



**First National Conference  
on the Consequences of  
Sodium Valproate**

## IN THIS ISSUE:

- Brexit: will it affect epilepsy medication?
- Kevin O'Connell: my first seizure
- Mark O'Reilly: epilepsy and fitness
- Prof. Mark Cunningham: the role of neuroscience

## CONTENTS

3. News Update
4. Impact of Brexit on Medication Supplies
5. Report on Sodium Valproate
6. TFS Award Winning Course
7. Overcoming my Epilepsy
8. The Role of Neuroscience
9. New Light on Mitochondrial Epilepsy
10. Epilepsy and Exercise
11. Learning to breathe again
12. Fundraising
13. Joe Schmidt supports International Epilepsy Day
14. Regional Events

### Front cover:

Pictured at the First National Conference on the consequences of Sodium Valproate (I-r) are Geoff Day (OACS Ireland); Karen Keely (Chairperson, OACS Ireland) and Dr Peter Turnpenny, (Consultant Geneticist, Exeter, UK). The conference was held at Trinity College on March 22nd.



249 Crumlin Road,  
Dublin 12.

Tel: 01 4557500

Fax: 01 4557013

Email: [info@epilepsy.ie](mailto:info@epilepsy.ie)

Web: [www.epilepsy.ie](http://www.epilepsy.ie)

Registered Charity Number:  
20010553

CHY Number: 6170



Design and layout by  
PlipSpace.com

Printed by Doggett Print & Design

## NOTE FROM THE EDITOR

Conor Culkin



We have another busy issue of Epilepsy News, which includes a variety of articles I hope you will enjoy. Speakers from the recent conference on the consequences of Sodium Valproate feature on the front cover of this issue. This important event brought together professionals and policy makers with the families affected by Sodium Valproate and was organised by Epilepsy Ireland, HSE, OACS Ireland, FACS Forum and Trinity College. On page 5 we have the latest news on the drug which includes a HSE report on the issue. Brexit has created uncertainty about

medication and on the previous page we clarify the situation in relation to epilepsy drugs.

This issue also includes a revealing personal story from Kevin O'Connell (Page 7) a 19 year old journalism student who will document his epilepsy story in a series of articles for

Epilepsy News. On page 9, Dr. Gareth Morris from FutureNeuro discusses mitochondrial epilepsy, a piece which is taken from a new blog called 'Epilepsy In English'. In addition,

fitness expert Mark O'Reilly offers some exercise tips for people with epilepsy on how you can start and most importantly be safe while improving your health. On the following page Epilepsy Ireland member Jenny Snook discusses an alternative treatment that helped her anxiety and epilepsy, which is known as 'The Buteyko Breathing Method'.

Finally, I would like to announce some personal news. After nearly three years editing Epilepsy News and working fulltime as Epilepsy Ireland Communications Officer I am moving onto pastures new. I would like to thank everyone who helped contribute to this magazine since the autumn issue of 2016. I hope the articles have been informative and thank everyone who has contacted me with feedback and suggestions.

This is a great organisation with lots of dedicated people and I hope I've played a small part in Epilepsy Ireland's success. Best of luck to all for the future.

## STAFF APPOINTMENT: LUKE MEANY



Luke Meany is the newest member of the Fundraising and Communications team here at Epilepsy Ireland. Luke joined the team at end of November as a Graduate Fundraising and Communications trainee. Luke is highly enthusiastic about his new role and is motivated to help develop numerous fundraising initiatives here at Epilepsy Ireland. Luke studied Sociology and Social policy in UCD and most recently received his Master's Degree in Sociology and Politics from NUIG.



### Michael Fassbender shows his support for Brain Awareness Week

Internationally renowned actor Michael Fassbender showed his support for the Love your Brain campaign for National Brain Awareness Week (March 11th to 17th). In his endorsement video, Michael highlights the need to raise awareness on behalf of the 800,000 Irish people living with neurological conditions.

The campaign aim was to promote greater awareness and understanding of the brain and brain conditions as well as the need for more investment in services, research and prevention. Love your Brain was supported by over 20 patient organisations including Epilepsy Ireland and research groups were involved in organising events for Brain Awareness Week throughout the country. For more information visit [loveyourbrain.ie](http://loveyourbrain.ie).

[GO https://goo.gl/wecMtw](https://goo.gl/wecMtw)

### The Links between Stress and Seizures

Professor Stafford Lightman at the University of Bristol began investigating the links between stress and seizures in 2014. This research is vital as although the association between stress and seizures has been noted it is still not fully understood. Lightman's team from University of Bristol and the University of Exeter placed their focus on the research of cortisol. This is a hormone that is released by the body in response to stress. The research team used mathematical and preclinical models of epilepsy so that they could examine how the hormone cortisol changes the electrical activity in areas of the brain that are generally linked with seizures. The team was able to examine how increased levels of cortisol affected seizure activity in comparison to models without epilepsy.

The study found that increased levels of cortisol alone did not play a role in increasing the occurrence of seizures. However they also found that exposure to a loud sound did increase the occurrence of seizures. This indicates that other components of our body's biological

response to stress are related to seizure activity.

[GO https://goo.gl/fXNdJs](https://goo.gl/fXNdJs)

### European Scientific Journal Highlights the Contribution of Irish Neurological Charities

A collaborative paper led by the Neurological Alliance of Ireland has been published in the European Journal of Neuroscience entitled "Building a Supportive Framework for Brain Research in Ireland". The paper highlights the vital role played by neurological charities (including Epilepsy Ireland) in supporting research into neurological conditions in Ireland and profiles a number of NAI member organisations.

Overall, the paper provides an important overview of the landscape for brain research in Ireland, highlighting the progress and potential in exploring rare and genetic conditions but pointing to the need for dedicated investment in neuroscience research as well as the development of an infrastructure to support research which includes technology, legislative changes, research networks and support for early career researchers and clinicians.

You can download the publication via the link below.

[GO https://rdcu.be/biOuo](https://rdcu.be/biOuo)



### Nocturnal Seizures with Convulsions Linked to SUDEP

A study which focused on patients with intellectual disabilities who reside in care homes found that seizures marked with convulsions that occur at night are more likely to be associated with sudden unexpected death in epilepsy (SUDEP). The research team from Leiden University Medical Center (Netherlands) examined the medical records of patients who died as a result of SUDEP from two different residential care homes over a 25 year period (1987 – 2012). The investigators identified 60 cases of SUDEP along with 198 different age and residential control cases. They

then correlated the degree of night-time supervision (e.g, no supervision; a listening device, roommate, or physical checks at 15-minute intervals; or 2 of the following: a listening device, roommate, additional device, or physical checks at 15-minute intervals) with outcomes.

