

**S3 Table.** Multivariable-adjusted relationships of weight change and changes in nut intake (0.5 serving/day) within a 4-y period stratified by age, BMI and PA among US men and women

|                 | Weight Change (95% CI) each 4 years, lb (n=144,885 US men and women) |         |                            |         |                   |
|-----------------|--|---------|----------------------------|---------|-------------------|
|                 | Multivariable-adjusted*  | P-value | Multivariable-adjusted*    | P-value | P for interaction |
|                 | age <55  |         | age >55                    |         |                   |
| Total nuts      | -0.24(-0.29,-0.20)   | <.0001  | -0.18(-0.21,-0.14)         | <.0001  | 0.24              |
| Tree nuts       | -0.30(-0.36,-0.25)   | <.0001  | -0.24(-0.28,-0.19)         | <.0001  | 0.00              |
| Walnuts         | -0.34(-0.46,-0.22)   | <.0001  | -0.35(-0.45,-0.25)         | <.0001  | 0.40              |
| Other tree nuts | -0.40(-0.48,-0.33)   | <.0001  | -0.30(-0.36,-0.24)         | <.0001  | 0.00              |
| Peanuts         | -0.31(-0.40,-0.21)   | <.0001  | -0.16(-0.23,-0.10)         | <.0001  | 0.26              |
| Peanut butter   | -0.17(-0.23,-0.11)   | <.0001  | -0.04(-0.09,0.01)          | 0.1177  | 0.21              |
|                 | BMI > 25 kg/m <sup>2</sup>   |         | BMI > 25 kg/m <sup>2</sup> |         |                   |
| Total nuts      | -0.82(-1.00,-0.63)   | <.0001  | -0.16(-0.19,-0.14)         | <.0001  | <.0001            |
| Tree nuts       | -0.98(-1.24,-0.73)   | <.0001  | -0.23(-0.26,-0.19)         | <.0001  | <.0001            |
| Walnuts         | -1.25(-1.80,-0.69)   | <.0001  | -0.29(-0.36,-0.22)         | <.0001  | <.0001            |
| Other tree nuts | -1.30(-1.64,-0.95)   | <.0001  | -0.29(-0.34,-0.25)         | <.0001  | <.0001            |
| Peanuts         | -1.15(-1.52,-0.78)   | <.0001  | -0.14(-0.19,-0.09)         | <.0001  | <.0001            |
| Peanut butter   | -0.36(-0.59,-0.13)   | 0.0021  | -0.08(-0.12,-0.04)         | <.0001  | 0.0619            |
|                 | PA <18 MET/h/Week  |         | PA >18 MET/h/Week          |         |                   |
| Total nuts      | -0.26(-0.30,-0.21)   | <.0001  | -0.20(-0.24,-0.16)         | <.0001  | 0.13              |
| Tree nuts       | -0.32(-0.38,-0.26)   | <.0001  | -0.28(-0.33,-0.22)         | <.0001  | 0.33              |
| Walnuts         | -0.40(-0.53,-0.26)   | <.0001  | -0.38(-0.49,-0.27)         | <.0001  | 0.58              |
| Other tree nuts | -0.43(-0.51,-0.35)   | <.0001  | -0.34(-0.42,-0.27)         | <.0001  | 0.12              |
| Peanuts         | -0.29(-0.37,-0.21)   | <.0001  | -0.20(-0.28,-0.12)         | <.0001  | 0.25              |
| Peanut butter   | -0.10(-0.15,-0.04)   | 0.0014  | -0.12(-0.18,-0.06)         | <.0001  | 0.26              |
|                 | AHEI <42   |         | AHEI >42                   |         |                   |
| Total nuts      | -0.28(-0.34,-0.21)   | <.0001  | -0.18(-0.21,-0.15)         | <.0001  | 0.24              |
| Tree nuts       | -0.36(-0.45,-0.27)   | <.0001  | -0.24(-0.27,-0.20)         | <.0001  | 0.31              |
| Walnuts         | -0.39(-0.61,-0.17)   | 0.0004  | -0.31(-0.39,-0.23)         | <.0001  | 0.89              |
| Other tree nuts | -0.47(-0.59,-0.36)   | <.0001  | -0.31(-0.36,-0.26)         | <.0001  | 0.25              |
| Peanuts         | -0.31(-0.41,-0.20)   | <.0001  | -0.19(-0.25,-0.12)         | <.0001  | 0.26              |
| Peanut butter   | -0.17(-0.24,-0.09)   | <.0001  | -0.07(-0.12,-0.03)         | <.0001  | 0.21              |

Model was adjusted for age, menopausal status (pre- or postmenopausal) and hormone therapy use (never, past, or current) in women; baseline BMI of every 4 year; hours of sleeping at baseline; changes in lifestyle factors: smoking status (never, former, current: 1 to 14, 15 to 24, or  $\geq 25$  cigarettes/day), physical activity (Met/h/wk), hours of sitting (hr/wk); changes in dietary factors: fruits, vegetables, alcohol, snacks, dessert, French fries, potato, red or processed meat, whole grain, refined grain and sugar sweetened beverages. Data of walnuts and other tree nuts were firstly available at 1998 of NHS, 1998 of HPFS and 1999 of NHSII. Tree nut consumption was sum of other tree nut and walnut (if available). Total nut consumption was sum of peanut, tree nut and walnut (if available).