Fertility Info

Male Fertility

What You Need to Know

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How does the male reproductive system work?

The male reproductive system is designed to manufacture, store and transport sperm. The hormones testosterone and Follicle Stimulating Hormone (FSH) regulate this process. Like sperm, testosterone is produced in both testicles, which are suspended in pouch-like skin sacs called the scrotum, located below the penis.

Sperm production begins when immature cells grow and develop within a network of delicate microscopic ducts, called seminiferous tubules, inside the testicles. Initially these new sperm cannot move on their own and depend on adjacent organs to become functional. They mature while travelling through the epididymis, which is a coiled channel behind each testicle.

When orgasm occurs, sperm are carried out of the body within seminal fluid secreted from various male reproductive glands, most notably the prostate and paired seminal vesicles.

What is male infertility?

Developing and transporting mature, healthy, functional sperm depend on a specific sequence of events occurring in the male reproductive tract. Many disturbances can occur along that path, preventing cells from maturing into sperm production or reaching the woman's fallopian tube, where fertilisation occurs.

Infertility may be caused by:

- The testicles producing fewer sperm
- Genetic factors triggering abnormal sperm production
- A number of lifestyle choices (e.g. smoking, alcohol and recreational drugs)
- Long-term illnesses (e.g. kidney failure)
- Childhood infections (e.g. mumps)
- Hormonal or chromosomal deficiencies (e.g. insufficient testosterone)

All of the above issues impair the normal production of sperm cells, which, in turn, decreases their number.

Other factors:

- **Azoospermia:** The chance of biologically fathering a child is non-existent if there are no sperm in the seminal fluid. Azoospermia (no sperm in the ejaculate) accounts for 10-15% of all male infertility. Azoospermia can be triggered by various hormonal or chromosomal deficiencies often linked to testicular failure; damage to the epididymis, vas deferens or ejaculatory ducts of the reproductive system; and congenital or acquired problems such as infections.

  Vasectomy is a prime example of an acquired factor causing azoospermia. By cutting and sealing the vas deferens to stop sperm from moving through the reproductive tract, pregnancy is prevented. Vasectomies can often be reversed (sperm may reappear in about 70% of men); however, half of these men will develop high levels of sperm antibodies, which reduce the sperm's ability to fertilise an egg. Low success with vasectomy reversal is associated with high antibodies, the length of time since the vasectomy was performed and the amount of vas removed.

- **Erectile Dysfunction:** The inability to produce a semen sample for Assisted Reproductive Technology treatment can cause complications. Impotence or erectile dysfunction (the inability to sustain an erection) is the most easily identified sexual problem linked to male infertility.

- **Retrograde Ejaculation:** A lesser-known issue, this involves the improper deposit of sperm and semen. In this case, the ejaculate content may be normal but instead of leaving the penis, it flows backwards into the bladder due to an improperly functioning bladder neck.

  Due to the range of fertility issues mentioned above, sperm may need to be retrieved surgically. As the sperm retrieved in these methods are immature and unable to swim well to fertilise eggs, the sperm can only be used in conjunction with Intracytoplasmic Sperm Injection (ICSI) treatment.

Types of Surgical Sperm Retrieval Techniques

- **Testicular Sperm Aspiration (TESA):** Initially a diagnostic procedure in azoospermic men, TESA is now sometimes used to recover sperm from the testicles of men with obstructions or ejaculatory problems that cannot be treated by any other methods. A fine biopsy needle punctures the skin to aspirate sperm tissue directly from the testes. Sperm are then dissected out of the tissue for use in the ICSI procedure.

- **Percutaneous Epididymal Sperm Aspiration (PESA):** PESA can be completed without a surgical incision. The procedure is done under local or general anaesthesia in which a needle attached to a syringe is inserted into the epididymis, and fluid is gently aspirated. The epididymis is the structure into which the sperm first flow after developing and leaving the testes. Sperm may not always be obtained in this manner and the doctor may have to perform an open procedure. This technique is used for men who have had a vasectomy and for those who have a congenital or acquired obstruction of the genital tract, such as absence of the vas deferens. The sperm retrieved can only be used in conjunction with ICSI treatment.
- **Microsurgical Epididymal Sperm Aspiration (MESA):** MESA is an operative procedure used to obtain sperm by opening the ducts in the epididymis. It is performed in the operating room under local or general anaesthesia. This technique is used for men who have had a vasectomy and for those who have a congenital or acquired obstruction of the genital tract, such as absence of the vas deferens. MESA is often performed when PESA has been unsuccessful. This sperm can only be used with ICSI treatment.

Where to Now?

I want more information

- Contact our Fertility Advice Team or
- Book a 15-minute nurse chat

I'm ready to take the next step

- Book an appointment with us
- Get a referral to City Fertility Centre from your GP for a semen analysis

New fertility patient referrals are guaranteed an appointment within 10 working days with the first available specialist.

Contact Us

Call 1300 354 354
Email contactus@cityfertility.com.au
Visit cityfertility.com.au

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