

# Physiology of menstruation







- Menstruation
- Cyclic uterine bleeding caused by shedding of secretory endometrium
- **Menarche:** 1<sup>st</sup> menstruation
- Menopause



# Normal Menstruation

Menarche age 12

9 years

16 years

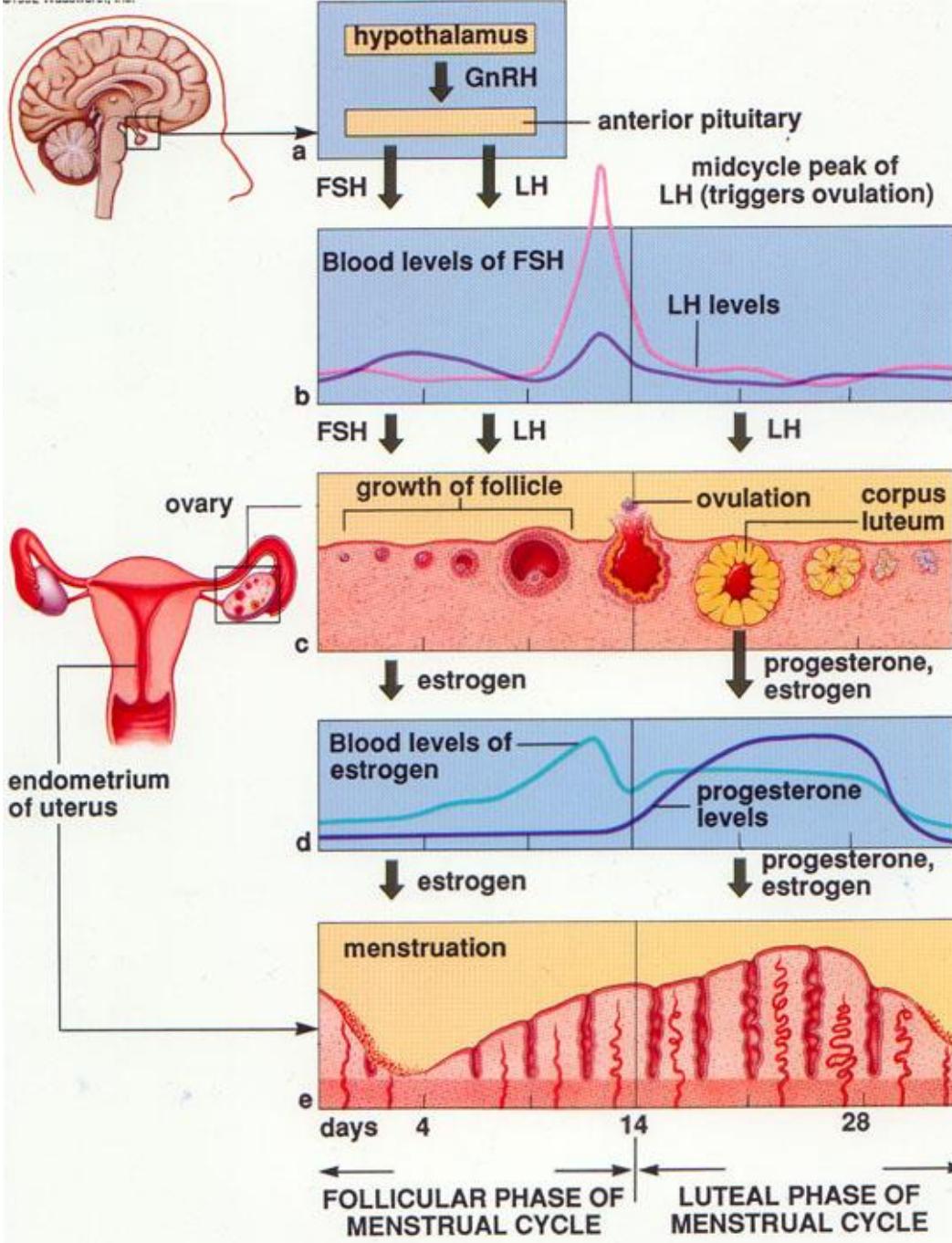
- Highest rate of anovulatory cycles <20 or >40 yo age
- Duration of flow 2-8 days
- Amount of flow dependent on how rapid endometrium sheds
- Incomplete shedding = heavier flow, blood loss anemia



# Normal Menstruation

- Count from 1<sup>st</sup> day of flow
- Normal 21-35 days
- 14 day luteal phase
- Cyclic events
  - Vaginal discharge
  - Mittleschmertz
  - Molimina
  - PMS???





