**Supplemental Table 1.** Classification of food items to 18 food groups in the Korea National Health and Nutrition Examination Survey 2012-2016

|  |  |  |
| --- | --- | --- |
|  | Food Groups | Food Items |
| Healthy plantFoods  | Whole grains  | Various whole grains (300ml) |
| Fruits  | Strawberry (10 strawberries), tomato (1 tomato, 30 cherry tomatoes), muskmelon (1 muskmelon), watermelon (2 slices), peach (1 peach), grape (200ml), apple (1 apple), pear (half a pear), persimmon (1 persimmon), tangerine (2 tangerine), banana (1 banana), orange (1 orange), kiwi (2 kiwis) |
| Vegetables  | Bean sprouts/mung-bean sprout (50ml), spinach (50ml), bellflower root (50ml), pumpkin (50ml), green vegetables or seasoned other vegetables (50ml), cucumber (50ml), radish (50ml), vegetable salad (100ml), green onion/Chinese chive (50ml), mixed vegetables (lettuce (10 lettuce), sesame (30 sesame leaves), Chinese cabbage (3 leaves), pumpkin leaf (5 leaves))/green pepper (3 peppers), broccoli/cabbage (50ml), garlic (2 garlic), mushrooms (50ml), corn (1 corn), lotus root/burdock (50ml), laver (8 sheets), sea mustard stems (50ml), green laver (50ml), green laver soup (250ml), sweet potatoes (1 sweet potato) |
| Nuts  | Peanut (50ml), chestnut (3 chestnuts) |
| Legumes  | Soft bean curd stew (200ml), bean curd (100ml), legumes (15 ml), soymilk (200ml) |
| Coffee and Tea | Coffee (10ml), green tea (200ml) |
| Less healthy plant foods | Fruit juices  | Fruit juice (200ml) |
| Refined grain  | Grain powder (200ml), cooked rice (300ml), cooked rice with assorted mixtures/fried rice (500ml), rice rolled in laver (1 roll), rice with curry (500ml), instant noodle (1 noodle pack), noodles (1000ml), Chinese black bean noodles/spicy seafood noodle soup (1000ml), cold noodle (1000ml), rice cake soup (1000ml), loaf of bread (2 slices), rice cake (half a slice or 3-piece), cereals (250ml), Korean pancake (half a pancake), stir-fried noodles and vegetables (100ml), snack (200ml) |
| Potatoes  | Potatoes (1 potato for steamed potatoes or 1 potato for stir-fry) |
| Sugar sweetened beverages  | Soft drink (cola/soda/fruit juice soda) (200ml) |
| Sweets and desserts  | Jam (2 teaspoon), sugar\* (2 teaspoon), chocolate (half of chocolate bars), Sweet red-beans buns/cream buns (1 bun), sponge cake/ cake (1 slice), cookie/cracker (6 cookies/crackers) |
| Salty foods  | Bean paste sauce/red pepper paste sauce/mixed paste (10ml), Korean cabbage kimchi (50ml), other kimchi (50ml), pickled vegetable (15ml), kimchi stew (200ml), bean paste soup (250ml), bean paste/fermented bean stew (200ml) |
| Animal foods  | Animal fat  | Cream\* (10ml), butter/margarine (2 teaspoon) |
| Dairy  | Milk (200ml), yogurt (100g), ice cream (100ml) |
| Egg | Steamed egg (1 egg), fried egg (1 egg) |
| Fish or seafood  | Loach stew (250ml), dried alaska pollack soup (250ml), alaska pollack stew/spicy seafood stew (250ml), mackerel/saury (50ml), hairtail/yellow croaker (50ml), anchovy (15ml), cuttlefish (half a cup), crab (15ml), salted shrimp/squid and clam (5ml), fish cake (100ml for stir-fry, 250ml for soup) |
| Meat | Beef soup (250ml), potato and pork rib soup (250ml), pork (150g), sweet and sour pork/pork cutlet (200ml), grilled beef (150g), ham (50ml), chicken stew (800ml), chicken (2 drumsticks or 2 cups), grilled duck (150g), spicy sausage stew (200ml), hamburgers/sandwich (1 hamburger/sandwich) |
| Miscellaneous animal foods  | Dumplings (6 dumplings), pizza (2 slices), Korean blood sausage (soondae) (half a cup) |

