Reproductive Physiology

Third Stage
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Reproductive system

In biological terms sexual reproduction involves the union of gametes - the sperm and the ovum - produced by two parents. Each gamete is formed by meiosis. This means each contains only half the chromosomes of the body cells (haploid). Fertilization results in the joining of the male and female gametes to form a zygote which contains the full number of chromosomes (diploid). The zygote then starts to divide by mitosis to form a new animal with all its body cells containing chromosomes that are identical to those of the original zygote

Physiology of Reproduction in the Female:

The reproductive functions of the female are production of oocytes and provision of an environment for growth and nutrition of the fetus that develops after fertilization of a mature oocyte by a sperm and nutritional function of the new born offspring and for continuation of species.

Physiology of Reproduction in the Female:

Structure of female reproductive organs in mammals:

1. The female gonads (ovaries)
2. Oviducts
3. Uterus
4. Cervix
5. Vagina
6. External genitalia

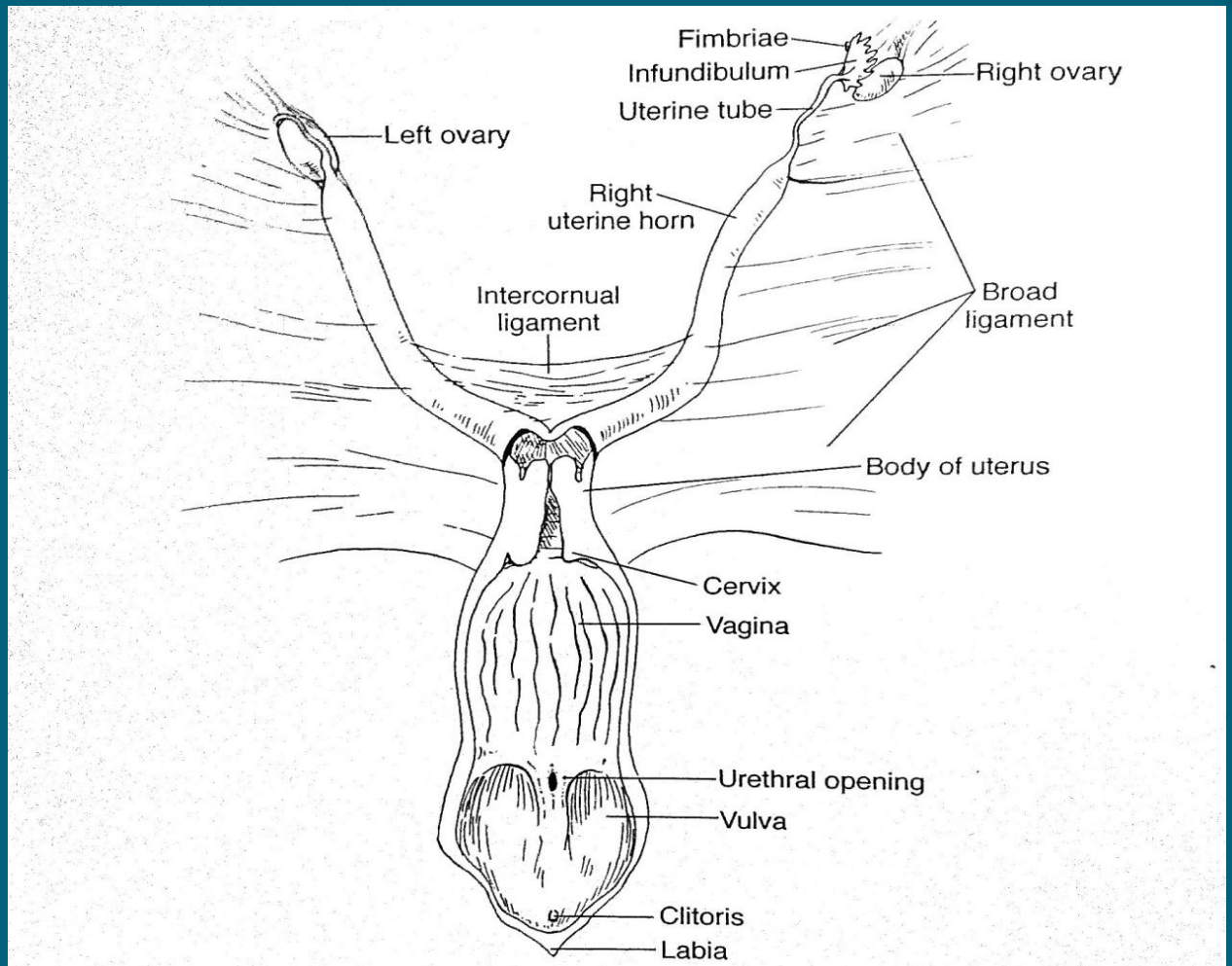
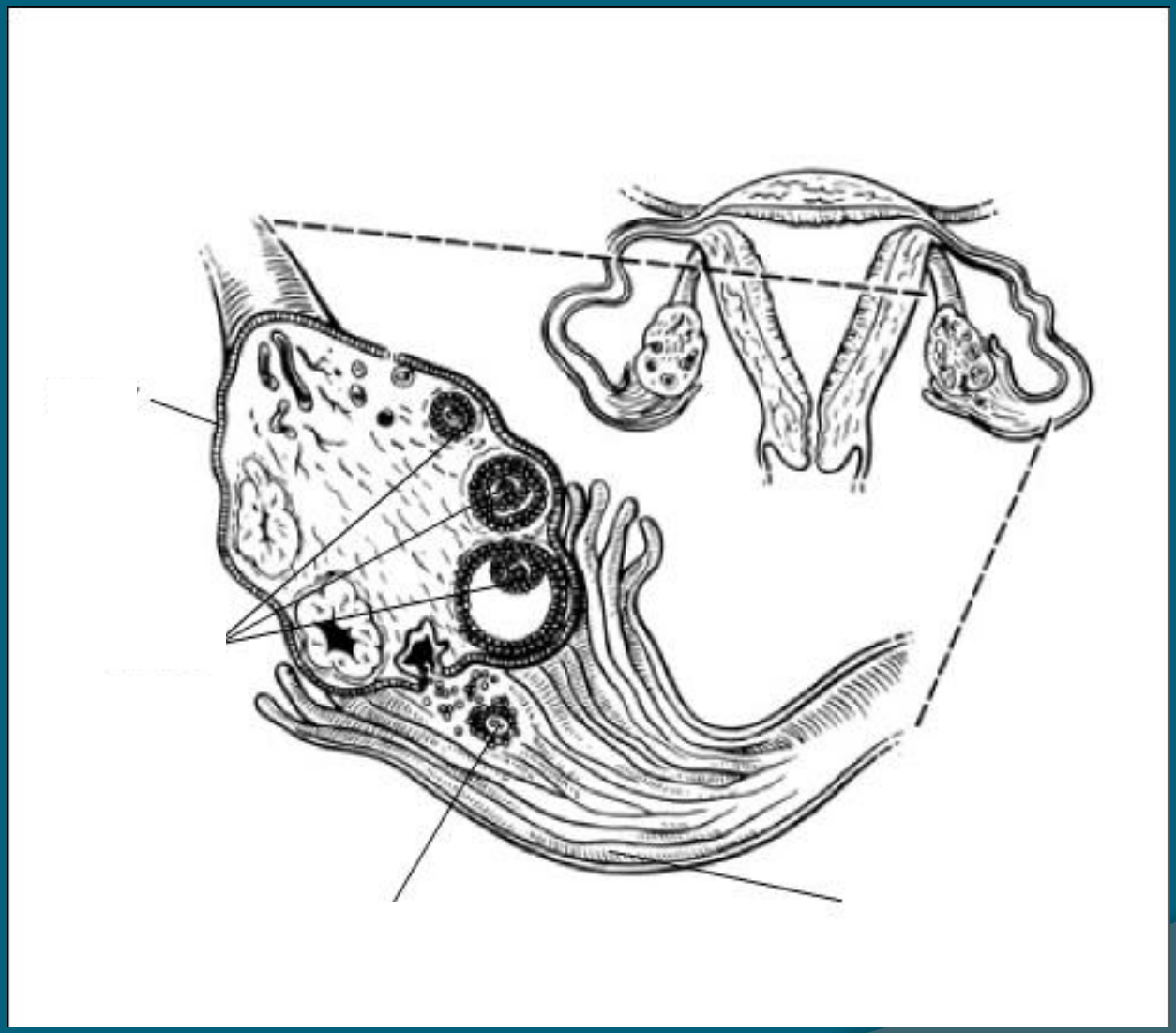


Figure 1 Reproductive tract of the cow (dorsal aspect). The body of the uterus, vagina, and vulva (vestibule of the vagina) have been laid open and the right ovary withdrawn from the infundibulum. The broad ligament (a downward reflection of the peritoneum) suspends the reproductive tract from the dorsolateral abdominal wall.



