

Stall Street Journal

How do we improve outcomes from Traumatic Brain Injury?

Prevent the H-Bombs!

Prevent Hypoxia

Keep SPO₂ > 90%

Prevent Hypotension

Keep SPB > 90mmHg

Prevent Hyperventilation

Keep ETCO₂ between 35 - 45

Managing these three things will give your patient the best chance of a positive outcome.

Sedation/Analgesia and TBI

Be mindful in the administration of benzos and narcotics in the presence of TBI. These medications rapidly drop blood pressure - especially in a patient in compensating shock. Judicious use in conjunction with aggressive fluid management is the key to managing TBI patients. Keep in mind, once we give it - we can't take it back!

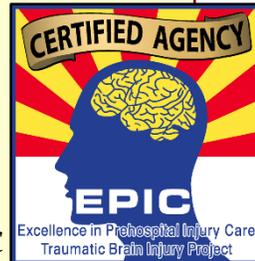
Definitive care starts in the field! Prehospital treatment can determine the outcome for a TBI patient. A patient with a mild to moderate primary brain injury can be converted to a severe secondary injury due to improper treatment.



Remember: A primary brain injury is the damage that is done at the time of impact. There are currently no treatments for a primary injury. Secondary brain injury occurs after the initial trauma and is caused by a lack of oxygen to the brain. This is caused in three ways: a hypoxic event, hypoperfusion, and if the patient is hyperventilated. Hyperventilation causes profound cerebral vasoconstriction!

EPIC Training

To date, over 8000 EMS providers in the State of Arizona have been certified as EPIC



providers. Thanks for the efforts each of you has put forward to improve outcome from TBI.

Implementation of Preventative Adjuncts

Pressure Controlled BVM's and Visual Rate Timers are powerful tools to control hyper and over ventilation. Through a generous grant from the Bob Ramsey Community Services Foundation, EPIC Certified agencies are eligible to receive an initial supply of these PCB's and VRT's.

Contact us via our website: www.epic.arizona.edu.

BEST PRACTICES

ETCO₂ - Standard of Care if Available

ETCO₂ is underutilized in the evaluation and treatment of TBI patients. It is **vital** that we place patients on ETCO₂ anytime we are ventilating them through any means - OPA/BVM, supra-glottic airway, or ET Tube, even nasal cannula. This is especially important in TBI patients, but all your patients will benefit from this practice.

Airway Interventions.

When managing a patient's airway, select the most appropriate adjunct based on provider experience, patient presentation, patient factors such as anatomy, and distance to the hospital that will **keep SPO₂ > 90% and ETCO₂ in the 35 - 45 range.** This can be accomplished via OPA/BVM, supra-glottic airway, or endotracheal tube.