

Dr Oluwadiya Kehinde
www.oluwadiya.com

The Male and Female Internal Genitalia

Overview

- The reproductive role of the male is to produce sperm, deliver them to the female
- Primary sex organs are the gonads
- Testes and ovaries
- Gonads produce sex cells: gametes
- Accessory reproductive organs: prostates, uterus, seminal glands etc

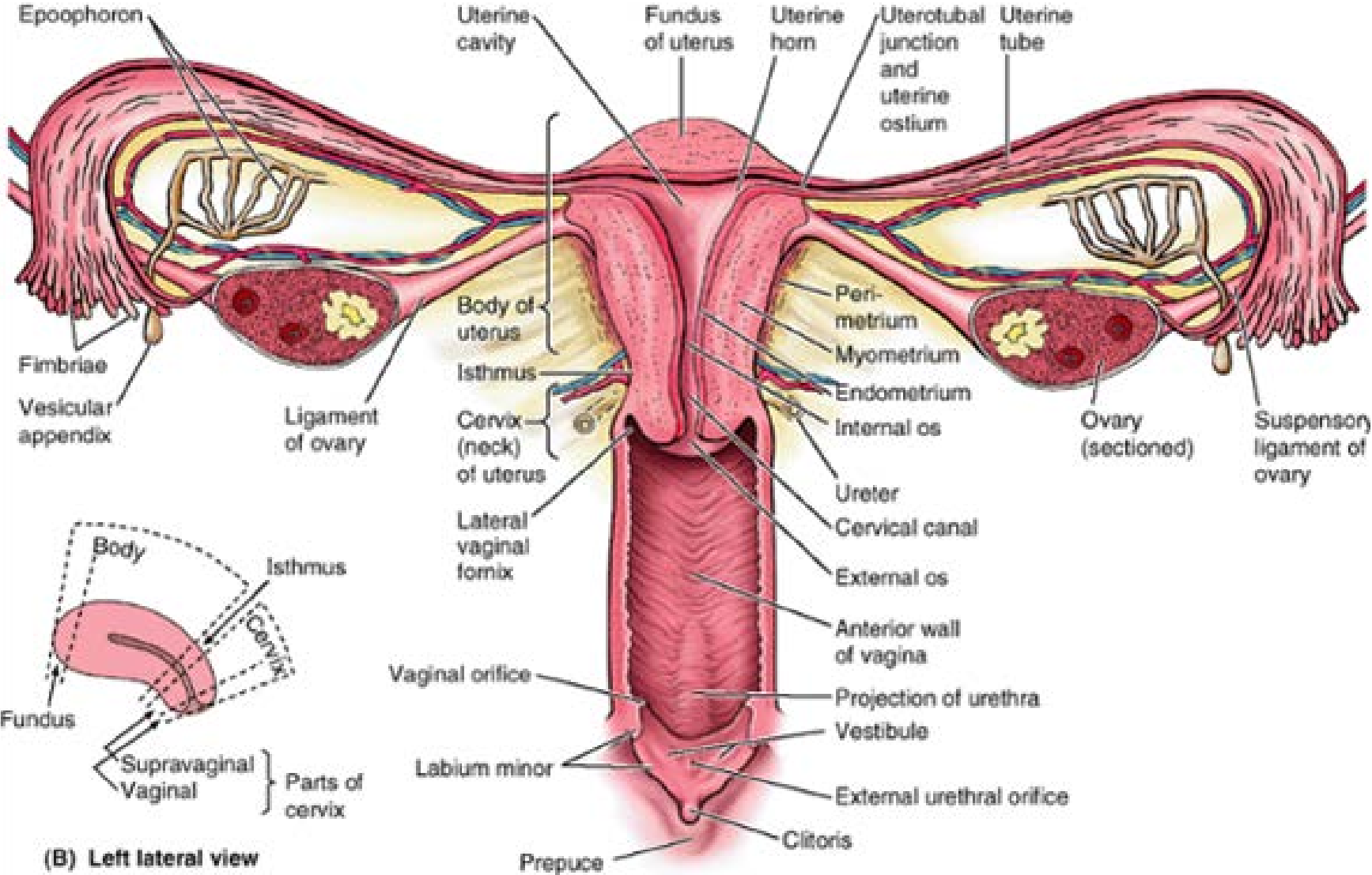
Overview

- Female provide female gametes or ova
- Males provide male gamete or spermatozoa
- The joining of sperm and ova forms fertilized eggs.
- After fertilization the female uterus provides a protective environment for the embryo, later called the fetus, which develops until birth

Female Internal Genitalia

- These are:
 - i. The ovary
 - ii. The uterine tubes (Formerly fallopian tubes)
 - iii. The uterus

Female Genitalia



The Ovary

- These are the primary organs of female reproduction
- Also functions as endocrine organs, producing the sex hormones
- Paired organs suspended in the pelvic cavity by ligaments
- Located near the attachment of the broad ligament to the wall of the pelvis
- Smooth surfaced in the prepubertal female, it becomes progressively scarred in the adult.

