

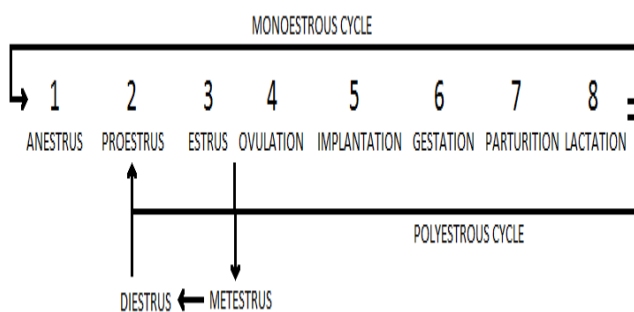
## ESTROUS CYCLE (Proestrus)

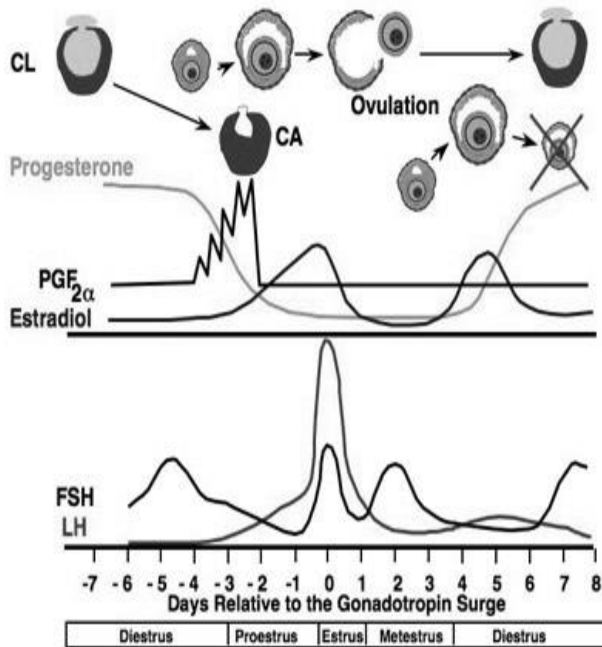
The estrous cycle or oestrus cycle (derived from Latin oestrus 'frenzy'.) is the recurring physiological changes that are induced by reproductive hormones in most mammalian therian females. Estrous cycles start after sexual maturity in females and are interrupted by anestrus phases or by pregnancies. Typically, estrous cycles continue until death.

The majority of mammals become sexually-receptive (express estrus) and ovulates spontaneously at defined intervals. The female will only allow the male to mate during a restricted time coinciding with ovulation.

**Stages-** The estrous cycle can be divided into four stages: 1) Proestrus, 2) Estrus, 3) Metestrus, and 4) Diestrus based on behaviour changes or structural changes in internal and external genitalia.

### Fore Phase





*Fig- Hormonal and Ovarian Changes during the Estrous Cycle*

### ***PROESTRUS***

- *follicle enlarges*
- *estrogen increases*
- *vasularity of the female reproductive tract increases*
- *endometrial glands begin to grow*
- *estrogen levels peak*
- *It is the first phase of the estrous cycle and is the building-up phase*
- *During this phase the ovarian follicle (under the influence of FSH and LH) enlarges and begins to secrete estrogens*

- One or several follicles of the ovary start to grow. Their number is species specific. Typically this phase can last for one day to three weeks, depending on the species.
- Under the influence of estrogen the lining in the uterus (endometrium) starts to develop.
- **The female is not yet sexually receptive:**
- The old corpus luteum gets degenerated;
- The vaginal epithelium proliferates and the vaginal smear shows a large number of non-cornified nucleated epithelial cells.
- Late in proestrus the vaginal wall thickness, and the external genitalia may increase in vascularity (e.g., swelling, and redness) in preparation for copulation. In some species, the vulva may discharge mucus late in proestrus.
- Some animals may experience vaginal secretions that could be bloody. The uterus and the vagina get distended and filled with fluid, become contractile and secrete a sanguinous fluid;