

Supplementary file 9. Pupils' nutrient and food intakes on a school day: at lunch, during the school day, and during 24-hours: associations with school type (4-group typology) – full models

Table 1: Outcome: Free sugar intake

Coefficient	Free sugar (g) Lunch	Free sugar (g) School day	Free sugar (g) 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	-4.83 (-11.85-2.18) p = 0.177	2.08 (-9.92-14.07) p = 0.734	17.75 (-6.16-41.67) p = 0.146
SFS Type: 3	1.50 (-1.12-4.11) p = 0.262	2.23 (-2.19-6.65) p = 0.323	1.72 (-6.96-10.40) p = 0.698
SFS Type: 4	1.52 (-3.61-6.64) p = 0.561	0.17 (-8.53-8.87) p = 0.970	2.26 (-14.79-19.30) p = 0.795
Sex: Male	-0.25 (-2.06-1.56) p = 0.785	0.34 (-2.45-3.12) p = 0.813	4.15 (-1.28-9.58) p = 0.134
Sex: Other	0.33 (-4.68-5.33) p = 0.898	-0.43 (-8.10-7.23) p = 0.912	-12.79 (-27.39-1.81) p = 0.086
Age	-1.53 (-4.09-1.04) p = 0.244	0.61 (-3.33-4.56) p = 0.760	1.44 (-6.20-9.08) p = 0.711
Ethnicity: Asian/Asian British	-1.43 (-3.89-1.03) p = 0.255	-4.17 (-8.00- -0.34) p = 0.033	-12.35 (-19.84- -4.86) p = 0.001
Ethnicity: Black/African/Caribbean/Black British	1.97 (-2.07-6.01) p = 0.339	7.23 (0.98-13.47) p = 0.023	4.07 (-7.96-16.10) p = 0.507
Ethnicity: Mixed/Multiple	-2.93 (-6.70-0.84) p = 0.128	-4.23 (-10.03-1.56) p = 0.152	-11.67 (-23.02- -0.33) p = 0.044
Ethnicity: Other	2.69 (-2.25-7.62) p = 0.285	5.31 (-2.14-12.77) p = 0.162	4.04 (-10.22-18.30) p = 0.579
IMD Quintile: 2	2.23 (-0.60-5.05) p = 0.122	2.54 (-1.81-6.88) p = 0.252	3.46 (-4.96-11.89) p = 0.420
IMD Quintile: 3	1.52 (-1.39-4.43) p = 0.305	1.80 (-2.72-6.31) p = 0.435	2.23 (-6.52-10.98) p = 0.617
IMD Quintile: 4	1.35 (-1.74-4.44) p = 0.393	0.02 (-4.77-4.81) p = 0.994	2.96 (-6.36-12.28) p = 0.533
IMD Quintile: 5	0.97 (-2.13-4.08) p = 0.539	1.10 (-3.73-5.94) p = 0.655	2.40 (-7.05-11.85) p = 0.619
Source of Lunch: 100% School Provided	-3.47 (-5.12- -1.82) p < .001	-2.05 (-4.57-0.47) p = 0.111	3.49 (-1.25-8.23) p = 0.149
Percent FSM	0.09 (-0.02-0.21) p = 0.121	0.02 (-0.17-0.22) p = 0.816	0.15 (-0.22-0.53) p = 0.426
School Level IDACI	0.11 (-0.002-0.22) p = 0.054	0.24 (0.06-0.43) p = 0.009	0.31 (-0.05-0.67) p = 0.089
Sixth Form: Yes	-2.19 (-4.66-0.29) p = 0.084	-0.49 (-4.70-3.71) p = 0.818	-1.69 (-10.04-6.66) p = 0.691
Provision: External	1.45 (-0.53-3.43) p = 0.150	2.00 (-1.32-5.32) p = 0.237	4.08 (-2.44-10.60) p = 0.220
Religious: Secular	3.27 (-0.67-7.21) p = 0.103	5.91 (-0.81-12.62) p = 0.085	7.92 (-5.34-21.18) p = 0.242
Year collected: 2020/2021	-1.81 (-5.50-1.88) p = 0.337	-0.85 (-7.09-5.38) p = 0.788	-6.28 (-18.53-5.97) p = 0.315
Year collected: 2021/2022	0.11 (-2.00-2.21) p = 0.922	1.28 (-2.24-4.80) p = 0.477	0.08 (-6.82-6.98) p = 0.983
Year: 9	1.80 (-3.72-7.32) p = 0.523	-4.07 (-12.53-4.39) p = 0.346	-4.26 (-20.73-12.20) p = 0.612
Year: 10	2.26 (-5.72-10.24) p = 0.579	-6.63 (-18.89-5.63) p = 0.289	-7.80 (-31.55-15.96) p = 0.520

