**Supplementary table 1.** Hazard ratios (95% CI) of incident type 2 diabetes by quintiles of nutrients and foods in participants in the Malmö Diet and Cancer cohort divided by sex (*n* 10 315 men, and *n* 16 307 women).

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | Men | | | |  | | Women | | | |
| Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId | |  | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Carbohydrates (E%) |  |  |  |  | |  |  |  |  |  |
| Q1 (16·2-40·3) | 1·00 | 1·00 | 1·00 | 1·00 | |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (40·3-43·7) | 0·81 (0·71, 0·93) | 0·83 (0·72, 0·95) | 0·83 (0·73, 0·95) | 0·85 (0·74, 0·97) | |  | 1·15 (1·00, 1·33) | 1·14 (0·99, 1·32) | 1·15 (1·00, 1·33) | 1·17 (1·02, 1·35) |
| Q3 (43·7-46·6) | 0·90 (0·79, 1·03) | 0·93 (0·81, 1·06) | 0·98 (0·86, 1·12) | 1·02 (0·89, 1·17) | |  | 1·15 (1·00, 1·32) | 1·15 (1·00, 1·33) | 1·14 (0·99, 1·31) | 1·17 (1·02, 1·36) |
| Q4 (46·6-50·1) | 0·82 (0·71, 0·94) | 0·84 (0·73, 0·97) | 0·92 (0·80, 1·06) | 0·97 (0·84, 1·13) | |  | 1·04 (0·90, 1·20) | 1·02 (0·88, 1·18) | 1·05 (0·91, 1·21) | 1·10 (0·95, 1·27) |
| Q5 (50·1-79·9) | 0·78 (0·68, 0·90) | 0·81 (0·70, 0·93) | 0·89 (0·77, 1·03) | 0·97 (0·83, 1·14) | |  | 1·08 (0·94, 1·24) | 1·05 (0·91, 1·21) | 1·11 (0·96, 1·28) | 1·19 (1·02, 1·39) |
| *P*trend | 0·002 | 0·009 | 0·38 | 0·74 | |  | 0·90 | 0·77 | 0·56 | 0·13 |
| Monosaccharides (E%) |  |  |  |  | |  |  |  |  |  |
| Q1 (0·4-5·0) | 1·00 | 1·00 | 1·00 | 1·00 | |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (5·0-6·4) | 0·89 (0·78, 1·00) | 0·93 (0·83, 1·05) | 0·89 (0·79, 1·00) | 0·90 (0·80, 1·02) | |  | 0·94 (0·81, 1·10) | 1·02 (0·87, 1·18) | 1·04 (0·89, 1·21) | 1·04 (0·89, 1·21) |
| Q3 (6·4-7·8) | 0·82 (0·72, 0·93) | 0·88 (0·77, 1·01) | 0·86 (0·76, 0·98) | 0·88 (0·77, 1·00) | |  | 0·90 (0·78, 1·05) | 1·01 (0·87, 1·17) | 1·01 (0·87, 1·17) | 1·01 (0·87, 1·17) |
| Q4 (7·8-9·6) | 0·79 (0·69, 0·91) | 0·87 (0·75, 1·01) | 0·85 (0·74, 0·99) | 0·87 (0·75, 1·01) | |  | 0·88 (0·76, 1·02) | 1·01 (0·87, 1·17) | 1·00 (0·86, 1·16) | 1·00 (0·88, 1·16) |
| Q5 (9·6-39·8) | 0·72 (0·61, 0·84) | 0·80 (0·68, 0·94) | 0·76 (0·64, 0·90) | 0·78 (0·66, 0·93) | |  | 0·79 (0·69, 0·92) | 0·92 (0·79, 1·07) | 0·96 (0·82, 1·11) | 0·97 (0·83, 1·13) |
| *P*trend | <0·001 | 0·004 | 0·001 | 0·005 | |  | 0·001 | 0·23 | 0·35 | 0·49 |
| Disaccharides (E%) |  |  |  |  | |  |  |  |  |  |
| Q1 (1·1-9·7) | 1·00 | 1·00 | 1·00 | 1·00 | |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (9·7-11·7) | 0·97 (0·86, 1·11) | 0·99 (0·87, 1·13) | 0·98 (0·86, 1·12) | 0·99 (0·87, 1·13) | |  | 1·05 (0·90, 1·22) | 1·02 (0·88, 1·19) | 1·02 (0·87, 1·19) | 1·02 (0·87, 1·19) |
| Q3 (11·7-13·6) | 0·96 (0·83, 1·10) | 0·98 (0·85, 1·12) | 0·99 (0·86, 1·14) | 1·01 (0·88, 1·17) | |  | 1·21 (1·04, 1·40) | 1·18 (1·02, 1·37) | 1·19 (1·02, 1·37) | 1·20 (1·04, 1·40) |
| Q4 (13·6-16·0) | 1·06 (0·92, 1·21) | 1·06 (0·92, 1·22) | 1·06 (0·93, 1·23) | 1·10 (0·96, 1·28) | |  | 1·20 (1·04, 1·39) | 1·12 (0·97, 1·30) | 1·10 (0·95, 1·28) | 1·13 (0·97, 1·32) |
| Q5 (16·0-41·1) | 1·06 (0·92, 1·22) | 1·01 (0·88, 1·17) | 1·04 (0·90, 1·20) | 1·12 (0·95, 1·30) | |  | 1·34 (1·16, 1·55) | 1·17 (1·01, 1·36) | 1·19 (1·02, 1·38) | 1·24 (1·05, 1·45) |
| *P*trend | 0·27 | 0·64 | 0·38 | 0·09 | |  | <0·001 | 0·02 | 0·01 | 0·004 |
| Sucrose (E%) |  |  |  |  | |  |  |  |  |  |
| Q1 (0·5-5·8) | 1·00 | 1·00 | 1·00 | 1·00 | |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (5·8-7·4) | 0·82 (0·72, 0·94) | 0·85 (0·74, 0·97) | 0·89 (0·78, 1·02) | 0·90 (0·78, 1·03) | |  | 0·93 (0·81, 1·08) | 0·94 (0·81, 1·08) | 0·97 (0·84, 1·12) | 0·97 (0·83, 1·12) |
| Q3 (7·4-9·0) | 0·94 (0·83, 1·08) | 0·98 (0·86, 1·13) | 1·06 (0·93, 1·21) | 1·08 (0·94, 1·24) | |  | 1·04 (0·90, 1·19) | 1·03 (0·90, 1·19) | 1·09 (0·95, 1·26) | 1·10 (0·95, 1·27) |
| Q4 (9·0-11·1) | 0·86 (0·75, 0·99) | 0·87 (0·76, 1·00) | 0·97 (0·84, 1·12) | 1·00 (0·86, 1·15) | |  | 0·93 (0·81, 1·08) | 0·91 (0·79, 1·06) | 0·98 (0·85, 1·13) | 0·98 (0·85, 1·14) |
| Q5 (11·1-38·6) | 0·92 (0·80, 1·05) | 0·89 (0·77, 1·02) | 0·99 (0·86, 1·14) | 1·05 (0·90, 1·23) | |  | 1·04 (0·90, 1·20) | 0·94 (0·82, 1·09) | 1·04 (0·90, 1·20) | 1·03 (0·88, 1·20) |
| *P*trend | 0·28 | 0·13 | 0·77 | 0·30 | |  | 0·59 | 0·39 | 0·58 | 0·74 |
| Added sugar (E%) |  |  |  |  | |  |  |  |  |  |
| Q1 (0·0-6·6) | 1·00 | 1·00 | 1·00 | 1·00 | |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (6·6-8·6) | 0·81 (0·71, 0·93) | 0·82 (0·71, 0·94) | 0·88 (0·77, 1·02) | 0·89 (0·77, 1·02) | |  | 0·94 (0·83, 1·08) | 0·94 (0·82, 1·08) | 1·01 (0·88, 1·15) | 1·01 (0·89, 1·16) |
| Q3 (8·6-10·6) | 0·82 (0·71, 0·94) | 0·83 (0·73, 0·96) | 0·94 (0·81, 1·08) | 0·95 (0·82, 1·09) | |  | 0·93 (0·81, 1·07) | 0·91 (0·80, 1·04) | 1·01 (0·88, 1·16) | 1·01 (0·88, 1·16) |
| Q4 (10·6-13·3) | 0·78 (0·68, 0·90) | 0·78 (0·68, 0·90) | 0·91 (0·79, 1·05) | 0·93 (0·80, 1·08) | |  | 0·96 (0·84, 1·10) | 0·92 (0·80, 1·05) | 1·04 (0·91, 1·19) | 1·03 (0·90, 1·19) |
| Q5 (13·3-56·1) | 0·76 (0·66, 0·88) | 0·74 (0·64, 0·85) | 0·87 (0·76, 1·01) | 0·91 (0·77, 1·06) | |  | 0·96 (0·83, 1·10) | 0·86 (0·75, 0·99) | 1·02 (0·89, 1·18) | 1·01 (0·86, 1·18) |
| *P*trend | <0·001 | <0·001 | 0·14 | 0·40 | |  | 0·65 | 0·04 | 0·65 | 0·84 |

