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Course:Embryology

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.

If a woman is hoping to become pregnant, she will want to keep track of when she may be ovulating. Knowing when a woman is ovulating each month is helpful because she is the most fertile — or able to become pregnant — around the time of ovulation.

A couple will be more likely to conceive if they have sex a day or two before a woman ovulates and the day of ovulation, according to the March of Dimes.

During ovulation, the walls of the uterus also thicken to prepare for a fertilized egg. But if the egg is not fertilized, the uterine lining is shed about two weeks later, causing menstrual flow to begin. But simply having her period does not always indicate that a woman is ovulating.

Many women have an ovulatory cycle — the buildup of the lining of the uterus — because they are making estrogen. But when the buildup gets to a certain level, the lining just sloughs off, and a woman can bleed quite heavily, said Minkin. When a woman ovulates, she also makes the hormone progesterone, which results in a more controlled bleed.

2.Meiosis is the production of four genetically diverse haploid daughter cells from one diploid parent cell. Meiosis can only occur in eukaryotic organisms. It is preceded by interphase, specifically the G phase of interphase. Both Meiosis I and II have the same number and arrangement of phases: prophase, metaphase, anaphase, and telophase. Both produce two daughter cells from each parent cell.

However, Meiosis I begins with one diploid parent cell and ends with two haploid daughter cells, halving the number of chromosomes in each cell. Meiosis II starts with two haploid parent cells and ends with four haploid daughter cells, maintaining the number of chromosomes in each cell. Homologous pairs of cells are present in meiosis I and separate into chromosomes before meiosis II. In meiosis II, these chromosomes are further separated into sister chromatids. Meiosis I includes crossing over or recombination of genetic material between chromosome pairs, while meiosis II does not. This occurs in meiosis I in a long and complicated prophase I, split into five sub-phases. The equatorial plane in meiosis II is rotated 90° from the alignment of the equatorial plane in meiosis I.

The difference is:

In meiosis I, homologous chromosomes separate, while in meiosis II, sister chromatids separate. Meiosis II produces 4 haploid daughter cells, whereas meiosis I produces 2 diploid daughter cells. Genetic recombination (crossing over) only occurs in meiosis I.

3.Monozygotic twins originate from a single zygote or fertilized egg. ... Most monozygotic twins share one placenta and amniotic sac, this occurs when the original zygote divides about seven to twelve days into pregnancy. Dizygotic twins originate from two zygotes or fertilized eggs. And they are called fraternal twins.