**Supplemetary Table 1: Summary of Mean Differences and Standardised Mean Differences**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Follow-up** | **Outcome** | **Study Author** | **Outcome Measure** | **Mean Difference (95% CI)** | **Pooled Raw Mean Difference (95% CI), I2** | **Pooled SMD (95% CI), I2** |
| **Shorter term** | **Physical Activity** | Ashe35 | MVPA | 22.1 mins/day (6.64, 37.5) | 506 steps/day (-80, 1092) I2=80.5% |  |
| Ashe35 | *Step Count* | 3787 steps/day (1715, 5859) |
| Lyons37 | *Step Count* | 1607 steps/day (-160, 3374) |
| Bickmore36 | *Step Count* | 32 steps/day (-619, 683) |
| **Sedentary time** | Lyons37 | *Sitting time per day* | -60.5 mins/day (-161, 40) |  |  −0.49 (−1.02, 0.03), I2 =0%;  |
| Ashe35 | *% Sitting time per day* | -5.1% (-10.8, 0.31) |
| **Fitness** | Silveira39 | *Fastest Gait Speed* | Social App 0.15m/s (-0.14, 0.44) |  | 0.31 (-0.09, 0.70), I2=0% |
| Individual App 0.47m/s (0.26, 0.68) |
| Knight238 | *VO2 Max* | SB app -2.71 ml/min/kg (-7.05, 1.63) |  |
| EX app 2.06 ml/min/kg (-3.20, 7.32) |
| CC app 1.98 ml/min/kg (-2.40, 6.36**)** |
| Lyons37 | *6 minute timed walk* | 68.3metres (-106, 243) |  |
| **Longer term** | **Physical Activity** | Bickmore36 | *Steps Count* | 332 steps/day (-647, 1311) | 753 steps/day (-147,1652) I2=78.0% | **-** |
| Ashe35 | *Steps Count* | 3013 steps/day (743, 5283) |
| Ashe35 | MVPA | 19.6 mins/day (2.2, 36.9) |
| **Sedentary time** | Ashe35 | ST per day | -1.06% (-6.35, 4.23) |  | **-** |

*Outcome measures used in pooled estimates are in italics. Where we pooled across studies using the same measure, we have reported pooled raw mean difference. Where we pooled occurred across studies using different measures (eg for fitness), we have reported pooled standardised mean differences (SMD).*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Certainty Assessment** | **No of patients** | SMD | **Certainty** | **Importance**  |
| **No of studies** | **Design** | **Risk of bias** | **Inconsistency** | **Indirectness** | **Imprecision** | **Intervention** | **Control** |
|
| **Outcome: Fitness** |
| 3 |  2 randomised trials, 1 non-randomised *(3)* | Serious- High risk of bias for 1 study, low risk of bias for 2 studies *(-0.5)* | No serious inconsistency,I² 0%)  | No serious indirectness | Serious risk of imprecision as small sample size *(-0.5)* | 50 | 52 | 0.31 (95%CI -0.09, 0.70) | Low | ⊕⊕ | Important |
|
| **Outcome: Physical Activity** |
| 3 | Randomised trials *(4)* | No change-overall low/unclear risk of bias for all studies | No serious inconsistency,I² =67.6%  | No serious indirectness | Serious risk of imprecision as small sample size *(-0.5)* | 164 | 158 | 0.14 (95% CI -0.09, 0.36) | Moderate | ⊕⊕⊕ | Important |
| **Outcome: Sedentary Time** |
| 2 | Randomised trials *(4)* | No serious risk of bias | No serious inconsistency, I² 0%  | No serious indirectness | Serious risk of imprecision as small sample sizes *(-0.5)* | 32 | 27 |  −0.49 (95% CI −1.02, 0.03) | Moderate | ⊕⊕⊕ | Important |

**Supplementary Table 2: GRADE Certainty Assessment**

GRADE scoring is in italics. Randomised-control trials provide the highest starting score (4), with deductions thereafter for high risk of bias, inconsistency, indirectness and imprecision.

**Supplementary Table 3: Risk of bias descriptions**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author(year)** | **ITT Analysis**  | **Attrition bias/rates** | **Missing data analysis** | **Selective reporting bias (Protocol/Trial registration)** | **Random sequence generation**  | **Allocation Concealment** | **Blinding of Outcome Assessment** | **Overall Risk** |
| Ashe (2015)33 | No | Intervention group 92% completed, control group 67% completed | Not mentioned | ClinicalTrials.gov NCT01842061. | Yes | Yes | Yes | Low risk |
| Bickmore (2013)34 | Yes | 86% completed, reported “no significant difference between attrition for intervention and control groups” | Analysis for effect of missing data, no significant impact | None | Yes | Yes | Yes | Low risk |
| Silveira (2013)37 | No | Individual intervention group 79% completed,social intervention group 92% completed,control group 59% completed | Not mentioned | None | No | No | No | High risk |
| Knight (2014)38 | No | 98% completed, reported “no significant difference between groups” | Not mentioned | None | Yes | Yes | Yes | Low risk |
| Lyons (2017)35 | Yes | Intervention group 95% completed, control group 95% completed | No analysis | Clinicaltrials.gov NCT01869348 | Yes | No | No | Unclear risk |
| Knight(2014)36 | No | 98% completed, reported “no significant difference between groups” | Not mentioned | None | Yes | Yes | Yes | Low risk |

**Supplementary Table 4: Summary of BCTs**

|  |  |  |  |
| --- | --- | --- | --- |
| **Study** | **Number of Control BCTs** | **Number of Intervention BCTs** | **Total Number of Intervention BCTs** |
| **Goals & planning** | **Feedback & monitoring** | **Social support** | **Shaping knowledge** | **Natural consequences** | **Comparison of behaviour** | **Associations** | **Repetition & substitution** | **Comparison of outcomes** | **Reward & threat** | **Antecedents** | **Self-belief** |
| **Ashe 2015**33 | 0 | 5 | 2 | 1 | 1 | 2 | 1 | 0 | 3 | 0 | 2 | 1 | 1 | 19 |
| **Bickmore 2013**34 | 2 | 5 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 10 |
| **Silveira 2013**37 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 1 | 0 | 3 | 1 | 0 | 12 |
| **Knight 2014**38 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| **Lyons 2017**35 | 0 | 5 | 3 | 2 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 21 |
| **Knight 2014**36 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |

This table summarises the BCTs which were used in each study under the headings outlined in the BCT Taxonomy30.