

The Effect of Aerobic and Resistance Training on Glycemic Control in Type 2 Diabetes Mellitus: Meta-Analytic Study

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ABSTRACT

Diabetes is a widely-spread disease among the whole population and can cause other complications in many organs if not treated correctly. Medications along with exercise and an appropriate diet are a key point in the management of type 2 diabetes. **PURPOSE:** to analyze the effects of aerobic, resistance, and combined training carefully on glycemic control in type 2 diabetes mellitus. **METHODS:** A meta-analysis review was conducted to investigate differences in glucose and HbA1c levels with aerobic and resistance training in type 2 diabetes patients. Data over training, HbA1c and daily glucose levels was collected from different studies for the investigation. The data collected was carefully analyzed to see whether aerobic or resistance training was the best option of training to have a better outcome on the control of glucose levels. All studies included adults from the ages 18-65 and of both genders. 905 inactive subjects were used for the study. The subjects met three times per week and exercised for an average of 49 minutes of moderate to high intensity training. **RESULTS:** All three types of training decreased the HbA1c levels but had a higher decrease in the combined training group. The Effect Size (ES) for all three groups were: aerobic (-0.47), resistance (-0.38), and combined (-0.77) which was a large ES. BMI (kg/m²), MVO₂ (ml/min/kg), and FFA (%) had a Small-Moderate ES with combined training, while MVO₂ showed a Large ES in the aerobic group. **CONCLUSION:** Even though the results showed positive effects in all three groups, the present study suggest type 2 diabetes patients to engage in combined training to see better results in their HbA1c levels.