



WELCOME TO THIS EMS ECHO SESSION

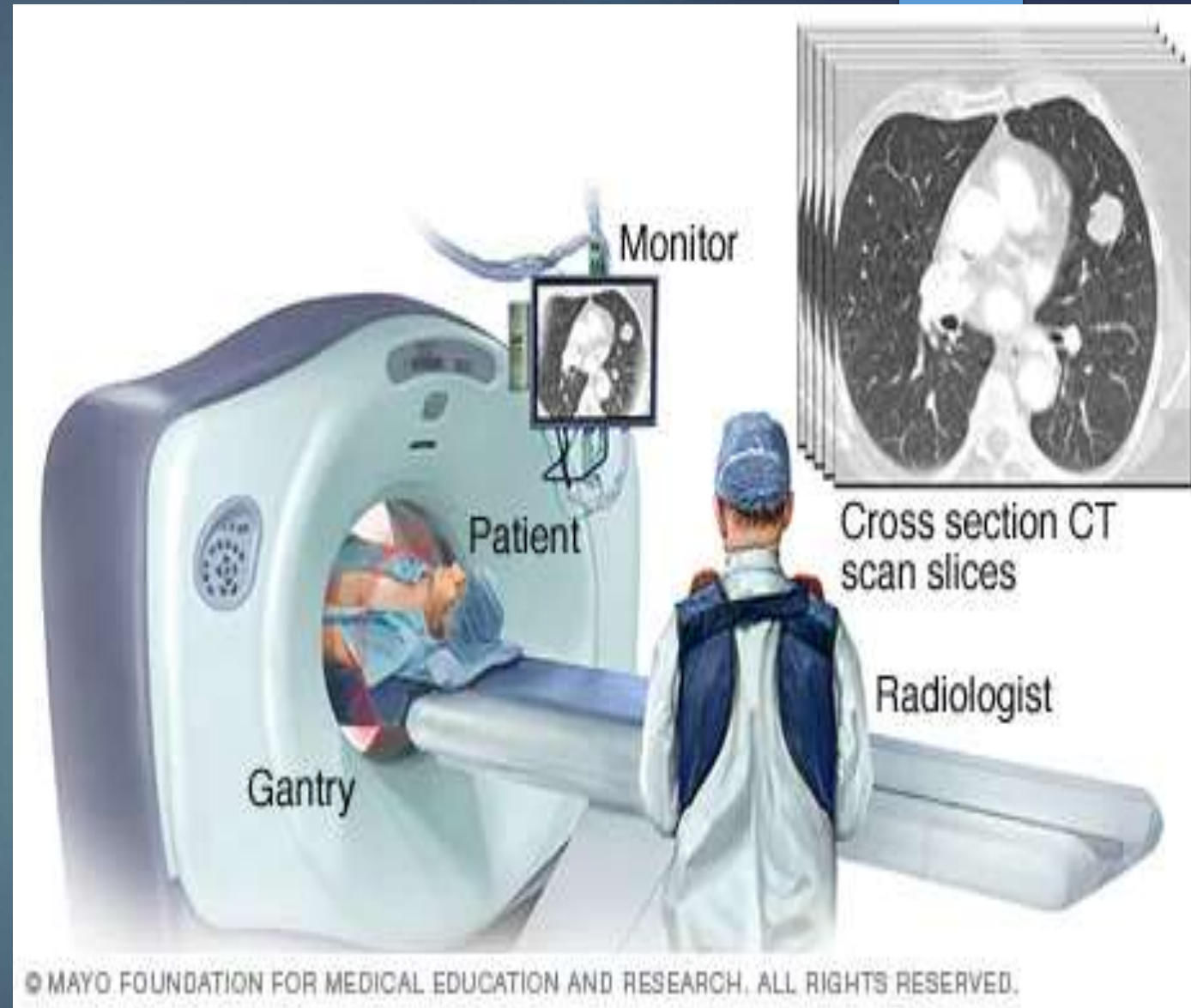
CT Scan



CHEST AND ABDOMINAL CT (COMPUTER TOMOGRAPHY)

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What is a CT scan?