**Supplementary table 1 (continued)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | Men | | | |  | Women | | | |
| Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |  | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Fibre (g/1000 kcal) |  |  |  |  |  |  |  |  |  |
| Q1 (1·9-7·1) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (7·1-8·4) | 0·91 (0·80, 1·03) | 0·96 (0·85, 1·09) | 0·92 (0·81, 1·04) | 0·93 (0·82, 1·06) |  | 0·97 (0·83, 1·12) | 1·05 (0·91, 1·22) | 1·01 (0·87, 1·17) | 1·02 (0·88, 1·19) |
| Q3 (8·4-9·6) | 0·90 (0·79, 1·02) | 0·98 (0·86, 1·12) | 0·94 (0·82, 1·07) | 0·96 (0·84, 1·11) |  | 0·98 (0·84, 1·13) | 1·11 (0·96, 1·28) | 1·03 (0·89, 1·20) | 1·06 (0·91, 1·24) |
| Q4 (9·6-11·3) | 0·86 (0·75, 0·99) | 0·95 (0·82, 1·10) | 0·96 (0·83, 1·10) | 1·00 (0·86, 1·17) |  | 0·82 (0·71, 0·95) | 0·96 (0·83, 1·12) | 0·91 (0·79, 1·06) | 0·96 (0·81, 1·12) |
| Q5 (11·3-33·5) | 0·84 (0·72, 0·98) | 0·95 (0·81, 1·11) | 0·94 (0·80, 1·10) | 1·02 (0·85, 1·24) |  | 0·86 (0·74, 0·99) | 1·02 (0·88, 1·18) | 0·99 (0·86, 1·15) | 1·07 (0·90, 1·27) |
| *P*trend | 0·01 | 0·46 | 0·53 | 0·76 |  | 0·003 | 0·64 | 0·51 | 0·75 |
| Whole grains (servings/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-0·2) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·2-0·5) | 0·98 (0·85, 1·12) | 1·04 (0·91, 1·19) | 1·04 (0·91, 1·20) | 1·06 (0·92, 1·21) |  | 0·94 (0·82, 1·08) | 1·01 (0·88, 1·16) | 0·98 (0·85, 1·12) | 0·98 (0·86, 1·12) |
| Q3 (0·5-0·9) | 0·84 (0·73, 0·97) | 0·90 (0·78, 1·04) | 0·90 (0·78, 1·04) | 0·91 (0·79, 1·05) |  | 0·92 (0·80, 1·05) | 1·01 (0·88, 1·16) | 0·96 (0·84, 1·10) | 0·97 (0·85, 1·11) |
| Q4 (0·9-1·6) | 0·86 (0·75, 0·99) | 0·93 (0·81, 1·07) | 0·90 (0·78, 1·03) | 0·91 (0·79, 1·05) |  | 0·82 (0·71, 0·94) | 0·90 (0·79, 1·04) | 0·88 (0·77, 1·02) | 0·90 (0·78, 1·04) |
| Q5 (1·6-15·0) | 0·82 (0·72, 0·93) | 0·89 (0·78, 1·01) | 0·91 (0·80, 1·04) | 0·93 (0·81, 1·06) |  | 0·87 (0·75, 1·00) | 0·93 (0·80, 1·08) | 0·95 (0·82, 1·11) | 0·99 (0·85, 1·15) |
| *P*trend | 0·001 | 0·03 | 0·04 | 0·07 |  | 0·007 | 0·11 | 0·21 | 0·45 |
| Refined grains (servings/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-1·4) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (1·4-2·0) | 0·97 (0·81, 1·16) | 0·97 (0·81, 1·16) | 1·04 (0·87, 1·25) | 1·02 (0·85, 1·23) |  | 0·94 (0·83, 1·06) | 0·93 (0·83, 1·06) | 0·96 (0·85, 1·09) | 0·96 (0·84, 1·09) |
| Q3 (2·0-2·7) | 0·98 (0·83, 1·16) | 0·99 (0·84, 1·18) | 1·08 (0·91, 1·27) | 1·04 (0·88, 1·24) |  | 1·07 (0·94, 1·21) | 1·04 (0·92, 1·18) | 1·06 (0·94, 1·21) | 1·06 (0·93, 1·21) |
| Q4 (2·7-3·6) | 0·85 (0·72, 1·01) | 0·87 (0·74, 1·02) | 0·98 (0·83, 1·15) | 0·94 (0·79, 1·12) |  | 1·10 (0·96, 1·26) | 1·07 (0·93, 1·23) | 1·14 (1·00, 1·31) | 1·15 (0·99, 1·34) |
| Q5 (3·6-19·7) | 0·84 (0·71, 0·98) | 0·84 (0·71, 0·99) | 0·97 (0·82, 1·15) | 0·93 (0·78, 1·12) |  | 0·94 (0·78, 1·13) | 0·88 (0·73, 1·06) | 0·92 (0·76, 1·11) | 0·92 (0·75, 1·13) |
| *P*trend | 0·006 | 0·01 | 0·39 | 0·21 |  | 0·39 | 0·89 | 0·35 | 0·35 |
| Potato (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-64·3) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (64·3-93·6) | 0·85 (0·70, 1·02) | 0·83 (0·69, 1·00) | 0·92 (0·77, 1·12) | 0·92 (0·77, 1·11) |  | 0·93 (0·82, 1·05) | 0·90 (0·80, 1·02) | 0·88 (0·77, 0·99) | 0·85 (0·75, 0·97) |
| Q3 (93·6-125·5) | 0·87 (0·73, 1·04) | 0·84 (0·71, 1·01) | 0·92 (0·77, 1·09) | 0·90 (0·76, 1·07) |  | 1·04 (0·92, 1·18) | 1·00 (0·88, 1·13) | 0·97 (0·86, 1·10) | 0·95 (0·84, 1·08) |
| Q4 (125·5-170·0) | 0·97 (0·82, 1·14) | 0·93 (0·79, 1·10) | 1·01 (0·86, 1·19) | 0·99 (0·84, 1·17) |  | 1·14 (1·00, 1·31) | 1·07 (0·94, 1·22) | 1·08 (0·94, 1·23) | 1·03 (0·90, 1·18) |
| Q5 (170·0-1446·7) | 0·96 (0·82, 1·12) | 0·89 (0·76, 1·04) | 0·99 (0·84, 1·16) | 0·95 (0·81, 1·12) |  | 1·18 (1·01, 1·38) | 1·05 (0·90, 1·23) | 1·03 (0·88, 1·21) | 0·96 (0·81, 1·13) |
| *P*trend | 0·48 | 0·79 | 0·53 | 0·95 |  | 0·003 | 0·13 | 0·13 | 0·55 |
| Fruits (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-92·1) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (92·1-144·0) | 0·96 (0·85, 1·09) | 1·00 (0·88, 1·14) | 0·96 (0·84, 1·09) | 0·96 (0·85, 1·10) |  | 0·90 (0·77, 1·04) | 0·96 (0·83, 1·11) | 0·92 (0·80, 1·07) | 0·94 (0·81, 1·09) |
| Q3 (144·1-203·6) | 0·90 (0·79, 1·03) | 0·96 (0·84, 1·10) | 0·90 (0·79, 1·04) | 0·91 (0·80, 1·05) |  | 0·91 (0·79, 1·05) | 0·99 (0·86, 1·15) | 0·94 (0·81, 1·09) | 0·96 (0·83, 1·11) |
| Q4 (203·6-285·0) | 0·87 (0·75, 1·00) | 0·94 (0·81, 1·08) | 0·83 (0·71, 0·96) | 0·84 (0·72, 0·97) |  | 0·86 (0·75, 0·99) | 0·98 (0·84, 1·13) | 0·89 (0·77, 1·03) | 0·91 (0·79, 1·05) |
| Q5 (285·0-2782·2) | 0·96 (0·83, 1·10) | 1·05 (0·91, 1·21) | 0·89 (0·77, 1·03) | 0·90 (0·78, 1·05) |  | 0·87 (0·75, 1·00) | 0·98 (0·84, 1·13) | 0·88 (0·76, 1·01) | 0·91 (0·79, 1·06) |
| *P*trend | 0·17 | 0·98 | 0·02 | 0·04 |  | 0·06 | 0·91 | 0·08 | 0·22 |
| Vegetables (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-102·3) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (102·3-142·2) | 0·90 (0·79, 1·03) | 0·94 (0·82, 1·08) | 0·91 (0·80, 1·04) | 0·92 (0·80, 1·05) |  | 0·88 (0·77, 1·01) | 0·96 (0·84, 1·10) | 0·95 (0·83, 1·09) | 0·95 (0·82, 1·09) |
| Q3 (142·2-184·5) | 0·86 (0·75, 0·99) | 0·93 (0·81, 1·07) | 0·89 (0·77, 1·02) | 0·89 (0·77, 1·02) |  | 0·83 (0·72, 0·95) | 0·95 (0·82, 1·09) | 0·90 (0·78, 1·04) | 0·90 (0·78, 1·03) |
| Q4 (184·5-246·4) | 0·90 (0·78, 1·04) | 0·98 (0·85, 1·13) | 0·94 (0·82, 1·08) | 0·94 (0·81, 1·08) |  | 0·91 (0·80, 1·05) | 1·10 (0·96, 1·26) | 1·03 (0·89, 1·18) | 1·02 (0·89, 1·17) |
| Q5 (246·4-1176·7) | 0·86 (0·75, 0·99) | 0·95 (0·82, 1·10) | 0·85 (0·74, 0·98) | 0·85 (0·73, 0·98) |  | 0·92 (0·80, 1·05) | 1·14 (0·99, 1·32) | 1·05 (0·81, 1·21) | 1·05 (0·91, 1·21) |
| *P*trend | 0·05 | 0·70 | 0·07 | 0·06 |  | 0·48 | 0·01 | 0·27 | 0·28 |

