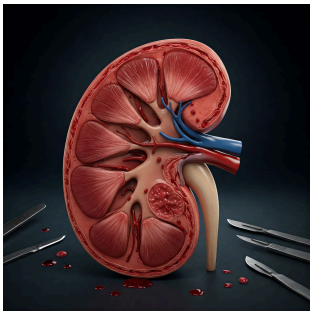


Written by: Dr. Ali Fahad Abu Jamil.
Anatomy, lecture title: Female genital system.

I will give a general explanation before entering the slides.

The female genital system is made up of two main parts: external and internal organs.

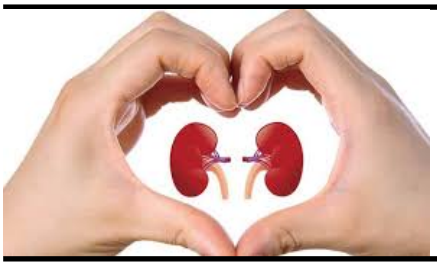
External Genital Organs (Vulva): These are the parts you can see from the outside. They include:

- Mons pubis: a soft, fatty area above the pubic bone, usually covered with hair.
- Labia majora: the larger outer lips that protect the inner parts.
- Labia minora: the smaller inner lips inside the labia majora.
- Clitoris: a small, sensitive organ that's involved in sexual pleasure.
- Vestibule: the space between the labia minora where you find the openings of the urethra and vagina.
- Bartholin's glands: located near the vaginal opening, these glands release mucus to help with lubrication.

Internal Genital Organs: These are the parts inside the body:

- Vagina: a muscular tube that connects the outside with the cervix; it's where menstrual blood comes out and where the baby passes during birth.
- Uterus: a pear-shaped organ where the baby grows during pregnancy. It has two main parts: Body, the upper part and Cervix, the lower part that opens into the vagina.
- Fallopian tubes: tubes that carry the egg from the ovary to the uterus. They have different sections like the infundibulum, ampulla (which is the common site for fertilization), isthmus, and interstitial part.
- Ovaries: small, oval-shaped organs that produce eggs and also release hormones like estrogen and progesterone.

Main Functions for Female genital system: Producing eggs (ovulation) and Releasing hormones like estrogen and progesterone and Supporting pregnancy and Providing a passageway for birth through the vagina.



Let's start the fun, and start with the slides.

Ovaries

Small almond-shaped organ found in the female pelvic cavity. It sits in a spot called the ovarian fossa, which is on the lateral wall of the pelvis. This fossa is bordered by the external iliac vessels in front, and the internal iliac vessels and ureter behind, in terms of orientation, it changes depending on whether the woman has had children, in a nulliparous woman (never gave birth), the ovary is positioned vertically, with a superior and inferior pole while in a multiparous woman (has given birth), it turns horizontally, so the superior pole faces laterally and the inferior pole faces medially; before puberty, the ovary looks smooth and pinkish-grey while after puberty, it becomes more grey and gets a wrinkled (puckered) surface due to ovulation and in old age, it shrinks and becomes atrophic.

The ovary has:

- 2 ends: The superior (tubal) end is connected to the pelvic wall via the suspensory ligament of the ovary and is near the fimbriae of the uterine tube and The inferior (uterine) end is attached to the uterus by the proper ovarian ligament (within the broad ligament).
- 2 borders: The anterior (mesovarian) border has the hilum, where vessels, lymphatics, and nerves enter/leave. It connects to the mesovarium, a small peritoneal fold and The posterior (free) border is related to the uterine tube.
- 2 surfaces: Lateral surface, faces the ovarian fossa, and lies close to the obturator nerve and vessels and Medial surface, touches the uterine tube.

Note: The uterine tube is related to the tubal end, the posterior border, and the medial surface of the ovary.

Ligaments of the ovary: Proper ovarian ligament – from the ovary to the uterus and Mesovarium – connects the anterior border to the broad ligament and Suspensory ligament of the ovary – connects the superior end to the lateral pelvic wall; it carries vessels, lymphatics, and nerves.

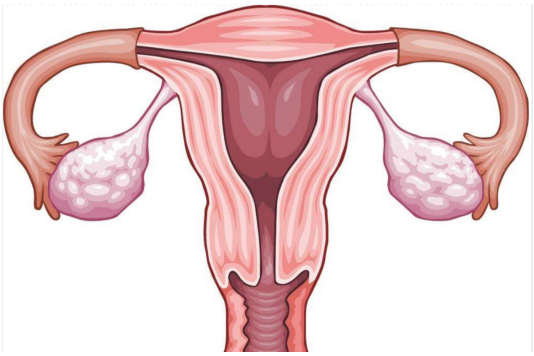
Blood supply: Mainly from the ovarian artery, which comes directly from the abdominal aorta (at L2) and It runs through the suspensory ligament, then through the mesovarium to reach the ovary's hilum and It also supplies the lateral part of the uterine tube, and anastomoses with the uterine artery.

Venous drainage: The ovarian vein forms from a pampiniform plexus at the hilum; Right ovarian vein drains into the IVC while Left ovarian vein drains into the left renal vein.

Lymphatic drainage: Goes to the lateral aortic (lumbar) lymph nodes.

Nerve supply: Comes from autonomic fibers that travel along the ovarian artery, mainly from the celiac and aortic plexuses. These nerves are sensory and vasomotor.

I like to explain the pictures and return the information to make it easier to memorize.



The image depicts the female reproductive system, specifically showing the ovaries, fallopian tubes, and uterus. The ovaries are the oval-shaped organs on either side of the uterus; they are responsible for producing eggs (ova) and female sex hormones. The fallopian tubes are the tubes connecting the ovaries to the uterus; they are the site of fertilization. The uterus is the hollow muscular organ that houses the fetus during pregnancy. The cervix, the lower part of the uterus that opens into the vagina, is also visible in the image.

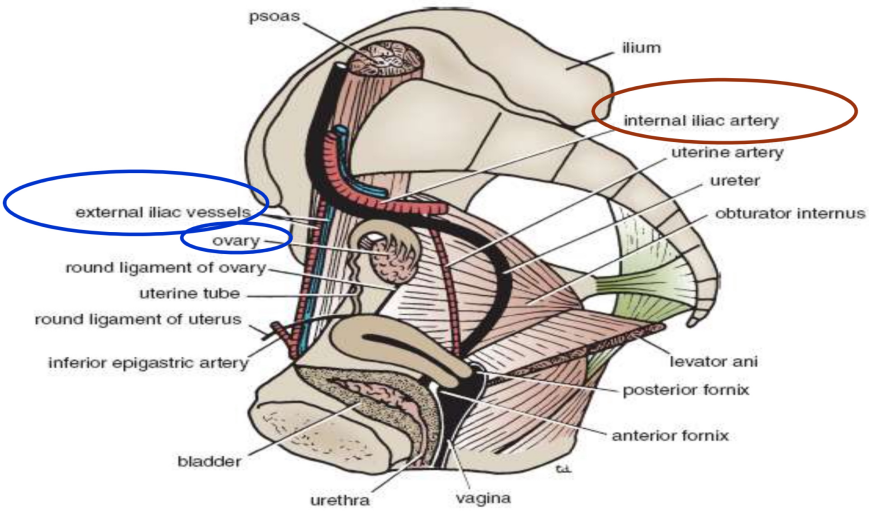
The image shows the anatomy of the female pelvis, focusing on the female reproductive organs and their relationship to surrounding structures. Here's a breakdown of the terms:

External iliac vessels: These are large vessels that carry blood to the legs.

Ovary: The female gonad that produces eggs and sex hormones.

Round ligament of ovary: A ligament that connects the ovary to the uterus.

Uterine tube (Fallopian tube): A tube



connecting the ovary to the uterus; the site of fertilization.

Round ligament of uterus: A ligament that connects the uterus to the pelvic wall.

Inferior epigastric artery: An artery supplying blood to the lower abdominal wall.

Bladder: A muscular sac that stores urine.

Urethra: The tube through which urine exits the bladder.

Vagina: The canal connecting the uterus to the external world.

Ilium: Part of the pelvic bone.

Internal iliac artery: A major artery supplying blood to the pelvic organs.

Uterine artery: An artery supplying blood to the uterus.

Ureter: The tube carrying urine from the kidneys to the bladder.

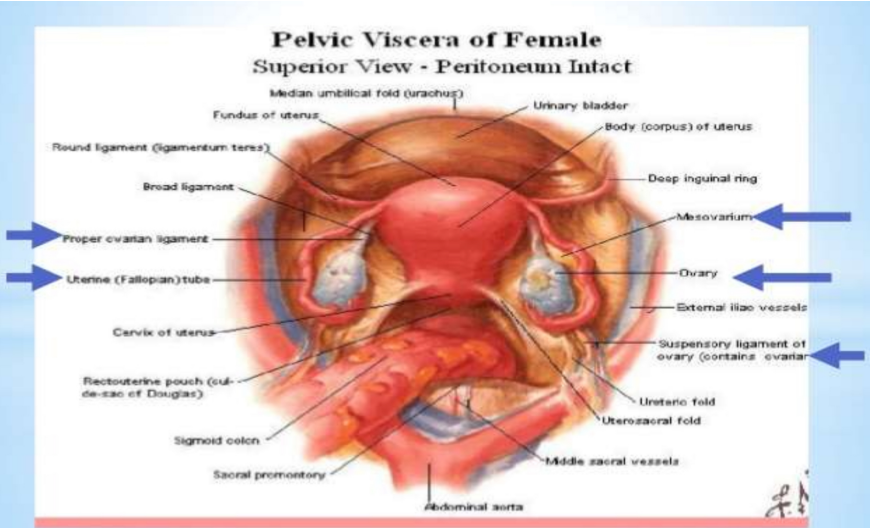
Obturator internus: A muscle in the pelvis.

Levator ani: A muscle in the pelvic floor.

Posterior fornix: The posterior part of the vaginal fornix.

Anterior fornix: The anterior part of the vaginal fornix.

The image shows a superior view of the female pelvic viscera with the peritoneum intact. Here's breakdown of the terms:



Median umbilical fold (urachus): remnant of the umbilical cord.

Fundus of uterus: The rounded upper portion of the uterus.

Round ligament (ligamentum teres): ligament connecting the uterus to the abdominal wall.

Broad ligament: broad ligament that supports the uterus.

Urinary bladder: muscular sac that stores urine.

Body (corpus) of uterus: The main part of the uterus.

Deep inguinal ring: opening in the abdominal wall.

Mesovarium: Part of the broad ligament that supports the ovary.

Proper ovarian ligament: ligament connecting the ovary to the uterus.

Uterine (Fallopian) tube: tube connecting the ovary to the uterus; the site of fertilization.

Cervix of uterus: The lower part of the uterus that opens into the vagina.

Rectouterine pouch (cul-de-sac of Douglas): deep pouch in the pelvic cavity.

Sigmoid colon: Part of the large intestine.

Sacral promontory: The projecting part of the sacrum.

Abdominal aorta: The main artery in the abdomen.

Ovary: The female gonad that produces eggs and hormones.

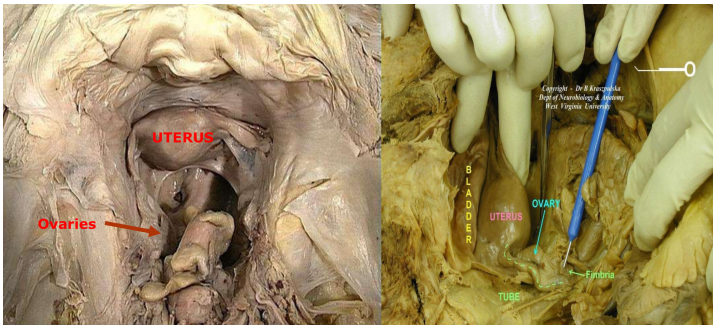
External iliac vessels: Large blood vessels in the pelvis.

Suspensory ligament of ovary: ligament that supports the ovary.

Uterine fold: A fold in the peritoneum.

Uterosacral fold: fold in the peritoneum connecting the uterus to the sacrum.

Middle sacral vessels: Blood vessels in the sacral region.



Both images depict the female reproductive system. The image on the left shows a general view of the uterus and ovaries, while the image on the right shows a closer view of the ovary, fallopian tube, and cervix.

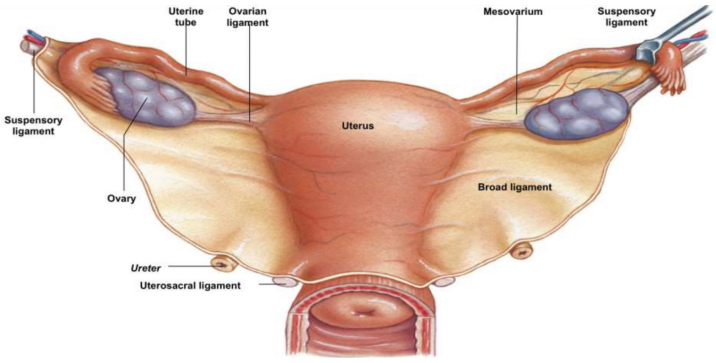
Uterus: The hollow muscular organ that houses the fetus during pregnancy.

