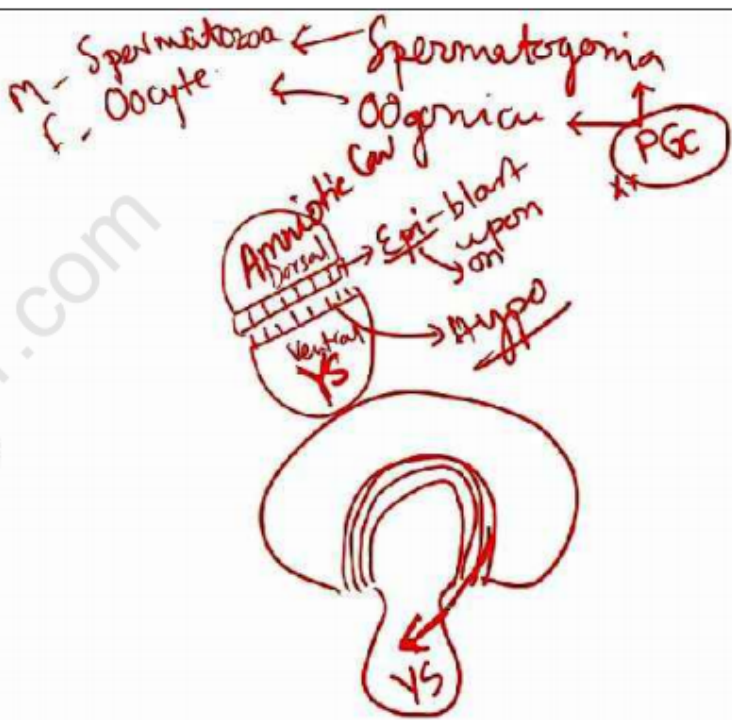
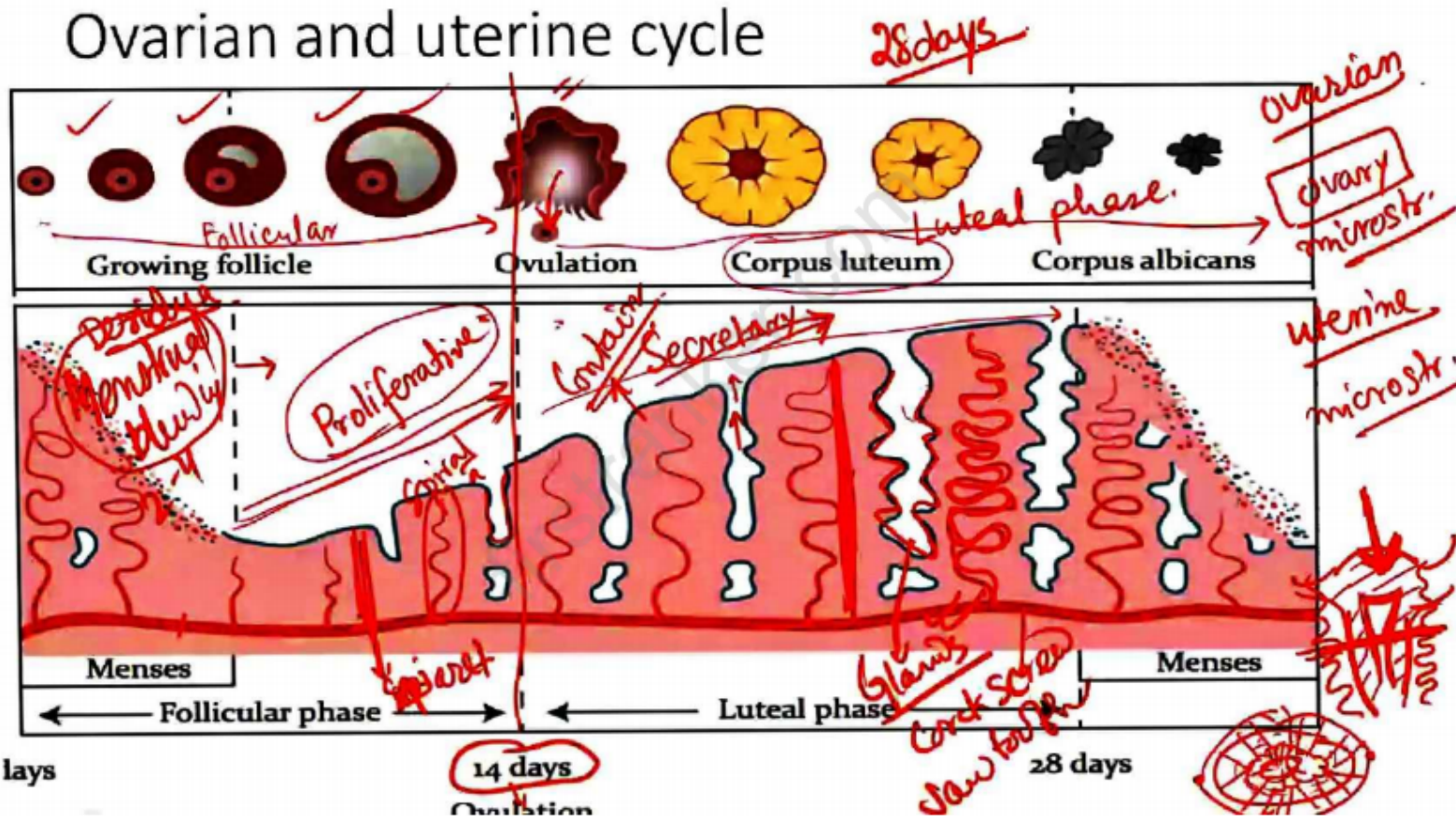


