# Supplementary Materials

Table S1: Quality Assessment of Trials

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| Criteria | Yes | No | Other (CD, NR, NA)\* |
| 1. Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT? |  |  |  |
| 2. Was the method of randomization adequate (i.e., use of randomly generated assignment)? |  |  |  |
| 3. Was the treatment allocation concealed (so that assignments could not be predicted)? |  |  |  |
| 4. Were study participants and providers blinded to treatment group assignment? |  |  |  |
| 5. Were the people assessing the outcomes blinded to the participants' group assignments? |  |  |  |
| 6. Were the groups similar at baseline on important characteristics that could affect outcomes (e.g., demographics, risk factors, co-morbid conditions)? |  |  |  |
| 7. Was the overall drop-out rate from the study at endpoint 20% or lower of the number allocated to treatment? |  |  |  |
| 8. Was the differential drop-out rate (between treatment groups) at endpoint 15 percentage points or lower? |  |  |  |
| 9. Was there high adherence to the intervention protocols for each treatment group? |  |  |  |
| 10. Were other interventions avoided or similar in the groups (e.g., similar background treatments)? |  |  |  |
| 11. Were outcomes assessed using valid and reliable measures, implemented consistently across all study participants? |  |  |  |
| 12. Did the authors report that the sample size was sufficiently large to be able to detect a difference in the main outcome between groups with at least 80% power? |  |  |  |
| 13. Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)? |  |  |  |
| 14. Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis? |  |  |  |

\*CD, cannot determine; NA, not applicable; NR, not reported

Table S2: Basic characteristics and surrogate outcomes of trials examining health promotion and prevention programs in small/medium sized enterprises