Ovaries: The female gonads that produce eggs (ova) and sex hormones.

Tube (Fallopian tube): The tube connecting the ovary to the uterus; the site of fertilization.

Fimbria: The finger-like projections at the end of the fallopian tube help capture the egg.

Bladder: A muscular sac that stores urine.



reproductive system, focusing on the uterus, ovaries, and their associated ligaments here's a breakdown of the terms:

Uterus: The primary muscular organ of the female reproductive system where the fetus develops during pregnancy.

Ovary: The female gonad that produces eggs (ova) and sex hormones.

Uterine tube (Fallopian tube): The tube connecting the ovary to the uterus; the site of fertilization.

Ovarian ligament: A ligament connecting the ovary to the uterus.

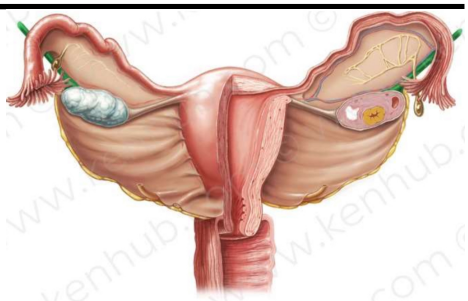
Suspensory ligament: A ligament that supports the ovary.

Broad ligament: A broad ligament that supports the uterus.

Mesovarium: Part of the broad ligament that supports the ovary.

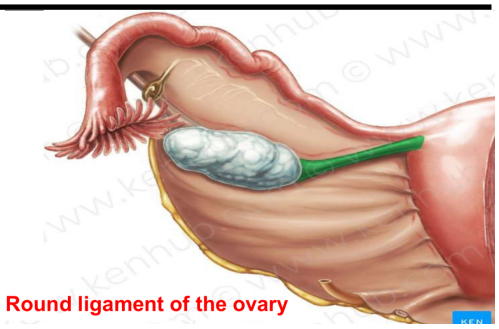
Uterosacral ligament: A ligament connecting the uterus to the sacrum (part of the spine).

Ureter: The tube carrying urine from the kidneys to the bladder.



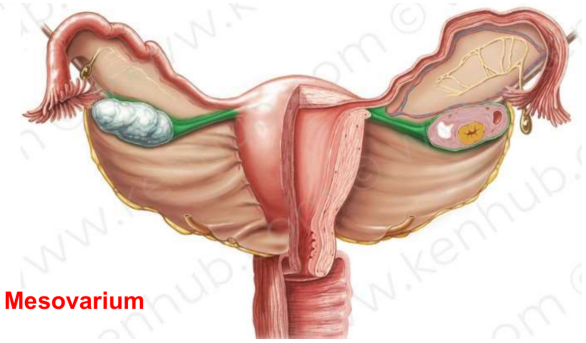
Suspensory ligament of ovary

The suspensory ligament of the ovary, also known as the infundibulopelvic ligament, is a fold of peritoneum that extends from the superior pole of the ovary to the lateral wall of the pelvis. It is considered a lateral extension of the broad ligament. This ligament is crucial not only for supporting the ovary but also because it contains important structures, including the ovarian artery (a branch of the abdominal aorta), ovarian vein, lymphatic vessels, and the ovarian nerve plexus. Clinically, the suspensory ligament is highly significant during oophorectomy, where it must be carefully ligated due to the presence of major blood vessels. It may also be a source of bleeding or pain in cases such as ovarian torsion or cyst rupture. It should not be confused with the ligament of the ovary proper, which connects the ovary to the uterus and does not contain major vessels.



Round ligament of the ovary

The round ligament of the ovary, more accurately called the ovarian ligament or ligament of the ovary proper, is a fibrous cord that connects the medial pole of the ovary to the lateral angle of the uterus, just below the origin of the uterine (fallopian) tube. It is a remnant of the superior part of the gubernaculum and lies within the broad ligament. This ligament does not contain blood vessels, unlike the suspensory ligament of the ovary. Its main function is to help anchor the ovary to the uterus and maintain its position.
Embryologically, both the round ligament of the uterus and the ovarian ligament are derived from the gubernaculum, which plays a role in the descent of the gonads during development.



Mesovarium

The mesovarium is a short fold of peritoneum that serves as a part of the broad ligament and connects the anterior border of the ovary to the posterior layer of the broad ligament. It forms the small portion of the broad ligament through which structures pass to and from the ovary. These structures include the ovarian vessels (artery and vein), lymphatics, nerves, and the mesonephric remnants (e.g., epoophoron). These elements enter and exit the ovary at the ovarian hilum, which is the point where the mesovarium attaches.

mesovarium is important because it acts as the conduit for the neurovascular supply of the ovary but does not cover the surface of the ovary itself—this is why the ovary is not completely covered by peritoneum, allowing for ovulation to occur directly into the peritoneal cavity.

I know that I have re-dissected many terms more than once, but this goal is to save.

The uterine tubes (aka fallopian tubes) are about 10 cm long and extend from the uterus to the area near the ovaries. They lie in the upper part of the broad ligament. Their job is mainly to transport the oocyte (egg) from the ovary and meet the sperm for fertilization — which usually happens in the ampulla. The tube has four parts from lateral to medial:

1. Infundibulum – it's funnel-shaped and has finger-like projections called fimbriae that help capture the egg after ovulation.
2. Ampulla – this is the longest and widest part, and it's the usual site of fertilization.
3. Isthmus – it's narrow, short, and thicker walled.
4. Uterine (intramural) part – it passes through the uterine wall and opens into the uterine cavity; it's the narrowest part.

Blood supply: The lateral third of the tube gets blood from the ovarian artery while The medial two-thirds are supplied by the uterine artery.

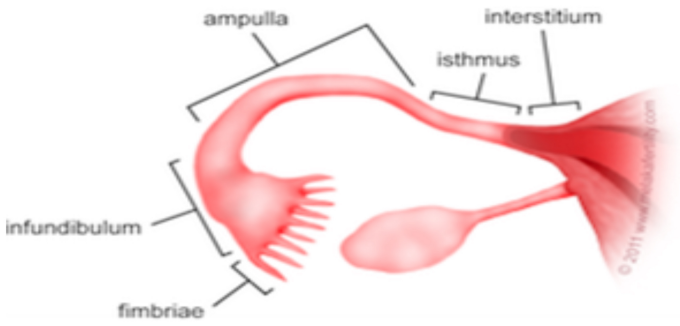
Nerve supply: Similar to blood supply: lateral third by ovarian plexus, and medial two-thirds by uterine nerve plexus; These nerves carry sympathetic and parasympathetic fibers from the inferior hypogastric plexus.

Functions: Carry the oocyte to the site of fertilization (ampulla) and Transport the fertilized egg (zygote) to the uterus.

Clinical relevance: Blocked tubes (from infections) can cause infertility and It's the most common site for ectopic pregnancy, and if it ruptures, it can cause internal bleeding also Since the abdominal end of the tube opens into the peritoneal cavity, infections can spread from the uterus to the abdomen (peritonitis) and we can do Tubal ligation is a surgical method to prevent pregnancy.

The image is a diagram illustrating the female Fallopian tubes. The Fallopian tubes are thin tubes that connect the ovaries to the uterus. They play a vital role in fertilization.

Infundibulum: The funnel-shaped portion of the Fallopian tube, which is its widest part. It contains small finger-like projections called fimbriae.

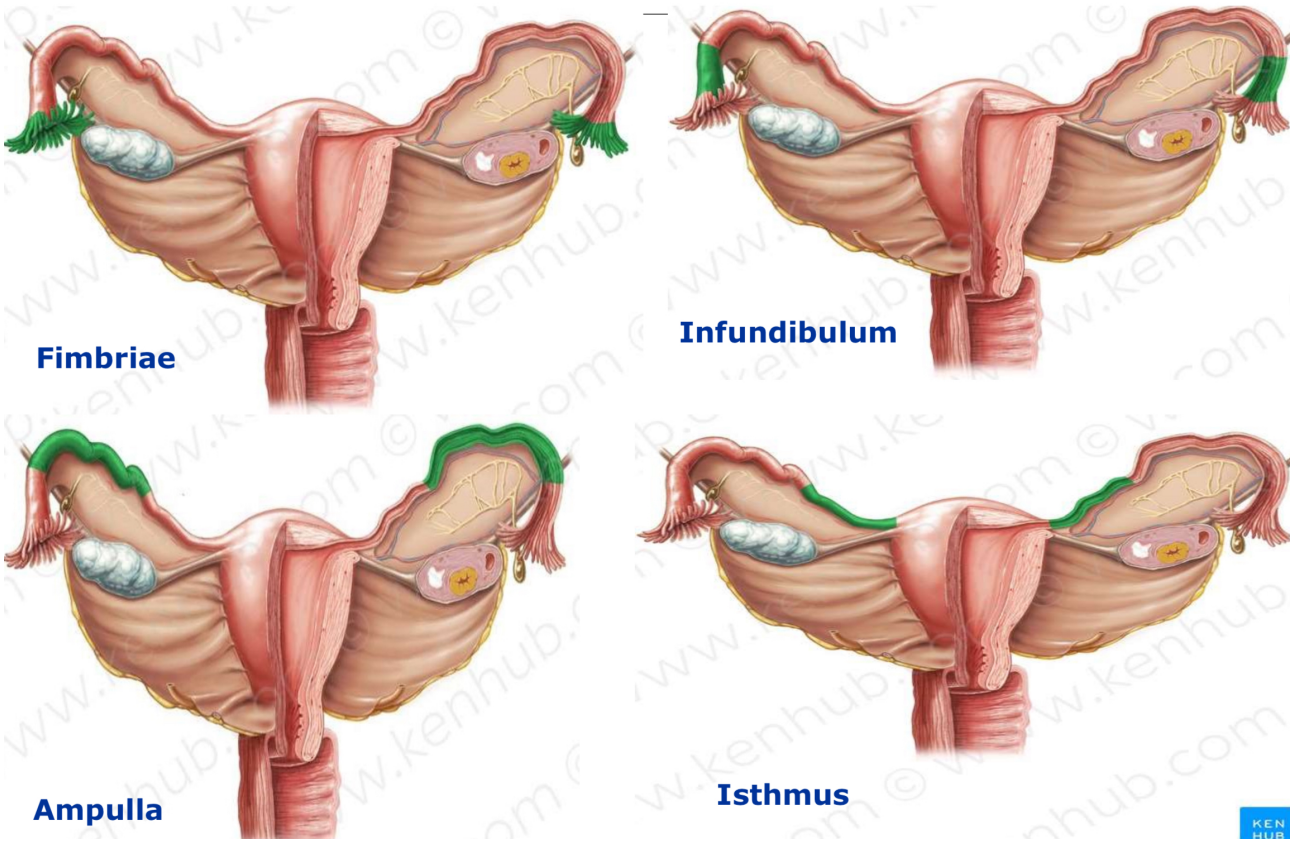


Fimbriae: These small, finger-like projections capture the ovum released from the ovary.

Ampulla: The widest and longest part of the Fallopian tube; this is where fertilization usually occurs.

Isthmus: The narrow part of the Fallopian tube; it connects the ampulla to the uterus.

Interstitium: The portion that passes through the uterine wall.



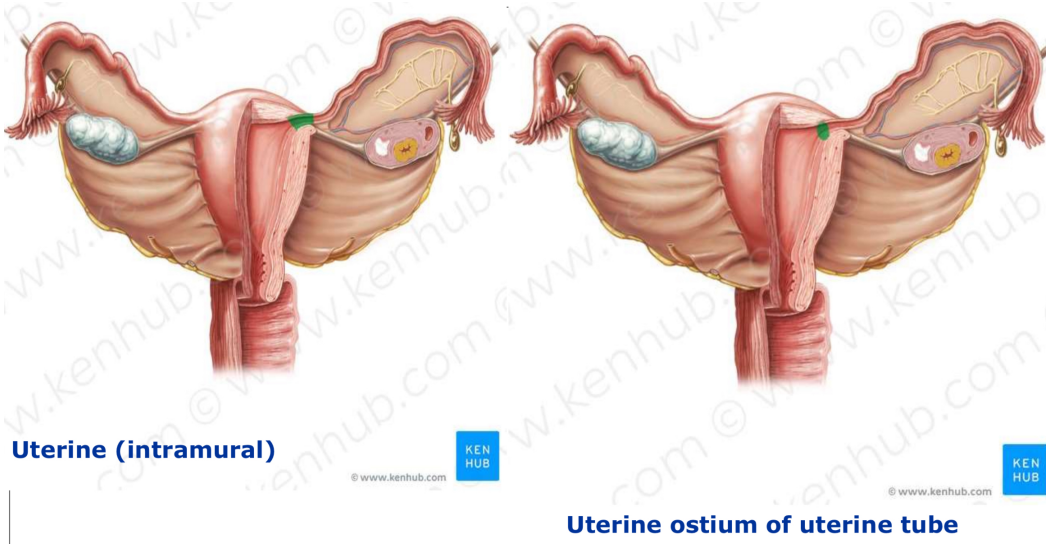
Fimbriae are finger-like projections located at the distal (lateral) end of the uterine (fallopian) tube, specifically on the infundibulum, which is the funnel-shaped part closest to the ovary. Their primary role is to capture the ovulated oocyte (egg) from the surface of the ovary and guide it into the fallopian tube for potential fertilization, Among the fimbriae, there is a particularly long one called the fimbria ovarica, which is directly attached to the ovary and helps align the infundibulum close to the ovary during ovulation; Fimbriae are mobile and flexible, and their movement is aided by smooth muscle contractions and ciliary action. This coordinated movement ensures the oocyte is swept into the tube and moved toward the uterus; Clinically, if the fimbriae fail to capture the oocyte or are damaged (e.g., due to pelvic inflammatory disease), it can lead to infertility or increase the risk of ectopic pregnancy.

