**General Linear Model**

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| *Between-Subjects Factors* |
|  | N |
| nt748 | 0 | 218 |
| 1 | 588 |
| 2 | 405 |
| nt414 | 0 | 594 |
| 1 | 524 |
| 2 | 93 |
| nt267 | 0 | 878 |
| 1 | 303 |
| 2 | 30 |
| q204x | 0 | 913 |
| 1 | 298 |

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| *Box's Test of Equality of Covariance Matricesa* |
| Box's M | 1663.189 |
| F | 1.493 |
| df1 | 1014 |
| df2 | 156721.415 |
| Sig. | .000 |

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| Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.a |
| a. Design: Intercept + nt748 + nt414 + nt267 + q204x |

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| *Multivariate Testsa* |
| Effect | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
| Intercept | Pillai's Trace | .798 | 391.418b | 12.000 | 1192.000 | .000 | .798 |
| Wilks' Lambda | .202 | 391.418b | 12.000 | 1192.000 | .000 | .798 |
| Hotelling's Trace | 3.940 | 391.418b | 12.000 | 1192.000 | .000 | .798 |
| Roy's Largest Root | 3.940 | 391.418b | 12.000 | 1192.000 | .000 | .798 |
| nt748 | Pillai's Trace | .046 | 2.319 | 24.000 | 2386.000 | .000 | .023 |
| Wilks' Lambda | .955 | 2.321b | 24.000 | 2384.000 | .000 | .023 |
| Hotelling's Trace | .047 | 2.323 | 24.000 | 2382.000 | .000 | .023 |
| Roy's Largest Root | .032 | 3.216c | 12.000 | 1193.000 | .000 | .031 |
| nt414 | Pillai's Trace | .064 | 3.283 | 24.000 | 2386.000 | .000 | .032 |
| Wilks' Lambda | .937 | 3.292b | 24.000 | 2384.000 | .000 | .032 |
| Hotelling's Trace | .067 | 3.302 | 24.000 | 2382.000 | .000 | .032 |
| Roy's Largest Root | .049 | 4.883c | 12.000 | 1193.000 | .000 | .047 |
| nt267 | Pillai's Trace | .058 | 2.992 | 24.000 | 2386.000 | .000 | .029 |
| Wilks' Lambda | .942 | 3.010b | 24.000 | 2384.000 | .000 | .029 |
| Hotelling's Trace | .061 | 3.027 | 24.000 | 2382.000 | .000 | .030 |
| Roy's Largest Root | .051 | 5.050c | 12.000 | 1193.000 | .000 | .048 |
| q204x | Pillai's Trace | .130 | 14.819b | 12.000 | 1192.000 | .000 | .130 |
| Wilks' Lambda | .870 | 14.819b | 12.000 | 1192.000 | .000 | .130 |
| Hotelling's Trace | .149 | 14.819b | 12.000 | 1192.000 | .000 | .130 |
| Roy's Largest Root | .149 | 14.819b | 12.000 | 1192.000 | .000 | .130 |

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| a. Design: Intercept + nt748 + nt414 + nt267 + q204x |
| b. Exact statistic |
| c. The statistic is an upper bound on F that yields a lower bound on the significance level. |

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| *Levene's Test of Equality of Error Variancesa* |
|  | F | df1 | df2 | Sig. |
| BW-dir | 1.398 | 17 | 1193 | .128 |
| Wean dir | 1.151 | 17 | 1193 | .299 |
| Mature wt | 2.350 | 17 | 1193 | .002 |
| ADG | .778 | 17 | 1193 | .720 |
| FCR | 1.138 | 17 | 1193 | .311 |
| Fat | 2.265 | 17 | 1193 | .002 |
| EMA | 1.043 | 17 | 1193 | .407 |
| Marb | 1.649 | 17 | 1193 | .046 |
| afc\_ebv | 1.052 | 17 | 1193 | .398 |
| icp\_ebv | 1.465 | 17 | 1193 | .099 |
| skr\_ebv | 2.275 | 17 | 1193 | .002 |
| Longevity | .906 | 17 | 1193 | .566 |

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| Tests the null hypothesis that the error variance of the dependent variable is equal across groups.a |
| a. Design: Intercept + nt748 + nt414 + nt267 + q204x |

