

SUPPLEMENTARY TABLES

Supplementary Table 1. Regression coefficients (β s and 95% confidence intervals) for glycemic indicators at follow-up by baseline groups of relative grip strength and timed up and go test in participants without baseline type 2 diabetes mellitus.

| | Fasting glucose, mmol/l | | 2-hour post-load glucose, mmol/l | | Hemoglobin A _{1c} , % | |
|--------------------------------------------------------------------------|-------------------------|-----------------------------|----------------------------------|-----------------------------|--------------------------------|-----------------------------|
| | Crude model | Adjusted model [†] | Crude model | Adjusted model [†] | Crude model | Adjusted model [†] |
| Tertiles of relative grip strength (RGS), kg per kg/m² | | | | | | |
| 3rd (<i>n</i> = 1,346) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2nd (<i>n</i> = 1,390) | 0.07 (0.002, 0.13)* | 0.03 (-0.05, 0.11) | 0.46 (0.27, 1.07)*** | 0.33 (0.09, 0.56)** | 0.07 (0.02, 0.12)** | 0.04 (-0.02, 0.11) |
| 1st (<i>n</i> = 1,156) | 0.15 (0.08, 0.21)*** | 0.03 (0.002, 0.18)* | 0.88 (0.68, 1.07)*** | 0.59 (0.34, 0.85)*** | 0.13 (0.07, 0.18)*** | 0.09 (0.02, 0.16)* |
| <i>P</i> for trend | <0.001 | 0.04 | <0.001 | <0.001 | <0.001 | 0.02 |
| Tertiles of timed up and go (TUG) test, second | | | | | | |
| 1st (<i>n</i> = 1,340) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2nd (<i>n</i> = 1,348) | 0.07 (0.01, 0.14)* | 0.04 (-0.03, 0.11) | 0.16 (-0.03, 0.35) | 0.01 (-0.19, 0.21) | 0.04 (-0.01, 0.09) | 0.01 (-0.05, 0.06) |
| 3rd (<i>n</i> = 1,204) | 0.12 (0.05, 0.18)** | 0.05 (-0.03, 0.13) | 0.73 (0.54, 0.93)*** | 0.23 (-0.0001, 0.45) | 0.09 (0.04, 0.15)** | 0.01 (-0.06, 0.07) |
| <i>P</i> for trend | 0.001 | 0.18 | <0.001 | 0.06 | 0.001 | 0.79 |

[†]Adjusting for sex, age, education, occupation, smoking status (only for analysis of RGS), alcohol use, self-rated health, body mass index (only for analysis of TUG), and fasting glucose at baseline, as appropriate.

P* < 0.05; *P* < 0.01; ****P* < 0.001.

Supplementary Table 2. Crude and adjusted hazards ratios (95% confidence intervals) for incident type 2 diabetes mellitus (T2DM) during the follow-up from March 2008 to December 2012 by baseline groups of relative grip strength and timed up and go test.

| | Number | Incidence of T2DM per 100 person-year | Crude model | Adjusted model [†] |
|--------------------------------------------------------------------------|--------|---------------------------------------|----------------------|-----------------------------|
| Tertiles of relative grip strength (RGS), kg per kg/m² | | | | |
| | | | Total | |
| 3rd | 1,346 | 0.09 | 0.00 | 0.00 |
| 2nd | 1,390 | 0.16 | 1.77 (1.26, 2.49)** | 1.96 (1.26, 3.07)** |
| 1st | 1,156 | 0.20 | 2.26 (1.61, 3.17)*** | 2.52 (1.58, 4.04)*** |
| <i>P</i> for trend | | | <0.001 | <0.001 |
| Normal weight | | | | |
| 3rd | 987 | 0.06 | 0.00 | 0.00 |
| 2nd | 922 | 0.13 | 2.01 (1.26, 3.21)** | 1.97 (1.04, 3.74)* |
| 1st | 563 | 0.10 | 1.57 (0.91, 2.72) | 1.39 (0.65, 2.99) |
| <i>P</i> for trend | | | 0.06 | 0.49 |
| Overweight/obesity | | | | |
| 3rd | 259 | 0.21 | 0.00 | 0.00 |
| 2nd | 415 | 0.24 | 1.17 (0.69, 1.96) | 1.17 (0.61, 2.24) |
| 1st | 577 | 0.31 | 1.51 (0.94, 2.43) | 1.45 (0.73, 2.88) |
| <i>P</i> for trend | | | 0.06 | 0.23 |
| Tertiles of timed up and go (TUG) test, second | | | | |
| 1st | 1,340 | 0.11 | 0.00 | 0.00 |
| 2nd | 1,348 | 0.13 | 1.18 (0.84, 1.67) | 0.93 (0.64, 1.35) |
| 3rd | 1,204 | 0.22 | 2.07 (1.51, 2.83)*** | 1.06 (0.71, 1.57) |
| <i>P</i> for trend | | | <0.001 | 0.77 |

Incident T2DM: defined by a history of self-reported physician-diagnosed diabetes or glucose-lowering treatment during follow up or fasting glucose ≥ 7.0 mmol/l or 2hPG ≥ 11.1 mmol/l and without T2DM at baseline; Normal weight: $18.5 \text{ kg/m}^2 \leq \text{BMI} < 25 \text{ kg/m}^2$; Overweight/obesity: $\text{BMI} \geq 25 \text{ kg/m}^2$.

[†]Adjusting for sex, age, education, occupation, smoking status (only for analysis of RGS), alcohol use, self-rated health and body mass index (only for analysis of TUG).

** $P < 0.01$; *** $P < 0.001$.

Supplementary Table 3. Comparisons of the Cox proportional hazards regression models for incident diabetes using the RGS-TUG score, relative grip strength (RGS) and timed up and go (TUG) test, separately.

| | RGS-TUG score | RGS | TUG test |
|-------------------|-------------------|-------------------|-------------------|
| C-index (95% CI) | 0.60 (0.56, 0.64) | 0.58 (0.54, 0.61) | 0.56 (0.53, 0.58) |
| CPE (95% CI) | 0.61 (0.58, 0.64) | 0.59 (0.55, 0.62) | 0.58 (0.54, 0.61) |
| AUC (95% CI) | 0.61 (0.58, 0.65) | 0.58 (0.55, 0.62) | 0.58 (0.55, 0.61) |
| AIC | 3982.21 | 3994.56 | 6169.54 |
| -2 Log likelihood | 3980.21 | 3990.56 | 6165.54 |

Abbreviations: CI: confidence interval; C-index: Harrell's concordance index; CPE: Gönen and Heller's Concordance Probability Estimate; AUC: Area Under Curve; AIC: Akaike Information Criterion.