The total number of SUDEP instances was 3.53 cases per thousand patients. The first residential centre incidence rate was 2.21 cases per thousand patients in comparison to the second centre where a rate of 6.12 cases per thousand was recorded. Importantly, the study found that the first centre had higher levels of nocturnal supervision than the second centre. A larger proportion of patients with SUDEP were more likely to have nocturnal convulsive seizures compared with control participants. Patients who died from SUDEP were also more likely to have a higher frequency of nocturnal convulsive seizures.

As nocturnal seizures and sleeping position often are factors in SUDEP, investigators emphasized the importance of nocturnal supervision in preventing SUDEP.

[GO https://goo.gl/1a1r5F](https://goo.gl/1a1r5F)

### FutureNeuro receive funding for new epilepsy treatments

FutureNeuro researcher, Dr. Gary Brennan has recently received funding as part of a Government investment of €10.8 million in research funding.

Dr Brennan, who is also a StAR Research Lecturer at the Department of Physiology and Medical Physics, RCSI has received a grant of €419,472. The funding will enable Dr Brennan and his team at FutureNeuro to study how gene regulation and protein generation could inform new treatments for epilepsy.

Meanwhile, Principal Investigator with FutureNeuro Professor Matthew Campbell has been awarded €125,610 in funding as part of a €4.5 million investment by Science Foundation Ireland.

His project will investigate whether restoring the function of a gene which regulates the blood-brain-barrier and has been found to be disrupted in brain material from epilepsy patients will prevent seizure activity and thereby treat refractory epilepsy.

Funding such as the above is a positive step both for Irish research and people with epilepsy.

[GO https://goo.gl/wWLiR3](https://goo.gl/wWLiR3)

# IMPACT OF BREXIT ON EPILEPSY MEDICATION

## SUPPLIES IN IRELAND



Concerns have been raised in the media in recent months regarding possible interruptions to the supply of essential medications in Ireland that might occur in the event of a no-deal Brexit. Currently, about 60% of all medications used in Ireland are imported from or pass through Britain.

In January, the Taoiseach said that the Government was monitoring a 'watchlist' of drugs which could be subject to shortages in a no-deal Brexit. The medications on this list were not disclosed but reports indicate that the greatest concern is around specialist drugs that have for example a short shelf life or those that require storage at very low temperatures. These special categories do not include anti-epileptic drugs (AEDs). Tanaiste Simon Coveney later disputed the existence of any such 'watchlist'.

The government has consistently pointed out that even if there is a no-deal Brexit, there will not be an immediate effect in relation to the supply of medicines in Ireland. The government have also warned against stockpiling medications, which is something that could actually cause a supply disruption in itself.



**An Taoiseach, Leo Varadkar, said that the Government was monitoring a 'watchlist' of drugs.**

In February, Epilepsy Ireland reached out to all the major pharmaceutical companies who supply anti-epileptic drugs (AEDs) in Ireland, requesting a brief update on their plans to ensure supply of their AEDs within Ireland over the coming months.

The feedback we have received indicates that manufacturers have taken a range of positive steps over the past 18 months to ensure that there will be no interruption to supplies of AEDs in the coming months, regardless of what kind of Brexit occurs.

Steps taken include:

- Re-routing supply chains to remove the transportation/importation via the UK
- Ensuring that adequate reserves of AEDs are in place within Ireland
- Relocating drug licences anchored in the UK to other European countries

**All the responses received from individual manufacturers have been collated on our website: <https://goo.gl/hzv5Ck>**

Based on feedback and conversations that we have had with manufacturers on this subject, we do not have any current concerns that there will be any disruption to the supply of AEDs in Ireland in the coming months. Should this change in any way, we will provide updates on our website and social media channels.



**60% of all medications used in Ireland are imported from or pass through Britain.**

In addition, the Department of Health, Health Products Regulatory Authority (HPRA) and HSE have put plans in place to minimise the risks of supply interruptions. The Department does not anticipate any immediate impact on supplies following Brexit. The HPRA have requested manufacturers to immediately engage with them if they believe that Brexit may impact on their ability to supply a medicine to the Irish market.

It should however be noted that from time to time, shortages in a particular medication can occur for a variety of different reasons. Both the HPRA and the Irish Pharmacy Union report information on product shortages and this is monitored by Epilepsy Ireland on an ongoing basis. For example, we recently highlighted a temporary shortage of Epilim 100mg and the steps that are being taken to ensure patient safety. These temporary shortages, unrelated to Brexit may continue to occur from time to time and EI will continue to monitor and report on these in the coming months.

### **Further Information:**

- HPRA Brexit Updates - [hpra.ie/brexit](https://hpra.ie/brexit)
- Department of Health Brexit page - [health.gov.ie/?s=brexit](https://health.gov.ie/?s=brexit)
- Irish Pharmaceutical Healthcare Association - [www.ipha.ie](https://www.ipha.ie)

**If you have any concerns about medication supplies, please contact your pharmacist or get in touch with Epilepsy Ireland at 01 4557500 or your local Epilepsy Ireland office (see page 14 for details).**

# HSE REPORT ON PRENATAL EXPOSURE TO

## SODIUM VALPROATE 1975 – 2015



**A group of parents who include Karen Keely of OACS Ireland at the very first Sodium Valproate Conference in Trinity College Dublin which was co-hosted by Epilepsy Ireland in March. Also pictured are Consultant Neurologist Prof. Colin Doherty and Senator Rose Conway-Walsh.**

As part of its Valproate Response Project established in 2018, the HSE has prepared a Rapid Assessment report of the number of women and children exposed to sodium valproate (Epilim) in Ireland over the past 40 years.

Valproate can cause birth defects and problems with the development and learning of the child if their mother takes the medicine during pregnancy. Children exposed to valproate in the womb are at a high risk of serious developmental disorders (in up to 30-40% of cases) and congenital malformations (in approximately 10% of cases). The HSE's Valproate Response Project was set up to: ensure the safe prescribing of Epilim in women, prevent current and future harm and develop a pathway of care for diagnosis and treatment of children who have been affected by past exposure to Valproate.

The Rapid Assessment Report aims to provide an estimate of the likely prevalence of specific major congenital abnormalities and neuro-developmental disorders associated with the drug (known as FVS – Foetal Valproate Syndrome). Until now, there has been no Irish data on this but estimates are vital in planning the services and supports that affected families require. Some of the report's estimates include:

- Between 1975 and 2015, approximately 3,126 babies were potentially exposed to valproate in utero. Of these, it is estimated that 873 were born between 2000 and 2015 (i.e. currently 18 years old or younger).
- From 1975 and 2015, between 153 and 341 children will have experienced a major congenital malformation and up to 1,250 children will have experienced some form of neurodevelopmental delay following exposure to valproate in the womb.
- An estimated 43 – 95 children under the age of 16 today will have experienced a major congenital malformation as a result of valproate exposure and 349 will have experienced some form of neurodevelopmental delay.