The infundibulum is the funnel-shaped, distal (lateral) end of the uterine (fallopian) tube, closest to the ovary. It plays a key role in receiving the ovulated oocyte during ovulation; The infundibulum is characterized by its fringed margin, which contains the fimbriae—finger-like projections that help sweep the oocyte from the surface of the ovary into the fallopian tube. One of these fimbriae, the fimbria ovarica, is directly attached to the ovary to help position the tube for ovum pickup; The infundibulum opens into the peritoneal cavity through a small opening called the abdominal ostium,

making it the only part of the female reproductive tract that is not completely enclosed, which is why ovulation releases the egg into the peritoneal cavity temporarily; Clinical relevance: Since the infundibulum is open to the peritoneal cavity, infections (like pelvic inflammatory disease) can spread from the external genital tract to the peritoneal cavity. It is also a common site for ectopic pregnancy when the fertilized egg fails to travel further into the tube.

The ampulla is the widest and longest portion of the uterine (fallopian) tube, located between the infundibulum (laterally) and the isthmus (medially). It is highly coiled and makes up the major part of the tube's length; The ampulla is the most common site of fertilization in the female reproductive system—where the sperm typically meets the oocyte. This is due to its large lumen, thin muscular wall, and extensive mucosal folds, which help provide an optimal environment for fertilization and early embryonic development; After fertilization, the zygote continues its journey toward the uterus for implantation; Clinical relevance: The ampulla is the most frequent site for ectopic (tubal) pregnancy, especially if the transport of the fertilized ovum is delayed and Infections or scarring (e.g., from pelvic inflammatory disease or endometriosis) can impair its function and lead to infertility or ectopic implantation.

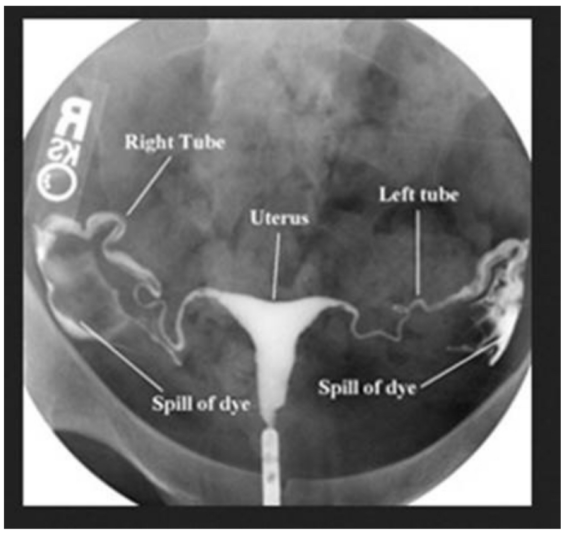
The isthmus is the narrow, medial third of the uterine (fallopian) tube, located between the ampulla (laterally) and the uterine part or intramural portion (medially, where it enters the uterus). It has a thicker muscular wall and a narrower lumen compared to the ampulla; Functionally, the isthmus plays a role in: Transporting the fertilized or unfertilized ovum toward the uterus via coordinated ciliary movement and smooth muscle contractions and Acting as a temporary storage site for sperm and possibly regulating the timing of sperm-egg interaction; The isthmus also serves as a physiological sphincter that can temporarily delay the passage of the fertilized egg to allow proper preparation of the endometrium for implantation; Clinical relevance: Blockage or scarring of the isthmus can cause infertility or increase the risk of ectopic pregnancy and It is sometimes involved in tubal sterilization procedures, like tubal ligation.



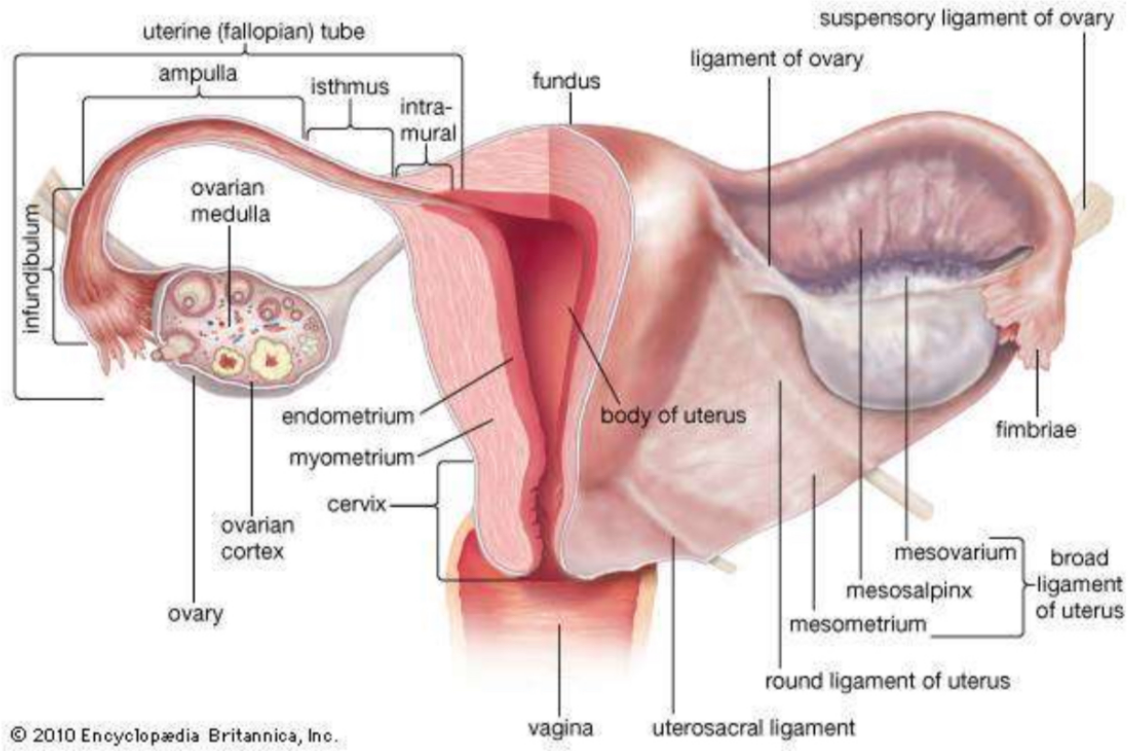
The uterine (intramural) part of the fallopian tube is the shortest and narrowest section, about 1 cm long, that passes through the uterine wall (myometrium) and opens into the uterine cavity at the uterine ostium. It acts as the final passage for the oocyte or zygote into the uterus. Because of its narrow lumen, it may be involved in infertility, ectopic pregnancy, or be targeted during tubal sterilization.

The uterine ostium of the uterine tube is the small opening where the uterine (intramural) part of the fallopian tube opens into the uterine cavity, specifically at the superolateral angle of the uterus. It allows the passage of the oocyte or embryo from the tube into the uterus. It is the narrowest point in the entire tube and may be involved in blockage leading to infertility or ectopic pregnancy.

The image is an X-ray image showing the results of a Hysterosalpingography (HSG). This is a medical procedure used to visualize the uterus and Fallopian tubes using a radiopaque dye. The dye is injected into the uterus, and then an X-ray image is taken to show the shape of the uterus and Fallopian tubes.In this particular image: The uterus is shown in the center of the image and The Fallopian tubes are visible on either side of the uterus. The dye has spread through both tubes, indicating no blockage and term Spill of dye mean The dye is seen outside the Fallopian tubes, indicating that the tubes are patent (open) and allow the dye to pass freely. This positive finding, suggesting that tubes not blocked.



Hysterosalpingography



Parts of the Female Reproductive System Shown:

Ovary: The female gonad that produces ova (eggs) and sex hormones. The diagram shows the cortex and medulla.

Uterine (Fallopian) Tube: A thin tube that transports the ovum from the ovary to the uterus. The diagram shows the parts of the tube: Infundibulum-The funnel-shaped portion of the Fallopian tube and Fimbriae-Finger-like projections that capture the ovum and Ampulla-The widest part of the Fallopian tube, where fertilization usually occurs and Isthmus-The narrow part of the Fallopian tube and Intramural-The portion of the Fallopian tube that passes through the uterine wall.

Uterus: The muscular organ that houses the fetus during pregnancy. The diagram shows: Fundus-The rounded upper portion of the uterus and Body of Uterus- The main part of the uterus and Cervix-The narrow lower part of the uterus that opens into the vagina and Endometrium-The inner lining of the uterus and Myometrium-The middle muscular layer of the uterus.

Vagina: The canal that connects the uterus to the external world.

Ligaments:

Suspensory ligament of ovary: Attaches the ovary to the abdominal wall.

Ligament of ovary: Attaches the ovary to the uterus.

Broad ligament of uterus: Attaches the uterus to the pelvic wall.

Mesovarium: Part of the broad ligament that suspends the ovary.

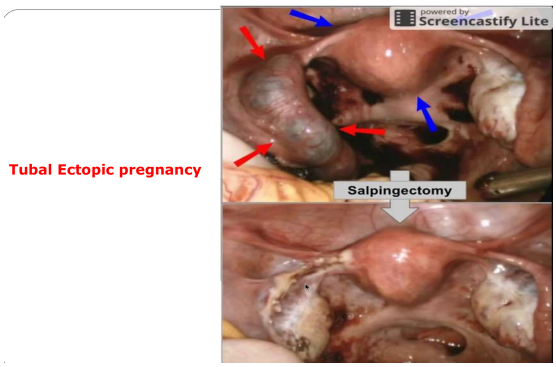
Mesosalpinx: Part of the broad ligament that suspends the Fallopian tube.

Mesometrium: Part of the broad ligament that suspends the uterus.

Round ligament of uterus: Attaches the uterus to the abdominal wall.

Uterosacral ligament: Attaches the uterus to the sacrum (the lower part of the spine).

Tubal Ectopic pregnancy, which refers to a condition where the fertilized egg implants and grows outside the uterus, specifically in the Fallopian tube. This is a serious condition because the Fallopian tube is not designed to support a growing embryo, and if left untreated, it can lead to rupture and internal bleeding; Salpingectomy which is a surgical procedure involving the partial or complete removal of the Fallopian tube. This procedure is commonly performed in cases of ectopic pregnancy when the tube is severely damaged or there is a risk of bleeding



Don’t wait for perfect conditions to start—perfection never comes. Begin with what you have, where you are, and do the best you can. Consistency and growth matter more than a strong start, and true success is becoming better every single day, even by a small step.

Uterus - Explained Like I Understand It

The uterus is one of the most important organs in the female reproductive system. It is a hollow, muscular, pear-shaped organ that lies deep in the pelvic cavity, specifically between the urinary bladder in the front and the rectum in the back. Its main role is to house and nourish a fertilized egg until it develops into a fetus and is ready for birth. If no fertilization happens, the uterus sheds its lining in what we know as the menstrual cycle.

In terms of size, the uterus in an adult woman who is not pregnant (nulligravid) typically measures about 7.5 cm long, 5 cm wide, and 2.5 cm thick. Its size can change depending on the woman's age, hormonal state, and whether she has been pregnant before. The shape resembles an upside-down pear, with a wider upper part and a narrow lower part.

Anatomically, the uterus is divided into two main regions: the body (corpus) and the cervix. The body makes up the upper two-thirds and includes the fundus, which is the top dome-shaped portion that lies above the openings of the fallopian tubes. The fallopian tubes connect to the uterus at its superolateral angles, and they serve as the passageway for the egg to travel from the ovaries. The lower third of the uterus is called the cervix, which protrudes into the vagina and acts as the opening between the uterus and the vaginal canal.

The uterus is normally positioned in a specific way known as anteversion and anteflexion. "Anteverted" means the uterus tilts forward over the bladder, forming about a 90-degree angle between the axis of the vagina and the cervix. "Anteflexed" means the body of the uterus is bent forward toward the cervix, forming another angle of about 170 degrees. These angles are important to maintain the uterus in its functional position and for efficient blood flow and support.

