Supplemental Table 1. Food groupings used in dietary pattern analysis, 49 food groups.

|  |  |
| --- | --- |
| Food group | Food items |
| Artificially sweetened beverages | Artificially sweetened soft drinks, artificially sweetened squash, artificially sweetened ice tea |
| Barbecue and taco seasoning | Taco seasoning, grill seasoning |
| Beer | Malt beer, pilsner, light beer |
| Berries | Blackberry, blueberry, raspberry, strawberry, cherry , cloudberry, rose hips, redcurrant, blackcurrant, cowberry  |
| Butter | Butter, melted butter |
| Cakes and desserts | Dessert mousse, vanilla sauce, ice-cream, canned fruits, ice pop, muffins, chocolate cake, sponge cake with cream (with or without marzipan), sweet biscuits, Danish pastry, cinnamon bun/ sweet bun with vanilla cream |
| Cheese | Regular and low-fat Norwegian brown cheese, regular and low-fat hard cheese, regular and low-fat cheese spread, cream cheese |
| Coffee | Coffee, boiled/press, instant, espresso, café latte, cappuccino |
| Eggs | Eggs |
| Fat rich potatoes | Potato salad, potato gratin with cream, fried potatoes, homemade French fries, restaurant made French fries |
| Fish, dinner | Smoked salmon/brown trout, fried salmon/brown trout, sardine, herring, shrimps/crabs, fish cakes/fish pudding, fish balls, fish fingers, boiled cod/saithe/haddock/catfish/redfish, fried cod/saithe/haddock/ catfish/redfish, smoked mackerel, fried mackerel, fish gratin, wok with seafood and vegetables |
| Fish, bread spread | Caviar spread, roe paste, mackerel in tomato sauce |
| Fruit juice | Blueberry and aronia juice, cranberry and raspberry juice, rosehip and orange juice, orange juice, apple juice |
| Fruits | Apple, pear, banana, orange, clementine, peach/nectarine, kiwi, grapes, melon, pomegranate, fruit as spreads, fresh fruits salad, prune, raisins, other dried fruits  |
| High-fat dairy products | High-fat milk, flavoured milk, sour cream, whipped cream, high-fat yoghurt |
| Herbs/spices | Dried and fresh basil, dried and fresh chili, dried and fresh oregano, dried and fresh thyme, cinnamon, cardamom, curry powder, black pepper powder, sweet red pepper powder, dried rosemary, garlic, fresh dill, fresh ginger, fresh peppermint, fresh parsley  |
| Legumes | Legumes |
| Liquor | Spirits, cider, cocktail |
| Low-fat dairy products | Skimmed- and semi-skimmed milk, cultured/probiotic low-fat milk, low-fat yoghurt drink, low-fat yoghurt |
| Margarine | Normal and low-fat margarine  |
| Mayonnaise | Regular and low fat remoulade/mayonnaise, regular and low fat spread with mayonnaise (Italian, shrimp etc.) |
| Meat dishes | Mutton and cabbage stew, stew with meat, vegetables and potatoes, wok with meat and vegetables |
| Mustard | Mustard |
| Nuts and seeds | Cashew nuts, peanuts, peanut butter, walnuts, hazelnuts, almonds, pecan nuts, pine nuts, pistachio nuts, sesame seeds, sunflower seeds |
| Pasta | Noodles, pasta, pasta with tomato sauce |
| Pizza | Pizza |
| Potatoes | Boiled, mashed |
| Poultry | Grilled chicken, chicken filet, chicken/turkey sausage, chicken/turkey grilled/wiener sausage |
| Processed meat | Meat balls, minced meat sauce, taco, kebab, lasagne, grilled/wiener sausage, minced meat sausage, bacon, regular and low fat liver paste, regular and low fat saveloy, salami |
| Read meat and game | Beef, roast of lamb/beef/pork, roast of game, hamburger, pork chops |
| Refined grains | White bread, crisp bread (wheat flour), hot dog bun, sweet muesli/breakfast cereal, pancake, rice porridge, waffle, sweet bun |
| Rice | Rice |
| Salad dressings | Thousand-island dressing, oil and vinegar dressing, pesto |
| Salty snacks | Potato chips, other salty snacks |
| Sauce | Brown/white sauce, béarnaise/hollandaise sauce |
| Soup | Tomato soup |
| Soy sauce | Soy sauce |
| Sugar | Pure sugar |
| Sugar-sweetened beverages | Fruit juices with added sugar, squash with sugar, sugar-sweetened soft drinks, iced tea with sugar |
| Sweets | Chocolate, dark chocolate, extra dark chocolate, sweets/jelly sweets, sweet pastille/candy |
| Sweeteners | Sweetener, sugar free pastille |
| Sweet spreads | Regular and low sugar jam, honey, chocolate/nut spread, other sweet spread |
| Tea | Black tea, green tea, herb tea |
| Tomato sauce | Ketchup, tomato sauce, taco sauce |
| Vegetables | Carrot, cabbage, swede, cauliflower, broccoli, brussels sprout, onion, spinach, sweet pepper, avocado, tomato, maize, frozen vegetables, mixed salad (with lettuce, cucumber, tomato and sweet pepper), vegetables as spread |
| Vegetarian food | Vegetarian food |
| Water | Tap water, mineral water |
| Wine | Red wine, white wine |
| Whole grains | Semi- and whole grain bread, crisp bread (whole meal), oat meal porridge and cereal, unsweetened muesli/breakfast cereal |

