Supporting information

**Recruiting and retaining young adults: What can we learn from behavioural interventions targeting nutrition, physical activity and/or obesity? A systematic review of the literature**

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**Supplementary Table 1:** Search Terms by database

*Medline*

|  |  |
| --- | --- |
| **#** | **Searches** |
| 1 | randomized controlled trial/ |
| 2 | controlled Clinical Trial/ |
| 3 | random\*.tw. |
| 4 | trial.tw. |
| 5 | (control adj group\*).tw. |
| 6 | 1 or 2 or 3 or 4 or 5 |
| 7 | (young\* adj (adult\* or men or male\* or man or women or female\* or woman)).tw. |
| 8 | Young Adult/ |
| 9 | college aged.tw. |
| 10 | ((university or college\*) adj student\*).tw. |
| 11 | 7 or 8 or 9 or 10 |
| 12 | Diet/ |
| 13 | Healthy Diet/ |
| 14 | eating/ |
| 15 | eating behavio?r.tw. |
| 16 | physical activity/ |
| 17 | Exercise/ |
| 18 | Weight Loss/ |
| 19 | obesity/ or obesity, abdominal/ or obesity, metabolically benign/ or obesity, morbid/ |
| 20 | Overweight/ |
| 21 | 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 |
| 22 | 6 and 11 and 21 |
| 23 | animals/ not (humans/ and animals/) |
| 24 | 22 not 23 |
| 25 | addresses/ or lectures/ or anecdotes/ or biography/ or interview/ or comment/ or directory/ or editorial/ or legal cases/ or case reports/ or legislation/ or letter/ or news/ or newspaper article/ or patient education handout/ |
| 26 | 24 not 25 |
| 27 | limit 26 to english language |

*Embase*

|  |  |
| --- | --- |
| **#** | **Searches** |
| 1 | randomized controlled trial/ |
| 2 | controlled Clinical Trial/ |
| 3 | random\*.tw. |
| 4 | trial.tw. |
| 5 | (control adj group\*).tw. |
| 6 | 1 or 2 or 3 or 4 or 5 |
| 7 | (young\* adj (adult\* or men or male\* or man or women or female\* or woman)).tw. |
| 8 | Young Adult/ |
| 9 | college aged.tw. |
| 10 | ((university or college\*) adj student\*).tw. |
| 11 | 7 or 8 or 9 or 10 |
| 12 | diet/ |
| 13 | healthy diet/ |
| 14 | dietary intake/ |
| 15 | eating/ |
| 16 | eating behavio?r.tw. |
| 17 | physical activity/ |
| 18 | exercise/ |
| 19 | obesity/ or abdominal obesity/ or metabolically benign obesity/ or morbid obesity/ |
| 20 | weight reduction/ |
| 21 | 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 |
| 22 | 6 and 11 and 21 |
| 23 | animals/ not (humans/ and animals/) |
| 24 | 22 not 23 |
| 25 | addresses/ or lectures/ or anecdotes/ or biography/ or interview/ or comment/ or directory/ or editorial/ or legal cases/ or case reports/ or legislation/ or letter/ or news/ or newspaper article/ or patient education handout/ |
| 26 | 24 not 25 |
| 27 | limit 26 to english language |

*PsycINFO*

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| --- | --- |
| **#** | **Searches** |
| 1 | clinical trials/ |
| 2 | random\*.tw. |
| 3 | trial.tw. |
| 4 | (control adj group\*).tw. |
| 5 | 1 or 2 or 3 or 4 |
| 6 | (young\* adj (adult\* or men or male\* or man or women or female\* or woman)).tw. |
| 7 | college aged.tw. |
| 8 | ((university or college\*) adj student\*).tw. |
| 9 | 6 or 7 or 8 |
| 10 | diets/ |
| 11 | eating behavior/ or food intake/ |
| 12 | physical activity/ or active living/ or activity level/ |
| 13 | EXERCISE/ |
| 14 | weight loss/ or weight control/ |
| 15 | obesity/ or overweight/ |
| 16 | 10 or 11 or 12 or 13 or 14 or 15 |
| 17 | 5 and 9 and 16 |
| 18 | animals/ not (humans/ and animals/) |
| 19 | 17 not 18 |
| 20 | addresses/ or lectures/ or anecdotes/ or biography/ or interview/ or comment/ or directory/ or editorial/ or legal cases/ or case reports/ or legislation/ or letter/ or news/ or newspaper article/ or patient education handout/ |
| 21 | 19 not 20 |
| 22 | limit 21 to english language |

*Web of Science*

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| --- | --- |
| **#** | **Searches** |
| # 15 | (#14 AND #10 AND #5) *AND***LANGUAGE:** (English) *AND* **DOCUMENT TYPES:** (Article OR Review)*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 14 | #13 OR #12 OR #11*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 13 | TS=("Exercise" or "Physical activity")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 12 | TS=("Diet" or "nutrition" or "healthy diet" or "eating habits" "eating behavi?r")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 11 | TS= ("Obesity" or "overweight" or "obesity, abdominal", or "weight loss" or "obesity, morbid")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 10 | #9 OR #8 OR #7 OR #6*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 9 | TS= ("young adult\*")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 8 | TS= ("university student\*" or "college student\*").*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 7 | TS= ("college aged" or "student\*")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 6 | TS= ("young men" or "young male\*" or "young man" or "young women" or "young female\*" or "young woman")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 5 | #1 or #2 or #3 or #4*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 4 | TS=("control group\*") OR TS=("trial" or "clinical trial" or "clinical trials" or "controlled trial" or "controlled trials")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 3 | TS=("random\*")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 2 | TS= ("controlled clinical trial")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |
| # 1 | TS=("randomized controlled trial")*Indexes=SCI-EXPANDED, SSCI, A&HCI, ESCI Timespan=All years* |

