

## SMALL-SIDED SOCCER GAMES ARE AN EFFECTIVE HEALTH PROMOTING ACTIVITY FOR HOMELESS AND SOCIALLY DEPRIVED MEN

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### **Introduction**

It is well documented that homeless and social deprived men have an elevated risk of health related diseases and early death due to physical inactivity, malnutrition and misuse of alcohol and sedatives (Nordentoft and Wandall-Holm, 2003). Regular soccer training has been proven to be an effective health promoting activity for untrained (Krustrup et al, 2009). Thus, the aim of this study was to examine how 12 wks of small-sides soccer games affect physical fitness and cardio-vascular health profile for homeless and social deprived men.

### **Methods**

22 homeless and social deprived men (20-61) carried out 12 wks of soccer training (SG) 2-3 times per week organised as games on a 16x22 m asphalt pitch surrounded by 1.1 m high boards. Before and after the intervention period, a fasting blood sample was analysed for cholesterol and blood glucose, DXA-scans were completed and an incremental cycle test to exhaustion was performed. On a separate day, a 30-m sprint test and a Yo-Yo IE1 test was performed. A control group with 9 homeless and social deprived men (29-52) continued their normal routine. Within-group changes were tested by Student's paired t-test, whereas between-group differences were tested by Student's t-test.

### **Results**

For SG, lean body mass increased ( $p<0.05$ ) by  $1.0\pm 1.8$  kg and fat mass decreased ( $p<0.05$ ) by  $1.6\pm 2.0$  kg. Thus, fat percentage decreased ( $p<0.05$ ) from  $19.4\pm 8.5$  to  $17.5\pm 8.6\%$ . LDL-cholesterol was reduced ( $p<0.05$ ) from  $3.2\pm 1.1$  to  $2.8\pm 0.8$  mM. LDL-cholesterol decreased for all but one the 13 participants with pre-values above 2.5 mM. Fasting blood glucose was unchanged.  $VO_2$ max increased ( $p<0.05$ ) from  $2.7\pm 0.5$  and  $3.0\pm 0.5$  l  $O_2$   $min^{-1}$  and peak ventilation from  $124\pm 27$  to  $131\pm 21$  l  $min^{-1}$ . Peak power output increased from  $205\pm 36$  to  $218\pm 46$  W. The performance in Yo-Yo IE1 test was improved by 53% ( $1335\pm 766$  to  $1942\pm 1180$  m), but sprint performance was unaltered.

### **Conclusion**

Small-sided soccer games can be used as an effective activity to promote physical fitness and cardio-vascular health profile for homeless and social deprived men.

### **References**

1. Nordentoft & Wandall-Holm (2003). *BMJ*. 327 (81)
2. Krustrup et al. (2009) *Br J Sports Med*. 43(11):825-31