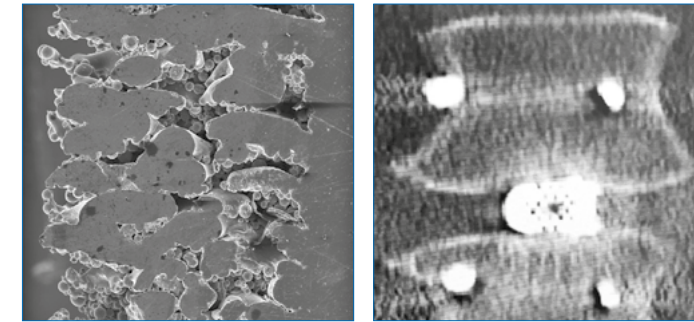
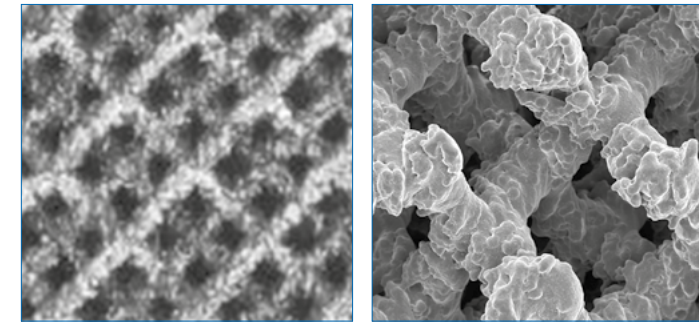


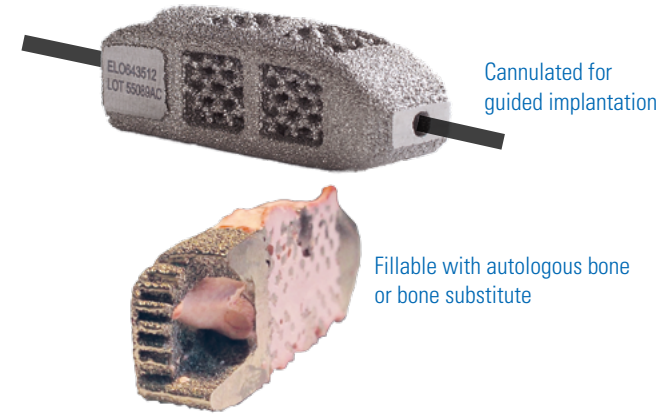
## Features and advantages of all EndoLIF® Implants

- 3D-printed Ti-alloy Ti6Al4V (electron beam melting)
- open diamond cell structure
- rough and porous surface
- optimal bone ingrowth, stability and fusion<sup>3,4</sup>