However, the HSE analysis is subject to a large range of assumptions and limitations and the report must be interpreted with these in mind. These include:

- There is no single source of data relating to the use of valproate in pregnancy in Ireland. Furthermore, while some individual datasets might have held useful information, the inability to link these datasets meant that they were of little value. The analysis therefore relied to a large extent on international data.
- It was not possible to take account of variation in the duration of valproate use during pregnancy, dosage prescribed to individual women or whether valproate was used as a standalone drug or in conjunction with other epilepsy drugs. All of these factors would influence the rate of disabilities.
- No account could be taken of differences in socio-economic status or urban-rural area of residence. Both of these factors are believed to influence the rate of valproate usage.
- The analysis is premised on the licensed prescribing of valproate for epilepsy and bipolar disorder but does not include off-licence prescribing e.g. for migraine.

Because of these significant limitations, the report concludes that the estimates should only be viewed as "a broad guide for those tasked with planning diagnostic and management services for people affected by this issue". It continues "the true impact of valproate on women and children will only become apparent as data is collected prospectively...".

While the estimates should be considered in light of these limitations, they are nonetheless very significant in that they greatly exceed both the number of confirmed FVS diagnoses made by the Department of Clinical Genetics at Crumlin Hospital (less than 50) and the 400 cases estimated by the FACS Forum in 2017.

Despite a wide range of actions taken in recent years to raise awareness of this issue including direct communications from HSE to women on valproate last year, only a small percentage of those affected have yet been diagnosed with FVS. Epilepsy Ireland and OACS Ireland continue to work closely with HSE on delivering a comprehensive response to this issue, including expanding diagnostic FVS services, putting in place a package of community supports and implementing a new Women's Health in Epilepsy programme.

The full HSE Rapid Assessment report can be downloaded from [www.epilepsy.ie/content/valproate-epilim-guidelines](http://www.epilepsy.ie/content/valproate-epilim-guidelines).

**Videos from the recent Sodium Valproate Conference will be available at [epilepsy.ie](http://epilepsy.ie).**

### OACS Ireland

The Organisation for Anti-Convulsant (OACS) Ireland supports and represents families with Foetal Valproate Syndrome. If you or your child has been affected by valproate exposure or if you would like to know more, please contact [oacsireland@gmail.com](mailto:oacsireland@gmail.com); Twitter - @oacsireland.

**For the latest updates, see [www.epilepsy.ie](http://www.epilepsy.ie) and our social media channels. If you are a woman on sodium valproate please do not stop taking the drug unless you have been advised by a medical professional.**

## AWARD WINNING FREE COURSE!

For many people with epilepsy further education hasn't been a viable option for a number of reasons. Epilepsy Ireland may have the solution if you're looking for a stepping stone between second level and further education or if you would like to gain a qualification to assist you in preparing for the world of work.

Based on campus at the Institute of Technology Sligo, Training For Success has had over 250 young people with epilepsy attend since its inception in 1998. Since that year 85% of graduates have progressed to employment or upskilled after they completed the programme. We have had students from all 26 counties as the course is only available in Sligo. Indeed, TFS is the only course of its kind anywhere in Europe!

Students participate in a wide variety of activities including lectures, tutorials, presentations, assignments, portfolio development, project work, discussion groups, one to one supported training, goal-setting, peer learning, outdoor pursuits and much more. All eligible students also receive a MSLETB training allowance and an accommodation allowance.



Who better to tell you about the course than one of our current students, Joey Finneran (20) from Dublin.

### What were you doing before the course?

I was on a PLC course after I finished school, but I never felt that I was going to be successful on that course. After that ended, I was doing nothing for five months, while waiting on my disability allowance.

### What attracted you to TFS in particular?

I felt that TFS gave me an opportunity to excel, after having felt like I was amounting to nothing in every other aspect of my education. I was confident that there would be people there who'd understand my difficulties, which would allow me to overcome them.

Living away from home was an exciting prospect. I came out to IT Sligo one day for an interview and I was shown around the campus and talked about what I'd get from taking part in the course. There was something very unique about the chance I was being given. I felt it would be wrong to pass up on such an opportunity.

### How are you finding the experience including being located within an Institute of Technology?

Being in the IT Sligo is great. It's a nice campus that offers a lot. There's a great library and a few good shops on campus. It's nice to be surrounded by so many people going about their things, as it provides an air of excitement.

I get all of my drinking water from the college campus. It's important to stay hydrated with the medication I'm on, so I get about 5-7 litres of water free from the IT on a daily basis.

### Have there been any unexpected or hidden benefits to the course?

This has been my first time living away from home and the experience has been invaluable. My family would have originally come from the west of Ireland, so it feels like I'm able to reconnect with the past by living out here.

### What do you hope to do after the course?

I'm not sure what I'd like to do after the course. I have thought about teaching English as a foreign language and I have also thought about going to university. Completing this course would give me the qualifications needed for university, so having that option open to me would be fantastic.

I have often thought about moving abroad, to somewhere where the weather picks me up, rather than brings me down. Having the experience of independent living gives me

some sort of experience towards that and having confidence in my capabilities being instilled through the course is something that would greatly benefit me.

### Have you any tips or advice for someone considering Training for Success as an option for them?

Apply for your disability allowance months in advance if you plan on coming to the course and aren't receiving social welfare. I had to wait upwards of 11 months before I got my disability allowance. I have yet to receive my travel card or my medical card. Fill out these forms and send them out straight away and don't be discouraged if they deny you at first.

The course co-ordinators and lecturers here are fantastic and are always looking out for ways to make the lives of the students easier. If the TFS Team sense that your head is starting to drop, they'll be there to look for ways to make your college life easier and ensure that you make it through the course.

### Recruiting NOW for September 2019

We are now recruiting for the September 2019 intake onto our Training for Success course.

If you'd like to hear more about the course, please contact: Honor Broderick ([broderick.honor@itsligo.ie](mailto:broderick.honor@itsligo.ie)) or Maire Tansey ([tansey.maire@itsligo.ie](mailto:tansey.maire@itsligo.ie)) or call 071 9155303.



*In 2013 Training for Success won the Aontas STAR National Award for providing "an outstanding contribution to adult education. L-R: David Gillick student, Paul Sharkey, Epilepsy Ireland, Maire Tansey course facilitator, Denise O'Connell student, Honor Broderick, course manager.*



**Kevin O'Connell, a 19 year old journalism student, will document his epilepsy story in a series of articles for *Epilepsy News*. In this piece, he talks about his first seizure.**

Epilepsy hung over me, like a cloud of depression. For so long, I was ashamed of my condition. That was until I slayed the stigma, and popped the cloud, letting the truth of my epilepsy sprinkle over my life. In this series of articles, I will share this truth, starting with my very first seizure.

