8	Somers' D	0.739
Percent Discordant	12.9	Gamma	0.742
Percent Tied	0.3	Tau-a	0.352
Pairs	87084	c	0.870