Contributing to Saving Lives!





What is Brachytherapy?



Brachytherapy is a form of radiotherapy that treats cancer by irradiation from a short distance. Two different forms of brachytherapy are used today: permanent and temporary brachytherapy.

In permanent brachytherapy, a small radioactive source is implanted in the tumorous tissue, while in temporary brachytherapy, the radioactive source is placed directly inside or close to the site of the tumor for a limited and defined period of time.

Over the last decades, brachytherapy has been proven to be very effective and safe. In the case of prostate cancer, it provides a good alternative to the surgical removal of the prostate gland (prostatectomy) and reduces the risk of some of the long-term side effects. As the radiation source is positioned directly at the site of or inside the tumor, healthy tissue is less exposed to radiation than with external beam radiation therapy and the risk of adverse effects is reduced. Brachytherapy is often an outpatient procedure and the patient can restart professional or other activities within a week. This noticeably increases the patient's quality of life.*

Brachytherapy is commonly used to treat tumors in numerous body sites, such as the cervix, endometrium, prostate, breast, esophagus, nasopharynx, lung and bronchus, lip and oral cavity, as well as the eyes.

^{*}See www.bebig.com -> Cancer News for references.

Permanent Brachytherapy

Prostate Seed Implantation





Eckert & Ziegler BEBIG manufactures radioactive implants, which are mainly used in the treatment of localized prostate cancer. The seeds have the shape of little capsules containing a small quantity of a radioactive isotope, I-125 (lodine-125). Eckert & Ziegler BEBIG offers two different types of seeds which are available in several configurations.

IsoSeed®: is a loose seed, available in two seed types, for use with the Mick™ Applicator.

IsoStrand®: consists of 10 IsoSeed® with 1.0 cm seed center-to-center spacing. The unique design of the biodegradable spacers and the structure of the outer suture ensures reliable strand placement.

IsoCord® and IsoCord® Needle Loading Station: IsoCord® are seed chains in a safe and convenient magazine. They are cut into the desired length with the unique IsoCord® Needle Loading Station, which provides advanced radiation shielding during the whole process of strand cutting and needle loading. IsoCord® provides reliable strand placement characteristics and visibility under X-ray and ultrasound. IsoCord® can be delivered with any IsoSeed®.

Eckert & Ziegler BEBIG also provides full installation to hospitals, including treatment planning systems, ultrasound scanners and a complete range of accessories.

Temporary Brachytherapy

Multiple HDR Applications



The Eckert & Ziegler BEBIG SagiNova® HDR afterloader can be used to treat gynecological cancers and other tumor sites such as esophagus, bronchus and nasopharynx, the prostate, breast and lung, as well as the lip and oral cavity.

SagiNova®: With the help of applicators and catheters, the miniaturized radiation source is driven from a shielded safe – located inside these afterloaders – directly into or next to the tumor. SagiNova® is the only afterloader available with an integrated In-Vivo Dosimetry System. This feature along with the automatic catheter length measurement and the precise source position check emphasize the afterloader's reputation of enabling for a high level of accuracy. Furthermore, SagiNova® provides an advanced graphical user interface (GUI), remote support for short response time and the customizable tool QAssist which supports physicists by defining and running site specific quality assurance. Eckert & Ziegler BEBIG afterloaders can be equipped with either a widely-used Ir-192 source or with

SagiPlan®: is a flexible and user-friendly treatment planning system that support all HDR applications. It enables 3D planning (based on CT, MRI, US, etc.), orthogonal planning and real-time prostate planning. SagiPlan® is equipped with dose optimization and advanced catheter reconstruction tools, and supports DICOM import and export, as well as image fusion. SagiPlan® additionally offers a new GUI that was developed in cooperation with brachytherapy experts and usability engineers leading to the introduction of the next level of smooth and efficient workflow guidance.

a Co-60 source, which has a particularly long life.

Eckert & Ziegler BEBIG HDR Applicators: are for use with SagiNova®, MultiSource® and GyneSource Ir-192 and Co-60 Systems. The MR Safe and MR Conditional Applicators enable a broad choice of treatment options allowing for individualized image guided brachytherapy treatments. All available applicators from Eckert & Ziegler BEBIG and Mick Radio-Nuclear Instruments are implemented in databases of SagiPlan®. This allows for fast and accurate reconstruction and enables precise automatic measurement of the internal length of the applicator.

Temporary Brachytherapy



Mick Radio-Nuclear Instruments HDR Applicators: With the addition of the prominent Mick™ HDR Applicators to the Eckert & Ziegler BEBIG portfolio, the HDR Applicator offering spans an even broader range of administrations from prostate to skin, including multiple CT/MR designs for a variety of gynecological treatments. The applicators are available for Eckert & Ziegler BEBIG, Elekta and Varian transfer tubes. Highlights include:

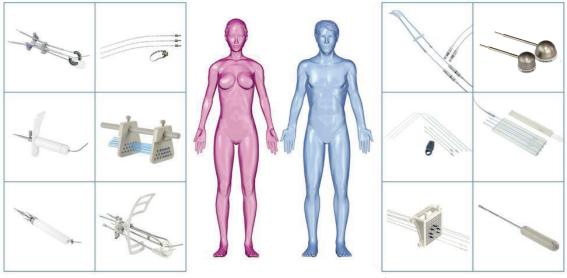
The CT/MR M.A.C. Interstitial GYN Template features a template design with optional intrauterine tube enabling complete or targeted treatment of the vagina, cervix, endometrium and parametrium. The set is available with 36 needle concentric channels and a variety of diameters to be integrated easily into current practice.