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| *Tests of Between-Subjects Effects* |
| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| Corrected Model | BW-dir | 62.122a | 7 | 8.875 | 4.358 | .000 | .025 |
| Wean dir | 780.459b | 7 | 111.494 | 3.015 | .004 | .017 |
| Mature wt | 3371.744c | 7 | 481.678 | 2.294 | .025 | .013 |
| ADG | 42333.006d | 7 | 6047.572 | 1.742 | .096 | .010 |
| FCR | 19631.477e | 7 | 2804.497 | 6.553 | .000 | .037 |
| Fat | 113.709f | 7 | 16.244 | 5.856 | .000 | .033 |
| EMA | 92.286g | 7 | 13.184 | 6.088 | .000 | .034 |
| Marb | 37.562h | 7 | 5.366 | 6.341 | .000 | .036 |
| afc\_ebv | 3152.142i | 7 | 450.306 | 5.117 | .000 | .029 |
| icp\_ebv | 422.952j | 7 | 60.422 | 7.129 | .000 | .040 |
| skr\_ebv | 865.499k | 7 | 123.643 | 1.739 | .096 | .010 |
| Longevity | 1370.416l | 7 | 195.774 | 9.805 | .000 | .054 |
| Intercept | BW-dir | 169.482 | 1 | 169.482 | 83.221 | .000 | .065 |
| Wean dir | 26960.333 | 1 | 26960.333 | 728.968 | .000 | .377 |
| Mature wt | 17235.898 | 1 | 17235.898 | 82.077 | .000 | .064 |
| ADG | 1478699.274 | 1 | 1478699.274 | 425.915 | .000 | .261 |
| FCR | 243644.946 | 1 | 243644.946 | 569.271 | .000 | .321 |
| Fat | 42.016 | 1 | 42.016 | 15.147 | .000 | .012 |
| EMA | 256.542 | 1 | 256.542 | 118.465 | .000 | .090 |
| Marb | 1.407 | 1 | 1.407 | 1.662 | .198 | .001 |
| afc\_ebv | 6350.788 | 1 | 6350.788 | 72.167 | .000 | .057 |
| icp\_ebv | 988.565 | 1 | 988.565 | 116.646 | .000 | .088 |
| skr\_ebv | 17694.261 | 1 | 17694.261 | 248.878 | .000 | .171 |
| Longevity | 79937.516 | 1 | 79937.516 | 4003.455 | .000 | .769 |
| nt748 | BW-dir | 9.131 | 2 | 4.565 | 2.242 | .107 | .004 |
| Wean dir | 213.740 | 2 | 106.870 | 2.890 | .056 | .005 |
| Mature wt | 933.785 | 2 | 466.893 | 2.223 | .109 | .004 |
| ADG | 32813.752 | 2 | 16406.876 | 4.726 | .009 | .008 |
| FCR | 6548.207 | 2 | 3274.104 | 7.650 | .000 | .013 |
| Fat | 4.753 | 2 | 2.376 | .857 | .425 | .001 |
| EMA | 8.970 | 2 | 4.485 | 2.071 | .127 | .003 |
| Marb | 7.259 | 2 | 3.630 | 4.289 | .014 | .007 |
| afc\_ebv | 485.466 | 2 | 242.733 | 2.758 | .064 | .005 |
| icp\_ebv | 3.120 | 2 | 1.560 | .184 | .832 | .000 |
| skr\_ebv | 82.871 | 2 | 41.436 | .583 | .558 | .001 |
| Longevity | 136.988 | 2 | 68.494 | 3.430 | .033 | .006 |
| nt414 | BW-dir | 1.253 | 2 | .627 | .308 | .735 | .001 |
| Wean dir | 153.589 | 2 | 76.794 | 2.076 | .126 | .003 |
| Mature wt | 1117.850 | 2 | 558.925 | 2.662 | .070 | .004 |
| ADG | 21192.855 | 2 | 10596.428 | 3.052 | .048 | .005 |
| FCR | 6418.384 | 2 | 3209.192 | 7.498 | .001 | .012 |
| Fat | 2.495 | 2 | 1.247 | .450 | .638 | .001 |
| EMA | 9.655 | 2 | 4.827 | 2.229 | .108 | .004 |
| Marb | 7.674 | 2 | 3.837 | 4.534 | .011 | .007 |
| afc\_ebv | 226.838 | 2 | 113.419 | 1.289 | .276 | .002 |
| icp\_ebv | 115.002 | 2 | 57.501 | 6.785 | .001 | .011 |
| skr\_ebv | 51.746 | 2 | 25.873 | .364 | .695 | .001 |
| Longevity | 400.845 | 2 | 200.423 | 10.038 | .000 | .016 |
| nt267 | BW-dir | 2.589 | 2 | 1.295 | .636 | .530 | .001 |
| Wean dir | 60.829 | 2 | 30.415 | .822 | .440 | .001 |
| Mature wt | 678.514 | 2 | 339.257 | 1.616 | .199 | .003 |
| ADG | 10236.163 | 2 | 5118.081 | 1.474 | .229 | .002 |
| FCR | 1699.268 | 2 | 849.634 | 1.985 | .138 | .003 |
| Fat | .627 | 2 | .313 | .113 | .893 | .000 |
| EMA | 18.845 | 2 | 9.422 | 4.351 | .013 | .007 |
| Marb | 4.157 | 2 | 2.078 | 2.456 | .086 | .004 |
| afc\_ebv | 703.154 | 2 | 351.577 | 3.995 | .019 | .007 |
| icp\_ebv | 84.723 | 2 | 42.361 | 4.998 | .007 | .008 |
| skr\_ebv | 123.981 | 2 | 61.990 | .872 | .418 | .001 |
| Longevity | 379.502 | 2 | 189.751 | 9.503 | .000 | .016 |
| q204x | BW-dir | 34.223 | 1 | 34.223 | 16.804 | .000 | .014 |
| Wean dir | 300.615 | 1 | 300.615 | 8.128 | .004 | .007 |
| Mature wt | 621.856 | 1 | 621.856 | 2.961 | .086 | .002 |
| ADG | 1816.345 | 1 | 1816.345 | .523 | .470 | .000 |
| FCR | 6636.518 | 1 | 6636.518 | 15.506 | .000 | .013 |
| Fat | 96.594 | 1 | 96.594 | 34.823 | .000 | .028 |
| EMA | 25.839 | 1 | 25.839 | 11.932 | .001 | .010 |
| Marb | 25.364 | 1 | 25.364 | 29.971 | .000 | .024 |
| afc\_ebv | 1013.633 | 1 | 1013.633 | 11.518 | .001 | .009 |
| icp\_ebv | 289.316 | 1 | 289.316 | 34.138 | .000 | .028 |
| skr\_ebv | 308.581 | 1 | 308.581 | 4.340 | .037 | .004 |
| Longevity | 547.815 | 1 | 547.815 | 27.436 | .000 | .022 |
| Error | BW-dir | 2449.961 | 1203 | 2.037 |  |  |  |
| Wean dir | 44492.070 | 1203 | 36.984 |  |  |  |
| Mature wt | 252625.975 | 1203 | 209.997 |  |  |  |
| ADG | 4176592.194 | 1203 | 3471.814 |  |  |  |
| FCR | 514877.470 | 1203 | 427.995 |  |  |  |
| Fat | 3336.924 | 1203 | 2.774 |  |  |  |
| EMA | 2605.163 | 1203 | 2.166 |  |  |  |
| Marb | 1018.090 | 1203 | .846 |  |  |  |
| afc\_ebv | 105864.868 | 1203 | 88.001 |  |  |  |
| icp\_ebv | 10195.319 | 1203 | 8.475 |  |  |  |
| skr\_ebv | 85528.774 | 1203 | 71.096 |  |  |  |
| Longevity | 24020.458 | 1203 | 19.967 |  |  |  |
| Total | BW-dir | 4391.812 | 1211 |  |  |  |  |
| Wean dir | 359540.645 | 1211 |  |  |  |  |
| Mature wt | 450288.439 | 1211 |  |  |  |  |
| ADG | 23435357.685 | 1211 |  |  |  |  |
| FCR | 3697719.853 | 1211 |  |  |  |  |
| Fat | 3591.802 | 1211 |  |  |  |  |
| EMA | 4189.487 | 1211 |  |  |  |  |
| Marb | 1055.935 | 1211 |  |  |  |  |
| afc\_ebv | 190013.739 | 1211 |  |  |  |  |
| icp\_ebv | 18985.483 | 1211 |  |  |  |  |
| skr\_ebv | 319043.149 | 1211 |  |  |  |  |
| Longevity | 989017.632 | 1211 |  |  |  |  |
| Corrected Total | BW-dir | 2512.084 | 1210 |  |  |  |  |
| Wean dir | 45272.529 | 1210 |  |  |  |  |
| Mature wt | 255997.719 | 1210 |  |  |  |  |
| ADG | 4218925.200 | 1210 |  |  |  |  |
| FCR | 534508.947 | 1210 |  |  |  |  |
| Fat | 3450.633 | 1210 |  |  |  |  |
| EMA | 2697.450 | 1210 |  |  |  |  |
| Marb | 1055.652 | 1210 |  |  |  |  |
| afc\_ebv | 109017.010 | 1210 |  |  |  |  |
| icp\_ebv | 10618.270 | 1210 |  |  |  |  |
| skr\_ebv | 86394.272 | 1210 |  |  |  |  |
| Longevity | 25390.875 | 1210 |  |  |  |  |

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| a. R Squared = .025 (Adjusted R Squared = .019) |
| b. R Squared = .017 (Adjusted R Squared = .012) |
| c. R Squared = .013 (Adjusted R Squared = .007) |
| d. R Squared = .010 (Adjusted R Squared = .004) |
| e. R Squared = .037 (Adjusted R Squared = .031) |
| f. R Squared = .033 (Adjusted R Squared = .027) |
| g. R Squared = .034 (Adjusted R Squared = .029) |
| h. R Squared = .036 (Adjusted R Squared = .030) |
| i. R Squared = .029 (Adjusted R Squared = .023) |
| j. R Squared = .040 (Adjusted R Squared = .034) |
| k. R Squared = .010 (Adjusted R Squared = .004) |
| l. R Squared = .054 (Adjusted R Squared = .048) |

