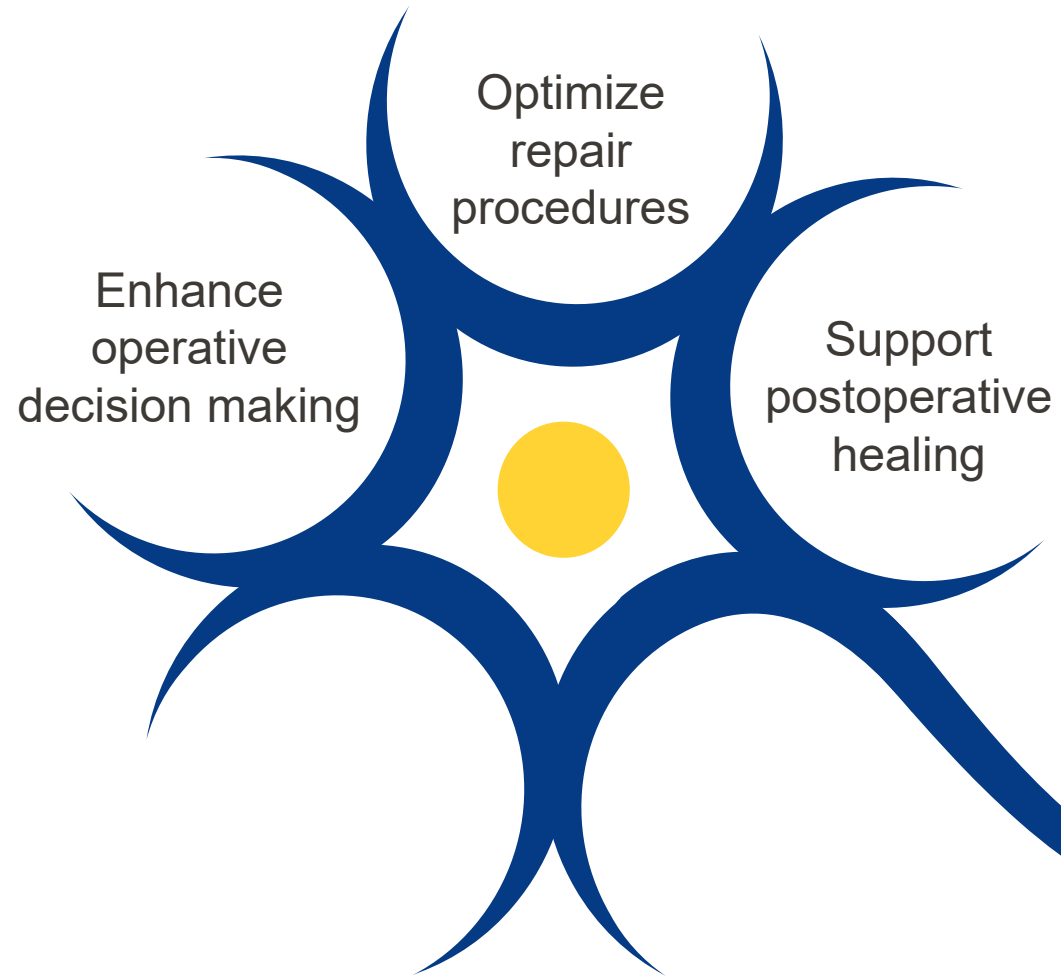




# Checkpoint Surgical

Product Portfolio Presentation



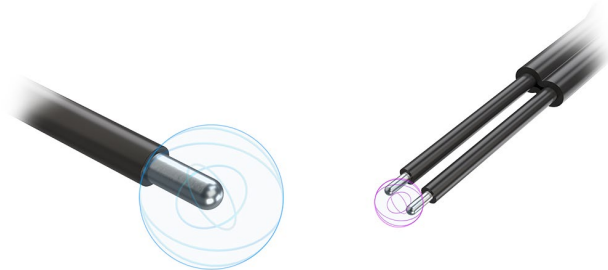
Checkpoint solutions  
for peripheral nerve  
surgery



# Product Portfolio

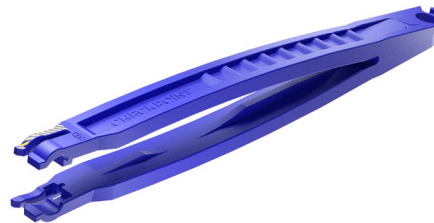
- Checkpoint Surgical offers solutions for peripheral nerve surgery that
  - enhance operative decision making,
  - optimize repair procedures, and
  - support post-operative healing.

