

Vidya Bhawan Balika Vidyapeeth Lakhisarai

Arun Kumar Gupta

Class 12th

Subject Biology

Date 10.06.2021

Human Reproduction

1. Humans are sexually reproducing and viviparous organisms. There are remarkable differences between the reproductive events and systems in male and female.

2. Male reproductive system includes a pair of testes, accessory ducts, glands and the external genitalia.

(i) Testes are located outside the abdominal cavity within a pouch called scrotum.

Scrotum maintains the low temperature of the testes (2-2.5°C lower than the normal body temperature) required for spermatogenesis.

(a) Each testis is oval-shape (length 4-5 cm and width 2-3 cm) and covered by a dense covering called tunica albuginea.

(b) Internally it is divided into about 250 compartments known as testicular lobules.

(c) Each lobule contains 1-3 highly coiled (structural and functional units of testis) called seminiferous tubules in which sperms are produced.

(d) Seminiferous tubule is lined on its inside by two types of cells called male germ cells (spermatogonia) and Sertoli cells.

(e) Male germ cells undergo meiotic divisions finally leading to sperm formation.

(f) Sertoli cells provide nutrition to the germ cells.

(g) Interstitial spaces are present in outside regions of seminiferous tubules which contain small blood vessels and interstitial cells or Leydig cells.

(h) Leydig cells synthesise and secrete the testicular hormones called androgens.

(ii) Male accessory ducts include rete testis, vasa efferentia, epididymis and vas deferens.

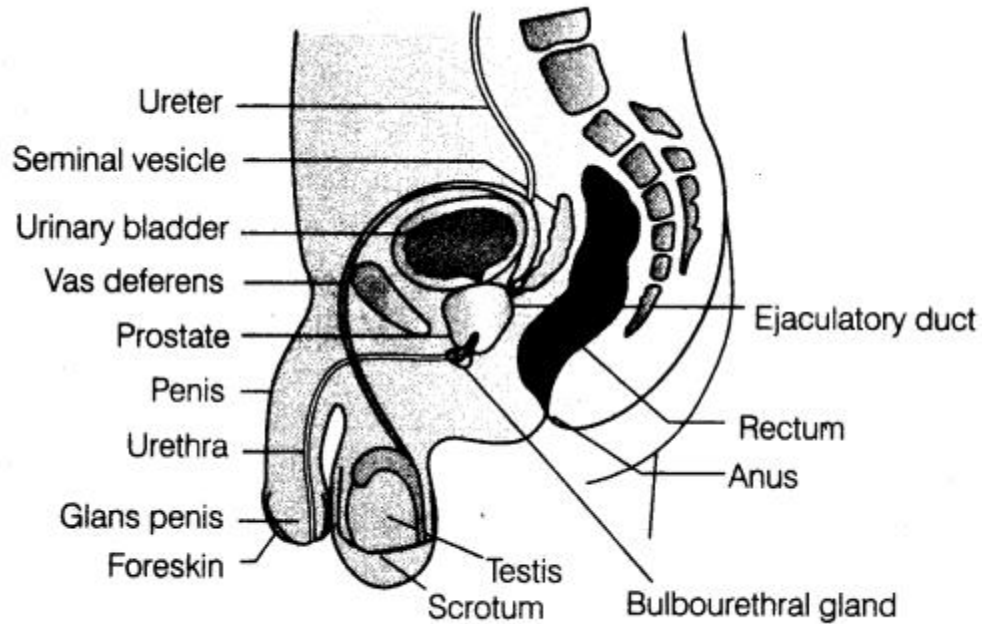
(a) The intratesticular duct system starts with tubuli recti, which are short, straight end segments of the seminiferous tubules. These tubules connect the seminiferous tubules to the highly anastomosing, cuboidal epithelium-lined channels called rete testis.

(b) From rete testis, 10-25 fine tubules arise called vasa efferentia that leave the testis and open into the epididymis.

