

Epilepsy

A disorder characterised by unpredictable and continuous seizures (Epilepsy Foundation, 2018). With a wide range of seizure types varying from person to person, it is a spectrum condition (Epilepsy Foundation, 2014c). Epilepsy is the 4th most common neurological disorder, affecting all ages, being twice as common in children, affecting 700 per 100,000 (Dr.Tidy, 2015).

A seizure is the sudden burst and disturbance of electrical activity in the brain (Pietrangelo, 2018), the temporary disruption of the messages being passed between brain cells (Great Ormond Street Hospital (GOSH), 2016). Epilepsy is not the act of one seizure, it is the act of two or more unprovoked seizures with the likelihood of more (Epilepsy Foundation, 2018).

Identification

There is more than one type of seizure and what happens during them determines where in the brain it started.

Focal Onset Seizures – start in and affect one part of the brain. Affecting a large hemisphere or small lobe area and can spread to both sides of brain (Epilepsy Society, 2018b).

Focal Aware – fully aware, remember the seizure after. Symptoms depend on where in the brain they start and can be motor or non-motor symptoms:

- Unusual taste or smell (an aura)
- Intense feeling of fear or joy
- Stiffness and twitching
- Numbness or tingling
- Visual disturbances or hallucinations

(Epilepsy Society (2018a); Centers for Disease Control and Prevention (2020)).

Focal Impaired Seizure

The loss of awareness and ability to respond, most likely will not remember what has happened.

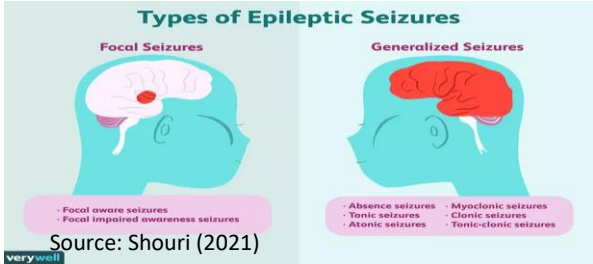
Generalised Onset Seizures – these affect both sides of the brain and happen without warning.

- Tonic – muscles become stiff
- Atonic – muscles relax and loss of control
- Myoclonic – quick and short muscle twitches
- Clonic – periods of shaking and jerking such as convulsions
- Tonic-clonic – muscles start stiff and then relax
- Absence – blank stare and repetitive movements (Moawad, 2021)

Identification and Diagnosis

As the NHS (2020a) explain, a doctor should be seen and notified after a seizure with a referral to a neurologist, especially within the first two weeks of having more than one in a short time frame. However, due to other conditions that can cause seizures such as low blood sugars, high temperatures or illnesses, determining if or when another one will happen and the cause is difficult (Cedars Sinai, date unknown). However, due to different types, people might not realise they have had a seizure if it happened while they were asleep or, they were unaware at the time (Newsome and Write, 2020). Some experience symptoms of an epileptic seizure but have no disturbance of electrical activity in the brain causing it (Cedars Sinai, date unknown).

EPILEPSY



Diagnosis and Treatment

Tests to diagnose epilepsy:

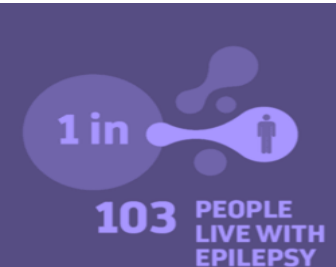
- Blood Tests – samples see if infections or genetic condition can be linked to epilepsy (Mayo Clinic, 2021), as medical conditions such as meningitis, brain tumours, haemorrhages or brain defects can cause links (Brain & Spine Foundation, 2020; Epilepsy Wales, date unknown).
- EEG (Electroencephalogram) – sensors, electrodes are attached to scalp and connected to a machine that detects electrical signals, different brainwave patterns seen by a neurophysiologist can determine whether someone experiences epileptic seizures (Epilepsy Action, 2020, NHS, 2020b).
- Neuroimaging – MRI or CT scans identify structural abnormalities (Epilepsy Society, 2021).

Considering the various benefits to these methods, issues occur regarding their effectiveness. EEG techniques are sometimes deemed labour-intensive and time-consuming (Elger and Hoppe, 2018, p.7). Furthermore, although these tests and strategies can be carried out, it is still possible to have epilepsy even with a normal MRI or EEG scan (Epilepsy Action, 2020). Likewise, there is not one single test to diagnose epilepsy and it can take a long time for multiple tests to be done.

