5 observations for later model validation

Obs	ID	weight	chest	age	gender
18	22	132	33	81	F
19	23	90	28	21	M
30	34	94	29	10	M
35	39	202	40	58	F
39	43	446	55	70	M

The FREQ Procedure

chest_group	Frequency	Percent	Cumulative Frequency	Cumulative Percent
L	13	28.89	13	28.89
M	18	40.00	31	68.89
S	14	31.11	45	100.00

Frequency Percent Row Pct Col Pct

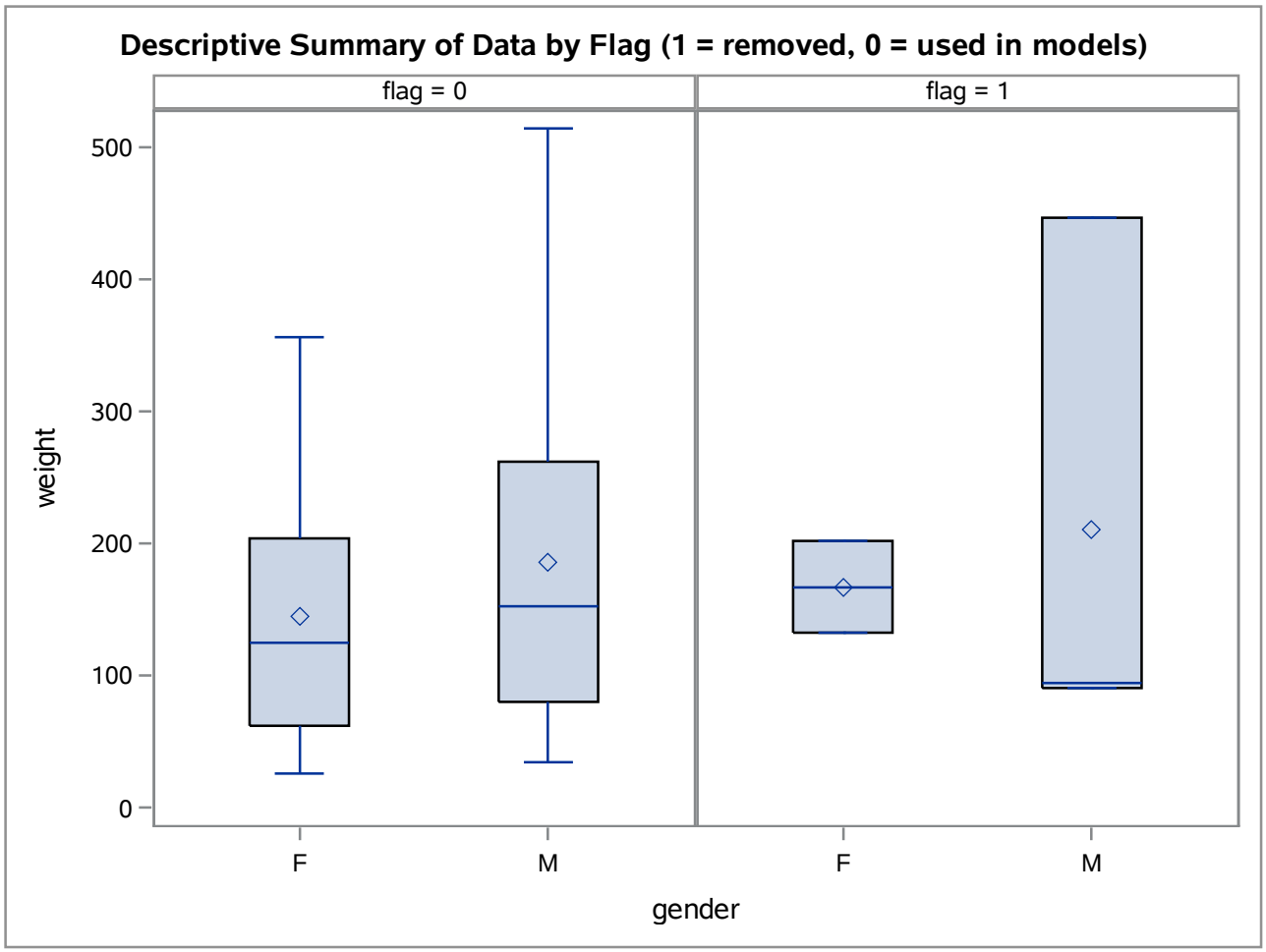
Table of chest_group by gender

chest_group	gender		
	F	M	Total
L	3 6.67 23.08 20.00	10 22.22 76.92 33.33	13 28.89
M	6 13.33 33.33 40.00	12 26.67 66.67 40.00	18 40.00
S	6 13.33 42.86 40.00	8 17.78 57.14 26.67	14 31.11
Total	15 33.33	30 66.67	45 100.00

Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)

The MEANS Procedure

flag	N Obs	Variable	N	Mean	Median	Minimum	Maximum	Std Dev	Lower Quartile	Upper Quartile
0	45	weight	45	172.0	148.0	26.0	514.0	116.7	79.0	220.0
		age	45	35.9	33.0	8.0	83.0	23.3	17.0	55.0
		length	45	57.5	59.0	36.0	75.0	10.7	48.0	65.0
		chest	45	34.8	33.0	19.0	54.0	9.2	28.0	42.0
		headlth	45	12.7	13.0	9.0	16.5	2.1	11.5	14.0
		headwth	45	6.1	6.0	4.0	9.0	1.4	5.0	7.0
		month	45	8.4	9.0	4.0	11.0	2.0	8.0	10.0
		neck	45	20.0	19.0	10.0	31.0	5.6	16.0	24.0
1	5	weight	5	192.8	132.0	90.0	446.0	148.5	94.0	202.0
		age	5	48.0	58.0	10.0	81.0	31.0	21.0	70.0
		length	5	60.7	61.0	49.0	76.5	10.4	54.0	63.0
		chest	5	37.0	33.0	28.0	55.0	11.1	29.0	40.0
		headlth	5	13.2	13.0	11.0	15.5	1.6	13.0	13.5
		headwth	5	5.7	5.0	5.0	7.0	1.0	5.0	6.5
		month	5	9.6	10.0	9.0	10.0	0.5	9.0	10.0
		neck	5	20.7	20.0	17.0	28.0	4.5	17.0	21.5