\*Consumption of sugar or cream added in coffee was asked separately from coffee in the questionnaire

**Supplemental Table 2.** Nutritional characteristics of diets by quintiles of plant-based diet scores in the Korea National Health and Nutrition Examination Survey 2012-2016\*†

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 | *P* |
| Overall plant-based diet index |
| Total energy intake (kcal) | 2165·8 | 15·2 | 2155·0 | 16·6 | 2020·2 | 14·9 | 1989·2 | 15·3 | 1897·8 | 14·9 | <0·001 |
| % of protein | 13·7 | 0·05 | 13·1 | 0·05 | 12·9 | 0·04 | 12·7 | 0·05 | 12·5 | 0·04 | <0·001 |
| % of carbohydrates | 58·7 | 0·1 | 62·2 | 0·2 | 64·0 | 0·1 | 65·9 | 0·1 | 68·4 | 0·1 | <0·001 |
| % of fat | 20·3 | 0·1 | 18·4 | 0·1 | 17·7 | 0·1 | 16·8 | 0·1 | 15·8 | 0·1 | <0·001 |
| % saturated fat | 6·2 | 0·04 | 5·5 | 0·04 | 5·2 | 0·03 | 4·8 | 0·04 | 4·3 | 0·03 | <0·001 |
| Potassium (mg/1000kcal) | 1231·6 | 6·7 | 1299·5 | 8·0 | 1373·6 | 7·8 | 1457·9 | 8·8 | 1587·8 | 8·7 | <0·001 |
| Calcium (mg/1000kcal) | 236·7 | 1·6 | 231·2 | 1·8 | 239·5 | 1·7 | 240·0 | 1·7 | 247·7 | 1·5 | <0·001 |
| Vitamin A (μgRE/1000kcal) | 272·2 | 2·2 | 284·0 | 2·6 | 301·2 | 2·7 | 323·7 | 2·9 | 361·4 | 3·0 | <0·001 |
| Vitamin C (mg/1000kcal) | 40·5 | 0·5 | 48·7 | 0·7 | 55·5 | 0·7 | 63·9 | 0·9 | 76·5 | 0·9 | <0·001 |
| Fiber (g/1000kcal) | 17·6 | 0·1 | 19·6 | 0·2 | 20·1 | 0·1 | 21·5 | 0·1 | 23·1 | 0·2 | <0·001 |
| Alcohol (g/day) | 16·7 | 0·5 | 14·5 | 0·5 | 12·0 | 0·4 | 10·2 | 0·4 | 7·2 | 0·3 | <0·001 |
| Plant food (portions/d) | 10·3 | 0·08 | 12·1 | 0·1 | 12·7 | 0·1 | 13·8 | 0·1 | 15·1 | 0·1 | <0·001 |
| Healthy plant food (portions/d) | 4·7 | 0·05 | 5·7 | 0·06 | 6·2 | 0·06 | 6·9 | 0·07 | 7·7 | 0·07 | <0·001 |
| Less healthy plant food (portions/d) | 5·6 | 0·05 | 6·3 | 0·07 | 6·5 | 0·06 | 6·9 | 0·07 | 7·3 | 0·07 | <0·001 |
| Animal food (portions/d) | 6·3 | 0·04 | 6·3 | 0·04 | 6·2 | 0·04 | 6·1 | 0·04 | 6·1 | 0·03 | 0·0013 |
|  Meat intake (portion/d) | 2·3 | 0.05 | 1·9 | 0·05 | 1·5 | 0·04 | 1·3 | 0·04 | 0·9 | 0·03 | <0·001 |
| Healthful plant-based diet index  |
| Total energy intake (kcal) | 2287·2 | 16·3 | 2143·5 | 15·5 | 2043·7 | 15·9 | 1935·8 | 14·6 | 1751·8 | 12·9 | <0·001 |
| % of protein | 13·7 | 0·04 | 13·3 | 0·04 | 12·9 | 0·05 | 12·7 | 0·04 | 12·2 | 0·04 | <0·001 |
| % of carbohydrates | 60·1 | 0·1 | 61·4 | 0·1 | 63·4 | 0·1 | 65·2 | 0·2 | 69·2 | 0·2 | <0·001 |
| % of fat | 21·0 | 0·1 | 19·3 | 0·1 | 17·7 | 0·1 | 16·3 | 0·1 | 14·2 | 0·1 | <0·001 |
| % saturated fat | 6·2 | 0·04 | 5·8 | 0·03 | 5·2 | 0·04 | 4·6 | 0·03 | 3·8 | 0·03 | <0·001 |
| Potassium (mg/1000kcal) | 1267·3 | 5·3 | 1318·3 | 6·9 | 1381·2 | 8·5 | 1444·0 | 8·9 | 1547·5 | 10·6 | <0·001 |