The surfaces of the uterus are also important to understand. The anterior surface (called the vesical surface) lies close to the urinary bladder, and it's separated from it by a peritoneal fold called the uterovesical pouch. The posterior surface (called the intestinal surface) is related to loops of the small intestine and the rectum, and it's separated from the rectum by a deeper pouch known as the rectouterine pouch or pouch of Douglas. This pouch is the lowest point in the female peritoneal cavity and is clinically significant because it's where fluids can collect in conditions like pelvic infections or ruptured cysts.

Looking more closely at the cervix, we find it has two parts: the supravaginal part, which is located above the vagina and not visible during a pelvic exam, and the vaginal part, which projects into the vagina. Around this vaginal part of the cervix, the vaginal wall forms fornices (singular: fornix)—these are small recesses: anterior, posterior, and two lateral fornices. The posterior fornix is the deepest and is important clinically because it provides a potential route to access the peritoneal cavity in certain procedures.

Inside the uterus is a triangular cavity. This is where a fertilized egg would implant during pregnancy. The base of the triangle is formed by the openings of the two fallopian tubes, and the apex points downward to the internal os, which leads into the cervical canal. The cervical canal ends in the external os, which is the opening of the cervix into the vagina. The shape of the external os can give clues about a woman's obstetric history—it's usually small and round in women who haven't given birth, and wider and slit-like in women who have had vaginal deliveries.

The uterus receives its blood supply from the uterine arteries, which are branches of the internal iliac arteries. These arteries travel through the broad ligament, a large peritoneal fold that supports

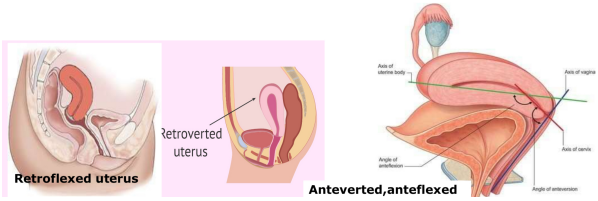
the uterus and contains other structures. Near the cervix, the uterine artery crosses over the ureter, which is a critical anatomical relationship surgeons must be careful with, especially during hysterectomy. A helpful phrase to remember this is: water under the bridge—the ureter (water) passes under the uterine artery (bridge).

Venous drainage is through venous plexuses around the uterus that ultimately drain into the internal iliac veins. These plexuses also communicate with vaginal and ovarian plexuses. This network can become engorged in conditions like pregnancy, and can sometimes contribute to varicose veins or pelvic congestion syndrome.

In terms of nerve supply, the uterus is innervated by the uterovaginal plexus, which is a branch of the inferior hypogastric plexus. This plexus carries sympathetic fibers (which stimulate uterine contractions, like during labor or menstruation) and parasympathetic fibers (which help relax the uterus).

Lymphatic drainage from the uterus is complex but clinically important, especially in cancer. The fundus drains into the paraaortic lymph nodes, and a small part near the round ligament drains into the superficial inguinal nodes. The body of the uterus drains mainly into the external iliac nodes, while the cervix drains into external iliac, internal iliac, and sacral lymph nodes. Understanding this pattern helps predict how malignancies might spread.

Finally, several ligaments and muscles help support the uterus in its position. The broad ligament helps suspend it laterally, while the round ligament pulls it forward to maintain anteversion. Stronger support comes from ligaments attached to the cervix, such as the transverse cervical ligament (also called cardinal or Mackenrodt's ligament), which provides lateral support and carries the uterine vessels. The uterosacral ligaments pull the cervix backward toward the sacrum, and the pubocervical ligaments stabilize it anteriorly. The pelvic diaphragm, especially the levator ani muscle, forms a muscular floor that prevents the uterus from prolapsing. The urogenital diaphragm and the perineal body also contribute to this complex support system.



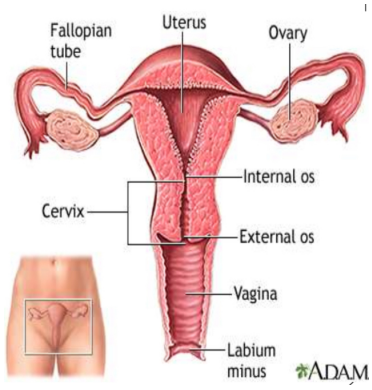
The image depicts three different positions of the uterus in the female reproductive system.

First: Retroflexed uterus: In this position, the uterine body is tilted backward, forming an acute angle with the cervix. The bending of the uterus backward towards the rectum is observed. This position is normal in some women and does not necessarily cause any problems.

Second: Retroverted uterus: Here, the entire uterus (uterine body and cervix) is tilted backward, forming an angle with the axis of the vagina. The main difference between this position and Retroflexed is that the bending in Retroverted occurs in the axis of the entire uterus, while in Retroflexed the bending is only in the uterine body.

Third: Anteverted, anteflexed: This is the most common normal position of the uterus. The uterine body is slightly tilted forward, forming an acute angle with the cervix, and the entire uterus is tilted forward towards the bladder. "Anteverted" refers to the forward tilt of the uterus, and "Anteflexed" refers to the forward bending of the uterine body.

Fallopian tubes: Two slender tubes that connect the ovaries to the uterus. This is where fertilization usually occurs.



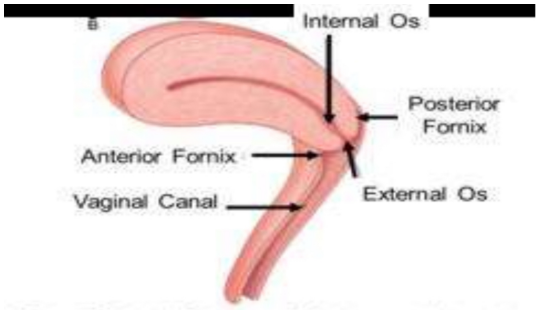
Ovary: The female gonads that produce eggs and female sex hormones such as estrogen and progesterone.

Uterus: A hollow muscular pear-shaped organ where the fetus grows during pregnancy.

Cervix: The lower, narrow part of the uterus that opens into the vagina. It contains two openings: Internal os upper opening that connects the uterine cavity to the cervical canal and External os lower opening that connects the cervix to the vagina.

Vagina: A muscular canal that connects the uterus to the outside world. It is the birth canal.

Labium minus: Small folds of skin located on either side of the labia majora.



Vaginal Canal: The muscular canal that connects the uterus to the outside world.

Anterior Fornix: The anterior part of the vaginal fornix, which is the recess between the cervix and the vaginal wall.

Posterior Fornix: The posterior part of the vaginal fornix, which is the recess between the cervix and the vaginal wall.

External Os: The lower opening of the cervix that opens into the vaginal canal.

Internal Os: The upper opening of the cervix that connects the cervical canal to

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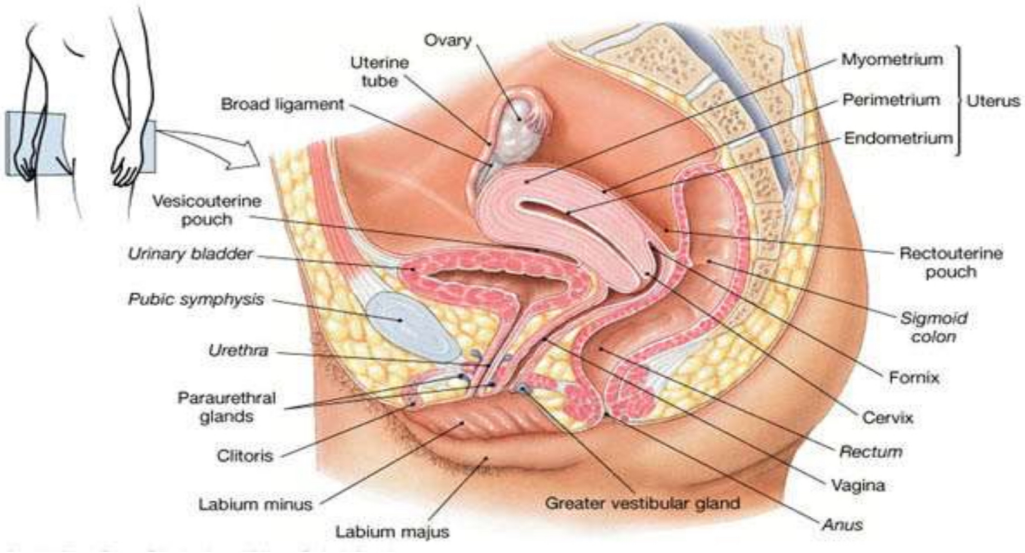


Female Reproductive Organs:

Ovary: The female gonads that produce eggs and female sex hormones such as estrogen and progesterone.

Uterine tube (Fallopian tube): Two slender tubes that connect the ovaries to the uterus. This is where fertilization usually occurs.

Uterus: A hollow muscular pear-shaped organ where the fetus grows during pregnancy. It has three layers:

Endometrium: The inner lining of the uterus, which is shed during menstruation.

Myometrium: The thick muscular middle layer of the uterus.

Perimetrium: The outer layer of the uterus.

Cervix: The lower, narrow part of the uterus that opens into the vagina.

Vagina: A muscular canal that connects the uterus to the outside world. It is the birth canal.

Fornix: The upper part of the vagina surrounding the cervix.

Adjacent Organs:

Broad ligament: A ligament that supports the uterus.

Vesicouterine pouch: The space between the bladder and the uterus.

Rectouterine pouch (Douglas' pouch): The space between the uterus and the rectum (sigmoid colon).

Urinary bladder: An organ that stores urine.

Urethra: The canal through which urine is expelled.

Paraurethral glands (Skene's glands): Glands that secrete mucous fluids.

Clitoris: A sensitive sexual organ.

Labium minus: Small folds of skin located on either side of the labia majora.

Labium majus: Larger outer folds of skin that surround the labia minora.

Greater vestibular gland (Bartholin's gland): Glands that secrete mucous fluids.

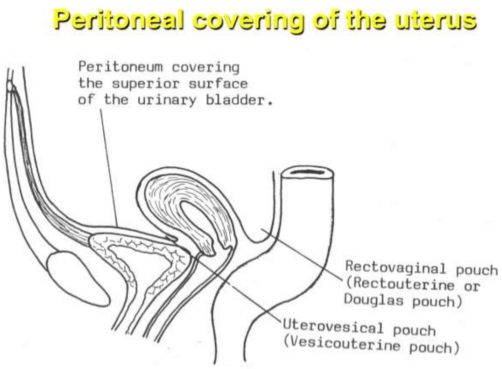
Anus: The opening of the rectum.

Sigmoid colon: The last part of the large intestine.

Peritoneum: A thin membrane lining the abdominal wall and viscera.

Uterus: The muscular organ that houses the fetus during pregnancy.

Urinary bladder: An organ that stores urine.



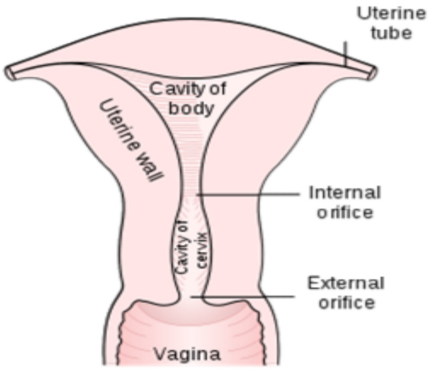
Rectouterine pouch / Douglas pouch: The peritoneal pouch located between the uterus and the rectum. It is the deepest point in the pelvic cavity.

Uterovesical pouch / Vesicouterine pouch: The peritoneal pouch located between the uterus and the bladder.

Rectovaginal pouch: The peritoneal pouch located between the vagina and the rectum.

Diagram Explanation: shows how the peritoneum covers the superior surface of the bladder and the uterus, forming peritoneal pouches. The Douglas pouch (rectouterine pouch) is clinically the most significant pouch, as fluid or blood can accumulate there in certain conditions. It can be accessed via vaginal or rectal examination.

Uterine tubes (Fallopian tubes): Two slender tubes that connect the ovaries (not shown in the diagram) to the uterus. This is where fertilization usually occurs.



Cavity of body: The main cavity inside the uterine body.

Uterine wall: The muscular wall of the uterus.

Cavity of cervix: The narrow canal inside the cervix.

Internal orifice: The opening that connects the cavity of the uterine body to the cavity of the cervix.

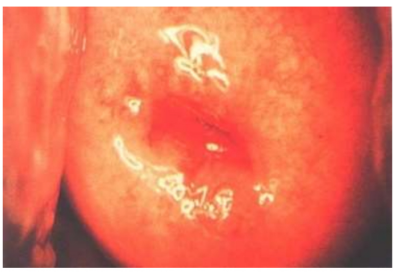
External orifice: The opening that connects the cavity of the cervix to the vagina.

Vagina: The muscular canal that connects the uterus to the outside world.

Diagram Explanation: illustrates the connection between the cavity of the uterine body, the cavity of the cervix, and the vagina via the internal and external os of the cervix. It also shows the fallopian tubes connected to the cavity of the uterine body. The diagram is simplified and does not show fine anatomical details.