*Cochrane*

|  |  |
| --- | --- |
| **ID** | **Search** |
| #1 | MeSH descriptor: [Controlled Clinical Trials as Topic] this term only |
| #2 | MeSH descriptor: [Randomized Controlled Trials as Topic] this term only |
| #3 | MeSH descriptor: [Randomized Controlled Trial] explode all trees |
| #4 | (random\*):ti,ab,kw  |
| #5 | (trial):ti,ab,kw  |
| #6 | (control next group\*):ti,ab,kw  |
| #7 | (#1 or #2 or #3 or #4 or #5 or #6)  |
| #8 | MeSH descriptor: [Young Adult] this term only |
| #9 | (young\* next (adult\* or men or male\* or man or women or female\* or woman)):ti,ab,kw  |
| #10 | (college aged):ti,ab,kw  |
| #11 | ((university or college\*) next student\*):ti,ab,kw  |
| #12 | #8 or #9 or #10 or #11  |
| #13 | MeSH descriptor: [Diet] explode all trees |
| #14 | MeSH descriptor: [Healthy Diet] this term only |
| #15 | (eating behavio?r):ti,ab,kw  |
| #16 | MeSH descriptor: [Exercise] this term only |
| #17 | MeSH descriptor: [Weight Loss] this term only |
| #18 | MeSH descriptor: [Obesity] 1 tree(s) exploded |
| #19 | MeSH descriptor: [Overweight] this term only |
| #20 | (#13 or #14 or #15 or #16 or #18 or #19)  |
| #21 | (#7 and #12 and #20)  |
| #22 | (addresses):pt or (lectures):pt or (anecdotes):pt or (biography):pt or (interview):pt or (comment):pt or (directory):pt or (editorial):pt or (legal cases):pt or (case reports):pt or (legislation):pt or (letter):pt or (news):pt or (newspaper article):pt or (patient education handout):pt  |
| #23 | (#21 not #22)  |

*Cinahl*

|  |  |
| --- | --- |
| **#** | **Search** |
| S20 | S6 AND S12 AND S19 |
| S19 | S13 OR S14 OR S15 OR S16 OR S17 OR S18 |
| S18 | (MH "Weight Loss") |
| S17 | (MH "Obesity") OR (MH "Obesity, Morbid") |
| S16 | (MH "Exercise") |
| S15 | (MH "Physical Activity") |
| S14 | (MH "Nutrition") |
| S13 | (MH "Diet+") |
| S12 | S7 OR S8 OR S9 OR S10 OR S11 |
| S11 | TI ((university or college\*) N1 student\*) or AB ((university or college\*) N1 student\*) |
| S10 | TI "college aged" OR AB "college aged" |
| S9 | (MH "Students, College") OR (MH "Students, Undergraduate") OR (MH "Students, Graduate") |
| S8 | (MH "Young Adult") |
| S7 | TI ( (young\* N1 (adult\* or men or male\* or man or women or female or woman)) ) OR AB ( (young\* N1 (adult\* or men or male\* or man or women or female or woman)) ) |
| S6 | S1 OR S2 OR S3 OR S4 OR S5 |
| S5 | TI (control N1 group\*) OR AB (control N1 group\*) |
| S4 | TI (trial) OR AB (trial) |
| S3 | TI (random\*) OR AB (random\*) |
| S2 | (MH “randomized controlled trials”) |
| S1 | (MH "clinical trials") |