**Supplementary table 1 (continued)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | Men | | | |  | Women | | | |
| Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |  | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Juice (g/d)e |  |  |  |  |  |  |  |  |  |
| non-consumers | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·0-40·9) | 0·93 (0·82, 1·05) | 0·98 (0·87, 1·12) | 0·99 (0·87, 1·12) | 1·00 (0·88, 1·13) |  | 0·98 (0·87, 1·10) | 1·06 (0·95, 1·20) | 1·08 (0·96, 1·21) | 1·08 (0·96, 1·21) |
| T2 (41·0-141·8) | 0·92 (0·80, 1·05) | 0·99 (0·87, 1·13) | 0·97 (0·85, 1·10) | 0·97 (0·85, 1·11) |  | 0·96 (0·85, 1·08) | 1·04 (0·92, 1·17) | 1·05 (0·93, 1·18) | 1·04 (0·92, 1·17) |
| T3 (142·9-1500·0) | 1·00 (0·88, 1·13) | 1·07 (0·94, 1·21) | 1·05 (0·92, 1·19) | 1·05 (0·92, 1·20) |  | 0·91 (0·81, 1·02) | 0·96 (0·85, 1·08) | 1·00 (0·89, 1·12) | 0·99 (0·88, 1·12) |
| *P*trend | 0·56 | 0·46 | 0·72 | 0·67 |  | 0·12 | 0·67 | 0·87 | 0·98 |
| Sugar-sweetened beverages (g/d)e |  |  |  |  |  |  |  |  |  |
| non-consumers | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·3-47·1) | 1·03 (0·91, 1·17) | 1·04 (0·91, 1·18) | 0·98 (0·86, 1·11) | 0·97 (0·86, 1·11) |  | 1·01 (0·90, 1·14) | 1·00 (0·89, 1·13) | 1·04 (0·93, 1·17) | 1·04 (0·92, 1·17) |
| T2 (47·3-142·8) | 1·04 (0·91, 1·18) | 1·04 (0·92, 1·19) | 1·01 (0·88, 1·15) | 1·00 (0·88, 1·14) |  | 1·16 (1·03, 1·30) | 1·11 (0·99, 1·26) | 1·09 (0·97, 1·23) | 1·09 (0·97, 1·23) |
| T3 (142·9-3000·0) | 1·16 (1·03, 1·30) | 1·11 (0·99, 1·25) | 1·01 (0·90, 1·14) | 1·00 (0·89, 1·13) |  | 1·27 (1·13, 1·44) | 1·16 (1·03, 1·32) | 1·09 (0·96, 1·23) | 1·06 (0·94, 1·20) |
| *P*trend | 0·02 | 0·08 | 0·80 | 0·92 |  | <0·001 | 0·008 | 0·10 | 0·20 |
| Table sugar (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-0·4) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·4-2·4) | 0·79 (0·68, 0·92) | 0·80 (0·69, 0·93) | 0·82 (0·70, 0·95) | 0·81 (0·70, 0·94) |  | 1·01 (0·89, 1·15) | 1·05 (0·92, 1·19) | 1·05 (0·93, 1·19) | 1·05 (0·92, 1·19) |
| Q3 (2·4-6·1) | 0·80 (0·69, 0·93) | 0·81 (0·69, 0·94) | 0·85 (0·73, 0·99) | 0·84 (0·72, 0·98) |  | 0·97 (0·86, 1·11) | 0·97 (0·85, 1·10) | 1·02 (0·90, 1·17) | 1·01 (0·89, 1·16) |
| Q4 (6·1-15·5) | 0·74 (0·64, 0·85) | 0·74 (0·64, 0·86) | 0·85 (0·73, 0·98) | 0·84 (0·72, 0·97) |  | 0·98 (0·86, 1·13) | 0·94 (0·82, 1·08) | 1·03 (0·90, 1·19) | 1·02 (0·89, 1·17) |
| Q5 (15·5-237·6) | 0·82 (0·72, 0·94) | 0·77 (0·67, 0·88) | 0·96 (0·84, 1·10) | 0·95 (0·83, 1·10) |  | 1·10 (0·95, 1·29) | 0·96 (0·82, 1·13) | 1·16 (0·99, 1·36) | 1·13 (0·96, 1·32) |
| *P*trend | 0·007 | <0·001 | 0·97 | 0·87 |  | 0·51 | 0·26 | 0·18 | 0·32 |
| Sweets (g/d)e |  |  |  |  |  |  |  |  |  |
| Non-consumers | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·1-2·6) | 0·82 (0·72, 0·93) | 0·83 (0·73, 0·94) | 0·85 (0·75, 0·97) | 0·85 (0·75, 0·97) |  | 0·89 (0·78, 1·01) | 0·90 (0·79, 1·02) | 0·88 (0·77, 1·00) | 0·88 (0·77, 0·99) |
| T2 (2·7-8·0) | 1·02 (0·90, 1·15) | 1·02 (0·90, 1·15) | 0·97 (0·86, 1·10) | 0·98 (0·87, 1·10) |  | 1·06 (0·94, 1·19) | 1·05 (0·94, 1·19) | 1·03 (0·91, 1·16) | 1·03 (0·91, 1·15) |
| T3 (8·0-349·0) | 1·11 (0·98, 1·25) | 1·08 (0·96, 1·22) | 1·07 (0·95, 1·21) | 1·08 (0·96, 1·23) |  | 1·19 (1·06, 1·34) | 1·13 (1·00, 1·27) | 1·09 (0·97, 1·23) | 1·11 (0·98, 1·25) |
| *P*trend | 0·08 | 0·16 | 0·33 | 0·27 |  | 0·001 | 0·02 | 0·06 | 0·04 |
| Chocolate (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-0·5) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·5-3·2) | 0·76 (0·66, 0·88) | 0·78 (0·68, 0·90) | 0·79 (0·69, 0·91) | 0·79 (0·68, 0·91) |  | 0·87 (0·76, 1·00) | 0·92 (0·80, 1·06) | 0·95 (0·83, 1·10) | 0·96 (0·83, 1·10) |
| Q3 (3·2-6·3) | 0·82 (0·71, 0·94) | 0·86 (0·75, 0·99) | 0·89 (0·78, 1·03) | 0·89 (0·78, 1·03) |  | 0·96 (0·83, 1·10) | 1·01 (0·88, 1·16) | 1·06 (0·92, 1·22) | 1·08 (0·94, 1·24) |
| Q4 (6·3-12·4) | 0·80 (0·70, 0·92) | 0·84 (0·74, 0·97) | 0·85 (0·74, 0·97) | 0·85 (0·74, 0·97) |  | 0·98 (0·85, 1·12) | 1·04 (0·91, 1·20) | 1·09 (0·95, 1·26) | 1·10 (0·95, 1·26) |
| Q5 (12·4-231·4) | 0·86 (0·75, 0·99) | 0·90 (0·78, 1·03) | 0·92 (0·80, 1·06) | 0·92 (0·80, 1·06) |  | 1·12 (0·97, 1·29) | 1·17 (1·01, 1·34) | 1·24 (1·07, 1·43) | 1·26 (1·09, 1·46) |
| *P*trend | 0·05 | 0·20 | 0·35 | 0·37 |  | 0·03 | 0·008 | 0·001 | <0·001 |
| Ice cream (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-1·1) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (1·1-3·9) | 0·95 (0·83, 1·10) | 0·99 (0·86, 1·14) | 0·96 (0·84, 1·11) | 0·97 (0·84, 1·12) |  | 0·97 (0·84, 1·11) | 0·98 (0·85, 1·12) | 1·00 (0·88, 1·15) | 1·01 (0·88, 1·16) |
| Q3 (3·9-9·0) | 0·96 (0·83, 1·10) | 0·99 (0·86, 1·14) | 0·97 (0·85, 1·12) | 0·98 (0·85, 1·13) |  | 0·94 (0·83, 1·07) | 0·97 (0·85, 1·11) | 0·95 (0·84, 1·09) | 0·96 (0·84, 1·10) |
| Q4 (9·0-17·9) | 0·97 (0·84, 1·11) | 1·01 (0·88, 1·16) | 0·94 (0·82, 1·09) | 0·96 (0·83, 1·10) |  | 0·99 (0·87, 1·13) | 1·03 (0·90, 1·17) | 0·97 (0·85, 1·11) | 0·99 (0·87, 1·13) |
| Q5 (17·9-616·0) | 0·91 (0·80, 1·04) | 0·97 (0·84, 1·04) | 0·92 (0·80, 1·05) | 0·93 (0·81, 1·06) |  | 1·07 (0·93, 1·23) | 1·11 (0·96, 1·27) | 1·04 (0·91, 1·20) | 1·07 (0·93, 1·23) |
| *P*trend | 0·23 | 0·73 | 0·22 | 0·30 |  | 0·37 | 0·14 | 0·81 | 0·55 |

**Supplementary table 1 (continued)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | Men | | | |  | Women | | | |
| Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |  | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Pastries (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-11·7) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (11·8-24·0) | 0·84 (0·73, 0·97) | 0·87 (0·75, 1·00) | 0·92 (0·80, 1·06) | 0·92 (0·80, 1·06) |  | 0·91 (0·79, 1·03) | 0·92 (0·81, 1·05) | 0·95 (0·83, 1·08) | 0·96 (0·84, 1·09) |
| Q3 (24·0-38·0) | 0·88 (0·77, 1·01) | 0·92 (0·80, 1·06) | 0·95 (0·83, 1·10) | 0·97 (0·84, 1·11) |  | 0·83 (0·73, 0·95) | 0·83 (0·73, 0·95) | 0·83 (0·72, 0·95) | 0·84 (0·74, 0·97) |
| Q4 (38·0-57·9) | 0·79 (0·68, 0·91) | 0·83 (0·71, 0·95) | 0·91 (0·78, 1·05) | 0·92 (0·80, 1·07) |  | 0·80 (0·70, 0·92) | 0·80 (0·69, 0·92) | 0·85 (0·74, 0·98) | 0·87 (0·75, 1·00) |
| Q5 (57·9-550·0) | 0·85 (0·74, 0·98) | 0·89 (0·77, 1·03) | 1·01 (0·88, 1·17) | 1·04 (0·90, 1·20) |  | 0·76 (0·66, 0·89) | 0·73 (0·63, 0·86) | 0·78 (0·67, 0·91) | 0·80 (0·69, 0·94) |
| *P*trend | 0·02 | 0·09 | 0·99 | 0·71 |  | <0·001 | <0·001 | 0·001 | 0·003 |
| Marmalade/honey/jam (g/d) |  |  |  |  |  |  |  |  |  |
| Q1 (0·0-1·4) | 1·00 | 1·00 | 1·00 | 1·00 |  | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (1·5-9·3) | 0·95 (0·82, 1·11) | 0·99 (0·85, 1·15) | 1·05 (0·90, 1·22) | 1·05 (0·91, 1·23) |  | 0·99 (0·87, 1·12) | 1·01 (0·89, 1·14) | 1·06 (0·93, 1·20) | 1·06 (0·93, 1·20) |
| Q3 (9·3-16·2) | 0·91 (0·80, 1·04) | 0·94 (0·82, 1·08) | 1·05 (0·91, 1·20) | 1·05 (0·92, 1·20) |  | 0·91 (0·79, 1·04) | 0·92 (0·81, 1·05) | 1·02 (0·89, 1·17) | 1·02 (0·89, 1·17) |
| Q4 (16·2-28·3) | 0·73 (0·64, 0·84) | 0·75 (0·65, 0·87) | 0·85 (0·74, 0·98) | 0·86 (0·74, 0·99) |  | 0·85 (0·74, 0·97) | 0·84 (0·74, 0·97) | 0·95 (0·83, 1·09) | 0·96 (0·83, 1·10) |
| Q5 (28·3-218·0) | 0·69 (0·60, 0·79) | 0·72 (0·63, 0·83) | 0·82 (0·71, 0·94) | 0·82 (0·72, 0·94) |  | 0·79 (0·68, 0·92) | 0·79 (0·68, 0·92) | 0·93 (0·80, 1·09) | 0·94 (0·81, 1·10) |
| *P*trend | <0·001 | <0·001 | <0·001 | <0·001 |  | <0·001 | <0·001 | 0·17 | 0·21 |

BMI, body mass index.

aadjusted for age, diet-method version, season, and total energy intake.

badjusted for age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, and education.

cadjusted for age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, and BMI.

dadjusted for age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, coffee, meat, whole grains (except for when whole grains was used as the main variable), sugar-sweetened beverages (except for when sugar-sweetened beverages was used as the main variable), and BMI.

edivided into non-consumers and tertiles of consumers, with non-consumers as reference.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Carbs (E%) | Msac  (E%) | Dsac  (E%) | Sucr (E%) | Added sugar  (E%) | Fibre  (g/1000 kcal) | Whole grains  (serv/d) | Refined grains  (serv/d) | Potato  (g/d) | Fruits  (g/d) | Vegetable  (g/d) | Juice (g/d) | SSBs  (g/d) | Table sugar (g/d) | Sweets (g/d) | Chocolate (g/d) | Ice cream (g/d) | Pastries (g/d) | Marm (g/d) | Coffee (g/d) | Meat (g/d) |
| Carbs  (E%) | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Msac  (E%) | **0·60** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Dsac  (E%) | **0·47** | **0·18** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sucr  (E%) | **0·44** | **0·25** | **0·82** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Added sugar  (E%) | **0·41** | **0·20** | **0·71** | **0·85** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Fibre  (g/1000 kcal) | **0·49** | **0·56** | **-0·11** | **-0·09** | **-0·20** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Whole grains  (serv/d) | **0·17** | **0·15** | **-0·04** | **-0·08** | **-0·06** | **0·49** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Refined grains  (serv/d) | **0·08** | **-0·20** | **-0·07** | **-0·08** | **0·08** | **-0·21** | **-0·23** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Potato  (g/d) | **-0·09** | **-0·24** | **-0·12** | **-0·10** | -0·00 | **-0·21** | **0·02** | **0·18** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |  |
| Fruits  (g/d) | **0·36** | **0·62** | **0·12** | **0·16** | **-0·05** | **0·56** | **0·21** | **-0·07** | **-0·11** | **1·00** |  |  |  |  |  |  |  |  |  |  |  |
| Vegetables  (g/d) | **0·08** | **0·29** | **-0·11** | **-0·07** | **-0·17** | **0·45** | **0·19** | **-0·02** | **-0·05** | **0·34** | **1·00** |  |  |  |  |  |  |  |  |  |  |
| Juice  (g/d) | **0·14** | **0·35** | **0·08** | **0·12** | **-0·02** | **0·02** | **0·03** | **-0·03** | **-0·05** | **0·10** | **0·08** | **1·00** |  |  |  |  |  |  |  |  |  |
| SSBs  (g/d) | **0·15** | **0·04** | **0·34** | **0·42** | **0·45** | **-0·19** | **-0·06** | **0·12** | **0·08** | **-0·03** | **-0·05** | **0·04** | **1·00** |  |  |  |  |  |  |  |  |
| Table sugar  (g/d) | **0·09** | **-0·18** | **0·43** | **0·47** | **0·45** | **-0·25** | **-0·02** | **0·23** | **0·15** | **-0·05** | **-0·09** | -0·01 | **0·17** | **1·00** |  |  |  |  |  |  |  |
| Sweets  (g/d) | **0·03** | **-0·03** | **0·21** | **0·28** | **0·25** | **-0·15** | **-0·06** | 0·00 | **-0·01** | -0·01 | **-0·04** | **0·04** | **0·12** | **0·02** | **1·00** |  |  |  |  |  |  |
| Chocolate  (g/d) | **-0·08** | **-0·09** | **0·21** | **0·28** | **0·26** | **-0·18** | -0·01 | **0·08** | **0·03** | **0·02** | **-0·03** | **0·04** | **0·08** | **0·11** | **0·21** | **1·00** |  |  |  |  |  |
| Ice cream  (g/d) | **0·05** | **0·05** | **0·17** | **0·17** | **0·17** | **-0·02** | **0·05** | **0·09** | **0·02** | **0·15** | **0·05** | **0·05** | **0·09** | **0·05** | **0·11** | **0·18** | **1·00** |  |  |  |  |
| Pastries  (g/d) | **0·08** | 0·01 | **0·20** | **0·29** | **0·34** | **-0·10** | **0·03** | **0·14** | **0·06** | **0·08** | **-0·05** | **0·02** | **0·10** | **0·16** | **0·14** | **0·28** | **0·18** | **1·00** |  |  |  |
| Marm  (g/d) | **0·19** | **0·28** | **0·13** | **0·15** | **0·39** | **-0·04** | **0·11** | **0·17** | **0·13** | **0·05** | **-0·03** | **0·03** | **0·07** | **0·14** | 0·00 | **0·10** | **0·09** | **0·20** | **1·00** |  |  |
| Coffee  (g/d) | **-0·09** | **-0·14** | **-0·03** | **-0·04** | **-0·04** | **-0·12** | **-0·05** | **0·07** | **0·07** | **-0·06** | 0·01 | **-0·05** | -0·01 | **-0·02** | **0·10** | **0·04** | **0·02** | **0·02** | **-0·03** | **1·00** |  |
| Meat  (g/d) | **-0·31** | **-0·32** | **-0·20** | **-0·15** | **-0·07** | **-0·30** | **-0·05** | **0·26** | **0·42** | **-0·12** | **0·05** | **-0·06** | **0·10** | **0·12** | **0·04** | **0·04** | **0·03** | **0·02** | **0·03** | **0·12** | **1·00** |

