Supplementary Table 1. Multivariable Poisson regression of increase of 1 grip strength/ SD associated with health-related quality of life (exclusion of individuals with exclusion of individuals with primary ovarian insufficiency)

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| --- | --- | --- |
| Domain | Model 4 - all | Model 4 – exclusion of POI |
| Mobility problem | 0.90 (0.85-0.95) | 0.89 (0.84-0.94) |
| Self-care problem | 0.72 (0.64-0.81) | 0.73 (0.65-0.83) |
| Usual activities problem | 0.83 (0.77-0.91) | 0.83 (0.76-0.90) |
| Pain/ discomfort | 0.91 (0.87-0.95) | 0.91 (0.87-0.95) |
| Anxiety/ depression | 0.93 (0.85-1.00) | 0.94 (0.86-1.02) |
| EQ-5D index  | 0.014 (0.010-0.018) | 0.014 (0.010-0.018) |
| EQ-5D index \* 100 | 1.39 (0.97-1.81) | 1.40 (0.99-1.81) |

Model 1: adjusted for age and body mass index

Model 2: further adjusted for years since menopause

Model 3: further adjusted for living in urbanicity, education level, income level, smoking, alcohol drinking, and physical activity

Model 4: further adjusted for chronic diseases including diabetes, stroke, coronary heart disease, asthma, chronic obstructive pulmonary disease, arthritis, chronic kidney disease, and history of cancer.

Supplementary Table 2. multivariable Poisson regression of the quintiles of grip strength associated with health-related quality of life (exclusion of individuals with exclusion of individuals with primary ovarian insufficiency)

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| --- | --- | --- | --- | --- |
| Variable | Model 4 | P for trend | Model 4 – exclusion of POI | P for trend |
| Mobility problem |  |  |  |  |
| 1st quintile (lowest) | Ref | 0.001 | Ref | <0.001 |
| 2nd quintile | 0.92 (0.82-1.04) |  | 0.91 (0.81-1.03) |  |
| 3rd quintile | 0.92 (0.80-1.06) |  | 0.90 (0.78-1.03) |  |
| 4th quintile | 0.84 (0.71-0.98) |  | 0.80 (0.68-0.94) |  |
| 5th quintile (highest) | 0.73 (0.60-0.89) |  | 0.72 (0.60-0.88) |  |
| Self-care problem |  |  |  |  |
| 1st quintile (lowest) | Ref | <0.001 | Ref | <0.001 |
| 2nd quintile | 0.76 (0.57-1.01) |  | 0.76 (0.57-1.02) |  |
| 3rd quintile | 0.73 (0.52-1.04) |  | 0.75 (0.53-1.06) |  |
| 4th quintile | 0.50 (0.33-0.75) |  | 0.51 (0.34-0.78) |  |
| 5th quintile (highest) | 0.45 (0.28-0.72) |  | 0.47 (0.29-0.75) |  |
| Usual activities problem |  |  |  |  |
| 1st quintile (lowest) | Ref | <0.001 | Ref | <0.001 |
| 2nd quintile | 0.80 (0.66-0.97) |  | 0.81 (0.66-0.99) |  |
| 3rd quintile | 0.80 (0.64-1.01) |  | 0.81 (0.64-1.01) |  |
| 4th quintile | 0.81 (0.63-1.04) |  | 0.79 (0.61-1.02) |  |
| 5th quintile (highest) | 0.52 (0.38-0.71) |  | 0.52 (0.38-0.71) |  |
| Pain/ discomfort |  |  |  |  |
| 1st quintile (lowest) | Ref | <0.001 | Ref | <0.001 |
| 2nd quintile | 0.95 (0.86-1.06) |  | 0.97 (0.86-1.08) |  |
| 3rd quintile | 0.95 (0.84-1.08) |  | 0.95 (0.84-1.08) |  |
| 4th quintile | 0.86 (0.75-0.98) |  | 0.85 (0.74-0.98) |  |
| 5th quintile (highest) | 0.74 (0.64-0.87) |  | 0.76 (0.65-0.88) |  |
| Anxiety/ depression |  |  |  |  |
| 1st quintile (lowest) | Ref | 0.22 | Ref | 0.33 |
| 2nd quintile | 0.92 (0.76-1.12) |  | 0.93 (0.77-1.14) |  |
| 3rd quintile | 0.90 (0.72-1.11) |  | 0.91 (0.73-1.14) |  |
| 4th quintile | 0.79 (0.63-0.99) |  | 0.80 (0.64-1.02) |  |
| 5th quintile (highest) | 0.91 (0.70-1.18) |  | 0.94 (0.72-1.23) |  |
| EQ-5D index  |  |  |  |  |
| 1st quintile (lowest) | Ref | <0.001 |  | <0.001 |
| 2nd quintile | 0.021 (0.009-0.033) |  | 0.021 (0.008-0.033) |  |
| 3rd quintile | 0.024 (0.012-0.037) |  | 0.025 (0.013-0.037) |  |
| 4th quintile | 0.030 (0.017-0.042) |  | 0.033 (0.021-0.045) |  |
| 5th quintile (highest) | 0.035 (0.023-0.047) |  | 0.035 (0.023-0.047) |  |
| EQ-5D index \* 100 |  |  |  |  |
| 1st quintile (lowest) | Ref | <0.001 |  | <0.001 |
| 2nd quintile | 2.10 (0.89-3.31) |  | 2.07 (0.83-3.32) |  |
| 3rd quintile | 2.44 (1.22-3.67) |  | 2.50 (1.25-3.74) |  |
| 4th quintile | 2.98 (1.74-4.22) |  | 3.26 (2.06-4.45) |  |
| 5th quintile (highest) | 3.53 (2.34-4.72) |  | 3.53 (2.35-4.72) |  |

Model 1: adjusted for age and body mass index

Model 2: further adjusted for years since menopause

Model 3: further adjusted for living in urbanicity, education level, income level, smoking, alcohol drinking, and physical activity

Model 4: further adjusted for chronic diseases including diabetes, stroke, coronary heart disease, asthma, chronic obstructive pulmonary disease, arthritis, chronic kidney disease, and history of cancer.