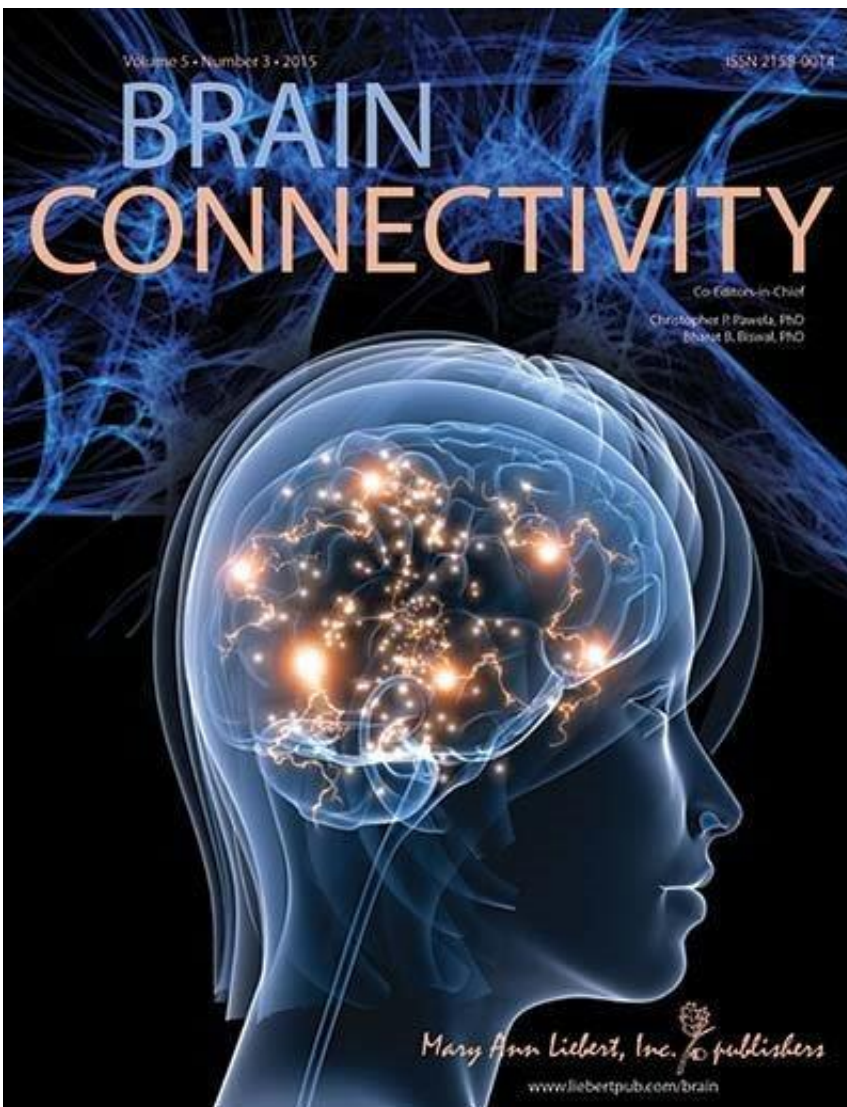


# Epilepsy alters organization of brain networks and functional efficiency

April 29 2015

---



Credit: Mary Ann Liebert, Inc., publishers

Epilepsy, a disorder characterized by abnormal neuronal activity in certain regions of the brain, leads to organizational changes that can alter brain efficiency at the level of the whole brain. This occurs across functional networks that connect different brain regions and within individual brain regions, as described in an article in *Brain Connectivity*.

Using data obtained from functional magnetic resonance imaging (fMRI) studies of the brains of two groups of age- and gender-matched individuals—one group with [epilepsy](#) and one without—Jie Song, PhD and coauthors, University of Wisconsin-Madison, developed a model of the functional networks and connectivity in the resting-state brain. They found distinct patterns of brain reorganizational changes in epilepsy, with functional connections between brain networks being either increased or decreased. In the article "[Disrupted Brain Functional Organization in Epilepsy Revealed by Graph Theory Analysis](#)," the authors conclude that epilepsy alters brain efficiency at the whole-brain level.

"Epilepsy is a neurological disorder characterized by extreme brain dysfunction. The work by Dr. Song and her colleagues provides significant insight into the brain structures that are affected by the disorder," says Christopher Pawela, PhD, Co-Editor-in-Chief of *Brain Connectivity* and Assistant Professor, Medical College of Wisconsin. "This work is central to large scale brain initiatives recently launched by the National Institutes of Health such as the 'Connectomes Related to Human Disease' funding mechanism."

**More information:** The article is available free on the *Brain Connectivity* website until May 29, 2015.

Provided by Mary Ann Liebert, Inc

Citation: Epilepsy alters organization of brain networks and functional efficiency (2015, April 29) retrieved 24 April 2024 from <https://medicalxpress.com/news/2015-04-epilepsy-brain-networks-functional-efficiency.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.