The ovary

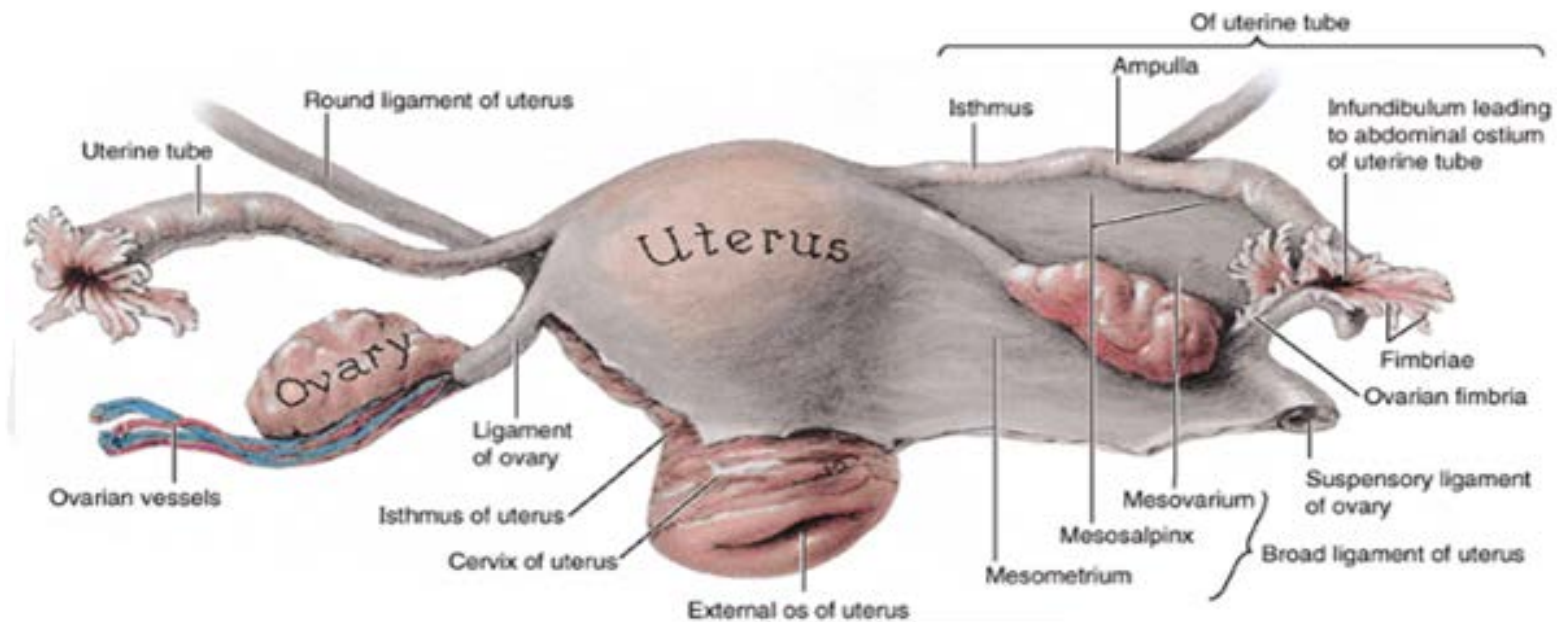
- The ovary is suspended inside the peritoneum cavity but is not covered by the peritoneum, because of this:
- the oocyte expelled at ovulation passes into the peritoneal cavity where it is snapped up by the fimbriae of the uterine tube
- The ovary is covered by cuboidal epithelium

Ovarian blood supply

- The ovarian vessels, lymphatics, and nerves pass to and from the superolateral aspect of the ovary within the suspensory ligament of the ovary
- The ovarian arteries are branches of abdominal aorta
- The right ovarian vein ascends to enter the inferior vena cava
- The left ovarian vein drains into the left renal vein

