

## Reproduction in men

During puberty a boy's body is transformed into that of a sexually mature man by the action of male hormones, especially testosterone. The testicles are responsible for producing hormones and sperm. Sperm production happens continuously throughout a man's life, from puberty into old age. The only function of the sperm – the male sex cell – is to fertilise a female egg and create new life.

### Organs of the male reproductive system

The male reproductive organs include:

- **Penis** – contains tissue that fills with blood during sexual arousal, making the penis erect (or 'hard'). Semen is a mixture of sperm and fluid from the male reproductive organs. It exits the penis, through the urethra, during ejaculation.
- **Testicles** – sex glands located in the scrotum (a loose pouch of skin that hangs outside the body behind the penis and holds the testes in place). Sperm and sex hormones (for example, testosterone) are produced by the testicles.
- **Epididymis** – a network of tubes at the back of each testicle that collect and store immature sperm.
- **Vas deferens** – the epididymis eventually becomes the vas deferens, a larger tube that transports sperm to the urethra (the urinary passage from the bladder).
- **Accessory sex glands** – including the prostate gland, seminal vesicles and the bulbourethral glands. These glands contribute nourishing fluid to the sperm.

### Male hormones

Hormones are chemical messengers that are made by glands in the body. Androgens are the hormones that make men 'male'. They are responsible for sexual functioning, fertility and secondary sexual characteristics such as muscle mass, height, deep voice and body hair (including the beard). The most important androgen is testosterone, which is manufactured in the testicles.

Testosterone is partly converted to the more active androgen dihydrotestosterone (DHT) within the testicles and at other sites. Other weaker androgens include dehydroepiandrosterone (DHEA) and DHEA sulphate (DHEAS), which are made by other organs and tissues of the body (such as the adrenal gland, liver and skin).

### The hormonal chain of command

The pituitary gland is a pea-sized structure inside the brain that controls the functions of other glands within the endocrine (hormonal) system, including the testicles. For the testicles to produce testosterone and sperm, they must be stimulated by both luteinising hormone (LH) and follicle stimulating hormone (FSH) from the pituitary gland.

Before the pituitary gland can release these hormones, it must receive chemical instructions from the hypothalamus. This is an important brain structure that connects the nervous system to the endocrine system. The hormone released by the hypothalamus is called gonadotrophin-releasing hormone (GnRH).

Any disruption in this hormonal chain of command can reduce a man's testosterone production. Some of these possible disruptions include testicular conditions (such as undescended testicles) and tumours or other disorders of the pituitary gland or hypothalamus.

### Anatomy of a sperm

Men produce up to 30 billion sperm every four weeks or so. Sperm are 'born' in the seminiferous tubules within each testicle, then mature as they migrate through the epididymis. A sperm takes about 70 days to develop in the testis and must mature further during its passage through the epididymis. The average male sperm is around 60 microns long (one micron equals one thousandth of a millimetre) and consists of the head, neck and tail. The genetic information of the father is contained within the head of the sperm.

New life begins when a male sperm encounters a female egg (ovum) within the female reproductive system. The tail helps the sperm to 'swim' through the female reproductive system in search of an ovum. The average speed of a swimming sperm is about 3mm every minute, which is astonishingly rapid given its microscopic size. There are around 100 million sperm in each millilitre of ejaculate (semen).

### **The scrotum regulates temperature**

Sperm production requires a temperature of around 3°C lower than that of the body, which is why the testicles are housed in the scrotum. The scrotum loses excess heat through its extensive network of blood vessels. If conditions are too cold, the scrotum can contract to press the testicles closer to the body for warmth.

### **Conditions of the male reproductive system**

Some of the conditions and diseases of the male reproductive system include:

- Infertility
- Sexually transmissible diseases
- Androgen (testosterone) deficiency
- Undescended testicles
- Testicular cancer
- Prostate disease
- Erectile dysfunction or impotence.

### **Where to get help**

- Your doctor
- Family Planning Victoria Tel. (03) 9257 0100
- Andrology Australia Tel. 1300 303 878 – for information

### **Things to remember**

- Androgens are the hormones that make men 'male' and are responsible for sexual functioning, fertility and secondary sexual characteristics such as muscle mass, height, deep voice and body hair (including the beard).
- Sperm production requires a temperature around 3°C lower than that of the body, which is why the testicles are housed in the scrotum.
- The only function of the sperm – the male sex cell – is to fertilise a female egg and create new life.

**This page has been produced in consultation with, and approved by:**

Andrology Australia

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