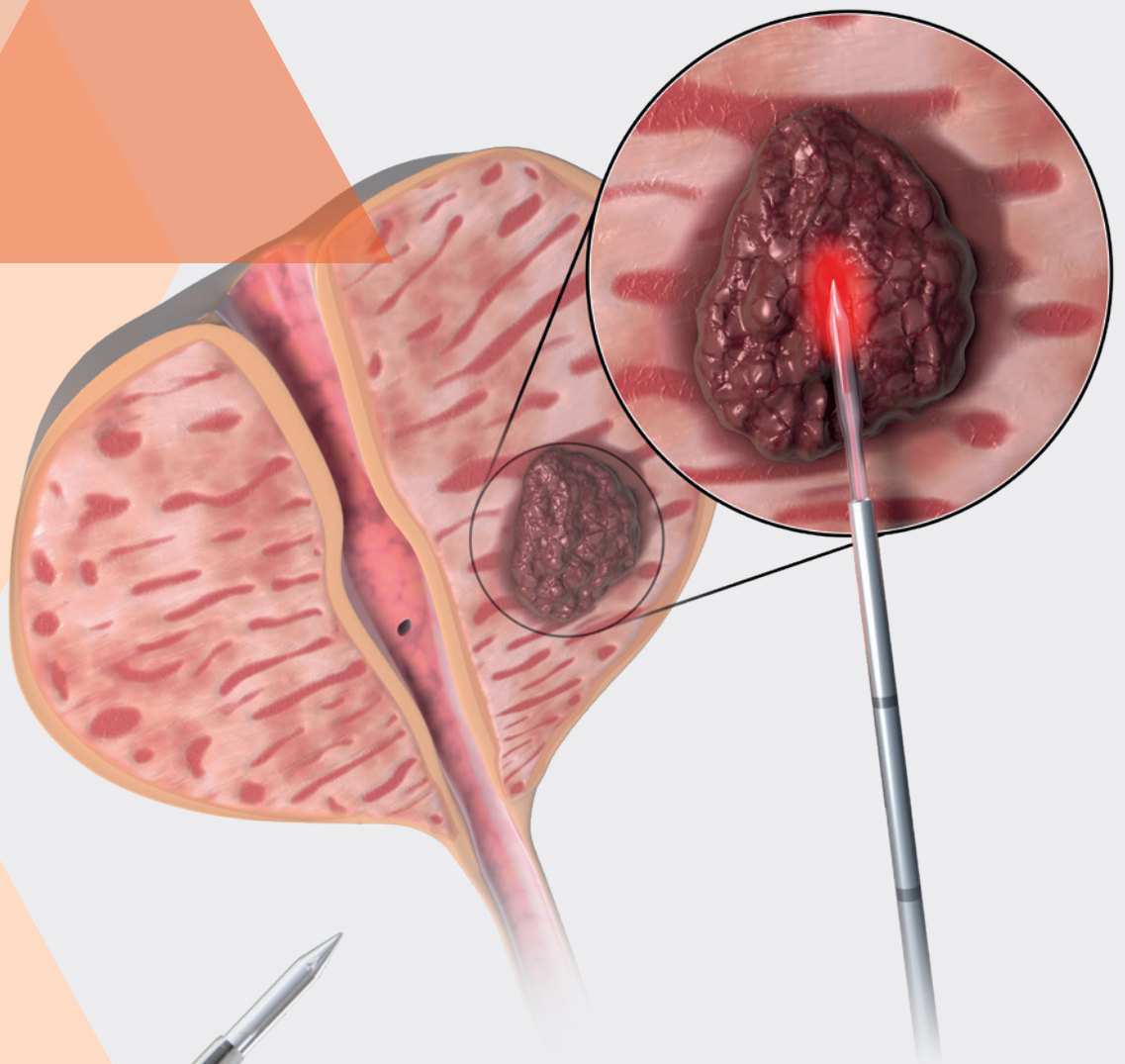


Interventional Radiology

Focal Laser Ablation (FLA) of Prostate tumors

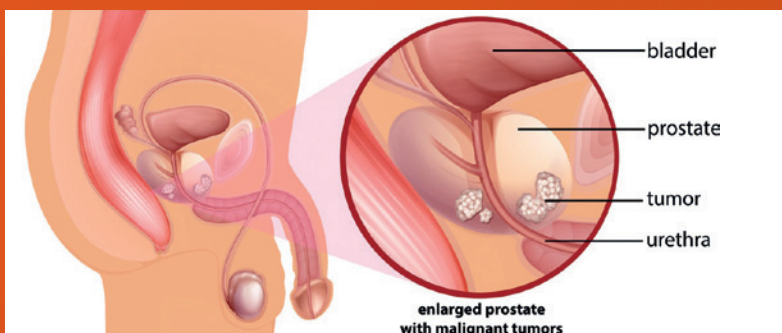


- MRI and Thermometry guided laser ablation
- Very defined and controlled round- or olive-shaped ablation zone within the prostate tumor
- Without any additional fiber cooling
- Local anesthesia

