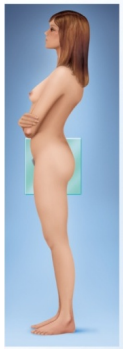
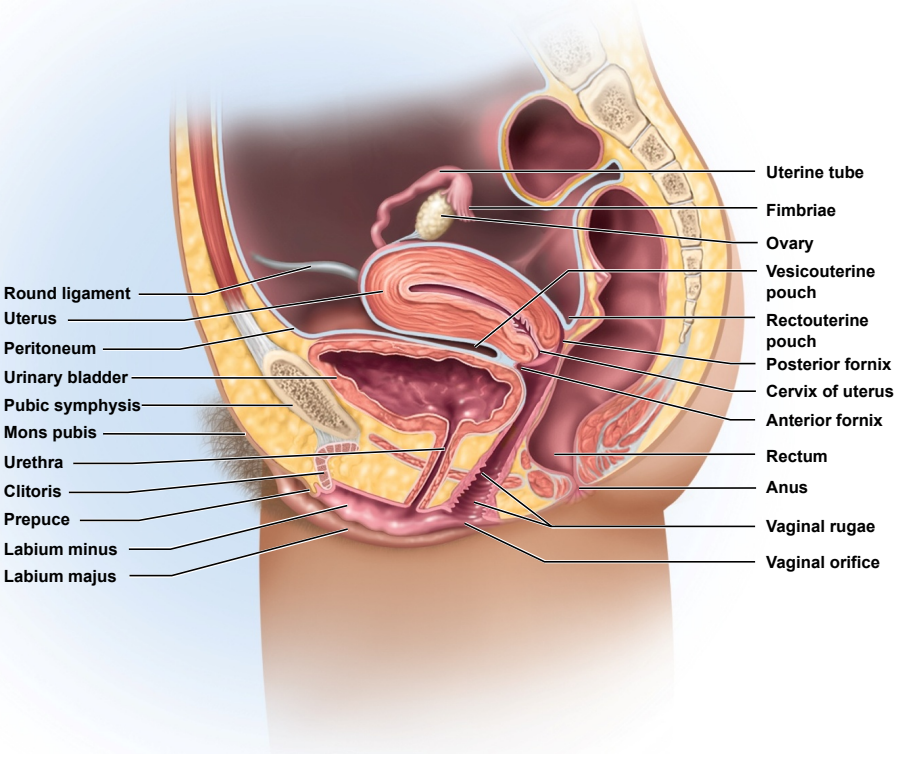
Fig. 28.1

