

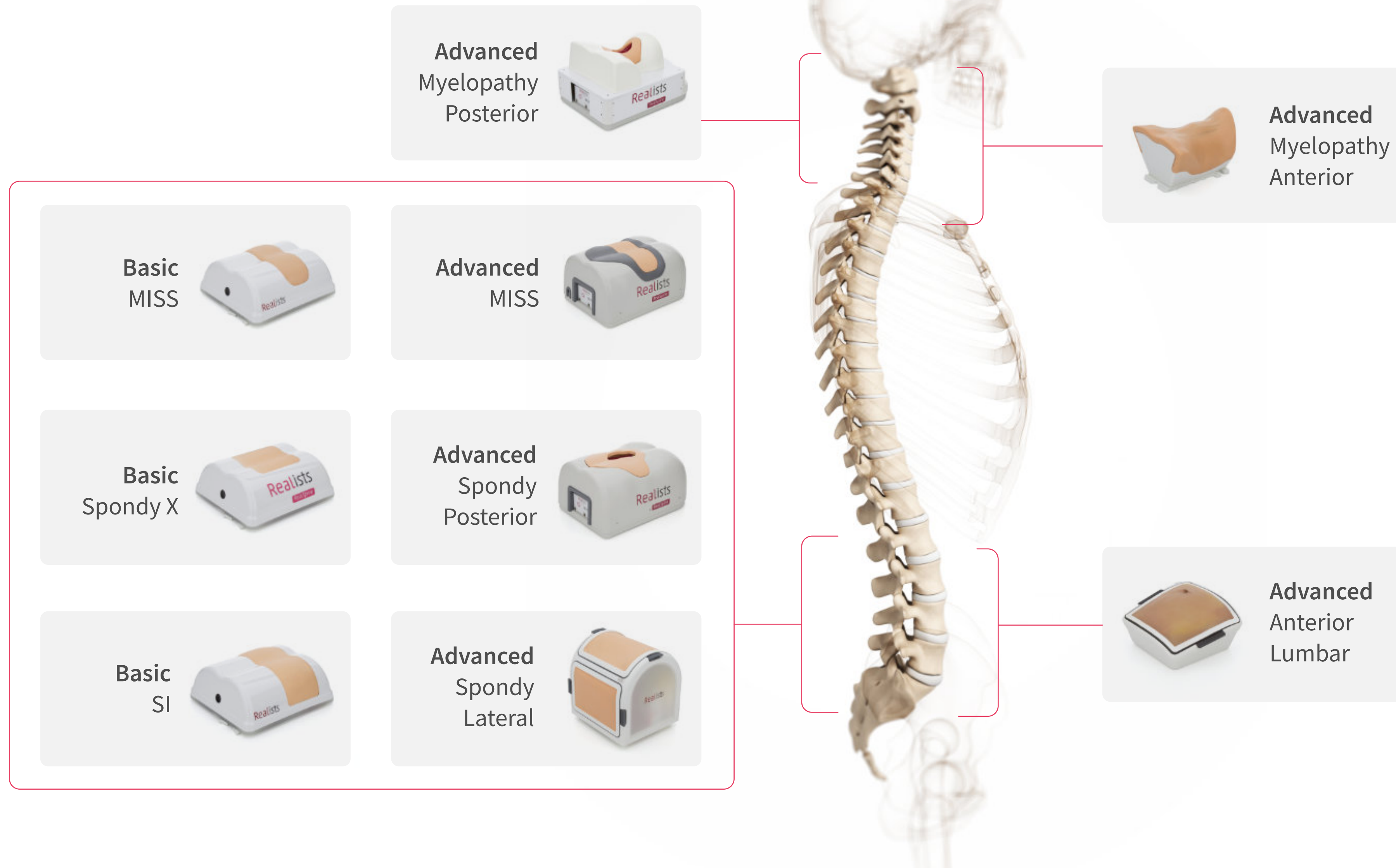


Realists

Product Presentation

Apr. 2024

RealSpine

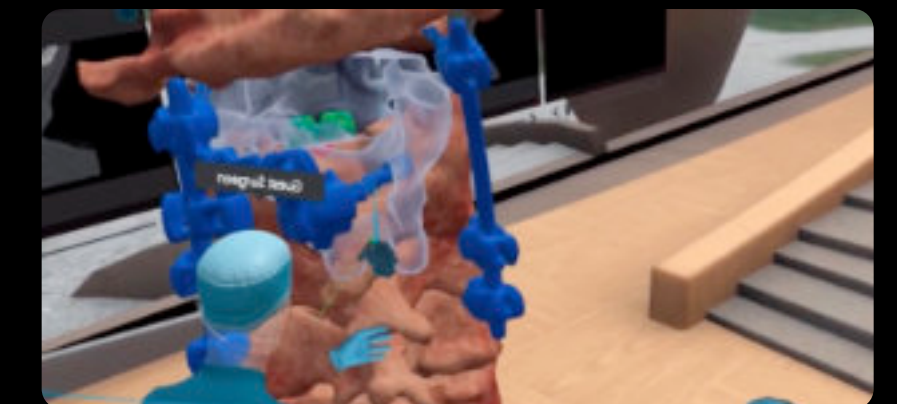


RealImaging



X-ray simulation for surgical training with RealSpine

Realists VR



Pre- and post-op in virtual reality

RealLab



Your partner in hands-on surgical training

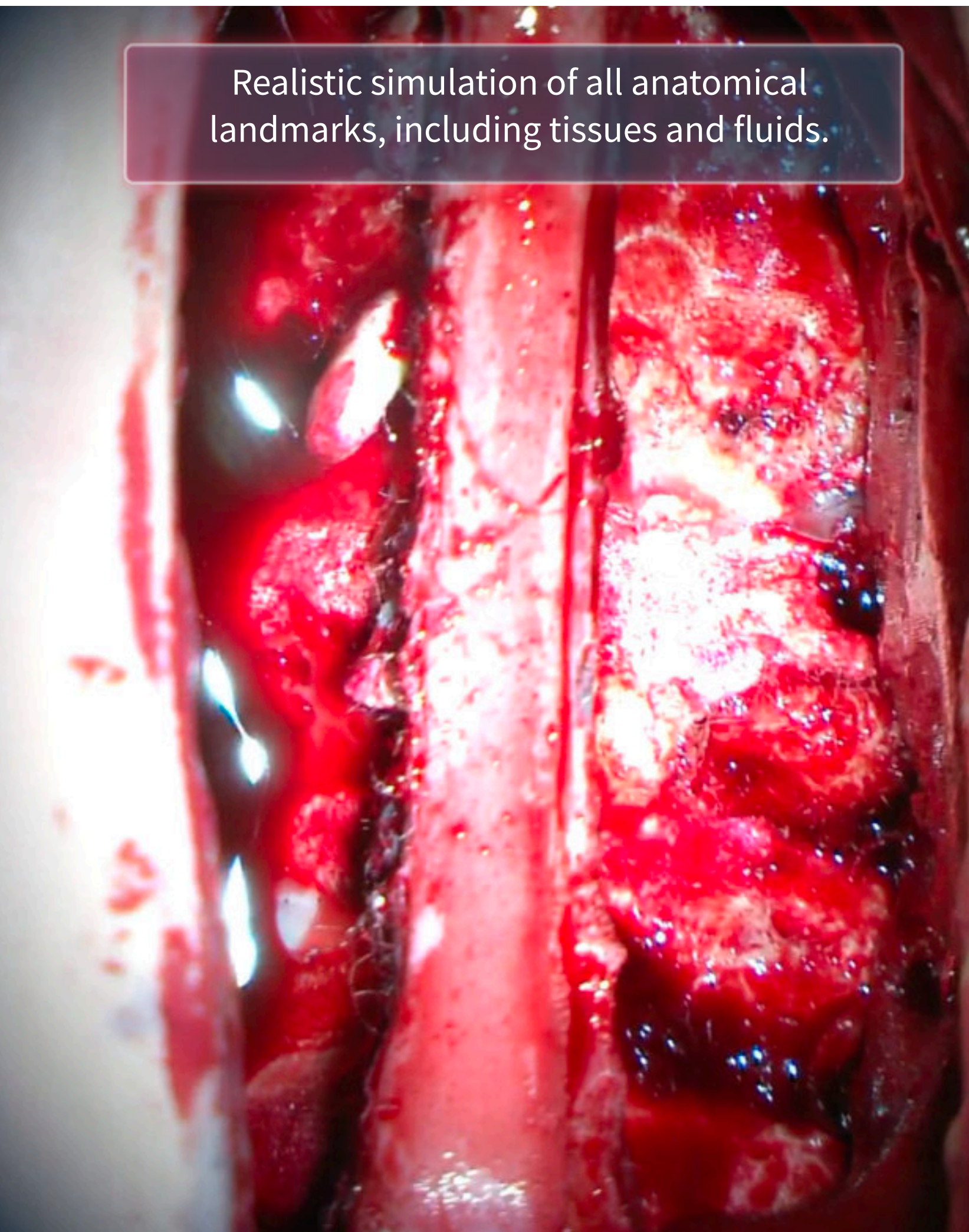
RealSpine | Advanced Myelopathy Posterior

For decompression and stabilization of the cervical spine



Realistic simulation of all anatomical landmarks, including tissues and fluids.

Compatible with Occipital fixation, Lateral Mass, Pedicle and Laminar screws.



RealSpine | Advanced Myelopathy Posterior



System ADVANCED
(Cervical posterior)
Cover
Reusable



Skin Cervical
Posterior - Open / Closed
Reusable / Disposable



Anatomical Cartridge
Replaceable

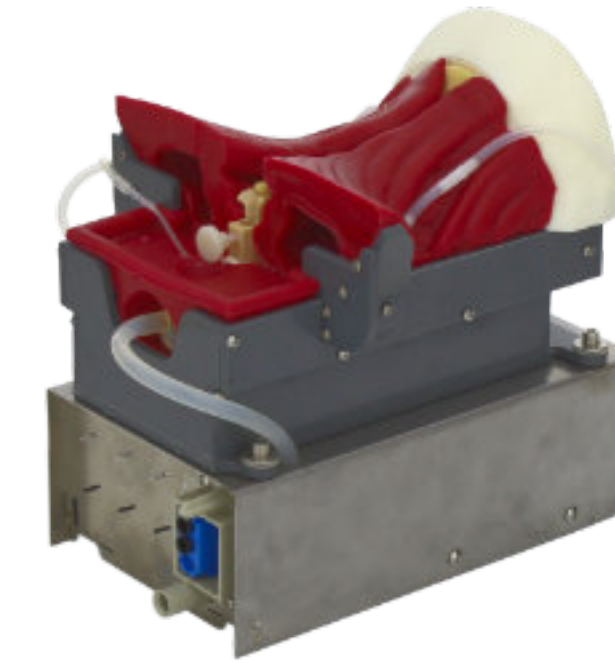


System ADVANCED
(Cervical posterior)
Base
Reusable

PRO86
Skin Cervical
Posterior Closed
(Included with
cartridge)



