

**Definition of ultra-processed products:** Ultra-processed products are industrial formulations of ingredients that result from a series of industrial processes to enhance their sensory qualities. They are commonly nutritionally unbalanced and hyper-palatable.

Flavored prepared milk (chocolate or other flavor) or flavoring added to milk

Industrialized yogurt and dairy products

Sandwich, hamburger, pizza, and hot dog

Longaniza or chorizo, sausage, ham, or mortadella

Saltine crackers

Breakfast cereal, sweetened or light

Soda, regular or diet

Non-dairy coffee creamer

Industrialized flavored beverages or waters

Chocolate

Candies and chocolate

Spicy Mexican candy

Fried snack

Marshmallow

Jello, flan, cake, or pie

Ice cream

Microwaveable popcorn

Industrialized pastries and doughnuts

Sweetened cookies and cereal bars

Instant soups

Margarine and mayonnaise

Vegetable shortenings

Industrialized sauces and dressings

Industrialized wheat flour tortilla

**Figure S1.** Food and beverages of semi-quantitative food consumption frequency questionnaire classified as ultra-processed products.

Table S1. Characteristics of children by socioeconomic status in 2006 and 2016.

Socioeconomic status <sup>a</sup>	Children					
	Year 2006			Year 2016		
	Tertile 1	Tertile 2	Tertile 3	Tertile 1	Tertile 2	Tertile 3
Sample <sup>b</sup> ,	2953	2931	2190	1421	950	563
Total energy intake kcal/d, mean (95% CI)	1391, (1353, 1430)	1559, (1521, 1596)	1681, (1636, 1726)	1524, (1460, 1588)	1594, (1528, 1659)	1707, (1631, 1782)
Ultra-processed products						
kcal/d, mean (95% CI)	284, (263, 305)	464, (444, 483)	591, (564, 619)	379, (348, 409)	510, (470, 550)	617, (563, 670)
% of energy, mean (95% CI)	19.4, (18.2, 20.7)	29, (28, 30)	34.4, (33.3, 35.5)	23.9, (22.1, 25.7)	31.3, (29.4, 33.3)	35.6, (32.8, 38.4)
Age, mean (95% CI)	8.7, (8.6, 8.8)	8.8, (8.7, 8.9)	8.8, (8.6, 8.9)	7.9, (7.7, 8.1)	8.2, (8, 8.5)	7.9, (7.7, 8.2)
Sex, % (95% CI)						
Men	49.5, (46.6, 52.4)	49.7, (46.7, 52.7)	50, (46.6, 53.4)	47, (43.1, 51)	51, (45.7, 56.3)	56.6, (49.1, 63.7)
Women	50.5, (47.6, 53.4)	50.3, (47.3, 53.3)	50, (46.6, 53.4)	53, (49, 56.9)	49, (43.7, 54.3)	43.4, (36.3, 50.9)
Screen time, % (95%CI)						
less than 7 hr/week	83.5, (80.1, 86.4)	66.1, (60.5, 71.3)	47.2, (40.5, 54)	12.2, (8.5, 17.2)	6, (3, 11.5)	1.8, (0.5, 6.2)
7 to 13 hr/week	15.6, (12.7, 19)	31.9, (26.9, 37.3)	42.5, (35.9, 49.3)	25.7, (17.3, 36.2)	10.2, (6.3, 16)	5.2, (1.7, 14.8)
14 to 20 hr/week	0.9, (0.5, 1.7)	2, (1, 3.7)	9.2, (4.8, 16.8)	15.6, (10.4, 22.7)	17.1, (10.3, 26.9)	10.9, (5.9, 19.1)
21 or more hr/week	0, (0, 0)	0.1, (0, 0.3)	1.1, (0.3, 4.2)	46.5, (37, 56.3)	66.8, (57.5, 75)	82.2, (71.5, 89.4)
Head of household educational level <sup>c</sup>						
