

## **UZ BRUSSEL - RADIATION ONCOLOGY**

Department Radiation Oncology and Biomedical Physics, UZ Brussel Faculty of Medicine, VUB (Vrije Universiteit Brussel)

### **Research axes & Expertise**

The mission of the Radiation Oncology department of the UZ Brussels is “to offer the optimal and most efficient radiation therapy tailored to the individual patient, through development and clinical implementation of novel irradiation techniques.” The radiobiological research unit is focussed on hypoxic tumour cell radiosensitization and the role of pro-inflammatory infiltrate on radiation response. About 1500 patients a year are treated in 2 sites, applying a multi-vendor philosophy with dedicated technology to optimize the individualized treatment approach.

### **Application fields**

From the start, research at the UZ Brussel has been based on the concept that conformal radiotherapy requires real-time and accurate knowledge of the patient’s anatomy during dose delivery. As such the UZ Brussel has always advocated the need of real-time image-guidance to warrant safe administration of dose when applying sophisticated dose delivery techniques. The centre was the first in Europe to clinically introduce dynamic rotational intensity modulated radiotherapy in 1995, and was pioneer in the development and validation of real-time image-guidance.

### **Major projects/partnerships/collaborations**

The department has a strong collaboration with industry, which emanated a.o. in the following realizations:

- development of 6DOF robotic treatment couch and respiratory gated irradiation on the Novalis system based on stereoscopic X-ray imaging (BrainLAB AG),
- development and clinical validation of gimbaled-based linac system for respiratory synchronized tumour tracking, the VERO system (BrainLAB AG),
- development of sequential and helical tomotherapy ( Accuray Inc).

There are on-going collaborations with several academic partners.

### **Key figures**

The department has a strong research group with training programs at Master and PhD level (Medical Science and Physics), as well as specialization in radiation oncology.

### **Contact**

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