**Supplemental file for “Association between egg consumption and cognitive function among Chinese adults: long-term effect and interaction effect of iron intake”**

Layan Sukik, Jianghong Liu, Zumin Shi

**Supplementary Table 1** Regression coefficients (95% CI) for cognitive function between 1997 and 2006 by levels of egg intake between 1991 and 1993 among Chinese adults aged 55 years and above attending China Health and Nutrition Survey (**n = 2973**)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | None(n=1671) | 1-20 (g/d)(n=617) | 21-50 (g/d)(n=465) | ≥51 (g/d)(n=220) | P for trend |
| **Global cognitive function** |  |  |  |  |  |
| Model 1 | 0.00 | 1.15 | (0.73 - 1.57) | 2.06 | (1.59 - 2.53) | 2.24 | (1.59 - 2.89) | <0.001 |
| Model 2 | 0.00 | 0.43 | (-0.01 - 0.86) | 1.01 | (0.52 - 1.51) | 1.31 | (0.62 - 2.01) | <0.001 |
| Model 3 | 0.00 | 0.31 | (-0.13 - 0.75) | 0.81 | (0.31 - 1.31) | 1.03 | (0.32 - 1.75) | <0.001 |
| Model 4 | 0.00 | 0.29 | (-0.16 - 0.74) | 0.68 | (0.17 - 1.19) | 0.97 | (0.24 - 1.70) | 0.001 |
| Model 5 | 0.00 | 0.26 | (-0.22 - 0.74) | 0.46 | (-0.09 - 1.01) | 0.73 | (-0.07 - 1.53) | 0.027 |
| Model 6 | 0.00 | 0.25 | (-0.23 - 0.73) | 0.45 | (-0.10 - 1.00) | 0.72 | (-0.08 - 1.52) | 0.03 |

Model 1 adjusted for age, gender and energy intake.

Model 2 further adjusted for intake of fat, smoking, alcohol drinking, income, urbanicity, education, and physical activity.

Model 3 further adjusted for overall dietary patterns.

Model 4 further adjusted for BMI and hypertension.

Model 5 further excluded those who only participated in one wave of the cognitive function tests.

Model 6 adjusted for the same variables as model 5 but excluded intake of fat. This model also adjusted for total protein intake (without eggs).

All the adjusted variables are treated as time-varying covariates (except gender and egg intake).

**Supplementary Table 2** Odds ratios (95% CI) for self-reported poor memory and self-reported memory decline between 1997 and 2006 by levels of egg intake between 1991 and 1993 among Chinese adults aged ≥55 years old by characteristics, China Health and Nutrition Survey (**n = 2973**)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | None(n=1671) | 1-20 (g/d)(n=617) | 21-50 (g/d)(n=465) | ≥51 (g/d)(n=220) | P for trend |
| **Self-reported poor memory** |  |  |  |  |  |  |  |  |
| Model 1 |  1.00 |  0.74 | (0.62 - 0.88) |  0.62 | (0.51 - 0.76) |  0.47 | (0.35 - 0.62) | 0.000 |
| Model 2 |  1.00 |  0.87 | (0.71 - 1.05) |  0.81 | (0.65 - 1.02) |  0.61 | (0.44 - 0.84) | 0.001 |
| Model 3 |  1.00 |  0.87 | (0.71 - 1.05) |  0.82 | (0.65 - 1.03) |  0.64 | (0.46 - 0.90) | 0.005 |
| Model 4 |  1.00 |  0.84 | (0.68 - 1.03) |  0.80 | (0.63 - 1.01) |  0.63 | (0.44 - 0.90) | 0.003 |
| Model 5 |  1.00 |  0.92 | (0.74 - 1.14) |  0.85 | (0.66 - 1.10) |  0.71 | (0.49 - 1.04) | 0.053 |
| Model 6 |  1.00 |  0.92 | (0.74 - 1.14) |  0.85 | (0.66 - 1.10) |  0.70 | (0.48 - 1.02) | 0.048 |
| **Self-reported memory decline** |  |  |  |  |  |  |  |  |
| Model 1 |  1.00 |  0.84 | (0.73 - 0.98) |  0.76 | (0.65 - 0.90) |  0.62 | (0.49 - 0.78) | 0.000 |
| Model 2 |  1.00 |  0.94 | (0.80 - 1.11) |  0.92 | (0.76 - 1.11) |  0.72 | (0.55 - 0.94) | 0.029 |
| Model 3 |  1.00 |  0.94 | (0.80 - 1.11) |  0.94 | (0.78 - 1.13) |  0.79 | (0.60 - 1.04) | 0.118 |
| Model 4 |  1.00 |  0.95 | (0.80 - 1.13) |  0.94 | (0.77 - 1.14) |  0.80 | (0.60 - 1.05) | 0.147 |
| Model 5 |  1.00 |  0.96 | (0.80 - 1.15) |  0.95 | (0.77 - 1.17) |  0.85 | (0.63 - 1.15) | 0.322 |
| Model 6 |  1.00 |  0.96 | (0.80 - 1.15) |  0.96 | (0.78 - 1.18) |  0.85 | (0.63 - 1.15) | 0.361 |

Model 1 adjusted for age, gender and energy intake.

Model 2 further adjusted for intake of fat, smoking, alcohol drinking, income, urbanicity, education, and physical activity.

Model 3 further adjusted for overall dietary patterns.

Model 4 further adjusted for BMI and hypertension.

Model 5 further excluded those who only participated in one wave of the cognitive function tests.

Model 6 adjusted for the same variables as model 5 but excluded intake of fat. This model also adjusted for total protein intake (without eggs).

All the adjusted variables are treated as time-varying covariates (except gender and egg intake).

**Supplementary figure 1** Interaction between egg consumption and iron intake in relation to counting back, subtraction and memory.



The mixed linear regression model adjusted for age, gender, intake of energy and fat, smoking, BMI, alcohol drinking, income, residence, education, and physical activity, overall dietary patterns and hypertension. All participants participated at least two waves of survey. Values represent regression coefficients and 95% CI. An ordinal value (1, 2, 3, 4) was assigned to reflect the quartiles of egg intake level and treated as a continuous variable while testing for interactions.