**Evidence Table 5b. Weight related outcomes for physical activity intervention studies taking place in a school only setting, by subgroup**

| **Author, Year** | **Arm** | **Subgroup** | **Base-line N** | **Baseline measure, mean (SD)** | **First follow-up time-point in weeks** | **N at first follow-up** | **First follow-up measure, mean (SD)** | **Mean change from baseline (SD)** | **Second follow-up timepoint in weeks** | **N Second follow-up** | **Second follow-up measure, mean (SD)** | **Mean change from baseline (SD)** | **Final measure timepoint** | **N at final measure** | **Final Follow-up measure, mean (SD)** | **Mean Change from Baseline (SD)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **BMI** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sallis, 199342 | 1 | Boys | 101 | 17.7 | Fall ‘90-spring ‘91 |  | 17.8 | Fall ‘90-fall ‘91 |  | 18.1 |  | Fall ‘90-spring ‘92 |  | 18.75 | 0.95 | All boys increased their BMI over the two years of the study. At the spring 1991 measurement, the arm1 boys had significantly lower adjusted BMIs than those in arm 2. At the fall 1991 measurement, the arm 1 boys were lower than both arm 2 and arm 3. By spring 1992 the arm1 children increased their BMI to the extent that there were no group differences. |
| 2 |  | 113 | 17.7 | Fall ‘90-spring ‘91 |  | 18.25 | Fall ‘90-fall ‘91 |  | 18.5 |  | Fall ‘90-spring ‘92 |  | 19.05 | 0.8 |  |
| 3 |  | 91 | 17.7 | Fall ‘90-spring ‘91 |  | 18.2 | Fall ‘90-fall ’91 |  | 18.55 |  | Fall ‘90-spring ‘92 |  | 18.8 | 0.6 |  |
| 1 | girls | 97 | 17.55 | Fall ‘90-spring ‘91 |  | 17.8 | Fall ‘90-fall ‘91 |  | 18 |  | Fall ‘90-spring ‘92 |  | 18.4 | 0.6 | For girls, arm 1 had the lowest adjusted BMI at each measurement point. The only significant difference, however, was at the spring 1992 measurement, at which time the arm1 girls had lower BMIs than girls in both of arm 2 and arm 3 |
| 2 |  | 87 | 17.55 | Fall ‘90-spring ‘91 |  | 18.05 | Fall ‘90-fall ‘91 |  | 18.5 |  | Fall ‘90-spring ‘92 |  | 18.95 | 0.9 |  |
| 3 |  | 60 | 17.55 | Fall ‘90-spring ‘91 |  | 18.1 | Fall ‘90-fall ‘91 |  | 18.3 |  | Fall ‘90-spring ‘92 |  | 19.05 | 0.95 |  |
| Lazaar, 200726 | 1 | boys | NR | 15.4 (1.1) | 26  | NR | 15.6 (1.1) |  |  |  |  |  |  |  | 0.2 | NS |
| 2 |  | NR | 20 (1.3) | 26 | NR | 20.3 (1.9) |  |  |  |  |  |  |  | 0.3 |  |
| 3 |  | NR | 15.5 (1.2) | 26 | NR | 15.4 (1.2) |  |  |  |  |  |  |  | -0.1 |  |
| 4 |  | NR | 21 (2.4) | 26 | NR | 20.9 (2.6) |  |  |  |  |  |  |  | -0.1 |  |
| 1 | girls | NR | 15.6 (1.1) | 26 | NR | 15.9 (1.1) |  |  |  |  |  |  |  | 0.3 | NS |
| 2 |  | NR | 20.4 (2.2) | 26  | NR | 20.8 (2.1) |  |  |  |  |  |  |  | 0.4 |  |
| 3 |  | NR | 15.9 1.2 | 26  | NR | 15.8 (1.2) |  |  |  |  |  |  |  | -0.1 |  |