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| **Author, year,**  **country**  **[reference]** | **Study design** | **Business size,**  **Source population** | **Sample,**  **size,**  **age,**  **females**  (baseline) | **Intervention** | **Follow-up,**  **Response** | **Health outcome definition** | **Main Health Outcomes** |
| **Trials with moderate quality** | | | | | | | |
| Hwang  2020  South Korea (Asia)  [38] | Quasi-experi-mental study with control group  (no rando-mization) | <300 employees,  Participants with cardiovascular risk factors from small manufacturing enterprises based in two cities  (recruitment source not described) | 4 sites  N=31 (IG)  N=38 (CG),  48.2 y (IG)  47.7 (CG),  45.8 % (IG)  47.4 % (CG) | 12 weeks,  IG: yoga program twice a week for 30 min  CG: instructed to maintain their normal life without participating in regular physical activity programs | One month after intervention | Health promoting behaviors: Health Promoting Lifestyle Profile II (HPLP II) (208 = best, 52 = worst, higher score = higher health-promoting behavior)  2. Job stress: Effort-Reward Imbalance (ERI) (<1 = low stress, >1 = high stress) | **IG vs CG**  **Body weight** Mean (SD), kg:  Baseline: 61.1 (12.7) vs 65.0 (11.2)  Follow-up: 62.1 (12.7) vs 65.1 (10.5), p=0.411  **Waist circumference** Mean (SD), cm:  Baseline: 81.9 (8.0) vs 79.1 (8.3)  Follow-up: 79.2 (7.9) vs 79.2 (8.2), p<0.001  **Systolic blood pressure** Mean (SD), mmHg:  Baseline: 128.5 (10.4) vs 127.5 (12.9)  Follow-up: 127.1 (10.6) vs 127.8 (13.1), p=0.084  **Diastolic blood pressure** Mean (SD), mmHg:  Baseline: 81.0 (8.6) vs 82.3 (9.0)  Follow-up: 79.2 (8.1) vs 82.7 (8.1), p=0.004  **Total cholesterol** Mean (SD), mg/dL:  Baseline: 201.2 (32.2) vs 192.8 (34.9)  Follow-up: 201.5 (33.8) vs 188.0 (30.5), p=0.348  **Health responsibility** Mean (SD):  Baseline: 16.4 (7.0) vs 14.6 (5.6)  Follow-up: 16.1 (4.7) vs 14.7 (4.7), p=0.651  **Health promoting behavior** Mean (SD):  Baseline: 109.1 (25.9) vs 97.3 (22.9)  Follow-up: 111.4 (15.6) vs 98.8 (20.4), p=0.828  **Nutrition** Mean (SD):  Baseline: 19.8 (4.4) vs 16.4 (3.4)  Follow-up: 19.2 (4.3) vs 16.3 (3.5), p=0.439  **Spiritual growth** Mean (SD):  Baseline: 20.6 (5.2) vs 18.6 (4.4)  Follow-up: 21.2 (5.8) vs 18.2 (5.4), p=0.304  **Stress management** Mean (SD):  Baseline: 17.0 (5.0) vs 15.3 (4.2)  Follow-up: 17.0 (2.4) vs 16.9 (6.1), p=0.310  **Job stress** Mean (SD):  Baseline: 1.4 (1.8) vs 1.1 (0.3)  Follow-up: 1.0 (0.2) vs 1.1 (0.3), p=0.240 |
| Martin  2020  Tasmania (Australia)  [36] | RCT | 0-200 employees,  SME owners/managers/sole traders from health, service, retail, building/ construction, or transport/ finance sector  (recruitment source not described) | N=297,  >18 y  63% (IG1)  71% (IG2)  57% (CG) | Voluntary (4 months)  IG1: 60-min DVD program and 30-pages Resource Kit focusing on mental health  IG2: IG1 + six 30-min calls  CG: 15-min DVD | Immediately after intervention,  49.5% | Psychological capital: PsyCap Inventory (PCQ-12) (72 =best , 12 = worst) | **IG1 vs IG2 vs CG**  **Psychological Capital** Mean(SE):  Baseline: 51.4 (0.7) vs 51.2 (1.0) vs 51.8 (0.7)  Follow-up: 50.0 (0.9) vs 53.2 (0.9) vs 50.8 (1.0)  p<0.05 |
| Allen  2012  New Hampshire (USA)  [41] | Intervention study (no randomization) | n.r.,  University of New Hampshire Cooperative Extension | 10 sites  N=29 (IG)  N=31 (CG),  51.7 (10.4) y (IG)  48.5 (10.1) y (CG),  93.1% (IG)  87.1% (CG) | Voluntary (10 months)  IG: Lifestyle education program (videoconference) + distribution of pedometers (aim: 10.000 steps/day)  CG: none | Two months after intervention  94% (CG)  90% (IG) of baseline | 1. Body mass index: 18.5-25 kg/m² = normal  2. Waist circumference: <40 inches (men) and <35 inches (women) = good  3. Body fat: 12-20% (men) and 20-30% (women) = normal  4. Blood pressure: <135/85 mmHg = good  5. Total cholesterol: <190 mg/dL = good  6. HDL-C: < 40mg/dL (men) and <50 mg/dL (women) = good  7. Triglycerides: <150 mg/dL = good  8. LDL-C: <116 mg/dL = good  9. Fasting blood glucose: <100 mg/dL = good  10. hsC-reactive protein: <5mg/L = good  11. Pedometer: >10.000 step/day = good | **IG vs CG**  **1. Body mass index**, kg/m²  Baseline: 29.2 (7.9) vs 28.0 (7.6)  Follow-up: 28.8 (8.1) vs 28.5 (7.7)  **2. Waist circumference**, in  Baseline: 37.1 (2.3) vs 37.1 (2.2)  Follow-up: 37.8 (2.4) vs 38.9 (2.2)  **3. Body fat**, **%**  Baseline: 31.7 (1.5) vs 31.1 (7.8)  Follow-up: 31.2 (1.6) vs 30.3 (7.9)  **4. Systolic blood pressure**, mmHg  Baseline:125.6 (8.9) vs 125.6 (8.4)  Follow-up: 130.9 (9.1) vs 131.0 (8.5)  **Diastolic blood pressure**, mmHg  Baseline:87.8 (11.8) vs 84.6 (11.5)  Follow-up: 87.0 (12.1) vs 82.7 (11.5)  **5. Total cholesterol**, mg/dL  Baseline: 201.8 (21.7) vs 200.1 (20.8)  Follow-up: 183.4 (22.2) vs 198.6 (20.9), p=0.01  **6. HDL-C**, mg/dL  Baseline: 53.1 (17.6) vs 54.7 (16.9)  Follow-up: 48.2 (18.0) vs 48.1 (17.0)  **7. Triglycerides**, mg/dL  Baseline: 156.7 (90.5) vs 145.7 (87.2)  Follow-up: 142.8 (92.6) vs 153.8 (87.6)  **8. LDL-C**, mg/dL  Baseline: 122.3 (21.2) vs 121.0 (20.6)  Follow-up: 110.9 (22.2)vs 126.7 (21.8), p=0.01  **9. Fasting blood glucose**, mg/dL  Baseline: 90.1 (7.6) vs 88.5 (7.1)  Follow-up: 90.6 (7.7) vs 92.0 (7.1)  **10. hsC-reactive protein**, mg/L  Baseline: 2.2 (1.5) vs 2.2 (1.5)  Follow-up: 2.9 (1.5) vs 2.8 (1.5)  **11. No. of metabolic syndrome markers**  Baseline: 1.5 (0.5) vs 1.4 (0.6)  Follow-up: 1.3 (0.5) vs 1.9 (0.5), p=0.002 |
