

Supplemental Table S1. Food Categories by BNS codes.

Food Categories	BNS Codes	Descriptions
PASTA, RICE, CEREAL GRAINS AND FLOUR - 01		
1	01A	pasta
1	01B	rice
1	01C	cereal grains and flours
1	130A	those in the ingredient column - we think this is an error in the database, but this is spaghetti (1 food entry)
WHITE BREADS - 02		
2	02A	white bread
WHOLEMEAL BREADS - 03		
3	03A	whole wheat bread
3	03B	other whole grains
OTHER BREADS - 04		
4	04A	rolls, bagels, pita bread, croutons, dumplings, matzo, tortilla
4	04B	crackers and crispbreads
4	04C	muffin and english muffin
4	04D	pancakes and waffles
4	04E	croissants, piecrusts & phyllo dough
4	04F	dry mixes (cakes, muffins, pancakes)
4	219B	those in the ingredient column - we think this is an error in the database, but this is submarine (1 entry)
WHOLEGRAIN AND HIGH FIBRE BREAKFAST CEREALS - 05		
5	05A	whole grain, oats and high fibre breakfast cereals
OTHER BREAKFAST CEREALS - 06		
6	06A	breakfast cereals
COOKIES, BISCUITS AND GRANOLA BARS - 07 (+SUG150B COOKIE)		
7	07A	cookies, commercial
7	07B	biscuits, commercial
7	07C	granola bar
7	150B	cookie
CAKES, PIES, DANISHES AND OTHER PASTRIES - 08 (+SUG150 RECIPES EXCEPT COOKIE IN ABOVE)		
8	08A	pies, commercial
8	08B	cakes, commercial (frozen cake)
8	08C	danishes, doughnuts and other pastries, commercial
8	150A	cakes, cheesecakes, shortcakes and brownies
8	150C	danishes, turnovers & pastries
8	150D	donuts
8	150E	muffins
8	150F	pies (including pie shell)
8	150G	squares & bars

8	150H	sweet rolls and breads
8	150I	filled crepes, bintzes, cobblers
FROZEN DAIRY PRODUCTS - 09		
9	09A	ice cream
9	09B	ice milk
9	09C	frozen yoghurt
MILKS - 10		
10	10A	milk, whole
10	10B	milk, 2%
10	10C	milk, 1%
10	10D	milk, skim
10	10E	milk, evaporated, whole
10	10F	milk, evaporated, 2%
10	10G	milk, evaporated, skim
10	10H	milk, condensed
10	10I	other types of milk (whey, buttermilk)
10	10J	plant-based beverage (soy, almond, coconut)
10	10K	goat and sheep milk
CREAMS - 13		
13	13A	whipping cream
13	13B	table cream
13	13C	half & half cream
13	13D	sour cream
CHEESES - 14		
14	14A	cottage cheese
14	14B	cheese, less than 10% B.F.
14	14C	cheese, 10% B.F. to 25% B.F.
14	14D	cheese, more than 25% B.F.
YOGURTS (NATURAL AND WITH FRUIT) - 15		
15	15A	yoghurts, less than 2% B.F.
15	15B	yoghurts, more than 2.1% B.F.
EGGS - 16		
16	16A	egg
16	16B	egg substitutes
BUTTERS - 17		
17	17A	butter
MARGARINES + OTHER FATS & SPREADS - 18, 20, 21 = 18		
18	18A	regular tub margarine
18	18B	calorie-reduced tub margarine
18	20A	block margarine
18	21A	vegetable oils
18	21B	animal fats
18	21C	shortening
18	227A	those in the ingredient column - we think this is an error in the database, but these are all fats and oils

RED MEATS - 22, 23, 24, 25, 28, 29, 30, 31, 32 = 22		
22	22A	beef, lean only
22	22B	beef, lean + fat
22	22C	beef, ground
22	23A	veal, lean only
22	23B	veal, lean + fat (incl ground veal)
22	24A	lamb, lean only
22	24B	lamb, lean + fat (incl ground lamb)
22	25A	pork, fresh, lean only
22	25B	pork, fresh, lean + fat
22	25C	bacon
22	25D	ham, cured, lean only
22	25E	ham, cured, lean + fat
22	28A	liver
22	28B	liver pate
22	29A	offal
22	31A	game meat
SAUSAGE + LUNCHEON MEATS (SOME SUGAR ADDED) - 30+32 = 23		
23	30A	sausage
23	32A	luncheon meat
POULTRY - 27		
27	27A	chicken, meat only
27	27B	chicken, meat + skin
27	27C	turkey, meat only
27	27D	turkey, meat + skin (incl ground turkey)
27	27E	other birds (duck, pheasant, pigeon)
27	27F	birds, skin only
NUTS, SEEDS AND PEANUT BUTTER - 33		
33	33A	nuts
33	33B	seeds
33	33C	peanut butter and other nut spreads
FISH + SHELLFISHES - 34, 35 = 34		
34	34A	fish, less than 6% total fat
34	34B	fish, superior or equal to 6% total fat
34	35A	shellfish
VEGETABLES - 36		
36	36A	beans
36	36B	broccoli
36	36C	cabbage and kale
36	36D	cauliflower
36	36E	carrots
36	36F	celery
36	36G	corn
36	36H	lettuces & leafy greens (spinach, mustard greens, etc.)

36	36I	mushrooms
36	36J	onion, green onions, leeks, garlic
36	36K	beans and snow peas
36	36L	peppers, red & green
36	36M	squashes
36	36N	tomatoes
36	36O	juices, tomato & vegetable
36	36P	other veg (cucumber, immature beans, brussels sprouts, beets, turnips)
VEG SOUPS - 501		
501	50A	soups with vegetables
501	50B	soups without vegetables
LEGUMES - 37		
37	37A	legume
37	37B	foods made with vegetable proteins (tofu)
POTATOES, FRIED - 38		
38	38A	potato chips
38	38B	fried or roasted potatoes
POTATOES, RAW AND COOKED (EXCLUDING FRIED) - 39		
39	39A	potato
FRUIT - 40		
40	40A	citrus fruits
40	40B	apple
40	40C	banana
40	40D	cherries
40	40E	grapes and raisins
40	40F	melons
40	40G	peaches, nectarines
40	40H	pears
40	40I	pineapple
40	40J	plums and prunes
40	40K	strawberries
40	40L	other fruits (blueberries, dates, kiwis, fruit salads, etc)
SUGARS, SYRUPS AND PRESERVES - 41		
41	41A	sugars (white and brown)
41	41B	jams, jellies and marmalade
41	41C	other sugars (syrups, molasses, honey, etc)
41	41D	sugar substitutes
SAVORY SNACKS - 42		
42	42A	popcorn, plain & pretzels
42	42B	salty and high fat snacks (incl tortilla chips)
CONFECTIONARY - 43 + 44 = 43		
43	43A	candies, gums, etc
43	43B	ice pop, sherbet
43	43C	gelatin, dessert toppings and pudding mixes, commercial

