

Original Paper

## Effect of 12 weeks aerobic exercise training on aerobic capacity and glucose concentration in obese men

Eizadi M (M.Sc)\*<sup>1</sup>, Hajirasouli M (Ph.D)<sup>2</sup>, Kiani F (Ph.D)<sup>3</sup>  
Khorshidi D (Ph.D)<sup>3</sup>, Dooaly H (M.Sc)<sup>1</sup>

<sup>1</sup>Academic Instructor, Department of Physical Education and Sport Sciences, Saveh Branch, Islamic Azad University, Saveh, Iran. <sup>2</sup>Assistant Professor, Department of Physical Education and Sport Sciences, Islamshahr Branch, Islamic Azad University, Islamshahr, Iran. <sup>3</sup>Assistant Professor, Department of Physical Education and Sport Sciences, Saveh Branch, Islamic Azad University, Saveh, Iran.

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### Abstract

**Background and Objective:** Accumulating evidence indicates a relation between aerobic capacity and glucose concentration, although the molecular mechanisms of this relationship are not fully known yet. This study was done to determine the effect of effect of 12 weeks aerobic exercise training on aerobic capacity and glucose concentration in obese men.

**Methods:** In this quasi-experimental study, thirty two adult obese males were divided into interventional and control groups. Anthropometrical indexes, fasting blood glucose and insulin, resting heart rate and aerobic capacity (VO<sub>2</sub>max) were measured before and after a 12 weeks aerobic exercise in the interventional and control groups. Beta cell function was calculated by fasting glucose and insulin.

**Results:** Long time aerobic exercise led to significant reduction in glucose (112±10 vs. 85±11 mg/dl), anthropometrical indices, BMI (28.44±2.29 vs. 33.24±5.14), increase in VO<sub>2</sub>max (26.12±4.11 vs. 32±6.41 ml/kg/min), beta cell function (83±23 vs. 181±35) and in interventional group in comparison with controls. A significant correlation was found between the changes in VO<sub>2</sub>max with changes in beta cell function and glucose level, these correlations were independent of BMI. There was no significant change in insulin level between intervention and control groups.

**Conclusion:** Increased aerobic capacity or cardiovascular fitness by exercise training improve beta cell function of glucose concentration in obese men.

**Keywords:** Obesity, Aerobic exercise training, Aerobic capacity, Insulin, Glucose, BMI

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\* **Corresponding Author:** Eizadi M (M.Sc), E-mail: [izadimojtaba2006@yahoo.com](mailto:izadimojtaba2006@yahoo.com)

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