Low	80.9, (78.1, 83.4)	63, (59.6, 66.3)	42.3, (38, 46.8)	54.3, (49.1, 59.4)	36.6, (30.9, 42.8)	22, (16.1, 29.4)
Medium	18.8, (16.3, 21.6)	35.8, (32.6, 39.3)	45.8, (41.4, 50.3)	44.7, (39.6, 49.9)	61.4, (55.3, 67.2)	55.1, (46.7, 63.4)
High	0.3, (0.2, 0.6)	1.2, (0.8, 1.8)	11.9, (8.2, 16.9)	1, (0.5, 1.9)	1.9, (1, 3.5)	22.8, (14.4, 34.2)
Indigenism						
Indigenous	43.1, (38.2, 48.1)	16.3, (14, 18.9)	8.5, (7, 10.3)	9.7, (5.7, 16.1)	2, (1, 4)	0.5, (0.1, 1.9)
Nonindigenous	56.9, (51.9, 61.8)	83.7, (81.1, 86)	91.5, (89.7, 93)	90.3, (83.9, 94.3)	98, (96, 99)	99.5, (98.1, 99.9)
Area <sup>d</sup> , % (95% CI)						
Urban	36.7, (32, 41.7)	62.8, (58.4, 67.1)	86.9, (84.2, 89.3)	52.7, (46.1, 59.3)	75.3, (69.1, 80.6)	86.7, (80.4, 91.1)
Rural	63.3, (58.3, 68)	37.2, (32.9, 41.6)	13.1, (10.7, 15.8)	47.3, (40.7, 53.9)	24.7, (19.4, 30.9)	13.3, (8.9, 19.6)
Region, % (95% CI)						
North	7.7, (4.9, 12.1)	14.2, (11.7, 17.3)	16.4, (13.4, 19.9)	16.2, (10.3, 24.6)	22.5, (16.8, 29.4)	23, (13.7, 36.1)
Central and Mexico City	30, (24.5, 36.1)	53, (47.6, 58.3)	68.8, (64, 73.2)	33.8, (28.5, 39.6)	51.7, (42.9, 60.3)	56.1, (44.9, 66.7)
South	62.3, (55.8, 68.4)	32.8, (28.2, 37.7)	14.8, (12.3, 17.8)	49.9, (43.2, 56.6)	25.9, (19.7, 33.2)	20.9, (13.8, 30.3)
Health conditions						
Only anemia <sup>e</sup>	10.4, (8.6, 12.4)	8.9, (7, 11.2)	8.8, (6.4, 12)	10.6, (8.2, 13.6)	9.1, (6.5, 12.6)	7.6, (5.2, 11)
Only overweight and obesity <sup>f</sup>	19.7, (17.5, 22.2)	30.9, (27.9, 34)	36.8, (32.9, 40.8)	19.1, (16, 22.6)	29.4, (23.5, 36.2)	41, (33.3, 49.2)
Double Burden of Malnutrition <sup>g</sup>	2.1, (1.5, 2.8)	3.3, (2.5, 4.3)	2.9, (2, 4.2)	4.5, (3, 6.9)	2.8, (1.5, 5.3)	2.2, (1.1, 4.1)
Health conditions						
Anemia <sup>e</sup>	12.4, (10.5, 14.6)	12.2, (10.1, 14.6)	11.7, (9.2, 14.9)	15.1, (12.4, 18.4)	11.9, (8.9, 15.8)	9.8, (6.9, 13.7)
Excess weight <sup>f</sup>	21.8, (19.4, 24.3)	34.2, (31.2, 37.4)	39.7, (35.7, 43.8)	23.6, (20.3, 27.2)	32.2, (25.9, 39.3)	43.2, (35.6, 51.2)
Double Burden of Malnutrition <sup>g</sup>	2.1, (1.5, 2.8)	3.3, (2.5, 4.3)	2.9, (2, 4.2)	4.5, (3, 6.9)	2.8, (1.5, 5.3)	2.2, (1.1, 4.1)

<sup>a</sup> Socioeconomic status was derived using the principal components method; the index score was divided into tertiles to represent a low, medium, and high socioeconomic status.

<sup>b</sup> Estimated population (thousand) by socioeconomic status; Tertile 1: Year 2006 N=3310.4, Year 2016 N=5370.5, Tertile 2: Year 2006 N=3056, Year 2016 N=5439.5 Tertile 3: Year 2006 N=2991, Year 2016 N=4967.5.

<sup>c</sup> Head of household educational level: Low—no formal education to elementary school; Medium—middle and high school education; and High—college and postgraduate courses.

<sup>d</sup> Area rural defined by 1. Rural localities with less than 2,500 habitants, and urban with 2,500 or more.

