**Supplementary Table 1.** Nutritional characteristics by ultra-processed food intake quartiles

| Characteristic | UPF intake quartiles | | | | *P* value[c] |
|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | |
| Nutrient density[a] | | | | | |
| Fiber, g | 4.9±0.1 | 4.5±0.1 | 4.2±0.1 | 3.6±0.1 | <0.0001 |
| Calcium, mg | 280.3±4.3 | 291.8±6.5 | 275.0±3.8 | 237.1±3.6 | <0.0001 |
| Phosphorous, mg | 655.3±3.9 | 648.0±3.6 | 610.9±3.4 | 531.8±3.3 | <0.0001 |
| Iron, mg | 8.7±0.2 | 9.0±0.2 | 8.2±0.1 | 7.0±0.2 | <0.0001 |
| Sodium, mg | 2,612±44 | 2,685±40 | 2,595±32 | 2,539±32 | 0.0318 |
| Potassium, mg | 1,768±21 | 1,709±15 | 1,624±16 | 1,392±13 | <0.0001 |
| Vitamin A, μgRE | 462.2±15.1 | 436.5±11.4 | 429.7±13.0 | 334.1±7.7 | <0.0001 |
| Carotene, μg | 2,572±88 | 2,332±66 | 2,275±74 | 1,724±44 | <0.0001 |
| Vitamin $B_1$, mg | 0.64±0.01 | 0.66±0.01 | 0.65±0.01 | 0.60±0.01 | <0.0001 |
| Vitamin $B_2$, mg | 0.56±0.01 | 0.59±0.01 | 0.59±0.01 | 0.55±0.01 | <0.0001 |
| Niacin, mg | 8.1±0.1 | 8.6±0.1 | 8.4±0.1 | 7.5±0.1 | <0.0001 |
| Vitamin C, mg | 63.6±1.3 | 59.9±1.1 | 56.8±1.1 | 45.4±0.9 | <0.0001 |
| Food group intake[b] | | | | | |
| Grains | 312.6±2.7 | 291.8±2.3 | 291.9±3.0 | 318.2±3.8 | <0.0001 |
| Potatoes | 51.0±3.9 | 44.2±3.1 | 33.3±2.2 | 22.4±2.2 | <0.0001 |
| Sugars | 5.0±0.2 | 7.9±0.3 | 8.9±0.4 | 7.6±0.4 | <0.0001 |
| Legumes | 43.1±2.0 | 42.9±1.9 | 44.0±2.1 | 31.4±2.0 | <0.0001 |
| Nuts | 4.9±0.7 | 7.1±1.9 | 4.2±0.7 | 1.7±0.8 | 0.0056 |
| Vegetables | 371.6±5.9 | 360.4±5.8 | 342.7±6.4 | 281.8±5.1 | <0.0001 |
| Mushrooms | 4.9±0.5 | 3.8±0.4 | 4.3±0.5 | 2.5±0.3 | 0.0008 |
| Fruits | 242.2±15.2 | 208.8±9.4 | 179.7±8 | 107.2±6.1 | <0.0001 |
| Seaweeds | 6.3±0.5 | 6.7±0.5 | 5.5±0.4 | 3.8±0.3 | <0.0001 |
| Meats | 53.1±2.5 | 83.7±3.8 | 78.3±3.0 | 58.6±2.9 | <0.0001 |
| Eggs | 11.2±0.7 | 16.1±1.0 | 16.8±0.8 | 17.6±0.9 | <0.0001 |
| Seafoods | 50.5±2.1 | 55.3±2.1 | 57.1±2.3 | 47.8±2.2 | 0.0091 |
| Dairy products | 44.0±3.3 | 55.9±3.5 | 66.3±4.4 | 59.1±3.5 | <0.0001 |

Values are presented as mean±standard error.
UPF, ultra-processed food; Q, quartile; μgRE, μg retinol equivalents.
[a]Nutrient density is expressed as each nutrient intake per 1,000 kcal, and values were obtained using the general linear model after adjusting for age and sex and weighted, [b]Food group intake is expressed as g/day, and values were obtained using the general linear model after adjusting for age, sex, and total energy intake and weighted, [c]*P* values for differences between quartile 1 and quartile 4 are determined using a two-sample *t*-test.