



## SEIZURES AND AUTISM SPECTRUM DISORDER

Seizures occur more frequently in individuals with Autism Spectrum Disorder (ASD) than in other children. Many of the neurological syndromes and structural causes of epilepsy also lead to developmental challenges that fulfill criteria for ASD, and increasingly there is evidence of genetic abnormalities such as microdeletions and duplications that affect brain development and lead to both epilepsy and autism. Although doctors and researchers do not always understand why ASD and epilepsy co-occur, treatment aims to manage the overlapping cognitive, language, affective, social, and behavioral delays common to both disorders.

A seizure is an abnormal electrical discharge in the brain altering function or behavior. It is the most common neurological condition in children, with a prevalence of more than 4%. Epilepsy, defined as two or more unprovoked seizures, occurs in 2-3% of the general population. Remarkably, epilepsy is reported in 25-40% of individuals with ASD. Identified risk factors for epilepsy in those with ASD include intellectual disability, an underlying neurologic disorder, a family history of epilepsy, and severe cognitive delay.

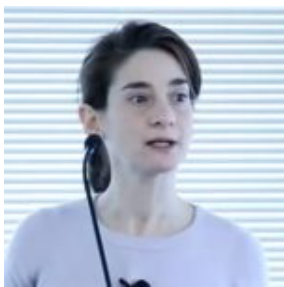
Most cases of epilepsy in children with ASD present after 10 years of age, and all seizure types have been reported. Seizures may be focal (partial), with only one side of the brain involved, or generalized in which both sides of the brain display abnormal activity. Focal seizures are further classified as either simple (no altered level of consciousness) or complex (altered level of consciousness). Generalized seizures may be either convulsive or non-convulsive. An electroencephalogram (EEG) is the diagnostic test that measures electrical activity in the brain and is used to confirm a clinical suspicion of seizure activity.

Symptoms of seizures are widely variable but include stiffening (tonic) or rhythmic twitching (clonic) of one or more extremities or the face, staring spells, lip smacking or other non-purposeful movements or distinct periods of changes in behavior such as staring or sudden headache. In children with ASD, a sudden loss

of language skills or behavioral regression may be caused by epileptic disruption of organized brain activity that may not always show up clinically. (This is called electrical status epilepticus of sleep.)

Seizure type, EEG findings, and clinical factors dictate treatment of epilepsy in those with and without ASD. The goal of medication with anti-epileptic drugs is to eliminate all seizures without negatively impacting cognitive and behavioral functioning.

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