

## Supplementary

Details of the mixed models used to model the change in anthropological measures over time. The trend over time is analysed to allow for a linear relationship over time with a single term for time. Longitudinal mixed modelling is applied including a random intercept and slope terms.

**Table 1.** Longitudinal modelling results for Weight z-scores.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 0.135      | 0.223           | 0.608          | 0.652          |
| Time                       | 0.042      | 0.015           | 2.893          | 0.032          |
| Gender (Male vs Female)    | -0.204     | 0.191           | -1.069         | 0.472          |
| Treatment (PKU vs Control) | -0.101     | 0.175           | -0.574         | 0.664          |
| Time: Gender Interaction   | -0.020     | 0.015           | -1.320         | 0.375          |
| Time: PKU Interaction      | 0.004      | 0.014           | 0.314          | 0.752          |

**Table 2.** Longitudinal modelling results for Head Circumference z-scores.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | -0.405     | 0.203           | -1.990         | 0.163          |
| Time                       | 0.311      | 0.192           | 1.614          | 0.271          |
| Gender (Male vs Female)    | -0.173     | 0.181           | -0.952         | 0.519          |
| Treatment (PKU vs Control) | 0.009      | 0.014           | 0.643          | 0.639          |
| Time:Gender Interaction    | -0.039     | 0.012           | -3.218         | 0.016          |
| Time:PKU Interaction       | -0.001     | 0.015           | -0.047         | 0.827          |

**Table 3.** Longitudinal modelling results for BMI z-scores.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | -0.041     | 0.243           | -0.170         | 0.795          |
| Time                       | -0.077     | 0.206           | -0.372         | 0.734          |
| Gender (Male vs Female)    | -0.675     | 0.188           | -3.591         | 0.006          |
| Treatment (PKU vs Control) | 0.036      | 0.015           | 2.405          | 0.083          |
| Time:Gender Interaction    | 0.025      | 0.014           | 1.830          | 0.205          |
| Time:PKU Interaction       | 0.019      | 0.015           | 1.232          | 0.409          |

**Table 4.** Longitudinal modelling results for Length z-scores.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 0.316      | 0.214           | 1.475          | 0.319          |
| Time                       | 0.019      | 0.015           | 1.278          | 0.391          |
| Gender (Male vs Female)    | −0.348     | 0.200           | −1.739         | 0.232          |
| Treatment (PKU vs Control) | 0.733      | 0.189           | 3.872          | 0.003          |
| Time:Gender Interaction    | −0.012     | 0.016           | −0.717         | 0.611          |
| Time:PKU Interaction       | −0.018     | 0.015           | −1.165         | 0.435          |

**Table 5.** Longitudinal modelling results for Length-for-age-difference.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 1.401      | 0.454           | 3.088          | 0.021          |
| Time                       | 0.022      | 0.049           | 0.439          | 0.711          |
| Gender (Male vs Female)    | −0.379     | 0.508           | −0.747         | 0.599          |
| Treatment (PKU vs Control) | 1.488      | 0.486           | 3.060          | 0.022          |
| Time:Gender Interaction    | −0.084     | 0.042           | −1.995         | 0.162          |
| Time:PKU Interaction       | −0.029     | 0.039           | −0.752         | 0.597          |

**Table 6.** Longitudinal modelling results for total Protein Equivalent g/kg/day.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 2.410      | 0.183           | 13.160         | 0.000          |
| Time                       | 0.070      | 0.013           | 5.426          | 0.000          |
| Gender (Male vs Female)    | 0.065      | 0.177           | 0.369          | 0.735          |
| Treatment (PKU vs Control) | 0.543      | 0.162           | 3.357          | 0.011          |
| Time:Gender Interaction    | −0.001     | 0.014           | −0.077         | 0.820          |
| Time:PKU Interaction       | −0.042     | 0.013           | −3.230         | 0.015          |

**Table 7.** Longitudinal modelling results for Protein Intake g/100kcal.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 2.320      | 0.170           | 13.681         | 0.000          |
| Time                       | 0.102      | 0.013           | 7.615          | 0.000          |
| Gender (Male vs Female)    | 0.040      | 0.176           | 0.225          | 0.779          |
| Treatment (PKU vs Control) | 0.736      | 0.161           | 4.566          | 0.000          |
| Time:Gender Interaction    | −0.018     | 0.014           | −1.248         | 0.403          |
| Time:PKU Interaction       | −0.057     | 0.013           | −4.411         | 0.001          |

