**Supplementary material 1** The components of the original Baltic Sea Diet Score and those used in the present study

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| **Score component** | **Contents in the original Baltic Sea Diet Score**[40] | **Contents in the current study\*** |
| **Fruits and berries (g/d)** | Berries, apples, pears | Whole fruits, berries |
| **Vegetables (g/d)** | Tomato, cucumber, cabbage, roots, peas, lettuce | Roots, pulses, vegetables |
| **Cereals (g/d)**  | Rye, oats, barley | Whole grains |
| **Low-fat milk (g/d)** | Fat-free milk and milk <2% fat | Fat-free milk and milk <2% fat |
| **Fish (g/d)** | Salmon, freshwater fish | Salmon, freshwater fish  |
| **Meat products (g/d)** | Beef, pork, processed meat products, sausages | Processed and unprocessed meat |
| **Total fat (E%1)** | Total fat as a percentage of total energy intake | Total fat as a percentage of total energy intake |
| **Fat ratio** | Ratio of PUFA2 to SFA3 + trans-fatty acids | Ratio of PUFA to SFA + trans-fatty acids |
| **Alcohol (g/d) †**  | Ethanol |  |
| 1 E%, percentage of total energy intake2 PUFA, polyunsaturated fatty acids3 SFA, saturated fatty acids\* The healthy Nordic diet index was calculated using the population-based consumption quartiles as cut-offs, with each intake quartile scored as 0, 1, 2 or 3 points. For the potentially healthy score components (fruits and berries, vegetables, cereals, low-fat milk, fish, and fat ratio), the lowest intake category was given 0 points and the highest 3 points. For the potentially less favourable score components (meat products and total fat), the lowest intake category was given 3 points and the highest 0 points.† Men consuming 20 g or less of alcohol per day received 1 point; otherwise 0 points were given. Alcohol was not included in the score used in the current study, because it was used as a separated factor in the analyses. |

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**Supplementary material 2** ROC curve for discriminatory accuracy of all-cause mortality prediction models
Model1, the initial Cox regression model
Model2, the final Cox regression model
Note. AUC, area under the curve; ROC, receiver operating characteristic.

**Supplementary material 3** Age-adjusted relative risk score of mortality (RRSM) for different combinations of health behaviors in contrast to an ideal health behavioral profile.

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|  | **Alcohol (g/week)**b | **Normal weight** | **Slight overweight** | **Overweight** | **Obese** |
|  | nonsmoker | smoker | nonsmoker | smoker | nonsmoker | smoker | nonsmoker | smoker |
| HNDa =24 | **1** | 1.00 | 2.72 | 1.29 | 2.35 | 1.63 | 2.60 | 1.96 | 3.04 |
| **43** | 1.05 | 2.86 | 1.36 | 2.47 | 1.72 | 2.73 | 2.06 | 3.20 |
| **475** | 1.78 | 4.85 | 2.31 | 4.19 | 2.91 | 4.63 | 3.49 | 5.43 |
|  |  |  |  |  |  |  |  |  |  |
| HNDa =15 | **1** | 1.26 | 3.41 | 1.62 | 2.95 | 2.05 | 3.26 | 2.45 | 3.82 |
| **43** | 1.32 | 3.59 | 1.71 | 3.10 | 2.16 | 3.43 | 2.58 | 4.02 |
| **475** | 2.24 | 6.09 | 2.89 | 5.26 | 3.66 | 5.82 | 4.38 | 6.82 |
|  |  |  |  |  |  |  |  |  |  |
| HNDa =9 | **1** | 1.46 | 3.97 | 1.89 | 3.43 | 2.38 | 3.79 | 2.86 | 4.44 |
| **43** | 1.54 | 4.18 | 1.99 | 3.61 | 2.51 | 3.99 | 3.01 | 4.68 |
| **475** | 2.61 | 7.08 | 3.37 | 6.12 | 4.25 | 6.77 | 5.10 | 7.93 |
|  |  |  |  |  |  |  |  |  |  |
| HNDa =1 | **1** | 1.79 | 4.86 | 2.31 | 4.20 | 2.92 | 4.64 | 3.50 | 5.44 |
| **43** | 1.88 | 5.11 | 2.43 | 4.42 | 3.07 | 4.88 | 3.68 | 5.72 |
| **475** | 3.19 | 8.67 | 4.12 | 7.49 | 5.20 | 8.28 | 6.24 | 9.71 |
| a The chosen levels of HND index correspond to the minimum value, the value of the first quartile, the value of the third quartile, and the maximum value of HND index in the cohort population.b The chosen levels for alcohol consumption correspond to the value of the second percentile, the median, and the value of the 98th percentile in the cohort population. |

**Supplementary material 4** Baseline characteristics of the study population stratified by smoking status

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| --- | --- | --- | --- | --- |
|  | Nonsmokers | Smokers | Total | P-values\* |
| Number of participants (%) | 1467 (65.6) | 768 (34.4) | 2235 |  |
| Survival (%) | 814 (55.5) | 581 (75.7) | 1395 (62.4) | <0.001 |
| Age a | 53.01 (5.16) | 52.77 (5.36) | 52.93 (5.23) | 0.305 |
| Age category (%) 42-47 47-52 52-57 57-62 | 185 (12.6)206 (14.0)858 (58.5)218 (14.9) | 114 (14.8)101 (13.2)442 (57.6)111 (14.5) | 299 (13.4)307 (13.7)1300 (58.2)329 (14.7) | 0.512 |
| BMI category (%) normal weight ≤25 slight overweight 25 - 27.5 overweight 27.5 – 30 obese ≥30 | 415 (28.3)455 (31.0)309 (21.1)288 (19.6) | 299 (38.9)240 (31.2)133 (17.3)96 (12.5) | 714 (31.9)695 (31.1)442 (19.8)384 (17.2) | <0.001 |
| Healthy Nordic Diet index a | 12.66 (3.80) | 10.67 (3.90) | 11.97 (3.95) | <0.001 |
| Alcohol consumption in g/week a | 68.98 (103.99) | 120.55 (191.32) | 86.70 (142.35) | <0.001 |
| Leisure-time physical activity in MET-hours/day a | 4.93 (4.08) | 4.40 (3.94) | 4.75 (4.04) | 0.004 |
| Charlson Comorbidity Index a | 0.74 (1.12) | 0.88 (1.18) | 0.79 (1.14) | 0.008 |
| Follow-up time in years a | 25.76 (8.19) | 20.81 (9.88) | 24.06 (9.11) | <0.001 |
| a results presented as *mean (SD)*\* Chi-square and Mann Whitney U tests to compare smokers and nonsmokers |

**Supplementary material 5** Baseline waist circumference of the study participants stratified by smoking status and BMI categories

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| --- | --- | --- | --- | --- |
|  | Nonsmokers | Smokers | Total | P-values\* |
| Waist Circumference by BMI category in cm a overall normal weight ≤25 slight overweight 25 - 27.5 overweight 27.5 – 30 obese ≥30 | 91.7 (9.7)82.1 (5.3)89.6 (4.5)95.5 (5.0)104.5 (7.9) | 89.9 (10.2)81.3 (5.5)90.3 (5.0)96.6 (5.0)105.7 (9.0) | 91.1 (9.9)81.8 (5.4)89.8 (4.7)95.9 (5.0)104.8 (8.2) | 0.0010.0720.1040.0280.307 |
| a results presented as *mean (SD)*\* Chi-square and Mann Whitney U tests to compare smokers and nonsmokers |