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| *Parameter Estimates* |
| Dependent Variable | Parameter | B | Std. Error | t | Sig. | 95% Confidence Interval | Partial Eta Squared |
| Lower Bound | Upper Bound |
| BW-dir | Intercept | 1.270 | .337 | 3.774 | .000 | .610 | 1.931 | .012 |
| [nt748=0] | -.098 | .175 | -.561 | .575 | -.442 | .245 | .000 |
| [nt748=1] | -.219 | .114 | -1.928 | .054 | -.442 | .004 | .003 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | .161 | .223 | .722 | .471 | -.277 | .599 | .000 |
| [nt414=1] | .139 | .180 | .771 | .441 | -.215 | .493 | .000 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | .334 | .300 | 1.114 | .266 | -.254 | .923 | .001 |
| [nt267=1] | .313 | .285 | 1.097 | .273 | -.247 | .873 | .001 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -.478 | .117 | -4.099 | .000 | -.707 | -.249 | .014 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| Wean dir | Intercept | 14.894 | 1.435 | 10.382 | .000 | 12.079 | 17.708 | .082 |
| [nt748=0] | -.597 | .746 | -.800 | .424 | -2.061 | .867 | .001 |
| [nt748=1] | -1.092 | .484 | -2.254 | .024 | -2.042 | -.141 | .004 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | 1.424 | .950 | 1.498 | .134 | -.441 | 3.289 | .002 |
| [nt414=1] | 1.545 | .768 | 2.012 | .044 | .038 | 3.052 | .003 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 1.620 | 1.279 | 1.266 | .206 | -.890 | 4.129 | .001 |
| [nt267=1] | 1.518 | 1.216 | 1.248 | .212 | -.868 | 3.903 | .001 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -1.417 | .497 | -2.851 | .004 | -2.391 | -.442 | .007 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| Mature wt | Intercept | 10.307 | 3.418 | 3.015 | .003 | 3.600 | 17.013 | .008 |
| [nt748=0] | .925 | 1.778 | .520 | .603 | -2.563 | 4.413 | .000 |
| [nt748=1] | -1.428 | 1.154 | -1.237 | .216 | -3.693 | .837 | .001 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | 1.393 | 2.265 | .615 | .539 | -3.050 | 5.837 | .000 |
| [nt414=1] | 3.185 | 1.830 | 1.740 | .082 | -.406 | 6.776 | .003 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 2.011 | 3.048 | .660 | .509 | -3.968 | 7.990 | .000 |
| [nt267=1] | 3.609 | 2.897 | 1.246 | .213 | -2.075 | 9.293 | .001 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -2.037 | 1.184 | -1.721 | .086 | -4.360 | .285 | .002 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| ADG | Intercept | 100.356 | 13.899 | 7.220 | .000 | 73.087 | 127.625 | .042 |
| [nt748=0] | -8.271 | 7.229 | -1.144 | .253 | -22.453 | 5.912 | .001 |
| [nt748=1] | -13.728 | 4.694 | -2.925 | .004 | -22.938 | -4.519 | .007 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | 21.391 | 9.209 | 2.323 | .020 | 3.324 | 39.458 | .004 |
| [nt414=1] | 17.875 | 7.443 | 2.402 | .016 | 3.273 | 32.477 | .005 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 19.934 | 12.392 | 1.609 | .108 | -4.377 | 44.246 | .002 |
| [nt267=1] | 14.841 | 11.779 | 1.260 | .208 | -8.270 | 37.951 | .001 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -3.482 | 4.814 | -.723 | .470 | -12.927 | 5.963 | .000 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| FCR | Intercept | -42.882 | 4.880 | -8.787 | .000 | -52.457 | -33.308 | .060 |
| [nt748=0] | 7.675 | 2.538 | 3.024 | .003 | 2.695 | 12.654 | .008 |
| [nt748=1] | 6.332 | 1.648 | 3.842 | .000 | 3.098 | 9.565 | .012 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | -11.188 | 3.233 | -3.460 | .001 | -17.531 | -4.844 | .010 |
| [nt414=1] | -10.048 | 2.613 | -3.845 | .000 | -15.175 | -4.921 | .012 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | -8.490 | 4.351 | -1.951 | .051 | -17.026 | .046 | .003 |
| [nt267=1] | -6.832 | 4.136 | -1.652 | .099 | -14.946 | 1.283 | .002 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | 6.656 | 1.690 | 3.938 | .000 | 3.340 | 9.972 | .013 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| Fat | Intercept | -1.000 | .393 | -2.544 | .011 | -1.770 | -.229 | .005 |
| [nt748=0] | -.238 | .204 | -1.166 | .244 | -.639 | .163 | .001 |
| [nt748=1] | -.038 | .133 | -.290 | .772 | -.299 | .222 | .000 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | -.060 | .260 | -.232 | .817 | -.571 | .450 | .000 |
| [nt414=1] | .066 | .210 | .314 | .753 | -.347 | .479 | .000 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | .132 | .350 | .376 | .707 | -.555 | .819 | .000 |
| [nt267=1] | .079 | .333 | .238 | .812 | -.574 | .732 | .000 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | .803 | .136 | 5.901 | .000 | .536 | 1.070 | .028 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| EMA | Intercept | 2.214 | .347 | 6.379 | .000 | 1.533 | 2.895 | .033 |
| [nt748=0] | .078 | .181 | .432 | .666 | -.276 | .432 | .000 |
| [nt748=1] | -.147 | .117 | -1.251 | .211 | -.377 | .083 | .001 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | -.123 | .230 | -.534 | .593 | -.574 | .328 | .000 |
| [nt414=1] | .127 | .186 | .682 | .496 | -.238 | .491 | .000 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | -.811 | .309 | -2.620 | .009 | -1.418 | -.204 | .006 |
| [nt267=1] | -.562 | .294 | -1.909 | .057 | -1.139 | .016 | .003 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -.415 | .120 | -3.454 | .001 | -.651 | -.179 | .010 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| Marb | Intercept | .089 | .217 | .412 | .681 | -.336 | .515 | .000 |
| [nt748=0] | .302 | .113 | 2.672 | .008 | .080 | .523 | .006 |
| [nt748=1] | .193 | .073 | 2.631 | .009 | .049 | .337 | .006 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | -.328 | .144 | -2.281 | .023 | -.610 | -.046 | .004 |
| [nt414=1] | -.095 | .116 | -.817 | .414 | -.323 | .133 | .001 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | -.370 | .193 | -1.914 | .056 | -.750 | .009 | .003 |
| [nt267=1] | -.247 | .184 | -1.345 | .179 | -.608 | .113 | .002 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | .411 | .075 | 5.475 | .000 | .264 | .559 | .024 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| afc\_ebv | Intercept | -8.397 | 2.213 | -3.795 | .000 | -12.738 | -4.055 | .012 |
| [nt748=0] | 2.044 | 1.151 | 1.776 | .076 | -.214 | 4.302 | .003 |
| [nt748=1] | -.032 | .747 | -.043 | .965 | -1.499 | 1.434 | .000 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | -2.154 | 1.466 | -1.469 | .142 | -5.030 | .722 | .002 |
| [nt414=1] | -1.029 | 1.185 | -.868 | .385 | -3.354 | 1.296 | .001 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 3.078 | 1.973 | 1.560 | .119 | -.793 | 6.949 | .002 |
| [nt267=1] | 4.386 | 1.875 | 2.339 | .020 | .707 | 8.066 | .005 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -2.601 | .766 | -3.394 | .001 | -4.105 | -1.098 | .009 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| icp\_ebv | Intercept | -3.550 | .687 | -5.169 | .000 | -4.897 | -2.202 | .022 |
| [nt748=0] | -.183 | .357 | -.512 | .609 | -.883 | .518 | .000 |
| [nt748=1] | -.134 | .232 | -.578 | .563 | -.589 | .321 | .000 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | .727 | .455 | 1.598 | .110 | -.165 | 1.620 | .002 |
| [nt414=1] | -.183 | .368 | -.498 | .619 | -.905 | .538 | .000 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 1.918 | .612 | 3.133 | .002 | .717 | 3.119 | .008 |
| [nt267=1] | 1.593 | .582 | 2.737 | .006 | .451 | 2.735 | .006 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -1.390 | .238 | -5.843 | .000 | -1.856 | -.923 | .028 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| skr\_ebv | Intercept | 10.589 | 1.989 | 5.324 | .000 | 6.687 | 14.491 | .023 |
| [nt748=0] | -.106 | 1.034 | -.103 | .918 | -2.136 | 1.923 | .000 |
| [nt748=1] | -.599 | .672 | -.891 | .373 | -1.917 | .719 | .001 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | 1.087 | 1.318 | .825 | .410 | -1.499 | 3.672 | .001 |
| [nt414=1] | .604 | 1.065 | .567 | .571 | -1.486 | 2.694 | .000 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 1.931 | 1.773 | 1.089 | .276 | -1.548 | 5.410 | .001 |
| [nt267=1] | 1.219 | 1.686 | .723 | .470 | -2.088 | 4.527 | .000 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | 1.435 | .689 | 2.083 | .037 | .084 | 2.787 | .004 |
| [q204x=1] | 0a | . | . | . | . | . | . |
| Longevity | Intercept | 24.363 | 1.054 | 23.114 | .000 | 22.295 | 26.431 | .308 |
| [nt748=0] | .305 | .548 | .556 | .578 | -.771 | 1.380 | .000 |
| [nt748=1] | -.573 | .356 | -1.610 | .108 | -1.272 | .125 | .002 |
| [nt748=2] | 0a | . | . | . | . | . | . |
| [nt414=0] | 3.043 | .698 | 4.357 | .000 | 1.673 | 4.413 | .016 |
| [nt414=1] | 1.726 | .564 | 3.058 | .002 | .619 | 2.833 | .008 |
| [nt414=2] | 0a | . | . | . | . | . | . |
| [nt267=0] | 3.641 | .940 | 3.875 | .000 | 1.797 | 5.485 | .012 |
| [nt267=1] | 2.523 | .893 | 2.825 | .005 | .771 | 4.276 | .007 |
| [nt267=2] | 0a | . | . | . | . | . | . |
| [q204x=0] | -1.912 | .365 | -5.238 | .000 | -2.629 | -1.196 | .022 |
| [q204x=1] | 0a | . | . | . | . | . | . |

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| a. This parameter is set to zero because it is redundant. |

