

EHY-1000 series

Oncothermia system for the treatment
of prostate diseases



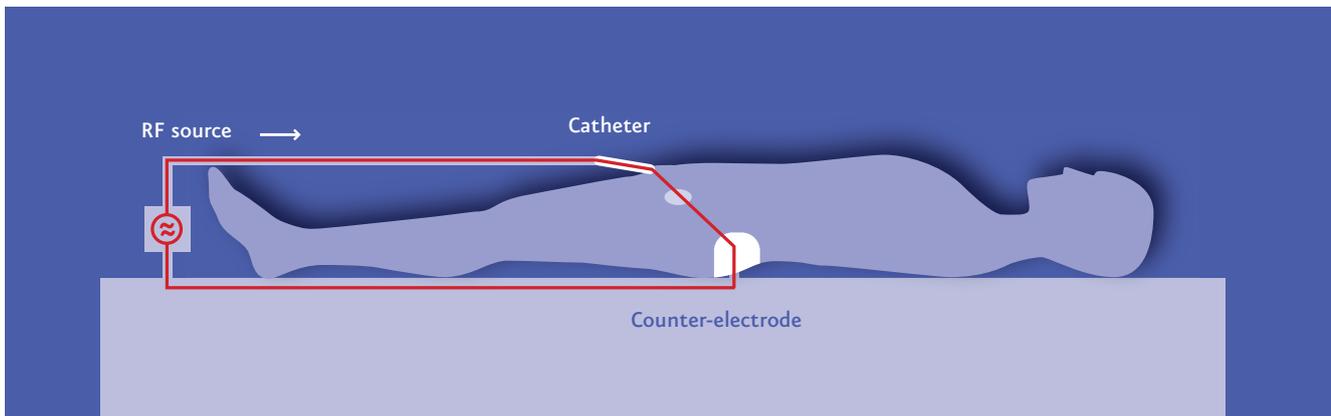
Oncotherm – About us

Oncotherm develops, manufactures and markets cancer treatment systems that utilize Oncothermia to treat tumors. Oncothermia is a further development of the classical method of Hyperthermia, one of the oldest cancer treatment methods, and it allows a personalized, non-toxic therapy using an electric field and promoting the body's natural regulatory processes. In accordance with its corporate philosophy, Oncotherm's mission is to heal cancer, to increase cancer patients' life expectancies and to improve patients' quality of life.

Oncothermia: how the method works and how it is used

The EHY-1000 system combines the ability to treat both malignant (CA) and benign (BPH) prostate tumors. When used for the treatment of malignant tumors, the EHY-1020 targets the tumor cells selectively and accurately, even if it is located far from the central lumen. Oncothermia enables you to selectively destroy the tumor tissue without harming the healthy tissue. This selection is of particular significance for the treatment of prostate carcinomas in which the malignant tissue is usually mainly found in the peripheral zone of the prostate.

Oncothermia: the method



Schematic illustration of Oncothermia treatment The illustration shows how the electric field, produced by the two active electrodes, passes through the patient's body. As shown schematically, the electric field tends to move through the pathways with the lowest impedance, i.e. through the malignant tissue (tumor).

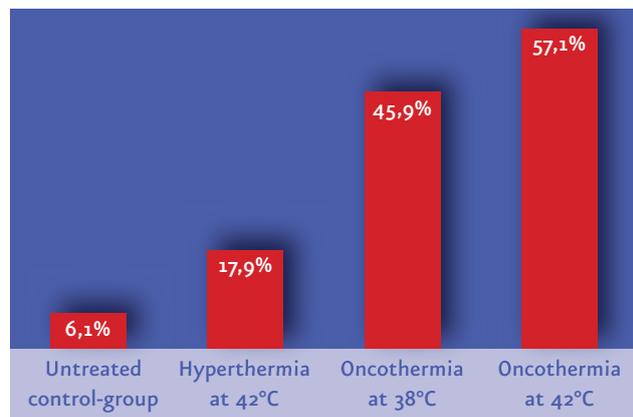
However, the focusing effect does not only act on the solid tumor lesion, but finds and destroys the scattered tumor cells, even if these have not accumulated into a visible tumor.