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
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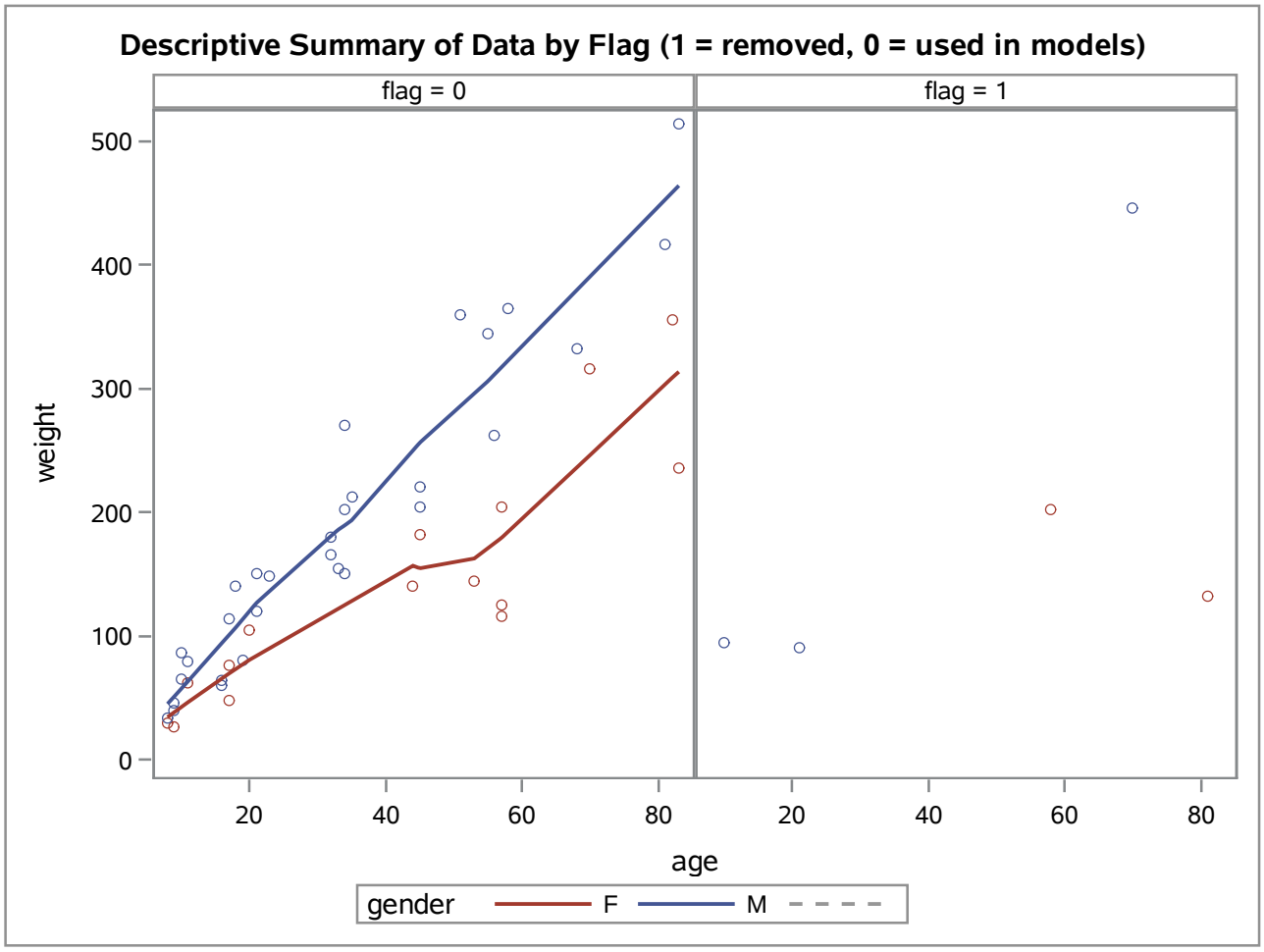
flag = 1
weight
500
400
300
200
100
0
F
M
F
M
gender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flag = 0
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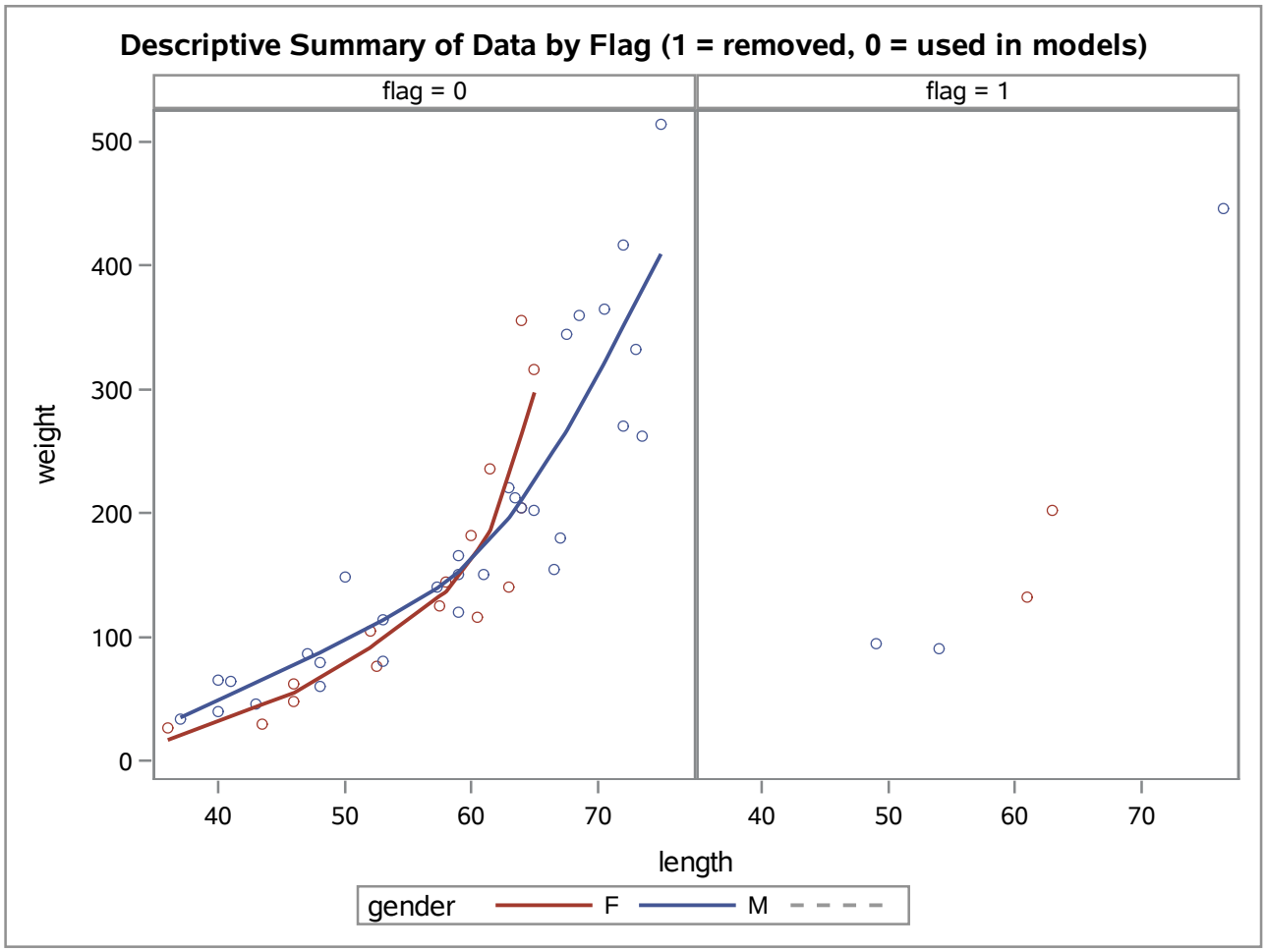
300
200
100
0
20
40
60
80
20
40
60
80
age
gender
F
M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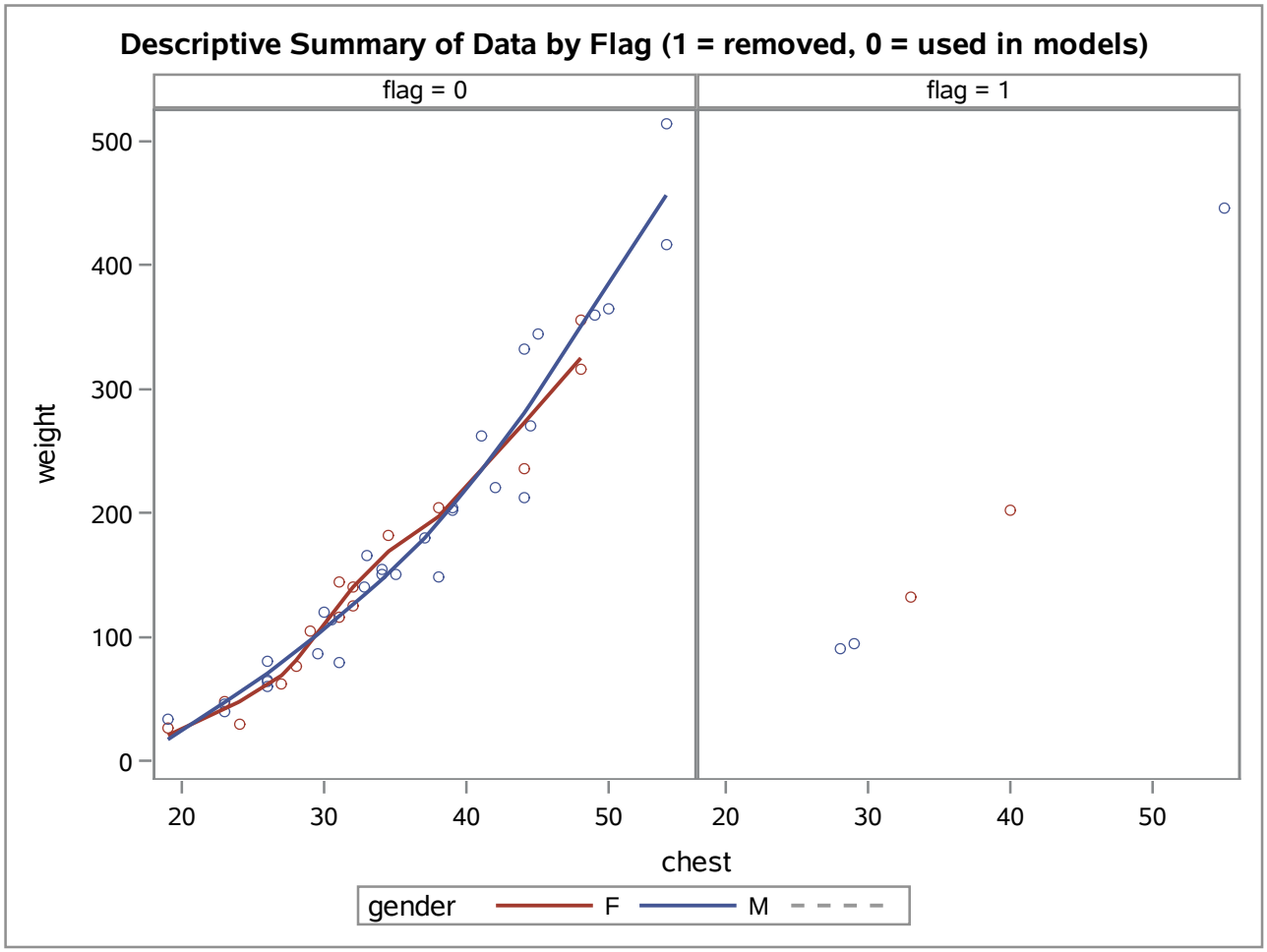
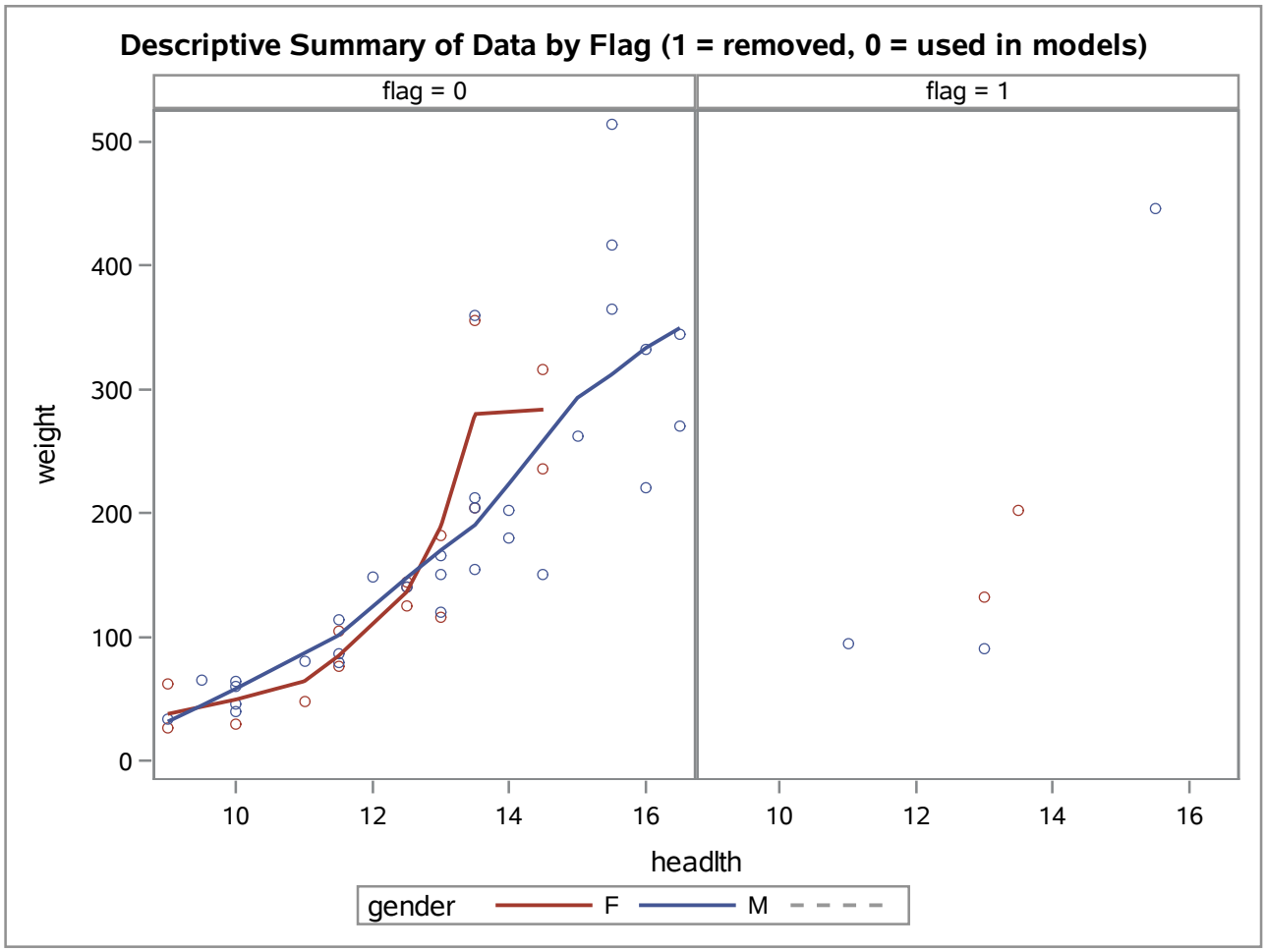
400
300
200
100
0
40
50
60
70
length
gender
F
M


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
flag = 0
flag = 1
weight
500
400
300
200
100
0
20
30
40
50
chest
gender
F
M


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
flag = 0
flag = 1
weight
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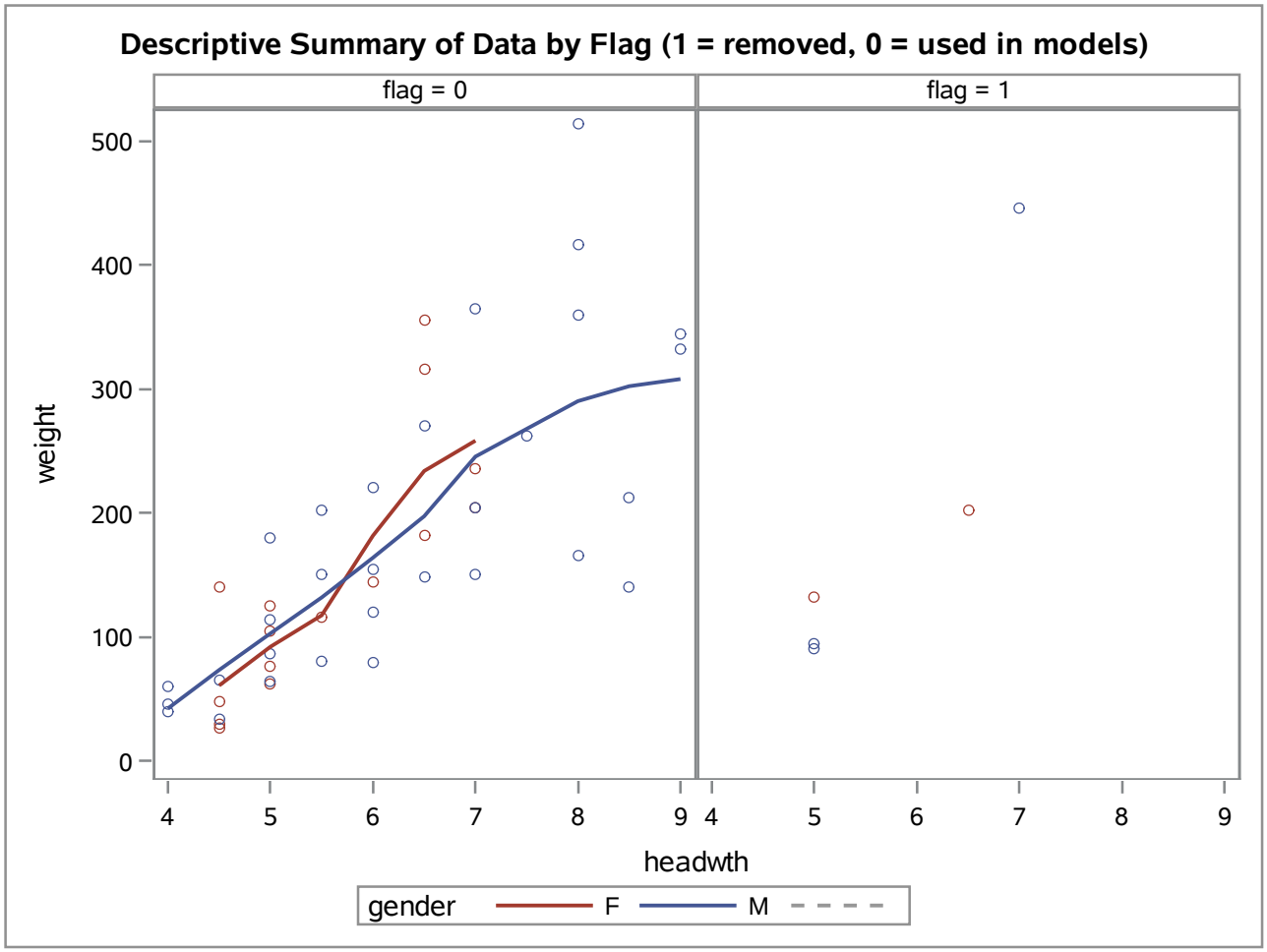
400
300
200
100
0
10
12
14
16
headlth
gender
F
M


