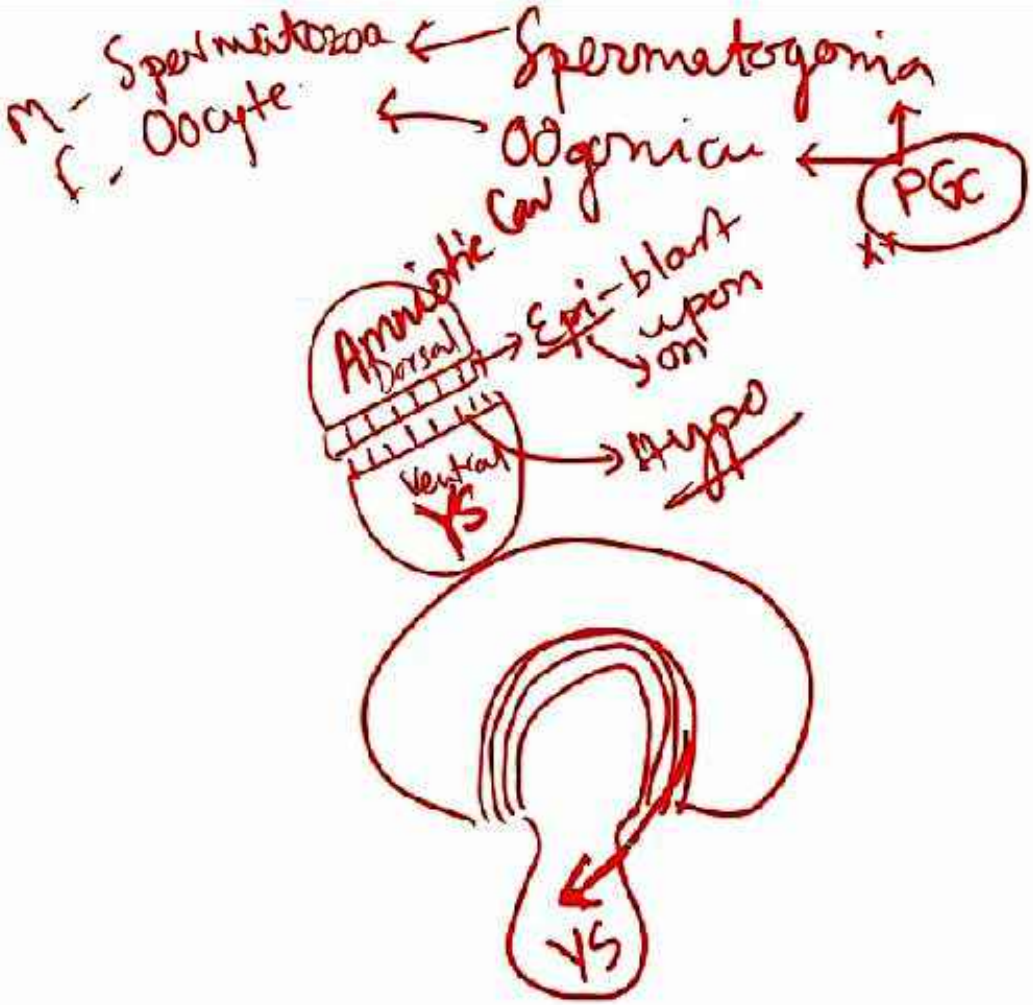
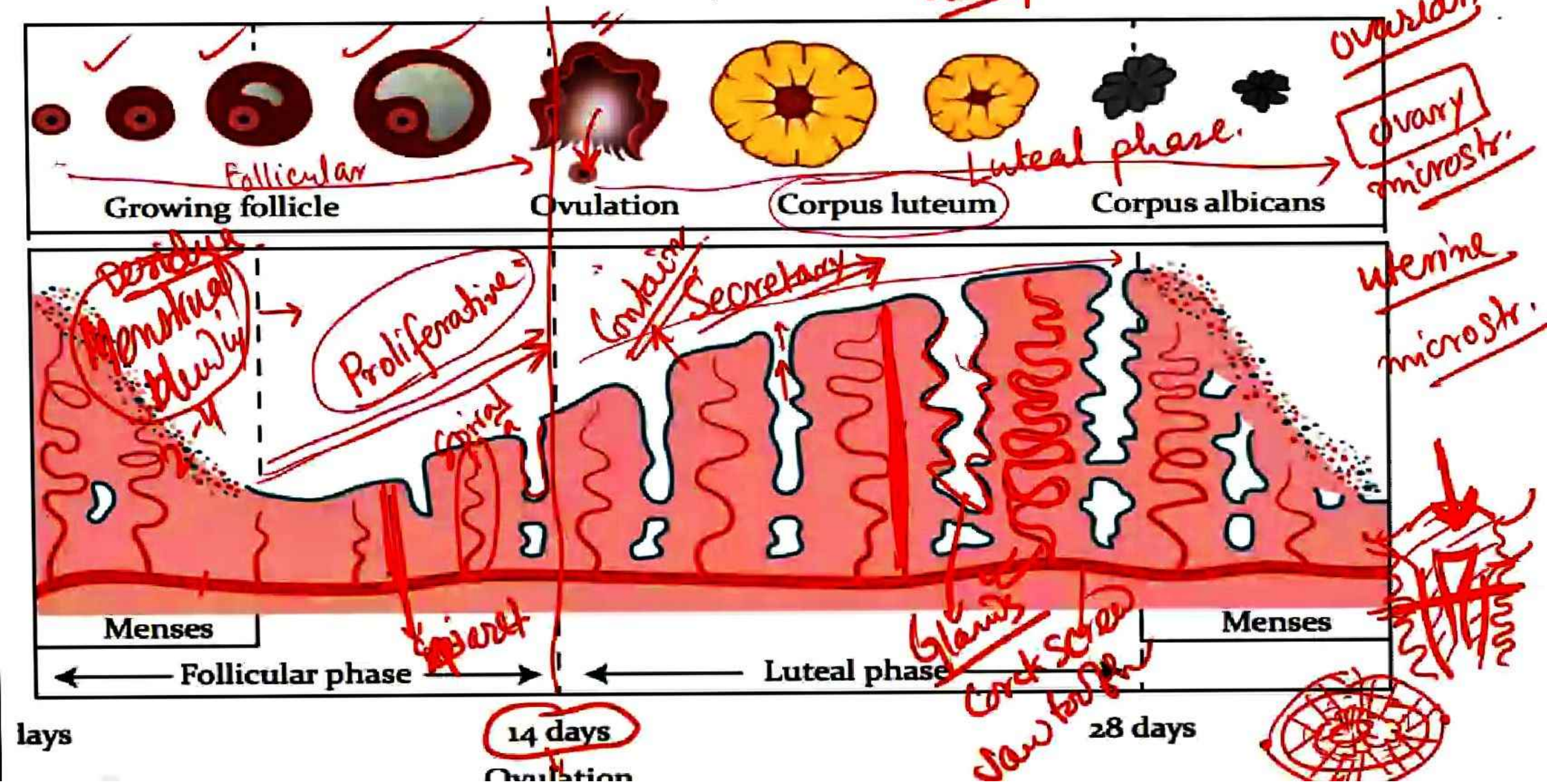
Primordial Germ Cell

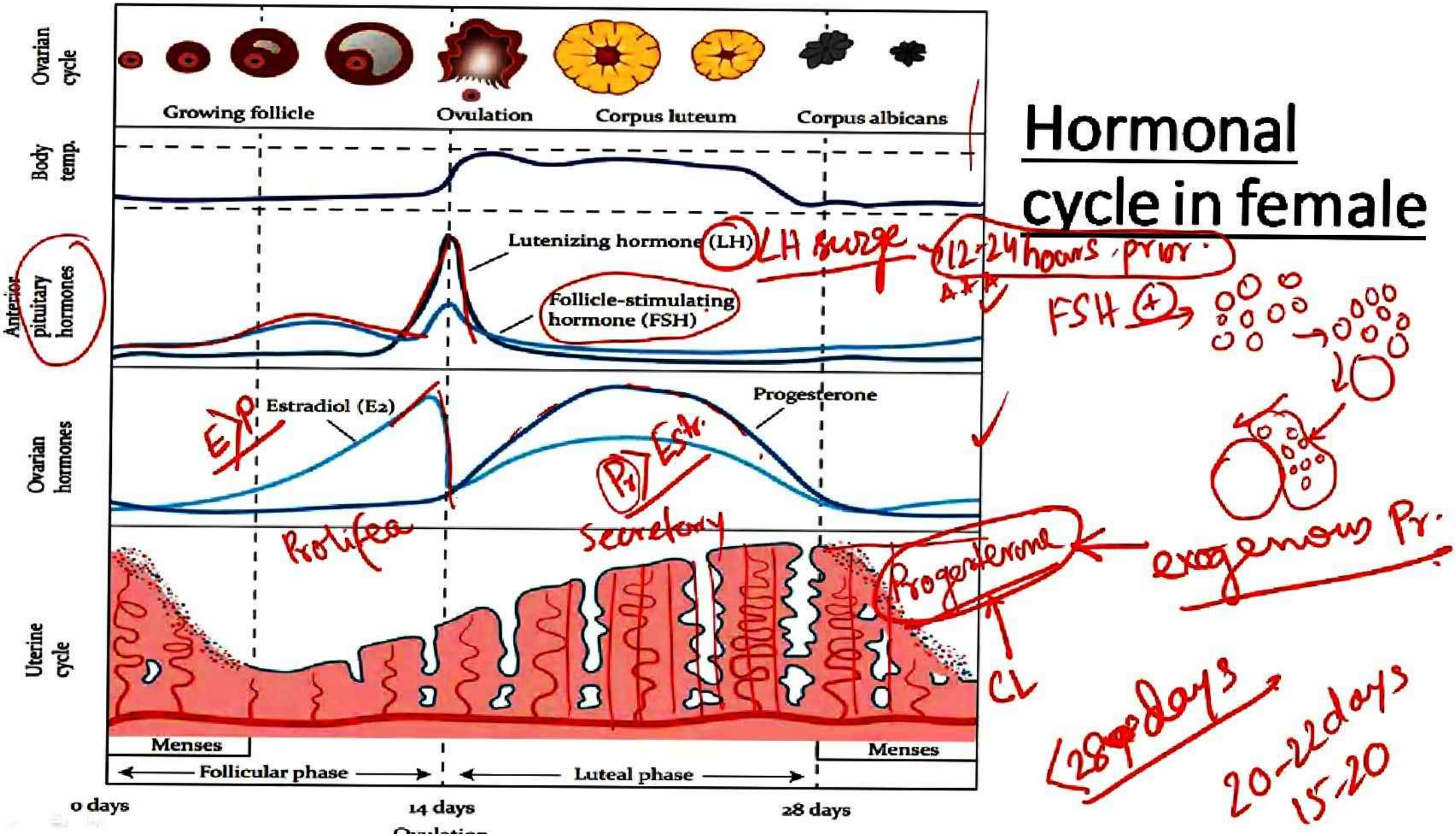
- Precursor of the Gamete, present in embryo
- Formed from Epiblast at 2nd week of IUL
