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
SBP was lower by 5.1 ± 1.0 mm Hg after WATER than CONTROL over 21 hours (P < 0.001), over awake hours by 5.7 ± 1.1 mm Hg (P < 0.001), and sleep hours by 4.5 ± 0.4 mm Hg (P = 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.