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
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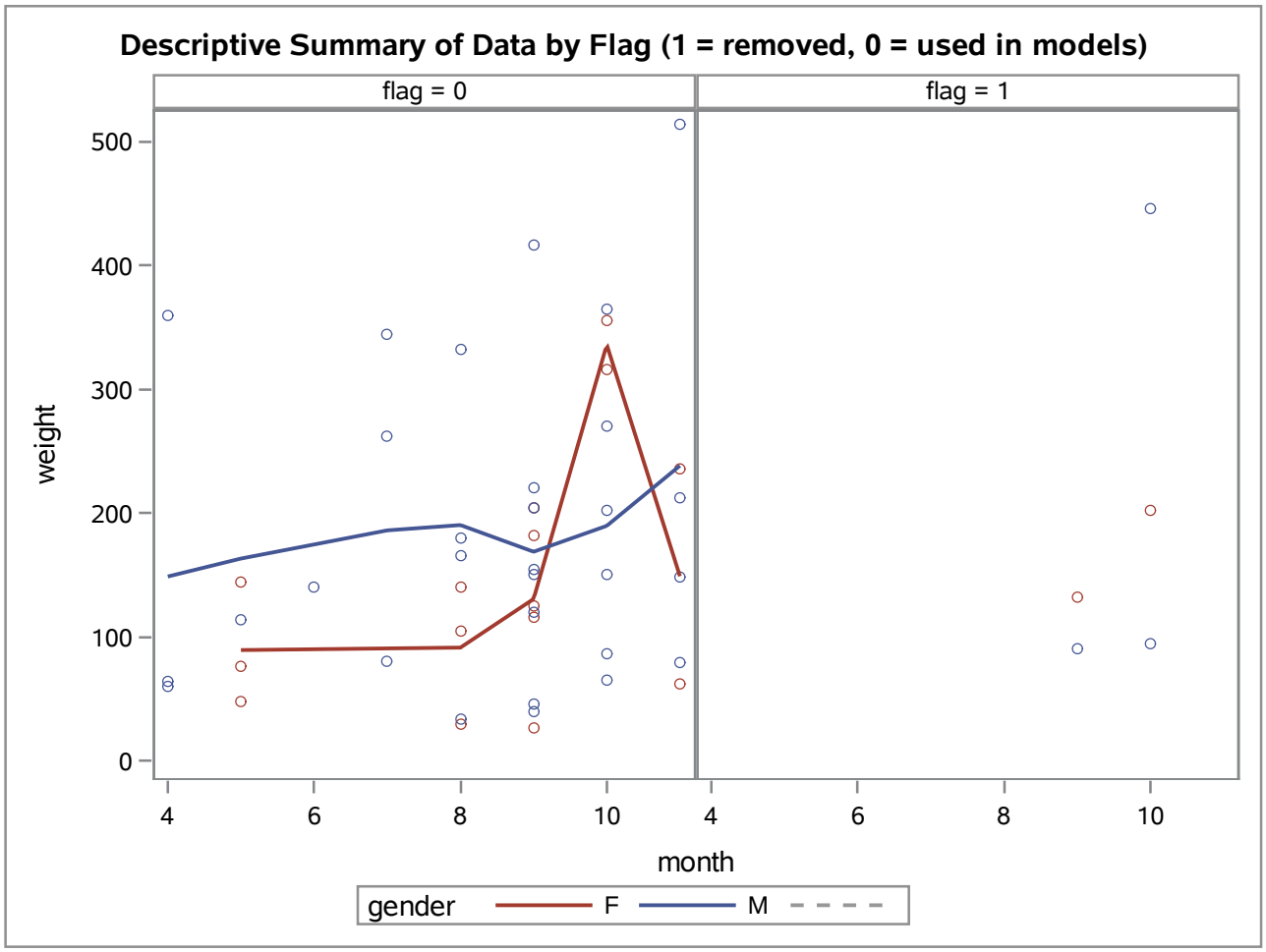
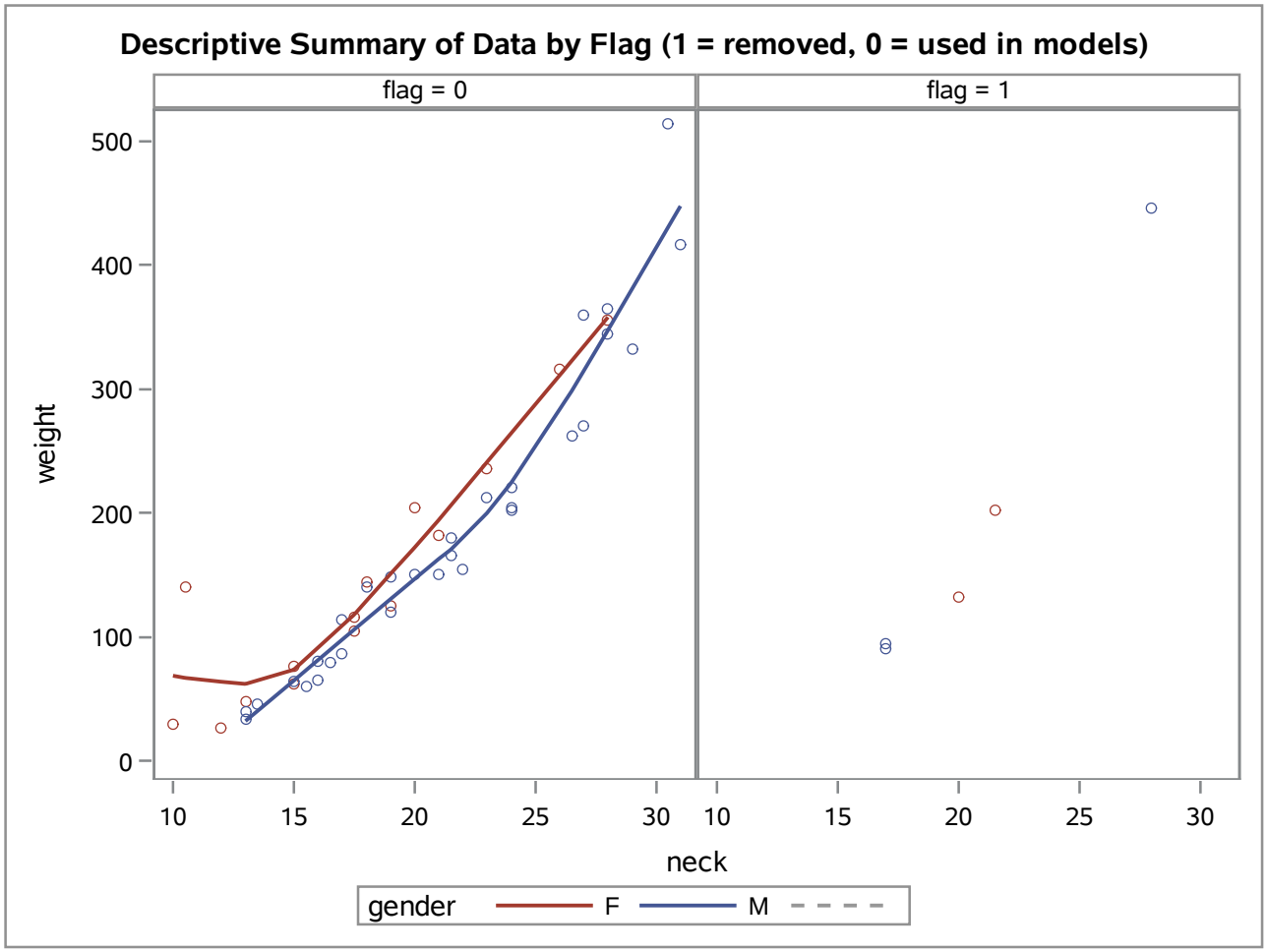
flag = 1
weight
500
400
300
200
100
0
4
5
6
7
8
9
headwth
gender
F
M


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
flag = 0
flag = 1
weight
500
400
300
200
100
0
4
6
8
10
month
gender
F
M


Descriptive Summary of Data by Flag (1 = removed, 0 = used in models)
flag = 0
flag = 1
weight
500
400
300
200
100
0
10
15
20
25
30
neck
gender
F
M

