

Table S1. Weighted analysis of energy intake (percentage) within the food groups by 2014 Health Canada Surveillance Tool Tier System among Canadian children (2-11 years of age) and adolescents (12-18 years of age).*

Food Group	% Energy within Food Group	
	Children (2-11 years)	Adolescents (12-18 years)
Fruit Sub-Group		
Fruit, Other than Juice Tier 1	50	42
Fruit, Other than Juice Tier 2	2	2
Fruit, Other than Juice Tier 3	1	1
Fruit, Other than Juice Tier 4	0	0
Fruit, Juice Tier 1	0	0
Fruit, Juice Tier 2	46	53
Fruit, Juice Tier 3	2	2
Fruit, Juice Tier 4	0	0
Vegetable Sub-Group		
Dark Green Tier 1	3	3
Dark Green Tier 2	0	0
Dark Green Tier 3	0	0
Dark Green Tier 4	0	0
Deep Yellow or Orange Tier 1	5	3
Deep Yellow or Orange Tier 2	0	0
Deep Yellow or Orange Tier 3	0	0
Deep Yellow or Orange Tier 4	0	0
Potatoes Tier 1	12	11
Potatoes Tier 2	7	4
Potatoes Tier 3	21	22
Potatoes Tier 4	27	32
Other Vegetables Tier 1	18	18
Other Vegetables Tier 2	3	2
Other Vegetables Tier 3	3	3
Other Vegetables Tier 4	0	1
Vegetable Juice & Cocktail Tier 1	0	0
Vegetable Juice & Cocktail Tier 2	0	0
Vegetable Juice & Cocktail Tier 3	1	0
Vegetable Juice & Cocktail Tier 4	0	0
Fruit & Vegetable Food Group		
Fruit, Other than Juice Tier 1	28	18
Fruit, Other than Juice Tier 2	1	1
Fruit, Other than Juice Tier 3	0	0
Fruit, Other than Juice Tier 4	0	0
Fruit, Juice Tier 1	0	0
Fruit, Juice Tier 2	25	22
Fruit, Juice Tier 3	1	1
Fruit, Juice Tier 4	0	0
Dark Green Tier 1	1	2
Dark Green Tier 2	0	0
Dark Green Tier 3	0	0
Dark Green Tier 4	0	0
Deep Yellow or Orange Tier 1	2	2
Deep Yellow or Orange Tier 2	0	0
Deep Yellow or Orange Tier 3	0	0

Deep Yellow or Orange Tier 4	0	0
Potatoes Tier 1	6	6
Potatoes Tier 2	3	2
Potatoes Tier 3	9	13
Potatoes Tier 4	12	18
Other Vegetables Tier 1	8	10
Other Vegetables Tier 2	1	1
Other Vegetables Tier 3	1	2
Other Vegetables Tier 4	0	1
Vegetable Juice & Cocktail Tier 1	0	0
Vegetable Juice & Cocktail Tier 2	0	0
Vegetable Juice & Cocktail Tier 3	0	0
Vegetable Juice & Cocktail Tier 4	0	0
Grain Products Food Group		
Whole Grain Tier 1	2	1
Whole Grain Tier 2	7	7
Whole Grain Tier 3	3	3
Whole Grain Tier 4	2	2
Non Whole Grain, Enriched Tier 1	14	17
Non Whole Grain, Enriched Tier 2	23	27
Non Whole Grain, Enriched Tier 3	18	13
Non Whole Grain, Enriched Tier 4	20	18
Non Whole Grain, Not Enriched Tier 1	0	0
Non Whole Grain, Not Enriched Tier 2	6	7
Non Whole Grain, Not Enriched Tier 3	3	2
Non Whole Grain, Not Enriched Tier 4	3	3
Milk & Alternatives Food Group		
Fluid Milk & Fortified Soy-Based Beverages Tier 1	15	22
Fluid Milk & Fortified Soy-Based Beverages Tier 2	45	45
Fluid Milk & Fortified Soy-Based Beverages Tier 3	36	26
Fluid Milk & Fortified Soy-Based Beverages Tier 4	4	5
Other Milk Alternatives Tier 1	0	0
Other Milk Alternatives Tier 2	1	2
Other Milk Alternatives Tier 3	0	0
Other Milk Alternatives Tier 4	0	0
Meat Sub-Group		
Beef, Game and Organ Meats Tier 1	0	0
Beef, Game and Organ Meats Tier 2	2	3
Beef, Game and Organ Meats Tier 3	26	30
Beef, Game and Organ Meats Tier 4	0	0
Other Meats (Pork, Veal, Lamb) Tier 1	0	0
Other Meats (Pork, Veal, Lamb) Tier 2	0	0
Other Meats (Pork, Veal, Lamb) Tier 3	10	9
Other Meats (Pork, Veal, Lamb) Tier 4	0	0
Poultry Tier 1	3	5
Poultry Tier 2	5	6
Poultry Tier 3	14	14
Poultry Tier 4	9	5
Processed Meats Tier 1	0	0
Processed Meats Tier 2	0	1
Processed Meats Tier 3	8	7
Processed Meats Tier 4	23	18

