**Online Supporting Material**

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**Theoretical substitutions between dairy products and all-cause and cause-specific mortality.**

**Results from the Danish Diet, Cancer and Health cohort.**

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**Supplemental table 1. Participant characteristics across quintiles of low-fat milk intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of low-fat milk** |
|  | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 2229 | 2620 | 2201 | 2053 | 2483 |
| **Sex. men (%)** | 34.2 | 54.8 | 49.9 | 47.7 | 51.9 |
| **Age** | 56.3 | 56.6 | 55.9 | 56.0 | 56.0 |
|  | (51.3; 63.2) | (51.3; 63.4) | (51.2; 63.1) | (51.2; 63.1) | (51.1; 63.3) |
| **Body mass index** | 25.0 | 25.4 | 25.9 | 25.6 | 25.7 |
|  | (21.0; 30.7) | (21.4; 30.8) | (21.8; 31.6) | (21.5; 31.2) | (21.6; 31.4) |
| **Waist circumference (cm)** |  |  |  |  |  |
|  **-Men** | 94.0 | 95.0 | 96.0 | 95.0 | 96.0 |
|  | (83.0; 107.0) | (84.0; 108.0) | (84.0; 109.0) | (85.0; 108.5) | (85.0; 110.0) |
|  **-Women** | 80.0 | 80.0 | 81.0 | 80.0 | 80.0 |
|  | (69.0; 96.0) | (69.0; 97.0) | (70.0; 98.0) | (70.0; 97.5) | (69.0; 97.0) |
| **Low educational attainment (%)** | 31.9 | 35.3 | 32.8 | 30.8 | 33.6 |
| **Current smoker (%)** | 36.0 | 40.2 | 33.5 | 32.9 | 37.4 |
| **Physically inactive (%)** | 62.8 | 63.4 | 60.2 | 58.4 | 58.0 |
| **Alcohol consumption (g/day)** | 13.0 | 15.1 | 13.6 | 12.8 | 11.3 |
|  | (1.4; 48.1) | (1.7; 55.6) | (1.8; 48.0) | (1.7; 44.4) | (1.4; 42.9) |
| **Hypertension (%)** | 16.1 | 16.5 | 16.5 | 16.3 | 15.9 |
| **Hypercholesteroleamia (%)** | 7.5 | 6.8 | 7.8 | 8.0 | 7.4 |
| **Diabetes (%)** | 1.7 | 2.1 | 2.2 | 2.2 | 2.2 |
| **Prevalent myocardial infarction (%)** | 1.3 | 1.6 | 1.6 | 1.6 | 1.8 |
| **Habitual food consumption (grams/day)** |  |  |  |  |  |
| **Total dairy** | 158 | 189 | 237 | 355 | 715 |
|  | (48-476) | (63-563) | (105-503) | (247-585) | (564-1177) |
| **Low-fat milk** | 6 | 12 | 42 | 208 | 513 |
|  | (3-8) | (9-18) | (23-98) | (163-223) | (505-915) |
| **Whole-fat milk** | 8 | 11 | 10 | 10 | 10 |
|  | (2-203) | (3-211) | (3-99) | (3-64) | (3-44) |
| **Buttermilk** | 3 | 6 | 6 | 6 | 6 |
|  | (0-88) | (0-88) | (0-88) | (0-88) | (0-72) |
| **Low-fat yoghurt** | 0 | 0 | 3 | 7 | 3 |
|  | (0-164) | (0-102) | (0-171) | (0-171) | (0-171) |
| **Whole-fat yoghurt** | 10 | 12 | 15 | 14 | 13 |
|  | (1-201) | (2-201) | (2-190) | (2-180) | (1-175) |
| **Cheese** | 26 | 29 | 30 | 29 | 29 |
|  | (7-66) | (10-70) | (11-69) | (11-68) | (10-70) |
| **Butter** | 8 | 12 | 9 | 9 | 9 |
|  | (0-28) | (0-33) | (0-31) | (0-30) | (0-30) |
| **Fruit** | 136 | 136 | 142 | 153 | 151 |
|  | (27-378) | (30-370) | (35-375) | (40-381) | (35-385) |
| **Vegetables** | 133 | 149 | 156 | 158 | 147 |
|  | (46-272) | (62-289) | (66-295) | (65-296) | (57-286) |
| **Fresh red meat** | 63 | 88 | 83 | 79 | 81 |
|  | (33-110) | (48-147) | (43-152) | (42-144) | (42-144) |
| **Processed meat** | 18 | 27 | 25 | 25 | 28 |
|  | (5-48) | (9-62) | (9-62) | (9-59) | (9-64) |
| **Fish** | 32 | 40 | 40 | 40 | 40 |
|  | (13-65) | (17-79) | (18-78) | (17-78) | (17-79) |

**Supplemental table 2. Participant characteristics across quintiles of whole-fat milk intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of whole-fat milk** |
|  | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 2337 | 2001 | 2045 | 2349 | 2854 |
| **Sex. men (%)** | 49.5 | 44.4 | 44.4 | 46.6 | 53.7 |
| **Age** | 55.0 | 55.4 | 56.3 | 57.1 | 57.2 |
|  | (51.0; 62.3) | (51.1; 62.7) | (51.2; 63.2) | (51.4; 63.6) | (51.4; 63.7) |
| **Body mass index** | 25.5 | 25.5 | 25.6 | 25.8 | 25.4 |
|  | (21.4; 31.1) | (21.5; 31.0) | (21.6; 31.3) | (21.6; 31.5) | (21.2; 30.9) |
| **Waist circumference (cm)** |  |  |  |  |  |
|  **-Men** | 95.0 | 95.0 | 95.0 | 95.0 | 94.5 |
|  | (84.5; 109.0) | (85.0; 108.0) | (85.0; 109.0) | (84.0; 109.0) | (83.0; 108.0) |
|  **-Women** | 80.0 | 80.0 | 80.0 | 81.0 | 80.0 |
|  | (69.0; 96.0) | (70.0; 97.0) | (70.0; 98.0) | (70.0; 99.0) | (69.0; 96.0) |
| **Low educational attainment (%)** | 28.6 | 28.5 | 31.4 | 36.1 | 39.8 |
| **Current smoker** | 39.1 | 34.2 | 30.9 | 33.0 | 43.0 |
| **Physically inactive (%)** | 64.4 | 61.1 | 59.7 | 57.5 | 60.2 |
| **Alcohol consumption (g/day)** | 17.8 | 14.1 | 12.1 | 11.2 | 11.9 |
|  | (2.1; 60.9) | (1.8; 47.2) | (1.5; 42.5) | (1.4; 40.7) | (1.3; 47.9) |
| **Hypertension (%)** | 17.4 | 16.4 | 16.5 | 16.9 | 14.2 |
| **Hypercholesteroleamia (%)** | 8.7 | 7.9 | 7.9 | 7.6 | 5.3 |
| **Diabetes (%)** | 2.9 | 1.9 | 2.0 | 1.9 | 1.7 |
| **Prevalent myocardial infarction (%)** | 1.7 | 1.5 | 1.5 | 1.7 | 1.4 |
| **Habitual food consumption (grams/day)** |  |  |  |  |  |
| **Total dairy** | 236 | 268 | 298 | 335 | 419 |
|  | (52-656) | (69-701) | (86-763) | (103-825) | (181-937) |
| **Low-fat milk** | 28 | 50 | 94 | 101 | 21 |
|  | (4-509) | (6-511) | (7-514) | (8-522) | (6-509) |
| **Whole-fat milk** | 3 | 6 | 10 | 19 | 104 |
|  | (1-4) | (5-7) | (8-12) | (14-31) | (39-509) |
| **Buttermilk** | 3 | 6 | 6 | 9 | 9 |
|  | (0-24) | (0-40) | (0-88) | (3-99) | (0-91) |
| **Low-fat yoghurt** | 0 | 3 | 3 | 7 | 0 |
|  | (0-171) | (0-171) | (0-171) | (0-171) | (0-89) |
| **Whole-fat yoghurt** | 8 | 11 | 14 | 17 | 18 |
|  | (1-160) | (1-184) | (2-201) | (2-201) | (2-202) |
| **Cheese** | 27 | 29 | 30 | 30 | 28 |
|  | (9-67) | (10-67) | (11-70) | (10-71) | (10-68) |
| **Butter** | 6 | 7 | 8 | 10 | 15 |
|  | (0-28) | (0-28) | (0-29) | (0-30) | (0-34) |
| **Fruit** | 111 | 139 | 154 | 168 | 146 |
|  | (20-329) | (34-359) | (42-386) | (47-416) | (34-395) |
| **Vegetables** | 139 | 151 | 155 | 155 | 142 |
|  | (50-275) | (61-285) | (63-291) | (65-297) | (54-290) |
| **Fresh red meat** | 72 | 75 | 78 | 82 | 86 |
|  | (36-132) | (40-133) | (42-138) | (43-146) | (43-155) |
| **Processed meat** | 22 | 23 | 24 | 26 | 29 |
|  | (6-54) | (8-54) | (8-57) | (9-62) | (9-69) |
| **Fish** | 30 | 36 | 40 | 44 | 41 |
|  | (12-61) | (17-69) | (18-76) | (20-86) | (17-85) |

