Report

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The process of fertilization can be described as the fusion of gametes that is eggs and sperms form a zygote. Both egg and sperm contain one set of chromosomes and upon fertilization, the genetic material will be combined to form a zygote that is diploid. Generally, in mammals, the egg is protected by a layer that consists of glycoproteins also known as zona pellucida. A series of biochemical events occur when sperms bind to zona pellucida. These series of events are known as an acrosomal reaction. In placental mammals the acrosome degenerate glycoprotein that protects egg, and allows sperm plasma membrane to fuse with the egg. During a fusion, the sperm plasma and egg plasma membrane are responsible for creating an opening that allows the sperm nucleus to enter the ovum. Then the nucleus membrane of the cell breaks down and two haploid genomes combine to form one dipole genome that leads to the formation of a zygote which will further be divided to form a blastocyst. When blastocysts enter the uterus it implants in the endometrium thus beginning pregnancy (Florman & Ducibella, 2006).

Spermatogenesis is a process during which the male gamete that is sperm is formed in testis while oogenesis is the process during which a female gamete that is ovum is formed in ovaries. This process occurs in ovaries. Sperm have less food reserve while ovum has more. The sterol cells are present in the sperms, and are absent in the oogenesis process.While talking about similarities between the two processes both the process takes place inside gonads and are completed in three-phase that are multiplicative, growth and maturation phase. Also both the process forms haploid gametes (Short & Balaban, 1994).

Testosterones are the hormones that belong to the class of male hormones however females also have this hormone as well as estrogen. Testerones are the sex hormones responsible to regulate sex drive, muscle mass, bone mass as well as the production of sperms and red blood cells. With the increasing age the level of testosterone drops. The low level of testosterone causes loss of body hair and muscle bulk, reduction in sex drive as well as increased body fat and increased vulnerability to chronic diseases whereas an increase in testosterones leads to early puberty. On the other hand, estrogen is female sex hormones that are responsible for accelerating metabolism, thickening of vaginal walls while increasing the growth of the uterus. It also helps in reducing the bone structure such as it helps in narrowing the shoulder. It helps to increase fat storage around thighs and hips also making voice box smaller. The reduction in the level of estrogen results in mood swings, breast tenderness, and depression (“OnlineMedEd,” n.d.).

**References**

Florman, H. M., & Ducibella, T. (2006). Fertilization in mammals. *Knobil and Neill’s physiology of reproduction*, *3*, 55-112.

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**References**