

Shedding Light on Shadows: Demystifying Pediatric Seizures and Their Lookalikes

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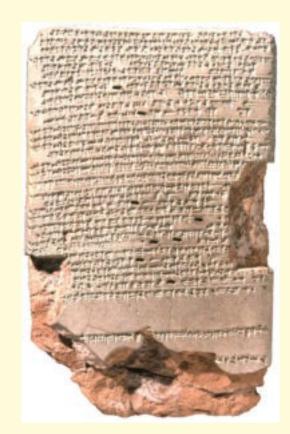
Objectives

- At the conclusion of this activity, learners will be able to:
 - Explain general rules regarding seizure vs. mimics
 - Be more comfortable when dealing with "seizure-like activity"
 - Have a better understanding of when to send to neurology and how urgent it needs to be



What Is A Seizure?

- The oldest description of a seizure was included in a clay tablet from 2500 BC found in Mesopotamia:
 - "his neck turning left, hands and feet are tense, and his eyes wide open, and from his mouth froth is flowing without him having any consciousness."



Current ILAE Definition of Seizure

- Aseizure is defined as "a transient occurrence of signs and/or symptoms due to abnormal excessive or synchronous neuronal activity in the brain."
- It is the clinician's first task to determine that an event has the characteristics of a seizure and not one of the many imitators of seizures.

ILAE 2017 Classification of Seizure Types Expanded Version 1

Focal Onset

Aware

Impaired Awareness

Motor Onset

automatisms atonic ² clonic epileptic spasms ² hyperkinetic myoclonic tonic

Nonmotor Onset

autonomic behavior arrest cognitive emotional sensory

focal to bilateral tonic-clonic

Generalized Onset

Motor

tonic-clonic
clonic
tonic
myoclonic
myoclonic-tonic-clonic
myoclonic-atonic
atonic
epileptic spasms
Nonmotor (absence)

typical

atypical myoclonic eyelid myoclonia

Unknown Onset

Motor

tonic-clonic epileptic spasms

Nonmotor

behavior arrest

Unclassified 3

Fisher, R.S., Cross, J.H., French, J.A., Higurashi, N., Hirsch, E., Jansen, F.E., Lagae, L., Moshé, S.L., Peltola, J., Roulet Perez, E., Scheffer, I.E. and Zuberi, S.M. (2017), Operational classification of seizure types by the International League Against Epilepsy: Position Paper of the ILAE Commission for Classification and Terminology. Epilepsia, 58: 522-530. https://doi.org/10.1111/epi.13670

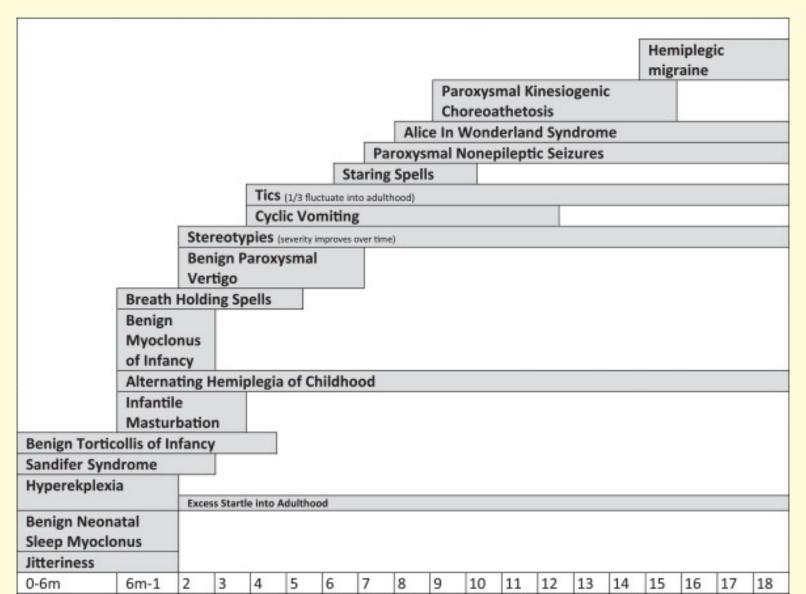
General Rules for Seizures

- Stereotyped
- Rhythmic
- Not suppressible or distractible
- Not triggered by specific emotions/events/etc.
- Needs to be localizable

