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| **Supplementary table 1. Validation of anthropometric equation 2 for lean body mass, fat mass and percent fat in subgroups of the validation group sampled from the NHANES (1999-2006)a** |
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|  | **N** | **Difference** **(DEXA - equation)b** | **SDb** | ***Ppaired T-test*** | **R2** | **SEEb** |
| ***Lean body mass*** |  |  |  |  |  |  |
| **Men** |  |  |  |  |  |  |
| Disease | 51 | 0.22 | 3.20 | 0.28 | 0.90 | 2.79 |
| no-disease | 2241 | -0.02 | 3.12 | 0.72 | 0.92 | 2.44 |
| age≥65 | 475 | -0.31 | 2.56 | 0.01 | 0.91 | 2.57 |
| age<65 | 1817 | 0.05 | 3.15 | 0.52 | 0.92 | 2.47 |
| BMI≥25 | 1398 | 0.14 | 3.45 | 0.14 | 0.88 | 2.61 |
| BMI<25 | 894 | -0.23 | 2.94 | 0.02 | 0.89 | 2.25 |
| Smoker | 1187 | 0.13 | 3.17 | 0.16 | 0.91 | 2.47 |
| Never smoker | 795 | -0.10 | 3.27 | 0.41 | 0.92 | 2.45 |
| White | 1095 | 0.04 | 2.69 | 0.60 | 0.91 | 2.50 |
| Black | 463 | -0.10 | 3.44 | 0.52 | 0.93 | 2.50 |
| Mexican American | 566 | -0.08 | 3.02 | 0.51 | 0.90 | 2.33 |
| Hispanic | 93 | 0.17 | 2.98 | 0.59 | 0.88 | 2.42 |
| Other | 75 | -0.47 | 2.64 | 0.13 | 0.95 | 2.55 |
| **Women** |  |  |  |  |  |  |
| Disease | 45 | 0.03 | 2.89 | 0.82 | 0.83 | 2.40 |
| no-disease | 1970 | -0.02 | 3.50 | 0.85 | 0.86 | 2.36 |
| age≥65 | 439 | 0.21 | 3.50 | 0.21 | 0.85 | 2.41 |
| age<65 | 1576 | -0.04 | 3.34 | 0.60 | 0.84 | 2.36 |
| BMI≥25 | 1073 | -0.11 | 3.24 | 0.28 | 0.81 | 2.53 |
| BMI<25 | 942 | 0.09 | 2.99 | 0.34 | 0.76 | 2.20 |
| Smoker | 684 | 0.13 | 2.60 | 0.18 | 0.84 | 2.31 |
| Never smoker | 1094 | -0.09 | 3.48 | 0.42 | 0.84 | 2.42 |
| White | 990 | -0.02 | 2.84 | 0.86 | 0.83 | 2.38 |
| Black | 353 | -0.08 | 3.49 | 0.65 | 0.84 | 2.49 |
| Mexican American | 493 | 0.16 | 3.18 | 0.27 | 0.83 | 2.39 |
| Hispanic | 96 | -0.03 | 3.51 | 0.94 | 0.86 | 2.32 |
| Other | 83 | 0.07 | 2.21 | 0.77 | 0.85 | 2.05 |
| ***Fat mass*** |  |  |  |  |  |  |
| **Men** |  |  |  |  |  |  |
| Disease | 51 | 0.07 | 3.82 | 0.90 | 0.90 | 3.02 |
| no-disease | 2241 | 0.00 | 3.15 | 0.97 | 0.91 | 2.50 |
| age≥65 | 475 | 0.24 | 2.60 | 0.04 | 0.89 | 2.62 |
| age<65 | 1817 | -0.04 | 2.95 | 0.59 | 0.91 | 2.49 |
| BMI≥25 | 1398 | -0.13 | 3.22 | 0.13 | 0.86 | 2.62 |
| BMI<25 | 894 | 0.22 | 2.96 | 0.03 | 0.74 | 2.32 |
| Smoker | 1187 | -0.14 | 3.08 | 0.13 | 0.90 | 2.49 |
| Never smoker | 795 | 0.11 | 3.11 | 0.30 | 0.91 | 2.51 |
| White | 1095 | -0.04 | 2.58 | 0.58 | 0.90 | 2.53 |
| Black | 463 | 0.09 | 3.37 | 0.55 | 0.92 | 2.49 |
| Mexican American | 566 | 0.06 | 2.82 | 0.60 | 0.89 | 2.34 |
| Hispanic | 93 | -0.14 | 3.00 | 0.65 | 0.88 | 2.41 |
| Other | 75 | 0.51 | 2.79 | 0.12 | 0.91 | 2.64 |
| **Women** |  |  |  |  |  |  |