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

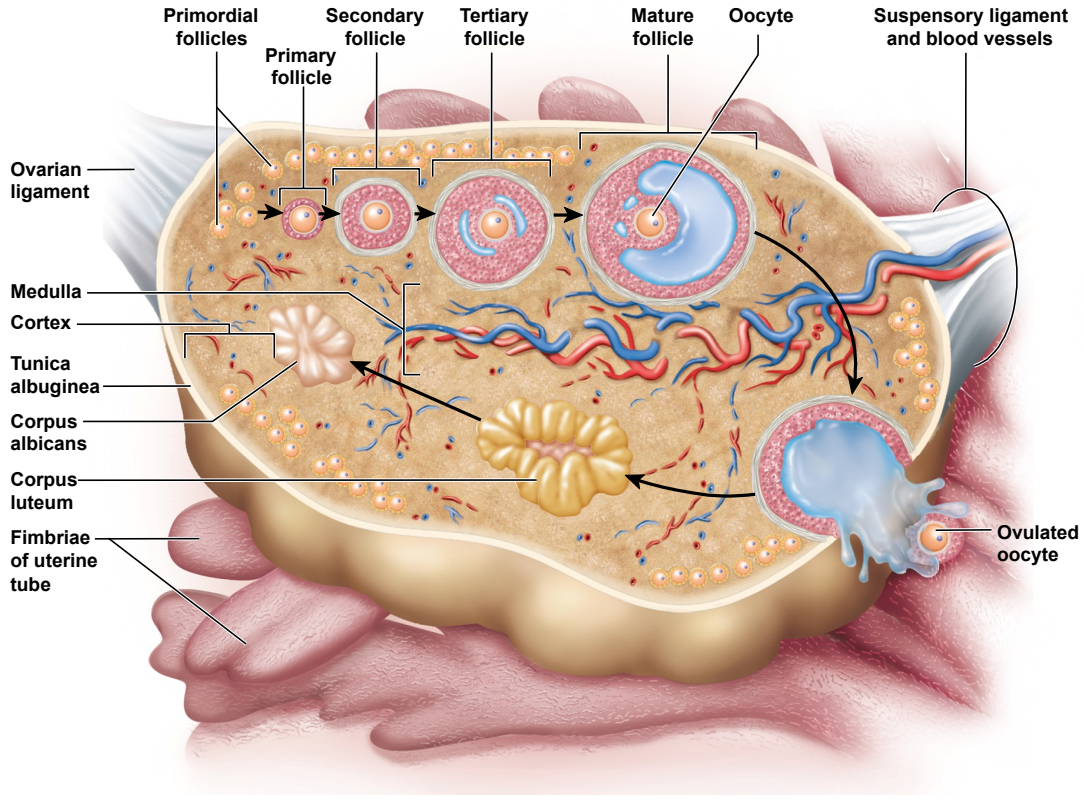




1

Fig. 28.2

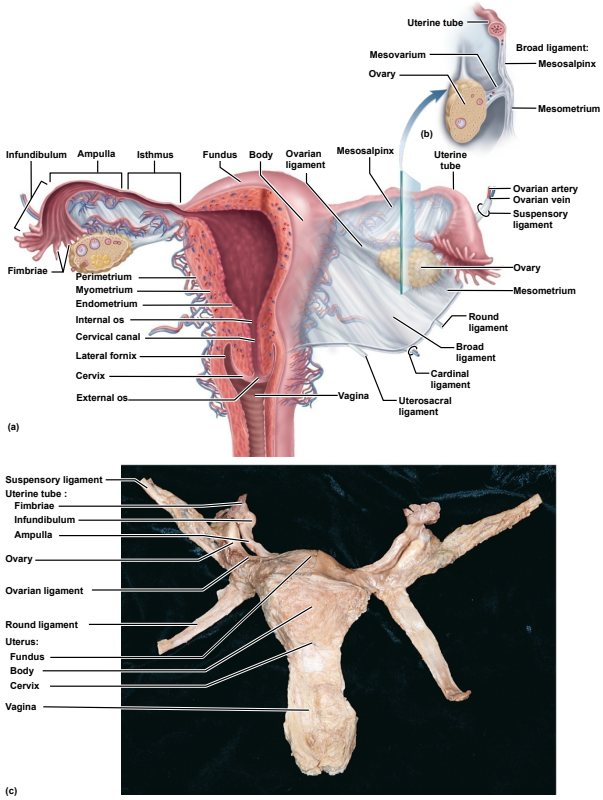
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