*Changing hormone levels during the menstrual cycle.*

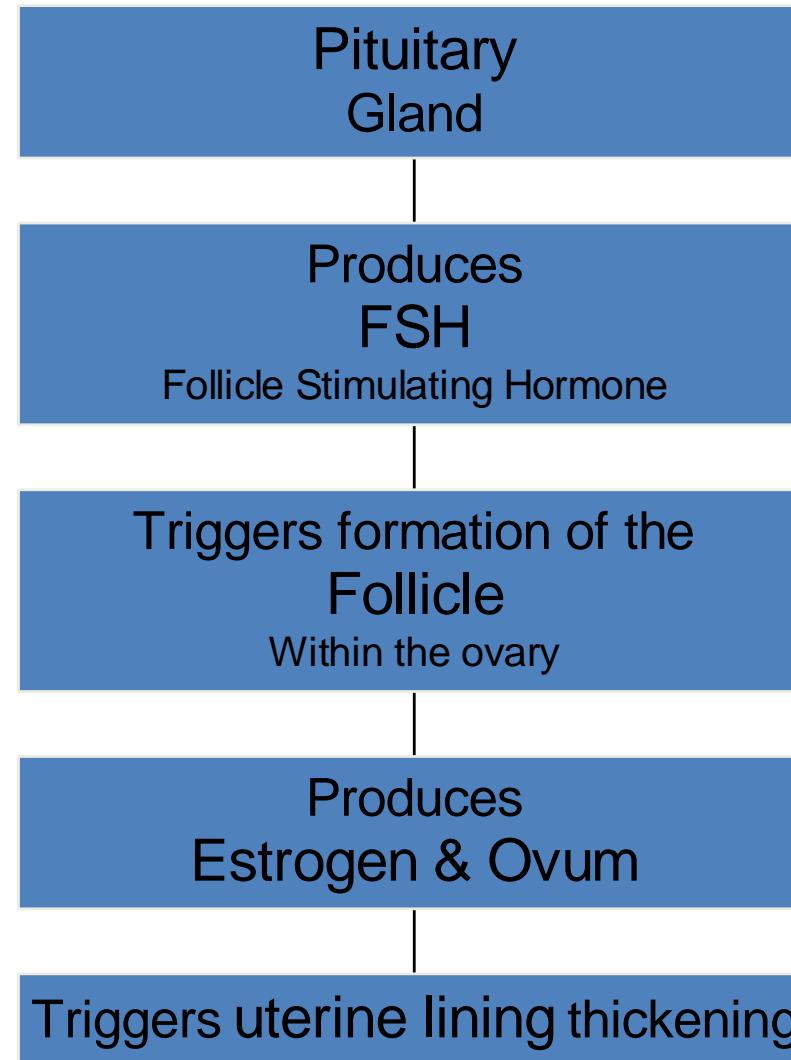


# Applied physiology

