

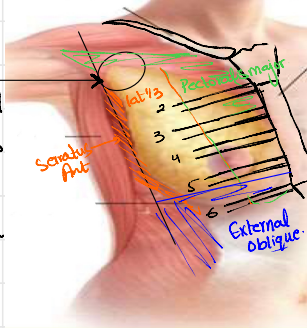
2 - Anatomy of Breast → Specialized accessory gland found in both sexes; secretes milk

*Refer to slides for histology part *

(Axillary Tail of Spencer)

→ pierces the clavipectoral fascia & clavicular head of pectoralis major to enter axilla through foramen of Langer.

found in deep fascia of pectoralis muscle.



⇒ location & layers

① Superficial fascia of Pectoral region; between 2nd & 6th upper ribs

② Retromammary Space - loose areolar tissue to allow movement of breast on underlying deep fascia

③ Deep fascia covering pectoralis major muscle → on its surface we have

④ Muscular layer: medial 1/3 - Pectoralis major
lateral 1/3 - Serratus Anterior
inferiorly - External Oblique

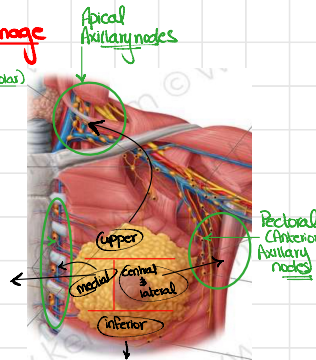
→ Confined between:- medially - lateral side of sternum
laterally - midaxillary line

⇒ Lymphatic Drainage

① superficial lymphatic plexus (subcutaneous)

② Deep lymphatic plexus

Area	Lymph Group
Central and lateral parts	Pectoral (anterior) group of axillary lymph nodes
Upper part	Apical group of axillary lymph nodes
Medial part	Internal mammary (parasternal) lymph nodes Cross to opposite breast
Interomedial part	Lymphatics of the rectus sheath, linea alba and subdiaphragmatic lymphatics



⇒ Components of Breast

→ elevation just below the center

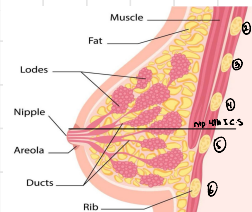
① Skin:- A. nipple → receives opening of 10-15 lactiferous ducts
(Fat & Hair are absent beneath nipple & areola)

(Circular muscles) → erect nipple
(longitudinal muscles) → flatten nipple

B. Areola → dark pigmented area around nipple

→ on its outer margins contains:- specialized sebaceous glands

well-developed during lactation pregnancy
oily secret to lubricate nipple & areola & prevent cracks during lactation



fibrous stroma - ligament of Cooper
→ extend from skin to deep pectoral fascia
→ divide gland into 15-20 lobules

② Stroma - gland with no capsule & divided into

gland embedded in it (lactiferous gland)
smooth contour of breast
Fatty stroma (main bulk of gland)

③ Parenchyma - contains glandular tissue that secrete milk

→ Each gland opens into "lactiferous duct" → dilates at areola → "lactiferous sinus" → narrow → opens into nipple.

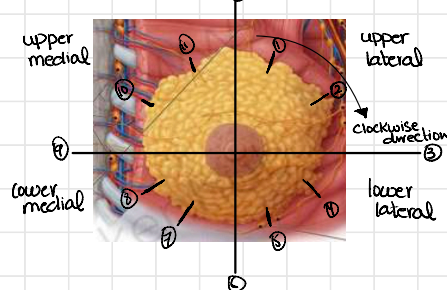
* Clinically:-

obstr of any of structures lead to:-
Carcinoma of the breast may give rise to the following features:

- 1) Retraction or puckering of the skin due to invasion of the ligament of Cooper.
- 2) Peau d'orange or oedema with pitting oedema is due to obstruction of cutaneous lymphatics by cancer cells and pitting due to fixation of the hair follicles to subcutaneous tissue.
- 3) Retraction of the nipple is due to extension of the growth along the lactiferous ducts with accompanying fibrosis.
- 4) Breast may become fixed with the deep fascia, pectoral muscle and chest wall due to direct spread to the subjacent structures.
- 5) Axillary lymph nodes may be involved, these are stony, hard and fixed

⇒ Division & Development

→ 4 Quadrants

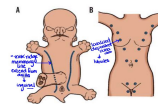


BE CAREFUL! It is breast have diff positions so the no will differ just understand the concept & apply it
→ 4 Quadrants
naming based on anal location numbers in clockwise direct

