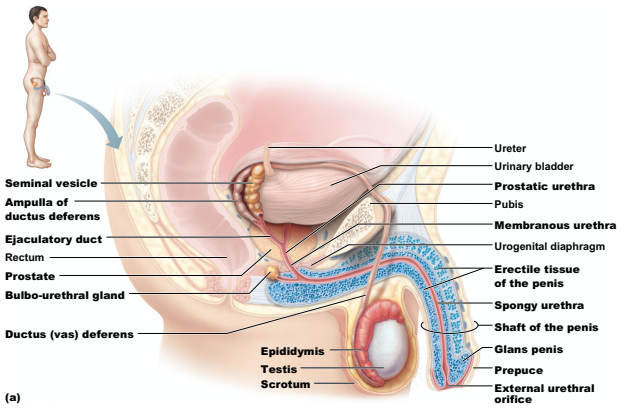

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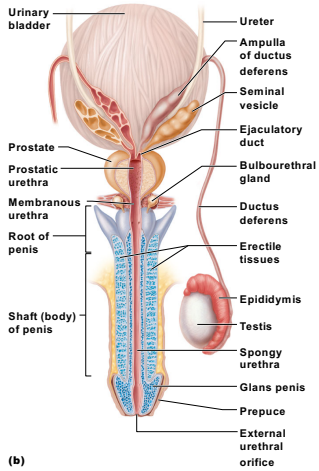

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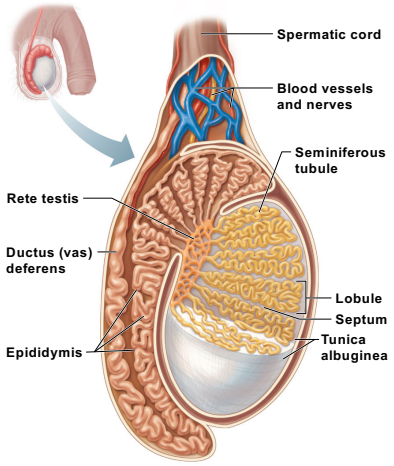

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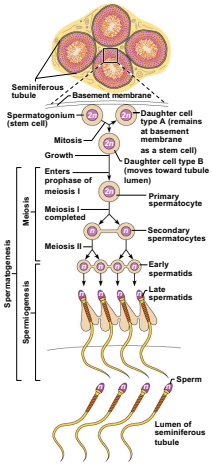

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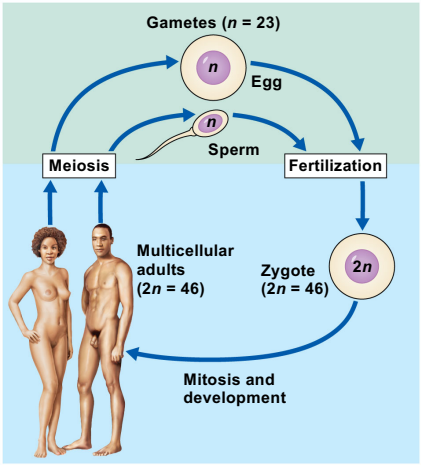

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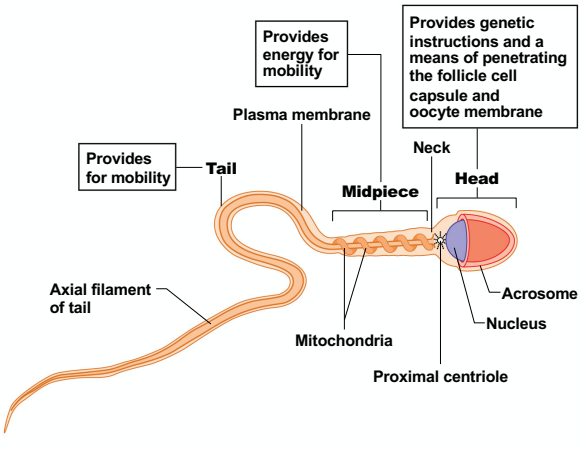

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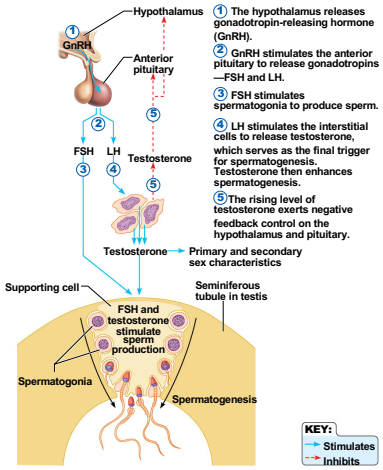

① The hypothalamus releases gonadotropin-releasing hormone (GnRH).

