|                                                                                                                                                                                                                                                                                                                                                 | Effect Size Characteristics  Characteristics of included and excluded effect sizes                                                                                                    |                                                                                                                                                          |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| /ariable                                                                                                                                                                                                                                                                                                                                        | Effect Size Used  Not Used, $N = 197^{1}$ Used, $N = 255^{1}$                                                                                                                         |                                                                                                                                                          |  |
| Review Year                                                                                                                                                                                                                                                                                                                                     | 0 (00/)                                                                                                                                                                               | 1 (0 40/)                                                                                                                                                |  |
| 1982                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 1 (0.4%)<br>3 (1.2%)                                                                                                                                     |  |
| 2002                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 1 (0.4%)                                                                                                                                                 |  |
| 2003                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 1 (0.4%)                                                                                                                                                 |  |
| 2004                                                                                                                                                                                                                                                                                                                                            | 4 (2.0%)<br>0 (0%)                                                                                                                                                                    | 13 (5.1%)<br>4 (1.6%)                                                                                                                                    |  |
| 2008                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 1 (0.4%)                                                                                                                                                 |  |
| 2009                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 2 (0.8%)                                                                                                                                                 |  |
| 2010                                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 2 (0.8%)                                                                                                                                                 |  |
| 2011                                                                                                                                                                                                                                                                                                                                            | 3 (1.5%)                                                                                                                                                                              | 3 (1.2%)                                                                                                                                                 |  |
| 2012                                                                                                                                                                                                                                                                                                                                            | 1 (0.5%)                                                                                                                                                                              | 2 (0.8%)                                                                                                                                                 |  |
| 2013                                                                                                                                                                                                                                                                                                                                            | 4 (2.0%)                                                                                                                                                                              | 12 (4.7%)                                                                                                                                                |  |
| 2014                                                                                                                                                                                                                                                                                                                                            | 1 (0.5%)                                                                                                                                                                              | 7 (2.7%)                                                                                                                                                 |  |
| 2016                                                                                                                                                                                                                                                                                                                                            | 8 (4.1%)<br>16 (8.1%)                                                                                                                                                                 | 16 (6.3%)<br>9 (3.5%)                                                                                                                                    |  |
| 2017                                                                                                                                                                                                                                                                                                                                            | 10 (5.1%)                                                                                                                                                                             | 8 (3.1%)                                                                                                                                                 |  |
| 2018                                                                                                                                                                                                                                                                                                                                            | 6 (3.0%)                                                                                                                                                                              | 16 (6.3%)                                                                                                                                                |  |
| 2019                                                                                                                                                                                                                                                                                                                                            | 38 (19%)                                                                                                                                                                              | 50 (20%)                                                                                                                                                 |  |
| 2020                                                                                                                                                                                                                                                                                                                                            | 25 (13%)                                                                                                                                                                              | 49 (19%)                                                                                                                                                 |  |
| 2021                                                                                                                                                                                                                                                                                                                                            | 28 (14%)                                                                                                                                                                              | 24 (9.4%)                                                                                                                                                |  |
| 2022                                                                                                                                                                                                                                                                                                                                            | 53 (27%)                                                                                                                                                                              | 31 (12%)                                                                                                                                                 |  |
| Dutcome Category  Education                                                                                                                                                                                                                                                                                                                     | A1 (210Z)                                                                                                                                                                             | 80 (250/)                                                                                                                                                |  |