| Sorensen  2005  Massachusetts (USA)  [40] | RCT | 50-150 employees,  Dun and Bradstreet database: manufacturing industries | 26 sites,  N=1,737,  44.1 y (IG)  42.8 y (CG),  44.0 % (IG)  24.6 % (CG) | Voluntary (18 months),  IG: 1 monthly intervention focused on individual behavior change;  CG and IG: smoking cessation programs + 1 monthly contact with management for organizational support | Immediately after intervention,  77% | 1. servings of fruits and vegetables  2. red meat consumption  3. multivitamin intake | **IG vs CG**  **≥5 servings of fruits and vegetables/day:**  Whole sample:  Baseline 15.4% vs 11.9%  Follow-up 20.8% vs 13.7%, p=0.41  Managers  Baseline 20.1% vs 8.2%  Follow-up 4.6% vs 11.8%, p=0.048  Workers  Baseline 14.3% vs 12.7%  Follow-up 21.8% vs 13.8%, p=0.048  **≤3 servings of red meat/week:**  Whole sample:  Baseline 32.3% vs 29.5%  Follow-up 36.4% vs 32.5%, p=0.72  High school or less  Baseline 32.7% vs 27.7%  Follow-up 39.7% vs 32.7%, p=0.02  Some post–high school  Baseline 26.5% vs 28.9%  Follow-up 31.6% vs 26.3%, p=0.02  College degree or more  Baseline 38.2% vs 31.6%  Follow-up 32.3 % vs 42.1%, p=0.02  **Multivitamins ≥6 days/week:**  Baseline 27.1% vs 24.8%  Follow-up 36.8% vs 27.3%, p=0.03 |
| **Trials with low quality** | | | | | | | |
| Reynolds  2015  Texas  (USA)  [34] | RCT | <500 employees,  Dan and Bradstreet Database + convenience sample per phone book/minority chambers/networking: Urban industries with high risk for alcohol or drug abuse (food service, transportation, construction workers) | 45 sites  N=661 (IG1)  N=348 (IG2)  N=373 (CG),  18-64 y,  56% | 4 hours  IG1: lecture on relevance, team ownership of policy, understanding tolerance, communication, support and encourage help  IG2: 1-hour face-to-face interview + lecture on stress management, tobacco, active lifestyle, healthy eating, parenting, time management / spiritual health, safety in the workplace, information on alcohol, team awareness + written individual goal + facilitators  CG: none | 6 months after treatment  62.9% (IG1)  71.6% (IG2)  54.4% (CG) | Alcohol frequency (0 = best, 1 = worst)  Number of days drank alcohol in last 30 days (0 = best, 4 = worst)  On-the-job drinking incidents (0 = best, 1 = worst) | **IG1 vs IG2 vs CG**  **Alcohol frequency,** Mean**:**  Baseline: 0.8 vs 0.9 vs 0.6  Follow-up: 0.6 vs 0.8 vs 0.6, p=0.04  **Number of day drank alcohol in last 30 days,** Mean**:**  Baseline: 3.8 vs 4.6 vs 2.7  Follow-up: 3.0 vs 3.9 vs 2.5, p=0.05  **On-the-job drinking incidents,** Mean**:**  Baseline: 0.14 vs 0.12 vs 0.13  Follow-up: 0.09 vs 0.10 vs 0.07, p=0.95 |
| Patterson  2005  Texas (USA)  [35] | Controlled intervention study (no randomization) | <500 employees,  Dan and Bradstreet Database + convenience sample per phone book/minority chambers/networking: Small businesses from south-western urban/sub-urban communities in industries identified as high risk for alcohol or drug abuse (construction, drivers, hotel, restaurant, service workers) | n.r.  N=194 (IG1)  N=124 (IG2)  N=212 (CG),  >16 y  42.3% (IG1)  38.7% (IG2)  50.5% (CG) | 4 hours  IG1: information, games, role-playing on substance abuse prevention, risk and strength in the workplace, communication  IG2: 1-hour face-to-face interview + lecture on stress management, tobacco, active lifestyle, healthy eating, parenting, time management / spiritual health, safety in the workplace, information on alcohol, team awareness + written individual goal  CG: none | Two weeks after intervention  66% (IG1)  81% (IG2)  53% (CG) | Outcome measure:  Unwinding Behaviors Scale (1 = not at all, 5 = very often)  Control variables:  1. Improvement in health: Sense of Coherence-Manageability Scale (4=best, 20 = worst)  2. Perceived Wellness: emotional, social, and spiritual subscales (16 = worst, 80=best)  3. Emotional Confidence (8=worst, 40=best)  4. Group Cohesion  (5=best, 25=worst)  5. Workplace Drinking Norms (4=best, 20=worst)  6. Alcoholism: CAGE-Questionnaire (>1 yes = likely alcoholism)  7. Drinking Incidents (0 = best, 7 = worst) | **IG1 vs IG2 vs CG**  **Positive Unwinding**, Mean  Baseline: 3.0 vs 3.0 vs 3.1  Follow-up: 3.2 vs 3.0 vs 3.0, p≤0.001  **Alcohol Unwinding**, Mean  Baseline: 1.7 vs 1.9 vs 1.6  Follow-up: 1.8 vs 1.9 vs 1.7, p=n.s.  **Over-the-Counter Medication Unwinding**, Mean  Baseline: 2.2 vs 2.3 vs 2.4  Follow-up: 2.3 vs 2.2 vs 2.3, p=n.s.  **Other drugs Unwinding**, Mean  Baseline: 1.2 vs 1.2 vs 1.3  Follow-up: 1.2 vs 1.2 vs 1.3, p=n.s.  **Cigarettes Unwinding**, Mean  Baseline: 1.8 vs 2.0 vs 2.1  Follow-up: 1.8 vs 2.0 vs 2.1, p=n.s. |