Table 2. Outcome: Percentage Total Energy Intake (TEI) from free sugar

Coefficient	%TEI from free sugar Lunch	%TEI from free sugar School day	%TEI from free sugar 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	-8.12 (-14.48- -1.76) p = 0.012	-5.21 (-11.45-1.03) p = 0.102	1.25 (-3.97-6.47) p = 0.638
SFS Type: 3	1.18 (-1.12-3.49) p = 0.315	1.35 (-0.91-3.60) p = 0.242	0.30 (-1.54-2.14) p = 0.752
SFS Type: 4	-3.50 (-8.19-1.18) p = 0.143	-2.56 (-7.13-2.02) p = 0.273	-0.68 (-4.48-3.13) p = 0.727
Sex: Male	-1.71 (-3.01- -0.42) p = 0.010	-1.36 (-2.57- -0.16) p = 0.027	-0.63 (-1.48-0.22) p = 0.145
Sex: Other	0.24 (-3.30-3.78) p = 0.894	0.07 (-3.21-3.36) p = 0.966	-1.40 (-3.65-0.85) p = 0.222
Age	-1.22 (-3.08-0.64) p = 0.198	-0.52 (-2.24-1.20) p = 0.552	-0.08 (-1.30-1.13) p = 0.893
Ethnicity: Asian/Asian British	0.20 (-1.58-1.98) p = 0.825	-0.13 (-1.79-1.54) p = 0.881	-1.68 (-2.87- -0.50) p = 0.005
Ethnicity: Black/African/Caribbean/Black British	0.66 (-2.22-3.55) p = 0.652	4.12 (1.42-6.81) p = 0.003	0.18 (-1.69-2.05) p = 0.852
Ethnicity: Mixed/Multiple	-0.80 (-3.47-1.87) p = 0.556	1.37 (-1.11-3.85) p = 0.279	-1.21 (-2.96-0.54) p = 0.175
Ethnicity: Other	-1.85 (-5.36-1.66) p = 0.300	-1.76 (-4.97-1.44) p = 0.281	-0.82 (-3.02-1.39) p = 0.468
IMD Quintile: 2	-0.87 (-2.89-1.15) p = 0.399	0.06 (-1.82-1.94) p = 0.951	-0.28 (-1.59-1.03) p = 0.677
IMD Quintile: 3	-0.18 (-2.28-1.92) p = 0.867	0.76 (-1.20-2.73) p = 0.445	0.08 (-1.30-1.46) p = 0.908
IMD Quintile: 4	-0.40 (-2.63-1.82) p = 0.723	0.32 (-1.76-2.40) p = 0.764	0.48 (-0.99-1.94) p = 0.522
IMD Quintile: 5	-1.32 (-3.57-0.92) p = 0.248	-0.02 (-2.13-2.08) p = 0.982	-0.81 (-2.30-0.68) p = 0.288
Source of Lunch: 100% School Provided	0.82 (-0.38-2.01) p = 0.183	0.04 (-1.07-1.15) p = 0.944	0.23 (-0.52-0.98) p = 0.550
Percent FSM	0.06 (-0.04-0.16) p = 0.244	0.06 (-0.03-0.16) p = 0.204	0.03 (-0.04-0.11) p = 0.377
School Level IDACI	0.06 (-0.04-0.15) p = 0.224	0.09 (0.0006-0.19) p = 0.049	0.05 (-0.03-0.12) p = 0.224
Sixth Form: Yes	-0.85 (-3.06-1.35) p = 0.450	-0.57 (-2.73-1.59) p = 0.603	-0.12 (-1.90-1.67) p = 0.898
Provision: External	0.81 (-0.92-2.55) p = 0.359	0.54 (-1.16-2.23) p = 0.533	0.24 (-1.15-1.62) p = 0.738
Religious: Secular	0.94 (-2.63-4.52) p = 0.605	1.14 (-2.36-4.64) p = 0.523	0.99 (-1.91-3.89) p = 0.503
Year collected: 2020/2021	1.17 (-2.10-4.44) p = 0.483	1.73 (-1.47-4.92) p = 0.290	0.54 (-2.10-3.17) p = 0.690
Year collected: 2021/2022	1.68 (-0.15-3.51) p = 0.073	1.09 (-0.69-2.87) p = 0.230	0.80 (-0.64-2.24) p = 0.277
Year: 9	2.20 (-1.78-6.18) p = 0.278	1.06 (-2.62-4.74) p = 0.573	-0.07 (-2.67-2.53) p = 0.958
Year: 10	2.40 (-3.37-8.17) p = 0.415	-0.008 (-5.35-5.33) p = 0.998	-1.01 (-4.77-2.76) p = 0.600

Table 3. Outcome: Total Energy Intake (TEI)

