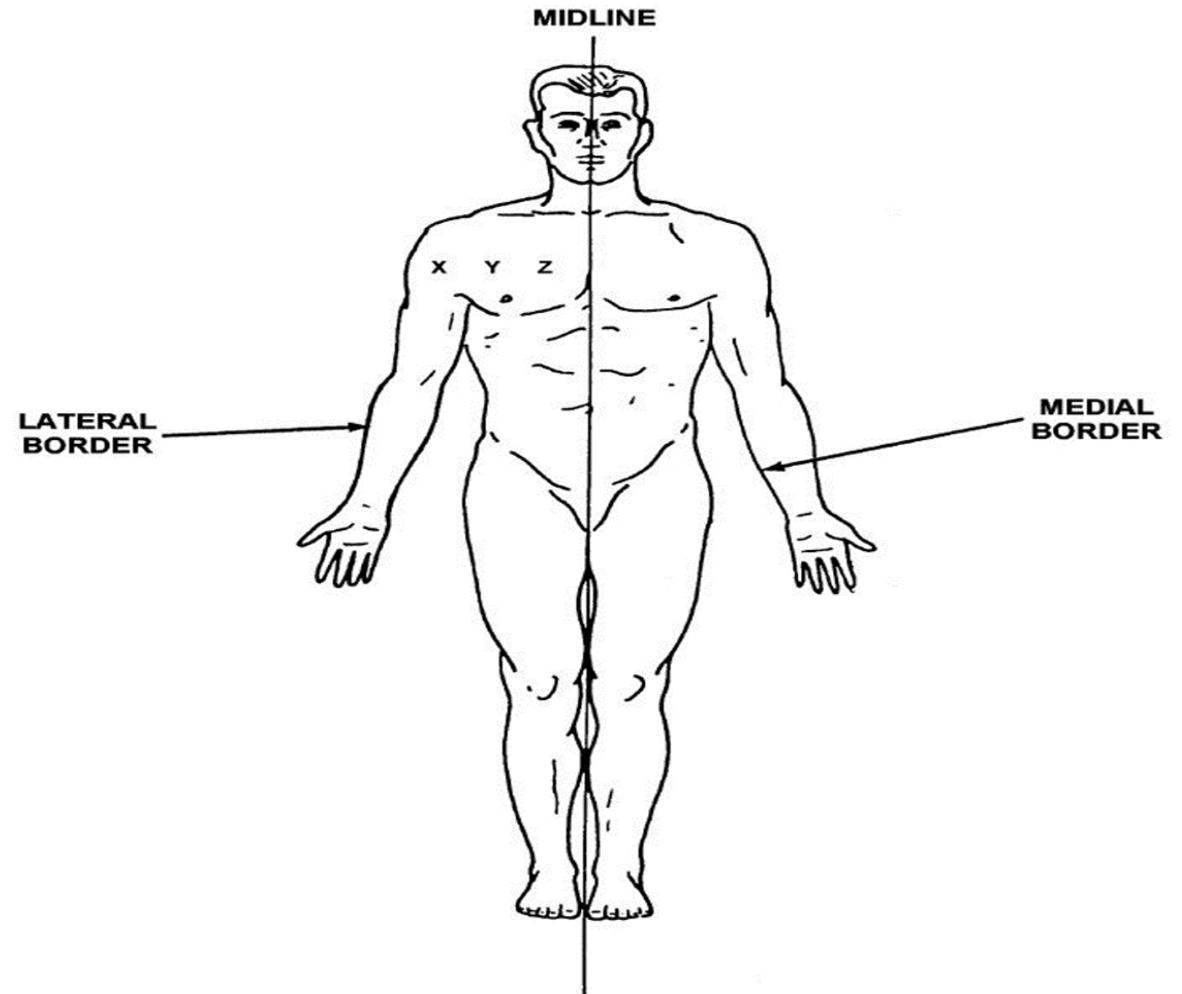


INTRODUCTION TO SECTIONAL ANATOMY

CHAPTER 1

ANATOMICAL POSITION

- Body erect
- Legs are straight
 - Toes facing forward
- Arms at the sides
 - Palms facing forward
 - Thumbs laterally

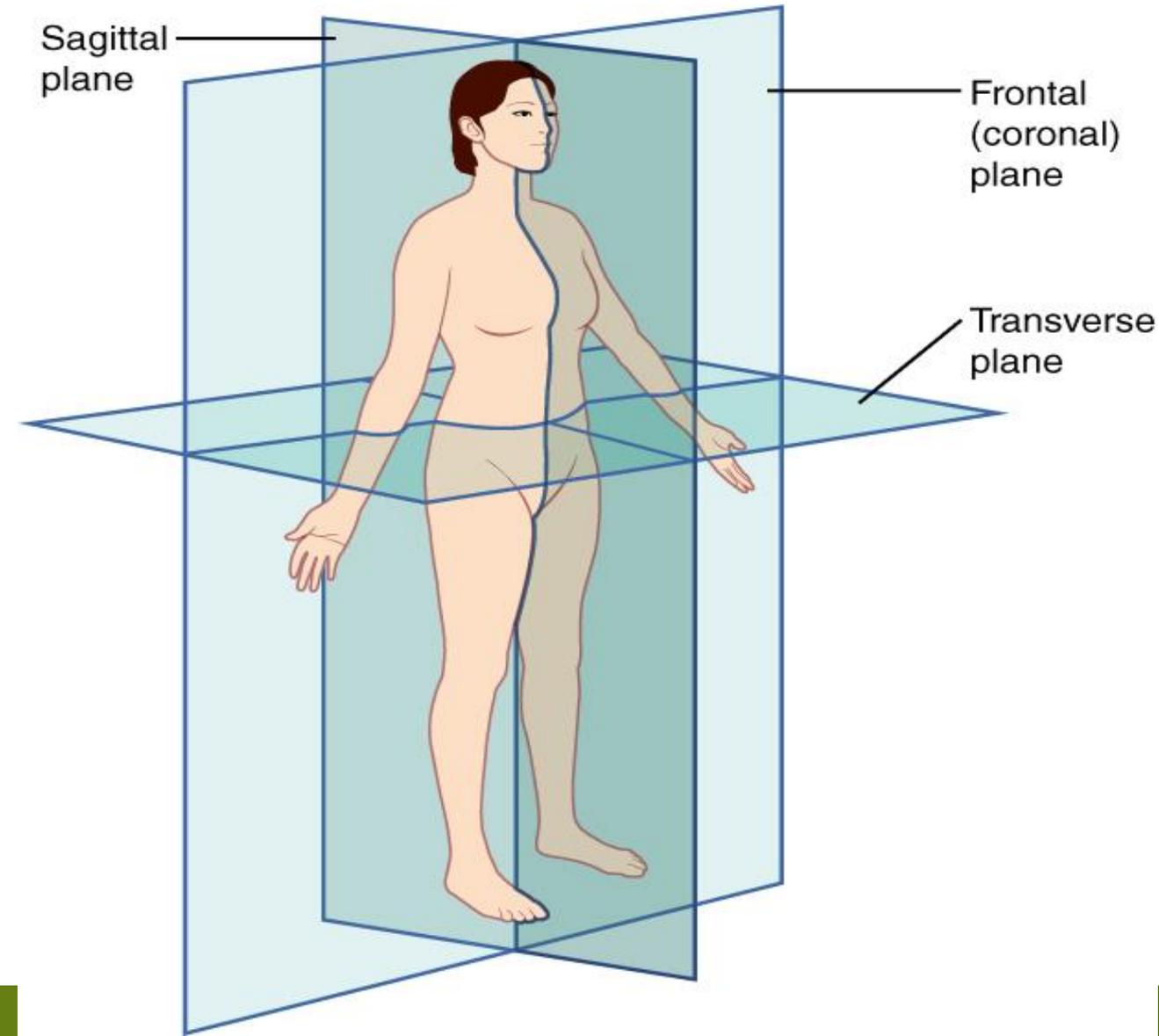


**X is lateral to Y and Z; Y is medial to X and lateral to Z
In the example shown, the body is in the normal anatomical position.**

BODY PLANES

- Imaginary lines drawn through the body to separate the body into sections
 - Used as reference points
 - Vertically and horizontally divisions

SAGITTAL PLANE



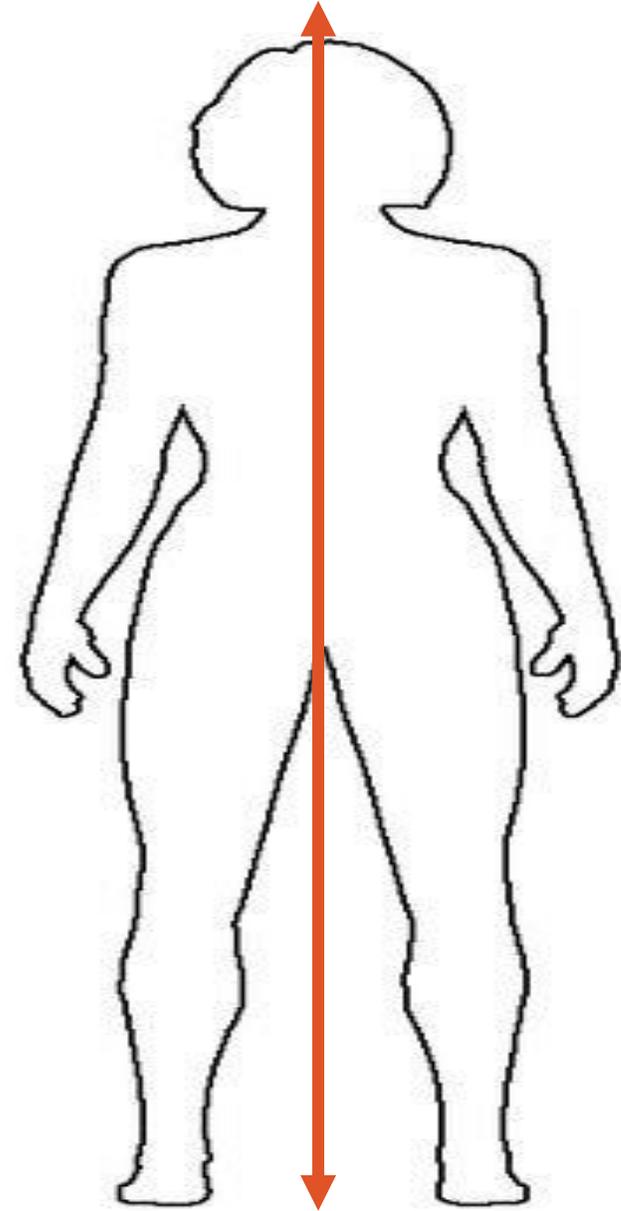
- Vertical plane
- Divides body into Right and Left