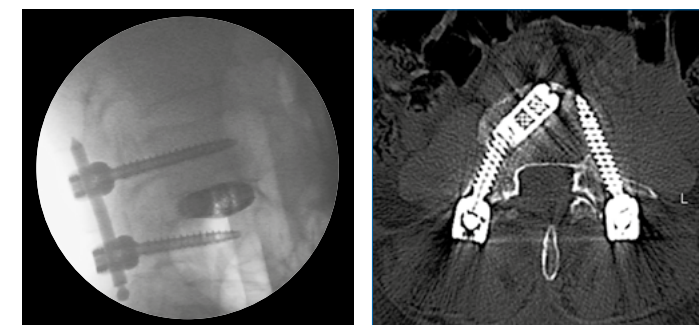


Open diamond cell structure X-ray showing bony fusion after 6 month of surgery

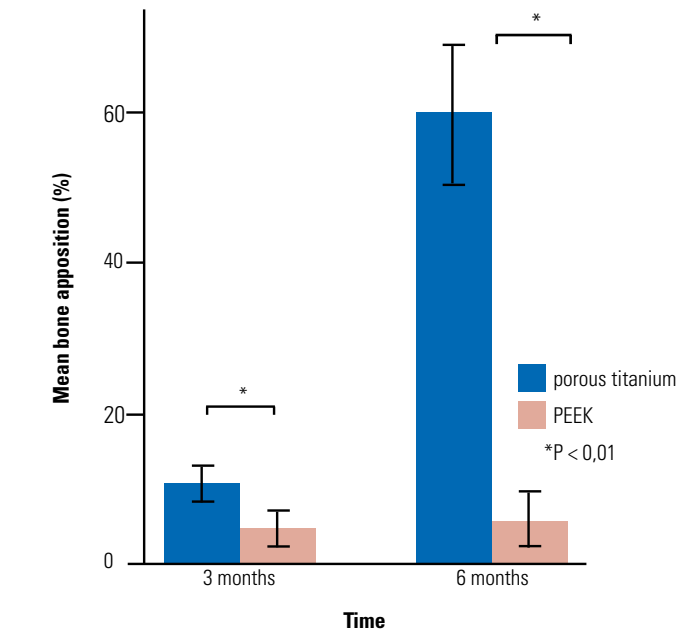
### Analysis of bone apposition using histomorphometry



Excellent visibility in X-ray and CT-scans

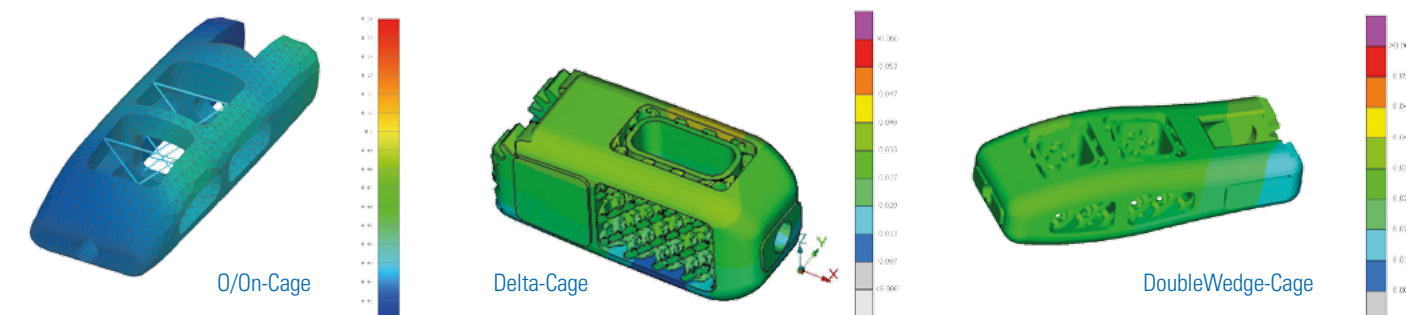


CT lateral, 1 month post-op CT axial, 3 months post-op



Bone apposition was measured as the percentage of intimate bone material contact. Bone apposition at the porous titanium cage increased over time and was significantly higher than that of PEEK cages throughout the study.

FE analysis of EndoLIF® Cages under test load in accordance with ASTM F2077. Deformation is shown at load of 2.2 kN (O/On-Cage and DoubleWedge-Cage) / 1.1 kN (Delta-Cage; used always in pairs):



### Results

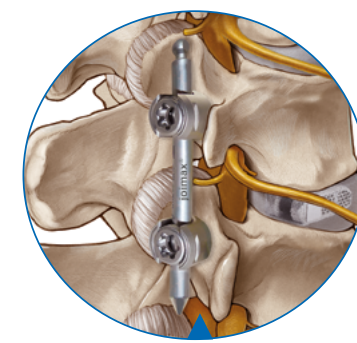
- Save and stable through a homogeneous load distribution
- Young's modulus of the diamond cell structure is close to bone

### Literature

1. Gibson, A. et al.: Long-term functional outcomes following transforaminal endoscopic surgery RCT data to two years. In: European Spine Journal (2013) 22 (Suppl 1):p57; Presented at BASS 2013
2. Kim, C. et al.: The Current State of Minimally Invasive Spine Surgery In: The Journal of Bone & Joint Surgery, Volume 93-A, Number 6, 2011;93:pp582-596.
3. Olivares-Narete, R. et al.: Rough titanium alloys regulate osteoblast production of angiogenic factors; The Spine Journal, 2013; 12:265-272
4. Olivares-Narete, R. et al.: Implant Materials Generate Different Peri-implant Inflammatory Factors. Spine 2015; 40:399-404