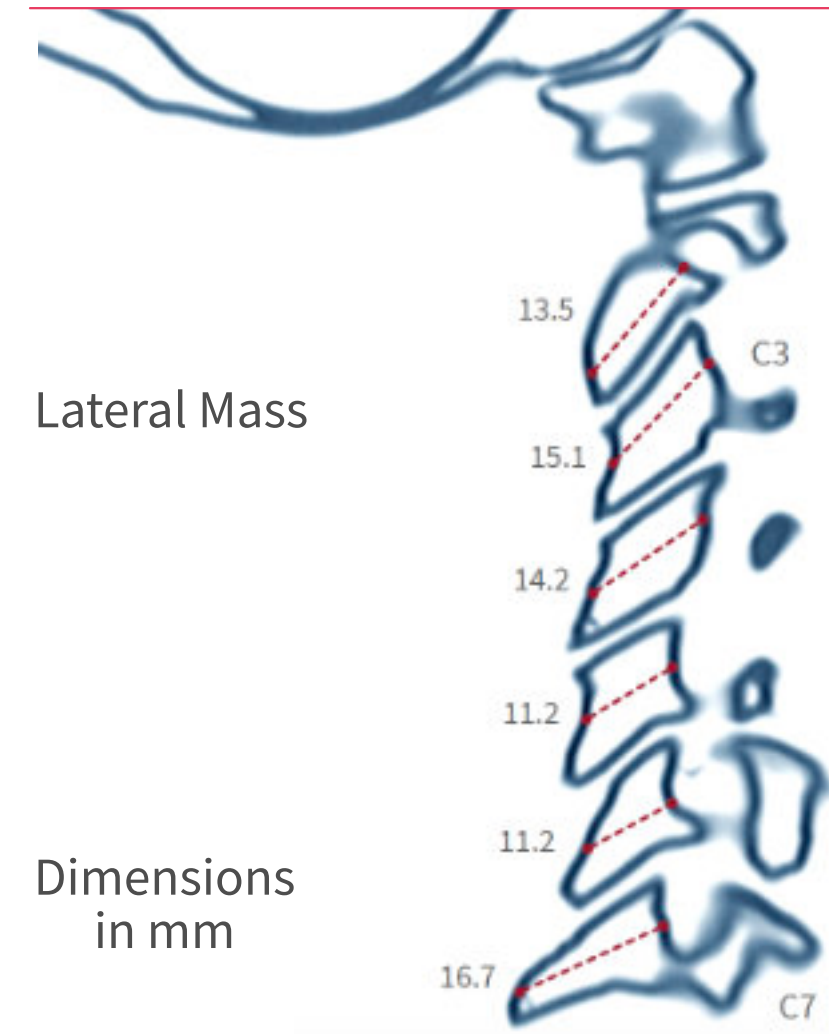
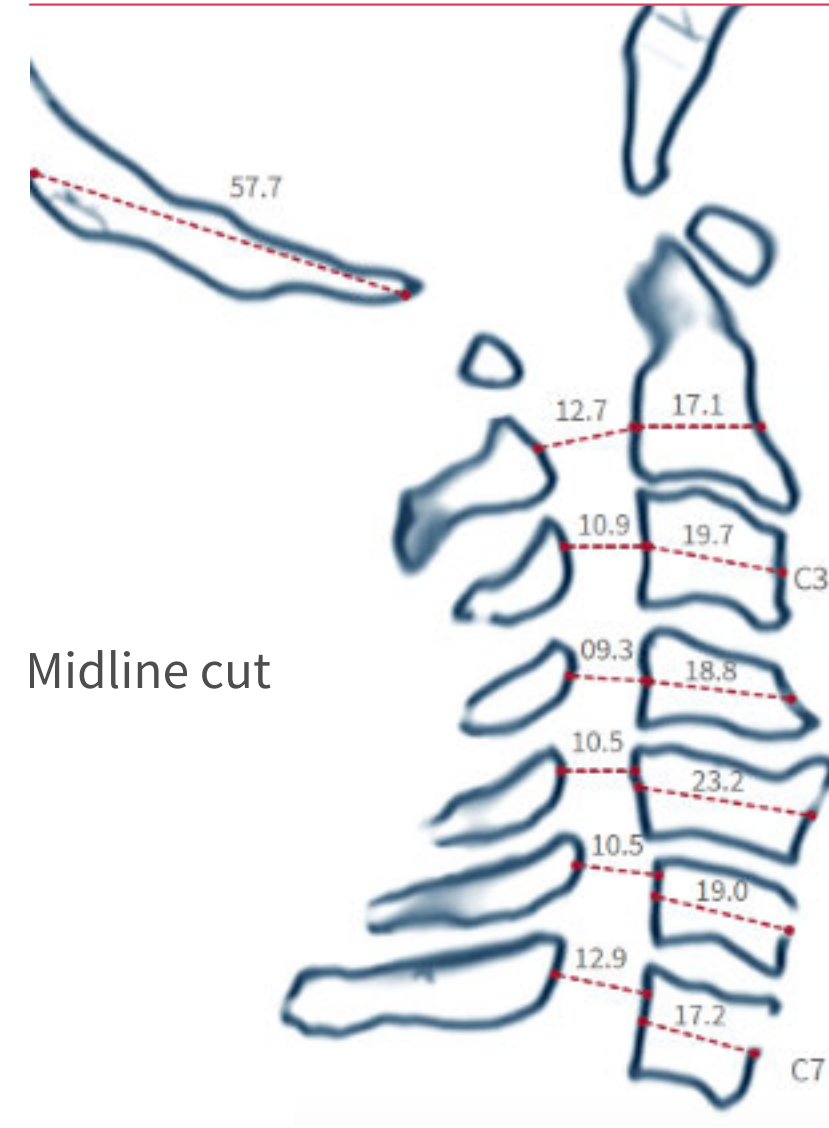
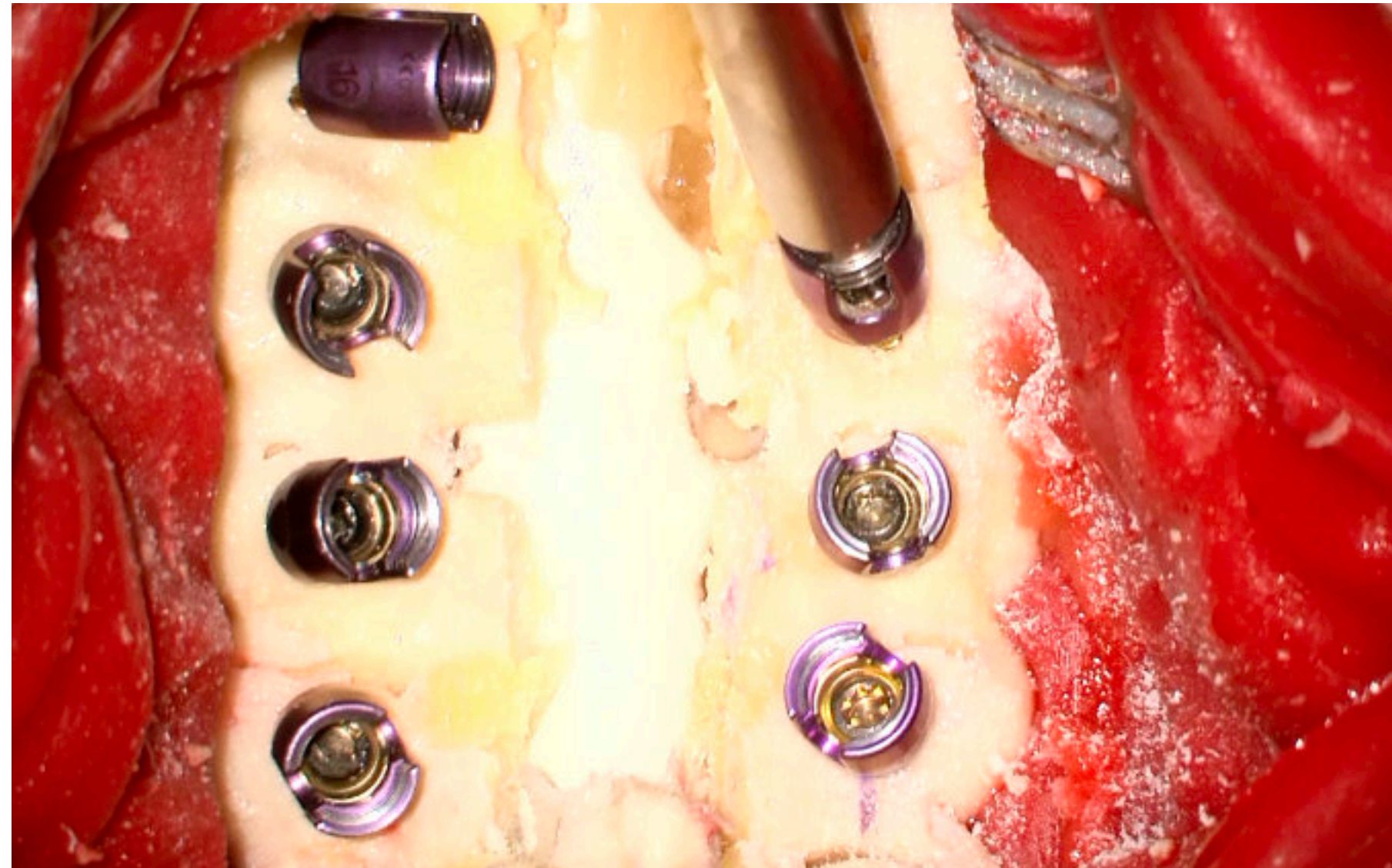
PRO39
Skin Cervical
Posterior Open
(Included with
System ADVANCED)



PRO193
Myelopathy Posterior
OC/C7 Open



PRO113
System ADVANCED
(cervical posterior)



ANATOMY

- Bones Occiput - C7
- Skin - Open
- Muscle - Cervical posterior closed / open
- L. Flavum
- L. Facet Capsular
- L. Interspinous
- L. Supraspinous
- Posterior Longitudinal (PLL)
- L. Nuchal
- L. Intertransverse
- Epidural Fat
- Dura & Nerve Roots (with CSF & Cauda Equina)
- Arteria Vertebralis
- Bleeding Muscular, Epidural, A. Vertebralis

PROCEDURES

- Incision
- Flavectomy
- Laminectomy
- Laminoplasty
- Bilateral Decompression
- Facetectomy
- Fusion (Screw Fixation)
- Dura closure
- Bleeding management

COMPATIBLE TECHNOLOGIES

- External Navigation
- Drilling
- Pedicle Screws (Fusion)
- Lateral Mass Screws (Fusion)
- Dura suture
- Bleeding management

ACCESS

- Interlaminar

APPROACHES

- Microscopic / Exoscopic
- Tubular Endoscopic
- Open

	Lateral Mass Screws			Pedicle Screws	Laminar Screws	Occiput Screws / Plate
	Magerl	Louis	Roy-Camille			
Occiput						✓
C1	✓	✓	✓	✓	✓	
C2	✓	✓	✓	✓	✓	
C3	✓	✓	✓	✓	✓	
C4	✓	✓	✓	✓	✓	
C5	✓*	✓	✓	✓	✓	
C6	✓*	✓	✓	✓	✓	
C7	✓*	✓	✓	✓		

* Possible but without cervical posterior cover

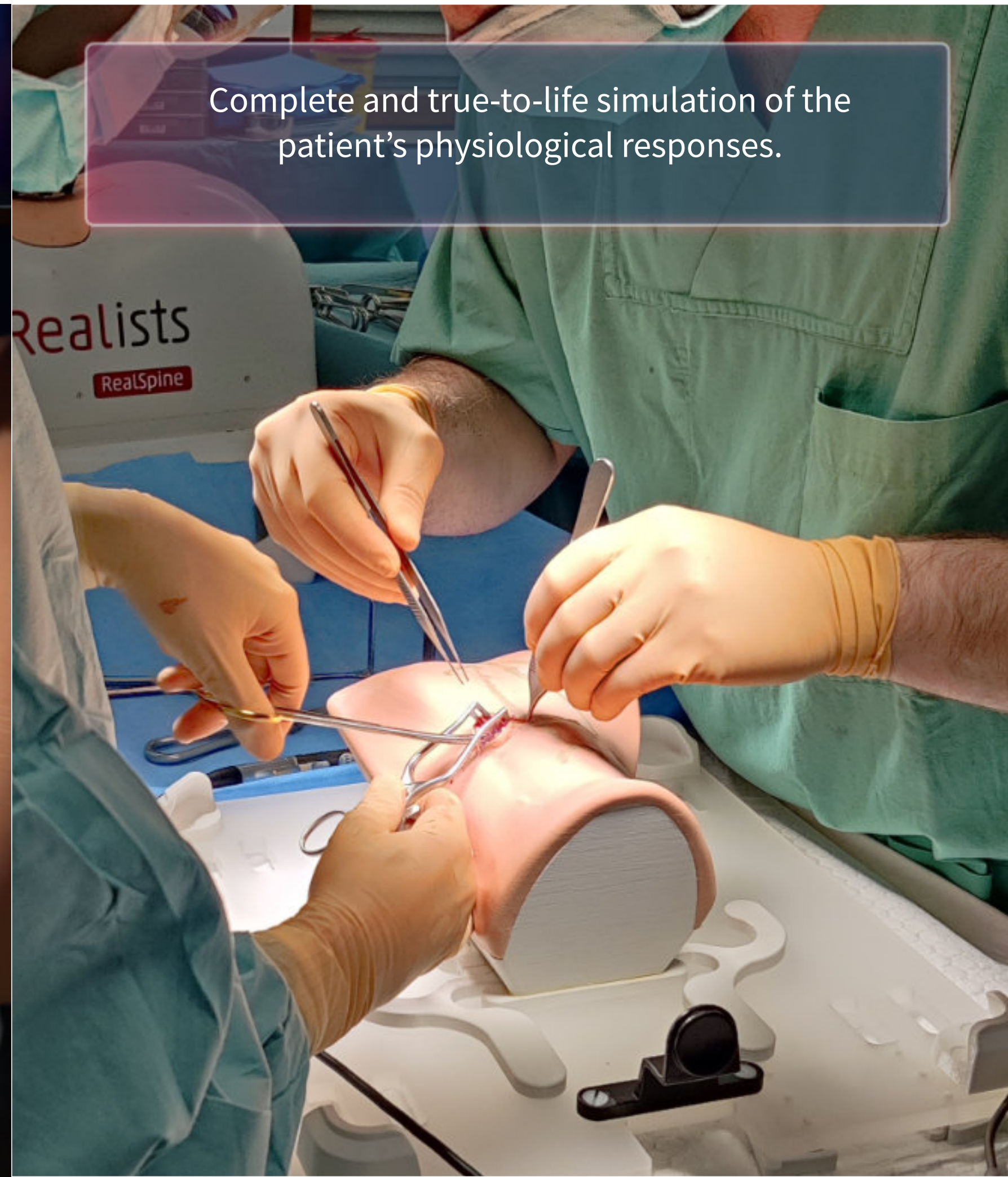
RealSpine | Advanced Myelopathy Anterior



