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| **Supplemental Material 2A. Association between computed tomography-based abdominal adiposity indexes and NAFLD (Fatty Liver Index, FLI)** |
| **Abdominal adiposity index** | **Men (n=1366)** |  | **Women (n=2480)** |
| **Range** | **n of people** | **n (%) of NAFLD** | **OR (95% CI)\*** |  | **Range** | **n of people** | **n (%) of NAFLD** | **OR (95% CI)\*** |
| **VFA** |  |  |  |  |  |  |  |  |  |
| **Q1** | <82.3 | 341 | 7 (2.1) | 1.00 | 　 | <59.6 | 620 | 0 (0) | 1.00 |
| **Q2** | 82.3-111.9 | 342 | 38 (11.1) | 1.93 (0.79-4.71) | 　 | 59.6-83.4 | 620 | 2 (0.3) | 0.86 (0.04-18.61)\*\* |
| **Q3** | 111.9-146.5 | 340 | 106 (31.2) | 3.27 (1.36-7.90) | 　 | 83.4-110.1 | 620 | 10 (1.6) | 1.82 (0.10-31.74)\*\* |
| **Q4** | ≥146.5 | 343 | 200 (58.3) | 4.75 (1.86-12.11) | 　 | ≥110.1 | 620  | 106 (17.1) | 6.73 (0.38-119.95)\*\* |
| *p for trend* | 　 |  |  | <0.001 | 　 | 　 | 　 | 　 | <0.001 |
| **continuous (per 10cm2)** | 　 |  | 　 | 1.10 (1.04-1.16) | 　 | 　 | 　 | 　 | 1.15 (1.07-1.23) |
| **SFA**  | 　 |  | 　 | 　 | 　 | 　 | 　 | 　 | 　 |
| **Q1** | <105.2 | 341 | 9 (2.6) | 1.00 | 　 | <131.4 | 620 | 5 (0.8) | 1.00 |
| **Q2** | 105.2-136.0 | 342 | 50 (14.6) | 1.99 (0.87-4.56) | 　 | 131.4-164.4 | 620 | 6 (1.0) | 0.18 (0.05-0.72) |
| **Q3** | 136.0-175.0 | 341 | 98 (28.7) | 1.42 (0.62-3.27) | 　 | 164.4-204.0 | 620 | 20 (3.2) | 0.17 (0.05-0.54) |
| **Q4** | ≥175.0 | 342 | 194 (56.7) | 1.11 (0.45-2.73) | 　 | ≥204.0 | 620  | 87 (14.0) | 0.06 (0.02-0.22) |
| *p for trend* | 　 |  |  | 0.320  | 　 | 　 | 　 | 　 | <0.001 |
| **continuous (per 10cm2)** | 　 |  | 　 | 0.94 (0.89-0.99) | 　 | 　 | 　 | 　 | 0.91 (0.85-0.96) |
| **VSR** | 　 |  | 　 | 　 | 　 | 　 | 　 | 　 | 　 |
| **Q1** | < 0.61 | 341 | 80 (23.5) | 1.00 | 　 | <0.39 | 620 | 17 (2.7) | 1.00 |
| **Q2** | 0.61-0.80 | 342 | 88 (25.7) | 2.21 (1.28-3.82) | 　 | 0.39-0.49 | 620 | 17 (2.7) | 1.13 (0.41-3.08) |
| **Q3** | 0.80-1.04 | 341 | 82 (24.1) | 2.38 (1.36-4.16) | 　 | 0.49-0.65 | 620 | 24 (3.9) | 2.26 (0.86-5.97) |
| **Q4** | ≥1.04 | 342 | 101 (29.5) | 3.16 (1.75-5.71) | 　 | ≥0.65 | 620  | 60 (9.7) | 5.11 (2.07-12.63) |
| *p for trend* | 　 |  |  | <0.001 | 　 | 　 | 　 | 　 | <0.001 |
| **continuous (per 0.1-SD)** | 　 |  | 　 | 1.03 (1.01-1.05) | 　 | 　 | 　 | 　 | 1.05 (1.03-1.07) |
| NAFLD, non-alcoholic fatty liver disease; OR, odds ratio; CI, confidence interval; VFA, visceral fat area; SFA, subcutaneous fat area; VSR, visceral-to-subcutaneous fat ratio; SD, standard deviation; BMI, body mass index; WC, waist circumference; GGT, gamma-glutamyltransferase.Fatty Liver Index = 1 / (1 + exp (-x)) × 100, x = 0.935 × ln (triglyceride) + 0.139 × BMI + 0.718 × ln (GGT) + 0.053 × WC - 15.745. |