### EndoLIF® Implants – Dorsal fixation

#### Stabilization with Percusys® Screw-Rod System



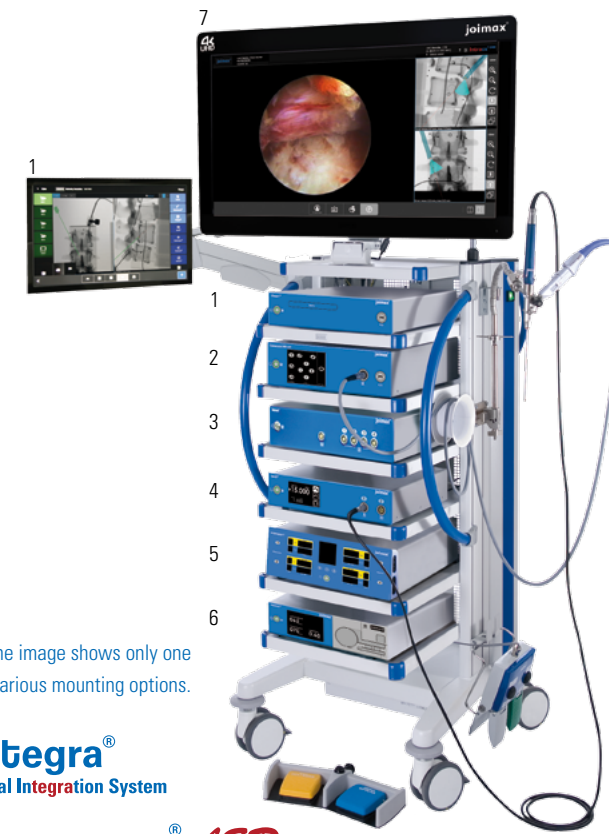
It is mandatory to support the EndoLIF® Implants for fusion with additional dorsal fixation. For this purpose, joimax® offers the posterior stabilization system Percusys®.

For more information, please refer to the Percusys® brochure and the Percusys® product usage guide.



### 4K Endoscopic Tower

The expert solution for spinal surgery and neurosurgery. All devices work in unison with one another and are designed specifically for the treatment of sensitive structures.



The image shows only one of various mounting options.

- 1 **Vitegra®**  
Visual Integration System
- 2 **Camsource® LED**  
Camera & Light Source System
- 3 **Intracis® em**  
Integrated Navigation Tracking & Control System
- 4 **Shrill®**  
Shaver Drill System
- 5 **Endovapor® 2**  
Multi Radio Frequency System
- 6 **Versicon®**  
Versatile Irrigation Control
- 7 **JFMS 2620 | JFMS 3220**  
High Definition Medical Displays FHD and 4K UHD



From diamond cells to fusion

3D printed titanium implants

## joined minimal access

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joimax® EndoLIF® Implants TD\_DME\_00\_P\_USZ; Rev. 001; Nov. 2018