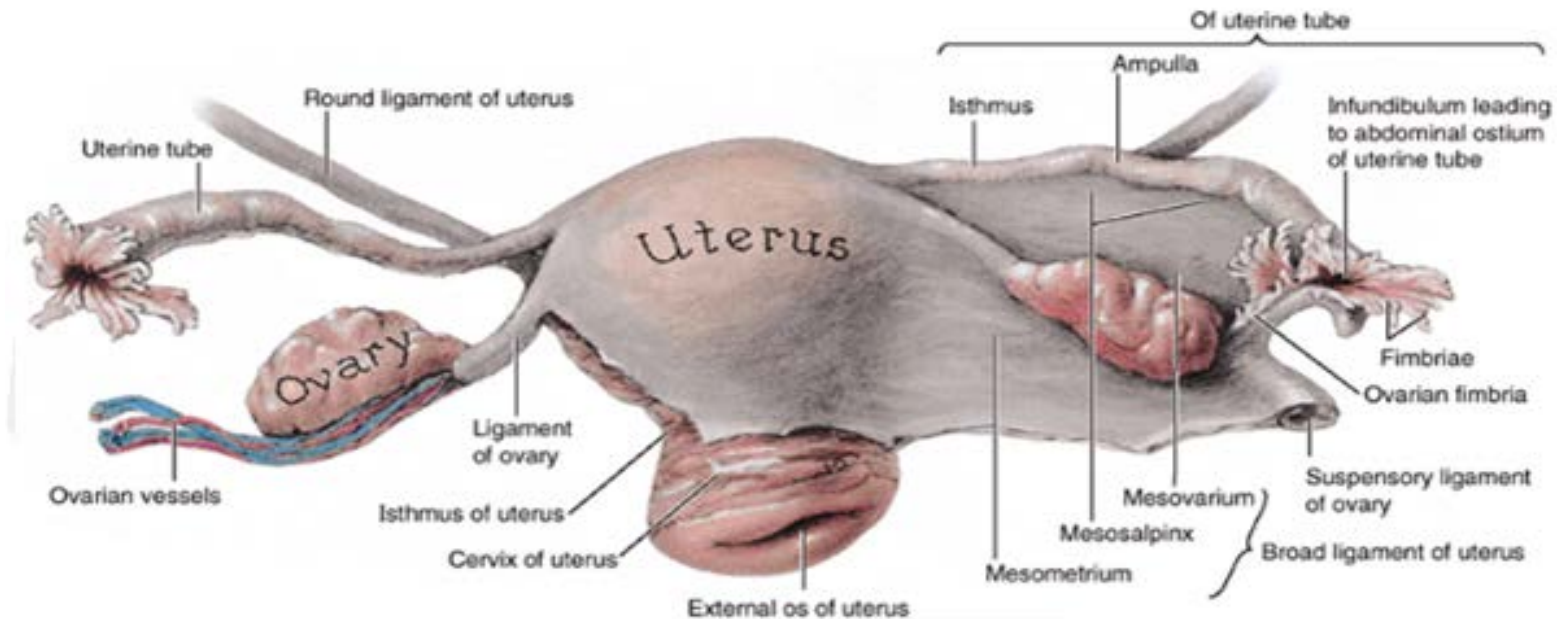
Ligaments of the ovary

- Two of them:
 - i. Suspensory ligament of the ovary: fold of peritoneum suspending the ovary from the pelvic brim; contains the ovarian vessels, which descend over the pelvic brim adjacent to the ureter



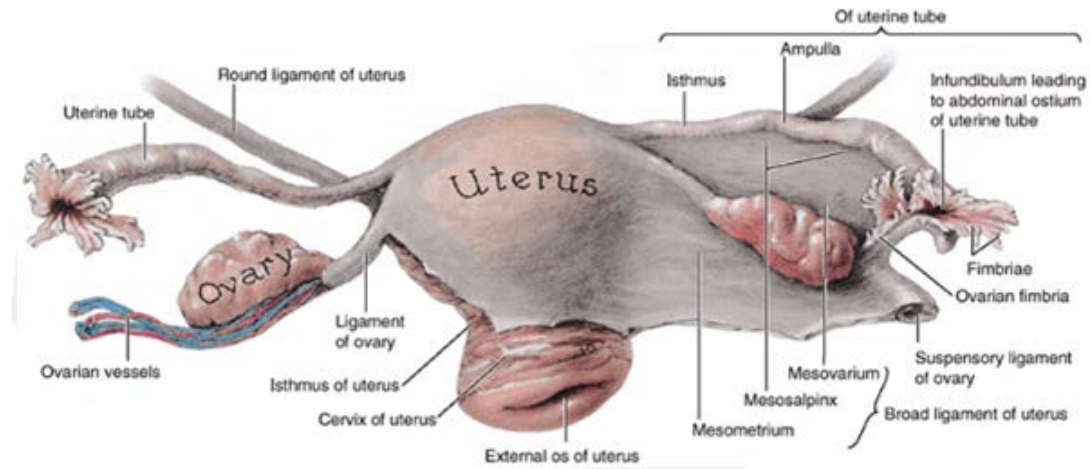
Ligaments of the ovary

- Two of them:
 - i. Ligament of the ovary: band of connective tissue and smooth muscle extending from the ovary to the lateral margin of the uterus, below the uterotubal junction



Uterine Tubes

- Extends from the ovary to the uterus and serves as a conduit for ova.
- Receives the ovulated oocyte
- Provides a site where fertilization can occur
- Enclosed and supported by a broad ligament



Divisions of Uterine tube

1. Infundibulum:

- Funnel-like, lateral end; its rim has a fringe of fingerlike processes called fimbriae that embrace the ovary
- Opens into the peritoneal cavity and thus provides for communication between the peritoneal cavity and the external environment (via the uterine tube, uterus, cervix, and vagina)

Divisions of Uterine tube

2. Ampulla:

- wide part medial to the infundibulum; comprises about half of the uterine tube

3. Isthmus:

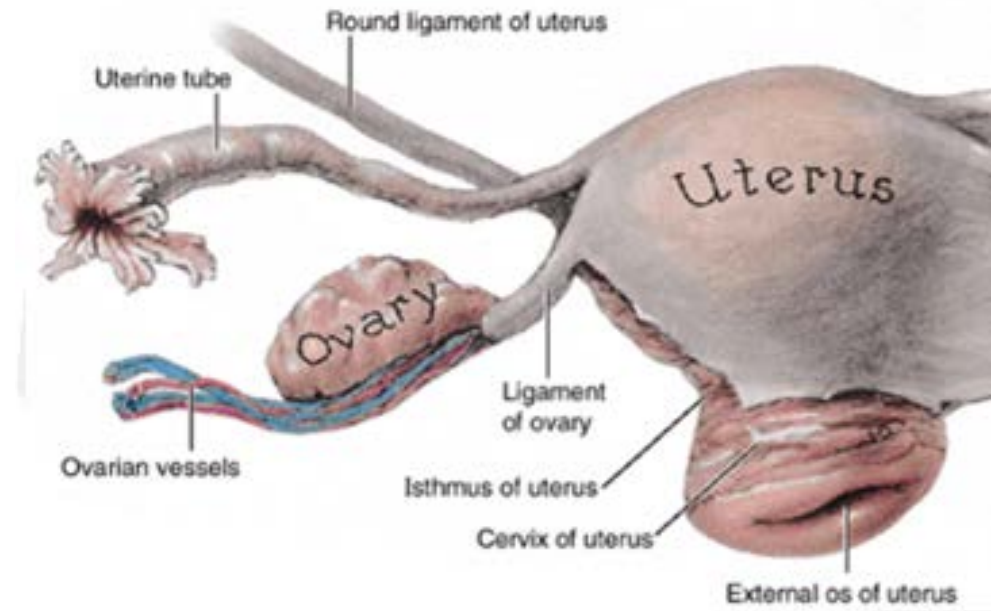
- Narrow part between the ampulla and intramural part.
- Comprises approximately one-third of the uterine tube