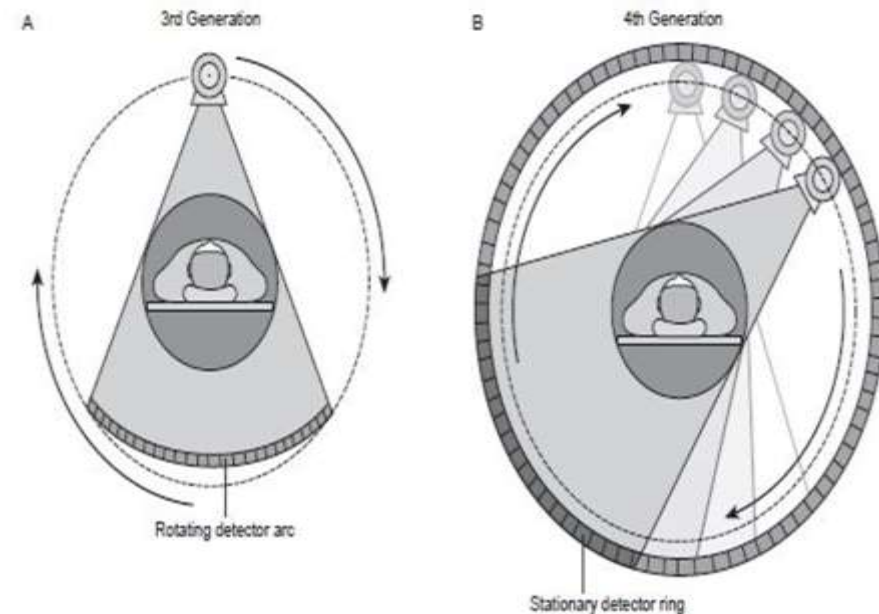
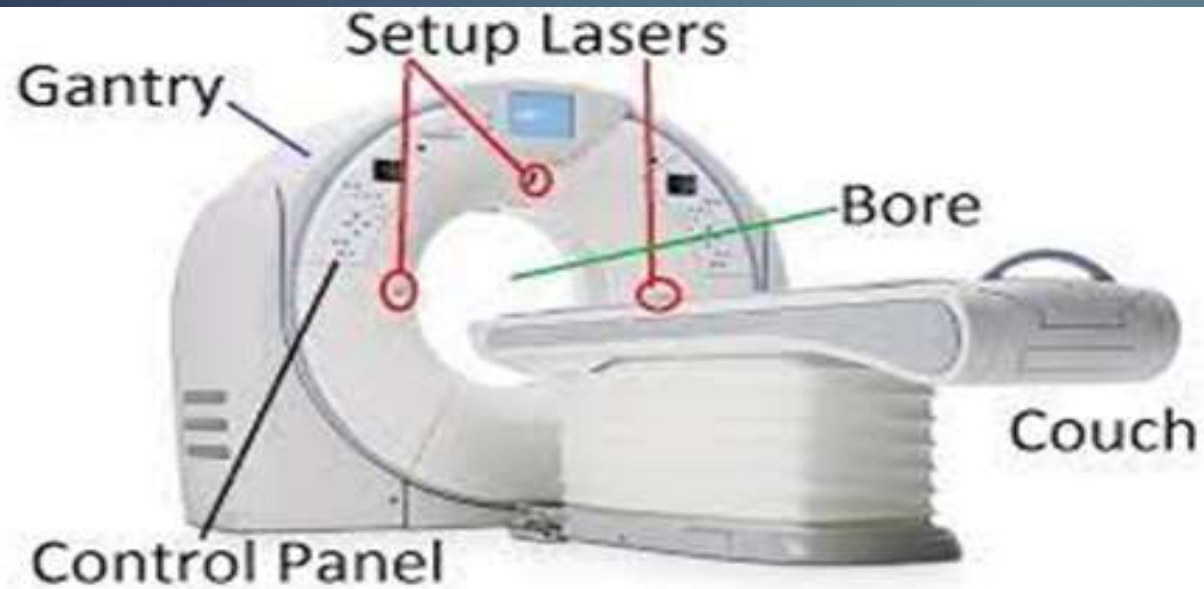


