

Freezing nerves knocks pain out cold

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Using a tiny ball of ice, a minimally invasive interventional radiology treatment called cryoneurolysis safely short circuits chronic pain caused by nerve damage, according to data being presented at the Society of Interventional Radiology's 38th Annual Scientific Meeting in New Orleans.

"Cryoneurolysis could have big implications for the millions of people who suffer from neuralgia, which can be unbearable and is very difficult to treat," said William Moore, M.D., medical director of radiology at Stony Brook University School of Medicine in Stony Brook, N.Y.

"Cryoneurolysis offers these patients an innovative [treatment option](#) that provides significant lasting pain relief and allows them to take a lower dose of [pain medication](#)—or even skip drugs altogether," added Moore, an interventional thoracic [radiologist](#) at Stony Brook.

More than 15 million Americans and Europeans suffer from neuralgia, in which nerves are damaged by diabetes, surgery or [traumatic injury](#), Moore noted. Sufferers often rely on pain medications, which have side effects and may not provide enough relief. Cryoneurolysis uses a small probe that is cooled to minus 10 to minus 16 degrees Celsius, creating a freezer burn along the outer layer of the nerve. This interrupts the pain signal to the brain and blunts or eliminates the pain while allowing the damaged nerves to grow over time, explained Moore.

In the study, 20 patients received cryoneurolysis treatment for a variety of [neuralgia](#) syndromes and were evaluated using a visual pain scale questionnaire immediately after treatment during one-week, one-month

and three-month follow-ups after the initial procedure. Prior to treatment, patients' pain plummeted from an average of 8 out of 10 on the pain scale to 2.4 one week after treatment. Pain relief was sustained for about two months after the procedure. Pain increased to an average of 4 out of 10 on the scale after six months due to [nerve regeneration](#), Moore said. He recommends repeat cryoneurolysis treatments as needed per patient, however, some patients will receive up to a year of pain relief from a single treatment, he said.

In the treatment, an interventional radiologist makes a nick in the skin near the source of pain and inserts a small probe about the size of an IV needle that is used to draw blood. Under imaging guidance, the probe is advanced through the skin to the affected nerves. Cooled with pressurized gas, the probe creates ice crystals along the edge of the nerves. "The effect is equivalent to removing the insulation from a wire, decreasing the rate of conductivity of the nerve. Fewer pain signals means less pain, and the nerve remains intact," he explained. Additional comparative studies are needed, said Moore.

More information: "Prospective Evaluation of Cryoneurolysis for Refractory Neuralgia," A.T. Ryan, V. Grechushkin, W. Moore, radiology, B. Durkin, anesthesiology, SUNY Stony Brook, Stony Brook, N.Y., SIR 38th Annual Scientific Meeting, April 13-18, 2013. This abstract can be found at www.SIRmeeting.org

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