

Supplementary file 5. Pupils' nutrient and food intakes on a school day: at lunch, during the school day, and during 24-hours: associations with SFS-mandated/non-mandated school status – full models

Table 1. 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 Status: Mandated | -0.90 (-2.76-0.95) p = 0.340 | -0.31 (-2.04-1.42) p = 0.724 | 0.77 (-0.53-2.07) p = 0.245 |
| Sex: Male | -1.67 (-2.97- -0.36) p = 0.012 | -1.32 (-2.53- -0.12) p = 0.032 | -0.63 (-1.47-0.22) p = 0.146 |
| Sex: Other | 0.34 (-3.20-3.89) p = 0.850 | 0.11 (-3.18-3.39) p = 0.950 | -1.41 (-3.66-0.84) p = 0.219 |
| Age | -1.12 (-3.00-0.75) p = 0.241 | -0.47 (-2.20-1.26) p = 0.594 | -0.16 (-1.37-1.05) p = 0.800 |
| Ethnicity: Asian/Asian British | 0.09 (-1.70-1.88) p = 0.920 | -0.19 (-1.86-1.47) p = 0.821 | -1.64 (-2.81- -0.46) p = 0.007 |
| Ethnicity: Black/African/Caribbean/Black British | 0.54 (-2.35-3.42) p = 0.716 | 4.02 (1.32-6.71) p = 0.003 | 0.19 (-1.67-2.06) p = 0.838 |
| Ethnicity: Mixed/Multiple | -0.81 (-3.48-1.86) p = 0.552 | 1.36 (-1.13-3.84) p = 0.284 | -1.19 (-2.94-0.55) p = 0.181 |
| Ethnicity: Other | -1.87 (-5.38-1.65) p = 0.298 | -1.79 (-5.00-1.41) p = 0.272 | -0.79 (-2.99-1.41) p = 0.481 |
| IMD Quintile: 2 | -0.92 (-2.95-1.11) p = 0.376 | 0.06 (-1.82-1.94) p = 0.952 | -0.27 (-1.58-1.04) p = 0.689 |
| IMD Quintile: 3 | -0.08 (-2.18-2.03) p = 0.944 | 0.88 (-1.08-2.85) p = 0.378 | 0.10 (-1.28-1.47) p = 0.890 |
| IMD Quintile: 4 | -0.27 (-2.51-1.96) p = 0.810 | 0.47 (-1.61-2.55) p = 0.657 | 0.53 (-0.93-1.98) p = 0.480 |
| IMD Quintile: 5 | -1.16 (-3.41-1.09) p = 0.311 | 0.14 (-1.96-2.23) p = 0.896 | -0.76 (-2.24-0.72) p = 0.314 |
| Source of Lunch: 100% School Provided | 0.70 (-0.50-1.90) p = 0.254 | -0.04 (-1.15-1.07) p = 0.939 | 0.23 (-0.52-0.98) p = 0.549 |
| Percent FSM | 0.02 (-0.08-0.12) p = 0.740 | 0.03 (-0.07-0.12) p = 0.571 | 0.03 (-0.04-0.10) p = 0.415 |
| School Level IDACI | 0.07 (-0.03-0.18) p = 0.165 | 0.11 (0.009-0.21) p = 0.032 | 0.05 (-0.03-0.12) p = 0.205 |
| Sixth Form: Yes | -1.84 (-3.82-0.14) p = 0.068 | -1.56 (-3.41-0.28) p = 0.097 | -0.32 (-1.71-1.08) p = 0.657 |
| Provision: External | 0.75 (-1.03-2.54) p = 0.408 | 0.39 (-1.27-2.06) p = 0.642 | 0.21 (-1.04-1.46) p = 0.737 |
| Religious: Secular | 3.54 (0.29-6.80) p = 0.033 | 2.92 (-0.12-5.96) p = 0.060 | 0.65 (-1.65-2.96) p = 0.579 |
| Year collected: 2020/2021 | -1.17 (-4.42-2.07) p = 0.478 | 0.07 (-2.95-3.10) p = 0.962 | 0.74 (-1.53-3.02) p = 0.523 |
| Year collected: 2021/2022 | 1.55 (-0.43-3.53) p = 0.125 | 0.98 (-0.87-2.83) p = 0.298 | 0.72 (-0.66-2.10) p = 0.306 |
| Year: 9 | 1.88 (-2.13-5.89) p = 0.359 | 0.87 (-2.82-4.56) p = 0.644 | 0.08 (-2.51-2.68) p = 0.951 |
| Year: 10 | 2.01 (-3.80-7.82) p = 0.498 | -0.24 (-5.60-5.12) p = 0.929 | -0.79 (-4.54-2.96) p = 0.681 |

Table 2. 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 Status: Mandated | -54.97 (-88.87- -21.07) p = 0.001 | -31.95 (-75.88-11.99) p = 0.154 | -78.71 (-175.43-18.01) p = 0.111 |
