Generalized Linear Models

Notes

Output Created		27-JUL-2022 10:38:37
Comments		
Input	Data	/Users/bonniepurcell/Desktop/SPSS /SPSS Whole data set correct sex.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2000
Missing Value Handling	Definition of Missing	User-defined missing values for factor, subject and within-subject variables are treated as missing.
	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable
Syntax		GENLIN mgkg BY bodysystemrecoded Indicateddose Sex (ORDER=ASCENDING) WITH Weight® Age_yearscalc /MODEL bodysystemrecoded Indicateddose Sex Weight® Age_yearscalc INTERCEPT=YES DISTRIBUTION=NORMAL LINK=IDENTITY /CRITERIA SCALE=MLE COVB=MODEL PCONVERGE=1E-006 (ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(LR) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
Resources	Processor Time	00:00:00.62
	Elapsed Time	00:00:00.00

Model Information

Dependent Variable	mg/kg
Probability Distribution	Normal
Link Function	Identity

Case Processing Summary

	N	Percent
Included	1886	94.3%
Excluded	114	5.7%
Total	2000	100.0%

Categorical Variable Information

			N	Percent
Factor	bodysystemrecoded	2.00	24	1.3%
		3.00	80	4.2%
		4.00	22	1.2%
		5.00	61	3.2%
		6.00	33	1.7%
		7.00	10	0.5%
		8.00	7	0.4%
		10.00	6	0.3%
		11.00	1643	87.1%
		Total	1886	100.0%
	Indicated dose	1	10	0.5%
		2	1796	95.2%
		3	80	4.2%
		Total	1886	100.0%
	Sex	0	114	6.0%
		1	736	39.0%
		2	203	10.8%
		3	833	44.2%
		Total	1886	100.0%

Continuous Variable Information

		N	Minimum	Maximum	Mean
Dependent Variable	mg/kg	1886	.032722513	5.00000000	.915651300
Covariate	Weight®	1886	1.56	90.00	19.3139
	Age_yearscalc	1886	.17	18.33	6.2843

Continuous Variable Information

		Std. Deviation
Dependent Variable	mg/kg	.516284623
Covariate	Weight®	12.57011
	Age_yearscalc	4.12004

Goodness of Fit[a]

	Value	df	Value/df
Deviance	441.413	1871	.236
Scaled Deviance	1886.000	1871	
Pearson Chi-Square	441.413	1871	.236
Scaled Pearson Chi-Square	1886.000	1871	
Log Likelihood[b]	-1306.663		
Akaike's Information Criterion (AIC)	2645.326		
Finite Sample Corrected AIC (AICC)	2645.617		
Bayesian Information Criterion (BIC)	2734.002		
Consistent AIC (CAIC)	2750.002		

Dependent Variable: mg/kg
Model: (Intercept), bodysystemrecoded, Indicated dose, Sex, Weight®, Age_yearscalc[a]

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
244.252	14	.000

Dependent Variable: mg/kg
Model: (Intercept), bodysystemrecoded, Indicated dose, Sex, Weight®, Age_yearscalc[a]

a. Compares the fitted model against the intercept-only...

Tests of Model Effects

	Type III		
Source	Likelihood Ratio Chi-Square	df	Sig.
(Intercept)	394.064	1	.000
bodysystemrecoded	40.236	7	<.001
Indicated dose	37.182	1	<.001
Sex	9.449	3	.024
Weight®	30.738	1	<.001
Age_yearscalc	8.751	1	.003

Dependent Variable: mg/kg
Model: (Intercept), bodysystemrecoded, Indicated dose, Sex, Weight®, Age_yearscalc

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test
			Lower	Upper	Wald Chi-Square
(Intercept)	1.468	.0804	1.311	1.626	333.832
[bodysystemrecoded=2.00]	.111	.0996	-.085	.306	1.232
[bodysystemrecoded=3.00]	.093	.0573	-.020	.205	2.612
[bodysystemrecoded=4.00]	.270	.1047	.064	.475	6.629
[bodysystemrecoded=5.00]	.293	.0670	.161	.424	19.065
[bodysystemrecoded=6.00]	.489	.1116	.270	.707	19.183
[bodysystemrecoded=7.00]	-1.019	.1708	-1.354	-.684	35.597
[bodysystemrecoded=8.00]	.036	.1880	-.333	.404	.036
[bodysystemrecoded=10.00]	.188	.1981	-.201	.576	.898
[bodysystemrecoded=11.00]	0[a]	.	.	.	.
[Indicated dose=1]	0[a]	.	.	.	.
[Indicated dose=2]	-.461	.0752	-.608	-.313	37.551
[Indicated dose=3]	0[a]	.	.	.	.
[Sex=0]	.145	.0487	.050	.241	8.917
[Sex=1]	.011	.0246	-.037	.059	.209
[Sex=2]	.042	.0384	-.034	.117	1.175
[Sex=3]	0[a]	.	.	.	.
Weight®	-.005	.0009	-.007	-.003	30.990
Age_yearscalc	-.009	.0029	-.014	-.003	8.771
(Scale)	.234[b]	.0076	.220	.249	

