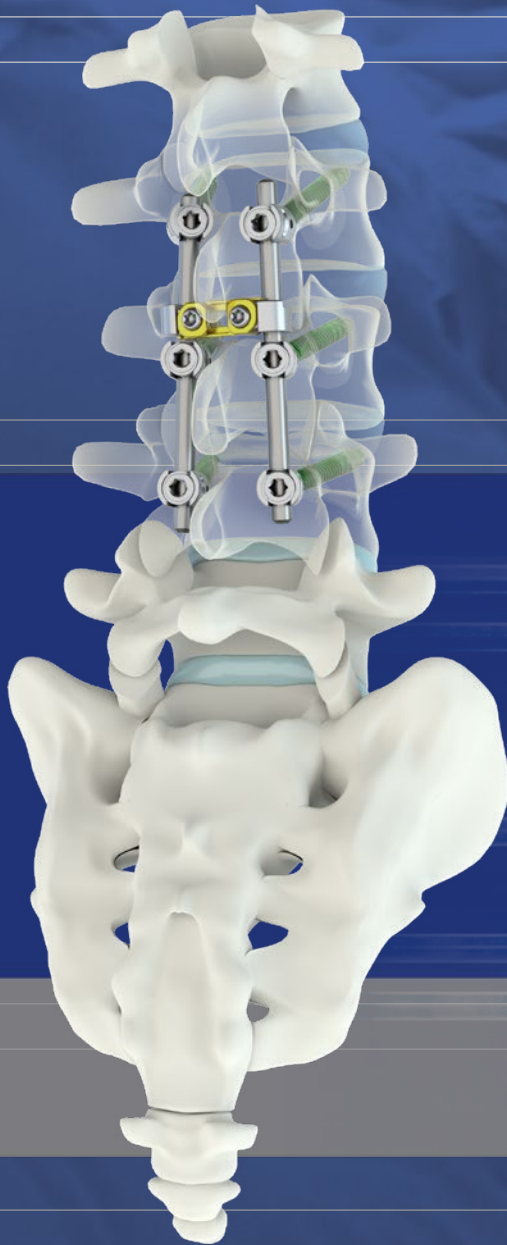


 **U.S.T.®** MC

MIS MIDLINE CORTICAL SCREW SYSTEM

ULTIMATE VERSATILITY IN ONE SYSTEM



**Brochure**

Joint

**Spine**

Sports Med

## MIS M.U.S.T. MC PLATFORM

The **M.U.S.T. MC Screw System** is intended for posterior non-cervical pedicle fixation (T1-S2/ilium) or anterolateral fixation (T8-L5). These devices are indicated as an **adjunct to fusion** for all of the following indications: degenerative disc disease, spondylolisthesis, trauma, spinal stenosis, curvatures, tumor, pseudoarthrosis and failed previous fusion in skeletally mature patients.

The MIS **M.U.S.T. MC Platform** represents an effective and harmonic concept in terms of **Minimally Invasive Solutions** in the **Midline Cortical** approach. The M.U.S.T. MC Platform is composed of:

### 1 RETRACTOR



### 2 PATIENT-SPECIFIC SOLUTION



### 3 MODULAR DISTRACTOR



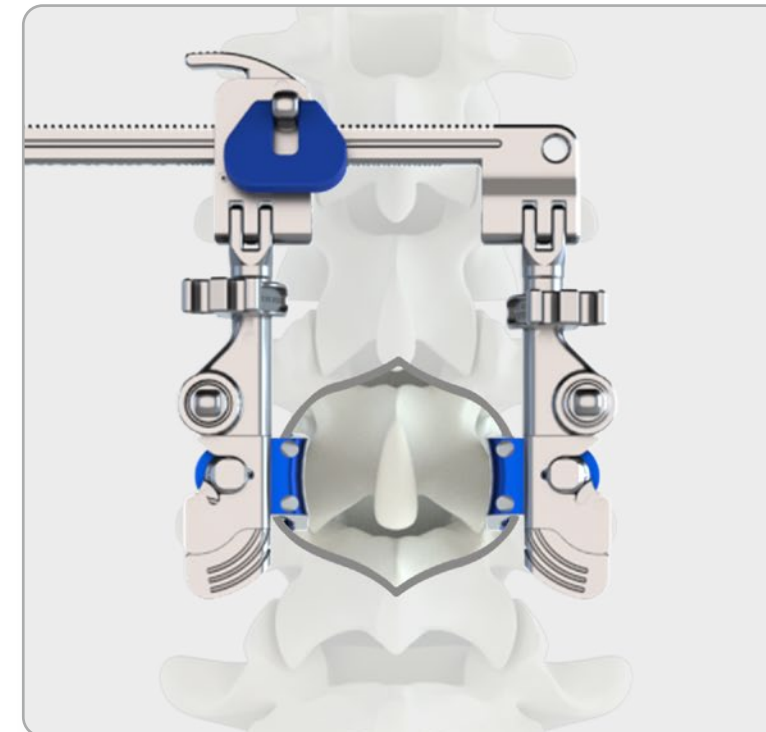
### 4 SCREW SYSTEM



Our Minimally Invasive Surgery treatments may allow patients to experience **reduced postoperative pain**, which may **shorten the length of the hospital stay** and **accelerate the return to daily activities**.

## 1 RETRACTOR

A dedicated **MIS retractor** with **anatomical blades** for **minimally disruptive** access.

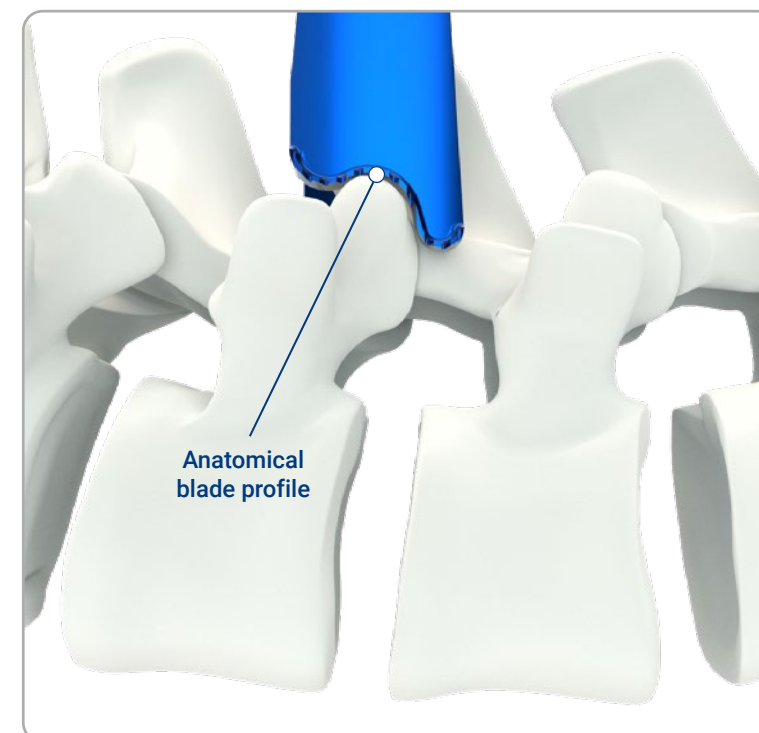


### QUICK LATERAL MOUNTING

The retractor frame has been designed with a lateral mounting feature for **quick blade mounting**, which also allows for connection of the blades **in situ**.

### EFFECTIVE MUSCLE RETRACTION

Further muscle retraction can be gently achieved by tilting the blades for an **optimal in situ visualization**.



### ANATOMICAL BLADE DESIGN

The favorable fit of the blade onto the posterior anatomy, as well as **optimal tissue retraction**, helps prevent tissue creep, improving the field of view.

### LIGHT SYSTEM

The compatible light system allows the surgeon to use **optical illumination** for **improved in situ visualization**.

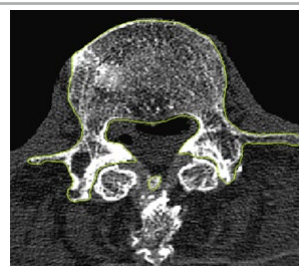


## 2 MIS MYSPINE MC

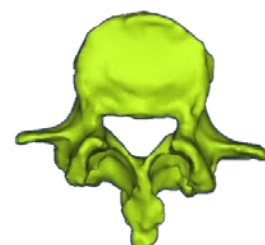
**MySpine MC** is an **innovative MIS patient-specific surgical platform** that provides preoperative planning and 3D printed intraoperative navigation.

