

Study suggests that an icy swim may cut 'bad' body fat, but further health benefits are unclear

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Taking a dip in cold water may cut "bad" body fat in men and reduce the risk of disorders such as diabetes, suggests a major scientific review published in the *International Journal of Circumpolar Health*.

The authors say many of the 104 studies they analyzed demonstrated significant effects from cold water swimming including also on "good"

fat, which helps burn calories. This may protect against obesity, cardiovascular disease, they add.

However, the review was inconclusive overall on the health benefits of cold-water bathing, an increasingly popular hobby.

Much of the available research involved small numbers of participants, often of one gender, and with differences in water temperature and salt composition. In addition, it is unclear whether or not winter swimmers are naturally healthier, say the scientific expert team of review authors from UiT The Arctic University of Norway and from the University Hospital of North Norway.

"From this review, it is clear that there is increasing scientific support that voluntary exposure to cold water may have some beneficial health effects," states lead author James Mercer, from UiT.

"Many of the studies demonstrated significant effects of cold-water immersion on various physiological and biochemical parameters. But the question as to whether these are beneficial or not for health is difficult to assess. Based on the results from this review, many of the health benefits claimed from regular cold exposure may not be causal. Instead, they may be explained by other factors including an active lifestyle, trained stress handling, social interactions, as well as a positive mindset. Without further conclusive studies, the topic will continue to be a subject of debate."

Weight loss, better mental health, and increased libido are among numerous health and well-being claims made by followers of regular cold-water immersion or arising from anecdotal cases.

This activity takes many forms such as swimming in cold water during the winter, and is the subject of growing interest worldwide.

The main aim of the review was to determine whether voluntary exposure to cold water has health effects in humans. The methodology involved a detailed search of the scientific literature.

Excluded from the review were studies where participants wore wetsuits, accidental cold-water immersion, and water temperatures greater than 20 degrees Celsius.

Themes covered by the studies that were eligible for review included inflammation, adipose tissue, blood circulation, immune system, and oxidative stress.

Immersion in cold water has a major impact on the body and triggers a shock response such as elevated heart rate. Some studies provided evidence that [cardiovascular risk factors](#) are actually improved in swimmers who have adapted to the cold. However, other studies suggest the workload on the heart is still increased.

The review provided insights into positive links between cold water swimming and [brown adipose tissue](#) (BAT), a type of "good" [body fat](#) that is activated by cold. BAT burns calories to maintain body temperature unlike "bad" [white fat](#) that stores energy.

Cold exposure in water—or air—appears also to increase the production of adiponectin by adipose tissue. This protein plays a key role in protecting against insulin resistance, diabetes and other diseases. Repeated cold-water immersions during the winter months significantly increased insulin sensitivity and decreased insulin concentrations, according to the review. This was for both inexperienced and experienced swimmers.

However, the authors point out that the profile of swimmers participating in the studies did vary. They ranged from elite swimmers or

established winter bathers to those with no previous winter swimming experience. Others were not strictly ice bathers but used cold-water immersion as a treatment after exercise.

Education is also needed on the health risks associated with taking a dip in icy water, say the authors. These include the consequences of hypothermia, and of heart and lung issues that are often related to the shock from the cold.

More information: Health effects of voluntary exposure to cold water—a continuing subject of debate, *International Journal of Circumpolar Health* (2022). [DOI: 10.1080/22423982.2022.2111789](https://doi.org/10.1080/22423982.2022.2111789)

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