Nerve stimulators



Enhance decision making

Nerve repair instruments



Optimize repair procedures

Biomaterials



Support post-op healing

# CHECKPOINT® Stimulation Technology

## Safe

- Biphasic, charge balanced waveform
- Internal checks before each pulse

## Reliable

- Low technological burden to surgeon
- Light ring confirms successful stimulation delivery

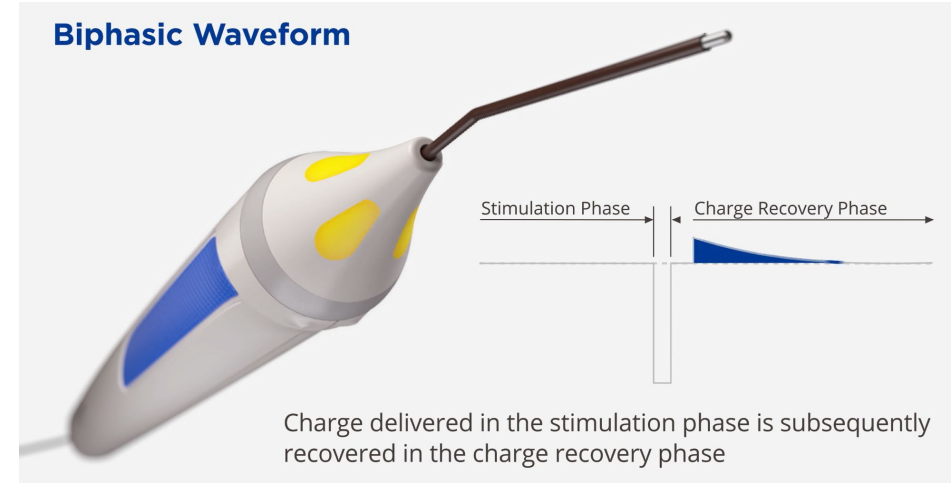
## Easy to Use

- Tetanic contraction, easier to palpate or visualize compared to single twitch
- No setup required, ready to use

*Provides the surgeon with additional, high-quality information to support intraoperative decision making.*

# Safe, Biphasic Stimulation

- Checkpoint delivers stimulation safely — for as long as it's needed to confirm a response.
  - Unlike DC stimulators, the charge-balanced biphasic waveform used by Checkpoint Nerve Stimulators does not allow the build-up of potential harmful charge during stimulation.
  - Checkpoint's biphasic waveform elicits a highly visible tetanic (fused) muscle contraction compared to the single “twitch” response of DC stimulators, which makes confirmation more difficult.



# Three Primary Clinical Uses for Checkpoint Stimulators

## Neuroprotective

Intraoperative nerve location and protection in revisions and procedures when nerves are at risk:

- ✓ Total Elbow Hardware Removal
- ✓ Revision Hip
- ✓ Revision Shoulder
- ✓ Reverse Shoulder
- ✓ Tumor Resection
- ✓ TMR
- ✓ TMJ

## Neurorestorative

Intraoperative assessment of nerve function:

- ✓ Facial Reanimation
- ✓ Nerve Releases
- ✓ Neurolysis
- ✓ Nerve Transfer
- ✓ Neuromas
- ✓ Brachial Plexus Exploration

## Functional Assessment

Intraoperative assessment of muscle function:

- ✓ Tendon Transfer
- ✓ Free Muscle Transfer-Gracilis
- ✓ Tenolysis
- ✓ Muscle Viability





# Clinical Applications for CHECKPOINT® Products

	STIMULATORS			INSTRUMENTS	BIOMATERIALS
	Guardian	Gemini	Head & Neck	Edge	NeuroShield
Nerve/fascicular transfer	●	●		●	●
Selective neurectomy/denervation		●			
Nerve coaptation or grafting	●			●	●
Nerve decompression/neurolysis	●				●
Nerve exploration/assessment	●				●
Nerve protection/revision surgery	●				
Tumor resection	●				
Trauma reconstruction	●				
Thyroidectomy/parathyroidectomy			●		
Parotidectomy	●		●		●
Neck dissection	●		●		●

