



For Immediate Release
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Major Scientific Discovery from Cook Children's Neuroscience Research Center

New Research Published in Top-Tier Scientific Journal 'Brain' Precisely Pinpoints Origin of Seizures in Children

Fort Worth, Texas - Groundbreaking research at Cook Children's Health Care System could help doctors around the globe precisely identify which part of the brain is causing seizures in children with epilepsy. The Neurosciences Research Center at Cook Children's, which is led by Professor Christos Papadelis, Ph.D., successfully demonstrated how noninvasive techniques and advanced computer modeling could be used to measure the electric and magnetic signals generated by the neural cells in the brain. Through this work, the team identified functional networks responsible for generating seizures in the brains of children with epilepsy. The findings, which were published today in the esteemed neurology journal [Brain](#), are significant because they allow physicians to better determine where brain surgery via resection (or ablation with laser heat) will be successful in stopping seizures in children.

"Surgical resection of the brain area where these functional networks are localized offers higher chances of seizure freedom than conventional methods," said Dr. Papadelis, [director of Neuroscience Research](#) at Cook Children's. "This novel method has the potential to improve the outcome of children with epilepsy, particularly those who were previously ineligible for neurosurgery due to the absence of abnormal activity in their electrophysiological conventional diagnostic tests."

One out of every 100 children in the U.S. suffer from epilepsy, a severe brain disease that causes frequent and unprovoked seizures. Anti-seizure drugs can control seizures in most cases, but they fail in 30% of children suffering from epilepsy. Children with uncontrolled seizures are at increased risk for poor long-term intellectual and psychological outcomes, along with a poor health-related quality of life. For these children, brain surgery is the best available treatment since it offers high chances of seizure freedom.

This study is funded by the National Institute of Neurological Disorders and Stroke and is in collaboration with the Boston Children's Hospital, Massachusetts General Hospital and Harvard Medical School. Ludovica Corona, a Ph.D. student of Bioengineering in University of Texas at Arlington, serves as first author in this scientific paper.

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About Cook Children's

Cook Children's is more than a health care system: we strive to be an extension of your family, growing with your child from their first steps to adulthood. By collaborating to deliver on our Promise—to improve the well-being of every child in our care and our communities, we connect the dots for our patients. Between primary and specialty. Between home and medical home. Between short-term care and long-term health.

Based in Fort Worth, Texas, we're 8,000+ dedicated team members strong, passionately caring for over 1.5 million patient encounters each year. Our integrated, not-for-profit organization spans two medical centers (including our new, state-of-the-art location in Prosper), two surgery centers, a physician network, home health services and a health plan. It also includes Child Study Center at Cook Children's, Cook Children's Health Services Inc., and Cook Children's Health Foundation.

And our impact extends beyond the borders of Texas. We proudly treat children from virtually every state in the nation and 32 countries. By seeing the world through the eyes of children and their families from all backgrounds, we're able to shape health care suited to them: connected by kindness, imagination and respect—with an extra dose of magical wonder.

Discover more at [cookchildrens.org](https://www.cookchildrens.org).

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