23. Sprint interval training to improve cardiometabolic risk factors in older adults

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Cardiovascular disease (CVD) was responsible for 26% of all deaths in England in 2015, however it is estimated that 50-80% are preventable through lifestyle changes to smoking, drinking, dietary requirements, and physical activity. Potentially modifiable cardiometabolic risk factors such as rate of pressure product (RPP), mean arterial pressure (MAP), oxygen pulse (O_2 pulse), and total cholesterol can be improved with vigorous physical exercise, reducing the risk of developing CVD. Three types of exercise which target cardiovascular adaptation are moderate intensity continuous training, high-intensity interval training (HIIT), and interval training (a combination of HIIT and moderate intensity continuous training). A subtype of HIIT, sprint interval training (SIT) involves 20-40 seconds of maximal sprints followed by 3-5 minutes of recovery. Because of the repeated maximal effort required, SIT research emanates from younger participants. As such, there is a paucity of data concerning SIT and cardiometabolic risk factors in older adults. The aims of the present study were to compare RPP, MAP, O_2 pulse and total cholesterol pre- and post-intervention in older adults undertaking an 8-week SIT programme. Eleven physically active participants aged 68.36 ± 6.07 years, with a body mass of 70.8 ± 13.5 kg, and stature of 172.3 ± 9.1 cm were recruited in the older group. A control group consisted of 17 healthy younger adults aged 25.3 ± 6.24 years, with a body mass of 78.2 ± 10.5 kg, and stature of 178.3 ± 7.0 cm. With institutional ethical approval, participants were tested at week 0 and week 4 (control phase), and again after the SIT intervention (week 13). SIT consisted of 3 minutes of self-paced spot running, followed by 20 seconds of maximal sprinting on the spot, repeated three times, which was conducted twice per week under supervision. Post-intervention data will be compared to pre-intervention data in the older cohort. Moreover, these data will be compared to the younger cohort to determine if SIT produces a 'younger' phenotype. A repeated measures analysis of variance (ANOVA) was conducted to test for differences in variables between the control phase, pre-intervention, and post intervention. Between samples t-tests analysed the differences between groups. Significance was accepted at $P < 0.05$. Results and conclusion pending.