43	44A	chocolate bar
FRUIT JUICE - 45		
45	45A	fruit juice
ALCOHOLIC BEVERAGES - 47, 48, 49 = 47		
47	47A	spirits
47	47B	liqueurs
47	48A	wine
47	49A	beer
47	49B	ciders and coolers
CONDIMENTS + GRAVIES – 50+53 =50		
50	50C	gravies
50	50D	sauces (white, bearnaise, soya, tartar, ketchup, etc)
50	50E	salad dressings (with or without oil)
50	50F	seasonings (salt, vinegar, etc)
50	53A	spices
50	53B	others (baking soda, baking power, yeast, etc)
TEA + COFFEE – 51+231B+231C = 51		
51	51A	tea (incl iced tea)
51	51B	coffee
51	51C	water
51	231B	tea (recipe sub-group)
51	231C	coffee (recipe sub-group)
BABYFOOD PRODUCTS - 52		
52	52A	babyfood product
52	52B	infant formula
SUPPLEMENTED BARS, SHAKES AND MEAL REPLACEMENTS - 54		
54	54A	energy bar
54	54B	protein bar and shake
54	54C	meal replacements
SOFT DRINKS - REGULAR – 46A = 60		
60	46A	soft drinks - regular
SOFT DRINKS - DIET -46B = 61		
61	46B	soft drinks - diet
FRUIT DRINKS – 46C = 62		
62	46C	fruit drinks
OTHER BEVERAGES - 46D-G + 231D = 63		
63	46D	other beverages (malted milk, chocolate beverage)
63	46E	energy drink
63	46F	vitamin water
63	46G	sports drink
63	231D	milk-based beverage (milk shakes, malted milk, hot cocoa, instant breakfast, etc)

Supplemental Table S2. Demographic information of the study population (n=11,817)

	Frequency		Total Sugars (%E)		P-value ^b
	n	%	Mean ^a	SE	
Sex					<0.0001
Male	5670	48%	18.0	0.2	
Female	6147	52%	19.7	0.2	
Age/sex groupings					0.012
Male 19 to 30 years	765	6%	17.4	1.1	
Female 19 to 30 years	757	6%	20.7	0.6	
Male 31 to 50 years	1839	16%	18.3	0.4	
Female 31 to 50 years	1945	16%	19.1	0.4	
Male 51 to 70 years	1961	17%	17.5	0.4	
Female 51 to 70 years	2105	18%	19.4	0.3	
Male 71 or older	1105	9%	19.6	0.7	
Female 71 or older	1340	11%	20.8	0.8	
Type of smoker					0.759
Daily	1749	15%	19.2	0.5	
Occasionally	540	5%	17.6	0.9	
Not at all	9519	81%	18.8	0.2	
Self-perceived health					0.034
Excellent	2209	19%	18.4	0.3	
Very good	4391	37%	18.8	0.3	
Good	3705	31%	18.8	0.3	
Fair	1178	10%	20.0	1.0	
Poor	321	3%	20.6	1.9	
Has high blood pressure					0.160
Yes	2888	24%	18.4	0.3	
No	8899	75%	18.9	0.2	
Has diabetes					0.006
Yes	1092	9%	17.3	0.5	
No	10707	91%	18.9	0.2	
Has heart disease					0.687
Yes	788	7%	20.1	0.6	
No	10996	93%	18.8	0.2	

Has cancer					0.662
Yes	290	2%	19.7	0.8	
No	11504	97%	18.8	0.2	
Has osteoporosis^c					0.507
Yes	793	7%	19.7	1.9	
No	5915	50%	18.9	0.2	
Body Mass Index					0.584*
18.5 to <25 kg/m ²	3826	32%	18.8	0.4	
25 to <30 kg/m ²	4359	37%	19.0	0.3	
30 to <35 kg/m ²	2315	20%	19.1	0.4	
35 to <40 kg/m ²	850	7%	18.1	1.3	
40 and over kg/m ²	467	4%	17.8	0.7	
Highest level of education					0.711
Less than high school diploma or its equivalent	1934	16%	19.1	0.9	
High school diploma or a high school equivalency certificate	3043	26%	19.2	0.3	
Certificate/diploma - trade/college/non-university/university below Bachelor's	3924	33%	18.3	0.2	
Bachelor's degree or university certificate/diploma/degree above Bachelor's level	2846	24%	19.0	0.3	
Income					0.188
\$0 - \$19,999	1311	11%	20.1	0.7	
\$20,000 - \$39,999	2503	21%	18.9	1.1	
\$40,000 - \$59,999	2114	18%	19.4	0.5	
\$60,000 - \$79,999	1651	14%	19.3	0.5	
\$80,000 - \$99,999	1183	10%	18.6	0.5	
\$100,000 - \$119,999	970	8%	17.7	0.9	
\$120,000 - \$139,999	617	5%	18.1	0.7	
\$140,000 and higher	1461	12%	18.4	0.5	

a adjusted for misreporting

b P-values of the association between covariates and total sugars intake as % of energy, significant if $p < 0.05$

c Respondents aged 50 and over

*When assessed as a continuous variable, $p = 0.586$ for the association with total sugars (%E)

The number of responses which did not indicate a selected option (i.e. "valid skip", "refusal", "don't know", "not stated" responses) were the following: type of smoker (n=9, 0.1%), self-perceived health (n=13, 0.1%), has high blood pressure (n=30, 0.3%), has diabetes (n=18, 0.2%),

has heart disease (n=33, 0.3%), has cancer (n=23, 0.2%), has osteoporosis (n=5109, 43.2%, the majority of which is because this only included responses from women ≥ 50 y), highest level of education (n=70, 0.6%), income (n=7, 0.1%).

Supplementary Table S3. Adjusted means (g/day) and confidence intervals of non-essential food categories and confidence intervals by quintiles of total sugars intake (% energy) in all adults (n=11,817) in Models 1 and 2*

