

Traumatic Brain Injury: Screening

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Arizona Governor's Council on Spinal and Head Injuries



Screening for TBI

Screening is asking about the history of brain injury and asking this question more than once, in more than one way, and in multiple settings.

Through screening, you may be the first person to identify that the client may have a brain injury.



If you do screen for brain injury, it is important to have a process in place for any follow-up that is indicated.



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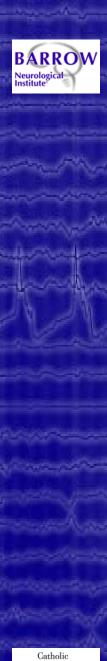


Red Flags for Screening

- Your intuition or professional senses are alarmed
- When obvious physical symptoms are present
- When clients disclose injury/disease information
- When post-concussive complaints are offered
- When your usual interventions or intervention strategies prove ineffective
- When affective and emotional responses are not parallel to stimulus/environment
- When medication regimens prove ineffective or the person exhibits effects different from those expected

Arizona Governor's Council on Spinal and Head Injuries





Traumatic Brain Injury: Assessment

Javier Cardenas, MD

Barrow Neurological Institute
St Joseph's Hospital and Medical Center
Department of Child Neurology





Acute Assessment

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Acute Assessment

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Acute Assessment

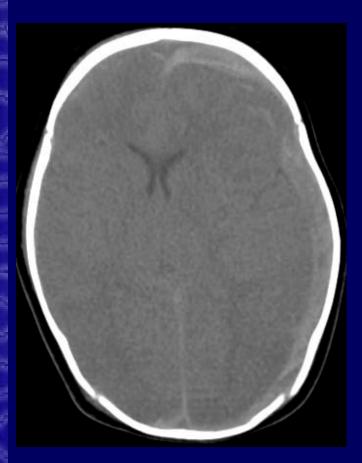
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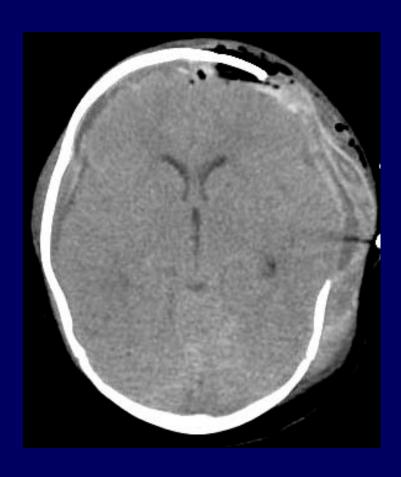
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Decompressive Craniectomy









Posttraumatic Seizures

- Immediate
 - Within 5 minutes of TBI
 - Does not represent epilepsy
 - Should be considered response to head injury
 i.e. provoked
- Early
 - Within 7 days of TBI
- Late
 - After 7 days of TBI

- Risk factors
 - Surgically evacuatedSDH
 - Intracerebral hematoma
 - GCS < 8
 - Depressed skull fracture
 - Penetrating injury
 - Parietal lesions on CT scan





Sub-acute/ Post-acute Assessment

- Physical Symptoms
 - Headache: Papilledema
 - Weakness: Hyperreflexia
 - Vertigo: Nystagmus
 - Imbalance: dysmetria/ataxia
- Behavioral Symptoms
 - Flat affect
 - Emotional lability
- Cognitive Symptoms
 - Word finding
 - Calculation
 - Processing speed









- CT scan
 - Pros:
 - fast
 - sensitive to blood and bone
 - Cons:
 - Less sensitive to tissue







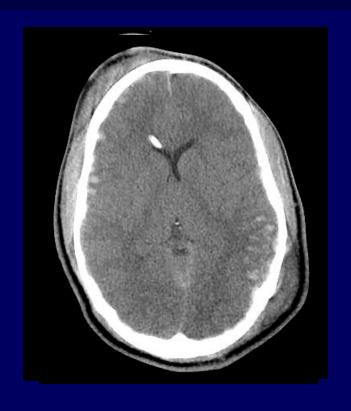
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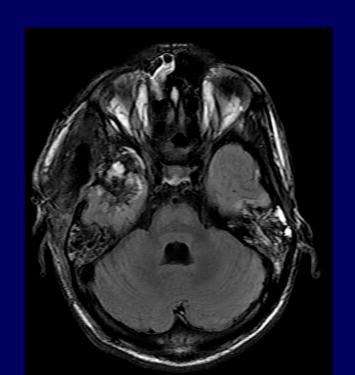






- CT scan
 - Pros:
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 - sensitive to blood and bone
 - Cons:
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- MRI
 - Pros:
 - Sensitive to brain tissue
 - Cons:
 - Slow
 - expensive