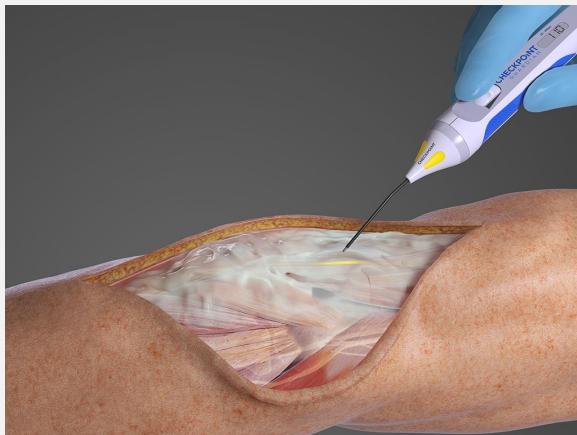
# CHECKPOINT GUARDIAN<sup>®</sup>

## Nerve Stimulator

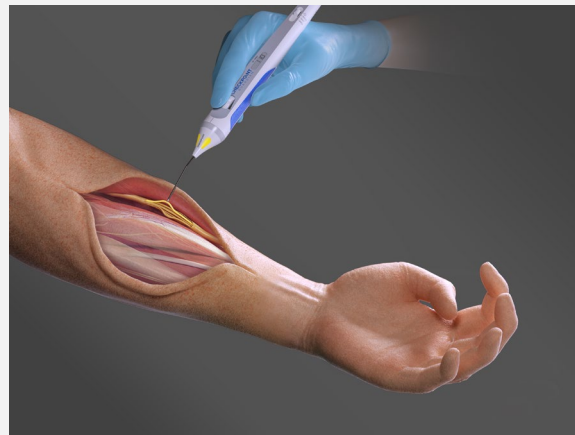
The Checkpoint Guardian next-generation stimulator offers enhanced features for information delivery, including a visual display of amplitude and pulse duration output. Like all Checkpoint stimulators, Guardian may be used safely for sustained or repeated nerve stimulation without diminished response.



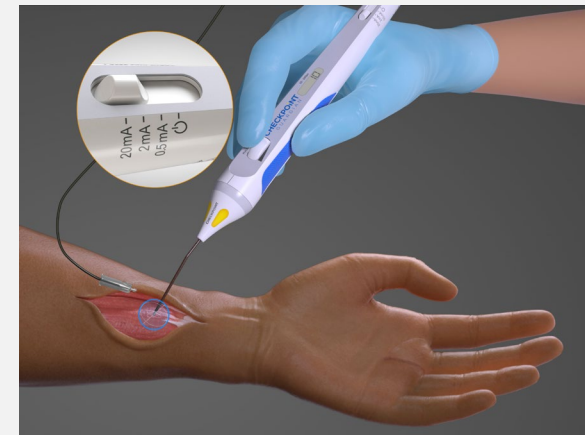
Mapping for nerve protection



Nerve assessment



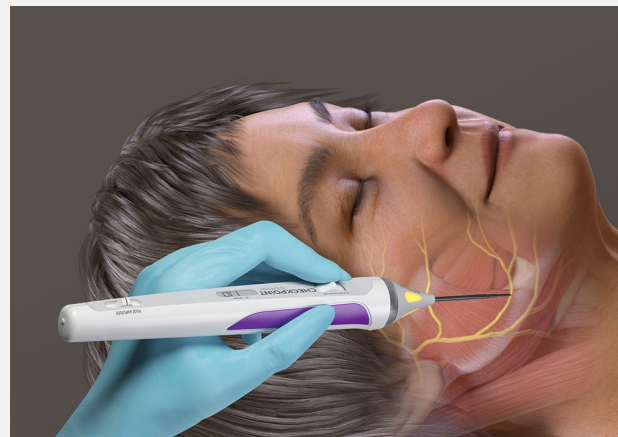
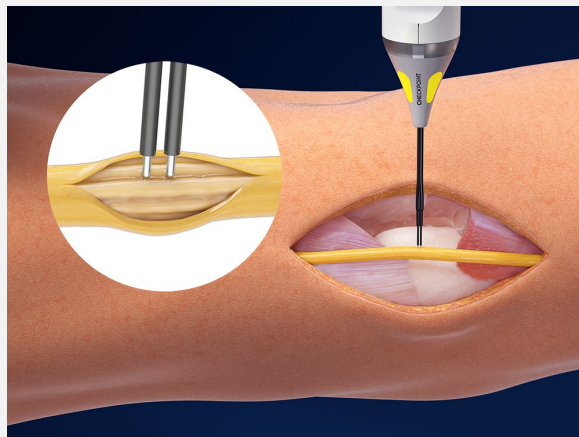
Direct muscle stimulation



# CHECKPOINT GEMINI<sup>®</sup>

## Bipolar Nerve Stimulator

CHECKPOINT GEMINI™ offers a bipolar stimulation probe for finely controlled stimulation, even at the fascicular level. Gemini's 32 Hz biphasic waveform delivers safe, continuous nerve activation without diminished response — even with fast-twitch muscle tissue. Like Guardian, Gemini provides visual confirmation of stimulation delivery and a precise, LCD status indicator of amplitude and pulse duration.

