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ASSIGNMENT

1. **SPERMATOGENESIS**

 Spermatogenesis is the process by which haploid spermatozoa develop from germ cells in the seminiferous tubules of the testis. This process starts with the mitotic division of the stem cells located 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.

**2. TESTOSTERONE**

Testosterone is the primary male sex hormone and anabolic steroid. In male humans, testosterone plays a key role in the development of male reproductive tissues such as testes and prostate, as well as promoting secondary sexual characteristics such as increased muscle and bone mass, and the growth of body hair. In addition, testosterone is involved in health and well-being, and the prevention of osteoporosis. Insufficient levels of testosterone in men may lead to abnormalities including frailty and bone loss.

**Biological Effects**

In general, androgens such as testosterone promote protein synthesis and thus growth of tissues with androgen receptors. Testosterone can be described as having virilising and anabolic effects.

**Anabolic effects** include growth of muscle mass and strength, increased bone density and strength, and stimulation of linear growth and bone maturation.

**Androgenic effects** include maturation of the sex organs, particularly the penis and the formation of the scrotum in the fetus, and after birth (usually at puberty) a deepening of the voice, growth of facial hair (such as the beard) and axillary (underarm) hair. Many of these fall into the category of male secondary sex characteristics.

Testosterone effects can also be classified by the age of usual occurrence. For postnatal effects in both males and females, these are mostly dependent on the levels and duration of circulating free testosterone.

3**. SEMEN**

Semen, also known as seminal fluid, is an organic fluid that contains spermatozoa. It is secreted by the gonads (sexual glands) and other sexual organs of male or hermaphroditic animals and can fertilize the female ovum. In humans, seminal fluid contains several components besides spermatozoa: proteolytic and other enzymes as well as fructose are elements of seminal fluid which promote the survival of spermatozoa, and provide a medium through which they can move or "swim". Semen is produced and originates from the seminal vesicle, which is located in the pelvis. The process that results in the discharge of semen is called ejaculation. Semen is also a form of genetic material. In animals, semen has been collected for cryoconservation.

**4. MALE ORGASM**

The orgasm is widely regarded as the peak of sexual excitement. It is a powerful feeling of physical pleasure and sensation, which includes a discharge of accumulated erotic tension.

Orgasms have multiple potential health benefits body during an orgasm.Orgasms do not only occur during sexual stimulation.

**Orgasm Models**

Sex researchers have defined orgasms within staged models of sexual response. Although the orgasm process can differ greatly between individuals, several basic physiological changes have been identified that tend to occur in the majority of incidences.

The following models are patterns that have been found to occur in all forms of sexual response and are not limited solely to penile-vaginal intercourse.

**Master and Johnson’s Four-Phase Model:**

* excitement
* plateau
* orgasm
* resolution

**Kaplan’s Three-Stage Model:**

Kaplan’s model differs from most other sexual response models as it includes desire – most models tend to avoid including non-genital changes. It is also important to note that not all sexual activity is preceded by desire.

* desire
* excitement
* orgasm

**5. MALE INFERTILITY**

Male infertility refers to a male's inability to cause pregnancy in a fertile female. In humans it accounts for 40–50% of infertility. It affects approximately 7% of all men.Male infertility is commonly due to deficiencies in the semen, and semen quality is used as a surrogate measure of male fecundity.

**IMMUNE INFERTILITY**

Antisperm antibodies (ASA ) production are directed against surface antigens on sperm, which can interfere with sperm motility and transport through the female reproductive tract, inhibiting capacitation and acrosome reaction, impaired fertilization, influence on the implantation process, and impaired growth and development of the embryo. Risk factors for the formation of antisperm antibodies in men include the breakdown of the blood‑testis barrier, trauma and surgery, orchitis, varicocele, infections, prostatitis, testicular cancer, failure of immunosuppression and unprotected receptive anal or oral sex with men.

**GENETICS**

Chromosomal anomalies and genetic mutations account for nearly 10–15% of all male infertility cases.

**KLINEFELTER SYNDROME**

One of the most commonly known causes of infertility is Klinefelter Syndrome, affecting 1 out of 500–1000 newborn males. The reduction of testosterone in the male body normally results in an overall decrease in the production of viable sperm for these individuals thereby forcing them to turn to fertility treatments to father children.

**Y CHROMOSOME DELETIONS**

Y chromosomal infertility is a direct cause of male infertility due to its effects on sperm production, occurring in 1 out of every 2000 males. Men with this condition can exhibit azoospermia (no sperm production), oligozoospermia (small number of sperm production), or they will produce abnormally shaped sperm (teratozoospermia). These individuals are thereby “Y-linked”, although daughters are not affected due to the lack of the Y chromosome.

**Others**

* Age (see also: Paternal age effect)
* Abnormal set of chromosomes
* Trauma
* Hydrocele
* Hypopituitarism in adults, and hypopituitarism untreated in children (resulting in growth hormone deficiency and proportionate dwarfism.)
* Mumps
* Malaria
* Testicular cancer