**Supplementary table 2.** Spearman correlation between independent variables in the Malmö Diet and Cancer cohort (*n* 26 622). Significant correlations (*P<*0.05) in bold.

Carbs, carbohydrates; Msac, monosacchardies; Dsac, disaccharides; Sucr, sucrose; SSBs, sugar-sweetened beverages; Marm = marmalade/honey/jam.

**Supplementary table 3.** Sensitivity analysis of hazard ratios (95% CI) of incident type 2 diabetes by quintiles of nutrients and foods in participants in the Malmö Diet and Cancer cohort (*n* 26 622).

|  |  |  |
| --- | --- | --- |
| Variables | Extended incl. diet & BMI  (excl. misreporters)a | Extended incl. diet & BMI  (excl. diet changers)b |
| Carbohydrates (E%) |  |  |
| Q1 (16·2-40·3) | 1·00 | 1·00 |
| Q2 (40·3-43·7) | 1·00 (0·90, 1·12) | 1·01 (0·90, 1·12) |
| Q3 (43·7-46·6) | 1·07 (0·96, 1·20) | 1·06 (0·95, 1·19) |
| Q4 (46·6-50·1) | 1·02 (0·91, 1·15) | 0·95 (0·84, 1·07) |
| Q5 (50·1-79·9) | 1·06 (0·93, 1·20) | 1·01 (0·88, 1·15) |
| *P*trend | 0·35 | 0·73 |
| *P*interactionc | 0·54 | 0·84 |
| Monosaccharides (E%) |  |  |
| Q1 (0·4-5·0) | 1·00 | 1·00 |
| Q2 (5·0-6·4) | 0·96 (0·87, 1·07) | 0·99 (0·89, 1·10) |
| Q3 (6·4-7·8) | 0·97 (0·87, 1·08) | 0·92 (0·82, 1·03) |
| Q4 (7·8-9·6) | 0·94 (0·84, 1·05) | 0·93 (0·82, 1·04) |
| Q5 (9·6-39·8) | 0·90 (0·79, 1·02) | 0·85 (0·74, 0·96) |
| *P*trend | 0·09 | 0·008 |
| *P*interactionc | 0·25 | 0·64 |
| Disaccharides (E%) |  |  |
| Q1 (1·1-9·7) | 1·00 | 1·00 |
| Q2 (9·7-11·7) | 0·98 (0·88, 1·10) | 0·95 (0·84, 1·06) |
| Q3 (11·7-13·6) | 1·07 (0·95, 1·20) | 1·05 (0·93, 1·18) |
| Q4 (13·6-16·0) | 1·09 (0·97, 1·23) | 1·01 (0·90, 1·14) |
| Q5 (16·0-41·1) | 1·15 (1·01, 1·30) | 1·09 (0·96, 1·24) |
| *P*trend | 0·009 | 0·11 |
| *P*interactionc | 0·13 | 0·16 |
| Sucrose (E%) |  |  |
| Q1 (0·5-5·8) | 1·00 | 1·00 |
| Q2 (5·8-7·4) | 0·89 (0·80, 1·00) | 0·89 (0·80, 1·00) |
| Q3 (7·4-9·0) | 1·06 (0·94, 1·18) | 1·06 (0·95, 1·19) |
| Q4 (9·0-11·1) | 0·95 (0·84, 1·06) | 0·94 (0·83, 1·06) |
| Q5 (11·1-38·6) | 1·03 (0·91, 1·17) | 1·00 (0·88, 1·14) |
| *P*trend | 0·45 | 0·77 |
| *P*interactionc | 0·42 | 0·46 |
| Added sugar (E%) |  |  |
| Q1 (0·0-6·6) | 1·00 | 1·00 |
| Q2 (6·6-8·6) | 0·95 (0·85, 1·07) | 0·95 (0·85, 1·07) |
| Q3 (8·6-10·6) | 0·99 (0·89, 1·11) | 0·94 (0·84, 1·06) |
| Q4 (10·6-13·3) | 0·97 (0·87, 1·09) | 0·97 (0·86, 1·09) |
| Q5 (13·3-56·1) | 0·98 (0·86, 1·11) | 0·94 (0·82, 1·07) |
| *P*trend | 0·85 | 0·49 |
| *P*interactionc | 0·07 | 0·03 |

**Supplementary table 3 (continued)**

|  |  |  |
| --- | --- | --- |
| Variables | Extended incl. diet & BMI  (excl. misreporters)a | Extended incl. diet & BMI  (excl. diet changers)b |
| Fibre (g/1000 kcal) |  |  |
| Q1 (1·9-7·1) | 1·00 | 1·00 |
| Q2 (7·1-8·4) | 0·98 (0·88, 1·09) | 0·98 (0·88, 1·09) |
| Q3 (8·4-9·6) | 1·04 (0·93, 1·16) | 1·03 (0·92, 1·16) |
| Q4 (9·6-11·3) | 0·99 (0·87, 1·12) | 0·96 (0·85, 1·09) |
| Q5 (11·3-33·5) | 1·02 (0·89, 1·18) | 0·96 (0·83, 1·12) |
| *P*trend | 0·73 | 0·63 |
| *P*interactionc | 0·41 | 0·28 |
| Whole grains (servings/d) |  |  |
| Q1 (0·0-0·2) | 1·00 | 1·00 |
| Q2 (0·2-0·5) | 1·04 (0·93, 1·16) | 1·03 (0·93, 1·15) |
| Q3 (0·5-0·9) | 0·95 (0·84, 1·06) | 0·93 (0·84, 1·05) |
| Q4 (0·9-1·6) | 0·94 (0·84, 1·05) | 0·92 (0·82, 1·03) |
| Q5 (1·6-15·0) | 0·99 (0·89, 1·11) | 0·90 (0·80, 1·02) |
| *P*trend | 0·37 | 0·02 |
| *P*interactionc | 0·69 | 0·69 |
| Refined grains (servings/d) |  |  |
| Q1 (0·0-1·4) | 1·00 | 1·00 |
| Q2 (1·4-2·0) | 0·97 (0·86, 1·10) | 0·97 (0·86, 1·10) |
| Q3 (2·0-2·7) | 1·06 (0·94, 1·20) | 1·04 (0·92, 1·18) |
| Q4 (2·7-3·6) | 1·01 (0·89, 1·15) | 1·02 (0·90, 1·17) |
| Q5 (3·6-19·7) | 0·92 (0·80, 1·07) | 0·93 (0·80, 1·09) |
| *P*trend | 0·54 | 0·70 |
| *P*interactionc | 0·21 | 0·16 |
| Potato (g/d) |  |  |
| Q1 (0·0-64·3) | 1·00 | 1·00 |
| Q2 (64·3-93·6) | 0·84 (0·75, 0·95) | 0·87 (0·77, 0·98) |
| Q3 (93·6-125·5) | 0·90 (0·80, 1·01) | 0·94 (0·83, 1·06) |
| Q4 (125·5-170·0) | 0·99 (0·88, 1·11) | 1·04 (0·93, 1·18) |
| Q5 (170·0-1446·7) | 0·93 (0·82, 1·05) | 0·97 (0·85, 1·10) |
| *P*trend | 0·82 | 0·38 |
| *P*interactionc | 0·23 | 0·13 |
| Fruits (g/d) |  |  |
| Q1 (0·0-92·1) | 1·00 | 1·00 |
| Q2 (92·1-144·0) | 0·97 (0·87, 1·08) | 0·95 (0·86, 1·07) |
| Q3 (144·1-203·6) | 0·93 (0·83, 1·04) | 0·94 (0·84, 1·05) |
| Q4 (203·6-285·0) | 0·92 (0·82, 1·03) | 0·90 (0·80, 1·01) |
| Q5 (285·0-2782·2) | 0·90 (0·80, 1·01) | 0·91 (0·81, 1·03) |
| *P*trend | 0·06 | 0·07 |
| *P*interactionc | 0·82 | 0·28 |