The seizure occurred on December 15th, 2017. Over a year before I was officially diagnosed as having epilepsy. It was a Thursday, and I spent the day at school, being my awkward self, and suffering through what already felt like an endless fifth year. Physically, I felt fine, so once school concluded, I decided to go for food with my father at a well known petrol station/food court.

This is where my memory becomes slightly fuzzy. I remember moments, but not in concrete fashion. It feels like I was already floating out of consciousness, and just didn't notice.

I remember being in the car, and being asked to check if any traffic was coming from my side. The usual anxiousness and self-consciousness were present, as I ordered my chicken-roll from the hot food counter. Most of all, I remember those last few moments, before I passed out, before my life changed forever.

I was chewing my chicken, when my vision weakened, and rapidly began to circle. I begged my father for help. When he asked me what was wrong, I mumbled something about a panic attack, as it felt like the quickest and most logical way to explain whatever was happening.

Ironically, my biggest challenge to date, my anxiety, was the last thing I referenced before an even bigger one emerged.

According to my father, I fell out of my chair, but he caught me before I hit the ground. A stranger then assisted him in laying me flat on the floor, and provided his jacket as a pillow.

It's unlikely I'll ever know who he is, or that he'll ever see this, but I extend my gratitude. I know that if brains were switched, I'd have frozen.

Once down, I started to shake, violently. As I type this, it's like my bones feel the ghosts of those violent tremors. There were several ugly side effects, such as saliva and leftover pieces of chicken racing from my mouth. In the few conversations I've allowed to occur about the seizures, those are all the details I can bear to hear.

I woke on a stretcher, feeling groggy, and being guided towards an ambulance by a paramedic. Behind her was the winter sky, dark as ever. Like her, it was beautiful, and it all felt like a dream, until my father came into sight, with a relieved, but horrified look on his face.

He would have no issues with remembering this experience. It had been burned into his brain. Every last second of it.

I repeatedly vomited at the hospital, from a combination of the seizure itself, and the obviously chaotic ambulance ride. Once over the initial shock, I thought "must have been some dodgy chicken."

It didn't take long the doctor to mention the words "seizure". I instantly thought of the stigma, of those freaks who can't watch television or handle strong lights. Those who live an unliveable life and are an absolute burden on absolutely everybody. As if anxiety didn't bring enough of a stigma and weight.

A more lighthearted moment occurred when we tried to isolate the reason behind my seizure. The doctor implied that I'd overdone it on drugs or alcohol. His persistence on this suggestion still makes me laugh. At the time, I had this long, dirty, tangled hair stretching down my back, and since I wasn't a saint for sleeping and eating, I looked far from my best.

It took some convincing, but he eventually got past that possibility.

From there, the doctor pointed out that one in twenty people will have a one off seizure in their life. So, unless I had a repeat experience, then no accurate diagnosis could be made. Following a night of cautionary observation, I was sent home to play the waiting game. Anxiety's favourite game. However, that is irrelevant, my gripes with the Irish health system are for another blog.

*“ The only positive from my first seizure is that it changed my perspective on family. ”*

The only positive from my first seizure is that it changed my perspective on family. Before, thanks to teenage moodiness and a messy past, I categorized them as compulsory friends rather than family. However, the looks on my parents faces, and the breathless presence of my siblings at the hospital, reacquainted me with the meaning of family.

With all that in mind, I went home, sat down against the wall, and sarcastically welcomed epilepsy into my life. However, no amount of sarcasm, worry, or hiding could have prepared me for the epilepsy journey set to follow.

**Kevin will continue to write about his epilepsy experience in the next issue of *Epilepsy News* and you can also follow his blog on [kevinskick.wordpress.com](http://kevinskick.wordpress.com).**



**Mark Cunningham is the recently appointed Ellen Mayston Bates Professor of Neurophysiology of Epilepsy at Trinity College Dublin. In this piece, he explains the importance of neuroscience in treating epilepsy.**

*'Electricity is life but electricity is an invisible fist punching up your spine, knocking your brains right out of your skull.'*

**Ray Robinson**

The quote above captures the main theme from Ray Robinson's debut novel 'Electricity' – an evocative and unsentimental description of living with epilepsy. Through the narrator and protagonist, Lily O'Connor, the reader is given an insight into Lily's attempts to deal with her difficult to control seizures as they impact on her life. Lily's complex wider existence is soothed by a romantic liaison with an electrician – a girl with abnormal electrical discharges rescued by an electrician?

Can studying the abnormal electrical discharges associated with epilepsy provide insights that might provide better treatments for those living with epilepsy? This question is central to the research that my laboratory at Trinity College Dublin hopes to address. Despite there being more than 30 different types of seizures, all share the fact that underlying the seizure is a 'misfiring' of brain cells. This is due to alterations in how these cells generate electrical activity and communicate between each other. These electrical and chemical disturbances give rise to a disorganisation of the electrical signals between large numbers of brain cells producing an electrical storm in the brain. Such uncontrolled electrical storms cause a change in awareness, movement or sensation – a seizure.

The brain is a complex organ with 100 billion brain cells and 0.15 quadrillion connections, or synapses, between those brain cells. Remarkably, the circuits of brain cells which produce a seizure in the whole brain can be studied at a much more basic level. For example, brain cells, or neurons, can be grown in a petri dish and are capable of forming connections between themselves that are similar to those connections in the intact brain. This cell model can be used to study seizure activity in the lab and is an important tool to assess potential anticonvulsant features of new drugs. Similarly, thin slices (0.5-1 mm) of brain tissue can be prepared and kept alive in such a way that the electrical activity of seizures generated by these intact brain tissue sections can be examined. The type of seizure activity seen in these slices relates directly to seizure observed in the intact brain and we can also study this using animal models of epilepsy. A variety of models of epilepsy are available for scientists to study. These range from models in which chemical agents, termed proconvulsants, are administered to the animal which then goes on to exhibit spontaneous seizures. Other models include where genetic manipulations associated with epilepsy have been made. We also work with models of brain tumours or traumatic brain injury, both conditions in which epilepsy is commonly seen.

How do we study epilepsy? As mentioned above, seizures arise from alterations in how brain cells generate electrical activity and communicate as networks. In order to eavesdrop on this electrical activity we use an approach called neurophysiology. Neurophysiology is the study of the functions of the nervous system. This technique is directed towards unravelling the question of operation of individual neurons, connections between neurons, interactions between groups of neuron and the emergent network features that arise from all these levels of function. All of the afore mentioned levels give rise to patterns of electrical activity which can be recorded by electrodes placed on the scalp – commonly known as the electroencephalogram or EEG. The activity we study in the laboratory is

therefore directly related to this clinical measurement.