For BPH, the treatment strategy is different. The benign tumor has a dominant influence on the entire prostate region, starting in the central region joined to the urethra. The treatment of this disease requires even heating. As shown in many publications, the heating is the active factor in such treatment. Whereas in the case of a carcinoma the effect of the Oncothermia field is of greater significance, in BPH the temperature is the crucial factor. In such cases, the temperature can be increased until physiological toxicity occurs. The exact temperature can be precisely determined and controlled by the built-in microprocessors in the calibrated catheters. These treatment parameters have a curative effect on the BPH and ensure the safety of the carcinoma treatment.

Medical and therapeutic benefits

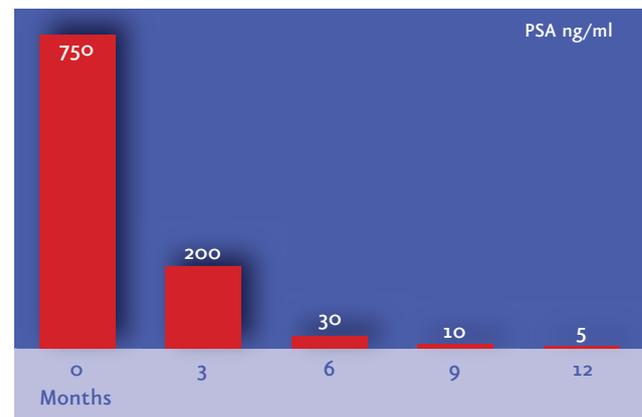
The Oncothermia method has proven itself in actual practice and yields very good results in the field of prostate diseases both for benign and malignant tumors. This therapeutic success has been shown in a study with 123 patients*. Over 95% of local clinical remissions in the treatment of malignant prostate tumors could be established as well as a good and long-term controllability of the disease with a high quality of life. The prostate specific antigen (PSA) was able to be reduced by 20% on average and maintained for approximately 3 years at this level. In some cases, the treatment was repeated after 3 years and the well-being of the patient was therefore maintained.

Percentage distribution of killed cells after Hyperthermia and Oncothermia treatment



Already at a temperature of 38°C, Oncothermia therapy yields better results than classic Hyperthermia does even at a higher temperature of 42°C. The number of killed cells is 2.5 times higher.

Reduction of the PSA level within the first 12 months from start of treatment



The figure shows that the treatment has huge effects on the PSA level. Already after 3 months, the PSA value has fallen by more than 3.5 times. After 6 months it has even fallen by 25 times.

* Transurethral tumor therapy in combination with short-term androgen blockade in localized prostate carcinoma – 10 year follow-up period in 123 patients

EHY-1020

The EHY-1000 series has been specially developed for prostate treatment. With the EHY-1020, both malignant and benign tumors (BPH) can be treated. In addition to the system itself, a special catheter set is required for the treatment, which consists of a catheter and counter electrode.

The EHY-1020 floor-mounted system is compact and easy to use. The method has been successfully used by our customers for many years. The treatment has no side effects or risks for the patient. The results of the treatment are excellent and nevertheless many unpleasant side effects that are known from other forms of treatment can be avoided.

Over the years, our R&D specialists have continuously improved the prostate treatment system and adapted it to our customers' wishes. Long-standing experience has helped us perfect the application and make it as comfortable as possible for the patients. The design has also been continuously improved to fit harmoniously with the equipment and fittings of modern hospitals and practices.

Additional consumables such as catheters can be ordered from our office in Troisdorf, Germany, and delivery can be made, when necessary, within a few hours.



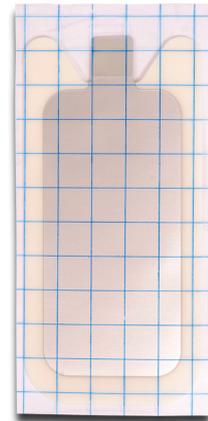
Treatment characteristics

Oncothermia is a safe and effective way to treat benign and malignant prostate diseases using the latest technology. The treatment is minimally invasive and does not use dangerous radiation or microwaves. Rather, short waves and a safe high frequency resolution are used, which makes the treatment completely harmless to patients and medical staff.

The tumor selection takes place at cellular level. Many unpleasant side effects that occur in other treatments can be avoided with Oncothermia: There is no undesirable build-up of heat, no muscular burns and no risk of incontinence. Quite on the contrary: Treatment with the EHY-1020 is simple and stress-free, and can be carried out on outpatients. The focused heat effect acts precisely on the tumor and energy is effectively absorbed.



The catheter, which is required for the treatment and by which the patient is incorporated into the electric field.