| Health Behaviour                                                                                                                                                                                                                                                                                                                                | 41 (21%)<br>55 (28%)                                                                                                                                                                  | 89 (35%)<br>64 (25%)                                                                                                                                     |  |
| Physical Health                                                                                                                                                                                                                                                                                                                                 | 62 (31%)                                                                                                                                                                              | 32 (13%)                                                                                                                                                 |  |
| Psychology                                                                                                                                                                                                                                                                                                                                      | 39 (20%)                                                                                                                                                                              | 69 (27%)                                                                                                                                                 |  |
| (missing)                                                                                                                                                                                                                                                                                                                                       | 0                                                                                                                                                                                     | 1                                                                                                                                                        |  |
| Broad Outcome                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                       |                                                                                                                                                          |  |
| Aggression                                                                                                                                                                                                                                                                                                                                      | 0 (0%)                                                                                                                                                                                | 4 (1.6%)                                                                                                                                                 |  |
| Antisocial Behaviour                                                                                                                                                                                                                                                                                                                            | 0 (0%)                                                                                                                                                                                | 3 (1.2%)                                                                                                                                                 |  |
| Body composition  Cardiometabolic health                                                                                                                                                                                                                                                                                                        | 45 (23%)                                                                                                                                                                              | 26 (10%)                                                                                                                                                 |  |
| Cardiometabolic health Cognition                                                                                                                                                                                                                                                                                                                | 4 (2.0%)                                                                                                                                                                              | 3 (1.2%)<br>21 (8.2%)                                                                                                                                    |  |
| Developmental                                                                                                                                                                                                                                                                                                                                   | 0 (0%)                                                                                                                                                                                | 5 (2.0%)                                                                                                                                                 |  |
| Diet                                                                                                                                                                                                                                                                                                                                            | 17 (8.6%)                                                                                                                                                                             | 15 (5.9%)                                                                                                                                                |  |
| Eye health                                                                                                                                                                                                                                                                                                                                      | 10 (5.1%)                                                                                                                                                                             | 0 (0%)                                                                                                                                                   |  |
| Healthy behavior                                                                                                                                                                                                                                                                                                                                | 1 (0.5%)                                                                                                                                                                              | 4 (1.6%)                                                                                                                                                 |  |
| Learning                                                                                                                                                                                                                                                                                                                                        | 29 (15%)                                                                                                                                                                              | 44 (17%)                                                                                                                                                 |  |
| Literacy                                                                                                                                                                                                                                                                                                                                        | 10 (5.1%)                                                                                                                                                                             | 33 (13%)                                                                                                                                                 |  |
| Numeracy                                                                                                                                                                                                                                                                                                                                        | 2 (1.0%)                                                                                                                                                                              | 11 (4.3%)                                                                                                                                                |  |
| Physical activity  Physical health                                                                                                                                                                                                                                                                                                              | 18 (9.1%)<br>3 (1.5%)                                                                                                                                                                 | 21 (8.2%)                                                                                                                                                |  |
| Physical health Prosocial Behavior                                                                                                                                                                                                                                                                                                              | 3 (1.5%)<br>0 (0%)                                                                                                                                                                    | 1 (0.4%)<br>3 (1.2%)                                                                                                                                     |  |
| Prosocial Benavior  Psychological health                                                                                                                                                                                                                                                                                                        | 23 (12%)                                                                                                                                                                              | 26 (10%)                                                                                                                                                 |  |