Parameter Estimates

Parameter	Hypothesis Test df	Hypothesis Test Sig.
(Intercept)	1	.000
[bodysystemrecoded=2.00]	1	.267
[bodysystemrecoded=3.00]	1	.106
[bodysystemrecoded=4.00]	1	.010
[bodysystemrecoded=5.00]	1	<.001
[bodysystemrecoded=6.00]	1	<.001
[bodysystemrecoded=7.00]	1	<.001
[bodysystemrecoded=8.00]	1	.849
[bodysystemrecoded=10.00]	1	.343
[bodysystemrecoded=11.00]	.	.
[Indicated dose=1]	.	.
[Indicated dose=2]	1	<.001
[Indicated dose=3]	.	.
[Sex=0]	1	.003
[Sex=1]	1	.647
[Sex=2]	1	.278
[Sex=3]	.	.
Weight®	1	<.001
Age_yearscalc	1	.003
(Scale)		

Dependent Variable: mg/kg
Model: (Intercept), bodysystemrecoded, Indicated dose, Sex, Weight®, Age_yearscalc

a. Set to zero because this parameter is redundant.

b. Maximum likelihood estimate.

Regression

Notes

Output Created		27-JUL-2022 11:03:45
Comments		
Input	Data	/Users/bonniepurcell/Desktop/SPSS /SPSS Whole data set correct sex.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2000
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on cases with no missing values for any variable used.
Syntax		REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS CI(95) R ANOVA CHANGE /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT mgkg /METHOD=ENTER Weight® Age_yearscalc Sex Indicateddose bodysystemrecoded.
Resources	Processor Time	00:00:00.05
	Elapsed Time	00:00:01.00
	Memory Required	7216 bytes
	Additional Memory Required for Residual Plots	0 bytes

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	bodysystemrecoded, Sex, Weight®, Indicated dose, Age_yearscalc[b]	.	Enter

a. Dependent Variable: mg/kg

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics	
					R Square Change	F Change
1	.330[a]	.109	.107	.487936741	.109	46.078

Model Summary

Model	Change Statistics		
	df1	df2	Sig. F Change
1	5	1880	<.001

a. Predictors: (Constant), bodysystemrecoded, Sex, Weight®, Indicated dose, Age_yearscalc

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.852	5	10.970	46.078	<.001[b]
	Residual	447.595	1880	.238		
	Total	502.446	1885			

a. Dependent Variable: mg/kg

b. Predictors: (Constant), bodysystemrecoded, Sex, Weight®, Indicated dose, Age_yearscalc

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.032	.134		.241	.809
	Weight®	-.005	.001	-.120	-5.348	<.001
	Age_yearscalc	-.009	.003	-.074	-3.195	.001
	Sex	-.019	.011	-.039	-1.776	.076
	Indicated dose	.644	.053	.268	12.107	<.001
	bodysystemrecoded	-.023	.005	-.105	-4.515	<.001

Coefficients[a]

Model		95.0% Confidence Interval for B	
		Lower Bound	Upper Bound
1	(Constant)	-.231	.296
	Weight®	-.007	-.003
	Age_yearscalc	-.015	-.004
	Sex	-.041	.002
	Indicated dose	.539	.748
	bodysystemrecoded	-.034	-.013

a. Dependent Variable: mg/kg

Generalized Linear Models

Notes

Output Created		27-JUL-2022 11:09:50
Comments		
Input	Data	/Users/bonniepurcell/Desktop/SPSS /SPSS Whole data set correct sex.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2000
Missing Value Handling	Definition of Missing	User-defined missing values for factor, subject and within-subject variables are treated as missing.
	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable
Syntax		GENLIN mgm2 BY bodysystemrecoded Indicateddose Sex (ORDER=ASCENDING) WITH Weight® Age_yearscalc /MODEL bodysystemrecoded Indicateddose Sex Weight® Age_yearscalc INTERCEPT=YES DISTRIBUTION=NORMAL LINK=IDENTITY /CRITERIA SCALE=MLE COVB=MODEL PCONVERGE=1E-006 (ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(LR) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
Resources	Processor Time	00:00:00.63
	Elapsed Time	00:00:01.00

Model Information

Dependent Variable	mg/m2
Probability Distribution	Normal
Link Function	Identity

Case Processing Summary

	N	Percent
Included	1886	94.3%
Excluded	114	5.7%
Total	2000	100.0%

Generalized Linear Models

Notes

Output Created		27-JUL-2022 11:56:51
Comments		
Input	Data	/Users/bonniepurcell/Desktop/SPSS /SPSS Whole data set correct sex.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	2000
Missing Value Handling	Definition of Missing	User-defined missing values for factor, subject and within-subject variables are treated as missing.
	Cases Used	Statistics are based on cases with valid data for all variables in the model.
Weight Handling		not applicable

Notes

Syntax		GENLIN mgm2 BY bodysystemrecoded Indicateddose (ORDER=ASCENDING) WITH Weight® Age_yearscalc /MODEL bodysystemrecoded Indicateddose Weight® Age_yearscalc INTERCEPT=YES DISTRIBUTION=NORMAL LINK=IDENTITY /CRITERIA SCALE=MLE COVB=MODEL PCONVERGE=1E-006 (ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(LR) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
Resources	Processor Time	00:00:00.42
	Elapsed Time	00:00:00.00