Model 1: Chest

The GLM Procedure

Dependent Variable: weight

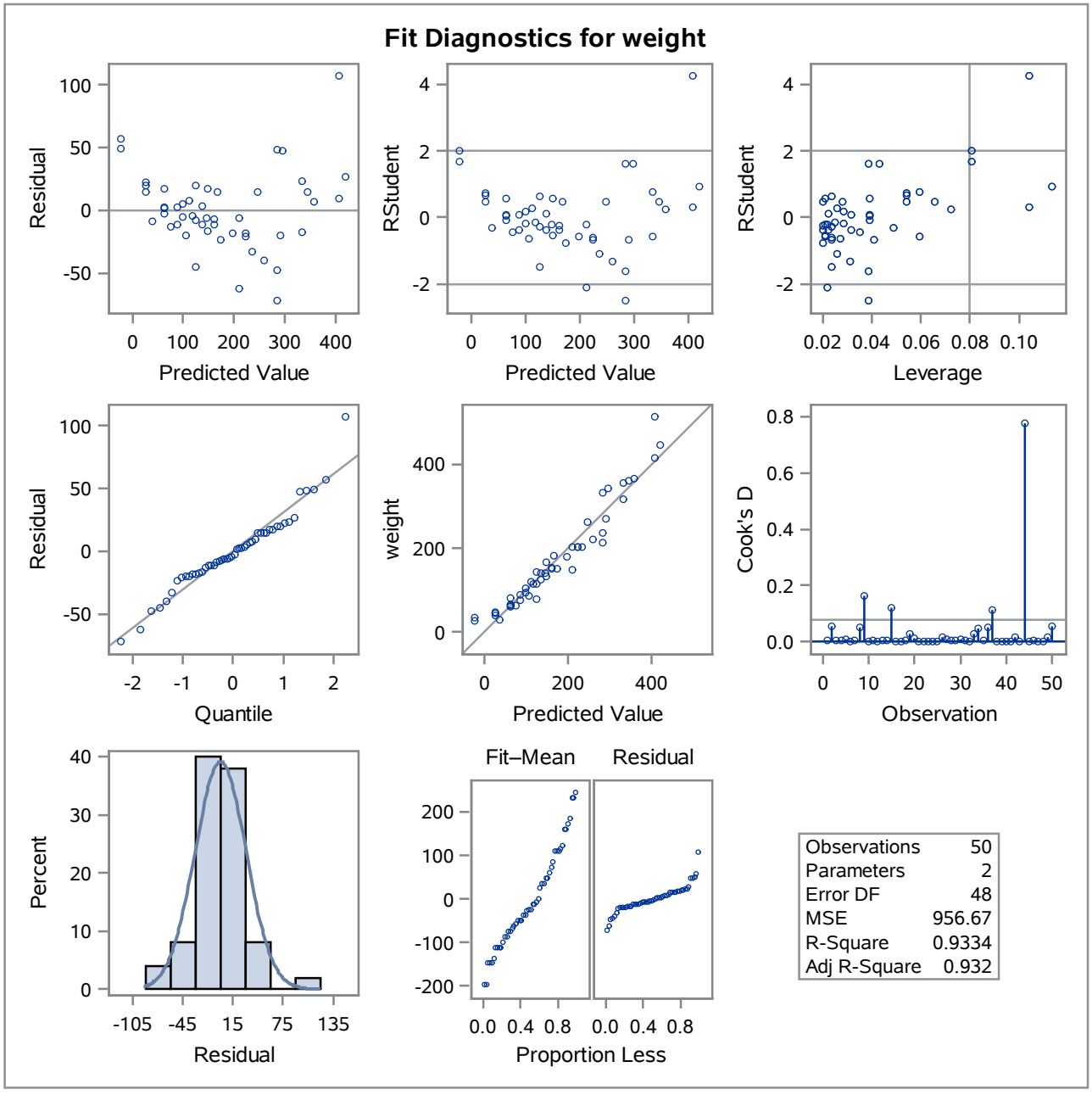
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	643529.0703	643529.0703	672.68	<.0001
Error	48	45920.2097	956.6710		
Corrected Total	49	689449.2800			

R-Square	Coeff Var	Root MSE	weight Mean
0.933396	17.76367	30.93010	174.1200

Parameter	Estimate	Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	-256.8626363	17.18323836	-14.95	<.0001	-291.4118526	-222.3134200
chest	12.2941190	0.47401779	25.94	<.0001	11.3410424	13.2471957

The GLM Procedure

Dependent Variable: weight

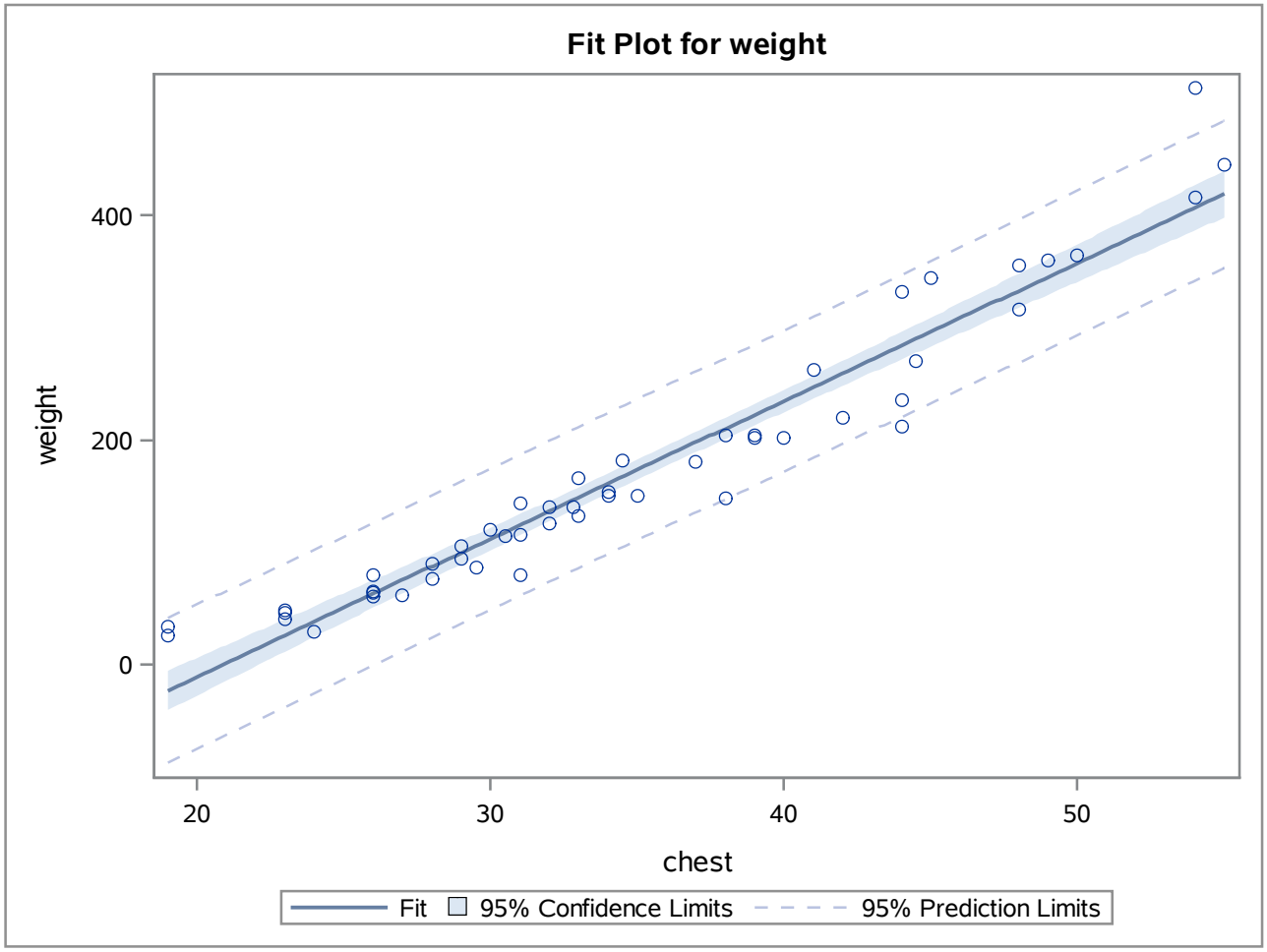


The GLM Procedure

Dependent Variable: weight

The GLM Procedure

Dependent Variable: weight



Model 2: Chest Squared

The GLM Procedure

Dependent Variable: weight

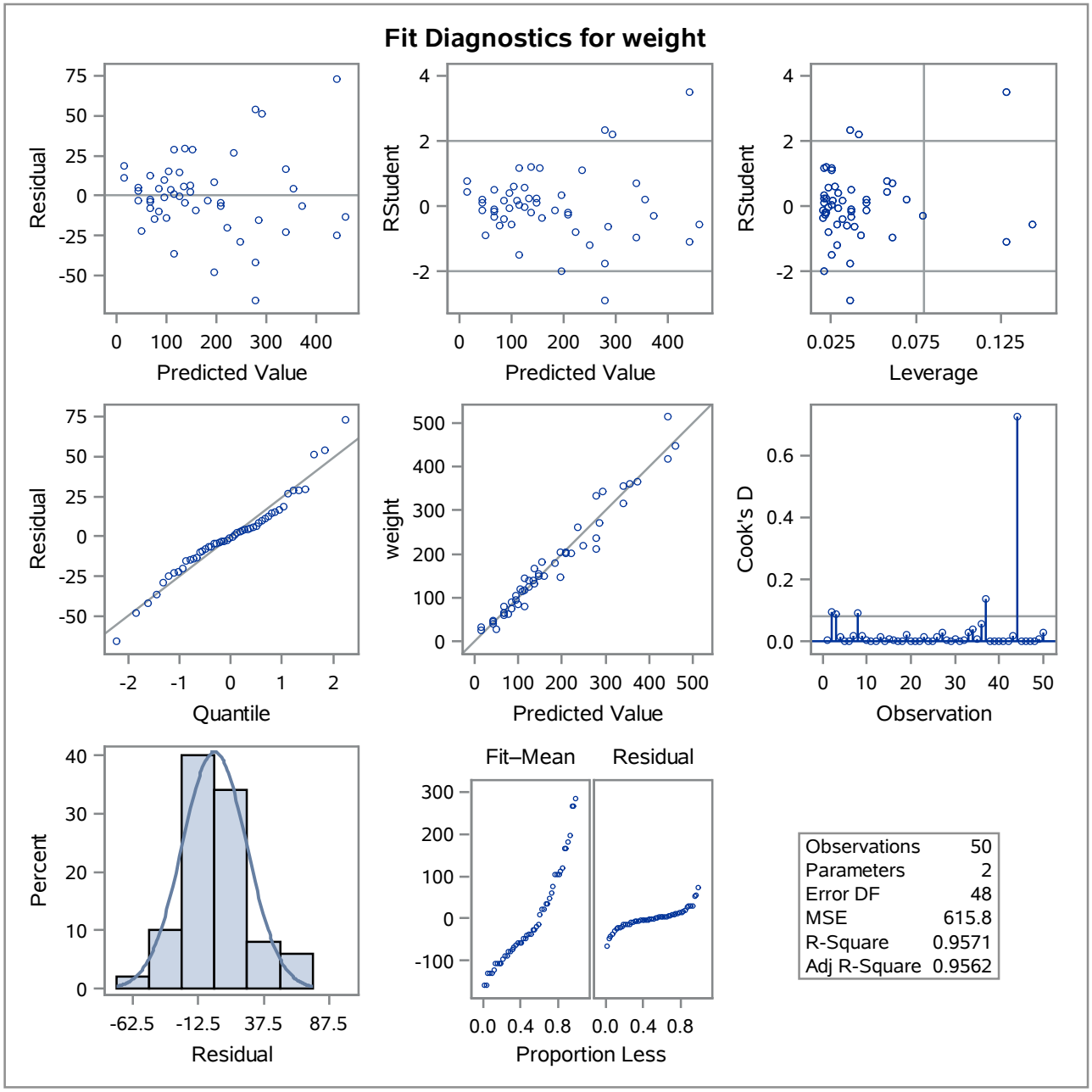
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	659890.9139	659890.9139	1071.60	<.0001
Error	48	29558.3661	615.7993		
Corrected Total	49	689449.2800			

R-Square	Coeff Var	Root MSE	weight Mean
0.957128	14.25184	24.81530	174.1200

Parameter	Estimate	Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	-44.97433782	7.55717975	-5.95	<.0001	-60.16906610	-29.77960955
chest*chest	0.16672872	0.00509324	32.74	<.0001	0.15648808	0.17696936