**Supplemental table 3. Participant characteristics across quintiles of buttermilk intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of buttermilk\*** |
|  | **Q1** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 4891 | 2425 | 2056 | 2214 |
| **Sex. men (%)** | 52.6 | 49.8 | 45.2 | 37.1 |
| **Age** | 55.8 | 55.8 | 56.4 | 57.2 |
|  | (51.2; 63.0) | (51.1; 63.0) | (51.2; 63.3) | (51.4; 63.6) |
| **Body mass index** | 25.3 | 25.6 | 25.9 | 25.8 |
|  | (21.3; 30.6) | (21.6; 31.0) | (21.6; 31.8) | (21.5; 31.8) |
| **Waist circumference (cm)** |  |  |  |  |
|  **-Men** | 95.0 | 95.0 | 96.0 | 96.0 |
|  | (84.0; 108.0) | (85.0; 108.0) | (84.0; 110.0) | (84.0; 110.0) |
|  **-Women** | 79.5 | 80.0 | 81.0 | 81.0 |
|  | (69.0; 96.0) | (69.5; 97.0) | (70.0; 99.0) | (70.0; 98.0) |
| **Low educational attainment (%)** | 29.0 | 32.6 | 37.2 | 37.5 |
| **Current smoking** | 38.4 | 36.1 | 34.6 | 32.2 |
| **Physically inactive (%)** | 63.4 | 60.9 | 58.8 | 55.6 |
| **Alcohol consumption (g/day)** | 16.2 | 12.6 | 11.2 | 10.5 |
|  | (1.8; 58.0) | (1.6; 44.4) | (1.5; 40.6) | (1.3; 37.9) |
| **Hypertension (%)** | 16.5 | 15.7 | 16.1 | 16.7 |
| **Hypercholesteroleamia (%)** | 7.9 | 7.4 | 6.9 | 7.3 |
| **Diabetes (%)** | 2.3 | 1.8 | 1.9 | 2.3 |
| **Prevalent myocardial infarction (%)** | 1.6 | 1.5 | 1.7 | 1.5 |
| **Habitual food consumption (grams/day)** |  |  |  |  |
| **Total dairy** | 243 | 294 | 334 | 483 |
|  | (59-647) | (88-755) | (120-794) | (208-980) |
| **Low-fat milk** | 23 | 92 | 96 | 92 |
|  | (5-509) | (7-513) | (8-518) | (7-517) |
| **Whole-fat milk** | 7 | 10 | 13 | 14 |
|  | (2-91) | (4-106) | (4-182) | (4-164) |
| **Buttermilk** | 3 | 6 | 16 | 88 |
|  | (0-3) | (6-9) | (9-22) | (30-503) |
| **Low-fat yoghurt** | 0 | 3 | 7 | 7 |
|  | (0-157) | (0-157) | (0-164) | (0-200) |
| **Whole-fat yoghurt** | 8 | 13 | 17 | 20 |
|  | (1-175) | (2-186) | (2-180) | (2-203) |
| **Cheese** | 27 | 28 | 30 | 32 |
|  | (8-66) | (10-67) | (11-69) | (12-73) |
| **Butter** | 9 | 10 | 10 | 8 |
|  | (0-30) | (0-31) | (0-31) | (0-30) |
| **Fruit** | 126 | 136 | 156 | 182 |
|  | (25-351) | (34-358) | (43-384) | (57-441) |
| **Vegetables** | 142 | 144 | 150 | 166 |
|  | (53-280) | (58-278) | (61-286) | (72-314) |
| **Fresh red meat** | 77 | 79 | 81 | 78 |
|  | (38-138) | (42-140) | (44-146) | (41-144) |
| **Processed meat** | 23 | 25 | 26 | 25 |
|  | (7-58) | (9-59) | (9-62) | (8-61) |
| **Fish** | 35 | 38 | 41 | 43 |
|  | (14-71) | (17-74) | (18-79) | (19-85) |

\*A large proportion of the participants do not consume buttermilk, thus the first quintile includes more than 1/5 of the participants, yielding only four groups.

**Supplemental table 4. Participant characteristics across quintiles of low-fat yoghurt intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of low-fat yoghurt** |
|  | **Q1** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 6365 | 1248 | 1918 | 2055 |
| **Sex. men (%)** | 57.4 | 44.7 | 39.2 | 34.2 |
| **Age** | 56.3 | 55.4 | 55.8 | 56.6 |
|  | (51.2; 63.3) | (51.1; 62.8) | (51.1; 63.0) | (51.3; 63.3) |
| **Body mass index** | 25.4 | 25.3 | 25.9 | 25.7 |
|  | (21.3; 30.8) | (21.5; 30.9) | (21.7; 31.8) | (21.7; 31.5) |
| **Waist circumference (cm)** |  |  |  |  |
|  **-Men** | 95.0 | 95.0 | 96.0 | 96.0 |
|  | (84.0; 108.0) | (84.0; 108.0) | (85.0; 110.0) | (85.0; 109.0) |
|  **-Women** | 79.0 | 80.0 | 81.0 | 81.0 |
|  | (69.0; 96.5) | (69.0; 96.0) | (70.0; 99.0) | (70.0; 98.0) |
| **Low educational attainment (%)** | 35.1 | 31.5 | 32.0 | 29.3 |
| **Current smoking** | 40.8 | 34.5 | 32.0 | 29.3 |
| **Physically inactive (%)** | 64.0 | 59.0 | 57.2 | 56.5 |
| **Alcohol consumption (g/day)** | 15.0 | 12.0 | 11.9 | 11.6 |
|  | (1.7; 56.3) | (1.6; 43.9) | (1.5; 42.0) | (1.5; 40.3) |
| **Hypertension (%)** | 15.3 | 15.0 | 17.2 | 18.6 |
| **Hypercholesteroleamia (%)** | 6.9 | 6.4 | 7.7 | 9.3 |
| **Diabetes (%)** | 2.1 | 1.2 | 2.0 | 2.6 |
| **Prevalent myocardial infarction (%)** | 1.7 | 1.1 | 1.4 | 1.6 |
| **Habitual food consumption (grams/day)** |  |  |  |  |
| **Total dairy** | 260 | 292 | 312 | 429 |
|  | (62-726) | (84-746) | (106-775) | (228-885) |
| **Low-fat milk** | 24 | 91 | 96 | 93 |
|  | (6-511) | (7-513) | (7-516) | (6-514) |
| **Whole-fat milk** | 9 | 10 | 11 | 10 |
|  | (3-203) | (4-102) | (4-94) | (3-57) |
| **Buttermilk** | 3 | 6 | 9 | 6 |
|  | (0-34) | (3-88) | (3-91) | (0-110) |
| **Low-fat yoghurt** | 0 | 3 | 16 | 171 |
|  | (0-0) | (3-7) | (7-33) | (86-207) |
| **Whole-fat yoghurt** | 8 | 15 | 21 | 12 |
|  | (1-202) | (4-203) | (3-174) | (1-110) |
| **Cheese** | 27 | 29 | 31 | 31 |
|  | (9-67) | (11-68) | (11-70) | (11-71) |
| **Butter** | 12 | 10 | 8 | 6 |
|  | (0-32) | (0-31) | (0-29) | (0-26) |
| **Fruit** | 124 | 141 | 157 | 182 |
|  | (25-346) | (36-367) | (46-391) | (58-436) |
| **Vegetables** | 135 | 149 | 158 | 171 |
|  | (51-270) | (60-283) | (68-295) | (74-322) |
| **Fresh red meat** | 82 | 76 | 77 | 73 |
|  | (42-145) | (40-136) | (42-140) | (38-133) |
| **Processed meat** | 27 | 23 | 24 | 21 |
|  | (9-64) | (8-57) | (8-56) | (7-51) |
| **Fish** | 36 | 38 | 40 | 41 |
|  | (15-73) | (17-73) | (19-79) | (18-81) |

\*A large proportion of the participants do not consume low-fat yoghurt, thus the first quintile includes more than 1/5 of the participants, yielding only four groups.

