



# ELEKTA SYNERGY™

## KEY FACTS

- One in three people will develop cancer during their lifetime with the most common forms being breast cancer in women and prostate cancer in men.<sup>1</sup>
- Most cancers can be treated alone or in combination with surgery, radiotherapy, chemotherapy or hormonal therapy.
- Approximately four out of ten people with cancer have radiotherapy as part of their treatment.<sup>2</sup>
- Elekta Synergy™ is a new radiotherapy treatment system that is the first of its kind to target cancer tumors via an integrated three-dimensional imaging system.
- Elekta Synergy™ fulfills the need for increased precision and accuracy in radiotherapy by delivering more direct and intense radiation to a tumor while avoiding damage to surrounding healthy tissue.

## What is radiotherapy?

- Radiotherapy is a key form of treatment for approximately four out of ten people with cancer, where radiation is directed at a patient's tumor in order to kill the cancerous cells.
- Radiotherapy is usually administered daily, over a period of time as long as six weeks.
- While damaging cancer cells, radiation can also affect surrounding healthy cells if it is not directed with a high degree of accuracy and precision.
- Traditionally, Computed Tomography (CT) scans have been taken prior to treatment to identify the exact location of the cancer tumor.
- The volume of tissue irradiated is increased to account for the uncertainty in the position of the volume to be irradiated. This uncertainty can be due to a number of causes:
  - The accuracy with which the patient can be positioned on the therapy machine.
  - Movement within the body (e.g. movement caused by breathing).
  - Changes between the time of CT scan and actual treatment.



## **What is Elekta Synergy™?**

- Elekta Synergy™ is an advance radiotherapy system used to treat cancerous tumors.
- Elekta Synergy™ is the first system of its kind to combine the scanning (X-ray Volume Imaging or XVI) and treatment processes in radiotherapy to give a ‘real-time’ indication of the cancer tumor location during treatment.

## **What are the key benefits of Elekta Synergy™?**

- The high degree of accuracy and precision with Elekta Synergy™ significantly reduces the number of healthy cells affected by the radiation.
- The increased accuracy and precision with Elekta Synergy™ offers the promise that higher doses of radiation can be safely used in treatment, resulting in a shorter treatment process for the patient and healthcare professional.

## **Who will benefit from Elekta Synergy™?**

- Anyone suffering from cancer who needs radiotherapy treatment could significantly benefit from the improved safety, accuracy and efficiency of Elekta Synergy™.
- Elekta Synergy™ can help to treat some of the most prevalent forms of cancer, such as breast, prostate and lung.
- Utilizing radiotherapy resources efficiently will reduce treatment times, thereby reducing hospital costs and maximising income.

## **How effective is Elekta Synergy™?**

- The success of Elekta Synergy™ has been brought about through close collaboration with Elekta clinical partners:
  - Princess Margaret Hospital, Toronto, Canada
  - William Beaumont Hospital, Royal Oak, Michigan, USA
  - Christie Hospital, Manchester, UK
  - The Netherlands Cancer Institute (NKI), Amsterdam, The Netherlands

“For the first time the cone beam system lets us see what we want to hit with our treatment by giving us a continuous set of detailed 3-D X-ray images of the patient when the patient is lying down on the treatment couch. This means we can even move towards better cure rates by safely increasing the doses we deliver in radiotherapy.”

*(Professor Chris Moore, Consultant Physicist, Christie Hospital)*



“We can now target the tumor more accurately using three dimensional volume imaging and closely follow the organ movement before and during treatment.”

*(Professor Bartelink, The Netherlands Cancer Institute)*

### **When is Elekta Synergy™ available?**

- Hospitals can currently purchase the Elekta Synergy™ platform with a view to upgrading to the full Elekta Synergy™ system when it becomes available in August 2004.
  
- Elekta Synergy™ is a continually evolving product with the potential to benefit from long-term technological advancements in the field of radiotherapy.

### **References**

1. CancerBACUP website: <http://www.cancerbacup.org.uk/info/what-is-cancer.htm>
2. Cancer Research UK website: <http://www.cancerhelp.org.uk/help/default.asp?page=3586>

**More information about Elekta Synergy™ is available at [www.elekta.com](http://www.elekta.com)**