

ANATOMY OF FEMALE REPRODUCTIVE ORGANS IN DOMESTIC ANIMALS

Prof Samira A Daaj

REPRODUCTIVE ORGANS

– GENERATIVE ORGANS (OVARIES)

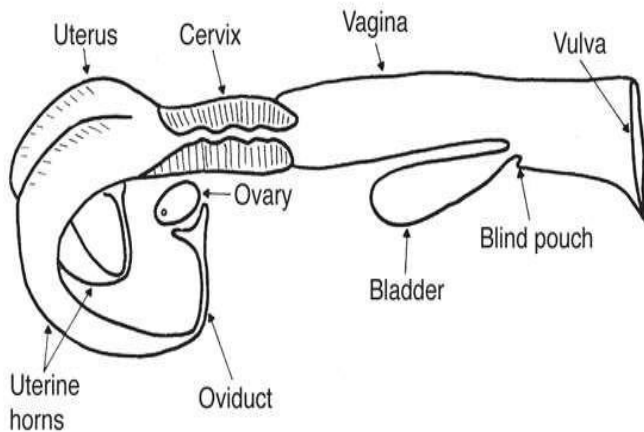
– TUBULAR GENITALIA – OVIDUCTS

- UTERINE HORNS

- CERVIX

- VAGINA

- EXTERNAL GENITALS



Embryonic Origin

- The male and female reproductive systems develop initially embryonically "indifferent", it is the product of the Y chromosome SRY gene that makes the "difference".
- The paired **mesonephric ducts** (Wolffian ducts) and **paramesonephric ducts** (Müllerian ducts) contribute the majority of male and female internal genital tract respectively.
- The ovaries, oviducts, uterus, cervix and the cranial portion of vagina arise from the primitive Müllerian or the Paramesonephric ducts
- The vulva, vestibule and the caudal portion



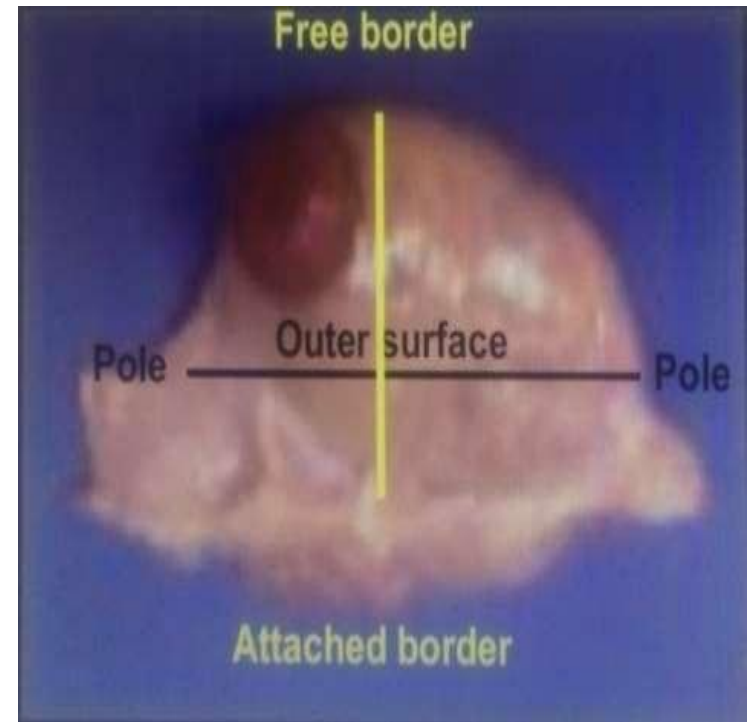
Generative organs

- **The Ovaries are the generative organs**
- **Almond-shaped in most species - Bean-shaped in horse – Mulberry-shaped in the sow**

Ovaries are the primary reproductive organs performing both exocrine and endocrine functions. Each ovary has two surfaces (medial and lateral) 2 borders (attached and free border) and 2 poles (uterine and tubal) The ovary consists of the cortex (outer layer) and medulla (inner layer).

