

Why icing doesn't work to heal injuries

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Applying ice to a muscle after injury is a commonly prescribed therapy for treating muscle bruises. But does it really speed recovery time and help the muscle to heal?

Researchers from the Institute of Health and Biomedical Innovation at Queensland University of Technology in Australia investigated whether icing after a muscle impact injury contributed to new blood vessel formation ([angiogenesis](#)) and [muscle regeneration](#).

The research team looked at two groups of rats with thigh contusions. One group received ice within five minutes of injury for 20 minutes. The second group received no ice. During the acute phase three days after injury, infiltration of inflammatory cells and the markers of angiogenesis—vascular endothelial growth factor (VEGF) and von Willebrand factor (vWF)—were lower in the icing group compared with the non-icing group. During the early repair phase (seven days), inflammatory cell numbers were higher, while VEGF and vWF expression remained lower, in the icing group compared with the non-icing group. In the late repair phase (28 days), inflammatory cell numbers, VEGF expression and the number of regenerating muscle fibers were all greater in the icing group (causing less inflammation and swelling) compared with the non-icing group. Muscle fiber cross-sectional area was similar between the groups at seven and 28 days after injury.

Despite popular belief, inflammation can be an important process in tissue regeneration. The results suggest that ice may delay inflammation,

angiogenesis and the formation of new [muscle fibers](#) during recovery from severe [muscle injury](#). "These findings challenge the practice of using ice to treat [muscle](#) injuries," the research team wrote. Practitioners should therefore reconsider how they use treatments such as icing and non-steroidal anti-inflammatory drugs to manage acute soft tissue injuries.

Jonathan Peake will present "The Effects of Topical Icing after Contusion Injury on Angiogenesis in Regenerating Skeletal Muscle" in a poster session on Monday, March 30, at the Experimental Biology Meeting (Boston Convention and Exhibition Center).

Provided by American Physiological Society

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