

## Informed Consent

Informed consent is an important process before the start of radiation therapy. As any cancer treatment involves certain risks, it is important for patients to understand the benefits and risks of the recommended therapy before the initiation of the treatment.

Through the process of informed consent, patients are informed about the purpose of the treatment, the technique or approach to be used, and the outcome and potential adverse effects to be expected.

Patients are usually required to sign a consent form before planning of radiation therapy. Signing the consent form indicates that the patient fully understands the therapeutic process and associated benefits and adverse effects, and agrees to accept the recommended treatment and their consequences. However, if questions or concern about the treatment arise after signing the consent form, patients should not hesitate to direct them to the attending physicians.

## About RTC@NCIS

Established in 1999, the Radiation Therapy Center of the National University Cancer Institute, Singapore (RTC@NCIS) houses state-of-the-art facilities and an internationally-trained team of radiation oncologists, therapists, physicists, nurses and healthcare professionals. Dedicated to providing holistic and specialized care, RTC@NCIS aims to be one of the world's leading comprehensive cancer centres, dedicated to the prevention, management, and cure of cancer.

### Online Resources

**Singapore Cancer Society**  
[www.singaporecancersociety.org.sg](http://www.singaporecancersociety.org.sg)

**American Cancer Society**  
[www.cancer.org](http://www.cancer.org)

**American Society of Clinical Oncology**  
[www.cancer.net](http://www.cancer.net)

**Macmillan Cancer Support**  
[www.macmillan.org.uk](http://www.macmillan.org.uk)

## Contact Information

**National University Cancer Institute, Singapore (NCIS)  
Radiation Therapy Centre (RTC)**  
5 Lower Kent Ridge Road Singapore 119074  
(Kent Ridge Wing, via Linkway on Level 4)

**Opening Hours:** 8:30am – 5:30pm (Mon- Fri)  
(except on Public Holidays)

**For appointments, please contact**  
Tel: (65) 6772 4870/4854 Fax: (65) 6779 4062  
Email: [CancerApptLine@nuhs.edu.sg](mailto:CancerApptLine@nuhs.edu.sg)

**For International Patients and Visitors**  
The International Patient Liaison Centre (IPLC) is a one-stop centre to support all the medical needs of our foreign patients.

Tel: (65) 6779 2777 (24-Hours Helpline) Fax: (65) 6777 8065  
Website: [www.nuh.com.sg/iplc](http://www.nuh.com.sg/iplc)

**National University Cancer Institute, Singapore (NCIS)**  
1E Kent Ridge Road,  
NUHS Tower Block, Level 7, Singapore 119224  
Tel: 6772 4811 Fax: 6872 3137  
Email: [ncis@nuhs.edu.sg](mailto:ncis@nuhs.edu.sg)  
Website: [www.ncis.com.sg](http://www.ncis.com.sg)



**National University Hospital**  
5 Lower Kent Ridge Road, Singapore 119074  
Tel: 6779 5555 Fax: 6779 5678  
Website: [www.nuh.com.sg](http://www.nuh.com.sg)

## Free Shuttle Bus Service

Free Shuttle Bus Service from Dover MRT Station to NUH

**Operation hours** : 8.00 am – 8.30 pm (Mondays – Fridays)  
: 8.00 am – 2.00 pm (Saturdays)  
Not available on Sundays and Public Holidays

**Dover/NUH** : 1. Dover MRT Station (opposite Singapore Polytechnic)  
**passenger pickup/** 2. Main Building, Lobby Entrance (near roundabout)  
**drop off point** 3. Kent Ridge Wing, Level 3, South Entrance

For more information on Shuttle Bus schedule, log on to [www.nuh.com.sg](http://www.nuh.com.sg)

### **NEW!** Circle Line Kent Ridge Station opens on 8 October 2011

Commuters can transit at the Buona Vista MRT Interchange and alight two stops after at the Kent Ridge Station, right at the door step of the NUH's Main Building.  
The NUH Shuttle Bus Service between Dover Station and NUH will cease on 1 Nov 2011.

Information in this brochure is given as a guide only and does not replace medical advice from your doctor. Please seek advice from your doctor if you have any questions related to the surgery, your health or medical condition.