**Supplementary Table 2:** Detailed recruitment and retention characteristics of included studies

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **First author, year, study name, citations** | **Country** | **Intervention focus** | **Intervention duration (weeks)** | **Recruitment setting** | **Recruitment strategies** | **Recruitment duration (days)** | **Recruitment efficiency (participants/ day)** | **Total cost of recruitment US$≠** | **Goal sample size** | **Number invited; interested; eligible; randomised** | **Recruitment rates (%): invited randomised; interested randomised; eligible randomised** | **Retention strategies** | **Retention rate**  | **Total cost of Retention US$≠** | **Data collection time points** |
| Allman-Farinelli, 2016, TXT2Bfit (1-7) | Australia | Weight gain prevention | 36 | Community and university | Online ads (Google, Gum Tree), Social media, uni newsletter, community newsletters, uni website, letters, listed on university research volunteer register, in class lecture, posters, flyers | 600 | 0.42 | $32,861.98 | 354 (powered) | NR; 1181; 390; 250 | U; 21.2; 64.1 | Text messages and phone call reminders | 9-mon: 81%\* | 3943.68 | 0, 3 and 9-m |
| Amiot, 2018 (8) | Canada  | Nutrition | 2 | University | email, social media, and presentations in University classrooms | NR | Could not be calculated | NR | NR | NR: NR: NR: 32 | U | NR | 2-wks: 100%, 4-wks: 100%\* | NR | 0, 2 and 4-wks |
| Annesi, 2015 (9) | USA | Weight gain prevention | 15 | University | Existing cohort | NR | Could not be calculated | NR | 76 (powered)\* | NR: NR: NR: 98 | U | Course credit | 15-wks: 95%\* | NR | 0, 15 weeks |
| Ashton, 2017, HEYMAN, (10) | Australia | Nutrition and Physical Activity | 12 | Community | Flyers, social media, media release, existing database | 49 | 1.02 | NR | 50\* | NR; 154; 64; 50 | U; 32.5; 78.1 | Financial compensation  | 3-mon: 94%\* | 360.49 | 0, 3-m |
| Bailey, 2019, (11)  | USA | Physical Activity | 24 | University | Flyers, classroom announcements, booths, social media, word of mouth | NR | Could not be calculated | NR | 99 (powered)\* | NR; 512; 180; 120 | U; 23.4; 66.7 | NR | 6-mon: 77% | NR | 0, 6-m |
| Bertz, 2015, (12) | USA | Weight gain prevention | 52 | University | Flyers, Class announcement, Email | 112 | 1.49 | NR | 158 (powered)\* | NR; 355; 221; 167 | U; 47.0; 75.6 | NR | 12-mon: 78% | NR | 0, 6 and 12-m |
| Bray, 2011, (13) | Canada  | Physical Activity | Single session | University | In university classes, Face-to-Face recruitment booths | 30 | 31.17 | NR | NR | NR; 1526; 1017; 935 | U; 61.3; 91.9 | Prize draw | 6-wks: 27% | NR | 0, 6 weeks |
| Brookie, 2017, Let them eat fruit, (14) | NZ | Nutrition | 2 | University | existing cohort | 84 | 2.07 | NR | 150 (powered)\* | NR; 426; 174; 174 | U; 40.8; 100.0 | Financial compensation, research credits  | 2-wks: 100%\* | 1234.63 | 0, 2 weeks |
| Brown, 2014, MobileMyPlate, (15) | USA | Nutrition | 7 | University | email | NR | Could not be calculated | NR | NR | 4000; 262; 165; 150 | 3.8; 57.3; 90.9 | Financial compensation | 7-wks: 77% | 1160 | 0, 7 weeks |
| Buscemi, 2011, NA, (16) | USA | Weight loss | 12 | University | university courses | NR | Could not be calculated | NR | 66 (powered)\* | NR; 1191; 317; 70 | U; 5.9; 22.1 | Financial compensation, course credit | 3-mon: 86%\* | 600 | 0, 3-m |
| Butryn, 2011, (17) | USA | Physical Activity | 5 | University | Flyers, existing cohort | NR | Could not be calculated | NR | NR | NR; NR; NR; 54 | U; | Financial incentives | 8-wks: 85%\* | 920 | 0, 5 and 8 weeks |
| Calfas, 2000, Project GRAD, (18-20) | USA | Physical Activity | 78 | University | Existing database | NR | Could not be calculated | 20,729 | NR | NR; NR; 338; 338 | U; U; 100.0 | Course credit | 24-mon: 93%\* | 9540 | 0, 12 and 24-m |
| Cambien, 1981, Paris Cardiovascular Risk Factor Prevention Trial, (21) | France | Nutrition and Physical Activity | 52 | Workplace | In person at workplace health screening | 480 | 6.95 | NR | NR | NR; NR; 3336; 3336 | U; U; 100.0 | NR | 24-mon: 33% | NR | 0, 2 yrs |
| Carfora, 2019, (22) | Italy | Nutrition | 2 | University | NR | NR | Could not be calculated | NR | 132 (powered)\* | 250; NR; 180; 180 | U; U; 100.0 | Course credit | 10-wka: 92%\* | NR | 0, 2 and 10-wks |
| Chang, 2010, Mothers in motion, (23, 24) | USA | Weight loss | 10 | Womens Infant and Childrens clinic | Face-to-face | 60 | 2.15 | NR | NR | 1007; 342; 194; 129 | 12.8; 37.7; 66.5 | flexible schedule, computer tracking system, mailed reminders, birthday and greeting cards, financial incentives | 10.5-mon: 30% | 4420 | 0, 4.5 and 10.5-m |
| Chapman, 2009, (25) | UK | Nutrition | Single session | University | Unclear | NR | Could not be calculated | NR | NR | 600; NR; 557; 557 | 92.8; U; 100.0 | NR | 1-wk: 54% | NR | 0, 1 week |
