

The Effect of exercise using a High Intensity Interval Training on predictors of cardiovascular risk.

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BACKGROUND: Low levels of physical activity are associated with a significant increase in the risk of cardiovascular disease. We aimed to determine if High Intensity Interval Training (HIIT), a reduced time high intensity exercise program, has the potential to reduce cardiovascular risk. **METHODS:** Twenty three healthy young adults were recruited and divided into control (n=10) and exercise (n=13) groups. The exercise group underwent 6 weeks of HIIT; the control group continued their normal lifestyle. For both groups VO_{2max} , oral glucose tolerance test (OGTT), blood lipids and systolic and diastolic blood pressure (BP) were determined at baseline, after the six week training period and four weeks after termination of the training program (detraining). **RESULTS:** There was a heterogeneous response to HIIT with some subjects responding with positive changes in markers and others being non-responders to HIIT. Fitness levels in responders increased significantly ($p=0.023$) following HIIT measured by an increase in VO_{2max} , from 45.4 (38.4,52.5) to 56.9 (51.2,65.7) (median (interquartile range)(ml/min/kg)). In responders HIIT resulted in a significant decrease ($p=0.026$) in systolic BP from 127 (126,129) to 116 (106,122) (mmHg) and a significant ($p= 0.026$) decrease in diastolic BP from 72 (69,74) to 57 (56,66). There was a decrease in plasma cholesterol from 4.6(3.9,4.5) (mmol/L) to 4.2 (4.0,4.3) but this was not statistically significant ($p= 0.059$). Parameters returned towards baseline four weeks after the training period finished. **CONCLUSIONS:** Increasing physical activity by just 9 minutes per week, by HIIT, for six weeks increases fitness levels, reduces blood pressure and has a beneficial effect on glucose homeostasis. HIIT has potential as a time efficient intervention to reduce cardiovascular risk.

Topic: CVS Cardiovascular

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Text: **Background:** Low levels of physical activity are associated with a significant increase in the risk of cardiovascular disease. We aimed to determine if High Intensity Interval Training (HIIT), a reduced time high intensity exercise program, has the potential to reduce cardiovascular risk.

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Conclusions: Increasing physical activity by just 9 minutes per week, by HIIT, for six weeks increases fitness levels, reduces blood pressure and has a beneficial effect on glucose homeostasis. HIIT has potential as a time efficient intervention to reduce cardiovascular risk.