SAGITTAL VIEW OF IVC

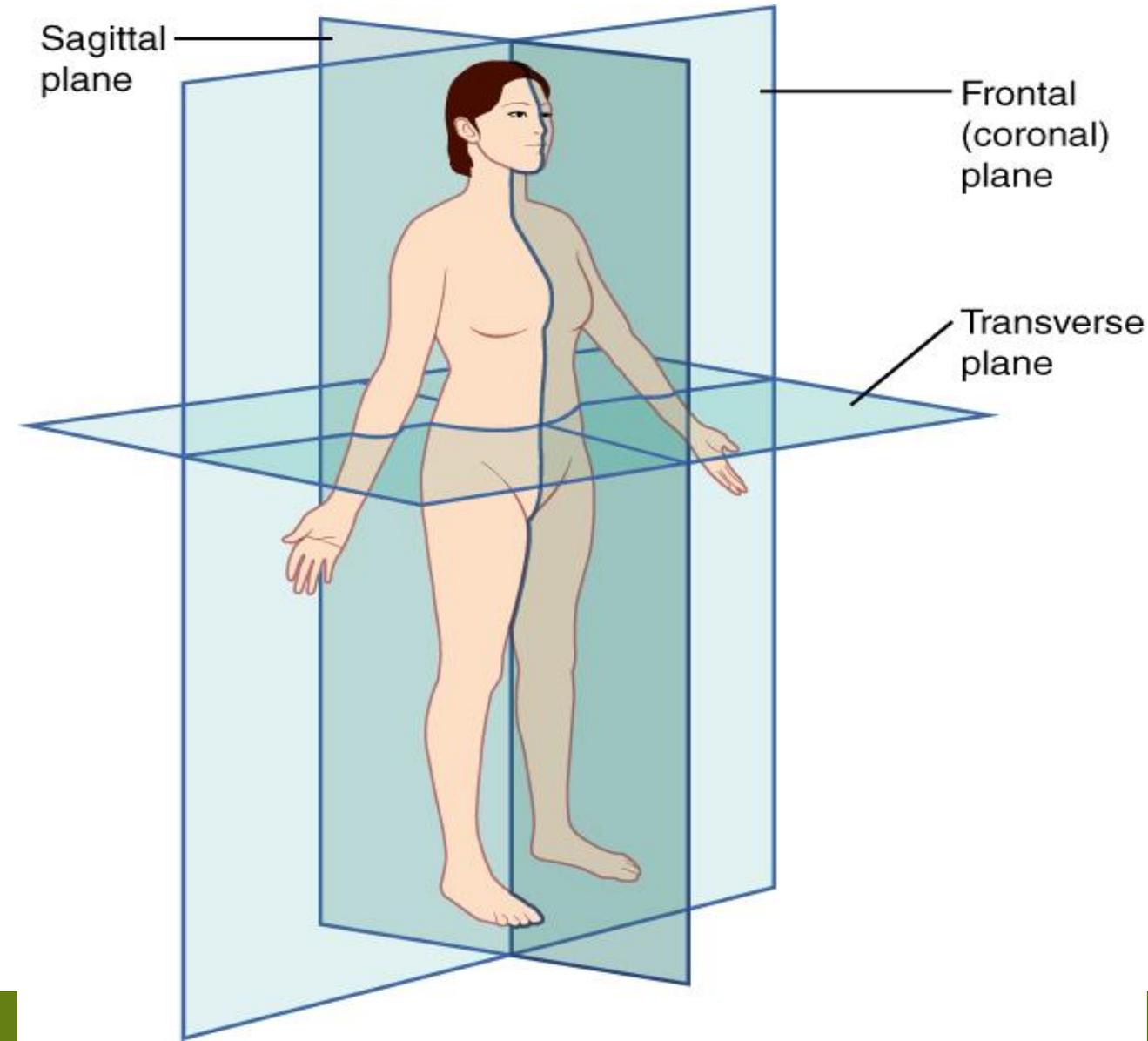


MID-SAGITTAL PLANE

- Vertical Plane
- Divides the body into equal halves
 - “Median” Plane



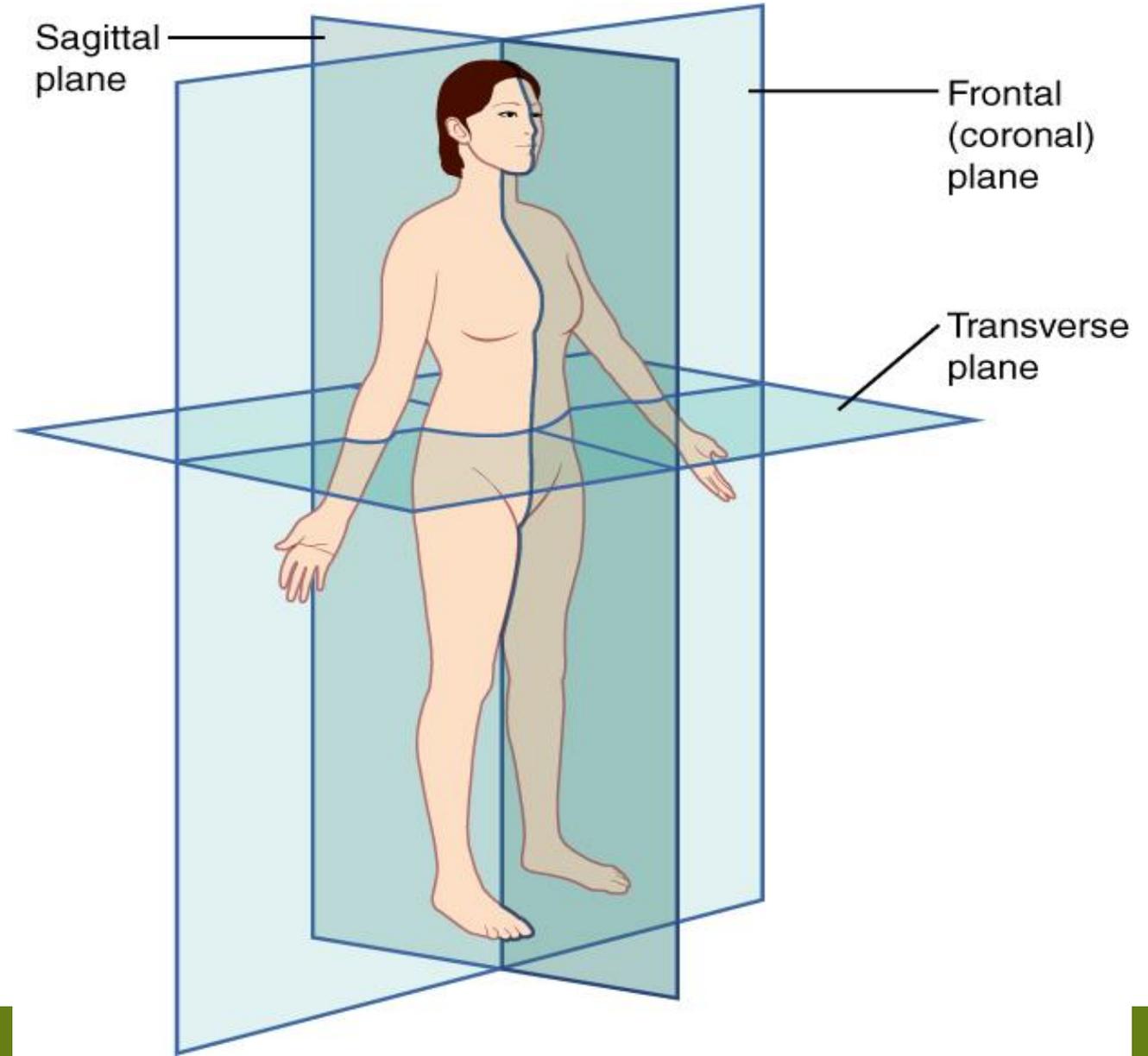
CORONAL PLANE



- Vertical Plane
- Divides body into Anterior and Posterior
 - “Frontal” Plane

TRANSVERSE PLANE

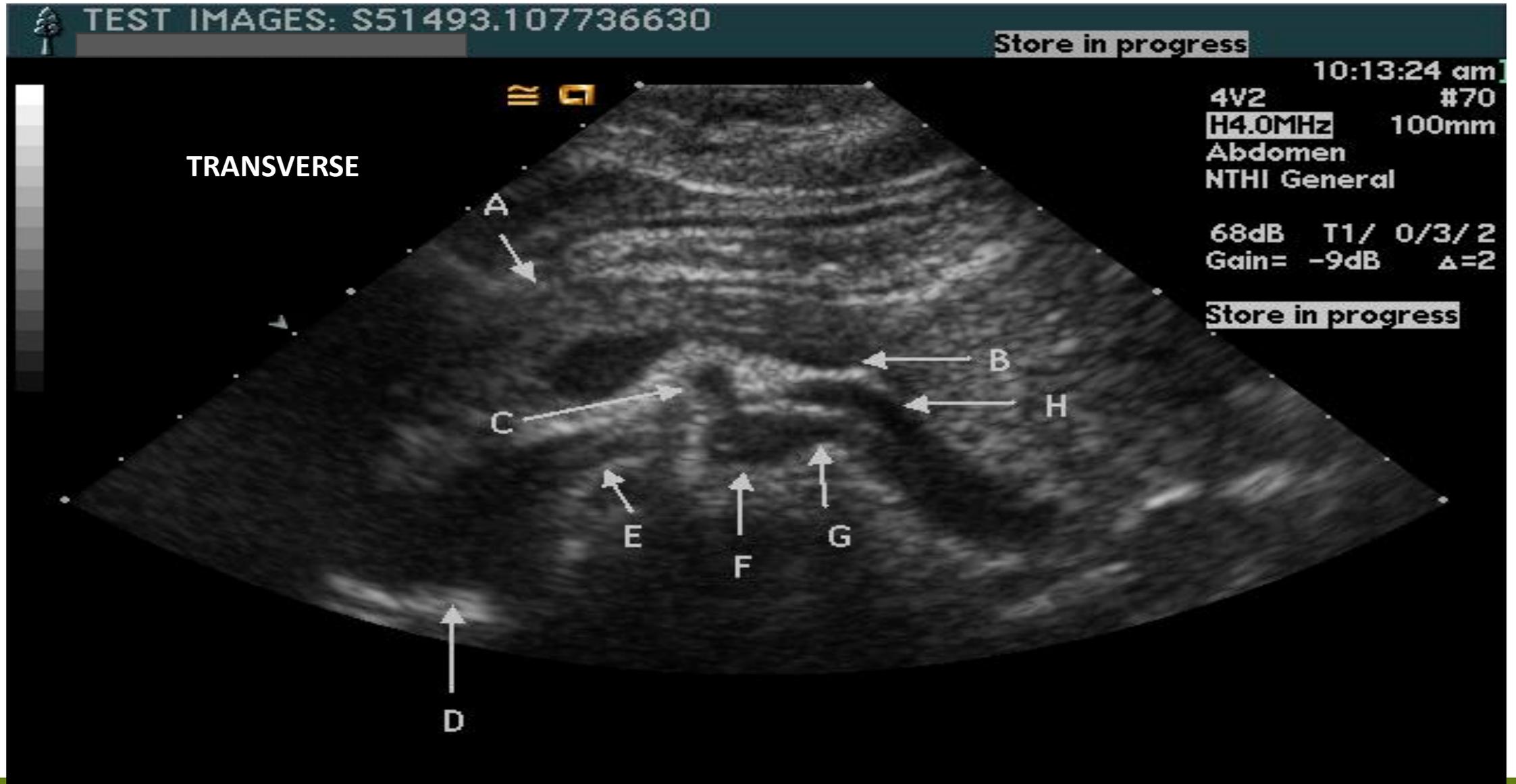
- Horizontal Plane
- Divides body into Superior and Inferior
 - “Axial” Plane



