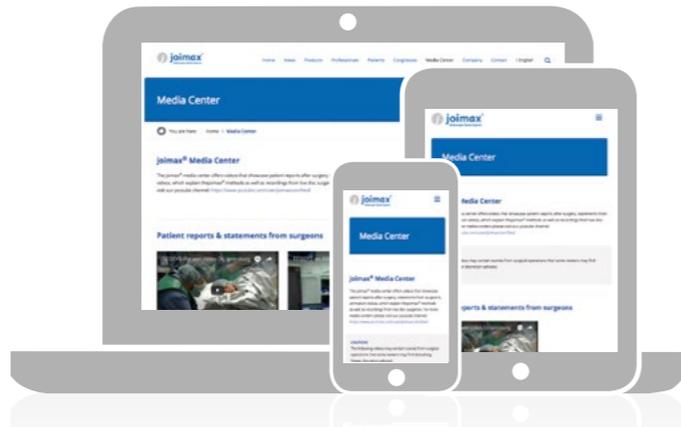
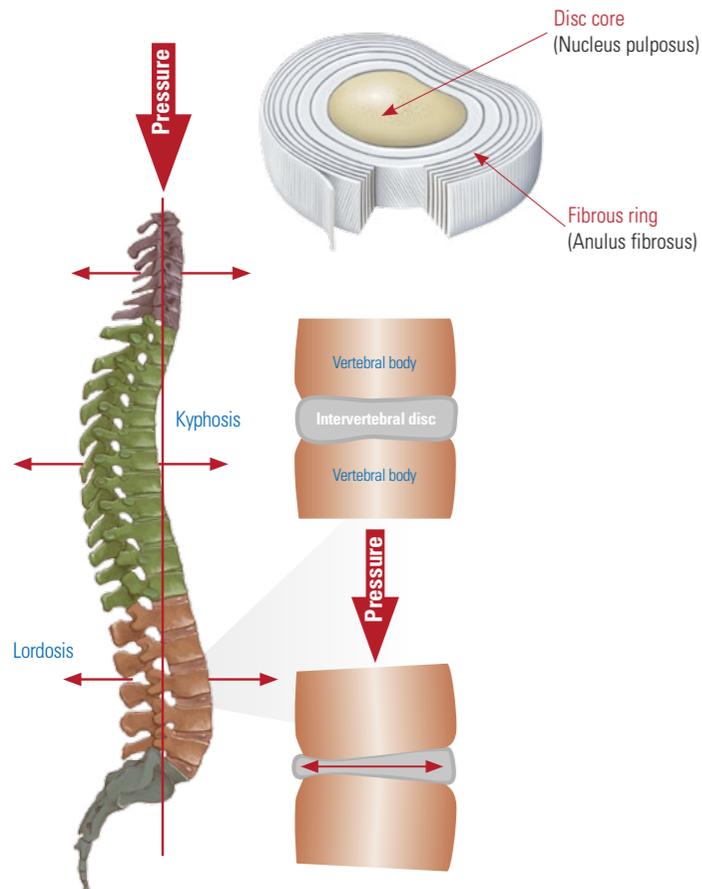


**S-curves for mobility and stability**

Viewed from the side, the curvature of the spine is like a double-S-shape. These curves along the spine are described as lordosis or kyphosis. They ensure that the body can absorb impact and provide it with the best possible support.

**The intervertebral disc**

The intervertebral discs are located between adjacent vertebral bodies and forming the characteristic double-S-shape. Intervertebral discs consist of a gel-like elastic core (nucleus pulposus) and a surrounding ring (anulus fibrosus). The fibrous ring holds the inner core together and prevents it from being extruded. This design allows the intervertebral discs to absorb pressure evenly. In other words, they function as a shock absorber and simultaneously allow a certain amount of movement.



