

**Pulmonary function study**  
**Partial listing of fev data**

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Obs	age	fev	ht	sex	smoke
1	9	1.708	57.0	Female	Nonsmoker
2	8	1.724	67.5	Female	Nonsmoker
3	7	1.720	54.5	Female	Nonsmoker
4	9	1.558	53.0	Male	Nonsmoker
5	9	1.895	57.0	Male	Nonsmoker
6	8	2.336	61.0	Female	Nonsmoker
7	6	1.919	58.0	Female	Nonsmoker
8	6	1.415	56.0	Female	Nonsmoker
9	8	1.987	58.5	Female	Nonsmoker
10	9	1.942	60.0	Female	Nonsmoker

# Pulmonary function study ANOVA

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## The GLM Procedure

Class Level Information		
Class	Levels	Values
smoke	2	0 1

Number of Observations Read	654
Number of Observations Used	654

# Pulmonary function study ANOVA

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## The GLM Procedure

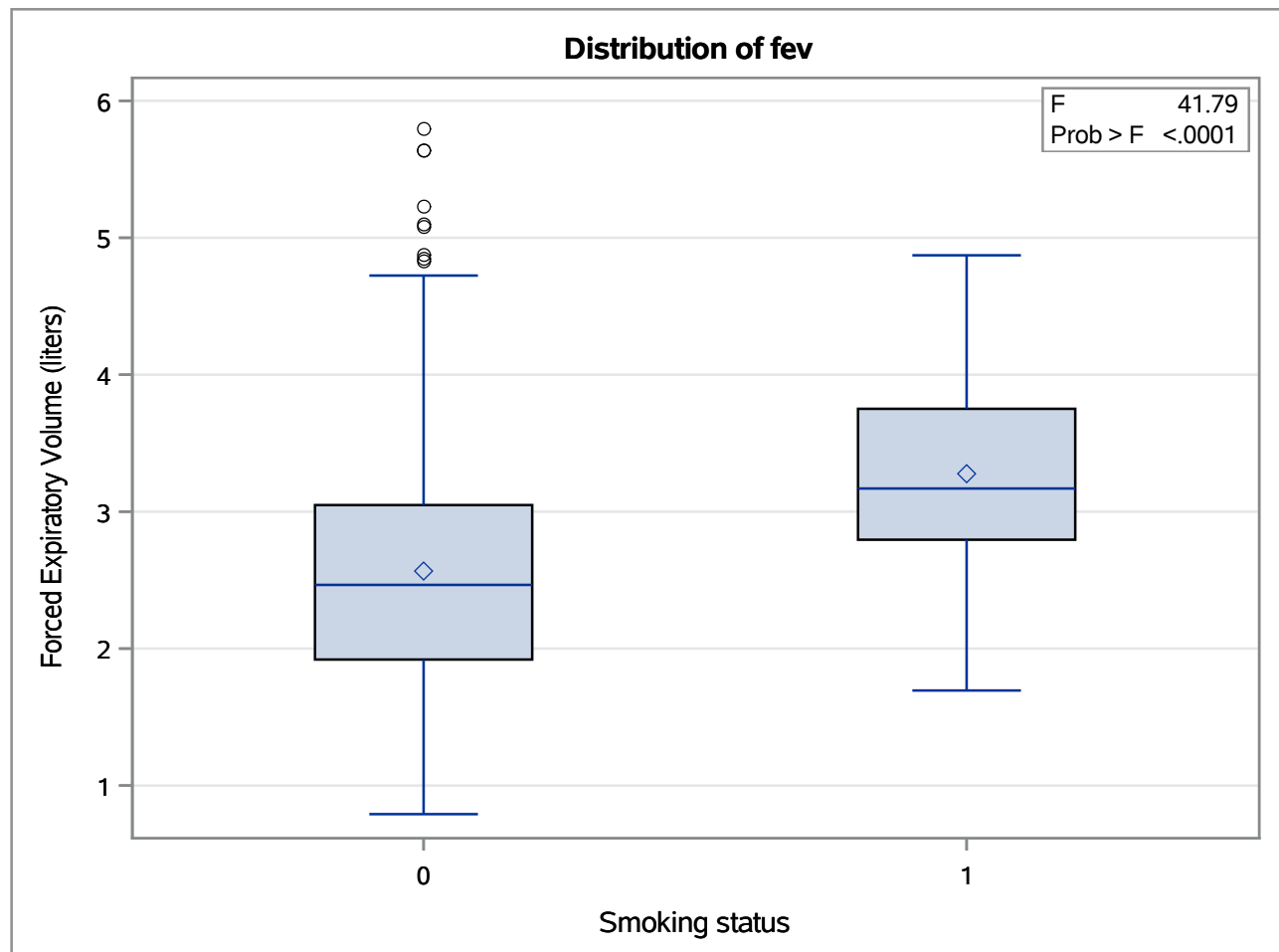
Dependent Variable: fev Forced Expiratory Volume (liters)

