

1. SUPPLEMENTARY MATERIAL

Supplementary Table 1. Refractive index and nitrogen conversion factors used for each food product (listed in alphabetical order) for particle size distribution and protein content analyses. Foods are listed in alphabetical order.

Food Product	Brand	Refractive Index	Nitrogen Conversion Factor
Apple, var. <i>Granny Smith</i>	N/A	1.53 ⁴²	5.72 ⁴³
Beans, black with water	Trader Joe's	1.53 ²⁶	5.44 ⁴³
Beans, refried black	Trader Joe's	1.53 ²⁶	5.44 ⁴³
Beef, baby food	Gerber	1.52 ⁴⁴	5.72 ⁴³
Beverage, almond milk	Trader Joe's	1.1 ⁴⁵	5.18 ⁴⁶
Beverage, protein shake	Pure Protein	1.52 ⁴⁷	6.38 ⁴⁸
Cheese, cream spread	Trader Joe's	1.52 ⁴⁷	6.13 ⁴³
Cheese, <i>queso fresco</i>	El Mexicano	1.46 ⁴⁹	6.13 ⁴³
Chicken, canned	Trader Joe's	1.46 ⁵⁰	5.82 ⁴³
Coffee, cold brew	Trader Joe's	1.53 ²⁶	6.25 ⁵¹
Hummus, plain	Trader Joe's	1.46 ⁴⁹	5.4 ⁵²
Juice, apple	Tropicana	1.53 ⁴²	5.72 ⁴³
Juice, carrot	Trader Joe's	1.73 ⁵³	6.49 ⁵⁴
Juice, pineapple	Trader Joe's	1.53 ⁵⁵	5.72 ⁴³
Lentils, steamed	Trader Joe's	1.53 ²⁶	5.4 ⁵²
Milk, half and half	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Milk, low-fat	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Milk, non-fat	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Milk, whipping cream	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Milk, whole	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Peanut butter, creamy unsalted	Trader Joe's	1.50 ⁵⁶	5.46 ⁵⁷
Potato, boiled	N/A	1.53 ²⁶	5.18 ⁴³
Rice, brown	Hinode	1.53 ⁵⁸	5.37 ⁴³
Rice, white	Hinode	1.53 ⁵⁸	5.37 ⁴³
Tofu, organic uncooked	Trader Joe's	1.47 ⁵⁹	5.50 ⁶⁰
Tomato, paste	Hunt's	1.46 ⁶¹	6.26 ⁴³
Tuna, canned in water	StarKist	1.52 ⁴⁴	5.82 ⁴³
Yogurt, Greek	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Yogurt, non-fat Greek	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³
Yogurt, plain	Trader Joe's	1.52 ⁴⁷	6.02 ⁴³

Supplementary Table 2. Transition sharpness and coefficient of determination (R^2) of the empirical model (Eq. 1). Foods are listed in alphabetical order.

Food Product	Transition sharpness (c) (dimensionless)	R^2
Apple, <i>Granny Smith</i>	183	1.00
Beans, black with water	74	0.99
Beans, refried black	75	0.99
Beef, baby food	61	0.98
Beverage, almond milk	137	1.00
Beverage, protein shake	90	1.00
Cheese, cream spread	108	0.98
Cheese, <i>queso fresco</i>	38	0.99
Chicken, canned	28	0.97
Coffee, cold brew	185	0.99
Hummus, plain	79	0.99
Juice, apple	149	0.98
Juice, carrot	124	0.98
Juice, pineapple	199	0.99
Lentils, steamed	64	1.00
Milk, half and half	148	1.00
Milk, low-fat	132	0.99
Milk, non-fat	148	1.00
Milk, whipping cream	227	0.97
Milk, whole	135	1.00
Peanut butter, creamy unsalted	43	0.93
Potato, boiled	66	0.98
Rice, brown	200	0.95
Rice, white	198	0.97
Tofu, organic uncooked	135	0.99
Tomato, paste	48	1.00
Tuna, canned in water	24	0.98
Yogurt, Greek	104	1.00
Yogurt, non-fat Greek	109	0.98
Yogurt, plain	97	1.00