**The SAS System** 19:27 Wednesday, November 27, 2019 **1**

**Obs ID Sex Group Days Fatmass FFM MuscleGlycogen COXIV GIRperkgFFMperinsulin**

**1** 1 1 1 0 43.1473 73.1527 517.538 1.37 2.6919

**2** 1 1 1 93 44.4567 72.8433 623.147 1.49 6.7656

**3** 1 1 1 96 44.4567 72.8433 726.587 1.88 6.1666

**4** 4 0 0 0 39.6760 51.3240 506.638 0.86 5.1617

**5** 4 0 0 93 38.2872 52.0128 766.439 1.12 6.2406

**6** 4 0 0 96 38.2448 51.9552 628.304 1.00 4.8547

**7** 6 1 0 0 49.7871 67.9129 519.121 1.05 4.6351

**8** 6 1 0 93 48.5135 68.3865 553.229 1.47 4.6936

**9** 6 1 0 96 49.7170 70.0830 832.371 1.58 4.4599

**10** 7 0 0 0 44.8836 54.4164 585.228 1.22 13.7358

**Obs TotalAdiponectin LogTotalAdiponectin**

**1** 2472.66 3.39316

**2** 1157.65 3.06358

**3** 1173.18 3.06936

**4** 1369.91 3.13669

**5** 1017.86 3.00769

**6** 1105.87 3.04371

**7** 1354.38 3.13174

**8** 795.24 2.90050

**9** 909.14 2.95863

**10** 11574.23 4.06349

**The SAS System** 19:27 Wednesday, November 27, 2019 **2**

**Obs ID Sex Group Days Fatmass FFM MuscleGlycogen COXIV GIRperkgFFMperinsulin TotalAdiponectin**

**1** 1 1 1 0 43.1473 73.1527 517.538 1.37 2.6919 2472.66

**2** 1 1 1 93 44.4567 72.8433 623.147 1.49 6.7656 1157.65

**3** 1 1 1 96 44.4567 72.8433 726.587 1.88 6.1666 1173.18

**4** 4 0 0 0 39.6760 51.3240 506.638 0.86 5.1617 1369.91

**5** 4 0 0 93 38.2872 52.0128 766.439 1.12 6.2406 1017.86

**6** 4 0 0 96 38.2448 51.9552 628.304 1.00 4.8547 1105.87

**7** 6 1 0 0 49.7871 67.9129 519.121 1.05 4.6351 1354.38

**8** 6 1 0 93 48.5135 68.3865 553.229 1.47 4.6936 795.24

**9** 6 1 0 96 49.7170 70.0830 832.371 1.58 4.4599 909.14

**10** 7 0 0 0 44.8836 54.4164 585.228 1.22 13.7358 11574.23

**Obs LogTotalAdiponectin Fatmass\_cent Adiponectin\_cent MuscleGlycogen\_cent**

**1** 3.39316 2.4673 -1537.73 -77.868

**2** 3.06358 3.7767 -2852.75 27.741

**3** 3.06936 3.7767 -2837.22 131.181

**4** 3.13669 -1.0040 -2640.48 -88.768

**5** 3.00769 -2.3928 -2992.53 171.033

**6** 3.04371 -2.4352 -2904.52 32.898

**7** 3.13174 9.1071 -2656.01 -76.285

**8** 2.90050 7.8335 -3215.16 -42.176

**9** 2.95863 9.0370 -3101.26 236.965

**10** 4.06349 4.2036 7563.84 -10.177

**Unstructured** 19:27 Wednesday, November 27, 2019 **3**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structure** Unstructured

**Subject Effects** ID, ID

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 7

**Columns in X** 6

**Columns in Z per Subject** 1

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 2 450.13938489 0.00009008

**2** 1 450.13535799 0.00000010

**3** 1 450.13535325 0.00000000

Convergence criteria met but final Hessian is not positive definite.

