

Passion for Precision

Technical Data Iccy 980

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Model / Modell:	Iccy 980
Wavelength / Wellenlänge:	980 +/- 5nm
Operation Modes / Betriebsarten:	CW, Pulsed, Low-Level
Power / Ausgangsleistung:	0.5 - 12W, 10 - 100mW Low-Level
Pulse Width / Pulsdauer:	1ms - 1000ms
Interval / Intervall:	1ms - 1000ms
Laser Class / Laserklasse:	4
Pilot Beam / Pilotlaser:	635nm, < 1mW
Fiber / Faser:	200µm - 1000µm, F-SMA 905
Mains / Netzversorgung:	230V~/ 50Hz
Consumption / Leistungsaufnahme:	65W
Standards / Normen:	Directive 93/42/EEC EN 60601 / EN 60825 CE 0482



Iccy
980

Surgical Laser System

Iccy
980

MED/CERT Alna-Medicalsystem GmbH
DIN EN ISO 13485 / DIN EN ISO 9001



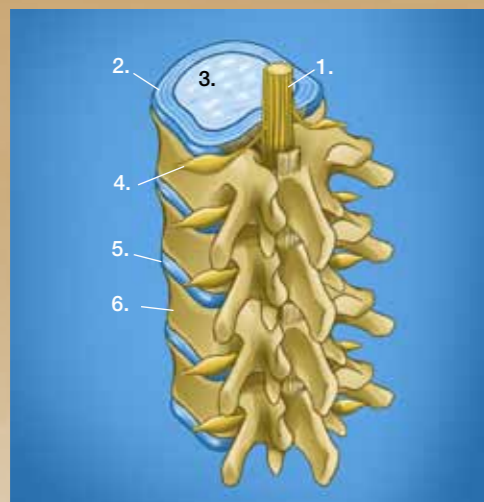
Alna-Medicalsystem GmbH
Poppenbütteler Bogen 68
D-22399 Hamburg
Germany
Phone: +49 (0)40 600 88 32-0
Fax: +49 (0)40 600 88 32-50
E-Mail: info@alna-medicalsystem.com
www.alna-medicalsystem.com

CE 0482

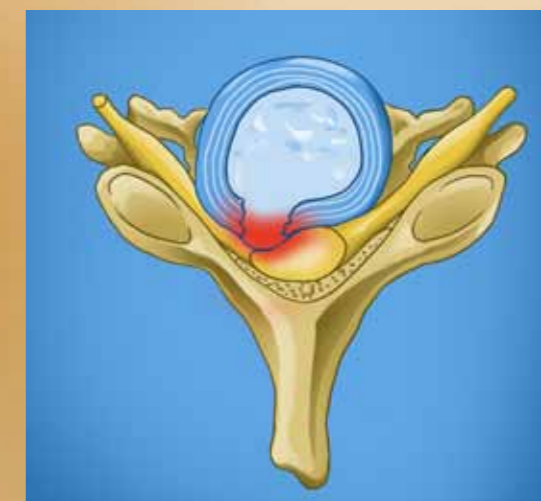
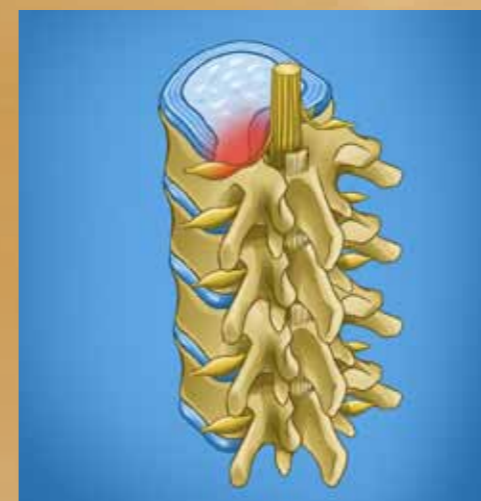
 Made in Germany

Surgical Diode-Laser-System Iccy 980

Percutaneous Laser Disc Decompression - PLDD



- 1. Spinal Cord
- 2. Anulus Fibrosus
- 3. Nucleus Pulposus
- 4. Nerve Root
- 5. Disc
- 6. Vertebrae



Intervertebral disc structure

An intervertebral disc (Latin: Discus intervertebralis) is a flexible connection between vertebrae. It absorbs the pressure and allows the movement of the vertebrae and consists of an outer fibrous ring called annulus fibrosus and an inner soft portion which called nucleus pulposus.