Meat Alternatives Sub-Group		
Fish Tier 1	4	4
Fish Tier 2	6	6
Fish Tier 3	1	1
Fish Tier 4	5	3
Shellfish Tier 1	1	1
Shellfish Tier 2	2	1
Shellfish Tier 3	1	1
Shellfish Tier 4	0	1
Legumes Tier 1	7	3
Legumes Tier 2	0	1
Legumes Tier 3	33	35
Legumes Tier 4	2	2
Nuts and Seeds Tier 1	0	0
Nuts and Seeds Tier 2	1	2
Nuts and Seeds Tier 3	8	9
Nuts and Seeds Tier 4	2	4
Eggs Tier 1	0	0
Eggs Tier 2	26	24
Eggs Tier 3	1	1
Eggs Tier 4	0	0
Meat & Alternatives Food Group		
Beef, Game and Organ Meats Tier 1	0	0
Beef, Game and Organ Meats Tier 2	1	3
Beef, Game and Organ Meats Tier 3	19	23
Beef, Game and Organ Meats Tier 4	0	0
Other Meats (Pork, Veal, Lamb) Tier 1	0	0
Other Meats (Pork, Veal, Lamb) Tier 2	0	0
Other Meats (Pork, Veal, Lamb) Tier 3	7	7
Other Meats (Pork, Veal, Lamb) Tier 4	0	0
Poultry Tier 1	2	4
Poultry Tier 2	4	4
Poultry Tier 3	10	11
Poultry Tier 4	7	4
Fish Tier 1	1	1
Fish Tier 2	1	1
Fish Tier 3	0	0
Fish Tier 4	1	1
Shellfish Tier 1	0	0
Shellfish Tier 2	0	0
Shellfish Tier 3	0	0
Shellfish Tier 4	0	0
Legumes Tier 1	2	1
Legumes Tier 2	0	0
Legumes Tier 3	8	8
Legumes Tier 4	1	1
Nuts and Seeds Tier 1	0	0
Nuts and Seeds Tier 2	0	1
Nuts and Seeds Tier 3	2	2
Nuts and Seeds Tier 4	0	1
Eggs Tier 1	0	0
Eggs Tier 2	7	5

Eggs Tier 3	0	0
Eggs Tier 4	0	0
Processed Meats Tier 1	0	0
Processed Meats Tier 2	0	0
Processed Meats Tier 3	6	6
Processed Meats Tier 4	17	14
Total Energy Intake	N/A	N/A

*Tiers are based on Health Canada's Surveillance Tool [19] and defined generally as follows: Tier 1-3 foods are compliant with EWCFG and Tier 4 foods are not recommended by the EWCFG. Tier 1 are foods that do not exceed lower thresholds for total fat, sugars, and sodium; Tier 2 foods do not exceed up to 2 lower thresholds for total fat, sugars or sodium, without exceeding any upper thresholds; for the Vegetables and Fruit and Grain Products food groups Tier 3 are foods that exceed all 3 lower thresholds without exceeding any upper thresholds or exceed only one upper threshold, while Tier 4 foods exceed at least 2 upper thresholds for total fat, saturated fat, sugars, or sodium. Within the Milk and Alternatives and Meat and Alternatives food groups, Tier 3 foods exceed all 3 lower thresholds without exceeding any upper thresholds for total fat, sugars, or sodium (irrespective of saturated fat) or exceed only one of these 3 thresholds or foods that only exceed the upper saturated fat threshold; within these 2 food groups foods that exceed at least 2 upper thresholds for total fat, sugars, or sodium were classified as Tier 4. Where lower thresholds entail: total fat ≤ 3 g/RA, sugars ≤ 6 g/RA, and sodium ≤ 140 mg/RA; and upper thresholds are: total fat >10 g/RA, sugars >19 g/RA, sodium >360 mg/RA, and saturated fat >2 g/RA.