**Supplementary table 3 (continued)**

|  |  |  |
| --- | --- | --- |
| Variables | Extended incl. diet & BMI  (excl. misreporters)a | Extended incl. diet & BMI  (excl. diet changers)b |
| Vegetables (g/d) |  |  |
| Q1 (0·0-102·3) | 1·00 | 1·00 |
| Q2 (102·3-142·2) | 0·95 (0·85, 1·06) | 0·95 (0·85, 1·06) |
| Q3 (142·2-184·5) | 0·91 (0·81, 1·02) | 0·87 (0·78, 0·98) |
| Q4 (184·5-246·4) | 1·01 (0·90, 1·13) | 0·96 (0·85, 1·07) |
| Q5 (246·4-1176·7) | 0·95 (0·84, 1·06) | 0·88 (0·78, 1·00) |
| *P*trend | 0·69 | 0·08 |
| *P*interactionc | 0·11 | 0·09 |
| Juice (g/d)d |  |  |
| non-consumers | 1·00 | 1·00 |
| T1 (0·0-40·9) | 1·04 (0·94, 1·15) | 1·06 (0·96, 1·17) |
| T2 (41·0-141·8) | 1·07 (0·97, 1·18) | 1·05 (0·94, 1·16) |
| T3 (142·9-1500·0) | 1·08 (0·98, 1·20) | 1·06 (0·95, 1·17) |
| *P*trend | 0·07 | 0·25 |
| *P*interactionc | 0·44 | 0·88 |
| Sugar-sweetened beverages (g/d)d |  |  |
| non-consumers | 1·00 | 1·00 |
| T1 (0·3-47·1) | 1·00 (0·91, 1·10) | 1·04 (0·94, 1·15) |
| T2 (47·3-142·8) | 1·01 (0·92, 1·12) | 1·01 (0·91, 1·12) |
| T3 (142·9-3000·0) | 1·02 (0·93, 1·13) | 1·01 (0·92, 1·12) |
| *P*trend | 0·62 | 0·80 |
| *P*interactionc | 0·32 | 0·55 |
| Table sugar (g/d) |  |  |
| Q1 (0·0-0·4) | 1·00 | 1·00 |
| Q2 (0·4-2·4) | 0·90 (0·81, 1·01) | 0·94 (0·83, 1·05) |
| Q3 (2·4-6·1) | 0·90 (0·80, 1·01) | 0·93 (0·83, 1·04) |
| Q4 (6·1-15·5) | 0·90 (0·80, 1·01) | 0·95 (0·84, 1·07) |
| Q5 (15·5-237·6) | 0·99 (0·88, 1·11) | 1·03 (0·92, 1·17) |
| *P*trend | 0·81 | 0·59 |
| *P*interactionc | 0·08 | 0·09 |
| Sweets (g/d)d |  |  |
| Non-consumers | 1·00 | 1·00 |
| T1 (0·1-2·6) | 0·86 (0·77, 0·95) | 0·83 (0·74, 0·92) |
| T2 (2·7-8·0) | 1·00 (0·91, 1·10) | 1·01 (0·92, 1·11) |
| T3 (8·0-349·0) | 1·08 (0·98, 1·19) | 1·07 (0·97, 1·18) |
| *P*trend | 0·06 | 0·07 |
| *P*interactionc | 0·19 | 0·82 |

**Supplementary table 3 (continued)**

|  |  |  |
| --- | --- | --- |
| Variables | Extended incl. diet & BMI  (excl. misreporters)a | Extended incl. diet & BMI  (excl. diet changers)b |
| Chocolate (g/d) |  |  |
| Q1 (0·0-0·5) | 1·00 | 1·00 |
| Q2 (0·5-3·2) | 0·82 (0·73, 0·92) | 0·83 (0·74, 0·94) |
| Q3 (3·2-6·3) | 0·95 (0·85, 1·07) | 0·98 (0·87, 1·10) |
| Q4 (6·3-12·4) | 0·95 (0·85, 1·06) | 0·94 (0·84, 1·06) |
| Q5 (12·4-231·4) | 1·03 (0·92, 1·15) | 1·06 (0·94, 1·19) |
| *P*trend | 0·12 | 0·09 |
| *P*interactionc | 0·001 | 0·01 |
| Ice cream (g/d) |  |  |
| Q1 (0·0-1·1) | 1·00 | 1·00 |
| Q2 (1·1-3·9) | 1·00 (0·89, 1·12) | 1·00 (0·89, 1·12) |
| Q3 (3·9-9·0) | 1·01 (0·90, 1·12) | 1·00 (0·90, 1·12) |
| Q4 (9·0-17·9) | 0·97 (0·86, 1·08) | 0·98 (0·88, 1·10) |
| Q5 (17·9-616·0) | 1·00 (0·90, 1·12) | 1·00 (0·89, 1·12) |
| *P*trend | 0·82 | 0·93 |
| *P*interactionc | 0·40 | 0·23 |
| Pastries (g/d) |  |  |
| Q1 (0·0-11·7) | 1·00 | 1·00 |
| Q2 (11·8-24·0) | 0·93 (0·83, 1·04) | 0·94 (0·84, 1·06) |
| Q3 (24·0-38·0) | 0·89 (0·80, 1·00) | 0·87 (0·77, 0·97) |
| Q4 (38·0-57·9) | 0·91 (0·81, 1·03) | 0·88 (0·78, 0·99) |
| Q5 (57·9-550·0) | 0·92 (0·82, 1·04) | 0·92 (0·81, 1·04) |
| *P*trend | 0·20 | 0·08 |
| *P*interactionc | 0·21 | 0·13 |
| Marmalade/honey/jam (g/d) |  |  |
| Q1 (0·0-1·4) | 1·00 | 1·00 |
| Q2 (1·5-9·3) | 1·10 (0·98, 1·23) | 1·08 (0·97, 1·21) |
| Q3 (9·3-16·2) | 1·12 (1·00, 1·25) | 1·09 (0·97, 1·22) |
| Q4 (16·2-28·3) | 0·94 (0·84, 1·06) | 0·93 (0·82, 1·04) |
| Q5 (28·3-218·0) | 0·93 (0·83, 1·04) | 0·86 (0·76, 0·97) |
| *P*trend | 0·03 | 0·002 |
| *P*interactionc | 0·04 | 0·02 |

BMI, body mass index.

aadjusted for sex, age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, coffee, meat, whole grains (except for when whole grains was used as the main variable), sugar-sweetened beverages (except for when sugar-sweetened beverages was used as the main variable), and BMI. Excluding participants who had under- and overreported their energy intake (compared to their level of physical activity) (*n* 21 758).

badjusted for sex, age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, coffee, meat, whole grains (except for when whole grains was used as the main variable), sugar-sweetened beverages (except for when sugar-sweetened beverages was used as the main variable), and BMI. Excluding participants who had made recent changes to their diet (due to e.g. illness) (*n* 20 660).

c*P* for interaction with sex.

ddivided into non-consumers and tertiles of consumers, with non-consumers as reference.

**Supplementary table 4.** Sensitivity analysis of hazard ratios (95% CI) of incident type 2 diabetes by sex-specific quintiles of nutrients and foods in participants in the Malmö Diet and Cancer cohort, divided by sex (*n* 10 315 for men, and *n* 16 307 women).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Men  (Extended incl. diet & BMI)a |  | Variable | Women  (Extended incl. diet & BMI)a |
| Carbohydrates (E%) |  |  | Carbohydrates (E%) |  |
| Q1 (21·8-39·7) | 1·00 |  | Q1 (16·2-40·6) | 1·00 |
| Q2 (39·7-43·2) | 0·82 (0·71, 0·95) |  | Q2 (40·6-44·0) | 1·17 (1·02, 1·35) |
| Q3 (43·2-46·2) | 0·96 (0·83, 1·11) |  | Q3 (44·0-46·9) | 1·14 (0·99, 1·31) |
| Q4 (46·2-49·7) | 0·97 (0·84, 1·13) |  | Q4 (46·9-50·3) | 1·10 (0·95, 1·27) |
| Q5 (49·7-79·9) | 0·94 (0·80, 1·09) |  | Q5 (50·3-76·4) | 1·18 (1·01, 1·37) |
| *P*trend | 0·88 |  | *P*trend | 0·16 |
| Monosaccharides (E%) |  |  | Monosaccharides (E%) |  |
| Q1 (0·4-4·4) | 1·00 |  | Q1 (0·9-5·6) | 1·00 |
| Q2 (4·4-5·6) | 0·98 (0·86, 1·13) |  | Q2 (5·6-7·0) | 1·01 (0·88, 1·16) |
| Q3 (5·6-6·8) | 0·87 (0·75, 1·00) |  | Q3 (7·0-8·4) | 0·99 (0·87, 1·14) |
| Q4 (6·8-8·4) | 0·85 (0·73, 0·98) |  | Q4 (8·4-10·1) | 0·93 (0·81, 1·08) |
| Q5 (8·4-39·8) | 0·85 (0·73, 0·99) |  | Q5 (10·1-30·3) | 0·98 (0·85, 1·13) |
| *P*trend | 0·007 |  | *P*trend | 0·45 |
| Disaccharides (E%) |  |  | Disaccharides (E%) |  |
| Q1 (1·9-8·9) | 1·00 |  | Q1 (1·1-10·2) | 1·00 |
| Q2 (8·9-11·0) | 0·91 (0·79, 1·05) |  | Q2 (10·2-12·1) | 1·10 (0·95, 1·26) |
| Q3 (11·0-13·0) | 0·95 (0·82, 1·10) |  | Q3 (12·1-13·9) | 1·19 (1·04, 1·37) |
| Q4 (13·0-15·6) | 1·07 (0·93, 1·24) |  | Q4 (13·9-16·3) | 1·12 (0·97, 1·29) |
| Q5 (15·6-37·9) | 1·05 (0·90, 1·23) |  | Q5 (16·3-41·1) | 1·25 (1·07, 1·46) |
| *P*trend | 0·15 |  | *P*trend | 0·009 |
| Sucrose (E%) |  |  | Sucrose (E%) |  |
| Q1 (0·6-5·2) | 1·00 |  | Q1 (0·5-6·2) | 1·00 |
| Q2 (5·2-6·9) | 0·89 (0·77, 1·03) |  | Q2 (6·2-7·7) | 0·91 (0·79, 1·05) |
| Q3 (6·9-8·6) | 1·05 (0·91, 1·21) |  | Q3 (7·7-9·2) | 1·14 (0·99, 1·30) |
| Q4 (8·6-10·8) | 1·01 (0·87, 1·17) |  | Q4 (9·2-11·3) | 0·98 (0·85, 1·13) |
| Q5 (10·8-35·5) | 1·03 (0·88, 1·21) |  | Q5 (11·3-38·6) | 1·04 (0·89, 1·21) |
| *P*trend | 0·33 |  | *P*trend | 0·43 |
| Added sugar (E%) |  |  | Added sugar (E%) |  |
| Q1 (0·0-6·6) | 1·00 |  | Q1 (0·0-6·5) | 1·00 |
| Q2 (6·6-8·7) | 0·89 (0·78, 1·02) |  | Q2 (6·5-8·6) | 1·02 (0·89, 1·17) |
| Q3 (8·7-10·7) | 0·96 (0·83, 1·10) |  | Q3 (8·6-10·5) | 1·00 (0·87, 1·15) |
| Q4 (10·7-13·5) | 0·91 (0·79, 1·06) |  | Q4 (10·5-13·1) | 1·03 (0·90, 1·19) |
| Q5 (13·5-49·2) | 0·92 (0·78, 1·08) |  | Q5 (13·1-56·1) | 1·01 (0·86, 1·18) |
| *P*trend | 0·38 |  | *P*trend | 0·86 |
| Fibre (g/1000 kcal) |  |  | Fibre (g/1000 kcal) |  |
| Q1 (2·3-6·6) | 1·00 |  | Q1 (1·9-7·5) | 1·00 |
| Q2 (6·6-7·8) | 0·91 (0·79, 1·05) |  | Q2 (7·5-8·8) | 1·07 (0·94, 1·23) |
| Q3 (7·8-8·9) | 0·82 (0·71, 0·95) |  | Q3 (8·8-10·1) | 1·00 (0·87, 1·16) |
| Q4 (8·9-10·4) | 0·97 (0·84, 1·13) |  | Q4 (10·1-11·8) | 0·97 (0·83, 1·13) |
| Q5 (10·4-33·5) | 0·95 (0·79, 1·12) |  | Q5 (11·8-30·9) | 1·06 (0·90, 1·25) |
| *P*trend | 0·76 |  | *P*trend | 0·99 |

