

Postexercise Hypotension After Aquatic Exercise in Older Women With Hypertension: A Randomized Crossover Clinical Trial

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Abstract

BACKGROUND

Hypertension can be prevented and modified with lifestyle interventions that include regular exercise. Aquatic exercise is widely recommended for older adults for a variety of health benefits, but few studies have assessed the immediate ambulatory blood pressure (BP) response to aquatic exercise, a response termed postexercise hypotension (PEH). Thus, we assessed PEH after a session of aquatic exercise in physically active, older women with hypertension.

METHODS

Twenty-four women 70.0 ± 3.9 years with a resting systolic (SBP)/diastolic (DBP) BP of $124.0/72.3$ mm Hg and body mass index of 29.8 ± 4.1 kg/m² were randomly assigned to participate in a 45-minute session of moderate intensity, water-based exercise (WATER) and a 45-minute land control session (CONTROL). All experimental sessions started at 9 AM sharply with 7 days between them. Subjects left the experiments wearing an ambulatory BP monitor for the next 21 hours.

RESULTS

0.004). DBP was lower following WATER compared to CONTROL: 1.2 ± 0.3 mm Hg over 21 hours ($P = 0.043$); 0.9 ± 0.6 mm Hg over awake hours ($P = 0.101$); and 1.4 ± 0.9 mm Hg over sleep hours ($P = 0.039$).

CONCLUSIONS

Aquatic exercise elicited PEH (~5 mm Hg) over 21 hours, BP reductions that are comparable in magnitude to land aerobic exercise. The immediate antihypertensive benefits of acute aquatic exercise should continue to be explored in future studies.

Keywords: [aerobic exercise](#), [ambulatory blood pressure](#), [blood pressure](#), [elderly](#), [hypertension](#), [postexercise hypotension](#)

Topic: [physical activity](#), [hypertension](#), [aerobic exercise](#), [hypotension](#), [blood pressure](#), [exercise](#), [sleep](#), [elderly](#), [control groups](#), [aquatic exercises](#)

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