

New study cites a possible breakthrough treatment in pain management

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Damaged nerves can be regenerated with the application of a frozen needle under advanced imaging guidance, according to new research to be presented at the Society of Interventional Radiology Annual Scientific Meeting in Boston.

The technique, called interventional cryoneurolysis, is performed by an

interventional radiologist and can offer hope to [patients](#) in [persistent pain](#) following a [traumatic injury](#).

"The idea that we can induce [regeneration](#) of damaged nerves simply by placing a cold needle through the skin under imaging guidance is extremely exciting," said the lead author of the study, J. David Prologo, MD, FSIR, ABOM-D, an interventional radiologist and associate professor at Emory University School of Medicine in Atlanta. "This research answers the call from United States legislators and specialty medical societies to develop alternatives to opioids for the management of pain."

Researchers at Emory University treated eight patients with chronic [nerve](#) pain related to a prior trauma with CT-guided interventional cryoneurolysis. CT-guided cryoneurolysis uses imaging to place a needle and freeze damaged nerves, causing them to degenerate and lose function. "What happens next is almost magical," Prologo says. "If the nerve is exposed to the correct amount of cold, over the correct area, for the right amount of time, it will regenerate—replacing the previously damaged nerve with a healthy one."

In this study, the average time from traumatic injury to the procedure was 9.5 years. There were no procedure related complications or adverse events, and all patients returned to their baseline strength over time—confirming regeneration of the targeted nerve. In six of the eight patients, [pain symptoms](#) dramatically improved following regeneration—reflected as a collective decrease of 4.6 points in Visual Analog Scale pain scores.

Prologo believes that the interventional radiology skillset applied to nerve freezing has many applications for treatment of complex pain. "We are using this regeneration technique not only to manage nerve pain induced by trauma—but also for pudendal neuralgia, post mastectomy

pain, post-surgical pain, and many other conditions historically managed with narcotics," says Prologo. "Interventional radiologists can place these needles safely in precise locations all over the body, allowing access to pain generators that were previously unreachable and giving hope to patients who struggle with [pain](#)."

More information: Abstract LBA 1: Percutaneously induced neuroregeneration for the management of chronic painful mononeuropathies secondary to trauma. J. Prologo, N. Resnick, F. Prologo, E. Friedberg. Annual Scientific Meeting, June 11–16, 2022. www.sirweb.org/

Provided by Society of Interventional Radiology

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