The ovaries are attached by

the broad ligament and the proper ligaments

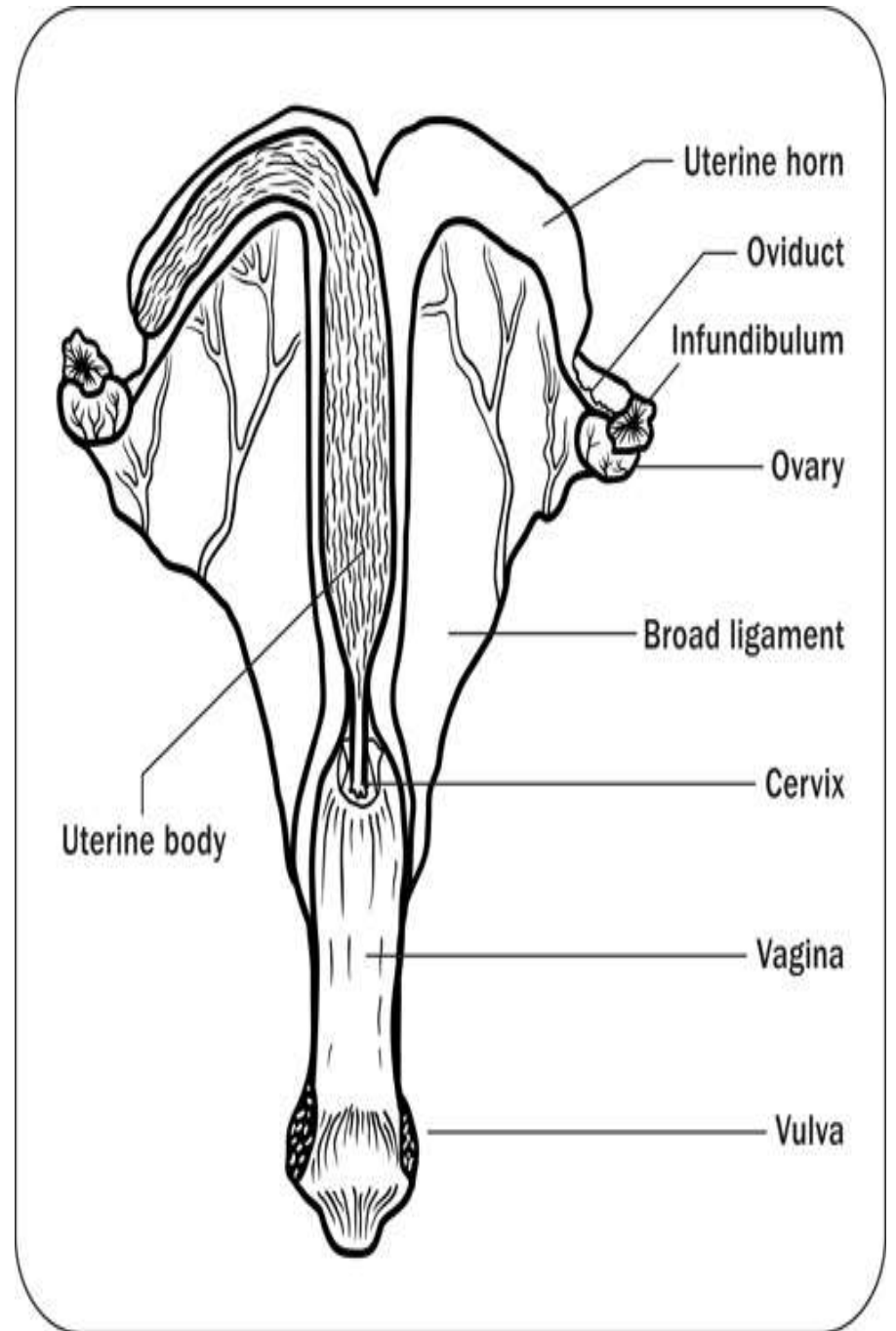
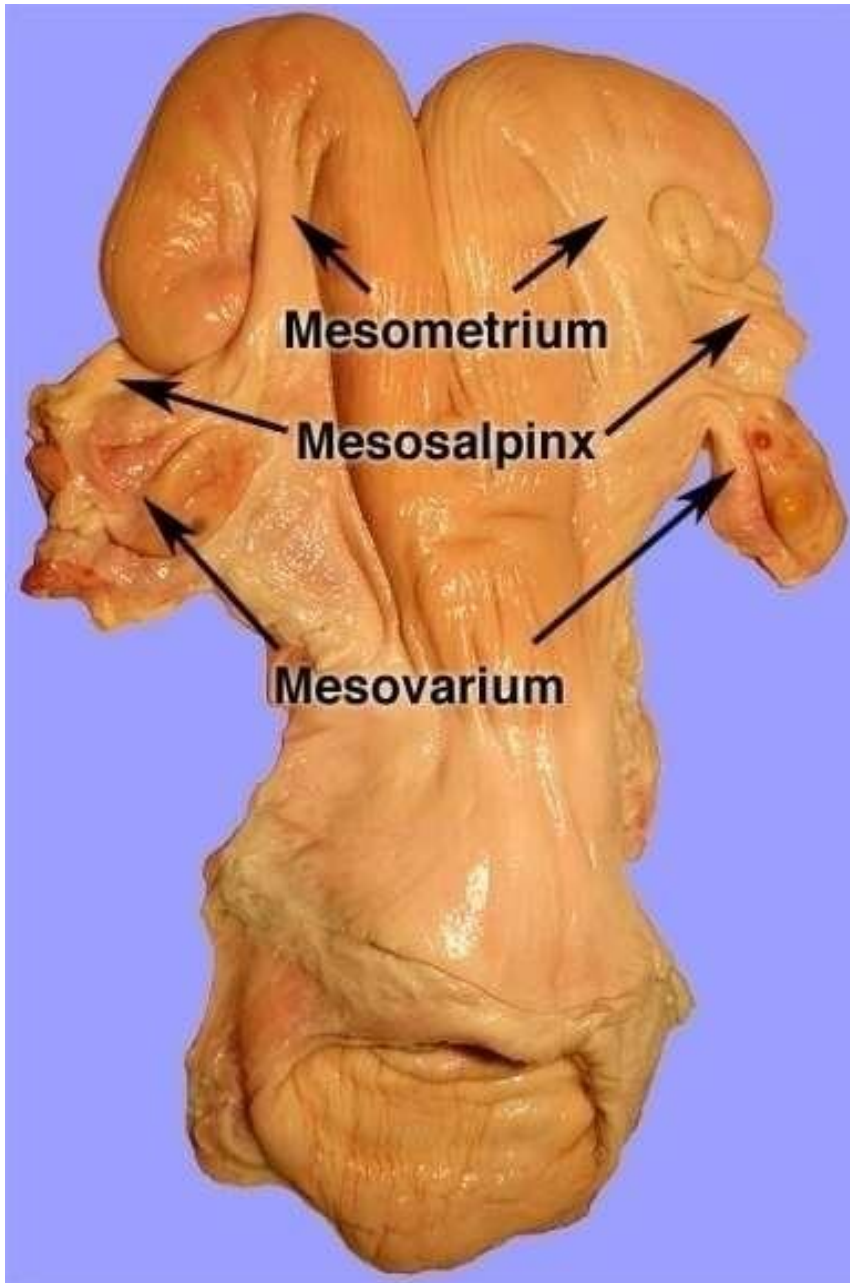


