**Supplement Data:**

**Table S1:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **AnkleFrontal** | |  | **AnkleSagittal** | |
| Interval ground contact | **Pre** | **Post** |  | **Pre** | **Post** |
| 0 to 10% | -0.005 ± 0.004 | -0.005 ± 0.004 |  | -0.037 ± 0.020 | 0.030 ± 0.017 |
| 10 to 20% | 0.012 ± 0.008 | 0.012 ± 0.009 |  | -0.169 ± 0.054 | -0.155 ± 0.040 |
| 20 to 30% | 0.045 ± 0.009 | 0.039 ± 0.010 |  | -0.368 ± 0.083 | -0.348 ± 0.067 |
| 30 to 40% | 0.057 ± 0.009 | 0.043 ± 0.009\* |  | -0.583 ± 0.088 | -0.574 ± 0.087 |
| 40 to 50% | 0.063 ± 0.011 | 0.041 ± 0.008\* |  | -0.794 ± 0.066 | -0.784 ± 0.076 |
| 50 to 60% | 0.079 ± 0.012 | 0.056 ± 0.009\* |  | -1.001 ± 0.042 | -0.996 ± 0.055 |
| 60 to 70% | 0.104 ± 0.013 | 0.083 ± 0.009\* |  | -1.182 ± 0.036 | -1.201 ± 0.040 |
| 70 to 80% | 0.130 ± 0.015 | 0.110 ± 0.011\* |  | -1.228 ± 0.058 | -1.311 ± 0.043\* |
| 80 to 90% | 0.105 ± 0.011 | 0.093 ± 0.012 |  | -0.881 ± 0.055 | -0.966 ± 0.045\* |
| 90 to 100% | 0.014 ± 0.003 | 0.011 ± 0.005 |  | -0.203 ± 0.021 | -0.265 ± 0.016\* |

**Table S2:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **KneeFrontal** | |  | **KneeSagittal** | |
| Interval ground contact | **Pre** | **Post** |  | **Pre** | **Post** |
| 0 to 10% | 0.027 ± 0.013 | 0.000 ± 0.007\* |  | 0.068 ± 0.018 | 0.027 ± 0.027 |
| 10 to 20% | 0.226 ± 0.024 | 0.151 ± 0.018\* |  | 0.535 ± 0.037 | 0.489 ± 0.077 |
| 20 to 30% | 0.433 ± 0.030 | 0.342 ± 0.030\* |  | 0.713 ± 0.069 | 0.654 ± 0.109 |
| 30 to 40% | 0.468 ± 0.028 | 0.389 ± 0.038\* |  | 0.530 ± 0.089 | 0.427 ± 0.106 |
| 40 to 50% | 0.369 ± 0.030 | 0.300 ± 0.042\* |  | 0.249 ± 0.099 | 0.093 ± 0.078 |
| 50 to 60% | 0.274 ± 0.026 | 0.229 ± 0.038\* |  | 0.032 ± 0.088 | -0.103 ± 0.053 |
| 60 to 70% | 0.218 ± 0.026 | 0.195 ± 0.030 |  | -0.100 ± 0.075 | -0.197 ± 0.045 |
| 70 to 80% | 0.153 ± 0.027 | 0.130 ± 0.028 |  | -0.088 ± 0.059 | -0.173 ± 0.038 |
| 80 to 90% | 0.050 ± 0.019 | 0.032 ± 0.023 |  | 0.047 ± 0.024 | -0.010 ± 0.025 |
| 90 to 100% | -0.038 ± 0.003 | -0.045 ± 0.007 |  | 0.080 ± 0.009 | 0.065 ± 0.013 |