**Estimated Marginal Means**

**1. nt748**

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| --- |
| *Estimates* |
| Dependent Variable | nt748 | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1.249 | .207 | .844 | 1.654 |
| 1 | 1.128 | .148 | .838 | 1.418 |
| 2 | 1.347 | .108 | 1.136 | 1.558 |
| Wean dir | 0 | 15.624 | .880 | 13.897 | 17.351 |
| 1 | 15.129 | .630 | 13.893 | 16.366 |
| 2 | 16.221 | .458 | 15.322 | 17.120 |
| Mature wt | 0 | 13.612 | 2.098 | 9.496 | 17.728 |
| 1 | 11.259 | 1.502 | 8.313 | 14.206 |
| 2 | 12.687 | 1.092 | 10.545 | 14.830 |
| ADG | 0 | 115.025 | 8.530 | 98.289 | 131.761 |
| 1 | 109.567 | 6.107 | 97.587 | 121.548 |
| 2 | 123.295 | 4.439 | 114.586 | 132.005 |
| FCR | 0 | -44.065 | 2.995 | -49.942 | -38.189 |
| 1 | -45.408 | 2.144 | -49.615 | -41.202 |
| 2 | -51.740 | 1.559 | -54.798 | -48.682 |
| Fat | 0 | -.764 | .241 | -1.237 | -.291 |
| 1 | -.564 | .173 | -.903 | -.226 |
| 2 | -.526 | .125 | -.772 | -.280 |
| EMA | 0 | 1.628 | .213 | 1.210 | 2.046 |
| 1 | 1.404 | .153 | 1.104 | 1.703 |
| 2 | 1.550 | .111 | 1.333 | 1.768 |
| Marb | 0 | .250 | .133 | -.011 | .511 |
| 1 | .141 | .095 | -.046 | .328 |
| 2 | -.052 | .069 | -.188 | .084 |
| afc\_ebv | 0 | -6.226 | 1.358 | -8.890 | -3.561 |
| 1 | -8.303 | .972 | -10.210 | -6.395 |
| 2 | -8.270 | .707 | -9.657 | -6.884 |
| icp\_ebv | 0 | -3.075 | .421 | -3.902 | -2.249 |
| 1 | -3.027 | .302 | -3.619 | -2.435 |
| 2 | -2.893 | .219 | -3.323 | -2.462 |
| skr\_ebv | 0 | 12.814 | 1.221 | 10.419 | 15.209 |
| 1 | 12.321 | .874 | 10.607 | 14.036 |
| 2 | 12.920 | .635 | 11.674 | 14.166 |
| Longevity | 0 | 27.356 | .647 | 26.087 | 28.626 |
| 1 | 26.478 | .463 | 25.570 | 27.387 |
| 2 | 27.051 | .337 | 26.391 | 27.712 |

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| --- |
| *Pairwise Comparisons* |
| Dependent Variable | (I) nt748 | (J) nt748 | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1 | .121 | .135 | .369 | -.143 | .385 |
| 2 | -.098 | .175 | .575 | -.442 | .245 |
| 1 | 0 | -.121 | .135 | .369 | -.385 | .143 |
| 2 | -.219 | .114 | .054 | -.442 | .004 |
| 2 | 0 | .098 | .175 | .575 | -.245 | .442 |
| 1 | .219 | .114 | .054 | -.004 | .442 |
| Wean dir | 0 | 1 | .495 | .573 | .388 | -.630 | 1.619 |
| 2 | -.597 | .746 | .424 | -2.061 | .867 |
| 1 | 0 | -.495 | .573 | .388 | -1.619 | .630 |
| 2 | -1.092\* | .484 | .024 | -2.042 | -.141 |
| 2 | 0 | .597 | .746 | .424 | -.867 | 2.061 |
| 1 | 1.092\* | .484 | .024 | .141 | 2.042 |
| Mature wt | 0 | 1 | 2.353 | 1.366 | .085 | -.327 | 5.033 |
| 2 | .925 | 1.778 | .603 | -2.563 | 4.413 |
| 1 | 0 | -2.353 | 1.366 | .085 | -5.033 | .327 |
| 2 | -1.428 | 1.154 | .216 | -3.693 | .837 |
| 2 | 0 | -.925 | 1.778 | .603 | -4.413 | 2.563 |
| 1 | 1.428 | 1.154 | .216 | -.837 | 3.693 |
| ADG | 0 | 1 | 5.458 | 5.554 | .326 | -5.439 | 16.354 |
| 2 | -8.271 | 7.229 | .253 | -22.453 | 5.912 |
| 1 | 0 | -5.458 | 5.554 | .326 | -16.354 | 5.439 |
| 2 | -13.728\* | 4.694 | .004 | -22.938 | -4.519 |
| 2 | 0 | 8.271 | 7.229 | .253 | -5.912 | 22.453 |
| 1 | 13.728\* | 4.694 | .004 | 4.519 | 22.938 |
| FCR | 0 | 1 | 1.343 | 1.950 | .491 | -2.483 | 5.169 |
| 2 | 7.675\* | 2.538 | .003 | 2.695 | 12.654 |
| 1 | 0 | -1.343 | 1.950 | .491 | -5.169 | 2.483 |
| 2 | 6.332\* | 1.648 | .000 | 3.098 | 9.565 |
| 2 | 0 | -7.675\* | 2.538 | .003 | -12.654 | -2.695 |
| 1 | -6.332\* | 1.648 | .000 | -9.565 | -3.098 |
| Fat | 0 | 1 | -.200 | .157 | .203 | -.508 | .108 |
| 2 | -.238 | .204 | .244 | -.639 | .163 |
| 1 | 0 | .200 | .157 | .203 | -.108 | .508 |
| 2 | -.038 | .133 | .772 | -.299 | .222 |
| 2 | 0 | .238 | .204 | .244 | -.163 | .639 |
| 1 | .038 | .133 | .772 | -.222 | .299 |
| EMA | 0 | 1 | .225 | .139 | .105 | -.047 | .497 |
| 2 | .078 | .181 | .666 | -.276 | .432 |
| 1 | 0 | -.225 | .139 | .105 | -.497 | .047 |
| 2 | -.147 | .117 | .211 | -.377 | .083 |
| 2 | 0 | -.078 | .181 | .666 | -.432 | .276 |
| 1 | .147 | .117 | .211 | -.083 | .377 |
| Marb | 0 | 1 | .109 | .087 | .210 | -.061 | .279 |
| 2 | .302\* | .113 | .008 | .080 | .523 |
| 1 | 0 | -.109 | .087 | .210 | -.279 | .061 |
| 2 | .193\* | .073 | .009 | .049 | .337 |
| 2 | 0 | -.302\* | .113 | .008 | -.523 | -.080 |
| 1 | -.193\* | .073 | .009 | -.337 | -.049 |
| afc\_ebv | 0 | 1 | 2.077\* | .884 | .019 | .342 | 3.812 |
| 2 | 2.044 | 1.151 | .076 | -.214 | 4.302 |
| 1 | 0 | -2.077\* | .884 | .019 | -3.812 | -.342 |
| 2 | -.032 | .747 | .965 | -1.499 | 1.434 |
| 2 | 0 | -2.044 | 1.151 | .076 | -4.302 | .214 |
| 1 | .032 | .747 | .965 | -1.434 | 1.499 |
| icp\_ebv | 0 | 1 | -.049 | .274 | .859 | -.587 | .490 |
| 2 | -.183 | .357 | .609 | -.883 | .518 |
| 1 | 0 | .049 | .274 | .859 | -.490 | .587 |
| 2 | -.134 | .232 | .563 | -.589 | .321 |
| 2 | 0 | .183 | .357 | .609 | -.518 | .883 |
| 1 | .134 | .232 | .563 | -.321 | .589 |
| skr\_ebv | 0 | 1 | .492 | .795 | .536 | -1.067 | 2.052 |
| 2 | -.106 | 1.034 | .918 | -2.136 | 1.923 |
| 1 | 0 | -.492 | .795 | .536 | -2.052 | 1.067 |
| 2 | -.599 | .672 | .373 | -1.917 | .719 |
| 2 | 0 | .106 | 1.034 | .918 | -1.923 | 2.136 |
| 1 | .599 | .672 | .373 | -.719 | 1.917 |
| Longevity | 0 | 1 | .878\* | .421 | .037 | .052 | 1.704 |
| 2 | .305 | .548 | .578 | -.771 | 1.380 |
| 1 | 0 | -.878\* | .421 | .037 | -1.704 | -.052 |
| 2 | -.573 | .356 | .108 | -1.272 | .125 |
| 2 | 0 | -.305 | .548 | .578 | -1.380 | .771 |
| 1 | .573 | .356 | .108 | -.125 | 1.272 |

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| Based on estimated marginal means |
| \*. The mean difference is significant at the ,05 level. |
| b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments). |