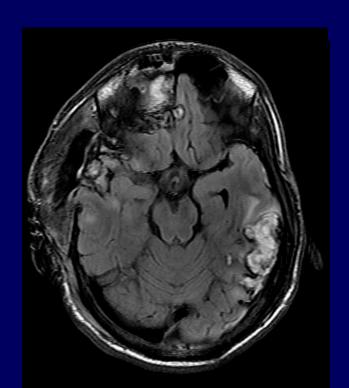






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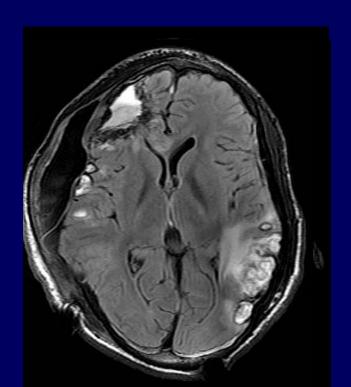


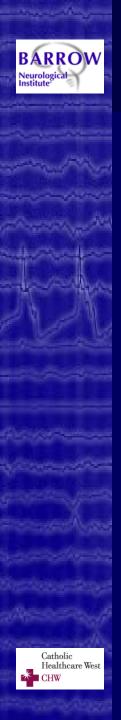




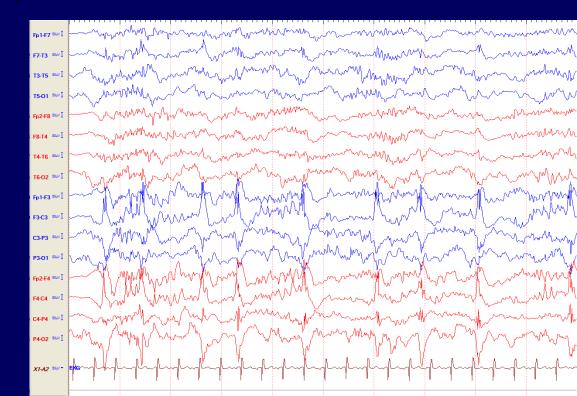
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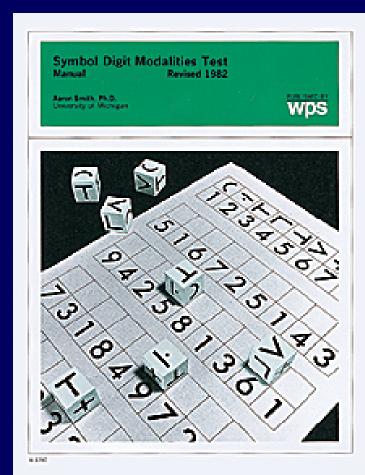
- Electroencephalogram
 - Clinically relevant for seizures and/or encephalopathy





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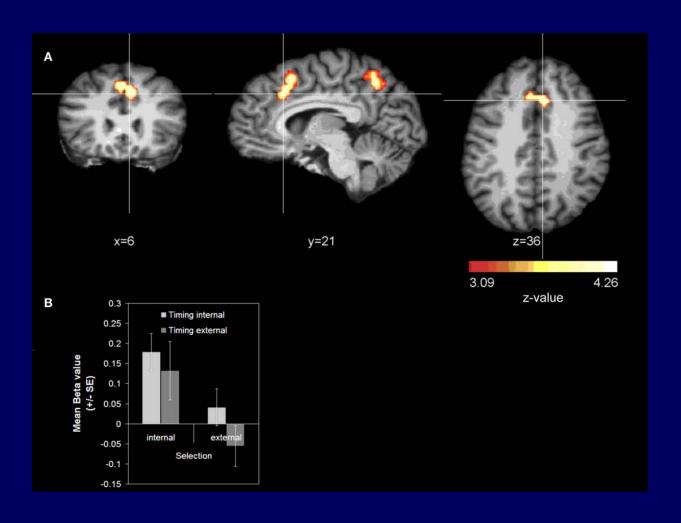
- Neuropsychological testing
 - screening