4. Intramural (uterine)

- Passes through the wall of the uterus and opens into the uterine cavity

Uterine Tubes

- No actual contact between the uterine tubes and the ovaries
- Fimbriae create fluid currents to carry the oocyte into the uterine tube



Uterine tubes

- Oocyte is carried to the uterus by peristalsis and rhythmic beating of cilia
- Takes 3-4 days to get to the uterus
- Oocyte is viable up to 24 hours after ovulation
- Usual site for fertilization is the uterine tube

The uterus

- Thick-walled, muscular organ shaped like an inverted pear; it is flattened anteroposteriorly and has a narrow triangular lumen
- Located within the lesser pelvis, posterior to the urinary bladder and anterior to the rectum
- Receives, retains and nourishes the fertilized egg

Parts of the uterus

- A. Fundus: Upper rounded region above the entrance of the uterine tubes is the fundus
- B. Body: tapering, intermediate part
- C. Cervix:
 - cylindrical, lower part of the uterus whose inferior part projects into the vagina
 - Separated from the body by the isthmus
 - The cavity of the cervix (cervical canal), communicates with the uterine cavity and vagina through its internal os and external os, respectively

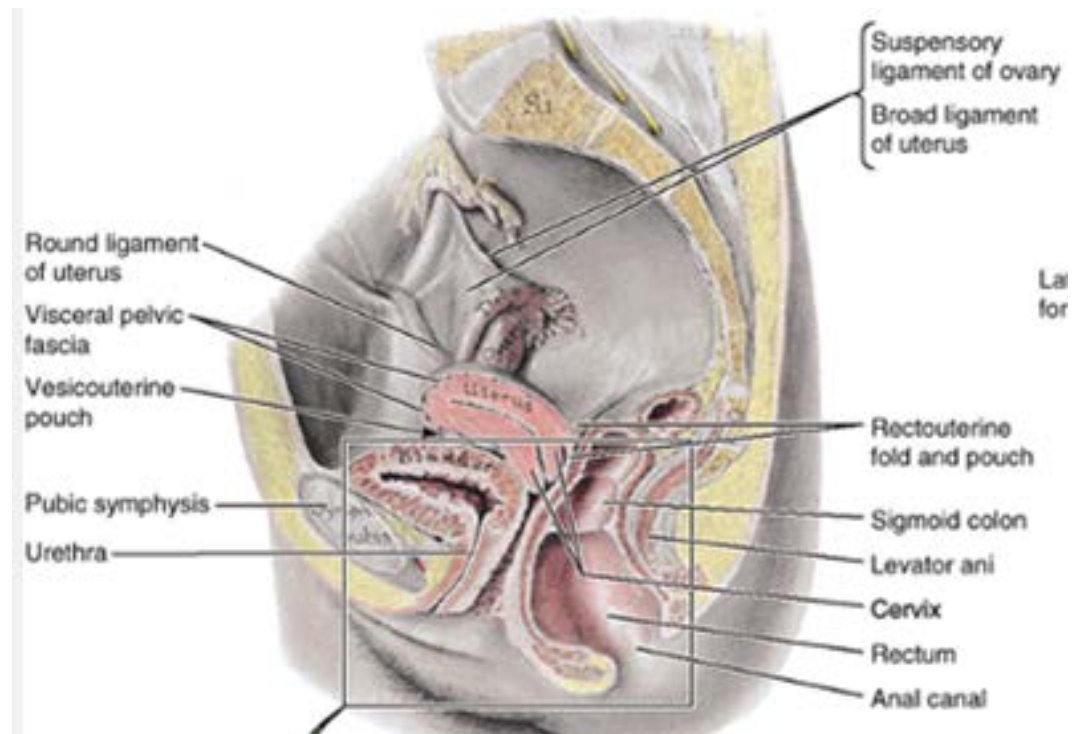
Uterine Wall

Three layers

- Inner layer or mucosa is the endometrium
 - if fertilization occurs, the fertilized egg implants into the endometrium
- Myometrium is the bulky middle layer
 - Composed of smooth muscle
 - Active role during the delivery of the baby
- Perimetrium or visceral peritoneum
 - Outer serous layer

Anterior relations

- The anterior surface of the uterus is covered with peritoneum as far inferiorly as the superior part of the cervix
- It then reflects forward onto the posterior surface of the urinary bladder to form the vesicouterine pouch



Posterior relations

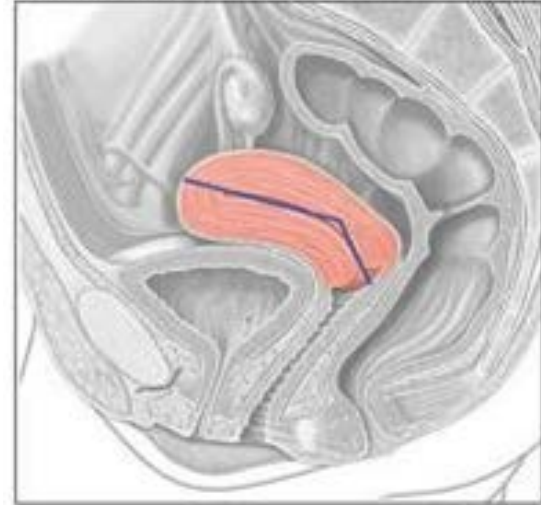
- The posterior surface of the uterus is covered with peritoneum which extends as far inferiorly as the superior part of the vagina.
- It then reflects backward onto the anterior surface of the rectum to form the rectouterine pouch or pouch of Douglas

