

Cancer and Radiation Therapy

WHAT IS CANCER?

Cancer is a disease of the body's cells. Healthy cells of the body grow in predictable patterns. As they wear out, they are replaced in an orderly manner by just the right number of new healthy cells. Cancer occurs when abnormal cells in the body multiply at an uncontrollable rate. These cancerous cells grow at such speed that your body cannot properly deal with them, and can form a lump or tumour.

There are many different types of cancers. What type of cancer you have depends on the area of the body that the abnormal cells are from. Each type of cancer has its own characteristics.

Metastases occur when some of the cancer cells detach themselves from the tumour and move, via the bloodstream or lymphatic system, to other parts of the body where they begin to form further tumours.



WHAT IS RADIATION THERAPY?

Radiation therapy or radiotherapy is the delivery of high energy x-ray beams to an area of the body. Radiation therapy kills cancer cells but can also damage normal cells in the treatment area. It is therefore important that the radiation therapy is carefully planned to ensure that the area needing treatment receives adequate radiation, while minimising the radiation dose to surrounding areas.

The radiation used is more powerful than that used for diagnostic tests like chest, bone and dental x-rays. Radiation therapy requires the generation of millions of volts of energy and lasts for parts of a minute, whereas x-rays require thousands of volts and last for a fraction of a second.

The type of radiation that will be used for your treatment depends on many factors – including the type of cancer you have and the size, shape and position of your cancer. The strength and penetration of the radiation beam can be varied to provide the best treatment for each individual.

For some types of cancer, radiation therapy is the only treatment given, but it can be used in conjunction with other forms of treatment such as surgery or chemotherapy.

HOW DOES RADIATION THERAPY WORK?

Radiation therapy works by damaging cancer cells when they divide. Normal cells suffer from radiation damage as well, but not to the same extent, and the damage can be repaired more easily. Radiation therapy is used in such a way as to maximize cancer cell damage without producing excessive damage to normal cells. Treatment is usually given once a day over a period of weeks – excluding weekends. By spreading the treatment out over time, greater effect is had on the cancerous cells as they are in a different stage of the cell cycle at each appointment. The break before the next treatment gives normal cells a chance to repair. Each treatment course is designed for the individual and can vary in length from days to weeks.