Treatments

Some treatments for epilepsy are

- Anti-epileptic drugs (AED)
- Surgery (if medication does not control seizures)



Barriers

Diagnosing children with epilepsy can be difficult due to the confusion of stereotypical behaviours and activities that can portray as symptoms of epilepsy (Dr. Tidy, 2015). Children who have epilepsy can be hard to read as their signs and symptoms will not always be the typical 'convulsions or muscle movements' and can last for less than a minute, so can go unnoticed (Epilepsy Foundation, 2014a). Therefore, undiagnosed seizures are being untreated and affect children's growth, education and development. Additionally, although children with epilepsy do not fit the typical definition of learning disabilities (Epilepsy Foundation, 2004), as their academic skills might not be affected, children do have challenges regarding their learning due to weaknesses such as concentration or memory.

Other barriers to children's learning due to epilepsy can involve

- Maintaining consistency
- Reading, spelling or speech and language
- Motor ability
- Behaviour (Young Epilepsy, 2022).

The stigma surrounding epileptic children means that being unaware and uneducated causes children to be left out (Epilepsy Foundation, 2014b). Often, there are negative attitudes to epilepsy from parents or teachers (Jacoby and Austin, 2007) which can lead children to feeling ashamed or different, especially if their seizures are harder to control (Lee, Yoo and Lee, 2005), leading to a poor quality of life from lack of opportunities (Williams *et al*, 2003). Some children are misdiagnosed with ADHD and hesitate to get further help (Bowers, 2013). Due to the stigma children can face, difficulties can arise when trying to maintain a normal and fulfilling life (World Health Organisation, 2015).

Strategy

A strategy that can be used to help children manage their epilepsy is medication, known as Anti-Epileptic Drugs (AED) (Wells, 2017). Although the right type or combination of medication can benefit children (GOSH, 2016), problems can happen such as:

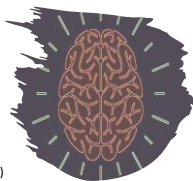
- Disliking the taste, refusing to take medicine
- Forgetfulness from parents or practitioners
- Wrong administration or lack of medicine
- Side effects that can affect their daily lives
- Expensive

(Epilepsy Action, 2019)

AED's prevent seizures or reduce frequency by controlling electrical activity (Brain Research UK, 2020). Although there are over approximately 70% of individuals (O'Rourke and O'Brien, 2017) with epilepsy seizure free, missing a dose or running out can result in loss of control and even fatalities (Shouri, 2021). Additionally, 7 out of 10 people worldwide do not receive AED's due to misdiagnosis and unavailable medicines. For children whose epilepsy cannot be controlled, their home and school life can be majorly disrupted (Dr. Valentin, 2015), nevertheless, children whose day to day lives with epilepsy that can be controlled with medicine allow them the opportunities to live a life just as everyone else (Guerrini, 2006), as physically, they can still lead active lives (GOSH, 2016).

Conclusion

Epilepsy is not an additional learning need that is particularly focused on learning, but the issues and difficulties from its experience can cause great difficulties for children and their development.



Reference

List

Bowers, E.S. (2013) *Overcoming the Stigma of Epilepsy*. Available at: <https://www.everydayhealth.com/epilepsy/overcoming-the-stigma-of-epilepsy.aspx> (Accessed: 10th January 2022).

Brain and Spine Foundation (2020) *Epilepsy*. Available at: https://www.brainandspine.org.uk/our-publications/our-fact-sheets/epilepsy/?gclid=Cj0KCQiAieWOBhCYARIsANcOw0wVaDn3loOVG8D3fvpuV4WevK-pgRydCsVqD4y4BixDE6xUEPwyG1oaAieAEALw_wcB (Accessed: 3rd January 2022).

Brain Research UK (2020) *Epilepsy Statistics*. Available at: <https://epilepsyresearch.org.uk/about-epilepsy/epilepsy-statistics/> (Accessed: 6th January 2022).

Cedars Sinai (date unknown) *Non-Epileptic Seizures*. Available at: <https://www.cedars-sinai.org/health-library/diseases-and-conditions/n/non-epileptic-seizures.html> (Accessed: 10th January 2022).

