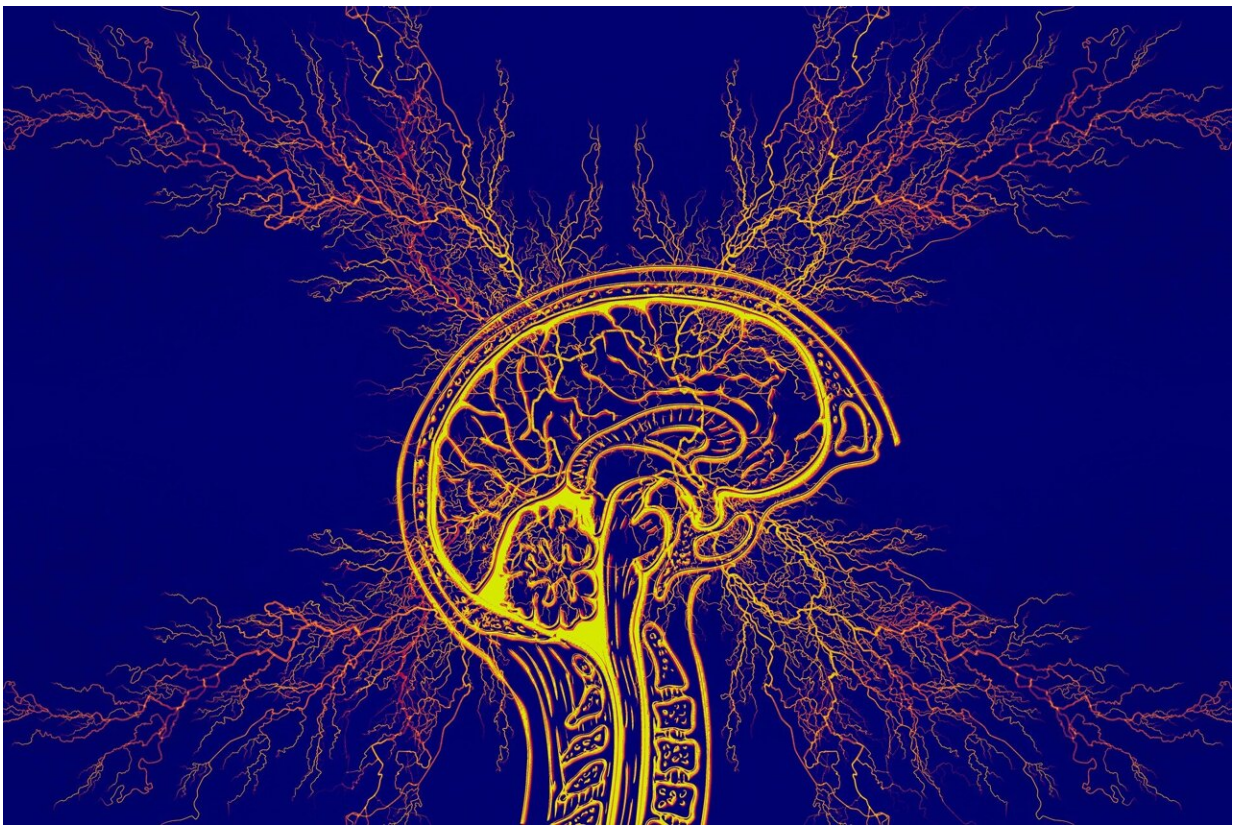


Study searchers for early indicators to predict care needs of children with life-threatening seizures

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Status epilepticus, a prolonged, potentially life-threatening seizure, is epilepsy's most severe manifestation. Patients known to have refractory

status epilepticus are more likely to need ICU care if initial treatment is delayed. But what about the broader population of children who come to the emergency room in status epilepticus? Are there any early indicators to predict their care needs or, ideally, to prevent refractory status epilepticus?

An observational case-control study led by Tobias Loddenkemper, MD, director of Clinical Epilepsy Research at Boston Children's Hospital, looked at nearly 600 episodes of status epilepticus that brought children to the ER across centers in North America. The [cohort](#) was drawn from the Pediatric Status Epilepticus Research Group (pSERG), founded at Boston Children's more than a decade ago.

The study compared two groups:

- children whose seizures stopped after benzodiazepines or after a second-line anticonvulsant
- children with refractory status epilepticus, needing a third drug and/or ICU care to stop their seizures.

Somewhat surprisingly, the time between arrival in the ER and first- or second-line treatment was not the strongest predictor of whether a child's seizure stopped. Instead, in a multivariate analysis, two significant predictors emerged: a [family history](#) of seizures and having a prescription for rectal diazepam. Both were associated with lower odds of having refractory status epilepticus. The study was recently published in *Neurology*.

Family preparation is important

Loddenkemper thinks these factors reflect that the family is more familiar with managing seizures and more prepared for emergencies by virtue of having a prescription for a rescue medication. Such children

could potentially avoid unnecessary intravenous treatment, he says.

"These families and [patients](#) were trained and aware of what to do," he says. "We're not sure if this is because of greater health literacy or better management by their providers."

However, having neither a family history nor a prescription for a rescue medication could indicate less overall seizure control and the need for early, intensive treatment to avoid a refractory seizure, says Loddenkemper.

The Epilepsy Center at Boston Children's provides patients with a detailed epilepsy action plan to help avoid emergencies. The Center also works with [insurance companies](#) to make sure all families have access to rescue medications (either nasal or rectal), since these can be expensive.

"We want to prepare families and rescue children at risk for refractory status epilepticus as quickly as possible to prevent complications," Loddenkemper says. "We're learning that there's more and more you can do to prevent prolonged seizures and keep children out of the ICU."

More information: Katrina Peariso et al, Early Clinical Variables Associated With Refractory Convulsive Status Epilepticus in Children, *Neurology* (2023). [DOI: 10.1212/WNL.0000000000207472](https://doi.org/10.1212/WNL.0000000000207472)

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