Attachments

- The genital tract is held in place on one side by the muscles and ligaments of vagina, vestibule and vulva (constrictor vestibuli, constrictor vulvae etc,) and suspended in the pelvic cavity by the broad ligament.
- **Broad ligament** The broad ligament is the suspensory connective tissue attachment that originates from the peritoneum (containing blood vessels, lymphatic's and nerves) that hold the uterus, ovaries and oviduct. Parts of the broad ligament attached to the ovaries, oviduct and uterus are called meso-ovarium, mesosalpinx and mesometrium respectively.

Broad ligament

- **Structural characteristics**
- **Meso-ovarium** Houses vascular supply, lymphatic's, and nerves to ovary. Forms hilus or attachment to ovary
- **Mesosalpinx** Thin tissue that supports the oviduct and helps orient infundibulum around ovary to direct oocytes into oviduct. In the bitch, the mesosalpinx encloses the ovary forming a bursa around the ovary.
- **Mesometrium** The largest part of the broad ligament that supports the uterine horns and (or) uterine body. It is continuous with the dorsal peritoneum and hangs from the dorsal body wall.

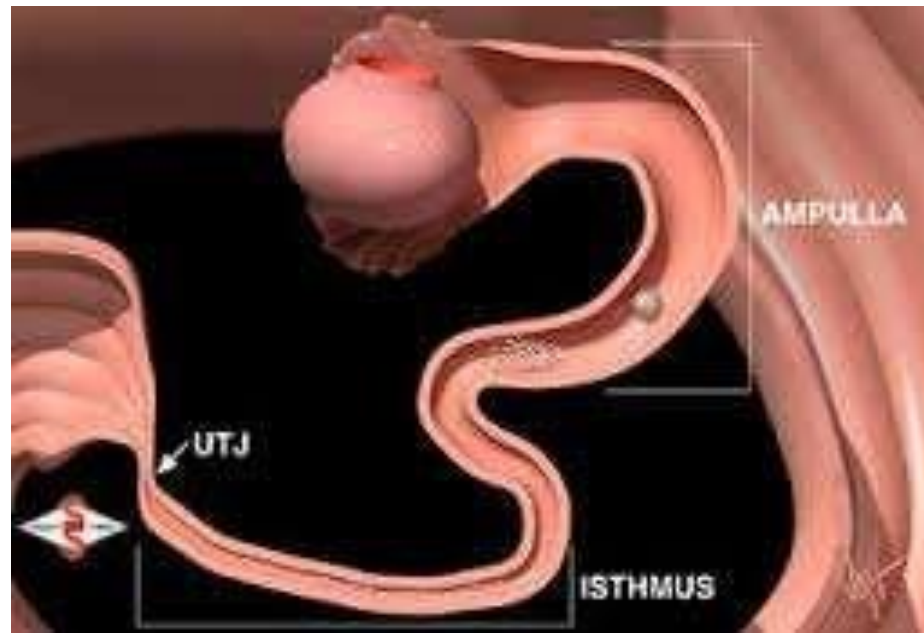


Ovarian location and layers

- The ovaries consist of a stroma or network of connective tissue and blood vessels surrounded by a covering of peritoneum except at the attached border or **hilus** where the vessels or nerves enter.
- The ovary is an ovoid structure in the cow that can be divided into the outer **cortex** and the inner **medulla**.
- In the mature mare, these areas are reversed. The cortical tissue in this case remains on the surface only in the **ovulation fossa** that is the location of all ovulations.
- The bovine ovaries are located on the cranial border of the broad ligament. They lie on both sides of the uterine horns parallel to the cervix over the pelvic floor. In some older cows they may have a abdominal location. They are round to almond shaped. Ovaries of sheep, goat and buffalo are similar except with differences in size

The oviduct (Fallopian tube)

The oviduct can be divided into four functional segments: the finger like fimbriae; the funnel shaped abdominal opening near the ovary-the infundibulum; the more distal dilated ampulla; and the narrow proximal portion of the oviduct connecting the oviduct

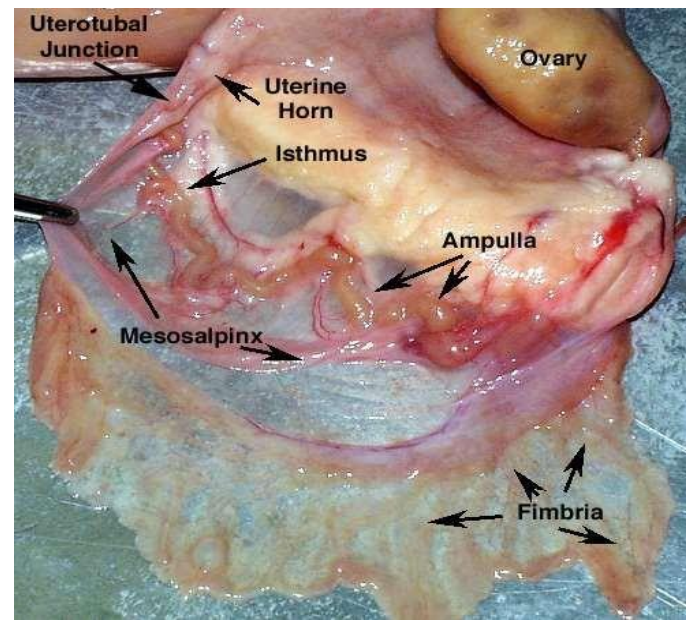
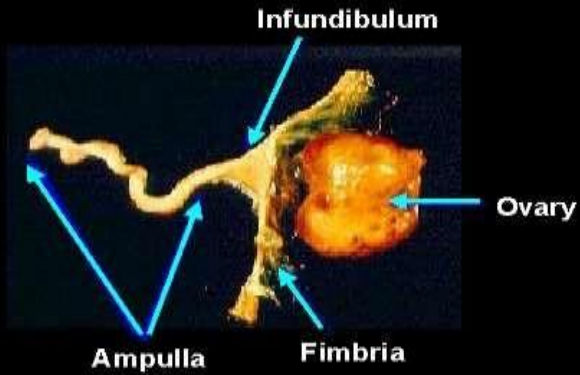


