Update Dinner

Epilepsy Families Southeast Wisconsin hosted an update dinner on November 13, 2025 at the Hilton Garden Inn Milwaukee Airport. About 50 people were in attendance. The food included: bruschetta, sirloin, lasagna, sauteed chicken breast, and whole grain pasta. The food for the dinner, especially the coffee, was very good. A doctor, Adi Vuppala, from Froedtert and the Medical College of Wisconsin, brought us up to date on the latest news on epilepsy. He also talked about the different types of seizures. One person even said, "Very sweet presenter made me understand it more." Another gentleman with epilepsy talked about a piece of his artwork, he gave an inspirational speech.

From Caraway to Cure: Engineering CDB-like Seizure Treatments Without Cannabis

A UNLV team of researchers has co-opted a common kitchen spice to create a new class of cannabidiol (CBD)-like medicines that show powerful seizure-reducing effects – offering a safer, more affordable, more effective treatment for childhood seizure disorders than existing frontline therapies.

Caraway seeds – a seasoning commonly used in both savory and sweet dishes, and also known as meridian fennel – are the key ingredient behind researchers' method. By altering the shape of the seeds' main chemical component, the scientists were able enhance the most favorable therapeutic properties of CBD and create a library of CBD-like medicines that are free from THC (the psychoactive compound in cannabis). Preclinical trials showed that the caraway-derived therapies packed a greater punch in stopping seizures – and did so without the adverse brain effects known to occur with long-term use of

benzodiazepines, the class of anticonvulsant drugs most popularly prescribed for treating developmental epilepsy syndromes.

Read more at https://www.unlv.edu/news/release/caraway-cure-engineering-cbd-seizure-treatments-without-cannabis

Website accessed on December 3, 2025.

Personalizing Electrical Stimulation for Focal Epilepsy

In a relentless pursuit to refine treatments for focal epilepsy, researchers have taken a groundbreaking step forward by harnessing the intricate connectivity networks between the thalamus and cortex – termed thalamocortical hodology. This approach promises to revolutionize how electrical stimulation therapies are personalized, offering hope to millions suffering from this debilitating condition worldwide. This innovative framework leverages advanced neural mapping and stimulation techniques to tailor interventions with unprecedented precision.

Read more at https://bioengineer.org/personalizing-electrical-stimulation-for-focal-epilepsy/#google_vignette

Website accessed December 4, 2025.

Scientists Fix Genetic Defect in Mice Tied to Epilepsy

In an exciting scientific first, researchers at the Allen Institute successfully designed a new gene therapy that reversed symptoms related to SYNGAP1-related disorders (SRD) in mice. These are a class of brain disorders that can lead to severe and debilitating symptoms including intellectual disability, epilepsy, motor problems, and risk-taking behavior in humans. In most cases, SRDs are caused when someone has only one working copy of the SYNGAP1 gene instead of the normal two.

The findings represent the first successful gene supplementation therapy for SRDs in which an adeno associate virus (AAV) was used to deliver a working copy of the SYNGAP1 gene into brain cells.

Read more at https://alleninstitute.org/news/scientists-fix-genetic-defect-in-mice-tied-to-brain-disorders-that-include-autism-and-epilepsy/

Website accessed December 4, 2025.

Research Reveals Structural Mechanism Behind Anti-Epilepsy Therapies

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St. Jude Children's Research Hospital scientists captured structures of the synaptic vesicle protein SV2A, an anti-seizure drug target, showing the power of a secondary binding site and providing guidance for drug development.

A multi-institute team established for the first time how certain drugs used to treat epilepsy affect their target. Using cyro-electron microscopy, the team revealed the structural changes that occur to SV2A, a membrane protein found In nearly all neurons, when anti-epilepsy drugs bind.

They further showed how experimental modulators bind an alternative site on SV2A to increase the potency of these drugs. The findings shed light on a poorly understood but therapeutically important protein and provide guidance for therapeutic optimization.

Read more at https://www.stjude.org/media-resources/news-releases/2025-medicine-science-news/research-reveals-structural-mechanism-behind-anti-epilepsy-therapies.html

Website accessed on December 5, 2025.

“Smart” Shirt Monitors and Detects Epileptic Seizures in Real Time

Researchers are now exploring other avenues, such as detecting or even predicting seizures to prevent the injuries that they can cause. “Detecting a seizure means realizing it’s happening, like opening your umbrella when it starts raining, whereas predicting means realizing that it’s coming, like knowing it’s going to rain and taking an umbrella when you go out,” explained Nguyen, holder of a Canada Research Chair in Epilepsy and Functional Anatomy of the Human Brain. While prediction remains a complex scientific challenge, real-time detection is within reach thanks to devices equipped with physiological sensors that can be worn or placed next to the body.

One focus of the research is a biometric shirt developed in Montreal. Originally designed for athletes, this “smart” shirt is equipped with sensors to track respiratory activity, electrodes to measure heart activity (ECG) and an accelerometer to detect abnormal movements. Together, these data can identify the typical clinical signs of a seizure, such as respiratory abnormalities, rapid heart rate and limb tremors. Once a seizure is detected, the device can automatically alert the wearer, a loved one or health care professional, enabling prompt assistance.

Read more at https://medicalxpress.com/news/2025-11-smart-shirt-epileptic-seizures-real.html

Website accessed on December 10, 225.

Study Links Heart Attacks to Late-Onset Epilepsy in Older Adults

Older adults who have a heart attack may be more likely to develop epilepsy later in life. While the study shows a link between these conditions, it does not prove cause and effect.

“Our study found a first heart attack may flag cerebrovascular disease, a condition that affects blood vessels in the brain, which may raise the risk of epilepsy.” The study included 3,174 adults who were stroke-free and had no history of heart attack or epilepsy at the start of the study. They had an average age of 69 and were followed up to 30 years. During the study, 296 people had a heart attack, 120 developed late-onset epilepsy, which is epilepsy after age 60.

Read more at https://medicalxpress.com/news/2025-11-links-heart-late-onset-epilepsy.html

Website accessed on December 10, 2025.