| Sex: Male | 42.11 (12.08-72.14) p = 0.006 | 61.56 (20.30-102.82) p = 0.003 | 208.72 (130.15-287.30) p < .001 |
| Sex: Other | 15.89 (-67.16-98.94) p = 0.708 | -11.04 (-125.99-103.92) p = 0.851 | -184.26 (-395.50-26.99) p = 0.087 |
| Age | 23.35 (-19.43-66.14) p = 0.285 | 47.24 (-11.05-105.54) p = 0.112 | 67.94 (-43.40-179.27) p = 0.232 |
| Ethnicity: Asian/Asian British | 4.17 (-36.63-44.97) p = 0.841 | -16.76 (-72.96-39.45) p = 0.559 | -4.66 (-112.99-103.68) p = 0.933 |
| Ethnicity: Black/African/Caribbean/Black British | 51.62 (-15.43-118.68) p = 0.131 | 59.57 (-33.38-152.52) p = 0.209 | 103.94 (-70.25-278.13) p = 0.242 |
| Ethnicity: Mixed/Multiple | -48.22 (-110.82-14.39) p = 0.131 | -105.04 (-191.83- -18.26) p = 0.018 | -78.97 (-243.25-85.31) p = 0.346 |
| Ethnicity: Other | 183.02 (101.05-264.98) p < .001 | 224.44 (113.21-335.67) p < .001 | 145.19 (-61.13-351.51) p = 0.168 |
| IMD Quintile: 2 | 50.78 (3.67-97.88) p = 0.035 | 41.97 (-22.88-106.82) p = 0.205 | 53.49 (-68.86-175.83) p = 0.392 |
| IMD Quintile: 3 | 34.63 (-13.75-83.01) p = 0.161 | 17.49 (-49.19-84.18) p = 0.607 | 2.80 (-124.05-129.65) p = 0.965 |
| IMD Quintile: 4 | 31.17 (-20.11-82.46) p = 0.233 | 44.19 (-26.35-114.73) p = 0.219 | 55.08 (-79.66-189.82) p = 0.423 |
| IMD Quintile: 5 | 44.37 (-6.94-95.69) p = 0.090 | 39.39 (-31.21-109.98) p = 0.274 | 75.06 (-61.06-211.17) p = 0.280 |
| Source of Lunch: 100% School Provided | -131.32 (-158.84- -103.81) p < .001 | -68.68 (-105.96- -31.40) p < .001 | 13.02 (-56.31-82.35) p = 0.713 |
| Percent FSM | -0.69 (-2.61-1.23) p = 0.480 | -1.01 (-3.52-1.50) p = 0.431 | -0.71 (-6.08-4.65) p = 0.795 |
| School Level IDACI | 2.13 (0.21-4.05) p = 0.030 | 2.32 (-0.16-4.81) p = 0.067 | 3.51 (-1.97-8.98) p = 0.210 |
| Sixth Form: Yes | -45.70 (-81.30- -10.10) p = 0.012 | -20.06 (-65.99-25.88) p = 0.392 | -9.05 (-111.52-93.42) p = 0.863 |
| Provision: External | 4.30 (-28.10-36.69) p = 0.795 | 34.14 (-7.64-75.92) p = 0.109 | 40.40 (-51.93-132.73) p = 0.391 |
| Religious: Secular | 70.30 (12.92-127.68) p = 0.016 | 110.57 (37.06-184.08) p = 0.003 | 94.39 (-73.14-261.91) p = 0.269 |
| Year collected: 2020/2021 | -64.28 (-123.15- -5.42) p = 0.032 | -36.92 (-113.27-39.43) p = 0.343 | -75.37 (-243.73-92.99) p = 0.380 |
| Year collected: 2021/2022 | -43.57 (-79.89- -7.26) p = 0.019 | -41.59 (-88.65-5.46) p = 0.083 | -70.64 (-173.71-32.43) p = 0.179 |
| Year: 9 | -89.45 (-181.48-2.59) p = 0.057 | -154.57 (-280.05- -29.09) p = 0.016 | -160.15 (-399.72-79.42) p = 0.190 |
| Year: 10 | -97.52 (-230.46-35.41) p = 0.150 | -175.51 (-356.88-5.85) p = 0.058 | -183.99 (-529.37-161.39) p = 0.296 |

Table 3. 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 Status: Mandated | -2.19 (-3.79- -0.58) p = 0.008 | -1.39 (-3.48-0.69) p = 0.190 | -2.98 (-7.10-1.14) p = 0.157 |
| Sex: Male | 1.64 (0.17-3.12) p = 0.029 | 2.30 (0.35-4.24) p = 0.021 | 7.35 (3.85-10.85) p < .001 |