Coefficient	TEI (kcal Lunch)	TEI (kcal) School day	TEI (kcal) 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	20.51 (-124.90-165.92) p = 0.782	-4.87 (-170.30-160.57) p = 0.954	192.14 (-184.12-568.40) p = 0.317
SFS Type: 3	-0.52 (-53.35-52.31) p = 0.985	22.33 (-39.27-83.94) p = 0.477	-6.92 (-142.42-128.58) p = 0.920
SFS Type: 4	55.30 (-51.70-162.30) p = 0.311	75.77 (-43.62-195.16) p = 0.214	106.70 (-163.52-376.91) p = 0.439
Sex: Male	43.62 (13.17-74.07) p = 0.005	63.00 (21.44-104.55) p = 0.003	208.43 (129.45-287.42) p < .001
Sex: Other	14.34 (-68.87-97.54) p = 0.736	-10.28 (-125.28-104.73) p = 0.861	-185.26 (-396.65-26.14) p = 0.086
Age	17.65 (-25.95-61.25) p = 0.428	42.94 (-15.61-101.48) p = 0.151	64.78 (-46.90-176.46) p = 0.256
Ethnicity: Asian/Asian British	2.16 (-39.61-43.93) p = 0.919	-19.05 (-75.99-37.89) p = 0.512	-7.72 (-117.06-101.61) p = 0.890
Ethnicity: Black/African/Caribbean/Black British	48.14 (-19.49-115.77) p = 0.163	56.86 (-36.52-150.23) p = 0.233	102.64 (-72.07-277.36) p = 0.250
Ethnicity: Mixed/Multiple	-49.83 (-112.59-12.92) p = 0.120	-105.27 (-192.09- -18.45) p = 0.017	-78.90 (-243.23-85.43) p = 0.347
Ethnicity: Other	180.76 (98.45-263.08) p < .001	220.42 (108.81-332.02) p < .001	145.31 (-61.53-352.14) p = 0.169
IMD Quintile: 2	53.05 (5.63-100.47) p = 0.028	42.28 (-22.63-107.19) p = 0.202	52.99 (-69.45-175.44) p = 0.396
IMD Quintile: 3	43.92 (-5.24-93.08) p = 0.080	23.60 (-43.60-90.80) p = 0.491	13.35 (-114.20-140.90) p = 0.837
IMD Quintile: 4	46.73 (-5.48-98.93) p = 0.079	57.23 (-14.08-128.54) p = 0.116	79.03 (-56.71-214.77) p = 0.254
IMD Quintile: 5	58.15 (5.49-110.80) p = 0.030	55.42 (-16.55-127.38) p = 0.131	99.17 (-38.65-237.00) p = 0.158
Source of Lunch: 100% School Provided	-133.05 (-160.85- -105.25) p < .001	-69.08 (-106.62- -31.53) p < .001	7.73 (-61.96-77.41) p = 0.828
Percent FSM	-0.78 (-3.06-1.49) p = 0.500	-0.85 (-3.57-1.88) p = 0.543	-1.40 (-7.20-4.40) p = 0.636
School Level IDACI	1.93 (-0.26-4.12) p = 0.085	2.16 (-0.39-4.71) p = 0.097	3.30 (-2.30-8.89) p = 0.248
Sixth Form: Yes	-50.00 (-100.57-0.56) p = 0.053	-9.93 (-68.39-48.53) p = 0.739	-23.57 (-154.12-106.97) p = 0.723
Provision: External	2.75 (-37.10-42.61) p = 0.892	43.59 (-2.70-89.89) p = 0.065	37.91 (-63.90-139.72) p = 0.465
Religious: Secular	72.22 (-9.34-153.78) p = 0.083	100.72 (8.15-193.29) p = 0.033	148.15 (-60.82-357.12) p = 0.165
Year collected: 2020/2021	-64.19 (-139.29-10.90) p = 0.094	-30.04 (-116.71-56.64) p = 0.497	-111.02 (-302.85-80.82) p = 0.257
Year collected: 2021/2022	-48.67 (-90.70- -6.63) p = 0.023	-50.78 (-100.09- -1.47) p = 0.044	-76.32 (-183.63-30.99) p = 0.163
Year: 9	-79.25 (-172.68-14.18) p = 0.096	-146.45 (-272.35- -20.55) p = 0.023	-155.66 (-395.83-84.51) p = 0.204
Year: 10	-82.08 (-217.48-53.32) p = 0.235	-162.13 (-344.48-20.22) p = 0.081	-177.75 (-524.54-169.04) p = 0.315