| 4 |  | NR | 20.1 2.8 | 26  | NR | 19.9 (3.2) |  |  |  |  |  |  |  | -0.2 |  |
| Smolak, 200145 | 1 | Girls | NR | NR |  |  |  | 104  | NR | 19.35 (3.90) |  |  |  |  |  | This study has two control groups and one experimental group. |
| 1 |  | NR | NR |  |  |  | 104  | NR | 19.15( 2.78) |  |  |  |  |  |  |
| 2 |  | NR | NR |  |  |  | 104  | NR | 18.97 ( 3.22) |  |  |  |  |  | There were no group differences in BMI |
| 1 | Boys | NR | NR |  |  |  | 104 | NR | 19.70 (3.38) |  |  |  |  |  | This study has two control groups and one experimental group |
| 1 |  | NR | NR |  |  |  | 104 | NR | 20.83 (4.10) |  |  |  |  |  |  |
| 2 |  | NR | NR |  |  |  | 104  | NR | 19.85 ( 3.50) |  |  |  |  |  | There were nogroup differences in BMI |
| Chiodera, 20087 | 2 | Girls | 370 | 16.17 ( 2.2) | 32  | 370 | 16.16 |  |  |  |  |  |  |  | -0.01 | NS |
| 3 |  | 469 | 16.77 (2.5) | 32  | 469 | 16.73 (2.5) |  |  |  |  |  |  |  | -0.04 | NS |
| 4 |  | 416 | 17.31 (2.7) | 32  | 416 | 17.26 (2.7) |  |  |  |  |  |  |  | -0.05 | NS |
| 5 |  | 413 | 17.96 ( 3.3) | 32  | 413 | 17.95 (3.3) |  |  |  |  |  |  |  | -0.01 | NS |
| 6 |  | 373 | 18.53 (3.1) | 32  | 373 | 18.5 (3.1) |  |  |  |  |  |  |  | -0.03 | NS |
| 2 | Male | 444 | 16.46 (2.3) | 32  | 444 | 16.25 ( 2.3) |  |  |  |  |  |  |  | -0.021 | P<0.01 |
| 3 |  | 453 | 16.95 (2.6) | 32  | 453 | 16.9 (2.6) |  |  |  |  |  |  |  | -0.05 | NS |
| 4 |  | 430 | 17.16 (2.4) | 32  | 430 | 17.11 (2.6) |  |  |  |  |  |  |  | -0.05 | NS |
| 5 |  | 435 | 17.9 (2.9) | 32  | 435 | 18.00 (3.0) |  |  |  |  |  |  |  | -0.01 | P<0.01 |
| 6 |  | 374 | 18.75 (3.1) | 32  | 374 | 18.83 (3.1) |  |  |  |  |  |  |  | 0.08 | NS |
| Resaland, 201162 | 1 | Girls | 69 | 17.5 (3.0)  |   |   |   | 104 | 43 | 18.2 (3.2) |   |   |   |   |  0.7 |  |
| 2 | Girls | 62 | Median (SD) =17.6, (3.1) |   |   |   |   | 49 | 18 |   |   |   |   |  0.4 |  |
| 1 | Boys | 62 | 16.9 (3.1) |   |   |   | 107 | 43 | 17.9 (2.8) |   |  |  |  |  1 | No significant effect of intervention on BMI. |
| 2 | Boys | 63 | Median (SD) =17.0, (2.2) |   |   |   | 104 | 49 | 17 (2.5) |   |  |  |  |  0.8 |  |
| Salmon, 200843 | 1 | Girls | Estimated to =31 | 2.8 (4.1) |  |  |  |  |  | -0.08 |  |  |  |  |  | There were significant intervention effects on unadjusted BMI among girls in the FMS and BM/FMS groups compared with the control group. |
| 2 |  | Estimated to =34 | 3.1 (3.3) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.07 (-1.12 to 0.02)P<0.01 |
| 3 |  | Estimated to = 39 | 3.0 (3.7) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.03 (-0.08 to 0.02) |
| 4 |  | Estimated to =48 | 1.8 (3.1) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.07 (-0.13 to -0.01)P<0.05 |
| 1 | Boys | Estimated to =31 | 4.5 (3.3) |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  | Estimated to =34 | 3.3 (3.8) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.01 (-0.07 to 0.04)P<0.01 |
