**Evidence Table 12c. Intermediate related outcomes for combination diet and physical activity intervention studies taking place in a school setting with a home component, subgroups**

| **Author, Year** | **Arm** | **Baseline N** | **Baseline measure, mean (SD)** | **Final measure timepoint** | **N at final measure** | **Final follow up measure, mean (SD)** | **Mean Change from baseline (SD)** | **(I-C) Difference of the difference** | **Measure of Association** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Change in Physical Activity** |  |  |  |  |  |  |  |  |  |
| **Motion Sensor (average vector magnitude/ min)** |  |  |  |  |  |  |  |  |  |
| Caballero, 20032 | 1—control | 278 total | 303.13 | 156 | 278 total | 246.79 |  | 20.43 mins. | P = 0.310 |
| 2—intervention |  | 282.04 |  |  | 267.22 |  |  |  |
| **Time spent in M to V PA (goal ≥ 50%), percent** |  |  |  |  |  |  |  |  |  |
| Coleman, 20053 | 1—control | 473 | 38 | 104 | 744 total | 63 |  | 5.0% | NS |
| 2—intervention | 423 | 30 |  |  | 60 |  |  |  |
| **Time spent in vigorous PA (goal ≥ 20%), percent** |  |  |  |  |  |  |  |  |  |
| Coleman, 20053 | 1—control | 473 | 11 | 104 | 744 total | 10 |  | 3.0% | P < 0.05 |
| 2—intervention | 423 | 10 |  |  | 12 |  |  |  |
| **Minutes of MV PA per day** |  |  |  |  |  |  |  |  |  |
| Dzewaltowski, 20106 | 1—control | 112 | NR | 104 | 112 | NR |  | 5.92 minutes | P < 0.05 |
| 2—intervention | 134 | NR |  | 134 | NR |  |  |  |
| **Exercise frequency (% ≥ 7 times per week)** |  |  |  |  |  |  |  |  |  |
| Fitzgibbon, 200636 | 1—control | 170 | 22.4 (NR) | 104 | 139 | 17.82 (4.32) |  | 10.8% (-2.56-24.12) (adjusted for baseline value and Head Start site | NS |
| 2—intervention | 180 | 26.7 (NR) |  | 154 | 28.60 (4.13) |  |  |  |
| **Exercise intensity (Borg scale)** |  |  |  |  |  |  |  |  |  |
| Fitzgibbon, 200636 | 1—control | 169 | 3.4 (2.5) | 104 | 139 | 4.62 (0.16) |  | -0.30 (-0.79-0.19) (adjusted for baseline value and Head Start site) | NS |
| 2—intervention | 180 | 3.7 (2.9) |  | 154 | 4.32 (0.15) |  |  |  |
| **Total PA in hour/wk** |  |  |  |  |  |  |  |  |  |
| Foster, 20087 | 1—control | 600 | 25.17 | 104 | 335 | 20.62 | -4.55 | 0.30 hours/week (adjusted difference (95% CI: -0.40-1.00) b/w intervention and control adjusted for race/ethnicity, gender, age, randomization pair, weight status at baseline and baseline measures of the dependent variable) | P = 0.40 |
| 2—intervention | 749 | 25.03 |  | 416 | 21.28 | -3.75 |  |  |
| **Number of steps per day (per participant)** |  |  |  |  |  |  |  |  |  |
| Gorely, 200937 | 1—control | 279 | 10163.49 (2888.82) | 43 (10 months) | 243 | NR |  | +1631 steps (intervention vs. control) | P = 0.001 |
| 2—intervention | 310 | 9579.42 (2735.64) |  | 264 | NR |  |  |  |
| **Minutes of Moderate to Vigorous PA/day** |  |  |  |  |  |  |  |  |  |
| Gorely, 200937 | 1—control | 279 | 120.32 (23.67) | 43 | 243 | NR |  | +20.0 minutes/day | P<0.0001 |
| 2—intervention | 310 | 124.72 (26.70) |  | 264 | NR |  |  |  |
| **Bouts of Moderate to Vigorous PA (mins/day) – where only count “bouts” or periods of 1min+ PA** |  |  |  |  |  |  |  |  |  |
| Gorely, 200937 | 1—control | 279 | 36.51 (16.37) | 43 | 243 | NR |  | +16 minutes/day | P<0.0001 |
| 2—intervention | 310 | 40.09 (18.73) |  | 264 | NR |  |  |  |
