

The Prostata Center team are the world leaders in NanoKnife® (IRE) therapy - the latest therapy for the treatment of prostate cancer.



Prof. Dr. med. Dr. phil. Dr. med. habil. Michael K. Stehling is the founder and director of the Prostata Center in Offenbach, which specialises in state-of-the-art diagnostics and minimally invasive prostate cancer therapy.

He holds degrees in both Medicine and Physics, worked with Sir Peter Mansfield, the 2003 Nobel Prize laureate in Medicine, on the development of magnetic resonance imaging. He held or holds academic positions at Harvard Medical School, Boston and University, Ludwig Maximilian University in Munich, Jerusalem and Titu Maiorescu University in Bucharest and the University of California in Berkeley.

With more than 600 successfully treated patients Prof. Stehling currently is the leading expert in IRE of prostate cancer.



Dr. med. Stefan Zapf is head of Interventional Radiology at the "Institut für Bildgebende Diagnostik".

With degrees in both Medicine and Biology he held leading positions in both Diagnostic and Interventional Radiology, as well as in Radiation Oncology at the University of Mainz. Together with Prof. Stehling, he has performed the most complex and largest number of interventions with IRE and ECT in the world.



Dr. Rachid El-Idrissi is the Senior Urologist at the Prostata Center. He holds a degree in Medicine from J. W. Goethe-University in Frankfurt/Main. Subsequently he specialised in Accident and General Surgery, followed by sub-specialisation in General and Paediatric Urology.

Since 2015 he supports the team around Prof. Stehling with his expertise in the field of Endo-Urology.



At Prostata Center we always keep our finger on the pulse of the latest developments, thanks to the close co-operation of our medical doctors and physicists with universities and industry both in Germany and abroad. This is how we managed to establish ourselves as the leaders in NanoKnife®(IRE)-therapy of prostate cancer.

Besides our clinical programme, we are active in research and development and, together with our international partners, have introduced a number of important technological advances in the field of electroporation.

At Prostate Center patients profit from our comprehensive clinical service, combining personalized counselling, precision diagnostics with state-of-the-art imaging (MRI, CT, PET, US, etc.), laboratory and genetic testing and the most advanced techniques in minimally-invasive cancer treatments (IRE = NanoKnife®, Electrochemotherapy, IR-ECT, etc.).



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Prostate Cancer

Irreversible Electroporation - **NanoKnife®** treatment:
A new era of prostate cancer treatment



Treating prostate cancer with the latest technology - avoiding impotence and incontinence

It affects one in five men

Today, one in five men is diagnosed with prostate cancer (PCA) during their lifetime and the number of men with this problem is even greater. PCA is responsible for around 10% of all cancer deaths. This makes prostate cancer one of the most important medical problems for men.

The problem

The treatment procedures which have been applied up to now - operation and radiation therapy - often offer only a small or sometimes no survival benefit, but have severe side effects. The majority of men treated in this way suffer erectile dysfunction (impotence) or loss of bladder control (incontinence). For the patient and the doctor, it is difficult to decide whether a radical treatment should be carried out at all. Better, less invasive procedures are urgently needed.

The world leader in the procedure of the future

Since 2011, at the Prostata Center, we have been the world leaders in implementing the new technology "Irreversible Electroporation (IRE, NanoKnife®)" for the treatment of prostate cancer.

Radiologists, Urologists, Physicists

Our globally unique results have been achieved from a combination of team work, a passion for progress and care for the patient.

We are now able to provide help in almost all cases - even if radiation therapy and/or surgery are not possible any more.

Selective instead of radical

The prostate is surrounded by nerves and blood vessels which are responsible for erection and bladder control. Even the latest surgical, heat or radiation-based therapies, such as HIFU, can disrupt these functions.

A "tissue-selective method" is needed in order to provide treatment that preserves these functions.

In the treatment with NanoKnife®, strong, ultra-short pulsed electrical fields cause cell death, without causing damage or significant heating of the tissue. This "Irreversible Electroporation (IRE)" destroys tumour and parenchymal cells in a reliable manner. Important anatomical structures in and around the prostate, such as nerves and vessels, sphincter and intestinal wall are protected. Erection and urinary continence are thus retained.

IRE for focal therapy

Magnetic Resonance Imaging (MRI) has fundamentally changed the thinking behind the treatment of prostate cancer. While only very inexact diagnostic options were available before the era of MRI, the cancer can now be localised precisely in the prostate and can be reliably monitored in the course of therapy. This has made "focal therapy" for prostate cancer possible.

IRE for relapse and advanced carcinoma stages

Tumour relapses, the recurrence of prostate cancer after the first treatment, are common. The relapse rate after radical prostatectomy (total removal) is over 30%. Recurrence rates are even higher after radiotherapy and HIFU.

