Supplemental Tables

Supplemental Table 1a. Trunk Muscle Area and Density

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Lateralis | Rectus | Psoas | Paraspinal |
| Trunk Muscle Area (cm2) | |  |  |  |
| Intercept | 26.8 (21.5-32.2) | 10.8 (8.7-12.9) | 22.2 (19.3-25.1) | 35.3 (30.5-40.0) |
| Age (per 5 years) | -0.5(-0.9--0.1)\* | -0.3(-0.5--0.1)\*\*\* | -0.5(-0.7--0.3)\*\*\* | -1.1(-1.5--0.7)\*\*\* |
| Black | 0.7(-0.4-1.8) | -0.1(-0.5-0.3) | 0.5(-0.1-1.1) | -0.3(-1.3-0.6) |
| Other | -1.4(-3.3-0.6) | -0.2(-1.0-0.5) | -0.8(-1.8-0.3) | -0.1(-1.9-1.6) |
| Female | -5.5(-7.0--3.9)\*\*\* | -3.0(-3.6--2.4)\*\*\* | -6.1(-6.9--5.2)\*\*\* | -4.3(-5.6--2.9)\*\*\* |
| HIV Positive | 1.1(0.2-1.9)\* | 0.2(-0.1-0.5) | -0.6(-1.0--0.1)\* | 0.8(0.0-1.6)\* |
| BMI 25-<30 | 2.4(1.4-3.4)\*\*\* | 0.6(0.2-1.0)\*\* | 1.1(0.6-1.7)\*\*\* | 1.6(0.7-2.5)\*\*\* |
| BMI 30+ | 5.5(4.4-6.6)\*\*\* | 1.5(1.1-2.0)\*\*\* | 2.2(1.6-2.8)\*\*\* | 2.3(1.4-3.3)\*\*\* |
| Trunk Muscle Density (HU) | |  |  |  |
| Intercept | 51.7 (43.2-60.1) | 59.2 (46.4-71.9) | 59.4 (54.0-64.7) | 70.8 (62.6-78.9) |
| Age (per 5 years) | -1.5(-2.2--0.9)\*\*\* | -2.2(-3.2--1.2)\*\*\* | -1.3(-1.7--0.9)\*\*\* | -3.1(-3.7--2.4)\*\*\* |
| Black | 2.5(0.8-4.3)\*\* | 1.7(-0.9-4.3) | 2.1(1.0-3.2)\*\*\* | 2.9(1.2-4.5)\*\*\* |
| Other | -0.1(-3.1-3.0) | -1.3(-5.9-3.3) | -1.2(-3.2-0.7) | -1.9(-4.8-1.0) |
| Female | -4.8(-7.2--2.4)\*\*\* | -13.4(-17.0--9.8)\*\*\* | -3.7(-5.2--2.2)\*\*\* | -10.4(-12.7--8.1)\*\*\* |
| HIV Positive | 0.2(-1.2-1.5) | -1.4(-3.4-0.7) | -1.6(-2.5--0.7)\*\*\* | 0.5(-0.8-1.8) |
| BMI 25-<30 | -4.1(-5.6--2.5)\*\*\* | -3.4(-5.8--1.0)\*\* | -0.9(-1.9-0.1) | -2.0(-3.5--0.5)\*\* |
| BMI 30+ | -10.5(-12.2--8.8)\*\*\* | -10.3(-12.9--7.7)\*\*\* | -1.7(-2.8--0.6)\*\* | -4.1(-5.8--2.4)\*\*\* |