	Q1				Q3				Q5				Model 1	Model 2
	n=2,364				n=2,363				n=2,364					
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2			
Food Category	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	p-values**	p-values**
Creams	8.3	6.0, 10.5	8.4	6.3, 10.4	7.2	5.9, 8.4	7.4	6.1, 8.7	6.8	5.4, 8.1	7.0	5.7, 8.4	0.5611	0.592
Cheeses	36.6	31.6, 41.3	35.8 ^y	31.6, 40.0	25.4	21.9, 28.9	24.7	22.5, 27.0	16.8	13.6, 20.1	17.8	14.7, 21.0	<.0001	0.002
Eggs	33.8	25.5, 42.1	31.7 ^y	25.6, 37.9	24.4	21.4, 27.4	22.9 ^y	19.9, 25.9	15.0	12.8, 17.2	15.3	12.8, 17.9	<.0001	<.0001
Butters	3.3	2.2, 4.4	3.5	2.2, 4.8	3.2	2.6, 3.7	3.3	2.8, 3.8	2.5	1.8, 3.2	2.8	2.0, 3.5	0.0267	0.069
Margarines, other fats, spreads	15.4	12.8, 18.0	14.9 ^y	12.7, 17.1	12.0	11.1, 12.9	11.7 ^y	10.8, 12.5	7.9	7.1, 8.6	8.2	7.5, 8.9	<.0001	<.0001
Red meats	60.6	52.1, 69.0	57.6 ^y	50.2, 65.0	48.9	42.8, 54.9	48.5 ^y	43.3, 53.6	33.3	28.3, 38.2	35.8	31.6, 40.0	<.0001	<.0001
Sausage, luncheon meats	22.2	18.1, 26.4	21.4 ^y	16.6, 26.2	18.4	14.5, 22.4	19.1	16.1, 22.0	13.2	10.5, 16.0	14.5	11.4, 17.6	0.0009	0.006
Poultry	58.0	45.8, 70.2	53.5 ^y	43.3, 63.6	48.2	39.1, 57.2	44.6 ^y	36.5, 52.7	31.4	25.4, 37.4	31.5	24.0, 39.0	<.0001	<.0001
Nuts, seeds, peanut butter	13.4	9.8, 17.1	13.1 ^y	9.9, 16.2	11.4	9.4, 13.4	10.9 ^y	9.3, 12.5	7.1	5.3, 8.8	7.6	5.9, 9.3	<.0001	<.0001
Fish, shellfish	23.3	16.0, 30.7	22.3	16.8, 27.8	20.4	14.4, 26.4	19.2	14.2, 24.2	12.4	7.7, 17.2	12.8	8.6, 17.0	0.0035	0.009
Vegetables, vegetable soups	160.1	145.5, 174.6	157.0	143.8, 170.3	170.3	155.1, 185.4	164.9	148.5, 181.4	168.6	148.6, 188.6	169.5	150.6, 188.5	0.6069	0.629
Legumes	15.5	10.7, 20.2	13.4	9.0, 17.7	13.9	10.8, 16.9	11.6	8.5, 14.6	9.0	4.7, 13.2	8.2	3.7, 12.7	0.161	0.431
Potatoes, fried	19.9	15.5, 24.3	18.8 ^y	14.8, 22.7	15.3	8.4, 22.2	15.2	9.8, 20.5	9.4	7.2, 11.6	9.8	7.6, 12.7	0.0002	0.001
Potatoes, raw and cooked	38.7	32.2, 45.2	41.7 ^y	34.6, 48.8	35.3	30.0, 40.7	38.3	32.6, 44.0	26.2	21.7, 30.6	29.8	24.6, 34.9	<.0001	0.001
Savory snacks	6.5	4.5, 8.5	6.3	4.0, 8.7	4.8	3.5, 6.1	4.5	3.3, 5.7	3.9	2.6, 5.2	4.0	2.8, 5.3	0.4455	0.656
Condiments, gravies	29.5	26.6, 32.3	28.1 ^y	25.2, 31.0	26.9	23.7, 30.0	26.4 ^y	23.9, 28.8	21.6	19.3, 24.0	21.8	19.5, 24.0	0.001	0.003
Supplemented bars, shakes, meal replacements	3.4	2.0, 4.8	3.5	2.1, 4.8	4.5	3.1, 6.0	4.4	2.8, 6.0	5.9	2.9, 8.8	6.0	3.1, 9.0	0.057	0.060
Soups	39.3	32.3, 46.3	41.5	34.2, 48.7	39.6	26.5, 52.7	41.3	27.7, 54.9	41.7	30.8, 52.6	43.1	33.4, 52.8	0.0571	0.088

* Intake of food categories across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 1, misreporting status (determined using previously published methods by Garriguet [47]); Model 2, misreporting status plus age, sex, smoking, self, perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status, weekend reference day and total energy intake. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

^y significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

[£] significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

CI, confidence interval.

Supplementary Table S4. Means and standard errors of the intakes from all food categories by quintiles of total sugars intake (% energy) in all adults (g/day) (n=11,817)*.

Food Category	Q1		Q3		Q5	
	n=2364		n=2363		n=2364	
	Mean	SE	Mean	SE	Mean	SE
Cremps	8.3	1.2	7.2	0.6	6.8	0.7
Pasta, rice, cereal grains and flour	112.3	14.6	83.9	6.2	53.6	6.2
White breads	21.0	1.7	31.2	4.4	22.9	1.7
Wholemeal breads	21.6	1.8	21.7	3.0	16.6	1.9
Other breads	43.9	3.7	35.4	4.9	26.7	2.6
Wholegrain and high fibre breakfast cereals	15.0	3.6	19.7	3.1	18.6	1.7
Other breakfast cereals	1.1	0.5	1.9	0.6	2.8	0.6
Cookies, biscuits and granola bars	7.0	1.2	10.1	1.0	11.2	1.0
Cakes, pies, danishes and other pastries	13.3	1.8	30.4	2.7	35.7	3.6
Frozen dairy products	2.3	0.6	16.1	4.1	22.6	2.5
Milks	58.7	4.7	170.7	8.4	190.5	14.8
Yogurts (natural and with fruits)	11.4	2.2	26.8	4.0	33.3	3.2
Fruit	59.7	4.0	160.4	7.8	223.6	10.8
Sugars, syrups, preserves	4.4	0.4	10.7	0.8	20.4	1.9
Confectionary	2.5	0.4	9.1	1.6	24.2	3.4
Fruit juice	23.4	3.9	58.9	4.0	112.6	8.1
Alcoholic beverages	326.8	42.1	116.2	18.7	52.5	9.0
Tea, coffee	1511.1	35.7	1555.6	48.2	1308.7	34.7
Soft drinks, regular	24.5	4.5	60.6	6.1	190.4	26.0
Soft drinks, diet	55.4	8.7	40.6	11.4	21.8	5.4
Fruit drinks	11.1[‡]	3.6	18.2	4.1	53.5	6.9

Other beverages	3.4	1.3	9.5	4.9	27.1	15.5
Cheeses	36.6	2.6	25.4	1.8	16.8	1.7
Eggs	33.8	4.2	24.4	1.5	15.0	1.1
Butters	3.3	0.6	3.2	0.3	2.5	0.4
Margarines, other fats, spreads	15.4	1.3	12.0	0.5	7.9	0.4
Red meats	60.6	4.3	48.9	3.1	33.3	2.5
Sausage, luncheon meats	22.2	2.1	18.4	2.0	13.2	1.4
Poultry	58.0	6.2	48.2	4.6	31.4	3.1
Nuts, seeds, peanut butter	13.4	1.9	11.4	1.0	7.1	0.9
Fish, shellfish	23.3	3.7	20.4	3.1	12.4	2.4
Vegetables, vegetable soups	160.1	7.4	170.3	7.7	168.6	10.2
Legumes	15.5	2.4	13.9	1.6	9.0	2.2
Potatoes, fried	19.9	2.2	15.3	3.5	9.4	1.1
Potatoes, raw and cooked	38.7	3.3	35.3	2.7	26.2	2.3
Savory snacks	6.5	1.0	4.8	0.6	3.9	0.7
Condiments, gravies	29.5	1.5	26.9	1.6	21.6	1.2
Baby food products	0.1	0.2	0.3	0.3	0.2	0.8
Supplemented bars, shakes, meal replacements	3.4	0.7	4.5	0.7	5.9	1.5
Soups	39.3	3.6	39.6	6.7	41.7	5.5

SE, standard error.