| Sex: Other | -0.18 (-4.27-3.91) p = 0.931 | -1.16 (-6.58-4.26) p = 0.675 | -9.59 (-19.02- -0.15) p = 0.046 |
| Age | 1.04 (-1.06-3.14) p = 0.332 | 2.55 (-0.20-5.31) p = 0.069 | 3.20 (-1.75-8.14) p = 0.205 |
| Ethnicity: Asian/Asian British | 0.18 (-1.81-2.18) p = 0.859 | -0.53 (-3.18-2.12) p = 0.695 | 0.33 (-4.46-5.12) p = 0.892 |
| Ethnicity: Black/African/Caribbean/Black British | 2.05 (-1.26-5.35) p = 0.225 | 2.19 (-2.20-6.58) p = 0.329 | 1.28 (-6.49-9.06) p = 0.746 |
| Ethnicity: Mixed/Multiple | -2.03 (-5.12-1.05) p = 0.196 | -4.60 (-8.69- -0.51) p = 0.028 | -2.98 (-10.31-4.35) p = 0.426 |
| Ethnicity: Other | 8.95 (4.90-12.99) p < .001 | 11.81 (6.56-17.06) p < .001 | 9.79 (0.56-19.02) p = 0.038 |
| IMD Quintile: 2 | 3.01 (0.69-5.33) p = 0.011 | 2.08 (-0.98-5.14) p = 0.182 | 2.77 (-2.69-8.23) p = 0.320 |
| IMD Quintile: 3 | 1.84 (-0.54-4.22) p = 0.129 | 1.02 (-2.13-4.17) p = 0.524 | -1.43 (-7.08-4.22) p = 0.619 |
| IMD Quintile: 4 | 2.08 (-0.44-4.60) p = 0.106 | 3.49 (0.16-6.82) p = 0.040 | 1.92 (-4.07-7.91) p = 0.530 |
| IMD Quintile: 5 | 2.61 (0.10-5.13) p = 0.042 | 2.65 (-0.68-5.98) p = 0.119 | 2.34 (-3.71-8.38) p = 0.449 |
| Source of Lunch: 100% School Provided | -5.07 (-6.43- -3.70) p < .001 | -2.71 (-4.49- -0.93) p = 0.003 | -0.40 (-3.57-2.78) p = 0.806 |
| Percent FSM | -0.03 (-0.12-0.07) p = 0.579 | -0.02 (-0.14-0.10) p = 0.720 | 0.005 (-0.23-0.24) p = 0.963 |
| School Level IDACI | 0.10 (0.005-0.19) p = 0.040 | 0.08 (-0.03-0.20) p = 0.168 | 0.10 (-0.13-0.34) p = 0.387 |
| Sixth Form: Yes | -1.69 (-3.37- -0.01) p = 0.048 | -0.55 (-2.73-1.63) p = 0.624 | -0.80 (-5.14-3.54) p = 0.719 |
| Provision: External | 0.26 (-1.27-1.79) p = 0.742 | 1.50 (-0.49-3.49) p = 0.139 | 1.78 (-2.14-5.70) p = 0.374 |
| Religious: Secular | 3.35 (0.65-6.05) p = 0.015 | 5.19 (1.69-8.68) p = 0.004 | 5.10 (-2.00-12.19) p = 0.159 |
| Year collected: 2020/2021 | -2.60 (-5.38-0.19) p = 0.067 | -1.33 (-4.96-2.29) p = 0.471 | -1.43 (-8.59-5.73) p = 0.695 |
| Year collected: 2021/2022 | -2.67 (-4.39- -0.95) p = 0.002 | -2.62 (-4.86- -0.38) p = 0.022 | -2.94 (-7.34-1.46) p = 0.190 |
| Year: 9 | -3.39 (-7.91-1.13) p = 0.141 | -6.92 (-12.85- -1.00) p = 0.022 | -6.89 (-17.55-3.76) p = 0.205 |
| Year: 10 | -3.49 (-10.01-3.03) p = 0.294 | -7.82 (-16.38-0.74) p = 0.074 | -6.85 (-22.20-8.50) p = 0.382 |

Table 4. 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 Status: Mandated | -0.25 (-0.69-0.18) p = 0.257 | -0.17 (-0.65-0.31) p = 0.484 | -0.96 (-2.11-0.19) p = 0.102 |
| Sex: Male | 0.17 (-0.13-0.47) p = 0.271 | 0.29 (-0.08-0.67) p = 0.124 | 1.14 (0.39-1.89) p = 0.003 |
| Sex: Other | -0.14 (-0.96-0.67) p = 0.731 | -0.38 (-1.41-0.65) p = 0.467 | -1.54 (-3.53-0.45) p = 0.130 |
| Age | 0.21 (-0.23-0.64) p = 0.348 | 0.44 (-0.10-0.97) p = 0.110 | 0.45 (-0.63-1.52) p = 0.414 |
| Ethnicity: Asian/Asian British | 0.07 (-0.35-0.48) p = 0.747 | -0.18 (-0.69-0.34) p = 0.501 | -0.04 (-1.09-1.00) p = 0.937 |
