

Reproductive System

Reproductive system ensures the continuation of species. **Gonads** are the primary reproductive organs which produce the gametes (egg or ovum); a pair of testes (singular = testis) produces sperms in males and a pair of ovaries produces ovum in females.

Normally, most of the animals including humans are either definite males or definite females. However, in some organisms like earthworms and snails, both sexes may be present in the same organism and this condition is known as **hermaphroditism**.

Male Sex Physiology

Reproductive organs include:

- 1. Primary sex organs:** testes.
- 2. Accessory sex organs:** Seminal vesicles, Prostate gland, Urethra and Penis.

Functions of Testes

Testes performs two functions:

1. Gametogenic function: Spermatogenesis
2. Endocrine function: Secretion of hormones.

Gametogenic Functions of Testes – Spermatogenesis

Spermatogenesis is the process by which the male gametes called **spermatozoa** (sperms) are formed from the primitive **spermatogenic cells** (spermatogonia) in the testis. It takes 74 days for the formation of sperm from a **primitive germ cell**. Throughout the process of spermatogenesis, the spermatogenic cells have cytoplasmic attachment with Sertoli cells. **Sertoli cells** supply all the necessary materials for spermatogenesis through the cytoplasmic attachment.

Hormones Secreted by Testes

Testes secrete male sex hormones, which are collectively called the **androgens**.

Androgens secreted by testes are:

1. Testosterone

Role of testosterone

1. play a role in development of male reproductive tissues such as testes and prostate.
2. Increase muscle, bone mass.
3. Deepening of the voice and growth of facial hair.

2. Dihydrotestosterone

3. Androstenedione.

Among these three androgens, testosterone is secreted in large quantities. However, dihydrotestosterone is more active. Female sex hormones, namely estrogen and progesterone are also found in testes.

Semen is a white or grey fluid that contains sperms. It is the collection of fluids from testes, seminal vesicles, prostate gland and bulbourethral glands. Semen is discharged during sexual act and the process of discharge of semen is called **ejaculation**.

Sperm is the **male gamete (reproductive cell)**, developed in the testis. It is also called **spermatozoon** (plural = spermatozoa). Matured sperm is 60 μ long.

<i>Azoospermia</i>	It is the condition characterized by lack of sperm in semen.
<i>Oligozoospermia</i>	It is the low sperm count with less than 20 million of sperms/mL of semen. Oligozoospermia causes infertility .
<i>Teratozoospermia</i>	It is the condition characterized by presence of sperms with abnormal morphology. It is also called teratospermia . The abnormal morphology of sperm results in infertility .
<i>Aspermia</i>	It is the lack of semen. It occurs due to retrograde ejaculation. Retrograde ejaculation is the entrance of semen into urinary bladder instead of entering urethra.

<i>Oligospermia</i>	Oligospermia is a genetic disorder characterized by low volume of semen.
<i>Hemospermia</i>	Hemospermia is the appearance of blood in sperm. It occurs due to infection of urethra or prostate.

