

# Research suggests physical activity can protect from chronic pain

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Pain tolerance is tested by submerging the hand in ice-cold water. Credit: Stina Grønbech/Tromsøundersøkelsen

In 2023, researchers from UiT The Arctic University of Norway, the University Hospital of North Norway (UNN), and the Norwegian

Institute of Public Health found that among more than 10,000 adults, those who were physically active [had a higher pain tolerance](#) than those who were sedentary; and the higher the activity level, the higher the pain tolerance.

After this finding, the researchers wanted to understand how physical activity could affect the chances of experiencing chronic pain several years later. And they wondered if this was related to how physical activity affects our ability to tolerate pain.

"We found that people who were more active in their free time had a lower chance of having various types of chronic pain 7-8 years later. For example, being just a little more active, such as going from light to moderate activity, was associated with a 5% lower risk of reporting some form of chronic pain later," says doctoral fellow Anders Årnes at UiT and UNN.

He is one of the researchers behind the study. He adds that for severe chronic pain in several places in the body, higher activity was associated with a 16% reduced risk.

## Measured cold pain tolerance

The researchers found that the ability to tolerate pain played a role in this apparent protective effect. That explains why being active could lower the risk of having severe chronic pain, whether or not it is widespread throughout the body.

"This suggests that [physical activity](#) increases our ability to tolerate pain and may be one of the ways in which activity helps to reduce the risk of severe chronic pain," says Årnes.

The researchers included almost 7,000 people in their study, recruited

from the large Tromsø survey, which has collected data on people's health and lifestyle over decades.

After obtaining information about the participants' exercise habits during their free time, the researchers examined how well the same people handled cold pain in a laboratory. Later, they checked whether the participants experienced pain that lasted for 3 months or more, including pain that was located in several parts of the body or pain that was experienced as more severe.

Among the participants, 60% reported some form of chronic pain, but only 5% had [severe pain](#) in multiple parts of the body. Few people experienced more serious pain conditions.

The research was recently published in the journal [PAIN—Journal of the International Association for the Study of Pain](#).

When it comes to exercising if you already have chronic pain, the researcher says,

"Physical activity is not dangerous in the first place, but people with chronic pain can benefit greatly from having an [exercise program](#) adapted to help them balance their effort so that it is not too much or too little. Health care professionals experienced in treating [chronic pain](#) conditions can often help with this. A rule of thumb is that there should be no worsening that persists over an extended period of time, but that certain reactions in the time after training can be expected."

**More information:** Anders Pedersen Årnes et al, Does pain tolerance mediate the effect of physical activity on chronic pain in the general population? The Tromsø Study, *PAIN—Journal of the International*

*Association for the Study of Pain* (2024). [DOI: 10.1097/j.pain.0000000000003209](https://doi.org/10.1097/j.pain.0000000000003209)

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