| Ethnicity: Black/African/Caribbean/Black British | 0.15 (-0.51-0.82) p = 0.649 | -0.09 (-0.93-0.75) p = 0.831 | -0.41 (-2.07-1.24) p = 0.625 |
| Ethnicity: Mixed/Multiple | -0.27 (-0.88-0.35) p = 0.397 | -0.72 (-1.49-0.06) p = 0.070 | -0.56 (-2.11-0.99) p = 0.477 |
| Ethnicity: Other | 1.41 (0.60-2.22) p = 0.001 | 1.25 (0.25-2.25) p = 0.014 | -0.35 (-2.30-1.60) p = 0.722 |
| IMD Quintile: 2 | 0.21 (-0.26-0.68) p = 0.379 | 0.21 (-0.38-0.79) p = 0.487 | 0.44 (-0.73-1.60) p = 0.462 |
| IMD Quintile: 3 | 0.09 (-0.40-0.58) p = 0.721 | 0.03 (-0.58-0.64) p = 0.931 | 0.38 (-0.84-1.59) p = 0.541 |
| IMD Quintile: 4 | 0.18 (-0.34-0.70) p = 0.493 | 0.47 (-0.18-1.11) p = 0.155 | 0.92 (-0.37-2.21) p = 0.161 |
| IMD Quintile: 5 | 0.29 (-0.23-0.81) p = 0.277 | 0.39 (-0.25-1.04) p = 0.233 | 1.53 (0.22-2.84) p = 0.022 |
| Source of Lunch: 100% School Provided | -1.37 (-1.65- -1.10) p < .001 | -0.85 (-1.19- -0.50) p < .001 | -0.12 (-0.79-0.54) p = 0.721 |
| Percent FSM | -0.02 (-0.04-0.003) p = 0.085 | -0.03 (-0.05-0.0010) p = 0.059 | -0.04 (-0.10-0.03) p = 0.260 |
| School Level IDACI | 0.02 (-0.008-0.04) p = 0.184 | 0.02 (-0.009-0.05) p = 0.199 | 0.03 (-0.03-0.10) p = 0.354 |
| Sixth Form: Yes | 0.15 (-0.32-0.62) p = 0.528 | 0.41 (-0.10-0.92) p = 0.115 | 0.64 (-0.60-1.88) p = 0.309 |
| Provision: External | 0.010 (-0.41-0.43) p = 0.963 | 0.30 (-0.17-0.76) p = 0.209 | 0.24 (-0.87-1.35) p = 0.673 |
| Religious: Secular | 0.22 (-0.55-0.99) p = 0.578 | 0.86 (0.03-1.69) p = 0.043 | 0.72 (-1.33-2.76) p = 0.491 |
| Year collected: 2020/2021 | 0.23 (-0.53-1.00) p = 0.551 | 0.27 (-0.57-1.11) p = 0.535 | -0.05 (-2.07-1.97) p = 0.960 |
| Year collected: 2021/2022 | -0.43 (-0.90-0.03) p = 0.068 | -0.50 (-1.01-0.02) p = 0.058 | -1.03 (-2.25-0.20) p = 0.100 |
| Year: 9 | -0.83 (-1.75-0.10) p = 0.080 | -1.42 (-2.56- -0.27) p = 0.015 | -1.28 (-3.57-1.02) p = 0.277 |
| Year: 10 | -0.97 (-2.32-0.37) p = 0.155 | -1.58 (-3.24-0.07) p = 0.061 | -1.36 (-4.68-1.96) p = 0.423 |

Table 5. 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 Status: Mandated | -0.24 (-0.36- -0.11) p < .001 | -0.21 (-0.34- -0.08) p = 0.002 | -0.35 (-0.64- -0.06) p = 0.019 |
| Sex: Male | -0.04 (-0.14-0.05) p = 0.392 | -0.03 (-0.14-0.09) p = 0.634 | -0.04 (-0.23-0.16) p = 0.727 |
| Sex: Other | -0.15 (-0.42-0.11) p = 0.254 | -0.26 (-0.58-0.05) p = 0.104 | -0.47 (-0.99-0.06) p = 0.083 |
| Age | 0.05 (-0.09-0.19) p = 0.455 | 0.04 (-0.12-0.20) p = 0.598 | 0.14 (-0.14-0.43) p = 0.322 |
| Ethnicity: Asian/Asian British | -0.04 (-0.17-0.09) p = 0.548 | -0.07 (-0.23-0.08) p = 0.366 | -0.10 (-0.38-0.17) p = 0.472 |
| Ethnicity: Black/African/Caribbean/Black British | 0.02 (-0.19-0.24) p = 0.838 | -0.01 (-0.27-0.24) p = 0.938 | 0.04 (-0.39-0.48) p = 0.844 |
| Ethnicity: Mixed/Multiple | 0.02 (-0.18-0.22) p = 0.848 | -0.05 (-0.29-0.19) p = 0.680 | -0.11 (-0.52-0.30) p = 0.611 |
