

A new understanding of why seizures occur with alcohol withdrawal

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Epileptic seizures are the most dramatic and prominent aspect of the "alcohol withdrawal syndrome" that occurs when a person abruptly stops a long-term or chronic drinking habit. Researchers have shown that the flow of calcium ions into brain cells via voltage-gated calcium channels plays an important role in the generation of alcohol withdrawal seizures, because blocking this flow suppresses these seizures. But do the changes in calcium currents contribute to alcohol withdrawal seizures or are they a consequence of the seizures?

Using a careful analysis of correlations between the course of alcohol withdrawal seizures and the expression of [calcium](#) currents, Georgetown University Medical Center researchers found that the enhancement of total calcium current density in pre-clinical animal studies occur prior to the onset of alcohol withdrawal seizures. The research presented at 39th annual meeting of the Society for Neuroscience also shows that calcium currents remain enhanced during the period of seizure susceptibility, but return to control levels when the period of seizure susceptibility is over.

"These preliminary findings are the first to indicate that altered calcium channel activity contributes to the occurrence of alcohol withdrawal seizures," explains lead author, Prosper N'Gouemo, PhD, an assistant professor in the department of pediatrics at GUMC. "The next step in our research is to determine which types of voltage-gated [calcium channels](#) contribute to the enhanced current density that takes place before the onset of alcohol withdrawal seizures so a potential treatment can be developed."

Source: Georgetown University Medical Center ([news](#) : [web](#))

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