# EndoLIF® Implants

## Endoscopic Lumbar Interbody Fusion

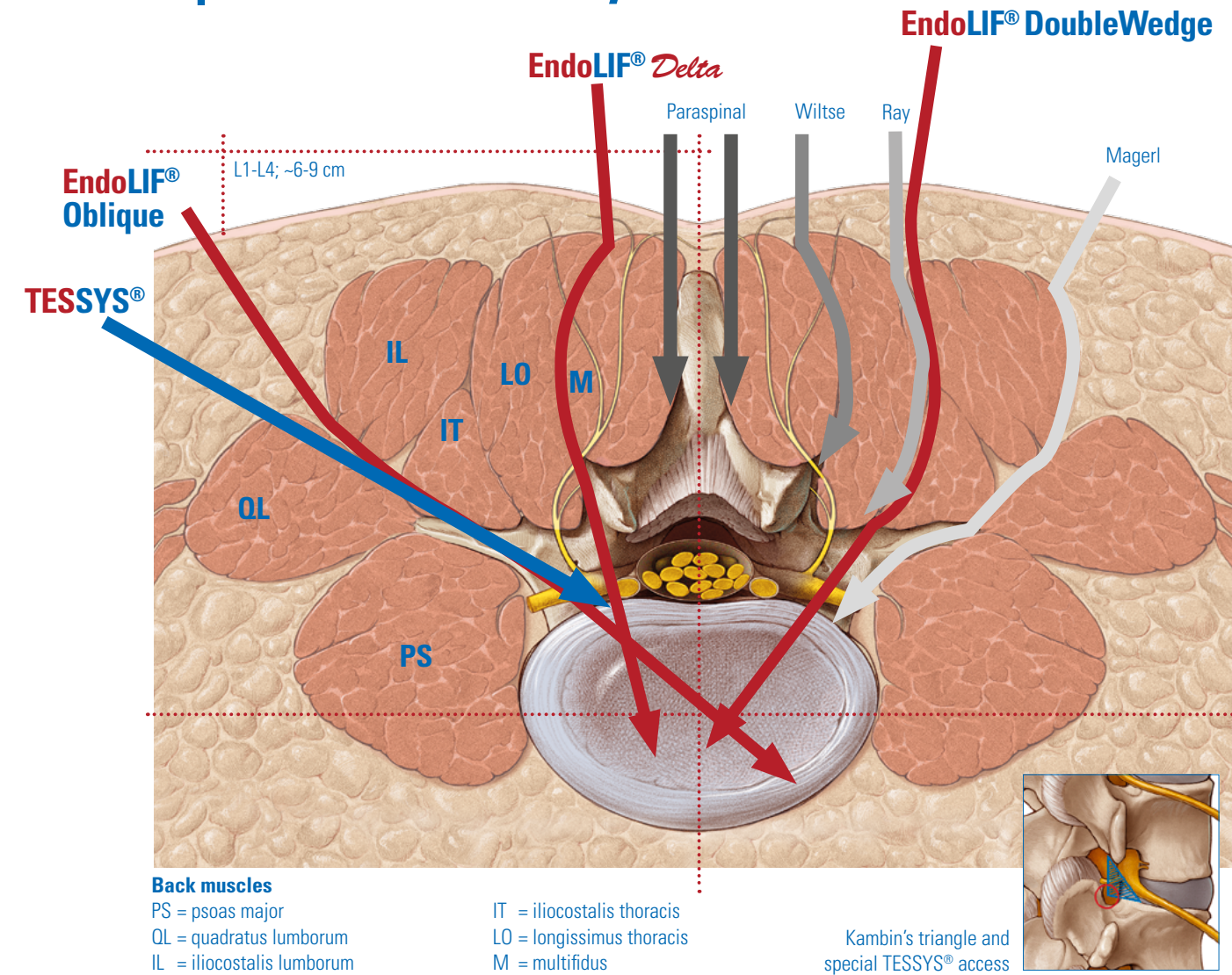


## Minimally invasive endoscopic spine surgery

Minimally invasive spine surgery has proven to be a favored and reliable method for a multitude of pathologies. Today, spinal decompression can be achieved through various methods utilizing small access channels to the spine. Several methods have already been implemented in everyday surgeries within the last couple of years. Additionally, new implants can now be introduced through minimally invasive techniques, e.g. percutaneous screw-rod systems, with significant reduction of tissue trauma. Experienced users consider endoscopic surgical methods as a gentle alternative to microsurgical techniques.

Scientific studies also confirm that endoscopic surgery offers advantages over microsurgery<sup>1</sup>.

## Endoscopic lumbar interbody fusion access



### General Advantages of the EndoLIF® access

- Minimally invasive surgery, endoscopic (assisted) fusion
- Gentle and atraumatic gradual tissue dilatation
- Muscles remain intact<sup>2</sup>
- Reduced risk of infection
- Shorter recovery time

### Advantages of the EndoLIF® Oblique cage

- Access to the intervertebral disc through the Kamin triangle
- Implantation after TESSYS® decompression made available
- Preservation of the stabilizing structures such as dorsal bony structures, muscles and ligaments