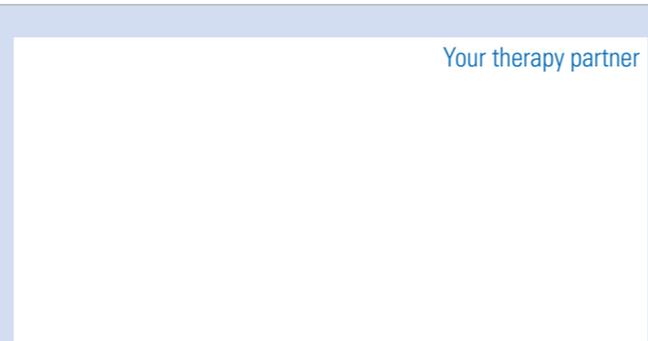
**View the online portal!**

You can see a 3D animation of the endoscopic surgery in the joimax® online media center: [www.joimax.com](http://www.joimax.com)



**Important!**  
All the information in this brochure is general in nature and not intended to replace a personal, detailed consultation with a doctor.

© 2018 joimax® GmbH. All rights reserved



**Publisher:**  
**joimax® GmbH**  
Amalienbadstrasse 41, RaumFabrik 61  
76227 Karlsruhe, Germany  
E-Mail [info@joimax.com](mailto:info@joimax.com)  
Net [www.joimax.com](http://www.joimax.com)

**joimax®, Inc.**  
14 Goodyear, Suite 145  
Irvine, CA 92618-3759, USA  
E-Mail [info@joimaxusa.com](mailto:info@joimaxusa.com)  
Net [www.joimax.com](http://www.joimax.com)

BROPATVORFEN  
TD\_DIVE\_00\_PI\_049\_Rev002\_Jan2018

HERNIATED DISC



**PATIENT INFORMATION**

**Get back in motion – fast and pain-free**

Endoscopic, minimally-invasive treatment of your herniated disc – with the joimax® method

**Dear Patient,**

Our spine is multifunctional – one of nature’s ingeniously created structures of bone, ligaments, tendons, intervertebral discs, muscles and nerves. If all structures function correctly, this central axis of our body allows movement and activity in all directions while providing stability at the same time.

**7 Cervical vertebrae**  
(Vertebrae cervicales)

Vertebral body  
(Corpus vertebralis)

**12 Thoracic vertebrae**  
(Vertebrae thoracicae)

Intervertebral foramina  
(Foramen intervertebrale)

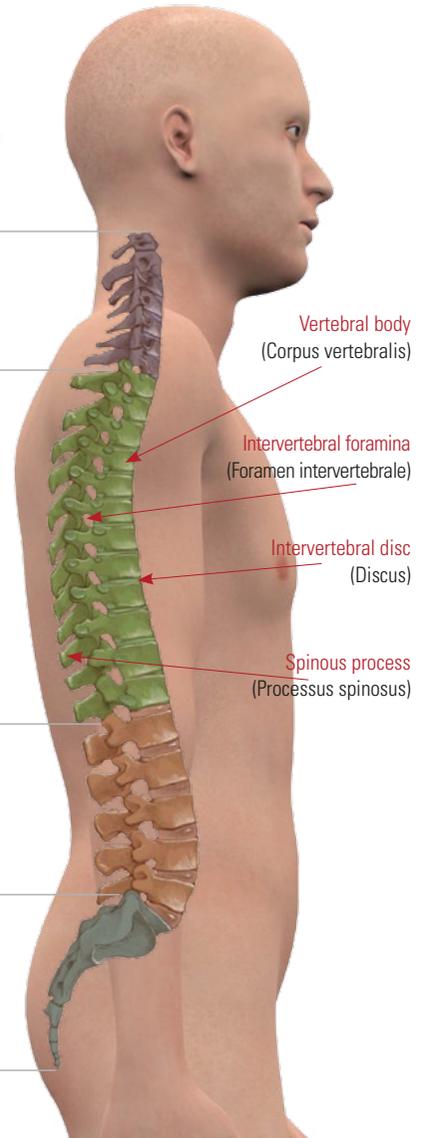
Intervertebral disc  
(Discus)

Spinous process  
(Processus spinosus)

