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Physiology

#### ❖ SPERMATOGENESIS:

This refers to the entire sequence of events by which primitive germ cells known as spermatogonia are transformed into sperms or spermatozoon.

The maturation period begins at puberty (13-16yrs) and continues till old age. Spermatogenesis is classically divided into 3 phases; spermatocytogenesis, meiosis and spermiogenesis.

Takes about two months or 64 days to complete. At about the 4th week of development, the primordium of the germ cells arrives at the testis area and are dormant until puberty. During puberty, these spermatogonia which have been dormant during foetal period begin to increase in number. After series of mitotic cell divisions they grow and undergo gradual changes which transform them into primary spermatocytes.

Each primary spermatocyte undergoes the first meiotic cell division-reduction division to form two haploid secondary spermatocytes. The secondary spermatocyte subsequently undergoes the second meiotic division to form haploid spermatids. The spermatids are then transformed into mature sperm in a differentiation process called spermiogenesis. When spermiogenesis is complete the sperm enters the lumen of the seminiferous tubules of the testis. They are then transferred from there to the epididymis, where they are stored and becomes functionally matured.

#### ❖ TESTOSTERONE:

This is a hormone found in humans. The testicles primarily makes testosterone in men, women's ovaries also make testosterone though in much smaller amounts. The production of testosterone starts to increase significantly during puberty, and begins to dip after age 30 or so.

Testosterone is most often associated with sex drive, and plays a vital role in sperm production. It also affects bone and muscle mass, the way men store fat in body, and even red blood cell production. A man's testosterone levels can also affect his mood.

A simple blood test can determine testosterone levels. There's a wide range of normal or healthy levels of testosterone circulating in the bloodstream. The normal range of testosterone for men is between 280 and 1,100 nanograms per deciliter (ng/dl) for adult male and between 15 and 70ng/dl female.