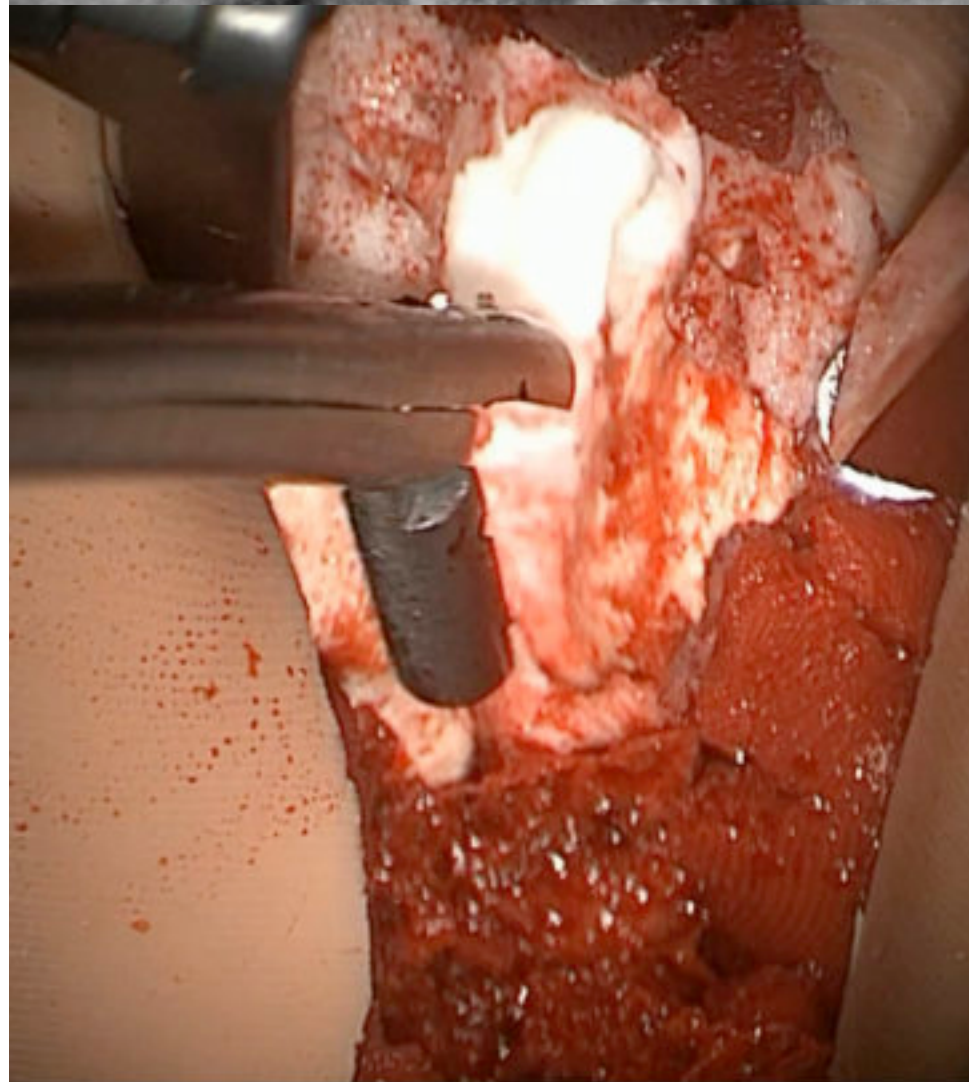
Discover a new dimension in ACDF training

Perform 6 corpectomies, 5 discectomies, 5-disc replacements, and a full spectrum of anterior cervical fixation procedures.

Complete and true-to-life simulation of the patient's physiological responses.



Realists



PRO235
Advanced Myelopathy
Anterior C3/T1
Disposable



PRO237
System COMPACT
Base
Reusable

ANATOMY

Vertebrae C3 - T1
Hyoid bone
M. Longus Colli
M. Sternothyroideus
M. Sternohyoideus
M. Sternocleidomastoid (SCM)
Platysma
Trachea
Esophagus
Prevertebral fascia
Thyroid cartilage
Cervicothoracic junction
Anterior longitudinal ligament
Posterior longitudinal ligament
Dura and nerve roots
Carotid artery
Vertebral artery
Jugular vein

PROCEDURES

Anterior Cervical Discectomy and Fusion (ACDF)
Anterior Cervical Corpectomy (Fusion)
Cervical Artificial Disc Replacement (ADR)

COMPATIBLE TECHNOLOGIES

External navigation
X-ray
Drilling
Screws
Implants
Cages / Spacers
Plates

ACCESS

Anterior

APPROACHES

Microscopic / Exoscopic
Tubular Endoscopic
Open

RealSpine | Basic MISS

For basic endoscopic / microscopic decompression training of the lumbar spine



Life-like simulation of key anatomical structures and tissues.



Perform endoscopic and microscopic decompression procedures on both sides of the L4-L5 vertebrae.



Realists

Realists



System COMPACT
Basic MISS
Anatomical Cover
Reusable



Skin and Muscle
Disposable



System COMPACT
Basic MISS
Muscle Container
Reusable



Anatomical Cartridge
Disposable



System COMPACT
Basic MISS
Base
Reusable



Skin and Muscle
(Included with cartridge)



PRO210
Herniated Disc
L4/L5

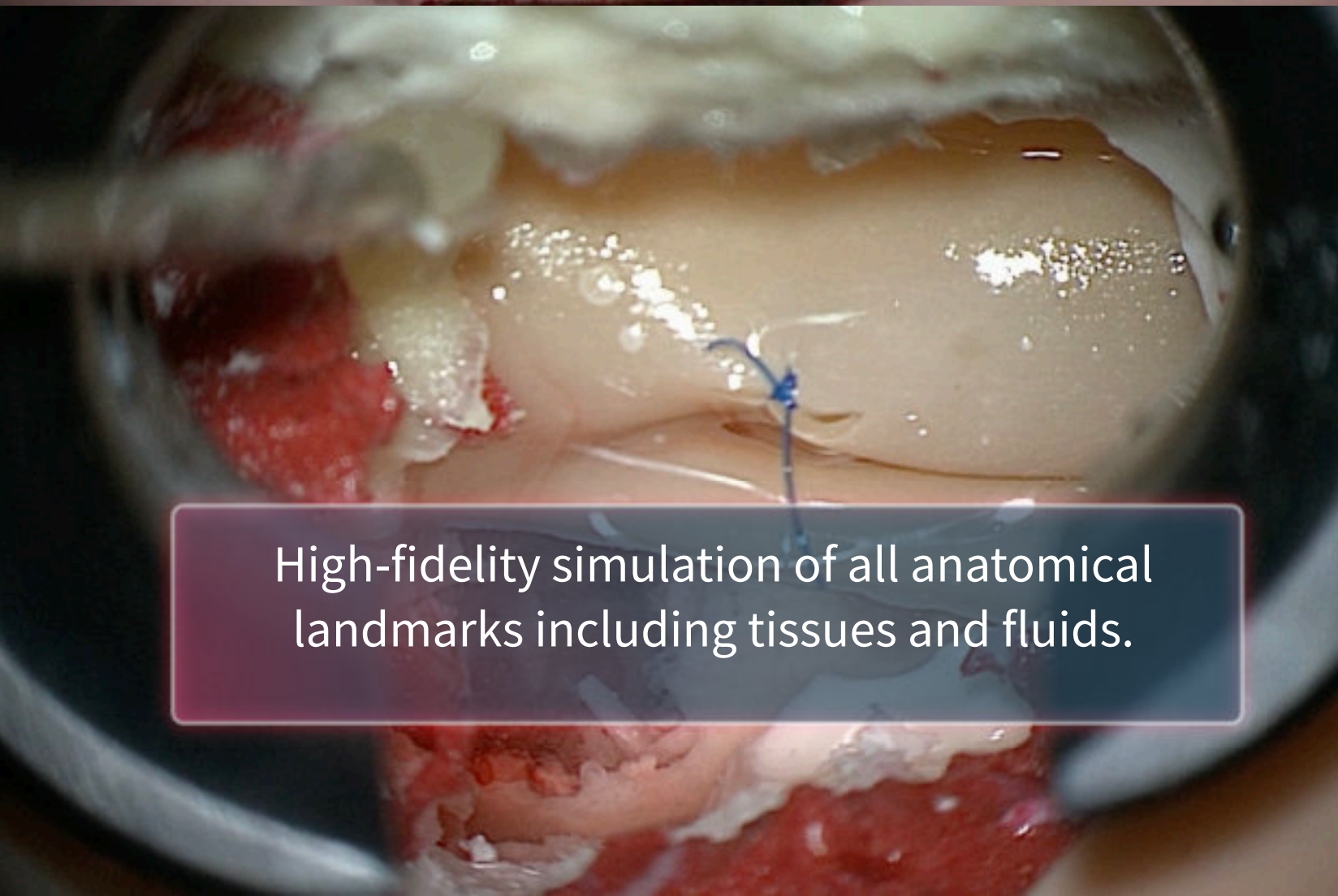
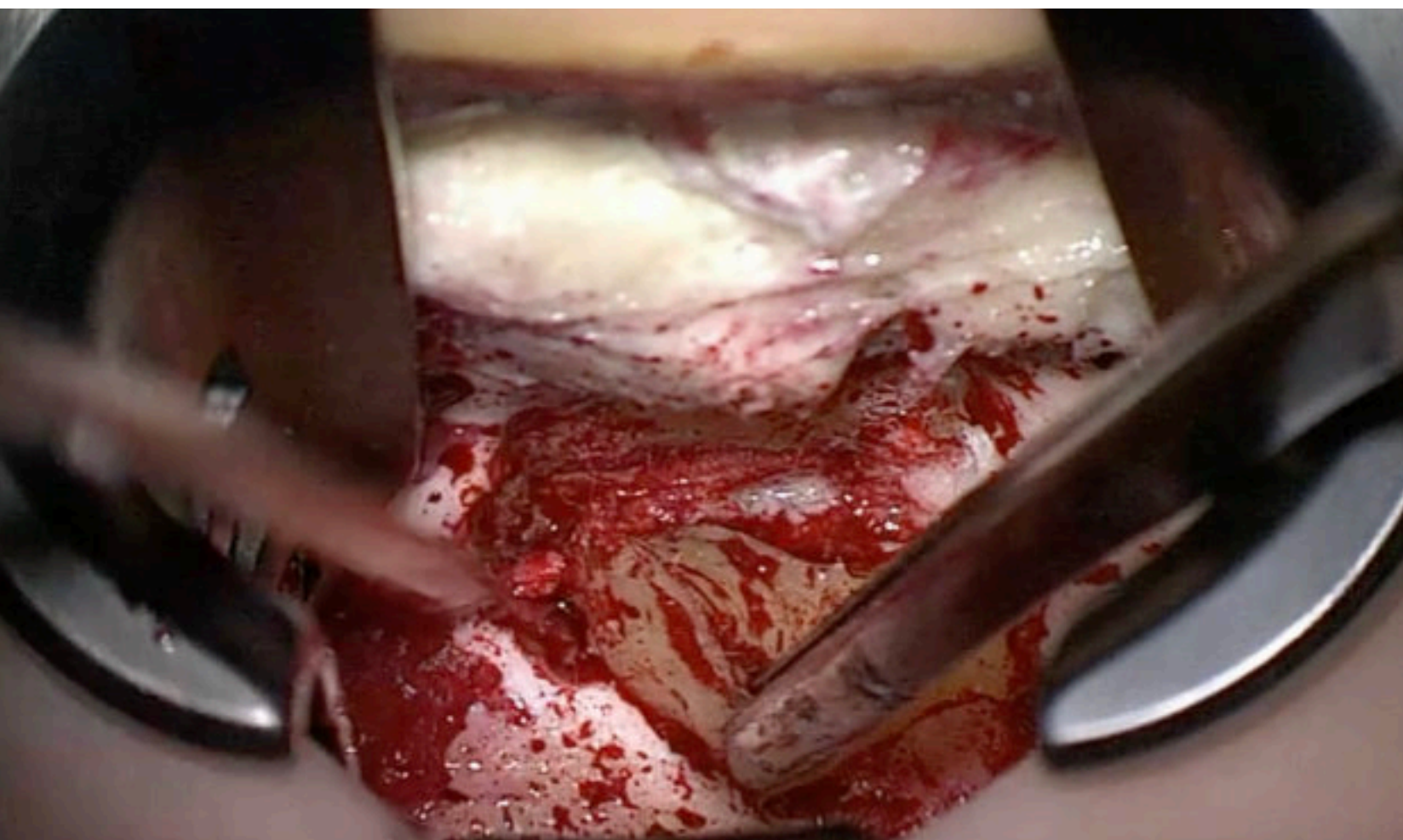