**Supplemental table 5. Participant characteristics across quintiles of whole-fat yoghurt intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of whole-fat yoghurt** |
|  | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 3157 | 2263 | 2179 | 1940 | 2047 |
| **Sex. men (%)** | 54.7 | 51.4 | 47.6 | 42.2 | 42.6 |
| **Age** | 56.8 | 56.3 | 55.8 | 55.7 | 56.2 |
|  | (51.4; 63.5) | (51.2; 63.2) | (51.1; 63.0) | (51.1; 62.9) | (51.2; 63.2) |
| **Body mass index** | 26.0 | 25.8 | 25.6 | 25.5 | 24.9 |
|  | (21.7; 31.8) | (21.7; 31.4) | (21.6; 31.3) | (21.4; 31.0) | (21.0; 30.3) |
| **Waist circumference (cm)** |  |  |  |  |  |
|  **-Men** | 96.0 | 95.0 | 95.0 | 95.0 | 94.0 |
|  | (84.5; 110.0) | (84.0; 109.0) | (84.0; 108.0) | (84.0; 109.0) | (83.0; 106.5) |
|  **-Women** | 82.0 | 81.0 | 80.0 | 80.0 | 79.0 |
|  | (70.0; 99.0) | (70.0; 98.0) | (70.0; 97.0) | (69.0; 97.0) | (69.0; 95.0) |
| **Low educational attainment (%)** | 42.4 | 34.0 | 30.3 | 29.7 | 27.8 |
| **Current smoking** | 42.5 | 37.8 | 35.6 | 32.2 | 31.9 |
| **Physically inactive (%)** | 65.7 | 63.8 | 60.8 | 57.2 | 55.2 |
| **Alcohol consumption (g/day)** | 12.7 | 13.4 | 13.6 | 12.3 | 12.8 |
|  | (1.1; 56.8) | (1.6; 49.2) | (1.9; 47.4) | (1.7; 43.5) | (1.7; 43.5) |
| **Hypertension (%)** | 18.1 | 17.2 | 17.0 | 15.2 | 13.8 |
| **Hypercholesteroleamia (%)** | 10.4 | 9.2 | 7.4 | 5.9 | 4.5 |
| **Diabetes (%)** | 3.5 | 2.2 | 1.9 | 1.5 | 1.3 |
| **Prevalent myocardial infarction (%)** | 2.8 | 1.9 | 1.3 | 0.9 | 0.9 |
| **Habitual food consumption (grams/day)** |  |  |  |  |  |
| **Total dairy** | 244 | 257 | 277 | 321 | 441 |
|  | (52-710) | (65-696) | (81-711) | (123-770) | (242-896) |
| **Low-fat milk** | 28 | 39 | 46 | 93 | 40 |
|  | (5-511) | (6-513) | (6-513) | (7-515) | (6-512) |
| **Whole-fat milk** | 8 | 8 | 9 | 12 | 12 |
|  | (2-100) | (3-91) | (3-96) | (4-160) | (4-171) |
| **Buttermilk** | 3 | 6 | 6 | 7 | 6 |
|  | (0-30) | (0-42) | (0-88) | (0-91) | (0-99) |
| **Low-fat yoghurt** | 0 | 0 | 7 | 7 | 3 |
|  | (0-200) | (0-200) | (0-186) | (0-114) | (0-92) |
| **Whole-fat yoghurt** | 1 | 6 | 13 | 32 | 200 |
|  | (0-3) | (3-8) | (9-18) | (21-87) | (93-219) |
| **Cheese** | 24 | 27 | 29 | 32 | 32 |
|  | (5-63) | (10-65) | (11-69) | (12-71) | (12-71) |
| **Butter** | 7 | 8 | 9 | 11 | 11 |
|  | (0-29) | (0-29) | (0-31) | (0-31) | (0-31) |
| **Fruit** | 121 | 131 | 143 | 154 | 167 |
|  | (20-364) | (29-361) | (36-378) | (47-382) | (49-402) |
| **Vegetables** | 107 | 136 | 163 | 165 | 169 |
|  | (39-251) | (59-260) | (71-299) | (72-304) | (74-304) |
| **Fresh red meat** | 75 | 80 | 80 | 79 | 78 |
|  | (37-137) | (41-142) | (42-143) | (42-144) | (41-140) |
| **Processed meat** | 26 | 25 | 25 | 24 | 24 |
|  | (7-64) | (8-60) | (8-59) | (8-58) | (8-56) |
| **Fish** | 33 | 37 | 39 | 41 | 41 |
|  | (12-70) | (16-74) | (18-76) | (19-79) | (18-80) |

**Supplemental table 6. Participant characteristics across quintiles of cheese intake in the Diet Cancer and Health cohort.**

|  |  |
| --- | --- |
|  | **Quintiles of cheese** |
|  | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| **Total deaths (n)** | 2569 | 2420 | 2184 | 2310 | 2103 |
| **Sex. men (%)** | 51.2 | 47.5 | 47.6 | 45.7 | 46.6 |
| **Age** | 56.1 | 56.6 | 55.8 | 56.5 | 55.7 |
|  | (51.2; 63.1) | (51.3; 63.4) | (51.1; 63.0) | (51.3; 63.4) | (51.1; 63.1) |
| **Body mass index** | 25.7 | 25.6 | 25.6 | 25.4 | 25.4 |
|  | (21.6; 31.2) | (21.5; 31.1) | (21.5; 31.2) | (21.4; 31.2) | (21.3; 31.0) |
| **Waist circumference (cm)** |  |  |  |  |  |
|  **-Men** | 95.0 | 95.0 | 95.0 | 95.0 | 95.0 |
|  | (84.0; 108.5) | (84.0; 109.0) | (85.0; 108.0) | (84.0; 109.0) | (84.0; 108.0) |
|  **-Women** | 81.0 | 80.0 | 80.0 | 80.0 | 80.0 |
|  | (70.0; 98.0) | (69.0; 97.0) | (70.0; 97.0) | (69.0; 97.0) | (69.0; 97.0) |
| **Low educational attainment (%)** | 36.7 | 36.2 | 28.4 | 33.9 | 29.3 |
| **Current smoking** | 39.9 | 38.8 | 33.2 | 35.2 | 33.1 |
| **Physically inactive (%)** | 64.7 | 62.9 | 59.2 | 60.0 | 55.9 |
| **Alcohol consumption (g/day)** | 12.4 | 12.9 | 15.1 | 12.1 | 12.6 |
|  | (1.2; 55.0) | (1.5; 50.0) | (2.2; 48.1) | (1.5; 44.5) | (1.7; 44.2) |
| **Hypertension (%)** | 16.9 | 16.6 | 16.3 | 16.0 | 15.6 |
| **Hypercholesteroleamia (%)** | 9.3 | 7.8 | 7.1 | 6.8 | 6.4 |
| **Diabetes (%)** | 1.7 | 1.6 | 1.6 | 2.5 | 3.1 |
| **Prevalent myocardial infarction (%)** | 2.1 | 1.7 | 1.3 | 1.4 | 1.3 |
| **Habitual food consumption (grams/day)** |  |  |  |  |  |
| **Total dairy** | 251 | 275 | 304 | 316 | 356 |
|  | (47-746) | (67-755) | (84-768) | (100-800) | (134-846) |
| **Low-fat milk** | 33 | 39 | 89 | 43 | 61 |
|  | (5-512) | (6-512) | (7-512) | (6-513) | (6-515) |
| **Whole-fat milk** | 9 | 9 | 10 | 10 | 10 |
|  | (3-138) | (3-142) | (3-103) | (3-100) | (3-97) |
| **Buttermilk** | 6 | 6 | 6 | 6 | 6 |
|  | (0-34) | (0-86) | (0-88) | (0-88) | (0-91) |
| **Low-fat yoghurt** | 0 | 0 | 3 | 3 | 3 |
|  | (0-114) | (0-160) | (0-171) | (0-160) | (0-171) |
| **Whole-fat yoghurt** | 8 | 10 | 16 | 13 | 17 |
|  | (1-163) | (1-179) | (2-201) | (1-200) | (2-202) |
| **Cheese** | 10 | 22 | 29 | 52 | 69 |
|  | (1-15) | (18-24) | (25-36) | (42-55) | (58-103) |
| **Butter** | 7 | 9 | 9 | 11 | 11 |
|  | (0-27) | (0-27) | (0-28) | (0-32) | (0-36) |
| **Fruit** | 119 | 131 | 150 | 150 | 167 |
|  | (25-347) | (29-353) | (40-369) | (35-389) | (45-422) |
| **Vegetables** | 123 | 131 | 159 | 154 | 178 |
|  | (46-257) | (51-260) | (70-289) | (61-291) | (76-324) |
| **Fresh red meat** | 78 | 76 | 82 | 76 | 81 |
|  | (39-139) | (40-135) | (43-145) | (40-138) | (41-148) |
| **Processed meat** | 23 | 24 | 26 | 24 | 26 |
|  | (7-58) | (8-56) | (9-58) | (8-61) | (8-64) |
| **Fish** | 35 | 35 | 42 | 38 | 42 |
|  | (14-70) | (15-70) | (20-81) | (16-76) | (18-82) |

**Supplemental table 7. Number and percentage of non-consumers of food groups among participants in the Diet Cancer and Health cohort.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All** | **Women** | **Men** |
|  | **Cohort**(n=55,775) | **Cases**(11,586) | **Cohort**(n=29,161) | **Cases**(4,774) | **Cohort**(26,614) | **Cases**(6,812) |
|  | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **Total dairy products** | 0 | - | 0 | - | 0 | - | 0 | - | 0 | - | 0 | - |
|  **Low-fat milk** | 39 | 0.1 | 14 | 0.1 | 13 | 0.0 | 6 | 0.1 | 26 | 0.1 | 8 | 0.1 |
|  **Whole-fat milk** | 112 | 0.2 | 45 | 0.4 | 36 | 0.1 | 9 | 0.2 | 76 | 0.3 | 36 | 0.5 |
|  **Buttermilk** | 9,101 | 16.3 | 2,140 | 18.5 | 4,372 | 15.0 | 800 | 16.8 | 4,729 | 17.8 | 1,340 | 19.7 |
|  **Low-fat yoghurt products** | 27,053 | 48.5 | 6,365 | 54.9 | 11,527 | 39.5 | 2,124 | 44.5 | 15,526 | 58.3 | 4,241 | 62.3 |
|  **Whole-fat yoghurt products** | 1,644 | 2.9 | 542 | 4.7 | 641 | 2.2 | 161 | 3.4 | 1,003 | 3.8 | 381 | 5.6 |
|  **Cheese** | 362 | 0.6 | 115 | 1.0 | 135 | 0.5 | 29 | 0.6 | 227 | 0.9 | 86 | 1.3 |
|  **Butter** | 9,793 | 17.6 | 2,275 | 19.6 | 4,872 | 16.7 | 863 | 18.1 | 4,921 | 18.5 | 1,412 | 20.7 |
|  **Fruit** | 15 | 0.0 | 10 | 0.1 | <5 | 0.0 | <5 | 0.0 | 13 | 0.0 | 9 | 0.1 |
|  **Vegetables** | 5 | 0.0 | <5 | 0.0 | <5 | 0.0 | <5 | 0.0 | <5 | 0.0 | <5 | 0.0 |
|  **Red meat** | 42 | 0.1 | 11 | 0.1 | 25 | 0.1 | 5 | 0.1 | 17 | 0.1 | 6 | 0.1 |
|  **Processed meat** | 83 | 0.1 | 25 | 0.2 | 57 | 0.2 | 14 | 0.3 | 26 | 0.1 | 11 | 0.2 |
|  **Fish** | 265 | 0.5 | 79 | 0.7 | 134 | 0.5 | 31 | 0.6 | 131 | 0.5 | 48 | 0.7 |