Table 4. Outcome: Fat intake

Coefficient	Fat intake (g) Lunch	Fat intake (g) School day	Fat intake (g) 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	2.79 (-3.71-9.30) p = 0.400	0.62 (-7.23-8.47) p = 0.878	9.00 (-6.72-24.71) p = 0.262
SFS Type: 3	-0.32 (-2.71-2.07) p = 0.791	0.31 (-2.61-3.23) p = 0.834	-1.78 (-7.49-3.92) p = 0.540
SFS Type: 4	1.83 (-2.96-6.61) p = 0.454	3.70 (-1.98-9.37) p = 0.202	3.74 (-7.51-15.00) p = 0.515
Sex: Male	1.65 (0.16-3.15) p = 0.030	2.38 (0.41-4.34) p = 0.018	7.31 (3.79-10.83) p < .001
Sex: Other	-0.25 (-4.36-3.85) p = 0.903	-1.14 (-6.57-4.28) p = 0.680	-9.69 (-19.13- -0.25) p = 0.044
Age	0.86 (-1.27-2.99) p = 0.430	2.35 (-0.42-5.11) p = 0.096	3.03 (-1.92-7.99) p = 0.230
Ethnicity: Asian/Asian British	0.12 (-1.92-2.15) p = 0.911	-0.61 (-3.30-2.07) p = 0.654	0.31 (-4.52-5.15) p = 0.899
Ethnicity: Black/African/Caribbean/Black British	1.94 (-1.39-5.27) p = 0.254	2.02 (-2.39-6.43) p = 0.370	1.22 (-6.58-9.02) p = 0.759
Ethnicity: Mixed/Multiple	-2.09 (-5.18-1.00) p = 0.185	-4.60 (-8.70- -0.51) p = 0.027	-2.95 (-10.28-4.38) p = 0.430
Ethnicity: Other	8.93 (4.87-12.99) p < .001	11.66 (6.39-16.92) p < .001	9.94 (0.68-19.19) p = 0.035
IMD Quintile: 2	3.05 (0.72-5.38) p = 0.010	2.11 (-0.96-5.17) p = 0.177	2.77 (-2.69-8.23) p = 0.320
IMD Quintile: 3	2.21 (-0.20-4.62) p = 0.073	1.32 (-1.85-4.49) p = 0.415	-0.97 (-6.65-4.71) p = 0.737
IMD Quintile: 4	2.80 (0.24-5.36) p = 0.032	4.09 (0.72-7.45) p = 0.017	2.90 (-3.14-8.94) p = 0.346
IMD Quintile: 5	3.23 (0.65-5.81) p = 0.014	3.34 (-0.06-6.74) p = 0.054	3.27 (-2.86-9.40) p = 0.296
Source of Lunch: 100% School Provided	-5.19 (-6.57- -3.81) p < .001	-2.76 (-4.55- -0.97) p = 0.003	-0.70 (-3.89-2.50) p = 0.669
Percent FSM	-0.04 (-0.14-0.07) p = 0.483	-0.03 (-0.16-0.10) p = 0.678	-0.04 (-0.29-0.20) p = 0.727
School Level IDACI	0.09 (-0.009-0.19) p = 0.075	0.08 (-0.04-0.20) p = 0.184	0.11 (-0.13-0.34) p = 0.374
Sixth Form: Yes	-2.02 (-4.30-0.25) p = 0.081	-0.52 (-3.29-2.25) p = 0.714	-2.22 (-7.69-3.25) p = 0.427
Provision: External	0.05 (-1.75-1.86) p = 0.953	1.79 (-0.41-3.99) p = 0.110	1.31 (-2.97-5.60) p = 0.548
Religious: Secular	4.17 (0.51-7.83) p = 0.026	5.12 (0.72-9.52) p = 0.022	8.02 (-0.72-16.76) p = 0.072
Year collected: 2020/2021	-3.04 (-6.42-0.33) p = 0.077	-1.43 (-5.54-2.67) p = 0.494	-3.54 (-11.57-4.48) p = 0.387
Year collected: 2021/2022	-2.81 (-4.73- -0.90) p = 0.004	-3.03 (-5.37- -0.69) p = 0.011	-3.13 (-7.66-1.40) p = 0.175
Year: 9	-3.10 (-7.67-1.47) p = 0.184	-6.58 (-12.52- -0.64) p = 0.030	-6.69 (-17.36-3.97) p = 0.219
Year: 10	-3.05 (-9.67-3.57) p = 0.366	-7.22 (-15.83-1.38) p = 0.100	-6.58 (-21.97-8.81) p = 0.402