PRO211
System COMPACT -
Basic MISS

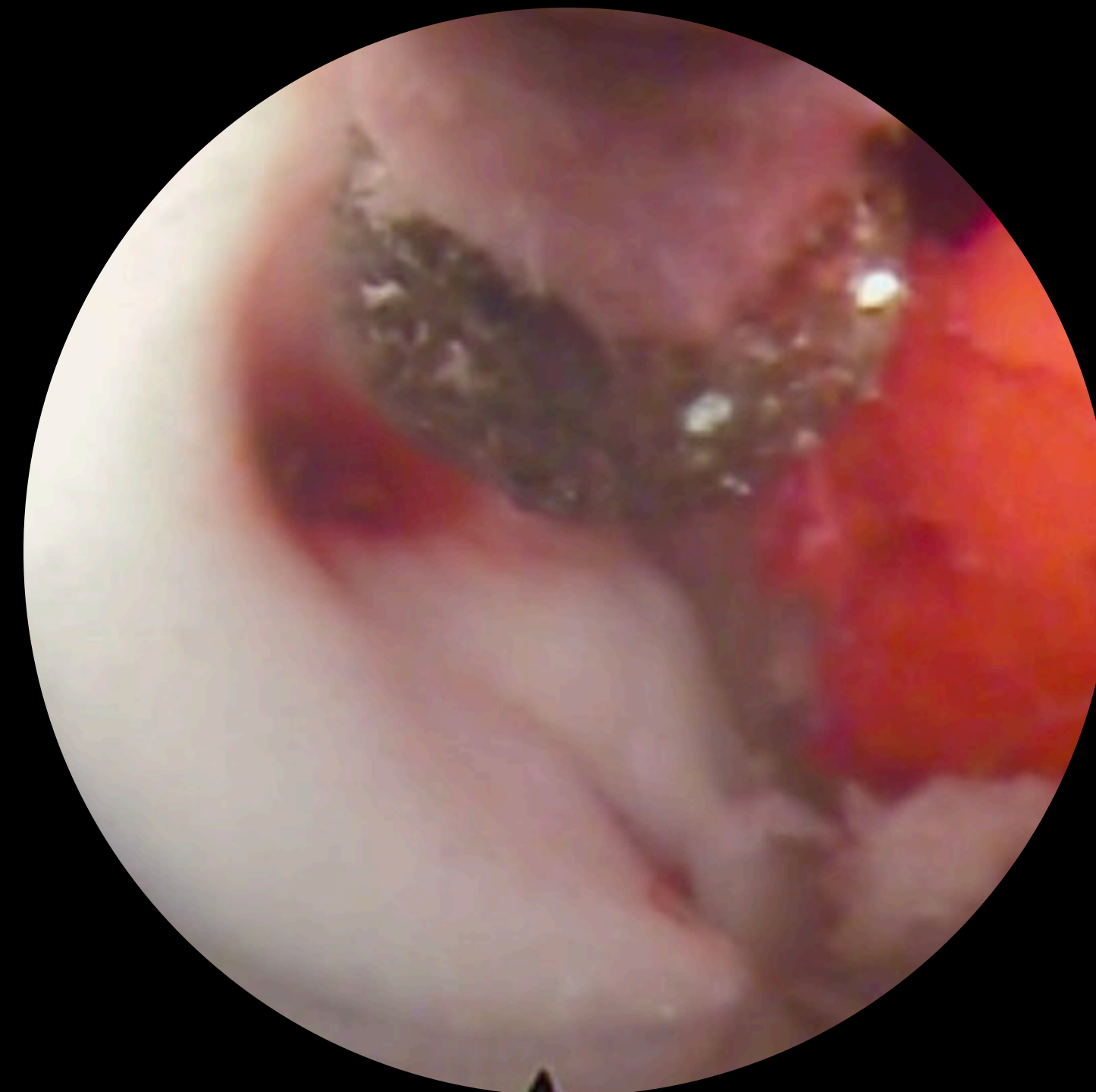
ANATOMY
Bones L4-L5
Skin - Closed
Muscle - Basic
L. Flavum
L. Interspinal
Posterior Longitudinal (PLL)
Dura & Nerve Roots
Disc L4-L5
PROCEDURES
Incision (Basic)
Flavectomy
Laminectomy
Bilateral Decompression
Sequestrectomy
Discectomy (Basic haptic feedback)
Facetectomy
COMPATIBLE TECHNOLOGIES
External Navigation
Cages TLIF / PLIF (Basic)
Drilling
ACCESS
Interlaminar
Extraforaminal
Transforaminal
Percutaneous
APPROACHES
Microscopic / Exoscopic
Tubular Endoscopic
Full Endoscopic

RealSpine | Advanced MISS

For advanced endoscopic / microscopic decompression training of the lumbar spine



High-fidelity simulation of all anatomical landmarks including tissues and fluids.



Discover a new standard in endoscopic spine surgery training with the ultra-realism of RealSpine Advanced MISS.



Realists

RealSpine | Advanced MISS

For advanced endoscopic / microscopic decompression training of the lumbar spine



Designed to simulate the challenges and complexities of real-life spine surgery with the highest level of accuracy.



Customize your training. Choose from a variety of pathologies and approaches to find the one that best suits your needs.



Realists



Skin
Reusable / Disposable



System ADVANCED
(Lumbar posterior)
Anatomical Cover
Reusable



Anatomical Cartridge
Recyclable



System ADVANCED
(Lumbar posterior)
Base
Reusable

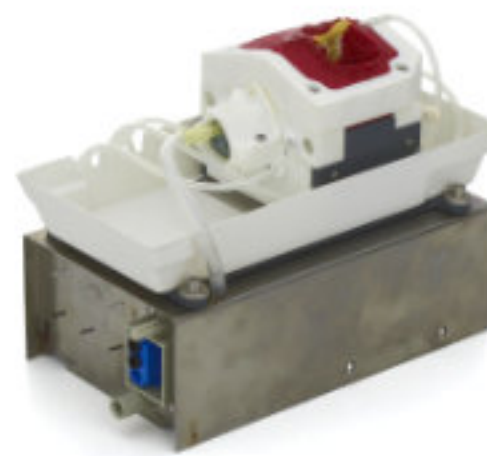
PRO37

Skin Lumbar Posterior
Bilateral Incision
(Reusable - Included with
System ADVANCED)

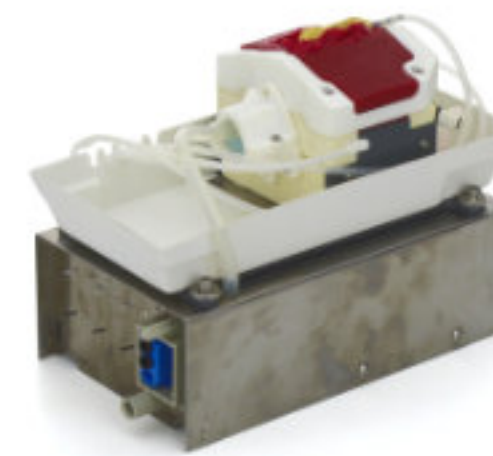


PRO38

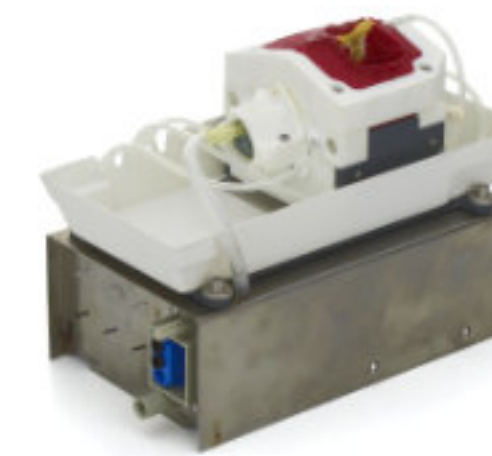
Skin Lumbar Posterior
Closed
(Disposable - Included
With cartridge)



PRO187
Herniated Disc
L4/5



PRO189
Stenosis
L4/5



PRO186
Complex Stenosis
L4/5



PRO194
Extraforaminal
L4/5



PRO108

System ADVANCED
(lumbar posterior)



System ADVANCED
(lumbar endoscopy)
Anatomical Cover
Reusable



Skin and Muscle
For Endoscopy
Disposable



System ADVANCED
(lumbar endoscopy)
Muscle Container
Reusable



Anatomical Cartridge
Recyclable



System ADVANCED
(lumbar endoscopy)
Base
Reusable



Skin and Muscle
For Endoscopy
(Included with cartridge)



PRO173
Herniated Disc
L4/5 Endo

PRO192
Herniated Disc & Stenosis
L4/5 Endo



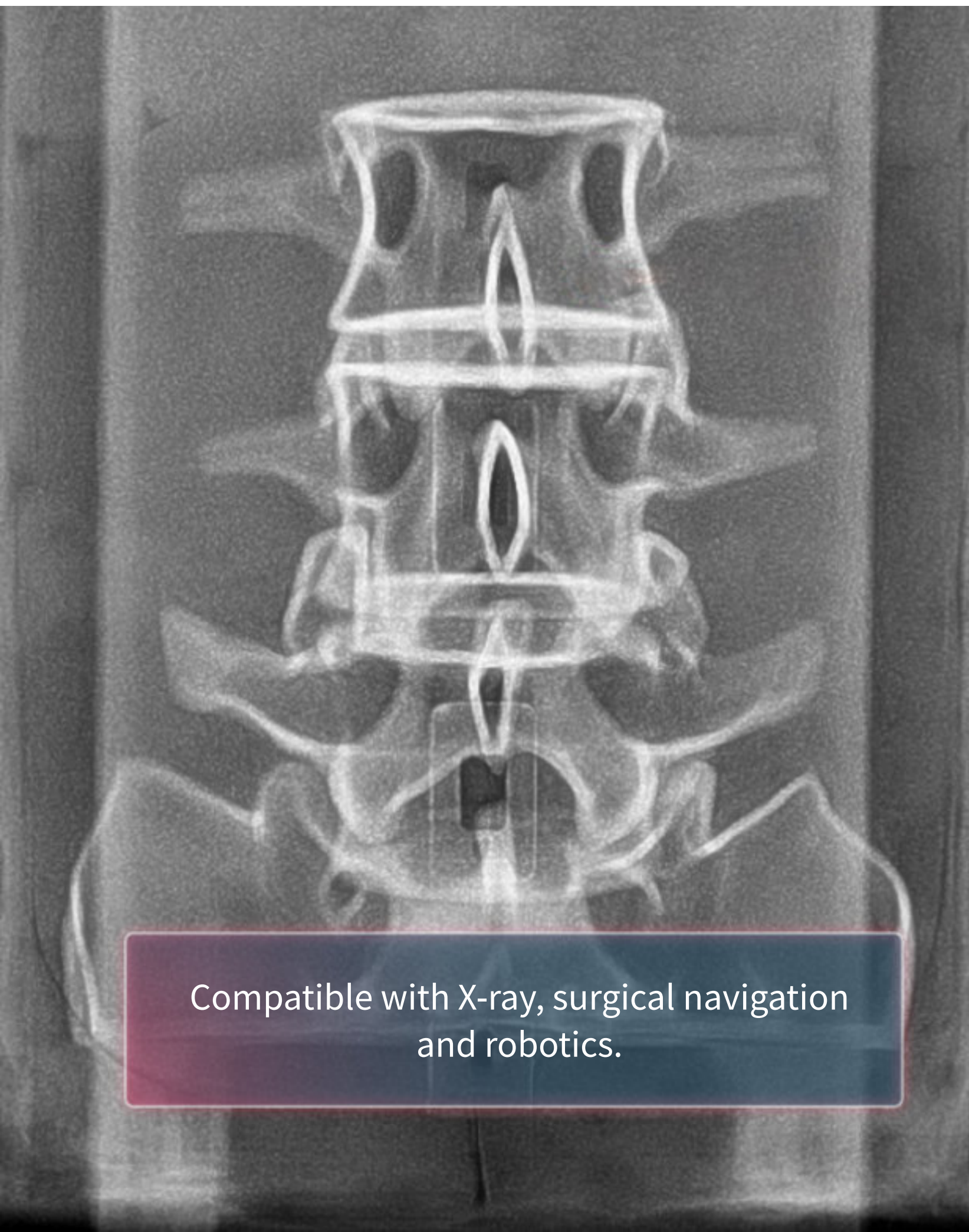
PRO118
System ADVANCED
(lumbar endoscopy)



