**Supplementary Table 1.** Food group components used to derive each cluster

| **Category used in cluster analysis** | **Items from Nutrition Data System for Research (NDSR)** **included in category** |
| --- | --- |
| Fruits | Citrus fruit, avocado and similar, fruit excluding citrus fruit |
| Vegetables | Dark-green vegetables, deep-yellow vegetables, tomato, vegetable juice, other vegetables |
| Starchy vegetables | White potatoes, other starchy vegetables |
| Legumes | Legumes |
| Whole grains | Whole grain varieties of grains, flour and dry mixed; loaf-type bread and plain rolls; other breads (quick breads, corn muffins, tortillas); pasta, ready-to-eat cereal (not presweetened and presweetened); baby food grain mixtures |
| Meat/dairy alternatives | Milk-nondairy, meat alternatives, cheese-nondairy, yogurt-nondairy, nondairy-based (sweetened, artificially sweetened, or unsweetened) meal replacement/supplement |
| Cheese/yogurt | Cheese (whole, reduced fat, low fat and fat free), yogurt (sweetened or artificially sweetened whole, low fat, and fat free) |
| Milk | Milk (whole, reduced fat, and low fat and fat free) |
| Eggs | Eggs, egg substitute |
| Nuts | Nuts and seeds, nuts and seed butters |
| Seafood | Fish-fresh and smoked, lean fish-fresh and smoked, shellfish |
| Poultry | Poultry, lean poultry |
| Beef/pork | Beef (full fat and lean), veal (full fat and lean), lamb (full fat and lean), fresh pork (full fat and lean), game |
| Cold cuts | Cold cuts and sausage (full fat and lean), cured pork (full fat and lean), organ meats, baby food meat mixtures |
| Artificially and unsweetened beverages | Artificially and unsweetened coffee, coffee substitutes, soft drinks, and tea; artificially sweetened fruit drinks, water, and milk beverage powder without non-fat dry milk |
| Fried produce | Fried fruit, fried potatoes, fried vegetables |
| Fried meat | Fried chicken (commercial entrée and fast food), fried fish (commercial entrée and fast food), fried shellfish (commercial entrée and fast food)  |
| Snacks | Fruit-based, vegetable-based, and meat-based savory snack; crackers, snack chips, and snack bars (whole grain, some whole grain, refined grain); popcorn (non-flavored and flavored) |
| Refined grains | Some whole grain and refined grain varieties of grains, flour and dry mixed; loaf-type bread and plain rolls; other breads (quick breads, corn muffins, tortillas); pasta, ready-to-eat cereal (not presweetened and presweetened); baby food grain mixtures + non-grain flour and similar |
| Desserts | Cakes, cookies, pies, pastries, Danish, doughnuts, and cobblers (whole grain, some whole grain, refined grain); frozen desserts (dairy and non-dairy); pudding and other dairy dessert (sugar and artificially sweetened); candy (non-chocolate and chocolate); frosting or glaze; sweet sauces (regular and reduce fat/reduced calorie/fat free); miscellaneous dessert; baby food dessert |
| Miscellaneous | Margarine (regular and reduced fat); oil, shortening; butter and other animal fats (regular and reduced fat); sugar; syrup, honey, jam, jelly, preserves; sugar substitute; cream (full, reduced fat, low fat and fat free, non-dairy); salad dressing (regular and reduced fat/reduced calorie/fat free); gravy (regular and reduced fat/fat free); sauces and condiments (regular and reduced fat); pickled foods; soup broth |
| Sugar-sweetened beverages | Sweetened coffee, coffee substitutes, fruit drinks soft drinks, tea, water, and flavored milk beverage powder without non-fat dry milk |
| Fruit juice | Citrus juice, fruit juice excluding citrus juice |
| Sweetened milk | Ready-to drink flavored milk (whole, reduced fat, low fat and fat free), sweetened (sugar or artificially) flavored milk beverage powder with non-fat dry milk |