| Chiang, 2019, (26) | Taiwan | Physical Activity | 8 | University | NR | 31 | 1.03 | NR | 36 | NR; NR; NR; 32 | U | NR | 2-mon: NR | NR | 0, 2-m |
| Conner, 2011, (27) | UK | Physical Activity | Single session | NR | Face-to-face | NR | Could not be calculated | NR | NR | NR; 197; 121; 121 | U; 61.4; 100.0 | Nil | 3-wks: 92%\* | NR | 0, 3 weeks |
| Cooke, 2013, (28) | UK | Physical Activity | 1 | University | Existing cohort | 300 | 0.45 | NR | 160 (powered) | 172; 159; 136; 136 | 79.1; 85.5; 100.0 | Nil | 1-wk: 88%\* | NR | 0, 1 week |
| Cooke, 2014, (29) | UK | Physical Activity | Single session | University | NR | NR | Could not be calculated | NR | NR | NR; NR; NR; 80 | U | Course credit | 1-wk: NR | NR | 0, 1 week |
| Do, 2008, (30, 31) | USA | Nutrition | 24 | Community | personal contacts, Flyers | 180 | 11.24 | NR | NR | NR; 2240; 2024; 2024 | U; 90.4; 100.0 | Financial incentives | 12-mon: 62% | 25,240 | 0, 4 and 12-m |
| Eiben, 2006, Health Hunters, (32) | Sweden | Weight gain prevention | 52 | Community | Existing cohort | 1095 | 0.04 | NR | NR | NR; NR; NR; 40 | U | NR | 13-mon: 75%\* | NR | 0, 13-m |
| Eisenberg, 2017, (33) | USA | Physical Activity | 1 | University | Online | NR | Could not be calculated | NR | 128 (powered)\* | NR; NR; NR; 159 | U | Course credit | 1-wk: 92%\* | NR | 0, 1 week |
| Franko, 2008, MyStudentBody, (34)  | USA | Nutrition and Physical Activity | 2 | University | face-to-face (sign up tables on campus) | 84 | 5.67 | NR | NR | NR; 800; 606; 476 | U; 59.5; 78.5 | Financial incentives | 2-wks: 73%, 6-mon: 70% | 57,770 | 0, 2 weeks, 3 and 6-m |
| Franko, 2012, (35) | USA | Nutrition | 2 | University | Uni newspaper, posters | NR | Could not be calculated | NR | NR | NR; 93; 93; 64 | U; 68.8; 68.8 | Financial incentives | 2-wks: 92%, 3-mon: 80%\* | 1915 | 0, 2 weeks, and 3-m |
| Godino, 2016, Project SMART, (36-39) | USA | Weight loss | 104 | University | Newspapers, flyers, posters, email, online, social media, face-to-face | 600 | 0.67 | NR | 254 (powered)\* | NR; 1941; 404; 404 | U; 20.8; 100.0 | Text message prompts, financial incentives, reminder postcards | 24-mon: 84%\* | 51,765 | 0, 6, 12, 18, 24-m |
| Gokee-LaRose, 2009, (40) | USA | Weight loss | 14 | Community | local media ads, email, flyers | NR | Could not be calculated | NR | 36 (powered)\* | NR; 119; 70; 40 | U; 33.6; 57.1 | Financial incentives | 20-wks: 85%\* | 1420 | 0, 10 and 20 weeks |
| Goodman, 2016, (41) | Canada  | Nutrition | 12 | Community | Posters and online advertisement | 120 | 0.91 | NR | 84 (powered)\* | NR; 405; 193; 109 | U; 26.9; 56.5 | Email reminder, financial incentives | 3-mon: 83%\* | NR | 0, 2 weeks and 3-m |
| Gow, 2010, (42) | USA | Weight gain prevention | 6 | University | Classroom announcements, flyers | NR | Could not be calculated | NR | 176 (powered) | NR; 170; 159; 159 | U; 93.5; 100.0 | Class credit | 6-wks: 69%, 3-mon: 11% | 1700 | 0, 6 weeks, and 3-m |
| Greene, 2012, Project Webhealth, (43, 44) | USA | Weight gain prevention | 10 | University | Flyers, face-to-face, newspaper, online and class room | NR | Could not be calculated | NR | NR | NR; 8903; 3636; 1689 | U; 19.0; 46.5 | Weekly reminder emails when lessons posted | 15-mon: 67% | NR | 0, 3 and 15-m |
| Halperin, 2019, (45) | Puerto Rico | Nutrition and Physical Activity | 10 | University | Flyers, internet announcements,classroom visits, tables set up oncampus and at health fairs | 60 | 0.67 | NR | NR | 1500; 113; 40; 40 | 2.7; 35.4; 100.0 | Financial compensation for measurement visits, and for attendance at group sessions  | 10-wks: 98%; 6-mon: 98%\* | NR | 0, 2.5 and 6-m |
| Hebden, 2014, (46) | Australia | Weight loss | 12 | University | Ads posted around campus, and in staff and student newletters | 42 | 1.21 | NR | NA | NR; 79; 55; 51 | U; 64.6; 92.7 | NR | 12-wks: 90%\* | NR | 0, 12 weeks |
| Heeren, 2017, (47) | South Africa | Nutrition and Physical Activity | 8 | University | existing cohort | 30 | 5.87 | NR | 170 (powered)\* | 244; 244; 240; 176 | 72.1; 72.1; 73.3 | Financial incentives, gifts, certificate of completion | 12-mon: 97%\* | NR | 0, 6 and 12-m |
| Hivert, 2007, (48) | Canada  | Weight gain prevention | 104 | University | Written advertisements, notices in lecture rooms and information tables | 30 | 3.83 | NR | 110 (powered)\* | NR; 117; 115; 115 | U; 98.3; 100.0 | NR | 24-mon: 83%\* | NR | 0, 3, 6, 12, 18 and 24-m |
| Husband, 2019, (49) | Canada  | Physical Activity | 2 | University | Posters and telecaster ads across University campus, personal recruitment through classroom visits | 120 | 0.17 | NR | NR | 880; 77; 21; 20 | 2.3; 26.0; 95.2 | Prize draw for a $50 grocery gift card | 6-wks: 90%\* | 40.11 | 0 and 6-wks |
