**Supplementary File 1.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Stance duration** | | | | **Stride duration** | | | | **Stride length** | | | |
|  | **Forelimbs** | | **Hindlimbs** | | **Forelimbs** | | **Hindlimbs** | | **Forelimbs** | | **Hindlimbs** | |
| **Time point** | **r** | **p** | **r** | **p** | **r** | **p** | **r** | **p** | **r** | **p** | **r** | **p** |
| Baseline | -0.870 | p<0.001 | -0.758 | 0.027 | -0.746 | 0.034 | -0.715 | 0.060 | 0.862 | 0.002 | 0.792 | 0.012 |
| Pre-Dox1 | -0.902 | p<0.001 | -0.950 | p<0.001 | -0.890 | p<0.001 | -0.895 | p<0.001 | 0.872 | p=0.001 | 0.889 | p<0.001 |
| Dox1On-D3 | -0.892 | p<0.001 | -0.877 | p=0.001 | -0.874 | p=0.001 | -0.849 | 0.002 | 0.735 | 0.042 | 0.808 | 0.008 |
| Dox1On-D5 | -0.981 | p<0.001 | -0.957 | p<0.001 | -0.944 | p<0.001 | -0.911 | p<0.001 | 0.822 | 0.006 | 0.817 | 0.007 |
| Dox1On-D8 | -0.981 | p<0.001 | -0.971 | p<0.001 | -0.953 | p<0.001 | -0.952 | p<0.001 | 0.771 | 0.020 | 0.824 | P=0.005 |
| DoxOff | -0.894 | p<0.001 | -0.930 | p<0.001 | -0.843 | 0.003 | -0.879 | p=0.001 | 0.781 | 0.016 | 0.673 | 0.117 |
| Sugar control | -0.934 | 0.021 | -0.962 | p=0.005 | -0.975 | 0.002 | -0.977 | 0.002 | 0.957 | 0.007 | 0.961 | 0.006 |
| Pre-Dox2 | -0.897 | p<0.001 | -0.837 | 0.004 | -0.867 | p=0.001 | -0.925 | p<0.001 | 0.445 | 0.128 | 0.753 | 0.030 |
| Dox2On-D3 | -0.950 | p<0.001 | -0.803 | p=0.010 | -0.913 | p<0.001 | -0.934 | p<0.001 | 0.645 | 0.174 | 0.710 | 0.065 |
| Dox2On-D5 | -0.870 | p=0.001 | -0.863 | p=0.001 | -0.880 | p=0.001 | -0.952 | p<0.001 | 0.642 | 0.180 | 0.736 | 0.040 |
| Dox-induced affected steps | -0.996 | 0.00033 | -0.956 | 0.0108 | -0.977 | 0.00405 | -0.95 | 0.0131 | 0.944 | 0.01590 | 0.905 | 0.0348 |