

## What is the male reproductive system?

The male reproductive system is a collection of organs, glands and other body structures and tissues that regulate body development and function, sexuality and fertility.

### Components of the male reproductive system

- The brain
  - The hypothalamus is an almond-sized region at the base of the brain that regulates body function by receiving information from the brain and sending messages to the endocrine system (the system of glands, [hormones](#) and tissues that regulate function of the body).
  - Many other parts of the brain are involved in [sexual arousal and orgasm](#).
- The pituitary gland
  - The pituitary is a coffee bean-sized gland that sits below the hypothalamus. The hypothalamus and pituitary are connected by a stalk of tissue containing blood vessels that carry hormones from the hypothalamus to the pituitary.
- The testes (testicles)
  - The testes are two egg-shaped organs located in the left and right sides of the scrotum, below the base of the penis, outside the abdomen.
  - The testes are where sperm come from and where [testosterone](#) is produced.
- The epididymides
  - There are two epididymides, which sit slightly above and behind the testes.
  - The epididymis is a tube that is connected to the seminiferous tubules of the testis. The epididymis contains immature sperm from the testis (testicle).
- The vas deferentia
  - There are two vas deferentia, tubes about 2-3 mm thick, which extend from the tails of the epididymis to the prostate gland.
  - Each vas deferens carries sperm from the tail of the epididymis towards the prostate gland.
- The seminal vesicles
  - There are two seminal vesicles, each about 5 cm long, which sit behind and below the urinary bladder, on the left and right.
  - Each seminal vesicle connects to the vas deferens as it enters the prostate gland.
  - The seminal vesicles make around 60% of the seminal fluid and release it into the ejaculatory ducts.

- The prostate gland
  - The prostate is a muscular gland, about the size of a walnut, located immediately below the urinary bladder.
  - The prostate makes fluid that contributes about one-third of the volume of semen.
- The ejaculatory ducts
  - The ejaculatory ducts carry semen (sperm and seminal fluid) from the seminal vesicles to the urethra, within the prostate gland.
- The urethra
  - The urethra is a tube that extends from the base of the bladder to the tip of the penis.
  - The urethra carries urine from the bladder and semen from the prostate.
- Bulbourethral glands
  - There are two bulbourethral glands, about the size of peas, located to the left and right sides of the urethra, below the prostate gland at the base of the penis.
  - The bulbourethral glands make pre-ejaculate fluid, which they release into the urethra.
  - The bulbourethral glands are also known as Cowper's glands.
- The penis
  - The penis contains two 'tubes' of erectile tissue, the corpora cavernosa, and a spongy tube of corpus spongiosum.
  - The glans (head) is positioned at the end of the penis and surrounds the urethral opening.
  - The glans is covered by the foreskin, a sheath of skin that protects the glans.
- The scrotum
  - The scrotum is a pouch of skin under the base of the penis that contains the testes, epididymides and the first part of the vas deferentia.
  - Your scrotum allows your testes to be cooler than your core body temperature, which is necessary for normal sperm development.
- Sperm
  - Mature male sex cells.
- Semen
  - Fluid that is ejaculated from the penis during sexual activity; contains sperm and other fluids from the testes, prostate and seminal vesicles.

## How is the male reproductive system regulated?

Successful function of the male reproductive system requires an appropriate level of testosterone and production of sperm.

- The brain
  - To regulate reproduction, the hypothalamus makes gonadotropin-releasing hormone (GnRH), which acts on the pituitary gland.
- The pituitary gland
  - Under the control of GnRH from the hypothalamus, the pituitary releases follicle-stimulating hormone (FSH) and luteinizing hormone (LH) into the bloodstream.
- The testes
  - FSH acts on the Sertoli cells in the seminiferous tubules in the testes (together with testosterone) to stimulate production of sperm.
  - The Sertoli cells of the testes make and secrete a hormone called inhibin.
  - LH stimulates production of testosterone in the Leydig cells of the testes, which acts on Sertoli cells within the testes to support sperm production and enters the bloodstream for transport throughout the body.
- Feedback mechanisms
  - The outputs of the male reproductive system (testosterone and spermatogenesis) feedback to the brain and pituitary gland to regulate their own levels.

## Health effects of the male reproductive system

Problems can occur with every part of the male reproductive system, and if something goes wrong in one part, it may affect function in another. For example, both depression (in the brain) and [low testosterone](#) production (by the testes) can affect the [erectile function](#) of the penis.

Parts of the body that are not parts of the reproductive system can be affected by abnormal reproductive system function. For example, if testosterone production by the testes is low, your mood and [libido can be low](#), and your bones can lose strength.

Diseases that occur in parts of the body that are not part of the reproductive system can also affect reproductive function. As examples, [cardiovascular disease](#) can affect erectile function and diabetes can affect your testosterone levels.

Healthy Male's Health Condition webpages have information about problems that arise in the male reproductive system and throughout the body.

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