Predicting brain surgery outcomes

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For patients with a common type of epilepsy known as temporal lobe epilepsy (TLE), the only treatment choices are anti-seizure drugs or surgery to remove the focus of the seizures in part of the brain known as the hippocampus.

Of those patients who have surgery, only about 60 to 70 percent will remain seizure-free after three years. It is difficult to predict beforehand which patients will or will not benefit from the operation.

Recently Victoria Morgan, Ph.D., Adam W. Anderson, Ph.D., and colleagues computed a model of pre-surgical functional and structural connectivity in the brain associated with TLE using magnetic resonance imaging (MRI).

Reporting last month in the journal *Epilepsia*, the researchers showed that the model predicted outcomes one year after surgery with 100 percent specificity and sensitivity.

The study demonstrates the potential for using connectivity as a clinical tool for identifying the best candidates for epilepsy surgery.

  More information: Victoria L. Morgan et al. Magnetic resonance imaging connectivity for the prediction of seizure outcome in temporal lobe epilepsy, *Epilepsia* (2017). DOI: 10.1111/epi.13762

  Provided by Vanderbilt University

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