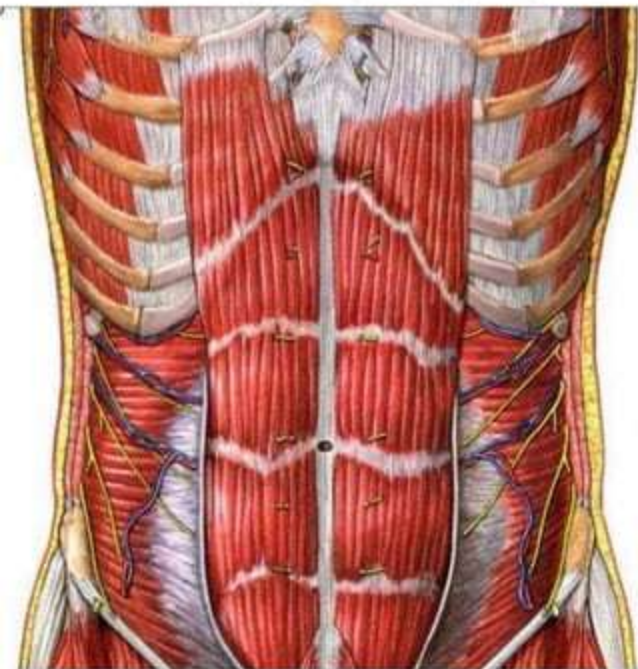


ANTERIOR ABDOMINAL WALL ANATOMY, ITS SURGICAL IMPORTANCE



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INTRODUCTION

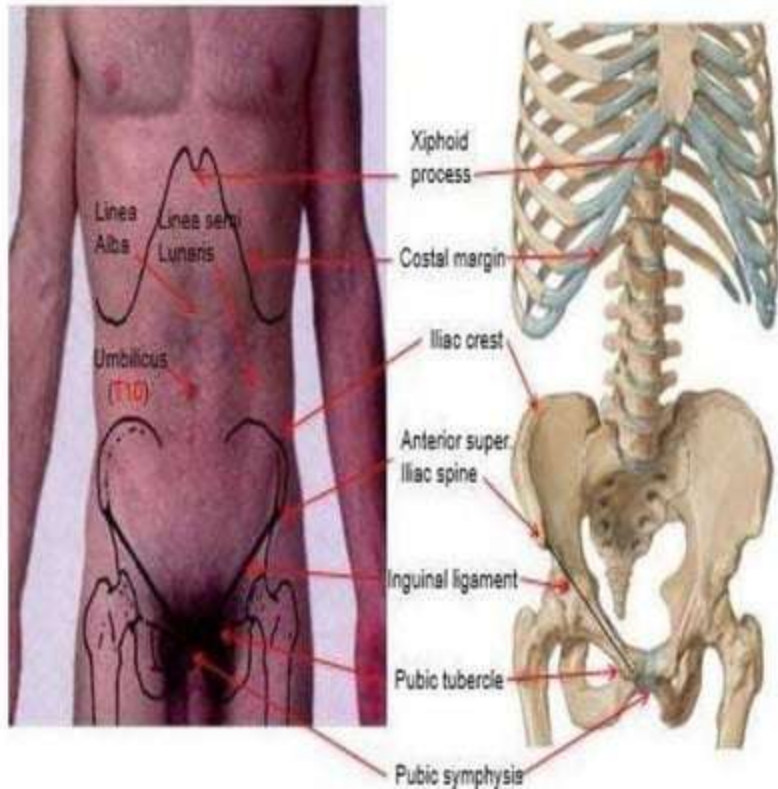
1. The abdominal wall is an anatomically
 - complex multilayered structure
 - with segmentally derived blood supply and innervations
 - provides structure, protection and support to the abdominal viscera and the peritoneal cavity.

2.Embryology-

it is **mesodermal** in origin
originate in the **paravertebral region**
develops as **bilateral migrating sheets**
and envelope the future abdomen.

BOUNDRIES OF ANT. ABDOMINAL WALL

- SUPERIORLY-
xiphoid process,
costal margins .
- INFERIORLY-
tubercle of iliac
crests, ASIS, pubic
symphysis
- POSTERO LATERAL-
mid axillary line



SURFACE TOPOGRAPHY

ABDOMINAL QUADRANTS

**-Formed by
two intersecting lines:
Intersect at umbilicus.**

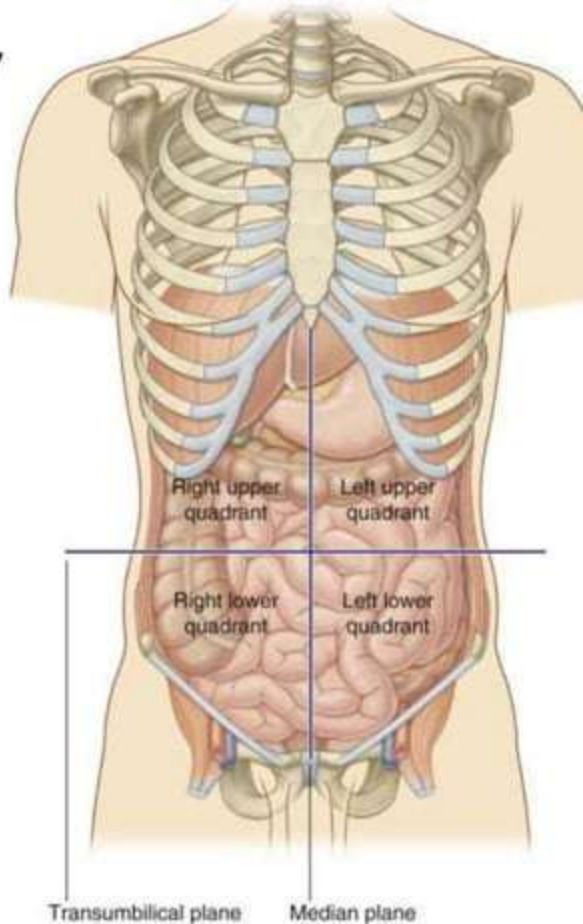
- Quadrants:**

Right Upper.

Left Upper.

Right Lower.

Left Lower.