| Ethnicity: Other | 0.16 (-0.10-0.42) p = 0.220 | 0.18 (-0.12-0.48) p = 0.247 | -0.13 (-0.65-0.38) p = 0.614 |
| IMD Quintile: 2 | -0.01 (-0.16-0.14) p = 0.888 | -0.02 (-0.20-0.15) p = 0.788 | 0.12 (-0.19-0.43) p = 0.440 |
| IMD Quintile: 3 | -0.0005 (-0.16-0.16) p = 0.995 | -0.003 (-0.19-0.18) p = 0.976 | 0.25 (-0.08-0.57) p = 0.133 |
| IMD Quintile: 4 | -0.02 (-0.18-0.15) p = 0.851 | -0.02 (-0.21-0.18) p = 0.851 | 0.14 (-0.20-0.48) p = 0.428 |
| IMD Quintile: 5 | -0.02 (-0.18-0.15) p = 0.829 | 0.03 (-0.17-0.22) p = 0.776 | 0.25 (-0.09-0.60) p = 0.152 |
| Source of Lunch: 100% School Provided | -0.26 (-0.34- -0.17) p < .001 | -0.20 (-0.30- -0.09) p < .001 | 0.007 (-0.17-0.19) p = 0.942 |
| Percent FSM | -0.01 (-0.02- -0.004) p = 0.002 | -0.01 (-0.02- -0.007) p < .001 | -0.03 (-0.04- -0.009) p = 0.002 |
| School Level IDACI | 0.005 (-0.002-0.01) p = 0.153 | 0.006 (-0.001-0.01) p = 0.101 | 0.009 (-0.007-0.03) p = 0.265 |
| Sixth Form: Yes | 0.03 (-0.10-0.16) p = 0.691 | 0.07 (-0.06-0.21) p = 0.283 | 0.11 (-0.20-0.43) p = 0.481 |
| Provision: External | 0.07 (-0.05-0.18) p = 0.283 | 0.11 (-0.01-0.24) p = 0.076 | 0.09 (-0.19-0.37) p = 0.538 |
| Religious: Secular | 0.10 (-0.12-0.31) p = 0.378 | 0.21 (-0.004-0.43) p = 0.055 | 0.30 (-0.22-0.81) p = 0.264 |
| Year collected: 2020/2021 | 0.04 (-0.18-0.25) p = 0.729 | 0.04 (-0.18-0.27) p = 0.718 | 0.10 (-0.41-0.61) p = 0.704 |
| Year collected: 2021/2022 | 0.11 (-0.02-0.25) p = 0.091 | 0.11 (-0.03-0.25) p = 0.122 | 0.05 (-0.26-0.37) p = 0.738 |
| Year: 9 | -0.13 (-0.42-0.17) p = 0.404 | -0.17 (-0.52-0.18) p = 0.337 | -0.38 (-0.99-0.23) p = 0.224 |
| Year: 10 | -0.23 (-0.65-0.20) p = 0.302 | -0.20 (-0.70-0.30) p = 0.435 | -0.52 (-1.40-0.35) p = 0.242 |

Table 6. 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 Status: Mandated | 1.11 (0.85-1.46) p = 0.449 | 1.16 (0.85-1.58) p = 0.359 | 1.29 (1.00-1.65) p = 0.047 |
| Sex: Male | 0.88 (0.68-1.14) p = 0.339 | 0.94 (0.73-1.21) p = 0.640 | 0.93 (0.78-1.10) p = 0.384 |
| Sex: Other | 1.10 (0.55-2.18) p = 0.788 | 1.20 (0.62-2.30) p = 0.587 | 0.92 (0.58-1.46) p = 0.732 |
| Age | 1.05 (0.72-1.51) p = 0.812 | 0.92 (0.64-1.30) p = 0.627 | 0.85 (0.67-1.09) p = 0.195 |
| Ethnicity: Asian/Asian British | 0.66 (0.44-1.01) p = 0.055 | 0.77 (0.53-1.12) p = 0.169 | 0.78 (0.60-1.00) p = 0.046 |
| Ethnicity: Black/African/Caribbean/Black British | 0.92 (0.52-1.63) p = 0.781 | 1.07 (0.63-1.81) p = 0.797 | 0.86 (0.59-1.26) p = 0.445 |
| Ethnicity: Mixed/Multiple | 0.71 (0.39-1.28) p = 0.252 | 0.85 (0.50-1.43) p = 0.530 | 0.84 (0.59-1.19) p = 0.324 |
| Ethnicity: Other | 1.06 (0.58-1.94) p = 0.837 | 0.94 (0.51-1.76) p = 0.856 | 0.73 (0.46-1.17) p = 0.189 |
| IMD Quintile: 2 | 0.84 (0.58-1.23) p = 0.371 | 0.96 (0.67-1.37) p = 0.805 | 1.03 (0.80-1.32) p = 0.845 |
| IMD Quintile: 3 | 0.72 (0.48-1.08) p = 0.117 | 0.80 (0.54-1.18) p = 0.257 | 0.93 (0.71-1.21) p = 0.590 |
| IMD Quintile: 4 | 0.75 (0.49-1.17) p = 0.204 | 0.81 (0.53-1.23) p = 0.318 | 1.04 (0.78-1.38) p = 0.787 |