Table S2. Weighted analysis of characteristics of compliers, intermediates, and non-compliers based on the percentage of energy from Tier 4 foods and “other” foods among Canadian adolescents (12-18_years)*, †

Characteristics	Compliers (Q1) [‡] ≤24.69% Energy		Intermediates (Q2) [§] 24.69-37.48% Energy		Intermediates (Q3) [§] 37.48-51.68% Energy		Non-compliers (Q4) [†] >51.68% Energy		P-Trend
	Mean	SEM	Mean	SEM	Mean	SEM	Mean	SEM	
Age (years)	15.04	0.16	14.79	0.13	14.69	0.16	15.13	0.16	0.0066
Sex									
Males (%)	46.85	3.05	55.16	2.75	55.00	3.56	50.21	2.36	
Females (%)	53.15	3.05	44.84	2.75	45.00	3.56	49.79	2.36	0.0762
BMI (kg/m ²)	22.43	0.20	22.45	0.26	22.17	0.22	22.43	0.29	0.7795
Reporters									
Under Reporters (%)	60.71	2.38	65.51	2.43	56.57	2.70	53.14	2.53	
Plausible Reporters (%)	60.71	2.38	65.51	2.43	56.57	2.70	53.14	2.53	
Over Reporters (%)	14.90	1.90	16.77	2.04	24.94	2.49	28.56	2.47	<.0001
Physical Activity									
Inactive (%)	32.08	2.56	35.88	2.54	36.41	2.88	30.86	2.33	
Moderate (%)	25.61	2.14	23.85	2.23	24.57	2.46	28.69	2.43	
Active (%)	42.31	2.60	40.27	2.44	39.03	2.58	40.44	2.59	0.5833
Smoking Status									
Daily Smoker (%)	1.90	0.55	4.18	0.94	4.36	0.87	5.46	1.02	
Occasional Smoker (%)	1.57	0.55	2.10	0.56	3.57	0.89	5.63	1.51	
Former Smoker (%)	1.03	0.48	1.88	0.62	1.29	0.50	2.51	0.72	
Never Smoked (%)	95.48	1.01	91.83	1.31	90.77	1.33	86.33	2.01	0.0019

Abbreviation: SEM: Standard Error of Mean

*Adjusted for age and sex.

†Quartiles are based upon percentage of energy from all Tier 4 foods based on Health Canada’s Surveillance Tool Tier system 2014 plus “other” foods and beverages not recommended in the Eating Well with Canada’s Food Guide

‡The 25% of individuals with the lowest percentage of energy from Tier 4 and “other” foods.

§The individuals in the interquartile range for energy intakes from Tier 4 and “other” foods.

†The 25% of individuals with the highest percentage of energy from Tier 4 and “other” foods

Table S3. Weighted analysis of nutrient intakes (density approach) [50] by compliers, intermediates, and non-compliers based on the percentage of energy consumed from Tier 4 foods and “other” foods among Canadian adolescent (12-18 years)*

