



Causes and Treatments for Male Infertility

Around one in six couples in Australia experience infertility. While it's often thought of as a female issue, in fact, one-third of infertility cases are caused by male reproductive issues, one-third by female reproductive problems and another third by both male and female reproductive challenges or by unknown factors.¹

If it seems that male infertility is more common today than in the past, then that's because it is. In the last 50 years, average human sperm concentrations dropped by 51.6 percent, and total sperm counts dropped by 62.3 percent.²

Whilst more research is needed, it is thought to be due to a variety of factors such as men becoming fathers later in life, environmental exposure to harmful chemicals, and lifestyle factors including changes in diet, exercise, and sleep patterns.

In most (though not all) cases it can be treated, and couples go on to have a healthy pregnancy.

Causes Of Male Factor Infertility

Anything that negatively impacts the numbers of sperm produced, its quality, or its motility (i.e. the ability to get to travel and reach an egg) will affect a man's fertility.

The most common causes of infertility in men include:

- Ageing
- Vasectomy
- Varicocele
- Anabolic steroid/exogenous testosterone use
- Medical treatment from chemotherapy/radiotherapy
- Chromosomal or genetic disorders, (e.g. Cystic Fibrosis, Klinefelter syndrome)
- Physical causes such as undescended testes, or injury
- Sexually transmitted disease or adult infection (e.g. mumps)
- Medications (e.g. some blood pressure medications, SSRI anti-depressants, long term use of proton pump inhibitors such as Nexium)
- Erectile dysfunction
- Ejaculatory disorders
- Obesity - particularly from the hormonal effect of visceral fat
- Recreational drug use
- Exposure to occupational and environmental toxins (e.g. agrochemicals)

1 in 6 couples will struggle with infertility



Anabolic Steroid Abuse

Androgen abuse, or the use of anabolic steroids, can have a significant impact on male fertility. Androgens are hormones that play a role in the development of male characteristics, such as muscle mass and body hair. Anabolic steroids are synthetic versions of these hormones that are often used to increase muscle mass.

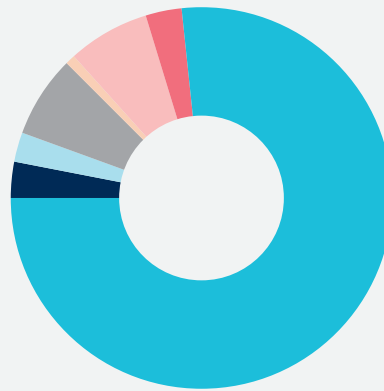
One of the most common ways in which anabolic steroids can affect fertility in men is by decreasing sperm count and motility. This happens because the steroids disrupt the normal balance of hormones in the body. External anabolic steroids raise blood levels of testosterone which switches off the signal to the testes to make natural testosterone. Low testosterone inside the testes is detrimental to sperm production and causes the testicles to shrink. Long-term use of anabolic steroids can also cause the body to stop producing testosterone naturally. This can lead to a decrease in testicular function and a host of other health problems such as cardiovascular disease, liver, and kidney damage.

There is no evidence that intermittent cycling of drugs reduces their impact, and these effects can sometimes be irreversible.

Recreational Drug Use

Use of recreational drugs is one of the leading factors that we see in male infertility, but one that mostly can be reversed by ceasing usage. Marijuana may help relaxation, but it has an unfortunately potent effect on sperm, reducing concentration, motility, and morphology which renders men infertile. Cocaine and methamphetamines use have a similar effect and they also cause oxidative stress, leading to DNA damage in sperm. Additionally, methamphetamine use can affect the hormonal balance in the body, leading to a decrease in testosterone production, which can negatively impact sperm production. In all but the most long-term or heavy users, the effects can be reversed by stopping drug use.

Causes of Male Infertility³



76.6%	UNEXPLAINED
3.2%	GENETIC
6.7%	TESTIS DAMAGE
1.1%	GONADOTROPHIN DEFICIENCY
6.7%	VASECTOMY
2.7%	OTHER OBSTRUCTIVE DISORDER
2.8%	ERECTILE AND EJACULATORY

Investigating Infertility

Vasectomy, ejaculatory problems, blockages, and genetic conditions represent less than a quarter of causes of infertility. The underlying reason for male infertility is unknown in 77% of cases. Further, in 20% of patients who have undergone standard semen analysis tests we find no sperm, or poor-quality sperm, with no obvious cause.

If you have unexplained infertility a Flinders Fertility doctor will work through a detailed medical and lifestyle history to investigate whether the underlying cause can be found. This will cover where you work, what sports you play, whether you take any drugs (prescribed or otherwise) and if you are routinely exposed (or have been in the past) to toxic chemicals. It may include blood tests to check for hormonal imbalance.

Treatments Available

The treatment for male infertility depends on the underlying cause.

Often making lifestyle changes such as losing weight, quitting smoking or drugs, and avoiding exposure to toxins can help improve sperm count and overall fertility without further intervention.

If sperm counts are low but not absent, sperm can be retrieved from a semen sample and used for simple procedures like Intrauterine insemination (IUI) or IVF, or it can be frozen and banked for future use.

If the underlying cause is found to be hormonal, an endocrinologist may prescribe medication to rebalance. At Flinders Fertility we have an experienced endocrinologist, who can test, diagnose and treat male factor hormone conditions.

Where sperm is still in the testes but cannot be ejaculated (e.g. in the case of vasectomies, retrograde ejaculation, or obstruction of the ejaculatory pathway), Testicular Sperm Extraction (TESE) and open testicular biopsy can be considered. The extracted sperm can then be injected directly into an egg using a technique called intracytoplasmic sperm injection (ICSI).

Where sperm are present, but they are abnormal, we may instead 'wash and prep' the semen sample in the lab to select healthy sperm and use ICSI to fertilise the egg.

It's important to note that in some cases, male infertility may be caused by a combination of factors or may be unexplained. In these cases, a combination of treatments may be necessary to achieve a successful pregnancy.

It's also important to note that not all infertility can be treated, and in some cases, couples may need to consider alternative options such as adoption, fostering, or using a sperm donor.

If you have been trying to conceive for over a year (or six months if your partner is 36 or over) then it's a good idea to get a referral from your GP for a fertility assessment for both of you.

¹ Fertility Society of Australia and New Zealand (FSANZ), Male infertility.

² Levine et al, Human Reproduction Update, Volume 29, Issue 2, March-April 2023, Pages 157-176.

³ From Table 7 Number of autologous and recipient cycles by male intending parent primary cause of infertility, Australia and New Zealand, 2022. Assisted Reproductive Technology in Australia and New Zealand 2022.

→ Please send all referrals via **HealthLink** to **FLINDFRT** or **enquire@flindersfertility.com.au** or fax **08 8155 5330**

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