| **Number of steps per month PER GROUP** |  |  |  |  |  |  |  |  |  |
| Hendy, 20119 | 1—control | 189 | NR | 3 months (? Weeks) | 189 | NR | +11,971 steps/month |  | P<0.008, - significant study phase x study group interaction effect - found by ANOVA |
| 2—intervention | 193 | NR |  | 193 | NR | +758 steps/month |  |  |
| **Hours of MVPA per week (outside of school)** |  |  |  |  |  |  |  |  |  |
| Manios, 199815 | 1—control | 149a | 1.4 (2.2) | 156 | 149 | 1.9 (2.6) | 0.4 (2.6)b Adjusted for sex, weight and height. | 1.6 minutes (=2.0-0.4) | P < 0.005 |
| 2—intervention | 199a | 0.9 (2.0) |  | 199 | 2.8 (3.2) | 2.0 (3.6)b Adjusted for sex, weight and height. |  |  |
| **Total PA, 2000-2100 hours (counts per min)** |  |  |  |  |  |  |  |  |  |
| Marcus, 200916 | 1—control | 640 | NR | Between April 2002 and June 2005 – so range between 156 weeks to 164? | 640 | 771 (sd =163) |  | 18 cpm (NR in the text but can be manually calculated) | P = 0.055, adjusted for calendar year, gender and age (p-value cluster, P = 0.10, cluster analysis where school and month were included as random factors in ANCOVA) |
| 2—intervention | 653 | NR |  | 653 | 789 (sd=161) |  |  |  |
| **Total PA, mins** |  |  |  |  |  |  |  |  |  |
| Nader, 199918 | 1—control | 1400 | 163.2 (3.1) | 156 | 1400 | 125.4 (2.6) | -37.8 | 6.9 | P = 0.02, reject Ho that I-C=0 at baseline, also p+0.04, reject Ho that I-C=0 at end of f/u |
| 2—intervention | 1996 | 152.0 (2.5) |  | 1996 | 121.1 (2.1) | -30.9 |  |  |
| **Minutes of vigorous PA, min** |  |  |  |  |  |  |  |  |  |
| Nader, 199918 | 1—control | 1400 | 45.5 (1.9) | 156 | 1400 | 22.1 (1.4) | -23.4 | -5.6 | P = 0.001, reject Ho that I-C=0 at baseline, also p+0.001, reject Ho that I-C=0 at end of f/u. |
| 2—intervention | 1996 | 59.2 (1.9) |  | 1996 | 30.2 (1.3) | -29.0 |  |  |
| **Percent engaged in at least 30 mins VPA per day (asked about previous day)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010b | 1—active control (CATCH BasicPlus) | 554 students at 15 active control schools | 74.2 (se=0.02) | 52 | 691 students at 15 active control schools | 76.6 (se=0.02), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 2.4 (P = 0.17) | -0.6% | P = 0.421 |
| 2-CATCH Basic Plus + Community | 553 students at 15 intervention schools | 71.0 (se=0.02) |  | 471 students at 15 intervention schools | 72.8 (se=0.02), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 1.8 (P = 0.27) |  |  |
| **Number of days engaged in at least 30 mins VPA (as assessed over past week)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010b | 1—active control (CATCH BasicPlus) | 554 | 4.3 (se=0.12) | 52 | 691 | 4.2 (se=0.11), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | -0.1 (P = 0.33) | 0.3 | P = 0.111 |
| 2-CATCH Basic Plus + Community | 553 | 4.0 (se=0.12) |  | 471 | 4.2 (se=0.12), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.2 (P = 0.11) |  |  |
| **Number of days played outdoors (as assessed over past week)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010b | 1—active control (CATCH BasicPlus) | 554 | 3.9 (se=0.12) | 52 | 691 | 4.1 (se=0.11), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.2 (P = 0.10)\* (sig at P = <0.05 level, 1-tailed) | 0.1 | P = 0.251 |