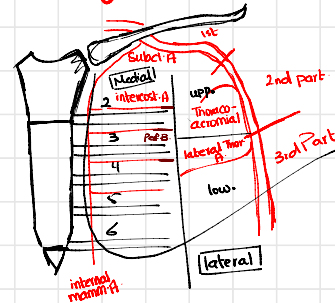
Development of the Breasts

- A linear thickening of ectoderm appears called the **milk ridge**, which extends from the axilla obliquely to the inguinal region.
- The ridge disappears except for a small part in the pectoral region.
- This localized area thickens, becomes slightly depressed, and sends off 15 to 20 solid cords, which grow into the underlying mesenchyme.
- The underlying mesenchyme proliferates, and the depressed ectodermal thickening becomes raised to form the **nipple**.
- At the fifth month, the **areola** is recognized as a circular pigmented area of skin around the future nipple.

- Solid Cord & Mesenchyme → duct & gland & Stroma
- Depressed line → areola → nipple



⇒ Blood Supply



→ medial part:- internal mammary (thoracic) Artery: branch of 1st Perforating Branches
Upper 6 intercostal Arteries
part of Subclav Artery

→ lateral upper:- Thoroacoacromial A. (branch from 2nd part of subclav A.)
→ lateral lower:- lateral thoracic A. (branch from 3rd part of subclav A.)

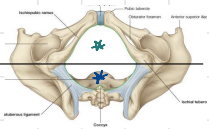
⇒ Venous Drainage

→ Subcutaneous Tissue:- circle of veins on base

→ Gland & Stroma:- small veins that accompany the arteries → internal mam. vein
Axillary Vein

3- Perineum → below pelvic diaphragm (levator ani + coccygeus) & above upper part of thigh.

→ Diamond-Shape boundaries same as pelvic outlet i-



* Transverse line between ant part of 2isch tub divide perineum into 2 parts:-

Posteriorly: Anal Triangle

→ Anal Canal

→ Ischioanal Fossa

→ Pudendal Canal

Anteriorly: Urogenital Triangle

Fascia of Triangle:-

① memb part of sup. Fascia (Coley's)

② Perineal membrane

→ Triangular fibrous sheet covers "ant" part of perineum i- urogenital Triangle

→ Extend from pubic arch to **perineal body**

→ roof of sup pouch

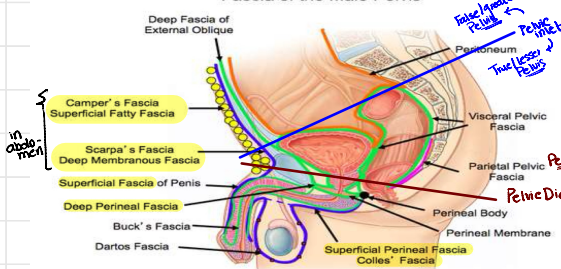
External Genitalia

Superficial Perineal Pouch *

Deep Perineal Pouch *

Separated by-

⇒ **Perineal Fascia**



Deep Fascia

* "investing" Perineal "Gauldell"

Superficial Fascia (divided into:-)

① Sup fatty layer: (Post) → ischio- anal fat

in males: absent; replaced by dartos muscle (smooth muscle)

in females: continuous with sup fatty layer of abdomen (Camper's Fascia) from labia majora & mons pubis

* Related to:- B I S Fascias Bulbospongiosus Ischio cavernosus Super Trans Perineal

* Ant:- Susp ligament of Penis

* laterally:- Ischiopubic Rami

⇒ 2 fibromuscular Bodies-

① Anococcygeal Body / Raphae

↳ Elastic: stretch during defecation & recoils through coccygeus muscle.

↳ Support Rectum.

Nerve Supply:- Perineal branch of Pudn

* Muscle of Perineal Body:-

3 paired muscles	3 single muscles
1. Superficial transverse perineal.	1. Bulbospongiosus.
2. Deep transverse perineal.	2. Superficial part of external urethral sphincter (sphincter urethrae).
3. Levator prostate or sphincter vaginae part of levator ani.	3. Superficial part of external anal sphincter.