Centers for Disease and Control (2020) *Epilepsy – Type of Seizures – Epilepsy and Seizures*. Available at: <https://www.cdc.gov/epilepsy/about/types-of-seizures.htm> (Accessed: 8th January 2022).

Dr Tidy, C. (2015) *Epilepsy in Children and Young People*. Available at: <https://patient.info/doctor/epilepsy-in-children-and-young-people> (Accessed: 4th January 2022).

Dr. Valentin, A. (2015) *Epilepsy: a new way to treat children with uncontrolled seizures*. Available at: <https://action.org.uk/research/epilepsy-new-way-treat-children-uncontrolled-seizures> (Accessed: 10th January 2022).

Elger, C.E. and Hoppe, C. (2018) ‘Diagnostic challenges in epilepsy: seizure under-reporting and seizure detection’, *The Lancet Neurology*. 17(3), pp.211-212. Available at: [\(PDF\) Diagnostic challenges in epilepsy: seizure under-reporting and seizure detection \(researchgate.net\)](#) (Accessed: 10th January 2022).

Epilepsy Action (2019) *Treating Children with Epilepsy*. Available at: <https://www.epilepsy.org.uk/info/children-young-adults/children/treatment-management> (Accessed: 10th January 2022).

Epilepsy Action (2020) *EEG Tests and Epilepsy*. Available at: <https://www.epilepsy.org.uk/info/diagnosis/eeg-electroencephalogram> (Accessed: 7th January 2022).

Epilepsy Foundation (2004) *Epilepsy: Impact on the Life of the Child*. Available at: <https://www.epilepsy.com/article/2014/3/epilepsy-impact-life-child> (Accessed: 6th January 2022).

Epilepsy Foundation (2014a) *What Happens During a Seizure?* Available at: <https://www.epilepsy.com/start-here/about-epilepsy-basics/what-happens-during-seizure#:~:text=During%20a%20seizure%2C%20you%20may,or%20easy%20to%20tell%20apart> (Accessed: 18th December 2021).

Epilepsy Foundation (2014b) *Fighting Stigma*. Available at: <https://www.epilepsy.com/living-epilepsy/epilepsy-and/parents-and-caregivers/helping-others-understand/fighting-stigma> (Accessed: 10th January 2022).

Epilepsy Foundation (2014c) *What is Epilepsy?* Available at: <https://www.epilepsy.com/learn/about-epilepsy-basics/what-epilepsy> (Accessed: 4th January 2022).

Epilepsy Foundation (2018) *New to Seizures & Epilepsy*. Available at: <https://www.epilepsy.com/sites/core/files/atoms/files/NewToSeizuresAndEpilepsy-May15-2020.pdf> (Accessed: 2nd January 2020).

Epilepsy Research UK (2020) *What is Epilepsy?* Available at: <https://epilepsyresearch.org.uk/about-epilepsy/what-is-epilepsy/> (Accessed: 3rd January 2022).

Epilepsy Society (2018) *Seizures – An Introduction to Epileptic Seizures*. Available at: https://epilepsysociety.org.uk/sites/default/files/2020-05/SeizuresSeptember2018_2.pdf (Accessed: 2nd January 2022).

Epilepsy Society (2019) *Causes of Epilepsy*. Available at: <https://epilepsysociety.org.uk/about-epilepsy/what-epilepsy/causes-epilepsy> (Accessed: 12th January 2022).

Epilepsy Society (2021a) *Focal Aware Seizures*. Available at <https://epilepsysociety.org.uk/about-epilepsy/epileptic-seizures/focal-aware-seizures> (Accessed: 2nd January 2022).

Epilepsy Society (2021b) *How Epilepsy is Diagnosed*. Available at: <https://epilepsysociety.org.uk/about-epilepsy/diagnosing-epilepsy/how-epilepsy-diagnosed> (Accessed: 2nd January 2022).

Epilepsy Wales (date unknown) *Supporting People in Wales with Epilepsy*. Available at: <https://epilepsy.wales/> (Accessed: 10th January 2022).

Great Ormond Street Hospital (GOSH) (2016) *Epilepsy*. Available at: <https://www.gosh.nhs.uk/conditions-and-treatments/conditions-we-treat/epilepsy/> (Accessed: 3rd January 2022).

