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- **OVULATION;**

This is the release of the secondary oocyte from the ovaries. The secondary oocyte is expelled from the ovarian follicle with the follicular fluid. Around the middle of the ovarian cycle, the ovarian follicle, under the influence of FHS and LH, undergoes a sudden growth spurt, producing a cystic swelling or bulge on the surface of the ovary. Ovulation is triggered by a surge of LH production. Ovulation usually follows the LH peak by 12 to 24 hours. The LH surge, elicited by the height estrogen level in the blood causes a stigma to balloon out, forming a vehicle. The stigma burst expelling the secondary oocyte. The expelled secondary oocyte is surrounded by the Zone pellucida and one or more layers of follicular cells (corona radiata). The LH surge seems to induce resumption of the first meiotic division of the primary oocyte. Hence, mature ovarian follicle contain secondary oocyte. After ovulation, the wall of the follicle collapses and is thrown into folds. The follicle is transformed into a glandular structure, the corpus luteum.

- **Difference between meiosis I and meiosis II**

Meiosis I	Meiosis II
At prophase I; synapses occur, then crossing over and then formation of chiasmata.	At prophase II; synapses doesn't occur. Hence, no crossing over or chiasma formation.
At anaphase I; the centromere doesn't split.	At anaphase II; the centromere split.
At telophase I; 2 daughter cells are formed.	At telophase II; 4 daughter cells are formed.
The chromosome number entering meiosis I is diploid.	The chromosome number entering meiosis II is haploid
It is a reduction division.	It isn't a reduction division.

- **Stages involved in fertilization;**

1. Passage of sperm through the corona radiata; the sperm cell must be capacitated (I.e removal of the glycoprotein and semina plasma protein) on the acrosomal region for it to pass through the corona radiata.
2. Penetration of Zona pellucida; Then, the acrosome binds to the zona pellucida at the binding site at the zona pellucida. Acrosin is then released and allows for passage of the sperm cell through the zona pellucida. Cortical granules sends message to the zona pellucida to close it's binding site after a sperm passes through, so as to stop other sperm from binding, preventing polyspermy

3. Fusion of plasma membrane of sperm and oocyte; the plasma membrane of the sperm and oocyte fuse together, allowing the sperm cell to move in for fertilization.
4. Completion of meiosis II and formation of female pronucleus; once the sperm enters, meiosis II is completed and a female pronucleus is formed.
5. Formation of male pronucleus; on reaching the oocyte, the sperm cell is transformed to a male pronucleus.
6. Formation of zygote; male pronucleus and female pronucleus fuse to form an ootid, which turns out to form a zygote.

- **Difference between monozygotic twins and dizygotic twins**

Dizygotic twins	Monozygotic twins
Results as a fertilization is 2 oocyte.	Result as a fertilization of 1 oocyte.
They develop from 2 zygote.	They develop from 1 zygote
They are genetically unidentical.	They are genetically identical.
Placenta may be fused.	Placenta may not be fused.