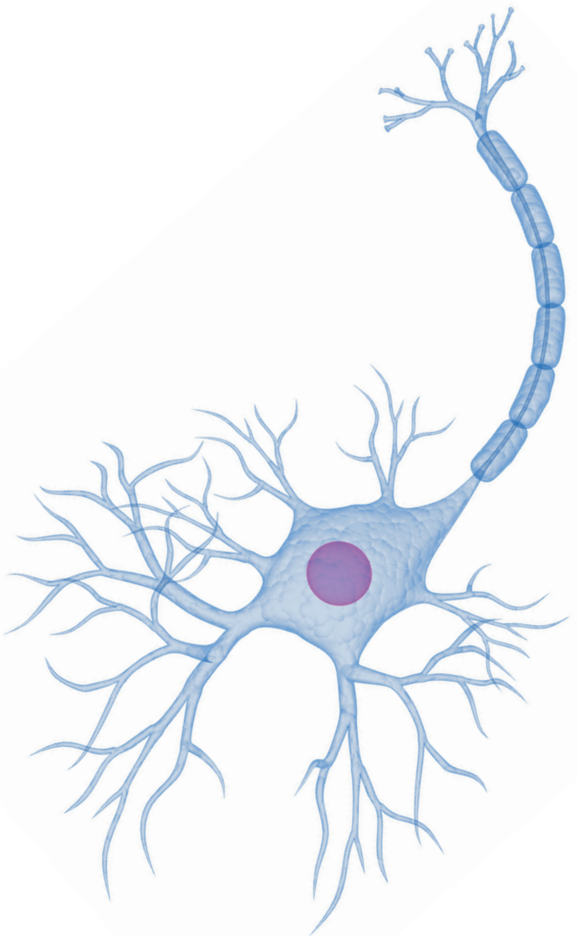
Nerve Assessment
Plastic, Neurosurgery & Orthopaedic Hand

Intraoperative motor nerve assessment is hampered by the technical constraints and limitations of currently available nerve assessment technology.



Checkpoint solution:

Checkpoint provides a unique intra-operative, surgeon controlled means of safely and reliably locating and identifying nerves and evaluating nerve and muscle excitability.

Successfully used on:

Neuroma Cases, Nerve Exploration, Revision Cubital Tunnel, Tendon Repair, Nerve Transfer, Muscle Transfer, Muscle Graft, Brachial Plexus Repair, Revision Elbow, ORIF Proximal Humerus, Trauma Reconstruction, Removal of Hardware, Schwannoma Tumor, Hemangioma

To schedule a trial call **877-478-9106**
or email us at **info@checkpointsurgical.com**

Checkpoint Surgical®

CHECKPOINT®
Stimulator/Locator

Proudly made in the USA

White Paper

Checkpoint has been utilized in a variety of procedures by Nerve Assessment Plastic, Neurosurgery & Orthopaedic Hand surgeons. Here is one such example:

Case Report: Radial Nerve Donor Branch Selection and Transfer to Anterior Branch of Axillary Nerve Using the Checkpoint Stimulator

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This case involves a 16-year-old male who is 6 months status post glenohumeral dislocation and resultant axillary nerve palsy. He presented with limited ability to abduct his right shoulder. The goal of the surgery was to re-innervate the anterior and middle deltoid muscles using a branch from the radial nerve to one of the heads of the triceps muscle.

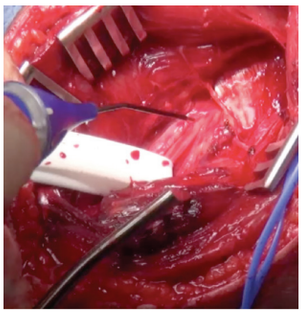
We used the Checkpoint stimulator (Checkpoint Surgical, Cleveland, Ohio) to help us confirm the location of the nerve block, and in particular the candidate motor branches of the radial nerve for transfer. In our experience intra-operative nerve stimulation enhances intra-operative decision-making.

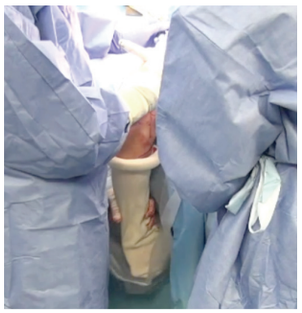
The initial posterior shoulder dissection involves identification of the radial and axillary nerves as they emerge on either side of the teres major muscle. Identification of the muscular branches ensues with the use of Checkpoint to confirm the integrity and excitability of the motor nerves and to help us assure that we protect these critical structures during surgery.

The Checkpoint device produces a fused, or tetanic, muscle contraction that varies in response to stimulus parameters—current amplitude and pulse width—the latter of which is under the surgeon's fingertip control through a slider switch. Since the Checkpoint device is biphasic, there are no concerns about prolonged tissue contact.

As the case advances, we identify and confirm the branches off the radial nerve to the long, lateral and medial heads of the triceps muscle. Nerve stimulation is used a) to select the best branch for transfer to the axillary nerve and b) to confirm that the residual triceps contraction will be vigorous and functional from the remaining branches that are protected and left intact. It is also important to assure that nerve selection and harvest will not deleteriously affect distal wrist, finger or thumb extension. The sustained muscle contraction afforded by a biphasic stimulator makes it quite easy to discern distal motion and to then select the most appropriate nerve branches for transfer.

It is important that the stimulator not be utilized when paralyzing anesthetic agents are in effect, as an absent or inconsistent response to stimulation may result in inaccurate assessment of nerve and muscle function.





After identifying an appropriate radial nerve branch for transfer, we use the Checkpoint device to stimulate each of the branches of the axillary nerve. Stimulation of the branches begins with the lowest current level (0.5mA). If no response is identified, we increase the pulse width incrementally to a maximum pulse width of 200 microseconds. In this case, the posterior branch did not stimulate at the 0.5mA level, so we re-assessed the motor response with a decreased pulse width, and an increased current of 2.0mA, gradually increasing pulse widths until a response was identified.

Read more at CheckpointSurgical.com

Videos and Other Information

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