Therefore, after a primary prostatectomy, radiation is often applied directly to treat the relapse. After primary radiation therapy or HIFU, a so-called "salvage" (rescue) prostatectomy may be attempted. However, this can cause scarring and tissue brittleness, leading to even more severe side effects than the primary treatment.

With IRE, we specialise in the gentle treatment of other non-treatable infiltrating carcinomas. We can also provide palliative care for many lymph nodes and bone metastases. This can be combined with novel immune therapies.

NanoKnife® (IRE):

Minimally invasive (pinholes)

24h check-up with MRI check on the following day

5-21 days, one catheter

No rehabilitation

No wound pain

0% incontinence rate*

<10% impotence rate*

Relapse rate: 5% after 50 months (25% in Gl.>8 group)*

Can be repeated as often as desired

Suitable for relapse of ectomy, Radiation, HIFU etc.

Suitable for T4 tumour (rectum/sphincter/bladder infiltration)

Secondary anti-tumour immun effects

High patient satisfaction

Prostatectomy:

Open surgery or robot

7-10 days inpatient stay with pain catheter

7-21 days, several catheters

3-6 weeks rehabilitation

5-6 days pain catheter

20 - 50% incontinence rate**

50 - 70% impotence rate**

20-40% after 60 months*** depending on the degree

Repeated OP and/or radiation problematic or impossible

Repeated OP and/or radiation problematic or impossible

Stage T4 problematic

Long period of healing

Low patient satisfaction

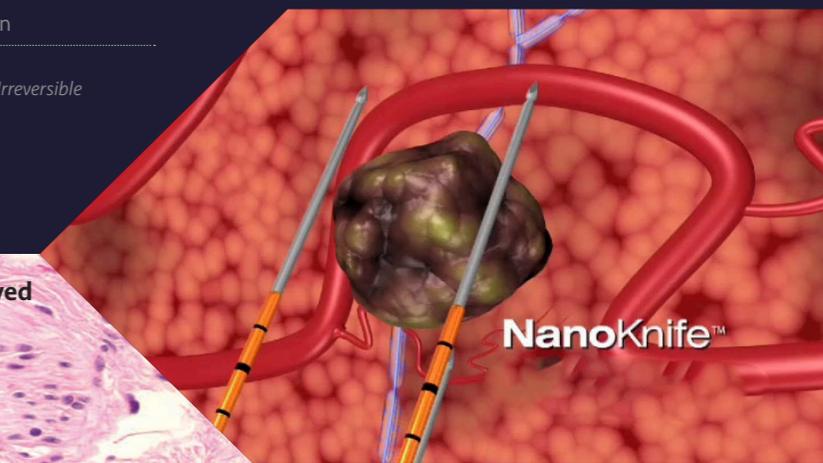
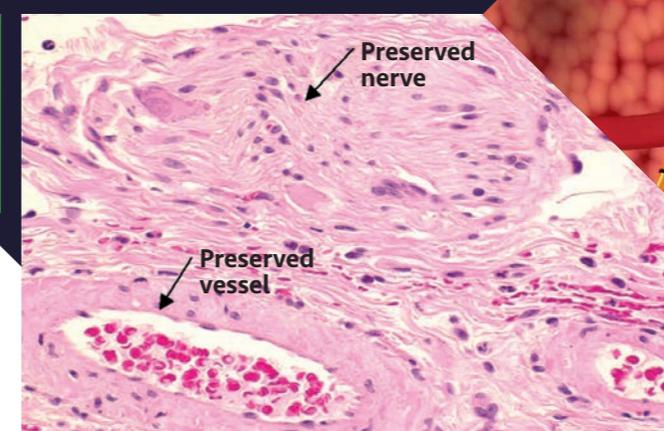
* Stehling MK (2016) MRI and 3D-Biopsy Based Treatment of Prostate Cancer with Irreversible Electroporation (IRE). Presented at WICO, Boston, MA, 9-12 June 2016

** BARMER Hospital Report 2012, German Statutory Health Insurance

*** Han Tables, Johns Hopkins

Benefits of NanoKnife® (IRE):

- Selective removal of tumour tissue
- Ultra-sharp treatment area margins
- Induced cell death instead of incineration or radiation damage
- No restriction for follow-on treatment
- Pain-free and minimally invasive
- Fast one-off treatment
- Wide range of uses for early and late stage prostate cancer
- Good relapse rate*
- Systemic immunological effects
- Outpatient treatment, without operation and without radiation



NanoKnife® (IRE) technology: The first, truly nerve sparing prostate cancer treatment.