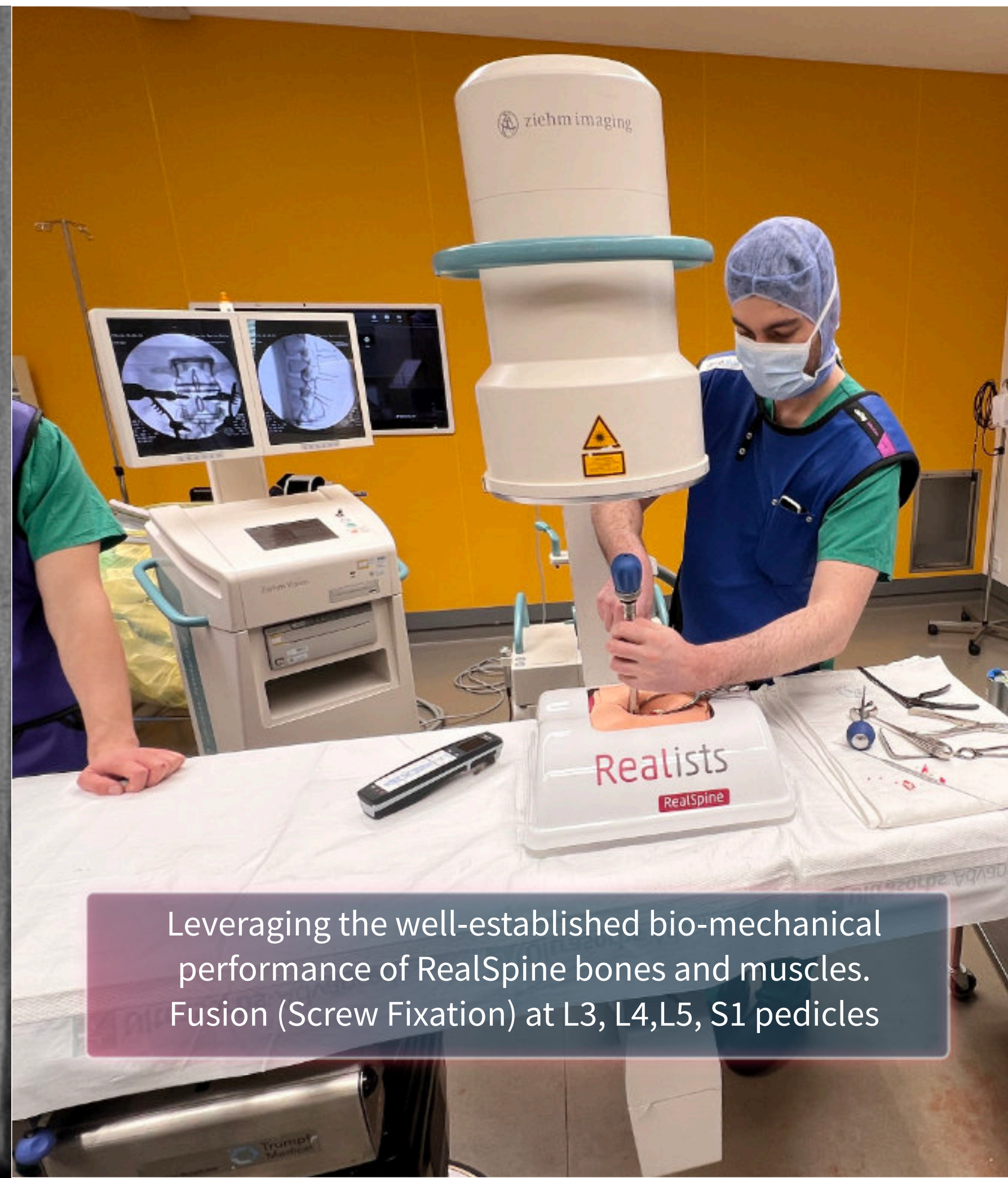
		PRO187 Herniated Disc L4/5	PRO189 Stenosis L4/5	PRO186 Complex Stenosis L4/5	PRO194 Extraforaminal L4/5	PRO173 Herniated Disc L4/5 Endo	PRO192 Hern. Disc & Stenosis L4/5 Endo
ANATOMY	Bones	L4-L5	L4-L5	L4-L5	L4-L5	L4-L5 + Iliac Crest	L4-L5 + Iliac Crest
	Skin	Bilateral Incision	Bilateral Incision	Bilateral Incision	Closed	Upper Anatomy	Upper Anatomy
	Muscle	Incision left	Incision right	Incision left	Closed	Closed	Closed
	L. Flavum	✓	✓	✓	✓	✓	✓
	L. Facet capsular	✓	✓	✓	✓	✓	✓
	L. Interspinal	✓	✓	✓	✓	✓	✓
	L. Supraspinous	✓	✓	✓	✓		
	Posterior Longitudinal (PLL)	✓	✓	✓	✓	✓	✓
	L. Intertransverse				✓		
	Nerve roots L3/4, L4/5	Left side	✓	✓	✓	✓	✓
	Operable Disc L4/5	✓	✓	✓	✓	✓	✓
	Epidural Fat	✓	✓	✓	✓	✓	✓
	Active bleeding (muscular, laminar, epidural)	✓	✓	✓	✓	✓	✓
	PROCEDURES	Incision				✓	✓
Flavectomy / Laminectomy		✓	✓	✓	✓	✓	✓
Unilateral Decompression		✓					
Bilateral Decompression			✓	✓	✓	✓	✓
Sequestrectomy		✓	✓		✓	✓	✓
Discectomy		✓	✓		✓	✓	✓
Facetectomy		✓	✓	✓	✓	✓	✓
Dura Closure		✓	✓	✓	✓	✓	✓
Bleeding Management		✓	✓	✓	✓	✓	✓
TECHN.	External Navigation	✓	✓	✓	✓	✓	✓
	Cages TLIF / PLIF					✓	✓
	Drilling	✓	✓	✓	✓	✓	✓
	Dura Suture	✓	✓	✓	✓	✓	✓
	Water Irrigation					✓	✓
ACCESS	Interlaminar	✓	✓	✓	✓	✓	✓
	Extraforaminal				✓	✓	✓
	Transforaminal					✓	✓
	Percutaneous				✓	✓	✓

RealSpine | Basic Spondy X

Radiolucent model for use with X-ray modalities
For lumbar pedicle screw fixation



Compatible with X-ray, surgical navigation
and robotics.



Leveraging the well-established bio-mechanical
performance of RealSpine bones and muscles.
Fusion (Screw Fixation) at L3, L4, L5, S1 pedicles



Realists
RealSpine

Realists

RealSpine | Basic Spondy X



System COMPACT
Basic X
Anatomical Cover
Reusable



Skin
Disposable



Muscle
Disposable



Anatomical Cartridge
Disposable



System COMPACT
Basic X
Base
Reusable

PRO94

Muscle Lumbar
Posterior - Closed X
(Included with
cartridge)



PRO90

Skin Lumbar
Posterior - Closed X
(Included with
cartridge)



PRO199

Basic - Spondy X
L3/S1



PRO76

System COMPACT
Basic X

ANATOMY

Bones L3-S1

Skin - Closed

Muscle - Lumbar posterior closed

PROCEDURES

Incision

Fusion (screw fixation)

COMPATIBLE TECHNOLOGIES

External Navigation

Pedicle Screws (Fusion)

X-ray

Robotics

ACCESS

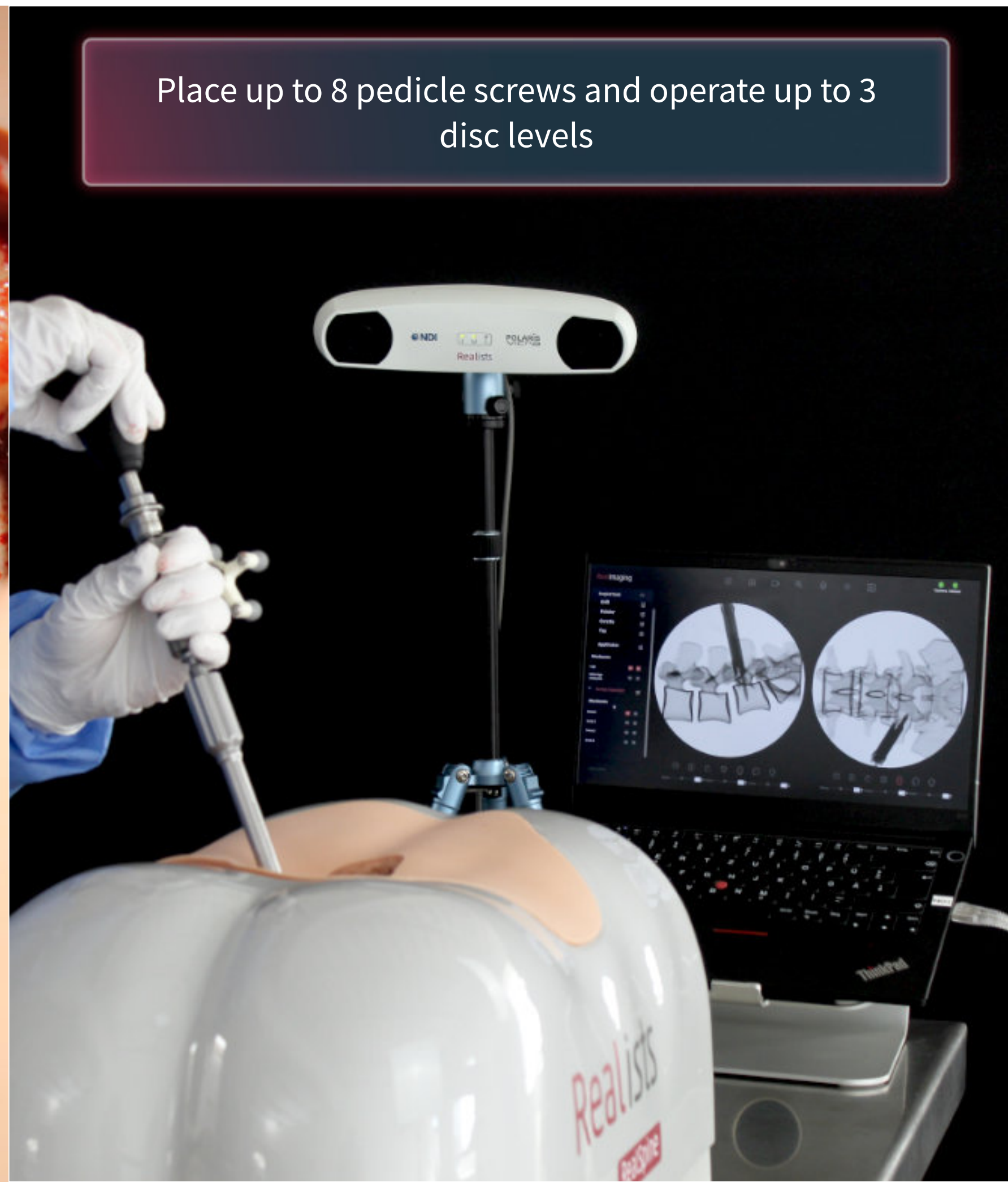
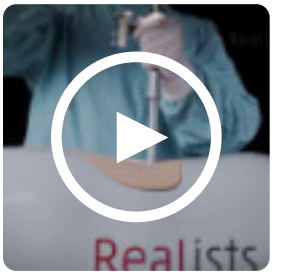
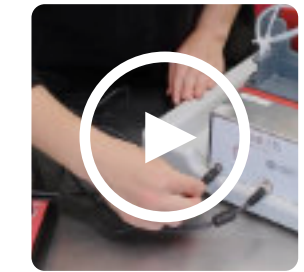
Percutaneous

APPROACHES

Open

RealSpine | Advanced Spondy Posterior

For decompression and stabilization of the lumbar spine
Covering a wide range of applications



RealSpine | Advanced Spondy Posterior



Skin
Reusable / Disposable



System ADVANCED
(lumbar posterior)
Anatomical Cover
Reusable



Muscle
Reusable / Disposable



Anatomical Cartridge
Replaceable



System ADVANCED
(lumbar posterior)
Base
Reusable

PRO38

Skin Lumbar Posterior
Closed
(Disposable - Included
with cartridge)



PRO41

Muscle Lumbar Posterior
Closed
(Disposable)



PRO195

Advanced Spondy Posterior
L3/S1 MISS



PRO23

Skin Lumbar Posterior
Open
(Reusable - Included with
System ADVANCED)



PRO40

Muscle Lumbar Posterior
Open
(Reusable)



PRO197

Advanced Spondy Posterior
L3/S1 Open



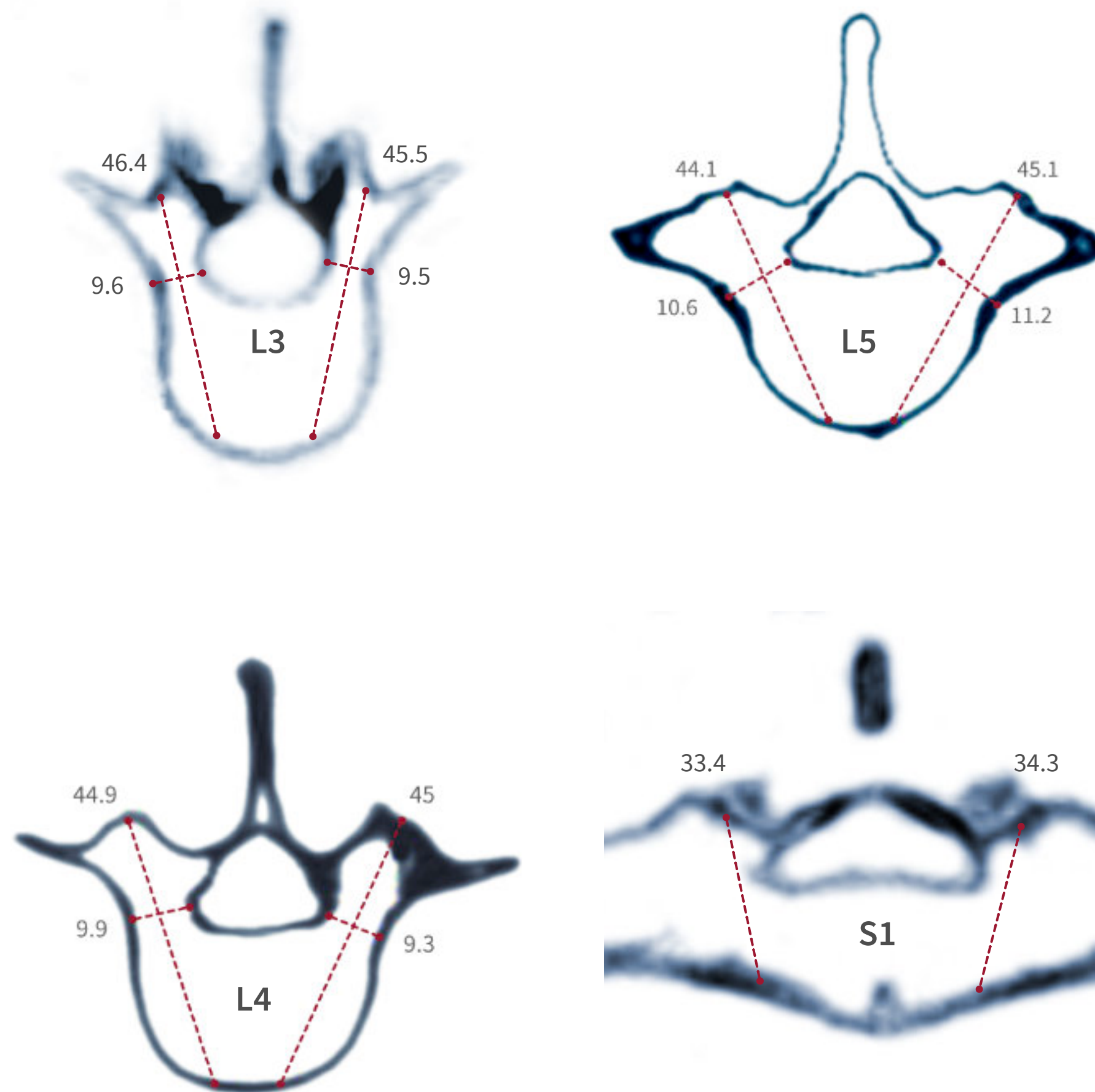
PRO108

System ADVANCED
(lumbar posterior)





