**ONLINE SUPPLEMENTAL MATERIAL**

|  |
| --- |
| **Online Supplemental Table I. Intraclass coefficient, heritability and shared factor contribution for diet scores\*** |
|  | **Intraclass coefficient (95%CI)** | **Heritability** | **Contribution from shared genetic and common environmental factors** |
| **MZ**  | **DZ** |
| **MQHD** | 0.24 (0.12, 0.36) | 0.14 (0.009, 0.27) | 21% | 24% |
| **aMQHD** | 0.27 (0.15, 0.39) | 0.25 (0.12, 0.37) | 4.5% | 27% |

\*aMQHD, moderation-quantified healthy diet; CI, confidence intervals; MZ, monozygotic twins; and DZ, dizygotic twins.

|  |
| --- |
| **Online Supplemental Table II. Hazard ratio(s) for associations of alternative moderation-quantified healthy diet (aMQHD) score with the risk of mortality from specific and all causes in the whole cohort pooled by zygosity (n=910)\*** |
|  | **Coronary Heart Disease** | **Cardiovascular Disease** | **All Causes** |
| **Items** | **HR**  | **95% CI** | ***P***  | **HR**  | **95% CI** | ***P***  | **HR**  | **95% CI** | ***P***  |
| **Overall Association [hazard ratio (95% CI) per 10-unit increment in aMQHD score]** |
| No. of deaths | 113 | 198 | 610 |
| Calorie adjusted | 0.78 | 0.66, 0.91 | 0.002 | 0.88  | 0.79, 0.98 | 0.02 | 0.94 |  0.90, 0.99  | 0.02 |
| Multivariable adjusted | 0.80 | 0.68, 0.93 | 0.004 | 0.90  | 0.81, 0.99 | 0.03 | 0.96 |  0.91, 1.00  | 0.07 |
| **Within-pair association [hazard ratio (95% CI) per 10-unit within-pair difference in aMQHD score]** |
| No. of deaths | 55 MZ, 58 DZ | 98 MZ, 100 DZ | 301 MZ, 309 DZ |
| Calorie adjusted | 0.77  | 0.62, 0.97 | 0.02 | 0.88  | 0.76, 1.02 | 0.08 | 0.96 | 0.89, 1.03  | 0.25 |
| Multivariable adjusted | 0.78  | 0.63, 0.97 | 0.03 | 0.89  | 0.77, 1.02 | 0. 098 | 0.96 | 0.90, 1.03 | 0.29 |
| Test for interaction with zygosity | --- |  | 0.95 | --- |  | 0.61 |  | --- | 0.78 |
|  |  |  |  |  |  |  |  |  |  |
| **Between-pair association [hazard ratio (95% CI) per 10-unit within-pair difference in aMQHD score]** |
| Calorie adjusted | 0.78  | 0.64, 0.96 | 0.02 | 0.88  | 0.76, 1.01 | 0.07 | 0.93  | 0.87, 0.995 | 0.03 |
| Multivariable adjusted | 0.81  | 0.67, 0.995 | 0.045 |  0.91  | 0.80, 1.03 | 0.13 | 0.96  | 0.90, 1.02 | 0.15 |

aMQHD, moderation-quantified healthy diet; CI, confidence intervals; MZ, monozygotic twins; and DZ, dizygotic twins.

\*Overall associations were equivalent to general population associations, and their hazard ratios and 95% confidence interval were estimated for each 10-unit increment in diet score (continuous variable). Within-pair associations were additionally controlled for genetic and common environmental factors, and their hazard ratios were estimated for per within-pair 10-unit difference in diet score (continuous variable). Between-pair associations were the association between familial predisposition and other environmental factors shared between co-twins and outcomes, and their hazard ratios were estimated for per 10-unit increment in the average of diet score of thetwin pair through frailty survival model. Frailty survival models were used for analyses to account for within-pair clustering, in which the frailty was a random effect to account for the clustering. Calorie-adjusted model controlled for total caloric intake (continuous). Multivariable-adjusted covariates included total caloric intake (continuous), marital status (never, not married currently, and married currently), years of education (continuous), body mass index (continuous), modified Framingham Risk Score (continuous), and antihypertensives (yes/no). In comparison to moderation-quantified healthy diet (MQHD), its alternative score (aMQHD) has 4 additional components includingthe presence of lamb or veal consumption, the presence of skim milk consumption, ratio of white to red meat, and ratio of ice cream to dairy consumption.

|  |
| --- |
| **Online Supplemental Table III. : Multivariable-adjusted hazard ratio(s) for diet scores without alcohol as a score component in relation to specific- and all-cause death risk\*** |
|  | **MQHD** | **aMQHD** |
| **Events** | **HR**  | **95% CI** | ***P***  | **HR**  | **95% CI** | ***P***  |
| **Overall Associations** |
| Coronary Heart Disease | 0.80 | 0.68, 0.93 | 0.004 | 0.84  | 0.72, 0.99 | 0.03 |
| Cardiovascular Disease | 0.87  | 0.79, 0.97 | 0.008 | 0.91  | 0.82, 1.01 | 0.06 |
| All causes | 0.94  | 0.90, 0.99 | 0.02 | 0.95  | 0.91, 1.00 | 0.07 |
| **Within-Pair Associations** |
| Coronary Heart Disease | 0.81  | 0.66, 1.002 | 0.051 | 0.80  | 0.64, 0.99 | 0.049 |
| Cardiovascular Disease | 0.87  | 0.76, 1.01 | 0.07 | 0.90  | 0.77, 1.04 | 0.17 |
| All causes | 0.96 | 0.90, 1.03 | 0.24 | 0.96  | 0.90, 1.03 | 0.31 |

aMQHD, alternative modified Mediterranean-style diet; CI, confidence intervals; HR, hazard ratio; MQHD, modified Mediterranean-style diet.