| 3 |  | Estimated to = 39 | 3.3 (3.2) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.07 (-1.12 to 0.02) |
| 4 |  | Estimated to =48 | 2.8 (4.0) |  |  |  |  |  |  |  |  |  |  |  | GEE coefficient at baseline and post intervention Unadjusted change; -0.07 (-0.13 to -0.01)P<0.05 |
| Thivel, 201150 | 1 | Normal Weight | 187 | 15.48 (1.11) | 26 | 187 | 15.71 (1.1) |  |  |  |  |  |  |  | 0.23 | NS |
|  | 2 |  | 169 | 15.62 (1.1) | 26  | 169 | 15.55 (1.1) |  |  |  |  |  |  |  | -0.07 |  |
| 1 | Obese | 41 | 20.19 (1.8) | 26 | 41 | 20.41 (1.9) |  |  |  |  |  |  |  | 0.12 | NS |
| 2 |  | 60 | 20.56 (2.6) | 26  | 60 | 20.38 (2.9) |  |  |  |  |  |  |  | -0.18 |  |
| Chiodera, 20087 | 2 | Grade 1 | 814 | 16.33(2.3) | 34 | 814 | 16.21(2.3) |  |  |  |  |  |  |  | -0.12 | P value <0.01 |
| 3 | 2 | 922 | 16.86(2.5) | 34 | 922 | 16.81(2.6) |  |  |  |  |  |  |  | -0.5 | NS |
| 4 | 3 | 846 | 17.24(2.6) | 34 | 846 | 17.18(2.6) |  |  |  |  |  |  |  | -0.06 | NS |
| 5 | 4 | 848 | 17.93 (3.1) | 34 | 848 | 17.97(3.1) |  |  |  |  |  |  |  | 0.04 | NS |
| 6 | 5 | 747 | 18.64 (3.1) | 34 | 747 | 18.66(3.1) |  |  |  |  |  |  |  | 0.02 | NS |
| **BMI z-score**  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lazaar, 200726% or change in prevalence  | 1 | boys | NR | 0.67 (0.60) | 26  | NR | 0.69 (0.61) |  |  |  |  |  |  |  | 0.02 |  |
| 2 |  | NR | 3.02 (0.62) | 26  | NR | 3.08 (0.90) |  |  |  |  |  |  |  | 0.06 |  |
| 3 |  | NR | 0.76 (0.51) | 26  | NR | 0.75 (0.51) |  |  |  |  |  |  |  | -0.01 |  |
| 4 |  | NR | 3.15 (1.13) | 26  | NR | 3.07 (1.13) |  |  |  |  |  |  |  | -0.08 |  |
| 1 | girls | NR | 0.69 (0.46) | 26  | NR | 0.68 (0.46) |  |  |  |  |  |  |  | -0.01 |  |
| 2 |  | NR | 2.98 (1.08) | 26  | NR | 3.05 (1.11) |  |  |  |  |  |  |  | 0.07 |  |
| 3 |  | NR | 0.77 (0.51) | 26  | NR | 0.75 (0.50) |  |  |  |  |  |  |  | -0.02 |  |
| 4 |  | NR | 2.94 (1.18) | 26  | NR | 2.75 (1.10) |  |  |  |  |  |  |  | -0.19 |  |
| Lazaar, 200726 | 1 | boys | NR | 22.6 ( 5.6) | 26 | NR | 24.5 (6.5) |  |  |  |  |  |  |  | 1.9 |  |
|  | 2 |  | NR | 53.1 (10.6) | 26 | NR | 55.9 (10) |  |  |  |  |  |  |  | 2.7 |  |
| 3 |  | NR | 23.8 (5.9) | 26 | NR | 22.7 (6.3) |  |  |  |  |  |  |  | -1.1 |  |
| 4 |  | NR | 53.5 (11.2) | 26 | NR | 51.7 (10.4) |  |  |  |  |  |  |  | -1.8 |  |
| 1 | girls | NR | 29.5 (7.6) | 26 | NR | 30.1 ( 7) |  |  |  |  |  |  |  | 0.6 |  |
| 2 |  | NR | 30.1 (7) | 26 | NR | 54.9 (11.4) |  |  |  |  |  |  |  | 24.8 |  |
| 3 |  | NR | 29.8 (7.4) | 26 | NR | 28 (8.9) |  |  |  |  |  |  |  | -1.9 |  |
| 4 |  | NR | 55.8 (11.9) | 26 | NR | 51.9 (10.7) |  |  |  |  |  |  |  | -3.9 |  |