Anatomical dimensions



Dimensions in mm

ANATOMY

- Bones L3-S1
- Skin - Closed / Open
- Muscle - Lumbar posterior closed / open
- L. Flavum
- L. Facet Capsular
- L. Interspinal
- L. Supraspinous
- Posterior Longitudinal (PLL)
- Dura & Nerve Roots (with CSF & Cauda Equina)
- Operable Discs at L3-L4, L4-L5, L5-S1
- Epidural Fat
- Bleeding Muscular, Laminal, Epidural

PROCEDURES

- Incision
- Flavectomy
- Laminectomy
- Bilateral Decompression
- Sequestrectomy
- Discectomy
- Facetctomy
- Fusion (Screw Fixation)
- Dura closure
- Bleeding management

COMPATIBLE TECHNOLOGIES

- External Navigation
- Cages TLIF / PLIF
- Drilling
- Pedicle Screws (Fusion)
- Dura suture
- Bleeding management
- Robotics

ACCESS

- Interlaminar
- Extraforaminal
- Percutaneous

APPROACHES

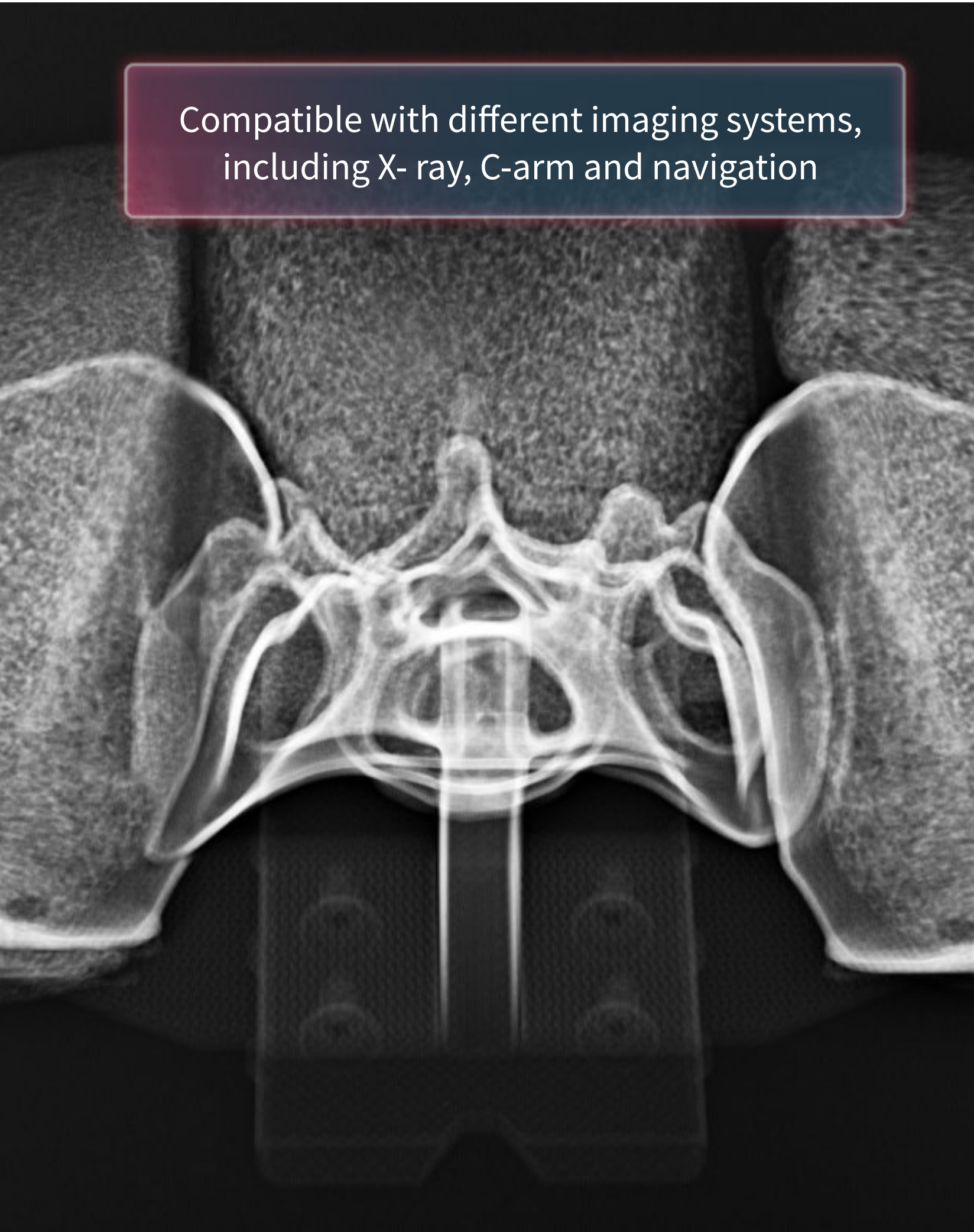
- Microscopic / Exoscopic
- Tubular Endoscopic
- Open

RealSpine | Basic SI



For sacroiliac joint fusion
Radiolucent model for use with X-ray modalities

Compatible with different imaging systems,
including X-ray, C-arm and navigation



Unmatched stability and accuracy to use
instruments and equipment just like in real surgery





System COMPACT
Basic - SI
Anatomical Cover
Reusable



Skin and Muscle
Disposable



Anatomical Cartridge
Replaceable



System COMPACT
Basic - SI
Base
Reusable



Skin and Muscle
(Included with
cartridge)



PRO222
Basic - SI
S1/S3



PRO218
System COMPACT
Basic SI

ANATOMY

Bones S3-S1

Iliums

Skin - Closed

Muscle - Posterior-lateral closed

Sacroiliac Joints

PROCEDURES

Incision

Pin insertion

Drilling

Fusion (implants / screws)

COMPATIBLE TECHNOLOGIES

External Navigation

Pedicle Screws (Fusion)

X-ray

ACCESS

Percutaneous

APPROACHES

Lateral

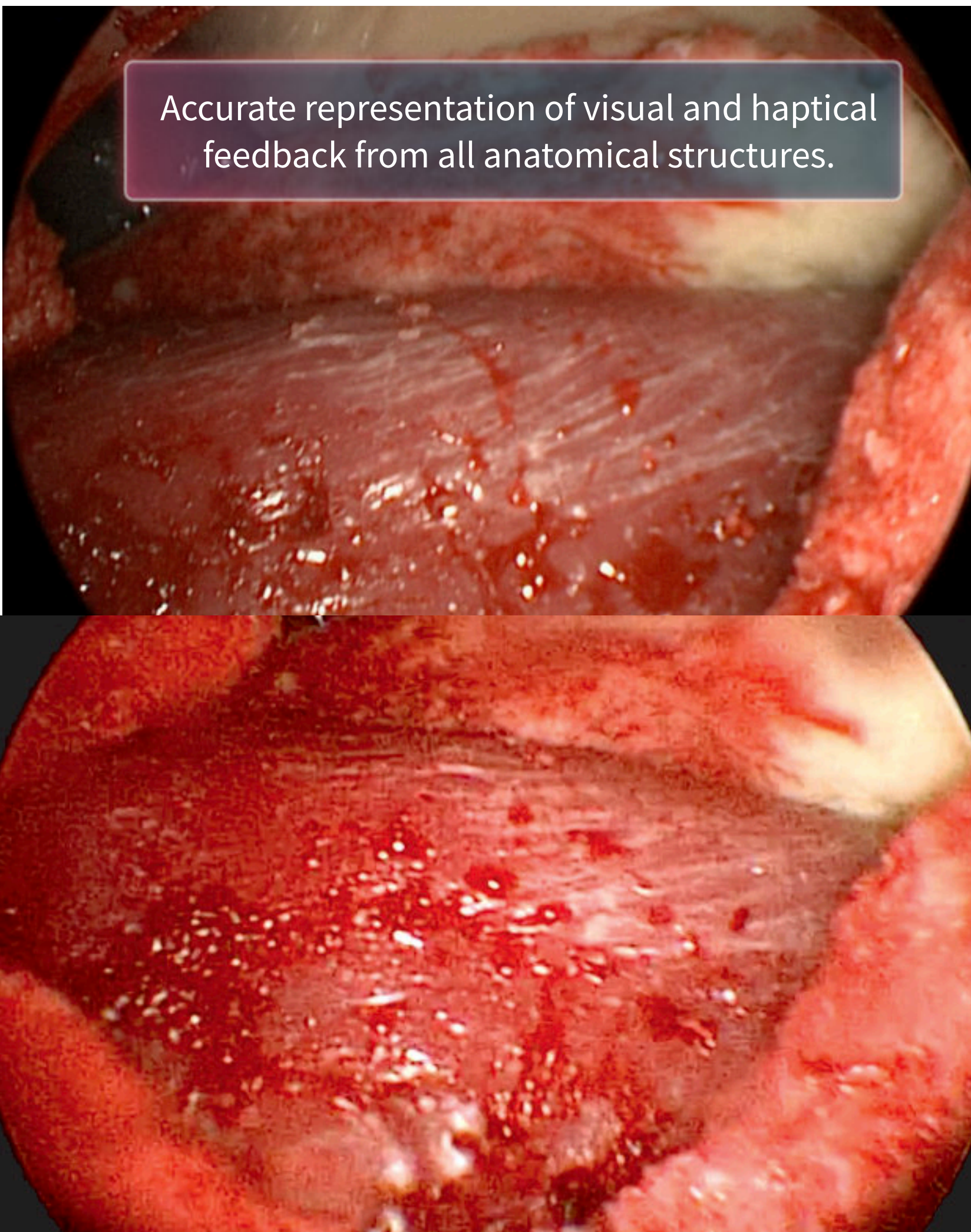
Posterior

RealSpine | Advanced Spondy Lateral

For training of lateral lumbar spine surgery
ATP and Transpoas approach



Accurate representation of visual and haptical feedback from all anatomical structures.



Single or lateral-then-prone positioning for lateral interbody fusion and pedicle screw fixation.