| Hutchesson, 2018, Be positive Be Healthe, (50) | Australia | Weight loss | 26 | Community and university | Media release, flyers, social media, existing chort, posters | 28 | 2.04 | NR | 114 (powered) | NR; 116; 57; 57 | U; 49.1; 100.0 | multiple forms of contact information, follow-up visits outside business hours, financial incentives | 6-mon: 75% | 654.74 | 0, 6-m |
| Jakicic, 2016, IDEA, (51, 52) | USA | Weight loss | 104 | University | letter, mass media release advertisements, existing database | 14 | 33.57 | NR | 476 (powered) | NR; 4164; 1016; 470 | U; 11.3; 46.3 | Efforts to reschedule missed sessions, financial compensation  | 24-mon: 75%\* | 35,100 | 0, 6, 12, 18, 24-m |
| Jauho, 2015, (53) | Finland | Physical Activity | 12 | Military | Existing cohort | 28 | 9.86 | NR | NR | 1262; 276; 276; 276 | 21.9; 100.0; 100.0 | NR | 3-mon: 76% | NR | 0, 3-m |
| Johnson, 2017, TARGIT, (54, 55) | USA | Weight gain prevention | 96 | Community | Media release (television/radio), letter, newspaper, flyers, in person, online, social media, email, word of mouth  | 730 | 0.45 | NR | 330 (powered)\* | NA; 3093; 1588; 330 | U; 10.7; 20.8 | Compensated for time | 24-mon: 68% | NR | 0, 6, 12 and 24-m |
| Jung, 2011, (56) | Canada  | Nutrition | 14 | University | Face-to-face at a university fair | 30 | 4.43 | NR | 112 (powered)\* | NR; NR; 290; 133 | U; U; 45.9 | Reminder phone call and email | 12-mon: 74%\* | 3499.33 | 0, 1, 8, 25 and 52 weeks |
| Kattelmann, 2014, YEAH , (57-59) | USA | Weight gain prevention | 10 | University | Face-to-face, email, letters, flyers, class room | 56 | 29.27 | NR | 1476 (powered)\* | NR; 6277; 3334; 1639 | U; 26.1; 49.2 | Email reminders | 10-wks: 76%, 15-mon: 59% | NR | 0, 10 weeks, and 15-m |
| Katterman, 2014, (60) | USA | Weight gain prevention | 16 | University | Flyers, mass emails | NR | Could not be calculated | NR | NR | NR; 118; 85; 58 | U; 49.2; 68.2 | Financial incentives | 16-wks: 81%, 12-mon: 64% | 1955 | 0, 6, 16 and 52 weeks |
| Katterman, 2016, (61) | USA | Weight gain prevention | 8 | University | Flyers, mass emails | NR | Could not be calculated | NR | NR | NR; 123; 66; 50 | U; 40.7; 75.8 | Financial incentives | 8-wks: 98%, 20-wls: 94%\* | 950 | 0, 8 and 20 weeks |
| Kendzierski, 2015, (62)  | USA | Nutrition | Single session | University | Flyers, face-to-face, class room, existing database | NR | Could not be calculated | NR | NR | NR; 173; 165; 142 | U; 82.1; 86.1 | Course credit, prize draw | 1-wk: 82%\* | NR | 0, 1 week |
| Kendzierski, 2015, (62)  | USA | Nutrition | Single session | University | Flyers, face-to-face, class room, existing database | NR | Could not be calculated | NR | NR | NR; 83; 82; 79 | U; 95.2; 96.3 | Course credit, prize draw | 1-wk: 95%\* | NR | 0, 1 week |
| Kerr, 2016, CHAT, (63-65) | Australia | Nutrition | 24 | Community | Letters through electoral roll | 90 | 2.74 | NR | 220 (powered)\* | 15000; 490; 342; 247 | 1.6; 50.4; 72.2 | Financial incentives and prize draw | 6-mon: 89%\* | NR | 0, 6-m |
| Kim, 2018, (66) | USA | Physical Activity | 15 | University | Existing cohort | 7 | 26.71 | NR | NR | 239; 234; 187; 187 | 78.2; 79.9; 100.0 | Ongoing feedback | 15-wks: 44% | NR | 0, 15 weeks |
| Klem, 2000, (67) | USA | Weight gain prevention | 10 | Community and University | Mail to electoral roll | NR | Could not be calculated | NR | NR | NR; 247; 102; 102 | U; 41.3; 100.0 | Nil | 10-wks: 65%, 6-mon: 56% | NR | 0, 10 weeks and 6-m |
| Knauper, 2011, (68) | USA | Nutrition | Single session | University | Face-to-face | NR | Could not be calculated | NR | NR | NR; 263; 247; 247 | U; 93.9; 100.0 | NR | 1-wk: 96%\* | NR | 0, 1 week |
| Kothe, 2012, Fresh Facts, (69) | Australia | Nutrition | 4 | University | Online | NR | Could not be calculated | NR | NR | NR; NR; NR; 194 | U | Course credit | 4-wks: 86%\* | NR | 0, 4 weeks |
| Kothe, 2014, Fresh Facts, (70, 71) | Australia | Nutrition | 4 | University | class room | NR | Could not be calculated | NR | Powered but number not reported\* | NR; NR; 180; 162 | U; U; 90.0 | Course credit | 1-mon: 82%\* | NR | 0, 1-m |
| Kreausukon, 2012, (72) | Thailand | Nutrition | Single session | University | existing cohort | NR | Could not be calculated | NR | NR | 764; 149; 121; 121 | 15.8; 81.2; 100.0 | Gift voucher, and small gifts such as booklets on health  | 6-wks: 94%\* | 130.56 | 0, 1 and 6 weeks |
| Kypri, 2005, (73) | New Zealand  | Nutrition and Physical Activity | Single session | University | In person at student health service | NR | Could not be calculated | NR | 213 (powered)\* | 277; 218; 218; 218 | 78.7; 100.0; 100.0 | Reminder email | 6-wks: 83%\* | 90.5 | 0, 6 weeks |