~~Supplemental Table 2. Relation between prevalence of total chronic disease\* and tertiles of dietary pattern scores divided in strata by BMI among the plausible reporters~~

~~(OR and 95% CI)~~

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | ~~18.5≤BMI<25 (~~*~~n~~* ~~2746)~~ |  | ~~25≤BMI<40 (~~*~~n~~* ~~2325)~~ |
|  | ~~Model~~ | ~~T1~~ | ~~T2~~ | ~~T3~~ |  | ~~T1~~ | ~~T2~~ | ~~T3~~ |
|  ~~Western~~ | ~~Crude~~ | ~~1.00~~ | ~~1.20 (1.00, 1.44)~~ | ~~1.10 (0.91, 1.33)~~ |  | ~~1.00~~ | ~~1.08 (0.86, 1.34)~~ | ~~1.38 (1.11, 1.72)~~ |
|  | ~~1 (Age)~~ | ~~1.00~~ | ~~1.15 (0.96, 1.39)~~ | ~~1.09 (0.91, 1.32)~~ |  | ~~1.00~~ | ~~1.08 (0.86, 1.35)~~ | ~~1.42 (1.13, 1.77)~~ |
|  | ~~2 (Model 1 + smoking)~~ | ~~1.00~~ | ~~1.15 (0.95, 1.38)~~ | ~~1.07 (0.88, 1.30)~~ |  | ~~1.00~~ | ~~1.08 (0.86, 1.35)~~ | ~~1.40 (1.12, 1.75)~~ |
|  | ~~3 (Model 2 + education)~~ | ~~1.00~~ | ~~1.11 (0.92, 1.33)~~ | ~~0.99 (0.81, 1.21)~~ |  | ~~1.00~~ | ~~1.00 (0.79, 1.25)~~ | ~~1.25 (0.99, 1.57)~~ |
|  | ~~4 (Model 3 + physical activity)~~ | ~~1.00~~ | ~~1.11 (0.92, 1.34)~~ | ~~1.00 (0.82, 1.22)~~ |  | ~~1.00~~ | ~~0.98 (0.78, 1.23)~~ | ~~1.21 (0.96, 1.52)~~ |
|  | ~~5 (Model 4 + energy intake)~~ | ~~1.00~~ | ~~1.12 (0.93, 1.36)~~ | ~~1.04 (0.84, 1.28)~~ |  | ~~1.00~~ | ~~0.96 (0.76, 1.21)~~ | ~~1.14 (0.89, 1.45)~~ |
|  |  |  |  |  |  |  |  |  |
|  ~~Continental~~ | ~~Crude~~ | ~~1.00~~ | ~~1.04 (0.86, 1.25)~~ | ~~0.70 (0.58, 0.85)~~ |  | ~~1.00~~ | ~~0.77 (0.62, 0.95)~~ | ~~0.77 (0.62, 0.95)~~ |
|  | ~~1 (Age)~~ | ~~1.00~~ | ~~1.14 (0.94, 1.38)~~ | ~~0.84 (0.69, 1.03)~~ |  | ~~1.00~~ | ~~0.87 (0.70, 1.09)~~ | ~~1.01 (0.80, 1.27)~~ |