**Supplemental table 8.** **Associations for 1-serving substitutions between dairy products with the rate of cancer mortality among men in the Danish Diet, Cancer and Health cohort** **(26614/2538).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** | **Model 3** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |  |  |
| Whole-fat milk | 0.90 | (0.86,0.95) | 0.95 | (0.90,1.00) | 0.95 | (0.90,1.00) | 0.95 | (0.90,1.00) |
| Buttermilk | 1.02 | (0.92,1.12) | 0.98 | (0.89,1.08) | 0.98 | (0.89,1.08) | 0.98 | (0.89,1.08) |
| Low-fat yoghurt products | 1.03 | (0.90,1.17) | 0.89 | (0.78,1.01) | 0.87 | (0.77,0.99) | 0.88 | (0.77,1.00) |
| Whole-fat yoghurt products | 1.25 | (1.10,1.41) | 1.09 | (0.97,1.23) | 1.07 | (0.94,1.20) | 1.07 | (0.94,1.20) |
| Cheese | 1.05 | (1.01,1.10) | 1.03 | (0.99,1.07) | 1.02 | (0.98,1.06) | 1.02 | (0.98,1.06) |
| **Whole-fat milk for** |  |  |  |  |  |  |  |  |
| Buttermilk | 1.13 | (1.02,1.26) | 1.03 | (0.93,1.14) | 1.03 | (0.93,1.14) | 1.03 | (0.93,1.14) |
| Low-fat yoghurt products | 1.14 | (1.00,1.30) | 0.93 | (0.82,1.06) | 0.92 | (0.80,1.05) | 0.92 | (0.81,1.05) |
| Whole-fat yoghurt products | 1.38 | (1.22,1.58) | 1.15 | (1.01,1.30) | 1.12 | (0.98,1.27) | 1.12 | (0.98,1.27) |
| Cheese | 1.17 | (1.11,1.24) | 1.08 | (1.02,1.14) | 1.07 | (1.01,1.13) | 1.07 | (1.01,1.13) |
| **Buttermilk for** |  |  |  |  |  |  |  |  |
| Low-fat yoghurt products | 1.01 | (0.86,1.19) | 0.90 | (0.77,1.06) | 0.89 | (0.76,1.04) | 0.89 | (0.76,1.05) |
| Whole-fat yoghurt products | 1.22 | (1.04,1.43) | 1.11 | (0.95,1.30) | 1.09 | (0.93,1.27) | 1.09 | (0.93,1.27) |
| Cheese | 1.03 | (0.94,1.14) | 1.05 | (0.95,1.16) | 1.04 | (0.94,1.15) | 1.04 | (0.94,1.15) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.21 | (1.02,1.44) | 1.23 | (1.04,1.46) | 1.22 | (1.03,1.45) | 1.22 | (1.02,1.45) |
| Cheese | 1.02 | (0.90,1.17) | 1.16 | (1.02,1.32) | 1.17 | (1.03,1.33) | 1.17 | (1.03,1.33) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Cheese | 0.85 | (0.75,0.96) | 0.94 | (0.83,1.07) | 0.96 | (0.85,1.08) | 0.96 | (0.85,1.08) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish. Model 3 was further adjusted for hypertension and hypercholesterolemia.

**Supplemental table 9.** **Associations for 1-serving substitutions between dairy products with the rate of cancer mortality among women in the Danish Diet, Cancer and Health cohort** **(29161/2105).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** | **Model 3** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |  |  |
| Whole-fat milk | 0.86 | (0.80,0.93) | 0.93 | (0.86,1.00) | 0.93 | (0.86,1.00) | 0.93 | (0.86,1.00) |
| Buttermilk | 1.12 | (1.02,1.24) | 1.07 | (0.97,1.18) | 1.07 | (0.97,1.18) | 1.07 | (0.97,1.18) |
| Low-fat yoghurt products | 1.05 | (0.93,1.18) | 0.97 | (0.86,1.08) | 0.95 | (0.85,1.07) | 0.95 | (0.85,1.07) |
| Whole-fat yoghurt products | 1.09 | (0.96,1.23) | 1.02 | (0.90,1.15) | 1.00 | (0.89,1.13) | 1.00 | (0.89,1.14) |
| Cheese | 1.02 | (0.97,1.07) | 1.00 | (0.96,1.05) | 1.00 | (0.95,1.05) | 1.00 | (0.95,1.05) |
| **Whole-fat milk for** |  |  |  |  |  |  |  |  |
| Buttermilk | 1.31 | (1.16,1.47) | 1.16 | (1.03,1.30) | 1.16 | (1.03,1.30) | 1.15 | (1.03,1.30) |
| Low-fat yoghurt products | 1.22 | (1.08,1.39) | 1.04 | (0.92,1.18) | 1.02 | (0.90,1.16) | 1.02 | (0.90,1.16) |
| Whole-fat yoghurt products | 1.27 | (1.10,1.45) | 1.09 | (0.95,1.26) | 1.08 | (0.94,1.24) | 1.08 | (0.94,1.24) |
| Cheese | 1.18 | (1.10,1.28) | 1.08 | (1.00,1.17) | 1.07 | (0.99,1.16) | 1.07 | (0.99,1.16) |
| **Buttermilk for** |  |  |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.94 | (0.81,1.09) | 0.90 | (0.78,1.04) | 0.89 | (0.76,1.03) | 0.88 | (0.76,1.02) |
| Whole-fat yoghurt products | 0.97 | (0.83,1.13) | 0.95 | (0.81,1.10) | 0.93 | (0.80,1.09) | 0.94 | (0.80,1.09) |
| Cheese | 0.91 | (0.82,1.00) | 0.94 | (0.85,1.03) | 0.93 | (0.84,1.03) | 0.93 | (0.84,1.03) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.04 | (0.89,1.21) | 1.05 | (0.90,1.23) | 1.05 | (0.90,1.23) | 1.06 | (0.91,1.24) |
| Cheese | 0.97 | (0.86,1.09) | 1.04 | (0.93,1.17) | 1.05 | (0.94,1.18) | 1.05 | (0.94,1.18) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Cheese | 0.93 | (0.82,1.06) | 0.99 | (0.87,1.12) | 0.99 | (0.88,1.12) | 0.99 | (0.88,1.12) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish. Model 3 was further adjusted for hypertension and hypercholesterolemia.

**Supplemental table 10. Associations for 1-serving substitutions between dairy products with the rate of cardiovascular disease mortality among men in the Danish Diet, Cancer and Health cohort (26614/1491).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** | **Model 3** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |  |  |
| Whole-fat milk | 0.97 | (0.91,1.03) | 1.00 | (0.93,1.07) | 0.99 | (0.92,1.06) | 0.97 | (0.91,1.04) |
| Buttermilk | 1.14 | (0.99,1.30) | 1.12 | (0.97,1.28) | 1.14 | (0.99,1.31) | 1.11 | (0.96,1.27) |
| Low-fat yoghurt products | 1.03 | (0.88,1.22) | 0.90 | (0.76,1.06) | 0.91 | (0.77,1.07) | 0.95 | (0.80,1.12) |
| Whole-fat yoghurt products | 1.34 | (1.13,1.57) | 1.10 | (0.94,1.29) | 1.07 | (0.91,1.26) | 1.04 | (0.89,1.22) |
| Cheese | 1.12 | (1.06,1.18) | 1.08 | (1.02,1.13) | 1.07 | (1.01,1.12) | 1.07 | (1.02,1.13) |
| **Whole-fat milk for** |  |  |  |  |  |  |  |  |
| Buttermilk | 1.17 | (1.01,1.36) | 1.12 | (0.97,1.30) | 1.15 | (0.99,1.34) | 1.14 | (0.98,1.32) |
| Low-fat yoghurt products | 1.07 | (0.90,1.26) | 0.90 | (0.77,1.07) | 0.92 | (0.78,1.09) | 0.98 | (0.82,1.15) |
| Whole-fat yoghurt products | 1.38 | (1.16,1.64) | 1.11 | (0.93,1.31) | 1.09 | (0.92,1.29) | 1.07 | (0.90,1.27) |
| Cheese | 1.16 | (1.08,1.24) | 1.08 | (1.00,1.16) | 1.08 | (1.00,1.16) | 1.10 | (1.02,1.19) |
| **Buttermilk for** |  |  |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.91 | (0.74,1.12) | 0.80 | (0.65,0.99) | 0.80 | (0.65,0.99) | 0.86 | (0.69,1.06) |
| Whole-fat yoghurt products | 1.18 | (0.95,1.46) | 0.99 | (0.80,1.22) | 0.94 | (0.76,1.17) | 0.94 | (0.76,1.17) |
| Cheese | 0.99 | (0.86,1.13) | 0.96 | (0.84,1.11) | 0.94 | (0.81,1.08) | 0.97 | (0.84,1.11) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.29 | (1.03,1.61) | 1.23 | (0.98,1.53) | 1.18 | (0.94,1.48) | 1.10 | (0.88,1.38) |
| Cheese | 1.08 | (0.92,1.28) | 1.20 | (1.02,1.41) | 1.17 | (1.00,1.38) | 1.13 | (0.96,1.33) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Cheese | 0.84 | (0.71,0.99) | 0.97 | (0.83,1.15) | 0.99 | (0.84,1.17) | 1.03 | (0.87,1.21) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish. Model 3 was further adjusted for hypertension and hypercholesterolemia.