Table 5. Outcome: Fibre intake

Coefficient	Fibre intake (g) Lunch	Fibre intake (g) School day	Fibre intake (g) 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	1.43 (-0.22-3.07) p = 0.089	0.78 (-1.03-2.59) p = 0.398	1.62 (-3.07-6.30) p = 0.498
SFS Type: 3	0.07 (-0.52-0.66) p = 0.810	0.31 (-0.35-0.97) p = 0.360	-0.13 (-1.78-1.52) p = 0.880
SFS Type: 4	0.41 (-0.81-1.62) p = 0.513	0.43 (-0.89-1.76) p = 0.520	-0.43 (-3.85-2.99) p = 0.804
Sex: Male	0.16 (-0.14-0.46) p = 0.295	0.29 (-0.09-0.66) p = 0.137	1.12 (0.36-1.87) p = 0.004
Sex: Other	-0.14 (-0.96-0.67) p = 0.732	-0.38 (-1.40-0.65) p = 0.473	-1.57 (-3.56-0.42) p = 0.123
Age	0.22 (-0.22-0.65) p = 0.324	0.44 (-0.09-0.98) p = 0.103	0.43 (-0.64-1.51) p = 0.429
Ethnicity: Asian/Asian British	0.05 (-0.36-0.47) p = 0.808	-0.21 (-0.72-0.31) p = 0.438	-0.02 (-1.08-1.03) p = 0.964
Ethnicity: Black/African/Caribbean/Black British	0.15 (-0.52-0.82) p = 0.655	-0.10 (-0.94-0.74) p = 0.816	-0.36 (-2.02-1.29) p = 0.667
Ethnicity: Mixed/Multiple	-0.27 (-0.89-0.35) p = 0.390	-0.72 (-1.50-0.05) p = 0.067	-0.56 (-2.10-0.99) p = 0.482
Ethnicity: Other	1.41 (0.60-2.22) p = 0.001	1.23 (0.23-2.23) p = 0.016	-0.31 (-2.27-1.64) p = 0.754
IMD Quintile: 2	0.21 (-0.26-0.67) p = 0.388	0.20 (-0.38-0.79) p = 0.498	0.43 (-0.74-1.59) p = 0.473
IMD Quintile: 3	0.12 (-0.37-0.61) p = 0.625	0.06 (-0.55-0.67) p = 0.849	0.41 (-0.81-1.64) p = 0.507
IMD Quintile: 4	0.26 (-0.26-0.78) p = 0.326	0.55 (-0.10-1.19) p = 0.098	1.02 (-0.27-2.32) p = 0.122
IMD Quintile: 5	0.37 (-0.15-0.90) p = 0.160	0.49 (-0.16-1.15) p = 0.141	1.61 (0.29-2.93) p = 0.017
Source of Lunch: 100% School Provided	-1.39 (-1.67- -1.12) p < .001	-0.86 (-1.20- -0.52) p < .001	-0.15 (-0.82-0.51) p = 0.653
Percent FSM	-0.02 (-0.05-0.001) p = 0.061	-0.02 (-0.05-0.004) p = 0.099	-0.04 (-0.11-0.03) p = 0.250
School Level IDACI	0.02 (-0.009-0.04) p = 0.224	0.01 (-0.01-0.04) p = 0.280	0.03 (-0.04-0.09) p = 0.457
Sixth Form: Yes	0.14 (-0.43-0.71) p = 0.625	0.55 (-0.08-1.18) p = 0.086	0.52 (-1.08-2.12) p = 0.523
Provision: External	0.010 (-0.44-0.45) p = 0.967	0.37 (-0.12-0.86) p = 0.142	0.06 (-1.18-1.31) p = 0.918
Religious: Secular	0.63 (-0.30-1.55) p = 0.183	1.02 (0.004-2.03) p = 0.049	1.26 (-1.34-3.87) p = 0.342
Year collected: 2020/2021	-0.02 (-0.86-0.82) p = 0.965	0.20 (-0.73-1.13) p = 0.674	-0.25 (-2.61-2.12) p = 0.838
Year collected: 2021/2022	-0.43 (-0.90-0.04) p = 0.070	-0.52 (-1.04- -0.0001) p = 0.050	-0.93 (-2.23-0.36) p = 0.157
Year: 9	-0.86 (-1.78-0.07) p = 0.070	-1.44 (-2.58- -0.29) p = 0.014	-1.24 (-3.55-1.06) p = 0.290
Year: 10	-1.02 (-2.36-0.33) p = 0.139	-1.61 (-3.27-0.05) p = 0.057	-1.34 (-4.67-2.00) p = 0.432

Table 6. Outcome: Fruit and vegetable (F&V) intake

Coefficient	F&V portions Lunch	F&V portions School day	F&V portions 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	-0.39 (-0.93-0.15) p = 0.153	-0.30 (-0.81-0.21) p = 0.254	-0.33 (-1.54-0.88) p = 0.590
SFS Type: 3	0.10 (-0.09-0.29) p = 0.298	0.18 (-0.004-0.37) p = 0.056	0.28 (-0.15-0.71) p = 0.201
SFS Type: 4	0.008 (-0.39-0.41) p = 0.968	0.06 (-0.31-0.43) p = 0.756	-0.14 (-1.03-0.74) p = 0.752
Sex: Male	-0.04 (-0.14-0.06) p = 0.400	-0.03 (-0.15-0.08) p = 0.579	-0.05 (-0.25-0.15) p = 0.651
Sex: Other	-0.16 (-0.42-0.10) p = 0.234	-0.27 (-0.58-0.05) p = 0.098	-0.47 (-1.00-0.06) p = 0.080
Age	0.03 (-0.11-0.17) p = 0.630	0.02 (-0.14-0.19) p = 0.771	0.13 (-0.16-0.41) p = 0.387
Ethnicity: Asian/Asian British	-0.03 (-0.17-0.10) p = 0.633	-0.07 (-0.22-0.09) p = 0.411	-0.09 (-0.37-0.19) p = 0.523
Ethnicity: Black/African/Caribbean/Black British	0.03 (-0.19-0.25) p = 0.785	0.003 (-0.25-0.26) p = 0.981	0.07 (-0.37-0.51) p = 0.765
Ethnicity: Mixed/Multiple	0.02 (-0.18-0.22) p = 0.827	-0.05 (-0.28-0.19) p = 0.709	-0.10 (-0.51-0.31) p = 0.633
Ethnicity: Other	0.17 (-0.09-0.43) p = 0.209	0.18 (-0.12-0.49) p = 0.244	-0.13 (-0.65-0.39) p = 0.632
IMD Quintile: 2	-0.02 (-0.17-0.14) p = 0.841	-0.03 (-0.21-0.15) p = 0.734	0.11 (-0.20-0.42) p = 0.472
IMD Quintile: 3	0.004 (-0.15-0.16) p = 0.960	0.003 (-0.18-0.19) p = 0.972	0.25 (-0.08-0.57) p = 0.136
IMD Quintile: 4	-0.003 (-0.17-0.16) p = 0.974	0.010 (-0.19-0.21) p = 0.923	0.16 (-0.18-0.51) p = 0.359
IMD Quintile: 5	-0.002 (-0.17-0.17) p = 0.981	0.07 (-0.13-0.27) p = 0.508	0.28 (-0.07-0.63) p = 0.119
Source of Lunch: 100% School Provided	-0.25 (-0.34- -0.16) p < .001	-0.19 (-0.29- -0.09) p < .001	0.008 (-0.17-0.19) p = 0.929
Percent FSM	-0.009 (-0.02- -0.0009) p = 0.030	-0.01 (-0.02- -0.004) p = 0.005	-0.02 (-0.04- -0.003) p = 0.023
School Level IDACI	0.003 (-0.005-0.01) p = 0.423	0.004 (-0.004-0.01) p = 0.305	0.006 (-0.01-0.02) p = 0.522
Sixth Form: Yes	0.09 (-0.10-0.27) p = 0.347	0.18 (0.005-0.36) p = 0.044	0.28 (-0.14-0.69) p = 0.189
Provision: External	0.08 (-0.07-0.22) p = 0.298	0.15 (0.005-0.29) p = 0.042	0.11 (-0.21-0.44) p = 0.490
Religious: Secular	-0.04 (-0.35-0.26) p = 0.772	0.09 (-0.20-0.37) p = 0.548	0.15 (-0.53-0.82) p = 0.668
Year collected: 2020/2021	0.18 (-0.10-0.45) p = 0.204	0.18 (-0.08-0.45) p = 0.179	0.31 (-0.30-0.92) p = 0.323
Year collected: 2021/2022	0.10 (-0.05-0.26) p = 0.177	0.09 (-0.06-0.24) p = 0.226	0.07 (-0.27-0.40) p = 0.702
Year: 9	-0.08 (-0.38-0.22) p = 0.587	-0.12 (-0.47-0.23) p = 0.496	-0.33 (-0.94-0.28) p = 0.289
Year: 10	-0.17 (-0.60-0.27) p = 0.453	-0.13 (-0.64-0.37) p = 0.608	-0.46 (-1.35-0.42) p = 0.305