ABDOMINAL REGIONS

9 Regions

Divided by two pairs of planes:

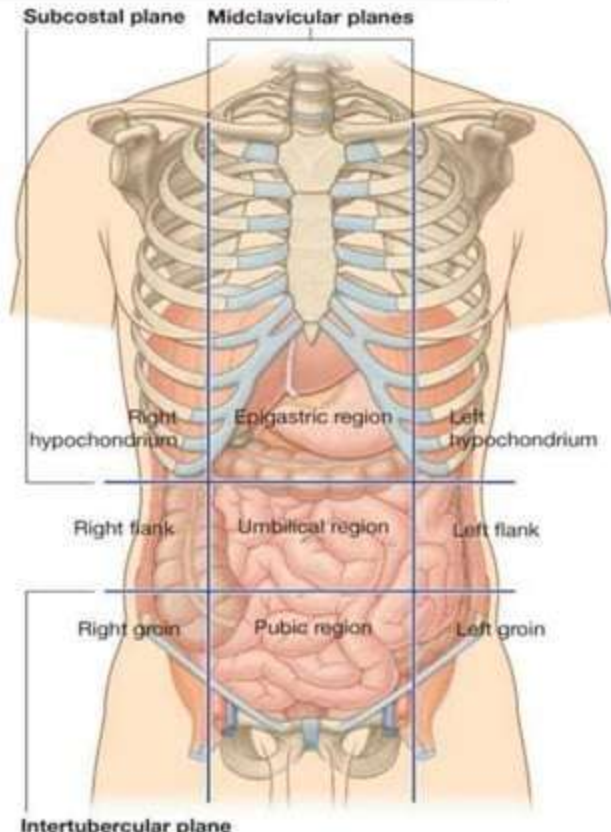
- Vertical Planes:

Left and right
midclavicular planes

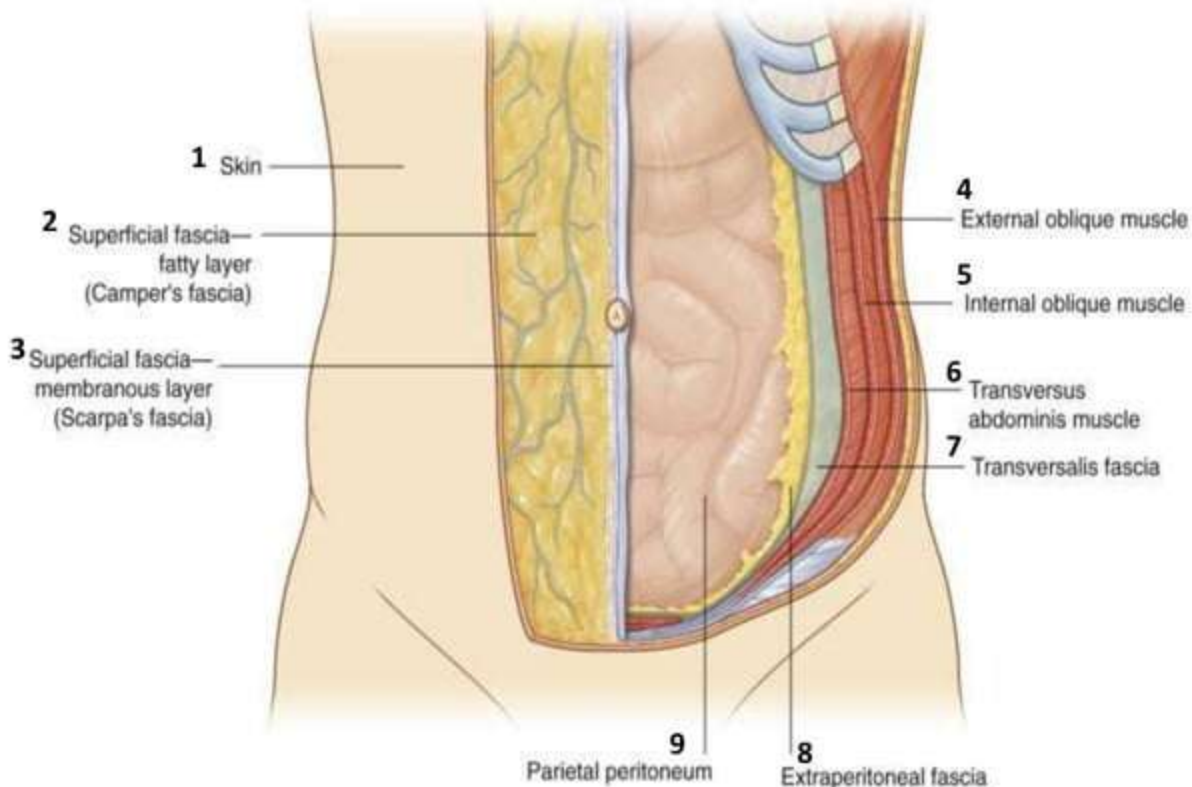
- Horizontal Planes:

Transpyloric plane

Transtubercular plane



Layers of abdominal wall



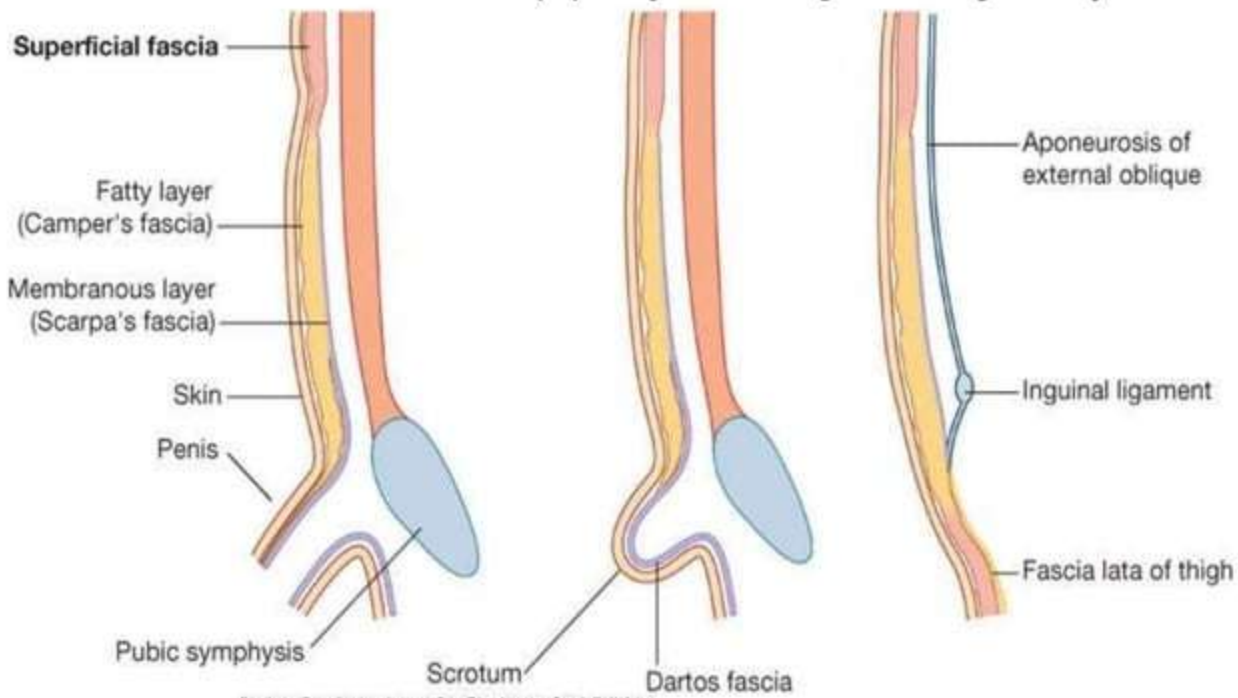
SKIN

- Loosely attach to the underlying structure except at umbilicus.
- Umbilicus is a normal scar formed by remnant of umbilical cord in fetus.
- Langer's line-almost horizontally, forward and downward