**Supplemental table 11. Associations for 1-serving substitutions between dairy products with the rate of cardiovascular disease mortality among women in the Danish Diet, Cancer and Health cohort (29161/668).**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** | **Model 3** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |  |  |
| Whole-fat milk | 0.90 | (0.79,1.02) | 0.96 | (0.85,1.10) | 0.96 | (0.84,1.09) | 0.95 | (0.83,1.08) |
| Buttermilk | 0.99 | (0.86,1.14) | 0.95 | (0.83,1.09) | 0.95 | (0.83,1.09) | 0.96 | (0.84,1.10) |
| Low-fat yoghurt products | 1.09 | (0.89,1.33) | 1.01 | (0.83,1.22) | 0.99 | (0.82,1.20) | 1.01 | (0.83,1.23) |
| Whole-fat yoghurt products | 1.13 | (0.91,1.40) | 1.00 | (0.81,1.23) | 0.98 | (0.79,1.21) | 0.94 | (0.76,1.16) |
| Cheese | 1.10 | (1.01,1.20) | 1.08 | (0.99,1.17) | 1.07 | (0.99,1.16) | 1.06 | (0.98,1.15) |
| **Whole-fat milk for** |  |  |  |  |  |  |  |  |
| Buttermilk | 1.10 | (0.93,1.31) | 0.98 | (0.83,1.17) | 0.99 | (0.84,1.18) | 1.01 | (0.85,1.20) |
| Low-fat yoghurt products | 1.21 | (0.98,1.50) | 1.04 | (0.84,1.29) | 1.03 | (0.83,1.28) | 1.07 | (0.86,1.32) |
| Whole-fat yoghurt products | 1.26 | (0.99,1.60) | 1.04 | (0.82,1.31) | 1.02 | (0.80,1.29) | 0.99 | (0.78,1.26) |
| Cheese | 1.23 | (1.08,1.40) | 1.12 | (0.98,1.27) | 1.11 | (0.97,1.27) | 1.12 | (0.98,1.28) |
| **Buttermilk for** |  |  |  |  |  |  |  |  |
| Low-fat yoghurt products | 1.10 | (0.87,1.39) | 1.06 | (0.84,1.34) | 1.04 | (0.83,1.31) | 1.06 | (0.84,1.33) |
| Whole-fat yoghurt products | 1.14 | (0.89,1.47) | 1.05 | (0.82,1.34) | 1.02 | (0.80,1.31) | 0.98 | (0.77,1.26) |
| Cheese | 1.12 | (0.97,1.29) | 1.13 | (0.98,1.30) | 1.12 | (0.97,1.29) | 1.11 | (0.96,1.28) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.04 | (0.80,1.36) | 0.99 | (0.76,1.29) | 0.99 | (0.76,1.29) | 0.93 | (0.71,1.21) |
| Cheese | 1.02 | (0.83,1.24) | 1.07 | (0.88,1.30) | 1.08 | (0.89,1.31) | 1.05 | (0.86,1.27) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |  |  |
| Cheese | 0.98 | (0.79,1.21) | 1.08 | (0.87,1.33) | 1.09 | (0.88,1.35) | 1.13 | (0.91,1.39) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish. Model 3 was further adjusted for hypertension and hypercholesterolemia.

**Supplemental table 12. Associations for 1-serving substitutions between dairy products with the rate of cardiovascular mortality among men without baseline cardiovascular disease in the Danish Diet, Cancer and Health cohort (25,609/1,232).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.94 | (0.88,1.01) | 0.97 | (0.90,1.04) | 0.96 | (0.90,1.04) |
| Buttermilk | 1.11 | (0.96,1.28) | 1.09 | (0.94,1.27) | 1.10 | (0.95,1.28) |
| Low-fat yoghurt products | 1.12 | (0.93,1.35) | 0.96 | (0.80,1.16) | 0.95 | (0.79,1.15) |
| Whole-fat yoghurt products | 1.30 | (1.09,1.55) | 1.07 | (0.90,1.27) | 1.03 | (0.87,1.23) |
| Cheese | 1.13 | (1.07,1.20) | 1.09 | (1.02,1.15) | 1.08 | (1.01,1.14) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.18 | (1.01,1.37) | 1.13 | (0.96,1.32) | 1.14 | (0.97,1.34) |
| Low-fat yoghurt products | 1.19 | (0.98,1.44) | 0.99 | (0.82,1.20) | 0.99 | (0.81,1.20) |
| Whole-fat yoghurt products | 1.38 | (1.15,1.66) | 1.10 | (0.92,1.32) | 1.07 | (0.89,1.29) |
| Cheese | 1.20 | (1.11,1.30) | 1.12 | (1.04,1.21) | 1.12 | (1.03,1.21) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 1.01 | (0.80,1.28) | 0.88 | (0.69,1.11) | 0.87 | (0.68,1.10) |
| Whole-fat yoghurt products | 1.17 | (0.93,1.47) | 0.98 | (0.78,1.23) | 0.94 | (0.75,1.18) |
| Cheese | 1.02 | (0.88,1.18) | 0.99 | (0.85,1.16) | 0.98 | (0.84,1.14) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.16 | (0.90,1.49) | 1.11 | (0.86,1.43) | 1.09 | (0.84,1.40) |
| Cheese | 1.01 | (0.83,1.22) | 1.13 | (0.93,1.37) | 1.13 | (0.93,1.37) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 0.87 | (0.73,1.04) | 1.02 | (0.85,1.21) | 1.04 | (0.87,1.24) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 13. Associations for 1-serving substitutions between dairy products with the rate of cardiovascular mortality among women without baseline cardiovascular disease in the Danish Diet, Cancer and Health cohort (28,768/599).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Substitution** | **Model 1a** | **Model 1b** | **Model 2** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.91 | (0.80,1.04) | 0.98 | (0.85,1.12) | 0.97 | (0.85,1.11) |
| Buttermilk | 0.98 | (0.85,1.13) | 0.94 | (0.81,1.08) | 0.94 | (0.82,1.08) |
| Low-fat yoghurt products | 1.16 | (0.93,1.44) | 1.07 | (0.87,1.32) | 1.06 | (0.86,1.31) |
| Whole-fat yoghurt products | 1.14 | (0.91,1.43) | 1.02 | (0.82,1.26) | 1.00 | (0.80,1.25) |
| Cheese | 1.11 | (1.02,1.21) | 1.09 | (1.00,1.18) | 1.08 | (0.99,1.18) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.07 | (0.90,1.28) | 0.96 | (0.80,1.15) | 0.97 | (0.81,1.16) |
| Low-fat yoghurt products | 1.27 | (1.01,1.60) | 1.10 | (0.87,1.38) | 1.09 | (0.87,1.37) |
| Whole-fat yoghurt products | 1.26 | (0.98,1.61) | 1.04 | (0.81,1.33) | 1.03 | (0.80,1.32) |
| Cheese | 1.22 | (1.06,1.40) | 1.11 | (0.97,1.28) | 1.11 | (0.97,1.28) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 1.19 | (0.92,1.52) | 1.14 | (0.90,1.46) | 1.13 | (0.88,1.44) |
| Whole-fat yoghurt products | 1.17 | (0.90,1.52) | 1.08 | (0.84,1.40) | 1.06 | (0.82,1.37) |
| Cheese | 1.14 | (0.98,1.32) | 1.16 | (1.00,1.34) | 1.15 | (0.99,1.33) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 0.99 | (0.74,1.31) | 0.95 | (0.72,1.26) | 0.94 | (0.71,1.25) |
| Cheese | 0.96 | (0.77,1.19) | 1.01 | (0.82,1.25) | 1.02 | (0.83,1.26) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 0.97 | (0.77,1.22) | 1.07 | (0.86,1.34) | 1.08 | (0.87,1.35) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity and alcohol intake. Model 2 was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 14.** **Associations for 1-serving per day substitutions between dairy products with the rate of total, cancer and cardiovascular disease mortality in the Danish Diet, Cancer and Health cohort, excluding poor energy-reporters\***