The image displays three different views of the cervix at various stages of a woman's life:

nulliparous women



multiparous women

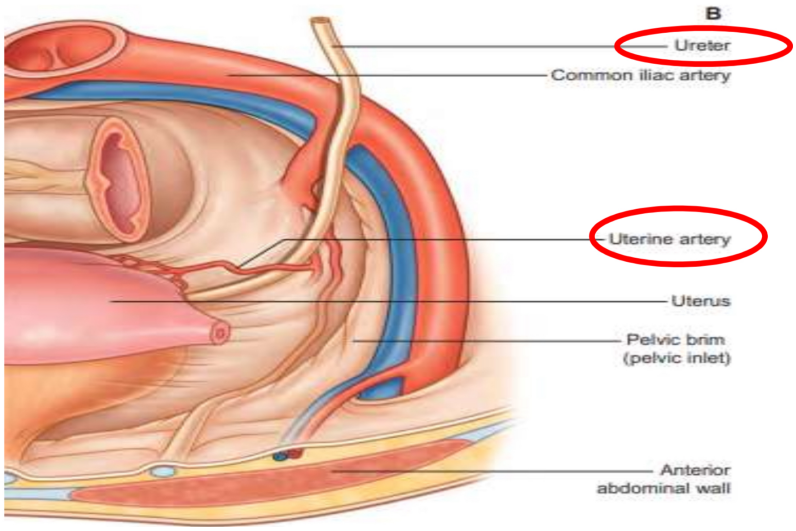
menopause narrow os

Nulliparous women: shows the cervix of a woman who has never been pregnant or given birth. Notice that the external os (the opening of the cervix) appears small, round or oval, and smooth.

Multiparous women: shows the cervix of a woman who has been pregnant and given birth multiple times. Here, the external os has changed its shape and appears as a slit or a wider, irregular opening. This change occurs due to the stretching of the cervix during repeated deliveries.

Menopause narrow os: shows the cervix of a woman after menopause. At this stage, the level of estrogen decreases, leading to atrophy of the tissues, and the external os may become very narrow or almost closed.

The ureter is a thin muscular tube that carries urine from the kidney to the bladder. Each person has two ureters—one for each kidney. Its main function is to transport urine safely and efficiently to the bladder using automatic muscular movements called peristalsis.



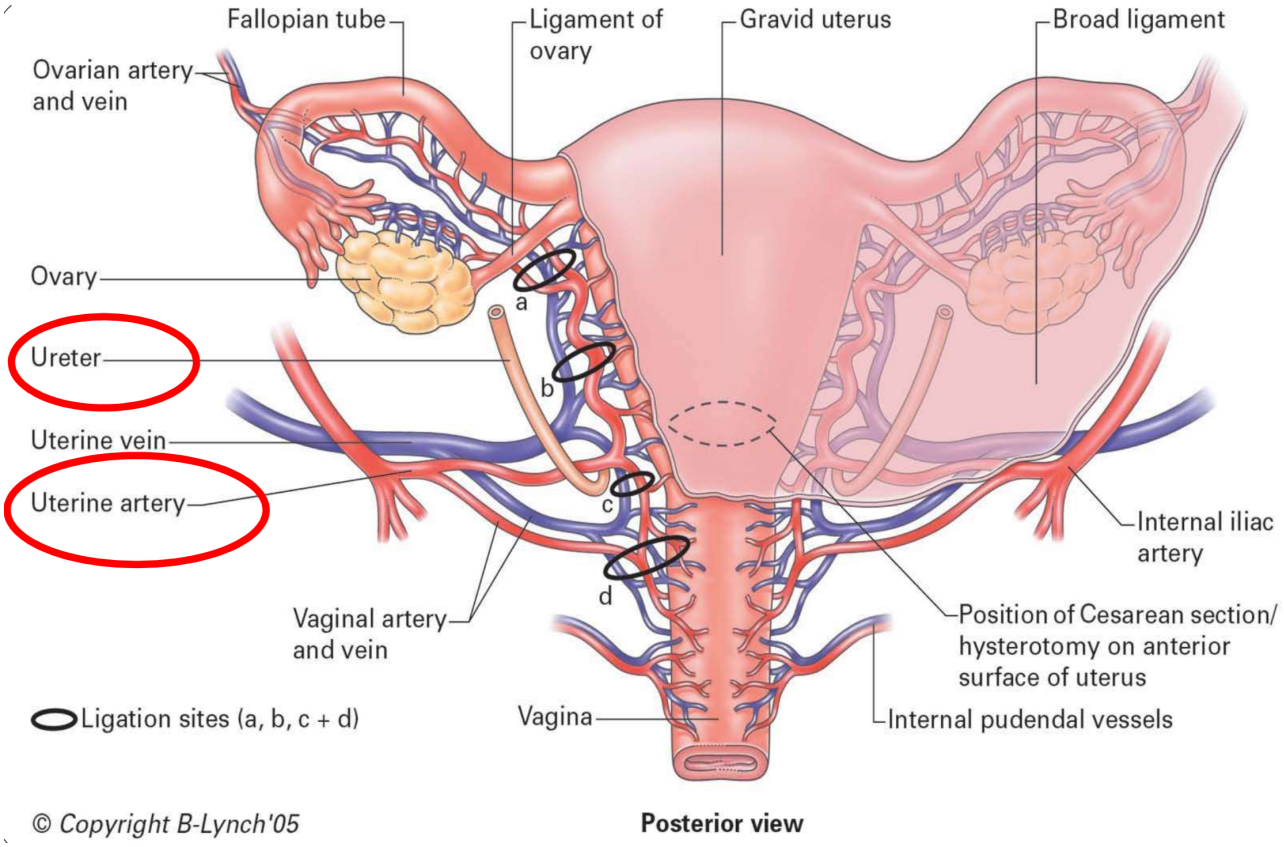
The common iliac artery is a large artery that branches off from the abdominal aorta. There are two common iliac arteries in the body—right and left. Their main function is to supply oxygen-rich blood to the pelvis and lower limbs. Each common iliac artery divides into: Internal iliac artery (supplies pelvic organs) and External iliac artery (continues to the leg).

The uterine artery is a branch of the internal iliac artery. Its main function is to supply oxygen-rich blood to the uterus. It plays a crucial role during pregnancy, as it helps deliver blood to the uterus and placenta to support fetal development. It also sends branches to the vagina and fallopian tubes.

The uterus is a hollow muscular organ located in the female pelvis. Its main function is to hold and nourish a developing baby during pregnancy. The inner lining of the uterus is called the endometrium, which supports a fertilized egg. If no pregnancy occurs, this lining is shed monthly during the menstrual cycle.

The pelvic brim is the edge or imaginary boundary that separates the pelvis into two parts: False pelvis (upper part) and True pelvis (lower part, important for childbirth). The pelvic brim marks the entrance to the true pelvis, and it is often used to assess pelvic size in women to determine if natural childbirth is possible.

The anterior abdominal wall is the front part of the abdominal wall, extending from the bottom of the chest to the top of the pelvis. It consists of layers including skin, fat, muscles (like the rectus abdominis), and fascia. Its main functions are to: Protect internal organs (like the intestines and stomach) and Support posture and Assist in movements such as coughing, vomiting, defecation, and even childbirth.



The ovarian artery and ovarian vein are the main blood vessels that supply and drain the ovary. The ovarian artery comes from the abdominal aorta and carries oxygen-rich blood to the ovary while The ovarian vein drains oxygen-poor blood from the ovary: The right ovarian vein drains into the inferior vena cava. and The left ovarian vein drains into the left renal vein. These vessels play a vital role in ovarian function and the menstrual cycle.

The Fallopian tube is a thin tube that connects the ovary to the uterus, and there are two of them—one on each side. Its main functions are to: Transport the egg from the ovary to the uterus and Serve as the usual site of fertilization, where the sperm meets the egg. If fertilization happens, the egg continues to the uterus to implant. If not, it is shed during menstruation.

The ligament of ovary is a small ligament that connects the ovary to the uterus. Its main function is to hold the ovary in place within the pelvis, keeping it close to the uterus.This ligament also contains blood vessels and nerves that supply the ovary.

The gravid uterus refers to the pregnant uterus. When the uterus is gravid it means it contains and supports a developing fetus during pregnancy.The gravid uterus functions to support and protect the fetus throughout pregnancy, providing the necessary environment for its growth and development.

The broad ligament is a wide fold of the peritoneum that extends from the sides of the uterus to the walls of the pelvis. Its main function is to support and hold the uterus, fallopian tubes, and ovaries in place within the pelvis. It also contains blood vessels and nerves that supply these organs.

The ovary is a small, oval-shaped organ in the female reproductive system located on either side of the uterus. Its main functions are to produce eggs (female reproductive cells) and secrete hormones like estrogen and progesterone, which regulate the menstrual cycle and pregnancy.

The ureter is a thin muscular tube that carries urine from the kidney to the bladder.Each person has two ureters—one for each kidney.Its main function is to transport urine safely and efficiently to the bladder using automatic muscular movements called peristalsis.

The uterine artery branches from the internal iliac artery and supplies oxygen-rich blood to the uterus while The uterine vein drains blood from the uterus into larger pelvic veins.These vessels play a crucial role in providing the uterus with the necessary blood supply, especially during pregnancy when the demand for oxygen and nutrients increases to support fetal growth.

The vaginal artery usually branches from the internal iliac artery and supplies oxygenated blood to the walls of the vagina while The vaginal vein drains blood from the vagina into the pelvic veins. These vessels are important for maintaining the health of vaginal tissues and supporting its functions, especially during pregnancy and childbirth.

Ligation sites are specific locations where blood vessels or tubes are surgically tied off to stop bleeding or prevent the flow of blood or fluids. For example, during a hysterectomy or bleeding control surgery, arteries like the uterine artery are ligated at certain sites to ensure bleeding is controlled.

The vagina is a muscular canal that extends from the cervix to the outside of the female body. Its main functions are to: Serve as the birth canal during natural childbirth and Receive the male organ during sexual intercourse and Allow menstrual blood to exit during the menstrual cycle. The vagina has a moist lining that provides flexibility and protection against infections.

The internal pudendal vessels include the internal pudendal artery and vein, which arise from the internal iliac artery and vein.Their functions are to: Supply and drain blood from the external genital organs such as the penis or clitoris, and surrounding pelvic muscles and They play a key role in the function and sensory sensation of the pelvic area.

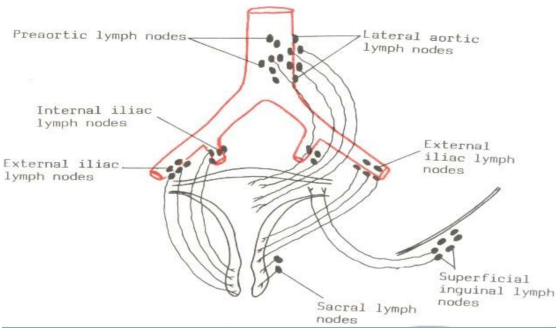
The position of a cesarean section refers to the location where the abdominal and uterine incisions are made to deliver the baby.

The most common type is the low transverse incision, made horizontally just above the pubic area. This position is preferred because: It causes less pain after surgery, Heals better, Reduces the risk of uterine rupture in future pregnancies. In special cases, a vertical incision (up-and-down) may be used in the midline of the abdomen.

The internal iliac artery is a branch of the common iliac artery, and it is a major blood vessel in the pelvis. Its main function is to supply oxygen-rich blood to the pelvic organs, including the reproductive organs, bladder, rectum, and pelvic floor muscles. It gives off several important branches, such as: The uterine artery, The vaginal artery, The internal pudendal artery.

Lymphatic drainage of the uterus refers to the pathways through which lymph (fluid carrying immune cells or cancer cells) from the uterus drains into different lymph nodes. The drainage varies depending on the part of the uterus:

Fundus of the uterus Drains to: Paraaortic lymph nodes and Sometimes to Superficial inguinal lymph nodes via the round ligament while Body of the uterus Drains to: External iliac lymph nodes and Internal iliac lymph nodes and Cervix of the uterus Drains to: Internal iliac lymph nodes and Sacral lymph nodes.



Lymphatic drainage of the uterus

Fundus examination refers to the assessment of the uterine fundus (top part of the uterus) by palpating the abdomen, mainly used during pregnancy. Its importance: Helps estimate gestational age, Monitors fetal growth and detects growth restrictions or overgrowth and Recorded as fundal height, measured in centimeters from the pubic symphysis to the top of the uterus.

Clinical tip: After 20 weeks of pregnancy, the fundal height (in cm) ≈ gestational age (in weeks).

