

## THE PROBLEM

Surgeons and dentists inherently work long days and have physically demanding jobs. Awkward postures, repetitive motions, and forceful exertions during procedures can often lead to muscular strain and the development of musculoskeletal pain.

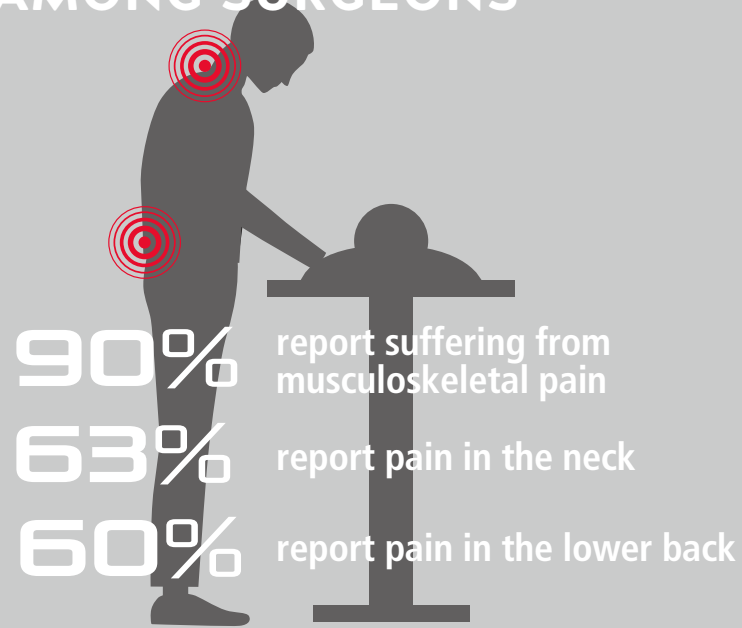
When patient outcomes are the primary focus, proper provider ergonomics are often an afterthought. And the use of loupes, headlamps, and microscopes can exacerbate poor posture. Unique risks in laparoscopic surgery include table and monitor position, long-shafted instruments, and poor instrument handle design.

Not surprisingly, musculoskeletal injuries are more common among surgeons than the general population. While alarming, this is nothing new. A 1992 study evaluated the postures of operating room staff and found that up to 54% of time was spent in a forward, bent-head stance and 27% of the time was spent in a back twisted and bent stance.<sup>1</sup>

Despite these risks there are evidence-based, researched interventions that can decrease the risk of career-ending musculoskeletal pain.

**Introducing NekSpine™ by CMI, a first-of-kind biomedically engineered cervical support device utilizing a lightweight vest, tuned carbon fiber support beam and tethered head frame designed to offload stress and prevent “overuse” of the cervical spine.**

### PREVALENCE OF MUSCULOSKELETAL PAIN AMONG SURGEONS



<sup>1</sup>Kant, I. J., et al. "A Survey of Static and Dynamic Work Postures of Operating Room Staff." International Archives of Occupational and Environmental Health, Vol. 63, no. 6, Feb, 1992, pp. 423-28. Springer Link, <https://doi.org/10.1007/BF00386939>.

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INTRODUCING NEKSPINE™ BY CMI  
A FIRST-OF-KIND BIOMEDICALLY  
ENGINEERED CERVICAL SUPPORT DEVICE

# NEKSPINE™

LIGHTWEIGHT WEARABLE  
**CERVICAL SUPPORT**  
FOR SURGEONS & DENTISTS



NEKSPINE™  
PERFORMANCE  
IN THE OR



ENHANCE YOUR WORK LIFE TODAY  
FOR A BETTER TOMORROW

NEKSPINE™

SURGICAL SITE ILLUMINATION AVAILABLE WITH AN OPTIONAL HEADLAMP CONVENIENTLY INTEGRATED DIRECTLY INTO THE HEAD FRAME

THE RIGID, YET HIGHLY ADJUSTABLE HEAD FRAME FACILITATES THE LOAD TRANSFER WHILE ERGONOMICALLY INTERFACING WITH THE USER'S HEAD

THE INTEGRATED SUPPORT BEAM PROVIDES STRUCTURE ALONG THE CERVICAL, THORACIC AND LUMBAR SPINE EFFECTIVELY FACILITATING THE LOAD TRANSFER OF THE HEAD TO THE HIPS

FULLY MR-COMPATIBLE AND COMFORTABLE ENOUGH FOR ALL DAY WEAR UNDER A SURGICAL GOWN OR PROTECTIVE LEADS

AVAILABLE IN 3 SIZES TO ENSURE A COMFORTABLE, SUPPORTIVE FIT, THE PADDED VEST IS MANUFACTURED FROM DURABLE, LIGHTWEIGHT MILITARY-GRADE MATERIALS

## THE SOLUTION: NEKSPINE™

NekSpine™ is a first-of-kind, biomedically-engineered spinal support system designed to reduce the stress on the cervical, thoracic and lumbar spine regions experienced during routine repetitive and awkward positions common to surgical and dental procedures.

NekSpine allows free range of motion while providing prophylactic care for the user. With comfort settings dialed in, NekSpine can be used daily as a normal part of PPE or on a case-by-case basis as determined by the length and expected stress.

Utilizing a lightweight vest and integrated carbon fiber support beam along with a rigid, yet adjustable carbon fiber head frame, the device provides support to the entire spine.

Key features include:

- passive support and creates postural awareness
- rigid head frame efficiently and ergonomically facilitates the transfer of load
- fully MR-Compatible
- customizable fit with adjustable tension settings
- seamlessly integrates into your workflow

### THE BODY VEST

The highly adjustable vest is manufactured from a lightweight, durable material commonly used in military applications where weight, comfort and strength are key. Laser cut and optimized for support, padding and fit, the vest comes in multiple sizes.

The vest's posture-correcting lumbar support system provides trunk compression and stability and is ideal for active positions required by surgical and dental procedures.

Cinching the shoulder and chest straps helps maintain good shoulder posture. The padded shoulders and waist allow the vest to do its job of facilitating the transfer of load from the cervical spine with comfort.

### THE SUPPORT BEAM

NekSpine's support beam is a carbon fiber structure tuned to provide a proportional counterbalance to offset the load of the head. Integrated into the vest and providing structure along the entire spine, the tie-in of the beam to the vest and the head frame facilitates the load transfer of the head to the hips. The composite carbon fiber beam provides an extraordinarily high stiffness-to-weight ratio delivering the user a comfortable but highly supportive experience.

### THE HEAD FRAME

The head frame connects the user's head to the support beam via a titanium Teflon-coated wire. Fabricated from lightweight and remarkably strong carbon fiber, NekSpine's head frame rigidity is a key component to facilitating the load transfer while ergonomically interfacing with the bony structures of the user's head via a replaceable comfort pad.



The head frame's fit can be adjusted to user preferences similar to a traditional head light band. The top knob adjusts the cap depth and the rear knob is used to adapt to head circumference. The critical function of the head frame is facilitated by the connection of the slider block to the carbon fiber spine via a rolling titanium wire. The wire moves smoothly through the slider block allowing for unrestricted head turn motion.

Color-coded tension knobs on each side of the frame allow the user to counterbalance the head forward load to the desired level with adjustments based on the clinical application.

For additional illumination, NekSpine offers the Quasar Premium Headlight System which is integrated directly into the head frame. For users with other headlamp preferences, CMI can mount your brand directly to NekSpine.

### INTERESTED IN A TEST DRIVE?

Get it touch today for more information or to schedule a trial: [info@nekspine.com](mailto:info@nekspine.com) | 949.361.7580

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