

# Oral Health Fact Sheet for Dental Professionals

## Adults 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
  - \* oral trauma
  - \* laceration, including bite injuries to tongue
  - \* ulcerations and glossitis as a result of medication-induced B-12 deficiency
  - \* trauma-induced TMJ disc dislocation requiring reduction
  - \* trauma-induced tooth avulsion – if tooth cannot be located, chest imaging indicated to rule out aspiration to lungs
- 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

# Adults with Epilepsy continued

## Management

### Medication

The list of medications below are intended to serve only as a guide to facilitate the dental professional's understanding of medications that can be used for Epilepsy or conditions associated with Epilepsy. Medical protocols can vary for individuals with Epilepsy from few to multiple medications.

| SYMPTOM                    | MEDICATION  | SIDE EFFECTS/DRUG INTERACTIONS   |
|----------------------------|---|--|
| Seizures                   | <b>Anticonvulsants</b>  |  |
|                            | <i>Carbamazepine</i> (Tegretol)   | Xerostomia, stomatitis, glossitis, dysgeusia, bone marrow suppression. Excessive bleeding may result when combined with aspirin or NSAIDs.   |
|                            | <i>Valproate</i> (Depakote, Depakene)   | Xerostomia, stomatitis, glossitis, dysgeusia, oral petechia. Excessive bleeding may result when combined with aspirin or NSAIDs.   |
|                            | <i>Phenytoin</i> (Dilantin)   | Xerostomia, gingival hyperplasia.  |
|                            | <i>Gabapentin</i> (Neurontin)   | Xerostomia, fever, mood changes, erythema multiforme, kidney failure, thrombocytopenia, viral infections, hyperkinesia, other neurologic symptoms.   |
|                            | <i>Levetiracetam</i> (Keppra)   | Hostility, irritability, mood changes, depression, anorexia, infection, gingivitis.  |
|                            | <i>Lamotrigine</i> (Lamictal)   | Angioedema of mouth, lips, tongue or face; oral lesions, xerostomia, nausea, headache, blurred vision, double vision, Stevens-Johnson syndrome (uncommon, severe).                           |
|                            | <i>Felbamate</i> (Felbatol)   | Heartburn, vomiting, nervousness, drowsiness, facial swelling, runny nose, rapid or pounding heart rate, difficulty breathing or swallowing, depression.                                     |
|                            | <i>Tiagabine</i> (Gabitril)   | Dizziness, inability to concentrate, drowsiness, nervousness, irritability, tiredness, shaking. Alcohol, and drugs that cause sedation, may increase the sedative effect of this medication. |
| <i>Pregabalin</i> (Lyrica) | Xerostomia, dizziness, drowsiness, edema, blurred vision, difficulty concentrating, reduced platelet counts. Alcohol, and drugs that cause sedation, may increase the sedative effect of this medication. |  |

## Adults with Epilepsy continued

| SYMPTOM                           | MEDICATION                             | SIDE EFFECTS/DRUG INTERACTIONS   |
|-----------------------------------|--|--|
| Seizures<br><i>continued</i>      | <i>Topiramate</i> (Topamax)            | Dizziness, tiredness, speech problems, difficulty with memory, sensory distortion. Alcohol, and drugs that cause sedation, may increase the sedative effect of this medication.  |
|                                   | <i>Oxcarbazepine</i> (Trileptal)       | Xerostomia, toothache, earache, dysguesia, headache, acne, nausea, vomiting.   |
|                                   | <i>Zonisamide</i> (Zonegran)           | Dizziness, drowsiness, tiredness, lack of coordination. Alcohol, and drugs that cause sedation, may increase the sedative effect of this medication.   |
| Muscle Spasticity<br>and Rigidity | <i>Baclofen</i> (Lioresal)             | Xerostomia (uncommon), angioedema of mouth, lips, tongue or face.  |
|                                   | <i>Diazepam</i> (Valium)               | Drowsiness, dystonia, double vision, xerostomia or hypersalivation, seizures, CNS and respiratory depression, paradoxical CNS stimulation, tiredness, syncope, fatigue, ataxia, depression, headache, nausea. Alcohol, and drugs that cause sedation, may increase the sedative effect of diazepam. Use with caution for persons with sleep apnea. |
|                                   | <i>Dantrolene sodium</i> (Dantrium)    | Drowsiness (alcohol can increase this effect), weakness, dizziness, tachycardia (increased heart rate), abnormal blood pressure, diarrhea, constipation, liver failure. Use caution in combining with drugs that cause CNS depression.   |
|                                   | <i>Tizanidine</i> (Zanaflex, Sirdalud) | Drowsiness (alcohol can increase this effect), xerostomia, dizziness, hypotension, weakness, somnolence.<br>Do not prescribe with ciprofloxacin or fluvoxamine.<br>Fluoroquinolone antibiotics, such as floxacin and norfloxacin, interfere with tizanidine metabolism.<br>Use caution in combining with drugs that cause CNS depression.          |

## **Surgery – Temporal Resection or Sectioning of Corpus Callosum**

- Implanted Vagal Nerve Stimulator (VNS) does not require antibiotic prophylaxis

**Behavioral:** Many patients have seizures controlled with medication 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 patient's eyes; wearing dark glasses in the operatory is an effective choice.
- Seizure management during treatment: **Remove** all dental instruments from the mouth. **Clear** the area around the dental chair. **Stay** with the patient and turn the patient 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.
- Ask patient (or caregiver) for medication updates at each appointment. Medication changes can affect the appropriate care of the patient from a medical and/or appointment management standpoint.
- Monitor patient 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 adults and should be recommended only after determining if the adult 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 seizure to reduce choking hazards. Fixed prosthetics are preferable to removable prosthetics because choking and aspiration of appliances are of concern.
- Determine if mouth guard could provide potential benefit.
- Some individuals with epilepsy are tube fed, therefore they 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.
- As needed for patients with xerostomia:
  - \* Educate on proper oral hygiene (brushing, flossing) and nutrition.
  - \* Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed.
  - \* Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

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

# Adults with Epilepsy continued

Below are references and resources which, although some are labeled for children, are very helpful for reviewing implications in adults.

## References

- Stoopler, E.T., Sollecito, T.P., Greenberg, M.S. (2003) Seizure disorders: update of medical and dental considerations. *Gen Dent*, 51(4): 361–66.
- Fitzpatrick, J.J., McArdle, N.S., Wilson, M.H., Stassen, L.F. (2008). Epilepsy in dental practice. *J Ir Dent Assoc*, 54(4):176–8.
- Károlyházy, K., Kovács, E., Kivovics, P., Fejérdy, P., Arányi, Z. (2003) Dental status and oral health of patients with epilepsy: an epidemiologic study. *Epilepsia*. 44(8):1103–8.
- Tan, H., Gurbuz, T., Dagsuyu, I.M. (2004) Gingival enlargement in children treated with antiepileptics. *J Child Neurol*, 19(12): 958–63.
- 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.
- [NIH Institute for Epilepsy](#)

## Additional Resources

- [NIH Institute for Epilepsy](#)
- [NY State Dental Journal Strategies for Dental Care and Epilepsy](#) (pages 35–36 and 39–43)
- [ASTDD-Special Needs](#)
- [Block Oral Disease, MA](#)
- Free of charge CDE course: [NIDCR CDE](#) (2 CDE hours)