**5 Lumbar vertebrae**  
(Vertebrae lumbales)

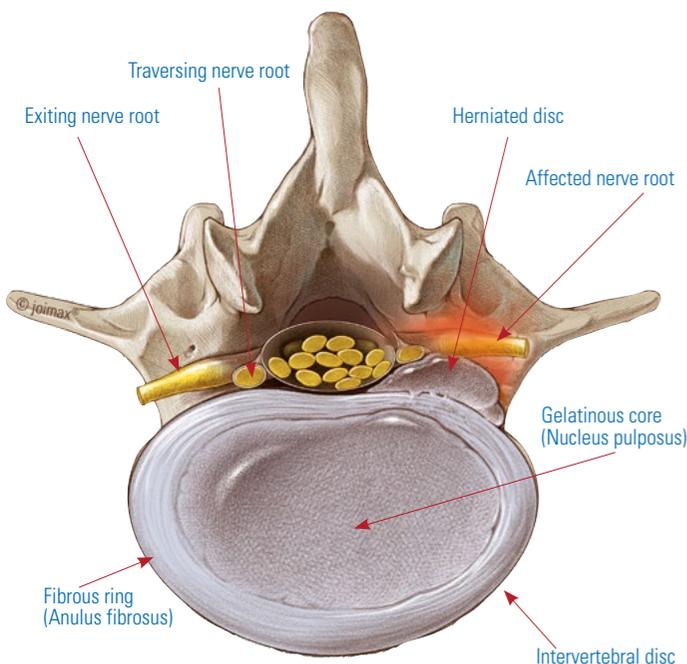
**Sacrum** (Os sacrum)

**Coccygeal vertebrae**  
(Os coccygeum)



**A herniated disc – what is it?**

In the course of the normal aging process or by overload, cracks may appear in the fibrous ring. Part of the gelatinous core can be extruded through the annulus into the spinal canal and pinch or obstruct the nerves. This is what is meant by a herniated disc. Most herniated discs occur in the lower lumbar spine or at the connection to the sacrum.



**What causes a herniated disc?**

- Sudden rotational trunk movements or heavy lifting
- Monotonous routines (e.g. incorrect sitting)
- Weak abdominal or back muscles
- Dehydration and a poor diet
- Obesity and hereditary deformity

**What are the most common symptoms of a herniated disc?**

- Back pain with or without radiating pain into the legs or arms
- Paresthesia or even symptoms of paralysis

**How is a herniated disc diagnosed?**

In addition to a clinical diagnosis, a herniated disc can be confirmed by MRI or CT scan.