Fundus examination

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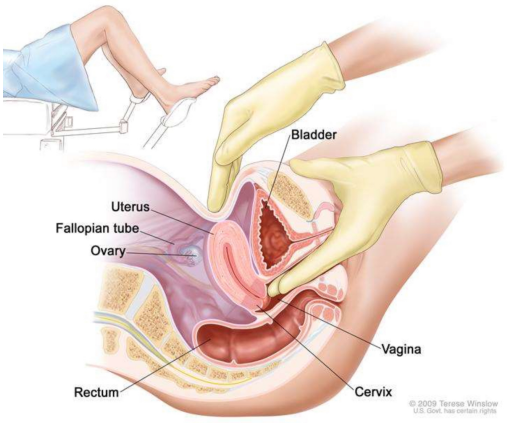
bimanual examination is a clinical procedure in which the uterus, ovaries, and vagina are assessed using both hands How it is done:

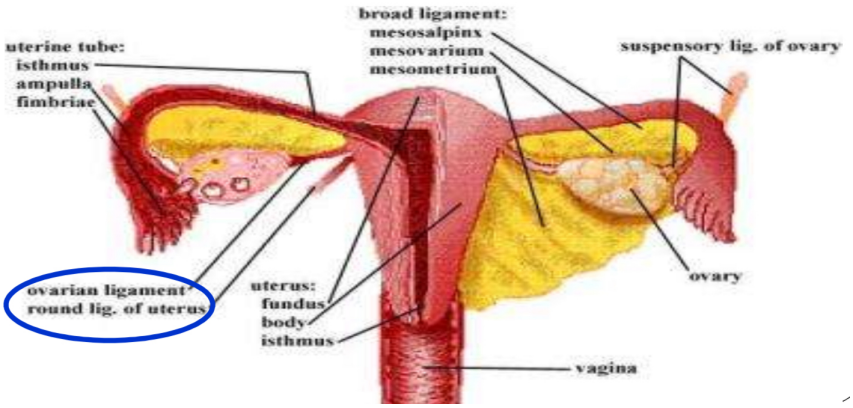
1. The doctor inserts two fingers of one hand into the vagina.
2. The other hand presses gently on the lower abdomen.
3. This allows the uterus to be felt between the two hands.

We do this for assess the size, shape, and position of the uterus, check whether the uterus is anteverted or retroverted, detect masses or tenderness (e.g., fibroids, infections) and To feel the ovaries if they are palpable.



Bimanual pelvic examination of uterus

The uterine tube (fallopian tube) connects the ovary to the uterus and consists of the following parts: the infundibulum with its finger-like projections called fimbriae that catch the released egg; the ampulla, which is the widest part where fertilization typically occurs; the isthmus, the narrow section; and the intramural (uterine part), which enters the uterus. The ovarian ligament attaches the ovary to the uterus posteriorly, while the round ligament of the uterus extends from the anterior uterine horn through the inguinal canal to the labia majora, helping to maintain the uterus in an anteverted position. The key difference is that the ovarian ligament links the ovary to the uterus, while the round ligament connects the uterus to the pelvic wall. The uterus itself is a hollow muscular organ composed of the fundus (top), body, isthmus, and cervix (lower neck). It is supported and covered by the broad ligament, a double fold of peritoneum, which has three parts: The mesosalpinx, surrounding the uterine tube, The mesovarium, associated with the ovary's hilum and The mesometrium, covering the uterus itself. The suspensory ligament of the ovary attaches the ovary to the pelvic wall and contains the ovarian blood vessels.The ovary is an oval-shaped gland responsible for producing eggs and female hormones. Finally, the vagina is a flexible muscular canal that connects the cervix to the outside of the body and functions as the passageway for menstruation, intercourse, and childbirth.



In a laparoscopic view, the internal reproductive organs can be clearly observed. The uterus is a hollow muscular organ that supports pregnancy and consists of the fundus, body, and isthmus, connecting to the cervix below. On each side of the uterus is the round ligament, which extends from the anterior uterine horn, passes through the inguinal canal, and attaches to the labia majora, helping to maintain the uterus in its forward (anteverted) position. Behind the uterus lies the rectum, the terminal part of the large intestine, and an important landmark in pelvic anatomy. On both sides, the ovary appears as an oval gland responsible for producing ova and female hormones; it is connected to the uterus via the ovarian ligament and to the pelvic wall via the suspensory ligament. Adjacent to the ovary is the uterine tube (fallopian tube), which carries the egg from the ovary to the uterus. It consists of several segments: the fimbriae, infundibulum, ampulla, and isthmus. This laparoscopic view allows doctors to assess organ health, detect adhesions, tumors, or evaluate infertility.

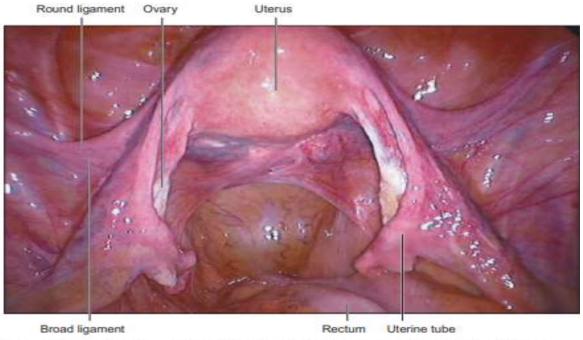


Fig. 77.11 Laparoscopic view of the uterus – the patient is tilted head down so that the small bowel is moved away from the uterus to give this view.

The rectouterine fold is a peritoneal fold extending between the uterus and the rectum, covering the rectouterine pouch (pouch of Douglas)—the deepest point in the peritoneal cavity in females, where fluid or blood may accumulate pathologically. The vesicouterine pouch lies between the bladder and uterus and is usually shallower. Over the bladder, three peritoneal folds are present: the median umbilical fold (containing the urachus), the medial umbilical folds (covering the obliterated umbilical arteries), and the lateral umbilical folds, which cover the inferior epigastric artery, an important vessel that supplies the anterior abdominal wall. The round ligament of the uterus extends from the uterine horn, travels through the inguinal canal, and attaches to the labia majora, helping to keep the uterus in an anteverted position. The ovary lies on each side of the uterus and contains the ova; it is connected to the uterus by the ovarian ligament. Finally, the ureter is the muscular tube that carries urine from the kidney to the bladder, passing close to the uterine cervix, making it a critical structure to identify and protect during gynecologic surgeries.

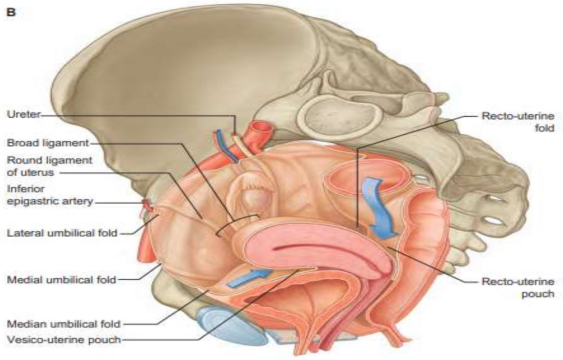
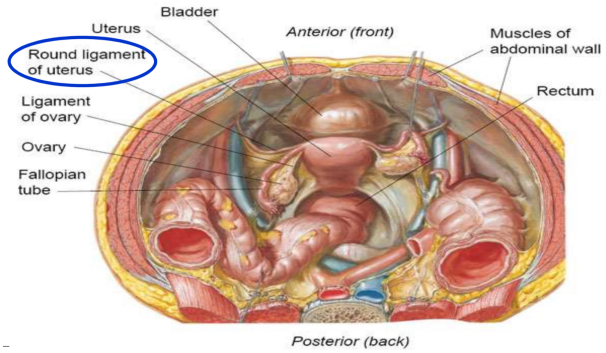
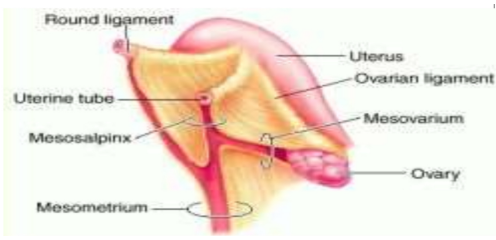


Fig. 77.10 **A**, Anatomical relations of the female genital tract and bladder and rectum. **B**, Pelvic peritoneal reflections showing broad ligament and its contents. (**A** from Drake, Vogl, Mitchell, Tibbitts and Richardson 2008. **B** from Drake, Vogl and Mitchell 2005.)

The fallopian tube is the conduit through which the ovum travels from the ovary to the uterus. It consists of several parts, including the fimbriae, ampulla, and isthmus. The ovary is a small gland responsible for producing eggs and female hormones, and it is attached to the uterus by the ligament of the ovary, which connects it posteriorly.The round ligament of the uterus arises from the uterine horns and travels through the inguinal canal to the labia majora, helping maintain the uterus in its anteverted position. Centrally, the uterus appears as a hollow muscular organ

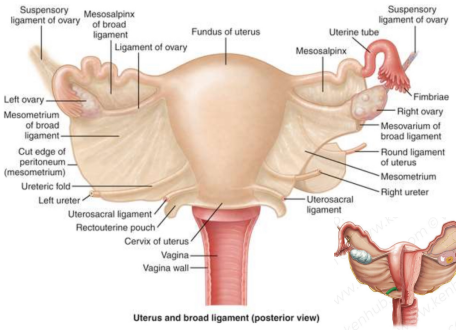


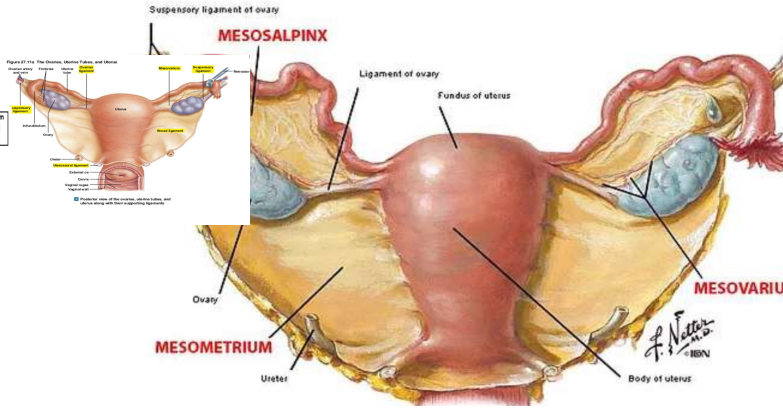
that supports pregnancy. Anterior to it lies the bladder, a hollow organ that stores urine. Posterior to the uterus and bladder is the rectum, the final segment of the large intestine.The muscles of the abdominal wall, including the rectus abdominis and oblique muscles, form the anterior boundary and are lifted during surgical procedures to access these internal structures.



In female pelvic anatomy, several important structures support and stabilize the reproductive organs.

The round ligament arises from the anterior uterine horn, passes through the inguinal canal, and attaches to the labia majora, helping to keep the uterus anteverted. The uterine tube (fallopian tube) transports the ovum from the ovary to the uterus and consists of several parts, including the fimbriae, infundibulum, and ampulla. The mesosalpinx is part of the broad ligament that envelops and supports the uterine tube. The mesometrium is the largest portion of the broad ligament that surrounds the uterus and connects it to the pelvic wall. The ovary is a small gland that produces ova and hormones and is surrounded by the mesovarium, a thin peritoneal fold containing the ovarian blood vessels. The ovarian ligament connects the ovary to the uterus posteriorly. Finally, the uterus is a hollow muscular organ responsible for supporting pregnancy.





The female reproductive system is a complex structure housed primarily within the pelvic cavity. When viewed in real-life anatomical dissection or surgery, it appears as a soft, vascular set of organs anchored by various ligaments and surrounded by peritoneal folds.

Uterus: This organ is centrally located in the pelvis. It is pear-shaped, thick-walled, and muscular, with a smooth outer surface. The upper part is called the fundus, the main part is the body, and the narrow lower part is the cervix, which protrudes into the vagina. The uterus feels firm and muscular, and during pregnancy, it expands dramatically. Its function is to host the fertilized egg, nourish the developing fetus, and contract during labor to deliver the baby.

Ovaries: Located on either side of the uterus, the ovaries are small (about the size and shape of an almond), firm, and whitish in color. They are attached to the uterus by the ovarian ligament and suspended by the suspensory ligament, which also contains their blood supply. The ovaries produce

ova (eggs) and secrete the hormones estrogen and progesterone, which regulate the menstrual cycle and secondary sex characteristics.

Fallopian tubes (Uterine tubes): These are slender, flexible tubes that extend from the upper corners of the uterus toward each ovary. Each tube is about 10–12 cm long. The distal end flares out into fimbriae, finger-like projections that gently sweep the ovulated egg into the tube. The ampulla is the widest part where fertilization typically occurs. These tubes have a delicate inner lining and are highly vascular.

Vagina: The vagina is a muscular, elastic canal approximately 8–10 cm long. It connects the cervix of the uterus to the external genitalia. On dissection, it appears as a flattened, collapsible tube with a moist inner lining (mucosa). It functions as the birth canal, the passageway for menstrual flow, and the site of sexual intercourse.

