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BLOG POST:

EPILEPSY WITHIN CEREBRAL PALSY PATIENTS

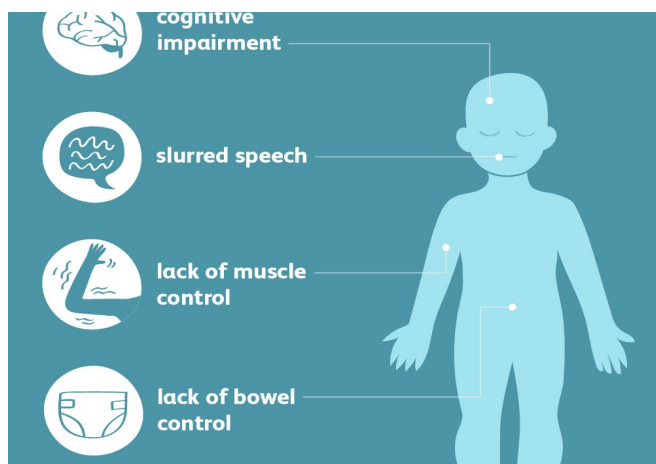


<https://penfieldbuildingblocks.org/early-education/helping-children-with-cerebral-palsy-transition-into-the-school-year/>

What is Cerebral Palsy?

Cerebral palsy (CP) is a disorder that affects an individual's motor ability and balance. CP can be caused by damage in the developing brain. Severity of the symptoms vary from patient to patient. Severe CP could mean lifelong care for them, struggles with swallowing and with motor abilities like walking, others may have mild CP. They can walk awkwardly or may not need to depend on life long care.

People with CP can present many challenges, not only motor impairments. They struggle with seizures, vision, hearing, speaking, scoliosis, muscles or joints problems, and intellectual development.



CP affects brain matter. White matter is deeper tissues in the brain that contain axons, which are extensions of nerve cells. CP damages these crucial fibers not allowing messages to be received in the body.

With all these conditions listed above, children or adults who have Cerebral Palsy are faced with challenges in their day to day life. Many aren't

able to walk or have control with their movements like walking steadily, writing, speaking, swallowing or picking up an object.

In the U.S two to three children out of every 1,000 have Cerebral Palsy¹ (CP). 30 to 50 percent of children have epilepsy². Children and athletes are very active physically and prone to brain injuries which would lead to epilepsy.

What is Epilepsy?

Epilepsy is a disorder of recurrent seizures. Seizures aren't predictable and can vary between each individual from mild to severe.

Witnessing a seizure in an individual can be a stressful moment. But those with CP, have a greater chance of developing epilepsy.

With the inability of being able to walk or talk, seizures are a scary challenge. The lack of oral skills doesn't allow time of warning, many children with CP struggle with swallowing and seizures can cause choking during this process.

There are different types of seizures that can range from loss of consciousness to stiffen movements. Some examples:

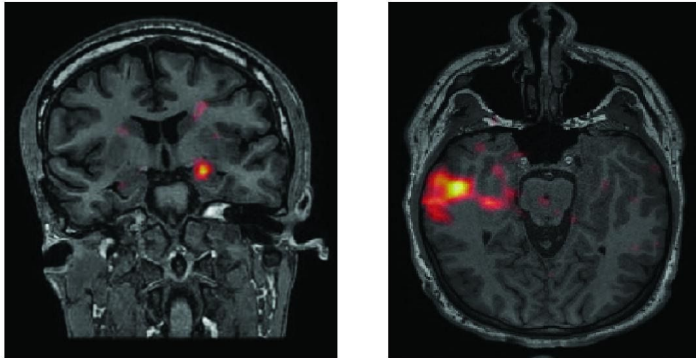
Tonic seizures: causes stiffening of your muscles, may cause you to fall to the ground.

Clonic seizures: associated with repeated or rhythmic, jerking muscle movements.