MRI lateral view: herniated disc (arrow) in the lumbar spine



MRI transversal view (cross section): herniated disc (arrow) in the lumbar spine

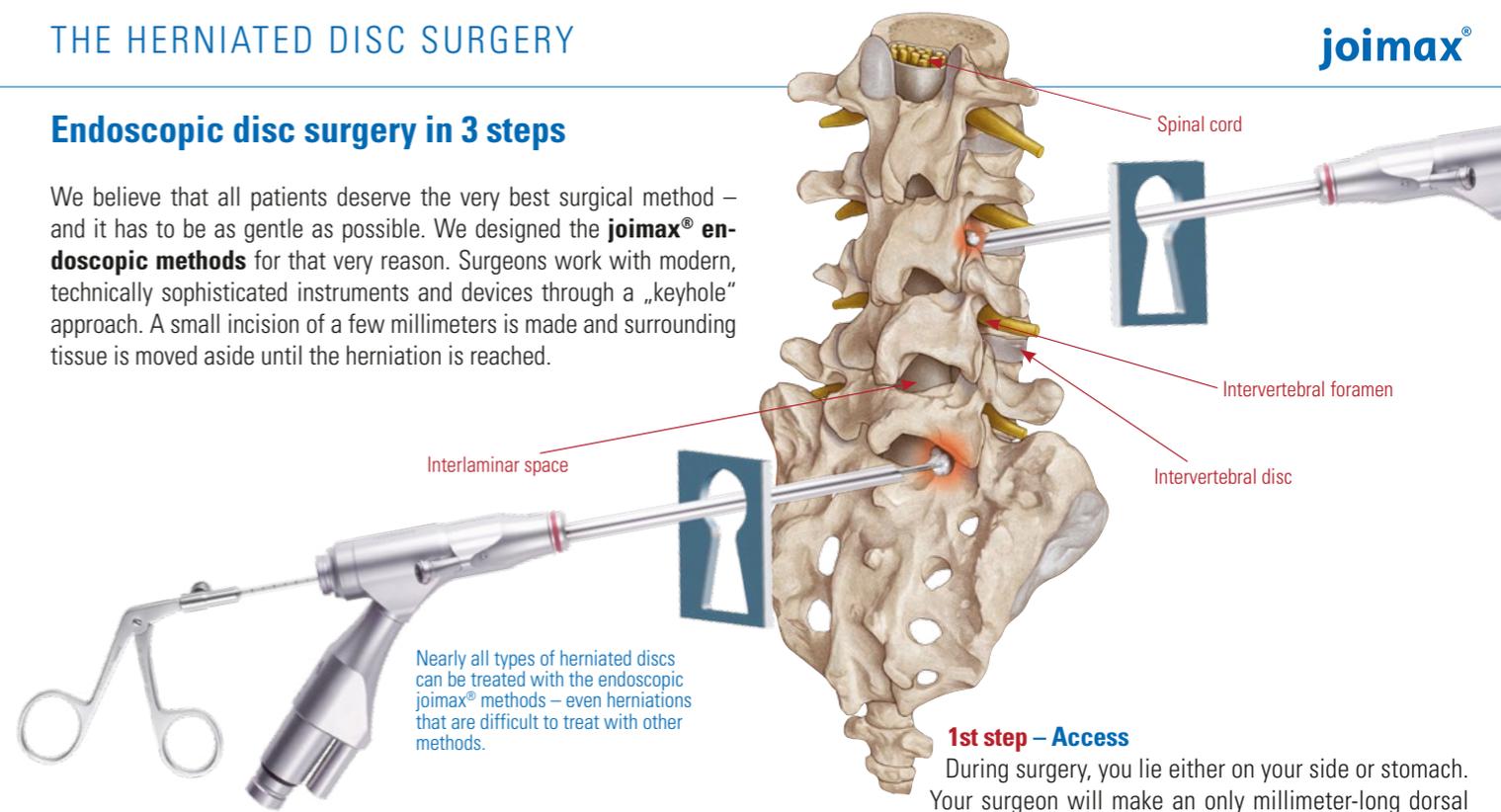
**When is surgery necessary for a herniated disc?**

Surgery is usually only necessary for a herniated disc if the pain does not lessen after at least 6 weeks of physiotherapy or muscle training and pain medication, or if there are symptoms of paralysis. In all cases, compression of the nerve roots is clearly identified as the cause.



**Endoscopic disc surgery in 3 steps**

We believe that all patients deserve the very best surgical method – and it has to be as gentle as possible. We designed the **joimax® endoscopic methods** for that very reason. Surgeons work with modern, technically sophisticated instruments and devices through a „keyhole“ approach. A small incision of a few millimeters is made and surrounding tissue is moved aside until the herniation is reached.



**1st step – Access**

During surgery, you lie either on your side or stomach. Your surgeon will make an only millimeter-long dorsal incision in your back and create a channel directly to the herniated disc. Surrounding tissue is moved aside gently without cutting. A natural opening – the intervertebral foramen or the interlaminary fenestration – is used to access the vertebral canal.

**2nd step – The herniation is removed**

The surgeon guides a special endoscope through the keyhole to the surgical field and has a bright and sharp view of all structures in the spinal canal. The herniated disc material is carefully and gently removed by using tiny forceps and other special instruments.

**3rd step – Review and completion**

On completion, the surgeon will check that the affected nerve fibers are now moving freely. Only then will the instruments be removed and the small incision closed with one or two stitches and a dressing. You will usually be back on your feet after a few hours. Your doctor will decide when you are fit enough to go home and resume normal activities.



**The advantages of endoscopy**

- All the stabilizing structures of the spine – ligaments, muscles and bones remain virtually unaffected
- Minimal risk of infection
- Fewer scars, less wound and muscle pain
- Faster return to everyday life