

# Best Practice Guidelines

## Checklist for the Response to Intraoperative Neuromonitoring Changes in Patients with a Stable Spine

Gain Control of Room	Anesthetic/Systemic	Technical/Neurophysiologic	Surgical
<ul style="list-style-type: none"> <li><input type="checkbox"/> Intraoperative pause: stop case and announce to the room</li> <li><input type="checkbox"/> Eliminate extraneous stimuli (e.g. music, conversations, etc.)</li> <li><input type="checkbox"/> Summon ATTENDING anesthesiologist, SENIOR neurologist or neurophysiologist, and EXPERIENCED nurse</li> <li><input type="checkbox"/> Anticipate need for intraoperative and/or perioperative imaging if not readily available</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Optimize mean arterial pressure (MAP)</li> <li><input type="checkbox"/> Optimize hematocrit</li> <li><input type="checkbox"/> Optimize blood pH and pCO<sub>2</sub></li> <li><input type="checkbox"/> Seek normothermia</li> <li><input type="checkbox"/> Discuss POTENTIAL need for wake-up test with ATTENDING anesthesiologist</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss status of anesthetic agents</li> <li><input type="checkbox"/> Check extent of neuromuscular blockade and degree of paralysis</li> <li><input type="checkbox"/> Check electrodes and connections</li> <li><input type="checkbox"/> Determine pattern and timing of signal changes</li> <li><input type="checkbox"/> Check neck and limb positioning; check limb position on table especially if unilateral loss</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Discuss events and actions just prior to signal loss and consider reversing actions               <ul style="list-style-type: none"> <li><input type="checkbox"/> Remove traction (if applicable)</li> <li><input type="checkbox"/> Decrease/remove distraction or other corrective forces</li> <li><input type="checkbox"/> Remove rods</li> <li><input type="checkbox"/> Remove screws and probe for breach</li> </ul> </li> <li><input type="checkbox"/> Evaluate for spinal cord compression, examine osteotomy and laminotomy sites</li> <li><input type="checkbox"/> Intraoperative and/or perioperative imaging (e.g., O-arm, fluoroscopy, x-ray) to evaluate implant placement</li> </ul>

Ongoing Considerations
<ul style="list-style-type: none"> <li><input type="checkbox"/> REVISIT anesthetic/systemic considerations and confirm that they are optimized</li> <li><input type="checkbox"/> CONSIDER Wake-up test</li> <li><input type="checkbox"/> Consultation with a colleague</li> <li><input type="checkbox"/> Continue surgical procedure versus staging procedure</li> <li><input type="checkbox"/> IV steroid protocol: Methylprednisolone 30mg/kg in first hr., then 5.4 mg/kg/hr. for next 23 hrs.</li> </ul>

**Reference:**

Vitale, MG, Skaggs, DL, Page, GI, et al. Best practices in intraoperative neuromonitoring in spine deformity surgery: development of an intraoperative checklist to optimize response. *Spine Deformity*. 2014; 2(5):333-339.

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