- Migrate towards Yolk sac
- At 4th week, they migrate from YS to developing gonads where they appear by 5th week of IUL

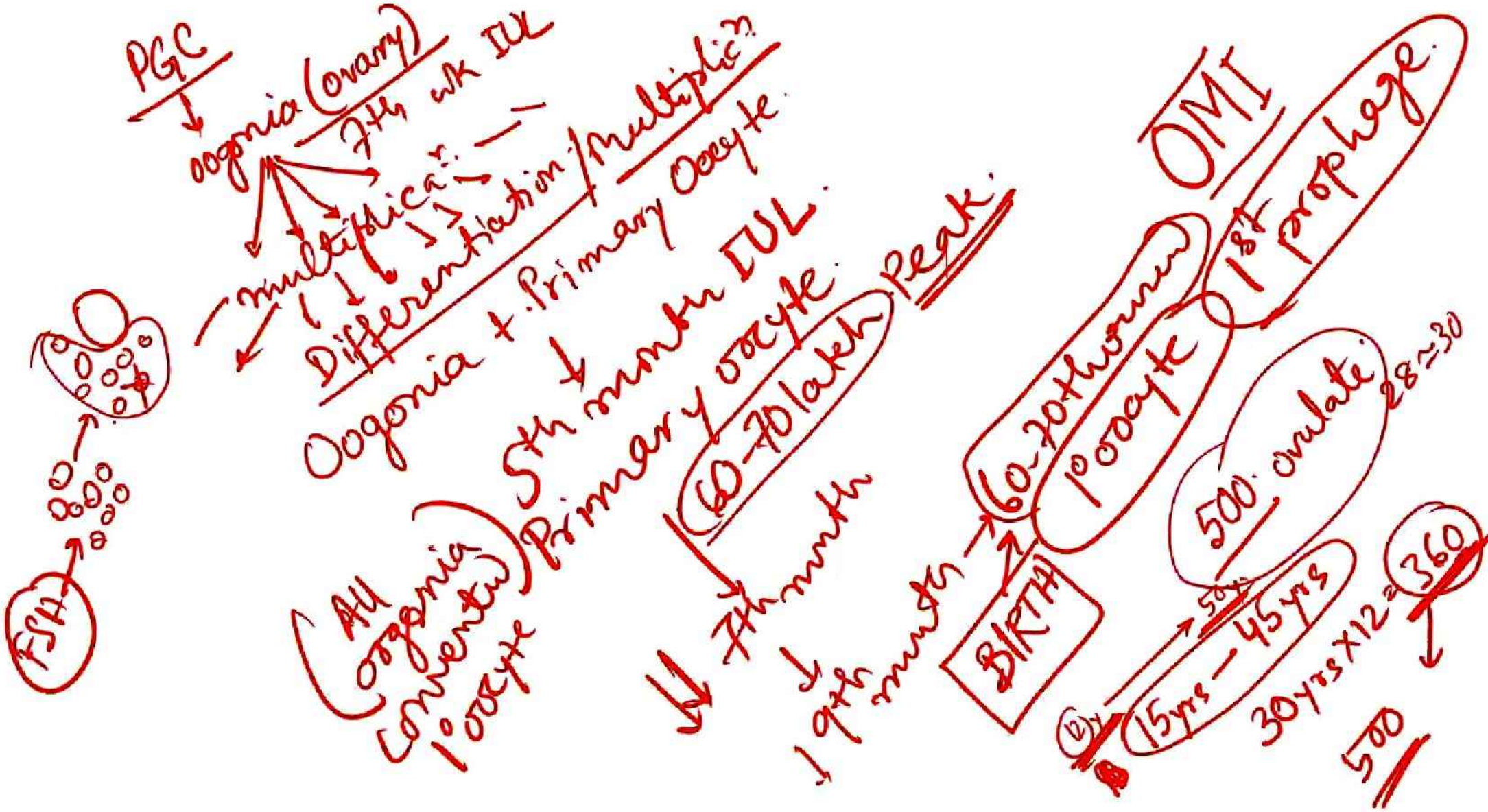


Ovarian and uterine cycle



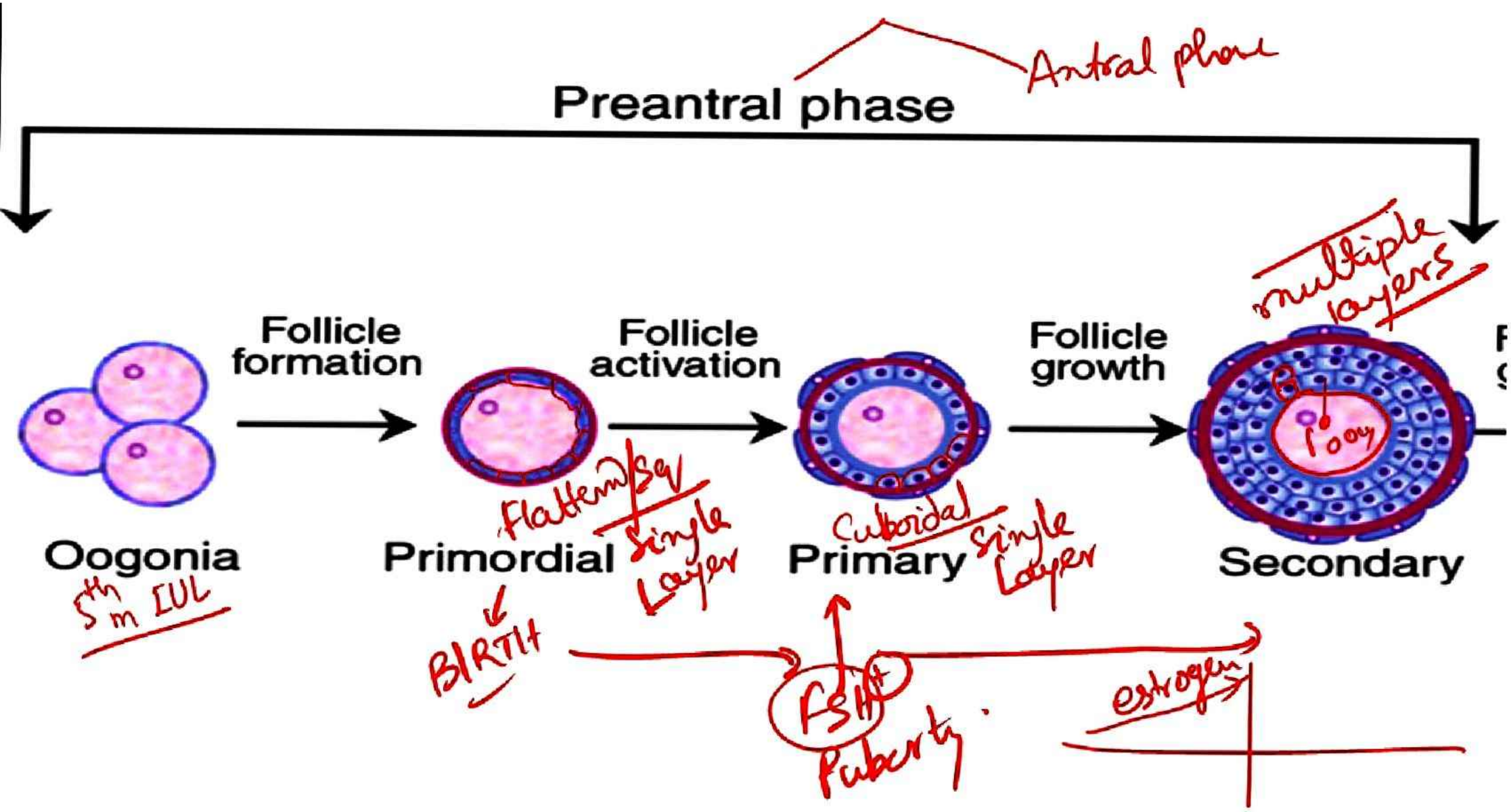