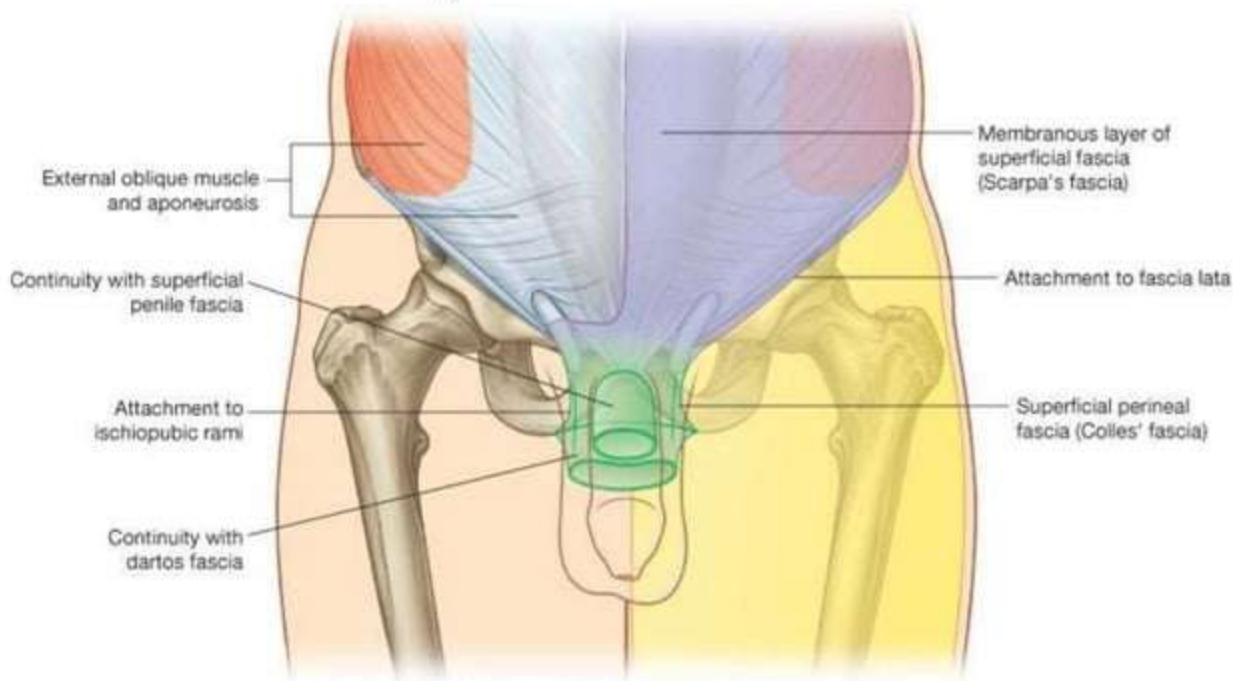


SUPERFICIAL FASCIA

- (1) *Superficial fascia of camper*
- (2) *Superficial fascia of scarpa*



Continuity of membranous layer of Superficial Fascia

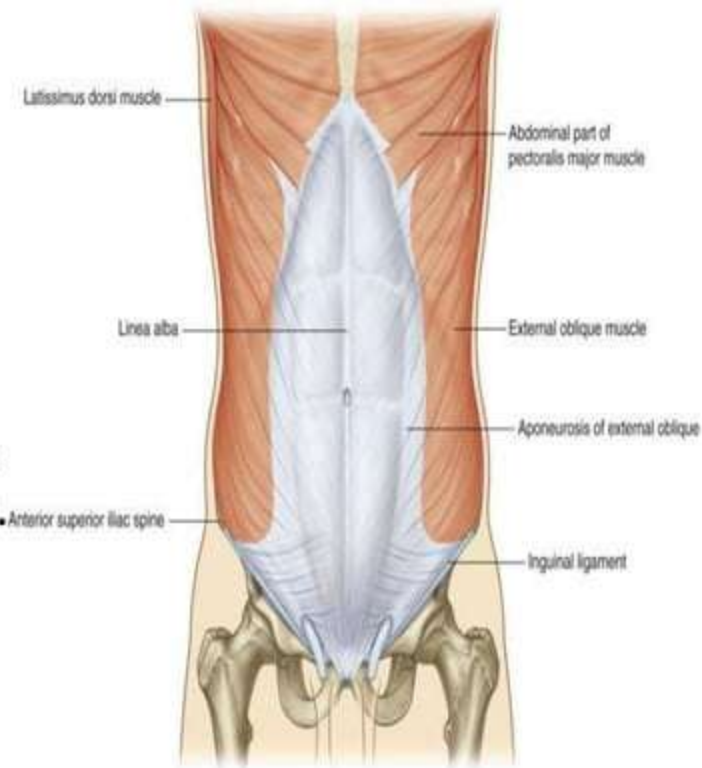


ANTEROLATERAL MUSCLES

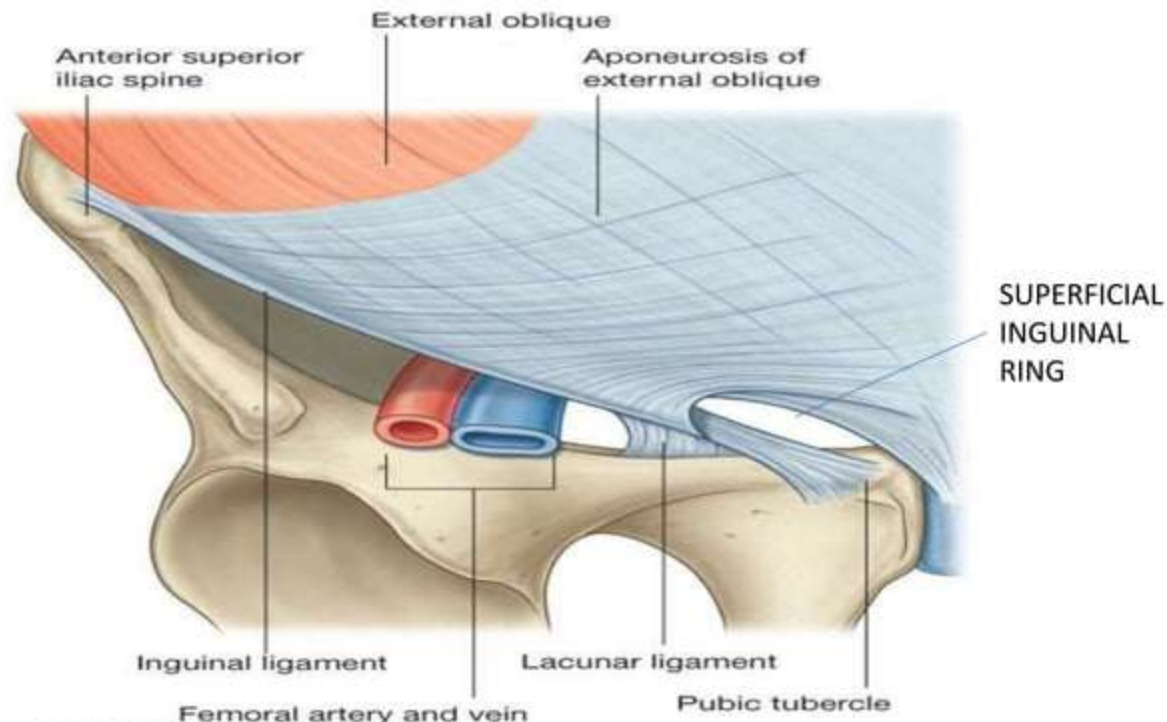
- 5 Muscles
 - 3 flat muscles
 - » *External Oblique*
 - » *Internal Oblique*
 - » *Transversus abdominis*
 - 2 vertical muscles
 - » *Rectus abdominis*
 - » *Pyramidalis*

EXTERNAL OBLIQUE MUSCLE AND APONEUROSIS

- **ORIGIN:** Arises by eight fleshy slips from outer borders of the lower eight ribs(5-12)
- **DIRECTION:** Downwards, Forwards, Medially
- **INSERTION:** Xiphoid, Linea alba, Pubic symphysis, ant. 2/3 of Iliac crest
- **NERVE SUPPLY:** Ant. rami of spinal n. T7 – T12



EXTERNAL OBLIQUE APPONEUROSIS



Drake: Gray's Anatomy for Students, 2nd Edition.

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INTERNAL OBLIQUE MUSCLE AND APPONEUROSIS

-ORIGIN: Ant. 2/3 iliac crest,

Lat 2/3 of inguinal ligament

Thoraco-lumber fascia

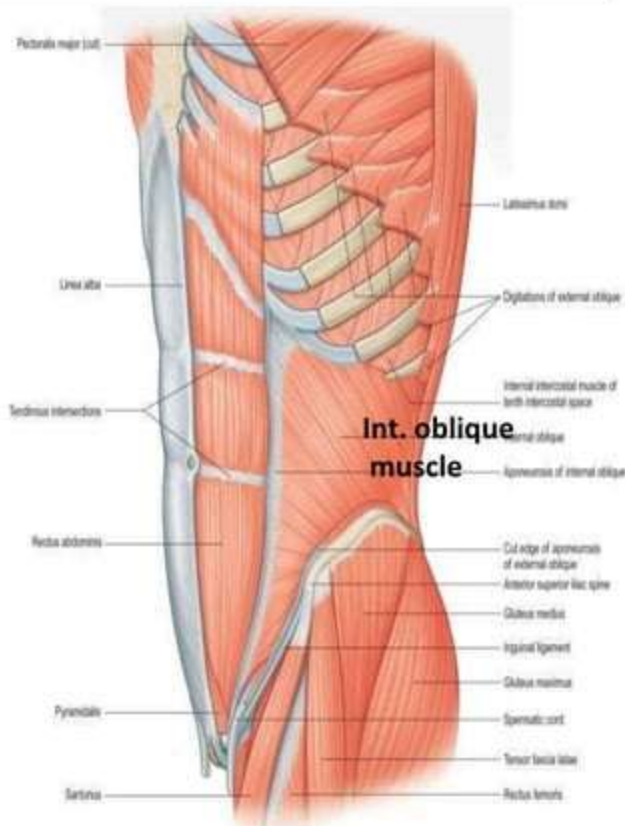
-DIRECTION:

Upward, Forward, Medially

-INSERTION: Lower 3 ribs,
xiphoid, linea alba,
conjunct tendon

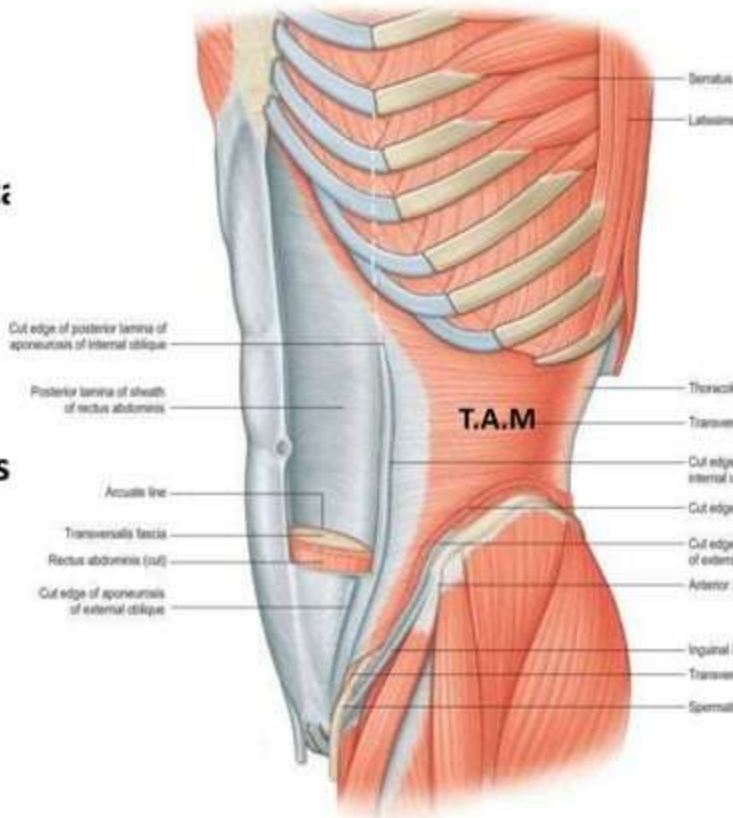
-NERVE SUPPLY:

Lower six thoracic n.T7-T12,
First lumbar nerve L1



Transversus abdominis

- ORIGIN:** Thoracolumbar fascia, Iliac crest, lat 1/2 of inguinal ligament, and costal cartilages 7-12
- DIRECTION:** Transverse
- INSERTION:** Xiphoid process, linea alba, pubic crest and pecten pubis via conjoint tendon
- NERVE SUPPLY:** T6-L1



RECTUS ABDOMINIS & PYRAMIDALIS

- **Origin:** Pubic crest
- **Insertion:** costal cartilage 5-7, xiphoid process
- **Direction:** vertical
- **Nerve supply:** T7-T11
- **Tendinous intersections**

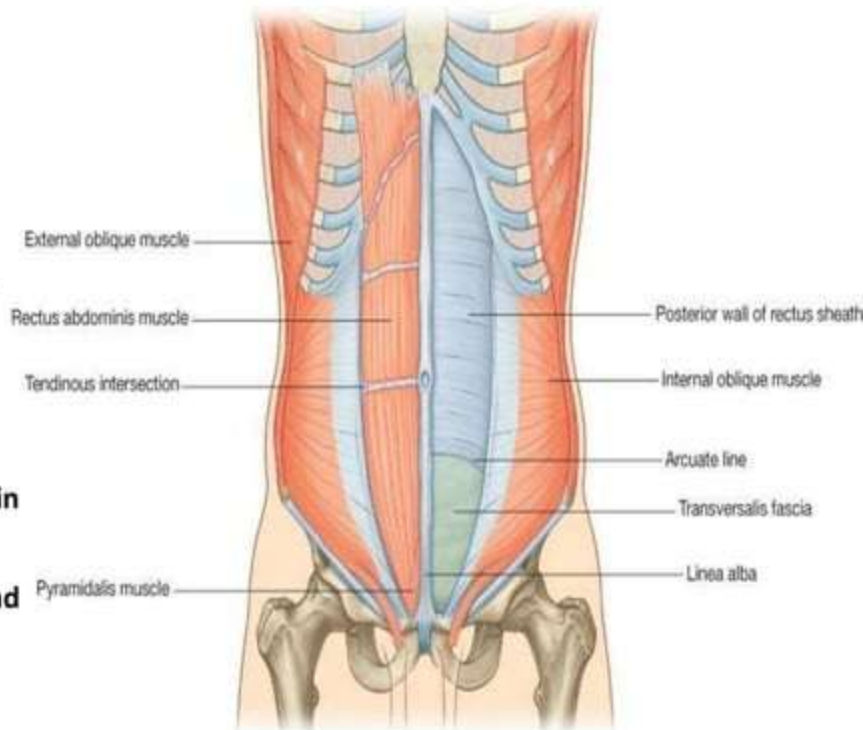
PYRAMIDALIS

-Inconsistent muscle, within rectus sheath

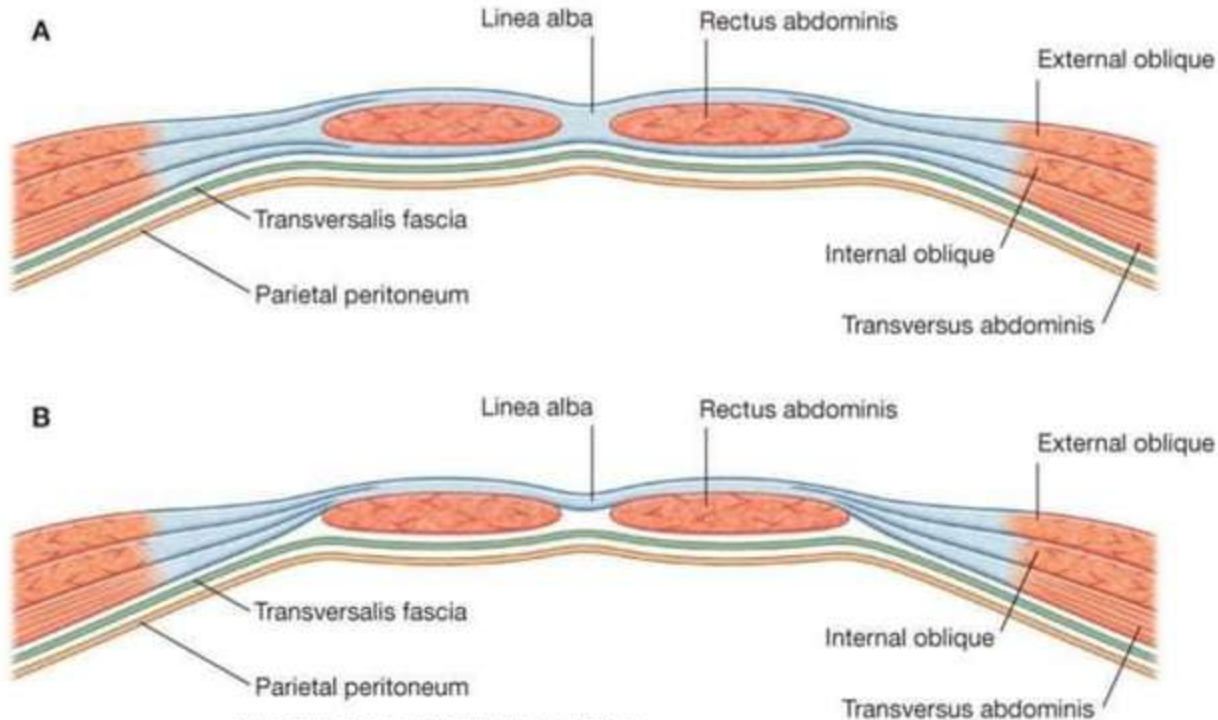
-**Origin:** pubic symphysis and pubic crest