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| *Multivariate Tests* |
|  | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
| Pillai's trace | .046 | 2.319 | 24.000 | 2386.000 | .000 | .023 |
| Wilks' lambda | .955 | 2.321a | 24.000 | 2384.000 | .000 | .023 |
| Hotelling's trace | .047 | 2.323 | 24.000 | 2382.000 | .000 | .023 |
| Roy's largest root | .032 | 3.216b | 12.000 | 1193.000 | .000 | .031 |

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| Each F tests the multivariate effect of nt748. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |
| a. Exact statistic |
| b. The statistic is an upper bound on F that yields a lower bound on the significance level. |

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| --- |
| *Univariate Tests* |
| Dependent Variable | Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| BW-dir | Contrast | 9.131 | 2 | 4.565 | 2.242 | .107 | .004 |
| Error | 2449.961 | 1203 | 2.037 |  |  |  |
| Wean dir | Contrast | 213.740 | 2 | 106.870 | 2.890 | .056 | .005 |
| Error | 44492.070 | 1203 | 36.984 |  |  |  |
| Mature wt | Contrast | 933.785 | 2 | 466.893 | 2.223 | .109 | .004 |
| Error | 252625.975 | 1203 | 209.997 |  |  |  |
| ADG | Contrast | 32813.752 | 2 | 16406.876 | 4.726 | .009 | .008 |
| Error | 4176592.194 | 1203 | 3471.814 |  |  |  |
| FCR | Contrast | 6548.207 | 2 | 3274.104 | 7.650 | .000 | .013 |
| Error | 514877.470 | 1203 | 427.995 |  |  |  |
| Fat | Contrast | 4.753 | 2 | 2.376 | .857 | .425 | .001 |
| Error | 3336.924 | 1203 | 2.774 |  |  |  |
| EMA | Contrast | 8.970 | 2 | 4.485 | 2.071 | .127 | .003 |
| Error | 2605.163 | 1203 | 2.166 |  |  |  |
| Marb | Contrast | 7.259 | 2 | 3.630 | 4.289 | .014 | .007 |
| Error | 1018.090 | 1203 | .846 |  |  |  |
| afc\_ebv | Contrast | 485.466 | 2 | 242.733 | 2.758 | .064 | .005 |
| Error | 105864.868 | 1203 | 88.001 |  |  |  |
| icp\_ebv | Contrast | 3.120 | 2 | 1.560 | .184 | .832 | .000 |
| Error | 10195.319 | 1203 | 8.475 |  |  |  |
| skr\_ebv | Contrast | 82.871 | 2 | 41.436 | .583 | .558 | .001 |
| Error | 85528.774 | 1203 | 71.096 |  |  |  |
| Longevity | Contrast | 136.988 | 2 | 68.494 | 3.430 | .033 | .006 |
| Error | 24020.458 | 1203 | 19.967 |  |  |  |

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| The F tests the effect of nt748. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. |

**2. nt414**

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| *Estimates* |
| Dependent Variable | nt414 | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1.302 | .114 | 1.078 | 1.527 |
| 1 | 1.281 | .143 | 1.000 | 1.561 |
| 2 | 1.141 | .234 | .683 | 1.600 |
| Wean dir | 0 | 16.092 | .487 | 15.136 | 17.049 |
| 1 | 16.214 | .609 | 15.019 | 17.408 |
| 2 | 14.668 | .995 | 12.716 | 16.621 |
| Mature wt | 0 | 12.387 | 1.161 | 10.108 | 14.666 |
| 1 | 14.179 | 1.451 | 11.332 | 17.025 |
| 2 | 10.994 | 2.371 | 6.341 | 15.646 |
| ADG | 0 | 124.264 | 4.723 | 114.999 | 133.530 |
| 1 | 120.749 | 5.900 | 109.174 | 132.324 |
| 2 | 102.874 | 9.642 | 83.957 | 121.790 |
| FCR | 0 | -51.180 | 1.658 | -54.433 | -47.927 |
| 1 | -50.041 | 2.071 | -54.105 | -45.977 |
| 2 | -39.993 | 3.385 | -46.634 | -33.351 |
| Fat | 0 | -.680 | .133 | -.942 | -.418 |
| 1 | -.554 | .167 | -.881 | -.227 |
| 2 | -.620 | .273 | -1.155 | -.085 |
| EMA | 0 | 1.403 | .118 | 1.172 | 1.635 |
| 1 | 1.653 | .147 | 1.364 | 1.942 |
| 2 | 1.526 | .241 | 1.054 | 1.999 |
| Marb | 0 | -.074 | .074 | -.219 | .071 |
| 1 | .159 | .092 | -.022 | .340 |
| 2 | .254 | .151 | -.041 | .549 |
| afc\_ebv | 0 | -8.693 | .752 | -10.168 | -7.218 |
| 1 | -7.567 | .939 | -9.410 | -5.725 |
| 2 | -6.539 | 1.535 | -9.550 | -3.527 |
| icp\_ebv | 0 | -2.452 | .233 | -2.910 | -1.995 |
| 1 | -3.363 | .291 | -3.935 | -2.791 |
| 2 | -3.180 | .476 | -4.114 | -2.245 |
| skr\_ebv | 0 | 13.208 | .676 | 11.882 | 14.534 |
| 1 | 12.726 | .844 | 11.069 | 14.382 |
| 2 | 12.121 | 1.380 | 9.414 | 14.828 |
| Longevity | 0 | 28.415 | .358 | 27.713 | 29.118 |
| 1 | 27.098 | .447 | 26.221 | 27.976 |
| 2 | 25.372 | .731 | 23.938 | 26.807 |

