

The Effect of T'ai Chi Exercise on Lipid Profiles: A Systematic Review and Meta-Analysis of Randomized Clinical Trials.

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Abstract: BACKGROUND: Cardiovascular disease is a common health problem resulting from many factors, including dyslipidemia. T'ai chi is one of the interventions assigned to improve lipid profiles and other physical outcomes. However, conflicting results might be attributed to different study designs and interventional approaches. A systematic review and meta-analysis are needed to evaluate existing evidence. OBJECTIVE: The aim of this systematic review and meta-analysis is to evaluate existing randomized clinical trials (RCTs) regarding the overall effect of t'ai chi exercise on lipid profiles. METHODS: Electronic databases (MEDLINE and Cumulative Index to Nursing and Allied Health Literature) were searched. The authors included only English peer reviewed published RCTs that used a t'ai chi intervention and high-density lipoprotein cholesterol (HDL-C) as the primary outcome along with low-density lipoprotein cholesterol (LDL-C) and/or total cholesterol (TC) as secondary outcomes. RESULTS: The authors identified 37 potentially eligible studies. Only eight RCTs were eligible for their qualitative review, and seven studies were eligible for meta-analysis. The included studies were rated as having a low risk of bias. Despite the overall low risk of bias, all studies failed to blind participants to group assignment and were generally unclear about whether they were selectively reporting data. A fixed effect model ($I^2=38.16\%$) demonstrated a small positive effect of t'ai chi on HDL-C (Cohen $d=0.12$; standard error [SE]= 0.067 ; $p=0.037$). A random effect model demonstrated a medium effect and small effect for LDL-C (Cohen $d=0.47$; SE= 0.347 ; $p=0.089$) and TC (Cohen $d=0.34$; SE= 0.225 ; $p=0.066$), respectively. CONCLUSION: T'ai chi may potentially be beneficial on lipid profiles across different age groups and populations. Although there were conflicting results regarding the effect of t'ai chi on lipid profiles, the majority of studies had at least a small positiv