

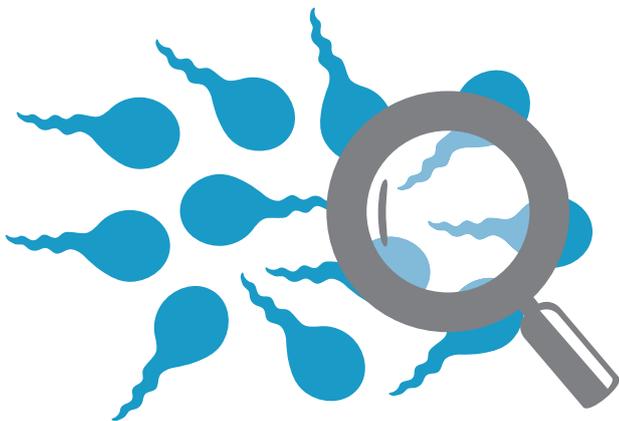
Male Infertility

Almost one third of fertility problems experienced by Australian couples are caused by male infertility. Approximately one in 20 Australian men has low numbers of sperm in his ejaculate, however, only about one in every 100 men has no sperm at all in his ejaculate.

Due to the fact it is often the female partner who presents to a medical professional to discuss difficulty conceiving, male infertility is often overlooked or investigated only after causes of female infertility have been exhausted.

However, with the advent of new effective treatments, identifying at the outset whether male infertility is present through a simple, non-invasive semen analysis can avoid putting women through the risk and discomfort of unnecessary invasive and expensive investigations such as laparoscopy.

For this reason it is strongly recommended both partners are present to discuss conception, investigations and the best course of treatment.



What is male infertility?

In general terms, a man's fertility relies on the quantity and quality of his sperm. If the number of sperm a man ejaculates is low or if the sperm are of a poor quality, it will be difficult, and sometimes impossible, for him to get his partner pregnant.

One of the challenges of dealing with potential male infertility is that in many cases there are no obvious signs of a problem. Usually, the patient will still be able to have sex, maintain erections and ejaculate without difficulty and the appearance and volume of ejaculated semen generally appears normal.

Causes of male infertility

The main causes of fertility problems in men involve one or more of these three areas:

- 1 Issues with sperm;
- 2 Physical issues; or
- 3 Medical/family history and hormonal issues

1. Issues with Sperm

Approximately two thirds of infertile men have sperm production problems - with low numbers being made, the sperm not functioning properly (poor motility or shape) or a combination of both problems.

There will be a decrease in fertility if the sperm are:

- Not being produced in adequate numbers (oligospermia - a normal amount is considered to be more than 15 million sperm per millilitre of semen). Or at all (azoospermia);
- Being produced but misshapen (poor morphology - at least two per cent of sperm should be perfect at any given time for maximum fertility);
- Being produced, but not swimming very well (poor motility);
- Being overheated in the testes; or
- Functionally impaired by antibody production in either partner which inhibits fertilisation between the sperm and egg.

2. Physical Issues

Sometimes it is a physical issue that is causing a couple to have trouble conceiving. Some of the most common ones include:

- Sperm being produced, but facing an obstruction that prevents them from being ejaculated;
- Erectile or ejaculatory dysfunction including secondary to spinal injury;
- Varicocele; and
- Urogenital anomalies such as undescended testes.

3. Medical/family history and hormonal issues

Other factors which can impact on a man's fertility may be found in his or his family's medical background. These are some of the issues that can affect fertility:

- Urogenital infection or surgery;
- A chronic medical condition such as diabetes or high blood pressure;
- Previous chemotherapy or radiation treatment for cancer;
- Infections such as mumps
- A family history of cystic fibrosis or other genetic disorders; or
- Hormonal problems

Male infertility can also be caused or exacerbated by a number of lifestyle choices including smoking, excessive alcohol or recreational drugs.

Diagnosis

The first step to diagnosing male infertility is a physical examination and then a semen analysis.

Blood tests may also be done to check the levels of hormones that control sperm production. Genetic investigations and testicular biopsies are sometimes done.

The basic analysis of semen tests the overall appearance, acidity/alkalinity and volume of the semen, measures the sperm concentration, motility and vitality, and assesses morphology.

Other tests that may need to be performed to assess the patient's situation include:

- Sperm Chromatin Integrity Test (SCIT) - is a test for sperm DNA fragmentation. High levels of DNA fragmentation in sperm can be a factor in miscarriage and male infertility;
- Semen microbiology - detects bacterial infections;
- Genetic tests - for men with severely depressed sperm counts, a genetic basis can be identified, and the likelihood of passing the condition on to the children can be assessed;
- Antisperm antibodies - tests can be performed on the semen or the blood; and
- Fructose testing - can indicate if there is a problem with the seminal vesicles (the gland which contributes the major part of ejaculate volume). This test is done routinely in all cases of Azoospermia.

Treatment

The good news for men is that many of the sperm conditions affecting fertility can be overcome and some are actually reversible. Unlike oocytes in women that are all made before birth, men continue to produce new sperm throughout their life, offering the opportunity to improve fertility in some cases. It takes

approximately 11 weeks for new sperm to be produced and fully mature so, for men who are experiencing sperm problems due to lifestyle factors, a little over two months of clean living may help them produce healthier, better quality sperm.

In the past, treatments for male infertility tried to change semen parameters using medical or surgical techniques and were largely ineffective. Current methods like IVF or ICSI (Intra-cytoplasmic sperm injection) are highly effective in helping the sperm to fertilise the egg. New, emerging methods have allowed us to help men who are azoospermic, and achieve safer and better treatment results with selection of sperm with low levels of DNA fragmentation.

Blind testicular biopsy to retrieve sperm in men with non-obstructive azoospermia can damage blood vessels and cause unnecessary loss of testicular tissue (where hormone production cells are located) with lower chance of sperm recovery, particularly in men with sparse sperm production and small testicular size. In contrast, testicular microdissection is a new technique to localise and selectively remove those tubules within the testes that contain sperm utilising high-powered operative microscope. Compared to simple or multiple blind testicular biopsies, microdissection provides better sperm recovery in this subset of men, while minimising the loss of testicular tissue and reducing complications by avoiding blood vessels.

Another important and not infrequent cause of male infertility is sperm DNA fragmentation that can result from oxidative damage secondary to cigarette smoking, concurrent infections/ill-health or increasing age.

Sperm DNA fragmentation should be assessed if couples have a history of unsuccessful IVF cycles despite the availability of embryos for transfer. Treatment options for men with high levels of sperm DNA fragmentation can include increasing antioxidant intake through dietary changes or nutritional supplements, and addressing other factors such as cigarette smoking or infections.

Shortening the sperm transit time by frequent ejaculation can also help reduce sperm DNA fragmentation. Less damaged sperm can be selected for fertilisation using specific sperm washing and selection techniques such as (PICSI) Physiological Intracytoplasmic Sperm Injection.

Another option when the above fails, is to obtain sperm directly from the testes via a testicular sperm needle aspiration before they are damaged during their transit down the epididymis.

**For further information, call our
Genea Fertility Advisor on
1300 361 795**