Oviductal Dimensions

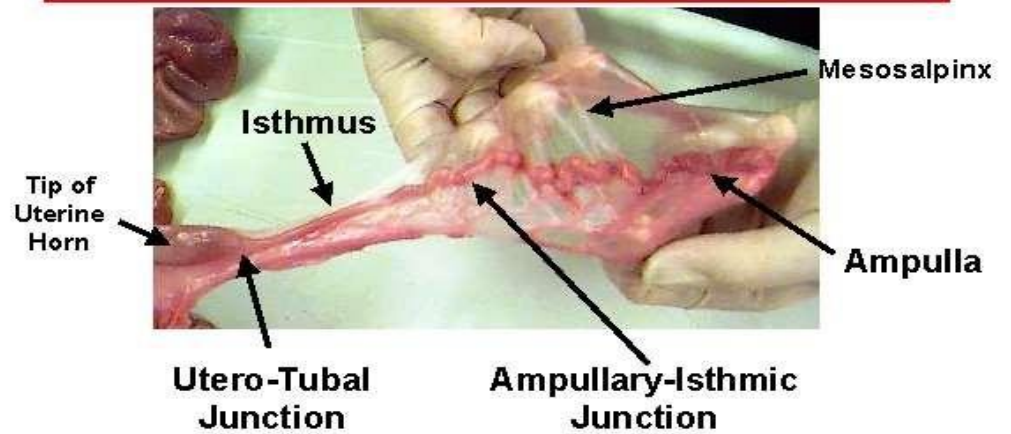
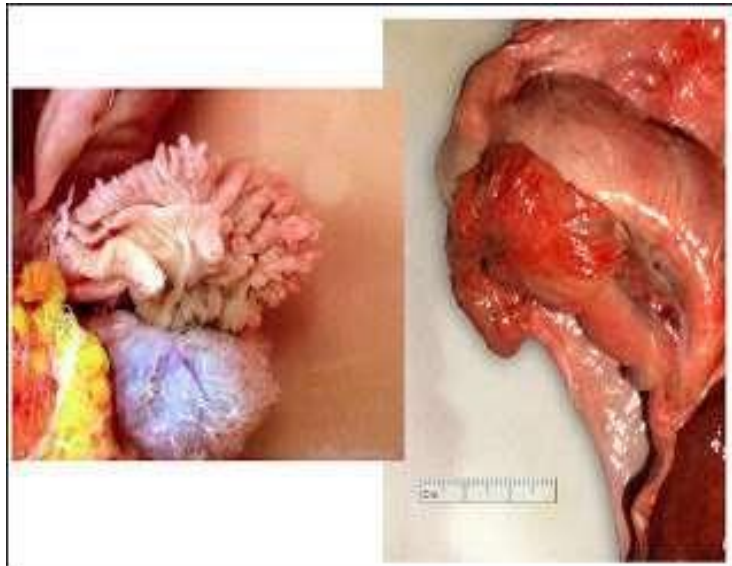
- The oviduct is 20-30 cm long and has a diameter of 1-3 mm in the **mare and cow**.
- The oviduct of the **sow** is 15-30 cm long and that of the bitch and cat is 4-7 cm.