### PATIENT SPECIFIC

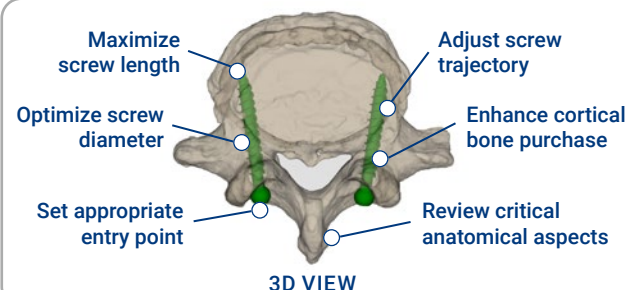
Patients are exposed to a **low dose pre-op CT scan**, resulting in a lower radiation exposure than a single full spine x-ray, to deliver 3D reconstruction of **each patient's vertebral anatomy**.



CT BASED SEGMENTATION



3D ANATOMY



3D VIEW

### ACCURATE PREOPERATIVE PLAN

The MySpine Web Platform allows for a **simple and accurate 3D preoperative planning**. The surgeon can simulate the final screw position from the patient's medical images and preview any potential surgical obstacles.

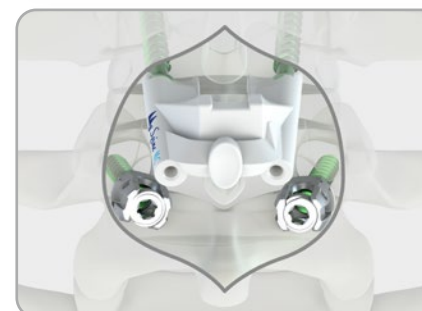
### 3D PRINTING

Following the pre-operative trajectory, a **3D patient-matched guide** is designed to match the patient's anatomy. This navigation platform provides **accurate intraoperative guidance** for safe screw positioning.



### NAVIGATED MIS SURGERY

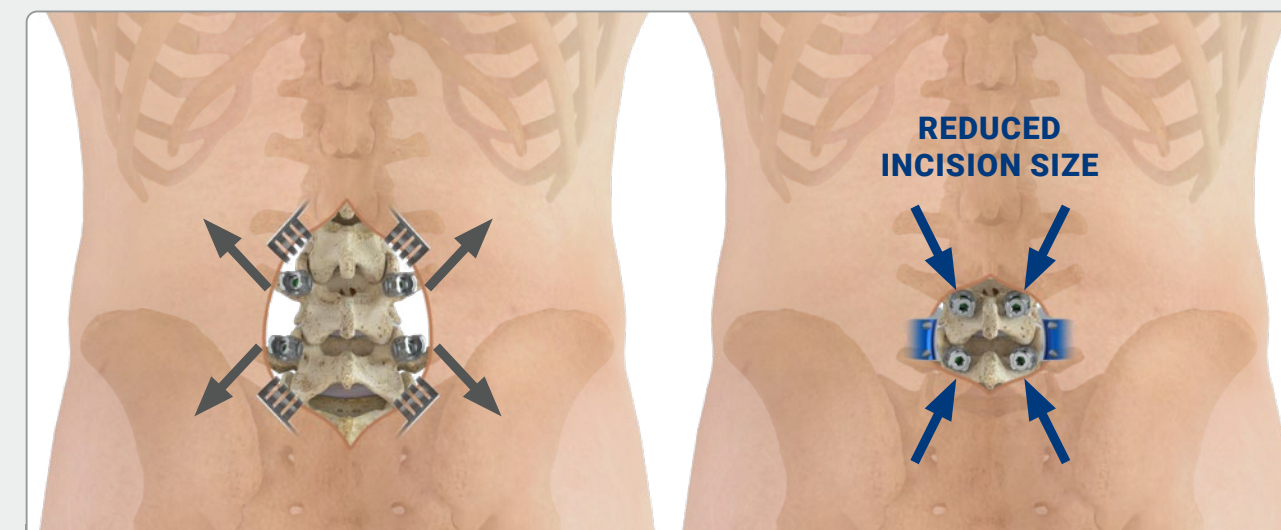
MySpine MC provides **highly precise** guided implant positioning for a **dependable surgery**, as well as a significant **reduction of procedural time and radiation exposure** compared to the freehand technique. <sup>[1,2]</sup> Zero capital investment or restrictive purchasing agreements are required by this system.