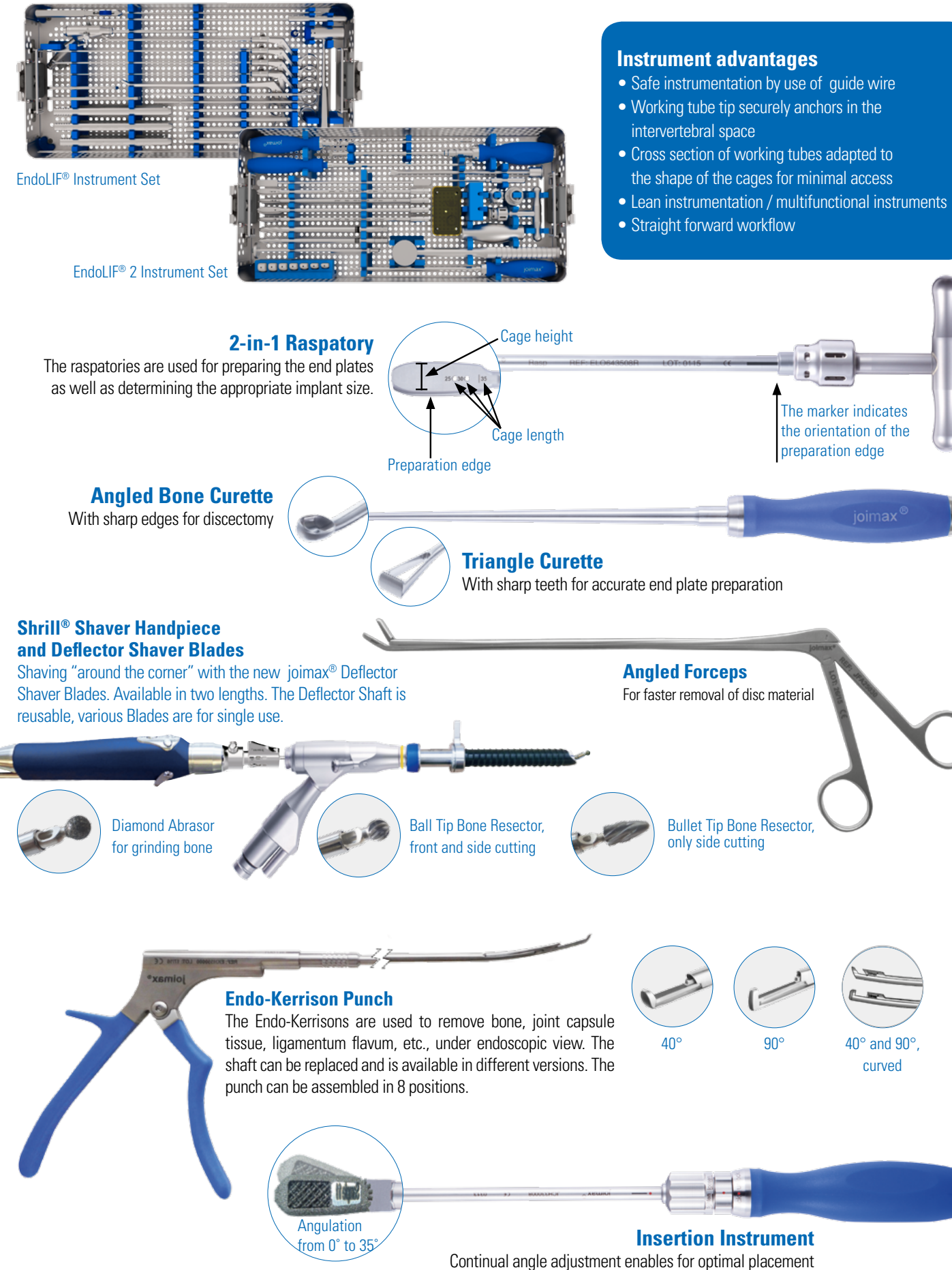
### Advantages of the EndoLIF® Delta cage

- Posterior, interlaminar access
- Implantation after iLESSYS® Delta decompression made available
- Easy access to L5/S1
- L4/5 and L5/S1 have a large laminar window

