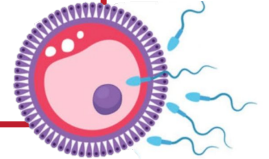


Female perineum and external genitalia

Reproductive block-Anatomy-Lecture 2

Editing file



Objectives

Color guide :

Only in boys slides in **Green**

Only in girls slides in **Purple**

important in **Red**

Notes in **Grey**

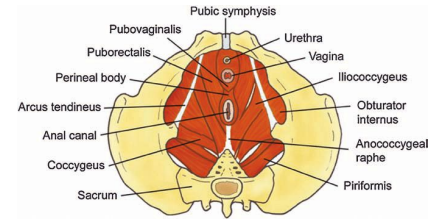
 **At the end of the lecture, students should be able to:**

- Boundaries of the perineum.
- Division of perineum into two triangles.
- Boundaries & Contents of anal & urogenital triangles.
- Lower part of Anal canal.
- Boundaries & contents of Ischiorectal fossa.
- Innervation, Blood supply and lymphatic drainage of perineum



Perineum

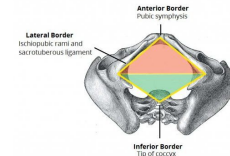
- It is the region of the body below the pelvic diaphragm (The outlet of the pelvis)
- It is a diamond shaped area between the thighs



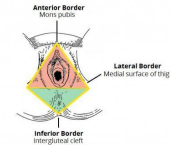
- Perineum Contents:**
- | | |
|---------------------------|-----------------------|
| 1. Lower ends of urethra. | 4. Anococcygeal body |
| 2. Vagina | 5. Anal canal |
| 3. Perineal body | 6. External genitalia |

Relations	Anterior	Posterior	Lateral
Bony Boundaries	Symphysis pubis	Coccyx	<ul style="list-style-type: none"> • Ischiopubic rami "anteriolateral" • Ischial tuberosities • Sacrotuberous ligaments "Posteriolateral"
Boundaries	Mons pubis	Inter gluteal folds	Medial surfaces of the thighs

Anatomical Borders:



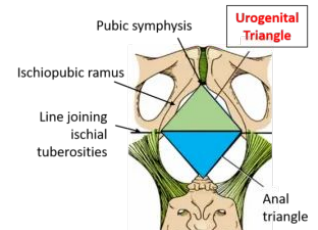
Surface Borders:



By an imaginary line passing through two ischial tuberosities it divided into:

Anteriorly: urogenital triangle

Posterior: Anal triangle



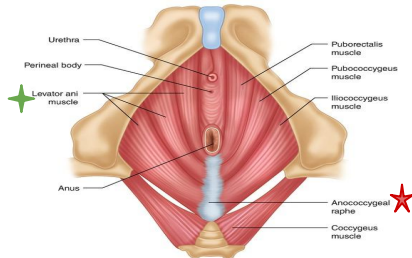
Perineum Contents

Anococcygeal Body

- ❑ It is a complex musculotendinous structure
- ❑ Located between the anterior aspect of the coccyx & the posterior wall of the anorectal canal

Function:

- ❑ Receives insertion of fibers of **levator ani muscle**

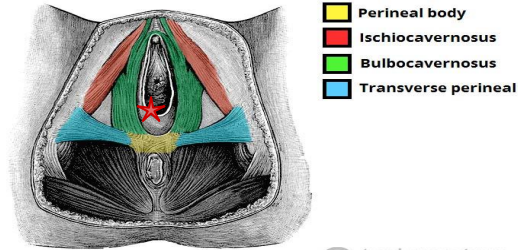


Perineal Body

- ❑ It is an irregular fibromuscular mass of variable size and consistency
- ❑ Located at **midpoint of the line between the ischial tuberosities**
- ❑ Lies in the subcutaneous tissue, posterior to vaginal vestibule and anterior to the anal canal & anus
- ❑ Forms the central point of the perineum & blends anteriorly with the perineal membrane

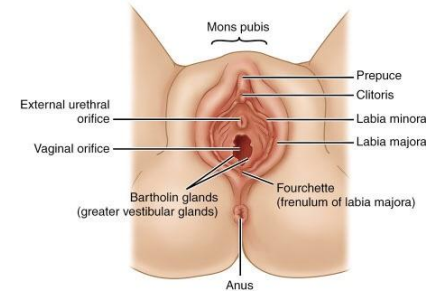
Function:

- ❑ Gives attachment to perineal muscles
- ❑ Plays an important role in visceral support especially in female



Female External Genitalia (Vulva)

1. Mons pubis : a collection of fat overlying the pubes.
2. Clitoris
3. Labia majora.
4. Labia minora.
5. Vestibule of vagina: The interval between the two labia minora.
6. Vagina & urethra open into the vestibule through urethral orifice anteriorly and vaginal orifice posteriorly.