TRANSVERSE ABDOMINAL CT

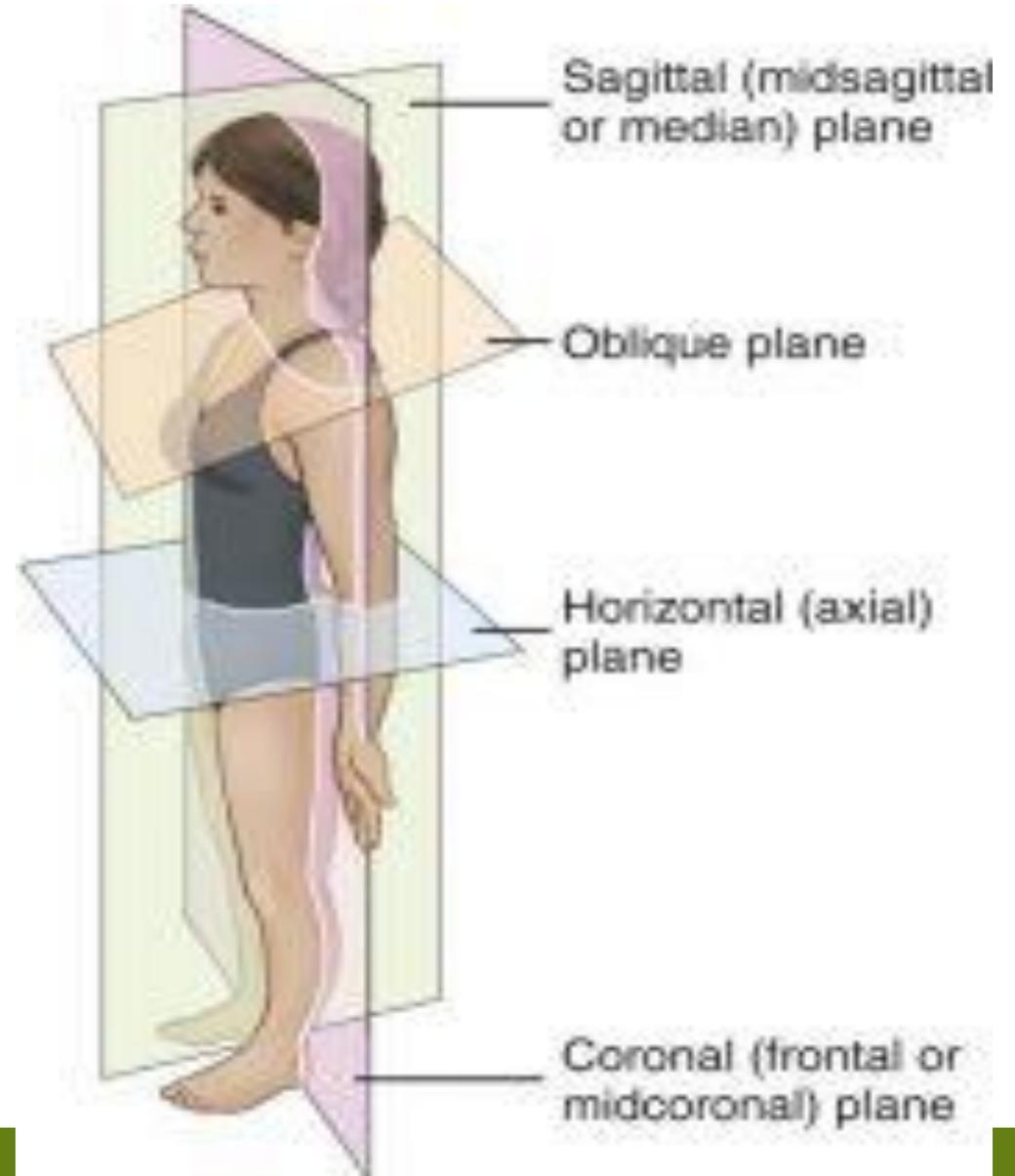


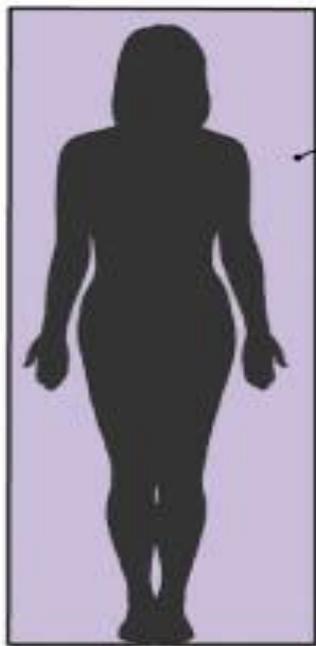
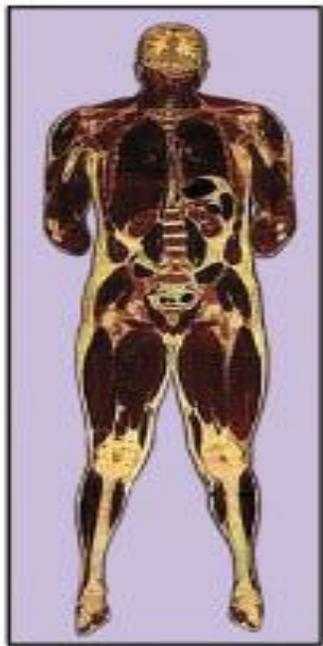
TRANSVERSE ABDOMINAL US



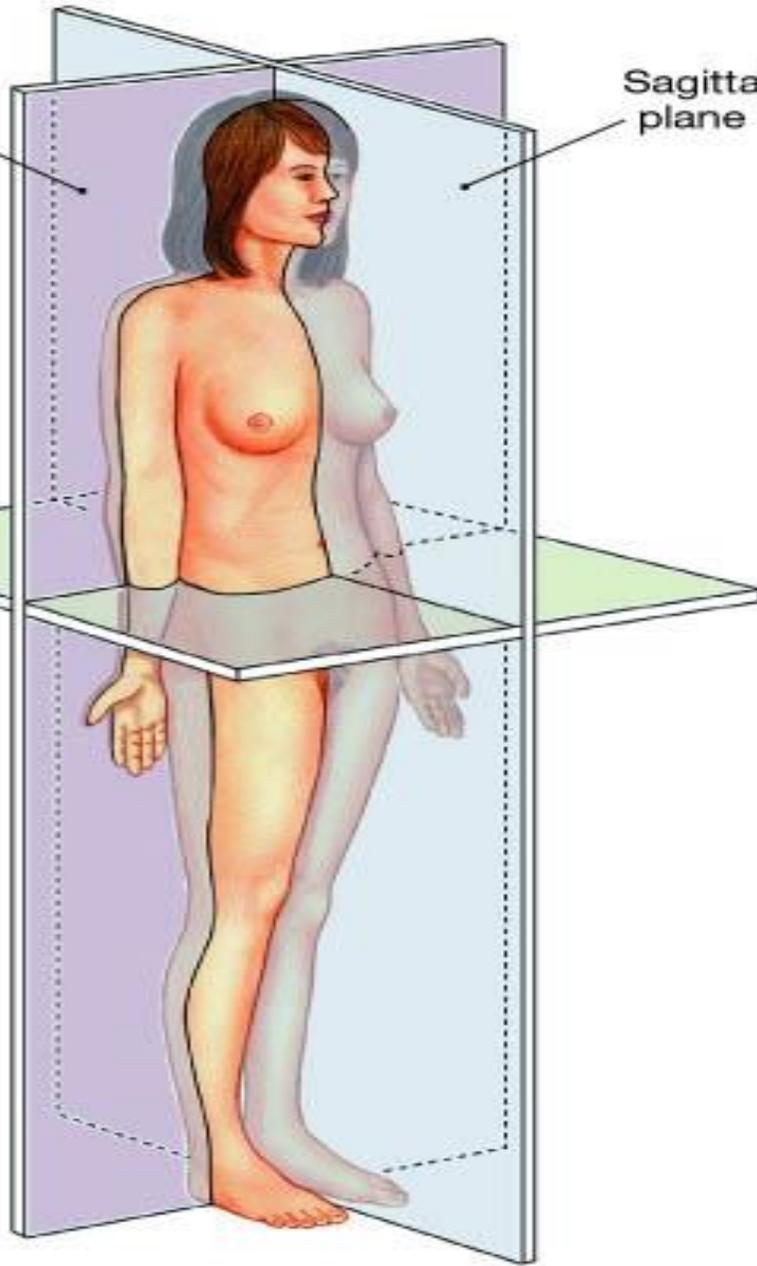
OBLIQUE PLANE

- Diagonal plane
- Between the axes of two other planes

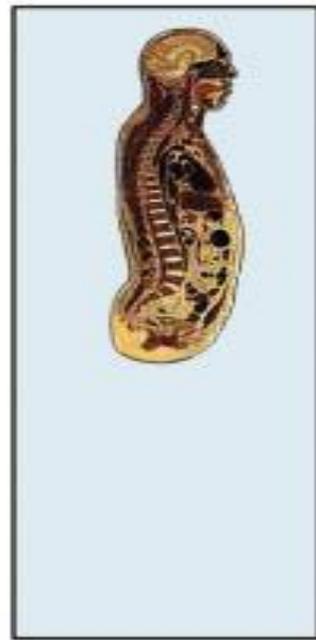
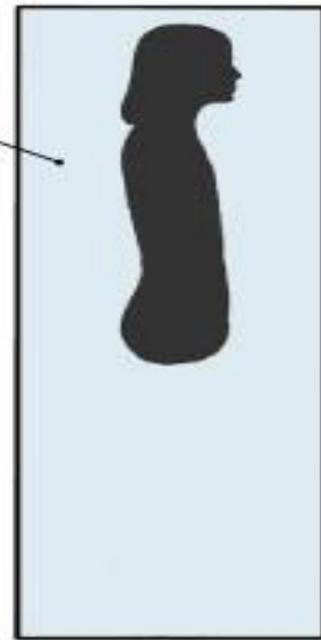