Table 7. Outcome: number of sugar sweetened beverages (SSB) consumed (Poisson models)

Coefficient	SSB items Incidence Rate Ratio Lunch	SSB items Incidence Rate Ratio School day	SSB items Incidence Rate Ratio 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	0.55 (0.14-2.13) p = 0.389	0.68 (0.16-2.86) p = 0.599	1.36 (0.48-3.85) p = 0.559
SFS Type: 3	0.91 (0.63-1.33) p = 0.639	0.72 (0.46-1.13) p = 0.150	0.78 (0.54-1.13) p = 0.195
SFS Type: 4	0.82 (0.37-1.82) p = 0.619	0.97 (0.41-2.28) p = 0.948	0.77 (0.36-1.64) p = 0.500
Sex: Male	0.88 (0.68-1.14) p = 0.349	0.95 (0.74-1.22) p = 0.688	0.93 (0.79-1.10) p = 0.398
Sex: Other	1.09 (0.55-2.17) p = 0.797	1.20 (0.62-2.30) p = 0.589	0.92 (0.58-1.46) p = 0.734
Age	1.05 (0.73-1.52) p = 0.792	0.91 (0.64-1.30) p = 0.614	0.86 (0.68-1.10) p = 0.238
Ethnicity: Asian/Asian British	0.67 (0.45-1.01) p = 0.055	0.77 (0.53-1.13) p = 0.178	0.78 (0.60-1.00) p = 0.048
Ethnicity: Black/African/Caribbean/Black British	0.92 (0.52-1.64) p = 0.787	1.06 (0.62-1.80) p = 0.829	0.86 (0.59-1.25) p = 0.436
Ethnicity: Mixed/Multiple	0.71 (0.39-1.29) p = 0.263	0.85 (0.50-1.43) p = 0.538	0.83 (0.58-1.19) p = 0.316
Ethnicity: Other	1.07 (0.59-1.95) p = 0.831	0.95 (0.51-1.77) p = 0.864	0.73 (0.46-1.17) p = 0.192
IMD Quintile: 2	0.84 (0.57-1.22) p = 0.353	0.96 (0.67-1.38) p = 0.833	1.03 (0.80-1.32) p = 0.837
IMD Quintile: 3	0.69 (0.47-1.03) p = 0.072	0.79 (0.53-1.16) p = 0.228	0.92 (0.71-1.20) p = 0.546
IMD Quintile: 4	0.70 (0.45-1.07) p = 0.102	0.77 (0.50-1.17) p = 0.222	1.01 (0.76-1.35) p = 0.928
IMD Quintile: 5	0.52 (0.33-0.83) p = 0.006	0.68 (0.44-1.06) p = 0.092	0.71 (0.53-0.97) p = 0.031
Source of Lunch: 100% School Provided	0.89 (0.69-1.14) p = 0.354	1.04 (0.83-1.30) p = 0.751	1.23 (1.06-1.43) p = 0.007
Percent FSM	1.00 (0.98-1.02) p = 0.857	0.99 (0.97-1.01) p = 0.497	1.00 (0.98-1.01) p = 0.842
School Level IDACI	1.01 (0.99-1.03) p = 0.213	1.02 (1.00-1.03) p = 0.080	1.02 (1.00-1.03) p = 0.047
Sixth Form: Yes	1.09 (0.76-1.58) p = 0.636	1.00 (0.64-1.54) p = 0.984	1.01 (0.70-1.46) p = 0.948
Provision: External	1.04 (0.79-1.38) p = 0.767	0.87 (0.63-1.22) p = 0.427	0.89 (0.68-1.18) p = 0.417
Religious: Secular	1.63 (0.76-3.49) p = 0.211	2.26 (1.01-5.07) p = 0.048	1.44 (0.79-2.62) p = 0.231
Year collected: 2020/2021	0.84 (0.50-1.42) p = 0.525	0.82 (0.44-1.51) p = 0.516	1.01 (0.60-1.70) p = 0.969
Year collected: 2021/2022	0.66 (0.49-0.89) p = 0.007	0.70 (0.50-0.98) p = 0.041	0.89 (0.67-1.18) p = 0.407
Year: 9	0.70 (0.32-1.55) p = 0.382	0.86 (0.41-1.83) p = 0.701	1.12 (0.67-1.89) p = 0.661
Year: 10	0.62 (0.20-1.94) p = 0.409	0.82 (0.28-2.46) p = 0.729	1.01 (0.47-2.16) p = 0.976

