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| **SM1.** Main characteristics of study participants according to Timed "Up-and-Go" test (n= 78) |
|  | Low TUG (n=40) | High TUG (n=38) |
| *Muscle Power Parameters* |
| AMP\_EQUA, W | 186.4 ± 49.6 | 167.7 ± 75.6 |
| Relative muscle power, W/kg | 2.5 ± 0.73 | 2.2 ± 0.91 |
| Allometric muscle power, W/m2 | 72.6 ± 17.3 | 69.2 ± 31.3 |
| Concentric Muscle power, W | 53.7 ± 26.2 | 56.8 ± 18.9 |
| Concentric Muscle power 1st, W | 61.8 ± 35.1 | 62.1 ± 29.8 |
| Concentric Muscle power 2nd, W | 52.2 ± 27.6 | 54.7 ± 19.4 |
| Concentric Muscle power 3rd, W | 49.9 ± 24.7 | 58.3 ± 22.5 |
| Concentric Muscle power 4th, W | 51.7 ± 27.6 | 54.7 ± 25.9 |
| Concentric Muscle power 5th, W | 51.5 ± 27.6 | 56.4 ± 20.4 |
| Concentric Muscle power 1-2, W | 114.0 ± 60.2 | 116.9 ± 44.4 |
| Concentric Muscle power 1-3, W | 164.0 ± 79.8 | 175.2 ± 60.7 |
| Concentric Muscle power 1-4, W | 215.7 ± 104.1 | 230.0 ± 80.4 |
| Δ Concentric Muscle power 2nd, W | -9.6 ± 19.1 | -7.3 ± 23.6 |
| Δ Concentric Muscle power 3rd, W | -11.8 ± 22.4 | -3.8 ± 25.5 |
| Δ Concentric Muscle power 4th, W | -10.1 ±21.6 | -7.3 ± 22.4 |
| Δ Concentric Muscle power 5th, W | -10.2 ± 24.3 | -5.7 ± 20.4 |
| Duration concentric 1st, s | 1.6 ± 0.9 | 1.6 ± 0.7 |
| Duration concentric 2nd, s | 1.5 ± 0.9 | 1.5 ± 0.5 |
| Duration concentric 3rd, s | 1.5 ± 0.7 | 1.6 ± 0.6 |
| Duration concentric 4th, s | 1.5 ± 0.9 | 1.5 ± 0.6 |
| Duration concentric 5th, s | 1.5 ± 0.9 | 1.6 ± 0.5 |
| Duration concentric 1-2, s | 3.2 ± 1.7 | 3.1 ± 1.2 |
| Duration concentric 1-3, s | 4.8 ± 2.3 | 4.8 ± 1.6 |
| Duration concentric 1-4, s | 6.4 ± 3.2 | 6.3 ± 2.0 |
| Eccentric muscle power, W | 37.0 ± 12.4 | 40.5 ± 10.0 |
| Eccentric muscle power 1st, W | 38.5 ± 14.7 | 39.3 ± 16.1 |
| Eccentric muscle power 2nd, W | 38.7 ± 13.6 | 39.2 ± 12.0 |
| Eccentric muscle power 3rd, W | 34.9 ± 14.5 | **42.2 ± 12.3\*** |
| Eccentric muscle power 4th, W | 37.0 ± 12.5 | 41.5 ± 12.2 |
| Eccentric muscle power 5th, W | 35.9 ± 15.9 | 40.0 ± 10.4 |
| Eccentric muscle power 1-2, W | 77.2 ± 26.1 | 78.6 ± 25.0 |
| Eccentric muscle power 1-3, W | 112.2 ± 38.0 | 120.9 ± 34.3 |
| Eccentric muscle power 1-4, W | 149.2 ± 49.2 | 162.4 ± 42.5 |
| Δ Eccentric muscle power 2nd, W | -0.2 ± 11.1 | 0.1 ± 13.4 |
| Δ Eccentric muscle power 3rd, W | 3.5 ± 12.3 | **-2.9 ± 15.1\*** |
| Δ Eccentric muscle power 4th, W | 1.5 ± 10.1 | -2.1 ± 15.8 |
| Δ Eccentric muscle power 5th, W | 2.5 ± 9.7 | -0.6 ± 16.0 |
| Duration eccentric 1st, s | 0.9 ± 0.3 | 0.9 ± 0.4 |
| Duration eccentric 2nd, s | 0.9 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 3rd, s | 0.8 ± 0.3 | 1.0 ± 0.2 |
| Duration eccentric 4th, s | 0.9 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 5th, s | 0.8 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 1-2, s | 1.8 ± 0.6 | 1.9 ± 0.6 |
| Duration eccentric 1-3, s | 2.7 ± 0.9 | 2.9 ± 0.9 |