| LaChausse, 2012, MyStudentBody, (74) | USA | Weight gain prevention | 12 | University | Email, Flyers, Billboard announcements | NR | Could not be calculated | NR | NR | NR; NR; NR; 358 | U | Course credit | 14-wks: 87%\* | NR | 0, 14 weeks |
| LaRose, 2010, (75) | USA | Weight loss | 16 | Community | Email, Flyers  | NR | Could not be calculated | NR | NA | NR; 232; 82; 52 | U; 22.4; 63.4 | Financial incentives | 4-mon: 85%\* | 1330 | 0, 2 and 4-m |
| LaRose, 2019, (76) | USA | Weight loss | 12 | University | Digital & print advertising, radio, email blasts, list servs, flyers and word of mouth.  | 60 | 0.87 | NR | NR | NR; 196; 53; 52 | U; 26.5; 98.1 | Participants received $25 for completing the 3-and 6-month visits. | 3-mon: 81%, 6-mon: 75% | 2550 | 0, 3 and 6-mon |
| Laska 2016, CHOICES, (77-81)  | USA | Weight gain prevention | 104 | University | Emails, Flyers,Face-to-face, word of mouth | 150 | 2.94 | NR | 358 (powered)\* | NR; 962; 443; 441 | U; 45.8; 99.5 | Financial incentives, feedback on health results, course credit, points redeemable for health related prizes | 24-mon: 93%\* | 202,700 | 0, 4, 12 and 24-m |
| LeCheminant, 2011, (82) | USA | Physical Activity | 28 | University | Word of mouth, Flyer, Face-to-face, Email, posters | NR | Could not be calculated | NR | NA | NR; NR; NR; 47 | U | Financial incentives | 7-mon: 67% | 1290 | 0, 7-m |
| Leinonen, 2017, (83-85) | Finland | Physical Activity | 24 | Military | Existing cohort | 30 | 16.53 | NR | 670 (powered) | 1265; 825; 496; 496 | 39.2; 60.1; 100.0 | Monthly prize draw | 6-mon: 71% | NR | 0, 6-m |
| Lhakhang, 2014, (86) | India | Nutrition | 2.4 | University | Flyer | NR | Could not be calculated | NR | NR | NR; 231; 224; 224 | U; 97.0; 100.0 | Nil | 17-days: 92%, 34-days: 92%\* | NR | 0, 17 and 34 days |
| Lua, 2013, (87)  | Malaysia | Nutrition | 10 | University | Existing cohort | NR | Could not be calculated | NR | 240 (powered)\* | NR; NR; 417; 417 | U; U; 100.0 | Nil | 10-wks: 91%\* | NR | 0, 10 weeks |
| Lyzwinski, 2019, (88) | Australia | Weight gain prevention | 11 | University | Posters, flyers, social media, trial facts and UQ marketing and communications, UQ website | 36 | 2.50 | NR | 58\* | NR; 105; 91; 90 | U; 85.7; 98.9 | Aus $20 coffee voucher for participaing. Prize draw for an iPad mini at completion | 11-wks: 80%\* | NR | 0, 11-wks |
| Maher, 2015, (89) | USA | Physical Activity | 1 | University | Existing cohort | NR | Could not be calculated | NR | NR | NR; NR; 195; 195 | U; U; 100.0 | Daily reminder emails | 1-wk: 96%\* | NR | 0, 1, 2, 3, 4, 5, 6, 7 days |
| Martens, 2012, (90) | USA | Physical Activity | Single session | University | Existing cohort | 180 | 0.39 | NR | 70\* | 163; 1100; 300; 70 | U; 6.4; 23.3 | Nil | 1-mon: 98%\* | NR | 0, 1-m |
| Maselli, 2019, (91) | Italy | Physical Activity | 12 | University | Face-to-face interviews on campus | NR | Could not be calculated | NR | NR | 1254; NR; 828; 33 | 2.6; U; 4.0 | Nil rewards for participation | 12-wks: 100%; 6-mon: 97%\* | NR | 0 and 12 weeks, 6-mon |
| Matvienko, 2001, (92) | USA | Weight gain prevention | 16 | University | Flyers, newspaper | NR | Could not be calculated | NR | NR | NR; NR; NR; 40 | U | NR | 4-mon: 83%, 16-mon: 8% | NR | 0, 4 and 16-m |
| Memon, 2018, (93) | Pakistan | Physical Activity | 5 | University | NR | NR | Could not be calculated | NR | NR | NR; 268; 265; 56 | U; 20.9; 21.1 | NR | 5-wks: 100%\* | NR | 0, 5-wks |
| Meng, 2017, (94) | USA | Nutrition | 4 | University | Email, existing database | NR | Could not be calculated | NR | NR | NR; 1283; 338; 338 | U; 26.3; 100.0 | Financial incentives | 4-wks: 22% | 2190 | 0, 4 weeks |
| Middleton, 2014, (95) | USA | Physical Activity | 4 | University | Flyers, In person, presentations in university classes, student newspaper | 365 | 0.26 | NR | 90 (powered)\* | NR; 177; 95; 95 | U; 53.7; 100.0 | Financial incentives | 15-wks: 84%\* | 1720 | 0, 7, 15 wks |
| Napolitano, 2013, (96, 97) | USA | Weight loss | 8 | University | Newspaper, flyers, online ads, social media (Facebook), email, student organisations | NR | Could not be calculated | NR | NR | NR; 329; 93; 52 | U; 15.8; 55.9 | Financial incentives | 8-wks: 96%\* | 750 | 0, 4 and 8 weeks |
| Nix, 2017, (98) | USA | Nutrition | Single session | University | Announcements in university classes | 90 | 2.47 | NR | 348 (powered) | 700; 222; 222; 222 | 31.7; 100.0; 100.0 | Prize draw | 1-wk: 100%\* | NR | 0, 1 week |
| O'brien, 2016, (99) | USA | Nutrition and Physical Activity | 4 | University | Existing cohort | NR | Could not be calculated | NR | NR | NR; NR; 154; 154 | U; U; 100.0 | Class credit | 1-mon: 96%\* | NR | 0, 1-m |
| Ohtsuki, 2018, (100) | Japan | Nutrition | 25 | University | Posters on campus | 16 | 6.50 | NR | NR | NR; NR; 132; 104 | U; U; 78.8 | NR | 25-wks: 94%\* | NR | 0, 25 weeks |
