

Walking Versus Running for Hypertension, Cholesterol, and Diabetes Mellitus Risk Reduction

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Abstract

Objective—To test whether equivalent energy expenditure by moderate-intensity (eg, walking) and vigorous-intensity exercise (eg, running) provides equivalent health benefits.

Approach and Results—We used the National Runners' (n=33 060) and Walkers' (n=15 945) Health Study cohorts to examine the effect of differences in exercise mode and thereby exercise intensity on coronary heart disease (CHD) risk factors. Baseline expenditure (metabolic equivalent hours per day [METh/d]) was compared with self-reported, physician-diagnosed incident hypertension, hypercholesterolemia, diabetes mellitus, and CHD during 6.2 years follow-up. Running significantly decreased the risks for incident hypertension by 4.2% ($P<10^{-7}$), hypercholesterolemia by 4.3% ($P<10^{-14}$), diabetes mellitus by 12.1% ($P<10^{-5}$), and CHD by 4.5% per METh/d ($P=0.05$). The corresponding reductions for walking were 7.2% ($P<10^{-7}$), 7.0% ($P<10^{-8}$), 12.3% ($P<10^{-4}$), and 9.3% ($P=0.01$). Relative to <1.8 METh/d, the risk reductions for 1.8 to 3.6, 3.6 to 5.4, 5.4 to 7.2, and ≥ 7.2 METh/d were as follows: (1) 10.0%, 17.7%, 25.1%, and 34.9% from running and 14.0%, 23.8%, 21.8%, and 38.3% from walking for hypercholesterolemia; (2) 19.7%, 19.4%, 26.8%, and 39.8% from running and 14.7%, 19.1%, 23.6%, and 13.3% from walking for hypertension; and (3) 43.5%, 44.1%, 47.7%, and 68.2% from running, and 34.1%, 44.2% and 23.6% from walking for diabetes mellitus (walking >5.4 METh/d excluded for too few cases). The risk reductions were not significantly different for running than walking for diabetes mellitus ($P=0.94$), hypercholesterolemia ($P=0.06$), or CHD ($P=0.26$), and only marginally greater for walking than running for hypercholesterolemia ($P=0.04$).

Conclusions—Equivalent energy expenditures by moderate (walking) and vigorous (running) exercise produced similar risk reductions for hypertension, hypercholesterolemia, diabetes mellitus, and possibly CHD.