CT scan (computer tomography) is a radiological non invasive imaging technique that uses ionizing radiation(x.rays)to obtain patients information by taking multiple slices of the body tissue.

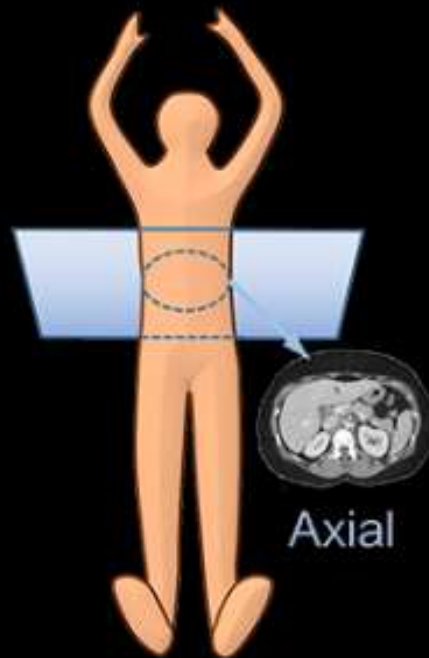
The machine used is called a CT scanner

- ▶ Given advancements in CT scanner models from 4-10,16 slice to lately going upto 128 slices.The quality and safety of CT examinations has increased.
- ▶ To reduce the radiation dose yet achieve adequate diagnostic information , it is important to apply different techniques with the scanner provided. E.g choice of slice thickness,patient preparation e.tc.

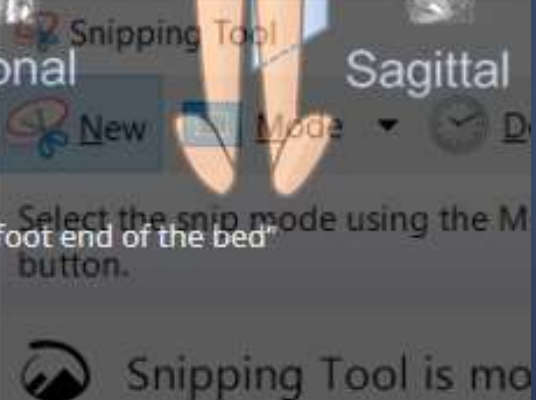
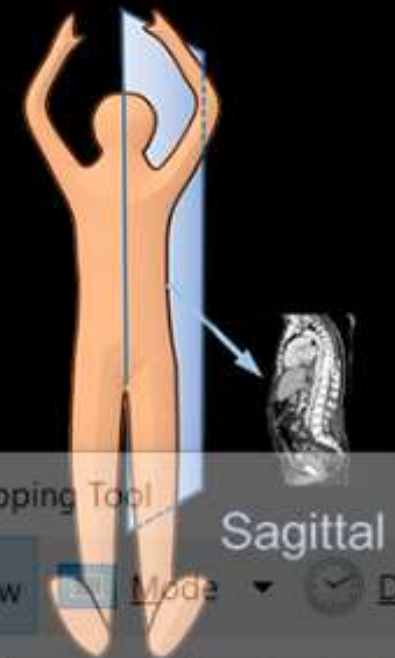
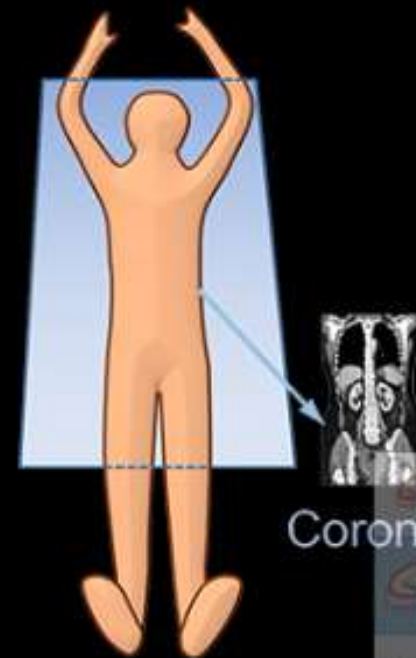
Parts of a CT scanner.



