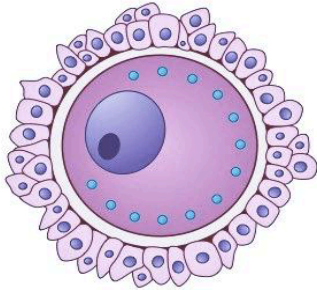


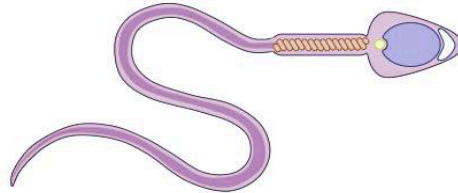
Reproduction and Meiosis

Sexual reproduction (two parents) is a fascinating process that allows living organisms to create new life. This method involves two types of sex cells, known as gametes, which are produced by male and female organisms. In humans and many other animals, the male gamete is called sperm, while the female gamete is called an egg.

Human Egg (Ovum)



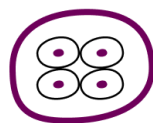
Human Sperm (Spermatozoa)



(NOT TO SCALE. EGG CELLS IN HUMANS ARE 10,000 TIMES LARGER THAN SPERM CELLS)

Sperm are small cells that have a unique structure. They possess a whip-like tail, known as a flagellum, which helps them swim through the female reproductive system to reach the egg. The journey of the sperm is crucial because it must travel to fertilize the egg. The egg, on the other hand, is larger than the sperm and contains important nutrients that will support the developing embryo (early form of the organism before birth).

During fertilization, one sperm cell successfully merges with one egg cell. This union creates a new cell called a zygote. The zygote contains a complete set of chromosomes, which are the structures that carry genetic information. Each parent contributes half of the chromosomes, combining their traits to form a unique individual.



Zygote



Embryo



Fetus

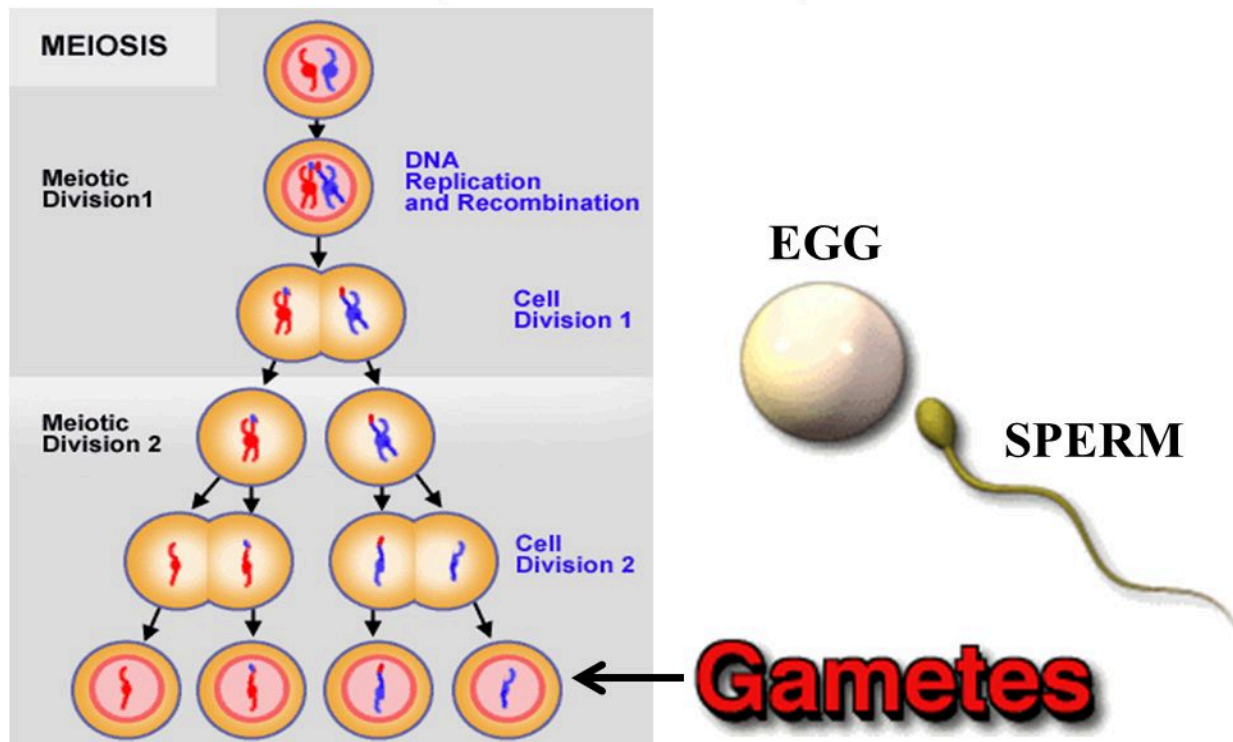


Baby

Before the formation of gametes, a special type of cell division called meiosis occurs. This process is essential for producing sperm and eggs. Meiosis consists of two stages: meiosis I and meiosis II. During meiosis I, the number of chromosomes is halved, resulting in cells that are ready to develop into sperm or eggs. Meiosis II further divides these cells, ensuring that each gamete has the correct amount of genetic material. Each gamete will have half the number of chromosomes as the parent cell.

MEIOSIS: Sexual Reproduction

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Once the zygote is formed, it begins to develop. The first stage of this development involves a process called mitosis, where the zygote divides repeatedly to create more cells. As these cells continue to multiply, they start to specialize and form different organs and systems of the body.

In conclusion, sexual reproduction is a complex but beautiful process that involves the collaboration of male and female sex cells. Through the intricate steps of meiosis, fertilization, and development, new life is created, showcasing the incredible diversity of living organisms. Understanding this process helps us appreciate the wonders of biology and the importance of reproduction in sustaining life.