| Calcium (mg/1000kcal) | 242·8 | 1·5 | 237·7 | 1·6 | 238·47 | 1·7 | 239·3 | 1·8 | 235·3 | 2·1 | 0·0314 |
| Vitamin A (μgRE/1000kcal) | 285·6 | 1·9 | 293·1 | 2·3 | 305·3 | 2·8 | 316·6 | 3·0 | 340·7 | 3·6 | <0·001 |
| Vitamin C (mg/1000kcal) | 42·3 | 0·5 | 48·0 | 0·6 | 55·5 | 0·8 | 62·9 | 0·8 | 78·6 | 1·2 | <0·001 |
| Fiber (g/1000kcal) | 19·1 | 0·1 | 19·5 | 0·1 | 20·4 | 0·2 | 21·0 | 0·1 | 21·5 | 0·2 | <0·001 |
| Alcohol (g/day) | 11·9 | 0·4 | 14·0 | 0·4 | 13·1 | 0·5 | 13·0 | 0·5 | 9·4 | 0·5 | <0·001 |
| Plant food (portions/d) | 12·7 | 0·1 | 12·5 | 0·1 | 12·8 | 0·1 | 12·8 | 0·1 | 12·4 | 0·1 | 0·0101 |
| Healthy plant food (portions/d) | 4·7 | 0·05 | 5·5 | 0·05 | 6·4 | 0·07 | 6·9 | 0·07 | 7·7 | 0·08 | <0·001 |
| Less healthy plant food (portions/d) | 8·0 | 0·07 | 6·9 | 0·06 | 6·4 | 0·06 | 5·8 | 0·06 | 4·6 | 0·05 | <0·001 |
| Animal food (portions/d) | 6·8 | 0·04 | 6·4 | 0·04 | 6·1 | 0·04 | 5·9 | 0·04 | 5·6 | 0·04 | <0·001 |
| Meat intake (portion/d) | 2·6 | 0·05 | 1·9 | 0·05 | 1·5 | 0·04 | 1·2 | 0·03 | 0·6 | 0·02 | <0·001 |
| Unhealthful plant-based diet index  |
| Total energy intake (kcal) | 1932·6 | 14·8 | 2023·4 | 16·0 | 2081·8 | 15·5 | 2125·0 | 16·6 | 2079·3 | 15·1 | <0·001 |
| % of protein | 14·4 | 0·04 | 13·5 | 0·04 | 13·1 | 0·04 | 12·7 | 0·05 | 11·7 | 0·05 | <0·001 |
| % of carbohydrates | 62·9 | 0·1 | 63·7 | 0·2 | 63·5 | 0·1 | 63·3 | 0·2 | 64·1 | 0·2 | <0·001 |
| % of fat | 20·0 | 0·1 | 18·5 | 0·1 | 18·0 | 0·1 | 17·5 | 0·1 | 16·4 | 0·1 | <0·001 |
| % saturated fat | 5·5 | 0·03 | 5·3 | 0·04 | 5·3 | 0·04 | 5·3 | 0·04 | 5·1 | 0·04 | <0·001 |
| Potassium (mg/1000kcal) | 1684·6 | 8·9 | 1502·9 | 7·8 | 1384·8 | 6·9 | 1286·0 | 6·5 | 1134·7 | 5·7 | <0·001 |
| Calcium (mg/1000kcal) | 291·7 | 1·8 | 258·8 | 1·7 | 238·0 | 1·4 | 222·3 | 1·5 | 199·1 | 1·3 | <0·001 |
| Vitamin A (μgRE/1000kcal) | 393·5 | 3·0 | 340·4 | 2·7 | 308·3 | 2·4 | 278·0 | 2·3 | 236·8 | 2·0 | <0·001 |
| Vitamin C (mg/1000kcal) | 82·0 | 1·0 | 65·6 | 0·8 | 55·2 | 0·7 | 47·3 | 0·7 | 37·3 | 0·6 | <0·001 |
| Fiber (g/1000kcal) | 24·0 | 0·2 | 22·5 | 0·2 | 20·8 | 0·1 | 19·3 | 0·1 | 16·0 | 0·1 | <0·001 |
| Alcohol (g/day) | 6·7 | 0·3 | 9·8 | 0·4 | 12·2 | 0·4 | 15·1 | 0·5 | 16·6 | 0·5 | <0·001 |
| Plant food (portions/d) | 13·8 | 0·1 | 13·4 | 0·1 | 12·8 | 0·09 | 12·3 | 0·1 | 11·2 | 0·1 | <0·001 |
| Healthy plant food (portions/d) | 8·6 | 0·08 | 7·3 | 0·06 | 6·3 | 0·05 | 5·4 | 0·05 | 3·8 | 0·04 | <0·001 |
| Less healthy plant food (portions/d) | 5·1 | 0·06 | 6·0 | 0·06 | 6·4 | 0·06 | 6·9 | 0·07 | 7·4 | 0·07 | <0·001 |
| Animal food (portions/d) | 6·2 | 0·04 | 6·1 | 0·04 | 6·3 | 0·04 | 6·3 | 0·04 | 6·1 | 0·04 | 0·0028 |
| Meat intake (portion/d) | 1·5 | 0·04 | 1·6 | 0·04 | 1·7 | 0·05 | 1·9 | 0·05 | 1·6 | 0·04 | <0·001 |

