

# Traumatic Brain Injury Management

BC Trauma & Critical Care  
Severe Traumatic Brain Injury Management Protocol  
(Unconfounded GCS 8 or less)

<b>Airway &amp; C-spine</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ensure patent &amp; protected airway (intubate if indicated)<sup>1</sup></li> <li><input type="checkbox"/> Spine precautions             <ul style="list-style-type: none"> <li>○ HOB 30° (if T-L spines cleared) OR</li> <li>○ Reverse Trendelenberg 30° (if full spine precautions)</li> </ul> </li> </ul>
<b>Breathing</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Ventilate to <b>PaCO<sub>2</sub> 35 – 40 mmHg</b></li> <li><input type="checkbox"/> Oxygenate to <b>PaO<sub>2</sub> 100 – 150 mmHg</b></li> <li><input type="checkbox"/> PEEP 5 – 12 cmH<sub>2</sub>O</li> </ul>
<b>Circulation</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Central<sup>2</sup> or Intraosseous line &amp; Arterial line</li> <li><input type="checkbox"/> <b>MAP &gt; 80 mmHg</b> using <i>norepinephrine infusion</i><sup>3</sup></li> <li><input type="checkbox"/> <b>SBP &lt; 160 mmHg</b> using either             <ul style="list-style-type: none"> <li>○ <i>Labetalol</i> and/or <i>Hydralazine</i><sup>3</sup></li> </ul> </li> </ul>
<b>CT Scan</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Non-contrast CT head (if available)</li> <li><input type="checkbox"/> <i>Consider</i> CT Angio (arch to circle of Willis) and CT cervical spine</li> <li><input type="checkbox"/> <i>Consider</i> thoracic, abdomen and pelvis CT for other injuries as indicated</li> </ul>
<b>Coagulopathy</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Coagulopathy treatment<sup>4</sup> <ul style="list-style-type: none"> <li>○ Goals: INR &lt; 1.5, PTT &lt; 40, Platelets &gt; 100, Fibrinogen &gt; 1.0</li> </ul> </li> </ul>
<b>Disability</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Document best neurologic examination             <ul style="list-style-type: none"> <li>○ Pupil size and reactivity</li> <li>○ GCS</li> <li>○ Best motor examination</li> </ul> </li> </ul>
<b>Drugs</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sedation<sup>5</sup> AFTER neurologic examination             <ul style="list-style-type: none"> <li>○ <i>Propofol</i></li> </ul> </li> <li><input type="checkbox"/> Seizure prophylaxis<sup>6</sup> <ul style="list-style-type: none"> <li>○ <i>Phenytoin</i> or <i>Leviteracetam</i></li> </ul> </li> </ul>
<b>Exposure</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Core Temperature goal <b>36.0 – 37.5 °C</b><sup>7</sup></li> </ul>
<b>Labs</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Goal <b>Na 140 – 150 mEq/L</b><sup>8</sup></li> <li><input type="checkbox"/> Goal <b>hemoglobin ≥ 90 g/dL</b><sup>9</sup></li> </ul>
<b>Herniation</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> If herniation syndrome (unilateral or bilateral pupils become fixed and dilated)             <ul style="list-style-type: none"> <li>○ <i>Hypertonic saline</i><sup>10</sup></li> <li>○ <i>Mannitol</i><sup>10</sup></li> <li>○ Mild hyperventilation - <b>PaCO<sub>2</sub> 25 – 30 mmHg</b></li> </ul> </li> </ul>