From **Minimally Invasive Surgery**  
to **Personalized Medicine**  
and beyond

## WHY MYSPINE MC MINIMALLY INVASIVE SURGERY?

Thanks to its muscle sparing technique, the erector spinae muscles are gently manipulated and a **small skin incision** of 4-5 cm is performed. For this reason, MySpine MC delivers a **minimally disruptive surgery**, which is fundamental to drive a **fast patient recovery**. MySpine MC has the potential to **improve the patients' quality of life and help support their recovery** after a spinal fusion surgery.



CONVENTIONAL APPROACH

MIS MYSPINE MC APPROACH

### LESS BLOOD LOSS AND REDUCED COMPLICATIONS

Preservation of muscles and vessels potentially **reduces blood loss**, -16% compared to conventional open access surgery, for **more conservative treatments**. <sup>[3,4]</sup> The MySpine MC technique also **significantly reduces the incidence of complications**, when compared to free-hand techniques, because of the **highly accurate implant positioning**. <sup>[1,5]</sup>

**-16%**  
BLOOD LOSS <sup>[3,4]</sup>

### SHORTER HOSPITAL STAY AND REHABILITATION

While **sparing the neuro-muscular structures**, the MySpine MC technique usually **significantly reduces the duration of the hospital stay up to 37%** and it can **decrease the muscular atrophy**, leading to a potentially **shorter rehabilitation**. <sup>[1,3,4]</sup>

**-37%**  
HOSPITAL STAY <sup>[1]</sup>

### DECREASED POST-OP PAIN AND FASTER RETURN TO DAILY ACTIVITIES

In comparison with "conventional" open surgical techniques, the MySpine MC approach can **reduce the postoperative pain** thanks to a **less invasive technique**. <sup>[3,4]</sup> Compared to conventional techniques, the ODI Index at 12 months is 18% lower, leading to a better clinical score.

The technique can also potentially provide **better biomechanical performance**, allowing for an **improved long-term outcome**. <sup>[3,4,6]</sup>

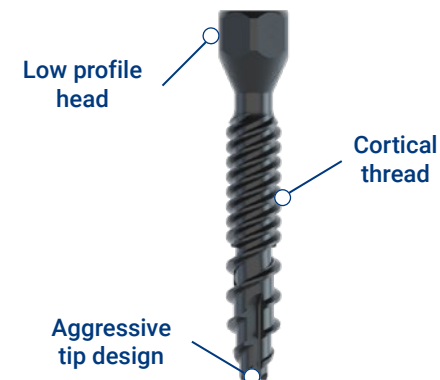
**-18%**  
ODI AT 12 MO <sup>[3,4]</sup>

## 3 MODULAR DISTRACTOR

The **distractor system** with **modular & low profile taps** allows for a **straightforward technique** with an **effective distraction maneuver**.