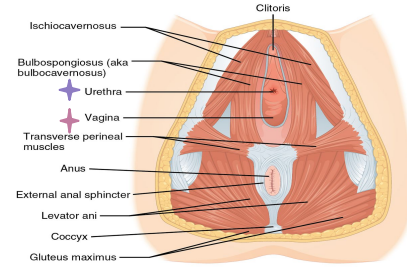
Urogenital Triangle

Boundaries

- **Anterior** → symphysis pubis
- **Posterior** → transverse line passing through the 2 ischial tuberosities
- **Lateral** → ischiopubic rami & ischial tuberosities

Contents

- ❖ Lower part of **urethra** & **Vagina**
- ❖ **External genitalia (Vulva)**



Fascia of Urogenital Triangle (Perineal Fascia)

- ❑ is continuous anteriorly with the fascia of abdomen and consists of:

01 Superficial layer

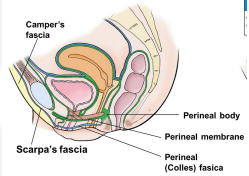
consists of

02 Deep layer

- ❑ Deep perineal fascia invests the muscles in the superficial perineal pouch

Superficial fatty layer (**Camper's fascia**) makes up the substance of mons pubis & labia majora and extends into the anal region

Deep membranous layer (**Colle's fascia**): Does not extend to anal region. Becomes fused with the posterior margin of the perineal membrane



Urogenital Diaphragm

- A triangular musculofascial diaphragm located in the anterior part of the perineum (in the urogenital triangle).
- Fills in the gap between the pubic arch.

- **Composed of:** Sphincter urethrae and the deep transverse perineal muscles enclosed within the superior and inferior layers of fascia of the urogenital diaphragm
- The inferior layer of the fascia is formed by perineal membrane

Perineal Pouches

Superficial perineal pouches

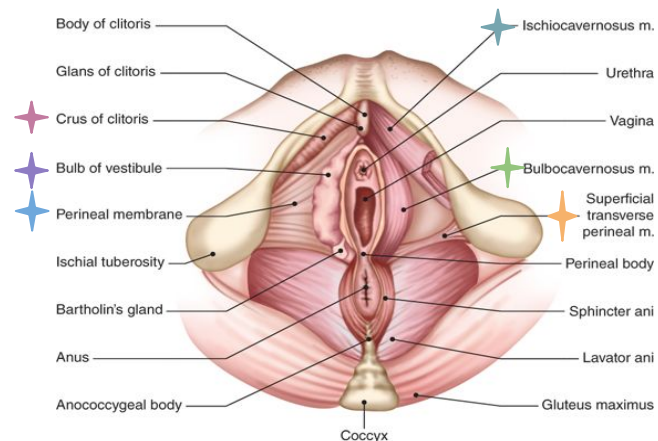
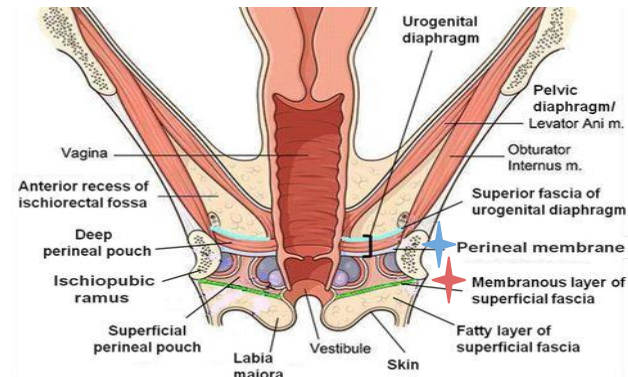
It is the space between the deep **membranous layer of superficial fascia** of perineum (Colle's fascia) and the **perineal membrane**

Boundaries

- Superior → perineal membrane
- Inferior → membranous layer of superficial fascia
- Lateral → ischiopubic rami