| 2-CATCH Basic Plus + Community | 553 | 3.8 (se=0.12) |  | 471 | 4.1 (se=0.13), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.3 (P = 0.020)\*\* (sig at P = <0.01 level, 1-tailed) |  |  |
| **Number of days played sports activity (as assessed over past week)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010b | 1—active control (CATCH BasicPlus) | 554 | 3.3 (se=0.11) | 52 | 691 | 3.4 (se=0.10), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.1 (p-0.29) | 0.2 | P = 0.110 |
| 2-CATCH Basic Plus + Community | 553 | 3.2 (se=0.11) |  | 471 | 3.5 (se=0.12), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.3 (P = 0015)\*\* (sig at P = <0.01 level, 1-tailed) |  |  |
| **Number of days participated in some organized PA (as assessed over past week)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010b | 1—active control (CATCH BasicPlus) | 554 | 1.4 (se=0.09) | 52 | 691 | 1.7 (se=0.09), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.3 (P = 0.010)\*\* (sig at P = <0.01 level, 1-tailed) | -0.1 | P = 0.305 |
| 2-CATCH Basic Plus + Community | 553 | 1.4 (se=0.09) |  | 471 | 1.6 (se=0.1), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 0.2 (P = 0.08)\* (sig at P = <0.05 level, 1-tailed) |  |  |
| **Average daily pedometer steps (post-pre)** |  |  |  |  |  |  |  |  |  |
| Schetzina, 200920 | 2- intervention only | 114 | 3301 (1107) | 78 | 48 | 4187 (1578) | 886 steps |  | P < 0.001 |
| **Leisure time out of school physical activity (h/week) – defined as at least equivalent to moderate walking speed and lasting at least 5 minutes monitored by 7-day diaries** |  |  |  |  |  |  |  |  |  |
| Burke, 19981 (girls only) | 1—control | 391 girls total | NR | 26 weeks post intervention | 720 children total (boys and girls) | NR |  |  | Ns |
| 2—WASPAN |  | NR |  |  | NR |  |  |  |
| 3--PEEP |  | NR |  |  | NR |  |  |  |
| Burke, 19981 (boys only) | 1—Control | 409 boys total | NR | 26 weeks post intervention |  | NR |  |  | NS |
| 2—WASPAN |  | NR |  |  | NR |  |  |  |
| 3--PEEP |  | NR |  |  | NR |  |  |  |
| **Change in Sedentary Behavior** |  |  |  |  |  |  |  |  |  |
| **TV Watching (min/week)** |  |  |  |  |  |  |  |  |  |
| Burke, 19981 (girls only) | 1—control | 391 girls total | NR | 26 weeks post intervention | 720 children total (boys and girls) | NR | 4.8 (95% CI: -15.5, 25.0) |  | NS |
| 2—WASPAN |  | NR |  |  | NR | -8.5 (95% CI: -31.2, 14.2) |  |  |
| 3--PEEP |  | NR |  |  | NR | 2.0 (95% CI: 18.1, 22.1) |  |  |
| Burke, 19981 (boys only) | 1—Control | 409 boys total | NR | 26 weeks post intervention |  | NR | 22.8 (95%CI: -2.6, 48.2) |  | P = 0.014 for PEEP |
| 2—WASPAN |  | NR |  |  | NR | 7.0 (95%CI: -18.1, 32.2) |  |  |
| 3--PEEP |  | NR |  |  | NR | -17.7 (95%CI: -38.2, 2.9) |  |  |
| **Average total TV viewing, hours per day – no particular day of the week, parent reported** |  |  |  |  |  |  |  |  |  |
| Fitzgibbon, 200636 | 1—control | 170 | 2.6 (1.5) | 104 | 139 | 2.34 (0.12) | -0.26 | -0.2; or from Table – 0.00 h/day (-0.38 to 0.38) (adjusted for baseline value and Head Start site) | NS |
| 2—intervention | 180 | 2.8 (1.6) |  | 154 | 2.34 (0.12) | -0.46 |  |  |
| **Total TV, hours per weekday** |  |  |  |  |  |  |  |  |  |
| Foster, 20087 | 1—control | 600 | 2.81 | 104 | 315 | 3.02 | 0.21 | 1.00 | P<0.001 |