Nutrients		Compliers (Q1) [†] ≤24.69% Energy		Intermediates (Q2) [‡] 24.69-37.48% Energy		Intermediates (Q3) [‡] 37.48-51.68% Energy		Non-compliers (Q4) [§] >51.68% Energy		P-Trend
		Mean	SEM	Mean	SEM	Mean	SEM	Mean	SEM	
Energy (kcal/day)	a	2251	60	2419	44	2540	60	2680	67	<.0001
	b	2439.58	43.99	2508.93	32.76	2512.39	37.88	2595.60	40.25	0.04
Fat (%Energy)	a	28.35	0.43	30.82	0.37	32.13	0.34	33.00	0.42	<.0001
	b	28.52	0.43	30.91	0.40	32.11	0.35	32.93	0.44	<.0001
Saturated fat (%Energy)	a	10.80	0.20	12.06	0.19	12.80	0.16	13.13	0.20	<.0001
	b	9.88	0.22	10.40	0.17	10.86	0.24	11.02	0.22	0.00
Monounsaturated fat (%Energy)	a	10.80	0.20	12.06	0.19	12.80	0.16	13.13	0.20	<.0001
	b	10.86	0.21	12.08	0.20	12.79	0.17	13.10	0.21	<.0001
Polyunsaturated fat (%Energy)	a	4.79	0.15	5.13	0.10	5.34	0.10	5.70	0.14	<.0001
	b	4.85	0.16	5.18	0.11	5.37	0.10	5.72	0.15	0.00
Carbohydrates (%Energy)	a	54.15	0.50	53.57	0.44	53.92	0.41	54.39	0.57	0.68
	b	53.87	0.51	53.35	0.47	53.84	0.42	54.37	0.59	0.55
Added sugar (%Energy)	a	9.68	0.40	12.91	0.38	16.39	0.48	19.81	0.63	<.0001
	b	9.65	0.42	12.90	0.39	16.41	0.51	19.84	0.63	<.0001
Dietary fiber (g/1000 kcal)	a	8.24	0.17	6.83	0.13	6.17	0.11	5.61	0.12	<.0001
	b	8.21	0.17	6.82	0.14	6.18	0.11	5.64	0.13	<.0001
Protein (%Energy)	a	17.49	0.28	15.43	0.32	13.45	0.19	11.44	0.20	<.0001
	b	17.50	0.28	15.48	0.30	13.51	0.20	11.51	0.21	<.0001
Alcohol (%Energy)	a	0.01	0.05	0.17	0.05	0.05	0.10	1.17	0.31	<.0001
	b	0.11	0.08	0.26	0.08	0.54	0.11	1.19	0.31	<.0001
Vitamin A (RE/1000 kcal)	a	338.44	12.36	291.76	12.14	251.21	10.61	220.37	8.55	<.0001
	b	337.41	12.81	292.25	11.93	252.74	10.41	222.46	8.61	<.0001
Vitamin D (ug/1000 kcal)	a	3.23	0.10	2.91	0.11	2.33	0.10	2.10	0.10	<.0001
	b	3.25	0.10	2.94	0.11	2.35	0.10	2.13	0.10	<.0001
Thiamin (mg/1000 kcal)	a	1.01	0.02	0.90	0.02	0.78	0.01	0.61	0.01	<.0001
	b	1.01	0.02	0.89	0.02	0.78	0.02	0.61	0.01	<.0001
Riboflavin (mg/1000 kcal)	a	1.11	0.02	1.01	0.02	0.93	0.04	0.77	0.01	<.0001
	b	1.10	0.02	1.00	0.02	0.93	0.04	0.77	0.02	<.0001
Niacin (NE/1000 kcal)	a	19.70	0.31	17.48	0.39	15.27	0.18	13.06	0.23	<.0001
	b	19.61	0.31	17.43	0.37	15.28	0.20	13.09	0.24	<.0001
Vitamin B6 (ug/1000 kcal)	a	0.95	0.02	0.82	0.02	0.67	0.01	0.56	0.01	<.0001
	b	0.94	0.02	0.82	0.02	0.67	0.01	0.56	0.01	<.0001
Folate (ug/1000 kcal)	a	111.93	2.99	95.80	2.46	82.31	2.01	70.52	2.25	<.0001
	b	110.55	2.96	94.93	2.59	82.21	2.19	70.78	2.36	<.0001
Vitamin B12 (ug/1000 kcal)	a	2.18	0.07	1.92	0.08	1.59	0.05	1.37	0.06	<.0001
	b	2.19	0.08	1.94	0.07	1.61	0.06	1.38	0.07	<.0001
Vitamin C (mg/1000 kcal)	a	79.65	3.20	71.18	3.41	65.60	3.25	50.96	2.26	<.0001
	b	77.62	3.21	69.81	3.58	65.32	3.49	51.18	2.31	<.0001
Calcium (mg/1000 kcal)	a	553.15	12.83	482.20	12.10	433.91	12.71	374.93	8.01	<.0001
	b	557.30	12.83	488.04	12.28	438.78	13.10	379.53	8.60	<.0001
Phosphorous (mg/1000 kcal)	a	727.40	9.78	636.49	9.20	572.58	8.88	505.76	7.84	<.0001
	b	727.81	9.69	638.14	9.38	574.57	9.28	508.00	8.19	<.0001
Potassium (mg/1000 kcal)	a	1568.27	25.46	1366.81	20.67	1191.45	15.74	1049.93	18.77	<.0001
	b	1557.19	25.46	1360.71	22.08	1191.87	17.48	1053.48	19.16	<.0001
Sodium (mg/1000 kcal)	a	1530.75	33.05	1462.75	23.38	1441.09	22.31	1389.53	25.26	0.01
	b	1521.63	31.44	1459.61	25.02	1444.09	23.31	1395.59	26.51	0.03
Magnesium (mg/1000 kcal)	a	158.65	2.03	133.65	1.88	120.11	1.43	106.81	1.58	<.0001
	b	157.79	2.02	133.36	1.88	120.40	1.55	107.39	1.59	<.0001
Iron (mg/1000 kcal)	a	7.79	0.12	7.21	0.24	6.35	0.12	5.29	0.07	<.0001
	b	7.83	0.14	7.29	0.28	6.42	0.14	5.36	0.09	<.0001
Zinc (mg/1000 kcal)	a	5.78	0.11	5.15	0.09	4.52	0.08	3.86	0.07	<.0001
	b	5.77	0.11	5.14	0.09	4.52	0.08	3.86	0.07	<.0001
Glycemic Index	a	52.93	0.30	55.47	0.31	57.25	0.31	58.10	0.38	<.0001