Realists

RealSpine | Advanced Spondy Lateral



PRO96

Advanced Spondy Lateral L2/L5
(Frame reusable)

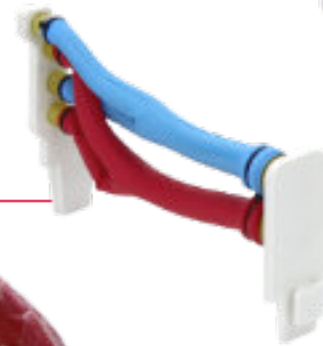
PRO97
Mod. 1 (Lateral Access)
Disposable



PRO100
Mod. 4 (Peritoneum,
Ureter, Fat)
Disposable



PRO101
Mod. 5 (Aorta, Vena Cava)
Disposable



PRO99
Mod. 3 (Vertebrae, Psoas)
Disposable



PRO98
Mod. 2 (Posterior Access)
Disposable



	ANATOMY
MOD. 1	Skin lateral closed
	Subcutaneous fat
	M. Obliquus externus abdominalis
	M. Obliquus internus abdominalis
	M. Transversus abdominis
MOD. 2	Fascia transversalis
	Passive bleeding (optional)
	Ribs
	Iliac Crest
	Skin posterior closed
MOD. 3	Muscle lumbar posterior
	Vertebrae L2-L5
	M. Psoas major
MOD. 4	Operable Discs at L2-L3, L3-L4, L4-L5
	Retroperitoneal fat
	Peritoneum
MOD. 5	Ureter
	Aorta Abdominalis
	Inferior Vena Cava

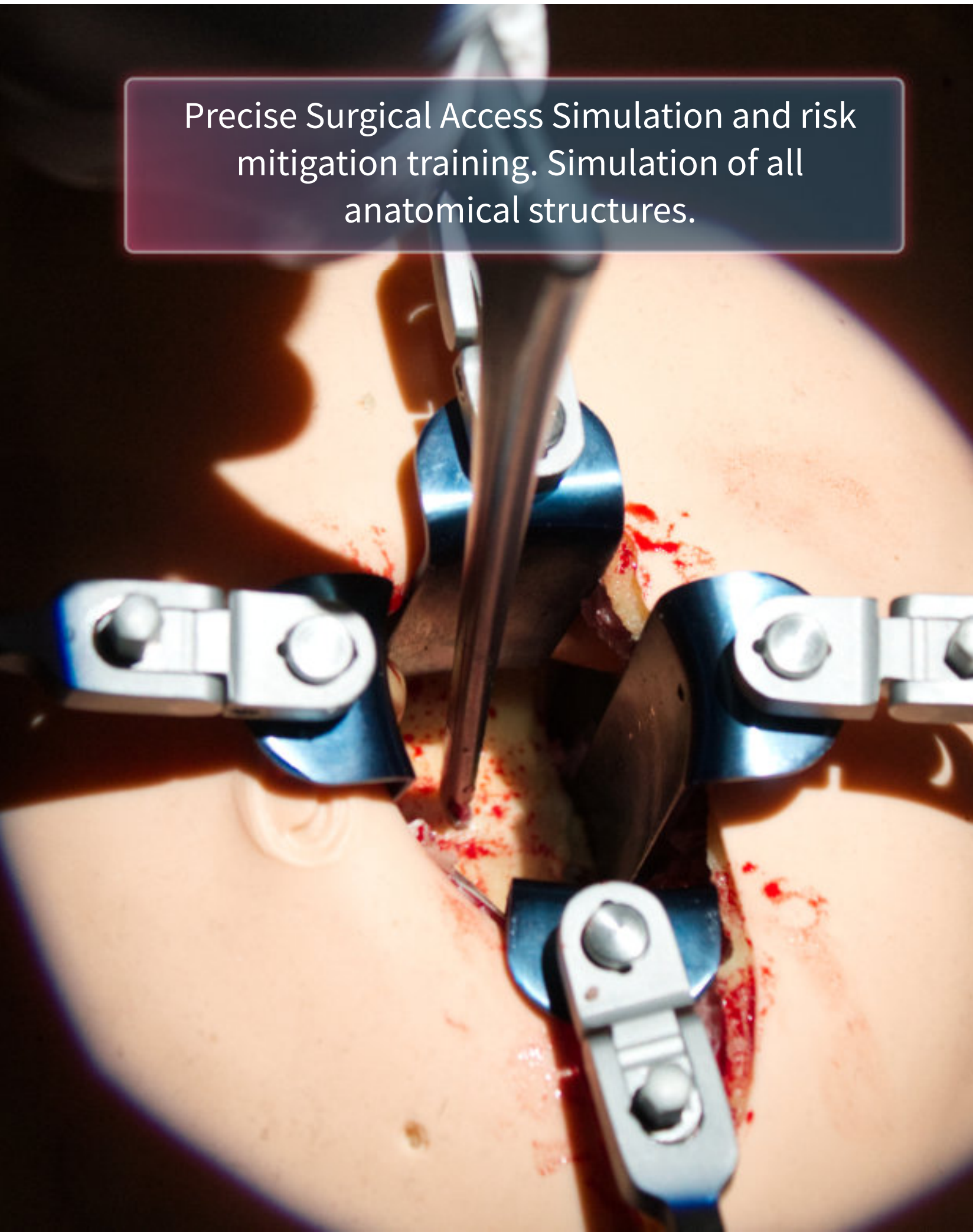
PROCEDURES
Incision
Discectomy
Fusion (Screw Fixation)
Transpsaos approach
ATP approach
COMPATIBLE TECHNOLOGIES
External Navigation
Cages LLIF
Pedicle Screws (Fusion)
X-ray
ACCESS
Lateral
Percutaneous
APPROACHES
Tubular Endoscopic
Open

RealSpine | Advanced Anterior Lumbar

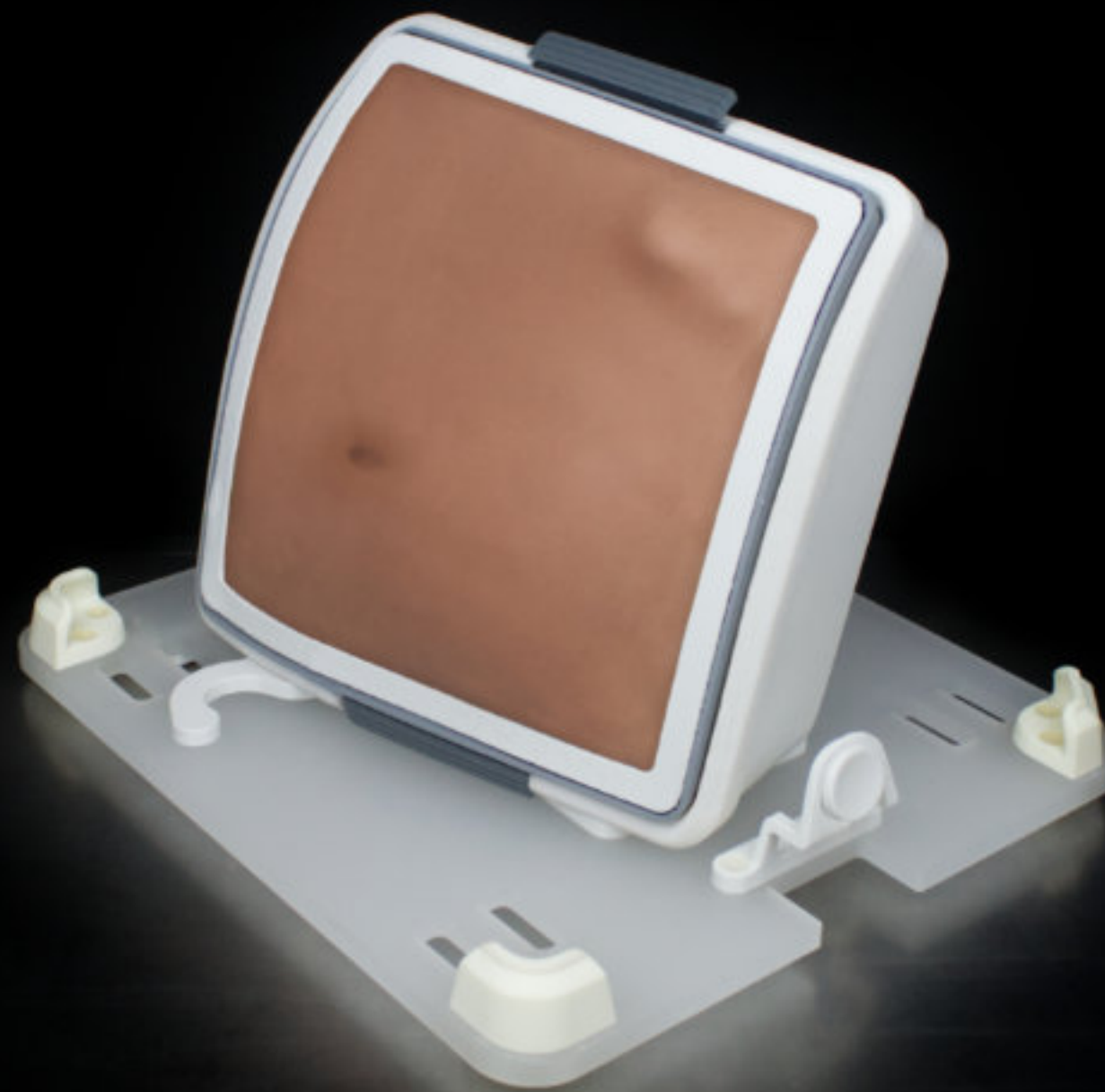


For Anterior Lumbar Interbody Fusion (ALIF) and
Oblique Lumbar Interbody Fusion (OLIF)

Precise Surgical Access Simulation and risk mitigation training. Simulation of all anatomical structures.



One product, two different approaches. Designed for ALIF and OLIF.



Realists

RealSpine | Advanced Anterior Lumbar



PRO291
Advanced Anterior Lumbar L3-S1



PRO294
Mod. 1 (Anterior access)
Disposable



PRO296
Mod. 4 (Peritoneum)
Disposable



PRO297
Mod. 2 (Aorta, Vena Cava)
Disposable



PRO295
Mod. 3 (Vertebrae, Psoas)
Disposable



Advanced Anterior Lumbar Case
Reusable



PRO237
System COMPACT - Base
Reusable

	ANATOMY
MOD. 1	Skin closed
	Campers fascia
	M. Abdominal external oblique
	M. Abdominal internal oblique
	M. Transverse abdominal
	M. Rectus abdominal
MOD. 2	Scarpas fascia
	Aorta Abdominalis
MOD. 3	Inferior Vena Cava
	Anterior longitudinal ligament (ALL)
	M. Psoas Major
	Vertebrae L3-S1
	Middle sacral artery and vein
MOD. 4	Operable discs L3-L4, L4-L5, L5-S1
	Peritoneum
CASE	Ureter
	Iliac crest (left)
	Peritoneal fat
	M. Iliacus

PROCEDURES
Incision
Discectomy
Fusion (Screw Fixation)
Transpsoas approach
ATP approach
COMPATIBLE TECHNOLOGIES
External Navigation
Cages LLIF
Pedicle Screws (Fusion)
X-ray
ACCESS
Lateral
Percutaneous
APPROACHES
Tubular Endoscopic
Open

RealImaging

The most precise X-ray simulation for spine surgical training, zero radiation



RealImaging visualizes with high accuracy the movement of instruments, implants and anatomy in real-time without exposing users to radiation.

PRO129 Realists Imaging
(hardware w/o Realists Imaging software)

PRO139 Realists Imaging 1-Year Software License incl. laptop

SER210 Realists Imaging - ER (Event rent)

SER212 Realists Imaging - 6M (6 Months rent)

SER211 Realists Imaging - 1Y (1 Year rent)