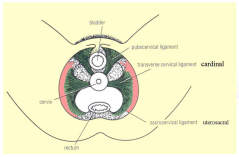
Broad ligament: A wide, flat sheet of peritoneum that drapes over the uterus, fallopian tubes, and ovaries, anchoring them in place. It contains subdivisions like the mesosalpinx (around the uterine tube), mesovarium (near the ovary), and mesometrium (around the uterus).

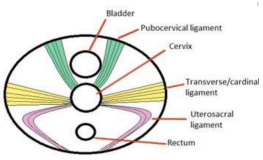
Round ligament of uterus: Thin, cord-like structures that extend from the uterine horns, pass through the inguinal canal, and end in the labia majora. On inspection, they appear as small bands and help keep the uterus tilted forward (anteverted position).

Ovarian ligament: A short, thick band connecting the ovary to the uterus. It's usually found posterior to the fallopian tube and can be seen clearly when the peritoneum is reflected.

Rectum and bladder (in proximity): Although not part of the reproductive system, they lie directly behind (rectum) and in front (bladder) of the uterus and play roles in pelvic anatomy relationships.

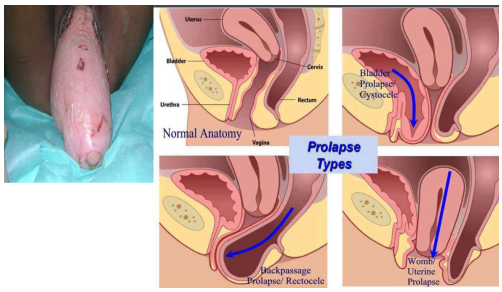
This expanded description is designed to help you visualize and understand the female reproductive organs as they appear in actual anatomy, including what they feel and look like, and how they relate spatially to each other and surrounding structures.





In this sagittal anatomical image of the female pelvis, we can observe the organs arranged from front to back, with a clear emphasis on the ligaments that support the uterus. Starting from the front, we see the bladder, a hollow muscular organ that stores urine, located just behind the pubic bone. Directly posterior to it is the pubocervical ligament, which connects the cervix to the pubic bone and helps support the uterus anteriorly, preventing it from tilting too far forward. Behind the pubocervical ligament lies the cervix, the narrow lower part of the uterus that opens into the vagina. Lateral to the cervix is the transverse cardinal ligament (also known as the lateral cervical ligament), which extends from the cervix to the lateral pelvic wall. This ligament is particularly important because it contains the uterine artery and provides strong lateral support to the uterus. Further back is the uterosacral ligament, which runs from the uterus to the sacrum. This ligament provides posterior support and helps maintain the uterus in its natural anteverted position, preventing it from tipping backward. At the very back lies the rectum, the final portion of the large intestine, which sits directly behind the uterus and vagina.

The image illustrates both normal female pelvic anatomy and different types of pelvic organ prolapse, which occurs when the supporting muscles and ligaments weaken, allowing organs to shift downward.



1. Cystocele (Bladder prolapse):This refers to the descent of the bladder into the anterior vaginal wall due to weakness or damage in the pelvic floor. On examination, the bladder pushes against the vaginal wall, creating a bulge. Patients may experience urinary difficulties, pressure, or a vaginal bulge.

2. Rectocele (Rectal prolapse into the vagina):In this condition, the rectum protrudes into the posterior vaginal wall due to weakened support structures. This can lead to difficulty with bowel movements or a sensation of fullness in the vagina.

3. Uterine prolapse (Womb prolapse):The uterus descends down into the vaginal canal, sometimes protruding outside the vaginal opening in severe cases. This is typically due to weakening of the uterosacral and cardinal ligaments. Symptoms include a vaginal bulge, pelvic discomfort, or a dragging sensation.

Vagina - is a muscular and fibrous tube, about 8 cm long, that connects the uterus to the outside of the body. It's lined with stratified squamous epithelium, which is a strong, protective tissue type—important because the vagina has to handle friction and mechanical stress, especially during childbirth or intercourse.It starts at the cervix of the uterus and ends at the vaginal opening, which is found in the vestibule, the area between the two labia minora. The vagina actually sits at a right angle to the cervix, which helps with alignment during childbirth and intercourse.

Size and Walls: Anterior (front) vaginal wall is about 7.5 cm long while Posterior (back) wall is a bit longer—around 9 cm.

Relations (What's around the vagina), Understanding the structures around the vagina is super important in anatomy.

Anterior (Front) Relations: Base of the bladder – this is right in front of the vagina and Urethra – the tube that carries urine is also just in front.

Posterior (Back) Relations: Upper 1/4 of the back wall is related to the rectum, but separated by a small space called the Douglas pouch (this part has peritoneum covering it) while Middle 2/4 is directly touching the rectum—no pouch or separation and Lower 1/4 touches the anal canal, and there's a little cushion in between called the perineal body.

Lateral (Side) Relations: Upper part of the vagina is close to the ureter and Middle part is next to part of a pelvic floor muscle called levator ani, specifically the sphincter vaginae while Lower part is in contact with: Muscles of the urogenital diaphragm (deep pelvic muscles), The bulbs of the vestibule (erectile tissue) And the greater vestibular glands (which help lubricate the vagina).

Inside the Vagina (Cavity): The top of the vagina surrounds the cervix. This creates four small spaces called fornices: The posterior fornix (behind the cervix) is the deepest and the only one covered by peritoneum, In girls or women who haven't had vaginal intercourse, the vaginal opening usually has a thin membrane called the hymen, which usually has a small hole in the middle.

Blood Supply Comes mainly from two arteries: Uterine artery and Vaginal artery.

The vaginal artery also sends blood to the base of the bladder and connects (anastomoses) with branches from the uterine artery. Together, they form two vertical vessels on the front and back of the vagina called azygos arteries.

Venous Drainage (Veins): Blood from the vagina drains into a network called the vaginal venous plexus—this collects on the sides and drains into the internal iliac vein.

Lymphatic Drainage: Above the hymen, lymph flows to the internal and external iliac nodes while Below the hymen, lymph goes to the superficial inguinal lymph nodes (these are near the groin).

Nerve Supply: Most of the vagina gets autonomic nerve fibers from the uterovaginal plexus, which comes from the inferior hypogastric plexus. These nerves control involuntary functions like muscle tone and blood flow But the lowest 1 inch is supplied by the pudendal nerve, which is a somatic nerve—it carries pain and touch sensations.

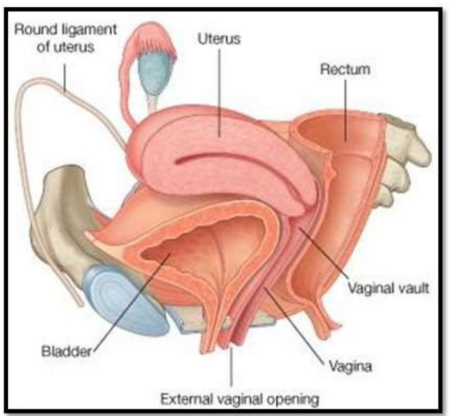
Peritoneal Covering: The uterus is mostly covered by peritoneum, except the front and sides of the supravaginal cervix while The vagina is mostly not covered by peritoneum, except the posterior fornix, which touches the Douglas pouch.

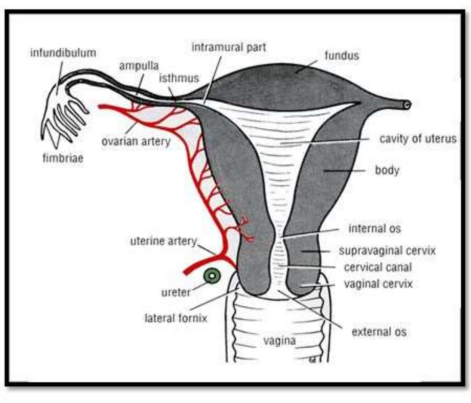
Culdocentesis: This is a medical procedure where a needle is inserted through the posterior fornix into the Douglas pouch. It's used to drain pus or blood in the pelvis (for example, in pelvic infections or ectopic pregnancy).

⚠️ Important note: If someone tries to perform an unsafe abortion with unclean tools, they might accidentally puncture the posterior fornix, causing infection and serious inflammation called pelvic peritonitis, which can be life-threatening.

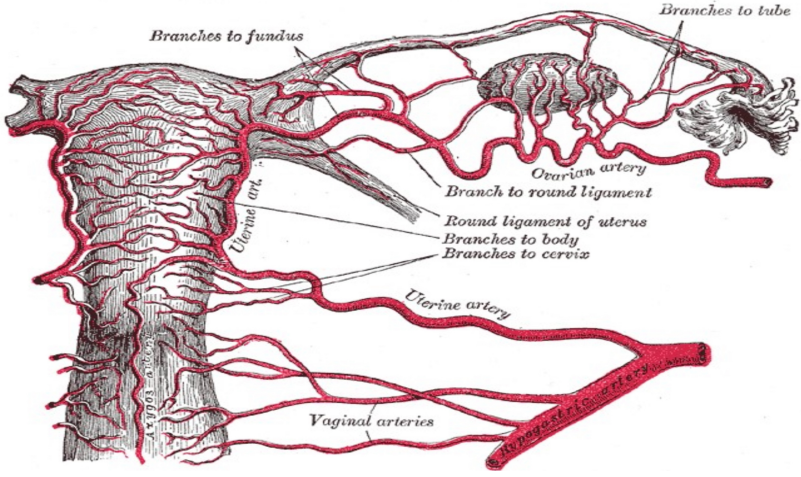
Painless Labour (Epidural Anaesthesia): During childbirth, a woman can get epidural anaesthesia to block pain. The anaesthetic is injected into the epidural space near the spinal cord at L3–L4, using a catheter. It helps relieve labor pain and even post-delivery pain.

RELATIONS OF VAGINA

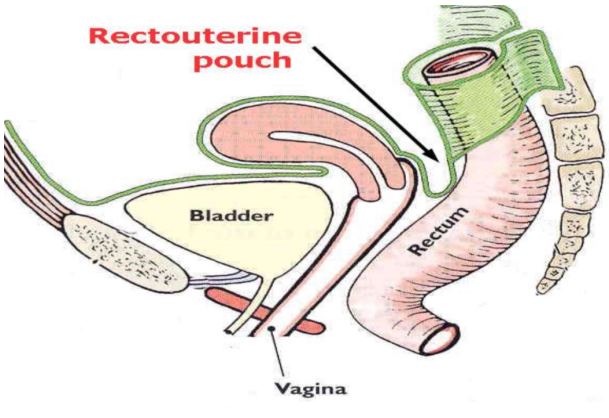




The image shows the anatomical relationships of the vagina with adjacent pelvic organs. The first image displays a sagittal view illustrating the vagina's position relative to the bladder anteriorly, the rectum posteriorly, and the uterus superiorly. Key structures include: the external vaginal opening, the vaginal vault, the uterus, the bladder, and the rectum. The round ligament of the uterus is also visible while The second image provides a detailed view of the uterus and cervix, highlighting their internal and external structures. The uterus is shown with its fundus, body, and intramural part. The cervix is clearly depicted, including the supravaginal cervix, the cervical canal, the vaginal cervix, the internal os, and the external os. The fallopian tubes are partially visible, showing the infundibulum, ampulla, isthmus, and fimbriae. Important blood vessels are also labeled: the ovarian artery and the uterine artery. The ureter is shown in close proximity to the cervix, and the lateral fornix of the vagina is indicated.



This image depicts the arterial supply of the uterus and fallopian tubes, primary artery shown is the uterine artery, a branch of the internal iliac artery. The uterine artery gives off several important branches: Branches to the fundus, These supply the superior portion of the uterus, the fundus, which is the dome-shaped top of the uterus. Adequate blood supply to this area is essential for implantation and the growth of a developing embryo during pregnancy and Branches to the body of the uterus, These branches nourish the main body of the uterus, providing oxygen and nutrients for the uterine lining (endometrium) and the myometrium (uterine muscle). The health of these tissues is critical for menstruation, pregnancy, and overall uterine function and Branches to the cervix, These branches supply the lower, narrow part of the uterus, the cervix. The cervix plays a vital role in childbirth and is highly vascularized and Branches to the fallopian tubes, These branches provide blood supply to the fallopian tubes, which are essential for the transport of the egg from the ovary to the uterus and for fertilization. Disruptions in blood flow to the fallopian tubes can lead to infertility. The image also shows the ovarian artery, originating from the abdominal aorta, which supplies blood to the ovary. A branch of the ovarian artery is seen supplying the round ligament of the uterus. Finally, the vaginal arteries, supplying the vagina, are also depicted.



The image shows a sagittal section of the female pelvis, highlighting the anatomical relationships between the uterus, rectum, bladder, and vagina.the recto-uterine pouch, also known as the pouch of Douglas or Douglas's cul-de-sac is the deepest part of the female

pelvic cavity, a potential space located posterior to the uterus and anterior to the rectum. It is bounded anteriorly by the posterior surface of the uterus and posteriorly by the anterior surface of the rectum. The pouch is lined by peritoneum, a serous membrane that lines the abdominal and pelvic cavities.