Table S5. Means and standard errors of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in all adults (n=11,817)*.

	Q1		Q3		Q5		ALL	
	n=2364		n=2363		n=2364		n=11,817	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Energy (kcal)	1953.8	25.4	1919.2^y	50.5	1805.5	21.2	1890.1	20.4
Carbohydrates (%)	38.9^{yz}	0.8	47.7^y	0.9	58.4	0.4	47.7	0.7
Total Fibre (g/1000 kcal)	8.6^{yz}	0.2	10.1	0.4	10.3	0.2	9.7	0.2
Total Sugars (%)	7.9^{yz}	0.1	18.3^y	0.01	33.0	0.3	18.8	0.2
Natural Sugars (%)	4.8^{yz}	0.1	10.2^y	0.2	15.6	0.3	10.1	0.1
Added Sugars (%)	3.0^{yz}	0.1	8.1^y	0.3	17.3	0.4	8.6	0.1
Free Sugars (%)	3.2^{yz}	0.1	9.2^y	0.3	20.1	0.4	9.9	0.1
Fat (%)	36.1^{yz}	0.5	32.2^y	0.5	26.4	0.4	32.2	0.6
Saturated Fat (%)	11.3^{yz}	0.2	10.4^y	0.3	9.0	0.1	10.4	0.2
Monounsaturated Fat (%)	13.8^{yz}	0.2	12.0^y	0.3	9.4	0.2	12.0	0.2
Polyunsaturated Fat (%)	7.8^{yz}	0.2	6.8^y	0.1	5.5	0.1	6.9	0.2
Linoleic acid (%)	6.6^{yz}	0.2	5.7^y	0.1	4.6	0.1	5.9	0.2
Alpha-linolenic Acid (%)	0.8^y	0.01	0.8^y	0.01	0.6	0.01	0.7	0.01
Protein (%)	18.8^y	0.4	17.5^y	0.2	13.9	0.3	17.0	0.2
Cholesterol (mg/1000 kcal)	178.1^y	7.9	153.2^y	7.0	109.9	4.4	147.0	2.1
Alcohol (%)	6.2^{yz}	0.7	2.6^y	0.3	1.3	0.3	3.1	0.3
Vitamin A (ug RAE)	338.9^z	20.6	370.6	10.6	378.7	19.3	367.9	10.3
Thiamin (mg)	0.9	0.01	0.9	0.01	0.8	0.01	0.9	0.0
Riboflavin (mg)	1.0^z	0.01	1.1	0.01	1.1	0.01	1.1	0.0
Niacin (mg)	23.7^{yz}	0.6	21.7^y	0.4	18.0	0.3	21.4	0.3
Vitamin B-6 (mg)	0.9	0.01	1.0	0.0	0.9	0.01	0.9	0.01
Folate (ug DFE)	247.8^y	4.6	242.8^y	7.5	221.9	5.7	240.7	2.5
Vitamin B-12 (mg)	2.3	0.1	2.4^y	0.1	1.9	0.1	2.2	0.1

Vitamin C (mg)	35.9[¥]	1.8	56.2	3.0	85.1	5.7	56.4	1.5
Vitamin D (ug)	2.3[¥]	0.2	2.7	0.1	2.6	0.1	2.6	0.1
Calcium (mg)	370.8[¥]	11.7	439.8	9.2	458.2	8.5	428.1	5.6
Iron (mg)	6.7[¥]	0.1	6.9[¥]	0.1	6.3	0.1	6.8	0.01
Magnesium (mg)	167.3	3.1	177.7	3.5	169.7	2.9	172.9	1.2
Phosphorus (mg)	696.2[¥]	12.4	704.8[¥]	8.2	652.0	8.4	696.7	4.7
Potassium (mg)	1378.1[¥]	21.4	1536.7	20.9	1611.8	26.2	1511.2	10.1
Zinc (mg)	6.0[¥]	0.1	5.7[¥]	0.1	4.8	0.1	5.6	0.1
Sodium (mg)	1621.9[¥]	27.5	1512.0[¥]	19.6	1255.1	20.2	1478.9	11.0

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 1-misreporting status (determined using previously published methods by Garriguet [47]); Model 3- misreporting status plus age, sex, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

RAE, retinoic acid equivalent; DFE, dietary folate equivalents; SE, standard error.

Supplemental Table S6. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Males Aged 19-30y*

Males 19-30y (n=765)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	2379.9	106.5	2608.3	135.9	2338.3	121.7	0.028
Carbohydrates (%)	38.8^{¥£}	1.9	45.1[¥]	1.8	58.2	1.1	<.0001
Total Fibre (g/1000 kcal)	6.8	0.4	7.5	0.7	7.7	0.9	0.108
Total Sugars (%)	7.9^{¥£}	0.3	18.4[¥]	0.2	32.3	1.1	<.0001
Natural Sugars (%)	4.3^{¥£}	0.4	8.8	0.8	12.1	2.1	<.0001
Added Sugars (%)	3.5^{¥£}	0.3	9.6[¥]	0.9	20.2	2.2	<.0001
Free Sugars (%)	3.8^{¥£}	0.3	11.2[¥]	0.7	23.0	2.1	<.0001
Fat (%)	35.2[¥]	2.2	33.5[¥]	1.1	26.4	0.9	<.0001
Saturated Fat (%)	11.2	1.0	11.2	1.1	10.0	0.6	0.029
Monounsaturated Fat (%)	13.4[¥]	0.8	12.4[¥]	0.4	9.0	0.5	<.0001
Polyunsaturated Fat (%)	7.5[¥]	0.3	6.5[¥]	0.9	4.8	0.3	<.0001
Linoleic acid (%)	6.5[¥]	0.2	5.7[¥]	0.6	4.1	0.2	<.0001
Alpha-linolenic Acid (%)	0.8[¥]	0.1	0.7	0.1	0.6	0.0	0.003
Protein (%)	19.4[¥]	1.8	17.9[¥]	0.7	14.5	0.6	<.0001
Cholesterol (mg/1000 kcal)	192.8	41.9	166.0	15.6	107.6	11.6	0.038
Alcohol (%)	6.6[¥]	2.1	3.6	1.1	0.9	0.6	0.008
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	323.8	36.9	313.3	49.7	289.5	40.7	0.867
Thiamin (mg)	0.9	0.1	0.7	0.1	0.9	0.0	0.375
Riboflavin (mg)	1.0	0.0	1.1	0.0	1.1	0.1	0.399
Niacin (mg)	23.6	2.0	22.6	1.1	20.7	1.1	0.513
Vitamin B-6 (mg)	0.9	0.0	1.0	0.1	1.1	0.1	0.509