Information is correct at time of printing (Aug 2011) and subjected to revision without notice.

## Radiation Therapy for Lung Cancer



NEW LIFE, NEW HOPE

## What are the types of lung cancer?

- Non-small cell lung cancer (80% of all lung cancer cases)
- Small cell lung cancer

Lung cancer is also divided into 4 stages; the stage refers to how large the cancer is, and whether it has spread to the lymph nodes or elsewhere in the body.

## What are the treatment options?

Treatment depends on the type of lung cancer and the stage of cancer, as well as the general medical condition of the patient.

### *Surgery*

Surgery involves removing part of the lung containing cancer, and is mainly used for early stage non-small cell lung cancer .

### *Chemotherapy*

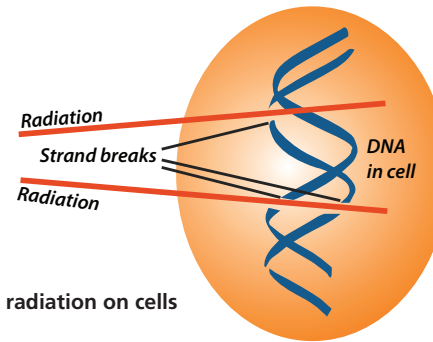
Chemotherapy is the use of drugs in the treatment of non-small cell lung cancer and may also be given in advanced stages to control the spread of tumour. It can also be used in combination with surgery and radiation therapy to improve chances of cure.

### *Radiation Therapy*

Radiation therapy is the use of targeted X-rays to treat cancer. It can be used in early-stage patients who are unable or choose not to undergo surgery, or in advanced disease which cannot be operated on. Radiation therapy can also be used to reduce local symptoms like pain, bleeding, obstruction or cough.

## What is radiation therapy?

Radiation therapy treats cancer by using high-energy X-rays generated from a radiotherapy machine to destroy the cancer cells. It inhibits cancer cells from multiplying by delivering ionizing radiation to destroy cancer cells whilst sparing normal tissues. When these cancer cells die, the body naturally eliminates them. Healthy tissue is then able to repair itself in a way cancer cells cannot, and are hence spared.



Effect of radiation on cells

## What are the types of radiation therapy for lung cancer?

### Three-Dimensional Conformal External Beam Radiation Therapy (3D-CRT)

- 3D-CRT delivers very precise doses of radiation to the lung and spares surrounding normal tissue through a machine called a linear accelerator.
- Before beginning treatment, you will be scheduled for a CT simulation to map out the area being treated.
- At the end of the CT simulation, you may also receive tiny tattoo marks on your skin to help the radiation therapist precisely position you for daily treatment.
- Depending on the stage of your disease, your radiation treatment may treat only the lung, or the nearby lymph nodes as well.
- Treatment sessions span one to seven weeks, Monday to Friday, and lasts approximately ten minutes each time.

### Intensity Modulated Radiation Therapy (IMRT)

- IMRT involves varying (or modulating) the intensity of the radiation being delivered during treatment.
- Compared to 3D-CRT, this technique can deliver more tightly focused radiation beams to cancerous tumours while reducing the amount of radiation to surrounding healthy tissues.

### Stereotactic Body Radiation Therapy (SBRT)

- SBRT is a highly precise form of radiation therapy that allows high doses of radiation to be delivered over a short period of time.
- Treatments are painless and usually last about 30 minutes.
- It is only suitable for small tumours.

## What are the side effects?

### Short-term side effects

- Tiredness
- Cough
- Problems with swallowing
- Skin irritation
- Hair loss

### Long-term side effects

- Fibrosis (hardening) of the lungs
- Narrowing of the oesophagus (swallowing passage)

Many of these side effects can be controlled with medications. Inform your doctor or nurse if you are experiencing any discomfort so they can help you feel better.

## Clinical Trials

Clinical trials are research studies exploring new ways to improve treatment for cancer patients. Today's radiation treatments are the result of clinical trials completed years ago proving that radiation therapy kills cancer cells and is safe long term. For more information on clinical trials, please visit: [www.ncis.com.sg](http://www.ncis.com.sg)