**Unstructured** 19:27 Wednesday, November 27, 2019 **4**

**The Mixed Procedure**

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 3.0905 2.7405 -0.2771

**2** 2.7405 8.3027 2.1599

**3** -0.2771 2.1599 3.6192

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.5410 -0.08286

**2** 0.5410 1.0000 0.3940

**3** -0.08286 0.3940 1.0000

**Estimated G Matrix**

**Row Effect ID Col1**

**1** Intercept 1 9.0407

**Estimated G Correlation Matrix**

**Row Effect ID Col1**

**1** Intercept 1 1.0000

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 12.1312 11.7812 8.7636

**2** 11.7812 17.3434 11.2006

**3** 8.7636 11.2006 12.6599

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.8122 0.7072

**2** 0.8122 1.0000 0.7559

**3** 0.7072 0.7559 1.0000

**Unstructured** 19:27 Wednesday, November 27, 2019 **5**

**The Mixed Procedure**

**Covariance Parameter Estimates**

**Cov Parm Subject Estimate**

**UN(1,1)** ID 9.0407

**UN(1,1)** ID 3.0905

**UN(2,1)** ID 2.7405

**UN(2,2)** ID 8.3027

**UN(3,1)** ID -0.2771

**UN(3,2)** ID 2.1599

**UN(3,3)** ID 3.6192

**Fit Statistics**

**-2 Res Log Likelihood** 450.1

**AIC (Smaller is Better)** 464.1

**AICC (Smaller is Better)** 465.6

**BIC (Smaller is Better)** 473.9

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

6 54.48 <.0001

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.3341 0.7963 55 10.47 <.0001

**Sex** 1 5.4223 0.9633 55 5.63 <.0001

**Days\*Group** 0 0.01595 0.006144 55 2.60 0.0121

**Days\*Group** 1 0.01952 0.006408 55 3.05 0.0036

**Fatmass\_cent** -0.1333 0.08013 55 -1.66 0.1018

**MuscleGlycogen\_cent** -0.00393 0.001651 55 -2.38 0.0209

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**DenDF F Value Pr > F**

**Sex** 2 55 71.95 <.0001

**Days\*Group** 2 55 7.17 0.0017

**Fatmass\_cent** 1 55 2.77 0.1018

**MuscleGlycogen\_cent** 1 55 5.66 0.0209

**rand unstrucutred, main ARH(1)** 19:27 Wednesday, November 27, 2019 **6**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structures** Unstructured, Heterogeneous Autoregressive

**Subject Effects** ID, ID

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 5

**Columns in X** 6

**Columns in Z per Subject** 1

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 3 451.15469811 0.00260219

**2** 1 450.69008209 0.00071256

**3** 1 450.57040829 0.00016094

**4** 1 450.54367716 0.00000938

**5** 1 450.54222647 0.00000005

**6** 1 450.54221890 0.00000000

**rand unstrucutred, main ARH(1)** 19:27 Wednesday, November 27, 2019 **7**

**The Mixed Procedure**

Convergence criteria met.

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 5.3104 4.6589 2.2371

**2** 4.6589 10.6838 5.1300

**3** 2.2371 5.1300 6.4387

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.6185 0.3826

**2** 0.6185 1.0000 0.6185

**3** 0.3826 0.6185 1.0000

**Estimated G Matrix**

**Row Effect ID Col1**

**1** Intercept 1 6.5071

**Estimated G Correlation Matrix**

**Row Effect ID Col1**

**1** Intercept 1 1.0000

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 11.8175 11.1660 8.7442

**2** 11.1660 17.1909 11.6371

**3** 8.7442 11.6371 12.9458

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7834 0.7070

**2** 0.7834 1.0000 0.7801

**3** 0.7070 0.7801 1.0000

**rand unstrucutred, main ARH(1)** 19:27 Wednesday, November 27, 2019 **8**

**The Mixed Procedure**

**Covariance Parameter Estimates**

**Cov Parm Subject Estimate**

**UN(1,1)** ID 6.5071

**Var(1)** ID 5.3104

**Var(2)** ID 10.6838

**Var(3)** ID 6.4387

**ARH(1)** ID 0.6185

**Fit Statistics**

**-2 Res Log Likelihood** 450.5

**AIC (Smaller is Better)** 460.5

**AICC (Smaller is Better)** 461.3

**BIC (Smaller is Better)** 467.5

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

4 54.07 <.0001

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.3530 0.7977 55 10.47 <.0001