| IMD Quintile: 5 | 0.57 (0.35-0.91) p = 0.019 | 0.73 (0.47-1.12) p = 0.152 | 0.74 (0.55-1.00) p = 0.050 |
| Source of Lunch: 100% School Provided | 0.89 (0.69-1.14) p = 0.341 | 1.04 (0.83-1.30) p = 0.731 | 1.23 (1.06-1.43) p = 0.006 |
| Percent FSM | 1.00 (0.98-1.02) p = 0.943 | 1.00 (0.98-1.02) p = 0.799 | 1.00 (0.99-1.01) p = 0.876 |
| School Level IDACI | 1.01 (0.99-1.03) p = 0.221 | 1.01 (1.00-1.03) p = 0.139 | 1.01 (1.00-1.03) p = 0.075 |
| Sixth Form: Yes | 1.15 (0.86-1.54) p = 0.348 | 1.21 (0.86-1.70) p = 0.275 | 1.15 (0.88-1.51) p = 0.313 |
| Provision: External | 1.06 (0.80-1.39) p = 0.693 | 0.92 (0.67-1.25) p = 0.593 | 0.96 (0.75-1.22) p = 0.711 |
| Religious: Secular | 2.01 (1.07-3.80) p = 0.031 | 2.47 (1.26-4.82) p = 0.008 | 1.24 (0.78-1.96) p = 0.362 |
| Year collected: 2020/2021 | 0.83 (0.51-1.36) p = 0.460 | 0.89 (0.51-1.58) p = 0.699 | 1.17 (0.75-1.82) p = 0.492 |
| Year collected: 2021/2022 | 0.65 (0.49-0.87) p = 0.003 | 0.69 (0.50-0.96) p = 0.030 | 0.86 (0.66-1.12) p = 0.264 |
| Year: 9 | 0.71 (0.32-1.56) p = 0.392 | 0.87 (0.41-1.83) p = 0.705 | 1.16 (0.69-1.95) p = 0.570 |
| Year: 10 | 0.62 (0.20-1.97) p = 0.423 | 0.82 (0.28-2.47) p = 0.729 | 1.06 (0.50-2.25) p = 0.874 |

Table 7. 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 Status: Mandated | 0.92 (0.83-1.01) p = 0.093 | 0.97 (0.89-1.05) p = 0.428 | 0.99 (0.92-1.06) p = 0.721 |
| Sex: Male | 0.87 (0.80-0.95) p = 0.003 | 0.89 (0.83-0.96) p = 0.002 | 0.93 (0.88-0.99) p = 0.020 |
| Sex: Other | 1.02 (0.81-1.29) p = 0.853 | 0.91 (0.74-1.11) p = 0.355 | 0.79 (0.67-0.93) p = 0.004 |
| Age | 0.97 (0.86-1.10) p = 0.668 | 1.01 (0.91-1.12) p = 0.885 | 0.99 (0.91-1.07) p = 0.749 |
| Ethnicity: Asian/Asian British | 0.83 (0.74-0.95) p = 0.005 | 0.84 (0.76-0.93) p = 0.001 | 0.88 (0.81-0.95) p = 0.002 |
| Ethnicity: Black/African/Caribbean/Black British | 0.78 (0.62-0.99) p = 0.040 | 0.92 (0.77-1.09) p = 0.326 | 0.91 (0.80-1.04) p = 0.170 |
| Ethnicity: Mixed/Multiple | 0.87 (0.72-1.06) p = 0.164 | 0.87 (0.75-1.03) p = 0.099 | 0.87 (0.77-0.99) p = 0.031 |
| Ethnicity: Other | 1.14 (0.92-1.42) p = 0.227 | 1.05 (0.87-1.27) p = 0.636 | 1.04 (0.89-1.20) p = 0.639 |
| IMD Quintile: 2 | 1.03 (0.90-1.19) p = 0.648 | 1.07 (0.95-1.20) p = 0.253 | 1.04 (0.95-1.14) p = 0.378 |
| IMD Quintile: 3 | 1.07 (0.93-1.23) p = 0.368 | 1.10 (0.98-1.24) p = 0.122 | 1.06 (0.97-1.17) p = 0.200 |
| IMD Quintile: 4 | 1.16 (1.00-1.34) p = 0.053 | 1.19 (1.05-1.35) p = 0.006 | 1.14 (1.03-1.25) p = 0.010 |
| IMD Quintile: 5 | 1.12 (0.97-1.31) p = 0.123 | 1.18 (1.04-1.34) p = 0.009 | 1.14 (1.04-1.26) p = 0.008 |
| 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 = 0.014 | 1.00 (0.99-1.00) p = 0.134 | 1.00 (1.00-1.00) p = 0.730 |
| School Level IDACI | 1.01 (1.00-1.02) p < .001 | 1.01 (1.00-1.01) p = 0.018 | 1.00 (1.00-1.01) p = 0.187 |
| Sixth Form: Yes | 0.97 (0.88-1.07) p = 0.586 | 1.03 (0.95-1.11) p = 0.531 | 1.01 (0.94-1.09) p = 0.757 |
