



# Swiss Scoliosis

Centre for spinal and scoliosis surgery  
Zentrum für Chirurgie der Wirbelsäule und Skoliose

*Fusion operations of the spine*



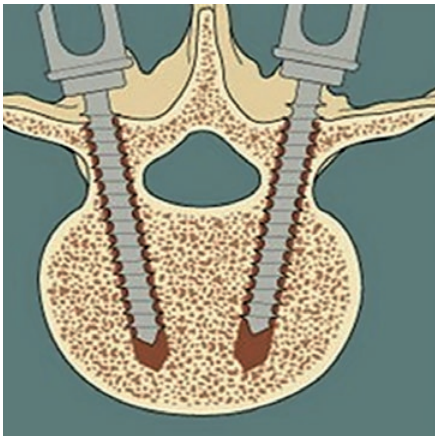


Abb. 1

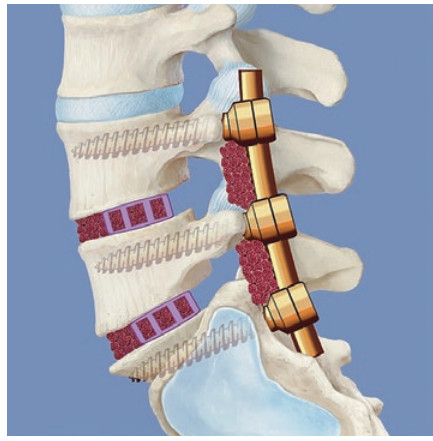
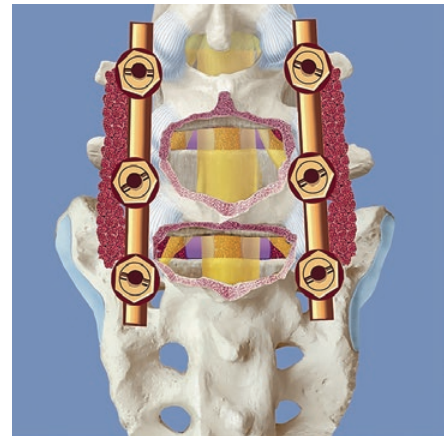


Abb. 2



## Fusion operations of the spine

*A stabilization of the spine can be necessary in following conditions:*

- Severe degeneration of the discs, spinal joints
- Instability caused by degeneration, trauma, previous operations
- Slip of vertebra (Spondylolisthesis)
- Deformities of the spine (Scoliosis and Kyphosis)
- Tumors and infections

### *Operation technique*

*In most cases the stabilization is carried out from the back. A skin incision is made in the midline. Titanium screws are inserted to the vertebral bodies and then connected with rods (Fig.1). Depending on the pathology additional procedures like spinal canal decompression, correction of a deformity, removal of tumors, and augmentation of the bone with cement may be necessary. Je nach Pathologie werden andere Eingriffe zusätzlich durchgeführt (Erweiterung des Wirbelkanals, Korrektur der Deformität, Entfernung von Tumoren, Augmentation des Knochens mit Zement usw.). When indicated the intervertebral disc is removed and replaced by a titanium cage. Bone graft is placed between the transverse processes of the vertebral to achieve a bony fusion between the vertebrae (Fig 2 & 3). Titanium implants do not cause problems with future MRI examination.*

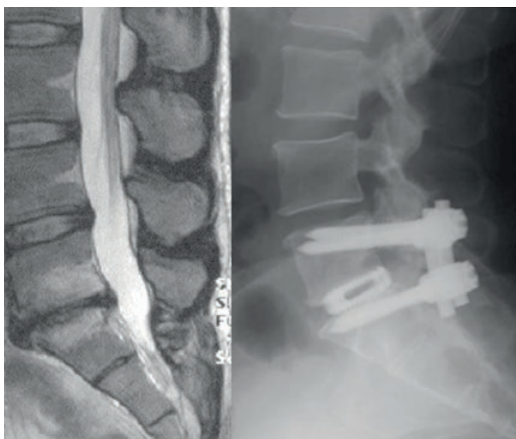


Abb. 3



Abb. 4

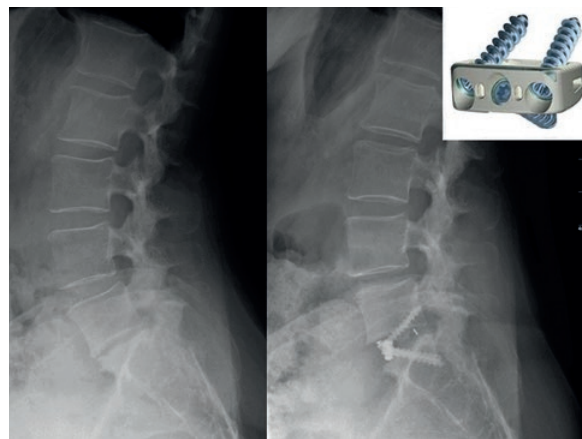


Abb. 5

*In some patients a spinal fusion from the anterior approach is of advantage. In such an operation the spine is exposed through a skin incision in the abdomen (Fig.4). The intervertebral disc is removed and replaced with a cage filled with bone graft (Fig.5). With time the bone graft grows into the vertebra above and below establishing a bony fusion.*

#### **Postoperative treatment**

*Patients can stand on the first day after the operation. A walking stick or a corset is not necessary. Gradual increase in weight bearing and movement will be done during the hospital stay with the help of physiotherapy. The hospital stay is 5-7-days. First clinical and radiological follow-up is after 6 weeks, after which time the physiotherapy can be intensified. Patient can resume with all sorts of sport including skiing, tennis and golf after 3 months.*

#### **Operation risks**

*Following risks apply to all spinal operations generally:*

*Injury of nerves and spinal cord leading to paralysis, numbness, disturbance of bladder and bowel function. Very seldom, a direct injury of a nerve through insertion of a screw can happen (<1%). Injury of so called sympathetic and parasympathetic nerves can lead to digestive problems, changes in temperature sensation, changes in blood circulation and sweating in extremities, as well as disturbance of sexual function. A disturbance of blood circulation to spinal cord can also lead to all the consequences mentioned above. The overall neurological risk is estimated to be less than 1%. Chronic pain, breakage or loosening of implants, infection, and failure of bony healing also belong to the risks.*

*When the bone quality is weak fracture of vertebrae can occur at the upper or lower end of the instrumentation. This will necessitate a revision operation.*

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