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All-cause mortality** | **Cancer mortality** | **CVD mortality** |
| **Substitution** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men (number/cases)** | **26,375/6,728** | **26,375/2,513** | **26,375/1,466** |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.98 | (0.95,1.01) | 0.95 | (0.90,1.00) | 0.99 | (0.93,1.06) |
| Buttermilk | 1.04 | (0.98,1.11) | 0.98 | (0.89,1.08) | 1.13 | (0.98,1.30) |
| Low-fat yoghurt products | 0.93 | (0.86,1.01) | 0.87 | (0.76,0.99) | 0.91 | (0.77,1.08) |
| Whole-fat yoghurt products | 1.03 | (0.96,1.11) | 1.06 | (0.94,1.20) | 1.08 | (0.91,1.27) |
| Cheese | 1.04 | (1.01,1.06) | 1.02 | (0.98,1.07) | 1.06 | (1.01,1.12) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.07 | (1.00,1.14) | 1.03 | (0.93,1.15) | 1.14 | (0.98,1.32) |
| Low-fat yoghurt products | 0.95 | (0.88,1.03) | 0.91 | (0.79,1.04) | 0.92 | (0.78,1.09) |
| Whole-fat yoghurt products | 1.06 | (0.98,1.15) | 1.11 | (0.98,1.27) | 1.08 | (0.91,1.29) |
| Cheese | 1.06 | (1.03,1.10) | 1.07 | (1.01,1.13) | 1.07 | (0.99,1.15) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.89 | (0.81,0.98) | 0.88 | (0.75,1.03) | 0.81 | (0.65,1.00) |
| Whole-fat yoghurt products | 0.99 | (0.90,1.09) | 1.08 | (0.92,1.26) | 0.95 | (0.77,1.18) |
| Cheese | 1.00 | (0.94,1.06) | 1.04 | (0.94,1.15) | 0.94 | (0.81,1.08) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.11 | (1.00,1.24) | 1.23 | (1.03,1.46) | 1.18 | (0.94,1.48) |
| Cheese | 1.12 | (1.03,1.21) | 1.18 | (1.04,1.35) | 1.16 | (0.98,1.37) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.00 | (0.93,1.08) | 0.96 | (0.85,1.09) | 0.99 | (0.84,1.16) |
|  |  |  |  |
| **Women (number/cases)** | **28,844/4,685** | **28,844/2,076** | **28,844/650** |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.92 | (0.88,0.97) | 0.92 | (0.85,1.00) | 0.95 | (0.83,1.08) |
| Buttermilk | 1.00 | (0.94,1.06) | 1.07 | (0.97,1.18) | 0.98 | (0.85,1.14) |
| Low-fat yoghurt products | 0.94 | (0.87,1.02) | 0.95 | (0.84,1.06) | 1.00 | (0.82,1.22) |
| Whole-fat yoghurt products | 0.98 | (0.90,1.06) | 1.01 | (0.89,1.15) | 0.98 | (0.79,1.22) |
| Cheese | 1.04 | (1.01,1.07) | 1.00 | (0.95,1.05) | 1.06 | (0.97,1.15) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.08 | (1.01,1.16) | 1.16 | (1.03,1.31) | 1.04 | (0.86,1.25) |
| Low-fat yoghurt products | 1.02 | (0.94,1.11) | 1.03 | (0.90,1.17) | 1.06 | (0.85,1.32) |
| Whole-fat yoghurt products | 1.06 | (0.97,1.17) | 1.10 | (0.95,1.26) | 1.04 | (0.81,1.33) |
| Cheese | 1.13 | (1.07,1.19) | 1.08 | (1.00,1.17) | 1.11 | (0.97,1.28) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.94 | (0.86,1.04) | 0.89 | (0.76,1.03) | 1.02 | (0.80,1.30) |
| Whole-fat yoghurt products | 0.99 | (0.89,1.09) | 0.95 | (0.81,1.11) | 1.00 | (0.78,1.30) |
| Cheese | 1.04 | (0.98,1.11) | 0.93 | (0.84,1.03) | 1.08 | (0.92,1.25) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.04 | (0.94,1.16) | 1.07 | (0.92,1.25) | 0.98 | (0.75,1.29) |
| Cheese | 1.11 | (1.02,1.19) | 1.05 | (0.94,1.18) | 1.05 | (0.86,1.29) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.06 | (0.98,1.15) | 0.99 | (0.87,1.12) | 1.07 | (0.86,1.33) |

\*We excluded the top and bottom 0.5 % of the ratio of reported energy intake to estimated energy requirement. HR: Hazard ratio, CI: Confidence interval. Adjusted for age and date of inclusion (as stratum variables), total energy intake, educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, alcohol intake, intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 15.** **Associations for 1-serving per day substitutions between dairy products with the rate of total , cancer and cardiovascular disease mortality in the Danish Diet, Cancer and Health cohort, excluding non-consumers of any dairy product subgroup.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All-cause mortality** | **Cancer mortality** | **CVD mortality** |
| **Substitution** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men (number/cases)** | 9,742/2,215 | 9,742/823 | 9,742/503 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.96 | (0.90,1.03) | 0.94 | (0.84,1.05) | 1.01 | (0.87,1.17) |
| Buttermilk | 1.08 | (0.98,1.19) | 0.95 | (0.82,1.10) | 1.28 | (1.01,1.62) |
| Low-fat yoghurt products | 0.98 | (0.88,1.08) | 0.84 | (0.71,1.00) | 0.93 | (0.75,1.15) |
| Whole-fat yoghurt products | 1.14 | (1.00,1.29) | 1.02 | (0.83,1.26) | 0.99 | (0.76,1.29) |
| Cheese | 1.04 | (1.00,1.09) | 1.01 | (0.94,1.09) | 1.08 | (0.99,1.19) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.12 | (1.00,1.26) | 1.00 | (0.84,1.20) | 1.27 | (0.96,1.67) |
| Low-fat yoghurt products | 1.01 | (0.90,1.14) | 0.89 | (0.74,1.08) | 0.92 | (0.72,1.17) |
| Whole-fat yoghurt products | 1.18 | (1.02,1.36) | 1.09 | (0.86,1.37) | 0.98 | (0.72,1.32) |
| Cheese | 1.08 | (1.00,1.16) | 1.07 | (0.96,1.21) | 1.07 | (0.91,1.26) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.90 | (0.78,1.03) | 0.89 | (0.72,1.10) | 0.73 | (0.53,0.99) |
| Whole-fat yoghurt products | 1.05 | (0.89,1.23) | 1.08 | (0.84,1.40) | 0.77 | (0.54,1.10) |
| Cheese | 0.96 | (0.87,1.06) | 1.07 | (0.92,1.24) | 0.85 | (0.66,1.08) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.16 | (0.99,1.37) | **1.22** | **(0.94,1.57)** | 1.06 | (0.76,1.48) |
| Cheese | 1.06 | (0.96,1.18) | 1.20 | (1.01,1.43) | 1.17 | (0.94,1.45) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 0.92 | (0.80,1.05) | **0.99** | **(0.80,1.22)** | 1.10 | (0.84,1.44) |
|  |  |  |  |
| **Women (number/cases)** | 15,587/2,302 | 15,587/1,046 | 15,587/326 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.97 | (0.90,1.05) | 1.02 | (0.89,1.16) | 1.13 | (0.88,1.44) |
| Buttermilk | 1.03 | (0.96,1.11) | 1.05 | (0.93,1.19) | 1.03 | (0.86,1.24) |
| Low-fat yoghurt products | 0.95 | (0.87,1.04) | 1.01 | (0.87,1.17) | 0.99 | (0.79,1.25) |
| Whole-fat yoghurt products | 1.00 | (0.89,1.13) | 0.99 | (0.83,1.19) | 1.00 | (0.73,1.36) |
| Cheese | 1.10 | (1.05,1.15) | 1.03 | (0.96,1.10) | 1.15 | (1.03,1.29) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.06 | (0.96,1.18) | 1.03 | (0.87,1.23) | 0.92 | (0.68,1.23) |
| Low-fat yoghurt products | 0.98 | (0.87,1.10) | 0.99 | (0.82,1.19) | 0.88 | (0.64,1.21) |
| Whole-fat yoghurt products | 1.03 | (0.89,1.19) | 0.98 | (0.78,1.23) | 0.89 | (0.60,1.32) |
| Cheese | 1.13 | (1.04,1.23) | 1.01 | (0.88,1.16) | 1.02 | (0.79,1.32) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.92 | (0.82,1.03) | 0.96 | (0.80,1.15) | 0.96 | (0.72,1.28) |
| Whole-fat yoghurt products | 0.97 | (0.85,1.12) | 0.95 | (0.76,1.17) | 0.97 | (0.68,1.38) |
| Cheese | 1.07 | (0.98,1.15) | 0.98 | (0.86,1.11) | 1.11 | (0.92,1.35) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.06 | (0.92,1.22) | 0.99 | (0.80,1.22) | 1.00 | (0.70,1.44) |
| Cheese | 1.16 | (1.05,1.27) | 1.02 | (0.88,1.18) | 1.16 | (0.92,1.46) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.10 | (0.97,1.24) | 1.03 | (0.86,1.24) | 1.15 | (0.84,1.58) |

