

# Hospital performs innovative minimally invasive surgery for severe muscle tone in cerebral palsy

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Jeffrey Raskin, MS, MD, a neurosurgeon at Ann & Robert H. Lurie Children's Hospital of Chicago, performed the first ever computer-guided radiofrequency ablation to decrease excessive muscle tone (called hypertonia) in a child with cerebral palsy.

In hypertonia, muscles are constantly activated, which causes [severe pain](#) and deformity in the bones and joints, and profoundly impacts the child's quality of life. Medications are not always effective, and these patients do not have any other surgical options.

Dr. Raskin's innovative minimally invasive surgical procedure uses a computer system to accurately place electrode needles into the nerve roots that exit the spine. Radiofrequency energy (similar to microwave heat) is then delivered to disconnect the muscle from the brain and [spinal cord](#), which effectively decreases the ability of the nervous system to activate muscles.

While [radiofrequency ablation](#) has been used for decades for relieving pain, the procedure has not been attempted previously for decreasing tone in cerebral palsy.

Dr. Raskin reported his experience with the first patient case in the journal [Operative Neurosurgery](#). Now eight months after the procedure, the benefits are lasting, and the child's quality of life is greatly improved.

"We need to change the paradigm of how we care for patients with severe hypertonia," said Dr. Raskin, Assistant Professor of Neurological Surgery at Northwestern University Feinberg School of Medicine.

"To decrease [muscle tone](#), we need to exclude the dysfunctional nervous system, which is the main driver of pathology. Radiofrequency ablation is a safe and effective approach that is well tolerated, with patients going home the next day. Patients with severe tone despite medications are

encouraged to see a neurosurgeon to see if they are candidates for this treatment."

**More information:** Melissa A. LoPresti et al, Navigated Radiofrequency Ablation Peripheral Rhizotomy for Lumbosacral Hypertonia in a Nonambulatory Patient With Spinal Fusion: Indications, Surgical Techniques, and Lessons Learned, *Operative Neurosurgery* (2023). [DOI: 10.1227/ons.0000000000000860](https://doi.org/10.1227/ons.0000000000000860)

Provided by Ann & Robert H. Lurie Children's Hospital of Chicago

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