| 2—intervention | 749 | 2.92 |  | 390 | 2.89 | -0.03 | 0.95 (0.93-0.98) adjusted difference b/w intervention and control adjusted for race/ethnicity, gender, age, randomization pair, weight status at baseline and baseline measures of the dependent variable; should be interpreted as OR |  |
| **Total TV, hours per weekend** |  |  |  |  |  |  |  |  |  |
| Foster, 20087 | 1—control | 600 | 3.41 | 104 | 300 | 3.32 | -0.09 | 1.00 | P = 0.39 |
| 2—intervention | 749 | 3.28 |  | 372 | 3.26 | -0.02 | 0.97 (0.89-1.05) b/w intervention and control adjusted for race/ethnicity, gender, age, randomization pair, weight status at baseline and baseline measures of the dependent variable; should be interpreted as OR |  |
| **Total Inactivity, h/wk** |  |  |  |  |  |  |  |  |  |
| Foster, 20087 | 1—control | 600 | 105.45 | 104 | 210 | 108.93 | 3.48 | 1.00 | P = 0.005 |
| 2—intervention | 749 | 115.21 |  | 269 | 104.42 | -10.79 | 0.96 (0.94-0.99) b/w intervention and control adjusted for race/ethnicity, gender, age, randomization pair, weight status at baseline and baseline measures of the dependent variable; should be interpreted as OR |  |
| **% who watched >2 hrs TV/day (asked about the previous day)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010 | 1—active control (CATCH BasicPlus) | 554 students at 15 active control schools | 22.0 (se=0.02) | 52 | 691 students at 15 active control schools | 29.1 (se=0.03), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 7.1 (P = 0.0002)\*\* (sig at P < =0.01 level, 1-tailed) | -4.7% | P = 0.095 \* sig at P < =0.05 level, 1-tailed |
| 2-CATCH Basic Plus + Community | 553 students at 15 intervention schools | 25.9 (se=0.03) |  | 471 students at 15 interven-tion schools | 28.3 (se=0.03), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 2.4 (P = 0.20) |  |  |
| **% who spent >2 hrs on the computer/day (asked about the previous day)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010 | 1—active control (CATCH BasicPlus) | 554 | 4.5 (se=0.01) | 52 | 691 | 8.3 (se=0.01), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 3.8 (P = 0.002)\*\* (sig at P < =0.01 level, 1-tailed) | -5.6% | P = 0.003 \*\* sig at P < =0.01 level, 1-tailed |
| 2-CATCH Basic Plus + Community | 553 | 8.2 (se=0.02) |  | 471 | 6.4 (se=0.01), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect. | -1.8 (P = 0.14) |  |  |
| **% who played >2 hrs of video games/day (asked about the previous day)** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010 | 1—active control (CATCH BasicPlus) | 554 | 5.9 (se=0.01) | 52 | 691 | 8.9 (se=0.01), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 3.0 (P = 0.010)\*\* (sig at P < =0.01 level, 1-tailed) | -1.3% | P = 0.182 |
|  | 2-CATCH Basic Plus + Community | 553 | 8.4 (se=0.01) |  | 471 | 10.1 (se=0.02), adjusting for sex, age, ethnicity, % economically disadvantaged, and school district; school is entered as random effect | 1.7 (P = 0.15) |  |  |
| **Change in fruit and vegetable intake** |  |  |  |  |  |  |  |  |  |
| **Number of fruits and vegetables per day** |  |  |  |  |  |  |  |  |  |
| Foster, 20087 | 1—control | 600 | 5.33 | 104 | 333 | 4.28 | -1.05 | -0.04 (-0.37-0.30) | P = 0.82 |
| 2—intervention | 749 | 5.26 |  | 441 | 4.17 | -1.09 |  |  |
| **Fruit and vegetable intake** |  |  |  |  |  |  |  |  |  |