2

Fig. 28.3

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

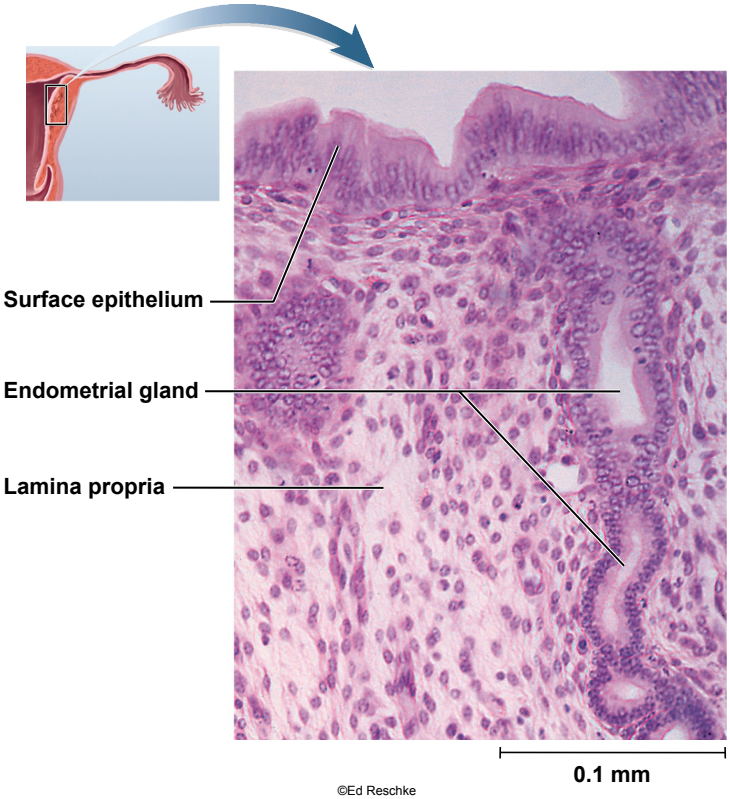


c: ©McGraw-Hill Education/Rebecca Gray/Don Kincaid, dissections

3

Fig. 28.6

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

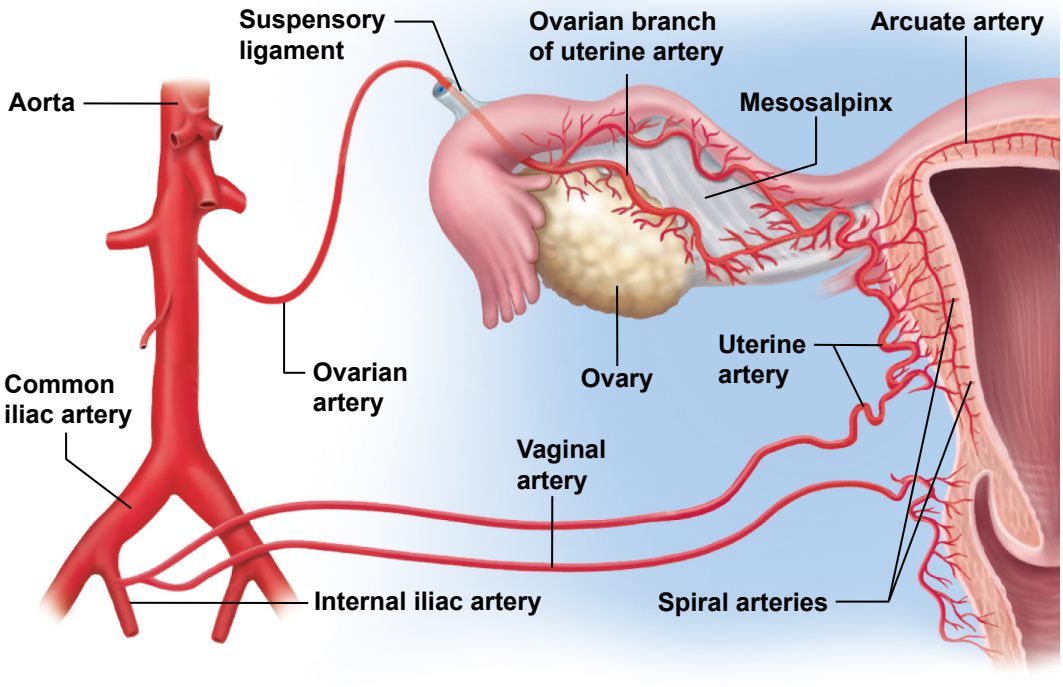


©Ed Reschke

4

Fig. 28.7

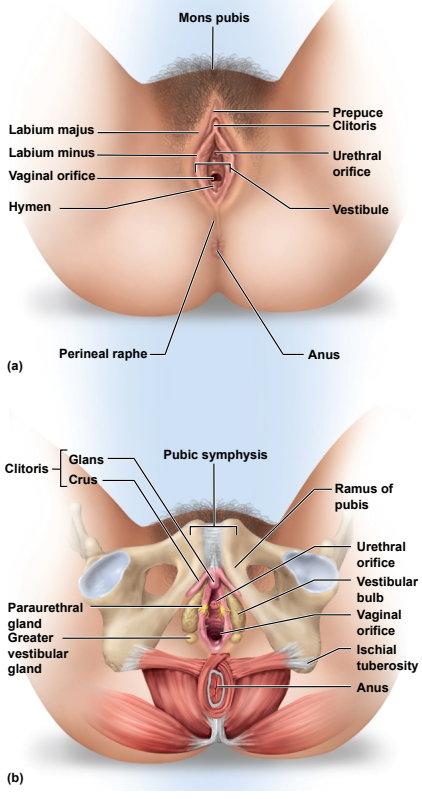
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



5

Fig. 28.8

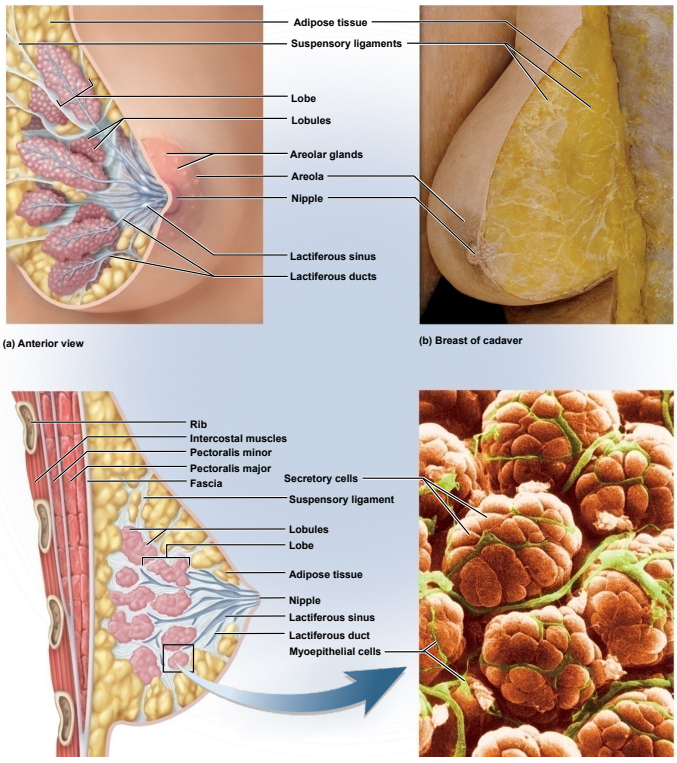
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



6

Fig. 28.9

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

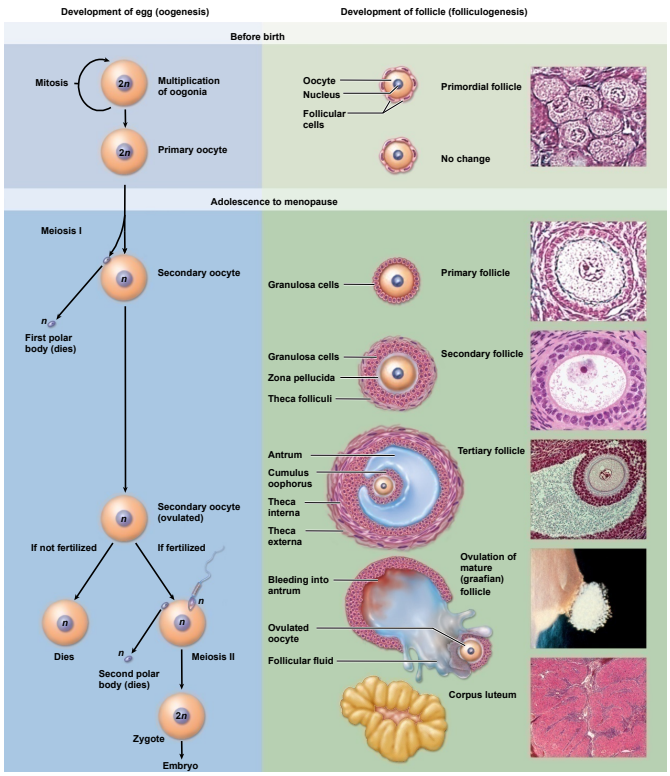


b: From Anatomy & Physiology Revealed, © The McGraw-Hill Companies, Inc./The University of Toledo, photography and dissection; d: © Dr. Donald Fawcett/Science Source

