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MATRIC NUMBER: 18/MHS02/029

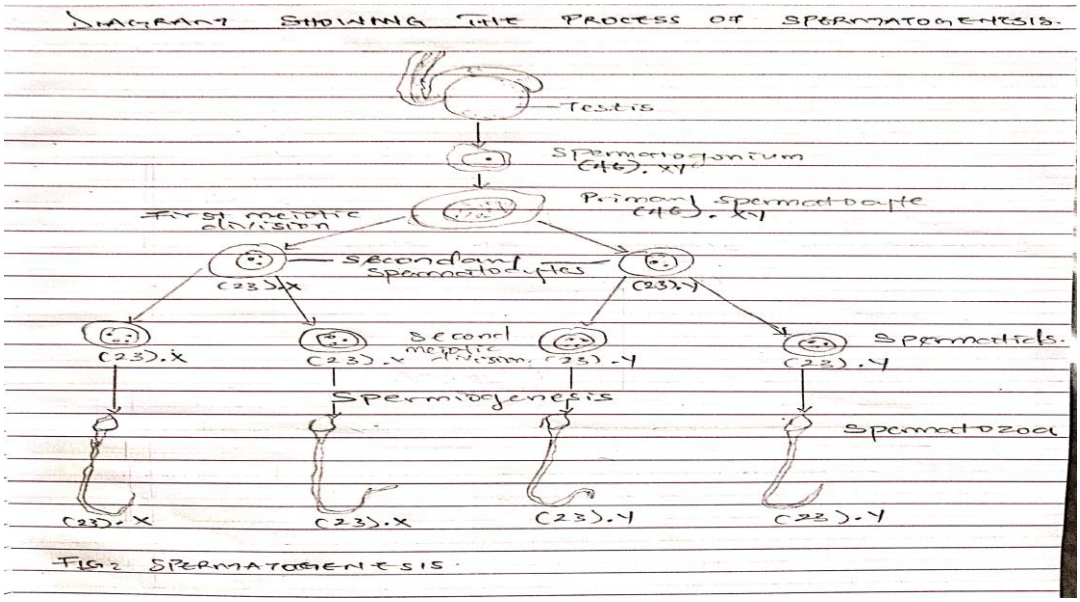
DEPARTMENT: NURSING, 200LVL

COURSE: PHS 212 (PHYSIOLOGY)

ANSWERS

1. SPERMATOGENESIS

This 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 are called spermatogonial stem cells. The mitotic division of these produces 2 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 then divides into 2 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 2 cells, the secondary spermatocytes and the 2 secondary spermatocytes by their sub-division produces 4 spermatozoa and 4 haploid cells. 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.



2. MALE ORGASM

The male orgasm is a complex system involving multiple hormones, organs, and nerve pathways. 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. 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 (provides fuel for sperm). The average volume of semen expelled by a healthy man is about a teaspoon.

There are 4 phases of the male orgasm which are;

i. Arousal: This is the stage in which physical, sensory and emotional cues prompt the brain to release a neurotransmitter known as acetylcholine. This in turn, triggers the release of nitric oxide into the arteries of the penis, causing them to expand and rapidly fill with blood. The resulting erection is accompanied by changes in respiration, increased overall muscle tension and retraction of the scrotal sac.

ii. Plateau: This is the phase immediately preceding orgasm in which the voluntary thrusts of the body, specifically the pelvis, suddenly become involuntary, increasing in both intensity and speed. Traces of seminal fluid may leak from the urethra which alters the pH of the urethra so that the sperm has a better chance of survival. This phase lasts between 30seconds and 2 minutes.

iii. Orgasm: The orgasm phase is divided into two parts. The first, known as emission, is the stage where ejaculation is inevitable. This is immediately followed by the second stage, ejaculation, in which strong contractions of the penile muscle, anus, and perinea muscles help propel the semen from the body.

iv. Resolution and Refraction: Resolution is the phase following orgasm where the penis starts to lose its erection. This is often accompanied by feelings of extreme relaxation or even drowsiness. Refraction is the stage following climax, when a man is unable to achieve another erection even with stimulation. In younger men, this may be as short as 15 minutes while in older men; it may last as long as an entire day.