Helpful History Pearls

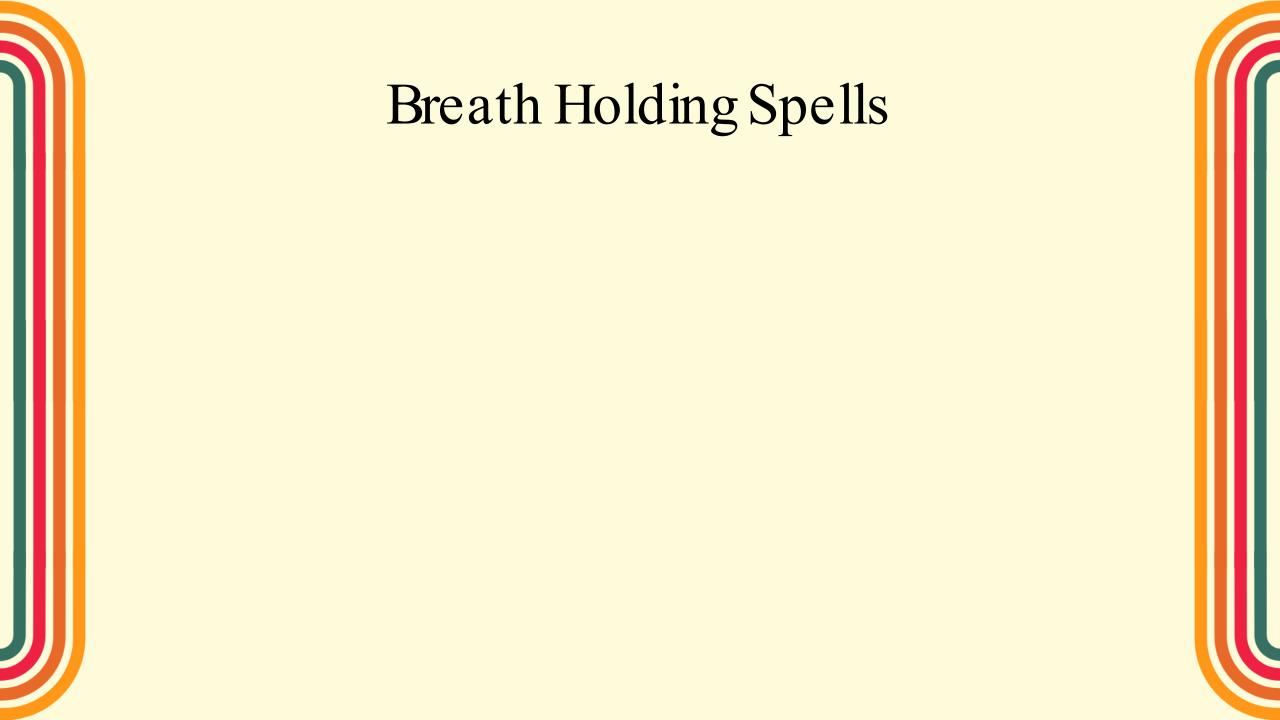
- Incontinence
- Starting from sleep
- Eyes open
- Grunting/gagging/vocalizations
- Post-ictal state
 - Especially speech difficulty and balance problems