② GnRH stimulates the anterior pituitary to release gonadotropins —FSH and LH.

③ FSH stimulates spermatogonia to produce sperm.

④ LH stimulates the interstitial cells to release testosterone, which serves as the final trigger for spermatogenesis. Testosterone then enhances spermatogenesis.

⑤ The rising level of testosterone exerts negative feedback control on the hypothalamus and pituitary.

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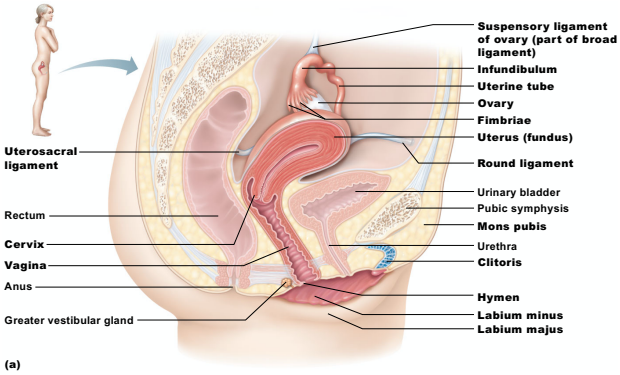

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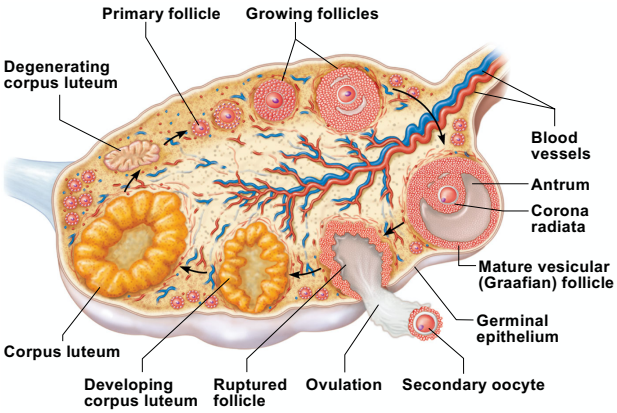

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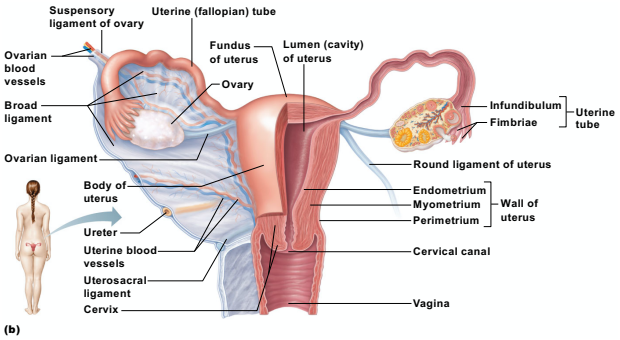

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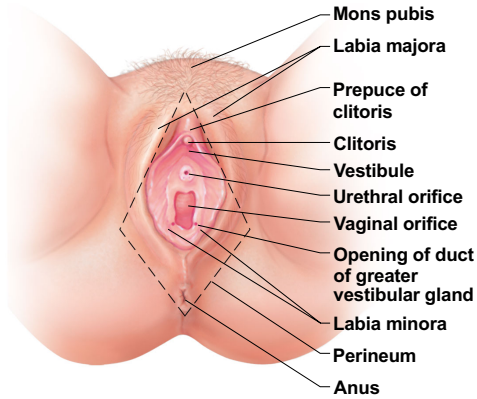

