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**PHS212 Assignment**

**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 primodium 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.

❖ **SEMEN**:

During the process of ejaculation, sperm passes through the ejaculatory ducts and mixes with fluids from the seminal vesicles, the prostrate and the bulbourethral glands to form the semen. The seminal vesicles produce a yellowish viscous fluid rich in fructose and other substances that makes up about 70% of human semen. The prostatic secretion, influenced by dihydrotestosterone, is a whitish thin fluid containing proteolytic enzymes, citric acid phosphatase and lipids. The bulbourethral glands secrete a clear secretion into the lumen of the urethra to lubricate it. The seminal plasma provides a nutritive and projective medium for the spermatozoa during their journey through the female reproductive tract.

❖ **MALE ORGASM:**

Orgasm occurs in two phases, emission and ejaculation. In emission, the man reaches ejaculatory inevitability, “the point of no return”. Semen is deposited near the top of the urethra, ready for ejaculation. Ejaculation occurs in a series of rapid-fire contractions of the penile muscles and around the base of the anus. Involuntary pelvic thrusting may also occur. The nerves causing the muscle contractions send messages of pleasure to the man’s brain. Men achieve orgasm through a series of steps involving a number of organs, hormones, blood vessels and nerves working together. The typical result is ejaculation of fluid that may contain sperm through strong muscle contraction

❖ **MALE INFERTILITY:**

According to WHO it’s a clinical diagnosis that can only be determined after formal assessment and testing. Infertility is either caused due to environmental, genetic or other identifiable factors

Common environmental cause include; excess heat, drugs, toxicants, stress, excess exercise, chronic disease, dietary deficiencies, varicocele, disease of the male genital tract, surgery on male genital tract and obesity.

Genital causes include; mutations inside the genes that determine male sex, hormonal issues and other conditions called klinefelter’s XXY syndrome.

Male infertility treatment include; reducing stress, taking medications, vitamins, antioxidants, alternative medicines, surgery and in vitro fertilization