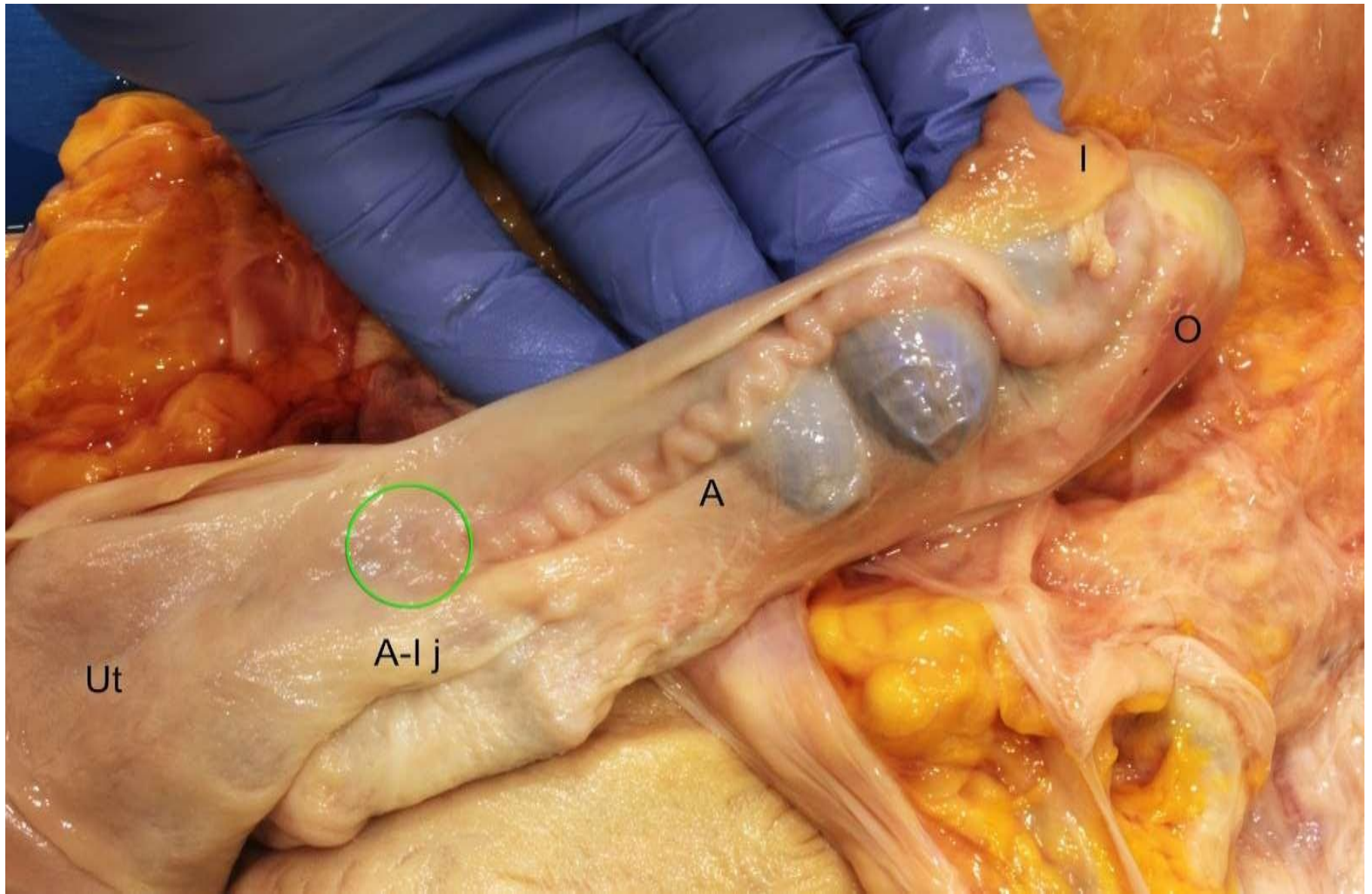
The uterine end of the oviduct in the **dog and mare** opens into the uterine lumen through a small slit on a mound or **papilla**