| Disease | 45 | -0.19 | 2.35 | 0.59 | 0.97 | 2.29 |
| no-disease | 1970 | 0.03 | 3.51 | 0.75 | 0.93 | 2.44 |
| age≥65 | 439 | -0.19 | 3.55 | 0.26 | 0.94 | 2.46 |
| age<65 | 1576 | 0.06 | 3.52 | 0.50 | 0.93 | 2.43 |
| BMI≥25 | 1073 | 0.16 | 3.29 | 0.11 | 0.90 | 2.59 |
| BMI<25 | 942 | -0.11 | 3.11 | 0.28 | 0.76 | 2.27 |
| Smoker | 684 | -0.11 | 2.75 | 0.30 | 0.93 | 2.37 |
| Never smoker | 1094 | 0.09 | 3.46 | 0.37 | 0.93 | 2.49 |
| White | 990 | 0.03 | 3.00 | 0.77 | 0.94 | 2.45 |
| Black | 353 | 0.07 | 3.34 | 0.67 | 0.93 | 2.51 |
| Mexican American | 493 | -0.16 | 3.07 | 0.23 | 0.92 | 2.42 |
| Hispanic | 96 | 0.09 | 3.55 | 0.80 | 0.92 | 2.32 |
| Other | 83 | 0.02 | 2.26 | 0.94 | 0.92 | 2.12 |
| ***Percent fat*** |  |  |  |  |  |  |
| **Men** |  |  |  |  |  |  |
| Disease | 51 | -0.65 | 4.71 | 0.33 | 0.69 | 3.78 |
| no-disease | 2241 | -0.54 | 3.79 | <0.01 | 0.74 | 2.99 |
| age≥65 | 475 | -0.31 | 3.05 | 0.03 | 0.61 | 3.24 |
| age<65 | 1817 | -0.58 | 3.41 | <0.01 | 0.74 | 2.97 |
| BMI≥25 | 1398 | -0.49 | 3.37 | <0.01 | 0.60 | 2.92 |
| BMI<25 | 894 | -0.62 | 4.19 | <0.01 | 0.60 | 3.16 |
| Smoker | 1187 | -0.72 | 3.79 | <0.01 | 0.73 | 3.06 |
| Never smoker | 795 | -0.32 | 3.67 | 0.01 | 0.73 | 2.90 |
| White | 1095 | -0.58 | 2.98 | <0.01 | 0.73 | 2.99 |
| Black | 463 | -0.54 | 3.66 | <0.01 | 0.77 | 3.01 |
| Mexican American | 566 | -0.46 | 3.81 | <0.01 | 0.70 | 2.88 |
| Hispanic | 93 | -0.83 | 3.86 | 0.04 | 0.74 | 3.14 |
| Other | 75 | 0.34 | 3.72 | 0.43 | 0.70 | 3.40 |
| **Women** |  |  |  |  |  |  |
| Disease | 45 | -1.67 | 3.15 | <0.01 | 0.73 | 3.42 |
| no-disease | 1970 | -0.69 | 5.33 | <0.01 | 0.66 | 3.86 |
| age≥65 | 439 | -1.14 | 5.45 | <0.01 | 0.56 | 4.12 |
| age<65 | 1576 | -0.63 | 5.16 | <0.01 | 0.67 | 3.80 |
| BMI≥25 | 1073 | -0.3 | 4.59 | 0.03 | 0.44 | 3.56 |
| BMI<25 | 942 | -1.11 | 5.22 | <0.01 | 0.47 | 4.11 |
| Smoker | 684 | -0.88 | 4.45 | <0.01 | 0.68 | 3.81 |
| Never smoker | 1094 |  -0.60 | 4.63 | <0.01 | 0.65 | 3.89 |
| White | 990 | -0.73 | 4.72 | <0.01 | 0.67 | 3.93 |
| Black | 353 | -0.48 | 4.51 | 0.05 | 0.68 | 3.56 |
| Mexican American | 493 | -0.95 | 4.44 | <0.01 | 0.60 | 3.76 |
| Hispanic | 96 | -0.57 | 4.70 | 0.24 | 0.62 | 3.46 |
| Other | 83 | -0.62 | 3.92 | 0.15 | 0.63 | 3.64 |
| Abbreviation: NHANES, national health and nutrition examination survey; SD, standard deviation; SEE, standard error of estimate; BMI, body mass index; DXA, dual-energy X-ray absorptiometrya Analysis included all subjects who had DXA and anthropometric measurements from the NHANES 1999-2006b Unit for difference (DXA-equation), SD, and SEE: lean body mass (kg), fat mass (kg), percent fat (%) |
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