Supplemental Table 1b. Thigh Muscle Area and Density

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Thigh Muscle | Area | | Density | |
|  | Quadriceps | Hamstring | Quadriceps | Hamstring |
| Intercept | 91.8 (79.9-103.6) | 40.1 (33.2-47.0) | 59.0 (54.3-63.7) | 50.8 (43.8-57.9) |
| Age (per 5 years) | -2.1(-3.0--1.2)\*\*\* | -0.8(-1.3--0.3)\*\* | -0.7(-1.0--0.3)\*\*\* | -0.9(-1.4--0.3)\*\* |
| Black | 3.9(1.5-6.3)\*\* | 2.2(0.8-3.6)\*\* | -1.8(-2.8--0.9)\*\*\* | 0.4(-1.0-1.8) |
| Other | -1.7(-6.0-2.6) | -0.4(-2.9-2.1) | -0.3(-2.0-1.4) | -0.1(-2.6-2.5) |
| Female | -27.7(-31.1--24.4)\*\*\* | -13.1(-15.1--11.2)\*\*\* | -1.2(-2.6-0.1) | -3.9(-5.9--1.9)\*\*\* |
| HIV Positive | 1.3(-0.5-3.2) | 1.2(0.1-2.3)\* | 0.5(-0.2-1.3) | 0.6(-0.5-1.7) |
| BMI 25-<30 | 6.5(4.3-8.7)\*\*\* | 3.2(1.9-4.4)\*\*\* | -0.8(-1.6-0.1) | -1.4(-2.7--0.1)\* |
| BMI 30+ | 12.1(9.6-14.5)\*\*\* | 5.2(3.8-6.7)\*\*\* | -2.5(-3.5--1.6)\*\*\* | -3.5(-5.0--2.1)\*\*\* |

Supplemental Table 2A. **Trunk Muscle Area (cm2) in Women and Men**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Women | | | |
| Lateralis | Rectus | Psoas | Paraspinal |
| Intercept | 15.0 (8.4-21.6) | 8.5 (5.8-11.3) | 14.6 (11.5-17.7) | 23.5 (17.6-29.3) |
| Age (per 5 years) | 0.2(-0.4-0.8) | -0.4(-0.7--0.1)\*\* | -0.4(-0.7--0.1)\*\* | -0.3(-0.8-0.3) |
| Black | 0.4(-1.3-2.1) | 0.1(-0.6-0.8) | 0.4(-0.4-1.3) | -1.1(-2.6-0.4) |
| Other | -1.6(-3.7-0.5) | -0.2(-1.1-0.6) | -0.6(-1.6-0.4) | -1.1(-2.9-0.8) |
| HIV Positive | -0.4(-1.7-0.9) | 0.4(-0.1-0.9) | -0.1(-0.8-0.5) | -0.3(-1.5-0.9) |
| BMI 25-<30 | 3.0(1.3-4.7)\*\*\* | 0.6(-0.1-1.3) | 1.1(0.2-1.9)\* | 2.5(1.0-4.0)\*\*\* |
| BMI 30+ | 6.8(5.2-8.4)\*\*\* | 1.5(0.8-2.2)\*\*\* | 2.3(1.5-3.1)\*\*\* | 3.6(2.2-5.0)\*\*\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Men | | | |
| Lateralis | Rectus | Psoas | Paraspinal |
| Intercept | 29.9 (23.0-36.9) | 10.3 (7.6-13.0) | 23.4 (19.5-27.4) | 38.8 (32.6-45.0) |
| Age (per 5 years) | -0.7(-1.3--0.2)\*\* | -0.3(-0.5--0.1)\* | -0.6(-0.9--0.3)\*\*\* | -1.4(-1.8--0.9)\*\*\* |
| Black | 0.6(-0.8-2.0) | -0.2(-0.8-0.3) | 0.6(-0.2-1.4) | -0.3(-1.6-0.9) |
| Other | -2.2(-7.6-3.3) | 1.2(-0.9-3.3) | -3.0(-6.1-0.0) | 1.5(-3.4-6.3) |
| HIV Positive | 1.7(0.6-2.8)\*\* | 0.1(-0.3-0.6) | -0.8(-1.4--0.2)\* | 1.2(0.2-2.2)\* |
| BMI 25-<30 | 2.3(1.0-3.5)\*\*\* | 0.6(0.1-1.0)\* | 1.1(0.4-1.8)\*\* | 1.5(0.4-2.6)\*\* |
| BMI 30+ | 4.6(3.1-6.0)\*\*\* | 1.6(1.0-2.2)\*\*\* | 2.1(1.3-3.0)\*\*\* | 1.6(0.3-2.9)\* |