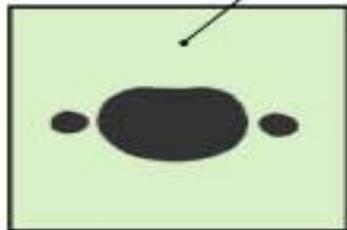
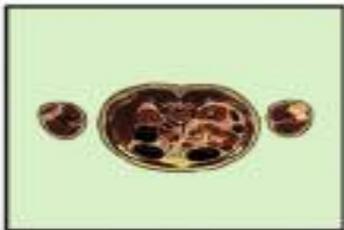
Frontal plane



Sagittal plane



Transverse plane

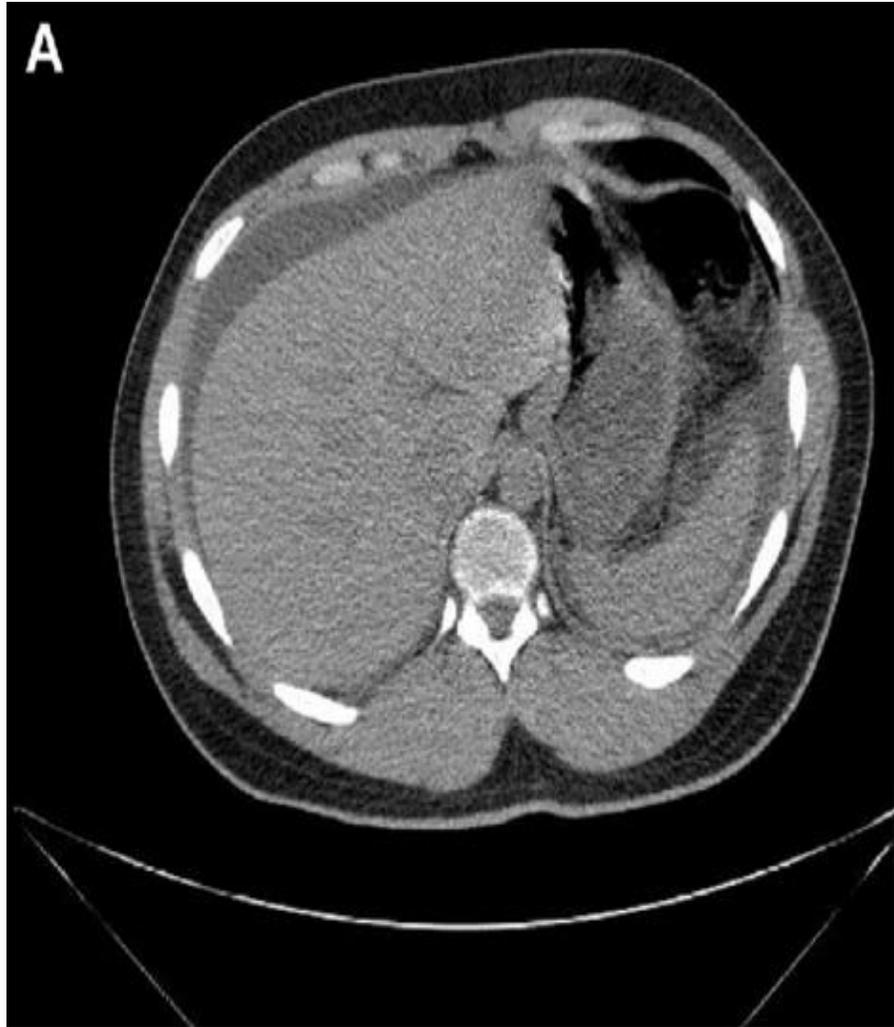


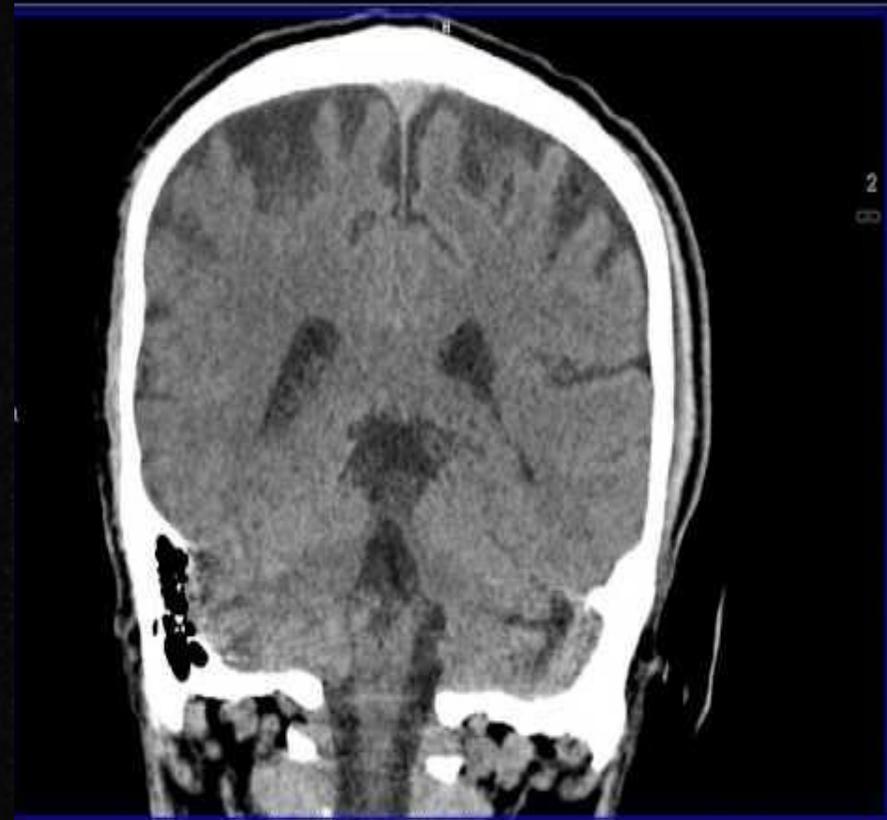
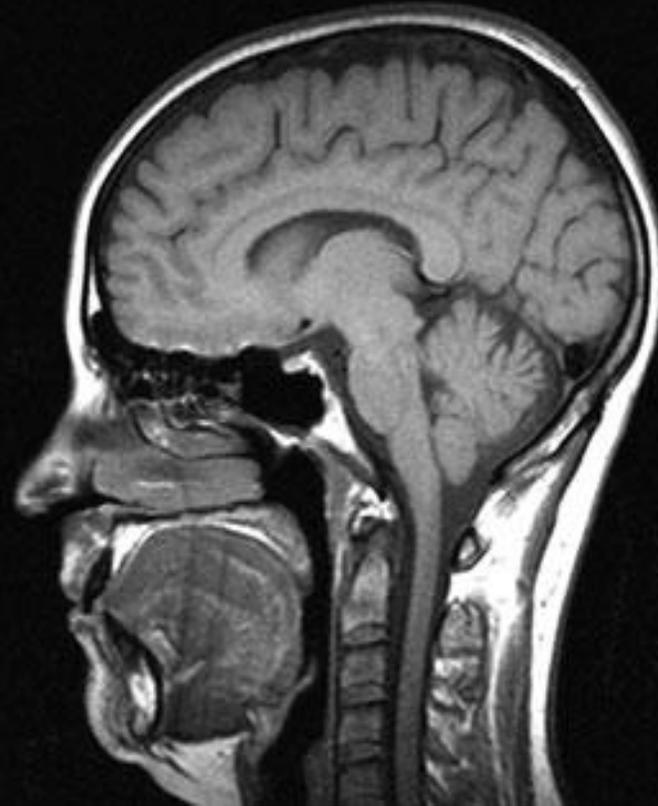
WHY WE TAKE MORE THAN ONE VIEW!!



WHY WE TAKE MORE THAN ONE VIEW!!





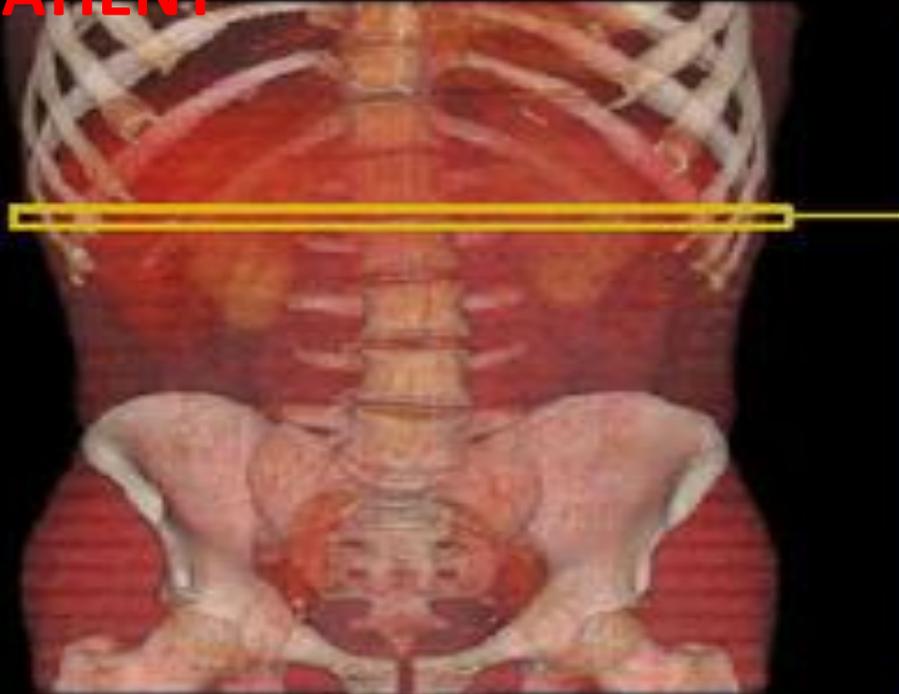


- Medical Images of Sectional Anatomy

- Right side of image corresponds to viewer's left side

Anatomy of Abdomen (CT)

