**Supplemental Table 1. Dietary Reference Intakes for children aged 3-6 years**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Boys |  | Girls |  |
|  | 3-5 years | 6 years | 3-5 years | 6 years |
| Nutrient with DG |  |  |  |  |
| Protein (% energy) | 13-20 | 13-20 | 13-20 | 13-20 |
| Total fat (% energy) | 20-30 | 20-30 | 20-30 | 20-30 |
| Carbohydrate (% energy) | 50-65 | 50-65 | 50-65 | 50-65 |
| SFA (% energy) \* | ≤7 | ≤7 | ≤7 | ≤7 |
| Sodium (g NaCl equivalent/day) † | <4 | <5 | <4.5 | <5.5 |
| Dietary fiber (g/day) | ≥9 | ≥11 | ≥8 | ≥10 |
| Potassium (mg/day) | ≥1600 | ≥1800 | ≥1400 | ≥1800 |
| Nutrient with EAR |  |  |  |  |
| Protein (g/day) | 20 | 25 | 20 | 25 |
| Vitamin A (μgRAE/day) ‡ | 350 | 300 | 300 | 300 |
| Thiamin (mg/day) | 0.6 | 0.7 | 0.6 | 0.7 |
| Riboflavin (mg/day) | 0.7 | 0.8 | 0.6 | 0.7 |
| Niacin (mgNE/day) § | 6 | 7 | 6 | 7 |
| Vitamin B6 (mg/day) | 0.5 | 0.7 | 0.5 | 0.6 |
| Vitamin B12 (μg/day) | 0.8 | 1.0 | 0.8 | 1.0 |
| Folate (μg/day) | 80 | 100 | 80 | 100 |
| Vitamin C (mg/day) | 35 | 45 | 35 | 45 |
| Calcium (mg/day) | 500 | 500 | 450 | 450 |
| Magnesium (mg/day) | 80 | 110 | 80 | 110 |
| Iron (mg/day) | 4 | 4.5 | 3.5 | 4.5 |
| Zinc (mg/day) | 3 | 4 | 3 | 4 |
| Copper (mg/day) | 0.3 | 0.4 | 0.3 | 0.4 |

DG, tentative dietary goal for preventing lifestyle-related disease; EAR, estimated average requirement; SFA, saturated fatty acids

\*We tentatively applied the DG for SFA in adults to children.

†1 g NaCl equivalent = 58.5/23 × sodium (g).

‡1 μg RAE = sum of retinol (μg) + β-carotene (μg) × 1/12 + α-carotene (μg) × 1/12 + β-cryptoxanthin (μg) × 1/24.

§1 mg NE = niacin (mg) + protein (mg)/6000.

**Supplemental Table 2. Daily food intake (g/day) from meals and snacks among Japanese nursery-school children (n=378).**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Total intake | | Intake from meals\* | | Intake from snacks\* | | p† | Contribution (%) of snacks to total intake‡ | |
|  | Mean | SD | Mean | SD | Mean | SD |  | Mean | SD |
| White rice | 185.6 | 63.7 | 180.4 | 61.9 | 5.2 | 11.7 | <0.001 | 2.7 | 6.0 |
| Noodle | 35.4 | 31.7 | 33.8 | 30.2 | 1.6 | 6.2 | <0.001 | 4.7 | 17 |
| Bread | 25.6 | 19.4 | 22.3 | 18.9 | 3.4 | 6.6 | <0.001 | 15.9 | 28.8 |
| Potato | 36.3 | 24.7 | 30.0 | 21.8 | 6.3 | 11.9 | <0.001 | 15.0 | 24.3 |
| Sugars | 9.4 | 6.8 | 5.4 | 4.8 | 4.0 | 4.7 | 0.0001 | 38.8 | 28.2 |
| Pulses and nuts | 31.4 | 22.6 | 29.3 | 20.6 | 2.2 | 7.8 | <0.001 | 6.2 | 14.3 |
| Total vegetable | 150.7 | 53.7 | 147.6 | 53.5 | 3.1 | 6.1 | <0.001 | 2.2 | 4.5 |
| Fruit | 81.9 | 56.7 | 59.6 | 45.2 | 22.3 | 32.3 | <0.001 | 26.5 | 28.8 |
| Fruit/vegetable juice | 27.8 | 46.9 | 16.0 | 34.7 | 11.9 | 25.4 | 0.040 | 47.7 | 44.1 |
| Fish | 33.5 | 21.6 | 32.8 | 21.6 | 0.7 | 2.2 | <0.001 | 3.3 | 10.3 |
| Meat | 57.4 | 25.7 | 55.9 | 25.5 | 1.5 | 3.6 | <0.001 | 2.9 | 6.8 |
| Eggs | 29.2 | 18.4 | 27.8 | 18.2 | 1.4 | 2.5 | <0.001 | 7.3 | 15.7 |
| Milk | 142.8 | 99.0 | 67.9 | 79.4 | 75.0 | 51.6 | 0.13 | 59.7 | 32.1 |
| Dairy products | 35.0 | 33.4 | 22.9 | 26.5 | 12.1 | 19.7 | <0.001 | 33.7 | 37.2 |
| Fats and oils | 11.0 | 5.6 | 9.6 | 5.2 | 1.4 | 1.7 | <0.001 | 13.5 | 14.8 |
| Confectionaries§ | 41.2 | 33.5 | 12.9 | 20.9 | 28.3 | 25.6 | <0.001 | 73.3 | 33.8 |
| Sweetened drinks || | 44.0 | 61.2 | 17.6 | 33.2 | 26.5 | 47.2 | 0.0014 | 57.4 | 44.3 |
| Tea and coffee | 301.2 | 191.7 | 192.3 | 126.7 | 108.8 | 115.1 | <0.001 | 33.7 | 26.4 |