Supplemental Table 2B. **Trunk Muscle Density (Hounsfield units, HU) in Women and Men**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Women | | | |
| Lateralis | Rectus | Psoas | Paraspinal |
| Intercept | 50.2 (37.4-63.0) | 47.2 (28.0-66.4) | 55.9 (48.6-63.2) | 63.1 (50.8-75.5) |
| Age (per 5 years) | -1.7(-3.0--0.5)\*\* | -2.4(-4.3--0.6)\*\* | -1.4(-2.1--0.7)\*\*\* | -3.3(-4.5--2.1)\*\*\* |
| Black | 1.1(-2.3-4.4) | 1.5(-3.5-6.5) | 2.3(0.5-4.2)\* | 2.0(-1.2-5.2) |
| Other | -2.3(-6.4-1.7) | -3.4(-9.4-2.7) | -1.4(-3.7-0.9) | -3.8(-7.7-0.1) |
| HIV Positive | -0.1(-2.7-2.5) | 0.6(-3.3-4.4) | -0.8(-2.3-0.6) | 0.1(-2.3-2.6) |
| BMI 25-<30 | -4.1(-7.4--0.7)\* | -2.6(-7.6-2.4) | -1.3(-3.2-0.6) | -1.2(-4.4-2.0) |
| BMI 30+ | -9.3(-12.5--6.1)\*\*\* | -9.7(-14.5--5.0)\*\*\* | -0.7(-2.5-1.1) | -3.5(-6.5--0.4)\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Men | | | |
| Lateralis | Rectus | Psoas | Paraspinal |
| Intercept | 48.8 (38.6-58.9) | 57.2 (41.9-72.5) | 59.3 (52.5-66.0) | 67.8 (58.0-77.6) |
| Age (per 5 years) | -1.3(-2.1--0.5)\*\*\* | -2.0(-3.2--0.8)\*\*\* | -1.3(-1.8--0.8)\*\*\* | -2.8(-3.6--2.1)\*\*\* |
| Black | 3.0(1.0-5.1)\*\* | 1.4(-1.6-4.5) | 2.1(0.7-3.5)\*\* | 2.9(1.0-4.9)\*\* |
| Other | 7.4(-0.6-15.3) | 11.8(-0.2-23.8) | 0.6(-4.7-5.9) | 7.2(-0.5-14.9) |
| HIV Positive | 0.4(-1.2-2.0) | -2.1(-4.5-0.3) | -1.9(-2.9--0.8)\*\*\* | 0.8(-0.8-2.3) |
| BMI 25-<30 | -3.8(-5.6--2.0)\*\*\* | -3.4(-6.1--0.7)\* | -0.6(-1.8-0.6) | -2.1(-3.8--0.3)\* |
| BMI 30+ | -11.4(-13.6--9.2)\*\*\* | -10.3(-13.6--7.0)\*\*\* | -2.4(-3.9--1.0)\*\*\* | -4.4(-6.5--2.3)\*\*\* |

