

Researchers make waves into what awakens epilepsy

September 29 2010, By Brian Murphy

A University of Alberta research team has discovered a potential new trigger for epileptic seizures that strike during deep sleep.

Epilepsy is a medical condition that causes normal electrical activity in the brain to suddenly spike and become an overwhelming storm of electrical signals that can temporarily cause the sufferer to lose self awareness and even consciousness. Millions of people world-wide are affected.

Psychology researcher at the U of A Clayton Dickson and his team went looking for the triggering event in the brain that brings on an epileptic event. They focused on a part of the brain that is prone to what Dickson describes as a particularly devastating type of epilepsy.

“Unlike other forms of the condition, in a large proportion of cases of complex partial epilepsy can’t be controlled with drugs,” said Dickson. “Usually surgery on the [temporal lobe](#) is the only option.”

Dickson says [epileptic seizures](#) strike while people are awake and asleep. “While we’re sleeping the brain may seem like its offline, but there’s lots of co-ordinated [neural activity](#) going on to perform important tasks like memory retention.”

Dickson’s team looked at a stage of sleep-like [brain activity](#) known as slow wave and found that in the highly sensitive temporal lobe of the brain, the slow waves themselves can allow [neuronal activity](#) to suddenly

and inexplicably spike out of control.

Dickson says that until now, research into what triggers an epileptic seizure hadn't targeted this specific period of activity in the temporal lobe region of the brain.

“We’ve opened the door to new ways of thinking about the onset of certain epileptic events. There’s no cure for epilepsy, but this research shows us that during deep sleep someone suffering complex partial [epilepsy](#) is really vulnerable.”

More information: The work of Dickson and fellow U of A researchers was published earlier this month by the *Journal of Neurophysiology*.

Provided by University of Alberta

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