Table 8. Outcome: number of high fat, sugar and salt (HFSS) items consumed (Poisson models)

Coefficient	HFSS items Incidence Rate Ratio Lunch	HFSS items Incidence Rate Ratio School day	HFSS items Incidence Rate Ratio 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	0.86 (0.56-1.34) p = 0.508	0.96 (0.71-1.31) p = 0.818	1.12 (0.86-1.44) p = 0.395
SFS Type: 3	1.05 (0.91-1.20) p = 0.492	1.08 (0.97-1.20) p = 0.174	1.06 (0.96-1.16) p = 0.253
SFS Type: 4	1.18 (0.88-1.58) p = 0.266	1.09 (0.87-1.35) p = 0.467	1.11 (0.92-1.34) p = 0.258
Sex: Male	0.88 (0.80-0.96) p = 0.004	0.89 (0.82-0.96) p = 0.002	0.93 (0.88-0.99) p = 0.018
Sex: Other	1.03 (0.82-1.30) p = 0.814	0.91 (0.74-1.11) p = 0.357	0.79 (0.67-0.93) p = 0.004
Age	0.96 (0.84-1.09) p = 0.495	1.01 (0.91-1.12) p = 0.892	0.99 (0.91-1.08) p = 0.840
Ethnicity: Asian/Asian British	0.84 (0.74-0.95) p = 0.005	0.84 (0.76-0.93) p = 0.001	0.87 (0.81-0.95) p = 0.001
Ethnicity: Black/African/Caribbean/Black British	0.78 (0.62-0.99) p = 0.040	0.91 (0.77-1.09) p = 0.314	0.91 (0.80-1.03) p = 0.143
Ethnicity: Mixed/Multiple	0.87 (0.72-1.06) p = 0.169	0.87 (0.75-1.02) p = 0.097	0.87 (0.77-0.99) p = 0.028
Ethnicity: Other	1.14 (0.92-1.42) p = 0.230	1.04 (0.86-1.26) p = 0.687	1.03 (0.89-1.19) p = 0.718
IMD Quintile: 2	1.03 (0.90-1.19) p = 0.645	1.07 (0.95-1.20) p = 0.248	1.04 (0.95-1.14) p = 0.349
IMD Quintile: 3	1.08 (0.93-1.24) p = 0.308	1.10 (0.98-1.24) p = 0.105	1.07 (0.98-1.17) p = 0.152
IMD Quintile: 4	1.18 (1.01-1.37) p = 0.032	1.21 (1.07-1.37) p = 0.003	1.15 (1.05-1.27) p = 0.004
IMD Quintile: 5	1.15 (0.99-1.34) p = 0.064	1.20 (1.06-1.37) p = 0.004	1.16 (1.05-1.29) p = 0.003
Source of Lunch: 100% School Provided	0.55 (0.50-0.60) p < .001	0.70 (0.65-0.75) p < .001	0.90 (0.85-0.95) p < .001
Percent FSM	0.99 (0.99-1.00) p = 0.034	1.00 (0.99-1.00) p = 0.307	1.00 (1.00-1.00) p = 0.865
School Level IDACI	1.01 (1.00-1.02) p = 0.001	1.01 (1.00-1.01) p = 0.028	1.00 (1.00-1.01) p = 0.229
Sixth Form: Yes	1.00 (0.88-1.14) p = 0.970	1.07 (0.97-1.18) p = 0.188	1.04 (0.95-1.13) p = 0.435
Provision: External	1.06 (0.96-1.18) p = 0.261	1.05 (0.97-1.14) p = 0.270	1.03 (0.96-1.11) p = 0.355
Religious: Secular	1.22 (0.98-1.53) p = 0.079	1.14 (0.97-1.35) p = 0.115	1.02 (0.88-1.18) p = 0.806
Year collected: 2020/2021	0.90 (0.74-1.09) p = 0.266	0.98 (0.85-1.14) p = 0.830	0.97 (0.86-1.11) p = 0.699
Year collected: 2021/2022	0.86 (0.77-0.96) p = 0.009	0.88 (0.80-0.95) p = 0.002	0.92 (0.86-0.99) p = 0.030
Year: 9	0.99 (0.75-1.29) p = 0.916	0.90 (0.72-1.12) p = 0.341	0.95 (0.80-1.14) p = 0.601
Year: 10	1.02 (0.69-1.50) p = 0.934	0.92 (0.67-1.27) p = 0.608	0.97 (0.75-1.25) p = 0.792