Orientation of the uterus

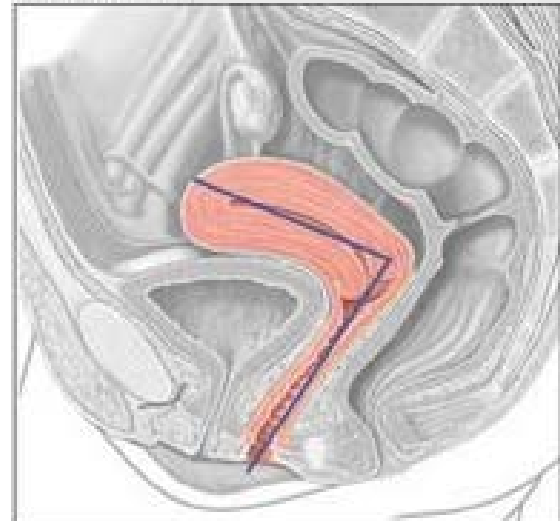
The adult uterus is usually:

- Anteverted: tipped anterosuperiorly relative to the axis of the vagina
- Anteflexed: flexed or bent anteriorly relative to the cervix, so that its mass lies over the bladder

Anteflexed



Anteverted



Ligaments of the uterus: (4)

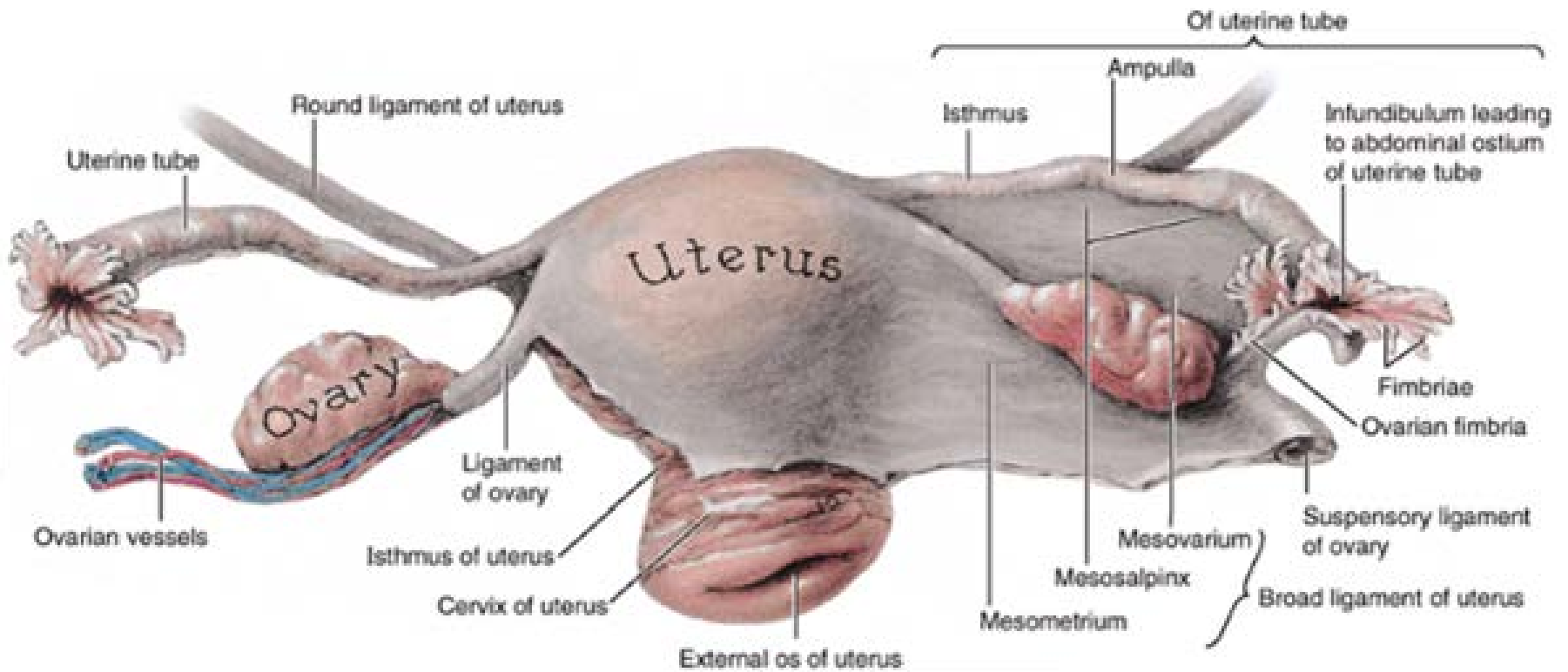
1. Broad ligament

- Formed by the two layers of peritoneum that come together along the lateral margin of the body of the uterus and extend to the lateral pelvic wall; supports the uterus in the pelvic cavity

Parts of the broad ligaments

- Mesovarium: fold of the posterior layer of the broad ligament that suspends the ovary
- Mesosalpinx: portion of the broad ligament superior to the mesovarium; it contains the uterine tube in its upper free margin
- Mesometrium: portion of the broad ligament inferior to the mesovarium

Ligaments of the uterus: (4)



Ligaments of the uterus: (4)

2. Round ligament

- *Continuation of the ovarian ligament; both the ovarian ligament and round ligament of the uterus are derivatives of the genitoinguinal ligament of the embryo*
- Commences below the uterotubal junction and courses forward to the deep inguinal ring; traverses the inguinal canal and ends in the labium majors

Ligaments of the uterus: (4)

3. Cardinal (transverse cervical) ligament

- Thick mass of extraperitoneal connective tissue within the base of the mesometrium; extends from the cervix to the lateral pelvic wall and supports the uterus in the pelvic cavity
- The uterine vessels course along its superior aspect