Contents

- ❖ **Bulbs of vestibule:** on each side of vaginal orifice
- ❖ **Crura of clitoris**
- ❖ **Superficial perineal muscles:**
 - I. **Bulbospongiosus muscle**, surrounds orifice of vagina and covers vestibular bulb
 - II. **Ischiocavernosus muscle**, covers crus of clitoris on each side
 - III. **Superficial transverse perineal muscles**
- ❖ **Greater vestibular glands:** on each side of vaginal orifice
- ❖ **Perineal branch of pudendal nerve** supplying muscles & skin



Perineal Pouches

Deep perineal pouches

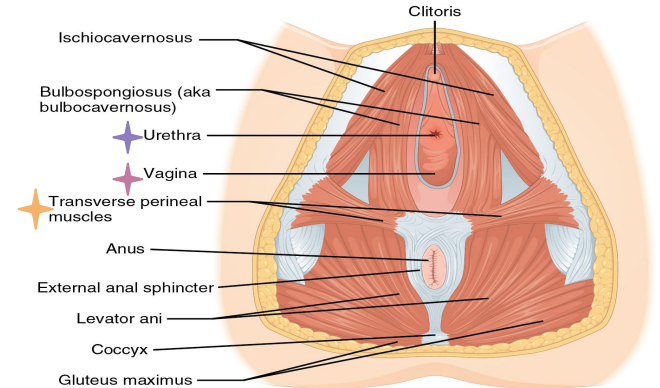
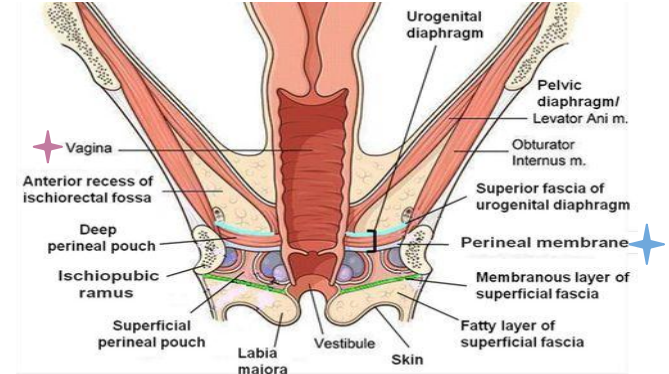
It is a completely closed space deep to the **perineal membrane**

Boundaries

- Superior → superior fascia of the urogenital diaphragm
- Inferior → inferior fascia of the urogenital diaphragm (perineal membrane)
- Lateral → inferior portion of obturator internus fascia

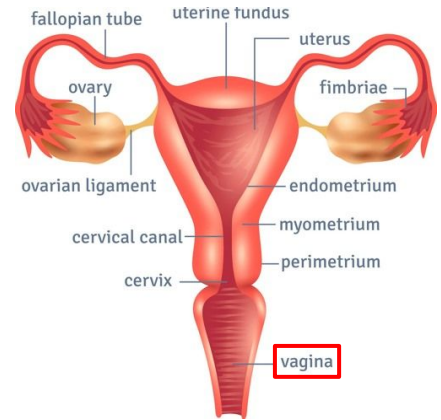
Contents

- ❖ Part of **urethra**
- ❖ Part of **vagina**
- ❖ **Sphincter urethrae** and **Sphincter vaginae** muscles, which is pierced by urethra & vagina
- ❖ Deep **transverse perineal muscles**
- ❖ **Internal pudendal vessels**
- ❖ **Dorsal nerve of clitoris** (branch of Pudendal nerve)



Vagina

- is a muscular canal that leads from the uterus to the external orifice of the genital canal
- It measures about 3 in. (8 cm) long.
- It serves as the excretory duct for the menstrual flow & forms part of the birth canal.
- The **vaginal orifice** in a virgin possesses a thin mucosal fold, called the hymen, which is perforated at its center. **It lies** posterior to the urethral orifice.