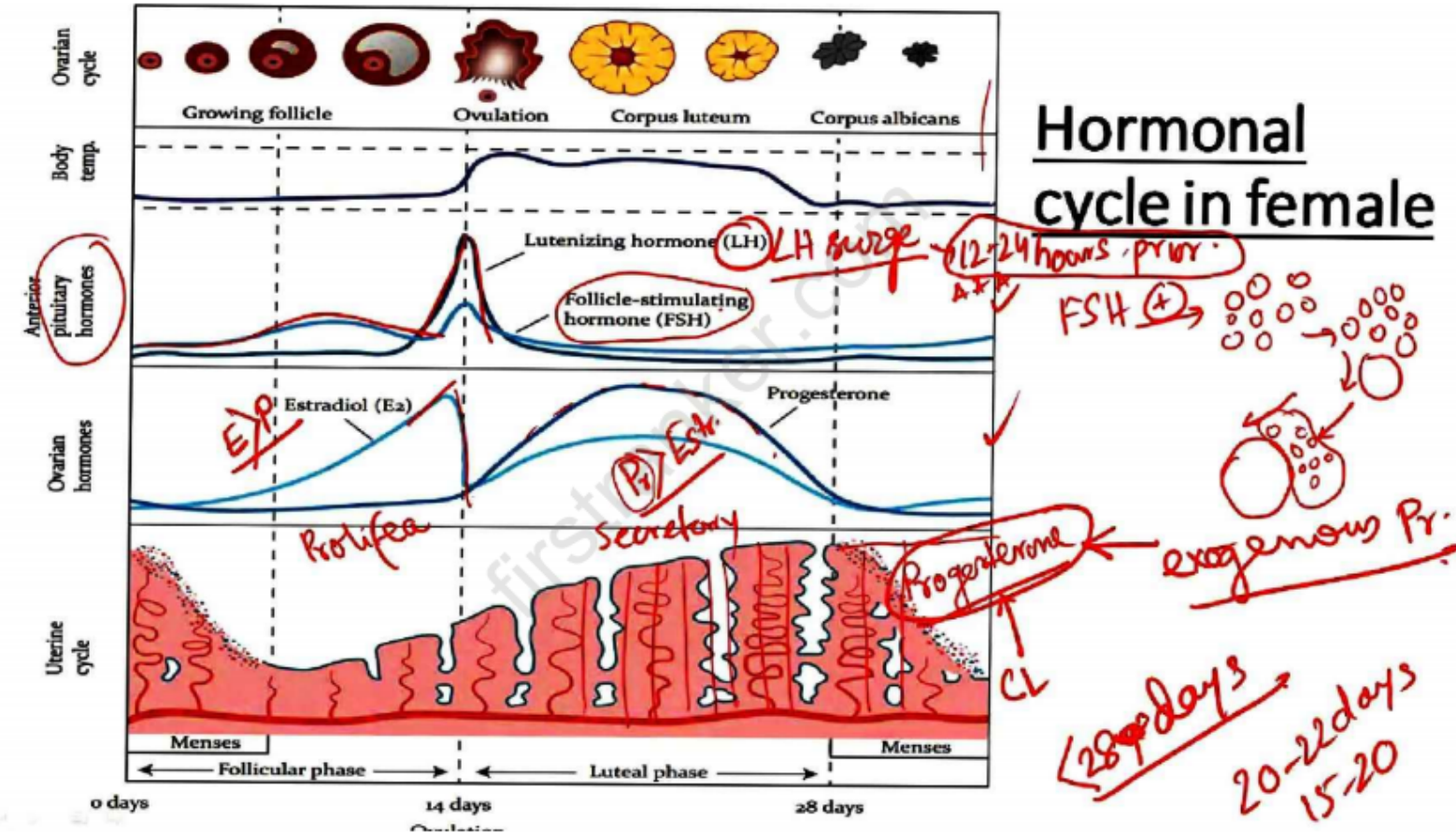
# Primordial Germ Cell

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

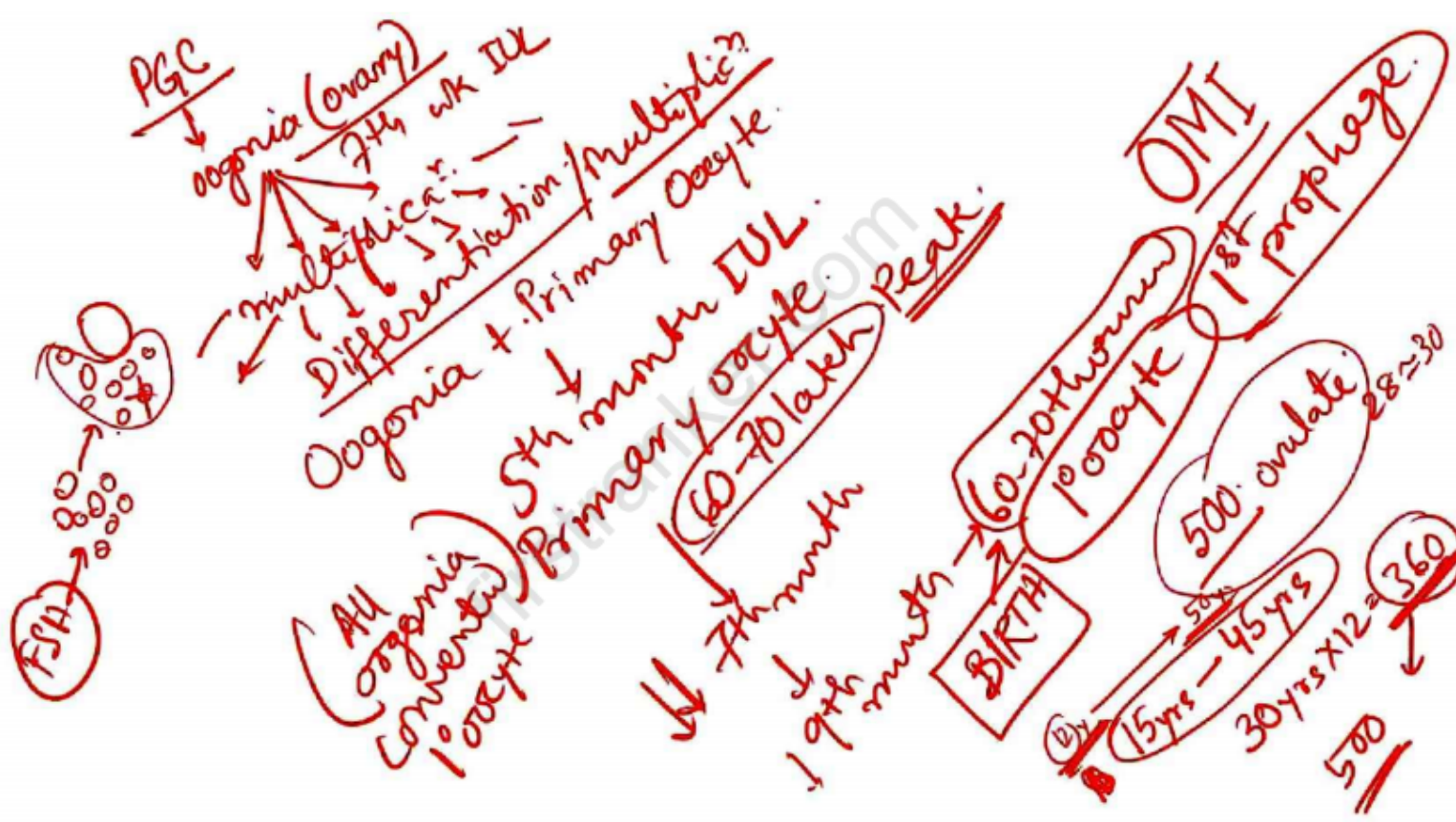


# Ovarian and uterine cycle



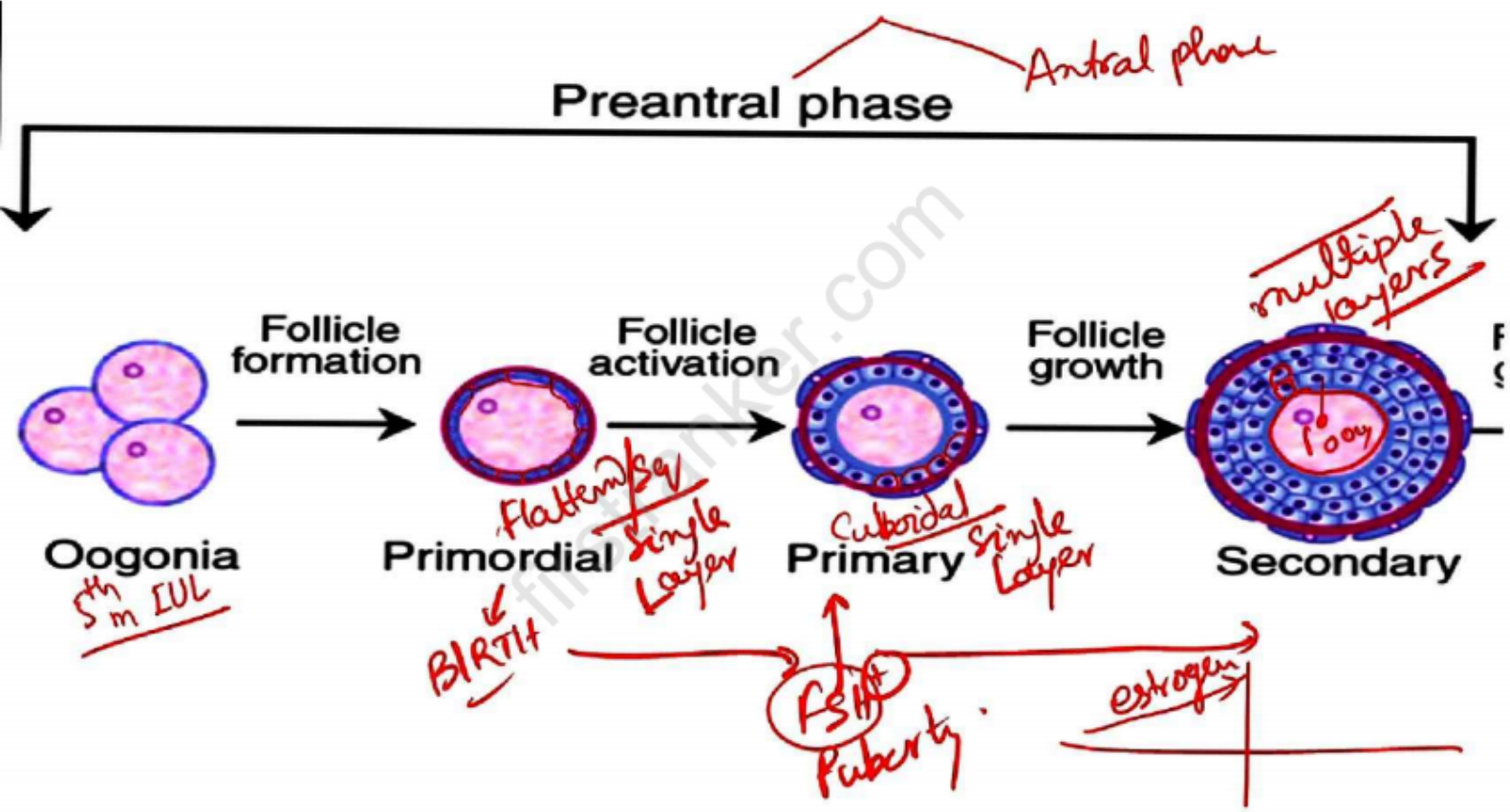




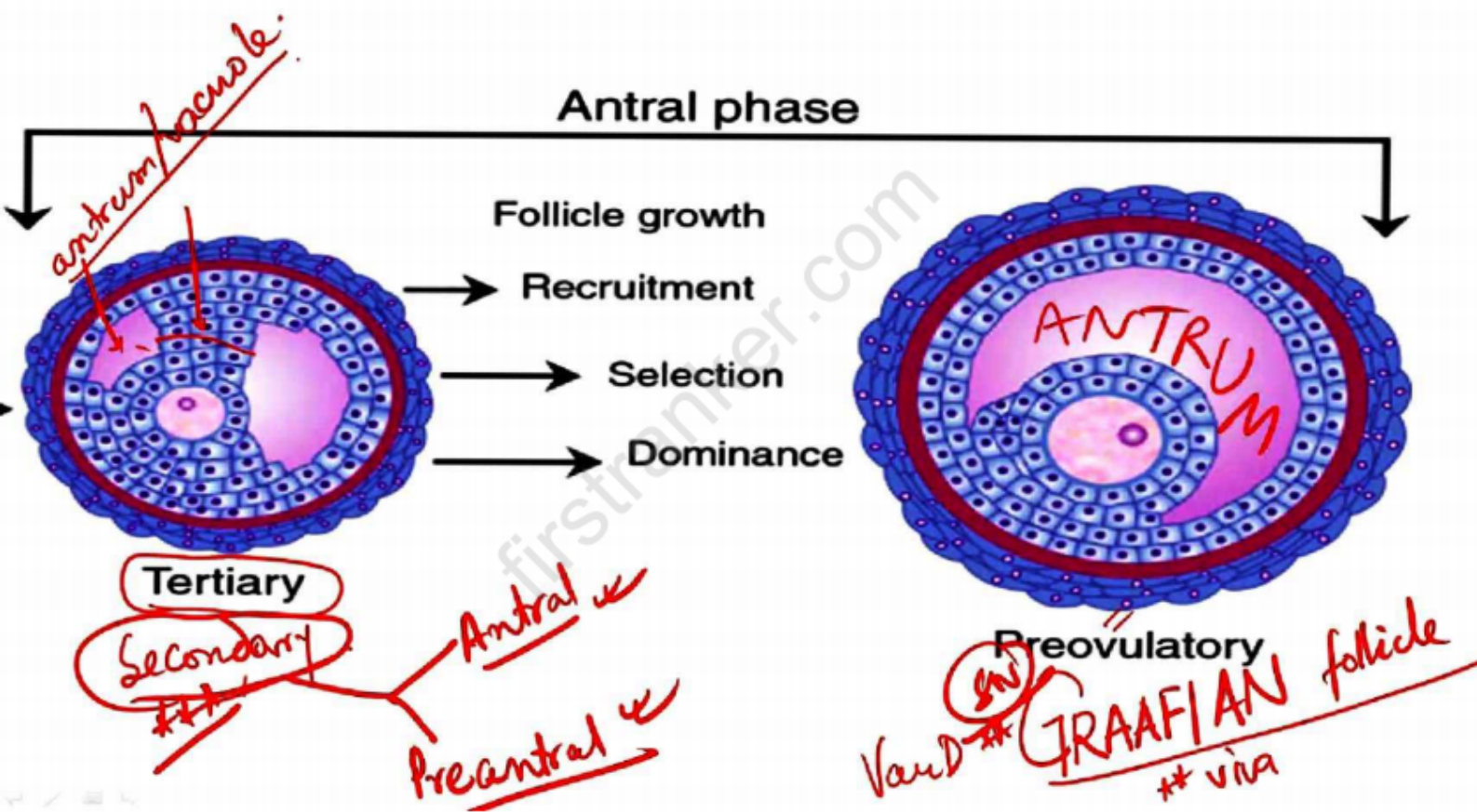


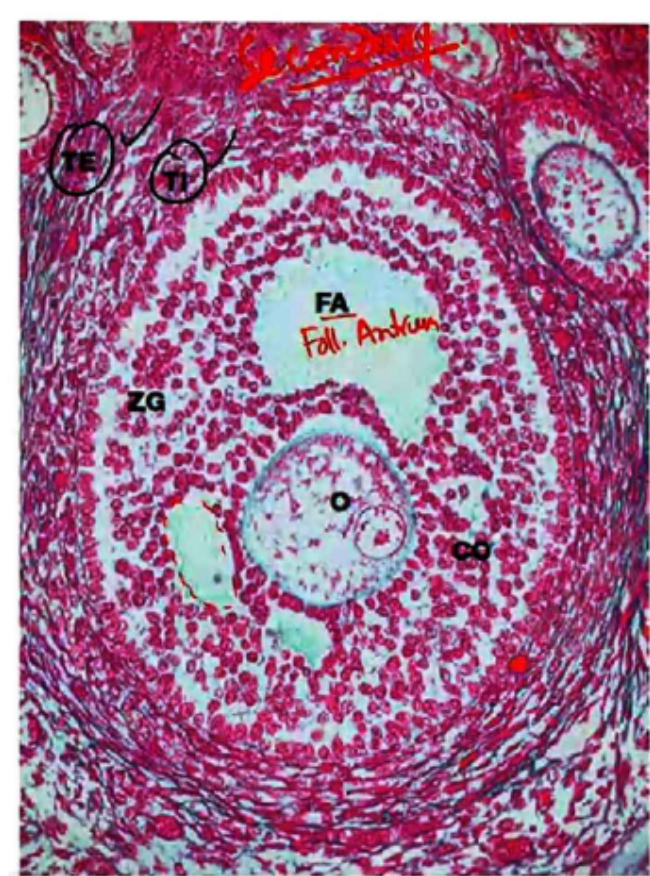