Ligaments of the uterus: (4)

4. Uterosacral ligament

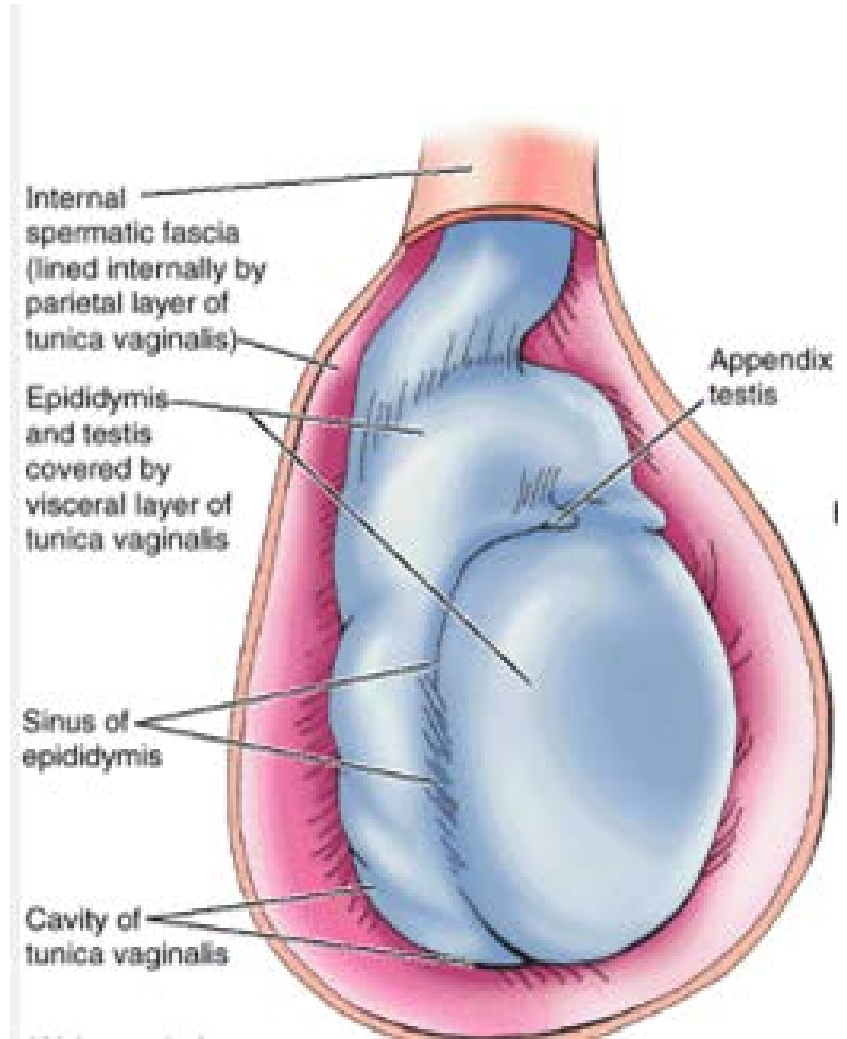
- Condensation of extraperitoneal connective tissue extending from the cervix to the sacrum; lateral to the rectum, it forms a fold of peritoneum, the rectouterine fold
- Functions to support the uterus in the pelvic cavity and helps maintain its ante flexed and anteverted position