**Sex** 1 5.4398 0.9640 55 5.64 <.0001

**Days\*Group** 0 0.01603 0.006535 55 2.45 0.0174

**Days\*Group** 1 0.01976 0.006783 55 2.91 0.0052

**Fatmass\_cent** -0.1389 0.08053 55 -1.72 0.0902

**MuscleGlycogen\_cent** -0.00429 0.001640 55 -2.62 0.0115

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**DenDF F Value Pr > F**

**Sex** 2 55 71.94 <.0001

**Days\*Group** 2 55 6.47 0.0030

**Fatmass\_cent** 1 55 2.97 0.0902

**MuscleGlycogen\_cent** 1 55 6.85 0.0115

**rand unstrucutred, main ARH(1), Group specific var-cov matrix**19:27 Wednesday, November 27, 2019 **9**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structures** Unstructured, Heterogeneous Autoregressive

**Subject Effects** ID, ID

**Group Effect** Group

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 6

**Columns in X** 6

**Columns in Z per Subject** 2

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 3 450.62302114 0.00398105

**2** 1 449.89227610 0.00123059

**3** 2 449.67044789 0.00032609

**4** 2 449.61378052 0.00003408

19:27 Wednesday, November 27, 2019 **10 rand unstrucutred, main ARH(1), Group specific var-cov matrix**

**The Mixed Procedure**

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**5** 1 449.60836426 0.00000050

**6** 1 449.60828940 0.00000000

Convergence criteria met.

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 6.4521 6.0471 3.0579

**2** 6.0471 12.4066 6.2736

**3** 3.0579 6.2736 6.9445

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.6759 0.4568

**2** 0.6759 1.0000 0.6759

**3** 0.4568 0.6759 1.0000

**Estimated G Matrix**

**Row Effect ID Group Col1 Col2**

**1** Intercept 1 0 8.7362

**2** Intercept 1 1 3.1827

**Estimated G Correlation Matrix**

**Row Effect ID Group Col1 Col2**

**1** Intercept 1 0 1.0000

**2** Intercept 1 1 1.0000

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 9.6348 9.2298 6.2405

**2** 9.2298 15.5892 9.4563

**3** 6.2405 9.4563 10.1271

19:27 Wednesday, November 27, 2019 **11 rand unstrucutred, main ARH(1), Group specific var-cov matrix**

**The Mixed Procedure**

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7531 0.6318

**2** 0.7531 1.0000 0.7526

**3** 0.6318 0.7526 1.0000

**Covariance Parameter Estimates**

**Cov Parm Subject Group Estimate**

**UN(1,1)** ID Group 0 8.7362

**UN(1,1)** ID Group 1 3.1827

**Var(1)** ID 6.4521

**Var(2)** ID 12.4066

**Var(3)** ID 6.9445

**ARH(1)** ID 0.6759

**Fit Statistics**

**-2 Res Log Likelihood** 449.6

**AIC (Smaller is Better)** 461.6

**AICC (Smaller is Better)** 462.7

**BIC (Smaller is Better)** 470.0

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

5 55.00 <.0001

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.4074 0.7635 55 11.01 <.0001

**Sex** 1 5.3850 0.9152 55 5.88 <.0001

**Days\*Group** 0 0.01627 0.006570 55 2.48 0.0164

**Days\*Group** 1 0.02022 0.006805 55 2.97 0.0044

**Fatmass\_cent** -0.1309 0.07895 55 -1.66 0.1029

**MuscleGlycogen\_cent** -0.00450 0.001620 55 -2.78 0.0074

19:27 Wednesday, November 27, 2019 **12 rand unstrucutred, main ARH(1), Group specific var-cov matrix**

