## SUPPLEMENTARY MATERIAL

## Initial sample

$$
N=12,137 \text { (6,931 women; 5,206 men) }
$$

Sample after considering demographic characteristics, anthropometric traits, and HGS

> Keeping individuals aged 50 to 80;
> keeping Caucasian individuals;
excluding male outliers with height < 150 cm or height > 210 cm ;
excluding female outliers with height $<130 \mathrm{~cm}$ or height $>190 \mathrm{~cm}$;
excluding outliers with weight < 30 kg or weight > 150 kg ;
excluding outliers with handgrip strength $<6 \mathrm{~kg}$ or handgrip strength $>80 \mathrm{~kg}$

$$
N=8,309 \text { (4,668 women; } 3,641 \text { men })
$$



Figure A1: Sample construction

|  | Model 1 <br> (without education) | Model 2 (with education) |
| :---: | :---: | :---: |
| Men |  |  |
| Reference: [0.0 SD, 0.5 SD) | 1.00 (reference) | 1.00 (reference) |
| Strong: [0.5 SD, 3.0 SD) | 0.93 (0.69-1.25) | 0.93 (0.69-1.26) |
| Weak 1: [-0.5 SD, 0.0 SD) | 1.67 (1.23-2.26) | 1.68 (1.24-2.27) |
| Weak 2: [-1.0 SD, -0.5 SD) | 2.02 (1.49-2.75) | 1.98 (1.46-2.69) |
| Weak 3: [-2.0 SD, -1.0 SD) | 2.40 (1.77-3.26) | 2.39 (1.76-3.25) |
| Weak 4: [-3.0 SD, -2.0 SD) | 2.34 (1.40-3.93) | 2.32 (1.39-3.89) |
| Age in years | 1.09 (1.07-1.10) | 1.09 (1.07-1.10) |
| Years of education |  | 0.96 (0.93-0.98) |
| Max log likelihood | -2358.9 | -2353.0 |
| LR test statistic | 244.6 | 256.4 |
| Total time at risk | 21864 | 21864 |
| Events | 529 | 529 |
| Women |  |  |
| Reference: [0.0 SD, 0.5 SD) | 1.00 (reference) | 1.00 (reference) |
| Strong: [0.5 SD, 3.0 SD) | 0.90 (0.66-1.22) | 0.89 (0.66-1.22) |
| Weak 1: [-0.5 SD, 0.0 SD) | 1.32 (0.96-1.82) | 1.30 (0.94-1.79) |
| Weak 2: [-1.0 SD, -0.5 SD) | 1.65 (1.20-2.28) | 1.62 (1.18-2.24) |
| Weak 3: [-2.0 SD, -1.0 SD) | 1.85 (1.34-2.55) | 1.83 (1.32-2.53) |
| Weak 4: [-3.0 SD, -2.0 SD) | 3.03 (1.83-5.04) | 2.98 (1.79-4.96) |
| Age in years | 1.10 (1.08-1.12) | 1.10 (1.08-1.11) |
| Years of education |  | 0.93 (0.90-0.96) |
| Max log likelihood | -2192.8 | -2181.7 |
| LR test statistic | 212.6 | 234.8 |
| Total time at risk | 28500 | 28500 |
| Events | 449 | 449 |

$95 \% \mathrm{Cl}$ in parentheses, years of education $<20$ years

Table A1: Hazard ratios for mortality by gender and st_HGS group, with and without years of education as control


Figure A2: Survival and numbers at risk, by gender and standardised handgrip strength
"High grip" refers to the strong and reference group and "low grip" to groups Weak1-4