RIGHT
SIDE OF
PATIENT



RIGHT
SIDE OF
PATIENT



LEFT
SIDE OF
PATIENT



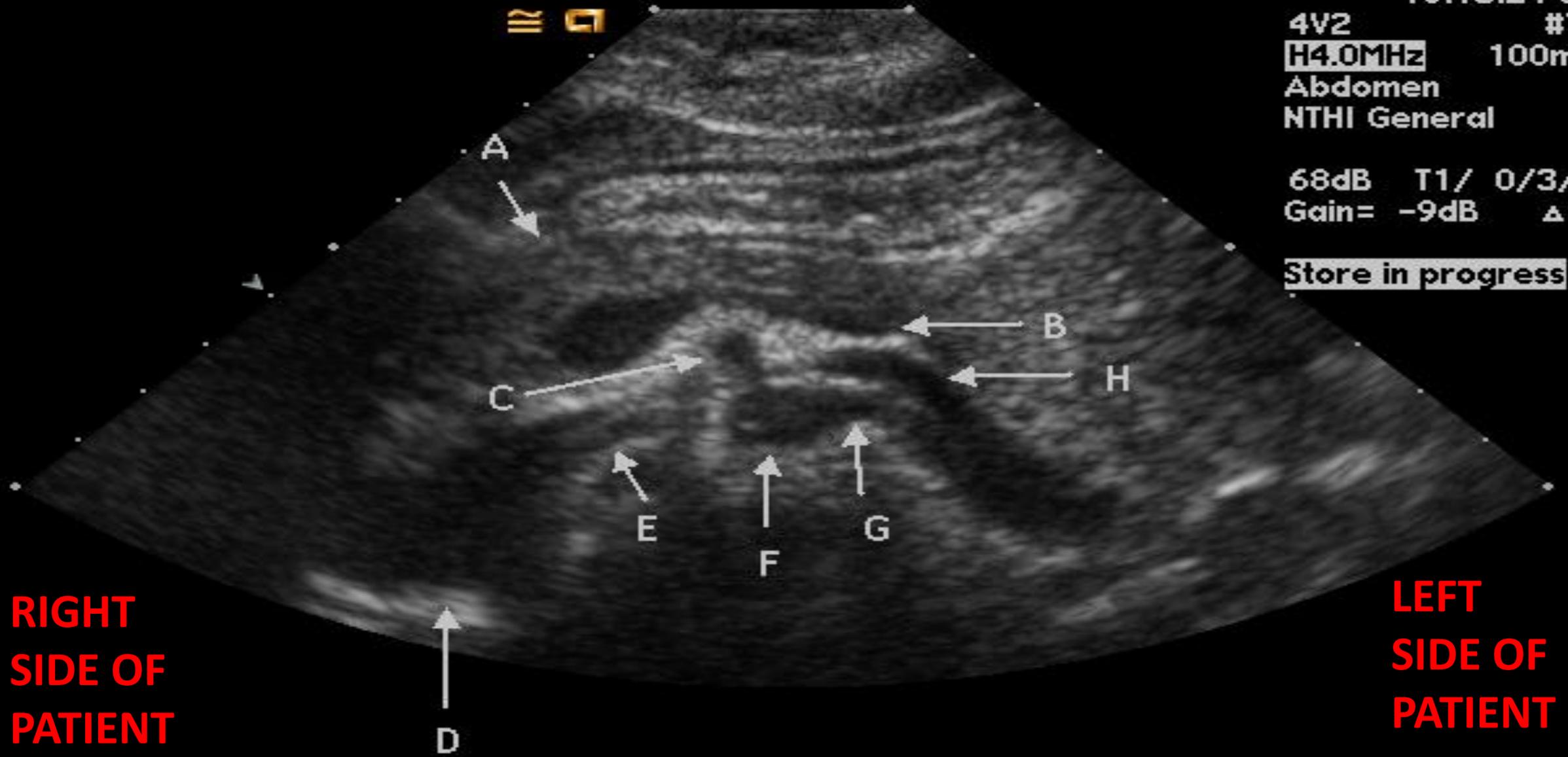
Please wait... Loading (10 Mb)



4V2 #70
H4.0MHz 100mm
Abdomen
NTHI General

68dB T1/ 0/3/ 2
Gain= -9dB Δ=2

Store in progress



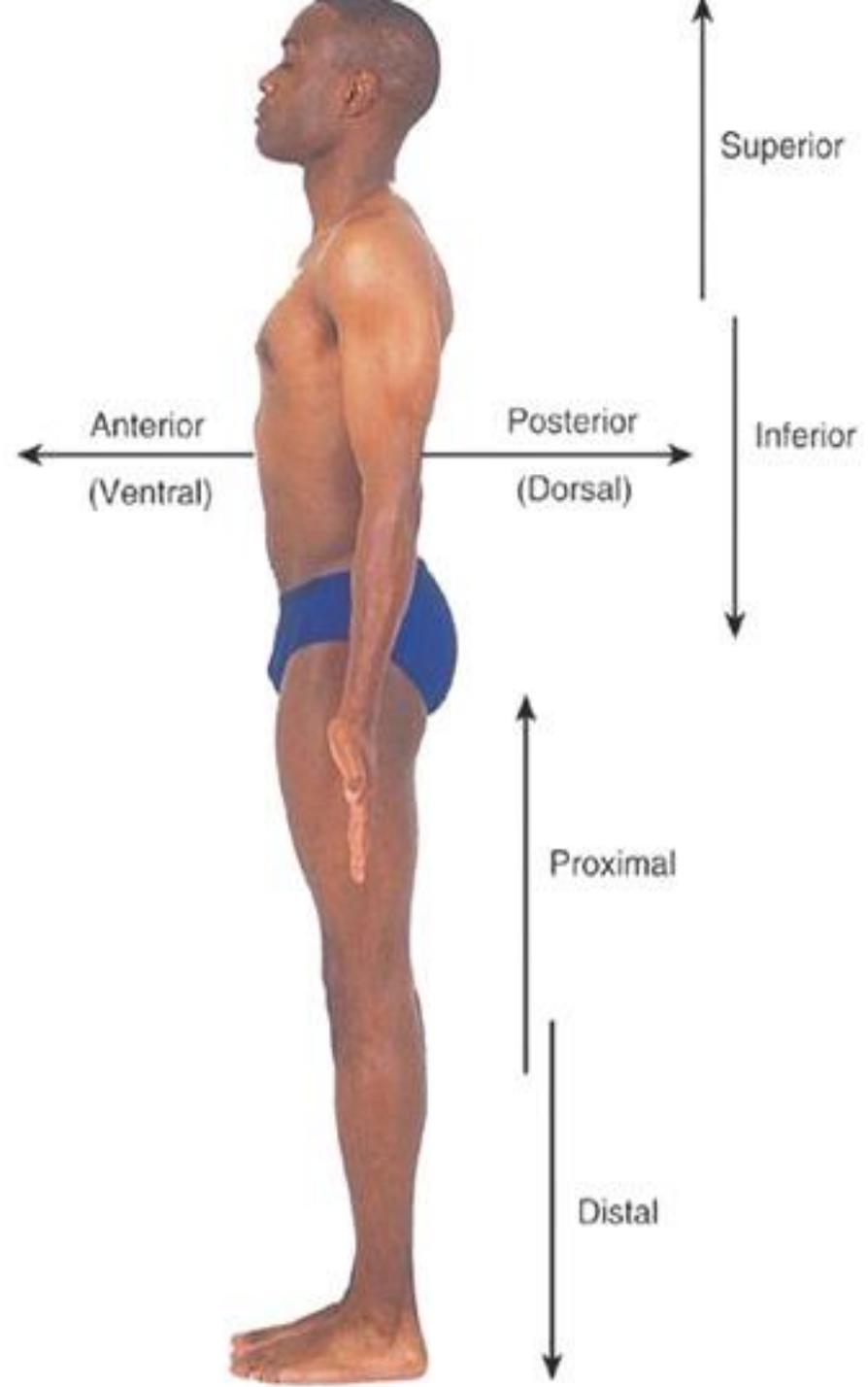
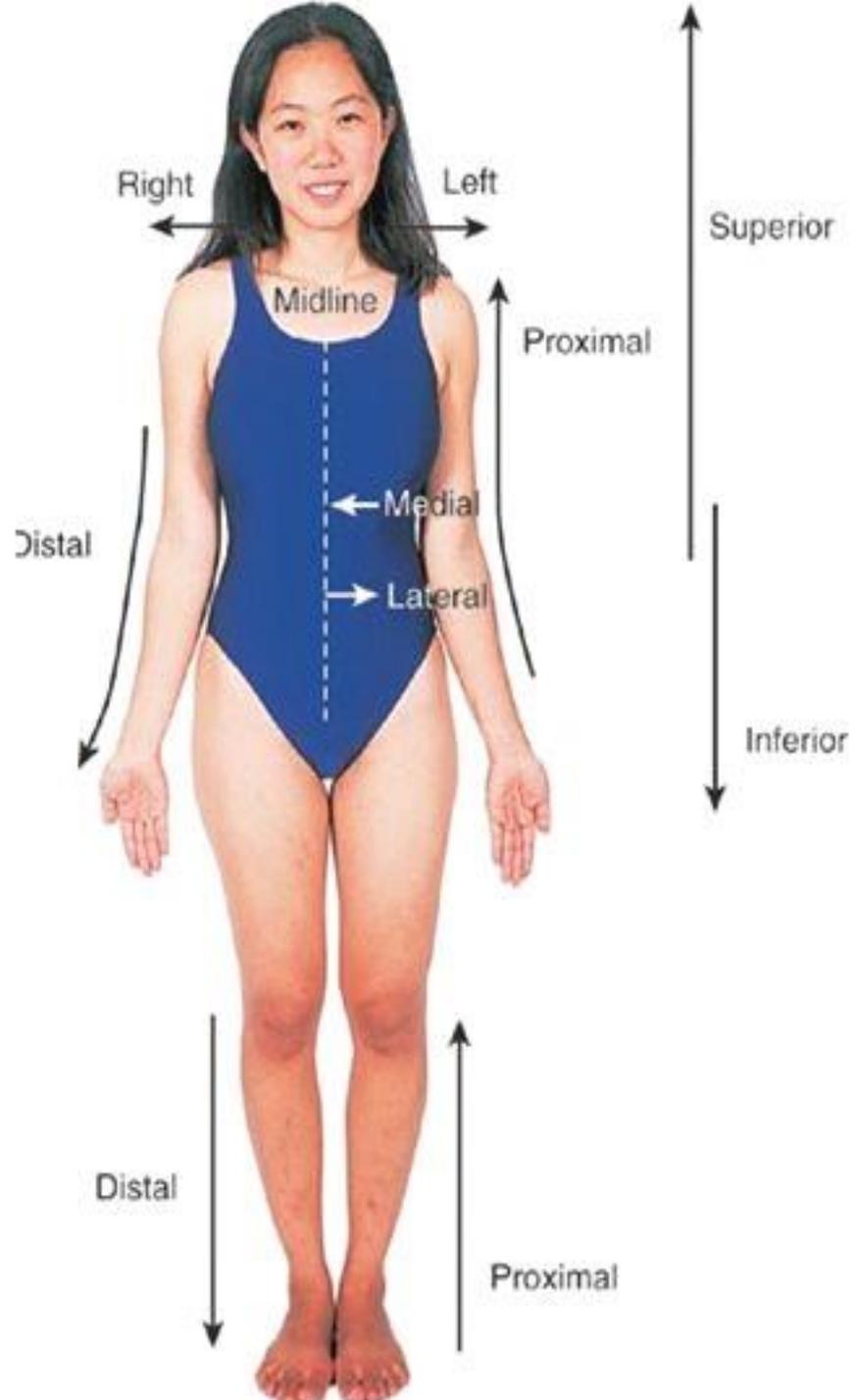
**RIGHT
SIDE OF
PATIENT**

