Supplementary table 1. Estimates and uncertainty (90% credible interval) of modeling sex- and body size-associated variation on muscle endurance and neuromuscular fatigue.

|  | Sex-associated variation | | Sex- and body size-associated variation | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | intercept | sex | intercept | sex | body mass | sex x body mass |
| Critical torque | 0.28 (0.06; 0.49) | -0.53 ( -0.83; -0.23) | -0.02 (-0.26; 0.24) | 0.03 (-0.40; 0.45) | 0.72 (0.29; 1.14) | - |
| Work capacity | 0.22 (-0.01; 0.45) | -0.43 ( -0.74; -0.12) | 0.21 (-0.12; 0.53) | -0.41 (-0.93; 0.14) | 0.02 (-0.51; 0.58) | - |
| Time-to-task failure | -0.13 (-0.38; 0.12) | 0.26 (-0.07; 0.58) | -0.26 (-0.60; 0.09) | 0.49 (-0.07; 1.07) | 0.30 (-0.26; 0.86) | - |
| Impulse accumulated above critical torque | -0.01 (-0.27; 0.25) | 0.02 (-0.34; 0.39) | -0.14 (-0.49; 0.20) | 0.27 (-0.31; 0.84) | 0.31 (-0.27; 0.89) | - |
| Maximal voluntary contraction | 0.27 (0.04; 0.50) | -0.51 (-0.82; -0.18) | 0.42 (0.08; 0.75) | -0.35 (-0.82; 0.11) | -0.39 (-1.02; 0.26) | 1.26 (0.29; 2.19) |

*Note: outcomes were standardized; sex was considered a dummy variable: man = 0, woman = 1, hence exponents indicate the additive term for women).*

Supplementary table 2. Multilevel modeling estimates and uncertainty (90% credible interval) of modeling sex- and body size-associated variation on Qtw.pot.

|  | Modeling sex-associated variation | Modeling sex- and mass-associated variation |
| --- | --- | --- |
| *Population-level parameters* | | |
| Intercept | -0.85 (-1.35; -0.35) | 1.21 (-1.70; -0.73) |
| Test duration | -2.81 (-3.86; -1.81) | -2.78 (-3.77; -1.79) |
| Sex | -0.44 ( -0.76; -0.13) | 0.25 (-0.16; 0.66) |
| Body mass | - | 0.72 (0.38; 1.06) |
| *Group-level parameters (level 2)* | | |
| Intercept (standard deviation) | 1.44 (1.03; 1.94) | 1.37 (1.03; 1.80) |
| Test duration (standard deviation) | 3.12 (2.26; 4.19) | 3.07 (2.33; 3.96) |
| Residual standard deviation (level 1) | 0.21 (0.19; 0.22) | 0.21 (0.19; 0.22) |

*Note: outcomes were standardized; sex was considered as a dummy variable: man = 0, woman = 1, hence exponents indicate the additive term for woman).*