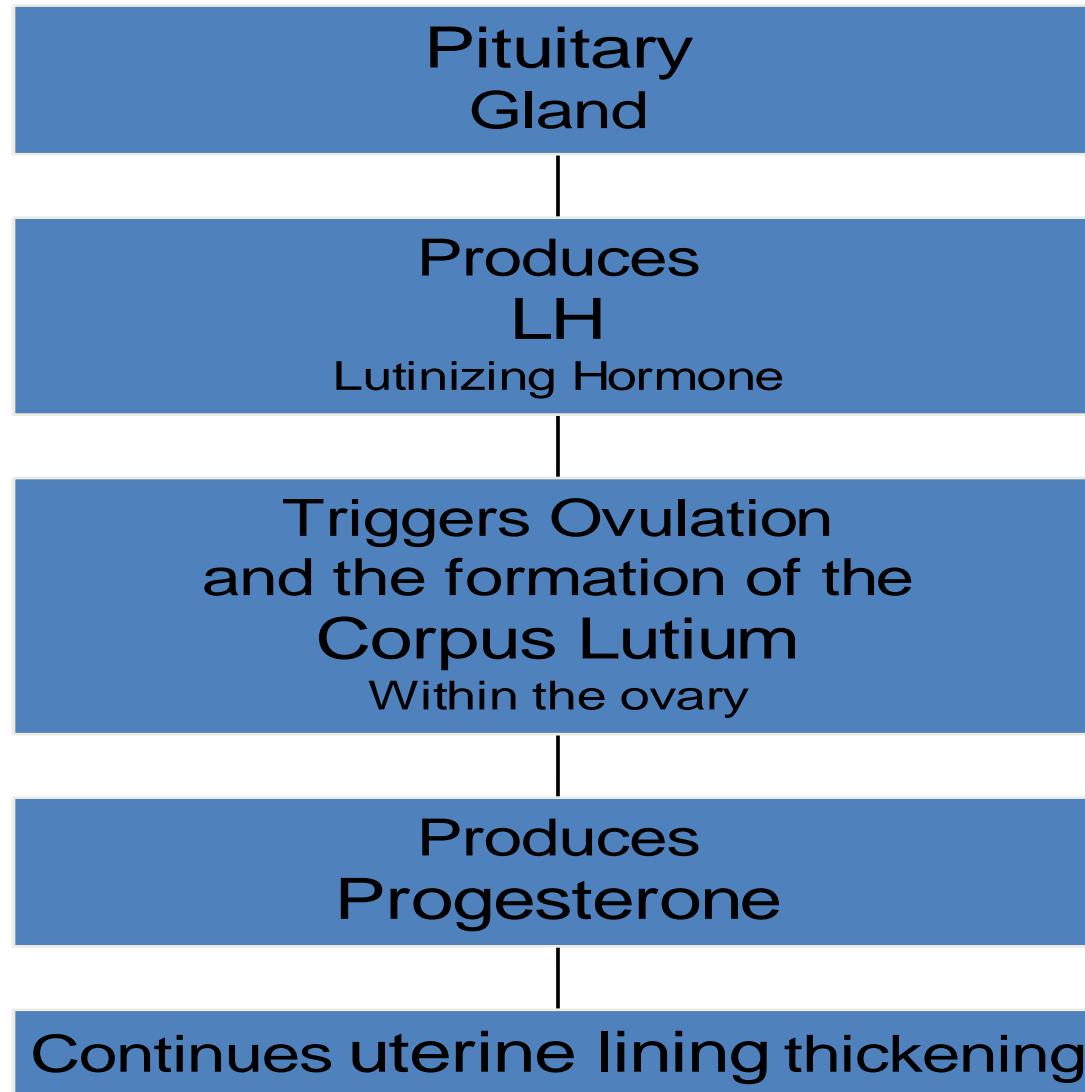
- Amenorrhea
- Causes ??
- Infertility
- Ovulation induction
- Contraception
- AUB
- Diagnosis of menopause
- PCOD

