

Oral Health Fact Sheet for Dental Professionals

Children with Epilepsy

Epilepsy is a brain disorder characterized by excessive neuronal discharge that can produce seizures, unusual body movements, and loss or changes in consciousness. Transient episodes of motor, sensory, or psychic dysfunction, with or without unconsciousness or convulsive movements may be present.

(ICD 9 code 345.9)

Prevalence

- < 1%
- 75% no known etiology
- Higher frequency in males

Manifestations

Clinical

- **Partial** affects only part of the brain
 - * Simple – may be subtle, with awareness intact
 - * Complex – involves impairment of awareness *variable presentation: may have autonomic symptoms, abnormal sensation, hallucinations
- **Clinical Generalized** – affects entire cortex
 - * Absence – impaired consciousness, staring, and eye blinking
 - * Atonic – abrupt loss of muscle tone, loss of consciousness, and sudden collapse
 - * Myoclonic – sudden jerking of arms and/or legs and impaired consciousness
 - * Tonic-clonic – loss of consciousness, repetitive jerking, sustained stiffening, post-seizure amnesia, and possibly cyanosis

Oral

- Increased risk for dental caries
- Increased risk for oral trauma
- Medication-induced gingival hyperplasia, bleeding gums, and delayed healing

Other Potential Disorders/Concerns

- ADHD
- Learning disabilities
- Anxiety
- Depression

Related disorders with implications for dental treatment

- none

Children with Epilepsy continued

Management

Medication

SYMPTOM	MEDICATION	SIDE EFFECTS
Seizures	<i>Phenytoin</i> (Dilantin)	Xerostomia and Gingival hyperplasia
	<i>Carbamazapin</i> (Tegretol) <i>Valproic Acid</i>	Bone marrow suppression and decreased platelet count, possible increased bleeding and postoperative infection
	<i>Gabapentin</i> (Neurontin)	Xerostomia, fever, mood changes, Erythema Multiforme, Thrombocytopenia, kidney failure, viral infections, hyperkinesia and other neurologic symptoms
	<i>Levetiracetam</i> (Keppra)	Hostility, irritability, mood changes, depression, anorexia, infection

Surgery

- Temporal Resection or Sectioning of Corpus Callosum
- Implanted Vagal Nerve Stimulator (VNS)- Does not require antibiotic prophylaxis

Ketogenic Diet

- Child may be on a specially controlled diet. Consult medical provider prior to prescribing sugar-containing medications that can interfere with the regimen.

Behavioral

Many children have seizures controlled or know when they are likely to have a seizure and seizure type so extensive precautions are unnecessary.

- Ensure medication has been taken as prescribed before treatment to reduce risk of seizure.
- Schedule appointment during time of day when seizures are less likely to occur.
- Minimize seizure triggers. Reduce stress and anxiety by explaining procedures before starting. Keep bright light out of child's eyes or allow child to wear dark glasses.
- Seizure management during treatment: **Remove** all dental instruments from the mouth. **Clear** the area around the dental chair. **Stay** with the child and turn child to one side. **Monitor** airway to reduce risk of aspiration. **Note time** seizure begins: if seizure continues >3 min call **EMS** – Danger of Status Epilepticus (potentially life threatening).

Dental Treatment and Prevention

- Obtain thorough medical history-including seizure triggers and seizure frequency/level of control.
- Monitor child for anti-epileptic medication induced gingival hyperplasia. Meticulous oral hygiene is the best prevention. In severe cases surgical reduction may be needed.
- Powered toothbrushes may be too stimulating for some children and should be recommended only after determining if the child will tolerate one.
- If prosthetic restorations are considered, insure they are appropriate for the rate, level and frequency of seizures, and they are resistant to damage or displacement during an epileptic attack to reduce choking hazards.
- Determine if mouth guard is necessary for children with uncontrolled epilepsy.
- Children with severe, uncontrolled epilepsy may require general anesthesia for restorative and surgical needs.

Children with Epilepsy continued

- It is not uncommon to encounter patients who are tube-fed among the population of Children with Special Healthcare Needs. Patients fed by tube typically have low caries, rapid accumulation of calculus, GERD (Gastro-esophageal Reflux Disease), oral hypersensitivity, and are at high risk for aspiration in the dental chair. No antibiotic premedication is needed for Gastric or Nasogastric tubes. Position the patient in as upright a position as possible and utilize low amounts of water and high volume suction to minimize aspiration.

Look for signs of physical abuse during the examination. Note findings in chart and report any suspected abuse to Child Protective Services, as required by law. Abuse is more common in children with developmental disabilities and often manifests in oral trauma.

Additional information: [Special Needs Fact Sheets for Providers and Caregivers](#)

References

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- Kossoff EH, Zupec-Kania BA, Rho JM. (Jun 17, 2009) Ketogenic Diets: An Update for Child Neurologists. *J Child Neurol*. 4(8): 979-88. Epub. Review.
- Dymont, H.A., Casas, M.J. 1999 Dental care for children fed by tube: a critical review. *Spec Care Dentist*, 19(5):220-4. Review.

Additional Resources

- [NIH Institute for Epilepsy](#)
- [Special Care: an Oral Health Professionals Guide to Serving Young Children with Special Health Care Needs](#)
- [Bright Futures Oral Health Pocket Guide](#)
- [American Academy of Pediatric Dentistry: 2011–2012 Definitions, Oral Health Policies and Clinical Guidelines](#)
- [MCH Resource Center](#)
- [ASTDD-Special Needs](#)
- [Block Oral Disease, MA](#)
- [NOHIC-NIDCR publications](#)
- Free of charge CDE courses: [MCH Oral Health CDE](#) (4 CDE hours); [NIDCR CDE](#) (2 CDE hours)



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