Resistance Training for the Prevention of Diabetic Heart Disease

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Abstract

Background: Older adults (≥65 years) are prone to multiple chronic conditions, especially metabolic diseases such as Type II diabetes mellitus (T2DM) and the spectrum of cardiometabolic complications which lead to the development of diabetic heart disease (DHD) (American Heart Association [AHA], 2015). Resistance exercise shows promise for DHD prevention and treatment as it requires less baseline cardiovascular conditioning in older adults and produces health benefits even when utilizing light weights (Winett & Carpinelli, 2001).

Objective: This systematic focus review of the literature study examines the impact of resistance training for the prevention of diabetic heart disease in older adults.

Methods: We performed a computerized search of the literature using PubMed using the key words “prevention of cardiovascular disease,” “resistance training,” “type 2 diabetes mellitus,” and “older adult (65+)”.

Results: The studies in this review support RT’s link to decreased HgA1c by 0.5-1.2 ± 1.7% and increased insulin sensitivity by 0.91 ± 0.75 (Castaneda et al., 2002; Cauza et al., 2005; Misra et al., 2008), improved lipid profiles (LDL decreased by 14 ± 8 mg/dl and HDL increased by 5 ± 3 mg/dl), reduced hypertension (SBP ~10-20 mmHg and DBP ~8mmHg) (Castaneda et al. 2002, Cauza et al. 2005), and increased muscle mass, as much as 1.2 kg in 16-weeks (Castaneda et al. 2002).

Conclusion: Researchers indicate that metabolic syndrome (obesity, hyperglycemia, dyslipidemia, and hypertension) and renal impairment are contributors to the onset and acceleration of DHD (Marwick, 2008). Resistance training is a promising low-aerobic, feasible treatment alternative to aerobic exercise.