| Provision: External | 1.04 (0.95-1.14) p = 0.378 | 1.02 (0.95-1.10) p = 0.551 | 1.02 (0.95-1.09) p = 0.665 |
| Religious: Secular | 1.30 (1.09-1.56) p = 0.004 | 1.18 (1.02-1.36) p = 0.022 | 1.00 (0.88-1.13) p = 0.993 |
| Year collected: 2020/2021 | 0.86 (0.73-1.02) p = 0.076 | 0.95 (0.83-1.09) p = 0.489 | 0.98 (0.87-1.11) p = 0.805 |
| Year collected: 2021/2022 | 0.88 (0.80-0.98) p = 0.020 | 0.88 (0.81-0.96) p = 0.005 | 0.93 (0.86-1.00) p = 0.055 |
| Year: 9 | 0.95 (0.73-1.25) p = 0.733 | 0.90 (0.72-1.12) p = 0.329 | 0.96 (0.81-1.15) p = 0.681 |
| Year: 10 | 0.97 (0.65-1.43) p = 0.862 | 0.91 (0.66-1.26) p = 0.586 | 0.98 (0.76-1.26) p = 0.880 |

Table 8. 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 Status: Mandated | 0.97 (0.75-1.25) p = 0.813 | 1.21 (1.01-1.46) p = 0.039 | 1.04 (0.91-1.20) p = 0.563 |
| Sex: Male | 0.81 (0.64-1.03) p = 0.088 | 0.80 (0.67-0.96) p = 0.014 | 0.72 (0.63-0.83) p < .001 |
| Sex: Other | 0.42 (0.17-1.06) p = 0.065 | 0.56 (0.31-1.02) p = 0.058 | 0.45 (0.28-0.71) p = 0.001 |
| Age | 1.07 (0.77-1.50) p = 0.676 | 0.95 (0.74-1.22) p = 0.713 | 0.92 (0.76-1.11) p = 0.367 |
| Ethnicity: Asian/Asian British | 0.78 (0.55-1.10) p = 0.157 | 0.77 (0.59-1.00) p = 0.053 | 0.75 (0.62-0.91) p = 0.004 |
| Ethnicity: Black/African/Caribbean/Black British | 0.67 (0.32-1.40) p = 0.284 | 0.96 (0.62-1.51) p = 0.873 | 0.81 (0.58-1.12) p = 0.205 |
| Ethnicity: Mixed/Multiple | 0.80 (0.46-1.38) p = 0.421 | 1.02 (0.71-1.48) p = 0.896 | 0.86 (0.64-1.15) p = 0.312 |
| Ethnicity: Other | 1.00 (0.53-1.91) p = 0.992 | 1.21 (0.77-1.88) p = 0.406 | 0.91 (0.63-1.31) p = 0.621 |
| IMD Quintile: 2 | 1.24 (0.84-1.85) p = 0.281 | 1.30 (0.98-1.72) p = 0.074 | 1.21 (0.98-1.50) p = 0.078 |
| IMD Quintile: 3 | 1.33 (0.90-1.97) p = 0.156 | 1.39 (1.04-1.85) p = 0.027 | 1.29 (1.03-1.60) p = 0.024 |
| IMD Quintile: 4 | 1.62 (1.08-2.43) p = 0.021 | 1.41 (1.03-1.92) p = 0.032 | 1.24 (0.98-1.57) p = 0.068 |
| IMD Quintile: 5 | 1.35 (0.89-2.05) p = 0.155 | 1.37 (1.00-1.88) p = 0.052 | 1.40 (1.11-1.77) p = 0.004 |
| Source of Lunch: 100% School Provided | 0.15 (0.11-0.22) p < .001 | 0.34 (0.27-0.41) p < .001 | 0.67 (0.59-0.77) p < .001 |
| Percent FSM | 1.00 (0.98-1.01) p = 0.696 | 1.00 (0.99-1.01) p = 0.841 | 1.01 (1.00-1.02) p = 0.079 |
| School Level IDACI | 1.01 (0.99-1.02) p = 0.390 | 1.00 (0.99-1.01) p = 0.691 | 1.00 (0.99-1.00) p = 0.347 |
| Sixth Form: Yes | 1.17 (0.91-1.50) p = 0.217 | 1.23 (1.01-1.49) p = 0.041 | 1.09 (0.95-1.27) p = 0.224 |
| Provision: External | 0.94 (0.74-1.19) p = 0.617 | 0.99 (0.83-1.18) p = 0.896 | 0.99 (0.87-1.13) p = 0.866 |
| Religious: Secular | 1.89 (1.12-3.16) p = 0.016 | 1.07 (0.77-1.49) p = 0.688 | 0.85 (0.67-1.08) p = 0.185 |
| Year collected: 2020/2021 | 0.80 (0.51-1.26) p = 0.336 | 0.94 (0.67-1.31) p = 0.699 | 0.87 (0.68-1.11) p = 0.270 |
| Year collected: 2021/2022 | 0.95 (0.74-1.23) p = 0.712 | 0.84 (0.69-1.03) p = 0.088 | 0.86 (0.74-1.00) p = 0.046 |