Male Internal genitalia

- Testis
- Epididymis
- Vas deferens
- Seminal glands
- Prostate

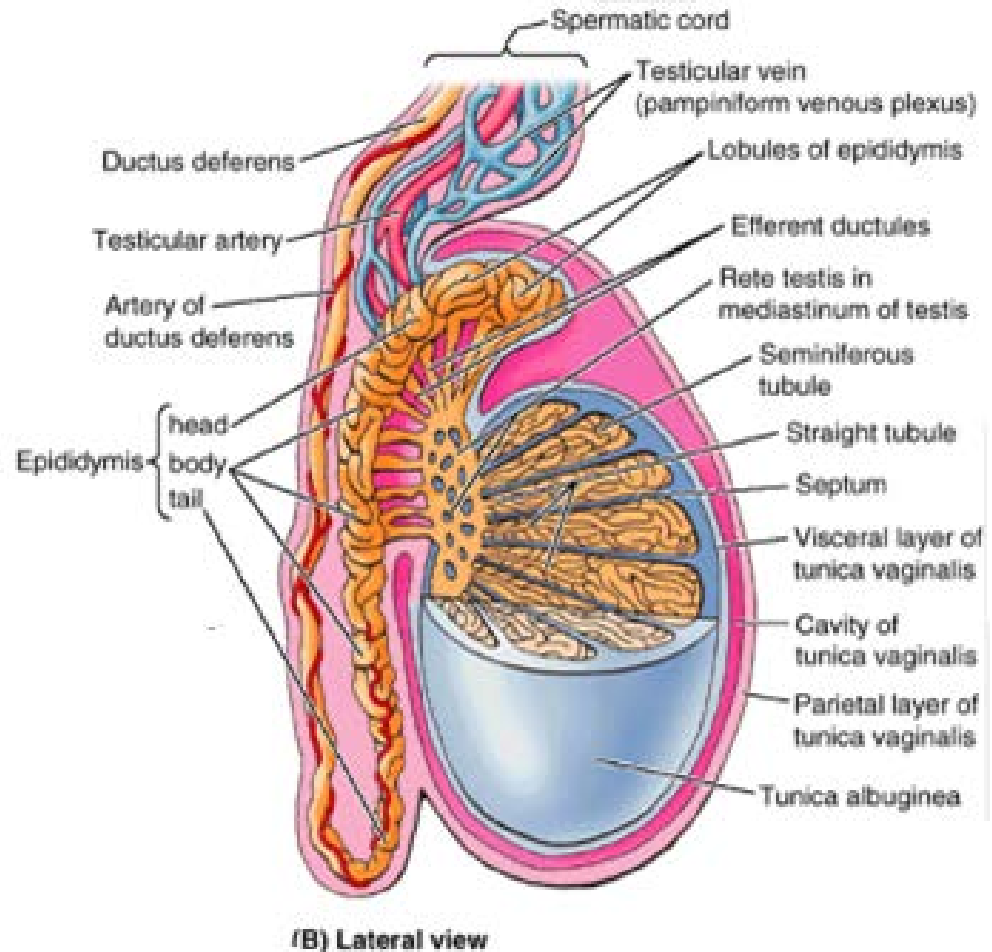
Testis

- The primary male reproductive organ
- Paired, resides in the scrotum, to keep its temperature low.
- Oval organ covered by a dense connective tissue capsule, the tunica albuginea.



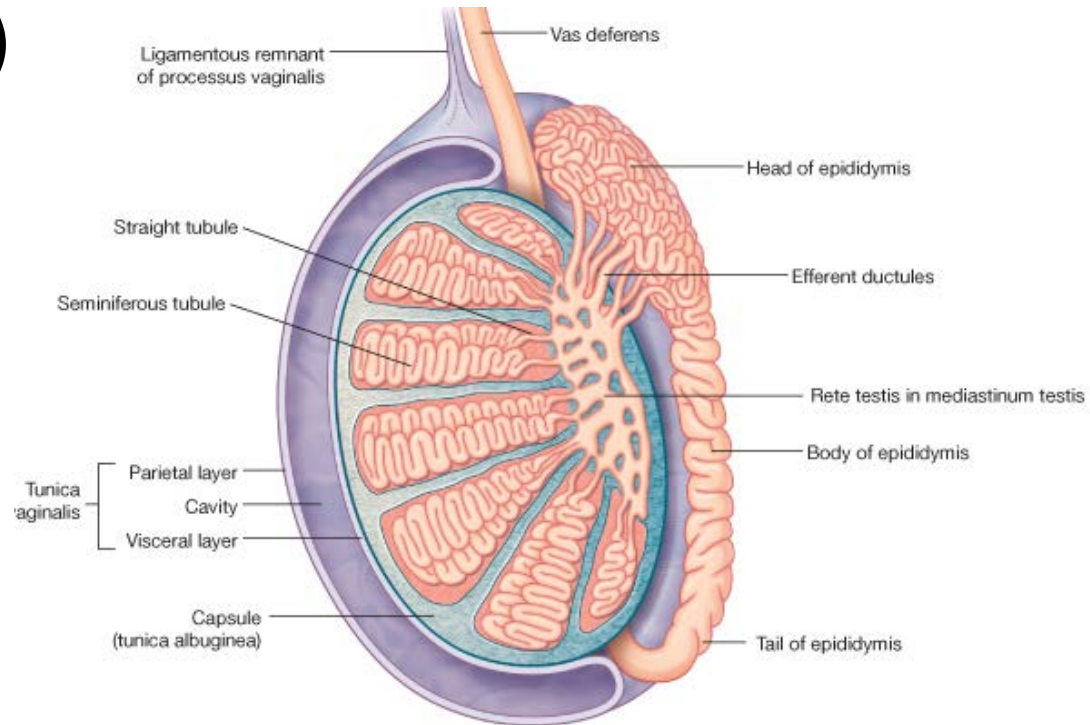
Testis

- Each testis is composed of seminiferous tubules, separated by septa.
- These septa are invaginations of the tunica albuginea
- Interstitial cells are also found in the testis. They produce sex hormones.



The testis

- The seminiferous tubules (about 500-600) opens into the rete testis
- The rete testis opens into the epididymis through the efferent ductules



Epididymis

- Comma shaped
- A single convoluted tube divided into three regions:
- Head which lies on the superior pole of the testis
- Body which descends along the posterior aspect of the testis
- Tail located at the inferior pole of the testis and this is continuous with the ductus deferens.
- About 15 efferent ductules transport spermatozoa from the superior pole of the testis into the head of the epididymis

Ductus deferens

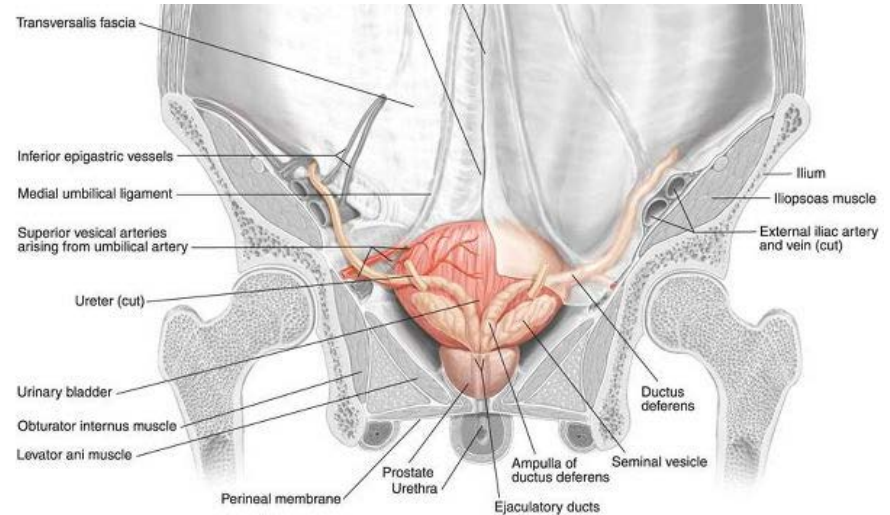
- Commences at the tail of the epididymis and ends at the ejaculatory duct
- Passes through the inguinal canal as a (the major) component of the spermatic cord
- It descends into the lesser pelvis; at the base of the urinary bladder, it courses superior, then medial to the ureter