-**Insertion:** linea alba

-**Nerve supply:** T12



Rectus Sheath

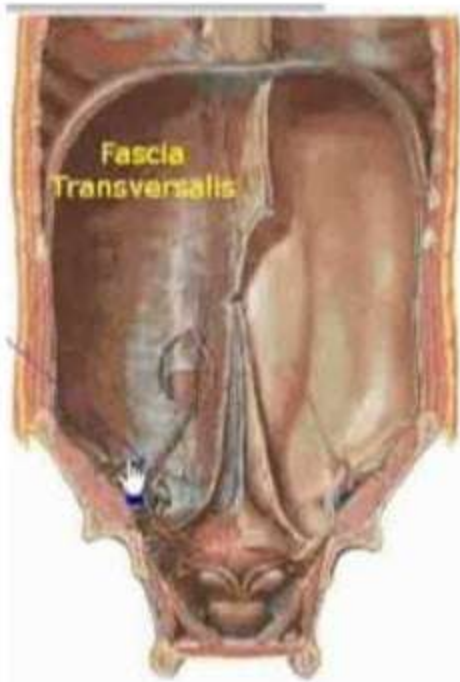


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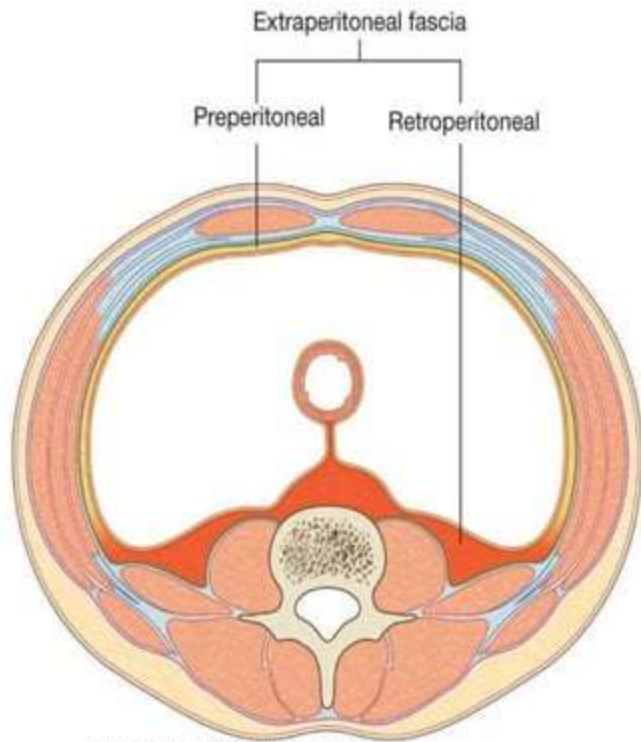
Fascia Transversalis

- The fascia transversalis is a thin layer of fascia that lines the transversus abdominis muscle and is continuous with a similar layer lining the diaphragm and the iliacus muscle .
- DEEP INGUNAL RING is oval opening formed $\frac{1}{2}$ ' above to mid-inguinal point and lat. to inf .epigastric artery.
- This layer responsible for the structural integrity of the abdominal wall defect of this fascia result in HERNIA.