¹ <https://www.cerebralpalsy.org/about-cerebral-palsy/prevalence-and-incidence>

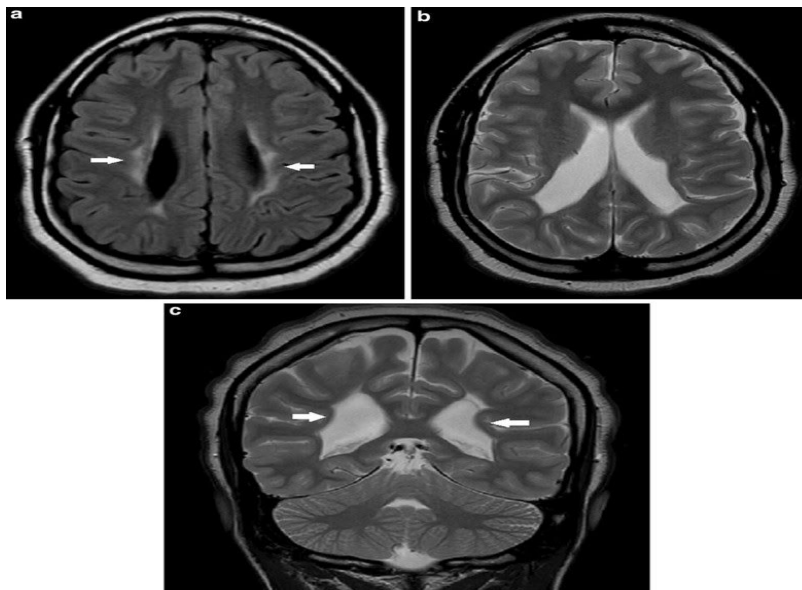
² <https://www.cerebralpalsyguide.com/cerebral-palsy/coexisting-conditions/epilepsy/>

Tonic-Clonic seizures: causes loss of bladder control, stiffening of muscles, biting of tongue, loss of consciousness



(Example of blood flow during and after a seizure using MRI imaging.)

EPILEPSY IN CEREBRAL PALSY



(Fig 2.) Showing 16 year old female with spastic quadriplegic cerebral palsy. Nikam R.M., Choudhary A.K., Kandula V., Averill L. (2019) Neuroimaging Pathology in Cerebral Palsy. In: Miller F., Bachrach S., Lennon N., O'Neil M. (eds) Cerebral Palsy. Springer, Cham. https://doi.org/10.1007/978-3-319-50592-3_10-1

While analyzing the occurrence of seizures in Cerebral palsy patients, this study observed and described the evolution of seizure disorders in children with CP. They determined that 25% of children with CP and WMI (white matter injury) had seizures— 41 kids were in the study. They described that overtime epilepsy becomes more frequent and also mentioned how children that take antiepileptic drugs (AED) experience less seizures (*Cooper et al, 2017*).

They also described the remission of different epileptic syndrome such as Focal Seizures, which causes the patient to lose consciousness.

This study recognizes the concept that children over time can develop different types of seizures and brings awareness to parents and doctors to know of the different remissions of seizures that could occur.

Furthermore, I wanted to look more into the environment of those affected cerebral palsy and possibly increase their quality of life with better treatment/prevention plans.

Based on a study, it is evident that the school environment differs between adolescents with CP and/or epilepsy. And the feedback they received was that the education system is important to note if it is enjoyable to them or tailored to fit specialized needs.

One thing highlighted within this study was puberty acknowledgement, social support and social acceptance, and parental stress (*Boldyreva et al, 2019*).

Unfortunately, epilepsy is a shameful illness to have in many countries. This causes parents to hide their kids' conditions which can affect the child's mental state over time.

For me, bringing up the idea of quality of life in relation to epilepsy in cerebral palsy patients was a difficult task. Having a quality life of support and a stress free environment is essential to mental health, because a person has CP their mental health should not be overlooked.

Seizures are unpredictable but the question that stands out is whether or not stress factors like education or home-life can cause seizures to occur more often?

Through many readings in research journals that question still stands but one thing to take away is that epilepsy is a difficult condition and is important to acknowledge that people with cerebral palsy may struggle with this for a long time. The dosage of Antiepileptic drugs have to change sometimes because of the seizures occurrence, strength, and activity within the brain. Those with cerebral palsy depend on this medication to help lessen the recurrent of types of seizures. Seizures are a difficult moment, a moment where control is not there, and children with CP have to go through this condition thus creating an unnecessary adversity. Those who have CP cannot control the timing of their seizures, it is important that we are aware of how to support those around us whether they are going through a seizure or need accommodations for their education/job.

For future studies, I hope to understand the quality of life for people with severe cerebral palsy and how that can affect epilepsy. Hopefully, this raises awareness and understanding of people with cerebral palsy.



Cerebral Palsy Awareness

Reference:

1. Boldyreva, U., Streiner, D. L., Rosenbaum, P. L., & Ronen, G. M. (2020). Quality of life in adolescents with epilepsy, cerebral palsy, and population norms. *Developmental Medicine & Child Neurology*, 62(5), 609-614.

2. Cooper, M. S., Mackay, M. T., Fahey, M., Reddihough, D., Reid, S. M., Williams, K., & Harvey, A. S. (2017). Seizures in Children With Cerebral Palsy and White Matter Injury. *Pediatrics*, 139(3), e20162975. <https://doi.org/10.1542/peds.2016-2975>