**Supplemental Table 2C. Thigh Muscle Area (cm2) and Density (HU) in Women and Men**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Women | | | |
| Density | | Area | |
| Quadriceps | Hamstring | Quadriceps | Hamstring |
| Intercept | 59.6 (52.0-67.3) | 40.7 (29.2-52.2) | 55.1 (41.9-68.4) | 17.2 (6.1-28.3) |
| Age (per 5 years) | -1.0(-1.8--0.3)\*\* | -0.5(-1.6-0.6) | -1.3(-2.6--0.1)\* | 0.3(-0.8-1.3) |
| Black | -0.5(-2.5-1.4) | 1.6(-1.3-4.5) | 2.5(-0.8-5.9) | 1.1(-1.7-3.9) |
| Other | -0.0(-2.4-2.4) | -0.1(-3.7-3.5) | -3.4(-7.5-0.7) | -1.6(-5.0-1.9) |
| HIV Positive | 0.6(-0.9-2.1) | 0.9(-1.4-3.2) | 3.7(1.1-6.3)\*\* | 0.7(-1.5-2.8) |
| BMI 25-<30 | -0.7(-2.6-1.3) | 0.3(-2.7-3.2) | 7.3(4.0-10.7)\*\*\* | 4.3(1.5-7.1)\*\* |
| BMI 30+ | -0.6(-2.4-1.3) | -0.6(-3.4-2.2) | 13.7(10.5-16.9)\*\*\* | 6.1(3.4-8.8)\*\*\* |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Men | | | |
| Density | | Area | |
| Quadriceps | Hamstring | Quadriceps | Hamstring |
| Intercept | 57.3 (52.1-62.6) | 53.2 (45.2-61.3) | 96.7 (80.9-112.4) | 44.6 (36.6-52.6) |
| Age (per 5 years) | -0.5(-0.9--0.1)\* | -1.0(-1.6--0.4)\*\*\* | -2.4(-3.6--1.2)\*\*\* | -1.1(-1.7--0.5)\*\*\* |
| Black | -2.3(-3.3--1.2)\*\*\* | -0.2(-1.8-1.4) | 4.3(1.1-7.4)\*\* | 2.3(0.7-3.9)\*\* |
| Other | 3.7(-1.1-8.4) | 4.7(-2.5-11.9) | 1.5(-12.7-15.6) | 2.1(-5.1-9.2) |
| HIV Positive | 0.8(-0.1-1.6) | 0.6(-0.6-1.9) | 0.2(-2.3-2.7) | 1.3(0.0-2.6)\* |
| BMI 25-<30 | -0.7(-1.6-0.3) | -1.7(-3.2--0.3)\* | 6.4(3.6-9.3)\*\*\* | 2.9(1.5-4.3)\*\*\* |
| BMI 30+ | -3.9(-5.1--2.8)\*\*\* | -5.1(-6.8--3.4)\*\*\* | 11.4(8.0-14.8)\*\*\* | 4.9(3.2-6.6)\*\*\* |

\*p<0.05

\*\*p≤0.01

\*\*\*p≤0.001

Supplemental Table 3. Effect of muscle area or density on physical function among both people with and without HIV

