**Supplementary Material**

**Adherence to a Western dietary pattern and risk of bladder cancer: a pooled analysis of 13 Cohort Studies of the Bladder Cancer Epidemiology and Nutritional Determinants (BLEND) International Study**

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**Supplementary Table 1.** Hazard ration (HR) and 95% confidence intervals (CIs) based on tertile of Western diet score stratified by gender and smoking status.

**Supplementary Table 2.** Hazard ration (HR) and 95% confidence intervals (CIs) based on tertile of Western diet score by cancer sub-types.

**Supplementary Table 1.** Hazard ration (HR) and 95% confidence intervals (CIs) based on tertile of Western diet score stratified by gender and smoking status.

| Subgroup | Tertile 1 HR (95%CI) * | Tertile 2 HR (95%CI) | Tertile 3 HR (95%CI) | P trend |
|---|---|---|---|---|
| **Women** | | | | |
| **Current smoker** | | | | - |
| Participants (*number*) Case/non-case | 56/ 23,263 | 94/ 23,912 | 88/ 23,674 | - |
| Pearson year | 248664.7 | 265448.4 | 266072.3 | - |
| Crude | 1 (reference) | 1.38 (0.99, 1.91) | 1.25 (0.90, 1.75) | 0.217 |
| Model 1 [1] | 1 (reference) | 1.45 (1.03, 0.03) | 1.40 (0.97, 2.02) | 0.080 |
| Model 2 [2] | 1 (reference) | 1.45 (1.03, 2.03) | 1.36 (0.96, 2.00) | 0.999 |
| **Former smoker** | | | | - |
| Participants (*number*) Case/non-case | 86/ 35,031 | 94/ 32,064 | 47/ 26,387 | - |
| Pearson year | 357183.6 | 363339.4 | 299911.1 | - |
| Crude | 1 (reference) | 1.02 (0.76, 1.37) | 0.70 (0.49, 1.00) | 0.079 |
| Model 1 [1] | 1 (reference) | 1.10 (0.81, 1.49) | 0.80 (0.54, 1.19) | 0.377 |
| Model 2 [2] | 1 (reference) | 1.11 (0.81, 1.51) | 0.81 (0.55, 1.21) | 0.425 |
| **Never smoker** | | | | |
| Participants (*number*) Case/non-case | 114/ 82,364 | 154/ 76,505 | 87/ 64, 055 | - |
| Pearson year | 903011.4 | 890789.3 | 732229.1 | - |
| Crude | 1 (reference) | 1.38 (1.09, 1.77) | 1.09 (0.82, 1.45) | 0.358 |
| Model 1 [1] | 1 (reference) | 1.49 (1.16, 1.91) | 1.28 (0.95, 1.47) | 0.055 |
| Model 2 [2] | 1 (reference) | 1.47 (1.14, 1.89) | 1.27 (0.93, 1.72) | 0.073 |
| **Men** | | | | |
| **Current smoker** | | | | |
| Participants (*number*) Case/non-case | 166/ 9,873 | 364/ 14,974 | 465/ 22,358 | - |
| Pearson year | 106860.5 | 170458 | 252179 | - |
| Crude | 1 (reference) | 1.49 (1.24, 1.80) | 1.47 (1.23, 1.76) | <0.001 |
| Model 1 [1] | 1 (reference) | 1.56 (1.29, 1.88) | 1.61 (1.34, 1.95) | 0.001 |
| Model 2 [2] | 1 (reference) | 1.63 (1.35, 1.96) | 1.78 (1.46, 2.16) | <0.001 |
| **Former smoker** | | | | |
| Participants (*number*) Case/non-case | 305/ 25,328 | 469/ 24,844 | 461/ 26,312 | - |
| Pearson year | 243256 | 282458.2 | 308673.5 | - |
| Crude | 1 (reference) | 1.40 (1.21, 1.62) | 1.55 (1.34, 1.80) | <0.001 |
| Model 1 [1] | 1 (reference) | 1.47 (1.26, 1.70) | 1.71 (1.46, 2.00) | 0.001 |
| Model 2 [2] | 1 (reference) | 1.44 (1.24, 1.68) | 1.67 (1.42, 1.96) | <0.001 |
| **Never smoker** | | | | |
| Participants (*number*) Case/non-case | 93/ 22,394 | 140/ 22,524 | 116/ 21,505 | - |
| Pearson year | 227755.3 | 270656.7 | 262359.7 | - |
| Crude | 1 (reference) | 1.38 (1.06, 1.79) | 1.35 (1.02, 1.78) | 0.032 |
| Model 1 [1] | 1 (reference) | 1.40 (1.07, 1.84) | 1.39 (1.04, 1.87) | 0.029 |

| | Model 2 [2] | 1 (reference) | 1.39 (1.06, 1.83) | 1.37 (1.01, 1.85) | 0.045 |
|---|---|---|---|---|---|

[*] HR= hazard ratio, CI= confidence interval.

[1] adjusted for energy intake, smoking status, smoking intensity, age and sex.

[2] adjusted for model 1+ fluid intake, fruit and vegetables intakes.

**Supplementary Table 2.** Hazard ration (HR) and 95% confidence intervals (CIs) based on tertile of Western diet score by cancer sub-types.

| | Tertile 1 HR (95%CI) [*] | Tertile 2 HR (95%CI) | Tertile 3 HR (95%CI) | P trend |
|---|---|---|---|---|
| **NMIBC[**]** | | | | - |
| **Participants** (*number*) | | | | - |
| Cases | 334 | 547 | 484 | |
| Pearson year | 2469.457 | 5147.161 | 4333.148 | - |
| Crude | 1 (reference) | 0.83 (0.72, 0.95) | 0.94 (0.82, 1.09) | 0.701 |
| Model 1 [1] | 1 (reference) | 1.10 (0.91, 1.31) | 1.40 (1.16, 1.69) | <0.001 |
| Model 2 [2] | 1 (reference) | 1.09 (0.86, 1.37) | 1.28 (1.02, 1.63) | <0.001 |
| **MIBC[+]** | | | | - |
| **Participants** (*number*) | | | | - |
| Cases | 189 | 380 | 305 | |
| Pearson year | 1616.891 | 3944.66 | 3117.87 | - |
| Crude | 1 (reference) | 0.87 (0.73, 1.04) | 0.93 (0.78, 1.12) | 0.672 |
| Model 1 [1] | 1 (reference) | 1.20 (0.95, 1.50) | 1.33 (1.05, 1.69) | 0.019 |
| Model 2 [2] | 1 (reference) | 1.09 (0.86, 1.37) | 1.28 (1.01, 1.64) | 0.028 |

[*] HR= hazard ratio, CI= confidence interval. [**] NMIBC = non-muscle-invasive bladder cancer, [+]MIBC= muscle-invasive bladder cancer.

[1] adjusted for energy intake, smoking status, smoking intensity, age and sex.

[2] adjusted for model 1+ fluid intake, fruit and vegetables intakes.