

| Males                             |          |          |             |         |          |             |           |         |             |
|-----------------------------------|----------|----------|-------------|---------|----------|-------------|-----------|---------|-------------|
| GLM (hSyn-GFP S vs hSyn-CRE S)    |          |          |             |         |          |             |           |         |             |
| Effect                            | Full Day |          |             | Light   |          |             | Dark      |         |             |
|                                   | Mass     | Group    | Interaction | Mass    | Group    | Interaction | Mass      | Group   | Interaction |
| Food Consumed (kcal/hr)           | 0.1325   | 0.5706   |             | 0.6391  | 0.5396   |             | 0.0044**  | 0.9295  |             |
| Water Consumed (ml/hr)            | 0.7864   | 0.3573   |             | 0.2949  | 0.4523   |             | 0.6199    | 0.4696  |             |
| Energy Expenditure (kcal/hr)      | 0.5566   | 0.0307*  | 0.0366*     | 0.0100* | 0.0014** | 0.0016**    | <0.001*** | 0.2787  |             |
| Oxygen Consumption (ml/hr)        | 0.6318   | 0.0379*  | 0.0467      | 0.0110* | 0.0012** | 0.0014**    | <0.001*** | 0.1703  |             |
| Carbon Dioxide Production (ml/hr) | 0.3912   | 0.0371*  | 0.0375*     | 0.0119* | 0.0043** | 0.0043**    | <0.001*** | 0.7695  |             |
| GLM (hSyn-CRE NS vs hSyn-CRE S)   |          |          |             |         |          |             |           |         |             |
| Effect                            | Full Day |          |             | Light   |          |             | Dark      |         |             |
|                                   | Mass     | Group    | Interaction | Mass    | Group    | Interaction | Mass      | Group   | Interaction |
| Food Consumed (kcal/hr)           | 0.1325   | 0.5569   |             | 0.6391  | 0.2614   |             | 0.0044**  | 0.5881  |             |
| Water Consumed (ml/hr)            | 0.7864   | 0.7367   |             | 0.2949  | 0.7689   |             | 0.6199    | 0.4240  |             |
| Energy Expenditure (kcal/hr)      | 0.5566   | 0.0395*  | 0.0436*     | 0.0100* | 0.0047** | 0.0049**    | <0.001*** | 0.3327  |             |
| Oxygen Consumption (ml/hr)        | 0.6318   | 0.0568   | 0.0627      | 0.0110* | 0.0044   | 0.0046**    | <0.001*** | 0.3193  |             |
| Carbon Dioxide Production (ml/hr) | 0.3912   | 0.0254*  | 0.0272*     | 0.0119* | 0.0093** | 0.0095**    | <0.001*** | 0.5066  |             |
| GLM (hSyn-GFP NS vs hSyn-CRE S)   |          |          |             |         |          |             |           |         |             |
| Effect                            | Full Day |          |             | Light   |          |             | Dark      |         |             |
|                                   | Mass     | Group    | Interaction | Mass    | Group    | Interaction | Mass      | Group   | Interaction |
| Food Consumed (kcal/hr)           | 0.1325   | 0.5947   |             | 0.6391  | 0.6148   |             | 0.0044**  | 0.8498  |             |
| Water Consumed (ml/hr)            | 0.7864   | 0.5936   |             | 0.2949  | 0.6454   |             | 0.6199    | 0.7578  |             |
| Energy Expenditure (kcal/hr)      | 0.5566   | 0.0051** | 0.0063**    | 0.0100* | 0.0032** | 0.0033**    | <0.001*** | 0.0215* |             |
| Oxygen Consumption (ml/hr)        | 0.6318   | 0.0070** | 0.0087**    | 0.0110* | 0.0025** | 0.0026**    | <0.001*** | 0.0193* |             |
| Carbon Dioxide Production (ml/hr) | 0.3912   | 0.0065** | 0.0073**    | 0.0119* | 0.0113*  | 0.0109*     | <0.001*** | 0.0903  |             |

| Males                               |                            |                             |                             |                            |                             |                             |                            |                             |                             |
|-------------------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|
| ANOVA                               |                            |                             |                             |                            |                             |                             |                            |                             |                             |
| Effect                              | Full Day                   |                             |                             | Light                      |                             |                             | Dark                       |                             |                             |
|                                     | (hSyn-GFP S vs hSyn-CRE S) | (hSyn-CRE NS vs hSyn-CRE S) | (hSyn-GFP NS vs hSyn-CRE S) | (hSyn-GFP S vs hSyn-CRE S) | (hSyn-CRE NS vs hSyn-CRE S) | (hSyn-GFP NS vs hSyn-CRE S) | (hSyn-GFP S vs hSyn-CRE S) | (hSyn-CRE NS vs hSyn-CRE S) | (hSyn-GFP NS vs hSyn-CRE S) |
| Pedestrian Locomotion (m)           | 0.0764                     | 0.0641                      | 0.0055**                    | 0.1415                     | 0.0931                      | 0.0075**                    | 0.0328                     | 0.0437*                     | 0.0046**                    |
| Total Distance in Cage (m)          | 0.0807                     | 0.0532                      | 0.0043**                    | 0.1520                     | 0.0819                      | 0.0061**                    | 0.0335*                    | 0.0335*                     | 0.0035**                    |
| Respiratory Exchange Ratio          | 0.0282*                    | 0.7783                      | 0.2041                      | 0.0503                     | 0.9779                      | 0.4972                      | 0.0764                     | 0.6197                      | 0.1392                      |
| Locomotor Activity (beam breaks/hr) | 0.3360                     | 0.1784                      | 0.0394*                     | 0.6706                     | 0.3614                      | 0.0652                      | 0.2383                     | 0.1519                      | 0.0704                      |