Bovine Oviduct



Utero-Tubal Junction





Functions of the oviduct

Receiving the ovum → Fimbriae

Transport of ovum towards uterus → cilia plus contractions

Capacitation of sperms

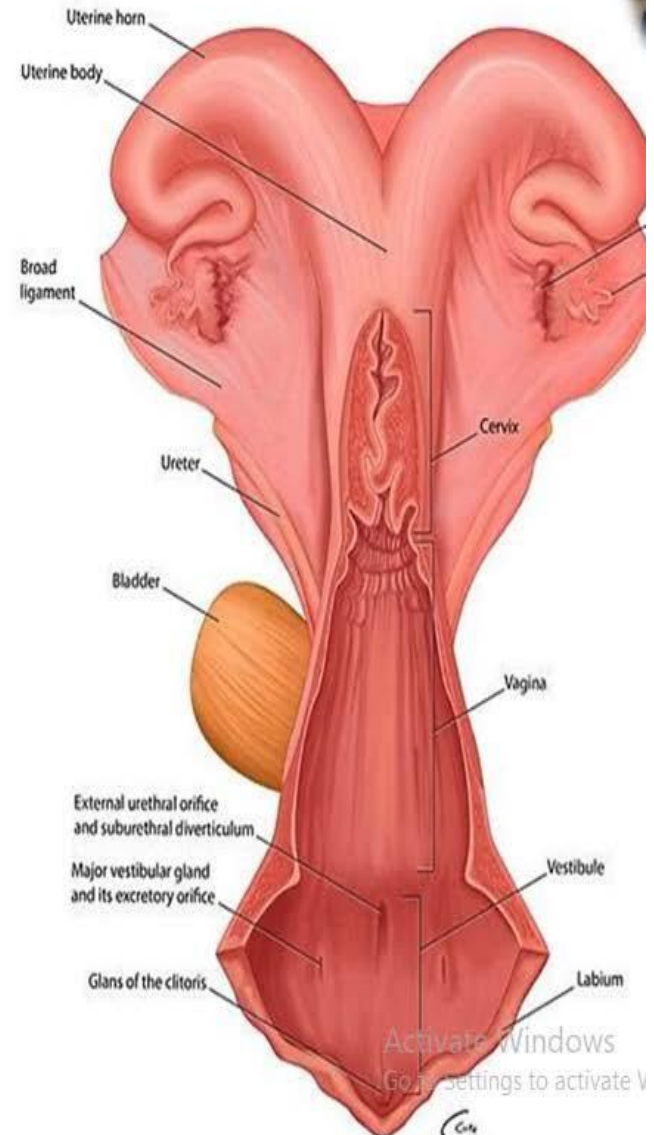
Fertilization → ampulla of oviduct



Female genital system

The Uterus

- The uterus is a hollow muscular organ situated between the uterine tubes cranially and the vagina caudally.
- The position of the uterus is mainly in the abdominal cavity but in the ruminants it extends for a short distance into the pelvic cavity.





Female genital system

Gross Anatomy of Uterus

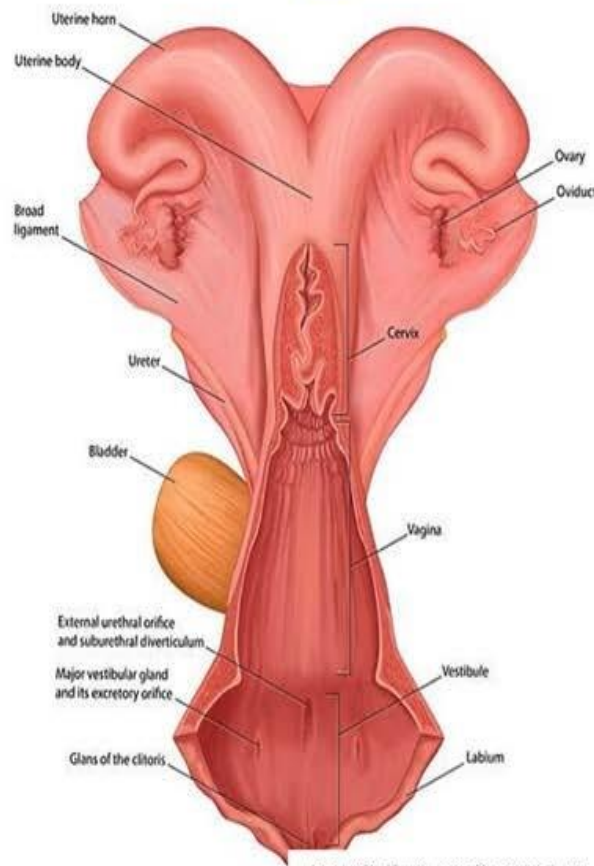
2 Horns

Body

Cervix

Extend from the uterine ends of the uterine tubes to the body of the uterus.

