







Benign Rolandic Epilepsy (BRE)

- 4x more common than ABS (24%)
- Onset – 2-12 yrs, average 5-10 yrs
- Outgrown by 16yrs
- Typically nighttime sz, may present during the day
- Sometimes never treated with AED
- Normal IQ



Febrile Seizures

- Not Epilepsy
- Onset – after 3 mths old and before 5 yrs old, Average onset 18 mths – 22 mths
- Only 2% of sz are febrile
- Boys > Girls
- Temp 102 degrees (rectal)
- May only have one
- Can last up to 15 mins
- Typically outgrown by 5 yrs old



Common Anti-Epilepsy Drug (AED)

Daily

Primarily Generalized

- Depakote (valproic acid)*
- Zonisam (Ethosuximide)*

Specialty

- Bravon (rufinamide)
- Epidolex (CBD)
- Onfi (clobazam)
- Sabril (Vigabatrin)

Broad Spectrum

- Felbatol (felbamate)
- Keppra (Levetiracetam)*
- Luminal (phenobarbital)
- Topamax (topiramate)*
- Zonegran (zonisamide)

Partial Seizures

- Carbatrol (clobazepam)
- Dilantin (phenytoin)
- Lamictal (lamotrigine)*
- Xiprat (oxcarbazepine)*
- Vimpat (lacosamide)



* - Most commonly used

Rescue

- Ativan (Lorazepam) – buccal paste
- Valium (Diazepam) – rectal
- Versed (Midazolam) – intranasal



• Intranasal Midazolam vs Rectal Diazepam for the Home Treatment of Acute Seizures in Pediatric Patients With Epilepsy. *Arch Pediatr Adolesc Med.* 2010;164(8):747-752

• Pharmacokinetics and pharmacodynamics of midazolam administered as a concentrated intranasal spray: A study in healthy Adults. *B J Clin Pharmacol.* 2002 May 5(3):501-507.

Non-Pharmaceutical Treatments

Palliative	Curative
<ul style="list-style-type: none"> ◦ Ketogenic Diet <ul style="list-style-type: none"> ◦ Modified Atkin's Diet ◦ VNS ◦ RNS  	<ul style="list-style-type: none"> ◦ Resections <ul style="list-style-type: none"> ◦ Lobectomies ◦ Hemispherectomy/otomy ◦ Corpus Callosotomy ◦ Laser ablation 

Rapid Seizure Response

Remember STAR	DON'T
<ul style="list-style-type: none"> • S - SAFETY <ul style="list-style-type: none"> - Make sure the area is safe/clear of hazardous objects and minimize the number of people in the area - Put something soft under the person's head (if needed) • T - TIME, TIME, TIME <ul style="list-style-type: none"> - Time how long the seizure lasts (at 5 mins obtain the seizure rescue medication) - 98% of seizures self resolve by 5 mins • A - ACT CALMLY <ul style="list-style-type: none"> - It's important to keep your cool so you can help the person who is having the seizure. • R - RECOVERY POSITION <ul style="list-style-type: none"> - Once the seizure has stopped, place the person in the recovery position. Stay with the person until they are conscious, breathing, and recovered. - Write details that you recall. If some is with you have them write it too. 	<ul style="list-style-type: none"> ◦ DON'T PANIC ◦ DON'T Put something in their mouth ◦ DON'T Give chest compressions/rescue breaths  <ul style="list-style-type: none"> ◦ DON'T Worry about needing oxygen during a seizure ◦ DON'T Give rescue unless advised prior to 5 mins (98% of all sz self-resolve)

How do I know?

Epileptic (rescue)	Nonepileptic (no rescue)
<ul style="list-style-type: none"> ◦ Automatism <ul style="list-style-type: none"> - lip smacking, chewing, picking, repeat phrases, etc ◦ 5 phases (FETCP) <ul style="list-style-type: none"> - F - Flexion (5 sec) <ul style="list-style-type: none"> - face or eyes open roll, mouth tight - E - Extension (10-30 sec) <ul style="list-style-type: none"> - forced cry, apnea, thoracic and abdominal muscles contract, arms/legs adduct - T - Tremor (5-10 sec) <ul style="list-style-type: none"> - fine motor proximally - C - Clonic (30-50 sec) <ul style="list-style-type: none"> - muscles relaxation interspersed with tonic contractions "rhythmic jerking" this will decrease in frequency as sz continues - P - Postictal (varies, 5-15 mins) <ul style="list-style-type: none"> - incontinence may occur, breathing resumes, increased secretions, if cyanosis resolves, if present, slowly awakens = confusion, stupor, drowsy, even sleep 	<ul style="list-style-type: none"> ◦ Closed/squeezed eyes or blinking ◦ Asynchronous movements/shaking ◦ Can be interrupted (ex. sternal rub) ◦ Drop (especially with protection) <ul style="list-style-type: none"> - Tonic (stiff)/Atonic (floppy) - LGS ◦ Fish Flopping  <ul style="list-style-type: none"> ◦ Nonepileptic are real but treated differently

Seizure Type	Absence	General Tonic Clonic	Simple Partial (think lobe)	Complex Partial	2e Generalized
Duration	<15 sec	2-3 mins	mins or >>	> 30 sec - 2 mins	mins or >
Frequency	Many/day	Variable wkly/mthly	Variable	Variable wkly/mthly	Variable wkly/mthly
Aura?	NO	NO	depends	YES	Usually (secs/mins)
LOC?	YES	YES	NO	Altered (could be aware)	YES
Motor	Minor	YES	Varies	Automatisms	Auto - GTC
Post-ictal?	NO	YES	Variable	YES	YES
How Common	2-11%	7-12%	5-10%	18-30%	>20%
Average age onset/range	3.8 yrs/ 2-13 yrs	66% onset round puberty	3 yrs/any	5.4yrs/any	Varies
Prodromal?	NO	YES (days/hours)	Vary	YES (days/hours)	YES

Other Interesting Seizures Facts

- What do these types of seizures have in common?
 - Absence
 - BRE (Benign Rolandic Epilepsy)
 - Primary GTC
 - JME (Juvenile Myoclonic Epilepsy)
- 1:10 - will have a single seizure
- 1:26 - will have epilepsy
- Seizures presents with single side involvement, seizures are starting from the opposite side
- International Epilepsy Day - 2nd Monday of February
- National Epilepsy Awareness Month - November
- Purple Day - March 26th




Helpful Websites



www.drugs.com



www.medicalhomeportal.org



www.epilepsy.org



www.epilepsyut.org



www.epilepsy.com

Resources (too many to name all of them)

- Gregory L. Holmes, M. D. (1987). *Diagnosis and Management of Seizures in Children*, v. 30. Philadelphia: W. B. Saunders Company.
- Francis Filloux, M. D., *Pediatric Neurologist and Division Chief of Pediatric Neurology at University of Utah School of Medicine, Primary Children's Hospital.*
- Colin Van Oman, M. D., *Pediatric Epileptologist for Pediatric Neurology at University of Utah School of Medicine, Primary Children's Hospital.*
- Matthew Sweney, M.D., *Pediatric Epileptologist for Pediatric Neurology at University of Utah School of Medicine, Primary Children's Hospital.*
- Kenneth "Kenny" Orton, *patient with epilepsy*
- *4 years as Pediatric Epilepsy Care Coordinator + 10 years of having a child with epilepsy*
