

Supplementary Digital Content: Table 4. Partition and isotemporal substitution models for mortality in less and more active participants, excluding those with < 2 years of follow-up - the NIH-AARP Diet & Health Study

Less Overall Physical Activity (< 2 hrs/d)

| | Sedentary | | Exercise | | Non-exercise | | Total time | |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | HR | 95% CI | HR | 95% CI | HR | 95% CI | HR | 95% CI |
| All-cause mortality | | | | | | | | |
| Partition | 1.019 | 1.011, 1.027 | 0.613 | 0.560, 0.672 | 0.730 | 0.686, 0.775 | - | |
| Replacement/substitution | - | | 0.602 | 0.550, 0.659 | 0.716 | 0.673, 0.761 | 1.019 | 1.011, 1.027 |
| Cardiovascular mortality | | | | | | | | |
| Partition | 1.023 | 1.008, 1.038 | 0.483 | 0.403, 0.580 | 0.675 | 0.602, 0.757 | - | |
| Replacement/substitution | - | | 0.473 | 0.394, 0.567 | 0.660 | 0.588, 0.741 | 1.023 | 1.008, 1.038 |

More Overall Physical Activity (≥ 2 hrs/d)

| | Sedentary | | Exercise | | Non-exercise | | Total time | |
|---------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | HR | 95% CI | HR | 95% CI | HR | 95% CI | HR | 95% CI |
| All-cause mortality | | | | | | | | |
| Partition | 1.014 | 1.005, 1.022 | 0.933 | 0.900, 0.968 | 1.013 | 0.992, 1.035 | - | |
| Replacement/substitution | - | | 0.921 | 0.887, 0.956 | 1.000 | 0.977, 1.023 | 1.014 | 1.005, 1.022 |
| Cardiovascular mortality | | | | | | | | |
| Partition | 1.023 | 1.007, 1.040 | 0.870 | 0.806, 0.938 | 1.029 | 0.988, 1.073 | - | |
| Replacement/substitution | - | | 0.850 | 0.787, 0.918 | 1.006 | 0.962, 1.052 | 1.023 | 1.007, 1.040 |

Partition Models adjusted for each type of activity indicated (hrs/d), as well as Age (years), Education (< 12 yrs, high school graduate, some college, college graduate, unknown),

Smoking history (never, stopped 10+ , stopped 5-9, stopped 1-4 years, stopped < 1 year, current smoker, unknown),

Sleep duration (< 4, 4-5.9, 6-7.9, 8-9.9, 10+ hours/day, unknown), Overall health (excellent, very good, good, fair, poor, unknown), and Body Mass Index (< 25, 25-29.9, 30+ kg/m², unknown), and Sex among All Participants

Replacement/substitution models include each type of activity, total time (sum of active and sedentary) and the covariates listed above.