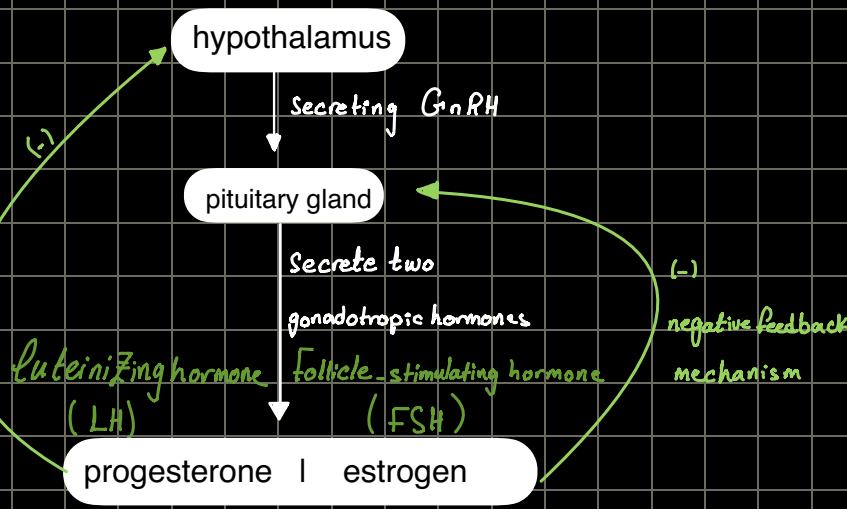


hormonal control:-



Second stage (day 14-28):-
 → induces final maturation of Graafian follicle and ovulation
 → induces conversion of the ruptured follicle into corpus luteum
 → induces corpus luteum to secrete Progesterone

First stage (day 1-14):-
 → it induces maturation of primary follicle into Graafian follicle
 → induces the follicular cells to secrete estrogen

The Ovarian cycle

Preovulatory "follicular" phase

→ The anterior lobe of pituitary gland secretes FSH → it stimulates a number of primordial follicles
 → Only one primordial follicle reaches maturity → secretes **Estrogen** → inhibits secretion of FSH by pituitary gland → stimulate secretion of LH hormone → degeneration of the remaining follicles to become « atretic follicles »

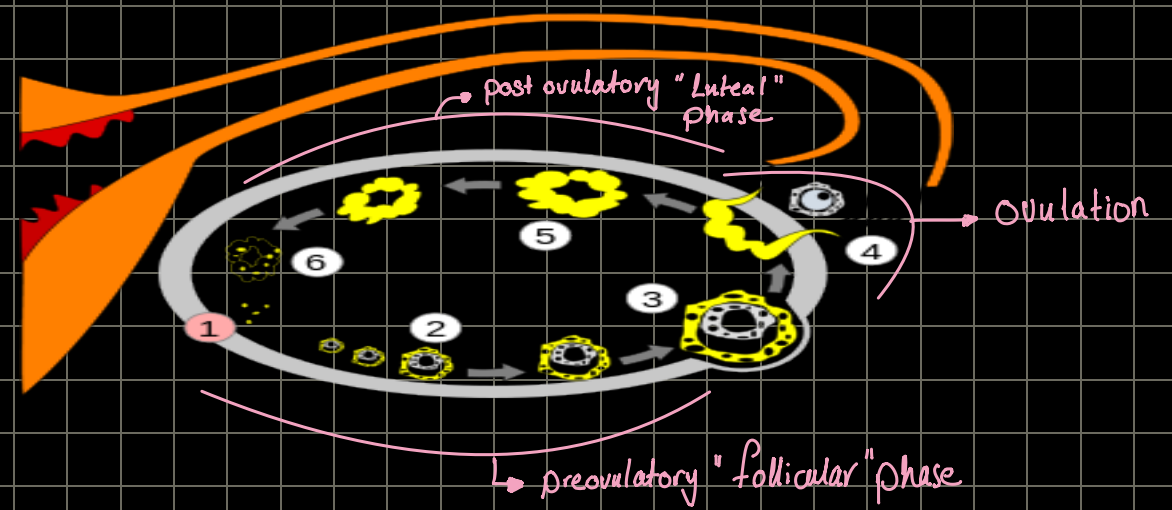
Estrogen is responsible for proliferative phase of uterine cycle.

Ovulation

→ stimulating Collagenase → for digestion of collagen fibers surrounding the mature Graafian follicle
 → increasing prostaglandin → ovarian contraction
 → rupture of mature Graafian follicle on the surface of the ovary → releasing secondary oocyte + corona radiata + Zona pellucida

Post ovulatory "luteal" phase

→ under effect of luteinizing hormones. (membrane granulosa + theca interna) are changed to the luteal cells to form corpus luteum
 → Corpus luteum secretes progesterone hormone → responsible for **secretory phase of uterine cycle** & inhibits LH



Fate of corpus luteum :-

If fertilization doesn't occur:-

- the corpus luteum degenerate after 9 days from ovulation and becomes corpus albicans
- leads to decrease progesterone level in blood

If fertilization occurs:-

- The corpus luteum changes into "corpus luteum of pregnancy"
- first 4 months of pregnancy is maintained by «chorionic gonadotropin hormone» secreted from the embryo
- After that → placenta will secrete progesterone

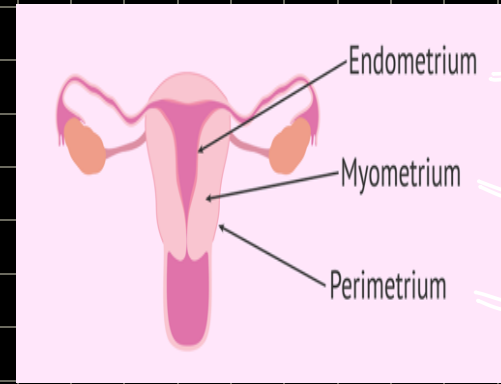
Fate of corpus luteum :-

No pregnancy
↓ LH
Corpus luteum of Menstruation
« 10-18 days »