The GLM Procedure

Dependent Variable: weight

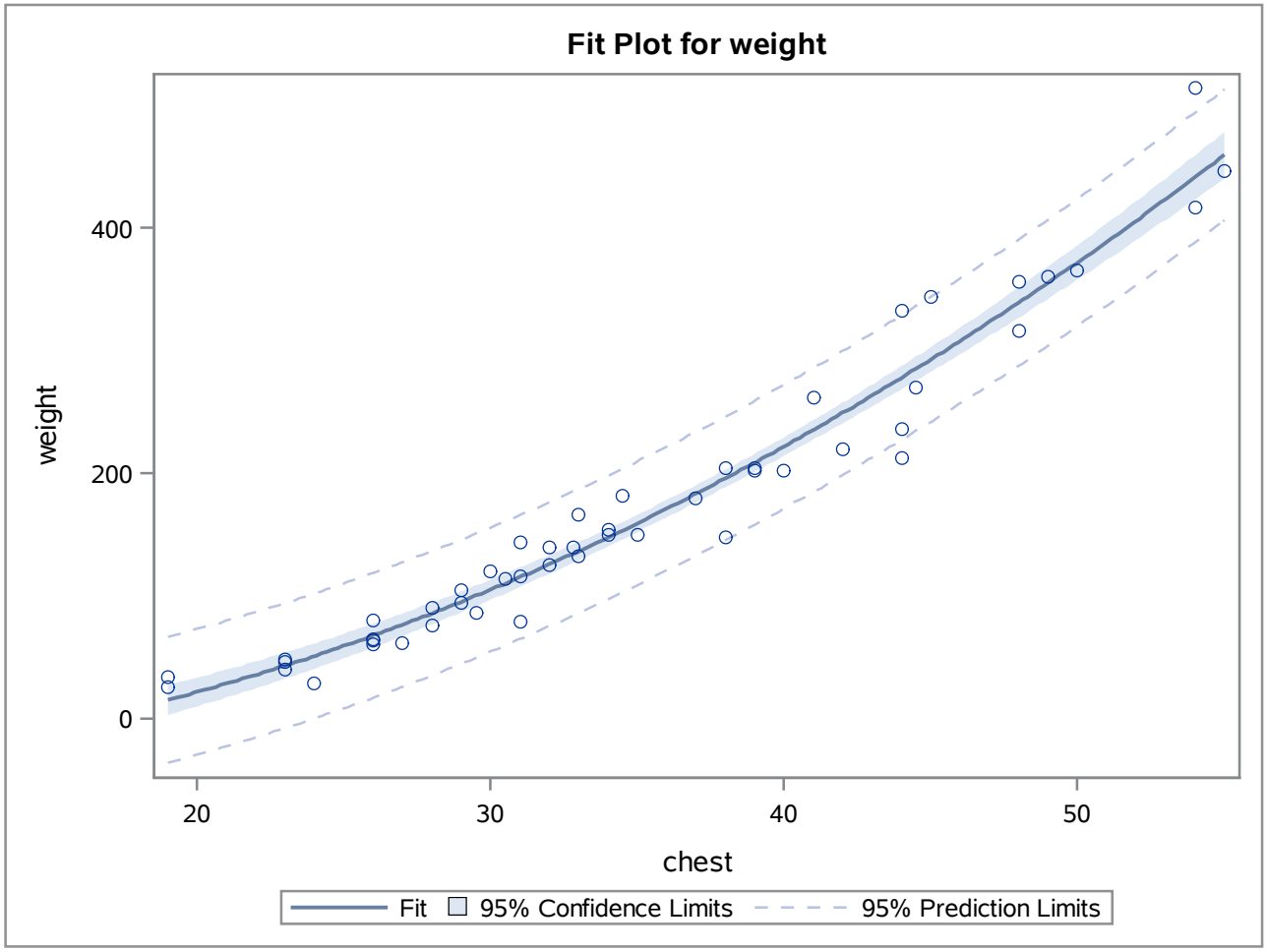


The GLM Procedure

Dependent Variable: weight

The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Class Level Information		
Class	Levels	Values
chest_group	3	L M S

The GLM Procedure

Dependent Variable: weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	543551.2425	271775.6212	87.55	<.0001
Error	47	145898.0375	3104.2136		
Corrected Total	49	689449.2800			

R-Square	Coeff Var	Root MSE	weight Mean
0.788385	31.99832	55.71547	174.1200

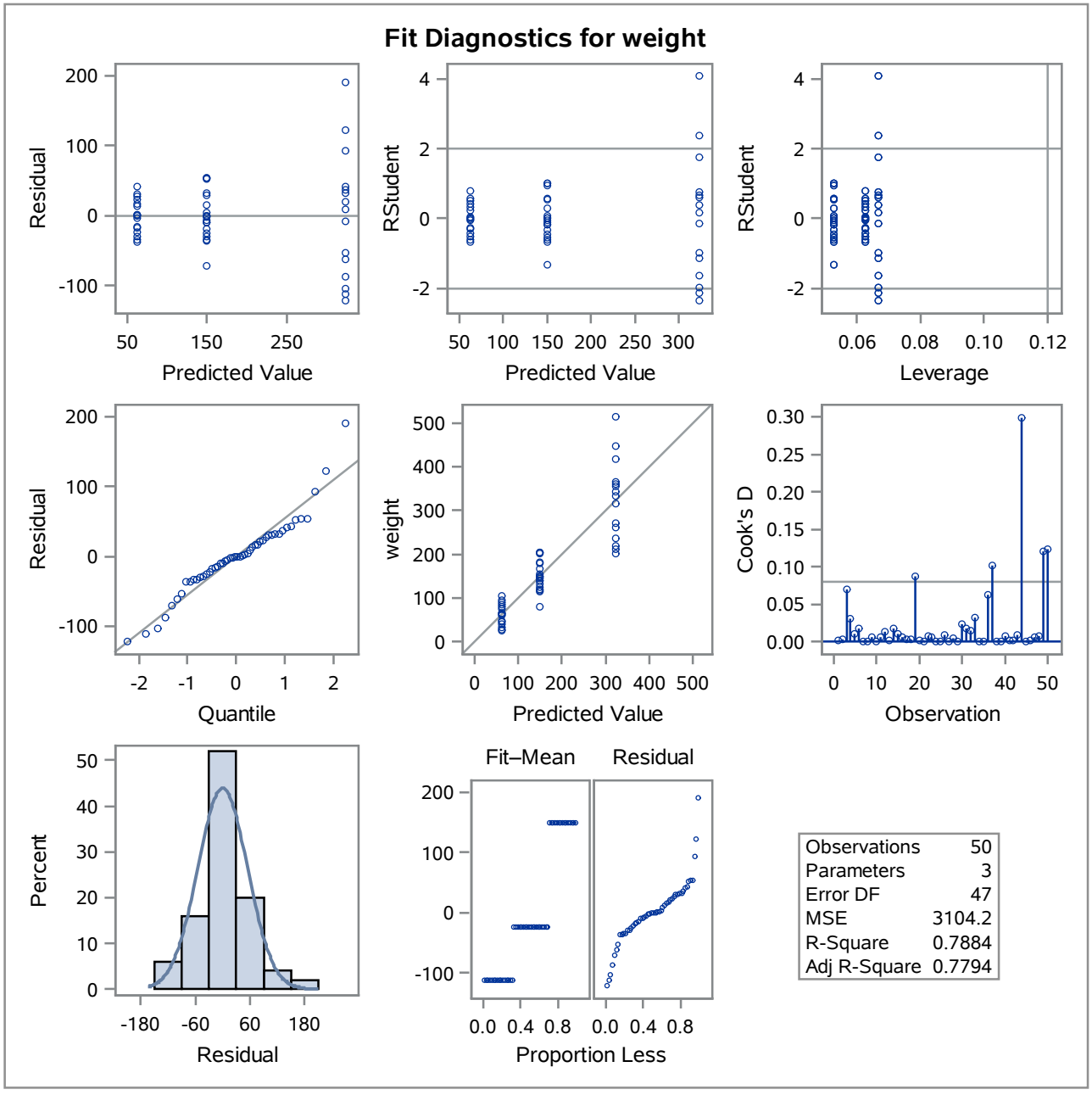
Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	62.8125000	B	13.92886742	4.51	<.0001	34.7912331	90.8337669
chest_group L	260.5875000	B	20.02400856	13.01	<.0001	220.3043907	300.8706093
chest_group M	87.1875000	B	18.90484089	4.61	<.0001	49.1558657	125.2191343
chest_group S	0.0000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

Model 3: Chest Groups

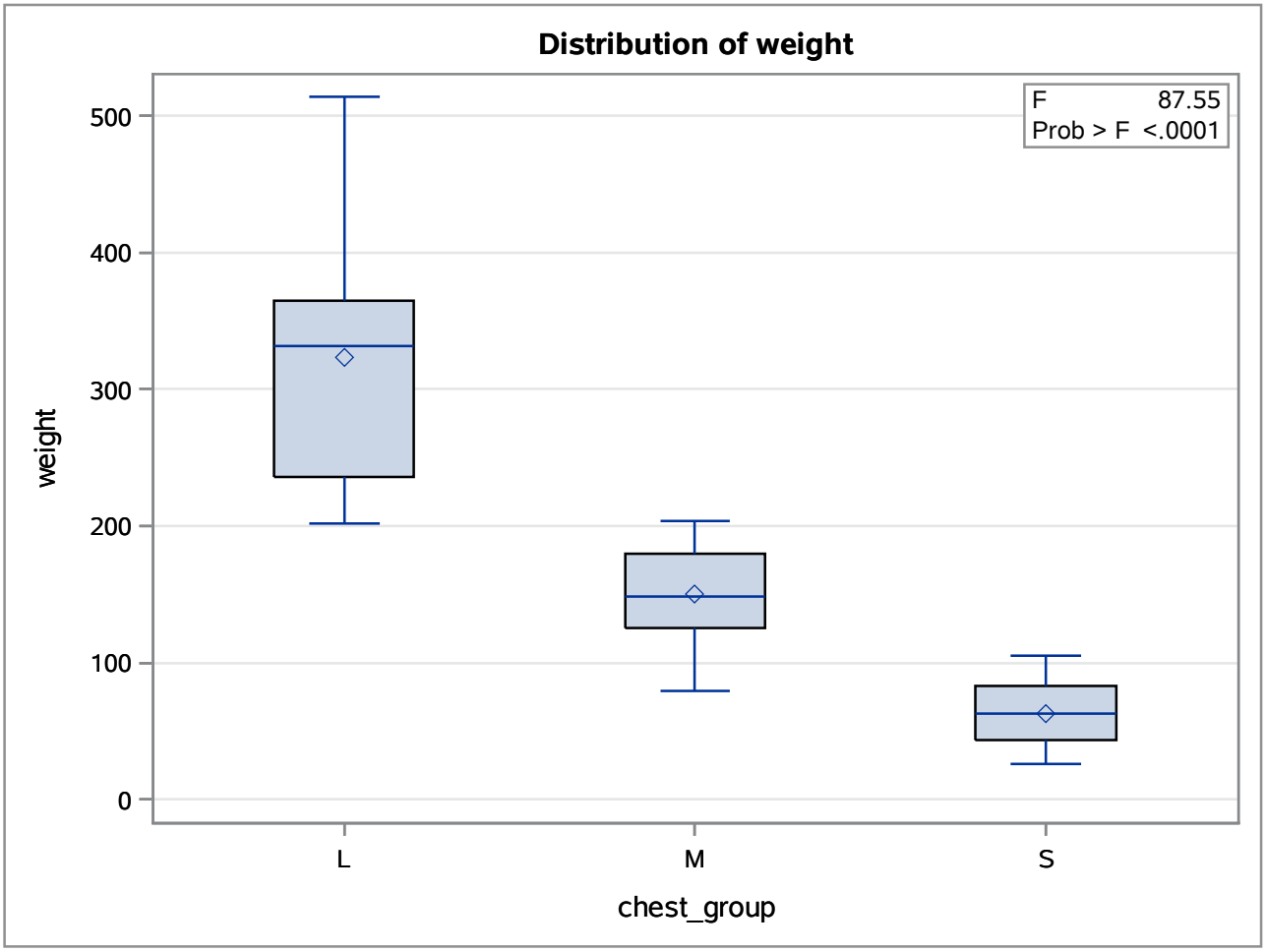
The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Class Level Information		
Class	Levels	Values
gender	2	F M

The GLM Procedure

Dependent Variable: weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	601115.0670	200371.6890	104.34	<.0001
Error	46	88334.2130	1920.3090		
Corrected Total	49	689449.2800			