**Table 8.** Longitudinal modelling results for Carbohydrates g/kg/day.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 12.340     | 0.700           | 17.619         | 0.000          |
| Time                       | −0.074     | 0.053           | −1.397         | 0.347          |
| Gender (Male vs Female)    | 1.137      | 0.699           | 1.627          | 0.267          |
| Treatment (PKU vs Control) | −1.490     | 0.639           | −2.331         | 0.095          |
| Time:Gender Interaction    | −0.001     | 0.056           | −0.023         | 0.833          |
| Time:PKU Interaction       | 0.232      | 0.051           | 4.521          | 0.000          |

**Table 9.** Longitudinal modelling results for Total Energy kcal/day.

|                            | <b>est</b> | <b>Std. dev</b> | <b>t-value</b> | <b>p-value</b> |
|----------------------------|------------|-----------------|----------------|----------------|
| (Intercept)                | 644.427    | 44.814          | 14.380         | 0.000          |
| Time                       | 21.690     | 3.525           | 6.154          | 0.000          |
| Gender (Male vs Female)    | 36.694     | 44.372          | 0.827          | 0.568          |
| Treatment (PKU vs Control) | −72.867    | 40.121          | −1.816         | 0.209          |
| Time:Gender Interaction    | 5.233      | 3.554           | 1.473          | 0.319          |
| Time:PKU Interaction       | 7.811      | 3.219           | 2.427          | 0.080          |

**Table 10.** Total energy intake as a percentage of DRV [25] for PKU and control groups and males vs. females (mean (range)).

|            | All              |                  | Males            |                  | Females          |                  |
|------------|------------------|------------------|------------------|------------------|------------------|------------------|
|            | PKU              | Control          | PKU              | Control          | PKU              | Control          |
| <b>4m</b>  | 118<br>(72–153)  | 135<br>(109–166) | 127<br>(105–153) | 124<br>(109–153) | 101<br>(72–120)  | 145<br>(124–166) |
| <b>5m</b>  | 121<br>(82–174)  | 117<br>(94–173)  | 126<br>(82–174)  | 114<br>(94–151)  | 110<br>(84–122)  | 119<br>(100–173) |
| <b>6m</b>  | 118<br>(92–164)  | 122<br>(96–160)  | 120<br>(95–164)  | 117<br>(96–148)  | 114<br>(92–128)  | 129<br>(112–160) |
| <b>7m</b>  | 116<br>(81–166)  | 120<br>(89–170)  | 116<br>(81–166)  | 115<br>(89–161)  | 115<br>(100–135) | 127<br>(104–170) |
| <b>8m</b>  | 124<br>(91–192)  | 125<br>(88–168)  | 125<br>(91–192)  | 123<br>(88–156)  | 122<br>(100–168) | 129<br>(94–168)  |
| <b>9m</b>  | 136<br>(83–184)  | 137<br>(96–195)  | 134<br>(83–184)  | 136<br>(96–195)  | 140<br>(104–177) | 140<br>(125–165) |
| <b>10m</b> | 142<br>(85–218)  | 137<br>(98–165)  | 145<br>(85–218)  | 133<br>(98–165)  | 135<br>(111–173) | 144<br>(121–165) |
| <b>11m</b> | 140<br>(100–206) | 150<br>(104–186) | 140<br>(100–206) | 151<br>(104–184) | 140<br>(109–184) | 149<br>(123–186) |
| <b>12m</b> | 131<br>(81–186)  | 133<br>(91–179)  | 127<br>(81–186)  | 127<br>(91–167)  | 139<br>(110–172) | 141<br>(114–179) |
| <b>15m</b> | 155<br>(107–198) | 145<br>(108–196) | 159<br>(120–197) | 141<br>(108–196) | 146<br>(107–198) | 150<br>(136–162) |
| <b>18m</b> | 154<br>(83–198)  | 147<br>(111–208) | 164<br>(123–198) | 147<br>(111–208) | 130<br>(83–181)  | 147<br>(115–183) |
| <b>24m</b> | 134<br>(73–194)  | 123<br>(79–180)  | 136<br>(81–190)  | 122<br>(79–180)  | 131<br>(73–194)  | 126<br>(103–163) |