\* We report means and standard errors for continuous variables and numbers and percentages for categorical variables.

† *P* indicates statistical differences across quintiles of plant-based diet scores.

**Supplemental Table 3**. Per serving increase in individual food groups within the unhealthful plant-based diet index and dyslipidemia risk\*

|  |  |  |
| --- | --- | --- |
| Individual food groups | OR | 95% CI |
| Unhealthful plant-based diet index |  |  |
| Healthy plant foods |  |  |
| Whole grains  | 0·97 | 0·88, 1·07 |
| Fruits  | 1·01 | 0·96, 1·06 |
| Vegetables  | 0·99 | 0·95, 1·02 |
| Nuts  | 0·84 | 0·67, 1·04 |
| Legumes  | 0·89 | 0·79, 1·01 |
| Coffee and tea  | 0·98 | 0·94, 1·03 |
| Less healthy plant foods |  |  |
| Fruit juices | 0·99 | 0·79,1·25  |
| Refined grain  | 1·00 | 0·92, 1·09 |
| Potatoes  | 1·23 | 0·99, 1·54 |
| Sugar sweetened beverages  | 1·20 | 1·02, 1·40 |
| Sweets and desserts  | 0·96 | 0·87, 1·05 |
| Salty foods  | 0·99 | 0·98, 1·02 |
| Animal foods |  |  |
| Animal fat  | 1·09 | 0·97, 1·02 |
| Dairy  | 0·96 | 0·90, 1·02 |
| Egg | 0·98 | 0·89, 1·08 |
| Fish or seafood  | 0·98 | 0·93, 1·03 |
| Meat | 0·87 | 0·77, 0·99 |
| Miscellaneous animal foods | 1·09 | 0·71, 1·66 |

\*Adjusted for age (continuous), sex (men/women), physical activity (yes/no), smoking status (never/former/current), education level (≤6, 7-12, >12 years), income level (low/medium/high), alcohol intake (never, <2times/week, ≥ 2times/week), total energy intake (continuous), BMI (continuous), presence of diabetes (yes/no), and anti-hyperlipidemic agent (yes/no).