| **Percentage overweight or obesity** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Waist circum-ference (cm)** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Lazaar, 200726 | 1 | boys | NR | 55.6 (3.6) | 26  | NR | 55.9 (3.8) |  |  |  |  |  |  |  | 0.3 | WC was not significantly affected over time, although a slight decrease was noted in GI (arm3 and 4) and a slight increase in GC (arm1 and 2 |
|  | 2 |  | NR | 67.2 (5.2) | 26  | NR | 67.8 (6) |  |  |  |  |  |  |  | 0.6 |  |
| 3 |  | NR | 55.8 (3.8) | 26  | NR | 55.7 (3.7) |  |  |  |  |  |  |  | -0.1 |  |
| 4 |  | NR | 70.1 (8.4) | 26  | NR | 69.7 (8.7) |  |  |  |  |  |  |  | -0.4 |  |
| 1 | girls | NR | 56.4 (3.7) | 26  | NR | 57.7 (4.0) |  |  |  |  |  |  |  | 1.3 | P<0.001 effect of groups |
| 2 |  | NR | 68.3 (6.6) | 26  | NR | 70.5 (6.2) |  |  |  |  |  |  |  | 2.2 |  |
| 3 |  | NR | 57.5 (3.8) | 26  | NR | 55.6 (4.2) |  |  |  |  |  |  |  | -1.9 |  |
| 4 |  | NR | 67.0 (7.6) | 26  | NR | 64.9 (8.1) |  |  |  |  |  |  |  | -2.1 |  |
| **Weight****Kg** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Thivel, 201150 | 1 | Obese | 41 | 33.60 (5.1) | 26 | 41 | 34.13 (5.3) |  |  |  |  |  |  |  | 0.53 | NS |
| Vizcaino, 200856, 67 | 2 |  | 60 | 33.89 (7.3) | 26  | 60 | 34.4 (7.9) |  |  |  |  |  |  |  | 0.51 |  |
| 1 | Normal Weight | 187 | 23.77 (3.3) | 26  | 187 | 24.54 (3.4) |  |  |  |  |  |  |  | 0.77 | NS |
| 2 |  | 169 | 24.10 (3.6) | 26  | 169 | 24.85 (3.6) |  |  |  |  |  |  |  | 0.75 |  |
| 1 | Girls | 289 | 36.0 (9.5) | 52 | 289 | 37.9 (9.8) | 104 | 289 | 43.1 (11.0) |  |  |  |  | 7.1 | Adjusted difference 0.23 (–0.13-0.60) p value= 0.20 after year 1, 0.28 (–0.31-0.87) p value 0.34 after year 2.  |
| Resaland, 201162 | 2 |  | 185 | 36.2 (8.4) | 52 | 185 | 38.5 (8.6) | 104  | 185 | 43.6 (9.3) |  |  |  |  | 7.4 |  |
| 1 | Boys | 257 | 37.2 (9.0) | 52 | 257 | 38.9 (9.3) | 104  | 257 | 43.3 (10.4) |  |  |  |  | 6.1 | Adjusted difference 0.49 (0.17-0.82) p value 0.03 after year 1, 0.95 (0.19-1.71) p value 0.01 after year 2.  |
| 2 |  | 190 | 36.2 (8.9) | 52 | 190 | 38.5 (9.4) | 104  | 190 | 43.3 (10.7) |  |  |  |  | 7.1 |  |
| 1 | Boys | 62 | 31.7(5.5)  |   |   |   | 104 | 43 | 37.6 (7.3) |   |   |   |   |  6.5 | NS |
| Resaland, 201162 | 2 | Boys | 63 | Median (SD) =32.4, (5.2) |   |   |   | 104 | 49 | 38.1 (6.5) |   |   |   |   |  5.7 | NS |
| Resaland, 201162 | 1 | Girls | 69 | 32.4(6.9)  |   |   |   | 104 | 39 | 38.6 (8.7) |   |   |   |   |  6.2 | NS |
| Resaland, 201162 | 2 | Girls | 62 | Median (SD) =33.3, (7.9) |   |   |   | 104 | 43 | 40.2 (9.7) |   |   |   |   |  6.9 | NS |

BM = Behavioral Modification; BMI = Body Mass Index; FMS = Fundamental Movement Skills; GC = Control Group; GEE = Generalized Estimating Equation; GI = Intervention Group; NR = Not Reported; P = P value; NS = Not Significant; SD = Standard Deviation; WC = Waist circumference