**LEFT
SIDE OF
PATIENT**

DIRECTIONAL TERMINOLOGY

- Superior – above
- Inferior – below
- Anterior (ventral) – towards the front
- Posterior (dorsal) – toward the back

- Medial – towards mid-sagittal plane
- Lateral – away from mid-sagittal
- Proximal – towards a source
- Distal – away from a source



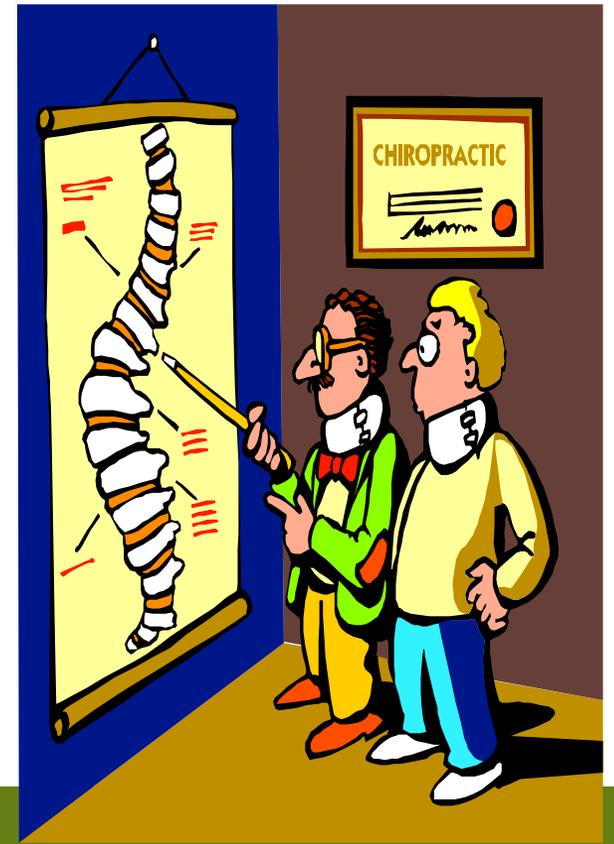
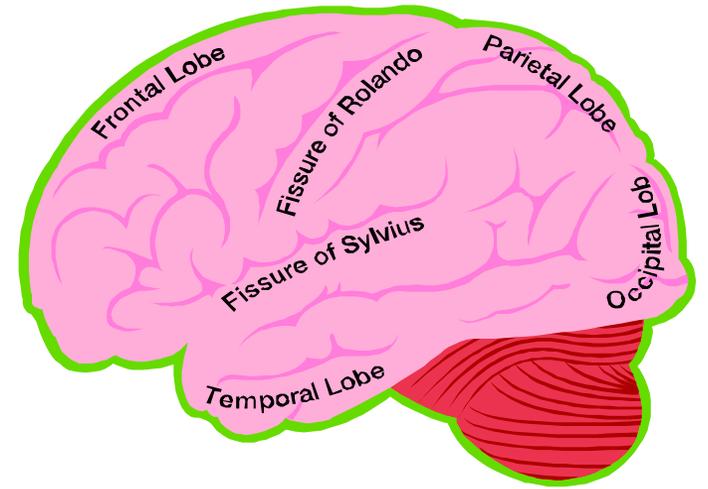
- Superficial – near the body surface
- Deep – further into the body
- Cephalic – towards the head
- Caudal – towards the feet

- Ipsilateral – one the same side
- Contralateral – on the opposite side
- Palmar – front of hand (palm)
- Dorsum
 - Posterior aspect of hand
 - Anterior aspect of foot
- Plantar – sole of foot

BODY CAVITIES

1. Dorsal Body Cavity

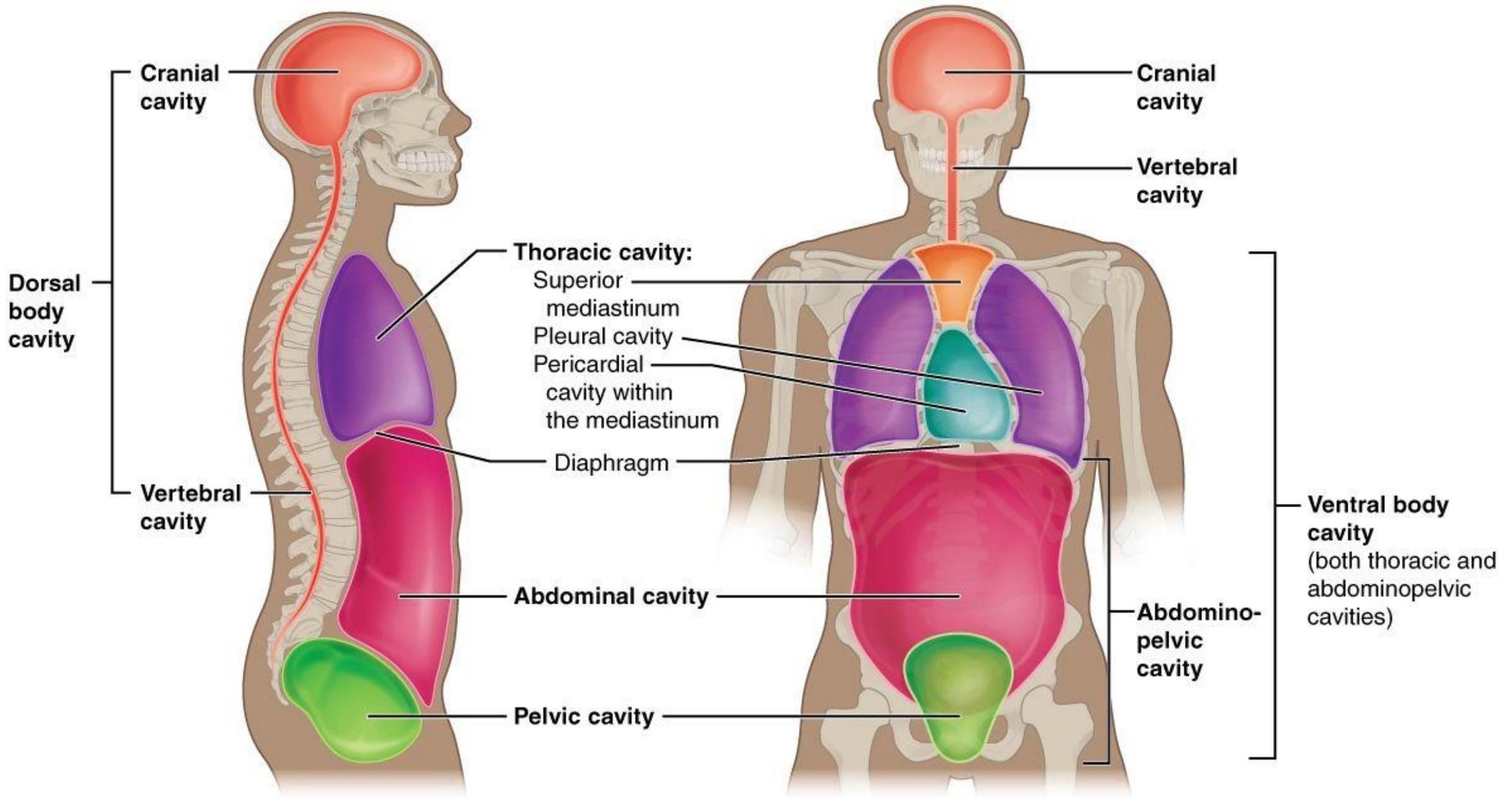
- Posterior
 - Cranial cavity
 - Vertebral or spinal cavity



