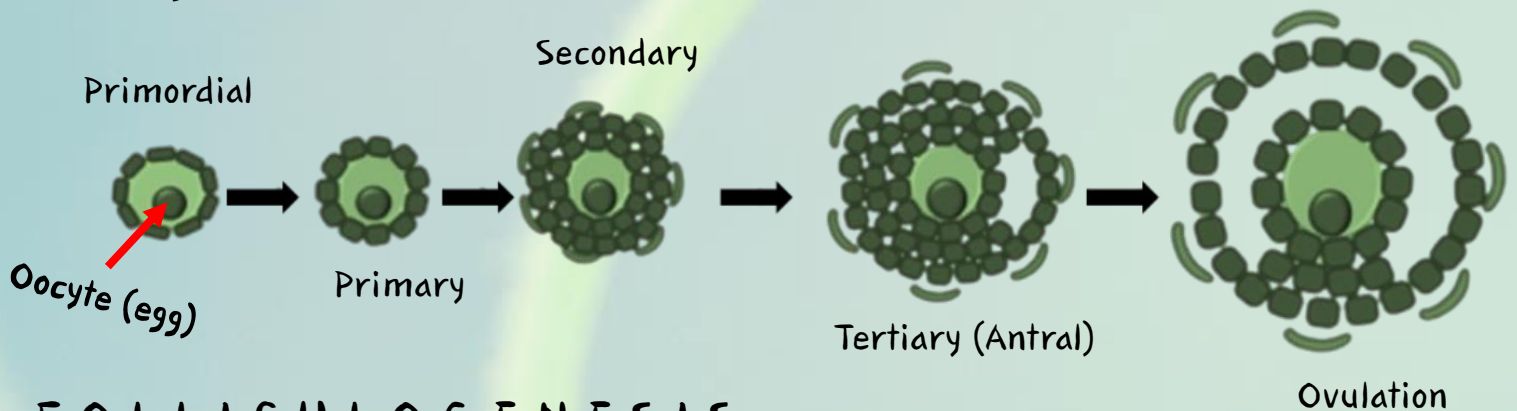


FOLLICLES & OOCYTES

A follicle is a fluid-filled sac within the ovary that contains an immature egg (or oocyte). Follicles develop through several stages, culminating in a mature egg that is capable of being fertilized. Folliculogenesis is the process of follicle development. It is influenced by hormones such as FSH (follicle stimulating hormone) and LH (luteinizing hormone). Nutrition is also a critical factor in folliculogenesis.

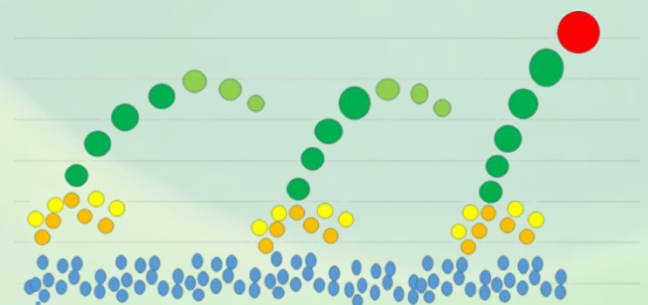


FOLLICULOGENESIS

1. **Primordial** follicles are the earliest stage of development. They are established during fetal development, around day 70 of gestation. The number of primordial follicles at birth is quite high (~100,000 to 200,000), but only a small fraction will reach the preovulatory stage. Most undergo atresia.
2. Primordial follicles transition to **primary** follicles through a process of activation and growth. The oocyte increases in size, and the granulosa cells surrounding it change shape.
3. In addition to another size increase, the transition from primary to **secondary** follicle is characterized by the proliferation of granulosa cells around the oocyte.
4. In the **tertiary** stage, follicle size further increases and a fluid-filled space called the antrum develops.
5. A tertiary follicle that is ready to ovulate is called a **graafian** follicle. The follicle is induced to ovulate by a surge in LH.
6. After ovulation, the ruptured follicle transforms into the **corpus luteum (CL)**, a temporary endocrine structure that produces progesterone, which plays a vital role in maintaining pregnancy. If fertilization does not occur, the CL regresses and the female resumes her estrus cycle.



Higher ovulation rates are often associated with smaller follicles.



Follicle development occurs in organized waves, with 2 to 4 waves per cycle. One follicle in each wave becomes dominant and continues to grow.