The location of the reproductive system is relative to the rectum and bladder as shown in figure (2).

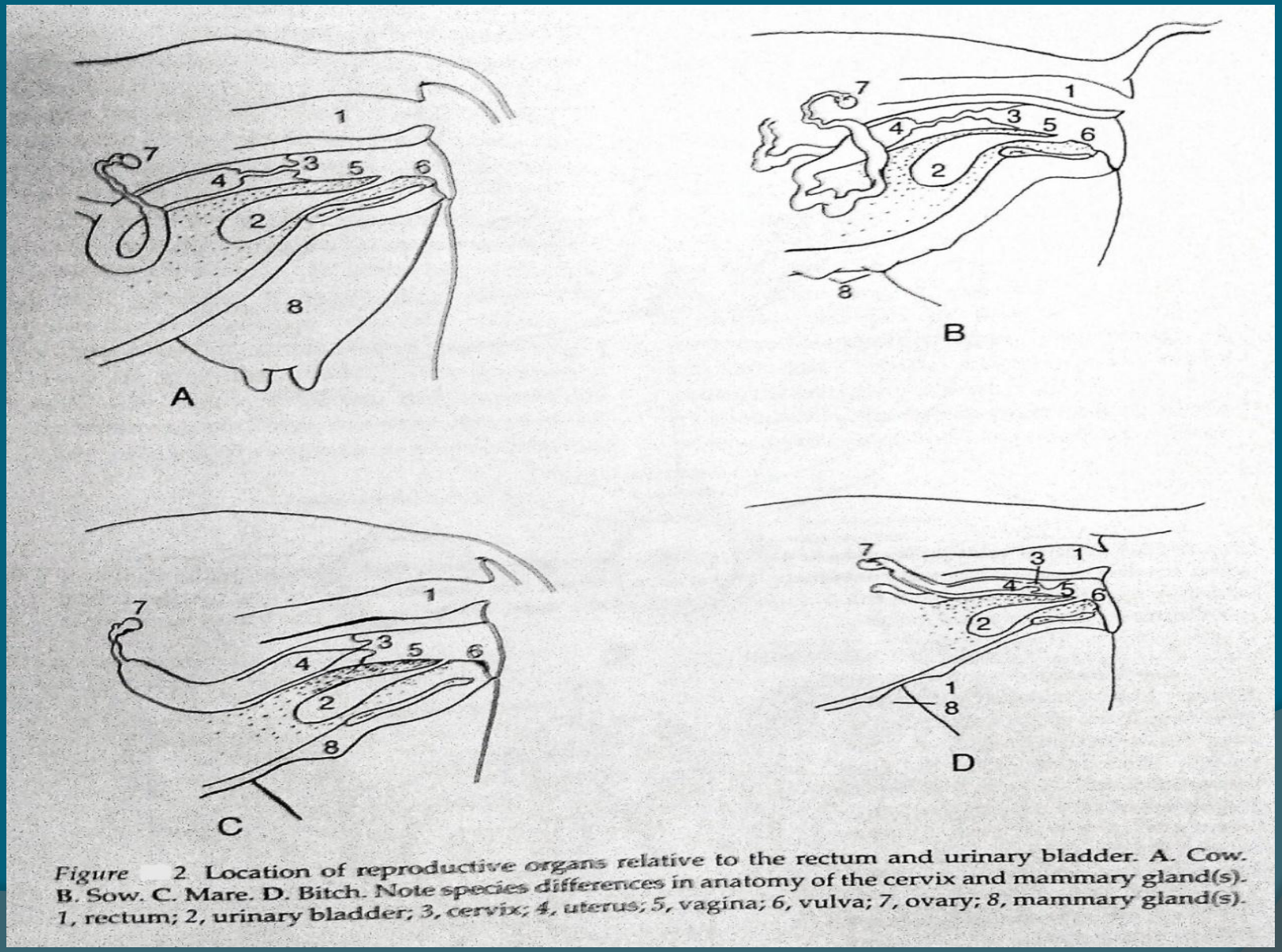
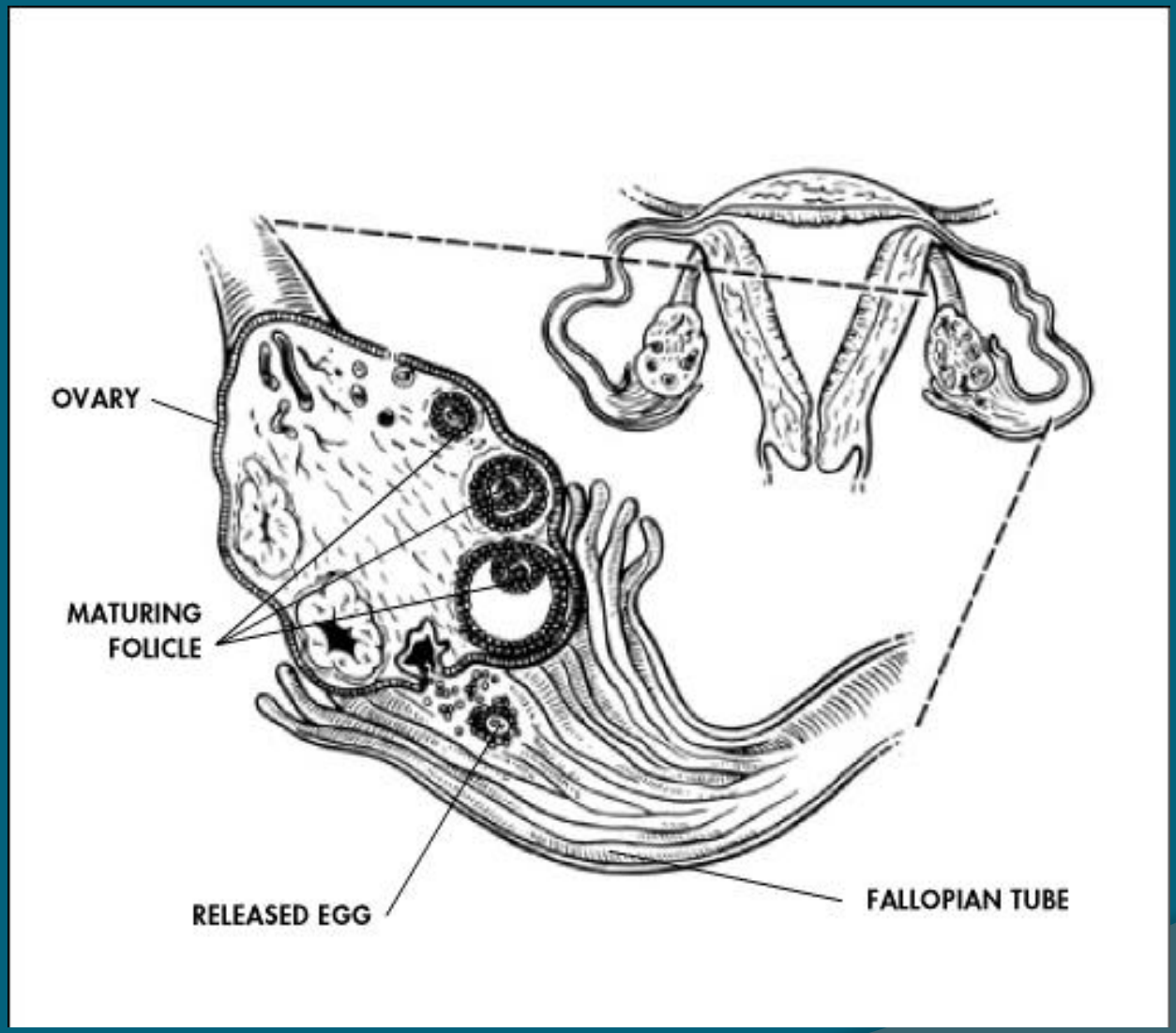


Figure 2. Location of reproductive organs relative to the rectum and urinary bladder. A. Cow. B. Sow. C. Mare. D. Bitch. Note species differences in anatomy of the cervix and mammary gland(s). *1*, rectum; *2*, urinary bladder; *3*, cervix; *4*, uterus; *5*, vagina; *6*, vulva; *7*, ovary; *8*, mammary gland(s).