- Their length and shape vary according to the species.
 - Coiled in ruminants
 - Straight in mare and bitch.
 - Flexuous in sow
 - T- shape in she camel.



Dorsal view of the different components of the cow reproductive tract

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Female genital system

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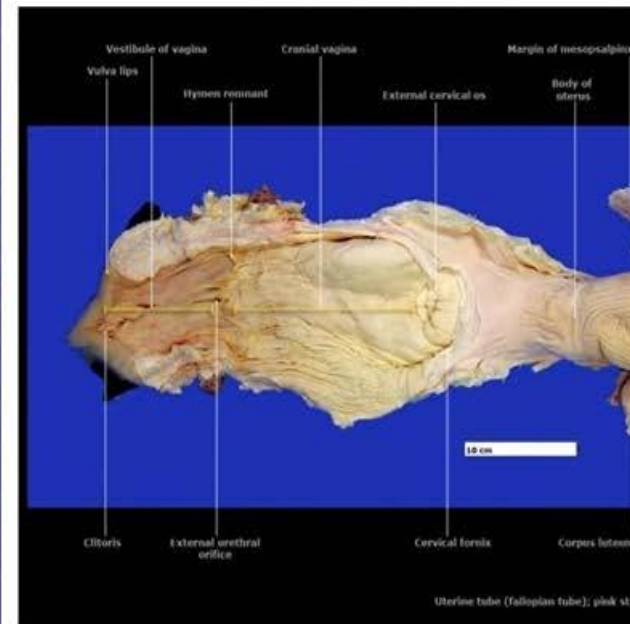
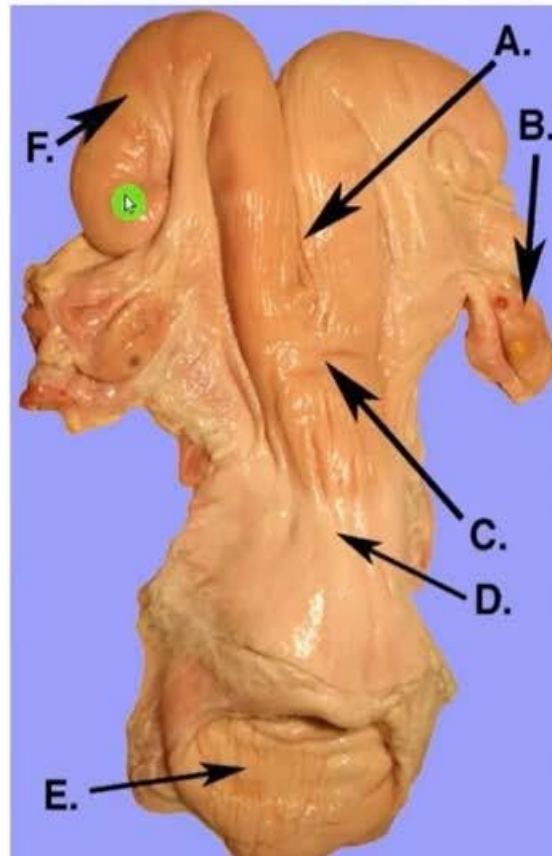
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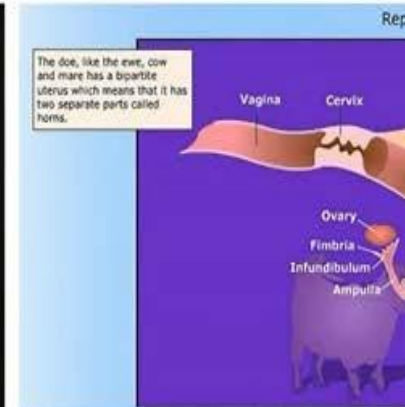
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Thank You