The annulus fibrosus is made of a multiple strong layers of fibrocartilage. The nucleus pulposus which is surrounded by annulus fibrosus is a gelatinous substance that is under pressure because of its high hydrophilicity. The nucleus pulposus due to its structure acts as a shock absorber and provides the movement ability of the spine.

Spinal disc herniation

The Spinal disc herniation (Latin: prolapsus nuclei pulposi) is a disease of the spine, where the soft central portion of the disc (nucleus pulposus) bulge out beyond its outer fibrous ring (annulus fibrosus) and causes nerve root compression.

The spinal disc herniation may occur in different regions of spinal cord. The most cases happen in lumbar (L4-L5 or L5-S1) and the cervical region (C5-C6 or C6-C7). Thoracic region has the least possibility because of its robust structure.



Treatment

Open back surgery



During an open back surgery, in addition to destruction of the back muscle fibers, the surgeon creates holes in the annulus fibrosus to remove the nucleus pulposus. It will lead to detritus of scar tissue. All of these severe disturbances will result in necessity of spinal fusion which in turn leads to adjacent disc syndrome. All of these will cost so much time and expenses.



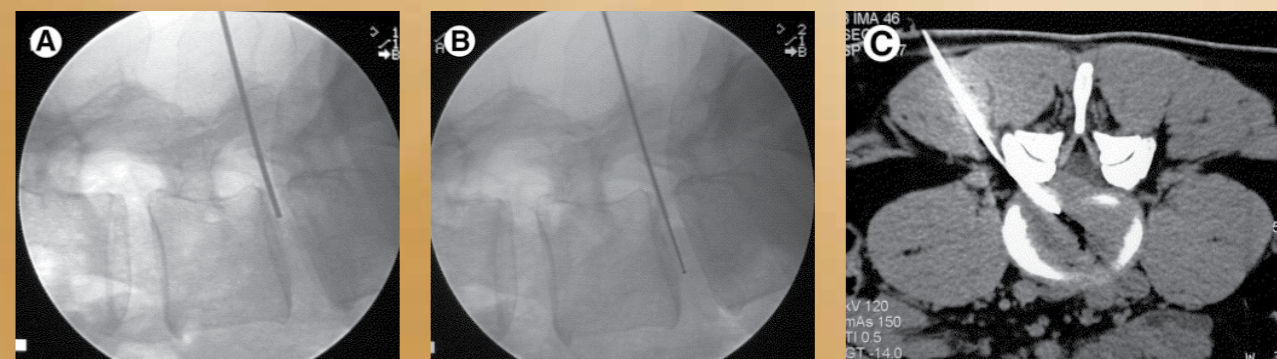
Spinal fusion - Coronal



Spinal fusion - Sagittal

Treatment

Percutaneous Laser Disc Decompression - PLDD



Percutaneous laser disc decompression is a minimally invasive therapy to treat spinal disc herniation which performed under local anesthesia.



A puncture needle is introduced into the nucleus pulposus of the affected disc. X-ray, CT or MRI, are relevant imaging guides for positioning the needle. Afterwards, the fiber goes through the needle and into the nucleus. The laser energy will produce heat which denature, coagulate and evaporate the proteins inside the nucleus. It results in loss of volume in the disc and therefore loss of pressure on the nerves.



Unlike open back surgery, in PLDD treatment there are no disturbances in the back muscle fibers and no damages in blood vessels, spinal nerves and spinal cord. Therefore, the rehabilitation is noticeably shorter and the expenses are much lower.