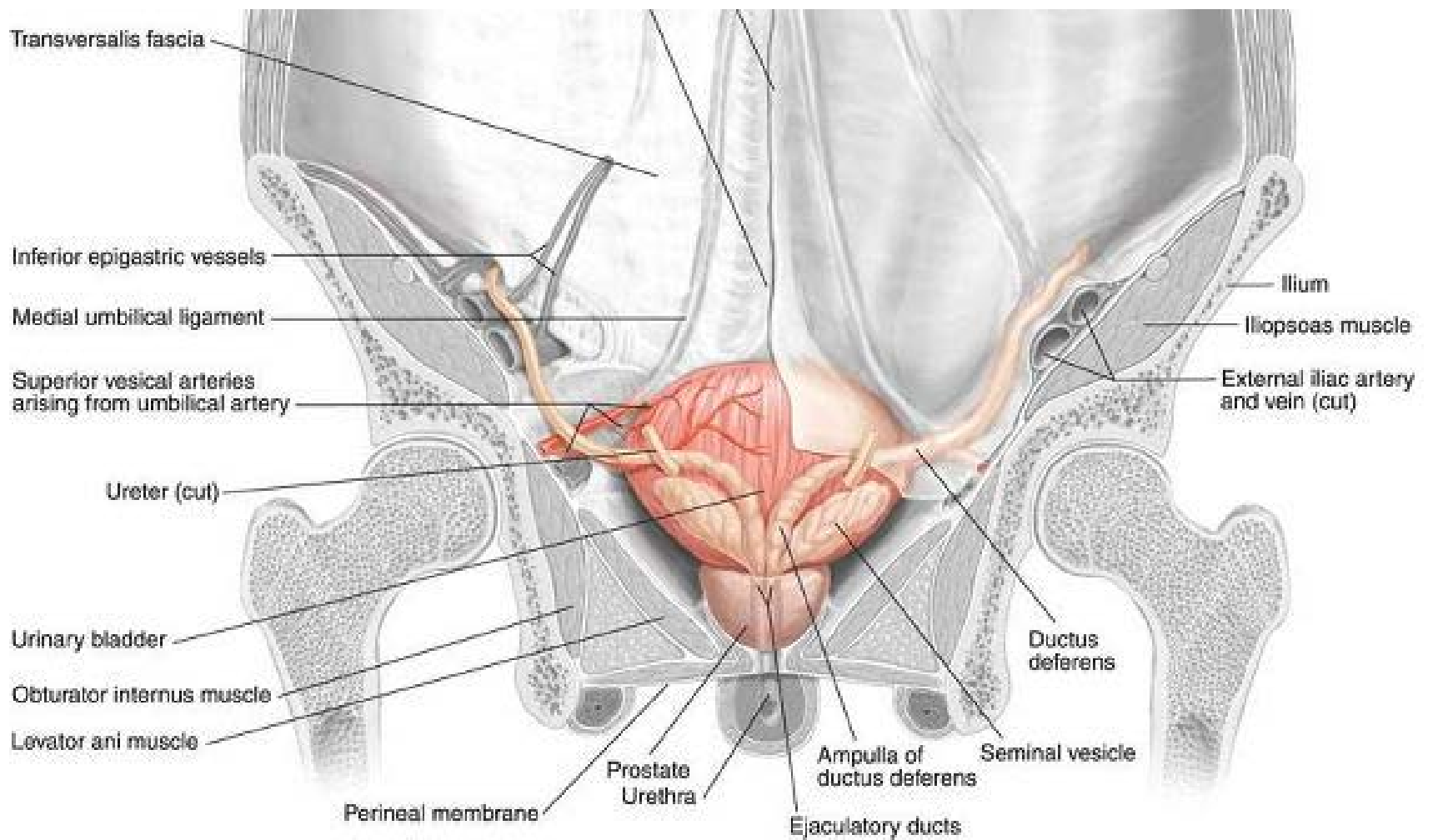
Ductus deferens

- Its distal, dilated portion, the ampulla, narrows before joining the duct of the seminal vesicle to form the ejaculatory duct; the ureter penetrates the urinary bladder wall between the ampulla of the ductus deferens and seminal vesicle

Seminar glands

- Blind-ending, sacculated tube; located lateral to the ampulla of the ductus deferens on the posterior surface of the bladder
- Its yellowish secretion contains fructose, which is nutritive to spermatozoa;





Ejaculatory duct

- Formed by the union of the ductus deferens and the duct of the seminal vesicle near the base of the prostate; passes through the posterior portion of the prostate and opens onto the colliculus seminalis lateral to the prostatic utricle

Prostate

- Cone-shaped; its base contacts the neck of the bladder, its apex is in contact with the superior fascia of the urogenital diaphragm, and, on each side, it is supported by the pubococcygeus muscles

Prostate

- Bound to the pubic symphysis by the puboprostatic ligament; its whitish secretion contains enzymes that liquefy semen and buffers that neutralize the acid pH of the vagina

- Benign enlargement of the prostate may result in narrowing of the prostatic urethra and impedance of urine flow
- It is common after the age of 50
- The prostate is also a frequent site of malignancy
- An enlarged prostate may be detected by digital rectal examination



PLEASE JOIN THE FORUM AT
WWW.OLUWADIYA.COM TO ASK
QUESTIONS

THE END