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| --- |
| *Pairwise Comparisons* |
| Dependent Variable | (I) nt414 | (J) nt414 | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1 | .022 | .123 | .859 | -.220 | .264 |
| 2 | .161 | .223 | .471 | -.277 | .599 |
| 1 | 0 | -.022 | .123 | .859 | -.264 | .220 |
| 2 | .139 | .180 | .441 | -.215 | .493 |
| 2 | 0 | -.161 | .223 | .471 | -.599 | .277 |
| 1 | -.139 | .180 | .441 | -.493 | .215 |
| Wean dir | 0 | 1 | -.121 | .525 | .817 | -1.151 | .909 |
| 2 | 1.424 | .950 | .134 | -.441 | 3.289 |
| 1 | 0 | .121 | .525 | .817 | -.909 | 1.151 |
| 2 | 1.545\* | .768 | .044 | .038 | 3.052 |
| 2 | 0 | -1.424 | .950 | .134 | -3.289 | .441 |
| 1 | -1.545\* | .768 | .044 | -3.052 | -.038 |
| Mature wt | 0 | 1 | -1.792 | 1.251 | .152 | -4.246 | .663 |
| 2 | 1.393 | 2.265 | .539 | -3.050 | 5.837 |
| 1 | 0 | 1.792 | 1.251 | .152 | -.663 | 4.246 |
| 2 | 3.185 | 1.830 | .082 | -.406 | 6.776 |
| 2 | 0 | -1.393 | 2.265 | .539 | -5.837 | 3.050 |
| 1 | -3.185 | 1.830 | .082 | -6.776 | .406 |
| ADG | 0 | 1 | 3.515 | 5.086 | .490 | -6.464 | 13.494 |
| 2 | 21.391\* | 9.209 | .020 | 3.324 | 39.458 |
| 1 | 0 | -3.515 | 5.086 | .490 | -13.494 | 6.464 |
| 2 | 17.875\* | 7.443 | .016 | 3.273 | 32.477 |
| 2 | 0 | -21.391\* | 9.209 | .020 | -39.458 | -3.324 |
| 1 | -17.875\* | 7.443 | .016 | -32.477 | -3.273 |
| FCR | 0 | 1 | -1.139 | 1.786 | .524 | -4.643 | 2.365 |
| 2 | -11.188\* | 3.233 | .001 | -17.531 | -4.844 |
| 1 | 0 | 1.139 | 1.786 | .524 | -2.365 | 4.643 |
| 2 | -10.048\* | 2.613 | .000 | -15.175 | -4.921 |
| 2 | 0 | 11.188\* | 3.233 | .001 | 4.844 | 17.531 |
| 1 | 10.048\* | 2.613 | .000 | 4.921 | 15.175 |
| Fat | 0 | 1 | -.126 | .144 | .380 | -.408 | .156 |
| 2 | -.060 | .260 | .817 | -.571 | .450 |
| 1 | 0 | .126 | .144 | .380 | -.156 | .408 |
| 2 | .066 | .210 | .753 | -.347 | .479 |
| 2 | 0 | .060 | .260 | .817 | -.450 | .571 |
| 1 | -.066 | .210 | .753 | -.479 | .347 |
| EMA | 0 | 1 | -.250\* | .127 | .050 | -.499 | .000 |
| 2 | -.123 | .230 | .593 | -.574 | .328 |
| 1 | 0 | .250\* | .127 | .050 | .000 | .499 |
| 2 | .127 | .186 | .496 | -.238 | .491 |
| 2 | 0 | .123 | .230 | .593 | -.328 | .574 |
| 1 | -.127 | .186 | .496 | -.491 | .238 |
| Marb | 0 | 1 | -.233\* | .079 | .003 | -.389 | -.077 |
| 2 | -.328\* | .144 | .023 | -.610 | -.046 |
| 1 | 0 | .233\* | .079 | .003 | .077 | .389 |
| 2 | -.095 | .116 | .414 | -.323 | .133 |
| 2 | 0 | .328\* | .144 | .023 | .046 | .610 |
| 1 | .095 | .116 | .414 | -.133 | .323 |
| afc\_ebv | 0 | 1 | -1.125 | .810 | .165 | -2.714 | .463 |
| 2 | -2.154 | 1.466 | .142 | -5.030 | .722 |
| 1 | 0 | 1.125 | .810 | .165 | -.463 | 2.714 |
| 2 | -1.029 | 1.185 | .385 | -3.354 | 1.296 |
| 2 | 0 | 2.154 | 1.466 | .142 | -.722 | 5.030 |
| 1 | 1.029 | 1.185 | .385 | -1.296 | 3.354 |
| icp\_ebv | 0 | 1 | .910\* | .251 | .000 | .417 | 1.403 |
| 2 | .727 | .455 | .110 | -.165 | 1.620 |
| 1 | 0 | -.910\* | .251 | .000 | -1.403 | -.417 |
| 2 | -.183 | .368 | .619 | -.905 | .538 |
| 2 | 0 | -.727 | .455 | .110 | -1.620 | .165 |
| 1 | .183 | .368 | .619 | -.538 | .905 |
| skr\_ebv | 0 | 1 | .483 | .728 | .507 | -.945 | 1.911 |
| 2 | 1.087 | 1.318 | .410 | -1.499 | 3.672 |
| 1 | 0 | -.483 | .728 | .507 | -1.911 | .945 |
| 2 | .604 | 1.065 | .571 | -1.486 | 2.694 |
| 2 | 0 | -1.087 | 1.318 | .410 | -3.672 | 1.499 |
| 1 | -.604 | 1.065 | .571 | -2.694 | 1.486 |
| Longevity | 0 | 1 | 1.317\* | .386 | .001 | .560 | 2.074 |
| 2 | 3.043\* | .698 | .000 | 1.673 | 4.413 |
| 1 | 0 | -1.317\* | .386 | .001 | -2.074 | -.560 |
| 2 | 1.726\* | .564 | .002 | .619 | 2.833 |
| 2 | 0 | -3.043\* | .698 | .000 | -4.413 | -1.673 |
| 1 | -1.726\* | .564 | .002 | -2.833 | -.619 |

|  |
| --- |
| Based on estimated marginal means |
| \*. The mean difference is significant at the ,05 level. |
| b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments). |

|  |
| --- |
| *Multivariate Tests* |
|  | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
| Pillai's trace | .064 | 3.283 | 24.000 | 2386.000 | .000 | .032 |
| Wilks' lambda | .937 | 3.292a | 24.000 | 2384.000 | .000 | .032 |
| Hotelling's trace | .067 | 3.302 | 24.000 | 2382.000 | .000 | .032 |
| Roy's largest root | .049 | 4.883b | 12.000 | 1193.000 | .000 | .047 |

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| --- |
| Each F tests the multivariate effect of nt414. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |
| a. Exact statistic |
| b. The statistic is an upper bound on F that yields a lower bound on the significance level. |

|  |
| --- |
| *Univariate Tests* |
| Dependent Variable | Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| BW-dir | Contrast | 1.253 | 2 | .627 | .308 | .735 | .001 |
| Error | 2449.961 | 1203 | 2.037 |  |  |  |
| Wean dir | Contrast | 153.589 | 2 | 76.794 | 2.076 | .126 | .003 |
| Error | 44492.070 | 1203 | 36.984 |  |  |  |
| Mature wt | Contrast | 1117.850 | 2 | 558.925 | 2.662 | .070 | .004 |
| Error | 252625.975 | 1203 | 209.997 |  |  |  |
| ADG | Contrast | 21192.855 | 2 | 10596.428 | 3.052 | .048 | .005 |
| Error | 4176592.194 | 1203 | 3471.814 |  |  |  |
| FCR | Contrast | 6418.384 | 2 | 3209.192 | 7.498 | .001 | .012 |
| Error | 514877.470 | 1203 | 427.995 |  |  |  |
| Fat | Contrast | 2.495 | 2 | 1.247 | .450 | .638 | .001 |
| Error | 3336.924 | 1203 | 2.774 |  |  |  |
| EMA | Contrast | 9.655 | 2 | 4.827 | 2.229 | .108 | .004 |
| Error | 2605.163 | 1203 | 2.166 |  |  |  |
| Marb | Contrast | 7.674 | 2 | 3.837 | 4.534 | .011 | .007 |
| Error | 1018.090 | 1203 | .846 |  |  |  |
| afc\_ebv | Contrast | 226.838 | 2 | 113.419 | 1.289 | .276 | .002 |
| Error | 105864.868 | 1203 | 88.001 |  |  |  |
| icp\_ebv | Contrast | 115.002 | 2 | 57.501 | 6.785 | .001 | .011 |
| Error | 10195.319 | 1203 | 8.475 |  |  |  |
| skr\_ebv | Contrast | 51.746 | 2 | 25.873 | .364 | .695 | .001 |
| Error | 85528.774 | 1203 | 71.096 |  |  |  |
| Longevity | Contrast | 400.845 | 2 | 200.423 | 10.038 | .000 | .016 |
| Error | 24020.458 | 1203 | 19.967 |  |  |  |

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| The F tests the effect of nt414. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. |

**3. nt267**

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| *Estimates* |
| Dependent Variable | nt267 | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1.360 | .066 | 1.231 | 1.489 |
| 1 | 1.339 | .129 | 1.086 | 1.591 |
| 2 | 1.026 | .310 | .417 | 1.634 |
| Wean dir | 0 | 16.232 | .281 | 15.682 | 16.782 |
| 1 | 16.130 | .549 | 15.054 | 17.206 |
| 2 | 14.612 | 1.321 | 12.020 | 17.205 |
| Mature wt | 0 | 12.657 | .668 | 11.346 | 13.969 |
| 1 | 14.255 | 1.307 | 11.690 | 16.820 |
| 2 | 10.646 | 3.149 | 4.468 | 16.824 |
| ADG | 0 | 124.305 | 2.718 | 118.973 | 129.637 |
| 1 | 119.211 | 5.316 | 108.782 | 129.640 |
| 2 | 104.371 | 12.804 | 79.251 | 129.491 |
| FCR | 0 | -50.454 | .954 | -52.326 | -48.582 |
| 1 | -48.796 | 1.866 | -52.457 | -45.134 |
| 2 | -41.964 | 4.495 | -50.784 | -33.144 |
| Fat | 0 | -.557 | .077 | -.707 | -.406 |
| 1 | -.609 | .150 | -.904 | -.315 |
| 2 | -.688 | .362 | -1.398 | .022 |
| EMA | 0 | 1.174 | .068 | 1.041 | 1.307 |
| 1 | 1.423 | .133 | 1.163 | 1.684 |
| 2 | 1.985 | .320 | 1.358 | 2.612 |
| Marb | 0 | -.051 | .042 | -.135 | .032 |
| 1 | .072 | .083 | -.091 | .234 |
| 2 | .319 | .200 | -.073 | .711 |
| afc\_ebv | 0 | -7.010 | .433 | -7.859 | -6.161 |
| 1 | -5.701 | .846 | -7.362 | -4.041 |
| 2 | -10.088 | 2.038 | -14.087 | -6.088 |
| icp\_ebv | 0 | -2.250 | .134 | -2.514 | -1.987 |
| 1 | -2.576 | .263 | -3.091 | -2.061 |
| 2 | -4.169 | .633 | -5.410 | -2.928 |
| skr\_ebv | 0 | 13.566 | .389 | 12.803 | 14.329 |
| 1 | 12.854 | .761 | 11.362 | 14.347 |
| 2 | 11.635 | 1.832 | 8.040 | 15.230 |
| Longevity | 0 | 28.548 | .206 | 28.144 | 28.953 |
| 1 | 27.430 | .403 | 26.640 | 28.221 |
| 2 | 24.907 | .971 | 23.002 | 26.812 |