Folate (ug DFE)	269.3	19.9	230.5	21.9	224.2	16.4	0.281
Vitamin B-12 (mg)	2.0	0.3	2.3	0.2	2.0	0.1	0.435
Vitamin C (mg)	29.1^{¥£}	4.2	48.8	10.6	72.8	10.1	<.0001
Vitamin D (ug)	1.7	0.3	2.1	0.5	2.6	0.4	0.372
Calcium (mg)	404.4	25.6	437.3	26.2	433.7	43.8	0.976
Iron (mg)	6.3	0.3	6.3	0.6	6.3	0.4	0.977
Magnesium (mg)	145.1	6.1	152.1	11.2	142.7	13.0	0.558
Phosphorus (mg)	686.1	18.8	680.9	26.0	624.8	36.2	0.487
Potassium (mg)	1209.2[¥]	55.1	1293.2	83.1	1368.3	77.9	0.004
Zinc (mg)	5.5	0.5	5.7	0.5	4.7	0.4	0.026
Sodium (mg)	1797.3[¥]	144.9	1485.3[¥]	76.9	1280.0	68.8	0.001

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment based in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S7. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Females Aged 19-30y*

Females 19-30y (n=757)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	1650.9	130.5	1694.9	67.0	1676.8	56.4	0.630
Carbohydrates (%)	37.6^{¥£}	2.2	47.3[¥]	1.4	60.0	1.6	<.0001
Total Fibre (g/1000 kcal)	8.5	1.4	9.9	0.7	9.3	0.7	0.461
Total Sugars (%)	7.6^{¥£}	0.6	18.5[¥]	0.2	33.8	1.1	<.0001
Natural Sugars (%)	5.6[¥]	1.5	9.9[¥]	1.1	16.4	1.6	<.0001
Added Sugars (%)	2.0^{¥£}	1.0	8.6[¥]	1.1	17.3	1.3	<.0001
Free Sugars (%)	2.1^{¥£}	1.1	10.0[¥]	0.9	21.1	1.7	<.0001
Fat (%)	34.6[¥]	2.3	33.0[¥]	1.4	25.6	1.4	<.0001
Saturated Fat (%)	11.2	1.3	10.5	0.5	8.9	0.6	0.004
Monounsaturated Fat (%)	13.3[¥]	0.9	12.4[¥]	0.7	9.1	0.4	<.0001
Polyunsaturated Fat (%)	6.9	0.5	7.0[¥]	0.7	5.2	0.5	<.0001
Linoleic acid (%)	5.9	0.4	5.9[¥]	0.4	4.4	0.4	<.0001
Alpha-linolenic Acid (%)	0.7	0.1	0.7	0.1	0.6	0.1	0.059
Protein (%)	18.9[¥]	1.9	18.4[¥]	1.0	13.7	0.6	<.0001
Cholesterol (mg/1000 kcal)	164.3[¥]	15.5	166.0[¥]	15.8	96.9	9.6	<.0001
Alcohol (%)	8.9	3.7	1.3	0.5	0.6	0.5	0.244
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	449.3	170.5	316.3	64.4	412.0	51.6	0.571
Thiamin (mg)	0.9	0.1	0.9	0.1	0.8	0.0	0.337
Riboflavin (mg)	1.1	0.1	1.1	0.0	1.1	0.1	0.562
Niacin (mg)	23.8[¥]	2.3	23.7[¥]	1.3	17.3	1.2	<.0001
Vitamin B-6 (mg)	0.9	0.1	1.0	0.1	1.0	0.1	0.140

Folate (ug DFE)	287.7	44.1	255.5	13.8	219.1	13.6	0.090
Vitamin B-12 (mg)	2.8	0.4	1.9	0.3	2.1	0.3	0.739
Vitamin C (mg)	43.7	16.4	58.0	9.2	81.7	8.9	0.011
Vitamin D (ug)	2.3	0.8	2.7	0.9	2.5	0.4	0.408
Calcium (mg)	420.2	62.9	475.7	32.4	496.7	24.8	0.022
Iron (mg)	6.7	0.4	6.3	0.5	6.3	0.3	0.444
Magnesium (mg)	167.3	22.8	163.7	7.0	168.5	8.1	0.656
Phosphorus (mg)	678.0	23.2	703.6	27.9	659.0	29.3	0.831
Potassium (mg)	1420.4	135.2	1495.1	71.1	1593.9	75.8	0.122
Zinc (mg)	6.5	0.8	4.7	0.3	4.9	0.3	<.0001
Sodium (mg)	1585.4	120.2	1393.2	107.8	1258.7	65.2	0.029

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S8. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Males Aged 31-50y*

Males 31-50y (n=1839)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	2316.8	56.3	2313.9	67.4	2131.7	128.2	0.028
Carbohydrates (%)	38.4^{¥£}	1.2	48.3[¥]	0.9	58.7	0.9	<.0001
Total Fibre (g/1000 kcal)	8.2	0.5	9.2	0.5	9.0	0.7	0.043
Total Sugars (%)	7.7^{¥£}	0.3	18.3[¥]	0.1	34.6	0.9	<.0001
Natural Sugars (%)	4.6^{¥£}	0.2	9.7	0.7	13.3	1.1	<.0001
Added Sugars (%)	3.0^{¥£}	0.2	8.6[¥]	0.7	21.0	1.3	<.0001
Free Sugars (%)	3.3^{¥£}	0.3	9.7[¥]	0.7	23.4	1.2	<.0001
Fat (%)	35.9[¥]	1.0	32.1[¥]	1.0	26.6	0.8	<.0001
Saturated Fat (%)	10.9[¥]	0.3	10.7	0.6	8.7	0.8	0.020
Monounsaturated Fat (%)	14.2^{¥£}	0.6	12.1[¥]	0.5	9.9	0.4	<.0001
Polyunsaturated Fat (%)	7.6[¥]	0.3	6.4	0.2	5.5	0.3	<.0001
Linoleic acid (%)	6.5[¥]	0.3	5.4	0.2	4.8	0.2	<.0001
Alpha-linolenic Acid (%)	0.7[¥]	0.0	0.7[¥]	0.0	0.6	0.0	0.006
Protein (%)	19.2[¥]	0.6	17.3[¥]	0.5	13.1	0.6	<.0001
Cholesterol (mg/1000 kcal)	180.4[¥]	22.3	145.1	7.8	108.4	8.3	<.0001
Alcohol (%)	6.4^{¥£}	0.7	2.3	0.5	1.7	0.6	<.0001
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	346.8	35.3	300.3	14.4	282.6	23.8	0.268
Thiamin (mg)	0.9	0.0	0.8	0.0	0.8	0.1	0.538
Riboflavin (mg)	1.0	0.1	1.0	0.0	1.0	0.1	0.278
Niacin (mg)	24.6[¥]	0.7	21.3[¥]	1.0	16.8	0.4	<.0001
Vitamin B-6 (mg)	1.0[¥]	0.0	0.9	0.1	0.8	0.0	<0.001
Folate (ug DFE)	246.9	12.0	233.0[¥]	12.2	201.5	10.6	0.006

