



The effects of personal, non-personal and no exercise supervision on cardiometabolic health in the workplace: a 16-week randomised controlled trial

Jayden Hunter¹, Brett Gordon², Stephen Bird³, Amanda Benson⁴

¹School of Exercise Science, Sport and Health, Charles Sturt University, Bathurst, New South Wales, Australia; ²La Trobe Rural Health School, La Trobe University, Bendigo, Victoria, Australia; ³School of Health and Biomedical Sciences, RMIT University, Bundoora, Victoria, Australia; ⁴Department of Health and Medical Sciences, Swinburne University of Technology, Hawthorn, Victoria, Australia

Introduction & Aims: Supervised exercise has achieved greater health outcomes than unsupervised exercise in clinical exercise trials, however, comparisons between supervision types have not been made in healthy employees. This randomised controlled trial compared the effectiveness of personal, non-personal and no-exercise supervision in the workplace to improve employee cardiometabolic health.

Methods: Eighty-five Australian university employees (62 female; mean±SD 43.2±9.8 years) were randomised to either personal (1:1; SUP, N=28) supervision, non-personal (typical gym-based; NPS, N=28) supervision or unsupervised control (CON, N=29) exercise groups. Participants received a 16-week, individually tailored, moderate-to-high intensity aerobic and resistance exercise program to complete at an onsite gymnasium (SUP and NPS) or without access to a specific exercise facility (CON). Changes to cardiorespiratory fitness (CRF; $\dot{V}O_2$ peak), muscular strength (1RM bench and leg press) and body composition (body fat % measured by DXA) were analysed using repeated measures ANOVA.

Results: Mean changes to CRF were greater ($p<0.01$) with SUP (+10.4±11.1%) compared to CON (+3.8±8.9%), but not different to NPS (+8.6±8.2%). When compared to CON (+1.7±7.7%), mean upper body strength changes were significantly greater with both SUP (+12.8±8.4%; $p<0.001$) and NPS (+8.4±7.3%; $p<0.05$). Mean lower body strength changes were greater with SUP (+26.3±12.7%) compared to both NPS (+15.0 ± 14.6%; $p<0.05$) and CON (+4.1 ± 12.4%; $p<0.001$), and NPS compared to CON ($p<0.01$). Mean reductions to body fat were greater with SUP (-2.2±2.2%) compared to both NPS (-0.6±1.9%; $p<0.05$) and CON (-0.7±1.9%; $p<0.05$). **Conclusion:** Access to an onsite exercise facility and personal (1:1) exercise supervision confers greater improvements to CRF than unsupervised exercise, and greater improvements to muscular strength and body composition than non-personal (typical gym) supervision or unsupervised exercise over 16 weeks.