Model Information

Dependent Variable	mg/m2
Probability Distribution	Normal
Link Function	Identity

Case Processing Summary

	N	Percent
Included	1886	94.3%
Excluded	114	5.7%
Total	2000	100.0%

Categorical Variable Information

			N	Percent
Factor	bodysystemrecoded	2.00	24	1.3%
		3.00	80	4.2%
		4.00	22	1.2%
		5.00	61	3.2%
		6.00	33	1.7%
		7.00	10	0.5%
		8.00	7	0.4%
		10.00	6	0.3%
		11.00	1643	87.1%
		Total	1886	100.0%
	Indicated dose	1	10	0.5%
		2	1796	95.2%
		3	80	4.2%
		Total	1886	100.0%

Continuous Variable Information

		N	Minimum	Maximum	Mean
Dependent Variable	mg/m2	1886	1.09113813	106.655183	22.7675797
Covariate	Weight®	1886	1.56	90.00	19.3139
	Age_yearscalc	1886	.17	18.33	6.2843

Continuous Variable Information

		Std. Deviation
Dependent Variable	mg/m2	13.0648639
Covariate	Weight®	12.57011
	Age_yearscalc	4.12004

Goodness of Fit[a]

	Value	df	Value/df
Deviance	270631.591	1874	144.414
Scaled Deviance	1886.000	1874	
Pearson Chi-Square	270631.591	1874	144.414
Scaled Pearson Chi-Square	1886.000	1874	
Log Likelihood[b]	-7359.339		
Akaike's Information Criterion (AIC)	14744.678		
Finite Sample Corrected AIC (AICC)	14744.873		
Bayesian Information Criterion (BIC)	14816.727		
Consistent AIC (CAIC)	14829.727		

Dependent Variable: mg/m2
Model: (Intercept), bodysystemrecoded, Indicated dose, Weight®, Age_yearscalc[a]

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
326.320	11	.000

Dependent Variable: mg/m2
Model: (Intercept), bodysystemrecoded, Indicated dose, Weight®, Age_yearscalc[a]

a. Compares the fitted model against the intercept-only...

Tests of Model Effects

Source	Type III Likelihood Ratio Chi-Square	df	Sig.
(Intercept)	393.523	1	.000
bodysystemrecoded	24.993	7	<.001
Indicated dose	37.137	1	<.001
Weight®	138.359	1	.000
Age_yearscalc	11.390	1	<.001

Dependent Variable: mg/m2
Model: (Intercept), bodysystemrecoded, Indicated dose, Weight®, Age_yearscalc

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test
			Lower	Upper	Wald Chi-Square
(Intercept)	29.489	1.9592	25.649	33.329	226.556
[bodysystemrecoded=2.00]	2.466	2.4648	-2.365	7.297	1.001
[bodysystemrecoded=3.00]	1.657	1.4181	-1.122	4.437	1.366
[bodysystemrecoded=4.00]	4.776	2.5896	-.299	9.852	3.402
[bodysystemrecoded=5.00]	4.556	1.6540	1.315	7.798	7.589
[bodysystemrecoded=6.00]	11.231	2.7617	5.818	16.644	16.538
[bodysystemrecoded=7.00]	-24.155	4.2257	-32.438	-15.873	32.676
[bodysystemrecoded=8.00]	4.453	4.6550	-4.671	13.576	.915
[bodysystemrecoded=10.00]	3.178	4.9032	-6.432	12.788	.420
[bodysystemrecoded=11.00]	0[a]	.	.	.	.
[Indicated dose=1]	0[a]	.	.	.	.
[Indicated dose=2]	-11.390	1.8598	-15.035	-7.744	37.505
[Indicated dose=3]	0[a]	.	.	.	.
Weight®	.271	.0226	.227	.316	143.561
Age_yearscalc	-.241	.0712	-.380	-.101	11.424
(Scale)	143.495[b]	4.6728	134.623	152.952	

Parameter Estimates

Parameter	Hypothesis Test df	Hypothesis Test Sig.
(Intercept)	1	.000
[bodysystemrecoded=2.00]	1	.317
[bodysystemrecoded=3.00]	1	.243
[bodysystemrecoded=4.00]	1	.065
[bodysystemrecoded=5.00]	1	.006
[bodysystemrecoded=6.00]	1	<.001
[bodysystemrecoded=7.00]	1	<.001
[bodysystemrecoded=8.00]	1	.339
[bodysystemrecoded=10.00]	1	.517
[bodysystemrecoded=11.00]	.	.
[Indicated dose=1]	.	.
[Indicated dose=2]	1	<.001
[Indicated dose=3]	.	.
Weight®	1	.000
Age_yearscalc	1	<.001
(Scale)		

Dependent Variable: mg/m2
Model: (Intercept), bodysystemrecoded, Indicated dose, Weight®, Age_yearscalc

a. Set to zero because this parameter is redundant.

b. Maximum likelihood estimate.