Using these approaches my group aims to carry out research that addresses fundamental questions about epilepsy but also has the capacity to translate findings into the clinic and ultimately improve the treatment of people with epilepsy.

An example of this type of work is as follows. Within the brain there is a molecule which acts to help neurons communicate with each other. The molecule, glutamate, is a neurotransmitter and when released from the endings of one neuron it acts on another neuron to excite it. This excitation causes neurons to generate electrical signals or spikes and too much glutamate can cause uncontrollable electrical spiking. If unchecked these spiking neurons can produce the electrical storms that underlie seizure generation. Normally, levels of glutamate are tightly regulated in the brain however in certain conditions glutamate levels can become very high. This frequently occurs around brain tumours particularly in the case of low grade gliomas. Patients with this form of brain tumour experience epileptic seizures and it is thought that their seizures are due to an excess of glutamate. We work with slices of live human brain tissue obtained during an operation to remove this type of brain tumour and we have been using neurophysiology to record seizures in these human brain slices and study the role that glutamate is playing. Our work suggests that currently available drugs, which target a particular type of glutamate receptor, may be better at limiting seizures associated with brain tumours than other drugs presently used.

As captured in the quote at the start of this article electricity plays a fundamental role in epilepsy. I aim to carry out research which shines a light on the abnormal electrical discharges which give rise to the epilepsy. In doing so I hope to provide answers about how epilepsy occurs but more importantly use this knowledge to improve how the condition can be treated for the benefit and wellbeing of patients, their carers and families.

## MITOCHONDRIAL EPILEPSY



**A new blog called 'Epilepsy in English' from academics at FutureNeuro aims to present epilepsy research papers in plain English so that they are accessible to everyone. In the first of a series of articles Dr. Gareth Morris discusses mitochondrial epilepsy and a recent study by Prof Mark Cunningham's team on the subject.**

### **Our brains are hungry beasts**

There are around 86 billion (yes, billion) electrically active cells in the average human brain. Each one of these cells can connect to multiple others, adding up to something like 10 trillion (yes, trillion) intricate electrical connections in the brain. And this doesn't even take into account numerous non-electrical cells which carry out vital processes like mediating the levels of critical brain chemicals and providing structural support. All of these biological processes use up energy and so, unsurprisingly, the energy bills in the brain start to add up.

### **But where does this energy come from?**

Each of the cells in the brain (and also in the rest of the body) has its own built-in batteries known as mitochondria. The main function of these tiny structures is to take energetic nutrients and convert them into a form that the cells can use. The useful energy currency in the cell is a molecule called ATP and it is at the heart of all biological processes that require energy.

### **And if it fails?**

Now, as with any biological process, there is a potential for mitochondria to stop functioning properly. It is estimated that about 1 in 4000 people have mitochondrial disease. Of these people, about a quarter will have 'mitochondrial epilepsy', where their condition leads to seizures. Mitochondrial epilepsy is notoriously difficult to treat and, on top of that, we don't really know exactly how problems in the mitochondria can cause seizures in some people and not in others.

### **What do we know about mitochondrial epilepsy?**

Not very much! In fact, because we know so little about mitochondrial epilepsy, we don't even have a disease model – a way to mimic the disease in an experimental setting so that we can test new drugs.

### **What does the new research show?**

They began by looking at post-mortem human brain tissue from people who had mitochondrial disease. This gave them a few clues about how the condition could lead to epilepsy. Along with the expected decrease in the activity of mitochondria, they also observed specific reductions in the

number two types of brain cell. Diseased tissue had fewer inhibitory brain cells (those that reduce overall brain activity) and also fewer astrocytes – crucial support cells which regulate, amongst other things, the levels of the chemicals which brain cells use to communicate with each other.

Previous studies showed that experimentally reducing mitochondrial function in otherwise healthy tissue was not enough to trigger seizures on its own. So, Mark's team realised that some of the changes seen in the post-mortem tissue must also be an important part of the disease.

To test this, they took small pieces of healthy brain tissue from rats and used drugs to block the activity of astrocytes – one of the cell types lost in the post-mortem tissue – at the same time as blocking mitochondrial function. This made the pieces of brain tissue start to generate seizures. Further analysis showed that the previously healthy tissue also began to look like tissue with mitochondrial epilepsy. This means that the team were able to create the first disease model of mitochondrial epilepsy. This is a massively valuable research tool to try to find new treatments.

With the model created, Mark's team then used a variety of common anti-epileptic drugs, to see if they could stop mitochondrial seizures. Just like the real condition, the seizures in this model did not respond to most drugs. But – promisingly – they were stopped by one drug, sodium pentobarbital. This is interesting because sodium pentobarbital effectively compensates for the lost inhibitory brain cells, by mimicking the action of a chemical called GABA which is normally released from inhibitory cells.

This finding gave the team another clue about mitochondrial epilepsy. In a healthy brain, GABA can be made from a chemical called glutamine. Usually this glutamine is produced by astrocytes but, as the team already showed, astrocytes are damaged in mitochondrial epilepsy. In a final experiment, Mark's team added glutamine to their mitochondrial epilepsy model. They showed that replenishing the lost glutamine means that the brain is able to restore GABA and stop seizure activity at the same time.

This research paper is very exciting for mitochondrial epilepsy. Not only does it provide us a new disease model that we can use to better understand the disease, it also suggests new treatments which might work in the condition.

Indeed, Prof Cunningham told us: "We believe this work provides important insights into the mechanisms which underlie mitochondrial epilepsy and provides future avenues for developing novel treatments for this condition. We are currently examining how available treatment may be re-purposed to treat this form of epilepsy based on the mechanistic underpinnings we have discovered."

We do have to be cautious at this point. Just because a drug or a treatment works in a disease model, it does not mean that it will work in real mitochondrial epilepsy. This paper provides a very strong beginning for further research into mitochondrial epilepsy with the hope that one day these treatments could be used in the clinic.

***For more articles log onto [epilepsyinenglish.wordpress.com](http://epilepsyinenglish.wordpress.com).***



**Mark O'Reilly is Managing Director of FitVision, a Corporate Wellbeing Partner to some of Ireland and the UK's biggest organisations. Mark is a former professional soccer player with Bohemians here in Ireland and also with Parramatta FC in Sydney, Australia along with taking part regularly in Triathlons and Ironman events. He is an experienced Executive Coach, Personal Trainer, Strength and Conditioning Coach, Nutrition Coach and Physical Therapist and would like to share some ways in which you can use exercise to help with your epilepsy. Mark had epilepsy up until the age of 11 and he only began getting involved in sports at a later age due to his condition. This article offers some tips on how you can start and most importantly be safe while improving your health.**

## Epilepsy and Exercise

Exercise is good for everyone as we know, but there can be a stigma around exercise and epilepsy. People with epilepsy get the same health benefits from exercise as individuals without epilepsy; increased stamina and strength, weight and fat loss, improved mood, reduced stress, better sleep, lower risk of illness- the list goes on and on. Before I offer some advice on how to get started let's look at a few key points to consider in the build up to embarking on your new fitness regime. Some of the following you will certainly know already but it is no harm to have

a check list to remind ourselves and most importantly remain safe with our exercise.