Vitamin B-12 (mg)	2.6	0.4	2.3	0.5	1.7	0.2	0.524
Vitamin C (mg)	37.6	7.6	48.0	3.6	74.4	13.9	0.001
Vitamin D (ug)	2.2	0.8	2.3	0.3	2.2	0.3	0.189
Calcium (mg)	369.9	22.6	400.9	20.6	397.1	57.3	0.100
Iron (mg)	6.6	0.3	6.7	0.2	5.9	0.3	0.047
Magnesium (mg)	165.7	5.2	166.6	4.8	151.3	6.6	0.010
Phosphorus (mg)	686.5	21.5	675.1	21.4	597.6	34.0	0.153
Potassium (mg)	1358.1	39.0	1422.0	34.9	1465.7	67.4	0.293
Zinc (mg)	6.2	0.4	5.6[¥]	0.2	4.6	0.2	0.022
Sodium (mg)	1519.5[¥]	46.8	1502.0[¥]	55.6	1241.7	55.5	0.002

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3(p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S9. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Females Aged 31-50y*

Females 31-50y (n=1945)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	1673.9	38.2	1684.2	41.6	1618.8	27.8	0.592
Carbohydrates (%)	40.0^{¥‡}	1.8	48.4[¥]	1.6	57.6	1.0	<.0001
Total Fibre (g/1000 kcal)	9.4	0.5	10.7	1.0	11.1	0.7	0.247
Total Sugars (%)	8.1^{¥‡}	0.3	18.3[¥]	0.1	32.6	0.6	<.0001
Natural Sugars (%)	4.8^{¥‡}	0.2	10.3[¥]	0.5	16.1	0.7	<.0001
Added Sugars (%)	3.2^{¥‡}	0.2	7.8[¥]	0.4	16.5	0.9	<.0001
Free Sugars (%)	3.6^{¥‡}	0.4	8.8[¥]	0.4	19.1	0.9	<.0001
Fat (%)	37.4^{¥‡}	1.6	32.4[¥]	1.4	26.8	0.9	<.0001
Saturated Fat (%)	12.1[¥]	1.0	10.4[¥]	0.5	9.1	0.3	<.0001
Monounsaturated Fat (%)	14.0^{¥‡}	0.7	12.0[¥]	0.5	9.5	0.3	<.0001
Polyunsaturated Fat (%)	7.8[¥]	0.3	7.1[¥]	0.3	5.7	0.3	<.0001
Linoleic acid (%)	6.7[¥]	0.3	5.8[¥]	0.2	4.9	0.3	<.0001
Alpha-linolenic Acid (%)	0.8	0.1	0.8	0.0	0.6	0.0	0.003
Protein (%)	18.1	0.8	17.3[¥]	0.4	15.0	0.6	<0.001
Cholesterol (mg/1000 kcal)	169.5	15.2	154.8	24.4	120.1	11.4	0.002
Alcohol (%)	4.5[¥]	0.8	1.8	0.4	0.6	0.2	0.001
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	309.3	24.1	390.9	34.1	431.8	64.3	0.103
Thiamin (mg)	0.9	0.0	0.9	0.1	0.8	0.0	0.062
Riboflavin (mg)	1.0[‡]	0.0	1.1	0.0	1.1	0.0	0.027
Niacin (mg)	23.1	1.3	20.9	1.2	19.4	1.0	<.0001

Vitamin B-6 (mg)	0.9	0.1	0.9	0.0	1.0	0.1	0.629
Folate (ug DFE)	255.0	15.4	262.7	14.8	248.8	14.6	0.417
Vitamin B-12 (mg)	1.9	0.2	2.8	0.6	1.9	0.2	0.017
Vitamin C (mg)	38.2[¥]	3.8	59.9	4.6	97.3	20.0	<.0001
Vitamin D (ug)	2.5	0.4	2.8	0.3	2.2	0.2	0.107
Calcium (mg)	376.2[£]	17.0	499.4	43.0	451.7	20.5	<.0001
Iron (mg)	6.8	0.2	7.4[¥]	0.3	6.3	0.2	0.005
Magnesium (mg)	167.7	6.7	195.7	9.9	177.7	10.0	0.247
Phosphorus (mg)	725.5	29.1	727.2	23.8	651.2	22.9	0.045
Potassium (mg)	1319.4^{¥£}	35.7	1565.9	45.0	1664.7	101.4	<.0001
Zinc (mg)	5.6[¥]	0.2	5.8[¥]	0.2	4.8	0.2	0.001
Sodium (mg)	1666.0[¥]	78.9	1558.5[¥]	70.4	1276.4	57.8	<0.001

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S10. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Males Aged 51-70y*

Males 51-70y (n=1961)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	1993.6	34.8	2140.7	62.5	2063.3	57.9	0.127
Carbohydrates (%)	38.4^{¥‡}	1.3	46.7[¥]	1.4	57.8	0.8	<.0001
Total Fibre (g/1000 kcal)	8.2[¥]	0.3	9.3	1.1	9.7	0.5	<.0001
Total Sugars (%)	7.7^{¥‡}	0.2	18.5[¥]	0.2	33.0	0.6	<.0001
Natural Sugars (%)	4.9^{¥‡}	0.3	10.0[¥]	0.5	15.1	0.9	<.0001
Added Sugars (%)	2.7^{¥‡}	0.2	8.3[¥]	0.6	17.9	1.1	<.0001
Free Sugars (%)	3.1^{¥‡}	0.2	9.3[¥]	0.6	20.5	0.8	<.0001
Fat (%)	35.9^{¥‡}	1.4	32.7[¥]	0.9	27.6	1.3	<.0001
Saturated Fat (%)	10.8	0.5	10.6	0.3	9.5	0.6	0.101
Monounsaturated Fat (%)	13.7^{¥‡}	0.5	12.1[¥]	0.4	9.8	0.6	<.0001
Polyunsaturated Fat (%)	8.2[¥]	0.4	7.1[¥]	0.3	5.7	0.4	<.0001
Linoleic acid (%)	7.0[¥]	0.4	6.0[¥]	0.3	4.8	0.3	<.0001
Alpha-linolenic Acid (%)	0.9	0.1	0.8	0.1	0.7	0.1	0.025
Protein (%)	18.9[¥]	0.7	18.0[¥]	0.8	13.4	1.3	<.0001
Cholesterol (mg/1000 kcal)	188.8[¥]	13.1	174.3	15.0	112.2	24.3	0.003
Alcohol (%)	6.8[¥]	0.9	2.7[¥]	0.3	1.2	0.3	<.0001
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	336.7	31.5	350.4	25.1	386.5	38.4	0.032
Thiamin (mg)	0.8	0.1	0.8	0.0	0.8	0.1	0.593
Riboflavin (mg)	1.0	0.0	1.1	0.0	1.1	0.0	0.374
Niacin (mg)	24.0[¥]	0.8	22.1[¥]	0.8	17.7	0.7	<.0001