A new level of prostate cancer treatment

No collateral damage to sensitive structures

The combination of real-time prostate Magnetic Resonance Imaging (MRI) with Focal Laser Ablation (FLA) has led to a new and higher quality of prostate tumor treatment. Now selected patients diagnosed with low to intermediate localized prostate tumors can be treated safely and very precisely **without collateral damage to sensitive structures.**



Example for location of a prostate tumor (© fotolia/blueringmedia)

How is the intervention done?

Focal Laser Ablation of prostate tumors can be performed either via a Transrectal or Transperineal approach

1. After confirmed diagnosis with PSA blood tests, MRI scans and a prostate biopsy, the Focal Laser Ablation is performed under real-time MRI guidance & Thermometry with the MRI compatible FLA-Litt fibers by biolitec®.



MAGNETOM

Skyra for Magnetic Resonance Imaging (MRI)
(© Siemens Healthcare Nederland B.V.)



Remote-Controlled Manipulator (RCM) by Soteria
(© Soteria Medical BV, Arnhem, The Netherlands)



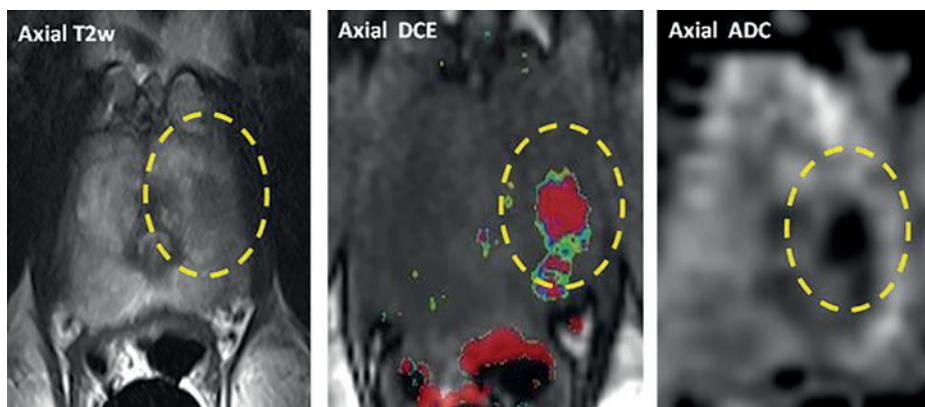
The RCM positioned between the patient's legs
(© Soteria Medical BV, Arnhem, The Netherlands)

Precision with Remote-Controlled Manipulator (RCM) by Soteria

This MRI-guided Focal Laser Ablation can be done very precise and fast with a **needle guide positioning manual technique** or with a **needle guide positioning device robotic technique** such as Soteria's Remote-Controlled Manipulator (RCM). With dedicated software the needle guide can remotely positioned without entering the MRI room.

2. The **Litt, Litt2B or 3B fiber** is gently under MRI guidance introduced and positioned into the core of the low to intermediate localized prostate tumor.

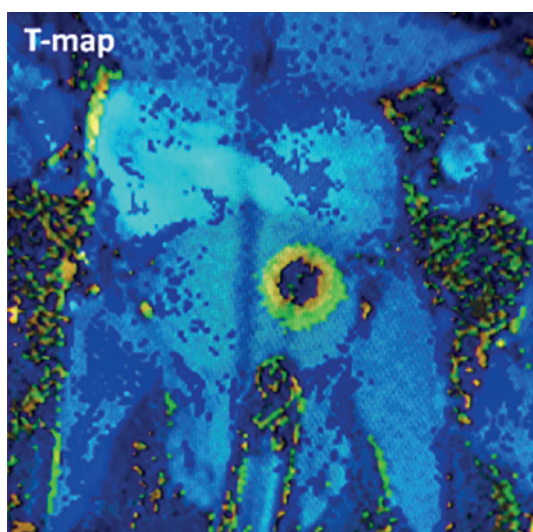
Multi parametric MRI of a 64-year old men, PSA 8,5, GS 3+3=6 in left peripheral zone



3. When the **LEONARDO® DUAL 45** laser is activated, the Litt2B or 3B fiber tip destroys the tumor with a round- or olive-shaped ablation zone, within minutes. Depending on the size and shape of the tumor, several ablations are needed to be precise and secure.

Real-time MRI mapping and Thermometry (see the actual temperature colors picture below) confirms the right and safe ablation during the laser procedure. The MRI scan will show proper destruction of the tumor with a sufficient safety margin.