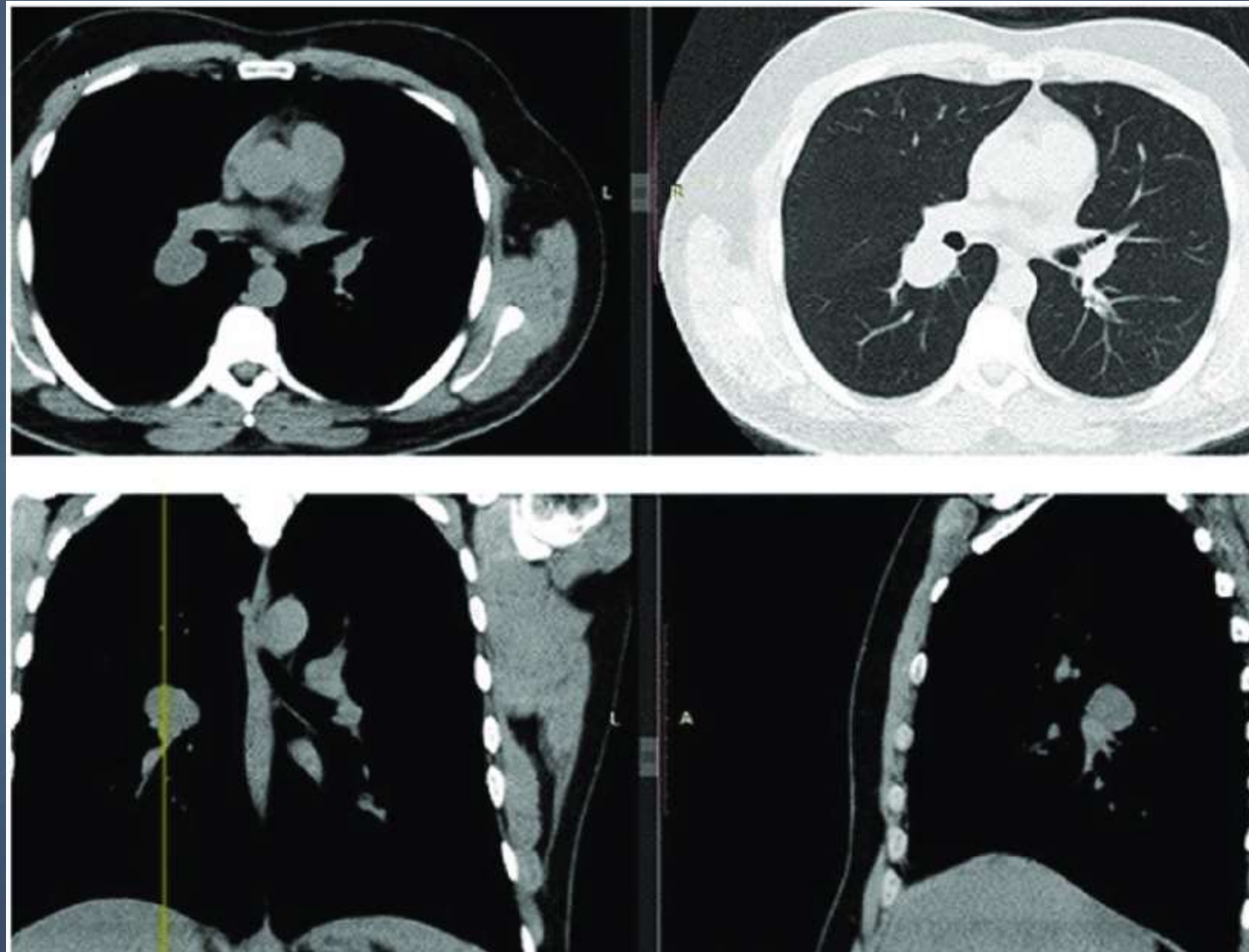
PLANES



Axial slices: "as if looking at patient from the foot end of the bed"



PLANES



INDICATIONS AND CONTRAINDICATION FOR A CHEST CT SCAN

INDICATIONS

- ▶ Trauma
- ▶ Thoracic pain
- ▶ Pneumonia
- ▶ Tuberculosis
- ▶ Dyspnea
- ▶ Check up
- ▶ Cardiac pathologies
- ▶ Anatomical abnormalities

CONTRAINDICATIONS



- Most of the chest CT scans can be done without contrast enhancement except if in need to access the vascular system and pleural disease. So most of the contra- indications except pregnancy are stated in regards to if contrast is to be administered. E.g
 - ▶ Renal failure
 - ▶ Diabetic patients on metformin
 - ▶ Asthmatics
 - ▶ Allergies
 - ▶ fresh trauma patient.

INDICATIONS AND CONTRAINDICATION FOR ABDOMINAL CT SCAN

INDICATIONS

- ▶ Staging of malignant disease
- ▶ Diagnosis of diffuse hepatic disease
- ▶ Assessment of biliary disease and tumor
- ▶ Congenital anomalies
- ▶ assessment of suspected post traumatic injuries.
- ▶ Assessment of equivocal(inconclusive) imaging findings.

CONTRA-INDICATIONS

- ▶ Clear indication for exploratory laparotomy.
- ▶ Hemodynamic instability e.g HTN
- ▶ Allergy to contrast media.
- ▶ Renal failure
- ▶ Pregnancy.

Patient preparation for chest /abdominal CT scan.



- ▶ Informed consent