**The Mixed Procedure**

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**DenDF F Value Pr > F**

**Sex** 2 55 77.71 <.0001

**Days\*Group** 2 55 6.68 0.0025

**Fatmass\_cent** 1 55 2.75 0.1029

**MuscleGlycogen\_cent** 1 55 7.73 0.0074

**rand unstrucutred, main ANTE(1)** 19:27 Wednesday, November 27, 2019 **13**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structures** Unstructured, Ante-dependence

**Subject Effects** ID, ID

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 6

**Columns in X** 6

**Columns in Z per Subject** 1

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 3 450.68212006 0.00214018

**2** 1 450.28892620 0.00070771

**3** 1 450.16060929 0.00014201

**4** 1 450.13669854 0.00000863

**5** 1 450.13535933 0.00000004

**6** 1 450.13535325 0.00000000

**rand unstrucutred, main ANTE(1)** 19:27 Wednesday, November 27, 2019 **14**

**The Mixed Procedure**

Convergence criteria met.

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 5.7207 5.3707 2.3531

**2** 5.3707 10.9329 4.7901

**3** 2.3531 4.7901 6.2494

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.6791 0.3935

**2** 0.6791 1.0000 0.5795

**3** 0.3935 0.5795 1.0000

**Estimated G Matrix**

**Row Effect ID Col1**

**1** Intercept 1 6.4105

**Estimated G Correlation Matrix**

**Row Effect ID Col1**

**1** Intercept 1 1.0000

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 12.1312 11.7812 8.7636

**2** 11.7812 17.3434 11.2006

**3** 8.7636 11.2006 12.6599

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.8122 0.7072

**2** 0.8122 1.0000 0.7559

**3** 0.7072 0.7559 1.0000

**rand unstrucutred, main ANTE(1)** 19:27 Wednesday, November 27, 2019 **15**

**The Mixed Procedure**

**Covariance Parameter Estimates**

**Cov Parm Subject Estimate**

**UN(1,1)** ID 6.4105

**Var(1)** ID 5.7207

**Var(2)** ID 10.9329

**Var(3)** ID 6.2494

**Rho(1)** ID 0.6791

**Rho(2)** ID 0.5795

**Fit Statistics**

**-2 Res Log Likelihood** 450.1

**AIC (Smaller is Better)** 462.1

**AICC (Smaller is Better)** 463.2

**BIC (Smaller is Better)** 470.5

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

5 54.48 <.0001

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.3341 0.7963 55 10.47 <.0001

**Sex** 1 5.4223 0.9633 55 5.63 <.0001

**Days\*Group** 0 0.01595 0.006144 55 2.60 0.0121

**Days\*Group** 1 0.01952 0.006408 55 3.05 0.0036

**Fatmass\_cent** -0.1333 0.08013 55 -1.66 0.1018

**MuscleGlycogen\_cent** -0.00393 0.001651 55 -2.38 0.0209

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**DenDF F Value Pr > F**

**Sex** 2 55 71.95 <.0001

**Days\*Group** 2 55 7.17 0.0017

**Fatmass\_cent** 1 55 2.77 0.1018

**MuscleGlycogen\_cent** 1 55 5.66 0.0209

**rand unstrucutred, main csh** 19:27 Wednesday, November 27, 2019 **16**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structures** Unstructured, Heterogeneous Compound Symmetry

**Subject Effects** ID, ID

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 5

**Columns in X** 6

**Columns in Z per Subject** 1

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 2 457.76835931 0.02190595

**2** 1 453.76936096 0.00370176

**3** 1 453.13618305 0.00035871

**4** 1 453.06603263 0.00033687

**5** 1 453.00822061 0.00041133

**6** 1 452.92470320 0.00049931

**rand unstrucutred, main csh** 19:27 Wednesday, November 27, 2019 **17**

**The Mixed Procedure**

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**7** 3 452.87358161 0.00040904

**8** 1 452.78648209 0.00063577

**9** 1 452.76455061 0.00159398

**10** 3 452.32171783 .

**11** 1 452.26763304 0.00419538

**12** 3 452.26383283 .

**13** 1 451.82506046 0.00018261

**14** 1 451.79620534 0.00000150

**15** 1 451.79598018 0.00000000

Convergence criteria met.