7

Fig. 28.11

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

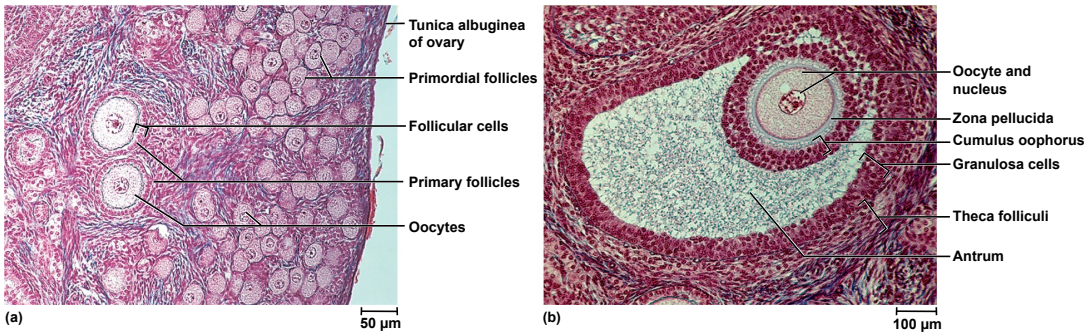


(Primordial & Primary follicle): © Ed Reschke; (Secondary follicle): © McGraw- Hill Education/Al Telser; (Tertiary follicle): © Ed Reschke/Photolibrary/ Getty Images; (graafian follicle): © Landrum B. Shettles, MD; (Corpus luteum): © McGraw-Hill Education/Al Telser

8

Fig. 28.12

Copyright © McGraw-Hill Education. Permission required for reproduction or display.



a: © Ed Reschke; b: © Ed Reschke/Photolibrary/Getty Images

Fig. 28.13

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

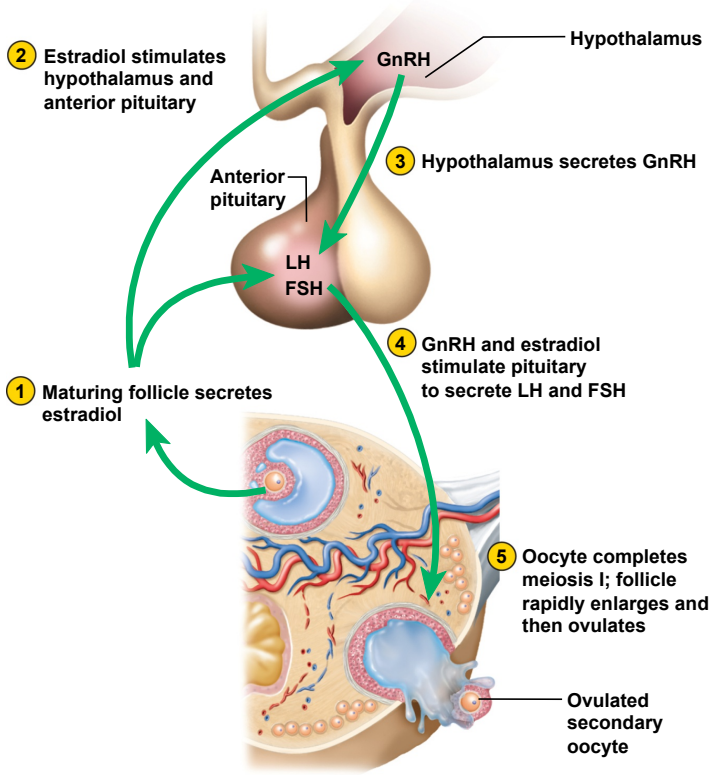
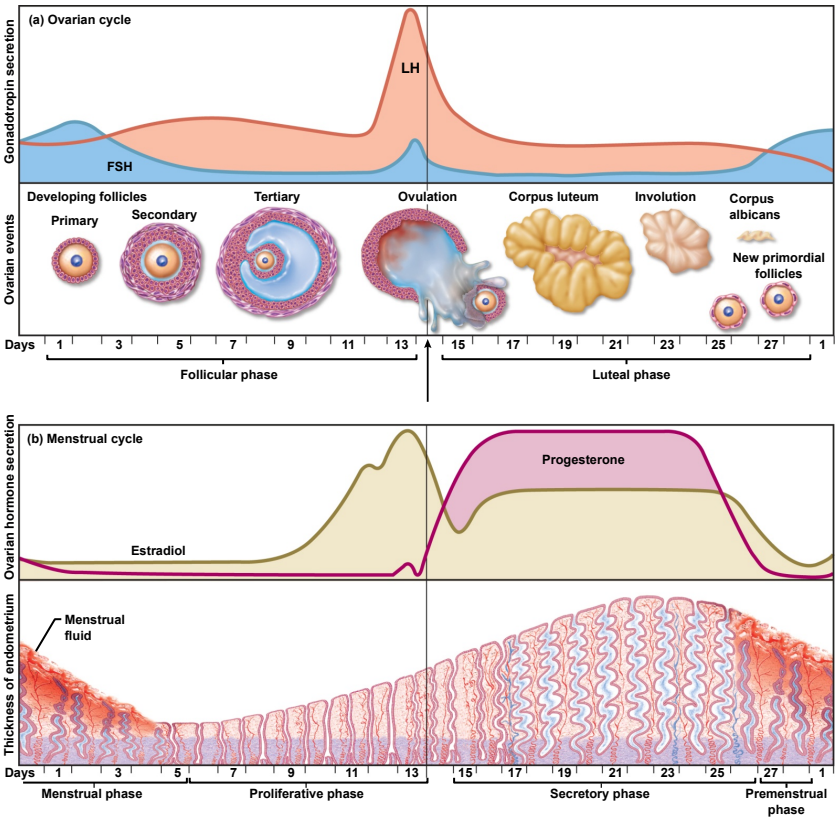