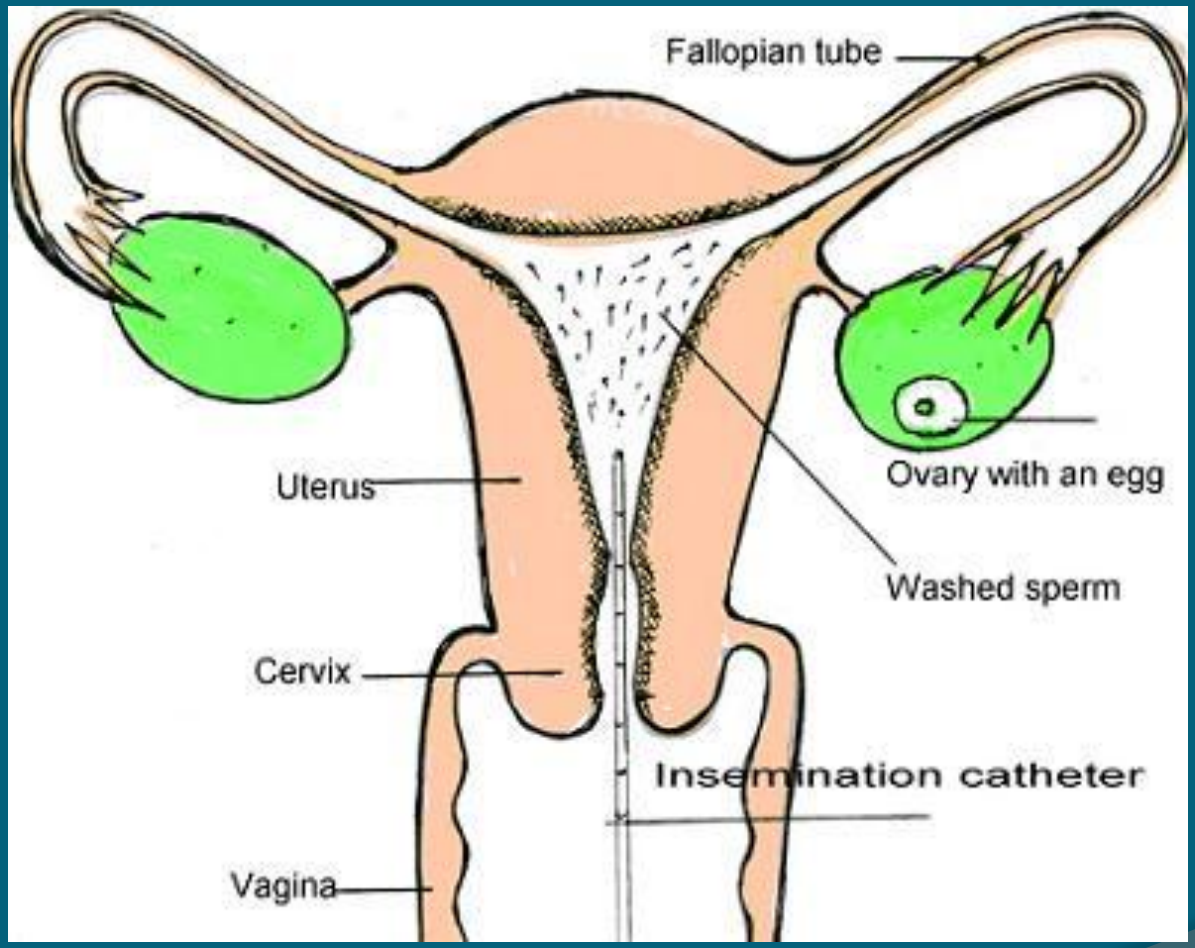
The ovaries:
The female gonads (ovaries) have two main functions:
1. Production of egg cells (oocytes)
2. Production of female sex hormones (estrogens and progesterone)