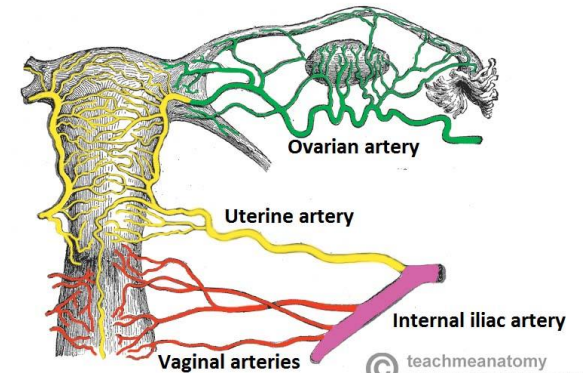


Arterial Supply

- Vaginal artery: a branch of the internal iliac artery
- Vaginal branch of the uterine artery

Venous Drainage

- drain into the internal iliac veins.



Anal Triangle

Boundaries:

1 **Anterior** → Transverse line passing through the 2 ischial tuberosities

2 **Lateral** → ischial tuberosity & sacrotuberous ligament

3 **Posterior** → coccyx

2-Contents:

A. Lower part of Anal canal

Anal canal

- It is about 1.5 in. long, descending from the rectal ampulla to the anus.

Relations (In female):

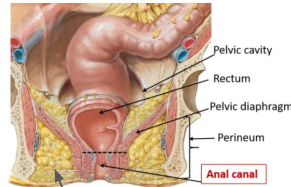
- Anteriorly → Perineal body, urogenital diaphragm, and lower part of vagina
- Posteriorly → Anococcygeal body.
- Laterally → Ischiorectal fossae.

Divided into: (by the pectinate line)

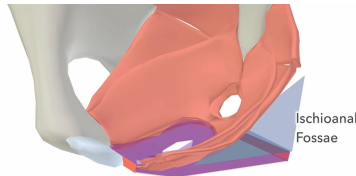
- Upper half: derived from hindgut (endoderm)
- Lower half: derived from the Proctodeum (ectoderm)

The two parts have different blood supply, nerve supply and lymphatic drainage

B. Anococcygeal body



Ischiorectal fossa



C. Ischiorectal fossa on each side

- A fascial lined wedge-shaped space on each side of the anal canal

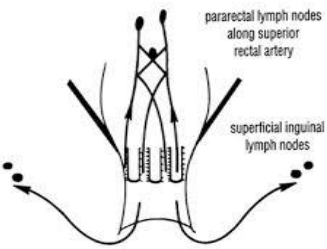
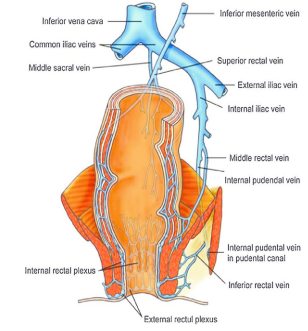
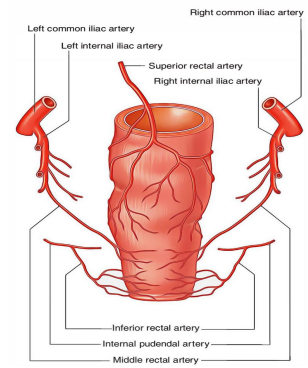
Boundaries:

- Base → Skin of the perineum
- Medial wall → Levator ani & anal canal
- Lateral wall → Obturator internus, covered with fascia

Contents:

- Dense fat
- Pudendal nerve & internal pudendal vessels within the pudendal canal (A fascial canal formed by obturator fascia, located on the lateral wall of the ischiorectal fossa)
- Inferior rectal nerve & vessels crossing the fossa to reach anal canal

Anal canal supply:

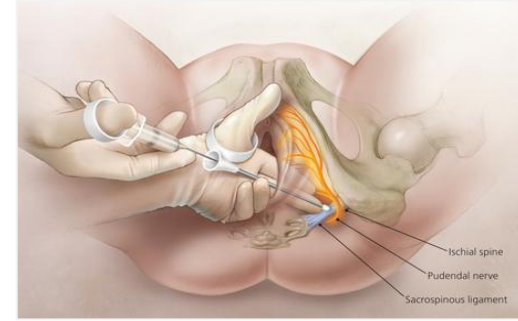


	Arterial supply	Venous drainage	Lymphatic drainage	Nerves ★
Upper half	Superior rectal a. (continuation of the inferior mesenteric a.)	Superior rectal vein <u>drained</u> into the inferior mesenteric vein (portal circulation)	Para-rectal nodes drained into inferior mesenteric lymph nodes and internal iliac lymph nodes	(sensitive to stretch) Autonomic nerve Visceral motor (Inferior Hypogastric Plexus) (sympathetic & parasympathetic)
Lower half	Inferior rectal a. (branch of internal pudendal a.)	Inferior rectal vein <u>drained</u> into the internal pudendal vein (Systemic circulation)	Superficial inguinal lymph nodes	(sensitive to pain) Somatic motor & sensory nerves - (Inferior rectal nerve branch of pudendal nerve) supplies external sphincter muscle of the anus and the skin of the anal region

Pudendal Nerve Block



- It is used in providing analgesia for the second stage of labour and to provide anesthesia of the perineum in order to create and repair an episiotomy.
- Can be done by transvaginally or through perineal approach.