| Ornes, 2007, (101) | USA | Physical Activity | 4 | University | Newspaper ads, posters, researcher announcements in classes | NR | Could not be calculated | NR | 75 (powered)\* | NR; 210; 210; 121 | U; 57.6; 57.6 | Reminder emails and financial incentives given for the submission of tasks each week.  | 4-wks: 93%\* | NR | 0, 4 weeks |
| Ortega, 2006, (102) | Spain | Weight loss | 6 | University | Posters, radio announcements and publications directed towards young adult female uni students | NR | Could not be calculated | NR | NR | NR; 307; 193; 67 | U; 21.8; 34.7 | Weekly attempts to understand barriers faced | 6-wks: 85%\* | NR | 0, 2 and 6 weeks |
| Park, 2008, (103) | USA | Nutrition | Single session | University | Class announcements, posters, community newspaper ads | NR | Could not be calculated | NR | NR | NR; 160; 111; 111 | U; 69.4; 100.0 | Financial incentives | 2-m: 87%\* | 960 | 0, 30-60 days |
| Pearson, 2013, CHANGE program, (104, 105) | Canada  | Weight loss | 12 | University | Flyers, email | 240 | 0.33 | NR | 80 (powered) | NR; 600; 78; 78 | U; 13.0; 100.0 | Nil | 12-mon: 58% | NR | 0, 6, 12 weeks, and 6, 12-m |
| Pellitteri, 2017, (106) | USA | Physical Activity | 8 | University | Newsletter, social media advertisements, flyers | NR | Could not be calculated | NR | NR | NR; 62; 37; 37 | U; 59.7; 100.0 | Nil | 8-wks: 73% | NR | 0, 8 weeks |
| Pfeffer, 2019, (107) | Germnay | Physical Activity | Single session | University | Online student platform and F2F contacts | NR | Could not be calculated | NR | 95 (powered)\* | NR; 116; 116; 116 | U; 100.0; 100.0 | Course credit | 1-wk: 96%\* | NR | 0 and 1-week |
| Phimarn, 2017, (108) | Thailand | Weight loss | 24 | University | In person - students visiting the university pharmacy | NR | Could not be calculated | NR | 90 (powered)\* | NR; NR; 112; 112 | U; U; 100.0 | NR | 6-mon: 96%\* | NR | 0, 3 and 6-m |
| Pope, 2014, Burn and Earn, (109, 110) | USA | Physical Activity | 24 | University | Social media (Facebook) and direct mailing | 90 | 1.30 | NR | 117 (powered)\* | NR; 119; 117; 117 | U; 98.3; 100.0 | Financial incentives | 24-wks: 94%\* | 5600 | 0, 12 and 24 weeks |
| Pope, 2019, (111) | USA | Nutrition and Physical Activity | 12 | University | Flyers, email, in-person recruitment presentations | 180 | 0.21 | NR | NR | NR; 126; 40; 38 | U; 30.2; 95.0 | Paid $30 for study completion + email contact every 3 weeks during to encourage adherence | 12-wks: 92%\* | 2800 | 0, 12-wks |
| Richards, 2006, (112) | USA | Nutrition | 16 | University | existing cohort | NR | Could not be calculated | NR | NR | NR; NR; 437; 437 | U; U; 100.0 | NR | 4-mon: 72% | NR | 0, 4-m |
| Rompotis, 2014, (113) | Australia | Nutrition | 8 | University | Electronic bulletin board notices | 90 | 1.79 | NR | NR | NR; 165; 161; 161 | U; 97.6; 100.0 | Nil | 8-wks: 45% | NR | 0, 8 weeks |
| Rote, 2015, (114) | USA | Physical Activity | 8 | University | Announcements in university classes, and email | 90 | 0.70 | NR | 62 (powered)\* | NR; 97; 83; 63 | U; 64.9; 75.9 | Weekly feedback | 8-wks: 84%\* | NR | 0, 8 weeks |
| Sandrick, 2017, (115) | USA | Nutrition and Physical Activity | 8 | University | Classroom announcements, posted ads, flyers, in person at information booths | 150 | 0.40 | NR | 50 (powered)\* | NR; 84; 78; 60 | U; 71.4; 76.9 | Text messages  | 8-wks: 97%\* | 2900 | 0, 8 weeks |
| Schweitzer, 2016, ALIVE, (116) | USA | Nutrition and Physical Activity | 24 | University | Email | NR | Could not be calculated | NR | 135\* | 10370; 693; 148; 148 | 1.4; 21.4; 100.0 | Financial incentives, prize raffle | 6-mon: 72% | 5775 | 0, 3 and 6-m |
| Share, 2015, (117) | Australia | Nutrition and Physical Activity | 12 | University | Unclear | NR | Could not be calculated | NR | 36 (powered)\* | NR; 62; 51; 39 | U; 62.9; 76.5 | Frequent contact with both groups | 12-wks: 77%, 24-wks: 70% | NR | 0, 12 and 24 weeks |
| Sharp, 2016, (118) | Canada  | Physical Activity | 12 | University | In university classes | 30 | 6.13 | NR | NR | NR; NR; 184; 184 | U; U; 100.0 | Monthly reminder and emails | 12-wks: 75% | NR | 0, 12 weeks |
| Simons, 2018, (119, 120) | Belgium | Physical Activity | 9 | Community | Email, telephone | 60 | 2.17 | NR | 120 (powered)\* | NR; NR; 130; 130 | U; U; 100.0 | Nil | 9-wks: 78%, 21-wks: 84%\* | NR | 0, 9 and 21 weeks |
| Sriramatr, 2014, (121) | Thailand | Physical Activity | 12 | University | Advertisements in newsletters, on university notice boards, university website, and through university email | NR | Could not be calculated | NR | 128 (powered)\* | NR; 224; 220; 220 | U; 98.2; 100.0 | Financial incentives, reminder emails | 3-mon: 90%, 6-mon: 80%\* | NR | 0, 3 and 6-m |