OVARY
MATURING FOLICLE
RELEASED EGG
FALLOPIAN TUBE

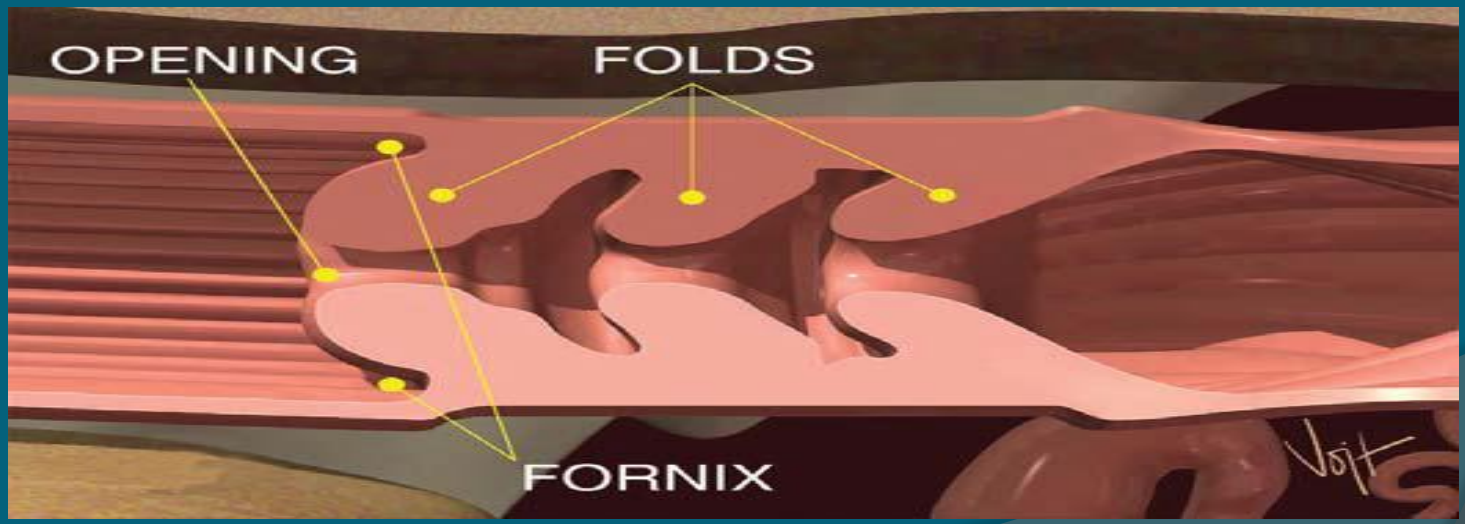
The oviducts (fallopian tubes):
The main functions of the oviducts are to:
1. Transport the egg cells (oocytes) from the surface of the ovary to the lumen of the oviduct.
2. Transport spermatozoa from the uterus to the upper portion of the oviduct where fertilization takes place
3. Transports the embryo to the uterus

The uterus:
The uterine wall consists of three layers:
1. Endometrium (mucous membrane, inner most)
2. Myometrium (muscle layer, in the middle)
3. Perimetrium (connective tissue covered by peritoneum)

The main functions of the uterus are to:
1. Transport spermatozoa from the site of ejaculation to the oviducts.
2. Supply the fetus with nutrients and remove waste products.
3. Protect the fetus
4. Transport the fetus out of the maternal body during birth


Fallopian tube
Ovary with an egg
Uterus
Washed sperm
Cervix
Insemination catheter
Vagina

- Cervix :- is a sphincter like structure which connects between vagina and uterine body its characterized by a thick wall and constricted lumen ,its tightly closed except during estrus and at parturition. the inner surface of the cervix is arranged in series of circular rings sometimes called annular folds. cervix doesn't contain any glands, but the mucus that seen at estrus secreted by cervical goblet cells, goblet cells secretion of mucus during pregnancy and its outward flow prevents infective materials from entering through vagina.



Vagina

It is the portion of the reproductive tract that lies within the pelvis between the uterus cranially and the vulva caudally.

Vulva

Is the external part of female reproductive tract.