NAME: ALADE OYINDAMOLA FAITH

MATRIC NO: 18/MHS02/035

DEPARTMENT: NURSING

COURSE CODE: PHS 212

ASSIGNMENT

Write short notes on the following:

1. Spermatogenesis
2. Testosterone
3. Semen
4. Male orgasm
5. Male infertility

ANSWER

- 1 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.[1] 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] Thus, the primary spermatocyte gives rise to two cells, the secondary spermatocytes, and the two secondary spermatocytes by their subdivision produce four spermatozoa and our haploid cells.[3] Spermatozoa are the mature male gametes in many sexually reproducing organisms. Thus, spermatogenesis is the male version of gametogenesis, of which the female equivalent is oogenesis. In mammals it occurs in the seminiferous tubules of the male testes in a stepwise fashion. Spermatogenesis is highly dependent upon optimal conditions for the process to occur correctly, and is essential for sexual reproduction. DNA

methylation and histone modification have been implicated in the regulation of this process.[4] It starts at puberty and usually continues uninterrupted until death, although a slight decrease can be discerned in the quantity of produced sperm with increase in age (see Male infertility).

- 2 Testosterone is a hormone found in humans, as well as in other animals. The testicles primarily make 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 the body, and even red blood cell production. A man's testosterone levels can also affect his mood.

  ### Low testosterone levels

  Low levels of testosterone, also called low T levels, can produce a variety of symptoms in men, including:

  - decreased sex drive
  - less energy
  - weight gain
  - feelings of depression
  - moodiness
  - low self-esteem
  - less body hair

- thinner bones

While testosterone production naturally tapers off as a man ages, other factors can cause hormone levels to drop. Injury to the testicles and cancer treatments such as chemotherapy or radiation can negatively affect testosterone production.

Chronic health conditions and stress can also reduce testosterone production. Some of these include:

- AIDS
- kidney disease
- alcoholism
- cirrhosis of the liver
- 3 Semen, also called seminal fluid, fluid that is emitted from the male reproductive tract and that contains sperm cells, which are capable of fertilizing the female eggs. Semen also contains other liquids, known as seminal plasma, which help to keep the sperm cells viable. In the sexually mature human male, sperm cells are produced by the testes (singular, testis); they constitute only about 2 to 5 percent of the total semen volume. As sperm travel through the male reproductive tract, they are bathed in fluids produced and secreted by the various tubules and glands of the reproductive system. After emerging from the testes, sperm are stored in the epididymis, in which secretions of potassium, sodium, and glycerylphosphorylcholine (an energy source for sperm) are contributed to the sperm cells. Sperm mature in the epididymis. They then pass through a long tube, called the ductus deferens, or vas deferens, to another storage area, the ampulla. The ampulla secretes a yellowish fluid, ergothioneine, a substance that reduces (removes oxygen from) chemical compounds, and the ampulla also secretes fructose, a sugar that nourishes the sperm. During the process of ejaculation, liquids from the prostate gland and seminal

vesicles are added, which help dilute the concentration of sperm and provide a suitable environment for them. Fluids contributed by the seminal vesicles are approximately 60 percent of the total semen volume; these fluids contain fructose, amino acids, citric acid, phosphorus, potassium, and hormones known as prostaglandins. The prostate gland contributes about 30 percent of the seminal fluid; the constituents of its secretions are mainly citric acid, acid phosphatase, calcium, sodium, zinc, potassium, protein-splitting enzymes, and fibrolysin (an enzyme that reduces blood and tissue fibres). A small amount of fluid is secreted by the bulbourethral and urethral glands; this is a thick, clear, lubricating protein commonly known as mucus.

- 4 The male orgasm is a complex experience. The major function of the male orgasm is to ejaculate sperm, although not all men will ejaculate during an orgasm. Beyond delivering pleasure, the role of the female orgasm is less clear, although it may help move the sperm closer toward the ovum (egg).In the 1950s, Alfred Kinsey, the first scientist to study human sexuality in detail, described the orgasm as "an explosive discharge of neuromuscular tension." In the years since those initial studies, we have come closer to understanding both the physiological and emotional components of the male orgasm, as well as the conditions that impede or promote it The hormone testosterone, produced in the testicles, plays a central role by enhancing the sexual desire (libido) that leads to arousal, erection, and ultimately orgasm. By contrast, low testosterone not only decreases a man's energy and mood, it makes him less responsive to sexual stimuli, both physical and mental.[1]

With that being said, a man often only requires physical stimulation to achieve arousal, while women typically need physical and mental stimulation to achieve the same.
The male ejaculate, semen, is comprised of sperm cells and seminal fluid, the latter of which contains phosphorylcholine (an enzyme that aids in fertility) and fructose (which provides fuel for sperm). The average volume of semen expelled by a healthy man is around a teaspoon.

- 5 Male infertility refers to a male's inability to cause pregnancy in a fertile female. In humans it accounts for 40–50% of infertility.[1][2][3] It affects approximately 7% of all men.[4] Male infertility is commonly due to deficiencies in the semen, and semen quality is used as a surrogate measure of male fecundity.[5] Male infertility is due to low sperm production, abnormal sperm function or blockages that prevent the delivery of sperm. Illnesses, injuries, chronic health problems, lifestyle choices and other factors can play a role in causing male infertility. Symptoms

The main sign of male infertility is the inability to conceive a child. There may be no other obvious signs or symptoms. In some cases, however, an underlying problem such as an inherited disorder, a hormonal imbalance, dilated veins around the testicle or a condition that blocks the passage of sperm causes signs and symptoms.

Although most men with male infertility do not notice symptoms other than the inability to conceive a child, signs and symptoms associated with male infertility include:

- Problems with sexual function — for example, difficulty with ejaculation or small volumes of fluid ejaculated, reduced sexual desire, or difficulty maintaining an erection (erectile dysfunction)
- Pain, swelling or a lump in the testicle area

- Recurrent respiratory infections
- Inability to smell
- Abnormal breast growth (gynecomastia)
- Decreased facial or body hair or other signs of a chromosomal or hormonal abnormality
- A lower than normal sperm count (fewer than 15 million sperm per milliliter of semen or a total sperm count of less than 39 million per ejaculate)