- Stay well-hydrated and eat something light before exercising.
- Remember, don't continue exercising if you feel faint, lightheaded or nauseous.
- Don't overexert yourself – know your limits and be kind to yourself.
- If heat or becoming overheated is a trigger for you, avoid studios which can increase this and exercise in an air-conditioned gym or at a cooler time of day.
- Let family or friends know your walking, jogging route or exercise location before you leave, and how long you will be out.
- Consider carrying a mobile phone, which many of us do now.
- Consider wearing a medical alert bracelet or pendant, so people can easily identify you have epilepsy.

## Can I do things like HIIT (High Intensity Interval Training) or Resistance Training?

First of all, intensity is relative to the individual. For some, walking a mile may be high intensity, but for others that is just a warmup. So, it's important that you do not compare yourself to someone else, rather listen to your body and what intensity is right for you. Higher intensity exercise is very helpful to improve fitness, increase muscle, and help hormone balance. It also can be done in a shorter amount of time which generally can be very appealing to us all. High intensity exercise is brief and intense. This generally comes in the form of interval-based cardio, bodyweight resistance training or lifting weights.

With low intensity exercise, this means working out for a longer length of time at a rate that doesn't stress the body as much. Think of taking a walk, yoga or a leisurely bike ride, I would recommend 1-2 sessions of low intensity work per week. Also remember just adding in more steps through your day has plenty of health benefits so use your lunch break to up the total steps for the day, especially now coming into spring and summer.

It is important to have both types of training in a program but remember the most important thing is that you're keeping yourself safe.

## Getting Started

The key is to start small and set measureable and attainable goals.

Remember, research states that 30 minutes of physical activity most days of the week is enough. Why not look at breaking this into 2 x 15 minute blocks per day when starting off or even 3 blocks of 10 minutes? Try something simple like a walk around your block. Another way to get moving more is to just make your daily activities more active. Jog up your stairs every time you climb them. Park in the spot furthest from the supermarket entrance or get off the bus a stop or two from home.

From there, increase your activity level every week slightly and ensure it is manageable for your current lifestyle. Aim to build sustainable habits, so opt for small increases which over time lead to a big change.

## Should I exercise if I'm tired?

This is a common question. The best advice here would be to do some self-assessment. The first step is to figure out why you are tired. Ask yourself the following questions;

- Did you not sleep well the night before?
- Are you doing too much at the minute and need some downtime?
- Has your nutrition been off its regular pattern and could this be impacting your energy?
- Are you dehydrated and not drinking enough fluids on a regular basis?

All of these things can make us tired and need to be assessed, maybe resting and focusing on fixing those problem areas can be a better use of your time that day. I hope this information can help you in developing that regular amount of activity needed to energise both body and mind.

**For further exercise tips and routines check out [www.FitVision.ie](http://www.FitVision.ie).**

**See also Epilepsy Ireland's exercise section on our website : <https://www.epilepsy.ie/content/sport>**



**Epilepsy Ireland member Jenny Snook (33) discusses an alternative treatment that helped her anxiety and epilepsy, which is known as 'The Buteyko Breathing Method'.**

Epilepsy first became a problem when I was 13 and started having small complex partial seizures. It was something I was able to handle until I finished college when postictal psychosis became a problem. This continued for about 3 or 4 days after I had a seizure. Some of the effects included insomnia, paranoia, thinking that people were constantly talking about me and hearing voices. Sometimes I even ended up in hospital after a panic attack. My medical team in Beaumont Hospital believed neurosurgery might be able to help me.

Five years after surgery, I am now working in a permanent job for the first time as content executive for a management software company in Dublin, giving me the chance to research and write my own pieces. I had the choice to work from home or the office, as long as articles are written on time. This really helped when epilepsy was more of an issue. It's still great to know I have the choice but it's even better to know it's not a problem I have to worry about anymore.

**Life after surgery**

Neurosurgery helped a lot with the amount of seizures I used to have during the day. Usually from tiredness,

heat and sometimes after even catching my reflection in a mirror. My daytime seizures completely stopped, but nocturnal seizures became more of a problem. I did find after-effects such as strong paranoia began to fade out, but some of the effects I noticed the next day apart from a bad memory were a throbbing headache, a dry taste in my mouth so that anything I ate tasted of copper.

I'd stopped having daytime seizures, but I sometimes felt an aura come on as if I was going to have one. When I was out for lunch one day, I picked out my reflection in a shop window and got that frightening feeling of déjà vu that I remember having just before a seizure usually starts. It didn't turn into a seizure, but it was so long since I'd had that feeling I remember how scared I was. My heartbeat sped up and I started to feel like I couldn't breathe before it turned into a panic attack. I know how many people think they're having a heart attack when this feeling comes on. I remember a big crowd standing around me on Henry St and someone coming out of Clarke's Shoes with a pillow for my head.

After that I was afraid to go out for lunch when I was in work but found out how helpful it was to breathe through a paper bag when my heartbeat sped up. I began to read online that lightly breathing in and out through your nose (Buteyko Breathing Method) so that you don't breathe in too much oxygen, also helped when I felt a panic attack coming on.

**Buteyko Breathing Method**

After reading a book called "Anxiety Free: Stop Worrying and Quieten Your Mind (Featuring the Buteyko Breathing Method)", by Patrick McKeown, I tried the technique of only ever breathing through my nose. Apart from anxiety I made a link between taking in deep breaths through my mouth and disrupted sleep.

I made the link between holding my breath in my sleep and then over-breathing through my mouth afterwards, to my daytime sleepiness, problems with memory and concentration, headaches and dry mouth.

I think my problems with epilepsy have improved over time after surgery but as soon as I got the hang of breathing lightly through my nose during the day, the next nocturnal seizure I had was so much better. I didn't have that copper taste in my mouth and was able to get up out of bed. Even if I get that feeling of a panic attack coming on, I still find that as long as I keep my mouth shut I won't have one, but it's had such a positive effect on my nocturnal seizures that sometimes I have to look at the sleep pattern on my phone to decide whether I've had one or not. There have been times during the day when I get that aura that used to come on before I had a seizure. Now I naturally start to concentrate on breathing in and out through my nose and the feeling goes away.