BODY CAVITIES

2. Ventral Body Cavity

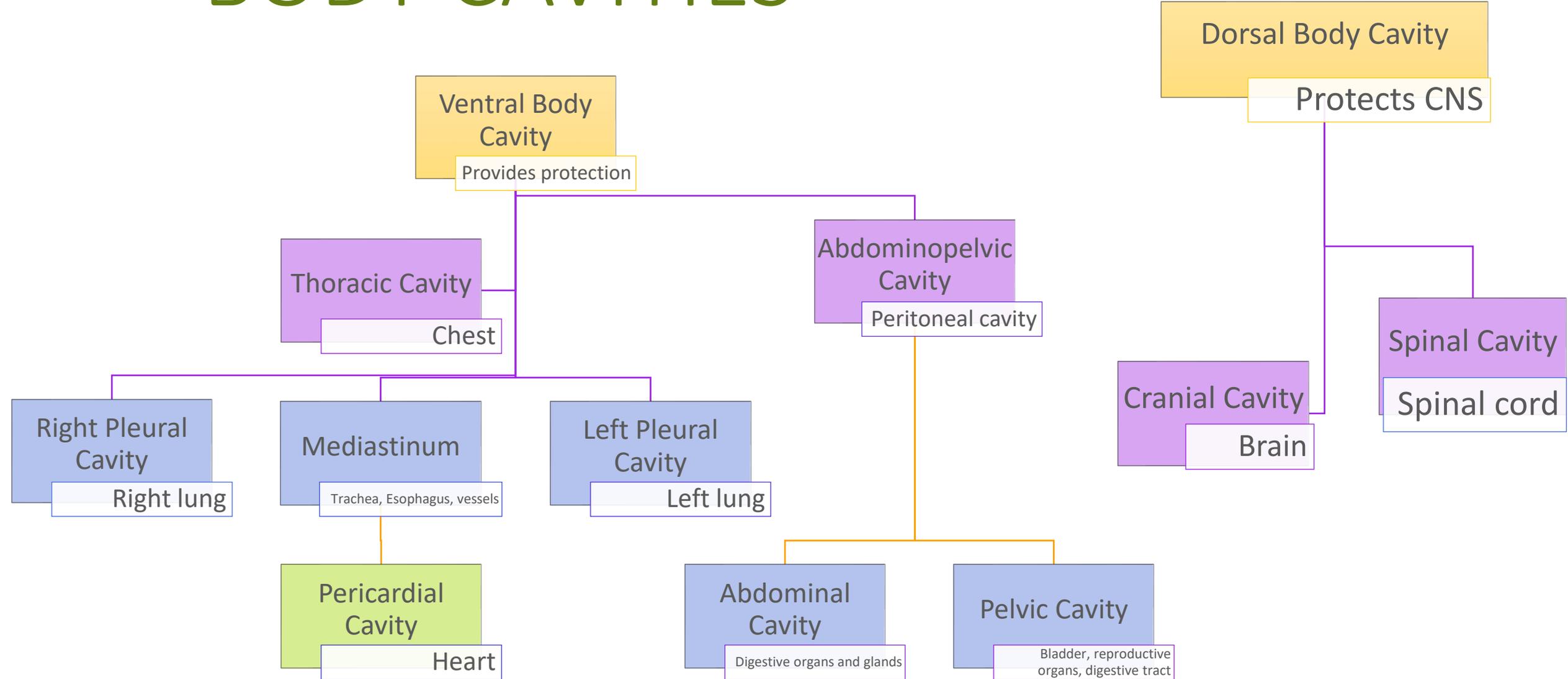
- Largest
 - Thoracic
 - Pleural Cavities
 - Mediastinum
 - Abdominopelvic Cavity
 - Abdominal Cavity
 - Pelvic Cavity



Lateral view

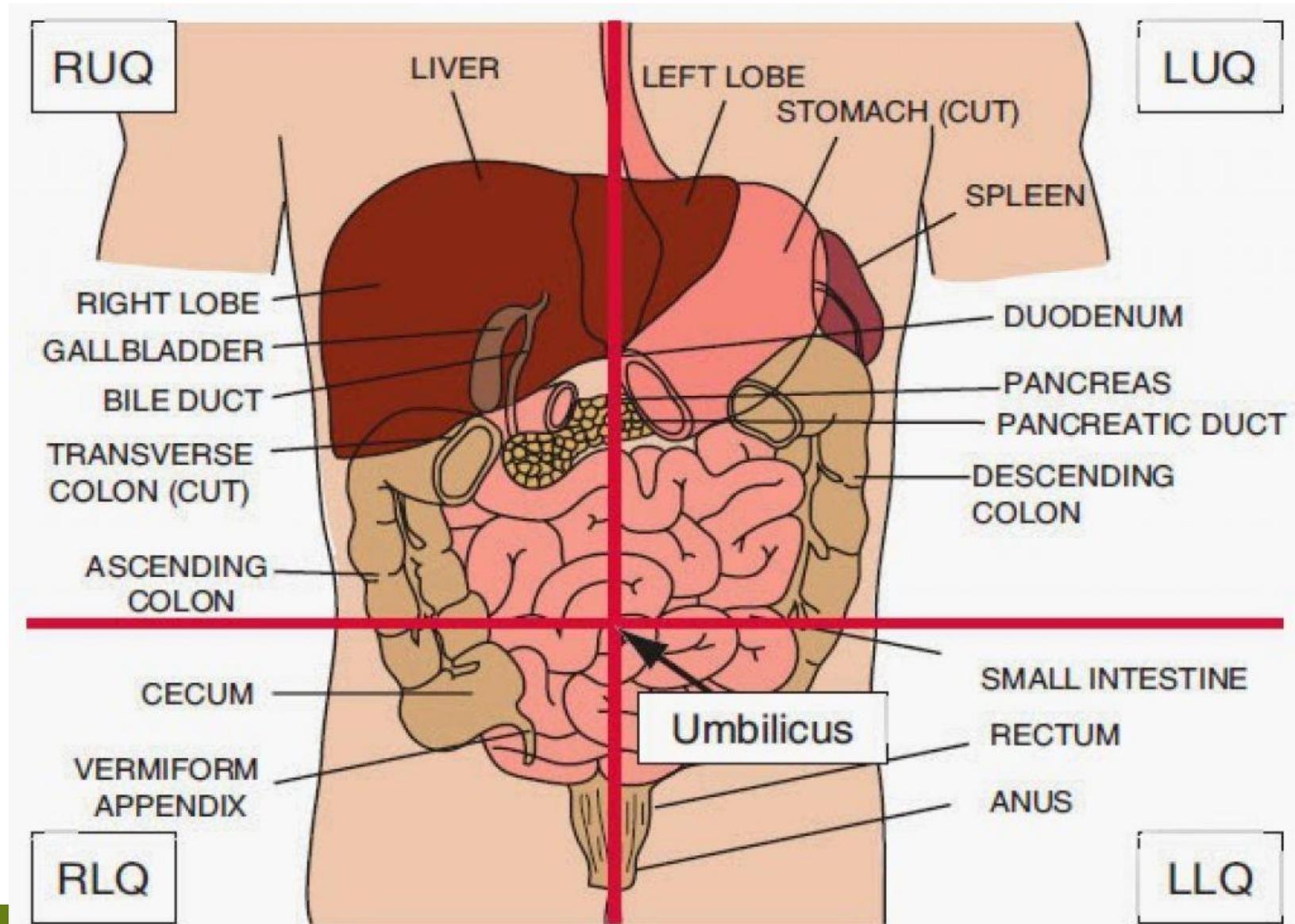
Anterior view

BODY CAVITIES



QUADRANTS

- RUQ
- RLQ
- LUQ
- LLQ



RUQ

- Right Lobe of Liver
- Gallbladder
- Right Kidney
- Portions of stomach, small & large bowel

RLQ

- Right Ovary
- Right Ureter
- Right Spermatic Cord
- Portions of small & large bowel

LUQ

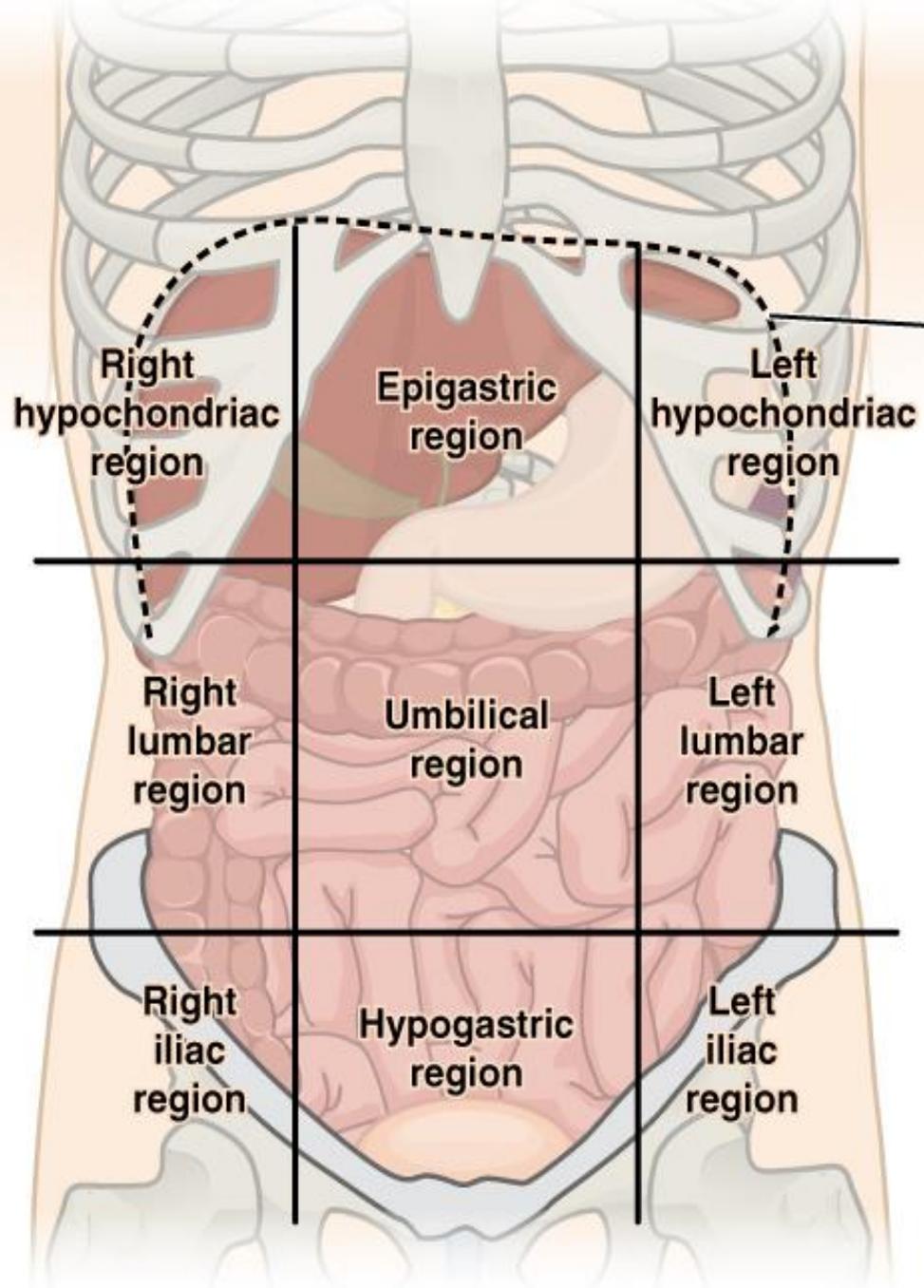
- Left Lobe of Liver
- Left Kidney
- Spleen
- Tail of Pancreas
- Stomach
- Portions of small & large bowel

LLQ

- Left Ovary
- Left Ureter
- Left Spermatic Cord
- Portions of small & large bowel

