**Supplementary Table 1.** Precision analysis of consumer-grade devices

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Total****(n=182)** | **Female****(n=114)** | **Male****(n=68)** | **White****(n=114)** | **BAA****(n=47)** |
| VATNIRS | 0.952‡(0.34) | 0.934‡ (0.34) | 0.966‡(0.34) | 0.917‡(0.42) | 0.999‡(0.18) |
| VATVBC  | 0.982‡(0.22) | 0.937‡ (0.24) | 0.991‡(0.19) | 0.972‡(0.25) | 0.994‡(0.17) |
| VATMFBIA | 0.998‡(0.61) | 0.994‡ (0.18) | 0.999‡(0.19) | 0.998‡(0.19) | 0.999‡(0.18) |

BAA, Black/African-American; VAT, visceral adipose tissue; NIRS, near-infrared reactance spectroscopy; VBC, visual body composition; MFBIA, multifrequency BIA. Data are presented as intraclass correlation coefficients using two-way random effects with absolute agreement and (precision error). ‡ significant at p < 0.001

**Supplementary Table 2a.** Associations Between VAT Indices and VAT/SAT Estimates From DXA by VAT and SAT Quartiles

|  |  |
| --- | --- |
|  | **DXA Visceral Adipose Area (cm2)a** |
|  | **Visceral Classificationb,c** |  | **Subcutaneous Classificationb,d** |
|  | **< 16.5****(n=45)** | **16.5-39.99****(n=47)** | **40.0-66.99****(n=44)** | **≥ 67.0****(n=46)** |  | **< 77.0****(n=46)** | **77.0-139.99****(n=47)** | **140.0-229.99****(n=44)** | **≥ 230.0****(n=45)** |
| Waist (cm) | 0.12(0.03) | 0.21(0.01) | 0.42†(0.14) | 0.67‡(0.46)† |  | 0.16(0.25) | 0.50‡(0.43)† | 0.41†(0.37)\* | 0.89‡(0.77)‡ |
| BMI (kg/m2) | 0.12(0.06) | 0.23(0.07) | 0.30(-0.03) | 0.64‡(0.39)† |  | -0.06(0.02) | 0.58‡(0.53)‡ | 0.32\*(0.27) | 0.88‡(0.77)‡ |
| Waist:hip | 0.03(-0.03) | 0.00(0.12) | 0.31\*(0.22) | 0.60‡(0.37)\* |  | -0.19(-0.12) | 0.10(-0.01) | 0.01(-0.09) | 0.61(0.34)\* |
| Waist:height | 0.14(0.04) | 0.23(-0.03) | 0.46†(0.20) | 0.56‡(0.14) |  | 0.36\*(0.40)† | 0.72‡(0.69)‡ | 0.33\*(0.28) | 0.86‡(0.78)‡ |
| VATNIRS  | 0.03(-0.06) | -0.00(-0.30) | 0.34\*(-0.00) | 0.71‡(0.53)‡ |  | 0.42†(0.52)‡ | 0.26(0.21) | 0.39\*(0.34)\* | 0.85‡(0.69)‡ |
| VATVBC  | -0.09(-0.13) | -0.04(-0.10) | 0.14(0.10) | 0.76‡(0.63)‡ |  | 0.01(0.19) | 0.44†(0.35)\* | 0.26(0.17) | 0.81‡(0.60)‡ |
| VATMFBIA | -0.03(-0.06) | 0.01(-0.14) | 0.39\*(0.26) | 0.77‡(0.64)‡ |  | 0.14(0.32)\* | 0.41†(0.31)\* | 0.19(0.07) | 0.80‡(0.57)‡ |
| UnadjustedSAT (cm2) | 0.15 | 0.37\* | 0.44† | 0.56‡ |  |  |  |  |  |

a Values presented as: Pearson r (rpartial adjusted); b adipose tissue area quartiles measured in cm2; c values are total and partial correlations between each VAT index and VATDXA after adjusting for SATDXA; d values are total and partial correlations between each VAT index and SATDXA after adjusting for VATDXA ‡ significant at p < 0.001; † significant at p < 0.010; \*  significant at p < 0.050.