| Risky behavior                                                                                                                                                                                                                                                                                                                                  | 10 (5.1%)                                                                                                                                                                             | 7 (2.7%)                                                                                                                                                 |  |
| Science                                                                                                                                                                                                                                                                                                                                         | 0 (0%)                                                                                                                                                                                | 1 (0.4%)                                                                                                                                                 |  |
| Screen time                                                                                                                                                                                                                                                                                                                                     | 3 (1.5%)                                                                                                                                                                              | 4 (1.6%)                                                                                                                                                 |  |
| Self-perceptions                                                                                                                                                                                                                                                                                                                                | 1 (0.5%)                                                                                                                                                                              | 2 (0.8%)                                                                                                                                                 |  |
| Sleep                                                                                                                                                                                                                                                                                                                                           | 11 (5.6%)                                                                                                                                                                             | 20 (7.8%)                                                                                                                                                |  |
| Social interactions                                                                                                                                                                                                                                                                                                                             | 0 (0%)                                                                                                                                                                                | 1 (0.4%)                                                                                                                                                 |  |
| Broad Exposure                                                                                                                                                                                                                                                                                                                                  | 4 / / 7 / 4 0 ( )                                                                                                                                                                     | E (0.000)                                                                                                                                                |  |
| Advertising  Computer use                                                                                                                                                                                                                                                                                                                       | 9 (4.6%)                                                                                                                                                                              | 5 (2.0%)                                                                                                                                                 |  |
| e-Books                                                                                                                                                                                                                                                                                                                                         | 0 (0%)                                                                                                                                                                                | 5 (2.0%)                                                                                                                                                 |  |
| Internet use                                                                                                                                                                                                                                                                                                                                    | 1 (0.5%)                                                                                                                                                                              | 7 (2.7%)                                                                                                                                                 |  |
| Screen use                                                                                                                                                                                                                                                                                                                                      | 77 (39%)                                                                                                                                                                              | 48 (19%)                                                                                                                                                 |  |
| Screen-based intervention                                                                                                                                                                                                                                                                                                                       | 56 (28%)                                                                                                                                                                              | 92 (36%)                                                                                                                                                 |  |
| Social Media                                                                                                                                                                                                                                                                                                                                    | 6 (3.0%)                                                                                                                                                                              | 10 (3.9%)                                                                                                                                                |  |
| TV advertising                                                                                                                                                                                                                                                                                                                                  | 1 (0.5%)                                                                                                                                                                              | 0 (0%)                                                                                                                                                   |  |
| TV programs and movies                                                                                                                                                                                                                                                                                                                          | 10 (5.1%)                                                                                                                                                                             | 32 (13%)                                                                                                                                                 |  |
| Video games                                                                                                                                                                                                                                                                                                                                     | 23 (12%)<br>5 (3, 9)                                                                                                                                                                  | 45 (18%)<br>9 (5, 16)                                                                                                                                    |  |
| lumber of Contribution Carry                                                                                                                                                                                                                                                                                                                    | 5 (3, 9)<br>9                                                                                                                                                                         | 9 (5, 16)<br>3                                                                                                                                           |  |
| Number of Contributing Studies (missing)                                                                                                                                                                                                                                                                                                        | •                                                                                                                                                                                     |                                                                                                                                                          |  |