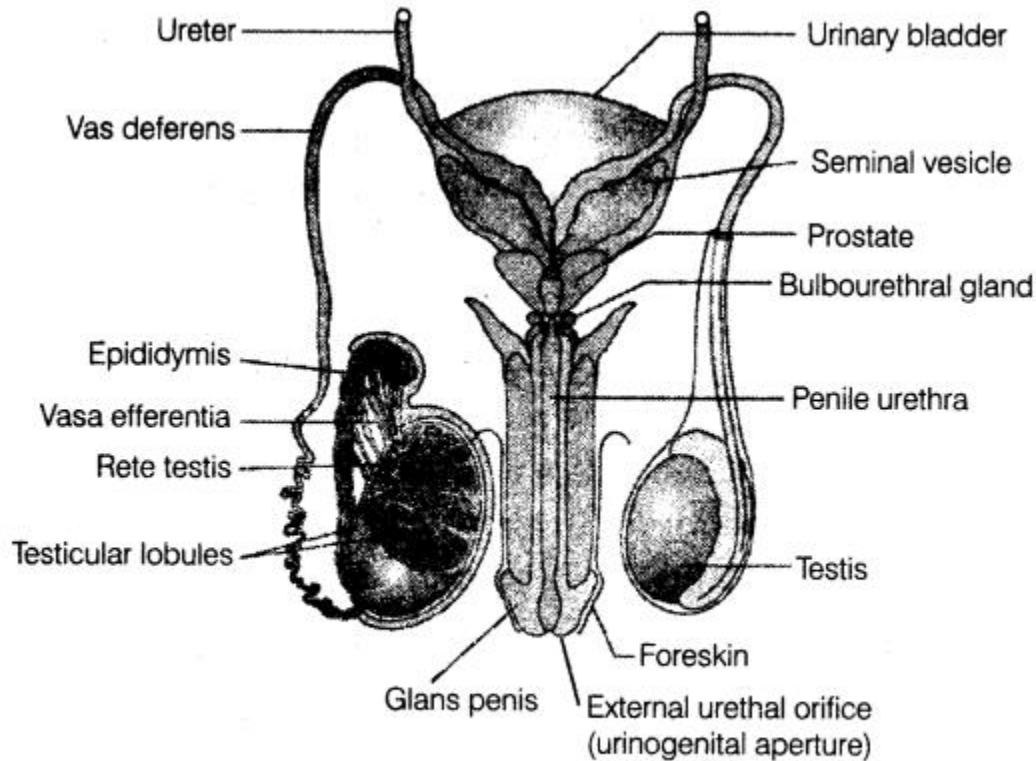
(c) Epididymis leads to vas deferens that ascends to the abdomen and loops over the urinary bladder.

Diagrammatic sectional view of male pelvis showing reproductive system

Diagrammatic view of male reproductive system [part of testis is open to show inner details]



Diagrammatic sectional view of male pelvis showing reproductive system



**Diagrammatic view of male reproductive system
(part of testis is open to show inner details)**

Urinary bladder receives a duct from the seminal vesicle to form ejaculatory duct that runs through the prostate and opens into urethra.

(e) Urethra receives the ducts of prostate gland and the bulbourethral gland (Cowper's glands) a little ahead and runs through the penis to its external opening called urethral meatus.

(iii) The accessory glands of male reproductive system include

(a) A pair of seminal vesicles, a prostate gland and a pair of bulbourethral glands (Cowper's glands).

(b) The secretion of all these glands is called seminal plasma.

(c) Seminal plasma contains fructose, calcium and some enzymes. It is to provide nutrition to the spermatozoa, while travelling through female reproductive tract.

(d) Seminal plasma along with sperms is called semen.

(e) Secretion of bulbourethral glands also helps in the lubrication of the penis.

(iv) External genitalia is the penis. It is made up of special erectile tissue that helps in erection of the penis. The enlarged tip of the penis is called glans penis. It is covered by a loose fold of skin called foreskin or prepuce.