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ANATOMY ASSIGNMENT

1. Ovulation is the release of an egg from one of a woman's ovaries. After the egg is released, it travels down the fallopian tube, where fertilization by a sperm cell may occur.

Ovulation typically lasts one day and occurs in the middle of a woman's menstrual cycle, about two weeks before she expects to get her period. But the timing of the process varies for each woman, and it may even vary from month to month.

At birth, a female fetus has 1 to 2 million immature eggs called oocytes inside her ovaries, which is all the eggs she will ever produce. By the time a girl enters puberty, about 300,000 of these eggs remain. Approximately 300 to 400 of the remaining eggs will be ovulated during a woman's reproductive lifetime.

With every monthly menstrual cycle, a woman's body prepares for a potential pregnancy.

A woman may have clues that she could be ovulating. Her body may have one of the following three signs:

A. Change in vaginal secretions.

A few days before a woman ovulates, her cervix, which is the lower part of the uterus, produces a type of mucus that is thin, clear, slippery and stretchy.

B. Change in basal body temperature

C. Rise in luteinizing hormone.

About 24 to 36 hours before a woman ovulates, her levels of luteinizing hormone increase. A rise in luteinizing hormone is a signal for the ovary to release an egg.

2. DIFFERENTIATE BETWEEN MEIOSIS I AND MEIOSIS II

- I. In meiosis I, homologous chromosomes separate, while in meiosis II, sister chromatids separate
- II. Meiosis II produces 4 haploid daughter cells, whereas Meiosis I produces 2 diploid daughter cells.
- III. Crossing over only occurs in meiosis 1.
- IV. In Meiosis I, there is chiasma formation, whereas, in Meiosis II, there is no chiasma formation.
- V. In Meiosis I, there is Synapsis, while in Meiosis II, there is no Synapsis.

3. STAGES INVOLVED IN FERTILIZATION

- I. Passage of the sperm through the Corona radiata:
This involves the removal of the glycoproteins and seminal plasma proteins. I.e the cell must be capacitated on the Acrosomal region
- II. Penetration of Zona Pellucida:

Binding of the acrosome to the Zona pellucida at the binding sites of the Zona pellucida. This is followed by the release of Acrosin for passage to the Zona pellucida.

III. Action of Cortical Granules:

These send messages to the Zona pellucida to close their binding sites after a sperm passes through to prevent polyspermy.

IV. Fusion of plasma membrane of sperm and oocyte.

V. Completion of Meiosis II & Formation of female pronucleus

VI. Formation of Male pronucleus

VII. Formation of zygote

4. DIFFERENTIATE BETWEEN MONOZYGOTIC TWINS AND DIZYGOTIC TWINS

I. MONOZYGOTIC twins are formed by splitting of a fertilized embryo into two while DIZYGOTIC twins are formed by two separate simultaneous fertilization events.

II. The cause of MONOZYGOTIC twins is not known, while the cause of DIZYGOTIC twins is caused by either IVF, fertility drug or hereditary predisposition.

III. Gender of MONOZYGOTIC twins is the same, while gender of DIZYGOTIC twins is different.

IV. Blood types are the same for MONOZYGOTIC twins while blood types are different for DIZYGOTIC twins.

V. One-third of the twins in the world are MONOZYGOTIC while two-third are DIZYGOTIC.