**Table S3:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **HipFrontal** | |  | **HipSagittal** | |
| Interval ground contact | **Pre** | **Post** |  | **Pre** | **Post** |
| 0 to 10% | 0.084 ± 0.025 | 0.030 ± 0.022 |  | -0.602 ± 0.038 | -0.567 ± 0.068 |
| 10 to 20% | 0.505 ± 0.038 | 0.382 ± 0.027\* |  | -0.853 ± 0.065 | -0.976 ± 0.073 |
| 20 to 30% | 0.862 ± 0.046 | 0.735 ± 0.041\* |  | -0.944 ± 0.067 | -1.070 ± 0.088 |
| 30 to 40% | 0.993 ± 0.044 | 0.858 ± 0.040\* |  | -0.778 ± 0.072 | -0.893 ± 0.092 |
| 40 to 50% | 0.921 ± 0.041 | 0.787 ± 0.043\* |  | -0.540 ± 0.061 | -0.635 ± 0.090 |
| 50 to 60% | 0.813 ± 0.039 | 0.700 ± 0.043\* |  | -0.305 ± 0.057 | -0.405 ± 0.084 |
| 60 to 70% | 0.722 ± 0.039 | 0.659 ± 0.031\* |  | -0.091 ± 0.053 | -0.181 ± 0.084 |
| 70 to 80% | 0.579 ± 0.042 | 0.548 ± 0.032 |  | 0.124 ± 0.044 | 0.056 ± 0.080 |
| 80 to 90% | 0.277 ± 0.033 | 0.271 ± 0.023 |  | 0.203 ± 0.030 | 0.180 ± 0.057 |
| 90 to 100% | -0.018 ± 0.014 | -0.021 ± 0.014 |  | 0.148 ± 0.025 | 0.140 ± 0.024 |

**Table S4:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **GRFMagnitude** | |  | **GRFML** | |
| Interval ground contact | **Pre** | **Post** |  | **Pre** | **Post** |
| 0 to 10% | 3.22 ± 0.15 | 2.82 ± 0.17 |  | -0.06 ± 0.03 | -0.01 ± 0.02 |
| 10 to 20% | 7.79 ± 0.18 | 7.67 ± 0.25 |  | -0.39 ± 0.04 | -0.28 ± 0.03\* |
| 20 to 30% | 10.20 ± 0.20 | 10.21 ± 0.25 |  | -0.83 ± 0.04 | -0.69 ± 0.04\* |
| 30 to 40% | 10.06 ± 0.26 | 9.86 ± 0.18 |  | -1.00 ± 0.04 | -0.88 ± 0.03\* |
| 40 to 50% | 9.06 ± 0.34 | 8.52 ± 0.24 |  | -0.90 ± 0.05 | -0.76 ± 0.04\* |
| 50 to 60% | 8.87 ± 0.32 | 8.41 ± 0.32 |  | -0.75 ± 0.04 | -0.63 ± 0.04\* |
| 60 to 70% | 9.39 ± 0.23 | 9.26 ± 0.27 |  | -0.64 ± 0.04 | -0.57 ± 0.05\* |
| 70 to 80% | 9.41 ± 0.36 | 9.60 ± 0.27 |  | -0.47 ± 0.03 | -0.41 ± 0.05 |
| 80 to 90% | 6.86 ± 0.34 | 7.44 ± 0.29 |  | -0.19 ± 0.03 | -0.15 ± 0.03 |
| 90 to 100% | 1.81 ± 0.11 | 1.98 ± 0.09 |  | 0.04 ± 0.01 | 0.05 ± 0.01 |

**Table S5:**

|  |  |  |
| --- | --- | --- |
|  | **Lever Arm FrontalKnee** | |
| Interval ground contact | **Pre** | **Post** |
| 10 to 20% | -0.026 ± 0.003 | -0.018 ± 0.002\* |
| 20 to 30% | -0.042 ± 0.003 | -0.033 ± 0.003\* |
| 30 to 40% | -0.047 ± 0.003 | -0.041 ± 0.004\* |
| 40 to 50% | -0.042 ± 0.003 | -0.036 ± 0.004\* |
| 50 to 60% | -0.032 ± 0.003 | -0.028 ± 0.004\* |
| 60 to 70% | -0.024 ± 0.003 | -0.023 ± 0.003 |
| 70 to 80% | -0.017 ± 0.003 | -0.015 ± 0.003 |
| 80 to 90% | -0.006 ± 0.003 | -0.005 ± 0.003 |

**Table S6:**

|  |  |  |
| --- | --- | --- |
|  | **Serum COMP concentration** | |
|  | **Pre** | **Post** |
| -0.5-h | 12.1 ± 1.2 | 11.7 ± 0.8 |
| 0-h 1 | 13.6 ± 1.2 | 13.2 ± 1.1 |
| 0.5-h 2 | 12.1 ± 1.1 | 11.4 ± 1.1 |
| 1.0-h 1,2,3 | 11.6 ± 1.2 | 11.1 ± 0.9 |