Extra-peritoneal Fascia & Peritoneum

- PRE PERITONEAL SPACE
- CONTAINS ADIPOSE AND AREOLAR TISSUE



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BLOOD SUPPLY

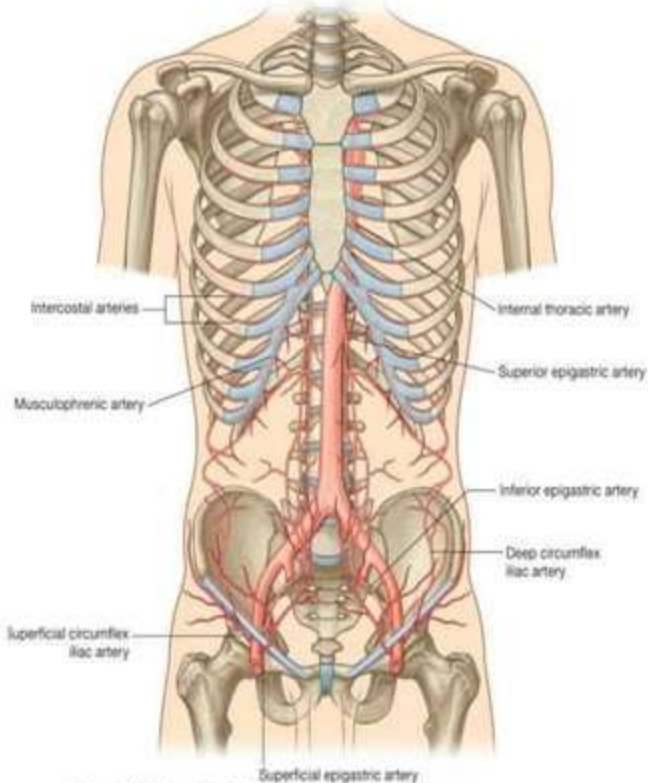
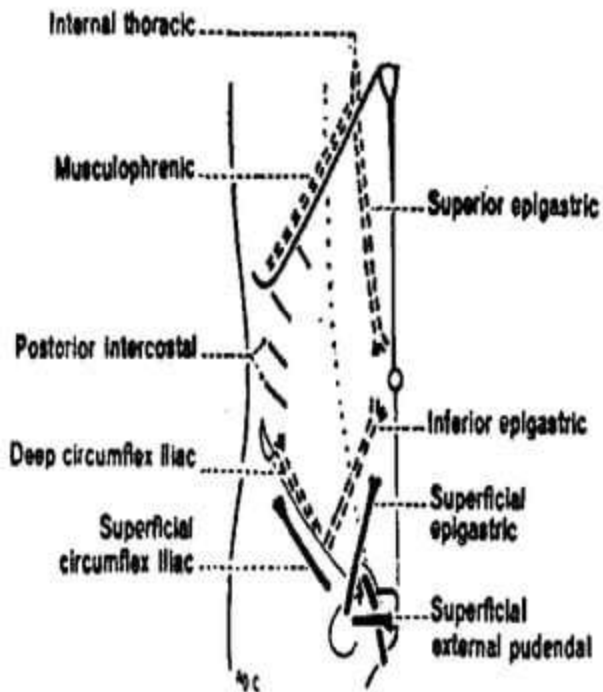
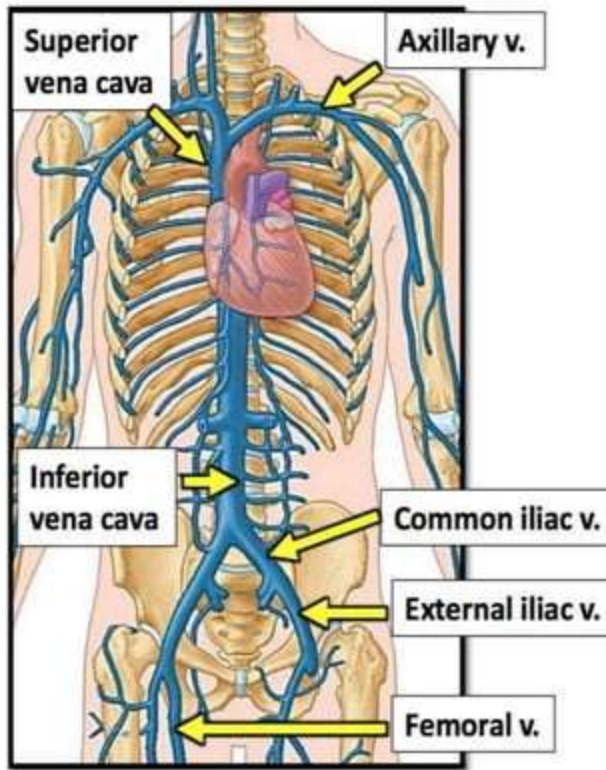
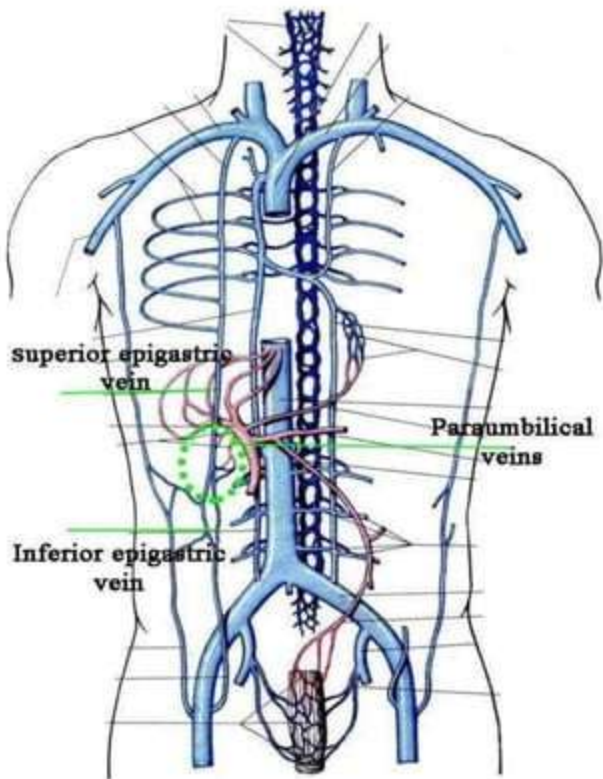


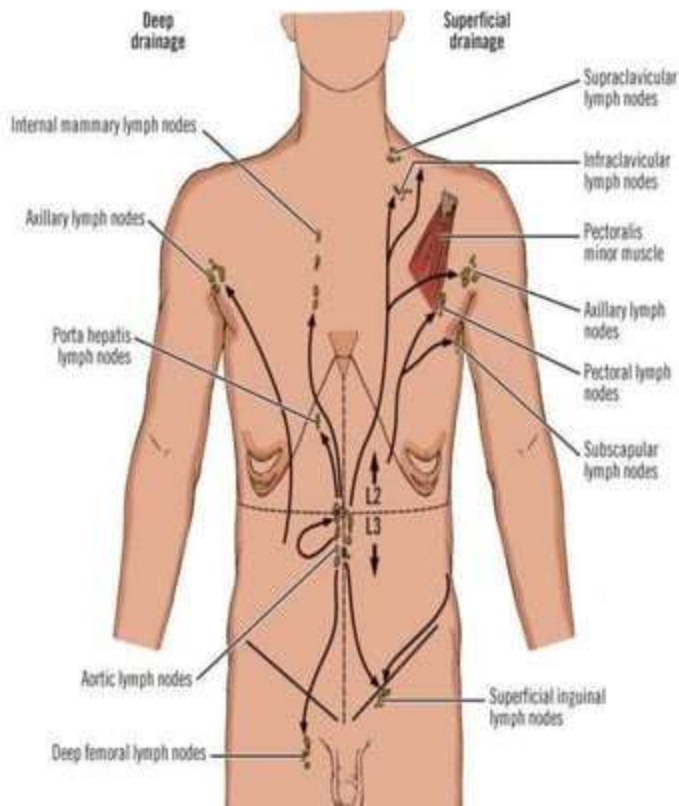
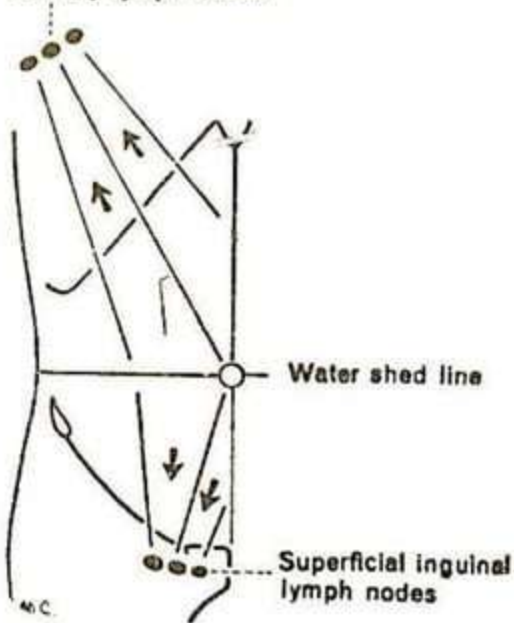
Fig. 142 Arteries of the anterior abdominal wall.