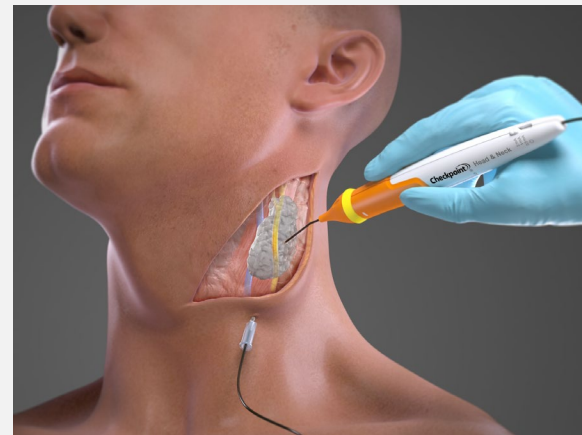
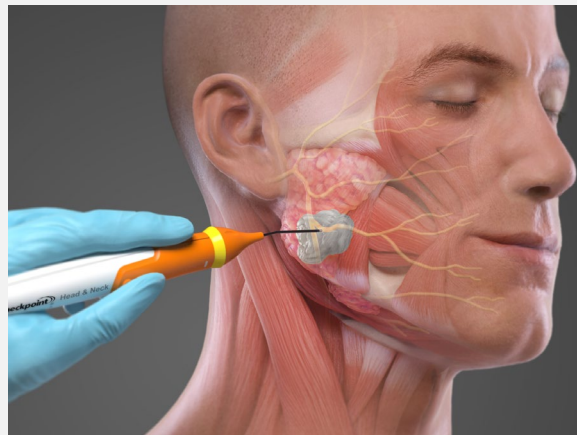


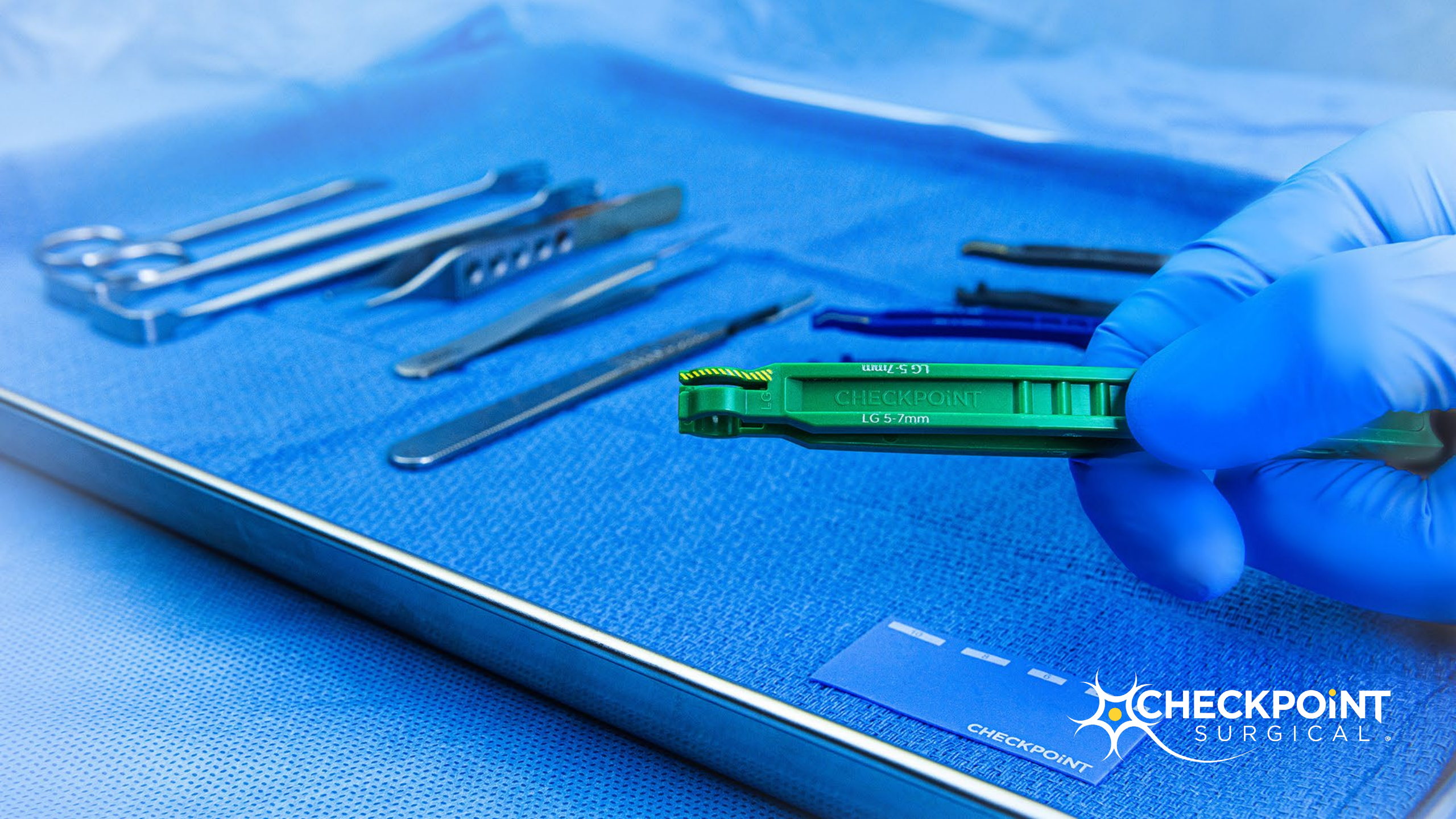
The CHECKPOINT GEMINI™ Bipolar Nerve Stimulator delivers focused stimulation of specific nerves and fascicles, allowing the surgeon to take actions based on the most precise information available.