The first thing my neurologist said when I told him was: "Do you know how important it is to breathe through your nose?" If I start to feel like I'm going to have a panic attack, I know if I breathe in and out through my nose, I might feel out of breath, but it never goes to my head. I've also stopped having seizures completely and think there are always safe, natural methods that help, it's just up to the person to research them and try them out.

Although Lamictal is still something I take for epilepsy that I'd never leave the house without having. I think it's also worth trying alternative treatments like the Buteyko Breathing Method but only staying on it if it works well for you. After all everybody's epilepsy is unique.

**Epilepsy Ireland would like to highlight that over-breathing or hyperventilation can trigger some seizures for certain individuals. Everyone's epilepsy is unique and before you consider any alternative treatments such as the above please contact your GP.**

# JOE SCHMIDT SUPPORTS SEIZURE AWARENESS CAMPAIGN

## FOR INTERNATIONAL EPILEPSY DAY



International Epilepsy Day (February 11th) was one of the most high profile days in recent years with widespread coverage. Epilepsy Ireland used the day to focus on seizure awareness with Ireland Rugby Coach, Joe Schmidt supporting this year's campaign.

Epilepsy Ireland CEO Peter Murphy said: "We were delighted to have Joe Schmidt again supporting the need for greater seizure awareness through the T.E.A.M. campaign. Joe's association with Epilepsy Ireland has been a major factor in improving seizure awareness

*This image of Joe Schmidt was shared by thousands of people on social media to mark International Epilepsy Day.*

among the Irish public over the past five years. There are over 40,000 people with epilepsy in Ireland, so it is vital that we all know the basics of how to respond to a seizure if ever called upon."

**Epilepsy Research Explained Event** Meanwhile, Epilepsy Ireland and FutureNeuro were pleased to recently co-host a Public Seminar to mark International Epilepsy Day. The seminar was for people with epilepsy, their families & carers and highlighted the latest developments in epilepsy research in Ireland and internationally. A selection of presentations from the event can be watched via this link: <https://goo.gl/xnKajn>.



*Epilepsy Ireland Patron Rick O'Shea told his epilepsy story on twitter.*



*Political activist Sile Ni Dhubhghaill spoke about her epilepsy in the Irish Independent.*



*Asia Enterprises were kind enough to drop sweet treats into the Epilepsy Ireland office to mark the day.*



*In Brussels, Irish MEP Brian Hayes brought together his colleagues for a seminar on epilepsy.*



*Over 200 people attended Epilepsy Research Explained in the Royal College of Surgeons in Ireland.*

### Online highlights

Epilepsy Ireland Facebook posts reached 100,000 people from February 1st to February 12th.

Over 72,000 impressions on February 11th on Twitter and #EpilepsyDay was the most talked about topics on the same social media platform.

Famous Irish people such as Cian Healy, Minister Finian McGrath and Gerry Adams tweeted their support for #EpilepsyDay.

### Other media highlights

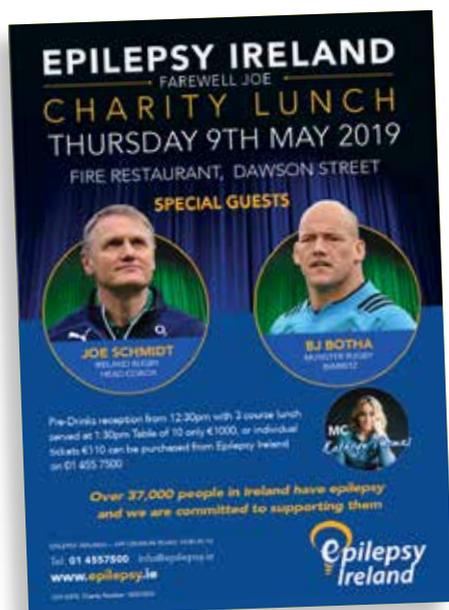
An interview with rugby player BJ Botha about his son's epilepsy was featured in the Irish Times.

The Pat Kenny Show on Newstalk featured a special report on epilepsy which featured an interview with Colin Doherty, Lorraine Lally and Donna Kennedy.

International Epilepsy Day also enjoyed widespread regional coverage through many media outlets (The Kerryman, Evening Echo, The Connaught Tribune etc).

# FUNDRAISING

## Lunch with Joe



Epilepsy Ireland's annual fundraising lunch will be held on May 9th 2019 in Fire Restaurant Dawson St.

The event will involve a drinks reception, followed by a 3 course lunch. We will then be having a panel discussion where we will chat with Irish rugby coach Joe Schmidt and World Cup winner, and former Munster rugby player BJ Botha. Tables are now sold out. If you or your organisation would like to donate a prize for the event please contact Luke Meany on 01-4557500 or email [lmeany@epilepsy.ie](mailto:lmeany@epilepsy.ie).

## Vhi Women's Mini Marathon



The VHI Women's Mini Marathon, takes place this June bank holiday weekend in Dublin and is the largest Women's event of its kind in the world. To get involved please contact Luke Meany on 01-4557500 or email [lmeany@epilepsy.ie](mailto:lmeany@epilepsy.ie).

## Cape Challenge



Former Munster and South African Rugby player BJ Botha pictured (left) during the Cape Challenge in South Africa. BJ Botha is raising funds for Epilepsy Ireland.

### Volunteers needed!

Epilepsy Ireland are looking for volunteers in the Cavan area to take up a church gate collection on 20th & 21st April. Please contact Barbara on 01-4557500.



### Cork Marathon

The 2019 Cork City Marathon, Half Marathon & Team Relay will take place on Sunday 2nd June. Entry is now open. Log onto [www.epilepsy.ie/content/get-involved](http://www.epilepsy.ie/content/get-involved) for more details.

# PURPLE DAY

## Landmark Buildings around Ireland turn Purple in Support of Epilepsy Awareness

Epilepsy Ireland with the support of Joe Schmidt promoted Purple Day this year by encouraging buildings and businesses

around the country to 'turn purple' to raise awareness of epilepsy on March 26th. Almost 40 well known Irish buildings showed their support for the cause including the Convention Centre , UCC and Kilkenny Castle.



Joe Schmidt shows his support for Purple Day.



The Convention Centre goes Purple for epilepsy awareness.