**Supplementary table 4 (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Men  (Extended incl. diet & BMI)a |  | Variable | Women  (Extended incl. diet & BMI)a |
| Whole grains (servings/d) |  |  | Whole grains (servings/d) |  |
| Q1 (0·0-0·1) | 1·00 |  | Q1 (0·0-0·2) | 1·00 |
| Q2 (0·1-0·5) | 1·04 (0·91, 1·20) |  | Q2 (0·2-0·5) | 0·95 (0·83, 1·08) |
| Q3 (0·5-1·0) | 0·92 (0·79, 1·06) |  | Q3 (0·5-0·9) | 0·96 (0·84, 1·09) |
| Q4 (1·0-1·8) | 0·94 (0·82, 1·09) |  | Q4 (0·9-1·5) | 0·89 (0·77, 1·02) |
| Q5 (1·8-15·0) | 0·92 (0·79, 1·06) |  | Q5 (1·5-9·8) | 0·98 (0·85, 1·12) |
| *P*trend | 0·11 |  | *P*trend | 0·46 |
| Refined grains (servings/d) |  |  | Refined grains (servings/d) |  |
| Q1 (0·0-1·9) | 1·00 |  | Q1 (0·0-1·3) | 1·00 |
| Q2 (1·9-2·6) | 0·98 (0·85, 1·13) |  | Q2 (1·3-1·8) | 0·97 (0·85, 1·12) |
| Q3 (2·6-3·4) | 0·91 (0·79, 1·06) |  | Q3 (1·8-2·3) | 1·01 (0·87, 1·16) |
| Q4 (3·4-4·5) | 0·89 (0·76, 1·04) |  | Q4 (2·3-3·0) | 1·05 (0·91, 1·22) |
| Q5 (4·5-19·7) | 0·88 (0·74, 1·05) |  | Q5 (3·0-11·6) | 1·06 (0·89, 1·25) |
| *P*trend | 0·09 |  | *P*trend | 0·91 |
| Potato (g/d) |  |  | Potato (g/d) |  |
| Q1 (0·0-87·5) | 1·00 |  | Q1 (0·0-54·0) | 1·00 |
| Q2 (87·5-124·7) | 0·91 (0·79, 1·05) |  | Q2 (54·0-80·8) | 0·84 (0·73, 0·97) |
| Q3 (124·7-160·7) | 0·98 (0·85, 1·13) |  | Q3 (80·9-105·6) | 0·81 (0·71, 0·93) |
| Q4 (160·7-208·7) | 1·04 (0·91, 1·20) |  | Q4 (105·6-140·5) | 0·92 (0·81, 1·06) |
| Q5 (208·8-1446·7) | 0·93 (0·80, 1·08) |  | Q5 (140·5-1021·4) | 0·94 (0·82, 1·08) |
| *P*trend | 0·97 |  | *P*trend | 0·86 |
| Fruits (g/d) |  |  | Fruits (g/d) |  |
| Q1 (0·0-71·7) | 1·00 |  | Q1 (0·0-107·9) | 1·00 |
| Q2 (71·8-121·1) | 0·90 (0·79, 1·04) |  | Q2 (107·9-159·3) | 0·96 (0·84, 1·10) |
| Q3 (121·1-173·1) | 0·88 (0·76, 1·01) |  | Q3 (159·4-220·3) | 0·94 (0·82, 1·08) |
| Q4 (173·1-257·0) | 0·83 (0·72, 0·96) |  | Q4 (220·3-299·3) | 0·98 (0·85, 1·12) |
| Q5 (257·1-2782·2) | 0·83 (0·72, 0·96) |  | Q5 (299·4-1413·1) | 0·92 (0·80, 1·07) |
| *P*trend | 0·008 |  | *P*trend | 0·41 |
| Vegetables (g/d) |  |  | Vegetables (g/d) |  |
| Q1 (0·0-94·7) | 1·00 |  | Q1 (0·0-107·9) | 1·00 |
| Q2 (94·7-133·3) | 0·92 (0·80, 1·06) |  | Q2 (107·9-147·8) | 0·99 (0·86, 1·13) |
| Q3 (133·3-175·2) | 0·85 (0·74, 0·98) |  | Q3 (147·8-190·8) | 0·94 (0·82, 1·08) |
| Q4 (175·2-236·6) | 0·93 (0·81, 1·08) |  | Q4 (190·8-252·6) | 1·00 (0·87, 1·15) |
| Q5 (236·6-1077·0) | 0·80 (0·69, 0·92) |  | Q5 (252·6-1176·7) | 1·08 (0·94, 1·24) |
| *P*trend | 0·009 |  | *P*trend | 0·33 |
| Juice (g/d)b |  |  | Juice (g/d)b |  |
| non-consumers | 1·00 |  | non-cons | 1·00 |
| T1 (0·0-28·7) | 0·99 (0·87, 1·12) |  | T1 (0·0-42·9) | 1·06 (0·94, 1·19) |
| T2 (28·7-129·4) | 0·98 (0·86, 1·12) |  | T2 (42·9-142·9) | 1·05 (0·93, 1·18) |
| T3 (129·4-1500·0) | 1·05 (0·92, 1·19) |  | T3 (142·9-1371·4) | 1·00 (0·88, 1·13) |
| *P*trend | 0·64 |  | *P*trend | 0·85 |

**Supplementary table 4 (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Men  (Extended incl. diet & BMI)a |  | Variable | Women  (Extended incl. diet & BMI)a |
| Sugar-sweetened beverages, (g/d)b |  |  | Sugar-sweetened beverages, (g/d)b |  |
| non-consumers | 1·00 |  | non-cons | 1·00 |
| T1 (0·5-57·1) | 0·98 (0·86, 1·11) |  | T1 (0·3-47·1) | 1·04 (0·92, 1·18) |
| T2 (57·1-171·4) | 1·03 (0·91, 1·17) |  | T2 (47·1-121·7) | 1·08 (0·96, 1·21) |
| T3 (172·2-3000·0) | 0·97 (0·85, 1·10) |  | T3 (121·8-3000·0) | 1·06 (0·94, 1·20) |
| *P*trend | 0·84 |  | *P*trend | 0·20 |
| Table sugar (g/d) |  |  | Table sugar (g/d) |  |
| Q1 (0·0-1·0) | 1·00 |  | Q1 (0·0-0·0) | 1·00 |
| Q2 (1·0-4·0) | 0·87 (0·76, 0·99) |  | Q2 (0·0-2·0) | 1·05 (0·92, 1·20) |
| Q3 (4·0-11·0) | 0·85 (0·74, 0·98) |  | Q3 (2·0-5·0) | 1·01 (0·88, 1·16) |
| Q4 (11·0-24·0) | 0·90 (0·78, 1·04) |  | Q4 (5·0-11·0) | 1·02 (0·88, 1·17) |
| Q5 (24·0-238·0) | 0·98 (0·84, 1·14) |  | Q5 (11·0-191·0) | 1·08 (0·94, 1·25) |
| *P*trend | 0·83 |  | *P*trend | 0·48 |
| Sweets (g/d)b |  |  | Sweets (g/d)b |  |
| non-consumers | 1·00 |  | non-consumers | 1·00 |
| T1 (0·1-2·5) | 0·86 (0·76, 0·98) |  | T1 (0·1-2·8) | 0·89 (0·79, 1·01) |
| T2 (2·5-7·4) | 0·97 (0·86, 1·09) |  | T2 (2·8-8·3) | 1·02 (0·91, 1·15) |
| T3 (7·5-349·0) | 1·08 (0·96, 1·22) |  | T3 (8·3-285·7) | 1·10 (0·97, 1·24) |
| *P*trend | 0·30 |  | *P*trend | 0·06 |
| Chocolate (g/d) |  |  | Chocolate (g/d) |  |
| Q1 (0·0-0·0) | 1·00 |  | Q1 (0·0-1·0) | 1·00 |
| Q2 (0·0-3·0) | 0·82 (0·71, 0·94) |  | Q2 (1·0-3·0) | 0·97 (0·84, 1·12) |
| Q3 (3·0-6·0) | 0·90 (0·79, 1·04) |  | Q3 (3·0-6·0) | 1·11 (0·97, 1·28) |
| Q4 (6·0-13·0) | 0·85 (0·74, 0·97) |  | Q4 (6·0-12·0) | 1·11 (0·97, 1·28) |
| Q5 (13·0-231·0) | 0·94 (0·82, 1·09) |  | Q5 (12·0-217·0) | 1·28 (1·11, 1·47) |
| *P*trend | 0·50 |  | *P*trend | <0·001 |
| Ice cream (g/d) |  |  | Ice cream (g/d) |  |
| Q1 (0·0-1·0) | 1·00 |  | Q1 (0·0-1·1) | 1·00 |
| Q2 (1·1-3·9) | 0·91 (0·79, 1·05) |  | Q2 (1·1-4·0) | 1·01 (0·88, 1·15) |
| Q3 (3·9-9·8) | 0·92 (0·80, 1·06) |  | Q3 (4·0-8·5) | 0·96 (0·84, 1·10) |
| Q4 (9·9-21·1) | 0·91 (0·79, 1·05) |  | Q4 (8·5-16·5) | 1·01 (0·88, 1·16) |
| Q5 (21·2-338·3) | 0·92 (0·79, 1·07) |  | Q5 (16·5-616·0) | 1·03 (0·90, 1·18) |
| *P*trend | 0·35 |  | *P*trend | 0·69 |
| Pastries (g/d) |  |  | Pastries (g/d) |  |
| Q1 (0·0-10·7) | 1·00 |  | Q1 (0·0-12·3) | 1·00 |
| Q2 (10·7-24·4) | 0·96 (0·83, 1·10) |  | Q2 (12·3-23·8) | 1·01 (0·89, 1·15) |
| Q3 (24·4-39·4) | 0·98 (0·85, 1·12) |  | Q3 (23·8-37·1) | 0·86 (0·75, 0·98) |
| Q4 (39·4-61·7) | 0·91 (0·79, 1·06) |  | Q4 (37·1-55·7) | 0·89 (0·77, 1·03) |
| Q5 (61·7-550·0) | 1·07 (0·92, 1·25) |  | Q5 (55·7-292·0) | 0·82 (0·70, 0·95) |
| *P*trend | 0·70 |  | *P*trend | 0·003 |

**Supplementary table 4 (continued)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Men  (Extended incl. diet & BMI)a |  | Variable | Women  (Extended incl. diet & BMI)a |
| Marmalade/honey/jam (g/d) |  |  | Marmalade/honey/jam (g/d) |  |
| Q1 (0·0-1·0) | 1·00 |  | Q1 (0·0-2·0) | 1·00 |
| Q2 (1·0-10·0) | 1·04 (0·92, 1·19) |  | Q2 (2·0-8·0) | 1·10 (0·96, 1·25) |
| Q3 (10·0-20·0) | 0·97 (0·85, 1·12) |  | Q3 (8·0-14·0) | 1·02 (0·89, 1·16) |
| Q4 (20·0-34·0) | 0·81 (0·70, 0·94) |  | Q4 (14·0-25·0) | 0·94 (0·82, 1·09) |
| Q5 (34·0-218·0) | 0·85 (0·73, 0·98) |  | Q5 (25·0-204·0) | 0·98 (0·84, 1·13) |
| *P*trend | 0·001 |  | *P*trend | 0·24 |

BMI, body mass index.

aadjusted for age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, coffee, meat, whole grains (except for when whole grains was used as the main variable), sugar-sweetened beverages (except for when sugar-sweetened beverages was used as the main variable), and BMI.

bdivided into non-consumers (*n* 5271 men and *n* 6380 women for juice, *n* 4552 men and *n* 7514 women for sugar-sweetened beverages, and *n* 4184 men and *n* 4619 women for sweets) and tertiles of consumers, with non-consumers as reference.