| Stephens, 2017, (122, 123) | USA | Weight loss | 12 | University | posters, flyers, Social media, email and word of mouth | NR | Could not be calculated | NR | 51 (powered)\* | NR; 87; 66; 62 | U; 71.3; 93.9 | Financial incentives | 3-mon: 95%\* | NR | 0, 3-m |
| Stice, 2013, Healthy Weight 2, (124, 125) | USA | Weight gain prevention | 4 | University | Mail, flyers | NR | Could not be calculated | NR | NR | NR; 518; 400; 398 | U; 76.8; 99.5 | financial incentives | 1-mon: 96%, 24-mon: 93%\* | 45,000 | 0, 1, 6, 12 and 24-m |
| Strohacker, 2015, (126) | USA | Physical Activity | 10 | University | Flyers, Word of mouth | 180 | 0.12 | NR | 30 (powered) | NR; NR; 22; 22 | U; U; 100.0 | Financial incentives and reminder emails to record information | 10-wks: NR | NR | 0, 10 weeks |
| Svetkey, 2015, CITY, (127-131)  | USA | Weight loss | 104 | Community and university | On line advertising, mass mailing, word of mouth, social media, media release such as news and college newspapers | 420 | 0.87 | NR | 360 (powered)\* | NR; 2313; 1743; 365 | U; 15.8; 20.9 | Reimbursed phone bill, app prompts | 24-mon: 86%\* | NR | 0, 6, 12 and 24-m |
| Tavakoli, 2016, (132) | Iran | Nutrition | NR | Military university | Existing cohort | NR | Could not be calculated | NR | 202 (powered)\* | NR; NR; 280; 280 | U; U; 100.0 | Nil | 4-wks: 86%\* | NR | 0, 4 weeks |
| Tobias, 1977, (133) | USA | Weight loss | 10 | University | Advertisements in campus newspaper | NR | Could not be calculated | NR | NR | NR; NR; 100; 96 | U; U; 96.0 | Reminder phone calls | 10-wks: 70%, 14-wks: 67% | NR | 0, 10 and 14 weeks |
| Uglem, 2013, (134) | Norway | Nutrition | 20 | Military | Existing cohort | NR | Could not be calculated | NR | NR | 976; 917; 917; 787 | 80.6; 85.8; 100.0 | NR | 5-mon: 61% | NR | 0, 5-m |
| Valve, 2013, LINDA, (135) | Finland | Nutrition and Physical Activity | 78-130  | Health centre | Existing cohort | NR | Could not be calculated | NR | NR | 3515; 3059; 3059; 3059 | 87.0; 100.0; 100.0 | Nil | 1.5/2.5yrs: 88%\* | NR | 0, 1.5/2.5yrs |
| Walsh, 2016, (136) | Ireland | Physical Activity | 5 | University | existing database | NR | Could not be calculated | NR | 59 (powered) | NR; 61; 58; 58 | U; 95.1; 100.0 | Course credit | 5-wks: 95%\* | NR | 0, 5 weeks |
| Weinstock, 2014, (137) | USA | Physical Activity | I1: 8. I2: Single session | University | Flyers, email  | NR | Could not be calculated | NR | NR\* | NR; 352; 52; 31 | U; 8.8; 59.6 | Financial incentives | 2-mon: 94%\* | 1450 | 0, 2-m |
| Weinstock, 2016, (138) | USA | Physical Activity | 8 | University | Flyers, email, and in person screening of the student body | NR | Could not be calculated | NR | 70 (powered)\* | NR; 360; 116; 70 | U; 19.4; 60.3 | Financial incentives | 2-mon: 94%, 6-mon: 86%\* | NR | 0, 2 and 6-m |
| Werch, 2010, project fitness, (139-141) | USA | Nutrition and Physical Activity | Single session | University and Health service | Flyers, Email, Posters | 90 | 3.14 | NR | NR | NR; 303; 299; 283 | U; 93.4; 94.6 | Financial incentives | 12-mon: 77%\* | 10,280 | 0, 3 and 12-m |
| Whatnall, 2019, (142, 143) | Australia | Nutrition | Single session | University | University social media, digital screens on campus, posters, in-class announcements, online learning platform, internal contacts within university | 38 | 3.26 | NR | 126 | NR; 303; 228; 124 | U; 40.9; 54.4 | Gift voucher after baseline and follow-up data collection. Reminders (email, text, phone call) | 3-mon: 73% | 686.75 | 0 and 3-mon |
| Williams, 2002, (144) | USA | Nutrition | 4 | University | University database | NR | Could not be calculated | NR | NR | 233; 75; 45; 45 | 19.3; 60.0; 100.0 | NR | 6-wks: 100%\* | NR | 0, 1 and 6 weeks |
| Wing, 2016, SNAP, (145-154) | USA | Weight gain prevention | 156 | Community | Mass mailings, online, email to list serves, media release (TV, radio), newspaper advertising, word of mouth.  | 570 | 1.07 | 139,543.72 | 600 (powered)\* | NR; 5281; 3983; 609 | U; 10.5; 15.3 | Phone/email reminders, attendance barriers addressed, offered make up session, contact family and friends, birthday/ holiday cards, periodic newspaper, financial incentives | 48-mon: 78%\* | 106,650 | 0, 4, 12, 24, 36 and 48-m |
| Zhang, 2012, (155) | UK | Nutrition and Physical Activity | Single session | University | NR | NR | Could not be calculated | NR | 127 (powered)\* | NR; 221; 173; 173 | U; 78.3; 100.0 | Course credit | 4-wks: 48% | NR | 0, 2 and 4 weeks |

\* Indicates those where goal sample size was met/adequate retention achieved. NR: Not reported. U: Unclear.

≠To standardise, studies that reported cost information in a currency other than USD (n=10 studies) were converted to USD using xe.com (https://www.xe.com/currencytables/) from the year and month that the study was conducted.

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