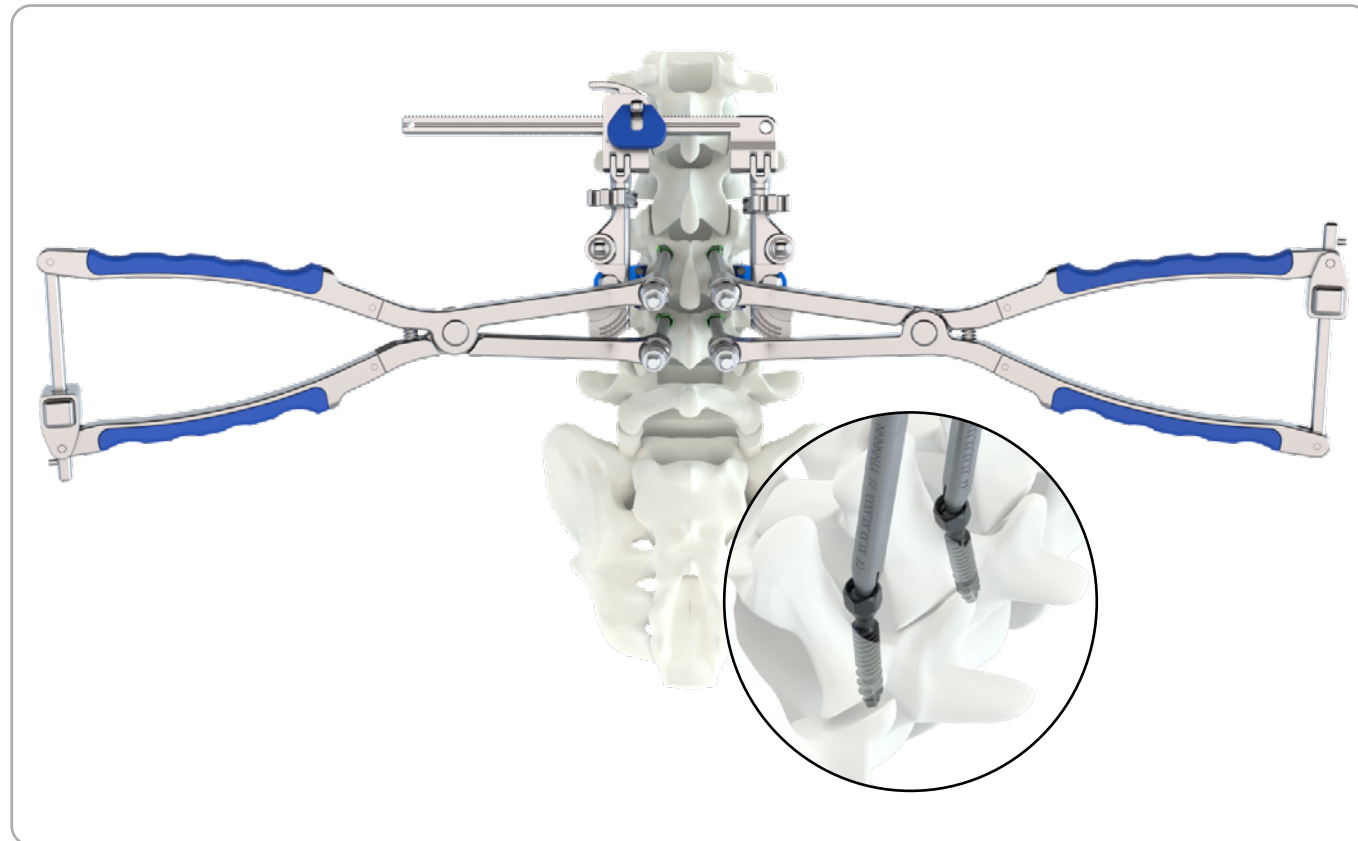
### MODULAR AND LOW PROFILE

The modular and low profile design allows for a quick distractor system connection.



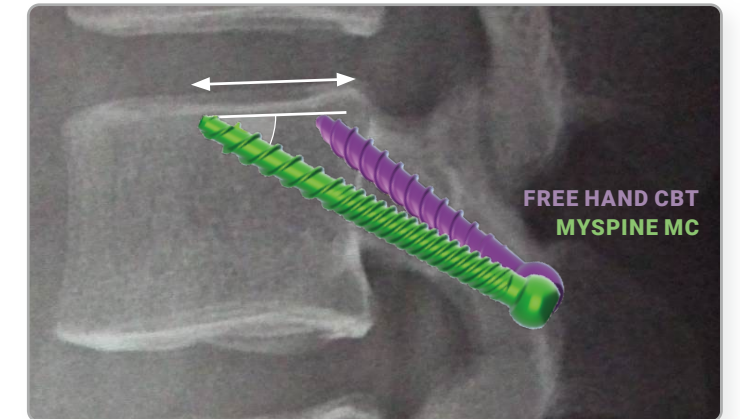
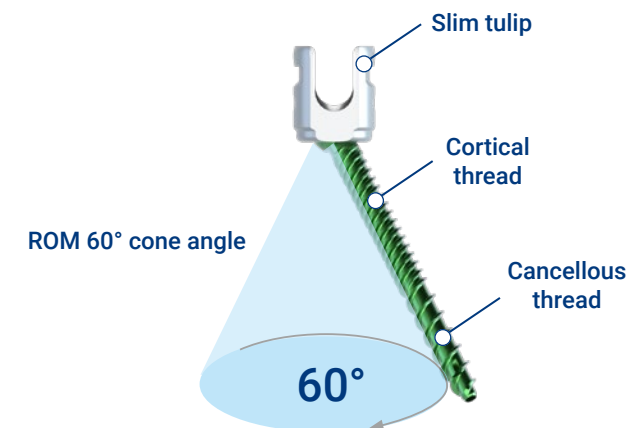
### VERSATILE AND ROBUST

The distractor system can be adapted to your surgeon's **personalized technique**, to distract for an **easier intervertebral body device insertion** or to perform a **simple and effective decompression maneuver**.