Vitamin B-6 (mg)	0.9	0.0	1.0	0.0	0.8	0.1	0.040
Folate (ug DFE)	235.0	13.0	227.5	8.0	215.9	10.7	0.739
Vitamin B-12 (mg)	2.5	0.2	2.4	0.2	1.9	0.3	0.451
Vitamin C (mg)	34.0^{¥£}	2.8	45.1[¥]	8.2	83.6	5.8	<.0001
Vitamin D (ug)	2.6	0.3	3.2	0.4	3.0	0.4	0.142
Calcium (mg)	338.3^{¥£}	17.7	405.8	15.2	450.3	26.5	<.0001
Iron (mg)	6.6	0.2	6.7	0.1	6.2	0.3	0.018
Magnesium (mg)	168.2	5.8	166.7	13.8	172.6	8.5	0.171
Phosphorus (mg)	668.1	13.9	704.3	14.1	679.8	28.6	0.071
Potassium (mg)	1403.9^{¥£}	30.3	1536.4	34.2	1592.7	66.8	0.004
Zinc (mg)	6.2[¥]	0.2	5.9[¥]	0.2	4.6	0.4	<.0001
Sodium (mg)	1619.8[¥]	59.0	1504.1	46.9	1277.7	68.4	0.010

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S11. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Females Aged 51-70y*

Females 51-70y (n=2105)	Q1		Q3		Q5		
	Mean	SE	Mean	SE	Mean	SE	p-value**
Energy (kcal)	1614.0	35.3	1567.6	31.4	1626.4	101.2	0.531
Carbohydrates (%)	38.7^{¥£}	1.1	48.5[¥]	0.7	57.8	1.3	<.0001
Total Fibre (g/1000 kcal)	9.5	0.4	12.5	1.0	11.1	0.8	<.0001
Total Sugars (%)	7.9^{¥£}	0.2	18.3[¥]	0.1	32.3	0.6	<.0001
Natural Sugars (%)	5.0^{¥£}	0.3	11.2[¥]	0.4	16.4	1.1	<.0001
Added Sugars (%)	2.9^{¥£}	0.2	7.0[¥]	0.3	15.8	0.9	<.0001
Free Sugars (%)	3.0^{¥£}	0.2	7.7[¥]	0.3	18.4	0.9	<.0001
Fat (%)	36.9^{¥£}	0.9	30.2[¥]	1.0	25.8	0.8	<.0001
Saturated Fat (%)	11.6^{¥£}	0.4	9.5	0.5	8.7	0.3	<.0001
Monounsaturated Fat (%)	14.0^{¥£}	0.4	11.4[¥]	0.3	9.0	0.3	<.0001
Polyunsaturated Fat (%)	8.2[¥]	0.4	6.7	0.3	5.5	0.3	<.0001
Linoleic acid (%)	6.8[¥]	0.3	5.6	0.2	4.7	0.3	<.0001
Alpha-linolenic Acid (%)	1.0[¥]	0.1	0.8	0.1	0.7	0.0	<0.001
Protein (%)	18.6[¥]	0.6	17.8[¥]	0.7	14.2	0.3	<.0001
Cholesterol (mg/1000 kcal)	167.0[¥]	9.3	138.6[¥]	9.1	103.0	5.9	<.0001
Alcohol (%)	5.8[¥]	0.9	3.5	1.0	2.2	0.8	0.001
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	331.4	22.3	470.9	41.5	381.9	19.4	0.054
Thiamin (mg)	0.8	0.1	0.9	0.1	0.8	0.0	0.110
Riboflavin (mg)	1.0	0.0	1.1	0.0	1.1	0.1	0.075
Niacin (mg)	23.3[¥]	0.9	22.4[¥]	0.9	18.0	0.5	<.0001

Vitamin B-6 (mg)	0.9	0.0	1.0	0.1	0.9	0.0	0.398
Folate (ug DFE)	234.6	15.0	246.6	15.9	211.9	24.9	0.615
Vitamin B-12 (mg)	2.2	0.1	2.2	0.2	1.8	0.1	0.250
Vitamin C (mg)	35.1^{¥£}	2.7	74.0	5.1	82.3	14.4	<.0001
Vitamin D (ug)	2.5	0.3	2.7	0.3	2.7	0.2	0.148
Calcium (mg)	370.3	19.4	441.1	23.5	481.3	27.5	0.001
Iron (mg)	7.1	0.2	7.4	0.3	6.4	0.3	0.002
Magnesium (mg)	184.4	6.2	200.8	6.8	177.3	16.4	0.323
Phosphorus (mg)	729.3	26.8	730.2	22.6	659.9	32.3	0.168
Potassium (mg)	1513.8	77.3	1745.3	40.7	1676.4	113.8	0.016
Zinc (mg)	6.2[¥]	0.2	6.1[¥]	0.3	5.0	0.1	<.0001
Sodium (mg)	1579.2[¥]	75.7	1511.9[¥]	65.3	1185.2	59.8	<.0001

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S12. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Males Aged 71y+*