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Lateralis** | | **Rectus** | **Psoas** | **Paraspinal** | **Quadriceps** | **Hamstring** |
| **Area** | | | | | | |  |  |
| Gait (m/sec) | Women | | -0.0023  (-0.0092-0.0047) | -0.0029  (-0.020-0.014) | 0.0026  (-0.013-0.018) | 0.0069  (-0.0012-0.015) | **0.0040**  **(0.0004-0.0076)** | **0.0056**  **(0.0013-0.0098)** |
| Men | | -0.0011  (-0.0048-0.0027) | 0.0040  (-0.0059-0.014) | 0.0019  (-0.0047-0.0085) | -0.0001  (-0.0043-0.0041) | 0.0009  (-0.0008-0.0026) | -0.0005  (-0.0040-0.0031) |
| Grip (kg) | Women | | 0.160  (-0.079-0.40) | 0.21  (-0.37-0.80) | **0.96**  **(0.47-1.45)** | **0.36**  **(0.083-0.63)** | **0.26**  **(0.15-0.38)** | **0.20**  **(0.039-0.35)** |
| Men | | **0.18**  **(0.019-0.35)** | **0.48**  **(0.047-0.92)** | **0.42**  **(0.13-0.71)** | 0.17  (-0.014-0.36) | **0.20**  **(0.13-0.27)** | **0.28**  **(0.13-0.44)** |
| 10x Chair Rise (sec) | Women | | 0.098  (-0.12-0.33) | -0.049  (-0.58-0.48) | -0.25  (-0.73-0.22) | 0.23  (-0.016-0.48) | -0.062  (-0.18-0.054) | **0.17**  **(0.031-0.31)** |
| Men | | -0.017  (-0.14-0.10) | -0.25  (-0.57-0.064) | -0.029  (-0.25-0.19) | 0.021  (-0.11-0.15) | -0.057  (-0.11-0.0005) | 0.019  (-0.094-0.13) |
| Frailty | Women | | 0.89 (0.77, 1.01) | **0.68 (0.49, 0.96)** | **0.65 (0.49, 0.88)** | 0.99 (0.87, 1.14) | **0.91 (0.85, 0.98)** | **0.91 (0.83, 0.99)** |
| Men | | 0.99 (0.93, 1.06) | 0.89 (0.74, 1.07) | **0.86 (0.76, 0.98)** | 1.04 (0.96, 1.12) | 0.95 (0.92, 0.98) | 0.97 (0.91, 1.04) |
| **Density** | | | | | | |  |  |
| Gait (m/sec) | Women | | 0.0021  (-0.0016-0.0058) | 0.0000  (-0.0024-0.0025) | -0.0042  (-0.011-0.0022) | 0.0002  (-0.0036-0.004) | 0.0022  (-0.0040-0.0083) | 0.0026  (-0.0017-0.0068) |
| Men | | **0.0037**  **(0.0011-0.0062)** | **0.0020**  **(0.0003-0.0036)** | **0.0038**  **(0.0001-0.0075)** | **0.003**  **(0.0004-0.0056)** | **0.0071**  **(0.0023-0.012)** | 0.0026  (-0.0006-0.0059) |
| Grip (kg) | Women | | 0.027  (-0.103-0.16) | 0.018  (-0.065-0.10) | 0.13  (-0.094-0.35) | 0.068  (-0.06-0.20) | 0.0031  (-0.20-0.21) | 0.14  (-0.0097-0.28) |
| Men | | 0**.21**  **(0.094-0.32)** | 0.067  (-0.0072-0.14) | **0.31**  **(0.14-0.47)** | **0.28**  **(0.16-0.39)** | **0.40**  **(0.19-0.61)** | 0.12  (-0.026-0.26) |
| 10x Chair Rise (sec) | Women | | 0.0090  (-0.10-0.12) | -0.0154  (-0.091-0.06) | **-0.25**  **(-0.45- -0.045)\*** | -0.029  (-0.15-0.087) | -0.18  (-0.38-0.019) | 0.048  (-0.087-0.18) |
| Men | | **-0.18**  **(-0.26- -0.096)** | **-0.074**  **(-0.13- -0.020)** | **-0.18**  **(-0.30- -0.059)** | **-0.17**  **(-0.26- -0.089)** | **-0.38**  **(-0.56- -0.21)** | **-0.19**  **(-0.29- -0.081)** |
| Frailty | Women | | 0.99 (0.94, 1.06) | 1.00 (0.96, 1.04) | 0.94 (0.84, 1.04) | 1.01 (0.95, 1.08) | **0.88 (0.78, 0.98)** | 0.94 (0.87, 1.01) |
| Men | | **0.91 (0.86, 0.95)** | **0.97 (0.94, 0.99)** | **0.84 (0.79, 0.91)** | **0.90 (0.86, 0.95)** | **0.86 (0.79, 0.92)** | **0.91 (0.86, 0.97)** |

Models were adjusted for age, race/ethnicity, body mass index, and HIV serostatus. Gait, grip, and 10x chair rise are presented as estimates (95% confidence interval) on the outcome in meters/second, kilograms, or seconds, respectively, and frailty as the odds ratio (95% confidence interval) of having frailty for each 1 cm or 1 HU change in the area or density.

**Bolded values** indicate p<0.05