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| *Pairwise Comparisons* |
| Dependent Variable | (I) nt267 | (J) nt267 | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1 | .021 | .114 | .851 | -.203 | .246 |
| 2 | .334 | .300 | .266 | -.254 | .923 |
| 1 | 0 | -.021 | .114 | .851 | -.246 | .203 |
| 2 | .313 | .285 | .273 | -.247 | .873 |
| 2 | 0 | -.334 | .300 | .266 | -.923 | .254 |
| 1 | -.313 | .285 | .273 | -.873 | .247 |
| Wean dir | 0 | 1 | .102 | .487 | .834 | -.854 | 1.058 |
| 2 | 1.620 | 1.279 | .206 | -.890 | 4.129 |
| 1 | 0 | -.102 | .487 | .834 | -1.058 | .854 |
| 2 | 1.518 | 1.216 | .212 | -.868 | 3.903 |
| 2 | 0 | -1.620 | 1.279 | .206 | -4.129 | .890 |
| 1 | -1.518 | 1.216 | .212 | -3.903 | .868 |
| Mature wt | 0 | 1 | -1.598 | 1.161 | .169 | -3.875 | .679 |
| 2 | 2.011 | 3.048 | .509 | -3.968 | 7.990 |
| 1 | 0 | 1.598 | 1.161 | .169 | -.679 | 3.875 |
| 2 | 3.609 | 2.897 | .213 | -2.075 | 9.293 |
| 2 | 0 | -2.011 | 3.048 | .509 | -7.990 | 3.968 |
| 1 | -3.609 | 2.897 | .213 | -9.293 | 2.075 |
| ADG | 0 | 1 | 5.094 | 4.720 | .281 | -4.166 | 14.353 |
| 2 | 19.934 | 12.392 | .108 | -4.377 | 44.246 |
| 1 | 0 | -5.094 | 4.720 | .281 | -14.353 | 4.166 |
| 2 | 14.841 | 11.779 | .208 | -8.270 | 37.951 |
| 2 | 0 | -19.934 | 12.392 | .108 | -44.246 | 4.377 |
| 1 | -14.841 | 11.779 | .208 | -37.951 | 8.270 |
| FCR | 0 | 1 | -1.658 | 1.657 | .317 | -4.909 | 1.593 |
| 2 | -8.490 | 4.351 | .051 | -17.026 | .046 |
| 1 | 0 | 1.658 | 1.657 | .317 | -1.593 | 4.909 |
| 2 | -6.832 | 4.136 | .099 | -14.946 | 1.283 |
| 2 | 0 | 8.490 | 4.351 | .051 | -.046 | 17.026 |
| 1 | 6.832 | 4.136 | .099 | -1.283 | 14.946 |
| Fat | 0 | 1 | .053 | .133 | .693 | -.209 | .314 |
| 2 | .132 | .350 | .707 | -.555 | .819 |
| 1 | 0 | -.053 | .133 | .693 | -.314 | .209 |
| 2 | .079 | .333 | .812 | -.574 | .732 |
| 2 | 0 | -.132 | .350 | .707 | -.819 | .555 |
| 1 | -.079 | .333 | .812 | -.732 | .574 |
| EMA | 0 | 1 | -.249\* | .118 | .035 | -.481 | -.018 |
| 2 | -.811\* | .309 | .009 | -1.418 | -.204 |
| 1 | 0 | .249\* | .118 | .035 | .018 | .481 |
| 2 | -.562 | .294 | .057 | -1.139 | .016 |
| 2 | 0 | .811\* | .309 | .009 | .204 | 1.418 |
| 1 | .562 | .294 | .057 | -.016 | 1.139 |
| Marb | 0 | 1 | -.123 | .074 | .096 | -.267 | .022 |
| 2 | -.370 | .193 | .056 | -.750 | .009 |
| 1 | 0 | .123 | .074 | .096 | -.022 | .267 |
| 2 | -.247 | .184 | .179 | -.608 | .113 |
| 2 | 0 | .370 | .193 | .056 | -.009 | .750 |
| 1 | .247 | .184 | .179 | -.113 | .608 |
| afc\_ebv | 0 | 1 | -1.308 | .751 | .082 | -2.782 | .166 |
| 2 | 3.078 | 1.973 | .119 | -.793 | 6.949 |
| 1 | 0 | 1.308 | .751 | .082 | -.166 | 2.782 |
| 2 | 4.386\* | 1.875 | .020 | .707 | 8.066 |
| 2 | 0 | -3.078 | 1.973 | .119 | -6.949 | .793 |
| 1 | -4.386\* | 1.875 | .020 | -8.066 | -.707 |
| icp\_ebv | 0 | 1 | .325 | .233 | .163 | -.132 | .783 |
| 2 | 1.918\* | .612 | .002 | .717 | 3.119 |
| 1 | 0 | -.325 | .233 | .163 | -.783 | .132 |
| 2 | 1.593\* | .582 | .006 | .451 | 2.735 |
| 2 | 0 | -1.918\* | .612 | .002 | -3.119 | -.717 |
| 1 | -1.593\* | .582 | .006 | -2.735 | -.451 |
| skr\_ebv | 0 | 1 | .712 | .675 | .292 | -.613 | 2.037 |
| 2 | 1.931 | 1.773 | .276 | -1.548 | 5.410 |
| 1 | 0 | -.712 | .675 | .292 | -2.037 | .613 |
| 2 | 1.219 | 1.686 | .470 | -2.088 | 4.527 |
| 2 | 0 | -1.931 | 1.773 | .276 | -5.410 | 1.548 |
| 1 | -1.219 | 1.686 | .470 | -4.527 | 2.088 |
| Longevity | 0 | 1 | 1.118\* | .358 | .002 | .416 | 1.820 |
| 2 | 3.641\* | .940 | .000 | 1.797 | 5.485 |
| 1 | 0 | -1.118\* | .358 | .002 | -1.820 | -.416 |
| 2 | 2.523\* | .893 | .005 | .771 | 4.276 |
| 2 | 0 | -3.641\* | .940 | .000 | -5.485 | -1.797 |
| 1 | -2.523\* | .893 | .005 | -4.276 | -.771 |

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| --- |
| Based on estimated marginal means |
| \*. The mean difference is significant at the ,05 level. |
| b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments). |

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| *Multivariate Tests* |
|  | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
| Pillai's trace | .058 | 2.992 | 24.000 | 2386.000 | .000 | .029 |
| Wilks' lambda | .942 | 3.010a | 24.000 | 2384.000 | .000 | .029 |
| Hotelling's trace | .061 | 3.027 | 24.000 | 2382.000 | .000 | .030 |
| Roy's largest root | .051 | 5.050b | 12.000 | 1193.000 | .000 | .048 |

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| --- |
| Each F tests the multivariate effect of nt267. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |
| a. Exact statistic |
| b. The statistic is an upper bound on F that yields a lower bound on the significance level. |

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| *Univariate Tests* |
| Dependent Variable | Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| BW-dir | Contrast | 2.589 | 2 | 1.295 | .636 | .530 | .001 |
| Error | 2449.961 | 1203 | 2.037 |  |  |  |
| Wean dir | Contrast | 60.829 | 2 | 30.415 | .822 | .440 | .001 |
| Error | 44492.070 | 1203 | 36.984 |  |  |  |
| Mature wt | Contrast | 678.514 | 2 | 339.257 | 1.616 | .199 | .003 |
| Error | 252625.975 | 1203 | 209.997 |  |  |  |
| ADG | Contrast | 10236.163 | 2 | 5118.081 | 1.474 | .229 | .002 |
| Error | 4176592.194 | 1203 | 3471.814 |  |  |  |
| FCR | Contrast | 1699.268 | 2 | 849.634 | 1.985 | .138 | .003 |
| Error | 514877.470 | 1203 | 427.995 |  |  |  |
| Fat | Contrast | .627 | 2 | .313 | .113 | .893 | .000 |
| Error | 3336.924 | 1203 | 2.774 |  |  |  |
| EMA | Contrast | 18.845 | 2 | 9.422 | 4.351 | .013 | .007 |
| Error | 2605.163 | 1203 | 2.166 |  |  |  |
| Marb | Contrast | 4.157 | 2 | 2.078 | 2.456 | .086 | .004 |
| Error | 1018.090 | 1203 | .846 |  |  |  |
| afc\_ebv | Contrast | 703.154 | 2 | 351.577 | 3.995 | .019 | .007 |
| Error | 105864.868 | 1203 | 88.001 |  |  |  |
| icp\_ebv | Contrast | 84.723 | 2 | 42.361 | 4.998 | .007 | .008 |
| Error | 10195.319 | 1203 | 8.475 |  |  |  |
| skr\_ebv | Contrast | 123.981 | 2 | 61.990 | .872 | .418 | .001 |
| Error | 85528.774 | 1203 | 71.096 |  |  |  |
| Longevity | Contrast | 379.502 | 2 | 189.751 | 9.503 | .000 | .016 |
| Error | 24020.458 | 1203 | 19.967 |  |  |  |

