Male Infertility

Reversible Conditions

There may be medical or environmental causes for poor sperm count, quality or both. Additionally, recent illnesses, recent drug treatments, regular heavy alcohol consumption, steroid hormone use, obesity, frequent hot baths or saunas and failure to follow correct specimen collection instructions can result in abnormal semen analysis results. As any serious illness may affect sperm production for up to three months, a repeat test may be required after the initial test as this may provide a different result. You should advise your Melbourne IVF Fertility Specialist if any of these factors are involved.

Fertility Preservation

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Before you begin chemotherapy or radiotherapy treatment, your sperm can be frozen and stored until you wish to start a family. Even if the sperm profile is poor, as is common during times of illness, it is usually possible to store sufficient sperm for use in IVF in the future.

Men who have to travel overseas or work in dangerous situations may also want to have their sperm frozen for possible use in the future.

Organising semen analysis at Melbourne IVF

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More Information

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Understanding fertility in men

Conceiving a baby depends on a number of factors, including healthy sperm. After a woman’s age, this can be the biggest issue. Reproduction, although simple and natural for many couples, can often be a challenge for others.

Male factor infertility affects around half of all infertile couples, so it is important to understand how the male reproductive system works.

Producing sperm

Sperm production starts in the testes, where the hormone testosterone is produced. An average of 100 million sperm is produced every day in healthy young men. After sperm is produced, it will need to travel along a lengthy channel system starting at the epididymis, maturing along the way, before exiting via ductal structures called vas deferens and the urethra.

The entire process of sperm production and maturation takes just under three months. Any serious illness may affect sperm production for up to three months.

A sperm consists of the head, mid-piece and tail sections. To successfully fertilise an egg, the sperm needs to have good motility (be able to move its tail) to propel itself through cervical mucus to then travel through the uterus and fallopian tube to reach the egg. It will also need to be normally shaped in order to penetrate the outer shell of the egg to deliver the genetic package contained in its head.

It is usually a good sign if you have conceived in the past, but this may not mean that your sperm is compatible with your current partner.
What causes male infertility?

Infertility is defined as a couple not conceiving after 12 months of regular unprotected sexual intercourse. For men, infertility is diagnosed when, after testing of both partners, reproductive problems have been found in the male partner.

Abnormal Sperm Production

The most common causes of male infertility are called:

- **Azoospermia** – where no sperm cells are found in the semen liquid.
- **Oligospermia** – where few sperm cells are produced.
- **Teratospermia** – where a high proportion of sperm is abnormally shaped.

Sometimes, sperm cells are malformed or die before they can reach the egg. In rare cases, a genetic condition such as cystic fibrosis or a chromosomal abnormality can cause male infertility.

Lifestyle

Other factors that may affect sperm quality include:

- Smoking;
- Excessive drinking;
- Drugs, including steroids and recreational use;
- Weight and Body Mass Index (BMI);
- Frequent exposure to extreme heat (working in hot temperatures, or regular saunas);
- Acute viral illness.

Male infertility tests

Semen Analysis

A semen analysis is the first, and often the only test, required to determine whether or not a male is experiencing fertility problems.

- **Sperm Count** – low sperm count may contribute to a couple’s infertility.
- **Sperm Motility** – if the sperm do not swim in a good forward-progressive manner it may not find its way to the egg.
- **Sperm Morphology** – if a very high proportion of the sperm in the semen sample is abnormally-shaped, this may result in its inability to penetrate and fertilise the egg.
- **Sperm antibodies** – which might interfere in the ability of sperm to swim or bind to the egg.

Sperm Quality Fluctuates

![Sperm Quality Fluctuates Diagram](image-url)

- Normal
- Giant
- Micro-sperm
- Double Head
- Double Body
- Long Head
- Rough Head
- Abnormal Middle Piece
Y Chromosome Abnormalities
Men with very low sperm counts or no sperm at all in their semen may have small parts of their Y chromosome missing. Diagnosis of the causes of chromosome abnormalities may require a blood test, known as DAZ Deletion Test.

The benefit of this test is its ability to predict the likelihood of finding small numbers of sperm in the testes; that can be extracted and used in IVF.

Knowledge of DAZ deletions also allows for consideration of the likelihood of passing on the genetic abnormality. If genetic abnormalities are found, a couple must be counselled as a genetic problem causing infertility may be inherited by the male child (although this is rare).

Managing male infertility

IVF with IntraCytoplasmic Sperm Injection (ICSI)
ICSI treatment is usually recommended for couples where male infertility is a problem, especially relating to the number or quality of sperm produced. ICSI can also be used in cases where a man has had a vasectomy. It involves the direct injection of a single sperm into each egg using sophisticated equipment.

The condition of azoospermia requires careful evaluation and a possible search for sperm in the testis using a technique known as testicular biopsy, where sperm is obtained by needle biopsy of the testis under local anaesthesia.

Testicular Biopsy
In some instances, microsurgery of the testis (open testicular biopsy) is utilised to more accurately find sperm in the seminiferous tubules. This is also done as a day procedure and a few days convalescence is required.

Vasectomy Reversal
A vasectomy reversal may be the preferred option for men who wish to conceive with a new partner. The potential benefit of this procedure should be thoroughly discussed with the fertility specialist as not all cases are suitable to undergo the procedure. This is performed as a day surgery procedure utilising the operating microscope. As the surgery involves very tiny sutures, a week at least must be set aside to aid healing and prevent injury to the especially small area of the vasectomy reversal site. Ejaculation must not occur for 2 weeks and no strenuous activity until discomfort and swelling has disappeared. A semen analysis to evaluate re-establishment of the sperm pathway should be done at 6–8 weeks following surgery.

Donor Insemination
For many couples confronted with severe male infertility, donor sperm is an alternate treatment option. Sperm donors are screened for prescribed genetic and infectious diseases. The decision to use donated sperm is a major consideration for couples. Melbourne IVF provides a thorough counselling process to discuss all aspects of the treatment prior to proceeding.
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