\*Breakfast, lunch, and dinner were considered as “meals”. Eating occasions other than meals were considered as “snacks” regardless of the time of day or foods and beverages consumed.

†paired t-test.

‡Individuals who did not eat these foods on the research days were excluded from the calculation.

§Including cake, pastry, Japanese sweetened buns, Japanese sweets, savory snacks, cookies, biscuits, ice cream and other chilled desserts, candies, and chocolates.

||Including cola and other carbonated drinks, sports drinks, fruit juice excluding 100% juice, cocoa, sweetened coffee beverage, sweetened milk, sweetened soy milk, and lactic acid bacteria beverages.

**Supplemental Table 3. Daily food intake (g/day) according to tertile category of energy intake from snacks among Japanese nursery-school children \***

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | Tertile category of energy intake from snacks | | | | | |  |
|  | Lowest |  | Middle |  | Highest |  |  |
|  | n=126 |  | n=126 |  | n=126 |  |  |
|  | Mean | SD | Mean | SD | Mean | SD | p† |
| White rice | 189.7 | 56.3 | 177.5 | 62.3 | 189.6 | 71.4 | 0.91 |
| Noodle | 33.2 | 29.2 | 36.2 | 33.0 | 36.8 | 32.9 | 0.38 |
| Bread | 26.8 | 18.8 | 26.3 | 20.0 | 23.9 | 19.6 | 0.23 |
| Potato | 37.3 | 23.2 | 35.6 | 24.1 | 35.9 | 26.9 | 0.69 |
| Sugar | 8.0 | 5.4 | 8.5 | 5.2 | 11.8 | 8.7 | <0.0001 |
| Pulses and nuts | 30.9 | 21.9 | 32.2 | 22.7 | 31.1 | 23.3 | 0.97 |
| Total vegetable | 152.0 | 54.9 | 151.5 | 47.6 | 148.7 | 58.2 | 0.62 |
| Fruit | 71.9 | 48.0 | 81.1 | 50.7 | 92.6 | 67.9 | 0.0035 |
| Fruit/vegetable juice | 24.9 | 47.4 | 32.5 | 50.3 | 26.1 | 42.6 | 0.92 |
| Fish | 32.0 | 21.1 | 33.4 | 21.7 | 35.2 | 22.1 | 0.23 |
| Meat | 57.5 | 25.0 | 57.7 | 27.9 | 56.9 | 24.4 | 0.83 |
| Eggs | 28.4 | 19.1 | 28.6 | 17.4 | 30.6 | 18.8 | 0.33 |
| Milk | 126.9 | 95.2 | 148.5 | 98.6 | 153.1 | 101.9 | 0.04 |
| Dairy products | 35.0 | 30.7 | 31.8 | 32.4 | 38.2 | 36.8 | 0.40 |
| Fats and oils | 10.3 | 5.3 | 11.0 | 5.7 | 11.7 | 5.8 | 0.05 |
| Confectionaries ‡ | 26.0 | 24.4 | 36.2 | 25.7 | 61.5 | 38.0 | <0.0001 |
| Sweetened drinks § | 27.4 | 40.1 | 38.9 | 54.9 | 65.7 | 76.8 | <0.0001 |
| Tea and coffee drinks | 290.6 | 161.9 | 314.1 | 213.1 | 298.8 | 197.3 | 0.78 |

\* Breakfast, lunch, and dinner were considered as “meals” regardless of the time of day or foods and beverages consumed. Eating occasions other than meals were considered as “snacks”. Median (range) energy intake from snacks in each category was 703.0 kJ/day (208.9-855), 1079.4 kJ/day (867.9-1272.5), and 1532.9 kJ/day (1273.4-3009.1), respectively.

†Regression analysis using median values of energy intake from snacks for each category as independent variables.

‡Including cake, pastry, Japanese sweetened buns, Japanese sweets, savory snacks, cookies, biscuits, ice cream and other chilled desserts, candies, and chocolates.

§Including cola and other carbonated drinks, sports drinks, fruit juice excluding 100% juice, cocoa, sweetened coffee beverage, sweetened milk, sweetened soy milk, and lactic acid bacteria beverages.