Glycemic Load	b	52.77	0.31	55.33	0.32	57.18	0.33	58.06	0.39	<.0001
	a	163.78	4.30	178.84	3.63	198.00	4.76	212.46	5.05	<.0001
Energy Density (kcal/g)	b	176.13	3.58	183.85	2.90	195.01	3.44	205.53	3.70	<.0001
	a	1.80	0.03	2.06	0.03	2.24	0.03	2.43	0.03	<.0001
	b	1.82	0.03	2.07	0.03	2.24	0.03	2.43	0.03	<.0001

Abbreviation: SEM: Standard Error of Mean

a Means are adjusted for age and sex.

b Means are adjusted for age, sex, and misreporting status (under-reporter, plausible-, and over-reporters)

*Quartiles are based upon percentage of energy from all Tier 4 foods based on Health Canada's Surveillance Tool Tier system 2014 plus "other" foods and beverages not recommended in the Eating Well with Canada's Food Guide

[†]The 25% of individuals with the lowest percentage of energy from Tier 4 and "other" foods.

[‡]The individuals in the interquartile range for energy intakes from Tier 4 and "other" foods.

[§]The 25% of individuals with the highest percentage of energy from Tier 4 and "other" foods

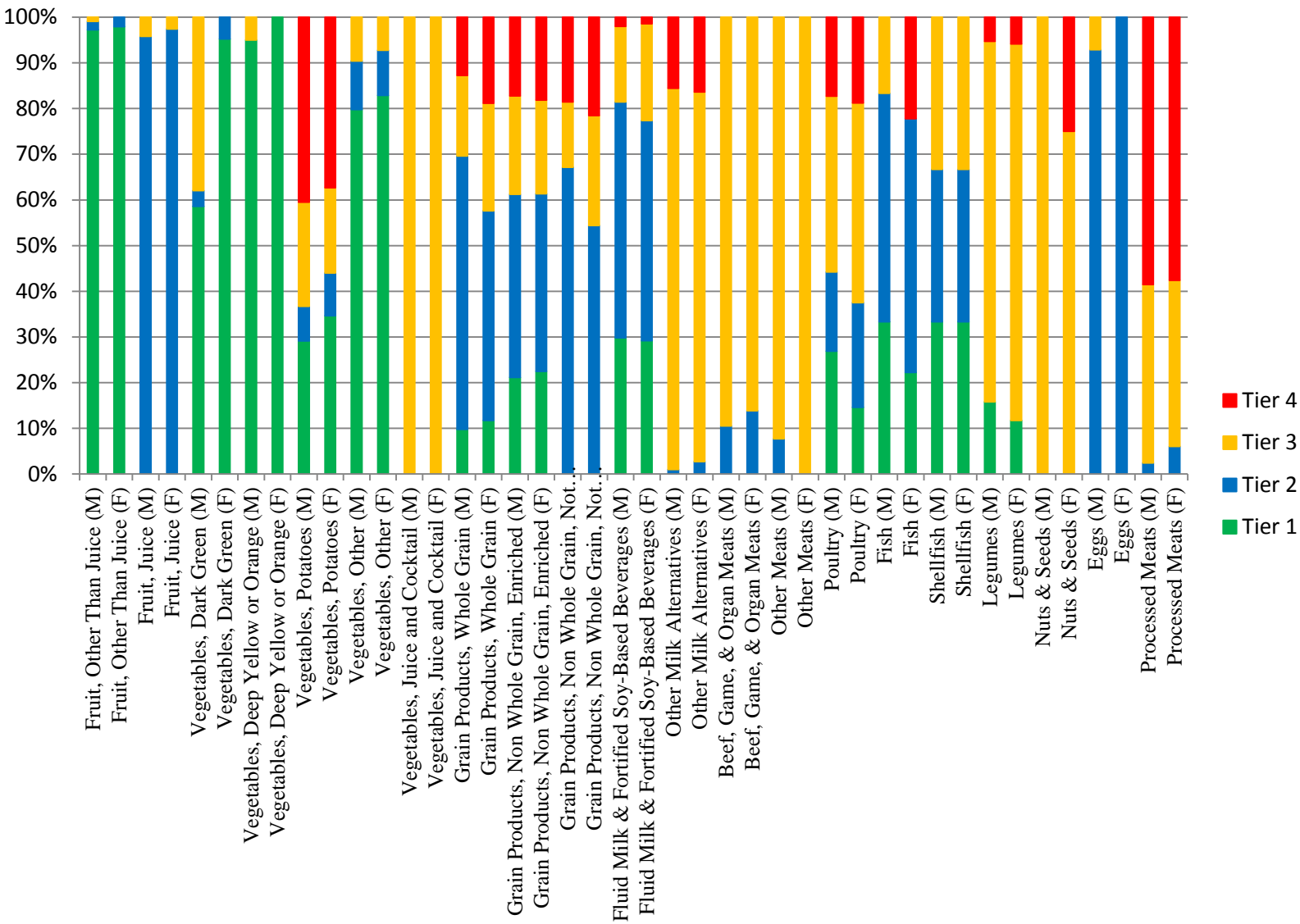
Figure S1. Weighted age-stratified analysis of classification of foods as a percentage of servings based on the 2014 Health Canada Surveillance Tool Tier system^{*,†} among Canadian population of a) Boys and Girls ages 9 to 13 years, and b) Boys and Girls ages 14 to 18 years inclusive.

*Energy adjusted.