| Gorely, 200937 | 1—control | 279 | NR | 43 | 243 | NR | NR | NR | P = 0.413 |
| 2—intervention | 310 | NR |  | 264 | NR | NR |  |  |
| **Fruits and vegetables first behavior** |  |  |  |  |  |  |  |  |  |
| Hendy, 20119 | 1—control | 189 | NR | 52 | NR | NR | .72 | 1.59 meals ( of 6 meals) | P = 0.000 |
| 2—intervention | 193 | NR |  | NR | NR | 2.31 |  |  |
| **Number of fruits and vegetables per day** |  |  |  |  |  |  |  |  |  |
| Hoelscher, 201010a | 1—control | 554 | 4.0 | 52 | NR | 3.8 | 0.1 | 0.3 | P = 0.074 |
| 2—intervention | 553 | 4.1 |  | NR | 4.2 | 0.4 |  |  |
| **Consumption of fruits and vegetables** |  |  |  |  |  |  |  |  |  |
| Marcus, 200916 | 1—control | 1465 | NR | 208 | NR | NR | NR | NR | P = 0.47 |
| 2—intervention | 1670 | NR |  | NR | NR |  |  |  |
| **Portions of vegetables consumed per week: ≈ ½ to 1 cup** |  |  |  |  |  |  |  |  |  |
| Mihas, 201017 | 1—control | 93 | 2.0 |  |  | 2.2 | 0.2 | -0.1 | NS |
|  | 2—intervention | 98 | 2.1 |  |  | 2.2 | 0.1 |  |  |
| **Portions of fruit consumed per week: ≈ ½ to 1 cup** |  |  |  |  |  |  |  |  |  |
| Mihas, 201017 | 1—control | 93 | 4.8 |  |  | 4.9 | 0.1 | 1.0 | NS |
|  | 2—intervention | 98 | 4.7 |  |  | 5.8 | 1.1 |  |  |
| **Change in Energy Intake** |  |  |  |  |  |  |  |  |  |
| **Number of kilocalories** |  |  |  |  |  |  |  |  |  |
| Caballero, 20032  (24 h dietary recall) | 1—control | 278 total | NR | 156 | 278 total | 2157 |  | -265.0  Calculated from mean values at follow-up (intervention-control) | P = 0.003 |
| 2—intervention |  | NR |  |  | 1892 |  |  |  |
| Caballero, 20032  (school lunch observation) | 1—control | 278 total | 573.6 | 156 | 278 total | 494.4 |  | 5.8\* | P = 0.804 |
| 2—intervention |  | 522.9 |  |  | 500.2 |  |  |  |
| Foster, 20087 | 1—control | 600 | 129000.59 | 104 | 331 | 10154.13 | -2764.46 | -104.27 | P = 0.12 |
| 2—intervention | 749 | 13764.37 |  | 437 | 10019.10 | -3745.26 |  |  |
| Hatzis, 20108 | 1—control | 93 | 1843 | 520 | 93 | 2066 | 222 | 299 | P = 0.027 |
| 2—intervention | 80 | 1845 |  | 80 | 2386 | 541 |  |  |
| Hopper, 200512 | 1—control | 96 | 1698.34 | 86 | 96 | 1686.25 | -12.09 | -58.9 | NS |
| 2—intervention | 142 | 1657.13 |  | 142 | 1586.15 | -70.98 |  |  |
| Lionis, 199114 | 1—control | 29 | 2074.6 | 39 | 29 | NR | 162.7 | -18.0 | NS |
| 2—intervention | 39 | 2160.7 |  | 39 | NR | 144.7 |  |  |
| Mihas, 201017 | 1—control | 93 | 8583.7 | 52 | 93 | 8757.9 | 174.2 | -565.10 | P < 0.05 |
| 2—intervention | 98 | 8503.3 |  | 98 | 8112.4 | -390.9 |  |  |
| Nader, 199918 | 1—control | 2117 | 8435 | 156 | 2117 | 9364 | 929 | -235.0 | P = 0.13 |
| 2—intervention | 2989 | 8544 |  | 2989 | 9238 | 694 |  |  |

ANCOVA = Analysis of Covariance; ANOVA = Analysis of Variance; b/w = Between; CATCH = Coordinated Approach to Child Health Basic Plus; CI = Confidence Interval; F/U =Follow-up; Ho = Null Hypothesis; I-C = Difference between intervention and control; MVPA = Moderate to Vigorous Physical Activity; M to V = Moderate to Vigorous; N = Sample Size; NR = Not Reported; NS = Not Significant; OR = Odds Ratio; P = P-value; PA = Physical Activity; PEEP = Physical Education Enrichment Program; SD = Standard Deviation; SE =Sample Error; Sig = Significant; VPA = Vigorous Physical Activity; WASPAN = West Australian Schools Physical Activity and Nutrition Project