| Number of Contributing Studies (missing)  Pooled Sample Size                                                                                                                                                                                                                                                                                    | 1,884 (665, 8,487)                                                                                                                                                                    | 2,000 (144, 0.88                                                                                                                                         |  |
| (missing)                                                                                                                                                                                                                                                                                                                                       | 1,884 (665, 8,487)                                                                                                                                                                    | 2,033 (744, 3,99                                                                                                                                         |  |
| (missing) Pooled Sample Size                                                                                                                                                                                                                                                                                                                    | 1,884 (665, 8,487)<br>21 (11%)                                                                                                                                                        | 57 (22%)                                                                                                                                                 |  |
| (missing)  Pooled Sample Size  Age Group                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                       | · · · · · · · · · · · · · · · · · · ·                                                                                                                    |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents                                                                                                                                                                                                                                                                                           | 21 (11%)                                                                                                                                                                              | 57 (22%)                                                                                                                                                 |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children                                                                                                                                                                                                                                                                                 | 21 (11%)<br>47 (24%)                                                                                                                                                                  | 57 (22%)<br>76 (30%)                                                                                                                                     |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type                                                                                                                                                                                                                                             | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)                                                                                                                                        | 57 (22%)<br>76 (30%)<br>102 (40%)<br>20 (7.8%)                                                                                                           |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing                                                                                                                                                                                                                      | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)                                                                                                                                        | 57 (22%)<br>76 (30%)<br>102 (40%)<br>20 (7.8%)                                                                                                           |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism                                                                                                                                                                                                              | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)                                                                                                                | 57 (22%)<br>76 (30%)<br>102 (40%)<br>20 (7.8%)<br>3 (1.2%)<br>1 (0.4%)                                                                                   |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing                                                                                                                                                                                                                      | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)                                                                                                                                        | 57 (22%)<br>76 (30%)<br>102 (40%)<br>20 (7.8%)                                                                                                           |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease                                                                                                                                                                                             | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)                                                                                                    | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%) 3 (1.2%) 1 (0.4%) 4 (1.6%)                                                                                         |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia                                                                                                                                                                                | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)                                                                                          | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%) 3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%)                                                                                |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General                                                                                                                                                                       | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)                                                                             | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%)                                                                     |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties                                                                                                                                                    | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)<br>1 (0.5%)                                                                 | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%) 3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%)                                                             |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese                                                                                                                              | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)<br>1 (0.5%)<br>4 (2.0%)                                                     | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%)                                                  |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese  Poor readers  Study Design  Cross-sectional only                                                                            | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)<br>1 (0.5%)<br>4 (2.0%)<br>4 (2.0%)                                         | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)                                         |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese  Poor readers  Study Design  Cross-sectional only  Experimental                                                              | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)<br>1 (0.5%)<br>4 (2.0%)<br>0 (0%)                                           | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)  16 (6.3%) 130 (51%)                    |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents Children  Mixed  Young children  Sample Type  Atypically developing  Autism Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese  Poor readers  Study Design  Cross-sectional only  Experimental  Longitudinal only                                             | 21 (11%)<br>47 (24%)<br>114 (58%)<br>15 (7.6%)<br>1 (0.5%)<br>6 (3.0%)<br>1 (0.5%)<br>0 (0%)<br>184 (93%)<br>1 (0.5%)<br>4 (2.0%)<br>0 (0%)<br>4 (2.0%)<br>108 (55%)<br>8 (4.1%)      | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%) 3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%) 16 (6.3%) 130 (51%) 12 (4.7%)            |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese  Poor readers  Study Design  Cross-sectional only  Experimental  Longitudinal only  Mixed or unspecified                     | 21 (11%) 47 (24%) 114 (58%) 15 (7.6%)  1 (0.5%) 6 (3.0%) 1 (0.5%) 0 (0%) 184 (93%) 1 (0.5%) 4 (2.0%) 0 (0%)  4 (2.0%) 108 (55%) 8 (4.1%) 48 (24%)                                     | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)  16 (6.3%) 130 (51%) 12 (4.7%) 81 (32%) |  |
| Cooled Sample Size Age Group Adolescents Children Mixed Young children Sample Type Atypically developing Autism Chronic disease Dyscalculia General Math difficulties Overweight and obese Poor readers Study Design Cross-sectional only Experimental Longitudinal only Mixed or unspecified Observational - mixed                             | 21 (11%) 47 (24%) 114 (58%) 15 (7.6%)  1 (0.5%) 6 (3.0%) 1 (0.5%) 0 (0%) 184 (93%) 1 (0.5%) 4 (2.0%) 0 (0%)  4 (2.0%) 0 (0%)  4 (2.0%) 3 (4.1%) 48 (24%) 29 (15%)                     | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)  16 (6.3%) 12 (4.7%) 81 (32%) 16 (6.3%) |  |
| (missing)  Pooled Sample Size  Age Group  Adolescents  Children  Mixed  Young children  Sample Type  Atypically developing  Autism  Chronic disease  Dyscalculia  General  Math difficulties  Overweight and obese  Poor readers  Study Design  Cross-sectional only  Experimental  Longitudinal only  Mixed or unspecified                     | 21 (11%) 47 (24%) 114 (58%) 15 (7.6%)  1 (0.5%) 6 (3.0%) 1 (0.5%) 0 (0%) 184 (93%) 1 (0.5%) 4 (2.0%) 0 (0%)  4 (2.0%) 0 (0%)  4 (2.0%) 108 (55%) 8 (4.1%) 48 (24%) 29 (15%) 150 (76%) | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)  16 (6.3%) 130 (51%) 12 (4.7%) 81 (32%) |  |
| Cooled Sample Size Age Group Adolescents Children Mixed Young children  Sample Type Atypically developing Autism Chronic disease Dyscalculia General Math difficulties Overweight and obese Poor readers Study Design Cross-sectional only Experimental Longitudinal only Mixed or unspecified Observational - mixed Study-level Data Available | 21 (11%) 47 (24%) 114 (58%) 15 (7.6%)  1 (0.5%) 6 (3.0%) 1 (0.5%) 0 (0%) 184 (93%) 1 (0.5%) 4 (2.0%) 0 (0%)  4 (2.0%) 0 (0%)  4 (2.0%) 108 (55%) 8 (4.1%) 48 (24%) 29 (15%) 150 (76%) | 57 (22%) 76 (30%) 102 (40%) 20 (7.8%)  3 (1.2%) 1 (0.4%) 4 (1.6%) 1 (0.4%) 231 (91%) 2 (0.8%) 10 (3.9%) 3 (1.2%)  16 (6.3%) 12 (4.7%) 81 (32%) 16 (6.3%) |  |