The counter electrode is positioned under the patient, as shown in the figure. Consumables such as catheters and electrodes have been specially designed for the system and can be ordered directly from Oncotherm.

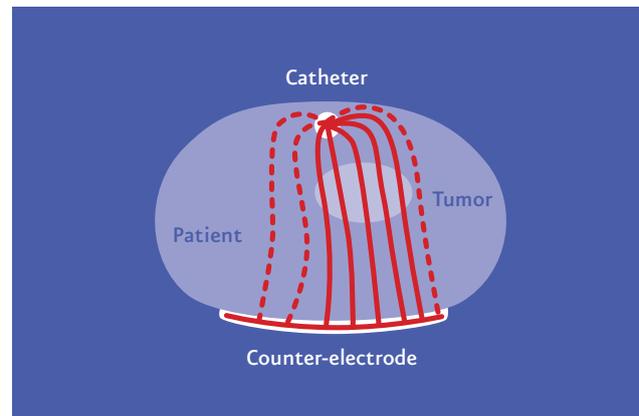
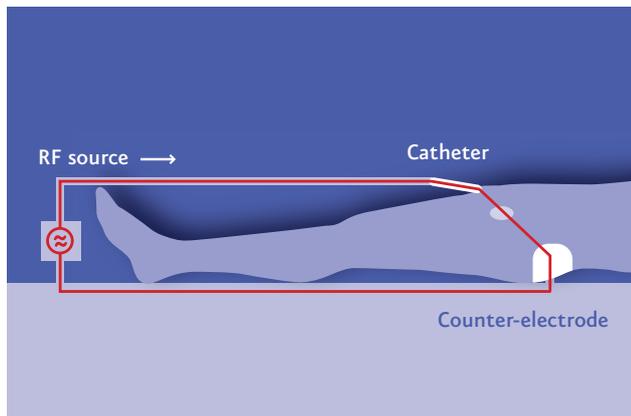
Treatment of malignant and benign tumors

In the treatment of malignant tumors, the catheter is inserted and the electrode is positioned so that heat and electric field specifically focus on the tumor. In cases of hyperplasia, a larger tissue field is involved, the boundaries of which cannot be exactly determined. Therefore in these cases a catheter is combined with an electrode band for the treatment, so heat and electric field are distributed over a larger area.

Medication for treatment

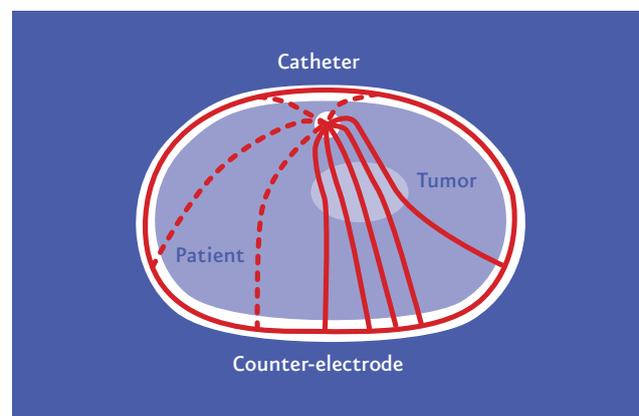
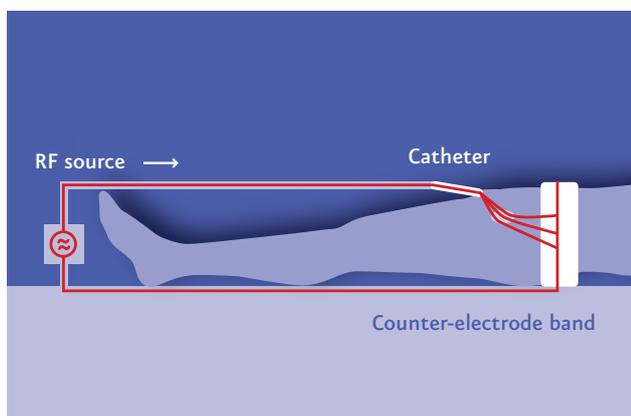
Some of our doctors, who already use systems from the EHY-1000 series to treat patients, have given us feedback on their experiences. They recommend injecting a local anesthetic before inserting the catheter and prescribing an anti-inflammatory drug for several days following treatment.

