

# Research pours cold water on ice bath recovery theory

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Credit: Freeimages.com/Márcia Rodrigues

If the thought of a post workout ice bath is enough to make you shiver, new research from QUT and The University of Queensland (UQ) will warm your heart.

The comprehensive study found [cold water](#) immersion after strength training hindered [muscle](#) adaptation - pouring cold water on the long-held theory that an ice bath helps speed up recovery.

Dr Llion Roberts, from UQ's School of Human Movement and Nutrition Sciences, and Dr Jonathan Peake, from QUT's School of Biomedical Sciences, led the research, with colleagues from the Queensland Academy of Sport, Norwegian School of Sport Sciences, The University

of Auckland and University of Oslo.

Dr Tony Shield, from QUT's School of Exercise and Nutrition Sciences, was also a co-investigator in the study.

The research has been published in *The Journal of Physiology*.

The first part of the study asked 21 physically active men to undertake strength training two days a week for 12 weeks. About half the group endured a 10 minute post workout ice bath at a chilly 10 degrees Celsius, while the rest had a warm down on an exercise bike.

At the end of the 12 weeks, [muscle strength](#) and mass had increased more in the active warm down group than the ice bath group.

A second study took muscle biopsies from men after they had performed single-leg strength exercises followed by either an ice bath or active warm down.

The researchers found that the activity of satellite cells, akin to muscle 'stem cells', and pathways needed to build bigger and stronger muscles were "blunted" up to two days after exercise in the ice bath group.

"We found that cold water immersion after training substantially attenuated, or reduced, long-term gains in muscle mass and strength," Dr Roberts said.

"It is anticipated that athletes who use ice baths after workouts would see less long-term muscle gains than those who choose an active warm down.

"At this stage we are unsure why cold [water immersion](#) had this effect, but a reduction of muscle blood flow could be one mechanism."

Dr Peake said the results suggested people should steer clear of ice baths - at least after strength training sessions.

"This is the most comprehensive study of its kind and the results suggest individuals who use [strength training](#) to improve athletic performance, recover from injury or maintain their health, should reconsider using [cold water immersion](#) as a recovery aid," he said.

**More information:** "Post-exercise cold water immersion attenuates acute anabolic signalling and long-term adaptations in muscle to strength training." The *Journal of Physiology* DOI: 10.1113/JP270570

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