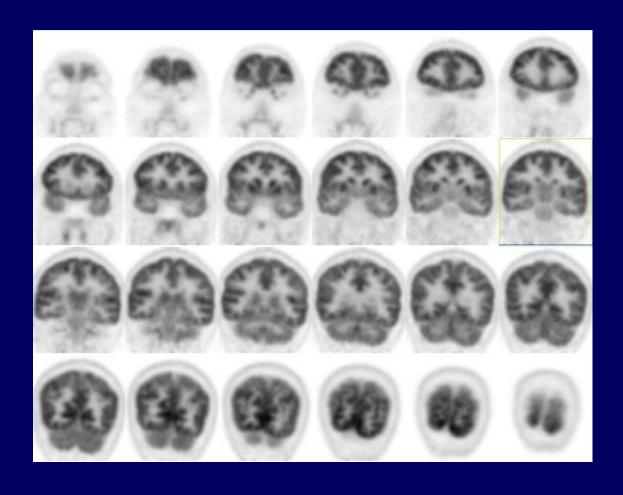
Future Tools







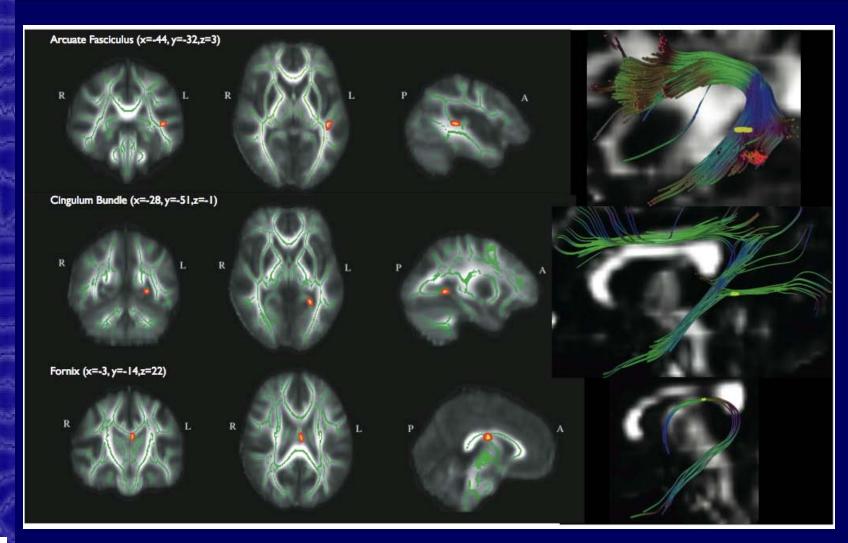
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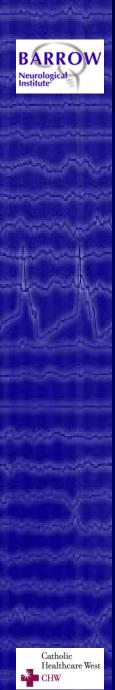




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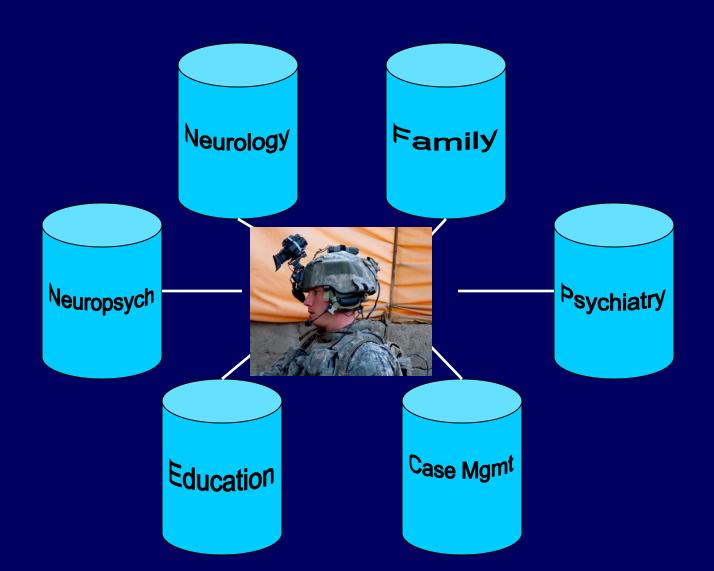
Traumatic Brain Injury: Interventions

Javier Cardenas, MD

Barrow Neurological Institute
St Joseph's Hospital and Medical Center
Department of Child Neurology



Approach to Interventions







Why a multidisciplinary approach?

- 230 pts with CHF
 - 115 randomized to multidisciplinary clinic
 - 115 standard care
- 39% readmission rate vs 57% in standard group
- Hospital stay 514 days in multidisciplinary group
 - 815 days in control group
- Quality of life better in multidisciplinary group
- Mortality no difference





Why a multidisciplinary approach?

- 344 ALS patients
 - 262 general neurology clinic
 - 82 multidisciplinary clinic
- Outcomes
 - Median survival in specialty clinic group 7.5 months longer
 - One-year mortality decreased by 29.7%
 - Prognosis of bulbar onset patients extended by
 9.6 months





Why a multidisciplinary approach?

- Multidisciplinary clinic for myelomenigocele patients 1963 – 1988 (disbanded)
- 87 patients followed
 - 52% failed to have regular medical and specialty care (despite continued availabilty of services)
 - Higher rates of nephrectomy
 - Higher rates in amputation



Kaufman, et al. Pediatr Neurosurg. 1994



Interventions

- Anticipatory Guidance
 - Fewer readmissions
- Medical Rx
 - Headaches
 - Seizures
 - Sleep
 - Fatigue
- Rehabilitation
 - TBI outcomes better than non traumatic brain injury
 - Cognitive therapy





Interventions

- Rehabilitation (cont)
 - Physical Therapy
 - Occupational Therapy
- Psychological/Psychiatric care
 - Combo therapy
- Case Management
 - Service member support
 - Family member support





Future Interventions

- Acute therapy
 - Hypothermia
 - Progesterone
 - NMDA receptor antagonists
- Subacute therapy
 - Amantadine
 - Improved cognition, alertness and memory in multiple studies
 - Atomoxetine
 - Bromocriptine
 - Fluoxetine
 - Selegeline
 - Methylphenidate
 - Glutamate receptor agonists
 - GABA modulation





Arizona Resources



- Information
- Support for Survivor and Family
- Direction to services and resources
- TriWest
- VA
- State Vocational Rehabilitation

