**Supplementary Files**

Supplementary File 1 Search string

1. substance related disorders/ or "substance use disorders"/ or substance abuse/ or drug abuse/ or substance dependence/ or alcoholism/ or narcotic dependence/ or heroin dependence/ or drug dependence/ or substance withdrawal syndrome/

2. drug addiction.mp.

3. Cocaine/ or cocaine.mp.

4. Cannabis/ or cannabis.mp.

5. heroin.mp. or Heroin dependence/

6. opiate addiction.mp.

7. opioid.mp.

8. amphetamine.mp.

9. Methadone/ or methadone.mp.

10. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9

11. exercise/ or weight training/ or physical fitness/ or sports/ or athletics/ or bicycling/ or boxing/ or gymnastics/ or jogging/ or swimming/

12. exercis\*.mp. or Exercise testing/

13. physical activity.mp.

14. Dancing/

15. running/ or walking/

16. Resistance training/

17. Yoga/

18. Tai chi/

19. tai ji.mp.

20. Qigong/

21. 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20

22. "Quality of life"/

23. Affect/

24. Anxiety/ or mood.mp.

25. wellbeing.mp.

26. 22 or 23 or 24 or 25

27. 10 and 21 and 26

Supplementary File 2a: Risk of bias of included Randomised Control Trials

Supplementary File 2b: Risk of bias of included Quasi Experimental Trials

Supplementary File 2c: Risk of bias of included uncontrolled and crossover trials

Supplementary File 3 Fitness Assessments

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| Reference | Test | Mean Difference | Effect Size |
| Zhu 2020 | Single leg stance | 8.33 | 0.35 |
| PACER | 6.12 | 1.13 |
| Sit and reach | 6.29 | 0.78 |
| Zhuang 2020 | Vital Capacity | -63.09 | -0.09 |
| Grip Strength | -0.61 | -0.07 |
| Single leg stance | 9.28 | 1.14 |
| Body Flexion | 1.93 | 0.24 |
| Zhu 2018 | Hand grip (R, Kgs) | -0.21 | -0.04 |
| Sit and reach (cms) | -0.94 | -0.13 |
| 1 leg stance (seconds) | 18 | 0.69 |
| PACER laps | 1.4 | 0.18 |
| Linke 2018 | Fitness (aerobic) Step test immediately post | -14.8 | -0.53 |
| Fitness (aerobic) Step test 1 minute post | -2.7 | -0.09 |
| Fitness (strength) Push up test | 9.5 | 0.79 |
| Fitness (strength) Sit up test | 14.7 | 0.87 |
| Fitness (other) sit and reach | -0.9 | -0.28 |
| Zhu 2016 | Vital capacity (ml) | -13.68 | -0.01 |
| Hand grip R | 0.61 | 0.09 |
| Hand grip L | -0.11 | -0.01 |
| Sit and reach (CM) | -0.46 | -0.04 |
| One leg stance (seconds) | 11.56 | 0.75 |
| Gimenz- Meseguer 2015 | 6 Minute walk test | 178.62 | 2.22 |
| 30 second chair stand | 5.4 | 2.4 |
| Timed up and go | -1.2 | -1.92 |
| Flemmen 2014 | VO2 | 5.6 | 0.54 |
| Roessler 2013 | VO2 | 1.1 | 0.37 |
| MHR | -3 | -0.31 |
| Mamen 2011 | VO2 (mL/kg/min) | 2 | 0.99 |
| VO3 (L/Min) | 0.14 | 1.15 |
| Threshold power | 16 | 1.22 |
| THreshold Speed | 0.18 | 2.54 |
| Threshold HR | 8 | 2.64 |

PACER: Progressive aerobic cardiovascular endurance run; MHR: Maximal heart rate

Supplementary File 4 Physical activity levels

|  |  |  |  |
| --- | --- | --- | --- |
| Reference | Measure | Mean Difference | Effect size |
| Abrantes 2017 | Number of Steps/day | 3002.93 | 1.99 |
| All PA/ week (mins) | 69.96 | 0.76 |
| MVPA/ week (mins) | 17.98 | 0.25 |
| Colledge 2017 | IPAQ- Days vig | 3.15 | 1.99 |
| IPAQ- Mins Vig | 18.84 | 0.59 |
| IPAQ- days mod | 1.46 | 0.54 |
| IPAQ- Mins mod | -26.54 | -0.34 |
| IPAQ Days walk | -0.34 | -0.13 |
| IPAQ mins walk | -1.17 | -0.04 |

Supplementary File 5 Substance Use

|  |  |  |  |
| --- | --- | --- | --- |
| Reference | Measure | Mean Difference | Effect size |
| Mamen | Short Michigan Alcoholic screening test | 0.2 | 0.28 |
| Drug abuse screening test | -0.1 | -0.1 |
| Linke 2018 | Substance use (days used) Alcohol in last month | -15.6 | -1.67 |
| Substance use (amount used) drinks /day | -4.4 | -0.87 |
| Days of drug use / month | -20.9 | -4.52 |
| Abrantes 2017 | Alcohol use (days in last 90 days) | -35.6 | -1.34 |
| Percentage of days abstenent | 39% | 1.32 |
| Drinks per drinking day | -3.39 | -0.52 |
| Colledge 2017 | Days secondary drug consumption | 0.63 | 0.05 |
| days heroin consumption | 0.43 | 0.8 |
| Days cocaine consumption | -1.2 | -0.19 |
| days etoh consumption | 2.01 | 0.22 |
| days unprescribed meds consumption | -1.38 | -0.69 |
| Hallgren 2014 | Number of standard drinks per day | -2.62 | -1.2 |
| number of standard drinks per week | -11.03 | -0.57 |