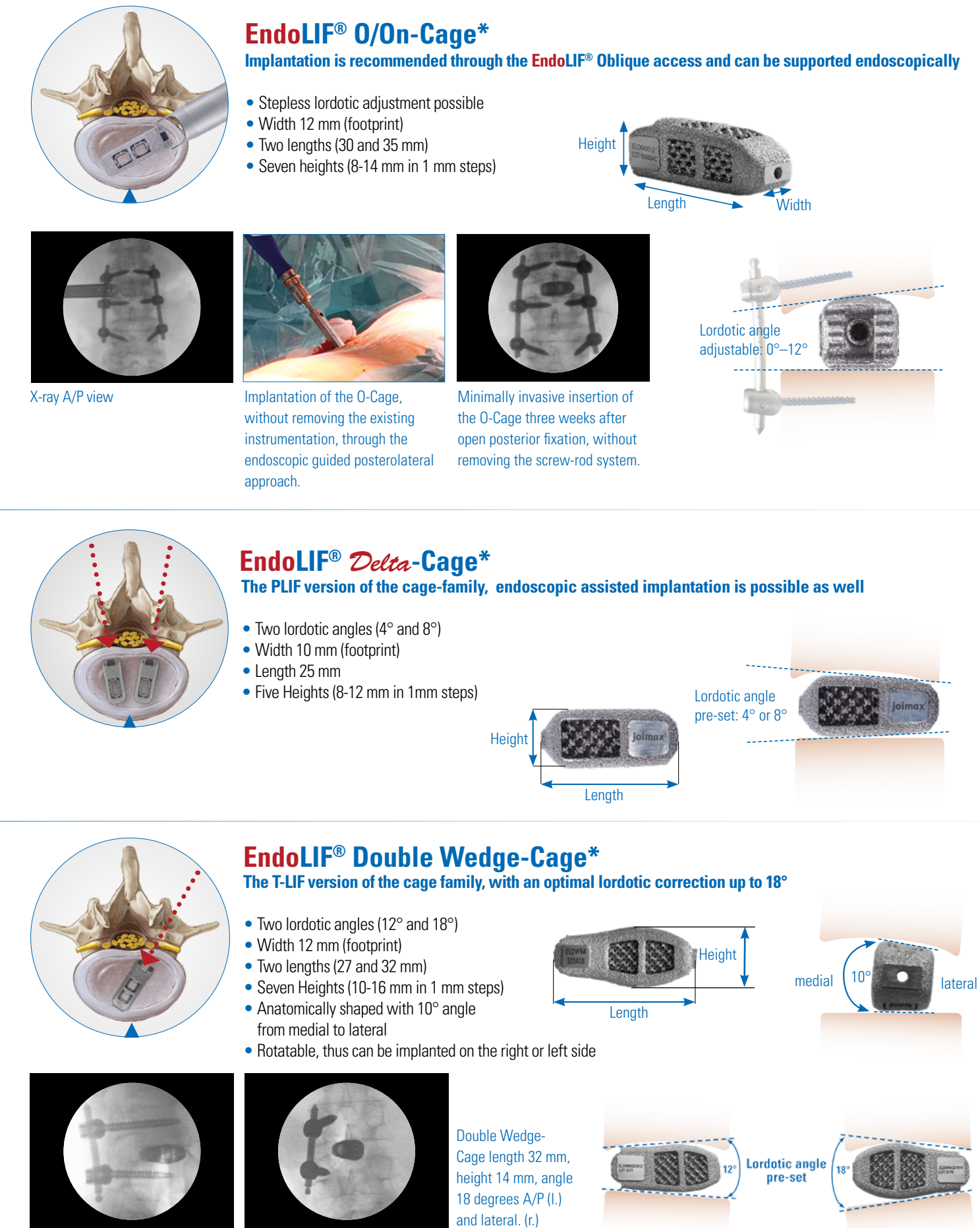
### Advantages of the EndoLIF® DoubleWedge cage

- Anatomically shaped T-LIF-Cage for optimal lordotic correction
- Minimally-invasive implantation of maximal lordotic correction made available

## One instrument set for all EndoLIF® Implants



## The right implant for all cases



\* The On-Cage is already FDA cleared. For the Delta-Cage and DoubleWedge-Cage: FDA clearance pending.