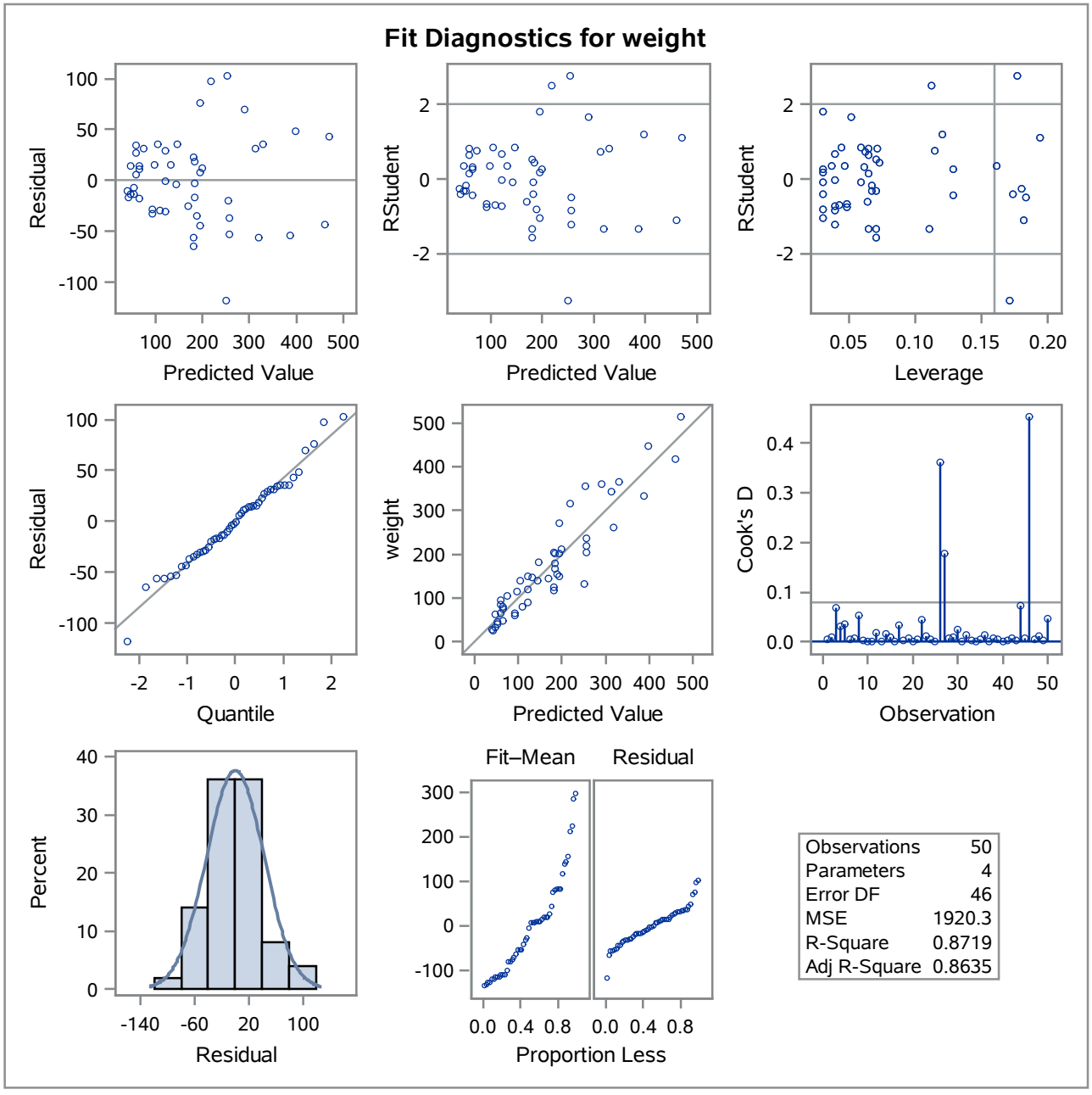
R-Square	Coeff Var	Root MSE	weight Mean
0.871877	25.16732	43.82133	174.1200

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	2.55517023	B	13.92641526	0.18	0.8552	-25.47724976	30.58759021
age	5.64302247	B	0.35437273	15.92	<.0001	4.92970716	6.35633778
gender F	13.77721476	B	25.51850281	0.54	0.5919	-37.58886723	65.14329675
gender M	0.00000000	B	.	.	.	.	.
age*gender F	-2.75440159	B	0.54206591	-5.08	<.0001	-3.84552368	-1.66327951
age*gender M	0.00000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

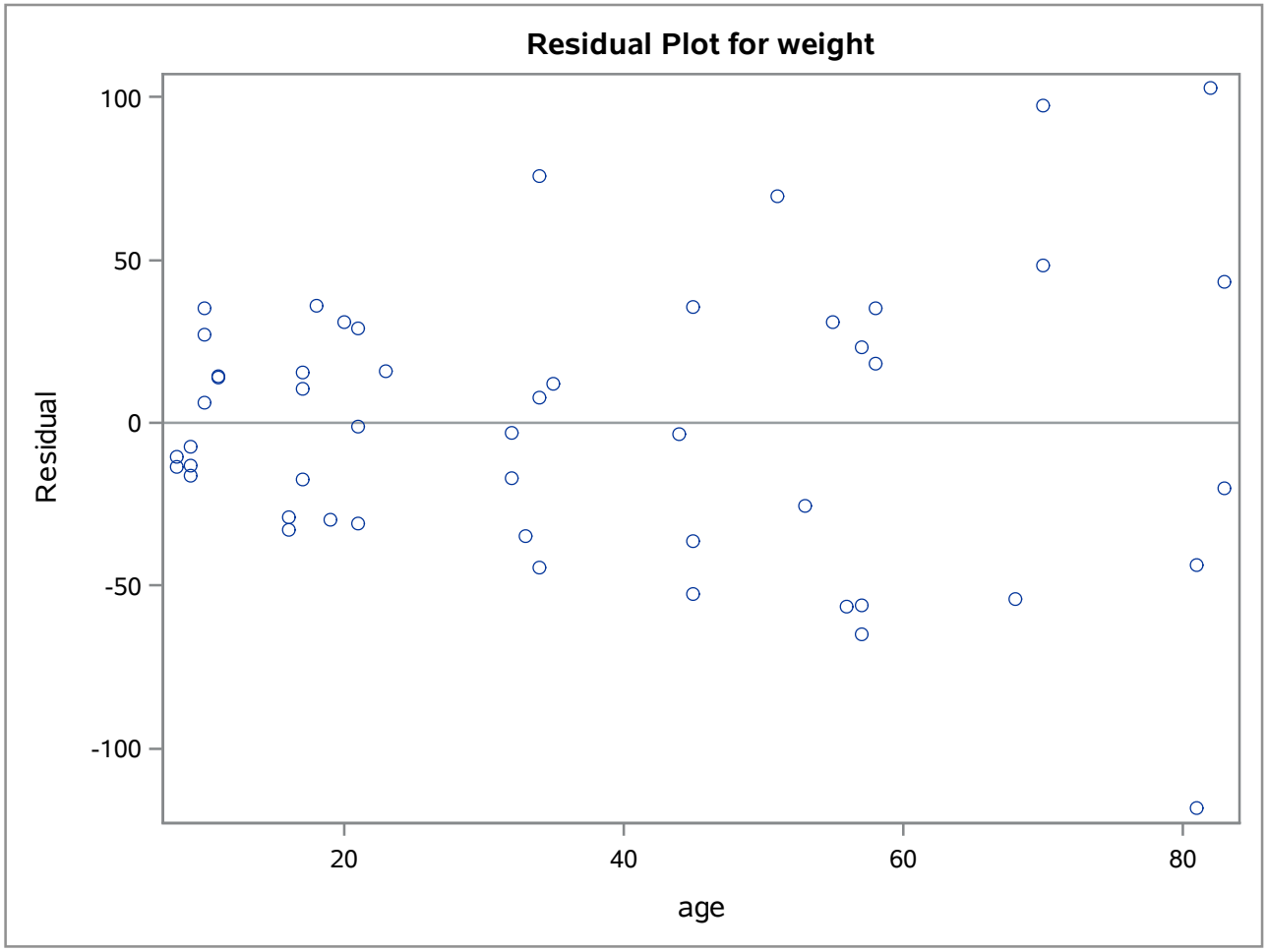
The GLM Procedure

Dependent Variable: weight



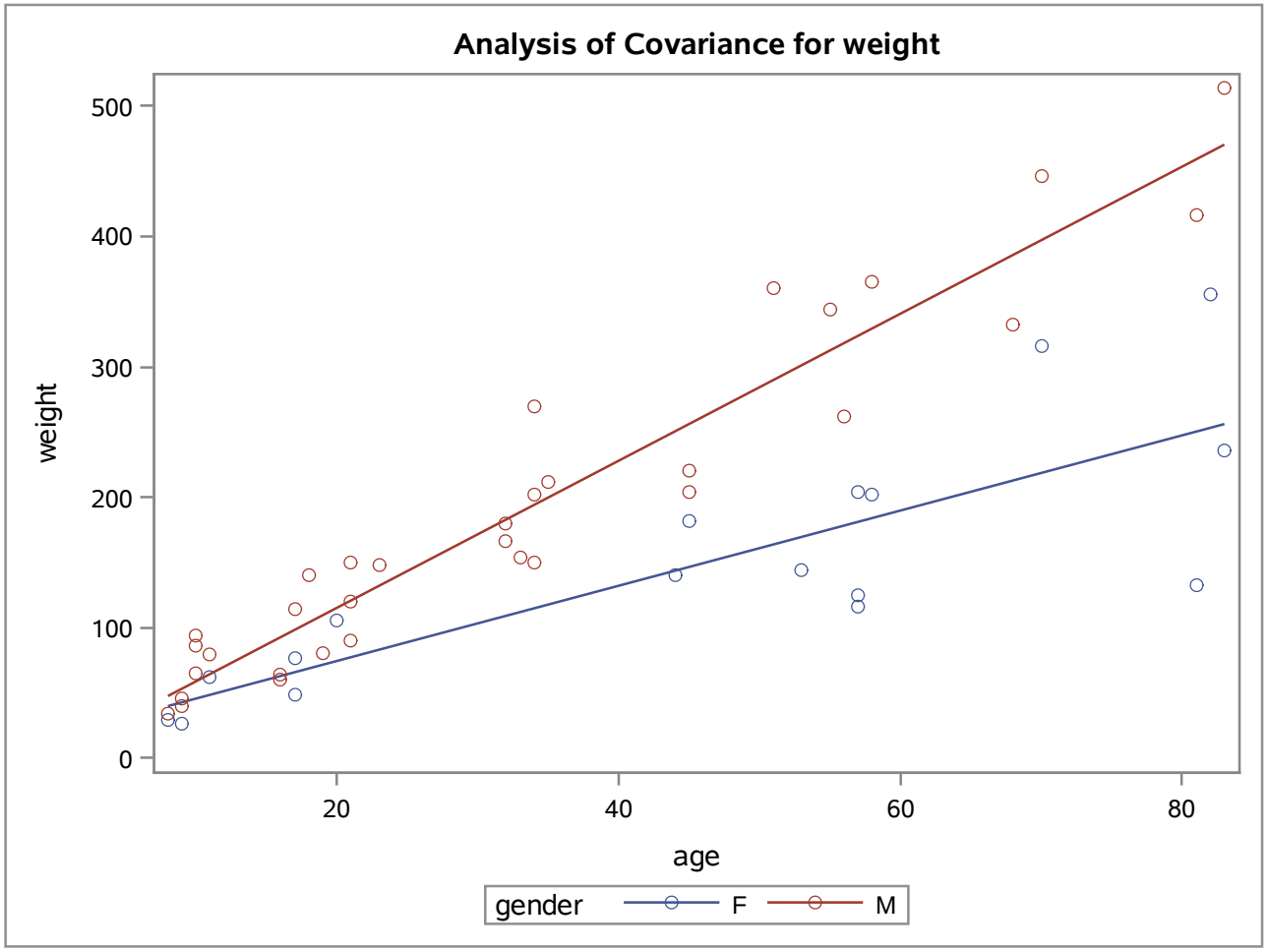
The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Class Level Information		
Class	Levels	Values
gender	2	F M

The GLM Procedure

Dependent Variable: weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	660834.1102	165208.5276	259.81	<.0001
Error	45	28615.1698	635.8927		
Corrected Total	49	689449.2800			