**Supplementary table 5.** Hazard ratios (95% CI) of incident type 2 diabetes by quintiles of nutrients and foods in participants in the Malmö Diet and Cancer cohort (*n* 26 622).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable | *n* total/*n* cases/  person-years | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | | Extended model incl. diet & BMId |
| Carbohydrates (E%) |  |  |  |  | |  |
| Q1 (16·2-40·3) | 5324/834/96 171 | 1·00 | 1·00 | 1·00 | | 1·00 |
| Q2 (40·3-43·7) | 5325/809/97 606 | 0·96 (0·87, 1·05) | 0·96 (0·87, 1·06) | 0·97 (0·88, 1·07) | | 1·00 (0·90, 1·10) |
| Q3 (43·7-46·6) | 5324/853/98 666 | 1·00 (0·91, 1·10) | 1·02 (0·93, 1·12) | 1·04 (0·94, 1·14) | | 1·08 (0·98, 1·19) |
| Q4 (46·6-50·1) | 5325/770/98 390 | 0·91 (0·82, 1·00) | 0·91 (0·83, 1·01) | 0·96 (0·87, 1·06) | | 1·02 (0·92, 1·13) |
| Q5 (50·1-79·9) | 5324/780/98 353 | 0·91 (0·83, 1·01) | 0·91 (0·82, 1·01) | 0·98 (0·89, 1·08) | | 1·07 (0·96, 1·19) |
| *P*trend |  | 0·04 | 0·04 | 0·66 | | 0·23 |
| *P*interactione |  | 0·009 | 0·01 | 0·15 | | 0·27 |
| Monosaccharides (E%) |  |  |  |  |  |  |
| Q1 (0·4-5·0) | 5324/938/93 041 | 1·00 | 1·00 | 1·00 | | 1·00 |
| Q2 (5·0-6·4) | 5325/849/97 290 | 0·90 (0·82, 0·99) | 0·96 (0·87, 1·05) | 0·95 (0·87, 1·05) | | 0·96 (0·87, 1·06) |
| Q3 (6·4-7·8) | 5324/801/98 700 | 0·84 (0·77, 0·93) | 0·93 (0·84, 1·02) | 0·92 (0·83, 1·01) | | 0·93 (0·85, 1·03) |
| Q4 (7·8-9·6) | 5325/763/99 222 | 0·83 (0·75, 0·91) | 0·93 (0·84, 1·03) | 0·91 (0·82, 1·01) | | 0·93 (0·84, 1·03) |
| Q5 (9·6-39·8) | 5324/695/100 933 | 0·75 (0·68, 0·83) | 0·85 (0·77, 0·95) | 0·86 (0·77, 0·95) | | 0·88 (0·79, 0·98) |
| *P*trend |  | <0·001 | 0·004 | 0·004 | | 0·02 |
| *P*interactione |  | 0·09 | 0·14 | 0·08 | | 0·15 |
| Disaccharides (E%) |  |  |  |  |  |  |
| Q1 (1·1-9·7) | 5324/811/98 133 | 1·00 | 1·00 | 1·00 | | 1·00 |
| Q2 (9·7-11·7) | 5325/781/100 131 | 0·99 (0·90, 1·09) | 0·99 (0·90, 1·09) | 0·99 (0·90, 1·09) | | 1·00 (0·91, 1·11) |
| Q3 (11·7-13·6) | 5324/799/98 650 | 1·07 (0·97, 1·18) | 1·06 (0·96, 1·17) | 1·08 (0·98, 1·19) | | 1·11 (1·00, 1·22) |
| Q4 (13·6-16·0) | 5325/817/97 784 | 1·11 (1·00, 1·22) | 1·07 (0·96, 1·18) | 1·07 (0·96, 1·18) | | 1·11 (1·00, 1·22) |
| Q5 (16·0-41·1) | 5324/838/94 486 | 1·18 (1·07, 1·30) | 1·07 (0·97, 1·19) | 1·10 (1·00, 1·22) | | 1·17 (1·05, 1·31) |
| *P*trend |  | <0·001 | 0·06 | 0·02 | | 0·001 |
| *P*interactione |  | 0·02 | 0·01 | 0·11 | | 0·16 |
| Sucrose (E%) |  |  |  |  |  |  |
| Q1 (0·5-5·8) | 5324/897/95 965 | 1·00 | 1·00 | 1·00 | | 1·00 |
| Q2 (5·8-7·4) | 5325/762/99 788 | 0·86 (0·78, 0·95) | 0·88 (0·80, 0·97) | 0·91 (0·83, 1·01) | | 0·92 (0·83, 1·01) |
| Q3 (7·4-9·0) | 5324/838/98 596 | 0·98 (0·89, 1·08) | 1·00 (0·91, 1·10) | 1·06 (0·96, 1·17) | | 1·08 (0·98, 1·19) |
| Q4 (9·0-11·1) | 5325/755/99 014 | 0·89 (0·81, 0·98) | 0·88 (0·80, 0·98) | 0·96 (0·87, 1·06) | | 0·97 (0·88, 1·08) |
| Q5 (11·1-38·6) | 5324/794/95 823 | 0·97 (0·88, 1·06) | 0·91 (0·82, 1·00) | 1·00 (0·91, 1·11) | | 1·03 (0·92, 1·15) |
| *P*trend |  | 0·69 | 0·08 | 0·65 | | 0·41 |
| *P*interactione |  | 0·25 | 0·21 | 0·38 | | 0·55 |
| Added sugar (E%) |  |  |  |  | |  |
| Q1 (0·0-6·6) | 5324/892/97 055 | 1·00 | 1·00 | 1·00 | | 1·00 |
| Q2 (6·6-8·6) | 5325/795/98 508 | 0·88 (0·79, 0·96) | 0·88 (0·80, 0·97) | 0·94 (0·85, 1·03) | | 0·94 (0·86, 1·04) |
| Q3 (8·6-10·6) | 5324/806/99 560 | 0·87 (0·79, 0·96) | 0·87 (0·79, 0·96) | 0·97 (0·88, 1·06) | | 0·97 (0·88, 1·07) |
| Q4 (10·6-13·3) | 5325/785/98 001 | 0·87 (0·79, 0·96) | 0·85 (0·77, 0·94) | 0·97 (0·88, 1·07) | | 0·98 (0·88, 1·08) |
| Q5 (13·3-56·1) | 5324/768/96 061 | 0·85 (0·77, 0·94) | 0·80 (0·72, 0·88) | 0·94 (0·85, 1·04) | | 0·95 (0·85, 1·06) |
| *P*trend |  | 0·004 | <0·001 | 0·43 | | 0·62 |
| *P*interactione |  | 0·02 | 0·02 | 0·03 | | 0·06 |

**Supplementary table 5 (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | *n* total/*n* cases/  person-years | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Fibre (g/1000 kcal) |  |  |  |  |  |
| Q1 (1·9-7·1) | 5324/874/92 393 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (7·1-8·4) | 5325/832/96 520 | 0·93 (0·85, 1·02) | 1·00 (0·91, 1·10) | 0·96 (0·87, 1·05) | 0·97 (0·88, 1·07) |
| Q3 (8·4-9·6) | 5324/833/98 025 | 0·93 (0·85, 1·02) | 1·03 (0·93, 1·14) | 0·98 (0·89, 1·08) | 1·01 (0·92, 1·12) |
| Q4 (9·6-11·3) | 5325/747/100 468 | 0·83 (0·75, 0·92) | 0·94 (0·85, 1·04) | 0·92 (0·83, 1·02) | 0·96 (0·86, 1·08) |
| Q5 (11·3-33·5) | 5324/760/101 780 | 0·85 (0·76, 0·94) | 0·97 (0·87, 1·08) | 0·96 (0·86, 1·07) | 1·05 (0·93, 1·19) |
| *P*trend |  | <0·001 | 0·31 | 0·31 | 0·61 |
| *P*interactione |  | 0·79 | 0·75 | 0·91 | 0·68 |
| Whole grains (servings/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·1) | 5324/884/92 604 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·1-0·2) | 5325/830/97 662 | 0·93 (0·85, 1·02) | 1·00 (0·91, 1·10) | 1·00 (0·91, 1·10) | 1·01 (0·92, 1·11) |
| Q3 (0·2-0·4) | 5324/796/98 535 | 0·89 (0·81, 0·98) | 0·97 (0·88, 1·07) | 0·94 (0·85, 1·03) | 0·95 (0·86, 1·05) |
| Q4 (0·4-0·7) | 5325/755/99 758 | 0·83 (0·75, 0·91) | 0·91 (0·83, 1·01) | 0·91 (0·82, 1·00) | 0·92 (0·83, 1·02) |
| Q5 (0·7-5·4) | 5324/781/100 625 | 0·83 (0·75, 0·92) | 0·90 (0·82, 0·99) | 0·92 (0·84, 1·02) | 0·95 (0·86, 1·05) |
| *P*trend |  | <0·001 | 0·008 | 0·02 | 0·10 |
| *P*interactione |  | 0·54 | 0·65 | 0·67 | 0·75 |
| Refined grains (servings/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·7) | 5324/794/98 103 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·7-1·0) | 5325/823/97 580 | 1·03 (0·93, 1·14) | 1·03 (0·93, 1·13) | 1·07 (0·97, 1·18) | 1·06 (0·96, 1·17) |
| Q3 (1·0-1·2) | 5324/806/98 013 | 0·99 (0·89, 1·09) | 0·98 (0·89, 1·08) | 1·00 (0·91, 1·10) | 0·98 (0·88, 1·09) |
| Q4 (1·2-1·6) | 5325/761/97 851 | 0·92 (0·83, 1·01) | 0·91 (0·82, 1·01) | 0·98 (0·88, 1·08) | 0·96 (0·86, 1·07) |
| Q5 (1·6-5·2) | 5324/862/97 638 | 0·98 (0·89, 1·09) | 0·97 (0·87, 1·07) | 1·05 (0·95, 1·16) | 1·04 (0·93, 1·16) |
| *P*trend |  | 0·19 | 0·10 | 0·95 | 0·84 |
| *P*interactione |  | 0·12 | 0·17 | 0·17 | 0·23 |
| Potato (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-31·1) | 5324/764/100 735 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (31·1-45·1) | 5325/762/99 293 | 0·98 (0·89, 1·09) | 0·96 (0·87, 1·06) | 0·98 (0·88, 1·08) | 0·96 (0·87, 1·06) |
| Q3 (45·1-58·7) | 5324/773/98 075 | 0·98 (0·88, 1·08) | 0·94 (0·85, 1·04) | 0·96 (0·87, 1·07) | 0·94 (0·85, 1·04) |
| Q4 (58·7-77·1) | 5325/876/95 976 | 1·10 (1·00, 1·21) | 1·05 (0·95, 1·15) | 1·05 (0·96, 1·16) | 1·01 (0·92, 1·12) |
| Q5 (77·1-360·0) | 5324/871/95 106 | 1·05 (0·95, 1·16) | 0·97 (0·88, 1·08) | 0·97 (0·88, 1·08) | 0·92 (0·83, 1·02) |
| *P*trend |  | 0·06 | 0·77 | 0·84 | 0·35 |
| *P*interactione |  | 0·21 | 0·35 | 0·89 | 0·81 |
| Fruits (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-41·4) | 5324/907/94 179 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (41·4-67·5) | 5325/813/96 720 | 0·91 (0·83, 1·00) | 0·96 (0·87, 1·06) | 0·92 (0·84, 1·01) | 0·93 (0·85, 1·03) |
| Q3 (67·5-96·6) | 5324/793/97 402 | 0·93 (0·84, 1·02) | 1·01 (0·91, 1·11) | 0·95 (0·86, 1·05) | 0·96 (0·87, 1·07) |
| Q4 (96·6-138·9) | 5325/788/100 190 | 0·92 (0·84, 1·02) | 1·03 (0·93, 1·13) | 0·93 (0·84, 1·03) | 0·95 (0·86, 1·05) |
| Q5 (138·9-944·6) | 5324/745/100 694 | 0·90 (0·81, 0·99) | 1·00 (0·90, 1·12) | 0·87 (0·78, 0·97) | 0·89 (0·80, 1·00) |
| *P*trend |  | 0·08 | 0·56 | 0·03 | 0·10 |
| *P*interactione |  | 0·79 | 0·83 | 0·74 | 0·66 |