|  | ~~2 (Model 1 + smoking)~~ | ~~1.00~~ | ~~1.15 (0.95 1.39)~~ | ~~0.84 (0.69, 1.02)~~ |  | ~~1.00~~ | ~~0.87 (0.70, 1.09)~~ | ~~1.01 (0.80, 1.27)~~ |
|  | ~~3 (Model 2 + education)~~ | ~~1.00~~ | ~~1.16 (0.96, 1.40)~~ | ~~0.87 (0.71, 1.06)~~ |  | ~~1.00~~ | ~~0.89 (0.71, 1.11)~~ | ~~1.05 (0.83, 1.33)~~ |
|  | ~~4 (Model 3 + physical activity)~~ | ~~1.00~~ | ~~1.16 (0.96, 1.41)~~ | ~~0.87 (0.71, 1.06)~~ |  | ~~1.00~~ | ~~0.88 (0.70, 1.11)~~ | ~~1.05 (0.83, 1.32)~~ |
|  | ~~5 (Model 4 + energy intake)~~ | ~~1.00~~ | ~~1.16 (0.96, 1.41)~~ | ~~0.88 (0.72, 1.07)~~ |  | ~~1.00~~ | ~~0.87 (0.70, 1.10)~~ | ~~1.01 (0.79, 1.27)~~ |
|  |  |  |  |  |  |  |  |  |
|  ~~Prudent~~ | ~~Crude~~ | ~~1.00~~ | ~~1.04 (0.86, 1.25)~~ | ~~1.28 (1.06, 1.54)~~ |  | ~~1.00~~ | ~~1.37 (1.10, 1.70)~~ | ~~1.48 (1.19, 1.83)~~ |
|  | ~~1 (Age)~~ | ~~1.00~~ | ~~1.00 (0.83, 1.21)~~ | ~~1.23 (1.01, 1.49)~~ |  | ~~1.00~~ | ~~1.30 (1.04, 1.62)~~ | ~~1.39 (1.12, 1.73)~~ |
|  | ~~2 (Model 1 + smoking)~~ | ~~1.00~~ | ~~1.01 (0.84, 1.22)~~ | ~~1.24 (1.03, 1.51)~~ |  | ~~1.00~~ | ~~1.30 (1.04, 1.62)~~ | ~~1.40 (1.13, 1.74)~~ |
|  | ~~3 (Model 2 + education)~~ | ~~1.00~~ | ~~1.01 (0.83, 1.21)~~ | ~~1.25 (1.03, 1.52)~~ |  | ~~1.00~~ | ~~1.32 (1.05, 1.65)~~ | ~~1.44 (1.16, 1.79)~~ |
|  | ~~4 (Model 3 + physical activity)~~ | ~~1.00~~ | ~~1.01 (0.83, 1.21)~~ | ~~1.25 (1.03, 1.52)~~ |  | ~~1.00~~ | ~~1.35 (1.08 1.69)~~ | ~~1.51 (1.21, 1.89)~~ |
|  | ~~5 (Model 4 + energy intake)~~ | ~~1.00~~ | ~~1.07 (0.88, 1.30)~~ | ~~1.43 (1.14, 1.80)~~ |  | ~~1.00~~ | ~~1.33 (1.06, 1.67)~~ | ~~1.46 (1.14, 1.87)~~ |