<sup>e</sup> Anemia: The Hb concentrations to diagnose anemia adjusted by altitude were <11.5g/dl for children 5 to 11 years old; <12.0 g/dl for adolescents 12 to 14 years old; <12.0 g/dl for females  $\geq$  15 years old, and <13.0 g/dl for males  $\geq$  15 years old.

<sup>f</sup> Excess weight: Overweight or Obesity. Children and adolescents with z scores above +1 were classified as overweight and obese with z scores above +2 standard deviations.

<sup>g</sup> Individuals with anemia and overweight or obesity.

Table S2. Characteristics of adolescents by socioeconomic status in 2006 and 2016.

Socioeconomic status <sup>a</sup> Sample <sup>b</sup> , n	Adolescents					
	Year 2006			Year 2016		
	Tertile 1 2034	Tertile 2 2409	Tertile 3 2039	Tertile 1 916	Tertile 2 720	Tertile 3 481
Total energy intake kcal/d, mean (95% CI)	1684, (1635, 1732)	1779, (1735, 1824)	1846, (1802, 1890)	1976, (1885, 2067)	2011, (1921, 2100)	2080, (1965, 2195)
Ultra-processed products						
kcal/d, mean (95% CI)	263, (244, 282)	428, (407, 449)	541, (519, 564)	491, (434, 549)	600, (552, 648)	675, (611, 739)
% of energy, mean (95% CI)	15.8, (14.6, 16.9)	23.8, (22.8, 24.9)	29, (28.1, 30)	23.7, (21.7, 25.6)	29.1, (27.4, 30.9)	32, (30, 33.9)
Age, mean (95% CI)	15, (14.8, 15.1)	15.1, (15, 15.3)	15.3, (15.2, 15.4)	15.2, (15, 15.4)	15.4, (15.2, 15.7)	15.4, (15.2, 15.7)
Sex, % (95% CI)						
Men	49.6, (46.4, 52.7)	48.4, (45.3, 51.6)	50.5, (46.6, 54.4)	48.4, (42.5, 54.4)	49.3, (43.5, 55.3)	51.6, (45.5, 57.7)
Women	50.4, (47.3, 53.6)	51.6, (48.4, 54.7)	49.5, (45.6, 53.4)	51.6, (45.6, 57.5)	50.7, (44.7, 56.5)	48.4, (42.3, 54.5)
Screen time, % (95%CI)						
less than 7 hr/week	77.7, (74.8, 80.4)	65.6, (62.7, 68.4)	48.8, (45.2, 52.4)	10, (7.2, 13.8)	4.6, (2.9, 7.2)	1.6, (0.8, 2.9)
7 to 13 hr/week	20.3, (17.7, 23.1)	29.9, (27.3, 32.7)	38.9, (35.7, 42.3)	19.3, (15, 24.4)	11.8, (8.6, 15.9)	4.2, (2.3, 7.4)
14 to 20 hr/week	1.8, (1.2, 2.7)	3.9, (2.9, 5.1)	9.7, (7.6, 12.2)	14.2, (10.1, 19.5)	13, (9.7, 17.2)	6.8, (4.3, 10.5)
21 or more hr/week	0.2, (0, 0.6)	0.6, (0.2, 2)	2.6, (1.2, 5.5)	56.5, (50.1, 62.8)	70.7, (65.7, 75.2)	87.5, (83.1, 90.9)
Head of household educational level <sup>c</sup>						
Low	87.7, (85.2, 89.7)	70, (66.7, 73.1)	46, (42.6, 49.5)	64.4, (58.2, 70.2)	49.3, (43.5, 55.1)	24.6, (19.5, 30.6)
Medium	12.1, (10, 14.5)	28.4, (25.4, 31.6)	43.9, (40.3, 47.5)	35.3, (29.5, 41.5)	47, (41.1, 53)	57.8, (51.4, 64)
High	0.2, (0.1, 0.6)	1.6, (0.9, 2.7)	10.1, (7.8, 13.1)	0.3, (0.1, 0.9)	3.7, (2.2, 6.1)	17.5, (11.6, 25.7)
Indigenism						
Indigenous	42.4, (37, 47.9)	18, (15.3, 20.9)	10.4, (8.6, 12.7)	9.9, (6.4, 15.1)	4, (1.8, 8.5)	0.4, (0.1, 1.2)
Nonindigenous	57.6, (52.1, 63)	82, (79.1, 84.7)	89.6, (87.3, 91.4)	90.1, (84.9, 93.6)	96, (91.5, 98.2)	99.6, (98.8, 99.9)
Area <sup>d</sup> , % (95% CI)						
Urban	34.7, (29.7, 40)	57.8, (53.5, 62)	83, (79.8, 85.8)	51.7, (45, 58.3)	75.1, (70.4, 79.3)	87.7, (82.3, 91.6)
Rural	65.3, (60, 70.3)	42.2, (38, 46.5)	17, (14.2, 20.2)	48.3, (41.7, 55)	24.9, (20.7, 29.6)	12.3, (8.4, 17.7)
Region, % (95% CI)						
North	7, (4.7, 10.1)	14, (11.5, 17)	19, (16, 22.5)	10.2, (6.9, 14.8)	20, (14.9, 26.2)	20.8, (15.2, 27.7)
Central and Mexico City	27, (21.5, 33.4)	51.1, (45.8, 56.3)	63.8, (59.2, 68.2)	38.7, (32.2, 45.6)	51.8, (45.6, 58)	56.7, (48.4, 64.6)
South	66, (59.5, 72)	34.9, (30.2, 39.9)	17.1, (14.3, 20.3)	51.1, (44.3, 57.8)	28.2, (23, 34.1)	22.6, (15.5, 31.6)
Health conditions						
Only anemia <sup>e</sup>	7.2, (5.9, 8.8)	4.8, (3.8, 6)	5.2, (3.9, 6.8)	9, (6.4, 12.6)	9.9, (6.7, 14.4)	4.2, (2.7, 6.6)
Only overweight and obesity <sup>f</sup>	20.7, (18.2, 23.4)	29.3, (26.6, 32.2)	32.6, (29.6, 35.7)	26.7, (22.2, 31.8)	29.9, (25.2, 35.1)	42.3, (36.7, 48.2)
Double Burden of Malnutrition <sup>g</sup>	2.4, (1.6, 3.6)	3.7, (2.5, 5.2)	2.3, (1.4, 3.7)	4.2, (2.4, 7.3)	2.7, (1.6, 4.4)	1.9, (1, 3.5)
Health conditions						
Anemia <sup>e</sup>	9.6, (8, 11.3)	8.4, (6.9, 10.4)	7.4, (5.8, 9.5)	13.3, (9.9, 17.6)	12.6, (9.2, 17)	6.1, (4.2, 8.8)
Excess weight <sup>f</sup>	23.1, (20.3, 26)	33, (30.1, 36)	34.8, (31.8, 38)	31, (26, 36.4)	32.6, (27.8, 37.8)	44.2, (38.5, 50.1)
Double Burden of Malnutrition <sup>g</sup>	2.4, (1.6, 3.6)	3.7, (2.5, 5.2)	2.3, (1.4, 3.7)	4.2, (2.4, 7.3)	2.7, (1.6, 4.4)	1.9, (1, 3.5)