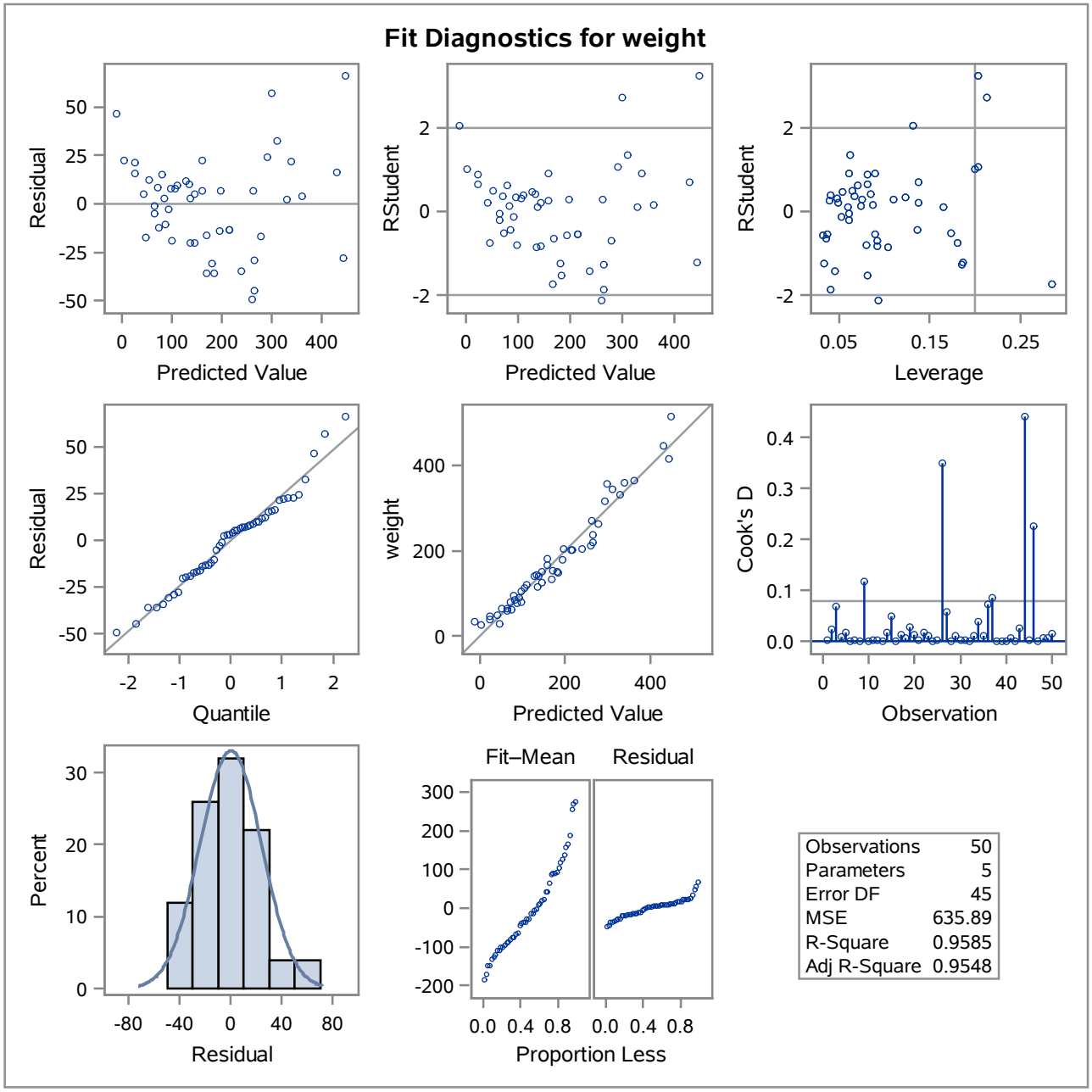
R-Square	Coeff Var	Root MSE	weight Mean
0.958496	14.48249	25.21691	174.1200

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	-194.2485741	B	21.83211369	-8.90	<.0001	-238.2207083	-150.2764399
chest	8.6996202		0.89770941	9.69	<.0001	6.8915406	10.5076997
age	2.0768161	B	0.42071964	4.94	<.0001	1.2294432	2.9241889
gender F	26.9858921	B	14.74770020	1.83	0.0739	-2.7175009	56.6892850
gender M	0.0000000	B	.	.	.	.	.
age*gender F	-1.4817200	B	0.33844909	-4.38	<.0001	-2.1633915	-0.8000486
age*gender M	0.0000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

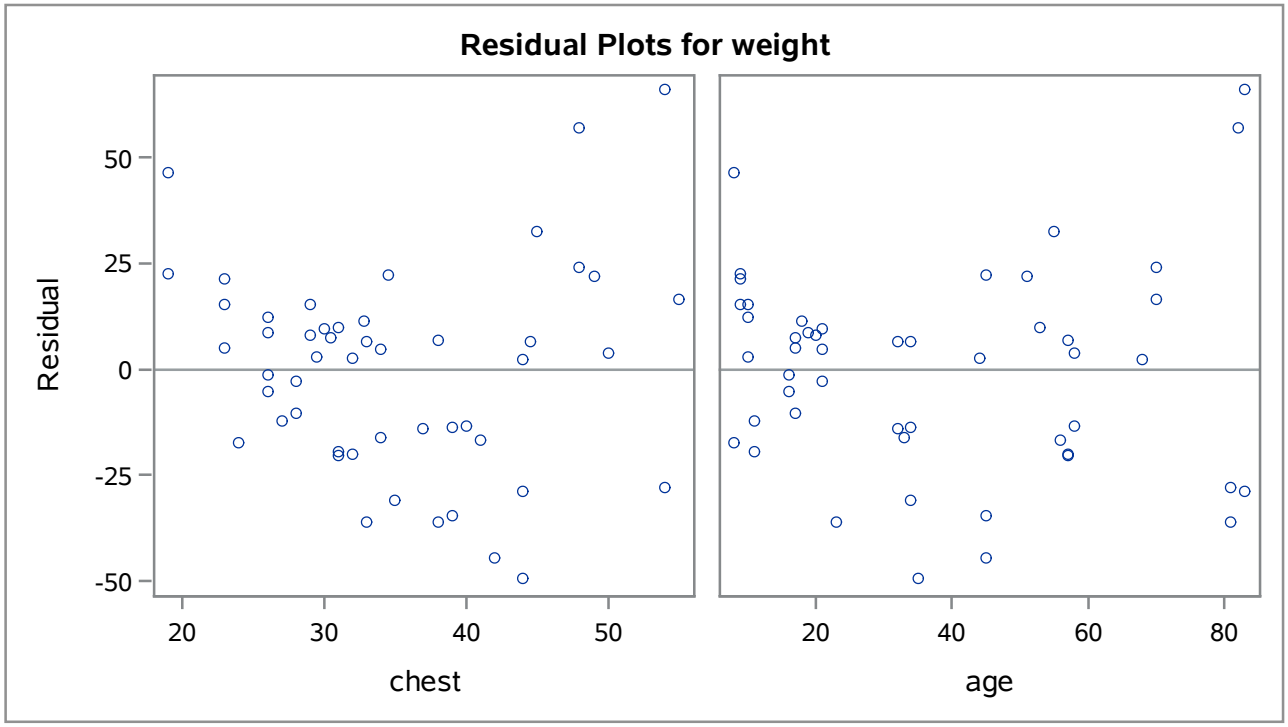
The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Class Level Information		
Class	Levels	Values
gender	2	F M

The GLM Procedure

Dependent Variable: weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	668964.0134	167241.0034	367.38	<.0001
Error	45	20485.2666	455.2281		
Corrected Total	49	689449.2800			

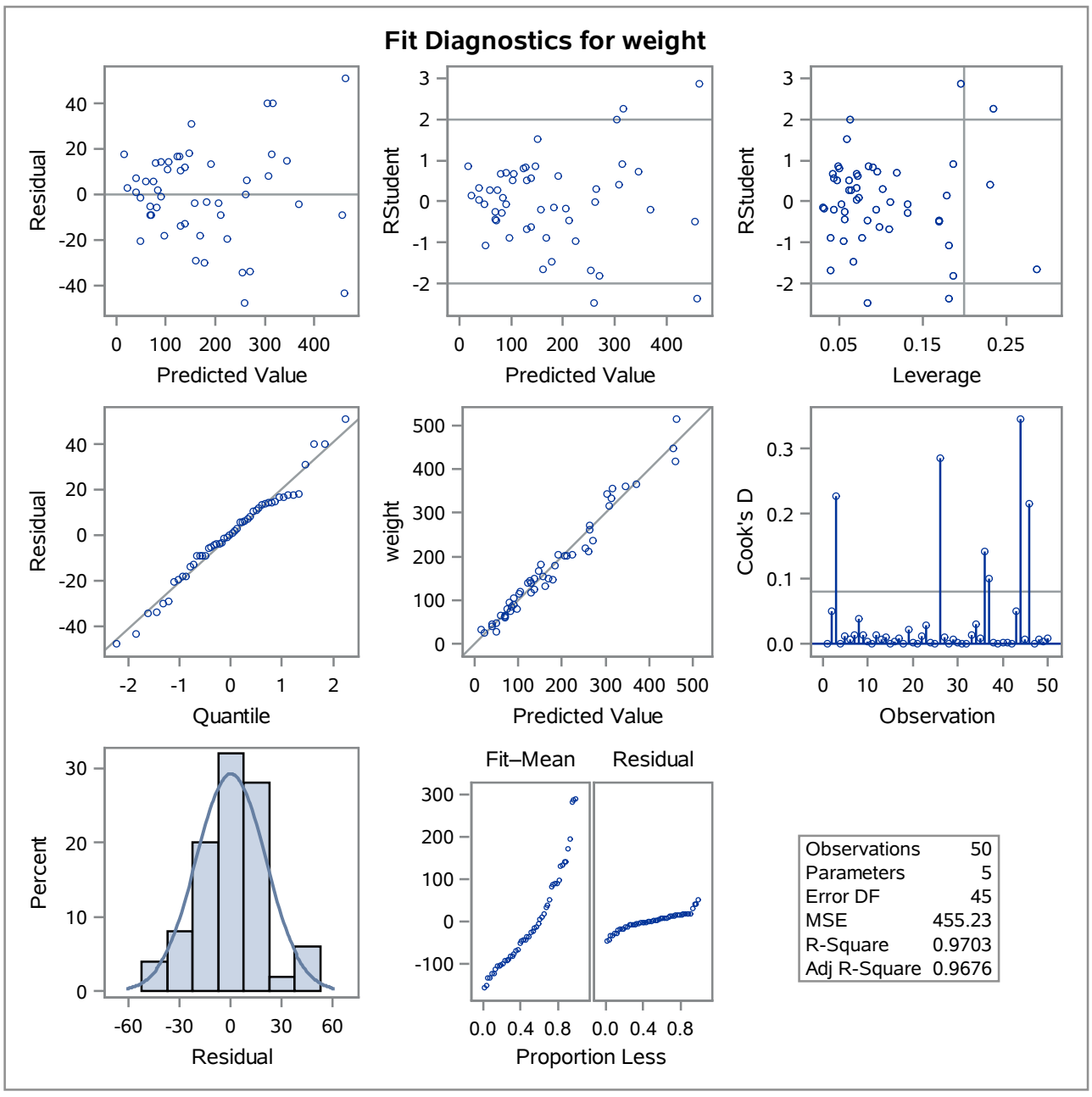
R-Square	Coeff Var	Root MSE	weight Mean
0.970287	12.25366	21.33608	174.1200

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	-42.58749126	B	7.72330702	-5.51	<.0001	-58.14303010	-27.03195242
chest*chest	0.12656138		0.01036679	12.21	<.0001	0.10568160	0.14744116
age	1.64485466	B	0.37016568	4.44	<.0001	0.89930270	2.39040662
gender F	14.26653407	B	12.42471532	1.15	0.2569	-10.75812717	39.29119530
gender M	0.00000000	B	.	.	.	.	.
age*gender F	-1.00427258	B	0.30034524	-3.34	0.0017	-1.60919895	-0.39934622
age*gender M	0.00000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