# CHECKPOINT® HEAD & NECK

## Nerve Stimulator/Locator

CHECKPOINT® Head & Neck provides visual or tactile confirmation of nerve function and location without the need for external monitoring equipment, protecting nerves even in obscured anatomy. All Checkpoint stimulators may be used safely for sustained or repeated nerve stimulation without diminished response.



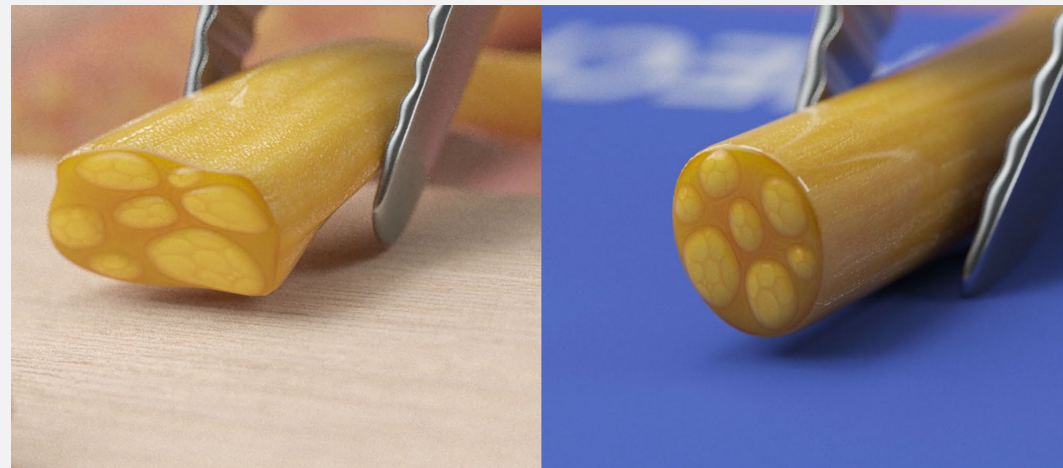
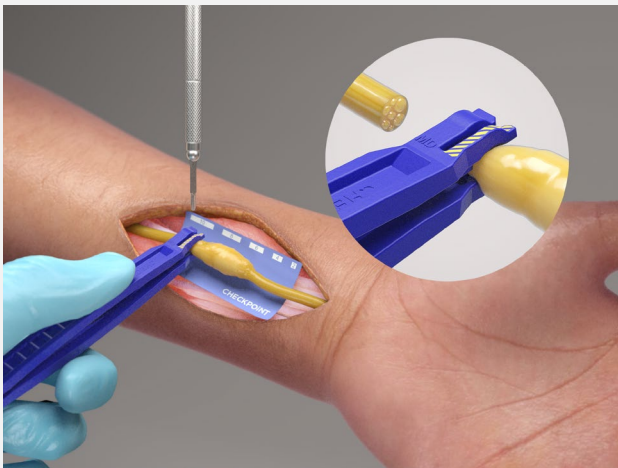
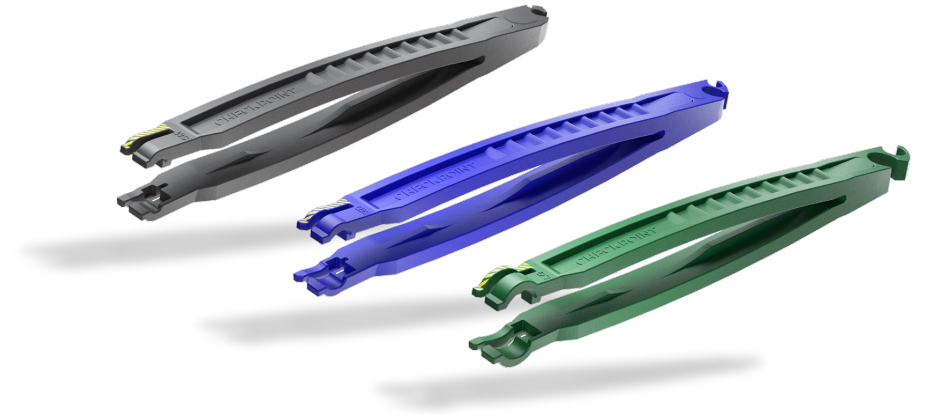