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	29.5696825	29.5696825	41.79	<.0001
Error	652	461.3501538	0.7075923		
Corrected Total	653	490.9198363			

R-Square	Coeff Var	Root MSE	fev Mean
0.060233	31.90198	0.841185	2.636780

Source	DF	Type I SS	Mean Square	F Value	Pr > F
smoke	1	29.56968252	29.56968252	41.79	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
smoke	1	29.56968252	29.56968252	41.79	<.0001



**The GENMOD Procedure**

Model Information		
Data Set	INTRO.FEV	
Distribution	Binomial	
Link Function	Logit	
Dependent Variable	smoke	Smoking status

Number of Observations Read	654
Number of Observations Used	654
Number of Events	589
Number of Trials	654

Response Profile		
Ordered Value	smoke	Total Frequency
1	0	589
2	1	65

PROC GENMOD is modeling the probability that smoke='0'. One way to change this to model the probability that smoke='1' is to specify the DESCENDING option in the PROC statement.

Criteria For Assessing Goodness Of Fit			
Criterion	DF	Value	Value/DF
Log Likelihood		-159.2825	
Full Log Likelihood		-159.2825	
AIC (smaller is better)		322.5650	
AICC (smaller is better)		322.5834	
BIC (smaller is better)		331.5312	

Algorithm converged.

Analysis Of Maximum Likelihood Parameter Estimates							
Parameter	DF	Estimate	Standard Error	Wald 95% Confidence Limits		Wald Chi-Square	Pr > ChiSq
Intercept	1	7.7439	0.7089	6.3545	9.1333	119.33	<.0001
age	1	-0.4836	0.0551	-0.5917	-0.3756	76.97	<.0001
Scale	0	1.0000	0.0000	1.0000	1.0000		

**Note:** The scale parameter was held fixed.

# Pulmonary function study ANCOVA

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## The GLM Procedure

Class Level Information		
Class	Levels	Values
smoke	2	0 1

Number of Observations Read	654
Number of Observations Used	654

# Pulmonary function study ANCOVA

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## The GLM Procedure

Dependent Variable: fev Forced Expiratory Volume (liters)

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	283.0582507	141.5291253	443.25	<.0001
Error	651	207.8615856	0.3192958		
Corrected Total	653	490.9198363			

R-Square	Coeff Var	Root MSE	fev Mean
0.576588	21.43003	0.565063	2.636780

Source	DF	Type I SS	Mean Square	F Value	Pr > F
age	1	280.9191578	280.9191578	879.81	<.0001
smoke	1	2.1390928	2.1390928	6.70	0.0099

Source	DF	Type III SS	Mean Square	F Value	Pr > F
age	1	253.4885681	253.4885681	793.90	<.0001
smoke	1	2.1390928	2.1390928	6.70	0.0099

