NAME: COUTROUPIS ELIZABETH

MATRIC NUMBER: 18/MHS07/013

DEPARTMENT: PHARMACOLOGY

COURSE: PHS212

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.[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 four haploid cells.[3]

2.TESTOSTERONE

Testosterone is the primary male sex hormone and anabolic steroid.[3] 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.[4] In addition, testosterone is involved in health and well-being,[5] and the prevention of osteoporosis.[6] Insufficient levels of testosterone in men may lead to abnormalities including frailty and bone loss.

3.SEMEN

Semen, also known as seminal fluid, is an organic fluid created to contain 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. Cryoconservation of animal genetic resources is a practice that calls for the collection of genetic material in efforts for conservation of a particular breed.

4. THE MALE ORGAN

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 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. 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.

5. MALE INFERTILITY

Male infertility is any health issue in a man that lowers the chances of his female partner getting pregnant.

About 13 out of 100 couples can't get pregnant with unprotected sex. There are many causes for infertility in men and women. In over a third of infertility cases, the problem is with the man. This is most often due to problems with his sperm production or with sperm delivery. Making mature, healthy sperm that can travel depends on many things. Problems can stop cells from growing into sperm. Problems can keep the sperm from reaching the egg. Even the temperature of the scrotum may affect fertility. These are the main causes of male infertility:

Varicoceles

Varicoceles are swollen veins in the scrotum. They're found in 16 out of 100 of all men. They are more common in infertile men (40 out of 100). They harm sperm growth by blocking proper blood drainage. It may be that varicoceles cause blood to flow back into your scrotum from your belly. The testicles are then too warm for making sperm. This can cause low sperm numbers.

For more information please refer to the Varicoceles information page.

Retrograde Ejaculation

Retrograde ejaculation is when semen goes backwards in the body. They go into your bladder instead of out the penis. This happens when nerves and muscles in your bladder don't close during orgasm (climax). Semen may have normal sperm, but the semen cannot reach the vagina.

Retrograde ejaculation can be caused by surgery, medications or health problems of the nervous system. Signs are cloudy urine after ejaculation and less fluid or "dry" ejaculation.

Immunologic Infertility

Sometimes a man's body makes antibodies that attack his own sperm. Antibodies are most often made because of injury, surgery or infection. They keep sperm from moving and working normally. We don't know yet exactly how antibodies lower fertility. We do know they can make it hard for sperm to swim to the fallopian tube and enter an egg. This is not a common cause of male infertility.

Obstruction

Sometimes sperm can be blocked. Repeated infections, surgery (such as vasectomy), swelling or developmental defects can cause blockage. Any part of the male reproductive tract can be blocked. With a blockage, sperm from the testicles can't leave the body during ejaculation.

Hormones

Hormones made by the pituitary gland tell the testicles to make sperm. Very low hormone levels cause poor sperm growth.

Chromosomes

Sperm carry half of the DNA to the egg. Changes in the number and structure of chromosomes can affect fertility. For example, the male Y chromosome may be missing parts.