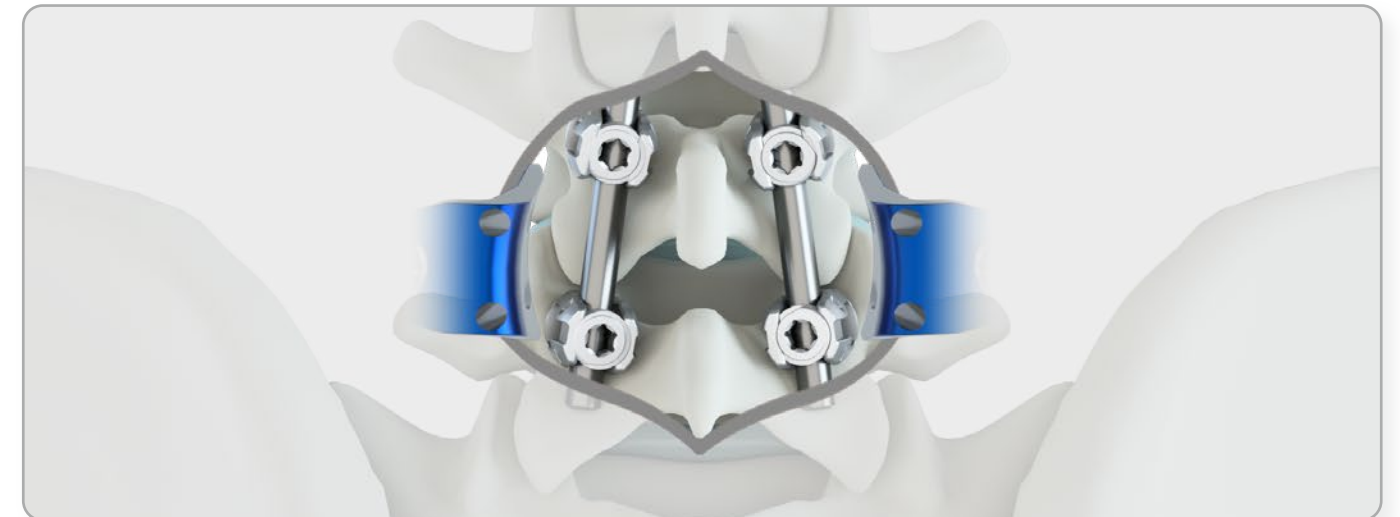
## 4 SCREW SYSTEM

The **cortical/cancellous** screw threads **differentiate bone purchase**, enhancing the posterior fixation.



### CORTICAL AND SLIM PROFILE SCREW

In addition to a **cortical** quadruple-lead thread, the **slim profile** screw head design is **optimized** for use in a **minimally invasive midline cortical approach**.



## REFERENCES

- [1] Petrone S. et al., Cortical bone trajectory technique's outcomes and procedures for posterior lumbar fusion: A retrospective study, *Journal of Clinical Neuroscience*, 2020.
- [2] Matsukawa K. et al., Comparison of Safety and Perioperative Outcomes Between Patient-specific Template-Guided and Fluoroscopic-Assisted Freehand Lumbar Screw Placement Using Cortical Bone Trajectory Technique, *Global Spine Journal*, 2022.
- [3] Marengo N. et al., Cortical Bone Trajectory Screw Placement Accuracy with a Patient-Matched 3-Dimensional Printed Guide in Lumbar Spinal Surgery: A Clinical Study, *WORLD NEUROSURGERY*, 2019.
- [4] Marengo N. et al., Cortical Bone Trajectory Screws in Posterior Lumbar Interbody Fusion: Minimally Invasive Surgery for Maximal Muscle Sparing—A Prospective Comparative Study with the Traditional Open Technique, *Clinical Study*, 2018.
- [5] Matsukawa K. et al., Accuracy of cortical bone trajectory screw placement using patient-specific template guide system, *Neurosurgical Review*, 2019.
- [6] Matsukawa K. et al., Cortical pedicle screw trajectory technique using 3D printed patient-specific-guide, *M.O.R.E. Journal*, 2018.



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**REDEFINING BETTER  
IN ORTHOPAEDICS  
AND SPINE SURGERY**

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