Table S5.

1. Individual SNPs\*: univariate Cox regression analysis predicting colorectal cancer risk

|  |  |  |  |
| --- | --- | --- | --- |
| **SNP** | **Allele (Ref/Alt)** | **HR (95% CI)** | ***p*** |
| ***GCK* rs730497** | **AA/AG** | **1.78 (1.11 – 2.87)** | **0.0174** |
| **AA/GG** | 2.05 (0.73 – 5.74) | 0.1715 |
| **AA/AG+GG** | **1.81 (1.14 – 2.87)** | **0.0115** |
| ***MTNR1B* rs10466351** | **CC/CT** | 1.05 (0.64 – 1.74) | 0.8402 |
| **CC/TT** | 1.78 (0.90 – 3.52) | 0.0959 |
| **CC+CT/TT** | 1.74 (0.92 – 3.31) | 0.0900 |
| ***PCSK1* rs144489757** | **GG/GC** | **1.89 (1.13 – 3.13)** | **0.0140** |
| **GG/CC** | N/A | N/A |
| **GG/GC+CC** | **1.78 (1.07 – 2.95)** | **0.0261** |
| ***PCSK1* rs9285019** | **TT/TC** | 1.61 (1.00 – 2.60) | 0.0512 |
| **TT/CC** | 1.80 (0.76 – 4.29) | 0.1835 |
| **TT/TC+CC** | **1.64 (1.03 – 2.59)** | **0.0356** |

Alt, alternative allele; CI, confidence interval; HR, hazard ratio; N/A, not available; Ref, reference allele; SNP, single-nucleotide polymorphism. Numbers in bold face are statistically significant.

\* Modeled SNPs were obtained from the second stage of random survival forest.

Table S5.

1. SNPs† adjusted for each other: multivariate Cox regression analysis predicting colorectal cancer risk

|  |  |  |  |
| --- | --- | --- | --- |
| **SNP** | **Allele (Ref/Alt)** | **HR (95% CI)** |  ***p*** |
| ***GCK* rs730497** | **AA/AG+GG** | **1.81 (1.14 – 2.86)** | **0.0118\*** |
| ***MTNR1B* rs10466351** | **CC+CT/TT** | 1.74 (0.91 – 3.30) | 0.0922 |
| ***PCSK1* rs144489757** | **GG/GC+CC** | 1.44 (0.77 – 2.69) | 0.2541 |
| ***PCSK1* rs9285019** | **TT/TC+CC** | 1.35 (0.77 – 2.39) | 0.2944 |

Alt, alternative allele; CI, confidence interval; HR, hazard ratio; Ref, reference allele; SNP, single-nucleotide polymorphism. Numbers in bold face are statistically significant.

† Modeled SNPs were obtained from the second stage of random survival forest.

\* *p* values were corrected for multiple comparison via the Benjamini-Hochberg approach.

Table S5.

1. Individual behavioral factors\*: univariate Cox regression analysis predicting colorectal cancer risk

|  |  |  |  |
| --- | --- | --- | --- |
| **Behavioral Factor** | **Cutoff Value** | **HR (95% CI)** | ***p*** |
| **Years as a regular smoker** | **Ten**-**year increase**\*\* | **1.27 (1.02 – 1.57)** | **0.0300** |
|  | **< 20 years vs. ≥ 20 years** | **2.92 (1.71 – 4.98)** | **7.95e-05** |
| **Age at enrollment** | **One**-**year increase** | **1.05 (1.01 – 1.08)** | **0.0079** |
|  | **≤ 56 years vs. > 56 years** | **1.97 (1.10 – 3.54)** | **0.0221** |
| **Age at menopause** | **One**-**year increase** | 1.02 (0.99 – 1.06) | 0.2241 |
|  | **≤ 49 years vs. > 49 years** | **1.59 (1.01 – 2.52)** | **0.0466** |
| **Percent calories from PFA/day** | **One decimal percent increase** | 0.95 (0.85 – 1.06) | 0.3513 |
|  | **< 7.5 % vs. ≥ 7.5%** | 1.09 (0.69 – 1.73) | 0.7016 |

CI, confidence interval; HR, hazard ratio; PFA, polyunsaturated fatty acid. Numbers in bold face are statistically significant.

\* Modeled behavioral factors were obtained from the second stage of random survival forest.

\*\* Years as a regular smoker was measured by a 10-year interval ranging from < 5 years to ≥ 50 years.

Table S5.

1. Behavioral factors† adjusted for each other: multivariate Cox regression analysis predicting colorectal cancer risk

|  |  |  |  |
| --- | --- | --- | --- |
| **Behavioral Factor** | **Cutoff Value** | **HR (95% CI)** |  ***p*** |
| **Years as a regular smoker** | **< 20 years vs. ≥ 20 years** | **2.79 (1.63 – 4.76)** | **0.0002\*** |
| **Age at enrollment** | **≤ 56 years vs. > 56 years** | 1.69 (0.94 – 3.04) | 0.0792 |
| **Age at menopause** | **≤ 49 years vs. > 49 years** | 1.55 (0.98 – 2.46) | 0.0622 |
| **Percent calories from PFA/day** | **< 7.5 % vs. ≥ 7.5%** | 1.04 (0.66 – 1.65) | 0.8533 |

CI, confidence interval; HR, hazard ratio; PFA, polyunsaturated fatty acid. Numbers in bold face are statistically significant.

† Modeled behavioral factors were obtained from the second stage of random survival forest.

\* *p* values were corrected for multiple comparison via the Benjamini-Hochberg approach.