| \* Adjusted for age, drinking status, smoking status, hypertension, diabetes mellitus, body mass index, and waist circumference. |
| \*\* Use firth logistic regression because of separation problem in VFA Q1. |
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| **Supplemental Material 2B. Comparison of discriminatory power of abdominal adiposity indexes in the detection of NAFLD (Fatty Liver Index, FLI)** |
| **Abdominal adiposity index** | **AUC** |  | **Improved AUC** |  | **IDI** |  | **Category-based NRI** |  | **Category-free NRI** |
| **Index** |  | **Index** | ***p*-value** |  | **Index** | ***p*-value** |  | **Index** | ***p*-value** |  | **Index** | ***p*-value** |
| **Men** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Base model\*** | 0.885 |  |  |  |  |  |  |  |  |  |  |  |  |
| **WC\*\*** | 0.907 |  | *Reference* |  |  | *Reference* |  | 　 | *Reference* | 　 | 　 | *Reference* | 　 |
| **WC + VFA** | **0.914** | 　 | **0.006** | 0.005 | 　 | **0.017** | <0.001 | 　 | 0.024 | 0.192 | 　 | 0.307 | <0.001 |
| **WC + SFA** | 0.908 | 　 | 0.001 | 0.422 | 　 | 0.005 | 0.043 | 　 | 0.002 | 0.878 | 　 | 0.170 | 0.006 |
| **WC + VSR** | 0.912 | 　 | 0.004 | 0.040 | 　 | 0.013 | <0.001 | 　 | 0.024 | 0.163 | 　 | **0.333** | <0.001 |
| **Women** | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 | 　 |
| **Base model\*** | 0.950 |  |  |  |  |  |  |  |  |  |  |  |  |
| **WC\*\*** | 0.955 | 　 | *Reference* | 　 | 　 | *Reference* | 　 | 　 | *Reference* | 　 | 　 | *Reference* | 　 |
| **WC + VFA** | 0.962 | 　 | 0.007 | <0.001 | 　 | 0.022 | 0.011 | 　 | 0.050 | 0.192 | 　 | 0.662 | <0.001 |
| **WC + SFA** | 0.960 | 　 | 0.005 | 0.003 | 　 | 0.012 | 0.152 | 　 | 0.050 | 0.145 | 　 | 0.666 | <0.001 |
| **WC + VSR** | **0.963** | 　 | **0.008** | 0.002 | 　 | **0.022** | 0.007 | 　 | 0.040 | 0.256 | 　 | **0.936** | <0.001 |
| NAFLD, non-alcoholic fatty liver disease; AUC, area under the receiver operating characteristic curve; IDI, integrated discrimination improvement; NRI, net reclassification improvement; WC, waist circumference; VFA, visceral fat area; SFA, subcutaneous fat area; VSR, visceral-to-subcutaneous fat ratio; BMI, body mass index; GGT, gamma-glutamyltransferase.Fatty Liver Index = 1 / (1 + exp (-x)) × 100, x = 0.935 × ln (triglyceride) + 0.139 × BMI + 0.718 × ln (GGT) + 0.053 × WC - 15.745.For the category-based NRI, risk cut-offs of 20% and 50% were used. |
| \*The base model is adjusted for age and body mass index. |
| \*\*The WC-based model is adjusted for age, body mass index, and WC. |