- During early fetal development, PGCs **migrate into the ovarian cortex – differentiate into oogonia &** multiply by mitosis.
- By the fourth and fifth months of human fetal development, some oogonia enlarge and assume the potential for development into mature gametes.
- At this stage, they are called **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  
1st meiotic  
complete*

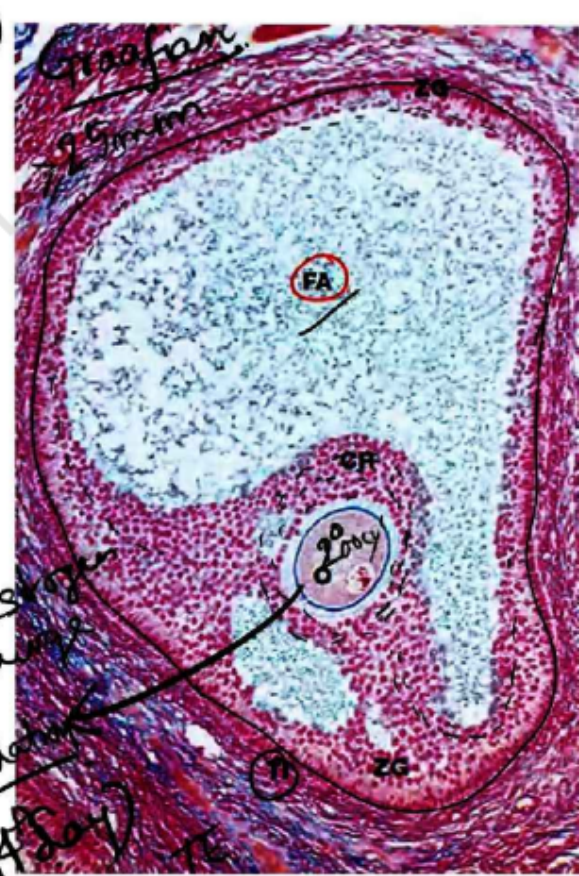








2<sup>o</sup> oocyte (metaphase)





OVULATION (SN) \*\*

Body (Corpus) → Corpus luteum → Yellow \*\*

- Till puberty primary oocytes remained arrested in the prolonged diplotene (DICTYOTENE) of first prophase of 1<sup>st</sup> meiotic division
- OMI (oocyte maturation inhibitor) released by follicular cells
- At puberty release of FSH, <sup>Follicular growth</sup> Midcycle LH surge (release of <sup>def'n</sup> ovum from one ovary (OVULATION), completion of prophase -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 + 1<sup>st</sup> polar body → arrested in Metaphase II till fertiliz<sup>n</sup>
- Arrested in meiosis-2 (metaphase) 3 hours prior to ovulation
- Ovulation 12-24 hours after LH surge
- Expelled 2" oocyte surrounded by corona radiata
- CLINICS- mittelschmerz (German) BBT, anovulation \*\*
- CORPUS LUTEUM (Thecal cells) + Granulosa cells.