| Duration eccentric 1-4, s | 3.6 ± 1.2 | 3.9 ± 1.6 |
| AMP\_EQUA= Absolute muscle power derived from equations, \*P<0.05 vs low Timed "Up and Go" (TUG) |

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| **SM2.** Main characteristics of study participants according to IHG performance (n= 78) |
|  | Low IHG (n=43) | High IHG (n=35) |
| *Muscle Power Parameters* |
| AMP\_EQUA, W | 171.3 ± 43.9 | 410.4 ± 149.0 |
| Relative muscle power, W/kg | 2.3 ± 0.6 | 2.9 ± 1.4 |
| Allometric muscle power, W/m2 | 67.4 ± 15.5 | 84.7 ± 13.8 |
| Concentric Muscle power, W | 52.2 ± 27.8 | 59.0 ± 19.0 |
| Concentric Muscle power 1st, W | 59.0 ± 37.0 | 65.0 ± 29.3 |
| Concentric Muscle power 2nd, W | 49.4 ± 28.8 | 59.2 ± 24.1 |
| Concentric Muscle power 3rd, W | 49.9 ± 24.0 | 58.1 ± 23.5 |
| Concentric Muscle power 4th, W | 51.3 ± 31.5 | 55.3 ± 22.1 |
| Concentric Muscle power 5th, W | 48.4 ± 27.0 | **59.4 ± 21.4** |
| Concentric Muscle power 1-2, W | 109.3 ± 62.6 | 124.2 ± 49.0 |
| Concentric Muscle power 1-3, W | 159.3 ± 82.9 | 182.4 ± 64.6 |
| Concentric Muscle power 1-4, W | 210.7 ± 110.6 | 237.7 ± 80.8 |
| Δ Concentric Muscle power 2nd, W | -10.3 ± 21.9 | -5.8 ± 21.9 |
| Δ Concentric Muscle power 3rd, W | -9.9 ± 21.3 | -6.9 ± 26.6 |
| Δ Concentric Muscle power 4th, W | -8.5 ± 18.3 | -9.7 ± 24.9 |
| Δ Concentric Muscle power 5th, W | -11.5 ± 20.0 | -5.5 ± 24.0 |
| Duration concentric 1st, s | 1.7 ± 1.0 | 1.7 ± 0.8 |
| Duration concentric 2nd, s | 1.5 ± 0.9 | 1.6 ± 1.0 |
| Duration concentric 3rd, s | 1.5 ± 0.6 | 1.6 ± 0.7 |
| Duration concentric 4th, s | 1.5 ± 0.9 | 1.5 ± 0.6 |
| Duration concentric 5th, s | 1.4 ± 0.8 | 1.7 ± 0.7 |
| Duration concentric 1-2, s | 3.2 ± 1.8 | 3.4 ± 1.7 |
| Duration concentric 1-3, s | 4.7 ± 2.5 | 5.1 ± 2.2 |
| Duration concentric 1-4, s | 6.3 ± 3.3 | 6.6 ± 2.7 |
| Eccentric muscle power, W | 38.1 ± 14.1 | 39.6 ± 8.8 |
| Eccentric muscle power 1st, W | 38.7 ± 18.1 | 39.3 ± 12.6 |
| Eccentric muscle power 2nd, W | 36.8 ± 14.8 | 41.5 ± 11.5 |
| Eccentric muscle power 3rd, W | 37.8 ± 16.7 | 39.5 ± 11.3 |
| Eccentric muscle power 4th, W | 40.1 ± 14.4 | 38.7 ± 10.8 |
| Eccentric muscle power 5th, W | 37.4 ± 14.8 | 38.7 ± 10.3 |
| Eccentric muscle power 1-2, W | 75.5 ± 30.2 | 80.9 ± 21.4 |
| Eccentric muscle power 1-3, W | 113.4 ± 44.5 | 120.4 ± 28.8 |
| Eccentric muscle power 1-4, W | 153.5 ± 57.7 | 159.2 ± 35.5 |
| Δ Eccentric muscle power 2nd, W | 1.9 ± 13.5 | -2.2 ± 11.2 |
| Δ Eccentric muscle power 3rd, W | 0.86 ± 14.8 | -0.19 ± 13.5 |
| Δ Eccentric muscle power 4th, W | -1.37 ± 13.5 | -0.56 ± 13.0 |
| Δ Eccentric muscle power 5th, W | 1.2 ± 14.7 | 0.58 ± 11.9 |
| Duration eccentric 1st, s | 1.0 ± 0.4 | 0.9 ± 0.3 |
| Duration eccentric 2nd, s | 0.9 ± 0.3 | 0.9 ± 0.3 |
| Duration eccentric 3rd, s | 0.9 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 4th, s | 0.9 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 5th, s | 0.9 ± 0.3 | 0.9 ± 0.2 |