Bulbospongiosus (from its name:- B & P & corpus spongiosum)

↳ around bulb of penis

↳ erection of penis & (clitoris)

↳ in females:- Bulbovescibule (split into 2 & surr bulb of vestibule)

↳ squeeze urine out

Ischio cavernosus (from its name:- corpus cavernosus)

↳ around crus of penis

↳ maintain erection of penis

Sup Trans Perineal

↳ on post edge of Perineal memb

↳ fixation of Perineal Body

Sphincter urethrae

↳ surround membran urethra

↳ voluntary control on urethra

↳ 2 parts:- Superficial & Inter Superficial

Deep Trans Perineal

↳ deep surface of post edge of Perineal memb

↳ fixation of Perineal Body

(Same as pouches in relation to peni membrane)

↳ **Urogenital Diaphragm**:- musculo-fascial

↳ Muscles:-

① Exit urethral Sphincter-

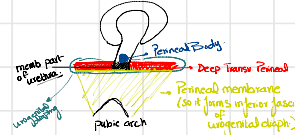
Sphincter urethrae

② Deep transverse Perineal

↳ Fascia:-

Surrounds muscles superiorly & inferiorly-

↳ Perineal membrane



② Deep membranous layer: Continuous with deep layer of abdomen (Scarpa's Fascia) in pelvis called (Coley's Fascia)

in males:-

(Ant) Scarpa's → Coley's → Surround penis & scrotum all sides

(in both cases can't reach anal triangle due to:-)

(Post) attached to posterior part of perineal memb + Perineal body

(later) attached to deep fascia of medial thigh (fascia lata)

(in both cases no urine flow to thigh due to this attachment)

* Clinically:-

- Fracture of Pelvis/ Fault of catheterization:-

→ Injury to membranous urethra → urine flows into **Deep Pouch** through urogenital hiatus it passes to surround:-

- urinary bladder

- Prostate

- "Extra-peritoneal"

- Straddle injury:- Hitting metal Beam/ Blow to the perineum.

Injury to **Spongy (penile) part of urethra** → urine flows into **Superficial Pouch**

- can reach abdominal wall behind Scarpa's fascia

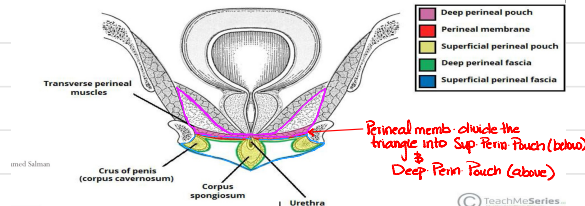
- surround penis & scrotum



Note: Study the arteries and nerves carefully and link them to superficial or deep before diving into the contents of the pouches it will make it easier for u

→ Continuing in Structures of Urogenital Triangle.

→ Sup & Deep Perineal Pouches.



Deep Perineal Pouch

* look at picture for easy borders *

- **Roof** :- Fascia of lower surface of pelvic diaphragm (kv Ani)
- **Floor** :- Perineal memb = inf fascia of urogenital diaphragm.
- **lateral** :- Obturator Fascia.
- **Posterior** :- closed by fusion of roof & floor
- **Anterior** :- closed by fusion of roof & floor below pubis symphysis
→ Transverse Perineal Ligament
* leaves an oval opening for passage of Deep vein of penis → Perineal Plexus
Deep vein of clitoris → Vesical Plexus



⇒ Contents:-

- * Urogenital Structures:- ① urethra (memb in males) → male: Bulbourethral gland
Female: part of vagina ②
- * Muscles:- muscles of urogenital diaphragm → Deep transverse Perineal + spinnet urethrae
- * Vessels:- vessels of D-PP:- Artery of Bulb & Urethral Artery
Intern Pudendal Artery
Perineal A
- * Nerves:- 2 Scrotal/labial branches + Perineal N.

Superficial Perineal Pouch

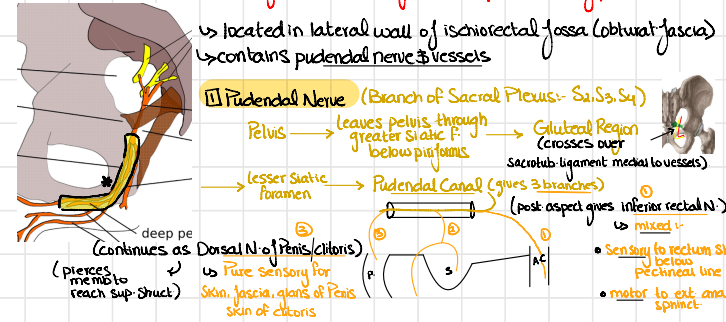
- **Roof** :- Perineal membrane
- **Floor** :- membranous layer of perineal fascia (Colley's)
- **lateral** :- Roof & floor attached to pubic arch
- **Posterior** :- closed by fusion of roof & floor
- **Anterior** :- Open to a space in abdominal wall between memb layer of ant wall & Ext oblique aponeurosis