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 12.0993 10.7205 9.4393

**2** 10.7205 16.6529 11.0740

**3** 9.4393 11.0740 12.9104

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7552 0.7552

**2** 0.7552 1.0000 0.7552

**3** 0.7552 0.7552 1.0000

**Estimated G Matrix**

**Row Effect ID Col1**

**1** Intercept 1

**Estimated G Correlation Matrix**

**Row Effect ID Col1**

**1** Intercept 1 1.0000

**rand unstrucutred, main csh** 19:27 Wednesday, November 27, 2019 **18**

**The Mixed Procedure**

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 12.0993 10.7205 9.4393

**2** 10.7205 16.6529 11.0740

**3** 9.4393 11.0740 12.9104

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7552 0.7552

**2** 0.7552 1.0000 0.7552

**3** 0.7552 0.7552 1.0000

**Estimated G matrix is not positive definite.**

**Covariance Parameter Estimates**

**Cov Parm Subject Estimate**

**UN(1,1)** ID 0

**Var(1)** ID 12.0993

**Var(2)** ID 16.6529

**Var(3)** ID 12.9104

**CSH** ID 0.7552

**Fit Statistics**

**-2 Res Log Likelihood** 451.8

**AIC (Smaller is Better)** 459.8

**AICC (Smaller is Better)** 460.3

**BIC (Smaller is Better)** 465.4

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

3 52.82 <.0001

**rand unstrucutred, main csh** 19:27 Wednesday, November 27, 2019 **19**

**The Mixed Procedure**

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.4310 0.8286 55 10.17 <.0001

