Subjects with substance dependence are considered to be in poor health. Previous investigations have shown a reduced aerobic power in this group of patients. Exercise has been used as a part of the rehabilitation in several clinical settings. These interventions have had durations of from ten days to ten months, and the fitness improvement has varied considerably. The testing has been done by means of indirect measurements and estimation of aerobic power. Such tests are less accurate than tests with direct measurements of oxygen uptake. We have tested 36 substance dependent patients (seven females) from Førde Psychiatric Clinic with a maximal oxygen uptake test (Bruce protocol) and a lactate profile test when entering and leaving a project where physical training was an important part of the treatment. Median (Interquartile range) duration in the project was 282 (114) days. Mean±SD speed at the lactate threshold increased with 11.0%, from 7.3±1.1 to 8.2±1.8 km h⁻¹ (p<0.01). Lactate threshold cycle power (W) increased with 14.7% (p<0.01). Aerobic utilisation, measured as percent of HRmax at threshold increased from 73.1±7.0% to 77.5±7.8% (p<0.01). Absolute aerobic power increased from 2.94±0.69 L min⁻¹ to 3.06±0.75 L min⁻¹ (p<0.03), relative oxygen uptake increased from 38.0±9.7 to 39.5±10.3 ml kg⁻¹ min⁻¹ (p<0.03). The fitness improvement was not correlated with training duration (r approx. -0.3). The submaximal threshold improvements were larger than improvements from the maximal test, which was only about 3%. This might reflect the regimen of training, which had focus on training pleasure and low to moderate intensity activities. It may also be that a long period of substance intoxication has reduced the ability to respond to training. It is concluded that the group showed a normal improvement in submaximal performance and below normal on maximal performance.

Keywords: Testing, Training, Health and Fitness