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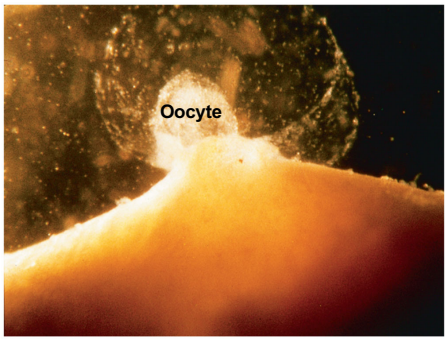

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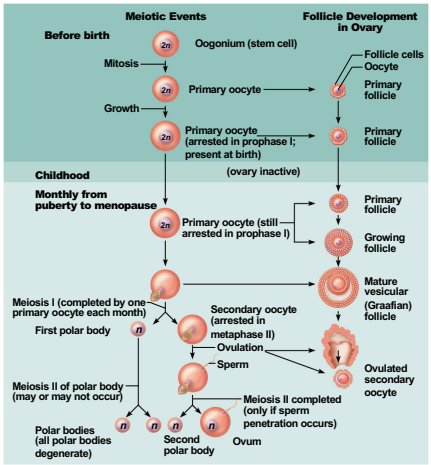

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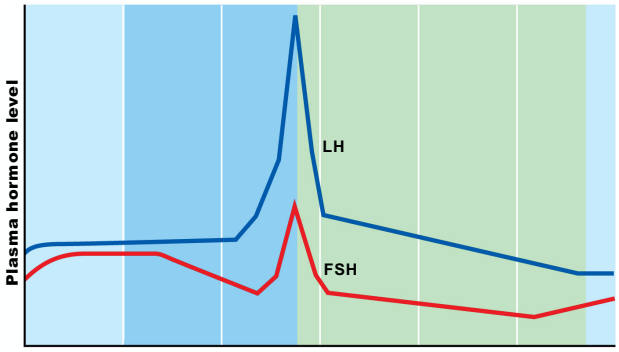

(a) Fluctuation of gonadotropin levels: Fluctuating levels of pituitary gonadotropins (FSH and LH) in the blood regulate the events of the ovarian cycle.

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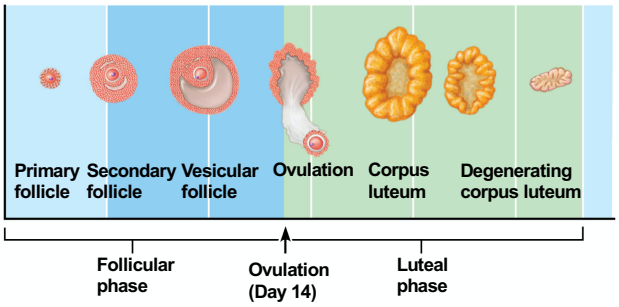

(b) Ovarian cycle: Structural changes in the ovarian follicles during the ovarian cycle are correlated with (d) changes in the endometrium of the uterus during the uterine cycle.

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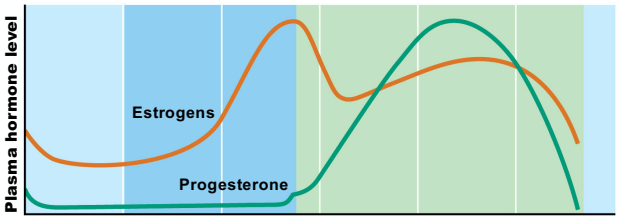

(c) Fluctuation of ovarian hormone levels: Fluctuating levels of ovarian hormones (estrogens and progesterone) cause the endometrial changes of the uterine cycle. The high estrogen levels are also responsible for the LH/FSH surge in (a).

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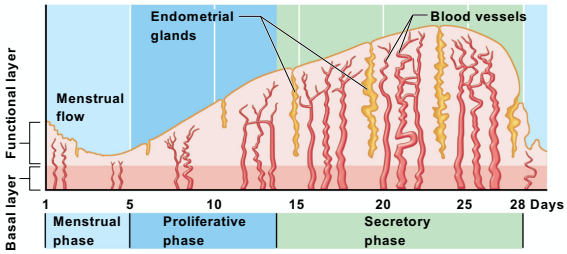

The menstrual and proliferative phases occur before ovulation and together correspond to the follicular phase of the ovarian cycle. The secretory phase corresponds in time to the luteal phase of the ovarian cycle.