†Tiers are based on Health Canada's Surveillance Tool [19] and defined generally as follows: Tier 1-3 foods are compliant with EWCFG and Tier 4 foods are not recommended by the EWCFG. Tier 1 are foods that do not exceed lower thresholds for total fat, sugars, and sodium; Tier 2 foods do not exceed up to 2 lower thresholds for total fat, sugars or sodium, without exceeding any upper thresholds; for the Vegetables and Fruit and Grain Products food groups Tier 3 are foods that exceed all 3 lower thresholds without exceeding any upper thresholds or exceed only one upper threshold, while Tier 4 foods exceed at least 2 upper thresholds for total fat, saturated fat, sugars, or sodium. Within the Milk and Alternatives and Meat and Alternatives food groups, Tier 3 foods exceed all 3 lower thresholds without exceeding any upper thresholds for total fat, sugars, or sodium (irrespective of saturated fat) or exceed only one of these 3 thresholds or foods that only exceed the upper saturated fat threshold; within these 2 food groups foods that exceed at least 2 upper thresholds for total fat, sugars, or sodium were classified as Tier 4. Where lower thresholds entail: total fat ≤ 3 g/RA, sugars ≤ 6 g/RA, and sodium ≤ 140 mg/RA; and upper thresholds are: total fat >10 g/RA, sugars >19 g/RA, sodium >360 mg/RA, and saturated fat >2 g/RA.

Supplementary Figure 1.

a)



b)