**CHECKPOINT**  
SURGICAL

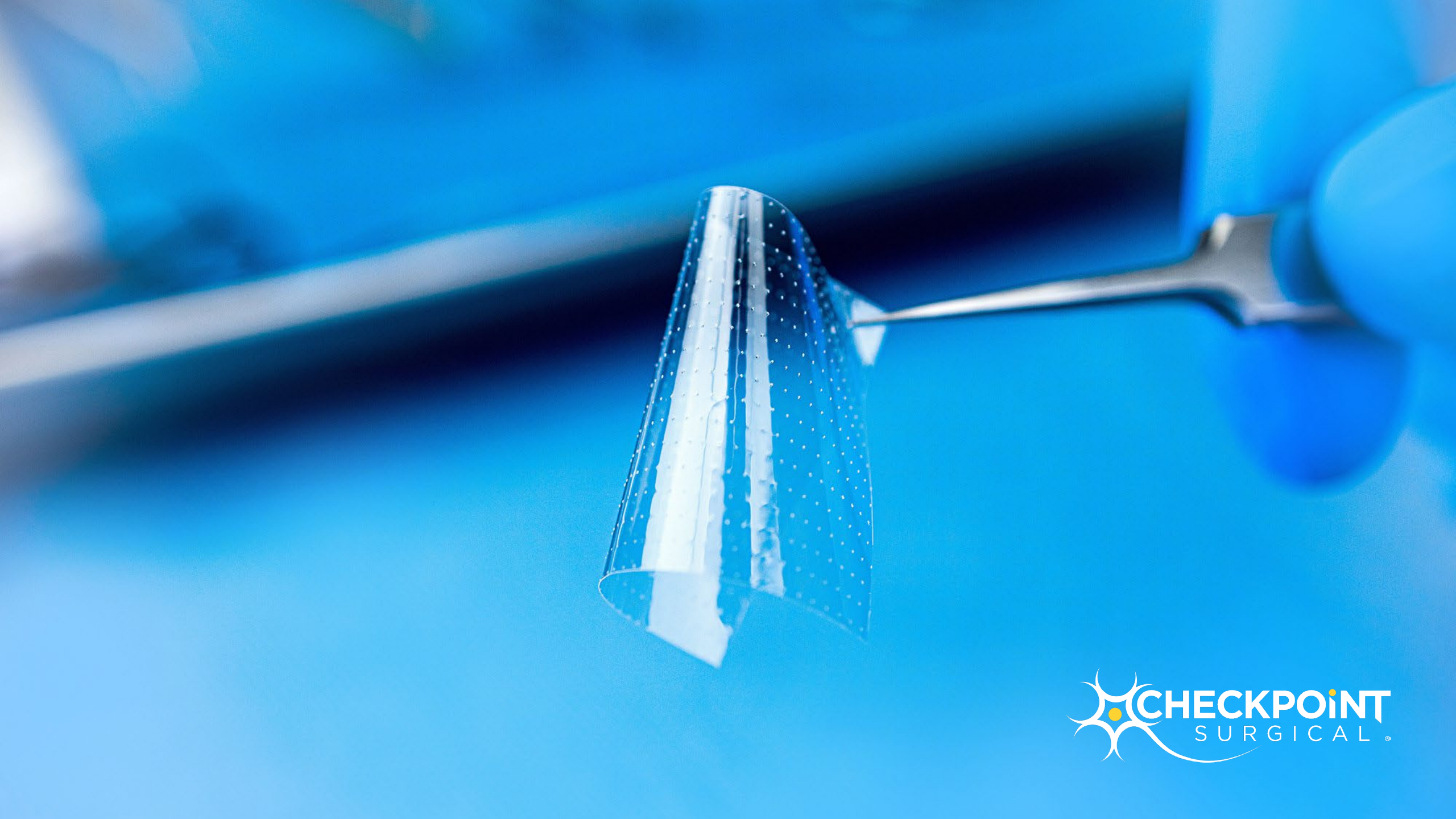
# CHECKPOINT EDGE<sup>®</sup>

## Nerve Cutting Kit

The CHECKPOINT EDGE™ Nerve Cutting Kit employs circumferential constraint to maintain the nerve's natural shape during transection. Constraining the nerve in this manner can prevent nerve sliding, flattening and subsequent nerve edge malformation, helping to preserve fascicular group alignment and tissue integrity.



(Left) Traditional method using #20 blade and tongue depressor  
