



RESEARCH REPORT

U of S Research on the treatment of Temporal Lobe Epilepsy Results in a Surprise

In June, Epilepsy Canada awarded a summer studentship research grant to a University of Saskatchewan student. The project was aimed at developing a course of seizure management for a significant number of patients with temporal lobe epilepsy. Currently, these patients have limited therapy options as their seizures have proven stubbornly, drug resistant.

Jocelyn Stockwell was the beneficiary of the grant, and is part of a research team at the University of Saskatchewan under the supervision of Dr. Francisco Cayabyab. Their research aims to determine if Perampanel, a newer drug therapy that has proven efficacious in treating drug-resistant seizures might be more effective in mitigating or eliminating seizure activity when teamed with selected second medication: an A2AR receptor antagonist.

Currently 70 percent of patients with Temporal Lobe Epilepsy do not benefit from pharmacy therapeutics. Years of uncontrolled seizures leads to additional cognitive and psychiatric challenges for these patients.



Jocelyn
Stockwell

To date, the results of the research have been surprising...

Although Perampanel has been found to be effective in the treatment of drug-resistant epilepsy, when combined with increased adenosine A1R signaling, as may occur in the aging brain, the effects of Perampanel were found to no longer be protective and in fact, exacerbate over-excitability of neurons.

The combination of increased adenosine signaling and adenosine levels in the brain may potentially indicate that Perampanel may have limited efficacy in cases of drug-resistant epilepsy. Jocelyn reports that further investigation is necessary to find the answers.

Jocelyn received an Honours degree in Physiology and Pharmacology in 2013 from the University of Saskatchewan and Master's degree in 2014. She is working toward by PhD under the supervision of Dr. Cayabyab and anticipates finishing her degree in 2018. Her goal is to work in the field of neuroprotection and therapeutic drug development in her career as a researcher. She told us, "I am very passionate about my research work and strive to gain understanding into the mechanisms of neurodegeneration in the brain in multiple disorders such as epilepsy, stroke, and Parkinson's disease."

The University of Saskatchewan is uniquely equipped to carry out this research as it's the home of the first Epilepsy Brain Bank in Canada. Once an initial phase of testing has been successfully completed in pre-clinical animal studies, the team will move to replicating the same result using brain-banked tissue.

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Epilepsy Canada is a national non-profit organization that is celebrating its 50th anniversary. Since 1966, it has supported research into all aspects of epilepsy. Approved research projects are selected through a rigorous grant review process carried out by a committee of individuals from the medical and scientific communities across Canada. This peer review process helps ensure that we are making the best possible use of research dollars by investing in the most promising epilepsy research.



Summer student bursaries are intended for third and fourth year undergraduates earning a B.Sc., graduate students in psychology, sociology, biochemistry, and medical students. The purpose of this bursary is to encourage individuals to pursue careers in epilepsy, in research or practice settings.

2017 Research Fellowship Award.

The goal is to enhance the quality of care for epilepsy patients and an eventual cure in Canada.

A new Epilepsy Research Fellowship is being offered by Epilepsy Canada. The goal of the Fellowship program is to develop expertise in clinical or basic sciences epilepsy research and to enhance the quality of care for epilepsy patients and an eventual cure in Canada. The award is designed primarily as a training program; it is not intended for individuals currently holding faculty appointment. The award (valued at \$38,000 CDN) is for one year only, July 1, 2017 – June 30, 2018.

Applicants must have an M.D. or a Ph.D. degree and must not be more than 5-years post Ph.D. completion. Those with an MD must have completed residency training and be enrolled in a recognized Fellowship program.

Deadline for submission of applications is December 1st, 2016. The Grant Review Committee's decision will be made public by February 1st, 2017

The logo for "Fight Back Against Epilepsy" features a red fist holding a shield. Above the fist is the Epilepsy Canada logo and the text "FIGHT BACK AGAINST EPILEPSY". Below the fist is the text "Contact epilepsycanada@epilepsy.ca or phone 1-877-734-0873".

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Across the country, families who have been touched by epilepsy are fighting back and making a real difference. They are scoring direct hits against epilepsy by raising awareness and research funds in their communities. Epilepsy is a tough adversary but we're confident it can be beaten.

We're ready to help you with some impressive punching power. Epilepsy Canada has a team with marketing know how, fundraising expertise and online tools that make event administration and tax receipting easy. Working with us also ensures that the money raised is directed to worthy research projects at Canadian hospitals and universities.

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