 HR: Hazard ratio, CI: Confidence interval. Adjusted for age and date of inclusion (as stratum variables), total energy intake, educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, alcohol intake, intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 16.** **Associations for 1-serving per day substitutions between dairy products with the rate of total, cancer and cardiovascular disease mortality among non-smokers in the Danish Diet, Cancer and Health cohort.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All-cause mortality** | **Cancer mortality** | **CVD mortality** |
| **Substitution** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men (number/cases)** | 16,072/3,025 | 16,072/1,082 | 16,072/657 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.97 | (0.92,1.03) | 0.93 | (0.85,1.03) | 1.04 | (0.91,1.18) |
| Buttermilk | 1.03 | (0.95,1.12) | 0.93 | (0.81,1.05) | 1.08 | (0.90,1.29) |
| Low-fat yoghurt products | 0.95 | (0.85,1.06) | 0.91 | (0.76,1.09) | 0.89 | (0.72,1.10) |
| Whole-fat yoghurt products | 1.03 | (0.92,1.14) | 1.02 | (0.85,1.22) | 1.14 | (0.90,1.43) |
| Cheese | 1.03 | (1.00,1.07) | 1.03 | (0.96,1.10) | 1.08 | (1.00,1.16) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.06 | (0.96,1.17) | 0.99 | (0.85,1.16) | 1.04 | (0.84,1.29) |
| Low-fat yoghurt products | 0.98 | (0.87,1.10) | 0.97 | (0.80,1.18) | 0.86 | (0.68,1.08) |
| Whole-fat yoghurt products | 1.06 | (0.94,1.19) | 1.09 | (0.90,1.33) | 1.10 | (0.85,1.42) |
| Cheese | 1.06 | (1.00,1.13) | 1.10 | (1.00,1.22) | 1.04 | (0.91,1.19) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.92 | (0.80,1.06) | 0.98 | (0.79,1.22) | 0.82 | (0.62,1.08) |
| Whole-fat yoghurt products | 0.99 | (0.87,1.14) | 1.10 | (0.89,1.37) | 1.05 | (0.78,1.41) |
| Cheese | 1.00 | (0.92,1.09) | 1.11 | (0.97,1.27) | 1.00 | (0.83,1.20) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.08 | (0.93,1.24) | 1.12 | (0.89,1.42) | 1.28 | (0.95,1.72) |
| Cheese | 1.09 | (0.98,1.21) | 1.13 | (0.95,1.36) | 1.21 | (0.98,1.50) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.01 | (0.91,1.12) | 1.01 | (0.84,1.20) | 0.95 | (0.75,1.20) |
|  |  |  |  |
| **Women (number/cases)** | 19,610/2,255 | 19,610/1,024 | 19,610/299 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.99 | (0.90,1.09) | 0.97 | (0.84,1.12) | 0.90 | (0.72,1.14) |
| Buttermilk | 1.01 | (0.93,1.10) | 1.02 | (0.89,1.16) | 1.32 | (0.99,1.74) |
| Low-fat yoghurt products | 0.95 | (0.85,1.06) | 0.99 | (0.84,1.17) | 0.89 | (0.67,1.19) |
| Whole-fat yoghurt products | 0.94 | (0.83,1.05) | 0.97 | (0.82,1.16) | 0.93 | (0.68,1.28) |
| Cheese | 1.04 | (0.99,1.09) | 0.97 | (0.90,1.04) | 1.09 | (0.96,1.24) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.02 | (0.90,1.15) | 1.05 | (0.87,1.27) | 1.46 | (1.03,2.06) |
| Low-fat yoghurt products | 0.96 | (0.84,1.10) | 1.02 | (0.83,1.25) | 0.99 | (0.71,1.38) |
| Whole-fat yoghurt products | 0.94 | (0.82,1.09) | 1.00 | (0.81,1.25) | 1.03 | (0.71,1.50) |
| Cheese | 1.05 | (0.95,1.15) | 1.00 | (0.86,1.16) | 1.21 | (0.95,1.53) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.94 | (0.83,1.08) | 0.97 | (0.79,1.18) | 0.68 | (0.46,1.00) |
| Whole-fat yoghurt products | 0.93 | (0.81,1.07) | 0.95 | (0.77,1.18) | 0.71 | (0.47,1.07) |
| Cheese | 1.03 | (0.94,1.12) | 0.95 | (0.83,1.08) | 0.83 | (0.62,1.11) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 0.98 | (0.85,1.13) | 0.99 | (0.80,1.22) | 1.04 | (0.71,1.53) |
| Cheese | 1.09 | (0.97,1.21) | 0.98 | (0.83,1.15) | 1.22 | (0.92,1.62) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.11 | (0.99,1.24) | 0.99 | (0.84,1.18) | 1.17 | (0.85,1.62) |

HR: Hazard ratio, CI: Confidence interval. Adjusted for age and date of inclusion (as stratum variables), total energy intake, educational attainment, body mass index, waist circumference adjusted for body mass index, physical activity, alcohol intake, intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 17. Associations for 1-serving per day substitutions between dairy products with the rate of 10-year total, cancer and cardiovascular disease mortality in the Danish Diet, Cancer and Health cohort.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **All-cause mortality** | **Cancer mortality** | **CVD mortality** |
| **Substitution** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men (number/cases)** | 26,614/2,355 | 26,614/1,042 | 26,614/687 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 1.03 | (0.97,1.08) | 1.07 | (0.98,1.16) | 1.02 | (0.92,1.13) |
| Buttermilk | 1.08 | (0.97,1.19) | 1.07 | (0.91,1.26) | 1.07 | (0.89,1.30) |
| Low-fat yoghurt products | 0.87 | (0.77,0.99) | 0.92 | (0.75,1.13) | 0.77 | (0.62,0.97) |
| Whole-fat yoghurt products | 0.94 | (0.83,1.07) | 1.06 | (0.87,1.28) | 0.99 | (0.78,1.25) |
| Cheese | 1.05 | (1.01,1.10) | 1.07 | (1.00,1.14) | 1.04 | (0.96,1.13) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.05 | (0.94,1.18) | 1.01 | (0.84,1.20) | 1.05 | (0.85,1.29) |
| Low-fat yoghurt products | 0.85 | (0.74,0.97) | 0.87 | (0.70,1.07) | 0.76 | (0.60,0.96) |
| Whole-fat yoghurt products | 0.92 | (0.81,1.05) | 0.99 | (0.81,1.22) | 0.97 | (0.76,1.25) |
| Cheese | 1.02 | (0.96,1.09) | 1.00 | (0.91,1.10) | 1.02 | (0.91,1.14) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.81 | (0.69,0.96) | 0.86 | (0.67,1.11) | 0.72 | (0.54,0.96) |
| Whole-fat yoghurt products | 0.88 | (0.75,1.03) | 0.99 | (0.77,1.27) | 0.92 | (0.68,1.25) |
| Cheese | 0.98 | (0.88,1.08) | 0.99 | (0.84,1.17) | 0.97 | (0.80,1.18) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.08 | (0.91,1.28) | 1.15 | (0.88,1.50) | 1.28 | (0.94,1.74) |
| Cheese | 1.20 | (1.06,1.37) | 1.16 | (0.95,1.42) | 1.35 | (1.08,1.68) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.11 | (0.98,1.26) | 1.01 | (0.83,1.23) | 1.05 | (0.83,1.33) |
|  |  |  |  |
| **Women (number/cases)** | 29,161/1,468 | 29,161/840 | 29,161/250 |
| **Low-fat milk for** |  |  |  |  |  |  |
| Whole-fat milk | 0.93 | (0.86,1.01) | 0.94 | (0.84,1.06) | 0.99 | (0.81,1.20) |
| Buttermilk | 1.06 | (0.95,1.17) | 1.17 | (0.99,1.37) | 0.92 | (0.77,1.11) |
| Low-fat yoghurt products | 0.93 | (0.81,1.06) | 0.92 | (0.77,1.10) | 0.99 | (0.72,1.36) |
| Whole-fat yoghurt products | 0.96 | (0.84,1.11) | 1.03 | (0.85,1.24) | 0.95 | (0.68,1.33) |
| Cheese | 1.05 | (0.99,1.11) | 0.99 | (0.91,1.07) | 1.08 | (0.95,1.23) |
| **Whole-fat milk for** |  |  |  |  |  |  |
| Buttermilk | 1.14 | (1.01,1.28) | 1.23 | (1.02,1.49) | 0.94 | (0.73,1.20) |
| Low-fat yoghurt products | 1.00 | (0.87,1.15) | 0.97 | (0.80,1.18) | 1.01 | (0.71,1.42) |
| Whole-fat yoghurt products | 1.04 | (0.89,1.21) | 1.09 | (0.88,1.35) | 0.97 | (0.66,1.41) |
| Cheese | 1.13 | (1.04,1.23) | 1.04 | (0.93,1.18) | 1.10 | (0.89,1.35) |
| **Buttermilk for** |  |  |  |  |  |  |
| Low-fat yoghurt products | 0.88 | (0.75,1.03) | 0.79 | (0.62,1.00) | 1.07 | (0.75,1.54) |
| Whole-fat yoghurt products | 0.91 | (0.77,1.08) | 0.88 | (0.69,1.13) | 1.03 | (0.71,1.50) |
| Cheese | 0.99 | (0.89,1.11) | 0.85 | (0.72,1.00) | 1.17 | (0.96,1.42) |
| **Low-fat yoghurt products for** |  |  |  |  |  |  |
| Whole-fat yoghurt products | 1.04 | (0.87,1.24) | 1.12 | (0.88,1.42) | 0.96 | (0.63,1.47) |
| Cheese | 1.13 | (0.99,1.29) | 1.07 | (0.90,1.28) | 1.09 | (0.79,1.50) |
| **Whole-fat yoghurt products for** |  |  |  |  |  |  |
| Cheese | 1.09 | (0.95,1.25) | 0.96 | (0.79,1.16) | 1.13 | (0.81,1.58) |