# REGIONAL EVENTS

## REGIONAL OFFICES

### Cork

Tel: 021 - 4274774  
Niamh Jones, Loretta Kennedy  
njones@epilepsy.ie  
lkennedy@epilepsy.ie

### East

Tel: 01 - 4557500  
Edel Curran, Carina Fitzgerald  
ecurran@epilepsy.ie  
cfitzgerald@epilepsy.ie

### North-East

Tel: 042 - 9337585  
Mary Baker  
mbaker@epilepsy.ie

### Midlands

Tel 057 9346790  
Cliona Molloy  
cmolloy@epilepsy.ie

### South-East

Tel: 0567789904  
Miriam Gray  
mgray@epilepsy.ie

### Mid-West

Tel: 061 - 313773  
Veronica Bon  
vbon@epilepsy.ie

### Kerry

Tel: 064 6630301  
Kathryn Foley  
kfoley@epilepsy.ie

### West

Tel: 091-587640  
Edel Killarney  
ekillarney@epilepsy.ie

### North-West

Tel: 074 9168725  
Agnes Mooney  
amooney@epilepsy.ie

## SOUTH EAST

**02/05/2019**

### **Wexford: Epilepsy Awareness presentations**

Maldron Hotel Wexford  
2pm - 3pm - For Professionals:  
"On Epilepsy management with the focus on recognising and responding to Seizures"  
2.30pm - 4.30pm - For People with Epilepsy: "Epilepsy and Seizures"  
Guest Speaker: Cora Flynn  
Advance Nurse Practitioner for St Vincent's Hospital Dublin

**21/05/2019**

### **Waterford Information Stand**

University Hospital Waterford  
10am - 3pm

## KERRY

**16/04/2019**

### **Kerry: Family Morning**

Venue: TBC  
10.30am-1pm

**28/05/2019**

### **Tralee: Support Group for Parents of children with epilepsy**

The Manor West Hotel, Tralee  
10am.

### **Killarney: Support group for people with epilepsy**

KDYS centre Killarney  
Wednesday 10th April  
Wednesday 8th May  
Wednesday 12th June  
10.30am

**20/05/2019**

### **Tralee: Information Evening for Teachers and School Staff**

The Education centre, IT Tralee  
4.30pm

### **Tralee: Outreach Appointments**

available each Monday at Kerry university hospital or in Tralee  
Further information please contact Kathryn

## WEST

**09/04/2019**

### **Galway Epilepsy Nurse Presentation**

Maldron Hotel, Oranmore, Galway  
11am - 1pm

## DUBLIN

**08/04/2019**

### **Dublin: Support, Information & Toolkit Group for People recently diagnosed with Epilepsy or Parents of Children recently diagnosed with Epilepsy**

Carmelite Community Centre, 56 Aungier Street, Dublin 2  
6pm - 9pm

**24/04/2019**

### **Arklow: Outreach Service**

Health Centre, Castle PARK, Arklow, Co. Wicklow  
By appointment only contact Carina

**01/05/2019**

### **Dublin: STEPS (Support and Training in Epilepsy Self-Management) for People with Epilepsy**

for 6 Wednesday Mornings

Carmelite Community Centre, 56 Aungier Street, Dublin 2  
10.30am - 1.30pm  
Commencing Wednesday May 1st for 6 Wednesday mornings

**23/05/2019**

### **Support, Information & Toolkit Group for People recently diagnosed with Epilepsy or Parents of Children recently diagnosed with Epilepsy - Morning Group**

Thursday May 23rd 2019 at Carmelite Community Centre, 56 Aungier Street, Dublin 2.  
10am - 1pm  
For more information or to register please contact Carina or Edel on 01-4557500 or email cfitzgerald@epilepsy.ie

## MID WEST

**11/04/2019**

### **Limerick: Nurse Talk for women with Epilepsy**

Limerick Education Centre  
6pm - 9pm

**02/05/2019**

### **Parents information Session and Buccal Midazolam Demonstration**

Clare Education Centre

**22/05/2019**

### **Limerick: Parents Inner-wise Session**

Radisson Hotel Limerick

## CORK

**29/05/2019**

### **Cork: Support Group for Parents of Children with Epilepsy**

Bishopstown GAA Club  
7.30pm

**22/05/2019**

### **Cork: National Epilepsy Week Information Stand**

Cork University Hospital  
10am - 4pm

## MIDLANDS

**24/05/2019**

### **Portlaoise: Information Stand**

Portlaoise Hospital  
10am - 2pm

## NORTH EAST

**21/05/2019**

### **Monaghan; Seminar for Teachers and SNAs**

Glencarn Hotel, Monaghan  
6.00 - 9.00pm  
For more information or to register please contact Mary at the Dundalk office

**23/05/2019**

### **Navan: Parents Buccal Midazolam information session**

Navan Education Centre, Navan, Co. Meath  
10.00 - 1.00  
For more information or to register please contact Mary at the Dundalk office

## NORTH WEST

**09/04/2019**

### **Sligo Outreach Service**

Sligo Office  
10.30 - 12.30  
By Appointment only contact Agnes

**21/05/2019**

### **Sligo: Information Session for Parents, Families & Carers. Administration of Buccal Midazolam**

St Michaels Family Life Centre, Church Hill, Sligo  
6.30pm to 8pm.  
Please call Agnes to confirm your attendance:

**29/05/2019**

### **Letterkenny: Hospital Outreach Service**

Out Patients, Scally House Letterkenny  
Agnes will be available to meet with you at The Neurology Clinic

## Epilepsy Ireland National Conference

### SAVE THE DATE

**Saturday 28th September in the Radisson Blu Hotel, Little Island, Cork.**

More details to follow in Summer issue.



# IRELAND'S ANCIENT EAST PEAKS CHALLENGE

**29th - 30th JUNE 2019**

**Featured Mountains:**

**Lugalla 595m, Lugnaquilla 925m, Blackstairs 732m  
and Ridge of Capard 509m.**

**Followed by a medieval banquet,  
storytelling and much more.**



**To receive an information pack, please contact our fundraising  
team on 01 4557500 or email [mcarty@epilepsy.ie](mailto:mcarty@epilepsy.ie)**

**To register, please go to [www.epilepsy.ie](http://www.epilepsy.ie)**

**This is a paid advertisement**



## EMFIT Tonic-Clonic Seizure Monitor

Clinically proven, easy to install, no false alarms

Best-selling seizure monitor in over 60 countries worldwide.

- Clinically proven, Class 1 Medical Device
- Patented, innovative sensor technology
- Detects micro-movements
- Unobtrusive and non-body contact
- Durable, safe and reliable
- No age or weight restrictions
- Emits high-frequency alarm sound
- Fast alert allows for a quick response time
- Options to send alert to Pager or Mobile Phone
- 2 Year Warranty
- May qualify for funding by your local HSE



HomeCare  
Technologies



*"The EMFIT Monitor has changed our lives, I can't thank you enough"*



FOR MORE INFORMATION AND ADVICE  
CALL 1890 344 344 OR +353 21 421 4925  
Email: [info@homecaretechnologies.ie](mailto:info@homecaretechnologies.ie)  
[www.homecaretechnologies.ie](http://www.homecaretechnologies.ie)