Treatment of malignant tumors



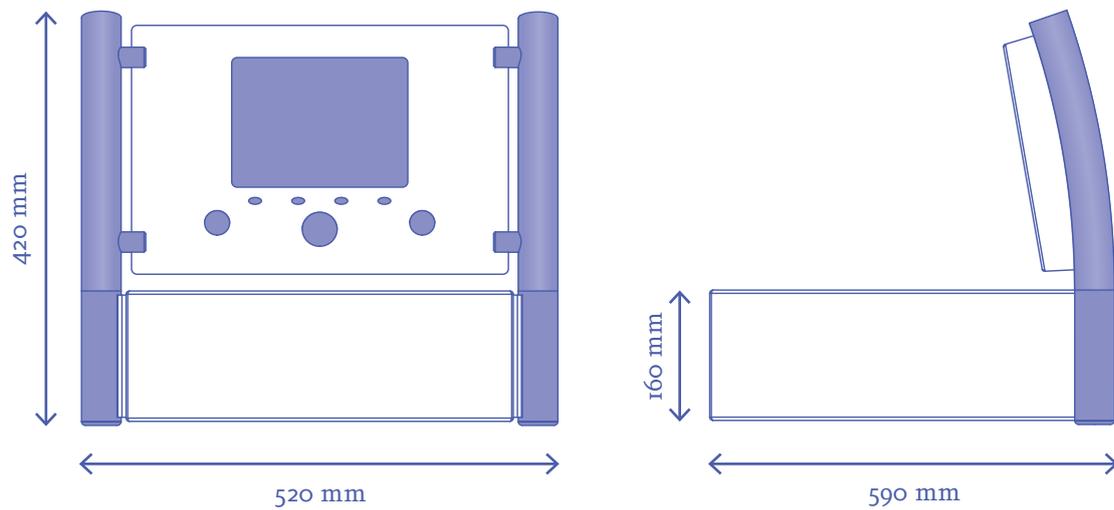
Schematic illustration of malignant prostate tumor treatment. The illustration shows how the catheter with integrated electrode and the counter electrode are positioned. As with classic Oncothermia treatment, the system generates an electric field between the catheter electrode and counter electrode.

Treatment of benign tumors



Schematic illustration of benign prostate tumor treatment. The illustration shows that in this case, the counter electrode is shaped as electrode band. The electric field then is built up in a circular shape from the catheter electrode outwards.

EHY-1020 IL



Technical data

Mains voltage	AC 230V/50Hz
Power input	300 VA
Maximum power output	max. 80 W
Nominal load	50 Ohm
Output carrier frequency	339 KHz
Output modulating frequency	Fractal noise
Weight	35 kg
Dimensions	420 x 590 x 520 mm (Height x Length x Width)
Temperature	+10°C - +30°C
Relative air humidity	20% - 60% (non-condensing)
Air pressure	700 hPa - 1060 hPa

Product range

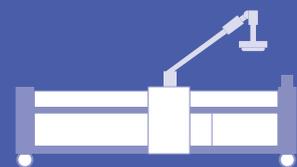
EHY-1020

The EHY-1020 is specifically designed to treat prostate diseases. Both malignant and benign tumors (BPH) can be treated using this system. It uses a catheter with built-in electronics and counter electrode. The EHY-1020 system is compact and easy to use. The method has been successfully used by our customers since 2010 with high success rates and minimal side effect.



EHY-2000plus

The EHY-2000plus is a widely accepted system for loco-regional deep mEHT applications. This model has been used for treatment worldwide for more than 20 years. Popular, versatile device, applicable for a range of solid tumors and improved over the years through feedback from our doctors, experts, the requirements of patients and the people treating them. The EHY-2000plus is an easy to use and highly reliable device.



EHY-3010

The EHY-3010 is designed for the simultaneous multi-local treatment of advanced, metastatically disseminated, malignant and solid tumors. Within the range of Oncothermia systems, it is the pioneering breakthrough in the field of multi-local tumor therapy. Instead of a bolus electrode, this system uses textile electrodes, which are even more flexible to better adjust to the treatment area.



EHY-2030

The EHY-2030 is our latest development in the treatment of loco-regional (including deep seated and surface) tumors. The newly designed device includes the Smart Electrode System (SES), the plug-in Patient Management System (PMS-100) and a user-friendly touch screen display with full system control. The new RF generator with increased power has been developed with a new intelligently controlled step motor tuning system for rapid impedance matching to achieve faster tuning times.



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