

# Seizures in the Hyperbaric Chamber

July 2020 HBO Safety meeting

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# Causes?

- Oxygen Toxicity
- Hypoglycemia
- High doses of steroids
- Hyperthermia (Febrile)
- Chemical / Alcohol abuse
- Certain medications (Chantix, antihistamines)
- Recent head injuries

# Oxygen Toxicity

- **Oxygen toxicity** is a condition resulting from the harmful effects of breathing molecular oxygen (O<sub>2</sub>) at increased partial pressures.
- Occurs in approximately 1.3 times in 10,000 exposures.

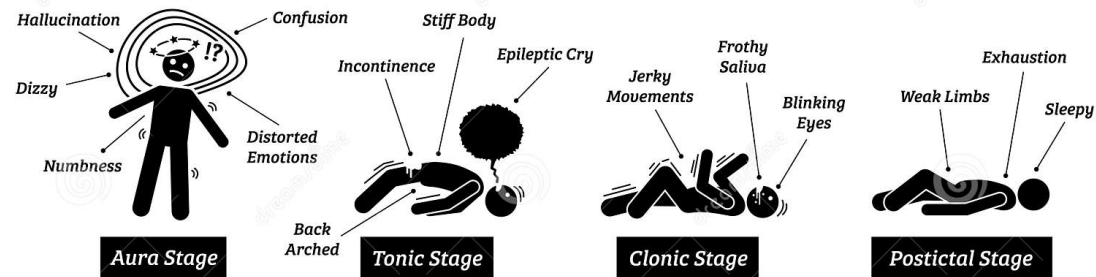
# Signs and Symptoms

- Sweating
- Nausea
- Vomiting
- Apprehension
- Shortness of breath
- Tunnel vision
- Tinnitus
- Muscle Twitching

# Phases of a Seizure

- Beginning (prodrome and aura).
- Middle (ictal) - Active seizure consisting of the Tonic and Clonic phase.
- End (Postictal).

## Stages of a Seizure



# How do we prevent a seizure?

- Physician / Tech pre treatment assessment (major tool used to prevent Oxygen Toxicity).
- During pre tx assessment factors for air breaks include narcotics, high doses of steroids, hyperthermia (febrile), hypoglycemia, or chemical / alcohol abuse.
- Utilizing air breaks during treatment.
- Environment of the HBO room (decreasing fluorescent lighting).

# Procedure (Early Onset)

- If the pt is observed or complains of any symptoms for a seizure have the pt breath from the air break system, this will lower their oxygen level.
- Notify attending physician immediately.
- Continue air break for 5-10 minutes or until pt states they feel better.
- Remove pt from chamber at the normal rate.

# Procedure (Active Seizure)

- Don't Panic! Stop and take a breath!
- If during compression or decompression stop chamber.
- Notify attending physician immediately.
- Assess pt for breathing, If pt is tonic they may hold their breath NEVER DECOMPRESS AT THIS PHASE!
- If the pt is clonic or postictal you may decompress at a rate that is comfortable to the pt if they are breathing, but only if instructed to by attending physician.
- Once removed from chamber the physician must do a complete assessment and determine a course of action for the pt.



# Other considerations

- When removing a diabetic pt from the chamber for a seizure or suspected early onset of seizure make sure to check BGL.
- When diving a pt with a cast or external fixator, use a blanket and secure with tape to protect the chamber in case of seizure.
- Pts may exhibit one or more symptoms of a seizure, however the seizure may happen without warning.

# Post Test

- Patients will always exhibit one or more signs/symptoms prior to having a seizure in the chamber. (True / False)
  
- False

- The seizure will consist of two Phases.
- Tonic
- Clonic

- You can only decompress the patient during the clonic phase. (True / False)
- True

- \_\_\_\_\_ is the major tool used to help you prevent oxygen toxicity.
- Pre-Treatment Assessment

- During your pre-treatment assessment, what are some of the factors that would determine if the patient should get an air break incorporated in their treatment protocol.
- Narcotics
- High doses of steroids
- Hyperthermia (Febrile)



Thank You!