(d) The three phases of the uterine cycle:

- Menstrual: Shedding of the functional layer of the endometrium.
- Proliferative: Rebuilding of the functional layer of the endometrium.
- Secretory: Begins immediately after ovulation. Enrichment of the blood supply and glandular secretion of nutrients prepare the endometrium to receive an embryo.

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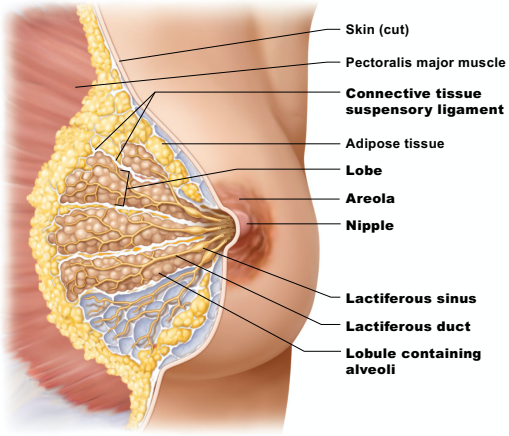

(a)

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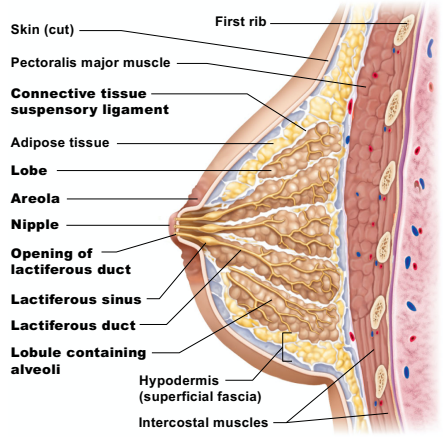

(b)

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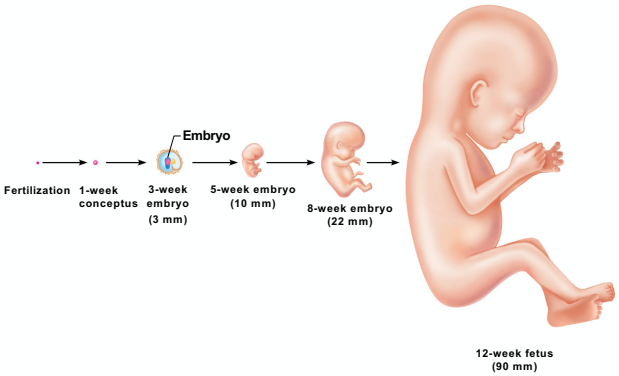

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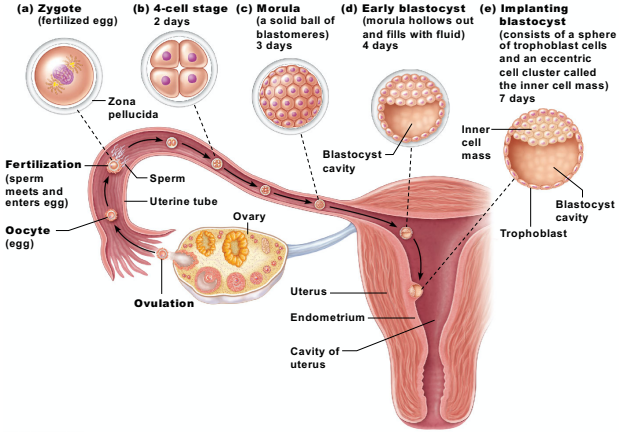

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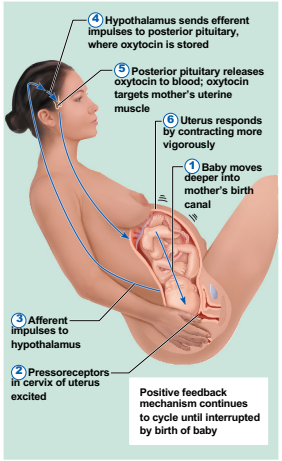

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