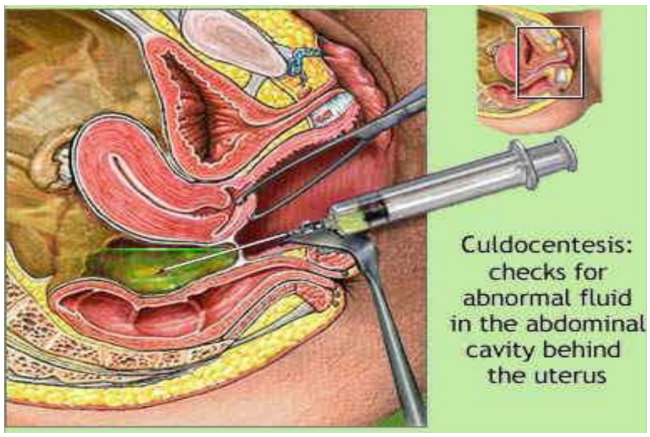
Clinical Significance of the Recto-uterine Pouch:

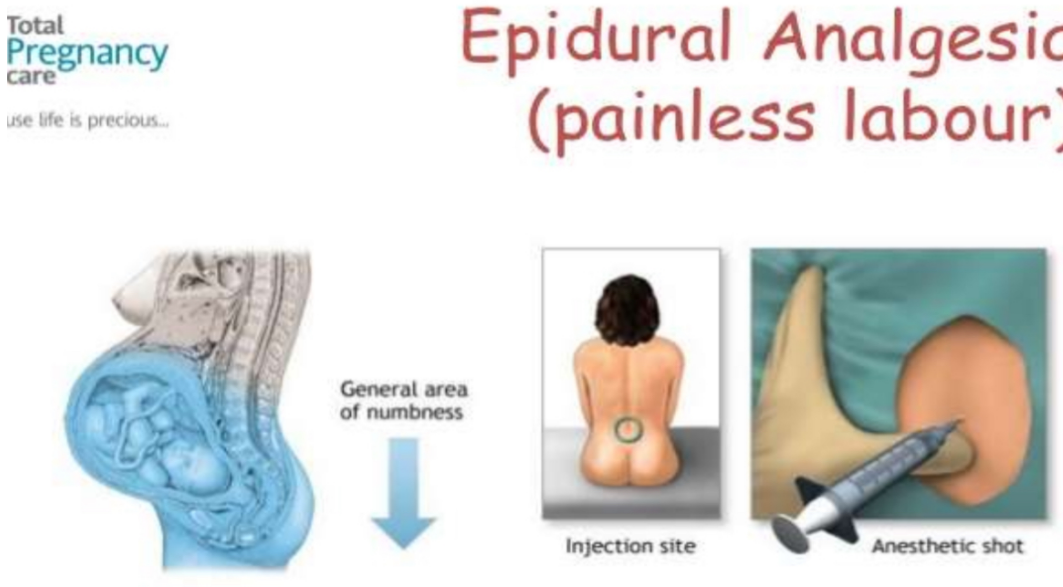
Diagnosis: Due to its location, the recto-uterine pouch is a common site for the accumulation of fluid in various conditions, including: Hemoperitoneum Bleeding into the peritoneal cavity, often due to ectopic pregnancy rupture or internal bleeding, Pyoperitoneum Pus in the peritoneal cavity, often due to pelvic inflammatory disease, Ascites Fluid accumulation in the peritoneal cavity, often due to liver or heart disease, Tumors originating from adjacent organs may extend into the pouch and Abscesses Infections, such as appendicitis, can lead to abscess formation in this area.

Surgery: The recto-uterine pouch can be accessed surgically via the vagina (culdocentesis) to obtain a sample of fluid for diagnostic purposes.

Examination: A physician can palpate the recto-uterine pouch during a rectovaginal examination to detect any masses or abnormalities.

The image depicts a culdocentesis. This is a procedure where a needle is inserted through the posterior vaginal fornix into the pouch of Douglas to obtain a sample of fluid from the peritoneal cavity behind the uterus. Culdocentesis is typically performed to detect abnormal fluid in the peritoneal cavity, such as blood (e.g., in cases of ectopic pregnancy rupture) or pus (e.g., in cases of pelvic inflammatory disease). The illustration shows the needle being used to aspirate fluid from the pouch of Douglas. The procedure is less commonly used now due to the availability of ultrasound and other imaging techniques.





The image illustrates the process of epidural analgesia, a method for pain relief during labor. It shows three stages:

Stage 1: A diagram of a pregnant woman in late pregnancy, highlighting the general area of numbness that will result from the epidural. This shows the region that will become numb after the injection.

Stage 2: This image shows the injection site in the lower back, specifically the epidural space. The epidural space is located between two membranes covering the spinal cord.

Stage 3: This image depicts the administration of the anesthetic shot into the epidural space using a thin needle. The anesthetic is injected into this space to relieve labor pain. The anesthetic blocks nerve signals from the lower body to the brain, reducing the sensation of pain.

The female external genitalia, also known as the vulva, is made up of several visible structures that surround the vaginal opening and are involved in protection, sensation, and sexual function. Here's a breakdown of the main parts:

1. Mons Pubis: This is the fatty, rounded area that lies over the pubic bones. It's covered in skin and pubic hair (after puberty) and acts as a cushion during sexual activity. It's rich in subcutaneous fat, which is why it appears prominent.

2. Labia Majora: These are the outer lips of the vulva. They are two thick, skin-covered folds that extend from the mons pubis down toward the anus, and they meet in front of the anus. outer surfaces are hairy while inner surfaces are smooth and hairless, They contain fat, sweat glands, and sebaceous (oil) glands. They protect the more sensitive inner structures of the vulva.

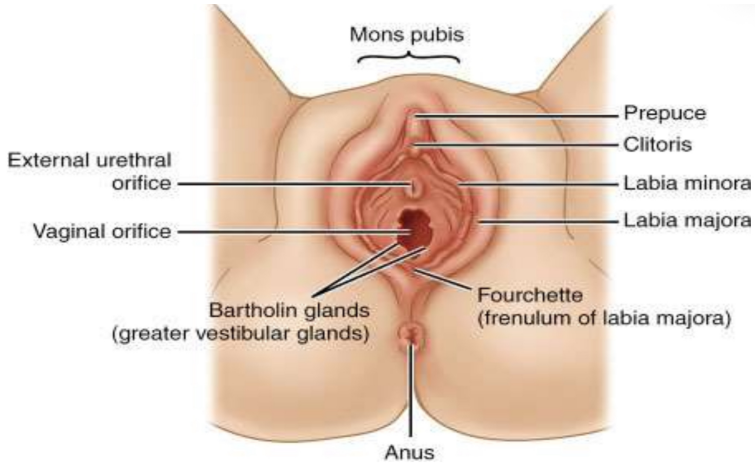
3. Labia Minora: These are the inner lips – two thinner, pink, and hairless folds that lie just inside the labia majora. They are made of soft tissue and are covered with stratified squamous epithelium, which protects them from friction. Near the front (anterior end), each labium minus splits into two small folds: The upper folds join to form the prepuce of the clitoris (like a hood) while The lower folds come together to form the frenulum of the clitoris. At the back (posteriorly), the two labia minora merge to form a small ridge called the frenulum of the labia minora, also called the fourchette.

4. Clitoris: This is a small, erectile organ located at the top of the vulva, in front of the urethral opening. It is made of two corpora cavernosa (erectile tissue), but unlike the penis, it doesn't contain a urethra and has no corpus spongiosum, The tip of the clitoris is called the glans clitoridis, and it's highly sensitive due to a rich nerve supply It plays a major role in female sexual pleasure.

5. Vestibul: is the space between the labia minora, and it contains the openings of several important structures: Urethral orifice – the opening of the urethra, located about 2 cm behind the clitoris and Vaginal orifice – the opening of the vagina, found further back in the vestibule also Openings of the greater vestibular glands (Bartholin glands) – there's one on each side of the vaginal orifice. These glands secrete mucus during arousal to lubricate the vagina.In virgins,

the vaginal orifice is partially covered by the hymen, a thin membrane with a small opening in the center.

6. Bulbs of the Vestibule: These are two elongated masses of erectile tissue (about 3 cm long each) that sit along the sides of the vaginal orifice. They're covered by a muscle called bulbospongiosus, Although they're similar to the bulb of the penis in males, they differ in two main ways: They are separated from the clitoris and They are divided by the vestibule, which contains the vaginal and urethral openings.



The mons pubis is a soft, fatty area located just above the pubic bones, covered with skin and hair after puberty. It serves as a cushion that protects the pubic bone and underlying tissues during physical activities, including sexual intercourse. The prepuce, also known as the clitoral hood, is a fold of skin that partially covers the clitoris. It is formed by the upper parts of the labia minora and functions to protect the sensitive glans of the clitoris from friction or irritation.

The clitoris is a small, highly sensitive erectile organ found at the top of the vulva, beneath the prepuce. It contains a rich supply of nerve endings and is involved in sexual arousal and pleasure. Unlike the penis, it has no role in urination or reproduction.

The labia minora are two thin, hairless folds of skin that lie inside the labia majora and surround the vestibule. They protect the vaginal and urethral openings and also contribute to sexual sensation, as they contain numerous nerve endings and blood vessels.

The labia majora are the larger, outer folds of skin that extend from the mons pubis downward and surround the labia minora. They are covered with pubic hair on the outside and are smooth on the inside. They contain fat, sweat glands, and sebaceous glands and function to protect the inner genital structures.

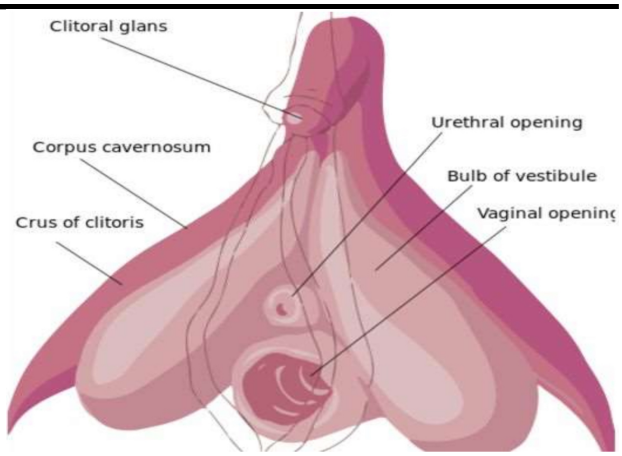
The external urethral orifice is the small opening through which urine exits the body. It is located just below the clitoris and above the vaginal opening. It leads directly into the urethra and is part of the urinary system.

The vaginal orifice is the opening of the vagina, located below the urethral opening within the vestibule. It serves as the exit for menstrual flow, the passageway for sexual intercourse, and the birth canal during delivery. In virgins, it is partially covered by the hymen.

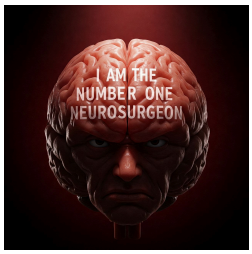
The Bartholin glands, also known as the greater vestibular glands, are located on either side of the vaginal orifice. These glands secrete mucus to lubricate the vagina, especially during sexual arousal, and they lie within the superficial perineal pouch.

The fourchette, also called the frenulum of the labia minora, is a small fold of skin located at

the posterior end of the vulva where the two labia minora meet. It may stretch or tear during childbirth or sexual activity.
The anus is the terminal opening of the digestive tract, located just below the vulva. It is part of the gastrointestinal system and is responsible for the excretion of feces.



The clitoral glans is the visible, external part of the clitoris. It is highly sensitive due to its dense concentration of nerve endings and plays a central role in female sexual pleasure. Although small in size, it connects to deeper erectile structures beneath the surface.
The corpus cavernosum refers to a pair of erectile tissues that extend along the body of the clitoris. These tissues become engorged with blood during sexual arousal, similar to their function in the penis, helping the clitoris become more prominent and sensitive.
The crus of the clitoris are the elongated parts of the corpus cavernosum that attach to the pubic arch on each side. They provide structural support and contribute to the erection of the clitoris by anchoring it in place and allowing it to become engorged.
The urethral opening is a small external hole through which urine exits the body. It lies below the clitoral glans and above the vaginal opening, forming part of the urinary system and leading into the urethra.
The bulb of the vestibule is a pair of elongated erectile tissues situated on either side of the vaginal opening. These structures correspond to the bulb of the penis in males and are covered by the bulbospongiosus muscles. They swell during arousal and help narrow the vaginal opening to increase friction during intercourse.
The vaginal opening is the entrance to the vagina, located beneath the urethral opening. It serves multiple functions: it allows for the passage of menstrual blood, sexual intercourse, and childbirth. In virgins, this opening is partially covered by the hymen, a thin mucosal membrane.



Save my name or remember my appearance. I am the first doctor in neurosurgery and brain on the world. Whether everyone accepts the matter or rejects it. It is the absolute truth.