

# Mind eyes warning signs

World-first epilepsy alert system will now be made in Victoria



Georgia Riordan, 23, was diagnosed with epilepsy five years ago. Picture: SARAH MATRAY

**BRIGID O'CONNELL**

A MELBOURNE-designed and world-first “fitbit for the brain”, which monitors epileptic seizures and warns patients of impending episodes, has been saved from being poached overseas and will be tested in Victorian patients next year. The *Herald Sun* reported last year it was looking probable the implantable brain device would need to be manufactured offshore. But medical device company Cochlear has come to the rescue, investing \$3.65 million into a Melbourne start-up company to ensure the “Minder” device is made and designed in Australia, and tested locally first.

The company, called Epi-Minder, is led by researchers from the Bionics Institute, St Vincent’s Hospital and University of Melbourne, and is the result of four years of research by a team of 100 neurologists, engineers, neurosurgeons and neuroscientists.

The first 20 devices have been ordered and their aim is

## HOW THE DEVICE WORKS

**1** The device is inserted behind the ear, with the string of four electrodes running under the scalp. An external battery worn over the ear powers the device.

**2** It detects brain wave patterns that are translated into readable EEG signals on an external phone or computer.

**3** By reading the unique “weather patterns” of brain waves, the device learns when a seizure is imminent, and sends an alert to the patient, doctor and carer.

**4** The device can detect if the person has fallen or stopped moving while seizing, or if the episode is unusually long, and can call for assistance.

**Professor Mark Cook**

to record and decode the unique “weather patterns” of brainwaves, so an alert can be sent to the patient and they can make treatment or lifestyle changes to best control their seizures.

Medication or surgery doesn’t work for a third of the

250,000 Australians with epilepsy.

St Vincent’s Director of Neurology Professor Mark Cook got the idea 15 years ago when the Cochlear inventor, Professor Graeme Clark, brought the implant to their shared laboratory.

“It wasn’t as invasive as other systems, and it had very sophisticated electronics I could see being useful for epilepsy. Being made locally was an advantage, too,” Prof Cook said. “The reason why we need Cochlear is they’ve got the technology to do what we need

now, and to do even better things in the future. That’s the most important part of the relationship.”

Bionics Institute chief Robert Klupacs said it was vital researchers found industry partners and investors to translate their laboratory breakthroughs into clinical outcomes. “By creating a company and bringing skills from such an illustrious group that is Cochlear — alongside our engineers and clinicians — it’s the model for medical research translation for the future,” Mr Klupacs said.

Georgia Riordan, 23, has spent three years gaining the confidence to start driving again after controlling her seizures with medication.

“There is a lot of nervousness and anxiety that comes with epilepsy, and not knowing when a seizure is going to happen,” Ms Riordan said. “If something could warn me I was going to have a seizure, I could take myself away, tell a friend and plan my day better to protect my independence.” [brigid.oconnell@news.com.au](mailto:brigid.oconnell@news.com.au)