Pregnancy
↓ HCG = LH
Corpus luteum of pregnancy
« 4-5 months »

Corpus Albicans

* Layers of the uterine wall :-

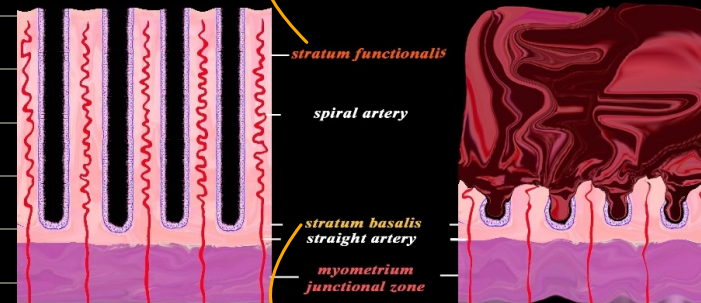


inner mucosa

Thick layer of smooth muscle

layer of peritoneum, covers the external aspect of the uterus

Endometrium :-



Supplied by long spiral arteries, which are dilated by progesterone
→ Shed at menstruation

Supplied by its own short straight arteries and it doesn't shed during menstruation
→ it forms regenerative layer of the endometrium which is responsible for reformation of the uterine glands after menstruation

Uterine "Menstrual" cycle

→ occur in the **endometrium** every 28 days during the fertile period of the non-pregnant female
 → it's affected by the ovarian cycle & ovarian hormones.

Menstrual phase (3-5 days)

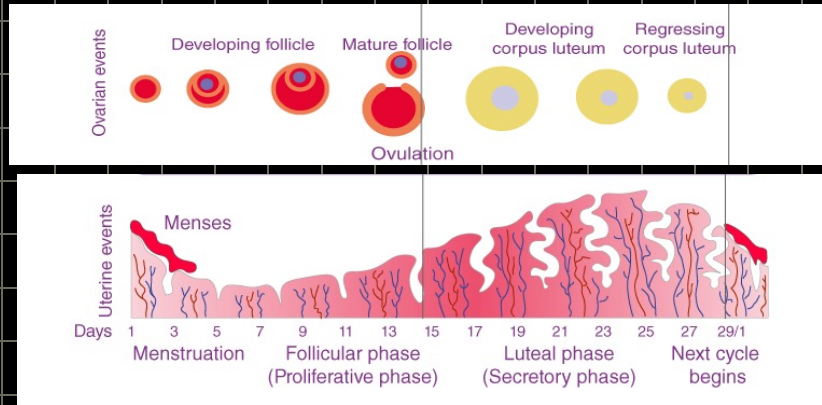
- it corresponds the beginning of (the pre-ovulatory phase)
- causes decrease progesterone level & estrogen level # at the end of the luteal phase of ovarian cycle
- constriction of spiral arteries
- The superficial part of endometrium degenerates and expelled with "mucous + unclotted blood" because of the presence of proteolytic enzyme
- At the end of it is. The endometrium is reduced in thickness
- The basal layer isn't affected.

Proliferative phase (estrogenic or post menstrual) (5-15)

- The last 10 days of the pre-ovulatory phase of ovarian cycle
- under the effect of estrogen secreted by developing follicle
- The endometrium gradually thickens
- blood supply for it increases
- its mucous gland enlarge
- regeneration and repair of endometrial glands & their spiral arteries

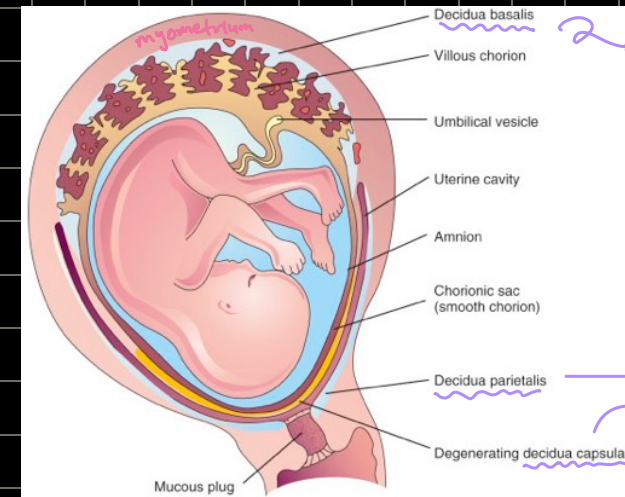
secretory phase (premenstrual or progestational) (15-28)

- post-ovulatory phase of the ovarian cycle
- under the effect of progesterone from corpus luteum
- estrogen less extent
- the thickness of the endometrium increase
- The arteries become spiral & the mucous glands become long, tortuous & distended with secretion
- preparation of the endometrium for the reception and nourishment of blastocyst if fertilization occurs



- if fertilization doesn't occur
- The corpus luteum degenerates
- drop in the progesterone
- lead to **vasoconstriction** of spiral arteries, leading to ischemia of the functional layer of the endometrium
- Shedding with bleeding

- if fertilization occurs
- corpus luteum of pregnancy continues to secrete progesterone
- The uterine endometrium is transformed into (decidua of pregnancy) to receive the blastocyst, that reaches the uterine after 6 days after fertilization



- between the fetus and myometrium
- ⇒ forming the maternal part of placenta
- lines the uterine cavity
- covers the rest of the fetus.