| Year: 9 | 0.75 (0.36-1.53) p = 0.424 | 1.05 (0.61-1.78) p = 0.868 | 1.16 (0.77-1.74) p = 0.478 |
| Year: 10 | 0.67 (0.24-1.90) p = 0.457 | 1.14 (0.53-2.47) p = 0.731 | 1.32 (0.74-2.36) p = 0.354 |

Table 9. Additional outcomes

| Coefficient | 24-hour free sugar intake greater than 5% Odds Ratio | At least 5 portions of F&V per 24-hour day Odds Ratio | Number of eating occasions Incidence Rate Ratio |
|--|---|--|--|
| Pupils | 2,045 | 2,045 | 2,045 |
| Schools | 36 | 36 | 36 |
| SFS Status: Mandated | 1.28 (0.94-1.75) p = 0.116 | 0.70 (0.49-1.02) p = 0.062 | 0.99 (0.95-1.04) p = 0.813 |
| Sex: Male | 0.81 (0.61-1.09) p = 0.162 | 1.09 (0.80-1.50) p = 0.579 | 0.98 (0.94-1.02) p = 0.304 |
| Sex: Other | 0.37 (0.18-0.73) p = 0.005 | 0.58 (0.22-1.53) p = 0.268 | 0.85 (0.77-0.95) p = 0.004 |
| Age | 1.18 (0.79-1.76) p = 0.425 | 1.42 (0.90-2.23) p = 0.133 | 1.03 (0.97-1.08) p = 0.317 |
| Ethnicity: Asian/Asian British | 0.59 (0.41-0.85) p = 0.005 | 1.24 (0.81-1.88) p = 0.322 | 1.00 (0.95-1.05) p = 0.993 |
| Ethnicity: Black/African/Caribbean/Black British | 0.69 (0.37-1.28) p = 0.235 | 1.88 (0.95-3.71) p = 0.071 | 1.01 (0.93-1.10) p = 0.838 |
| Ethnicity: Mixed/Multiple | 0.80 (0.44-1.45) p = 0.455 | 1.01 (0.51-2.00) p = 0.978 | 0.98 (0.91-1.07) p = 0.689 |
| Ethnicity: Other | 0.65 (0.31-1.34) p = 0.240 | 0.87 (0.35-2.17) p = 0.771 | 0.97 (0.87-1.07) p = 0.499 |
| IMD Quintile: 2 | 0.71 (0.46-1.11) p = 0.130 | 0.91 (0.54-1.55) p = 0.728 | 1.03 (0.96-1.09) p = 0.423 |
| IMD Quintile: 3 | 0.92 (0.58-1.47) p = 0.735 | 1.39 (0.83-2.33) p = 0.206 | 1.06 (0.99-1.12) p = 0.088 |
| IMD Quintile: 4 | 1.38 (0.83-2.30) p = 0.210 | 1.15 (0.66-1.99) p = 0.616 | 1.08 (1.01-1.15) p = 0.022 |
| IMD Quintile: 5 | 1.00 (0.61-1.63) p = 0.987 | 1.12 (0.64-1.97) p = 0.679 | 1.11 (1.04-1.18) p = 0.002 |
| Source of Lunch: 100% School Provided | 0.96 (0.73-1.25) p = 0.763 | 0.77 (0.57-1.04) p = 0.083 | 1.05 (1.01-1.09) p = 0.008 |
| Percent FSM | 1.00 (0.99-1.02) p = 0.763 | 0.97 (0.95-0.99) p = 0.001 | 1.00 (1.00-1.00) p = 0.558 |
| School Level IDACI | 1.02 (1.00-1.04) p = 0.019 | 1.01 (0.99-1.03) p = 0.492 | 1.00 (1.00-1.00) p = 0.769 |
| Sixth Form: Yes | 0.89 (0.65-1.22) p = 0.472 | 1.19 (0.83-1.72) p = 0.348 | 1.01 (0.97-1.06) p = 0.581 |
| Provision: External | 1.12 (0.85-1.49) p = 0.418 | 1.06 (0.76-1.48) p = 0.714 | 1.01 (0.97-1.05) p = 0.643 |
| Religious: Secular | 1.08 (0.66-1.78) p = 0.752 | 1.71 (0.92-3.15) p = 0.087 | 0.98 (0.91-1.05) p = 0.610 |
| Year collected: 2020/2021 | 1.07 (0.64-1.80) p = 0.791 | 0.92 (0.51-1.66) p = 0.783 | 0.98 (0.92-1.06) p = 0.660 |
| Year collected: 2021/2022 | 1.00 (0.73-1.38) p = 0.976 | 1.09 (0.75-1.59) p = 0.644 | 0.98 (0.94-1.03) p = 0.424 |
| Year: 9 | 0.68 (0.28-1.63) p = 0.388 | 0.44 (0.17-1.17) p = 0.099 | 0.90 (0.80-1.01) p = 0.079 |
| Year: 10 | 0.43 (0.12-1.49) p = 0.183 | 0.29 (0.07-1.19) p = 0.085 | 0.89 (0.75-1.05) p = 0.163 |