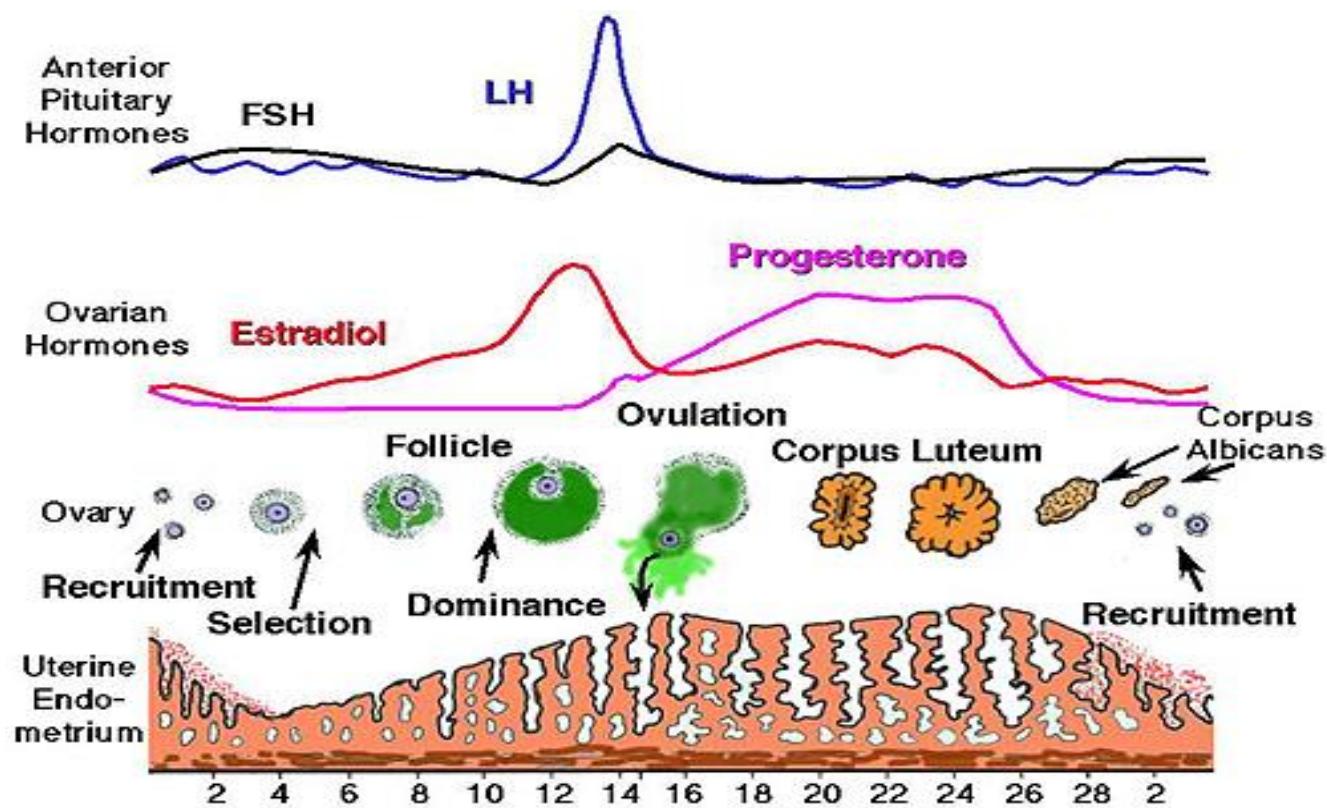


# Days 1-14

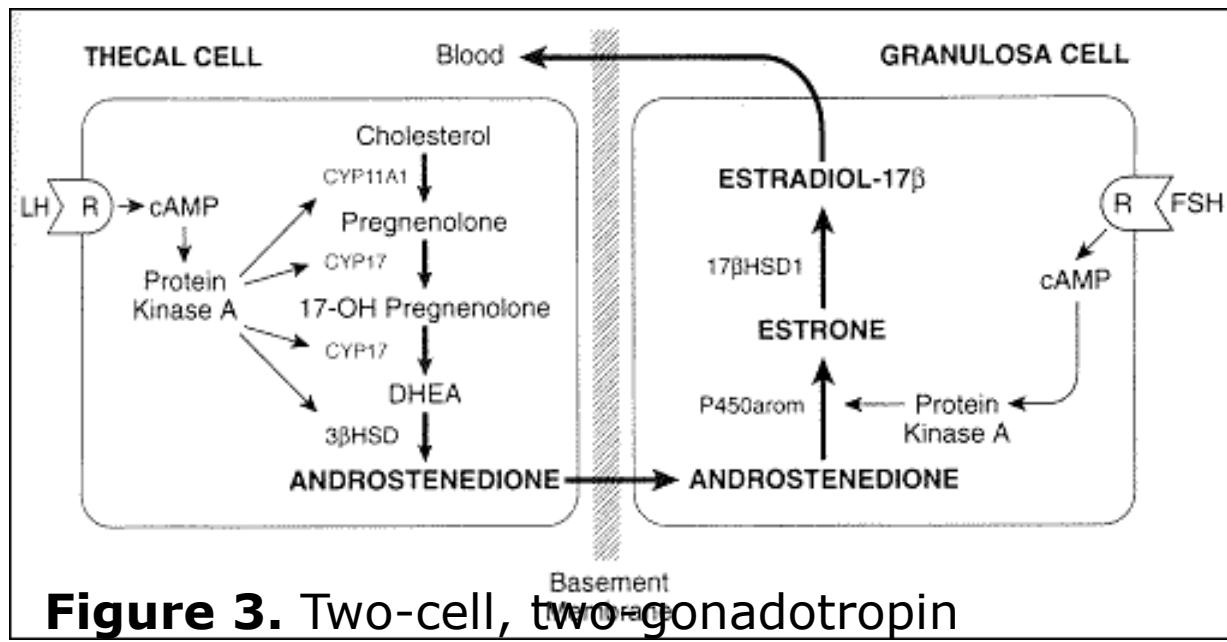


# Days 14 - 28





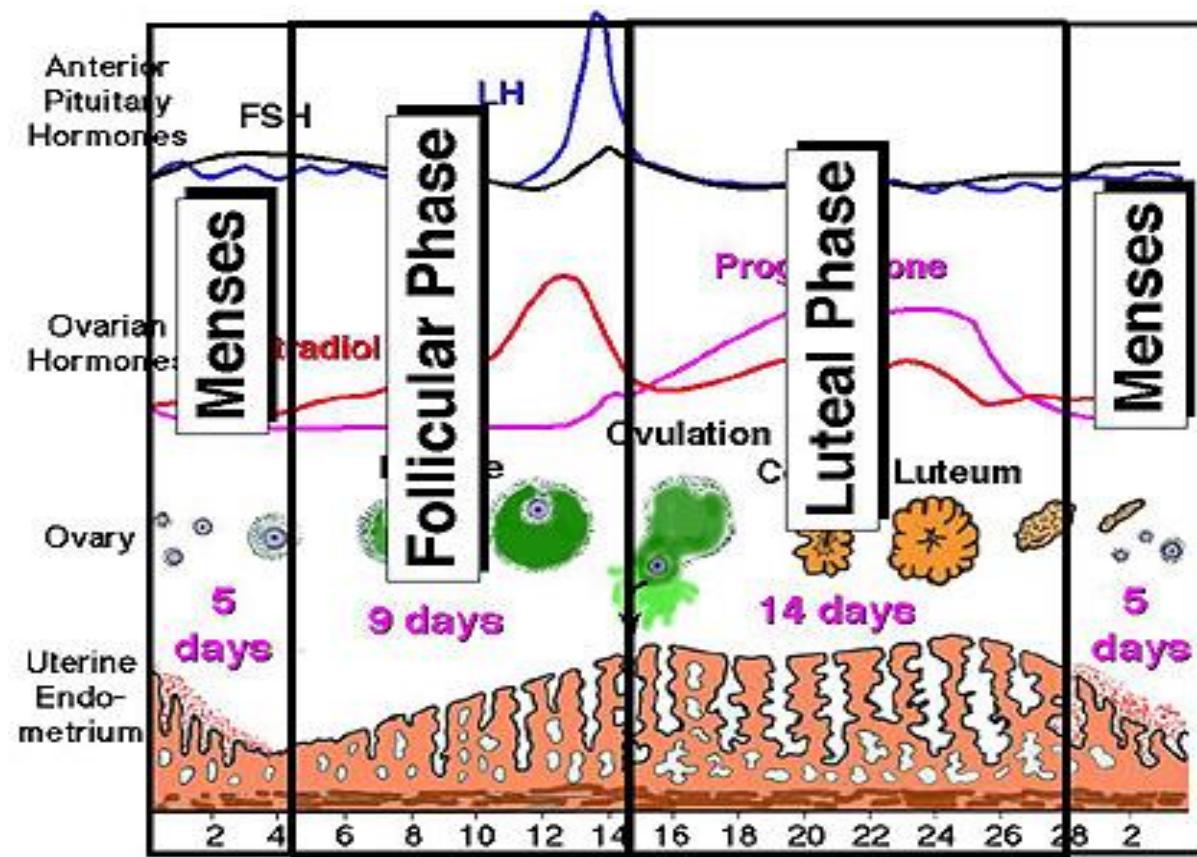
# Ovarian Two Cell System



**Figure 3.** Two-cell, two-gonadotropin

hypothesis of regulation of estrogen synthesis in the human ovary. Adapted by Carr, BR. Diseases of the ovary and reproductive tract.