The CT/MR Contour Prostate Template facilitates interstitial needles for the treatment of the prostate. Needles can be positioned and locked individually which allows the reconstruction on the treatment planning system directly after insertion.

The CT/MR Split Ring Applicator's patented design combines the benefits of several other intracavitary applicators, with the ability to be configured as a closed ring or split into four different diameter distances in either symmetric or asymmetric arrangements.

The CT/MR Segmented Vaginal Applicator is designed to treat accurately and completely with vaginal and cervical coverage. The four-segment design in multiple widths allows for a range of both lengths as well as diameters to fit a variety of anatomies.

The CT/MR Ring & Tandem Applicator is designed to treat accurately and reliably in nearly any anatomy with a range of ring angles, intrauterine tube lengths, build-up cap sizes and an optional rectal retractor to increase distance to organs at risk and eliminate the need for packing.



The Eckert & Ziegler BEBIG and Mick Radio-Nuclear Instruments HDR Applicator Portfolio

Temporary Brachytherapy

Ophthalmic Cancer Treatment





Eckert & Ziegler BEBIG offers a series of proven products for temporary brachytherapy of eye tumors, as there are uveal melanomas and retinoblastomas. The company is the only global provider of Ru-106 (Ruthenium-106) Eye Applicators as well as specific accessories. The product portfolio also includes the COMS Eye Applicators used together with the high activity IsoSeed® I-125.

Ru-106 Eye Applicators: are unique brachytherapy sources consisting of a thin film of Ru-106, a beta emitter, encapsulated within pure silver sheets with a total thickness of only 1 mm. Due to its half-life of 374 days, the Ru-106 Eye Applicators can be used a number of times within one year.

Accessories for Ru-106 Eye Applicators: Acrylic or Silver Dummies help to optimize the positioning of the applicators. They are available for all types of Ru-106 Eye Applicators. The provided Safety and Sterilization Container supports proper handling.



I-125 Ophthalmic Seeds and COMS Eye Applicators: The ophthalmic IsoSeed® I-125 has a particularly high activity. The matching COMS Eye Applicators consist of gold plaque shells and silicone inserts with a predefined slot pattern to place the seeds. COMS Eye Applicators are available in 5 different sizes.

EBRT Accessories

Accessories for External Beam Radiation Therapy





Eckert & Ziegler BEBIG also offers accessories for External Beam Radiation Therapy (EBRT). These include fiducial markers in preloaded needles to support visualization during radiation therapy and brachytherapy procedures as well as bolus material that is designed to provide maximum dose build-up for photon energies.

Mick[™] Gold Fiduciary Markers¹: are well proven conventional solid gold markers, each individually preloaded in a pre-waxed needle. Mick[™] Gold Fiduciary Markers are available in 3.0 mm and 5.0 mm lengths as well as in 1.2 mm and 1.0 mm diameter.

Eckert & Ziegler BEBIG Gold Fiduciary Markers²: These gold markers are loaded in a ripple hub pre-waxed needle. Eckert & Ziegler BEBIG Gold Fiduciary Markers are available in 3.0 mm and 5.0 mm lengths and can be ordered single packed or in sets of 3.

Superflab: supports dose build-up for the patient's contour during high energy photon and electron radiation treatments. Superflab is made of a proprietary synthetic gel. Since the molded material does not suffer inelastic strain from normal stresses, Superflab does not have to be bagged or wrapped in plastic film to maintain its shape. Superflab is offered in various sizes starting with $30 \times 30 \text{ cm}$ up to $50 \times 120 \text{ cm}$ as well as different thicknesses.

¹ Manufactured by CP Medical, Inc.

² Manufactured by Riverpoint Medical

Eckert & Ziegler BEBIG Today

Eckert & Ziegler BEBIG is a European-based group active in the medical device segment of the health care industry. Its core business is the production and distribution of medical products for the treatment of cancer using brachytherapy. The company's headquarters are in Belgium, with production facilities in Germany and in the USA, as well as subsidiaries throughout Europe, the USA and Brazil. In addition, Eckert & Ziegler BEBIG has a worldwide network of distributors and agents to support the international marketing and distribution of its product line. The company's products and equipment are intended for use by oncologists, radiotherapists, urologists, ophthalmologists and medical physicists. Eckert & Ziegler BEBIG employs approximately 130 people. The company has been listed on the Euronext stock exchange since April 1997.



Corporate Head Office:

Eckert & Ziegler BEBIG SA

Rue Jules Bordet Zone Industrielle C 7180 Seneffe

Phone +32 64 520 811 Fax +32 64 520 801

Manufacturer:

Eckert & Ziegler BEBIG GmbH

Robert-Rössle-Str. 10

13125 Berlin Germany

Phone +49 30 94 10 84 130 Fax +49 30 94 10 84 112

Mick Radio-Nuclear Instruments, Inc.

An Eckert & Ziegler BEBIG Company

521 Homestead Avenue

Mount Vernon, NY 10550

USA

Phone +1 914 667 3999 Fax +1 914 665 8834

Regional Sales, Marketing and Service:

Europe, Middle East, Africa, Latin America, Asia Pacific

Eckert & Ziegler BEBIG SA

Rue Jules Bordet Zone Industrielle C 7180 Seneffe Belgium

Phone +32 64 520 811 Fax +32 64 520 801

North America

Mick Radio-Nuclear Instruments, Inc. An Eckert & Ziegler BEBIG Company

521 Homestead Avenue

Mount Vernon, NY 10550 USA

Phone +1 914 667 3999 Fax +1 914 665 8834



www.bebig.com info@bebig.com www.micknuclear.com

The mentioned products are not available in all markets. Please contact your local Eckert & Ziegler BEBIG representative for more information.