Hormonal cycle in female

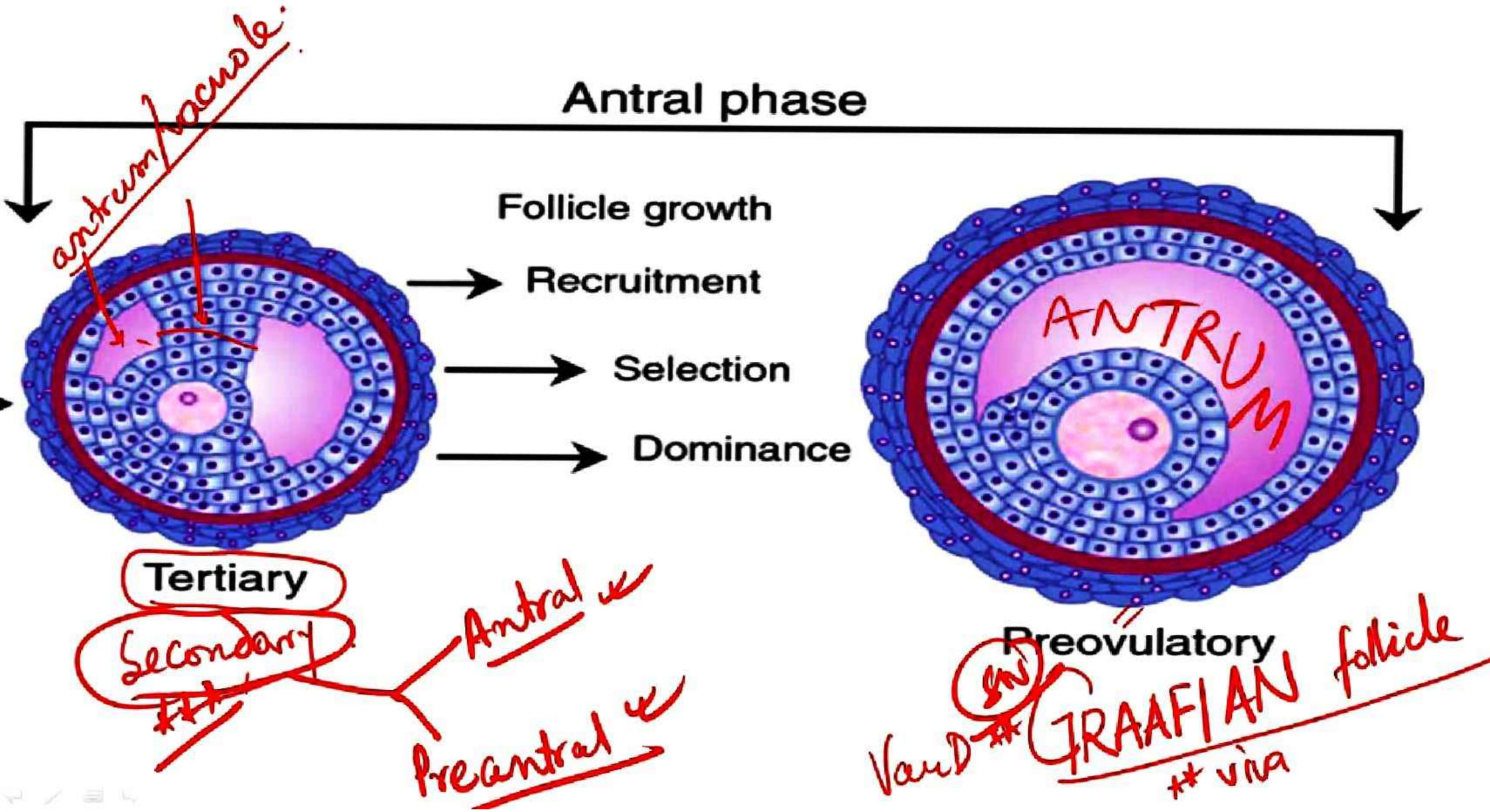


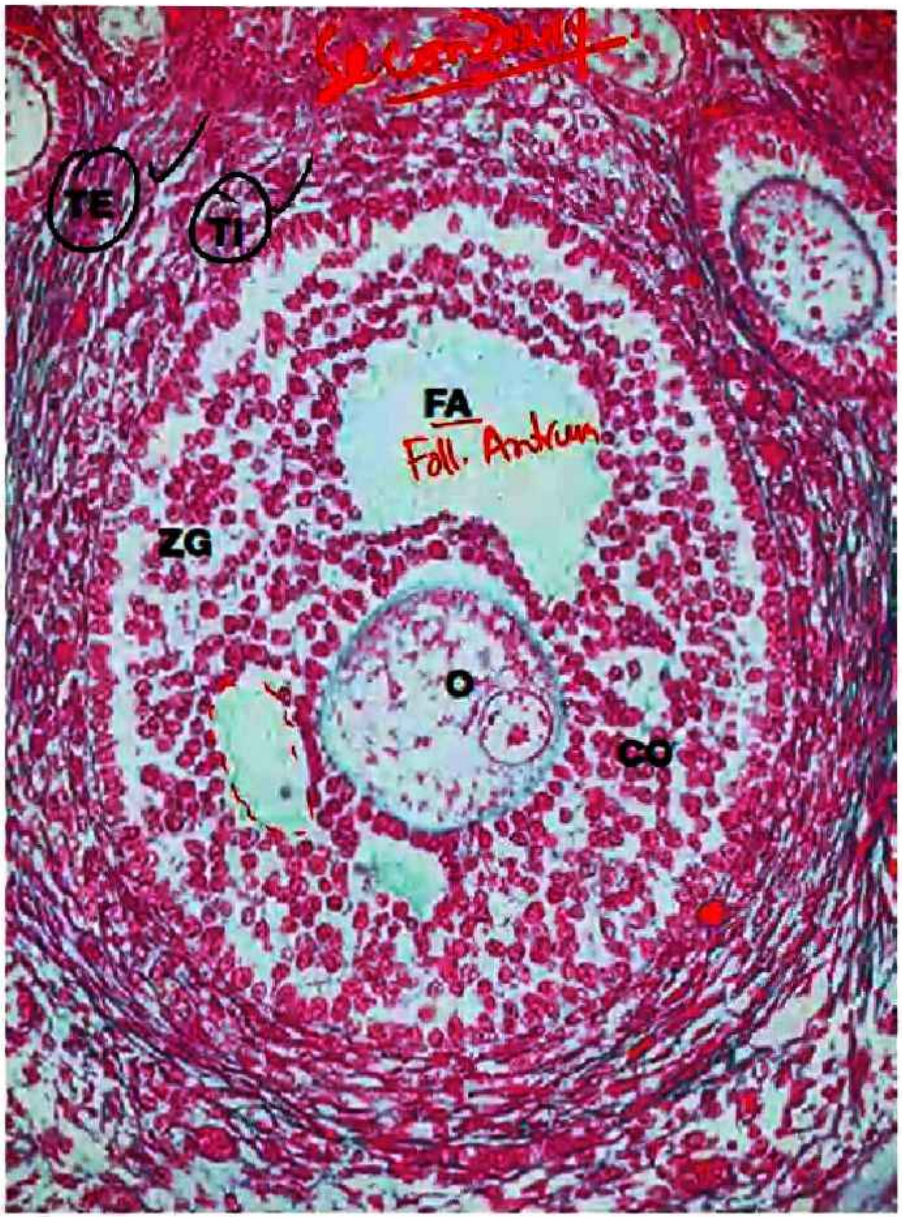


- During early fetal development, PGCs ***migrate into the ovarian cortex – differentiate into oogonia &*** multiply by mitosis.
- By the fourth and fifth months of human fetal development, some oogonia enlarge and assume the potential for development into mature gametes.
- At this stage, they are called ***primary oocytes and commence*** the first stage of ***meiotic division. By the*** seventh month of fetal development, a single layer of flattened ***follicular cells surrounds the primary oocytes to form primordial follicles, of which there are approximately*** 6-8 lakh in the human ovary at birth.
- This encapsulation arrests the first meiotic division (prolonged** diplotene k/a DICTYOTENE) until ***puberty.*** OMI
- ***The process of meiotic*** division is only completed during follicular maturation, leading up to ovulation and fertilisation.
- Thus, all the female germ cells are present at birth, but the process of meiotic division is only completed some 15 to 50 years later!