<sup>a</sup> Socioeconomic status was derived using the principal components method; the index score was divided into tertiles to represent a low, medium, and high socioeconomic status.

<sup>b</sup> Estimated population (thousand) by socioeconomic status; Tertile 1: Year 2006 N=2973.5, Year 2016 N=5044.3, Tertile 2: Year 2006 N=3097.3, Year 2016 N=5194.8 Tertile 3: Year 2006 N=3056.1, Year 2016 N=5210.6.

<sup>c</sup> Head of household educational level: Low—no formal education to elementary school; Medium—middle and high school education; and High—college and postgraduate courses.

<sup>d</sup> Area rural defined by 1. Rural localities with less than 2,500 habitants, and urban with 2,500 or more.

<sup>e</sup> Anemia: The Hb concentrations to diagnose anemia adjusted by altitude were <11.5g/dl for children 5 to 11 years old; <12.0 g/dl for adolescents 12 to 14 years old; <12.0 g/dl for females  $\geq$  15 years old, and <13.0 g/dl for males  $\geq$  15 years old.

<sup>f</sup> Excess weight: Overweight or Obesity. Children and adolescents with z scores above +1 were classified as overweight and obese with z scores above +2 standard deviations.

<sup>g</sup> Individuals with anemia and overweight or obesity.