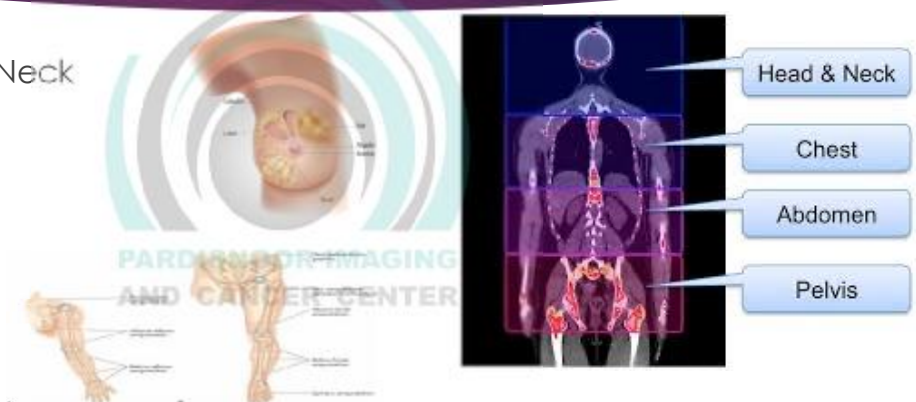


# Pelvic cancer treatment with advanced radiation technique

PARDISNOOR IMAGING AND CANCER CENTER  
RADIATION TECHNICIAN PERSPECTIVE  
NEDA MAL ANDISH (RTT)

## Major sites

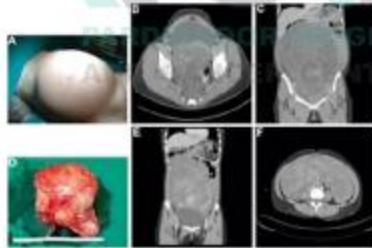
1. Head and Neck
2. Thorax
3. Breast
4. Abdomen
5. Pelvis
6. Extremities



The slide features two anatomical diagrams. On the left, a diagram of the human torso shows the head, neck, chest, and abdomen. On the right, a diagram of the human body shows the head, neck, chest, abdomen, and pelvis. Labels with arrows point to these areas: 'Head & Neck', 'Chest', 'Abdomen', and 'Pelvis'. The text 'PARDISNOOR IMAGING AND CANCER CENTER' is visible in the background of the diagrams.

# Pelvis Cancer

- ▶ Pelvic cancer refers to a variety of cancers involving the structures and organs in the pelvis.
- ▶ Your pelvic area is the lower portion of the trunk of your body
- ▶ It contains the pelvic bones, bladder, rectum, and reproductive organs.

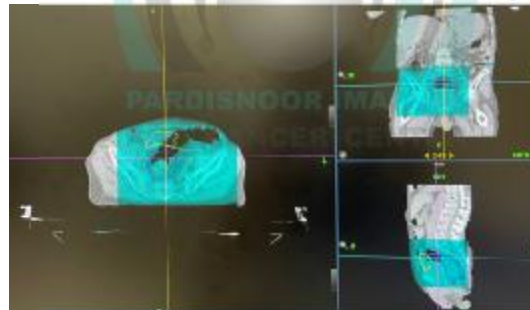


- ▶ IGRT: Image guided radiotherapy: gives a better idea that what we are doing
1. EPID (electronic portal imaging device) → 2D
  2. CT



## What do we do

- ▶ We take CT image from the patient at the first of every single fraction of treatment then we compare it with our CT simulation image. it have advantages and disadvantages for us.




## Daily Images and Registration Results


- ▶ Images were performed daily
- ▶ Registration is appropriate Daily shifts and X/Y/Z couch position For first fraction, it is common for oncologist to check daily MVCT registration results while patient is still on table
- ▶ More frequent checks for special cases or changing anatomy Oncologist may review screenshots for subsequent fractions; review image on TDC if discrepancy is seen.




Review Registration task on TDC home screen



- ▶ The most important problems in radiation therapy are:
  1. Internal organ motion/variability
  2. External movements




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## Motion or Variability?

- ▶ Motion:lungs,heart,gastic,colon
- ▶ Variability:prostate,bladder,rectum



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## Internal movements/variabilities

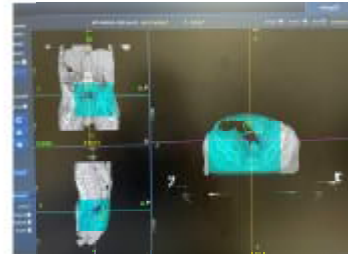
1. Bladder
2. Rectum
3. prostate
4. Head of femur

The preparations of bladder and rectum are based on protocols.


Bladder: the patient drinks certain amount of water before CT simulation and the patient should do this every fraction before treatment.

Rectum: empty


Head of femur: using knee rest and foot rest



- ▶ Despite using of IGRT, Markering and tattooing on CT simulation are still important.
- ▶ With right marking on CT simulation we can control the external movements of the patient (pitch, roll, yaw) and also it can help us to make the patient lie straight on the couch.



► For treating the patient on linac we usually use 3 markers(1 symphysis pubis and 2 on lateral sides)but for treating the same case on tomotherapy we use 6 markers(1 symphysis pubis,2 lateral sides,1 xiphoid and 2 lateral sides)



► Reducing external movements:

1. Markers
2. Reproducibility
3. Relaxing
4. Fixation