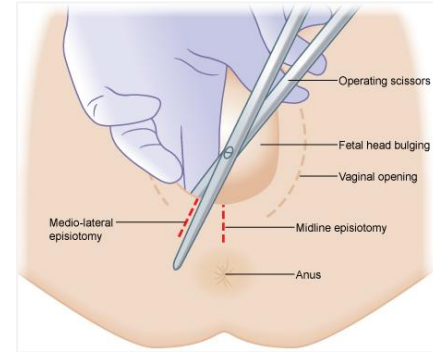


it divided into

Transvaginal method: The needle is passed through the vaginal **mucous membrane** toward the **ischial spine**. After the needle is passed through the sacrospinous ligament, the anesthetic solution is injected around the pudendal nerve

Perineal method: The **ischial tuberosity** is palpated subcutaneously through buttock. The needle is inserted on the medial side of the ischial tuberosity to a depth of about 1 in. (2.5 cm) from the free surface of the tuberosity. The anesthetic is injected around the pudendal nerve.

An episiotomy is a surgically planned incision on the perineum and the posterior vaginal wall during second stage of labor to prevent perineal tear.



QUIZ

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
B	B	A	A	D	A	D	B

Q1: which of the following bony boundaries is located in the anterior to perineum ?

- A. Coccyx
- B. Symphysis pubis
- C. Ischiopubic rami
- D. Ischial tuberosities

Q2: Vagina & urethra open into the vestibule through urethral orifice ... & vaginal orifice

- A. Laterally, posteriorly
- B. Anteriorly , posteriorly
- C. Anteriorly. Laterally .
- D. posteriorly , anteriorly

Q3: In transvaginal method, the needle is passed through thetoward the

- A. Vaginal mucous membrane, ischial spine
- B. Vaginal mucous membrane , ischial tuberosity
- C. Buttock , ischial spine
- D. Buttock , ischial tuberosity

Q4: Which of the following is considered a landmark during a transvaginal pudendal n. block?

- A. Ischial spine
- B. Ischial tuberosity
- C. Pubic rami

Q5: Crura of clitoris is one of the content of?

- A. Deep perineal pouch
- B. Anal triangle
- C. pudendal canal
- D. Superficial perineal pouch

Q6: which of the following is posterior to anal canal?

- A. Anococcygeal body
- B. vagina
- C. ischiorectal fossae
- D. perineal body

Q7: which of the following vein drains into inferior mesenteric vein?

- A. Middle rectal vein
- B. Internal pudendal vein
- C. Inferior rectal vein
- D. Superior rectal vein

Q8: which of the following boundaries is located in the base of Ischiorectal fossa?

- A. Levator ani
- B. skin of perineum
- C. Pudendal nerve
- D. Obturator internus



Members board



Team leaders

- **Abdulrahman Shadid**

Boys team:

- **Mohammed Al-huqbani**
- **Salman Alagla**
- **Ziyad Al-jofan**
- **Ali Aldawood**
- **Khalid Nagshabandi**
- **Sameh nuser**
- **Abdullah Basamh**
- **Alwaleed Alsaleh**
- **Mohaned Makkawi**
- **Abdullah Alghamdi**

- **Ateen Almutairi**

Girls team :

- **Ajeed Al Rashoud**
- **Taif Alotaibi**
-  **Noura Al Turki**
- **Amirah Al-Zahrani**
- **Alhanouf Al-haluli**
- **Sara Al-Abdulkarem**
- **Renad Al Haqbani**
- **Nouf Al Humaidhi**
- **Jude Al Khalifah**
- **Nouf Al Hussaini**
- **Danah Al Halees**
- **Rema Al Mutawa**
- **Maha Al Nahdi**
- **Razan Al zohaifi**
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