OPTIMIZING PATIENT TREATMENT THROUGH ELECTRICAL STIMULATION FOR TARGETED DEEP BRAIN STIMULATION

Adamek, Markus, Brunner, Peter, Leuthardt, Eric, Willie, Jon
Weilbaecher, Craig

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Technology Description

Researchers at Washington University in St. Louis have developed a deep brain stimulation approach that can identify optimal stimulation parameters intraoperatively, which significantly reduces the amount of time spent on adapting stimulation parameters, thus reducing costs, and increasing patient satisfaction. Typically, a neurologist selects settings and observes subsequent changes in a patients' symptoms to optimize parameters – this process can take a significant amount of time inside as well as outside of the operating room.

In this new approach, deep brain structures are stimulated electrically using single electrical pulses or distinct frequencies while simultaneously recording electroencephalographic (EEG) activity, either during implantation or post-operatively, thus reducing patient risk compared to other invasive approaches.

Publications

Ritaccio AL, Brunner P, Schalk G. Electrical Stimulation Mapping of the Brain: Basic Principles and Emerging Alternatives. J Clin Neurophysiol. 2018 Mar.

Applications

- Deep brain stimulation

Key Advantages

- Can identify optimal stimulation parameters intraoperatively
- Reduces time spent on adapting stimulation parameters
- Increases patient satisfaction, optimizes treatment and reduces costs

Patents

Patent application filed

Related Web Links – Peter Brunner profile; Brunner lab