

# Cryotherapy versus ice baths—it's a draw

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Credit: University of Applied Sciences and Arts of Southern Switzerland

The first study to compare the effect of cold water immersion versus extreme cold air has found very little difference between the two treatments on athletes' muscle recovery.

Cold [water](#) immersion has become popular among sportsmen and

women to cool strained muscles in order to recover faster, compete again sooner and to train harder.

Treatment in cold water immersion was compared to treatment in extremely [cold air](#) (below  $-100^{\circ}\text{C}$ ), a relatively new method of speeding up recovery and regarded by some elite athletes and coaches as a step forward, a superior treatment.

Cold air exposure typically lasts for three minutes in a specialised cold air chamber, an ice bath typically lasts for 10 minutes.

Until now, there has been limited research directly comparing the two treatments.

This new study, led by Dr Erich Hohenauer at the University of Applied Sciences and Arts of Southern Switzerland, found both cold water immersion and the partial-body cryotherapy treatments resulted in similar recovery during a 72-hour follow-up period.

The research is published the *Scandinavian Journal of Medicine and Science in Sports*.

Leading expert on cryotherapy, Dr Joe Costello, of the University of Portsmouth, is one of the study's authors.

He said: "The use of cryotherapy is very popular in elite sport. For example, various premier league teams currently use the treatment. However, we know very little about the effectiveness of the treatment; in particular we do not know if the cryotherapy is more, or less, effective than ice baths.

"Our results clearly demonstrate that, in terms of athletic recovery, there are no differences between cold water immersion and the partial-body

cryotherapy."

Dr Hohenauer said questions over the value of such treatments came first from elite sport but increasingly sportsmen and women at all levels were interested in ways of recovering faster and performing better.

He said: "Cold water [immersion](#) is well established in sport science as a way of speeding up recovery. Cryotherapy is relatively new and science is only now catching up in order to examine whether it works, and how.

"It's conceivable that cryotherapy might one day replace [cold water immersion](#) however, more research is needed to establish the optimal cooling dose."

In the study of 19 men there was a significant physiological difference – including oxygen levels in thigh muscles and skin temperature – between the two treatments in the immediate term. But within hours there was no difference in how the men felt and no measurable physiological benefit of one [treatment](#) over the other.

In previous research for the Cochrane review, Dr Costello found only some evidence to support the use of whole-body [cryotherapy](#) as a recovery method.

Athletes, including footballers and rugby players, and those competing in tournaments over one or two weeks, rely heavily on sports scientists helping them recover quickly before their next bout.

Dr Costello said: "These findings might also help inform coaches when making decisions about which [recovery](#) method to use for their athletes.

**More information:** Cold-water or partial-body cryotherapy?  
Comparison of physiological responses and recovery following muscle

damage *Scandinavian Journal of Medicine & Science in Sports*. [DOI: 10.1111/sms.13014](https://doi.org/10.1111/sms.13014)

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