

Brain implants could control epileptic seizures with chemical stimulants

People who suffer severe epileptic seizures may one day be able to control or even prevent them with an electronic device implanted directly into the brain. An oncoming seizure would trigger the targeted release of a brain-signaling chemical to stop the seizure in its tracks, [according to a new study](#) published in Science Advances. The device has only been tested on mice so far, but the results look promising.

...

When a seizure is detected, it uses a tiny ion pump to send a neurotransmitter directly to the source of the seizure, using electric fields to guide the chemical out of the device (and also to control the dosage). This tells the neurons to stop firing and effectively ends the seizure.

...

The researchers found they only needed small doses to prevent seizures in mice, and because the device uses natural neurotransmitters, the brain absorbed them quickly. That combination of lower dosage and swift uptake may offer a distinct advantage over electrical-stimulation brain implants.

...

“The advantage of [targeted] chemical delivery is that the effect on cells is very specific,” [researcher Christopher] Proctor said. “The neurotransmitters used in this study have well-understood effects on cells, and cells already use them to communicate with each other. So, in a sense, we can communicate with cells in their native language.”

Read full, original post: [Implantable brain device could stop epileptic seizures in their tracks](#)