SEVERE TRAUMATIC BRAIN INJURY

IS THERE HOPE?
SO...SEVERE TBI – IS THERE HOPE?

Currently there is not the data in NZ

Over a 6 year follow up 76% of severe TBI’s had poor reintegration \(\text{(Tate et al., 1989)}\)

Good recovery was found in 16% of patients with a GCS <6

Mortality decreased from 70% in the 70’s to 30% in the late 80’s. \(\text{(Marshall et al., 1991)}\)
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- Over a 6 year follow up 76% of severe TBI’s had poor reintegration (Tate et al., 1989)
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ARE WE NOW SEEING GREATER FUNCTIONAL OUTCOMES FOR THIS GROUP OF PATIENTS?
SUMMARY

- Wide variety of outcomes
- Need for improved data collection
- Awareness and management of severe TBI has significantly improved
- Defining a successful outcome is not straightforward
- Success is in the eye of the beholder
## Classifying Severity of TBI

<table>
<thead>
<tr>
<th>Severity of Injury</th>
<th>Glasgow Coma Scale (GCS)</th>
<th>Duration in Post Traumatic Amnesia (PTA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>13-15</td>
<td>&lt;24 hours</td>
</tr>
<tr>
<td>Moderate</td>
<td>9-12</td>
<td>1-6 days</td>
</tr>
<tr>
<td>Severe</td>
<td>3-8</td>
<td>7 days or more</td>
</tr>
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</table>
### Glasgow coma scale

<table>
<thead>
<tr>
<th>Eye opening</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>spontaneously</td>
<td>4</td>
</tr>
<tr>
<td>to speech</td>
<td>3</td>
</tr>
<tr>
<td>to pain</td>
<td>2</td>
</tr>
<tr>
<td>none</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Verbal response</th>
<th>Score</th>
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<tbody>
<tr>
<td>orientated</td>
<td>5</td>
</tr>
<tr>
<td>confused</td>
<td>4</td>
</tr>
<tr>
<td>inappropriate</td>
<td>3</td>
</tr>
<tr>
<td>incomprehensible</td>
<td>2</td>
</tr>
<tr>
<td>none</td>
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<table>
<thead>
<tr>
<th>Motor response</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>obeys commands</td>
<td>6</td>
</tr>
<tr>
<td>localises to pain</td>
<td>5</td>
</tr>
<tr>
<td>withdraws from pain</td>
<td>4</td>
</tr>
<tr>
<td>flexion to pain</td>
<td>3</td>
</tr>
<tr>
<td>extension to pain</td>
<td>2</td>
</tr>
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**Maximum score**

15
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POSSIBLE INFLUENCES ON OUTCOME

POSITIVE
- Short coma & PTA duration
- Age
- Good acute cognitive recovery
- Good family / social support
- Blunt trauma
- Higher pre injury education

NEGATIVE
- Prolonged coma & PTA duration
- Age
- Penetrating injury
- Evidence of a DAI or traumatic hemorrhage
- History of
  - Psychological morbidity
  - Alcohol / Drug abuse
  - Childhood sexual abuse
  - Social deprivation
  - Multiple TBI’s
- Co-morbidities
POSSIBLE IMPACT FROM SEVERE TBI

FATIGUE

Reduced ability to:
- Plan
- Communicate
- Mobilise
- Self monitor
- Dress and shower
- Drive / Access transport
- Work
- Manage bladder and bowels
- Swallow / Feed oneself

In addition:
- Painful spasms / muscle contractures
- Impaired vision / hearing
- Impaired insight and memory
- Retain information
- Make decisions
- Manage finances
- Cook meals
- Concentrate
- Do household chores
- Engage in social interests
- Fulfill previous role in family
- And so on...
- Loss of status
- Inappropriate / challenging behaviour
SO...SEVERE TBI – IS THERE HOPE?
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