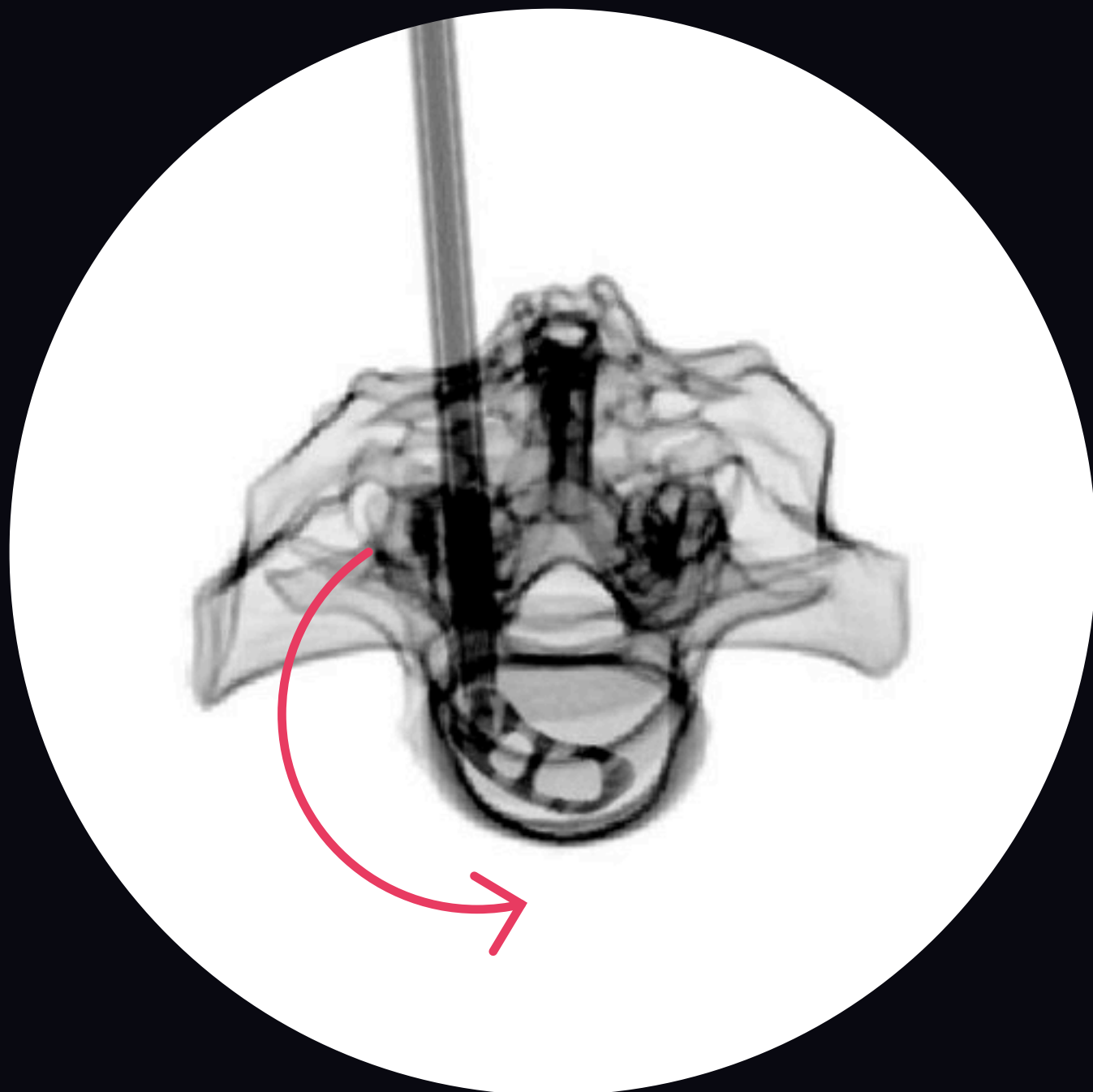


RealImaging

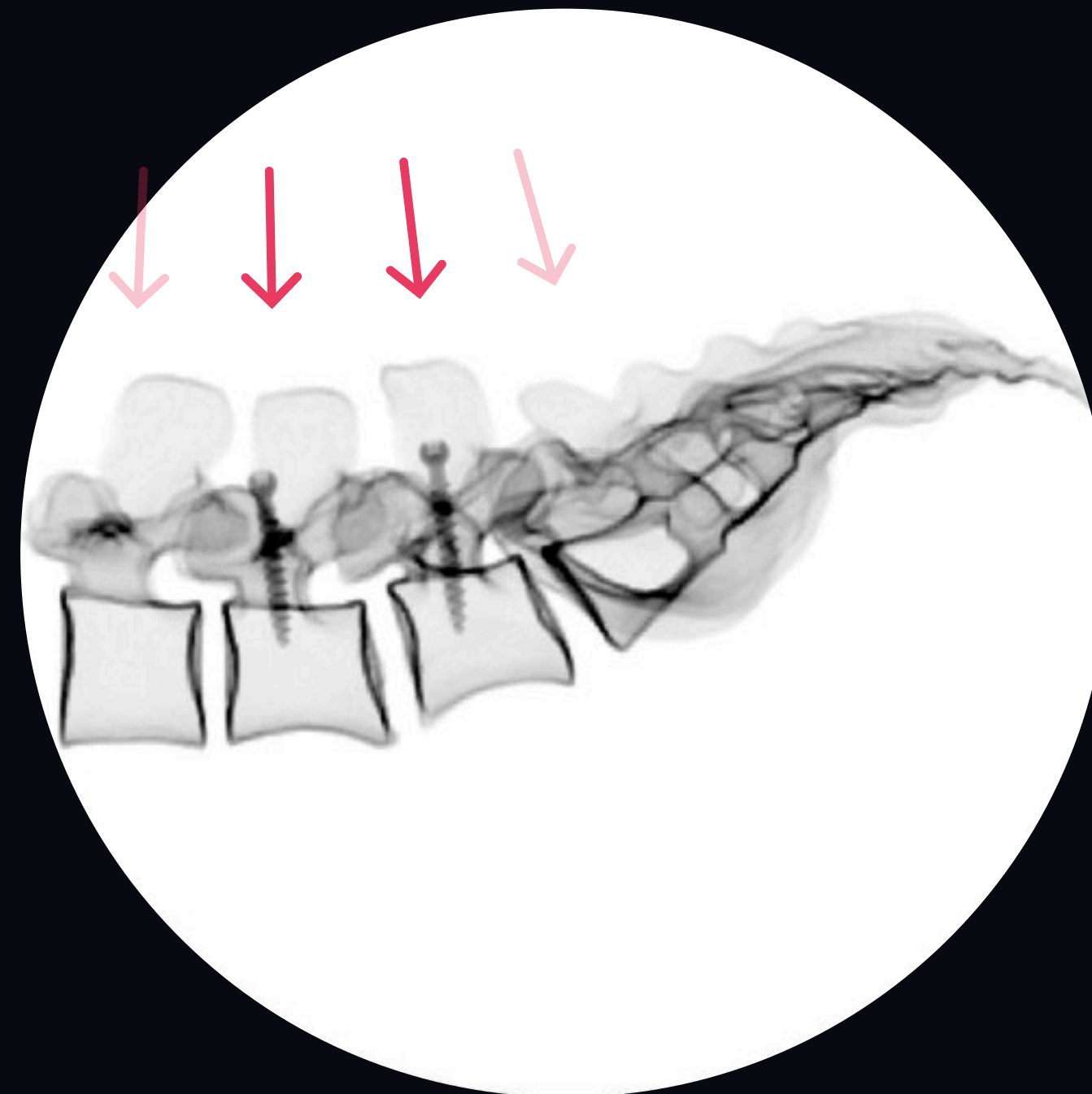
The most precise X-ray simulation for spine surgical training, zero radiation



Implant positioning precision.
Visualizing rotation and positional changes
within the vertebral body



Advanced Multi-implant visualization.
Simulating real surgical workflow for unmatched
precision.



Simultaneous Instrument Tracking.
Manage multiple instruments with ease.

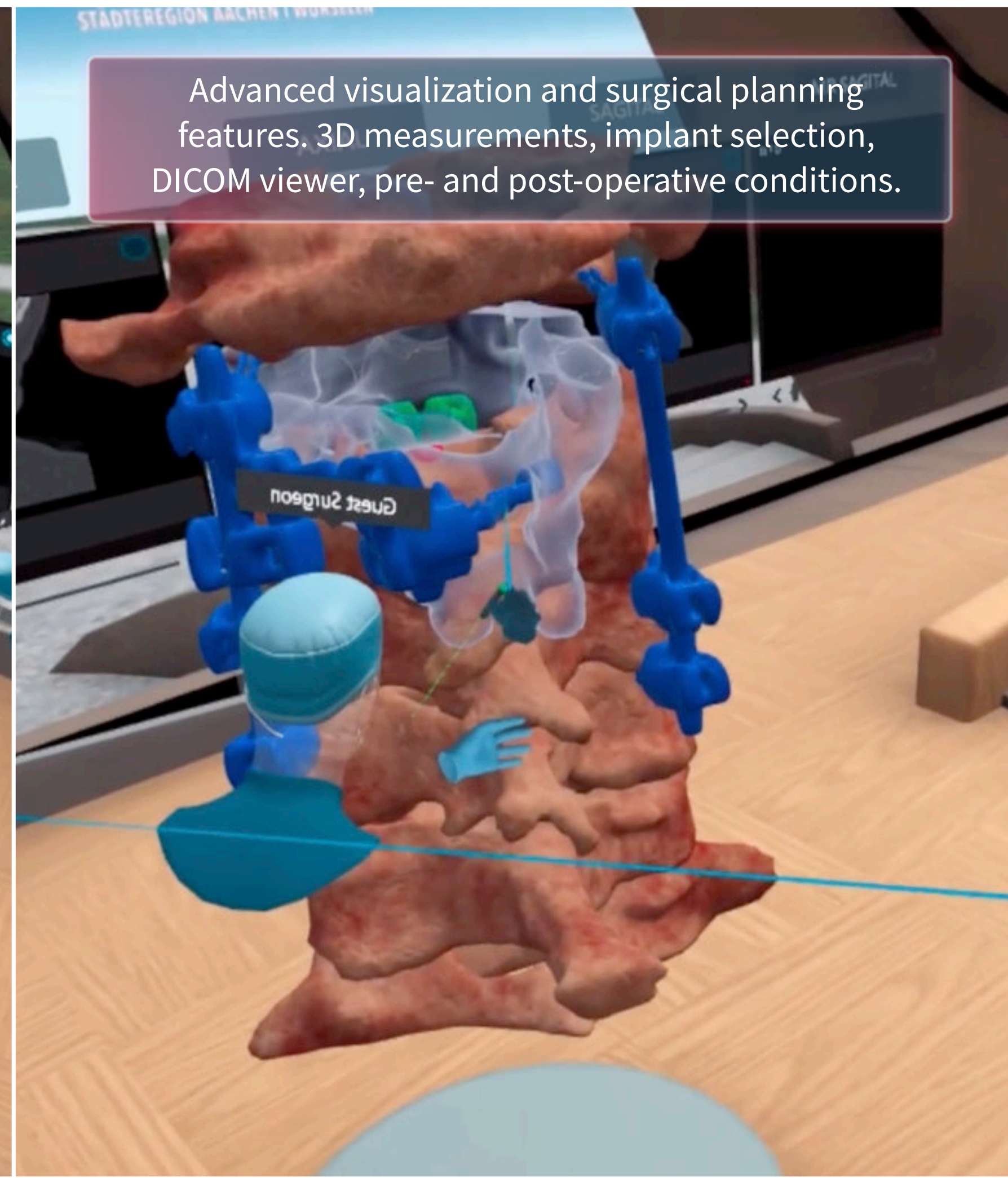


Realists

Virtual reality setup for pre- and post-operative case studies

SER235 Realists VR Software License for Workshop

SER227 Realists VR Software License for Workshop



RealLab Leipzig | Your platform for hands-on surgical training

Equipped with ample space to facilitate effective surgical training, including a conference room, hands-on area, and coffee station.



Includes technical, logistical and educational support.



Provided with all the necessary equipment to ensure a successful training experience.



Realists

RealLab Leipzig | Your platform for hands-on surgical training



The city's easy accessibility, diverse attractions and welcoming atmosphere make it effortlessly enjoyable and culturally rewarding for every visitor.



3 complete workstations for minimally invasive spine surgery.

- Microscope ZEISS S88
- Surgical Drill
- Suction
- Instruments for microdecompression
- X-ray simulation (Reallmaging)

In collaboration with the Leipzig University of Applied Sciences



Realists

Everything you need for spine surgery training





Advanced MISS

PRO108 Cover
(lumbar posterior)



PRO118 Cover
(lumbar endoscopy)



PRO37 Skin Lumbar Posterior
Bilateral Incision



PRO38 Skin Lumbar
Posterior Closed



Skin and Muscle



Muscle Container



PRO187
Herniated Disc
L4/5



PRO189
Stenosis
L4/5



PRO186
Complex Stenosis
L4/5



PRO194
Extraforaminal
L4/5



PRO173
Herniated Disc
L4/5 Endo



PRO192
Herniated Disc &
Stenosis L4/5 Endo

Advanced Spondy Posterior

PRO108 Cover
(lumbar posterior)



PRO38 Skin Lumbar
Posterior Closed



PRO23 Skin Lumbar
Posterior Open



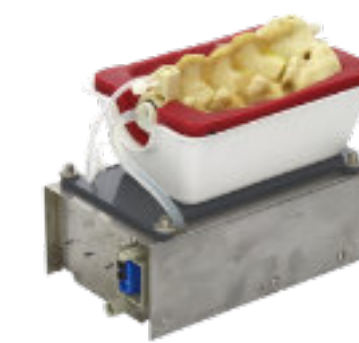
PRO41 Muscle Lumbar
Posterior Closed



PRO40 Muscle Lumbar
Posterior Open



PRO195
Spondy Posterior
L3/S1 MISS



PRO197
Spondy Posterior
L3/S1 Open

Advanced Myelopathy Posterior

PRO113 Cover
(cervical posterior)



PRO86 Skin Cervical
Posterior Closed



PRO39 Skin Cervical
Posterior Open



PRO193
Myelopathy Posterior
OC/C7 Open



System ADVANCED
Base

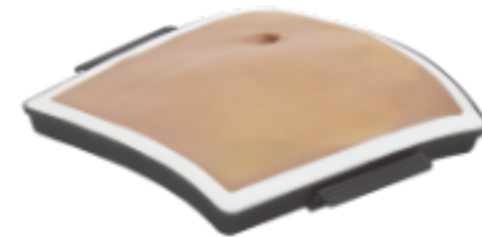


Advanced Myelopathy Anterior



PRO235 Advanced Myelopathy Anterior C3/T1

Advanced Anterior Lumbar



PRO294 Mod. 1 (Anterior access)



PRO296 Mod. 4 (Peritoneum)



PRO297 Mod. 2 (Aorta, Vena Cava)



PRO295 Mod. 3 (Vertebrae, Psoas)



PRO291 Advanced Anterior Lumbar L3-S1

Basic MISS



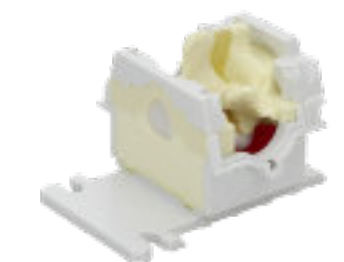
PRO211 Basic MISS Anatomical Cover



Skin and Muscle



Muscle Container



PRO210 Basic Herniated Disc L4/L5

Basic Spindy X



PRO76 Basic X Anatomical Cover



PRO90 Skin Lumbar Posterior - Closed X



PRO94 Muscle Lumbar Posterior - Closed X



PRO199 Basic - Spindy X L3/S1

Basic SI



PRO218 Basic - SI Anatomical Cover



Skin and Muscle



PRO222 Basic - SI S1/S3

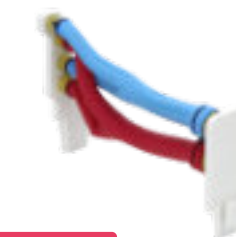
Advanced Spindy Lateral



PRO97 Mod. 1 (Lateral Access)



PRO100 Mod. 4 (Peritoneum, Ureter, Fat)



PRO101 Mod. 5 (Aorta, Vena Cava)



PRO99 Mod. 3 (Vertebrae, Psoas)



PRO98 Mod. 2 (Posterior Access)



PRO96 Advanced Spindy Lateral L2/L5



PRO237 System COMPACT - Base

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