Fig. 28.14

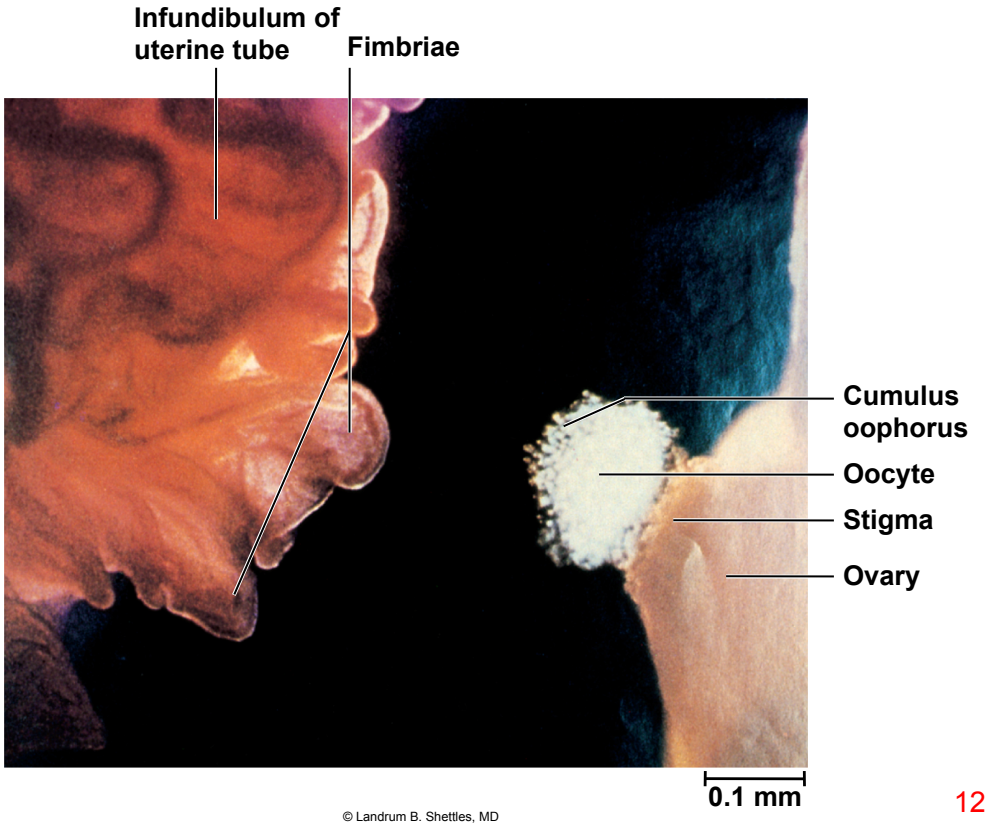
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



11

Fig. 28.15

Copyright © McGraw-Hill Education. Permission required for reproduction or display.