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| The F tests the effect of nt267. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. |

**4. q204x**

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| *Estimates* |
| Dependent Variable | q204x | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1.002 | .142 | .725 | 1.280 |
| 1 | 1.480 | .154 | 1.178 | 1.783 |
| Wean dir | 0 | 14.950 | .603 | 13.766 | 16.133 |
| 1 | 16.366 | .658 | 15.076 | 17.656 |
| Mature wt | 0 | 11.501 | 1.437 | 8.681 | 14.321 |
| 1 | 13.538 | 1.567 | 10.465 | 16.612 |
| ADG | 0 | 114.221 | 5.844 | 102.756 | 125.686 |
| 1 | 117.703 | 6.371 | 105.205 | 130.202 |
| FCR | 0 | -43.743 | 2.052 | -47.769 | -39.718 |
| 1 | -50.399 | 2.237 | -54.788 | -46.011 |
| Fat | 0 | -.217 | .165 | -.541 | .107 |
| 1 | -1.020 | .180 | -1.373 | -.666 |
| EMA | 0 | 1.320 | .146 | 1.033 | 1.606 |
| 1 | 1.735 | .159 | 1.423 | 2.047 |
| Marb | 0 | .319 | .091 | .140 | .498 |
| 1 | -.093 | .099 | -.288 | .102 |
| afc\_ebv | 0 | -8.900 | .930 | -10.726 | -7.075 |
| 1 | -6.299 | 1.014 | -8.289 | -4.309 |
| icp\_ebv | 0 | -3.693 | .289 | -4.260 | -3.127 |
| 1 | -2.303 | .315 | -2.921 | -1.686 |
| skr\_ebv | 0 | 13.403 | .836 | 11.762 | 15.043 |
| 1 | 11.967 | .912 | 10.179 | 13.756 |
| Longevity | 0 | 26.006 | .443 | 25.136 | 26.875 |
| 1 | 27.918 | .483 | 26.970 | 28.866 |

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| --- |
| *Pairwise Comparisons* |
| Dependent Variable | (I) q204x | (J) q204x | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| BW-dir | 0 | 1 | -.478\* | .117 | .000 | -.707 | -.249 |
| 1 | 0 | .478\* | .117 | .000 | .249 | .707 |
| Wean dir | 0 | 1 | -1.417\* | .497 | .004 | -2.391 | -.442 |
| 1 | 0 | 1.417\* | .497 | .004 | .442 | 2.391 |
| Mature wt | 0 | 1 | -2.037 | 1.184 | .086 | -4.360 | .285 |
| 1 | 0 | 2.037 | 1.184 | .086 | -.285 | 4.360 |
| ADG | 0 | 1 | -3.482 | 4.814 | .470 | -12.927 | 5.963 |
| 1 | 0 | 3.482 | 4.814 | .470 | -5.963 | 12.927 |
| FCR | 0 | 1 | 6.656\* | 1.690 | .000 | 3.340 | 9.972 |
| 1 | 0 | -6.656\* | 1.690 | .000 | -9.972 | -3.340 |
| Fat | 0 | 1 | .803\* | .136 | .000 | .536 | 1.070 |
| 1 | 0 | -.803\* | .136 | .000 | -1.070 | -.536 |
| EMA | 0 | 1 | -.415\* | .120 | .001 | -.651 | -.179 |
| 1 | 0 | .415\* | .120 | .001 | .179 | .651 |
| Marb | 0 | 1 | .411\* | .075 | .000 | .264 | .559 |
| 1 | 0 | -.411\* | .075 | .000 | -.559 | -.264 |
| afc\_ebv | 0 | 1 | -2.601\* | .766 | .001 | -4.105 | -1.098 |
| 1 | 0 | 2.601\* | .766 | .001 | 1.098 | 4.105 |
| icp\_ebv | 0 | 1 | -1.390\* | .238 | .000 | -1.856 | -.923 |
| 1 | 0 | 1.390\* | .238 | .000 | .923 | 1.856 |
| skr\_ebv | 0 | 1 | 1.435\* | .689 | .037 | .084 | 2.787 |
| 1 | 0 | -1.435\* | .689 | .037 | -2.787 | -.084 |
| Longevity | 0 | 1 | -1.912\* | .365 | .000 | -2.629 | -1.196 |
| 1 | 0 | 1.912\* | .365 | .000 | 1.196 | 2.629 |

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| --- |
| Based on estimated marginal means |
| \*. The mean difference is significant at the ,05 level. |
| b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments). |

|  |
| --- |
| *Multivariate Tests* |
|  | Value | F | Hypothesis df | Error df | Sig. | Partial Eta Squared |
| Pillai's trace | .130 | 14.819a | 12.000 | 1192.000 | .000 | .130 |
| Wilks' lambda | .870 | 14.819a | 12.000 | 1192.000 | .000 | .130 |
| Hotelling's trace | .149 | 14.819a | 12.000 | 1192.000 | .000 | .130 |
| Roy's largest root | .149 | 14.819a | 12.000 | 1192.000 | .000 | .130 |

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| --- |
| Each F tests the multivariate effect of q204x. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means. |
| a. Exact statistic |

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| *Univariate Tests* |
| Dependent Variable | Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
| BW-dir | Contrast | 34.223 | 1 | 34.223 | 16.804 | .000 | .014 |
| Error | 2449.961 | 1203 | 2.037 |  |  |  |
| Wean dir | Contrast | 300.615 | 1 | 300.615 | 8.128 | .004 | .007 |
| Error | 44492.070 | 1203 | 36.984 |  |  |  |
| Mature wt | Contrast | 621.856 | 1 | 621.856 | 2.961 | .086 | .002 |
| Error | 252625.975 | 1203 | 209.997 |  |  |  |
| ADG | Contrast | 1816.345 | 1 | 1816.345 | .523 | .470 | .000 |
| Error | 4176592.194 | 1203 | 3471.814 |  |  |  |
| FCR | Contrast | 6636.518 | 1 | 6636.518 | 15.506 | .000 | .013 |
| Error | 514877.470 | 1203 | 427.995 |  |  |  |
| Fat | Contrast | 96.594 | 1 | 96.594 | 34.823 | .000 | .028 |
| Error | 3336.924 | 1203 | 2.774 |  |  |  |
| EMA | Contrast | 25.839 | 1 | 25.839 | 11.932 | .001 | .010 |
| Error | 2605.163 | 1203 | 2.166 |  |  |  |
| Marb | Contrast | 25.364 | 1 | 25.364 | 29.971 | .000 | .024 |
| Error | 1018.090 | 1203 | .846 |  |  |  |
| afc\_ebv | Contrast | 1013.633 | 1 | 1013.633 | 11.518 | .001 | .009 |
| Error | 105864.868 | 1203 | 88.001 |  |  |  |
| icp\_ebv | Contrast | 289.316 | 1 | 289.316 | 34.138 | .000 | .028 |
| Error | 10195.319 | 1203 | 8.475 |  |  |  |
| skr\_ebv | Contrast | 308.581 | 1 | 308.581 | 4.340 | .037 | .004 |
| Error | 85528.774 | 1203 | 71.096 |  |  |  |
| Longevity | Contrast | 547.815 | 1 | 547.815 | 27.436 | .000 | .022 |
| Error | 24020.458 | 1203 | 19.967 |  |  |  |

|  |
| --- |
| The F tests the effect of q204x. This test is based on the linearly independent pairwise comparisons among the estimated marginal means. |