Table 9. Outcome: number of confectionery items consumed (Poisson models)

Coefficient	Confectionery items Incidence Rate Ratio Lunch	Confectionery items Incidence Rate Ratio School day	Confectionery items Incidence Rate Ratio 24-hour day
Pupils	1,878	1,934	2,045
Schools	36	36	36
SFS Type: 2	0.44 (0.05-3.61) p = 0.445	2.70 (1.30-5.59) p = 0.008	1.45 (0.84-2.49) p = 0.180
SFS Type: 3	0.92 (0.66-1.30) p = 0.650	1.07 (0.83-1.37) p = 0.617	1.09 (0.90-1.33) p = 0.376
SFS Type: 4	2.15 (1.16-3.98) p = 0.015	1.41 (0.86-2.30) p = 0.170	1.46 (1.02-2.10) p = 0.039
Sex: Male	0.84 (0.66-1.07) p = 0.152	0.81 (0.67-0.97) p = 0.019	0.73 (0.64-0.84) p < .001
Sex: Other	0.43 (0.17-1.06) p = 0.067	0.56 (0.31-1.03) p = 0.061	0.45 (0.28-0.72) p = 0.001
Age	1.03 (0.74-1.44) p = 0.844	1.00 (0.78-1.29) p = 0.972	0.93 (0.77-1.12) p = 0.435
Ethnicity: Asian/Asian British	0.76 (0.54-1.08) p = 0.125	0.71 (0.54-0.92) p = 0.011	0.72 (0.59-0.87) p = 0.001
Ethnicity: Black/African/Caribbean/Black British	0.62 (0.30-1.31) p = 0.213	0.89 (0.57-1.40) p = 0.622	0.77 (0.55-1.07) p = 0.122
Ethnicity: Mixed/Multiple	0.80 (0.46-1.38) p = 0.423	0.98 (0.68-1.42) p = 0.933	0.84 (0.63-1.13) p = 0.257
Ethnicity: Other	0.99 (0.52-1.87) p = 0.964	1.14 (0.73-1.78) p = 0.571	0.88 (0.61-1.26) p = 0.479
IMD Quintile: 2	1.27 (0.85-1.88) p = 0.243	1.31 (0.99-1.74) p = 0.059	1.22 (0.99-1.51) p = 0.068
IMD Quintile: 3	1.38 (0.93-2.04) p = 0.110	1.44 (1.08-1.92) p = 0.014	1.33 (1.07-1.66) p = 0.011
IMD Quintile: 4	1.72 (1.14-2.59) p = 0.010	1.48 (1.08-2.03) p = 0.014	1.31 (1.03-1.66) p = 0.025
IMD Quintile: 5	1.45 (0.95-2.21) p = 0.083	1.44 (1.05-1.98) p = 0.023	1.50 (1.18-1.89) p = 0.001
Source of Lunch: 100% School Provided	0.16 (0.11-0.22) p < .001	0.33 (0.27-0.40) p < .001	0.67 (0.59-0.77) p < .001
Percent FSM	0.99 (0.98-1.01) p = 0.346	1.00 (0.99-1.01) p = 0.858	1.01 (1.00-1.02) p = 0.087
School Level IDACI	1.01 (1.00-1.02) p = 0.189	1.00 (0.99-1.01) p = 0.794	1.00 (0.99-1.00) p = 0.311
Sixth Form: Yes	1.09 (0.80-1.48) p = 0.602	1.22 (0.96-1.55) p = 0.105	1.12 (0.93-1.35) p = 0.225
Provision: External	0.99 (0.76-1.29) p = 0.937	1.03 (0.85-1.25) p = 0.774	1.04 (0.90-1.20) p = 0.607
Religious: Secular	1.69 (0.96-2.96) p = 0.069	1.36 (0.90-2.06) p = 0.141	0.90 (0.67-1.20) p = 0.466
Year collected: 2020/2021	0.75 (0.47-1.21) p = 0.239	0.76 (0.53-1.10) p = 0.142	0.81 (0.61-1.07) p = 0.132
Year collected: 2021/2022	0.87 (0.66-1.14) p = 0.305	0.83 (0.68-1.02) p = 0.071	0.83 (0.71-0.97) p = 0.018
Year: 9	0.79 (0.39-1.59) p = 0.502	0.94 (0.55-1.59) p = 0.806	1.12 (0.75-1.68) p = 0.573
Year: 10	0.75 (0.27-2.10) p = 0.588	0.97 (0.45-2.10) p = 0.948	1.27 (0.71-2.27) p = 0.420