

Study: Theta rhythm reduces seizure rate

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Texas scientists say the brain's septum helps stop epileptic seizures by inducing electrical activity in another area of the brain called the hippocampus.

Researchers at the University of Texas-Brownsville found that imposing a normal "theta" rhythm on epileptic rats reduced the rate of seizures by 86 percent to 97 percent.

The septum acts as a conductor, orchestrating brain impulses as they pass from the brain stem through the septum and on to the hippocampus, said the study's lead researcher, Luis Colom. The hippocampus is a part of the brain that plays a role in memory, spatial navigation and sensory motor integration, among other functions.

"My hypothesis is that the septum keeps the electrical activity of neurons within certain areas of the brain working within normal ranges," Colom said. "By keeping the neurons firing normally, the septum inhibits neuronal hyperexcitability, such as epilepsy, and hypoexcitability, such as Alzheimer's disease." In addition, he said, septal impulses may help to maintain the anatomical integrity of other brain structures.

The research appears in the June issue of the *Journal of Neurophysiology*.

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