**Supplementary Table 2.** Odds ratios (95% CIs) predicting membership in the Unhealthy compared to Healthy cluster†

|  |  |
| --- | --- |
|  | **Prevention studies** |
|  | *NET-Works*(*n*=527) | *GROW*(*n*=604) |
| **Child’s sex** |  |  |
|  Male | Ref. | Ref. |
|  Female | 0.98 (0.68, 1.41) | 0.71 (0.44, 1.14) |
| **Child’s age, years**  | 1.02 (0.77, 1.36) | 0.83 (0.63, 1.09) |
| **Child’s BMI, kg/m2** | 0.92 (0.82, 1.03) | 0.82 (0.59, 1.12) |
| **Highest household education** | \*\* |  |
|  <High school | Ref. | Ref. |
|  High school or GED | 1.90 (1.14, 3.17)\* | 1.32 (0.73, 2.38) |
|  ≥Some higher education | 2.48 (1.57, 3.91)\*\* | 1.30 (0.72, 2.31) |
| **Primary parent/guardian employment** |  |  |
|  Not working for pay | Ref. | Ref. |
|  Part time | 0.86 (0.54, 1.36) | 0.83 (0.45, 1.53) |
|  Full time | 1.19 (0.74, 1.90) | 1.81 (0.95, 3.42) |
| **SNAP participant** |  |  |
|  No | Ref. | Ref. |
|  Yes | 1.33 (0.87, 2.03) | 1.28 (0.74, 2.20) |
| **Primary parent/guardian marital status** |  |  |
|  Married/Living as married | Ref. | Ref. |
|  Single | 2.04 (1.35, 3.08)\*\* | 1.34 (0.74, 2.44) |
| **Primary parent/guardian weight status**‡ |  |  |
|  Underweight/Normal weight | Ref. | Ref. |
|  Overweight | 1.16 (0.69, 1.94) | 0.86 (0.43, 1.72) |
|  Obesity | 1.38 (0.84, 2.24) | 1.24 (0.63, 2.43) |

CIs, confidence intervals; NET-Works, Now Everyone Together for Healthy and Amazing Kids; GROW, Growing Right Onto Wellness; GED, General Equivalency Diploma; SNAP, Supplemental Nutrition Assistance Program, BMI, body mass index

†Models adjusted for all variables listed in the table

‡Parent’s weight status classified as follows: underweight/normal weight (BMI<25 kg/m2), overweight (BMI 25-29 kg/m2), obesity (BMI≥30 kg/m2)

\*p<0.05, \*\*p<0.01

**Supplementary Table 3.** Odds ratios (95% CIs) predicting cluster membership for the Dairy/SSB or Semi-Traditional compared to Healthy cluster in GROW or GOALS, respectively and the Sandwich compared to Mixed cluster in IMPACT†

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Prevention study** |  | **Treatment studies** |
|  | **GROW**(*n*=604) |  | **GOALS**(*n*=240) | **IMPACT**(*n*=341) |
|  | **Dairy/SSB vs. Healthy** |  | **Semi-Traditional vs. Healthy** | **Sandwich vs. Mixed** |
| **Child’s sex** |  |  |  |  |
|  Male | Ref. |  | Ref. | Ref. |
|  Female | 0.65 (0.44, 0.97)\* |  | 0.95 (0.56, 1.64) | 1.08 (0.69, 1.68) |
| **Child’s age, years**  | 0.87 (0.70, 1.09) |  | 1.07 (0.88, 1.30) | 1.07 (0.72, 1.58) |
| **Child’s BMI, kg/m2** | 1.00 (0.77, 1.28) |  | 0.97 (0.90, 1.05) | 1.05 (1.00, 1.10)\* |
| **Highest household education** |  |  |  |  |
|  <High school | Ref. |  | Ref. | Ref. |
|  High school or GED | 1.25 (0.78, 2.00) |  | 1.22 (0.58, 2.57) | 0.87 (0.45, 1.70) |
|  ≥Some higher education | 0.81 (0.50, 1.33) |  | 1.35 (0.66, 2.78) | 1.12 (0.60, 2.10) |
| **Primary parent/guardian employment** |  |  |  |  |
|  Not working for pay | Ref. |  | Ref. | Ref. |
|  Part time | 0.79 (0.48, 1.29) |  | 1.61 (0.79, 3.28) | 1.25 (0.68, 2.30) |
|  Full time | 1.25 (0.71, 2.20) |  | 1.40 (0.73, 2.67) | 1.14 (0.66, 1.98) |
| **SNAP participant** |  |  |  |  |
|  No | Ref. |  | Ref. | Ref. |
|  Yes | 1.56 (1.00, 2.43) |  | 1.05 (0.59, 1.87) | 1.22 (0.71, 2.10) |
| **Primary parent/guardian marital status** |  |  |  |  |
|  Married/Living as married | Ref. |  | Ref. | Ref. |
|  Single | 0.70 (0.41, 1.21) |  | 1.60 (0.68, 3.78) | 0.92 (0.57, 1.49) |
| **Primary parent/guardian weight status**‡ |  |  |  |  |
|  Under-/Normal weight | Ref. |  | Ref. | Ref. |
|  Overweight | 0.67 (0.39, 1.16) |  | 1.58 (0.66, 3.80) | 0.98 (0.41, 2.33) |
|  Obesity | 0.64 (0.37, 1.10) |  | 1.40 (0.60, 3.26) | 0.85 (0.40, 1.78) |

CIs, confidence intervals; GROW, Growing Right Onto Wellness; IMPACT, Ideas Moving Parents and Adolescents to Change Together; GED, General Equivalency Diploma; SNAP, Supplemental Nutrition Assistance Program, BMI, body mass index; SSB, sugar-sweetened beverages

†Models adjusted for all covariates listed in the table

‡Parent’s weight status classified as follows: underweight/normal weight (BMI<25 kg/m2), overweight (BMI 25-29 kg/m2), obesity (BMI≥30 kg/m2)

\*p<0.05, \*\*p<0.01