⇒ Contents:-

- * Urogenital Structures:- ① Roots of clitoris (2 crura) + 2 bulbs of vestibule + greater vestibular gland
of penis (1 bulb, 2 crura) → penile urethra in spongiosum
- * Muscles:- Bulbovesibular/Bulbospongiosus, Ischio cavernosus, Superficial Trans Perineal
- * Vessels:- vessels of S-PP:- Dorsal A of Penis/clitoris
Deep A of Penis/clitoris
2 Posterior Scrotal A/labial
- * Nerves:- 2 Scrotal/labial branches + Dorsal N of Penis/clitoris

→ Moving on to Anal Triangle of Perineum

→ **Pudendal Canal** (extends from lesser sciatic foramen to post aspect of perineal memb)



(inside canal gives rise to - Pudendal N.) → mixed & divide to 2 branches

② Pudendal Artery (Branch from Ant division of Intern iliac)

- * descends in front of Sacral plexus & piriformis *
- **Pelvis** → Greater Sciatic foramen below piriformis → Gluteal Region (crosses over ischial spine) → lesser sciatic foramen
- **In S-PP** (pierces membrane & ends as) → Pudendal Canal (gives 6 branches) (post aspect gives inferior rectal A.)
- ① Dorsal art. of Penis → skin, fascia, glands in Deep art. of Penis → cavernous tissue
- ② In D-PP (pierces PM but directly supply under struct) → Artery of Bulb & Urethral Artery → corpus spongiosum & urethra
- ③ In pud. Canal:- (inside canal gives rise to - Pudendal A.) → 2 branches:- * 2 post. Scrotal/labial for post 1/3 of skin * Transverse Perineal A for muscles of Sup & Deep pad

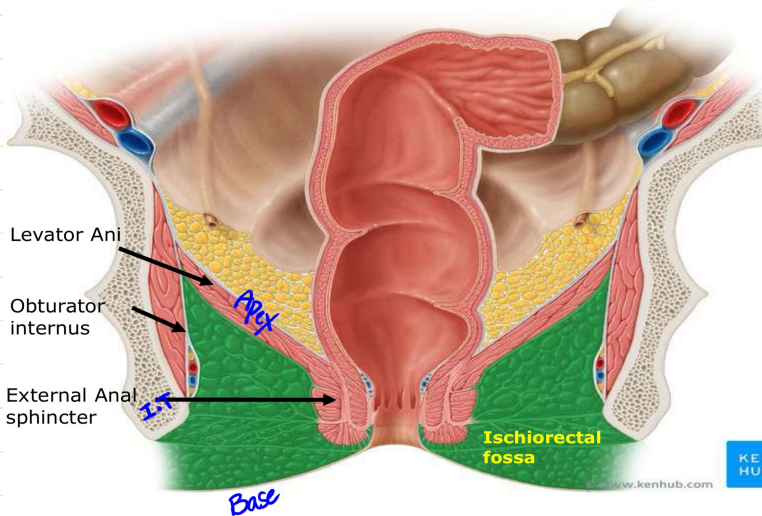
TABLE FOR COMPARISON.

Internal pudendal artery	Internal pudendal nerve
Inferior rectal	Inferior rectal N
Perineal A	Perineal N
Two scrotal (or labial)	Two scrotal (or labial)
Transverse perineal A	
Artery of the bulb Urethral artery	
Dorsal artery of the penis Deep artery of the penis	Dorsal nerve of penis or clitoris

→ Ischioanal Fossa

Boundaries : It has

1. **Apex :** it is the origin of levator ani from the lateral pelvic wall (White line)
2. **Base :** skin on either side of the anal orifice (skin of the base is supplied by inferior rectal N.).
3. **Anteriorly :** the posterior border of the perineal membrane
4. **Posteriorly :** sacrotuberous ligament covered by lower border of gluteus maximus muscle.
5. **Lateral wall :** is vertical formed by :
 - Lower part of obturator internus muscle and lower part of obturator fascia splitting to form pudendal canal.
 - Medial surface of ischial tuberosity.
6. **Medial wall :** formed by :
 - Levator ani muscle (lower surface).
 - External anal sphincter.



Contents of Ischioanal fossa :

1. Pudendal nerve.
2. Internal pudendal vessels.
3. Inferior rectal nerve.
4. Inferior rectal vessels.
5. Posterior scrotal nerves.
6. Posterior scrotal vessels.
7. Perforating cutaneous N. (S2, S3) .
8. Pad of Fat : It is rich in fibroelastic fibres and has two functions :

- It acts as a cushion support for rectum and anal canal.
- It allows distention of the rectum and anal canal during defaecation,
Then compress them after termination of the act.

Applied Anatomy:

Infections in the ischioanal pad of fat is common and lead to abscess formation.

The abscess may rupture medially into the anal canal or downwards into the skin at the fossa. This may leads to anal fistula

