

## Laser Treatment of Intervertebral Disks

### Percutaneous Laser Disk Decompression and Nucleotomy

Accurate application of the laser beam on the intervertebral disk activates substances found there which can initiate pain relief.

The following therapeutic effects are realized:

Reduction of the nucleus pulposus and anulus fibrosis, the so-called shrinking effect, is achieved. Already minor reductions in the size of these tissues during the procedure itself can lead to significant improvement.

The pain fibers of specific nerves can be inactivated. Denervation of the pain receptors of the anulus fibrosis and the ligaments of the spinal column is also possible. Heating the disk with the laser leads to the destruction of nerve transmitter production sites (L-glutamate, substance P, peptides and quinine). The transmission of pain signals to the brain is thus disrupted. This relieves most chronic pain. The laser transforms collagen in the disk, thereby closing small tears in the disk. The anulus fibrosis is stabilized; compression of the disks and the resultant likelihood of a post-nucleotomy syndrome is avoided.



### Indications

- protruding or herniated disks
- stiffened or fixated disks
- post-nucleotomy syndrome
- disk pain caused by diskography (x-ray of the intervertebral disks with contrast medium)
- disk pain which benefits from injection of local anesthetics into the disk

### Value

Exact and effective treatment intervertebral disks is possible. The shrinking effect reduces disk size and relieves the affected nerve root.

### Advantage

This is a minimal invasive procedure, available on an out-patient basis. Disk pain is treated inside the disk itself through laser-induced coagulation. Replacement tissue inside the disk prevents future disk compression and therefore post-nucleotomy syndrome (pain following surgical procedures on disks).

### Follow-Up

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### Work

Office work and light physical activity can be resumed in one to two weeks. Heavier physical activity should be avoided for the first four weeks and then slowly increased.

### Sport

Swimming and bike riding (both emphasizing upright posture) are allowed after three weeks. Jogging on soft surfaces is possible after four weeks. All other sports can be gradually resumed after the fifth week depending on their degree of intensity.

**Results**

Success rates of over 85% are reported in the international literature.