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## Pediatric Traumatic Brain Injury: Optimizing Function Present and Future

P.D. Adelson

Barrow Neurological Institute at Phoenix Children's Hospital, Diane and Bruce Halle Endowed Chair in Pediatric Neurosciences.

### Resumen

In this lecture, the basic principles of primary and secondary mechanisms of injury and secondary insults along with the potential impact of age at injury following traumatic brain injury (TBI) will be reviewed along with the considerations of these principles as they apply to clinical management. Based on these basic principles, the recommendations for the medical and surgical management as outlined in the evidence based pediatric guidelines will be reviewed to provide any logical clinical pathway for present day medical management. Importantly, the gaps in the literature and knowledge will be highlighted in order to lead to new perspectives for management in the neuro intensive care unit not only for traumatic brain injury but all other types of acquired neural injury. Further discussion will include the complex and unique issues in the acute phase of management of children uniquely following TBI, principles and basics behind multi-modal data collection and analysis in the neuro intensive care unit and opportunities for present day and future interventions, and lastly introduce concepts to begin to gain a better understanding of the potential new and future approaches to the management of TBI in both children and adults.