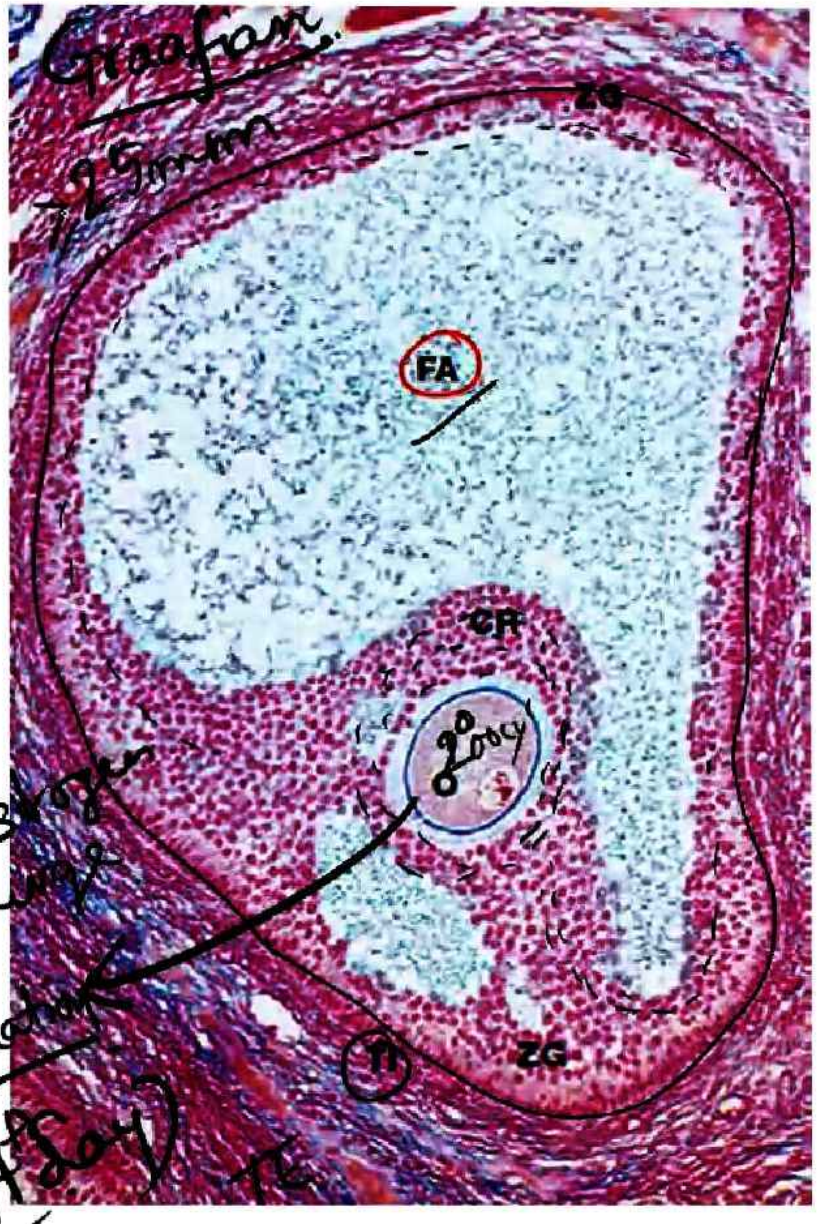
Ovulation at Meiotic Complete







2° oocyte (metaphase)



Graafian
2.5 mm
Peak Estrogen
LH surge
Ovulation
(14th day)

OVULATION (SW) **

Body (Corpes) → Corpus luteum → Yellow **

- Till puberty primary oocytes remained arrested in the prolonged diplotene (DICTYOTENE) of first prophase of 1st meiotic division
- OMI(oocyte maturation inhibitor) released by follicular cells
- At puberty release of FSH, follicular growth → Midcycle LH surge → release of ovum from one ovary (OVULATION)**, completion of prophage -1.
- Before ovulation granulosa cells and thecal cells of ovum secrete estrogen ↑
- Graafian follicle – pre ovulatory growth- completion of meiosis 1 – one large secondary oocyte + 1st polar body → arrested in Metaphase II till fertilization
- Arrested in meiosis-2 (metaphase) 3hours prior to ovulation
- Ovulation 12-24 hours after LH surge
- Expelled 2" oocyte surrounded by corona radiata
- CLINICS- mittelschmerz, BBT, anovulation ** → Advised record Oral body temp
- CORPUS LUTEUM (Thecal Cells + Granulosa cells)