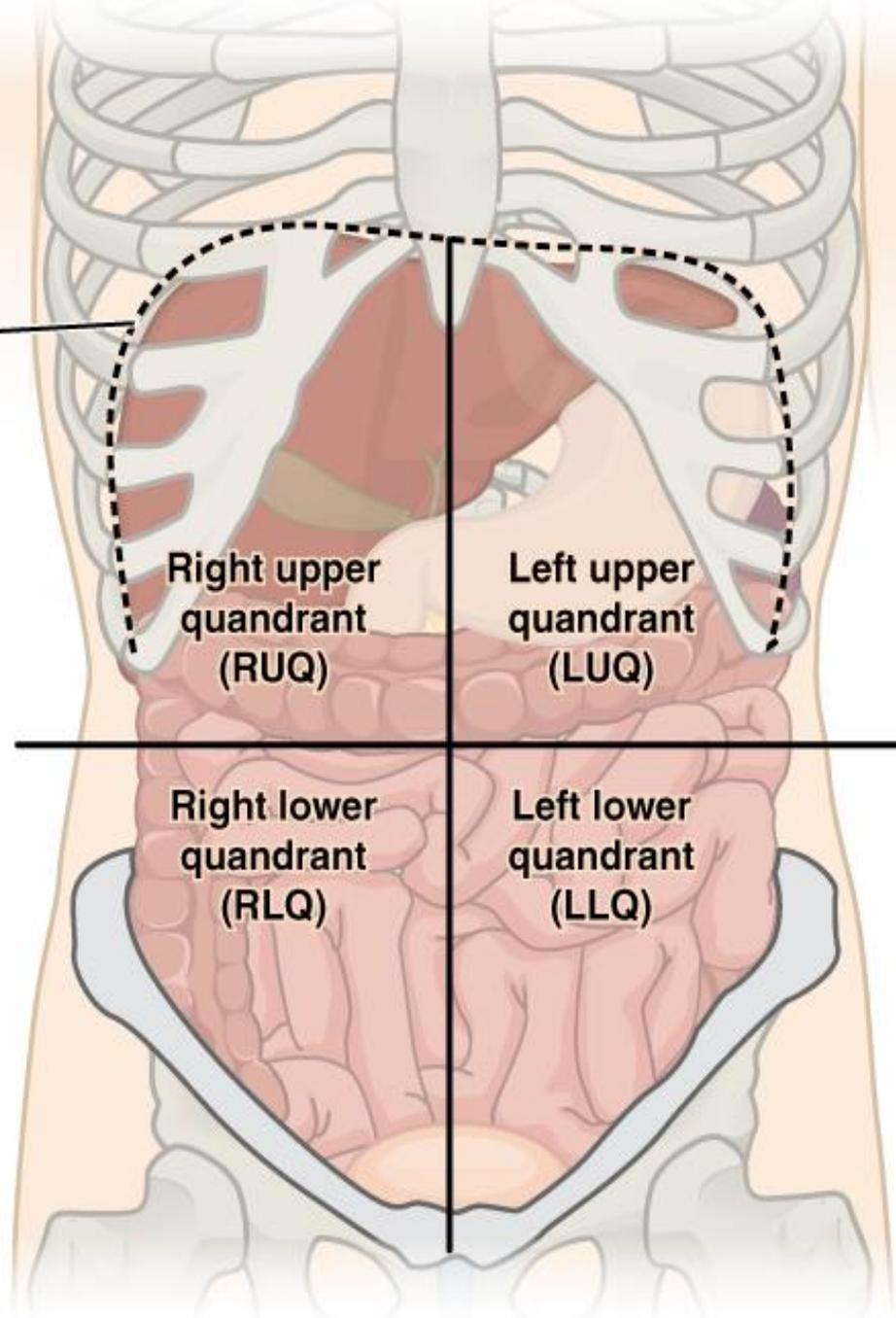
REGIONS

- Right Hypochondrium
- Right Lateral
- Right Inguinal
- Epigastrium
- Umbilical
- Hypogastrium
- Left Hypochondrium
- Left Lateral
- Left Inguinal



(a) Abdominopelvic regions

Diaphragm



(b) Abdominopelvic quadrants

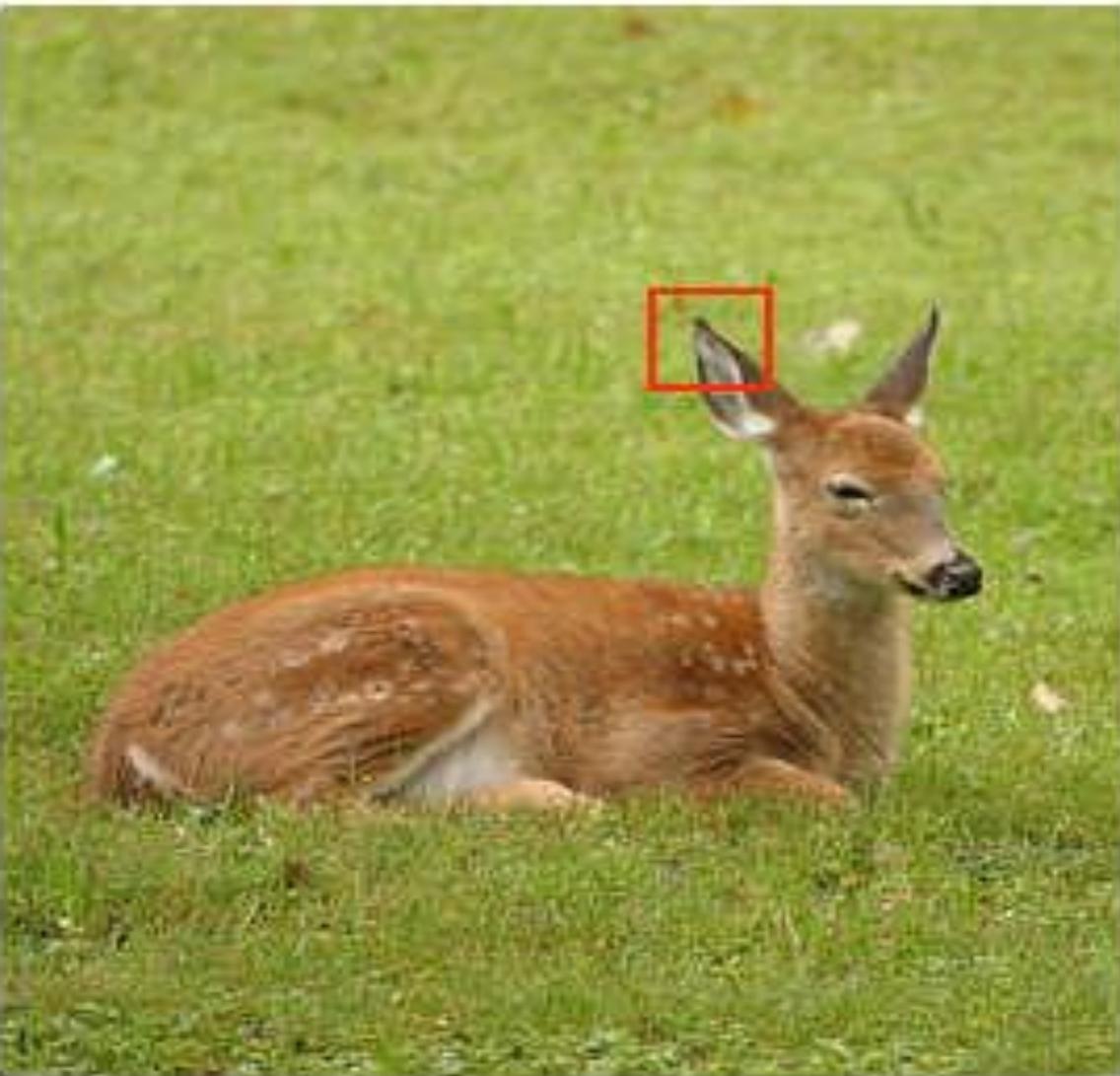
GRAY SCALE

- Each digital image is divided into pixels
- Each pixel is assigned a shade of gray
 - CT
 - MRI
 - Ultrasound

PIXEL

- From the term picture element
- Smallest part of digital image
- Picture divided into grid
(checkerboard)
 - Each individual box is a pixel

PIXEL



CT

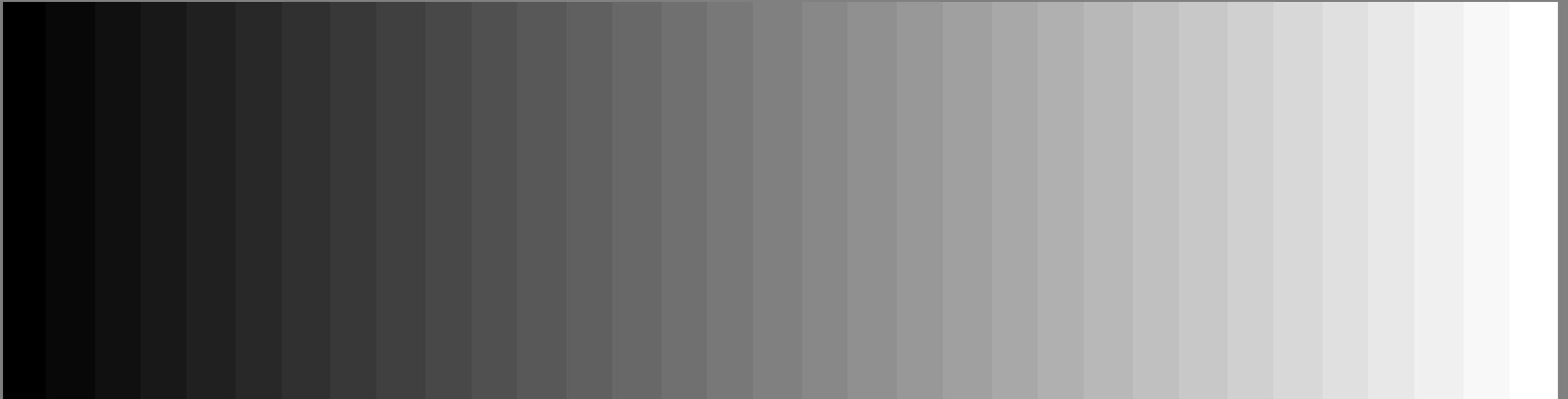
- Grayscale reported as Hounsfield unit (HU)
- Water is used as a reference tissue
 - Denser than water
 - Lighter shades of gray to white
 - Less dense than water
 - Darker shades of gray to black

MRI

- Gray scale can vary greatly because of inherent tissue properties
- Can appear different with each patient
- Can appear different with each series of images

ULTRASOUND

- Grayscale displays multiple levels of “BRIGHTNESS”



BRIGHTNESS

- Represents the strength of the detected ECHO
 - Stronger
 - Lighter shades of gray to white
 - Weaker
 - Darker shades of gray to black

Store in progress

9:31:42 am

< GRAY SCALE

4V1-S
H4.5MHz 150mm
Abdomen
NTHI General

85dB T1/+1/3/3
Gain=-18dB Δ=2

Store in progress