\* Overall associations were equivalent to general population associations, and their hazard ratios and 95% confidence interval were estimated for each 10-unit increment in diet score (continuous variable). Within-pair associations were additionally controlled for genetic and common environmental factors, and their hazard ratios were estimated for per within-pair 10-unit difference in diet score (continuous variable). Frailty survival models were used for analyses to account for within-pair clustering, in which the frailty was a random effect to account for the clustering. Multivariable-adjusted covariates included total caloric intake (continuous), alcohol consumption (continuous), marital status (never, not married currently, and married currently), years of education (continuous), body mass index (continuous), modified Framingham Risk Score (continuous), and antihypertensives (yes/no).

|  |
| --- |
| **Online Supplemental Table IV. Hazard ratio(s) for associations of Trichopoulou’s Mediterranean diet score with the risk of mortality from specific and all causes in the whole cohort pooled by zygosity (n=910)\*** |
|  | **Coronary Heart Disease** | **Cardiovascular Disease** | **All Causes** |
| **Items** | **HR**  | **95% CI** | ***P***  | **HR**  | **95% CI** | ***P***  | **HR** | **95% CI** | ***P***  |
| **Overall Association [hazard ratio (95% CI) per 2-unit increment in Diet Score]** |
| No. of deaths | 113 | 198 | 610 |
| Basic model | 0.86 | 0.74, 0.99 | 0.03 | 0.92 | 0.83, 1.01 | 0.09 | 0.98 | 0.94, 1.02 | 0.35 |
| Multivariable adjusted | 0.86 | 0.75, 0.98 | 0.03 | 0.91 | 0.83, 0.998 | 0.045 | 0.97 | 0.94, 1.01 | 0.20 |
| **Within-Pair Association [hazard ratio (95% CI) per 2-unit increment in Diet Score]** |
| Basic model | 0.85 | 0.70,1.03 | 0.09 | 0.91 | 0.80, 1.03 | 0.14 | 0.99 | 0.93, 1.05 | 0.69 |
| Multivariable adjusted | 0.84 | 0.70,1.02 | 0.07 | 0.91 | 0.81, 1.03 | 0.15 | 0.99 | 0.93, 1.05 | 0.74 |
| Test for interaction with zygosity | -- | -- | 0.86 | -- | -- | 0.44 | -- | -- | 0.48 |
| **Between-Pair Association [hazard ratio (95% CI) per 2-unit increment in Diet Score]** |
| Basic model | 0.87 | 0.72, 1.07 | 0.18 | 0.94 | 0.80, 1.03 | 0.14 | 0.97 | 0.91, 1.04 | 0.37 |
| Multivariable adjusted | 0.87 | 0.72, 1.05 | 0.14 | 0.91 | 0.81, 1.03 | 0.12 | 0.96 | 0.91, 1.02 | 0.21 |

CI, confidence intervals;HR, hazard ratio; MZ, monozygotic twins; DZ, dizygotic twins.

\* Mediterranean diet score was constructed following the algorithm published by Trichopoulou A et al. [1](#_ENREF_1). Overall associations were equivalent to general population associations, and their hazard ratios and 95% confidence interval were estimated for each 2-unit increment in diet score (continuous variable). Within-pair associations were additionally controlled for genetic and common environmental factors, and their hazard ratios were estimated for per within-pair 2-unit difference in diet score (continuous variable). Between-pair associations were the association between familial predisposition and other environmental factors shared between co-twins and outcomes, and their hazard ratios were estimated for per 2-unit increment in the average of diet score of thetwin pair through frailty survival model. Frailty survival models were used for analyses to account for within-pair clustering, in which the frailty was a random effect to account for the clustering. Basic model controlled for total caloric intake (continuous) and potato consumption (continuous). Multivariable-adjusted covariates included total caloric intake (continuous), potato consumption**,** marital status (never, not married currently, and married currently), years of education (continuous), body mass index (continuous), modified Framingham Risk Score (continuous), and antihypertensives (yes/no).

**Online Supplemental Table V. Multivariable-adjusted hazard ratio(s) for overall associations of Trichopoulou’s Mediterranean Diet Score with coronary heart mortality risk comparing the top quartile with the bottom quartile\***

|  |  |
| --- | --- |
|  | **Trichopoulou’s** **Mediterranean Diet Score** |
|  | **Quartile** | **Quintile** |
| **Items** | **HR**  | **95% CI** | ***P***  | **HR**  | **95% CI** | ***P***  |
| **No. of deaths** | 68 | 49 |
| Multivariable adjusted | 0.75 | 0.54, 1.04 | 0.08 | 0.61 | 0.41, 0.90 | 0.013 |

MQHD, modified Mediterranean-style diet; aMQHD, alternative modified Mediterranean-style diet; CI, confidence intervals; HR, hazard ratio; MQHD, modified Mediterranean-style diet.

\*Hazard ratio was estimated through frailty survival model. Multivariable-adjusted covariates included total caloric intake (continuous), potato intake (continuous, only for Trichopoulou’s Diet Score[1](#_ENREF_1)), marital status (never, not married currently, and married currently), years of education (continuous), body mass index (continuous), modified Framingham Risk Score (continuous), and antihypertensives (yes/no).

**References**

1. Trichopoulou A, Costacou T, Bamia C and Trichopoulos D. Adherence to a Mediterranean diet and survival in a Greek population. *N Engl J Med*. 2003;348:2599-608.