

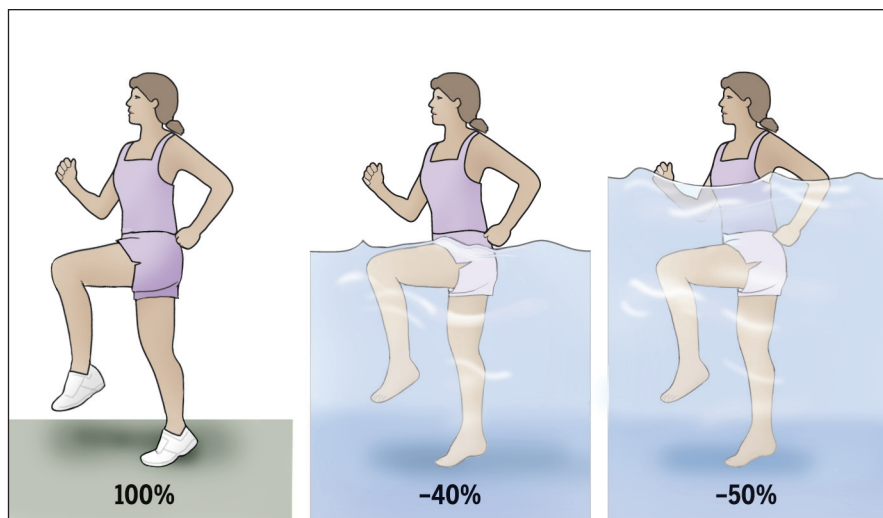
# Aquatic Physical Therapy

## *Running in Water Decreases Stress on the Body*

*J Orthop Sports Phys Ther* 2012;42(5):445. doi:10.2519/jospt.2012.0504

**A**quatic physical therapy is a form of physical therapy performed in a pool. Exercising in water can be helpful in improving function, fitness, balance, coordination, flexibility, and strength. Patients like exercising in water because water supports their body weight, decreasing stress on their joints and making it easier to move with less pain. Ath-

letes can run in water as a form of cross training. Patients can run in water to reduce pain or joint stress during rehabilitation. A study published in the May 2012 issue of *JOSPT* provides new insights on water's ability to decrease the load sustained by a runner, based on the depth of water in which the individual is running.



**WATER RUNNING.** Compared to stationary running on land, running in water that is hip level decreases forces applied to the body by nearly 40% (specifically, 34% to 38%). Running in water that is chest level decreases the forces by almost 50% (specifically, 44% to 47%).

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This *JOSPT* Perspectives for Patients is based on an article by Fontana HDB et al, titled "Effect of gender, cadence, and water immersion on ground reaction forces during stationary running," *J Orthop Sports Phys Ther* 2012;42(5):437-443, *Epub* 8 March 2012. doi:10.2519/jospt.2012.3572.

This Perspectives article was written by a team of *JOSPT*'s editorial board and staff, with Deydre S. Teyhen, PT, PhD, Editor, and Jeanne Robertson, Illustrator.

### NEW INSIGHTS

In this study of 22 college students (11 women; 11 men), the researchers measured the forces on the body during stationary running. These forces were measured while the students ran on land, in water at hip level, and in water at chest level. The researchers also tested 3 different running speeds: 90, 110, and 130 steps per minute. As expected, the forces were less when the students ran in water compared to running on land. Running in water at hip level decreased the forces by nearly 40%, and running in water at chest level decreased the forces by almost 50%. When running on land, forces were greater with faster running speeds. However, these forces did not increase with speed in water. The ability of the water to decrease the forces was similar for both women and men.

### PRACTICAL ADVICE

Stationary running in water has become a popular exercise to maintain fitness while decreasing the stress on a person's joints. Athletes worry about quickly losing their athletic edge and fitness after injury, which can affect their seasons. So, finding ways to safely exercise while recovering from the injury is important, and stationary running in water may be one such option. Exercising while recovering from an injury needs to be well controlled so that it does not slow down the healing process or increase pain. The researchers in this study were able to measure the influence of depth of water and speed of running on the forces that occur during stationary running in water. Their results can help your physical therapist customize an exercise program for you. For more information on aquatic exercise, contact your physical therapist specializing in musculoskeletal disorders.



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