- ▶ Patient to fast for at least 4hrs before examination if contrast is to be given.
- ▶ Remove all metallic accessories, ring ,eyeglasses change into hospital clothing to avoid unsuitable personal cloth material .
- ▶ Inquire about ,pregnant, allergies, asthma, cardiac and other medical concerns.
- ▶ Adequate hydration pre and post contrast enhanced exam.

DIFFERENCIAS BETWEEN CONTRASTED AND NON CONTRASTED CT SCAN

Contrasted

- ▶ Gives more resolution of tissues examined
- ▶ Good evaluation of vascularity
- ▶ Needs patient fasting
- ▶ Not friendly to renal function impaired patients.

Non contrasted

- ▶ Less detail got
- ▶ Gives less detail in regards to vascularity.
- ▶ No fasting need.
- ▶ Friendly/safe in renal impaired patients.

COMMON CONTRAST USED IN CHEST AND ABDOMINAL CT SCAN

Contrast

► Ultravi 370

► Iopamidol(370 and 350)

advantages

- Non ionic (water soluble)
- -high resolution(high affinity)
- Fair price

(But gives more patient reaction as compared to others.)

- Gives less patient reaction
- good resolution
- low osmolar.

Cont.....



- ▶ Omipaque 350

- ▶ Gives low patient reaction
- ▶ Fair resolution
- ▶ -cheapest
- ▶ Low osmolar

- ▶ Vizipaque 320

- ▶ Least toxic effect
- ▶ -Safe even in renal impaired patients
- ▶ -safe even in children

(However it's the most expensive)



*thank you.
A. Evelyn*