~~OR, odds ratio; CI, confidence interval; T, tertile~~

~~\* Disease group composed of cardiovascular disease, diabetes, chronic respiratory disease, cancer and joint inflammation, muscle and skeletal disorder~~

Supplemental Table 2. Relation between prevalence of total chronic disease\* and tertiles of dietary pattern scores among all and plausible reporters.

(PR and 95% CI)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | All reporters (*n* 5914) |  | Plausible reporters (*n* 4833) |
|  | Model | T1 | T2 | T3 |  | T1 | T2 | T3 |
|  Western | Crude | 1.00 | 1.04 (0.99, 1.10) | 1.07 (1.01, 1.13) |  | 1.00 | 1.09 (1.02, 1.16) | 1.13 (1.07, 1.20) |
|  | 1 (age) | 1.00 | 1.03 (0.98, 1.09) | 1.06 (1.00, 1.11) |  | 1.00 | 1.07 (1.01, 1.14) | 1.13 (1.07, 1.20) |
|  | 2 (Model 1 + smoking) | 1.00 | 1.03 (0.98, 1.09) | 1.06 (1.00, 1.11) |  | 1.00 | 1.07 (1.01, 1.14) | 1.13 (1.06, 1.20) |
|  | 3 (Model 2 + education) | 1.00 | 1.01 (0.96, 1.06) | 1.01 (0.96, 1.07) |  | 1.00 | 1.05 (0.98, 1.11) | 1.07 (1.01, 1.14) |
|  | 4 (Model 3 + physical activity) | 1.00 | 1.00 (0.95, 1.05) | 1.01 (0.96, 1.06) |  | 1.00 | 1.04 (0.98, 1.10) | 1.06 (1.00, 1.12) |
|  | 5 (Model 4 + BMI) | 1.00 | 0.99 (0.94, 1.04) | 1.00 (0.95, 1.05) |  | 1.00 | 1.02 (0.96, 1.08) | 1.04 (0.99, 1.11) |
|  | 6 (Model 5 + energy intake) | 1.00 | 0.99 (0.94, 1.04) | 1.00 (0.95, 1.06) |  | 1.00 | 1.01 (0.96, 1.08) | 1.04 (0.98, 1.11) |
|  |  |  |  |  |  |  |  |  |
|  Continental | Crude | 1.00 | 0.94 (0.90, 0.99) | 0.89 (0.85, 0.94) |  | 1.00 | 0.96 (0.91, 1.02) | 0.88 (0.83, 0.94) |
|  | 1 (Age) | 1.00 | 0.98 (0.93, 1.03) | 0.95 (0.90, 1.00) |  | 1.00 | 1.00 (0.95, 1.06) | 0.95 (0.89, 1.01) |
|  | 2 (Model 1 + smoking) | 1.00 | 0.98 (0.93 1.03) | 0.95 (0.90, 1.00) |  | 1.00 | 1.00 (0.95, 1.06) | 0.95 (0.89, 1.01) |
|  | 3 (Model 2 + education) | 1.00 | 0.98 (0.93 1.03) | 0.97 (0.92, 1.02) |  | 1.00 | 1.00 (0.95, 1.06) | 0.97 (0.91, 1.03) |
|  | 4 (Model 3 + physical activity) | 1.00 | 0.98 (0.93, 1.03) | 0.97 (0.92, 1.02) |  | 1.00 | 1.00 (0.95, 1.06) | 0.97 (0.91, 1.03) |
|  | 5 (Model 4 + BMI) | 1.00 | 0.96 (0.92, 1.01) | 0.96 (0.91, 1.01) |  | 1.00 | 0.98 (0.93, 1.04) | 0.96 (0.90, 1.01) |
|  | 6 (Model 5 + energy intake) | 1.00 | 0.96 (0.92, 1.01) | 0.96 (0.91, 1.01) |  | 1.00 | 0.98 (0.93, 1.04) | 0.95 (0.90, 1.01) |
|  |  |  |  |  |  |  |  |  |
|  Prudent | Crude | 1.00 | 0.96 (0.91, 1.02) | 1.04 (0.99, 1.10) |  | 1.00 | 1.07 (1.01, 1.14) | 1.16 (1.09, 1.23) |
|  | 1 (Age) | 1.00 | 0.96 (0.91, 1.01) | 1.04 (0.99, 1.09) |  | 1.00 | 1.07 (1.01, 1.14) | 1.14 (1.08, 1.21) |
|  | 2 (Model 1 + smoking) | 1.00 | 0.96 (0.91, 1.02) | 1.04 (0.99, 1.10) |  | 1.00 | 1.07 (1.01, 1.14) | 1.15 (1.08, 1.22) |
|  | 3 (Model 2 + education) | 1.00 | 0.98 (0.93, 1.03) | 1.07 (1.02, 1.13) |  | 1.00 | 1.07 (1.01, 1.13) | 1.16 (1.09, 1.22) |
|  | 4 (Model 3 + physical activity) | 1.00 | 0.99 (0.94, 1.04) | 1.10 (1.05, 1.16) |  | 1.00 | 1.07 (1.01 1.14) | 1.17 (1.11, 1.24) |
|  | 5 (Model 4 + BMI) | 1.00 | 0.99 (0.94, 1.04) | 1.10 (1.05, 1.15) |  | 1.00 | 1.07 (1.01, 1.14) | 1.15 (1.08, 1.21) |
|  | 6 (Model 5 + energy intake) | 1.00 | 1.01 (0.95, 1.06) | 1.14 (1.08, 1.21) |  | 1.00 | 1.08 (1.02, 1.15) | 1.18 (1.10, 1.25) |

PR, prevalence ratio; CI, confidence interval; T, tertile

\* Disease group composed of cardiovascular disease, diabetes, chronic respiratory disease, cancer and joint inflammation, muscle and skeletal disorder

† Covariates:age (50-60, 61-69 years), education (low, high), smoking (yes, no), physical activity (continuous), BMI (18.5≤BMI<25, 25≤BMI<40) and energy intake (continuous).