**Supplementary Table 2b.** Associations Between VAT Indices and VAT Estimates From DXA by VAT Quartiles Across Race and Sex Groups

|  |  |
| --- | --- |
|  | **Visceral Classification (cm2)** |
|  | **< 16.5** | **16.5-39.99** | **40.0-66.99** | **≥ 67.0** |
|  | **W** | **BAA** | **W** | **BAA** | **W** | **BAA** | **W** | **BAA** |
|  | n=31M=6 | n=11M=0 | n=32M=16 | n=12M=6 | n=26M=9 | n=10M=3 | n=25M=14 | n=14M=8 |
| Waist (cm) | 0.17(0.03) | 0.15(0.23) | 0.07(-0.19) | 0.54(0.47) | 0.18(0.01) | 0.73\*(0.23) | 0.64†(0.44)\* | 0.83‡(0.57)\* |
| BMI (kg/m2) | 0.13(0.04) | 0.07(0.08) | 0.11(-0.03) | 0.56(0.49) | -0.09(-0.30) | 0.66\*(0.01) | 0.64†(0.49)\* | 0.69†(0.27) |
| Waist:hip | 0.13(0.03) | -0.04(-0.03) | -0.18(-0.06) | 0.39(0.47) | 0.21(0.23) | 0.66\*(0.47) | 0.66‡(0.51)\* | 0.47(0.06) |
| Waist:height | 0.14(-0.07) | 0.14(0.19) | 0.21(-0.05) | 0.34(0.17) | 0.39\*(0.31) | 0.62(-0.24) | 0.54†(0.17) | 0.70†(0.19) |
| VATNIRS | -0.03(-0.13) | 0.03(0.13) | 0.03(-0.29) | -0.01(-0.34) | 0.10(-0.10) | 0.67\*(0.00) | 0.70‡(0.56)† | 0.68†(0.09) |
| VATVBC | -0.15(-0.18) | 0.03(0.03) | -0.33(-0.35) | 0.64\*(0.60) | -0.10(-0.08) | 0.53(0.44) | 0.84‡(0.78)‡ | 0.61\*(-0.04) |
| VATMFBIA | -0.08(-0.09) | 0.11(0.23) | -0.35(-0.50)‡ | 0.80†(0.79)† | 0.03(-0.02) | 0.83†(0.67)\* | 0.89‡(0.84)‡ | 0.65\*(0.15) |
| UnadjustedSAT (cm2) | 0.21 | -0.08 | 0.37\* | 0.30 | 0.26 | 0.73\* | 0.52† | 0.74† |
|  | **F** | **M** | **F** | **M** | **F** | **M** | **F** | **M** |
|  | n=39 | n=6 | n=23 | n=24 | n=31 | n=13 | n=21 | n=25 |
| Waist (cm) | 0.16(-0.04) | -0.29(0.58) | 0.39(0.04) | 0.04(-0.16) | 0.52†(0.25) | 0.05(-0.05) | 0.58†(0.26) | 0.72‡(0.64)† |
| BMI (kg/m2) | 0.10(-0.03) | -0.04(0.31) | 0.30(-0.07) | 0.19(0.11) | 0.36\*(-0.11) | -0.01(-0.12) | 0.56†(0.20) | 0.67‡(0.35) |
| Waist:hip | 0.06(-0.05) | -0.54(-0.29) | -0.01(0.21) | 0.07(0.08) | 0.46\*(0.39)\* | -0.22(-0.28) | 0.44\*(0.03) | 0.62†(0.38) |
| Waist:height | 0.24(0.04) | -0.27(0.22) | 0.25(-0.08) | 0.21(0.09) | 0.51†(0.23) | 0.23(0.18) | 0.47\*(-0.11) | 0.72‡(0.58)† |
| VATNIRS | 0.00(-0.17) | 0.22(0.59) | 0.33(-0.02) | -0.21(-0.38) | 0.48†(0.19) | -0.18(-0.37) | 0.44\*(0.06) | 0.79‡(0.68)‡ |
| VATVBC | -0.19(-0.25) | -0.25(0.22) | -0.12(-0.21) | 0.06(-0.09) | 0.64‡(0.53)† | -0.40(-0.64) | 0.59†(0.33) | 0.76‡(0.61)† |
| VATMFBIA | -0.01(-0.03) | -0.37(0.00) | -0.04(-0.21) | 0.05(-0.13) | 0.62‡(0.45)\* | 0.14(0.07) | 0.52†(0.20) | 0.77‡(0.62)† |
| UnadjustedSAT (cm2) | 0.27 | -0.48 | 0.58† | 0.19 | 0.48† | 0.15 | 0.56† | 0.61† |

a values are presented as: Pearson r (rpartial adjusted for SAT); b visceral adipose tissue area quartiles measured in cm2 ‡ significant at p < 0.001; † significant at p < 0.010; \*  significant at p < 0.050