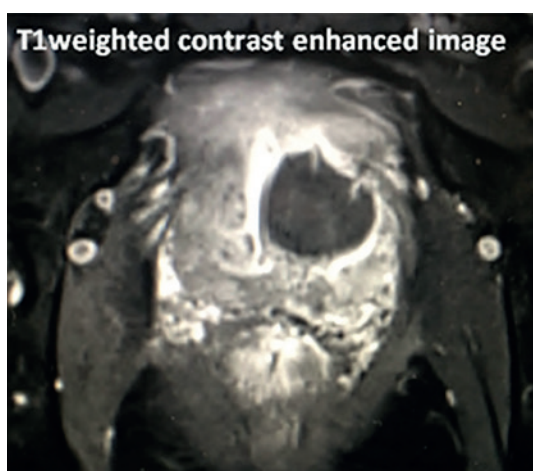
T-map image **during laser treatment**



Thermometry during FLA with the biolitec® Litt2B laser fiber (relative temperature scale)

Darkblue	< 40°
Lightblue	40 < 55°
Green	55 < 65°
Yellow	65 < 75°
Orange	75 < 85°
Red	85 < 100°

T1-weighted image with contrast direct **after laser ablation**



All MRI image pictures with courtesy of Prof. Fütterer and Dr. Bomers, University hospital, Radboudumc, Nijmegen, The Netherlands

Safety concept of biolitec® laser system

With the biolitec® LEONARDO® DUAL 45 diode laser and the biolitec® Litt fibers, the laser applies 980 nm thermal laser energy.

Advantages

- The right penetration depth and energy absorption
- 3 different MRI compatible Litt fibers
- Without any fiber cooling
- Large display, easy to use
- Pre-setting
- Local anesthesia

„Since 2017 I use the biolitec® LEONARDO® DUAL laser and special designed MRI compatible FLA-Litt fibers. This combination is a very precise and controlled technique for Focal Laser Ablation of prostate tumors. When you are close to vital structures you want and need to minimize thermal spread but at the same time, perform a safe and efficient ablation. biolitec® gives me this precision!“

(Jurgen Fütterer MD, PhD Interventional-Radiologist at Radboudumc Nijmegen and full professor at the Robotics and Mechatronics group, University of Twente The Netherlands. He focuses on imaging techniques in cancer, image-guided interventions and robotics.)

The biolitec® laser systems consisting of the LEONARDO® laser devices and the high-quality laser fibers are characterized by their versatile and universal application. One of the qualities of biolitec® is to develop fibers. The MRI compatible Litt fibers are specially designed and produced for MRI interventional radiology. Last but not least, the safety concept of biolitec®, which goes beyond the prescribed standards, guarantees a simple and safe treatment package with its low maintenance requirements and thus increased efficiency.

All LEONARDO® laser devices of biolitec® are equipped with an intuitive screen surface via touch screen. An electronic signature with RFID chips in the laser devices and the fibers prevents the use of unsuitable or expired fibers. In addition, the fiber can be connected directly to the laser with special designed RFID LEONARDO® fiber connectors. With all biolitec® laser fibers, the FUSION® technology not only bonds the laser fiber tips to the optical fiber, but also fuses them. In this way they can withstand even the highest mechanical loads. This makes the laser fibers even safer.

Our products






LEONARDO®

Model	LEONARDO® DUAL 45
REF	SL980 + 1470nm45W
Wavelength	980 nm and 1470 nm
Power	max. 45 Watt (1470 nm/15 Watt + 980 nm/30 Watt) separately adjustable
Fiber diameter	≥ 360 µm
Aiming beam	532 nm and 635 nm, green 1 mW, red 4 mW, user controlled intensity
Treatment mode	CW, Pulse Mode, ELVeS® Signal, ELVeS® Segment, Derma Mode
Pulse duration /-break	0.01 – 60 sec / 0.01 – 60 sec
Power supply	110 – 240 VAC, 50 / 60 Hz, 450 VA
Batteries	–
Dimensions (H x W x D)	approx. 28 cm x 37 cm x 9 cm
Weight	approx. 8,5 kg

All laser sets incl. 3 safety goggles, foot switch, interlock connector, power cord and manual in a carrying case.

Litt fibers

REF	Product	PU [Packaging unit]	length [m]	ø fiber [mm]	Tip shape ablation
503200260	Litt fiber	5	10	1.85	 round
503200270	Litt2B fiber	5	10	1.85	 olive
503200280	Litt3B fiber	5	10	1.85	 olive



Contact us

to learn more about a whole new world
of minimally invasive laser therapies



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All fibers are free of latex and DEHP. Our fibers are single use products (unless otherwise indicated) delivered sterile for immediate use.

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