© Landrum B. Shettles, MD

12

Table 28.1

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

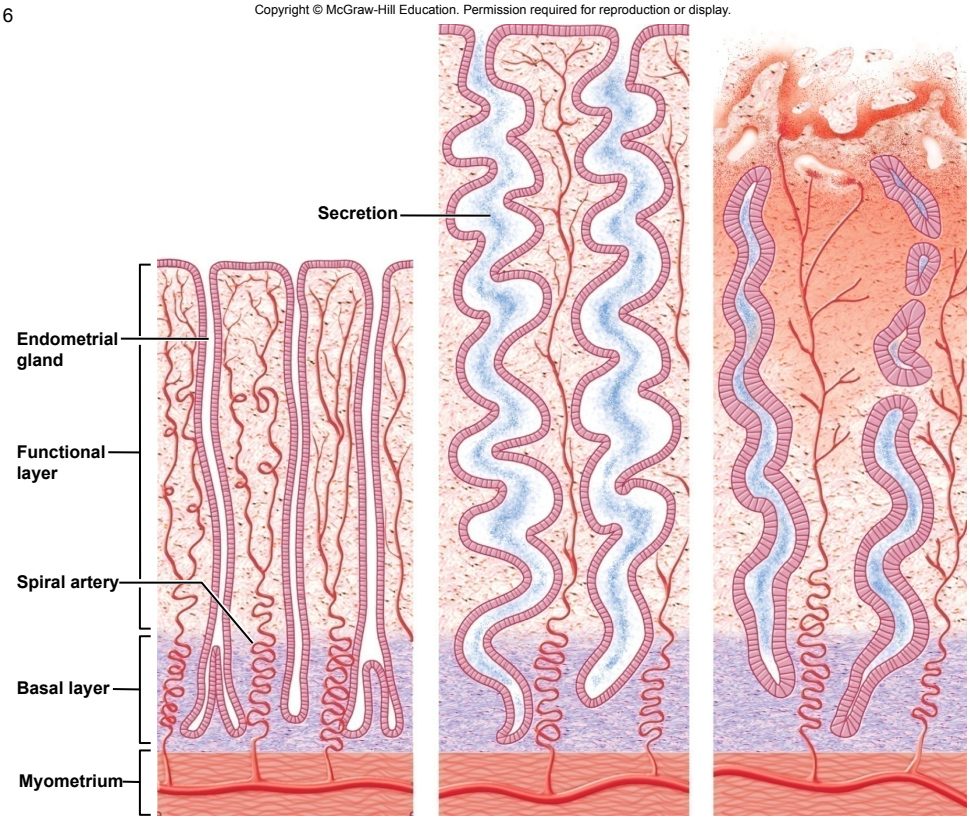
TABLE 28.1 Phases of the Ovarian Cycle

Days	Phase	Major Features
1–14	***Follicular phase***	Development of ovarian follicles and secretion primarily of estradiol. Coincides with menstrual and proliferative phases of the menstrual cycle.
	Primordial follicle	Formed prenatally and many persist into adulthood. Consists of an oocyte surrounded by a single layer of squamous follicular cells.
	Primary follicle	Consists of an oocyte surrounded by one layer of cuboidal follicular cells.
	Secondary follicle	Follicular cells stratify, become granulosa cells, and secrete a zona pellucida. Theca folliculi forms around follicle.
	Tertiary follicle	Develops from a secondary follicle in each cycle. Forms an antrum filled with follicular fluid and exhibits a cumulus oophorus, corona radiata, zona pellucida, and bilayered theca.
	Dominant follicle	The tertiary follicle that is destined to ovulate. Present by the end of the menstrual phase. Hormonally dominates the rest of the cycle, while other follicles in the cohort undergo atresia. Secretes mainly estradiol. Coincides with the proliferative phase of the menstrual cycle, in which the uterine endometrium thickens by mitosis.
	Mature (graafian) follicle	The dominant follicle just prior to ovulation. Attains a diameter of 20 to 30 mm and builds to high internal fluid pressure as adjacent ovarian wall weakens.
14	***Ovulation***	Rupture of mature follicle and release of oocyte.
15–28	***Luteal (postovulatory) phase***	Dominated by corpus luteum. Coincides with secretory and premenstrual phases of the menstrual cycle.
	Corpus luteum	Develops from ovulated follicle by proliferation of granulosa and theca interna cells. Progesterone stimulates thickening of endometrium by secretion (secretory phase of the menstrual cycle). Begins to involute by day 22 in the absence of pregnancy; involution complete by day 26.
	Corpus albicans	Scar tissue left by involution of corpus luteum; not hormonally active. In the absence of progesterone, endometrium exhibits ischemia, necrosis, and sloughing of tissue. Necrotic endometrial tissue mixes with blood and forms menstrual fluid.

13

Fig. 28.16

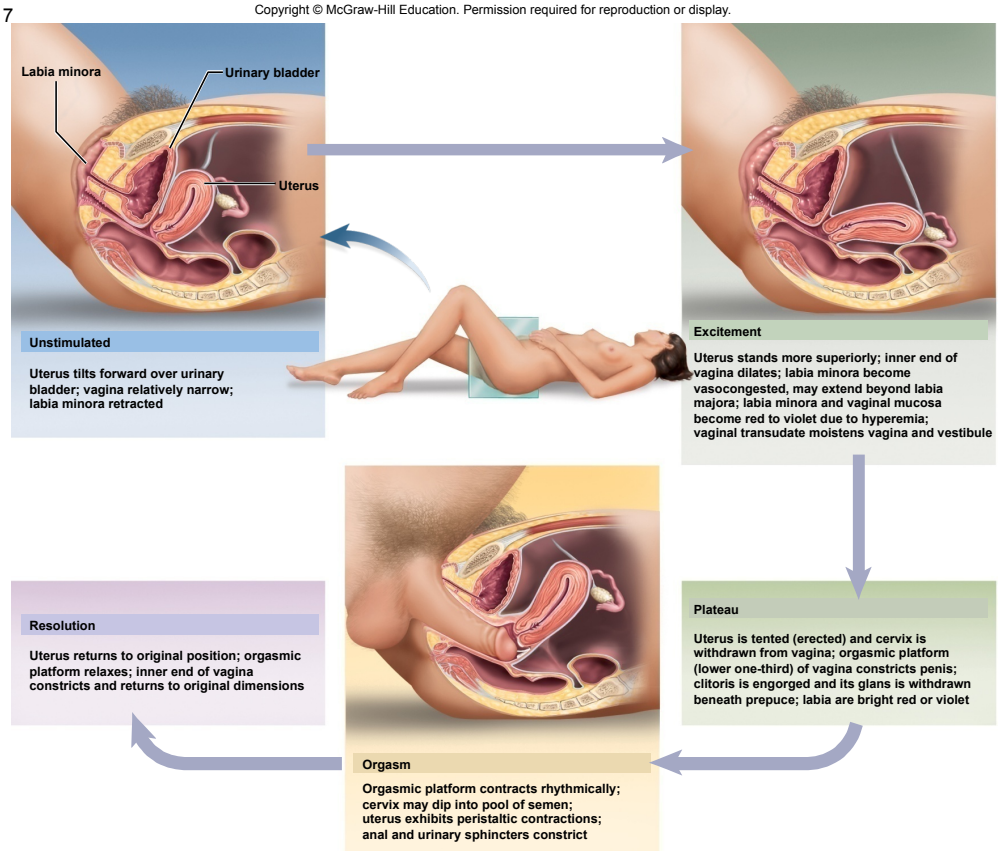
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



