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The effects of endurance exercise on some related variables of type-2 diabetes: A systematic review and meta-analysis of Iranian studies

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There are many research have been done so far about the effect of exercise training on diabetic type-2 related risk factors. But, in this regard there is no study performed in Iran. So, the aim of present study was to investigate the effect of endurance exercise training on some diabetic type-2 dependent variables in the form of systematic review and meta-analysis of studies that were performed in Iran. International and national electronic databases including PubMed, ISI, Ovid, Scopus, Science Direct, SID, MagIran and IranMedex were searched up to January 2016. All studies, in which the effects of endurance exercise on type-2 diabetes in Iran population had been reported, were included in this meta-analysis. Eligible studies were reviewed and data was extracted onto a standard data sheet. A meta-analysis was done by a random-effects model with a 95% confidence interval (CI). Studies were assessed involving an overall of 674 participants, of which 312 as a control group and 362 as a training group. The results indicate that there were significant association between endurance exercise and blood glucose levels ($P=0.0001$; -1.396 , -0.423 ; 95% CI), insulin ($P=0.0001$, -1.479 , -0.469 ; 95% CI), insulin resistance ($P=0.0001$; -1.605 , -0.591 ; 95% CI), HbA1c ($P=0.001$; -1.334 , -0.369 ; 95% CI), LDL-c ($P=0.007$; -1.111 , -0.172 ; 95% CI), HDL-c ($P=0.0001$; -1.605 , -0.591 ; 95% CI), triglyceride ($P=0.018$; -1.030 , -0.097 ; 95% CI) and cholesterol ($P=0.002$; -1.229 , -0.281 ; 95% CI). Generally, this systematic review and meta-analysis study was demonstrated endurance exercise could be related with decrease diabetic type-2 related risk factors. So, it is recommended that sport and medicine experts use endurance exercise as a non-pharmacological intervention for treatment of diabetes type-2 patients.

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