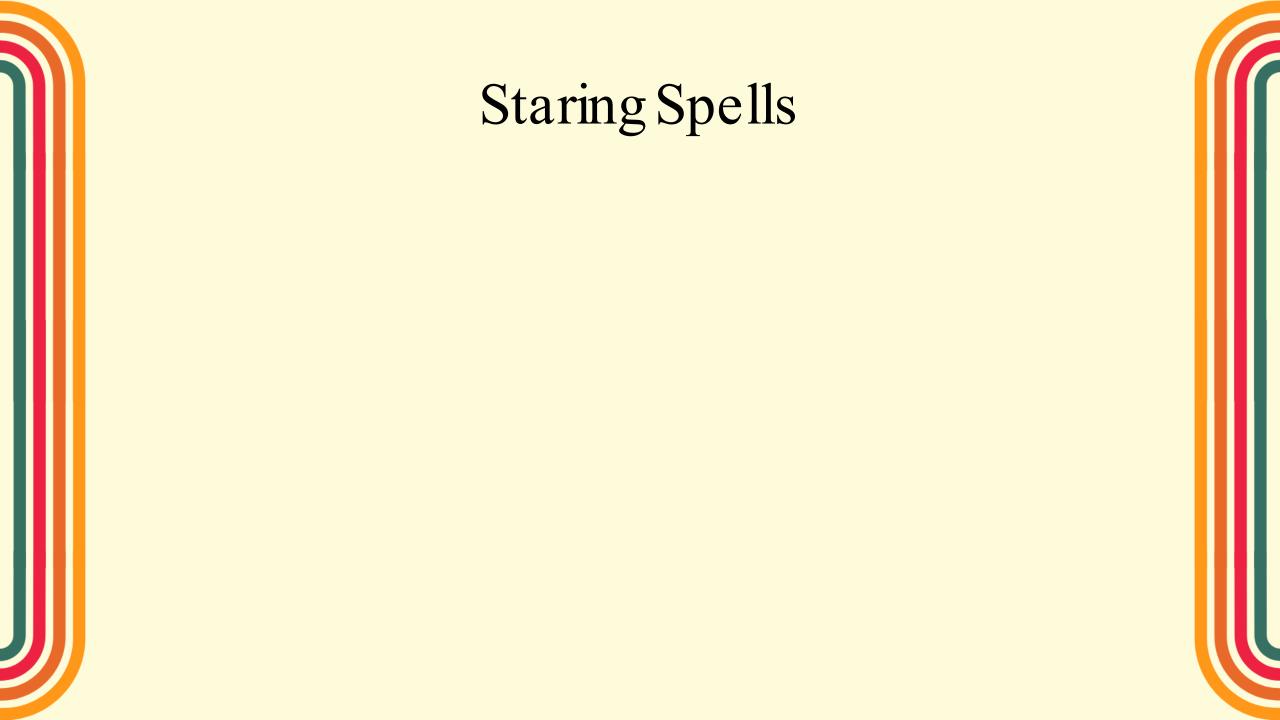
Common Mimics

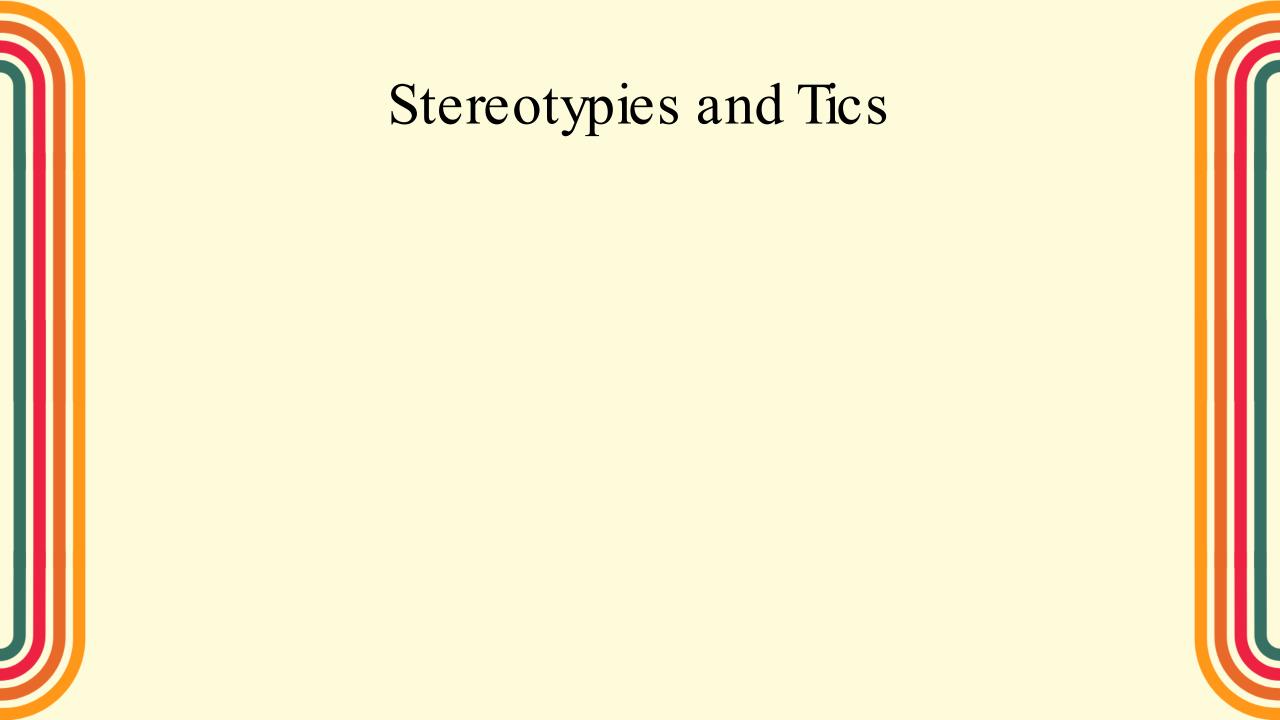


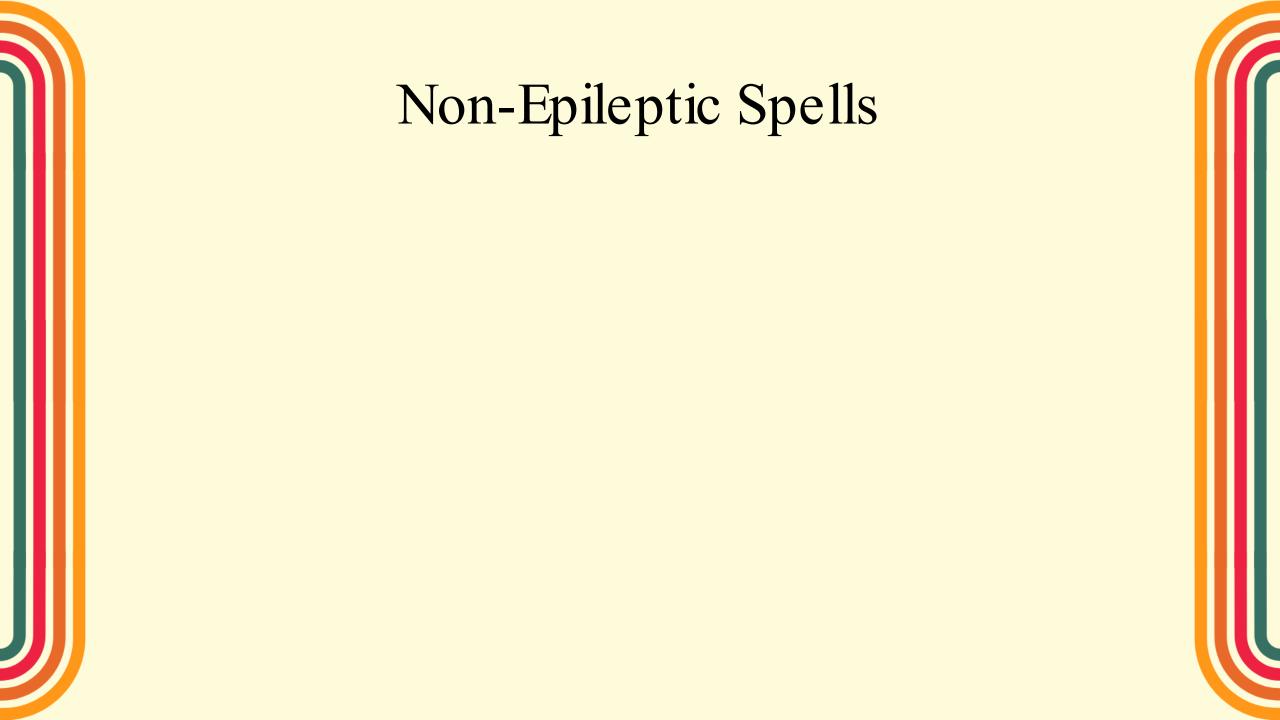
Infantile Spasms and Mimics

• Planning on inserting videos for most of the following slides...









MOC Questions in Slido (3 slides)

• Chapter staff will add these slides to your presentation once



Action Items

- Video the episodes
- Try to stop them/distract the patient
- Pay attention to timing and situations



What Is A Seizure?

- Seizures can be tricky!
- It is never wrong to send them to neurology when you are concerned!
- Videos are very helpful!

References and additional reading (1-2 slides)

- Fisher, R.S., Cross, J.H., French, J.A., Higurashi, N., Hirsch, E., Jansen, F.E., Lagae, L., Moshé, S.L., Peltola, J., Roulet Perez, E., Scheffer, I.E. and Zuberi, S.M. (2017), Operational classification of seizure types by the International League Against Epilepsy: Position Paper of the ILAE Commission for Classification and Terminology. Epilepsia, 58: 522-530. https://doi.org/10.1111/epi.13670
- History of Epilepsy Neuropedia
- Christos P. Panteliadis, Photios Vassilyadi, Julia Fehlert, Christian Hagel, Historical documents on epilepsy: From antiquity through the 20th century, Brain and Development, Volume 39, Issue 6, 2017, Pages 457-463, ISSN 0387-7604, https://doi.org/10.1016/j.braindev.2017.02.002.
- Hrachovy RA, Frost JD Jr. Infantile spasms. Handb Clin Neurol. 2013;111:611-8. doi: 10.1016/B978-0-444-52891-9.00063-4. PMID: 23622208.
- Leung AKC, Leung AAM, Wong AHC, Hon KL. Breath-Holding Spells in Pediatrics: A Narrative Review of the Current Evidence. Curr Pediatr Rev. 2019;15(1):22-29. doi: 10.2174/1573396314666181113094047. PMID: 30421679; PMCID: PMC6696822.
- Perez DL, LaFrance WC Jr. Nonepileptic seizures: an updated review. CNS Spectr. 2016 Jun;21(3):239-46. doi: 10.1017/S109285291600002X. Epub 2016 Mar 21. PMID: 26996600; PMCID: PMC5438261.

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