

MEASURING SPONTANEOUS PLASTICITY PULSES IN PATIENTS WITH BRAIN INJURIES

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Technology Description

Researchers at Washington University in St. Louis have developed an analysis stream to detect and measure spontaneous plasticity pulses in patients with brain injuries. In stark contrast to existing methodologies (resting-state functional MRI and resting state functional connectivity), this new method uses analytics that will allow neurologists, neurosurgeons, psychiatrists, and rehabilitation doctors to more effectively track objective markers of how a patients' brain changes in response to intervention and improve outcome prognosis after brain injury.

This method can also be used in the development of neuroactive medications aimed at improving plasticity.

Stage of Research

Observed plasticity pulses in 3 individuals during a disuse paradigm

Publications

Dosenbach NUF. [Plasticity and Spontaneous Activity Pulses in Disused Human Brain Circuits](#). Neuron. 2020 Aug 5;107(3):580-589.e6.

Applications

- Tracking spontaneous plasticity pulses
- Extracting and examining functional network organization and reorganization
- Improving brain injury outcomes

Key Advantages

- **Provides non-invasive objective measurements**
- **Can stratify patients into low/med/high plasticity groups**
- **Pulses can be easily detectable in single subjects**

Patents

Patent application filed

Related Web Links – [Nico Dosenbach Profile](#); [Dosenbach Lab](#)