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## The effect of aerobic exercise on glycosylated hemoglobin values in type 2 diabetes patients.

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### Abstract

**AIM:** The changes of glycosylated hemoglobin A1c values have been considered as an important marker of glucose control over time. On the other hand, benefit of exercise in the control of glycemia is well known. The purpose of the present study was to investigate the influence of aerobic exercise program on A1c values and glycemic control in type 2 diabetic patients.

**METHODS:** In this randomized, controlled trial, 65 participants aged 40 to 65 years with type 2 diabetes were randomly divided into 2 groups (30 controls and 35 exercises). The exercise training group performed aerobic training for 16 weeks (3 days/week, 90 min, 50-80%VO<sub>2</sub>max) and the control group did not perform any exercise. Finally, 60 subjects completed the program, and their results were analyzed to assess the A1c changes.

**RESULTS:** After a 16-week aerobic exercise program the mean A1c value significantly reduced in the exercise training group in comparison with the control group (-0.73±1.4% vs. +0.28±0.60%, P<0.001). No serious adverse event was observed in the training sessions. As secondary outcomes, changes of baseline parameters (i.e. fasting blood glucose, body mass index, and blood pressure) were statistically significant. The reduction of blood pressure in control group was also significant.

**CONCLUSION:** In patients with type 2 diabetes, significant improvement in A1c value and better glycemic control could be achieved by a regular exercise program as an intervention.

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