| Duration eccentric 1-2, s | 1.9 ± 0.7 | 1.9 ± 0.6 |
| Duration eccentric 1-3, s | 2.9 ± 1.1 | 2.8 ± 0.7 |
| Duration eccentric 1-4, s | 3.9 ± 1.4 | 3.7 ± 0.9 |
| AMP\_EQUA= Absolute muscle power derived from equations, \*P<0.05 vs low Isometric handgrip (IHG) |

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| **Table SM3.** Pearson's correlation between muscle power parameters and physical performance, adjusted according to body mass index. |
| Variables | **IHG** | **TUG** | **WS** |
| Concentric Muscle power | 0.549\* | -0.466\* | 0.610\* |
| Concentric Muscle power 1st | 0.438\* | -0.443\* | 0.455\* |
| Concentric Muscle power 2nd | 0.570\* | -0.434\* | 0.562\* |
| Concentric Muscle power 3rd | 0.485\* | -0.410\* | 0.542\* |
| Concentric Muscle power 4th | 0.444\* | -0.366\* | 0.501\* |
| Concentric Muscle power 5th | 0.540\* | -0.409\* | 0.636\* |
| Duration concentric 1st | 0.308\* | -0.435\* | 0.453\* |
| Duration concentric 2nd | 0.411\* | -0.440\* | 0.468\* |
| Duration concentric 3rd | 0.320\* | -0.422\* | 0.439\* |
| Duration concentric 4th | 0.239 | -0.350\* | 0.350\* |
| Duration concentric 5th | 0.440\* | -0.413\* | 0.567\* |
| Duration concentric 1-2 | 0.377\* | -0.464\* | 0.488\* |
| Duration concentric 1-3 | 0.382\* | -0.479\* | 0.503\* |
| Duration concentric 1-4 | 0.360\* | -0.468\* | 0.486\* |
| Δ Concentric Muscle power 2nd | 0.011 | 0.155 | -0.023 |
| Δ Concentric Muscle power 3rd | -0.045 | 0.139 | -0.002 |
| Δ Concentric Muscle power 4th | -0.067 | 0.185 | -0.012 |
| Δ Concentric Muscle power 5th | 0.103 | 0.096 | 0.218 |
| Eccentric muscle power | -0.492\* | 0.507\* | -0.5103\* |
| Eccentric muscle power 1st | -0.537 | 0.427\* | -0.455\* |
| Eccentric muscle power 2nd | -0.454\* | 0.365\* | -0.390\* |
| Eccentric muscle power 3rd | -0.310\* | 0.440\* | -0.375\* |
| Eccentric muscle power 4th | -0.308\* | 0.413\* | -0.420\* |
| Eccentric muscle power 5th | -0.475\* | 0.486\* | -0.512\* |
| Duration eccentric 1st | -0.267 | 0.489\* | -0.294 |
| Duration eccentric 2nd | -0.276 | 0.412\* | -0.274 |
| Duration eccentric 3rd | -0.060 | 0.448\* | -0.190 |
| Duration eccentric 4th | -0.171 | 0.461\* | -0.323\* |
| Duration eccentric 5th | -0.277 | 0.488\* | -0.359\* |
| Duration eccentric 1-2 | -0.292 | 0.487\* | -0.306\* |
| Duration eccentric 1-3 | -0.220 | 0.502\* | -0.280 |
| Duration eccentric 1-4 | -0.214 | 0.508\* | -0.301\* |
| Δ Eccentric muscle power 2nd | 0.083 | -0.062 | 0.063 |
| Δ Eccentric muscle power 3rd | 0.183 | 0.051 | 0.041 |
| Δ Eccentric muscle power 4th | 0.213 | 0.014 | 0.007 |
| Δ Eccentric muscle power 5th | 0.086 | 0.039 | -0.035 |
| AMP\_EQUA | -0.038 | 0.391\* | -0.213 |
| Allometric muscle power | 0.062 | 0.192 | -0.093 |
| Relative muscle power | 0.039 | 0.233 | -0.077 |
| AMP\_EQUA= Absolute muscle power derived from equations, IHG= Isometric handgrip strength, TUG= Timed “Up-and-Go”, WS= Walking speed, \*P<0.05 |