N = number, CG = control group, IG = intervention group, y = years, vs = versus, SD = standard deviation, SE = standard error, MET = metabolic equivalents, CI = confidence interval, n.s. = not significant, n.r. not reported

Table S3: Development of **surrogate outcomes** in trials with moderate and poor quality

SES = socioeconomic status; HDL = high-density lipoprotein; LDL = low-density lipoprotein; No. = Number

IG1a = 60-min DVD program and 30-pages Resource Kit focusing on mental health; IG2a = IG1a + six 30-min calls

Outcomes among the intervention group compared with those among the control group:

= significantly better = better = significantly worse = worse = no difference

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|  | **Moderate quality** | | | | | | **Poor quality** | |
| Hwang  2020  [38] | Martin  2020  [36] | | Allen  2012  [41] | Sorensen  2005  [40] | | Reynolds  2015  [34] | Patterson  2005  [35] |
| **Body weight** |  |  | |  |  | |  |  |
| **Body Mass Index** |  |  | |  |  | |  |  |
| **Waist circumference** |  |  | |  |  | |  |  |
| **Body fat** |  |  | |  |  | |  |  |
| **Systolic blood pressure** |  |  | |  |  | |  |  |
| **Diastolic blood pressure** |  |  | |  |  | |  |  |
| **Total cholesterol** |  |  | |  |  | |  |  |
| **Fasting glucose** |  |  | |  |  | |  |  |
| **Triglycerides** |  |  | |  |  | |  |  |
| **HDL-Cholesterol** |  |  | |  |  | |  |  |
| **LDL-Cholesterol** |  |  | |  |  | |  |  |
| **High sensitivity C-reactive protein** |  |  | |  |  | |  |  |
| **No. metabolic syndrome markers** |  |  | |  |  | |  |  |
| **Drinking** |  |  | |  |  | |  |  |
| **Health knowledge** |  |  | |  |  | |  |  |
| **Health promotion behavior** |  |  | |  |  | |  |  |
| **Nutrition** |  |  | |  | high SES | low SES |  |  |
| **Job stress** |  |  | |  |  | |  |  |
| **Stress management** |  |  | |  |  | |  |  |
| **Psychological capital** |  | IG1a | IG2a |  |  | |  |  |