(Right) Circumferential cut using Edge

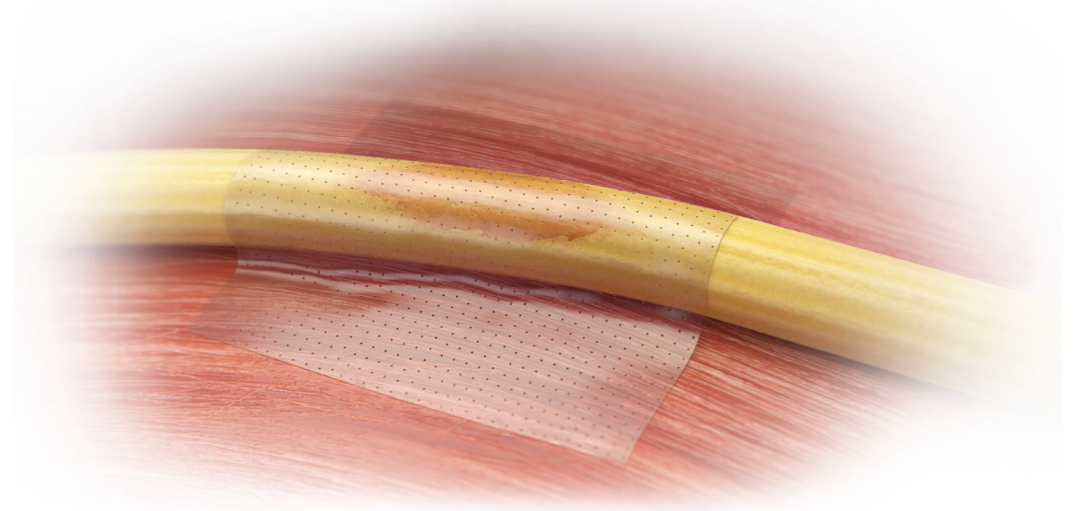


 **CHECKPOINT**  
SURGICAL.®

# CHECKPOINT NEUROSHIELD™

## Chitosan Membrane

CHECKPOINT NEUROSHIELD™ implants are made from a promising biomaterial called chitosan. Derived from the natural polymer chitin, chitosan is a polysaccharide and offers a multitude of realized benefits from over 20 years of biochemical research. Preclinical studies support its potential benefits compared to collagen in nerve repair surgery.



