**CYBERKNIFE - TECHNOLOGY OVERVIEW (time: 1.08 – 2.07)**

CyberKnife System brings the benefits of radiosurgery to the treatment of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ anywhere in the body.

CyberKnife provides pain-free, non-surgical alternative for patients who have been diagnosed with surgically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or complex tumours.

The CyberKnife System uses continual image \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and computer-controlled robotics to precisely deliver high dose of radiation beams.

The beams are delivered from virtually any direction with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ accuracy.

CyberKnife treatments are done on an \_\_\_\_\_\_\_\_\_\_\_\_\_\_ basis.

CyberKnife minimizes damage to surrounding healthy \_\_\_\_\_\_\_\_\_\_\_\_\_ and nearby sensitive structures.

**KEY DIFFERENTIATORS: T/F statements (time: 2.08 – 4.22)**

Unlike conventional radiation therapy it delivers low dose radiation in one to five treatments.

The CyberKnife System can’t be used as an alternative to surgery.

The system images continually throughout the treatment and automatically corrects treatment delivery for even the slightest tumour, or patient movement.

CyberKnife treatments require local anaesthesia and stabilizing frames.

In case of a lung tumour which moves with respiration, in conventional radiation you can’t damage the surrounding normal lung.

The CyberKnife delivers radiation beams at multiple different angles.

**HOW THE CYBERKNIFE SYSTEM WORKS (time: 4.24 – 5.30)**

Prior to treatment the patient is imaged using \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ CT scan to determine the size, shape and location of the tumour.

Thanks to the imaged data, the treating physician identifies the tumour to be targeted and the surrounding \_\_\_\_\_\_\_\_\_\_\_\_\_\_ structures to be spared.

The CyberKnife \_\_\_\_\_\_\_\_\_\_\_\_\_\_ then generates a treatment plan to provide the desired radiation dose to the identified tumour location.

The treatment generally lasts between \_\_\_\_\_\_\_\_\_\_\_\_\_ and ninety minutes.

Prior to the delivery of each beam of radiation, the CyberKnife System \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ takes a pair of X-ray images and compares them to the original CT scan.

The CyberKnife treatment is very precise thanks to the image-guided \_\_\_\_\_\_\_\_\_\_\_\_\_\_ which tracks, detects and makes adjustments for any movement of the patient and tumour throughout the treatment.