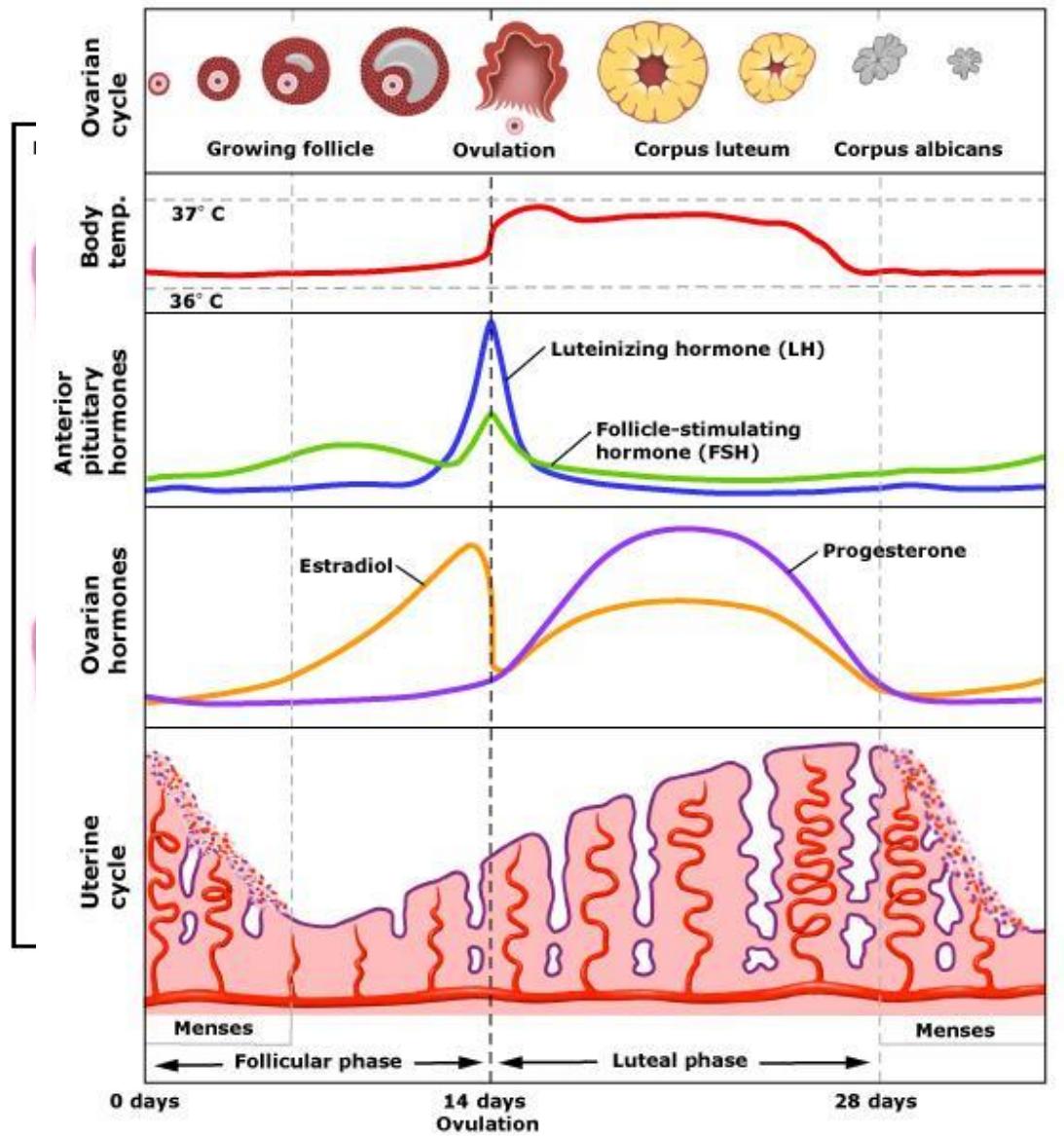


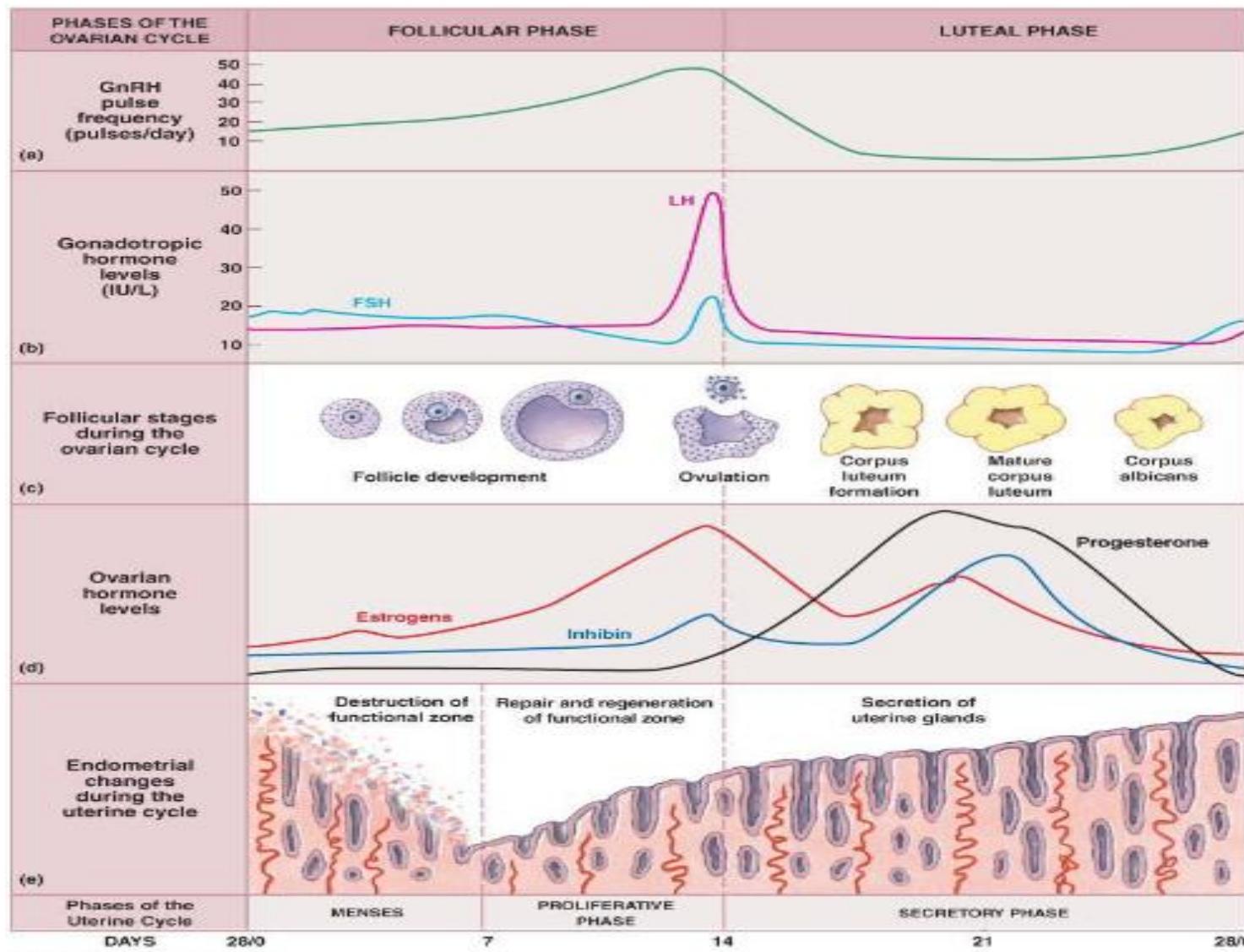


PD-INEL

Source Undetermined







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- Effect on the cervix
- Effect on the vagina
- Diagnosis of ovulation



# Dysmenorrhea



- Pain related to menstruation that interfer with the daily activity or necessitate medication



- 1ry spasmodic
- 2ry congestive



# 1ry

- Common young girl
- Usually disappear after delivery
- Colic
- May radiate to the inner thigh
- Start with the onset
- Reach maximum with 24 hours
- May be associated with vomiting



- Prostaglandin E2 and F2a
- Uterine contraction
- Ischemia of the muscle
- Disturbed polarity
- Narrow cervical os
- Low pain threshold



- NSAID
- Cocs
- Dilatation
- Presacral neurectomy
- LUNA



# 2ry

- Endometriosis
- Adenomyosis
- Fibroid
- PID
- prolapse



- Dull aching
- Referred to the back
- Menorrhagia
- Before 3-5 days



- Treatment of the cause



# PTS

- Cyclic recurrence of behavioural , psychological and somatic symptoms in the luteal phase



- Irritability
- Fatigue
- Anxiety
- Insomnia
- Depression
- Headache
- Nausea
- Mastalgia



- Estrogen and progesterone
- GABA
- Brian opiate
- Seratonine
- Prostaglaind
- Fluid retention
- Vit B deficiency



- Progesterone
- COCS
- Prima rose oil
- Alprazolam
- Flouxtine
- Diuretics
- Vit b