HR: Hazard ratio, CI: Confidence interval. Adjusted for age and date of inclusion (as stratum variables), total energy intake, educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, alcohol intake, intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 18.** **Associations for 1-serving per day higher intake of dairy product subgroups (non-specified substitution) with the rate of all-cause mortality in the Danish Diet, Cancer and Health cohort.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dairy product subgroup** | **Model 1a** | **Model 1b** | **Model 2a** | **Model 2b** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.04 | (1.02,1.06) | 1.03 | (1.02,1.05) | 1.04 | (1.02,1.06) | 1.05 | (1.03,1.07) |
| **Whole-fat milk** | 1.12 | (1.09,1.15) | 1.05 | (1.02,1.08) | 1.06 | (1.03,1.09) | 1.08 | (1.05,1.11) |
| **Buttermilk** | 0.97 | (0.91,1.03) | 1.00 | (0.94,1.06) | 1.00 | (0.95,1.06) | 1.01 | (0.95,1.07) |
| **Low-fat yoghurt products** | 0.95 | (0.87,1.02) | 1.09 | (1.01,1.18) | 1.10 | (1.02,1.19) | 1.13 | (1.04,1.22) |
| **Whole-fat yoghurt products** | 0.84 | (0.78,0.90) | 0.96 | (0.89,1.03) | 0.97 | (0.90,1.04) | 1.01 | (0.94,1.09) |
| **Cheese** | 0.97 | (0.95,0.99) | 0.99 | (0.97,1.01) | 1.00 | (0.98,1.02) | 1.02 | (1.00,1.04) |
| **Women** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.03 | (1.01,1.06) | 1.02 | (1.00,1.05) | 1.03 | (1.01,1.06) | 1.04 | (1.01,1.07) |
| **Whole-fat milk** | 1.20 | (1.15,1.26) | 1.10 | (1.05,1.15) | 1.11 | (1.06,1.16) | 1.12 | (1.07,1.17) |
| **Buttermilk** | 0.98 | (0.93,1.04) | 1.03 | (0.97,1.08) | 1.03 | (0.98,1.09) | 1.04 | (0.98,1.09) |
| **Low-fat yoghurt products** | 0.97 | (0.91,1.05) | 1.07 | (0.99,1.15) | 1.08 | (1.01,1.16) | 1.11 | (1.03,1.19) |
| **Whole-fat yoghurt products** | 0.95 | (0.88,1.03) | 1.02 | (0.95,1.10) | 1.03 | (0.95,1.12) | 1.06 | (0.98,1.15) |
| **Cheese** | 0.96 | (0.94,0.99) | 0.98 | (0.95,1.00) | 0.98 | (0.96,1.01) | 1.00 | (0.97,1.02) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, and alcohol intake. Model 2a was further mutually adjusted for intake of the remaining dairy product subgroups. Model 2b was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 19.** **Associations for 1-serving per day higher intake of dairy product subgroups (non-specified substitution) with the rate of cancer mortality in the Danish Diet, Cancer and Health cohort.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dairy product subgroup** | **Model 1a** | **Model 1b** | **Model 2a** | **Model 2b** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.01 | (0.98,1.04) | 1.01 | (0.98,1.04) | 1.01 | (0.98,1.04) | 1.02 | (0.99,1.05) |
| **Whole-fat milk** | 1.13 | (1.08,1.19) | 1.06 | (1.01,1.11) | 1.06 | (1.01,1.12) | 1.07 | (1.02,1.13) |
| **Buttermilk** | 0.99 | (0.90,1.09) | 1.03 | (0.94,1.13) | 1.03 | (0.94,1.13) | 1.04 | (0.95,1.14) |
| **Low-fat yoghurt products** | 0.97 | (0.86,1.11) | 1.13 | (1.00,1.28) | 1.14 | (1.01,1.29) | 1.17 | (1.03,1.32) |
| **Whole-fat yoghurt products** | 0.81 | (0.72,0.92) | 0.93 | (0.82,1.05) | 0.93 | (0.82,1.05) | 0.96 | (0.85,1.08) |
| **Cheese** | 0.96 | (0.93,0.99) | 0.98 | (0.95,1.01) | 0.99 | (0.95,1.02) | 1.00 | (0.97,1.03) |
| **Women** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.01 | (0.97,1.04) | 1.00 | (0.97,1.04) | 1.01 | (0.97,1.04) | 1.01 | (0.97,1.05) |
| **Whole-fat milk** | 1.18 | (1.10,1.26) | 1.08 | (1.01,1.16) | 1.08 | (1.01,1.16) | 1.08 | (1.01,1.17) |
| **Buttermilk** | 0.89 | (0.81,0.98) | 0.93 | (0.85,1.02) | 0.94 | (0.85,1.03) | 0.94 | (0.85,1.03) |
| **Low-fat yoghurt products** | 0.94 | (0.84,1.05) | 1.03 | (0.92,1.15) | 1.04 | (0.93,1.16) | 1.06 | (0.95,1.18) |
| **Whole-fat yoghurt products** | 0.93 | (0.82,1.05) | 0.98 | (0.87,1.10) | 0.99 | (0.88,1.11) | 1.00 | (0.89,1.13) |
| **Cheese** | 0.99 | (0.95,1.02) | 1.00 | (0.96,1.03) | 1.00 | (0.97,1.04) | 1.01 | (0.97,1.05) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, and alcohol intake. Model 2a was further mutually adjusted for intake of the remaining dairy product subgroups. Model 2b was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish.

**Supplemental table 20.** **Associations for 1-serving per day higher intake of dairy product subgroups (non-specified substitution) with the rate of cardiovascular disease mortality in the Danish Diet, Cancer and Health cohort.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Dairy product subgroup** | **Model 1a** | **Model 1b** | **Model 2a** | **Model 2b** |
|  | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** | **HR** | **95 % CI** |
| **Men** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.08 | (1.04,1.11) | 1.05 | (1.01,1.08) | 1.05 | (1.01,1.09) | 1.06 | (1.02,1.10) |
| **Whole-fat milk** | 1.10 | (1.03,1.17) | 1.04 | (0.97,1.10) | 1.05 | (0.99,1.12) | 1.07 | (1.00,1.15) |
| **Buttermilk** | 0.94 | (0.82,1.07) | 0.93 | (0.82,1.07) | 0.94 | (0.82,1.07) | 0.93 | (0.81,1.07) |
| **Low-fat yoghurt products** | 1.04 | (0.88,1.21) | 1.15 | (0.99,1.35) | 1.17 | (1.00,1.36) | 1.17 | (1.00,1.37) |
| **Whole-fat yoghurt products** | 0.79 | (0.67,0.92) | 0.94 | (0.80,1.10) | 0.95 | (0.81,1.11) | 0.99 | (0.84,1.16) |
| **Cheese** | 0.95 | (0.91,0.99) | 0.97 | (0.93,1.01) | 0.97 | (0.93,1.02) | 0.99 | (0.95,1.04) |
| **Women** |  |  |  |  |  |  |  |  |
| **Low-fat milk** | 1.08 | (1.02,1.15) | 1.07 | (1.01,1.14) | 1.09 | (1.02,1.15) | 1.10 | (1.03,1.17) |
| **Whole-fat milk** | 1.19 | (1.06,1.34) | 1.08 | (0.96,1.23) | 1.13 | (1.00,1.28) | 1.14 | (1.01,1.30) |
| **Buttermilk** | 1.09 | (0.95,1.24) | 1.13 | (0.99,1.28) | 1.15 | (1.01,1.30) | 1.15 | (1.01,1.31) |
| **Low-fat yoghurt products** | 0.99 | (0.82,1.20) | 1.06 | (0.88,1.28) | 1.08 | (0.90,1.30) | 1.11 | (0.92,1.34) |
| **Whole-fat yoghurt products** | 0.96 | (0.78,1.18) | 1.07 | (0.87,1.31) | 1.09 | (0.89,1.34) | 1.12 | (0.91,1.38) |
| **Cheese** | 0.99 | (0.93,1.05) | 1.00 | (0.94,1.06) | 1.01 | (0.95,1.07) | 1.03 | (0.96,1.09) |

HR: Hazard ratio, CI: Confidence interval. Model 1a was adjusted for age and date of inclusion (as stratum variables) and total energy intake. Model 1b was further adjusted for educational attainment, body mass index, waist circumference adjusted for body mass index, smoking, physical activity, and alcohol intake. Model 2a was further mutually adjusted for intake of the remaining dairy product subgroups. Model 2b was further adjusted for intakes of fruit, vegetables, red meat, processed meat and fish.

**Invited**

160,725 men and women

**Gave consent to participate**

n=57,053 (35.5 % of invited sample)

**Excluded due to**

Cancer before baseline (n=569)

Did not attend baseline assessment (n=42)

**Declined participation**

n=103,672

**Eligible for participation**

n=56,442 (35.1 % of invited sample)

**Excluded due to missing information on at least one covariate**

Body mass index (n=40)

Waist circumference (n=49)

Smoking (n=35)

Physical activity (n=386)

Alcohol intake (n=55)

Education (n=29)

History of hypertension (n=83)

History of hypercholesterolemia (n=145)

History of diabetes mellitus (n=74)

**Participants included in the analyses**

n= 55,775 (34.7 % of invited sample)

**Supplemental figure 1. Participant flowchart in the Danish Diet, Cancer and Health cohort**