VENOUS DRAINAGE

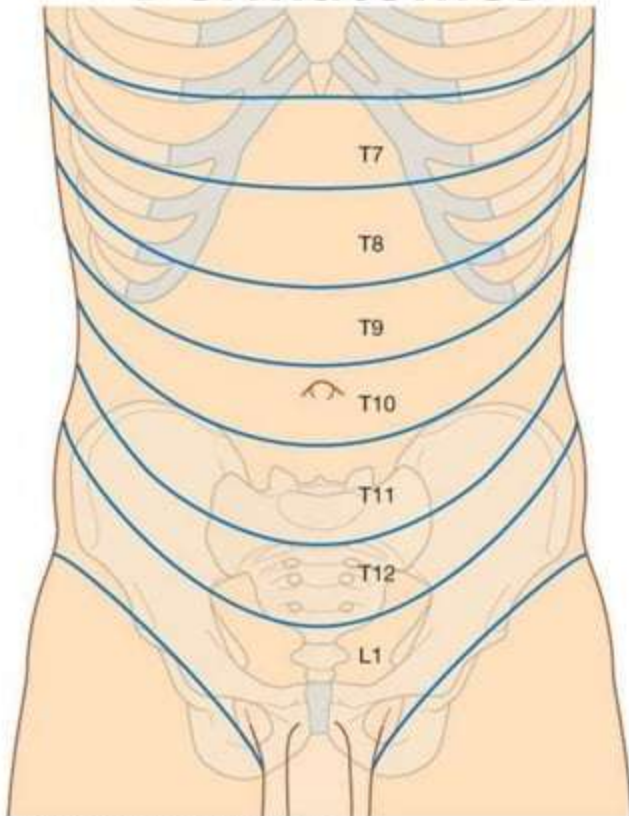


LYMPHATIC DRAINAGE

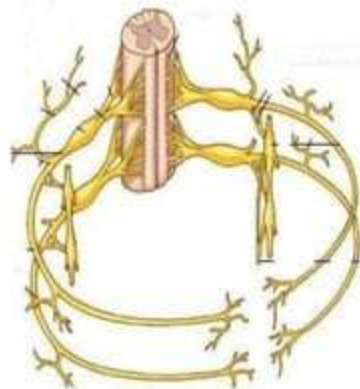
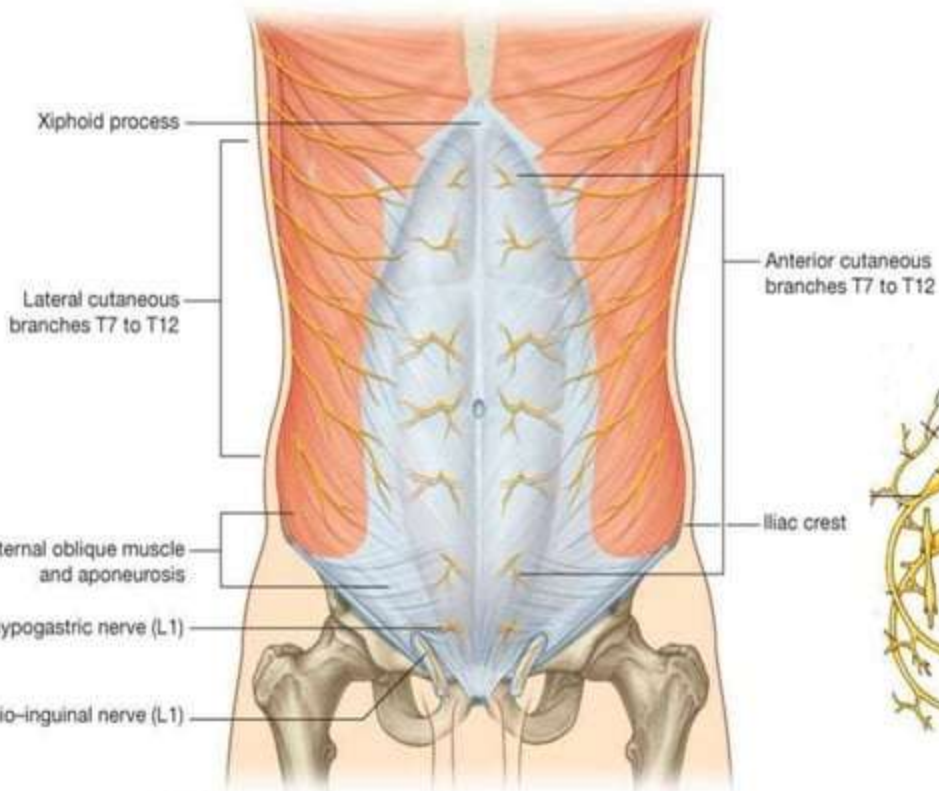
Axillary lymph nodes



Dermatomes



Innervation



CLINICAL IMPORTANCE ABOMINAL WALL

- 1.Support the abdominal viscera against gravity
- 2.Expulsive acts- micturition, defecation, parturition
- 3.Forcefull expiratory acts
- 4.Movements-flexon,rotation
- 5.Abd. wall abnormalities- Divarication of recti, Hernia, tumor(Desmoid, Sarcoma)
- 6.Persistent vitello-intestinal duct
- 7.Persistent urachus
- 8-Compartment separation
- 9-TRAM flap reconstruction
- 10-Symptoms of intra-abdominal disease

THANK YOU