Males 70y+ (n=1105)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	1770.6	80.4	1783.6	45.7	1727.2	50.2	0.971
Carbohydrates (%)	40.0[¥]	2.2	48.8[¥]	1.2	59.3	1.1	<.0001
Total Fibre (g/1000 kcal)	9.2	0.5	10.2	0.4	11.0	0.6	0.158
Total Sugars (%)	8.0[¥]	0.3	18.3[¥]	0.1	32.8	0.8	<.0001
Natural Sugars (%)	4.9[¥]	0.3	10.2[¥]	0.4	17.7	1.4	<.0001
Added Sugars (%)	2.9[¥]	0.3	8.0[¥]	0.5	14.9	1.5	<.0001
Free Sugars (%)	3.0[¥]	0.3	9.1[¥]	0.5	17.9	1.3	<.0001
Fat (%)	34.2[¥]	1.1	32.1[¥]	0.9	25.5	1.2	<.0001
Saturated Fat (%)	10.7	0.4	10.5	0.4	9.0	0.5	0.074
Monounsaturated Fat (%)	13.1[¥]	0.5	12.1[¥]	0.5	9.1	0.5	<.0001
Polyunsaturated Fat (%)	7.4[¥]	0.4	6.7[¥]	0.2	5.0	0.3	<.0001
Linoleic acid (%)	6.2[¥]	0.3	5.6[¥]	0.2	4.2	0.2	<.0001
Alpha-linolenic Acid (%)	0.8	0.0	0.8	0.0	0.6	0.1	0.258
Protein (%)	17.5[¥]	0.6	15.8[¥]	0.5	13.6	0.6	<.0001
Cholesterol (mg/1000 kcal)	171.0	23.8	133.1	10.5	116.4	8.0	0.011
Alcohol (%)	8.3[¥]	2.0	3.3	0.8	1.6	0.7	0.002
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	321.9	30.9	465.6	66.6	388.6	28.1	0.140
Thiamin (mg)	0.9	0.1	0.9	0.1	0.8	0.0	0.213
Riboflavin (mg)	0.9	0.0	1.1	0.1	1.1	0.0	0.008
Niacin (mg)	22.5[¥]	0.8	20.0[¥]	1.2	16.6	0.7	<.0001

Vitamin B-6 (mg)	0.9	0.0	0.9	0.0	0.9	0.0	0.731
Folate (ug DFE)	238.9	17.8	246.1	16.7	223.1	9.4	0.679
Vitamin B-12 (mg)	2.1	0.2	2.7	0.6	1.8	0.2	0.666
Vitamin C (mg)	33.4^{¥£}	3.7	52.8	7.7	90.5	15.3	<.0001
Vitamin D (ug)	2.9	0.4	3.3	0.4	3.1	0.3	0.460
Calcium (mg)	304.1^{¥£}	13.4	422.3	27.0	457.6	32.4	<.0001
Iron (mg)	7.0	0.4	7.3	0.2	6.6	0.3	0.256
Magnesium (mg)	161.3	5.3	171.5	5.1	169.2	6.6	0.346
Phosphorus (mg)	657.7	27.7	705.7	28.9	657.6	31.5	0.067
Potassium (mg)	1362.8^{¥£}	51.9	1564.9	45.7	1693.4	68.9	<0.001
Zinc (mg)	5.5	0.4	5.9	0.5	4.8	0.3	0.031
Sodium (mg)	1610.9[¥]	71.8	1536.7	81.7	1262.9	68.7	<.0001

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years

Supplemental Table S13. Comparison of intakes from macro- and micronutrients by quintiles of total sugars intake (% energy) in Females Aged 71y+*

Females 70y+ (n=1340)	Q1		Q3		Q5		p-value**
	Mean	SE	Mean	SE	Mean	SE	
Energy (kcal)	1443.9	77.3	1401.1	33.4	1422.1	35.9	0.914
Carbohydrates (%)	41.8[¥]	1.3	48.2[¥]	1.3	59.9	1.7	<.0001
Total Fibre (g/1000 kcal)	9.8[¥]	0.6	10.6	0.7	12.6	0.8	0.027
Total Sugars (%)	8.4^{¥£}	0.3	18.3[¥]	0.2	32.6	2.9	<.0001
Natural Sugars (%)	5.4^{¥£}	0.4	11.0[¥]	0.4	18.7	0.8	<.0001
Added Sugars (%)	2.9^{¥£}	0.3	7.2[¥]	0.4	13.8	2.5	<.0001
Free Sugars (%)	3.1^{¥£}	0.3	8.8[¥]	0.5	16.9	2.5	<.0001
Fat (%)	36.4[¥]	1.0	32.6[¥]	1.2	25.9	1.1	<.0001
Saturated Fat (%)	12.1[¥]	0.5	10.8	0.6	9.0	0.4	0.002
Monounsaturated Fat (%)	13.6[¥]	0.7	11.7[¥]	0.3	9.2	0.5	<.0001
Polyunsaturated Fat (%)	7.4	0.4	7.2[¥]	0.4	5.4	0.3	<0.001
Linoleic acid (%)	6.3	0.4	6.1[¥]	0.4	4.5	0.2	<0.001
Alpha-linolenic Acid (%)	0.8	0.0	0.9[¥]	0.1	0.7	0.1	0.013
Protein (%)	18.9	0.8	16.4	0.4	13.5	0.7	0.015
Cholesterol (mg/1000 kcal)	186.2[¥]	16.3	144.2	9.7	110.8	12.6	0.040
Alcohol (%)	2.9	0.9	2.8	0.7	0.6	0.3	0.039
micronutrients: per 1000 kcal							
Vitamin A (ug RAE)	344.5	43.0	353.4	36.3	450.1	38.7	0.382
Thiamin (mg)	0.9	0.0	0.9	0.0	0.9	0.1	0.655
Riboflavin (mg)	1.0	0.0	1.0	0.0	1.1	0.1	0.323
Niacin (mg)	23.0	0.8	20.5	0.6	16.8	0.8	0.014

Vitamin B-6 (mg)	0.9	0.1	0.9	0.0	0.9	0.0	0.531
Folate (ug DFE)	226.3	21.4	238.5	8.1	230.0	9.6	0.460
Vitamin B-12 (mg)	2.3	0.2	2.0	0.2	1.8	0.1	0.341
Vitamin C (mg)	34.3^{¥£}	6.1	57.4[¥]	4.4	93.0	8.1	<.0001
Vitamin D (ug)	2.5	0.3	2.7	0.3	3.2	0.3	0.091
Calcium (mg)	399.6	18.8	428.4	20.2	533.9	45.8	0.004
Iron (mg)	7.4	0.4	7.1	0.2	6.7	0.3	0.617
Magnesium (mg)	174.5	5.6	175.2	6.4	188.0	10.8	0.682
Phosphorus (mg)	737.8	27.9	687.1	19.1	718.4	37.2	0.104
Potassium (mg)	1507.5[¥]	75.3	1569.7	46.4	1799.3	60.9	0.006
Zinc (mg)	6.5[¥]	0.4	5.4	0.2	4.8	0.3	0.021
Sodium (mg)	1775.1[¥]	84.5	1558.0	47.8	1306.7	71.4	0.003

* Intake of macro- and micronutrients across quintiles of total sugars intake (as % energy) were compared using a general linear model (PROC SURVEYREG) including the following covariates: Model 3, mis-reporting status (determined using previously published methods by Garriguet [47]), age, smoking, self-perceived health, blood pressure, diabetes, heart disease, cancer, osteoporosis, education, physical activity, income, BMI, immigrant status and weekend reference day. Note: Quintiles 2 and 4 are not presented for readability.

** The p-value represents the global p-value for a significant difference across quintiles of intake of total sugars (%E)

¥ significant difference compared to Q5 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

£ significant difference compared to Q3 in post-hoc comparison with Bonferroni adjustment in Model 3 (p<0.05)

BMI, body mass index; DFE, dietary folate equivalents; y, years