

FEMALE HORMONES

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Martini 7th: 1050-1058

Menstrual cycle:

involves pituitary, hypothalamus, ovaries, uterus (and placenta in pregnancy)

Estrogen produced at onset of puberty stimulates breast enlargement
cessation of long bone growth
menstrual events begin to cycle

Ovarian cycle: follicular phase: FSH triggers development of several follicles at first
(p 1051) luteal phase: post ovulatory phase, corpus luteum secretes estrogen and progesterone

uterine phases: Flow release of menses = menstruation
(p 1056) Proliferative estrogen triggers endometrium to
Secretory progesterone triggers secretion of nutrient rich mucoid material

Flow: Only in higher primates (other animals resorb the material.)

Estrogen has several effects:

As follicle grows, moderate levels of estrogen are released:

- 1) shuts off release of FSH
- 2) terminates less developed follicles (atresia)
- 3) triggers the proliferation of the endometrium

When Graafian follicle is mature, high levels are released:

- 4) high doses trigger the release of luteinizing hormone from the anterior pituitary
- 5) high doses induce estrus

Progesterone effects:

- 1) triggers endometrium to enter secretory phase
- 2) maintains enriched secreting endometrium
- 3) inhibits release of luteinizing hormone by anterior pituitary

Hormones used for pharmacological purposes:

estrogen	primary ingredient in birth control pill, inhibits FSH release, no follicles mature hormone replacement during menopause
diethylstilbestrol	DES promoted by Squibb to "stabilize" pregnancy, caused higher CA in daughters DES fed to cattle to feminize steers...
Follicle stimulating hormone	"Fertility drug" triggers follicle maturation (can lead to multiple births Also to increase eggs for harvest in <i>in vitro</i> fertilization
RU 486	(mifepristone) progesterone analog, blocks action of progesterone on uterus, causes endometrium to be shed, inducing menstruation
morning after pill	"Plan B" contains progestin, probably prevents ovulation