**Sex** 1 5.5993 0.9991 55 5.60 <.0001

**Days\*Group** 0 0.01563 0.006295 55 2.48 0.0161

**Days\*Group** 1 0.01864 0.006698 55 2.78 0.0074

**Fatmass\_cent** -0.1573 0.08249 55 -1.91 0.0617

**MuscleGlycogen\_cent** -0.00436 0.001651 55 -2.64 0.0107

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**DenDF F Value Pr > F**

**Sex** 2 55 67.41 <.0001

**Days\*Group** 2 55 5.93 0.0047

**Fatmass\_cent** 1 55 3.64 0.0617

**MuscleGlycogen\_cent** 1 55 6.99 0.0107

**rand unstrucutred, main csh, Group specific var cov matrix**19:27 Wednesday, November 27, 2019 **20**

**The Mixed Procedure**

**Model Information**

**Data Set** WORK.EXERCISE\_D

**Dependent Variable** GIRperkgFFMperinsulin

**Covariance Structures** Unstructured, Heterogeneous Compound Symmetry

**Subject Effects** ID, ID

**Group Effect** Group

**Estimation Method** REML

**Residual Variance Method** None

**Fixed Effects SE Method** Model-Based

**Degrees of Freedom Method** Containment

**Class Level Information**

**Class Levels Values**

**ID** 30 1 10 11 19 21 22 23 24 25 27 29 31 4 40 41 42 43 47 49 53 55 56 6 62 63 64 65 7 8 9

**Group** 2 0 1

**Sex** 2 0 1

**Dimensions**

**Covariance Parameters** 6

**Columns in X** 6

**Columns in Z per Subject** 2

**Subjects** 30

**Max Obs per Subject** 3

**Number of Observations**

**Number of Observations Read** 93

**Number of Observations Used** 89

**Number of Observations Not Used** 4

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**0** 1 504.61293029

**1** 2 457.26689133 0.02030022

**2** 1 453.58258806 0.00322765

**3** 1 453.03261743 0.00044705

**4** 1 453.01232338 0.00086165

**5** 1 452.86109788 0.00129807

**rand unstrucutred, main csh, Group specific var cov matrix**19:27 Wednesday, November 27, 2019 **21**

**The Mixed Procedure**

**Iteration History**

**Iteration Evaluations -2 Res Log Like Criterion**

**6** 4 452.80604226 0.00053087

**7** 1 452.73059920 0.00082006

**8** 2 452.56110052 0.00394572

**9** 4 452.44879114 0.00186874

**10** 3 452.05377994 .

**11** 2 451.50863478 0.00015241

**12** 1 451.48445004 0.00000168

**13** 1 451.48419711 0.00000000

Convergence criteria met.

**Estimated R Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 10.6822 9.2780 7.9770

**2** 9.2780 15.2592 9.5340

**3** 7.9770 9.5340 11.2799

**Estimated R Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7267 0.7267

**2** 0.7267 1.0000 0.7267

**3** 0.7267 0.7267 1.0000

**Estimated G Matrix**

**Row Effect ID Group Col1 Col2**

**1** Intercept 1 0 3.2242

**2** Intercept 1 1

**Estimated G Correlation Matrix**

**Row Effect ID Group Col1 Col2**

**1** Intercept 1 0 1.0000

**2** Intercept 1 1 1.0000

**rand unstrucutred, main csh, Group specific var cov matrix**19:27 Wednesday, November 27, 2019 **22**

**The Mixed Procedure**

**Estimated V Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 10.6822 9.2780 7.9770

**2** 9.2780 15.2592 9.5340

**3** 7.9770 9.5340 11.2799

**Estimated V Correlation Matrix for ID 1**

**Row Col1 Col2 Col3**

**1** 1.0000 0.7267 0.7267

**2** 0.7267 1.0000 0.7267

**3** 0.7267 0.7267 1.0000

**Estimated G matrix is not positive definite.**

**Covariance Parameter Estimates**

**Cov Parm Subject Group Estimate**

**UN(1,1)** ID Group 0 3.2242

**UN(1,1)** ID Group 1 0

**Var(1)** ID 10.6822

**Var(2)** ID 15.2592

**Var(3)** ID 11.2799

**CSH** ID 0.7267

**Fit Statistics**

**-2 Res Log Likelihood** 451.5

**AIC (Smaller is Better)** 461.5

**AICC (Smaller is Better)** 462.3

**BIC (Smaller is Better)** 468.5

**Null Model Likelihood Ratio Test**

**DF Chi-Square Pr > ChiSq**

4 53.13 <.0001

**rand** 19:27 Wednesday, November 27, 2019 **23**

**unstrucutred, main csh, Group specific var cov matrixThe Mixed Procedure**

**Solution for Fixed Effects**

**Effect Group Sex Estimate**

**Standard**

**Error DF t Value Pr > |t|**

**Sex** 0 8.4816 0.8187 55 10.36 <.0001

**Sex** 1 5.6208 0.9833 55 5.72 <.0001

**Days\*Group** 0 0.01571 0.006262 55 2.51 0.0151

**Days\*Group** 1 0.01874 0.006676 55 2.81 0.0069

**Fatmass\_cent** -0.1565 0.08238 55 -1.90 0.0627

**MuscleGlycogen\_cent** -0.00446 0.001645 55 -2.71 0.0089

**Type 3 Tests of Fixed Effects**

**Effect**

**NumDF**

**DenDF F Value Pr > F**

**Sex** 2 55 69.06 <.0001

**Days\*Group** 2 55 6.01 0.0044

**Fatmass\_cent** 1 55 3.61 0.0627

**MuscleGlycogen\_cent** 1 55 7.35 0.0089