14

Fig. 28.17

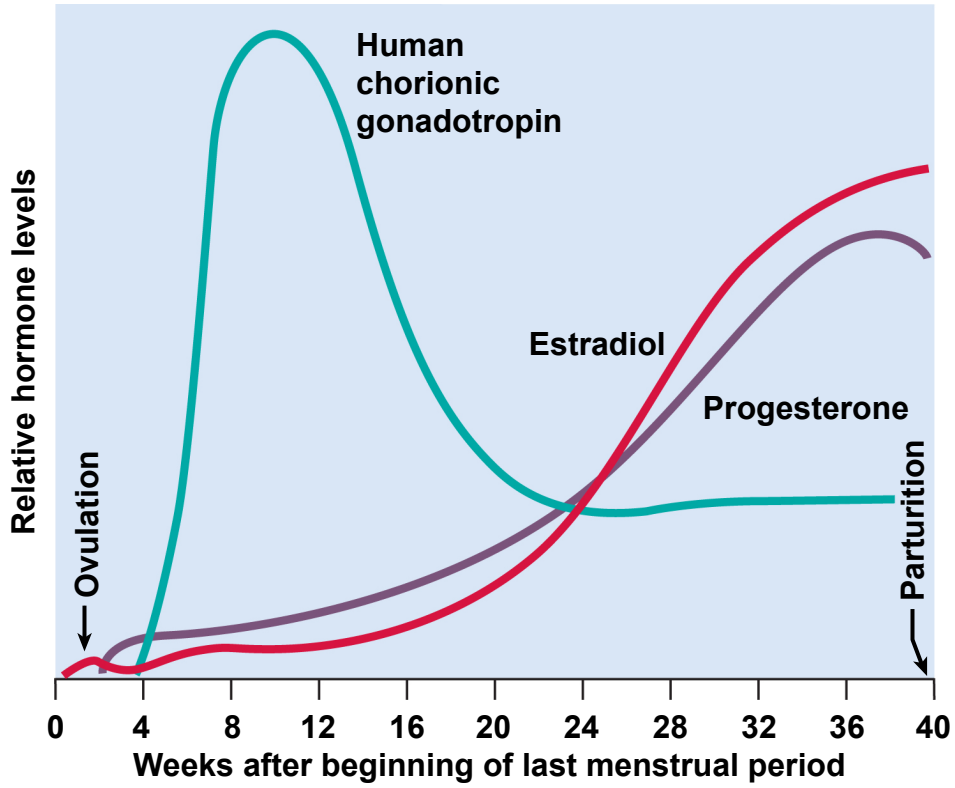
Copyright © McGraw-Hill Education. Permission required for reproduction or display.



15

Fig. 28.18

Copyright © McGraw-Hill Education. Permission required for reproduction or display.



16

Table 28.2

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

TABLE 28.2 The Hormones of Pregnancy

Hormone	Effects
Human chorionic gonadotropin (HCG)	Prevents involution of corpus luteum and stimulates its growth and secretory activity; basis of pregnancy tests
Estrogens	Stimulate maternal and fetal tissue growth, including enlargement of uterus and maternal genitalia; stimulate development of mammary ducts; soften pubic symphysis and sacroiliac joints, facilitating pelvic expansion in pregnancy and childbirth; suppress FSH and LH secretion
Progesterone	Suppresses premature uterine contractions; prevents menstruation; stimulates proliferation of decidual cells, which nourish embryo; stimulates development of mammary acini; suppresses FSH and LH secretion
Human chorionic somatomammotropin (HCS)	Has weak growth-stimulating effects similar to growth hormone and glucose-sparing effect on mother, making glucose more available to fetus; mobilizes fatty acids for use as maternal fuel
Pituitary thyrotropin	Stimulates thyroid activity and metabolic rate
Human chorionic thyrotropin	Same effect as pituitary thyrotropin
Parathyroid hormone	Stimulates osteoclasts and mobilizes maternal calcium for fetal use
Adrenocorticotropic hormone	Stimulates glucocorticoid secretion; thought to mobilize amino acids for fetal protein synthesis
Aldosterone	Causes fluid retention, contributing to increased maternal blood volume
Relaxin	Promotes development of decidual cells and blood vessels in the pregnant uterus

