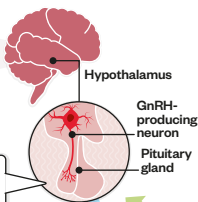


# MECHANISMS OF MALE CONTRACEPTIVES

Both hormonal and non-hormonal methods of male contraception are under development. Hormonal methods disrupt the normal hormonal feedback loop that controls sperm production, while non-hormonal methods interfere with spermatogenesis, sperm motility or passage out of the testis.

**1** Gonadotrophin-releasing hormone (GnRH), which is produced by the hypothalamus, stimulates the synthesis and secretion of luteinizing hormone (LH) and follicle-stimulating hormone (FSH) by the anterior pituitary gland.



## EXOGENOUS ANDROGENS AND/OR PROGESTIN

Exogenous androgens and/or progestin suppress release of GnRH, LH and FSH, causing an acute decline in sperm production.

**2** LH stimulates the testis to produce testosterone, a steroid hormone, which is important in sperm production.

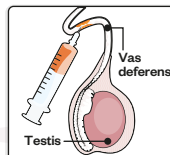


**3** The production of GnRH, LH and FSH are controlled by levels of testosterone. If testosterone levels rise, production of GnRH decreases, and vice versa.

## EPPIN INHIBITORS

Eppin inhibitors block a protein called semenogelin on the surface of human sperm. Eppin, with bound semenogelin, inhibits sperm motility.

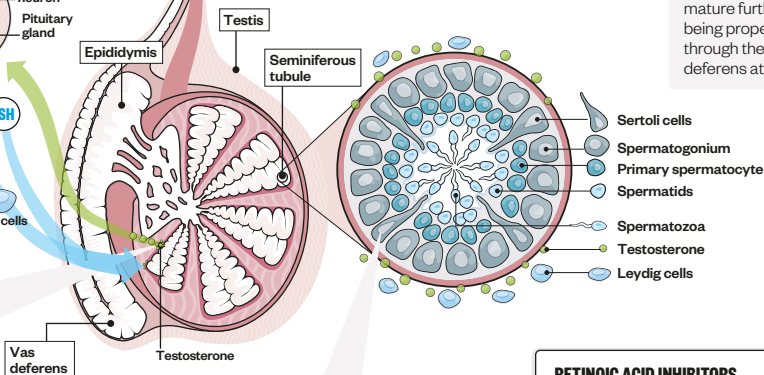
**4** Sperm are produced within the seminiferous tubules of the testis, which are lined with Sertoli cells. The Sertoli cells nurture the maturation of spermatogonia into spermatozoa, under the influence of FSH and high levels of intratesticular testosterone.



## BARRIER METHODS

Polymers and hydrogels are used to block the vas deferens, the duct that conveys sperm from the testis to the urethra.

**5** The sperm are then excreted into the epididymis where they mature further before being propelled through the vas deferens at ejaculation.



## RETINOIC ACID INHIBITORS

Retinoic acid inhibitors inhibit testicular retinoic acid biosynthesis, which is needed for differentiation of spermatogonia.