Onlay

### Clinical Applications



Direct coaptation



Neuroma-in-continuity  
neurolysis



Trauma neurolysis



Autograft repair



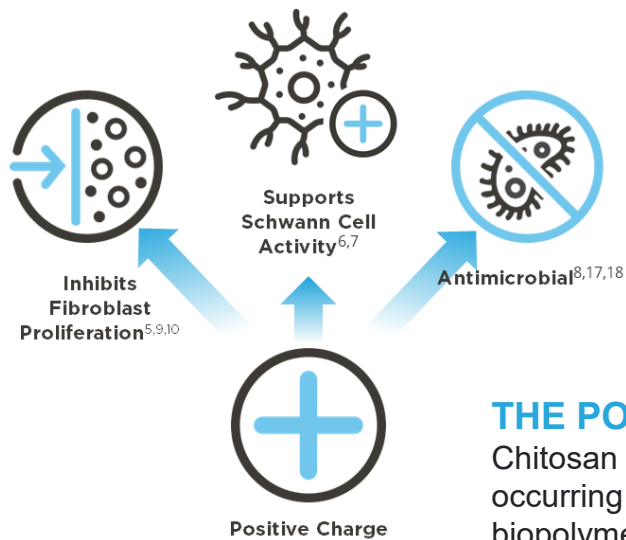
Allograft repair



# Chitosan

## An Optimized Biomaterial for Nerve Repair

Derived from the natural polymer chitin, chitosan is a polysaccharide and offers a multitude of realized benefits from over 20 years of biochemical research. Preclinical studies support its potential benefits compared to collagen in nerve repair surgery.

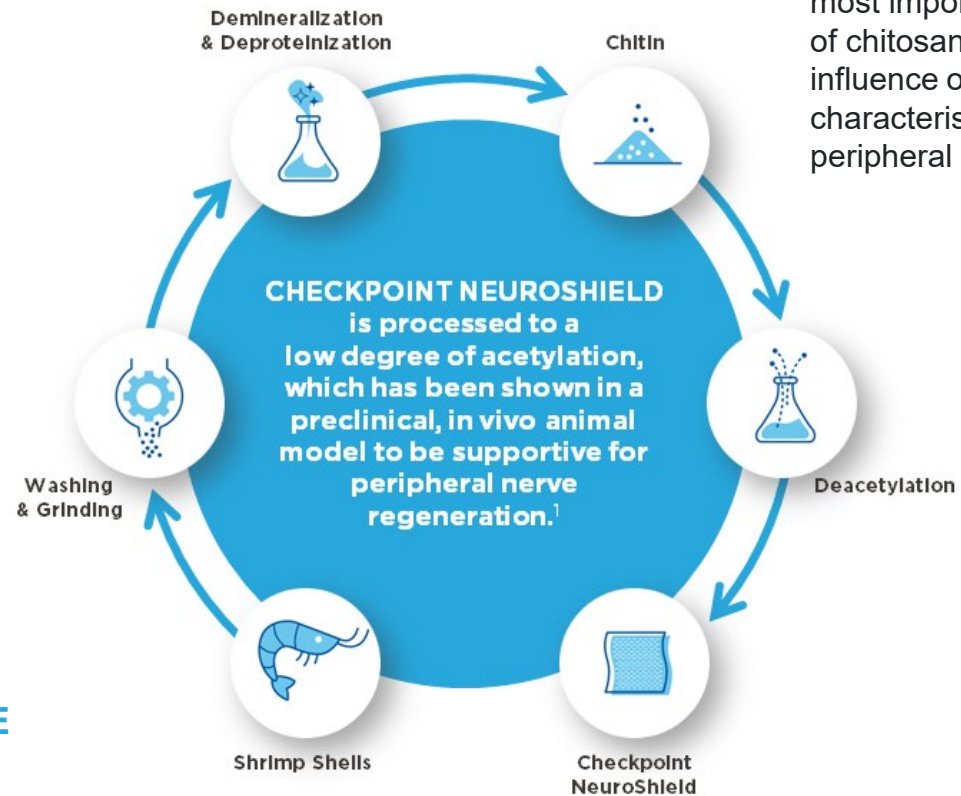


### THE POWER OF POSITIVE

Chitosan is the only naturally occurring positively charged biopolymer.<sup>5,6</sup> Positive charge density is a key factor affecting the properties of chitosan for nerve repair.<sup>1</sup>

### WHY PROCESSING MATTERS

Chitosan is produced commercially by the controlled deacetylation of chitin. The degree of acetylation is one of the most important chemical characteristics of chitosan processing and has a direct influence on the final product characteristics of NeuroShield for peripheral nerve repair.<sup>1,2</sup>



For a complete reference listing, visit: [checkpointsurgical.com/neuroshield/](https://checkpointsurgical.com/neuroshield/)



# Clinical Cases

- Presenter may use this template to present their own clinical cases using CPS products.