Guerrini, Prof.R. (2006) 'Epilepsy in Children', *The Lancet*. 367(9509), pp.499-524. Available at: [https://doi.org/10.1016/S0140-6736\(06\)68182-8](https://doi.org/10.1016/S0140-6736(06)68182-8). (Accessed: 9th January 2022).

Jacoby, A. and Austin, J.K. (2007) 'Social stigma for adults and children with epilepsy', *Epilepsia*. 48(s9), pp.6-9. Available at: <https://onlinelibrary.wiley.com/doi/10.1111/j.1528-1167.2007.01391.x> (Accessed: 13th January 2022).

Laskey, J. (2021) *How Much is Epilepsy Impacting Your Life?* Available at: <https://www.everydayhealth.com/epilepsy/how-much-is-epilepsy-impacting-your-life/> (Accessed: 8th January 2022).

Lee, S-A. Yoo, H-J. and Lee, B-I. (2005) 'Factors Contributing to the Stigma of Epilepsy', *Seizure – European Journal of Epilepsy*, 14(3), pp.157-163. Available at: <https://doi.org/10.1016/j.seizure.2005.01.001> (Accessed: 9th January 2022).

Mayo Clinic (2021) *Epilepsy – Diagnosis and Treatment*. Available at: <https://www.mayoclinic.org/diseases-conditions/epilepsy/diagnosis-treatment/drc-20350098#:~:text=An%20EEG%20records%20the%20electrical,epilepsy%20and%20other%20seizure%20disorders> (Accessed: 6th January 2022).

Moawad, H. (2021) *Seizure Types and Symptoms and How to Administer Emergency Aid*. Available at: <https://www.healthline.com/health/types-of-seizures> (Accessed: 5th January 2022).

- Newsome, R. and Write, H. (2020) *Epilepsy and Sleep*. [blog]. Available at: <https://www.sleepfoundation.org/physical-health/epilepsy-and-sleep> (Accessed: 12th January 2022).
- NHS (2020a) *Overview – Epilepsy*. Available at: <https://www.nhs.uk/conditions/epilepsy/> (Accessed: 2nd January 2022).
- NHS (2020b) *Treatment – Epilepsy*. Available at: <https://www.nhs.uk/conditions/epilepsy/treatment/> (Accessed: 7th January 2022).
- O'Rourke, G and O'Brien, J.J. (2017) 'Identifying the barriers to antiepileptic drug adherence among adults with epilepsy', *Seizure*, pp.160-168. doi: 10.1016/j.seizure.2016.12.006.006.
- Pietrangelo, A. (2018) *Everything You Need to Know About Epilepsy*. Available at: <https://www.healthline.com/health/epilepsy> (Accessed: 19th December 2021).
- Royal College of Paediatrics and Child Health (2020) *State of Child Health*. London: RCPCH.
- Shouri, R. (2021) *How Epilepsy is Treated*. Available at: <https://www.verywellhealth.com/epilepsy-treatments-1204498> (Accessed: 9th January 2022).
- Wells, D. (2017) *Simple Partial Seizure*. Available at: <https://www.healthline.com/health/simple-partial-seizure> (Accessed: 7th January 2022).
- Welsh Government (2021) *The Additional Learning Needs Code for Wales 2021*. Crown: Cardiff.
- Williams, J. Steel, C. B.Sharp, G. DelosReyes, E. Phillips, T. Bates, S. Lange, B. and Griebel, M. (2003) 'Parental anxiety and quality of life in children with epilepsy', *Epilepsy and Behaviour*, 4(5), pp.483-486. Available at: [https://doi.org/10.1016/S1525-5050\(03\)00159-8](https://doi.org/10.1016/S1525-5050(03)00159-8) (Accessed: 9th January 2022).
- World Health Organisation (2015) *Epilepsy*. Available at: <https://www.who.int/news-room/fact-sheets/detail/epilepsy> (Accessed: 5th January 2022).
- Young Epilepsy (2022) *Children with Epilepsy and their learning*. Available at: <https://www.youngepilepsy.org.uk/about-epilepsy/living-with-epilepsy/epilepsy-and-its-impact-on-children/epilepsy-and-memory.html> (Accessed: 11th January 2022).