**Supplementary table 5 (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | *n* total/*n* cases/  person-years | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Vegetables (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-46·5) | 5324/911/91 255 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (46·5-66·5) | 5325/830/95 921 | 0·90 (0·82, 0·99) | 0·97 (0·88, 1·06) | 0·94 (0·85, 1·03) | 0·93 (0·85, 1·02) |
| Q3 (66·5-87·8) | 5324/752/99 706 | 0·81 (0·73, 0·89) | 0·91 (0·82, 1·00) | 0·88 (0·80, 0·97) | 0·88 (0·79, 0·97) |
| Q4 (87·8-119·7) | 5325/762/100 347 | 0·85 (0·77, 0·94) | 0·98 (0·89, 1·09) | 0·91 (0·82, 1·01) | 0·90 (0·82, 1·00) |
| Q5 (119·7-871·2) | 5324/791/101 956 | 0·88 (0·80, 0·98) | 1·06 (0·95, 1·17) | 0·94 (0·85, 1·04) | 0·93 (0·84, 1·04) |
| *P*trend |  | 0·008 | 0·36 | 0·20 | 0·17 |
| *P*interactione |  | 0·39 | 0·28 | 0·14 | 0·13 |
| Juice (g/1000 kcal)f |  |  |  |  |  |
| non-consumers | 11 667/1852/209 207 | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·0-17·4) | 4985/760/93 365 | 0·96 (0·88, 1·04) | 1·03 (0·94, 1·12) | 1·03 (0·95, 1·12) | 1·04 (0·95, 1·13) |
| T2 (17·4-62·1) | 4985/729/94 072 | 0·94 (0·86, 1·02) | 1·02 (0·94, 1·11) | 1·02 (0·94, 1·11) | 1·02 (0·94, 1·11) |
| T3 (62·1-703·3) | 4985/705/92 541 | 0·95 (0·87, 1·04) | 1·01 (0·93, 1·11) | 1·03 (0·94, 1·13) | 1·03 (0·95, 1·13) |
| *P*trend |  | 0·15 | 0·69 | 0·47 | 0·46 |
| *P*interactione |  | 0·52 | 0·31 | 0·96 | 0·86 |
| Sugar-sweetened beverages, (g/1000 kcal)f |  |  |  |  |  |
| non-consumers | 12 066/1746/221 228 | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·1-23·0) | 4852/707/91 209 | 1·00 (0·92, 1·10) | 1·01 (0·92, 1·10) | 1·02 (0·93, 1·11) | 1·02 (0·93, 1·11) |
| T2 (23·0-63·3) | 4852/781/90 077 | 1·12 (1·03, 1·22) | 1·11 (1·02, 1·21) | 1·07 (0·98, 1·17) | 1·06 (0·97, 1·16) |
| T3 (63·3-1416·6) | 4852/812/86 671 | 1·20 (1·10, 1·30) | 1·13 (1·04, 1·23) | 1·05 (0·97, 1·14) | 1·04 (0·95, 1·13) |
| *P*trend |  | <0·001 | 0·001 | 0·13 | 0·24 |
| *P* for interactione |  | 0·47 | 0·50 | 0·53 | 0·59 |
| Table sugar (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·2) | 5324/867/98 364 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·2-1·1) | 5325/802/100 029 | 0·92 (0·84, 1·01) | 0·95 (0·86, 1·04) | 0·94 (0·86, 1·04) | 0·94 (0·85, 1·03) |
| Q3 (1·1-2·7) | 5324/770/99 501 | 0·89 (0·80, 0·98) | 0·89 (0·81, 0·98) | 0·92 (0·84, 1·02) | 0·92 (0·83, 1·02) |
| Q4 (2·7-6·6) | 5325/778/97 231 | 0·88 (0·80, 0·98) | 0·87 (0·79, 0·96) | 0·96 (0·87, 1·06) | 0·95 (0·86, 1·05) |
| Q5 (6·6-75·0) | 5324/829/94 059 | 0·92 (0·84, 1·02) | 0·84 (0·76, 0·93) | 1·01 (0·91, 1·12) | 1·00 (0·91, 1·11) |
| *P*trend |  | 0·08 | 0·001 | 0·80 | 0·91 |
| *P*interactione |  | 0·03 | 0·02 | 0·04 | 0·06 |
| Sweets (g/1000 kcal)f |  |  |  |  |  |
| non-consumers | 8803/1384/157 673 | 1·00 | 1·00 | 1·00 | 1·00 |
| T1 (0·0-1·2) | 5939/812/111 184 | 0·87 (0·79, 0·95) | 0·88 (0·81, 0·96) | 0·88 (0·81, 0·96) | 0·88 (0·81, 0·96) |
| T2 (1·2-3·6) | 5940/910/110 621 | 1·03 (0·95, 1·12) | 1·03 (0·94, 1·12) | 1·00 (0·92, 1·09) | 1·00 (0·92, 1·09) |
| T3 (3·6-92·3) | 5940/940/109 706 | 1·13 (1·04, 1·23) | 1·09 (1·00, 1·19) | 1·07 (0·98, 1·16) | 1·07 (0·99, 1·17) |
| *P*trend |  | 0·001 | 0·02 | 0·08 | 0·06 |
| *P*interactione |  | 0·46 | 0·48 | 0·38 | 0·37 |

**Supplementary table 5 (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | *n* total/*n* cases/  person-years | Basic modela | Extended model excl. BMIb | Extended model incl. BMIc | Extended model incl. diet & BMId |
| Chocolate (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·3) | 5324/889/92 979 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·3-1·4) | 5325/730/98 120 | 0·80 (0·72, 0·88) | 0·83 (0·76, 0·92) | 0·86 (0·78, 0·95) | 0·86 (0·78, 0·95) |
| Q3 (1·4-2·8) | 5324/790/99 128 | 0·87 (0·79, 0·96) | 0·92 (0·84, 1·02) | 0·94 (0·85, 1·03) | 0·94 (0·85, 1·04) |
| Q4 (2·8-5·4) | 5325/828/99 875 | 0·91 (0·83, 1·01) | 0·97 (0·88, 1·07) | 1·01 (0·91, 1·11) | 1·01 (0·92, 1·11) |
| Q5 (5·4-77·6) | 5324/809/99 082 | 0·93 (0·85, 1·03) | 0·97 (0·88, 1·07) | 1·03 (0·93, 1·13) | 1·04 (0·94, 1·14) |
| *P*trend |  | 0·92 | 0·44 | 0·07 | 0·04 |
| *P*interactione |  | 0·03 | 0·03 | 0·003 | 0·004 |
| Ice cream (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·5) | 5324/836/93 917 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·5-1·8) | 5325/787/98 322 | 0·92 (0·84, 1·02) | 0·95 (0·86, 1·04) | 0·94 (0·85, 1·04) | 0·94 (0·86, 1·04) |
| Q3 (1·8-4·3) | 5324/818/99 386 | 0·97 (0·88, 1·07) | 0·99 (0·90, 1·09) | 0·96 (0·87, 1·05) | 0·96 (0·87, 1·06) |
| Q4 (4·3-8·4) | 5325/776/98 982 | 0·92 (0·84, 1·02) | 0·97 (0·88, 1·07) | 0·93 (0·84, 1·02) | 0·94 (0·85, 1·04) |
| Q5 (8·4-258·9) | 5324/829/98 578 | 0·96 (0·87, 1·06) | 1·01 (0·92, 1·11) | 0·94 (0·86, 1·04) | 0·96 (0·87, 1·06) |
| *P*trend |  | 0·49 | 0·71 | 0·26 | 0·43 |
| *P*interactione |  | 0·23 | 0·24 | 0·48 | 0·52 |
| Pastries (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-5·8) | 5324/902/94 833 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (5·8-11·5) | 5325/844/98 759 | 0·93 (0·84, 1·02) | 0·96 (0·87, 1·05) | 0·98 (0·89, 1·07) | 0·98 (0·89, 1·08) |
| Q3 (11·5-17·7) | 5324/823/99 501 | 0·89 (0·81, 0·98) | 0·92 (0·84, 1·02) | 0·96 (0·87, 1·06) | 0·97 (0·88, 1·07) |
| Q4 (17·7-26·2) | 5325/730/98 832 | 0·80 (0·73, 0·88) | 0·82 (0·74, 0·91) | 0·87 (0·79, 0·96) | 0·89 (0·80, 0·98) |
| Q5 (26·2-126·4) | 5324/747/97 260 | 0·83 (0·75, 0·92) | 0·84 (0·76, 0·93) | 0·91 (0·83, 1·01) | 0·94 (0·84, 1·04) |
| *P*trend |  | <0·001 | <0·001 | 0·01 | 0·05 |
| *P*interactione |  | 0·56 | 0·37 | 0·08 | 0·05 |
| Marmalade/honey/jam (g/1000 kcal) |  |  |  |  |  |
| Q1 (0·0-0·7) | 5324/910/95 531 | 1·00 | 1·00 | 1·00 | 1·00 |
| Q2 (0·7-4·0) | 5325/861/98 262 | 0·96 (0·87, 1·05) | 0·98 (0·89, 1·08) | 1·04 (0·94, 1·14) | 1·04 (0·95, 1·14) |
| Q3 (4·0-7·3) | 5324/813/98 488 | 0·87 (0·79, 0·96) | 0·89 (0·81, 0·98) | 0·98 (0·89, 1·08) | 0·99 (0·90, 1·09) |
| Q4 (7·3-12·4) | 5325/742/98 282 | 0·79 (0·71, 0·87) | 0·79 (0·72, 0·88) | 0·87 (0·79, 0·96) | 0·88 (0·80, 0·97) |
| Q5 (12·4-84·5) | 5324/720/98 623 | 0·74 (0·67, 0·81) | 0·75 (0·67, 0·82) | 0·88 (0·79, 0·97) | 0·89 (0·80, 0·98) |
| *P*trend |  | <0·001 | <0·001 | <0·001 | 0·001 |
| *P*interactione |  | 0·03 | 0·06 | 0·02 | 0·03 |

BMI, body mass index.

aadjusted for sex, age, diet-method version, season, and total energy intake.

badjusted for sex, age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, and education.

cadjusted for sex, age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, and BMI.

dadjusted for sex, age, diet-method version, season, total energy intake, physical activity, alcohol habits, smoking, education, coffee, meat, whole grains (except for when whole grains was used as the main variable), sugar-sweetened beverages (except for when sugar-sweetened beverages was used as the main variable), and BMI.

e*P* for interaction with sex.

fdivided into non-consumers and tertiles of consumers, with non-consumers as reference.