1. SPERMATOGENESIS

Spermatogenesis is the process by which haploidspermatozoa develop from germ cells in the seminiferous tubules of the testis. This process starts with the mitotic division of the stem cellslocated close to the basement membrane of the tubules. These cells are called spermatogonial stem cells. The mitotic division of these produces two types of cells. Type A cells replenish the stem cells, and type B cells differentiate into primary spermatocytes. The primary spermatocyte divides meiotically (Meiosis I) into two secondary spermatocytes; each secondary spermatocyte divides into two equal haploid spermatids by Meiosis II. The spermatids are transformed into spermatozoa (sperm) by the process of spermiogenesis. These develop into mature spermatozoa, also known as sperm cells. Thus, the primary spermatocyte gives rise to two cells, the secondary spermatocytes, and the two secondary spermatocytes by their subdivision produce four spermatozoa and four haploid cells.

 2. TESTOSTERONE

Testosterone: A "male hormone" -- a sex hormone produced by the testes that encourages the development of male sexual characteristics, stimulates the activity of the male secondary sex characteristics, and prevents changes in them following castration. Chemically, testosterone is 17-beta-hydroxy-4-androstene-3-one.

Testosterone is the most potent of the naturally occurring androgens. The androgens cause the development of male sex characteristics, such as a deep voice and a beard; they also strengthen muscle tone and bone mass.

High levels of testosterone appear to promote good health in men, for example, lowering the risks of high blood pressure and heart attack. High testosterone levels also correlate with risky behavior, however, including increased aggressiveness and smoking, which may cancel out these health benefits.

Testosterone may be given to treat medical conditions, including female (but not male) breast cancer, hypogonadism (low gonadal function) in the male, cryptorchism (nondescent of the testis into the scrotum), and menorrhagia (irregular periods).