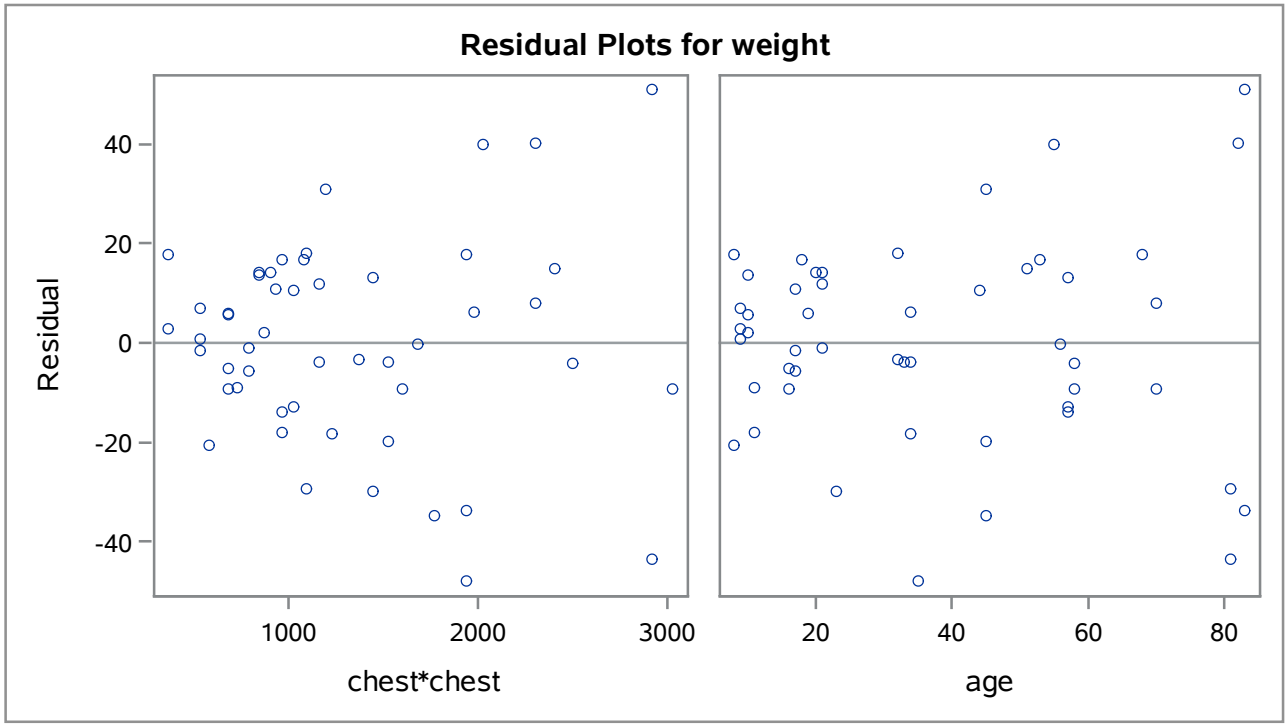
The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight



Model 7: Chest Group, Age, Gender, and Interaction

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
gender	2	F M
chest_group	3	L M S

The GLM Procedure

Dependent Variable: weight

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	628315.5782	125663.1156	90.44	<.0001
Error	44	61133.7018	1389.4023		
Corrected Total	49	689449.2800			

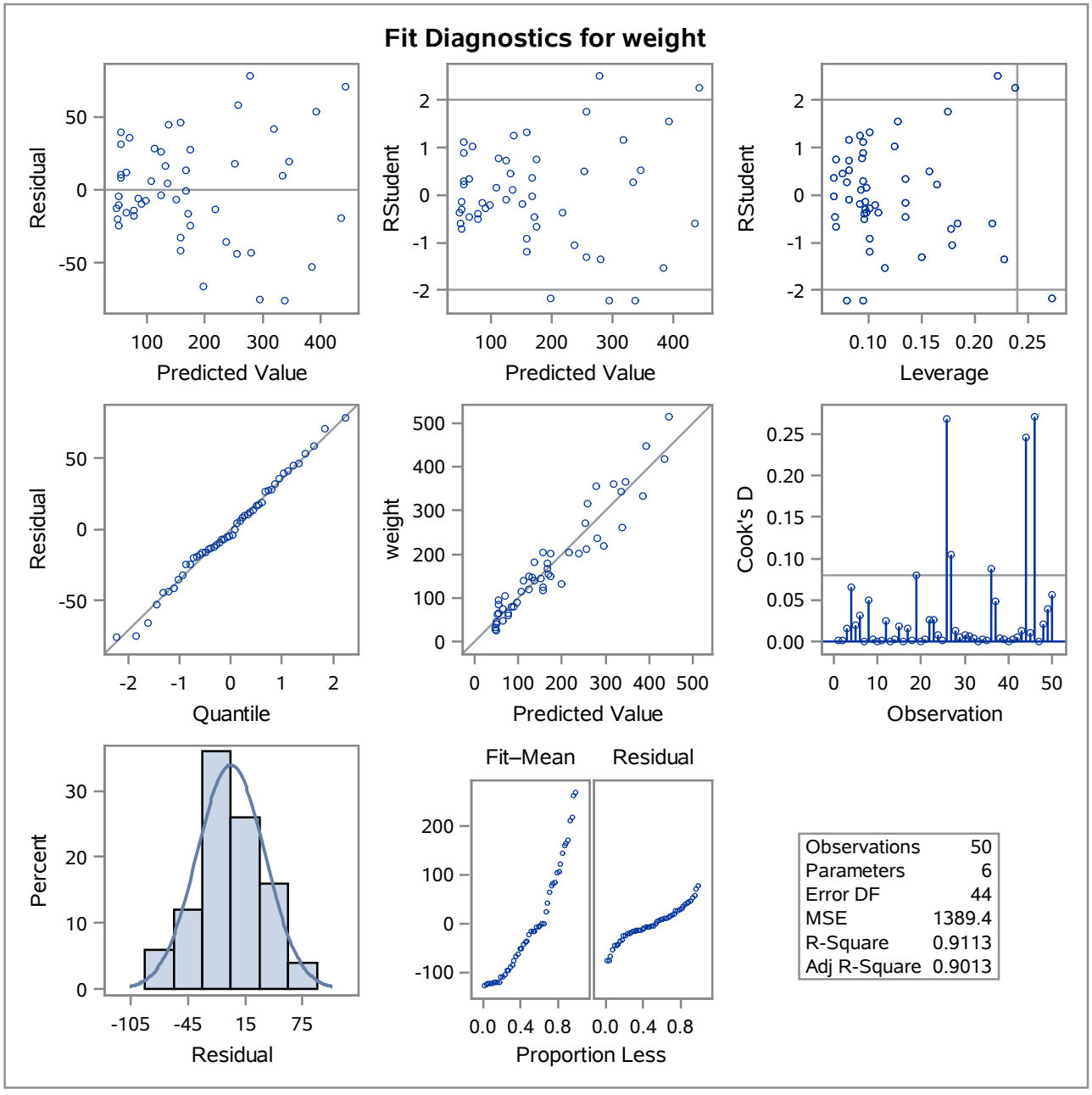
R-Square	Coeff Var	Root MSE	weight Mean
0.911330	21.40747	37.27469	174.1200

Parameter	Estimate		Standard Error	t Value	Pr > |t|	95% Confidence Limits	
Intercept	15.5874925	B	13.23678372	1.18	0.2453	-11.0894922	42.2644772
chest_group L	104.4098861	B	26.41756635	3.95	0.0003	51.1687795	157.6509928
chest_group M	26.3543449	B	16.74610016	1.57	0.1227	-7.3952024	60.1038921
chest_group S	0.0000000	B	.	.	.	.	.
age	3.8966377	B	0.51539593	7.56	<.0001	2.8579254	4.9353499
gender F	19.7787128	B	22.54877848	0.88	0.3852	-25.6653642	65.2227898
gender M	0.0000000	B	.	.	.	.	.
age*gender F	-2.2117813	B	0.48460910	-4.56	<.0001	-3.1884468	-1.2351158
age*gender M	0.0000000	B	.	.	.	.	.

Note: The X'X matrix has been found to be singular, and a generalized inverse was used to solve the normal equations. Terms whose estimates are followed by the letter 'B' are not uniquely estimable.

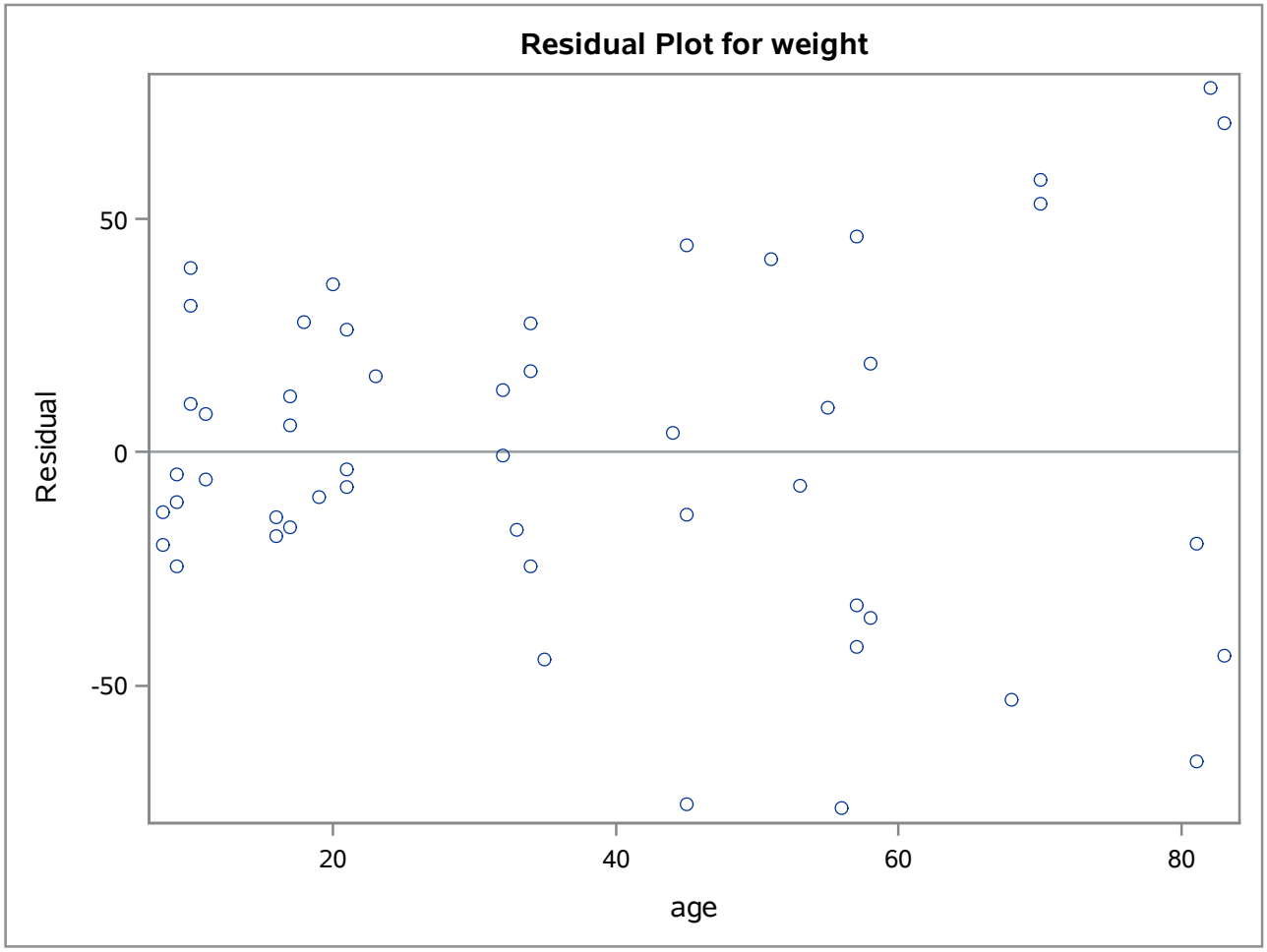
The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight



The GLM Procedure

Dependent Variable: weight