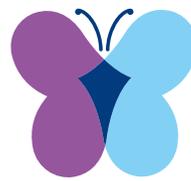


INTRACTABLE EPILEPSY: COULD IT BE DRAVET? A DIAGNOSIS GUIDE FOR HEALTH PROFESSIONALS



DRAVET Syndrome UK

Hope for families with life-limiting epilepsy

- **Dravet syndrome** is a form of developmental epilepsy that presents with prolonged recurrent seizures
- Seizures are often triggered by fever, illness, or sudden temperature change
- Dravet syndrome typically presents during the first year of life; over time, other seizure types appear and developmental delays occur to most children
- Currently the condition is under-diagnosed in the UK
- A genetic diagnosis test is now available in the UK from the NHS
- **Finding the right treatment plan is critical for children with Dravet syndrome** – some medicines are contraindicated as they can increase seizure frequency
- **Early diagnosis and effective treatment of Dravet syndrome makes a huge difference** – it saves unnecessary investigations, reduces seizures and may improve long-term outcomes

Why diagnosing Dravet syndrome matters

Dravet syndrome has a devastating impact on patients and family members but it can be more effectively managed with appropriate treatment. **Healthcare professionals** at the frontline of treating seizures and other symptoms of Dravet syndrome have a key role to play in improving the diagnosis and management of this condition in the UK.

What is Dravet syndrome?

Previously known as severe myoclonic epilepsy in infancy (SMEI), Dravet syndrome is a neurological disorder with onset during the first year in an otherwise healthy infant. Dravet syndrome develops as the child grows older; symptoms include prolonged, recurrent seizures and a wide spectrum of related problems such as learning disability, ataxia and behaviour difficulties.¹

Incidence of Dravet syndrome in the UK has previously been estimated at 1 in 40,000 or about 7% of all severe epilepsies starting before the age of three. However, recent data suggests the true incidence is of Dravet syndrome closer to 1 in 19,000 live births

Outside specialised epilepsy and neurology circles, Dravet syndrome remains relatively unknown. Scientific understanding of the disorder has improved significantly since it was first described by Dr Charlotte Dravet in 1978. Molecular research shows that mutations in the gene for the brain sodium ion channel, SCN1A, are found in about 80% of children with Dravet syndrome.² These advances mean it is now possible to use genetic testing to help make an early and accurate diagnosis of Dravet syndrome.

Diagnosing Dravet syndrome

Dravet syndrome is under-diagnosed. Being aware of the typical features of the syndrome and intervening early to request testing is critical to help reduce the burden of disease and ensure an appropriate treatment plan is in place.

WHEN TO TEST FOR DRAVET SYNDROME

SCN1A testing should be considered **when an infant presents with first seizure earlier than 12 months, particularly when the medical history reveals:**

- **Seizure episodes are frequent**, often prolonged (>10 minutes) or status epilepticus (>30 minutes)
- **Epilepsy is drug resistant**, combination drug therapy necessary for acceptable seizure control
- **Seizure pattern changes with age** and may include:
 - **hemiconic seizures** (jerking down one side of the body, may alternate sides in different seizures);
 - **focal seizures with impaired awareness** (staring spells lasting 30 seconds to 3 minutes with pallor, oral automatisms and sometimes head deviation);
 - **myoclonic jerks** (rapid contractions of muscles that may cause the child to drop their head or fall, often appearing after the first year)
- **Modest temperature elevation e.g. heat or water and illness trigger seizures**, especially in infants and toddlers. For this reason, immune response to immunisation sometimes triggers the first seizure
- **Photosensitivity** may appear
- **Initial development is normal** – EEG, MRI and metabolic studies are normal at presentation. Focal and generalised spike and wave abnormalities appear from the second year onwards.
- **From the second year development problems become apparent; ataxia** is common and an unusual **gait** develops in older children.

LIVING WITH DRAVET SYNDROME

Symptom patterns change during a lifetime...for intractable epilepsy patients don't stop asking

Could it be Dravet?

Age of onset – infant under 1 year

- Previously well, developmentally normal

Initial seizure types include

- Febrile seizure, hemiclonic, generalised clonic/tonic, status epilepticus (>30 minutes); triggered by high temperature or water

Normal development until 1 year

- Development slows, walk a little later (e.g. 17–18 months), unsteady for longer; language slower to acquire; sometimes regress

EEG normal in first 1–2 years then

- Generalised spike wave, polyspike, multifocal discharges, may be photosensitive

In the second year myoclonic and atypical absences may appear

- Other seizure types emerging from the second year include: myoclonic seizures, focal seizures with impairment of awareness (complex partial/dyscognitive seizures), atypical absence seizures, atonic seizures

After 2–5 years, episodes of status settle

- Convulsive status much less frequent but can still occur; TCS evolve to focal seizures with impairment of awareness and then primarily nocturnal generalised clonic/tonic seizures
- Myclonia more prominent as older, may fluctuate or become more prolonged

Long-term development

- Physiological ataxia does not improve in normal time course, pyramidal signs develop³
- Unusual crouch gait appears after 13 years (bony malalignment with significant functional impairment)
- Variable and autistic features in some, many children have extremely challenging behaviour
- Intellectual disability (severe 50%, moderate 25%, mild 25%), most children are long-term dependent

Adults with intellectual disability and epilepsy

- Don't rule out Dravet! The right diagnosis and treatment can still reduce seizure and disease burden even in intractable adult patients⁴

What to do if you suspect Dravet syndrome

Confirmation of diagnosis is essential. If you suspect a child or adult is presenting with features of Dravet syndrome, please refer without delay to a neurologist who has expertise in epilepsy, with a recommendation for SCN1A testing. Testing can be carried out by the Epilepsy Genetic Service, Glasgow and in other centres in the UK via local clinical genetics departments. There are a number of active centres running Genetic Epilepsy and Dravet syndrome Clinics, which families can attend if their doctor refers them for an opinion. Diagnostic testing is available through the NHS in the UK. Even if the SCN1A test comes back negative, Dravet syndrome should not be ruled out if the patient fits the diagnosis clinically. Further advice can be sought from the Glasgow Epilepsy Centre.

Treating patients with Dravet syndrome

Appropriate and aggressive seizure management, and implementation of tailored anti-epileptic therapies are necessary to improve the outcome of all those affected with Dravet syndrome. Treatments that may be effective for Dravet syndrome include: Topiramate, Stiripentol, Bromides, Clobazam, Sodium Valproate and a ketogenic diet. Phenytoin and lamotrigine should be used with caution as they may make seizures worse in some cases.

Important: Avoid Contraindicated Drugs!

Some anti-epileptic drugs may exacerbate seizures. The following drugs should be avoided: Carbamazepine, Vigabatrin and Tiagabine

Interdisciplinary management

Dravet syndrome causes children cognitive developmental impairment – often severe. Multi-disciplinary management is required in addition to drug treatment tailored to the specific needs of each patient. For example, in children, expressive and receptive language is often impaired; early intervention with speech therapy optimises potential. Ensure developmental assessments begin as early as possible and are repeated regularly.

For more information, contact us at www.dravet.org.uk

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