Fig. 28.19

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

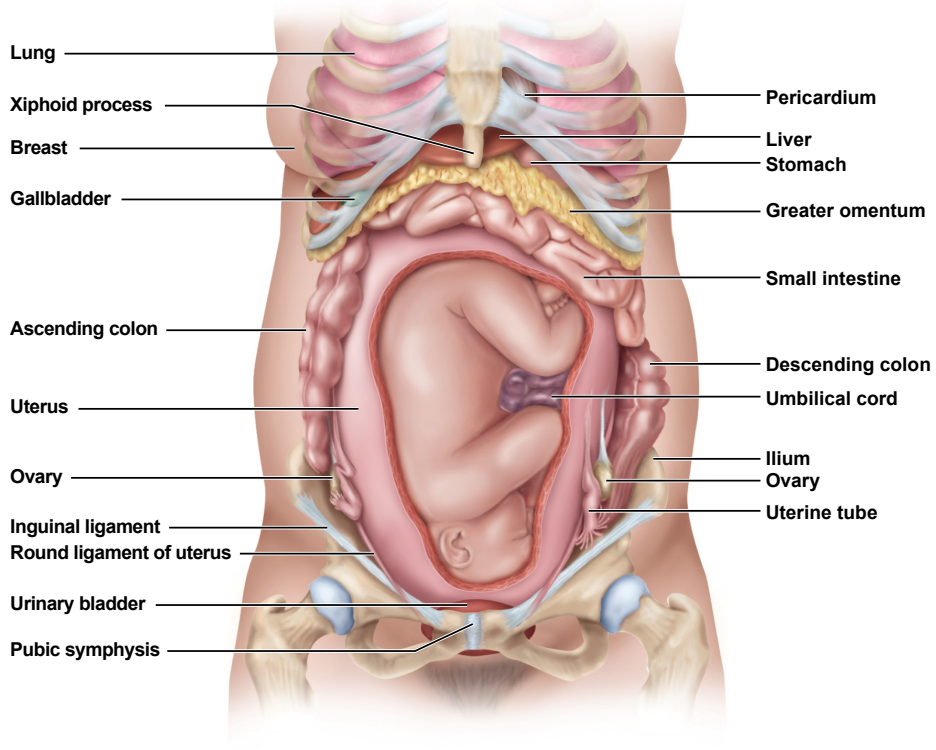
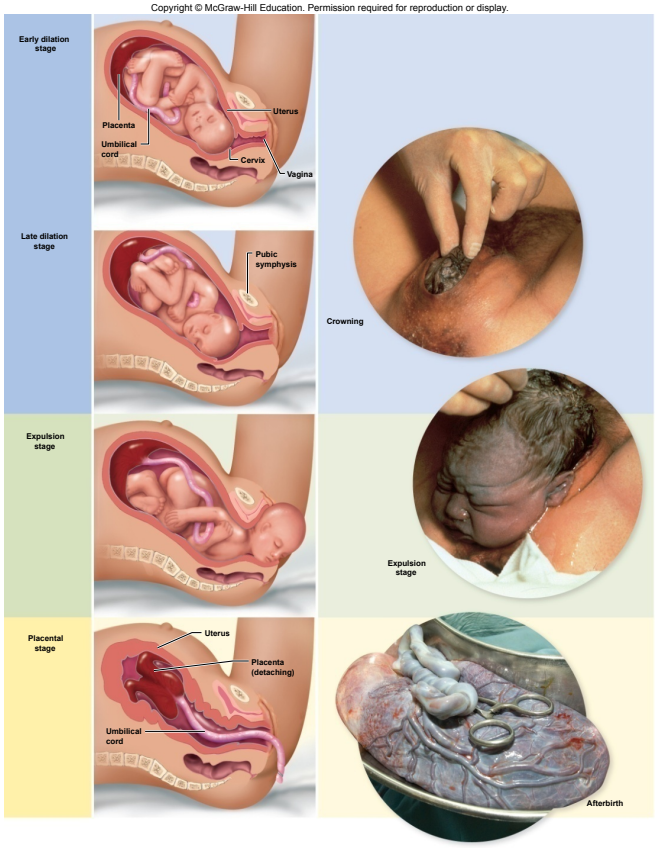


Fig. 28.20

Copyright © McGraw-Hill Education. Permission required for reproduction or display.

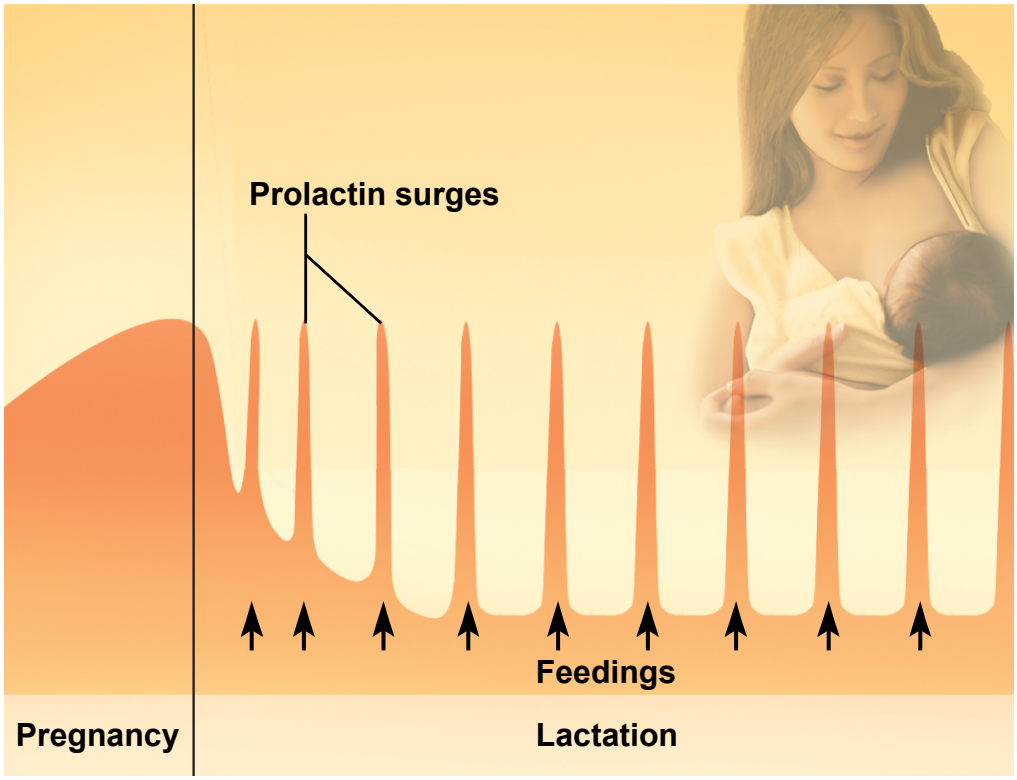


(Crowning, Expulsion stage): © D. Van Rossum/Science Source; (Afterbirth): © Medicimage/ Visuals Unlimited, Inc.

19

Fig. 28.21

Copyright © McGraw-Hill Education. Permission required for reproduction or display.



20