



**RAINBOW FERTILITY**

*your dream, our passion*

Pre-treatment

## SEMEN ANALYSIS

### *What is Semen Analysis?*

A semen analysis evaluates the amount and quality of a man's semen and sperm to determine male fertility. This test is sometimes called a sperm count.



### *Why is it done?*

Semen analysis allows to select the best-quality sperm to enable fertilisation to occur.

A semen analysis can help clarify whether a man has a reproductive problem that could possibly stop his sperm from fertilising an egg. Although the actual fertility of a semen sample cannot be completely determined until it is known to achieve fertilisation, careful and thorough analysis of all the semen's parameters in a specialised laboratory can allow to determine what fertility treatment options are recommended.

A severely low sperm count or low motility may indicate the need for an advanced approach, whereas a normal semen analysis might suggest a more conservative approach. With use of the right technology, even men with severe male-factor infertility have options to achieve the birth of their own biological child. In most cases of male-factor infertility, the exact cause of the problem is usually unknown.

Semen analysis is best performed by scientists with extensive experience, following the guidelines and criteria of the World Health Organisation\* (\*WHO Laboratory Manual for the Examination and Processing of Human Semen – fifth edition).

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## How is it done?

A semen sample is usually collected by masturbation, directing the semen into a sterile container. No lubricants should be used as it will kill the sperm. It is a common misunderstanding of some male patients that they can improve their semen by "storing it up." In actual fact this is not true. Two to five days of abstinence are recommended before a semen analysis, to ensure the reliability of the test. Longer periods of abstinence may affect the accuracy of the results (less active sperm).

Generally, it is preferable that men produce their sample in the comfort of their own home and deliver the sample to the laboratory within one hour. The sample should be kept close to body temperature. For patients who live further afield, the clinic has a discreet private room available.

## What the scientists look for:

In the laboratory, the scientists analyse the following parameters:

- **Motility:** movement of the sperm (swimming ability).
- **Morphology:** percentage of sperm that have a normal shape.
- **Count:** the number of individual sperm present in one ejaculation.

In addition, the presence of anti-sperm antibodies can also be detected.



A normal sperm, consists of three main regions that each plays an essential role in achieving the ultimate goal of fertilising the egg. The scientists assess the morphology of each of these regions in order to give an overall incidence of normal morphology.

1. **The head**, which is oval in shape and contains the genetic information. It also has a region known as the acrosome that is responsible for the release of enzymes involved in the fertilisation process.
2. **The midpiece** contains mitochondria, which are responsible for generating the energy required to "swim" towards the egg.
3. **The tail**, which contains microtubules that propel the sperm along the female fallopian tubes.

### INTERPRETING SEMEN ANALYSIS RESULTS

PARAMETER	NORMAL RANGE
Volume	> 1.5ml
Sperm concentration	> 15 million sperm/ml
Normal morphology (Shape)	> 4%
Motility	> 32% with forward progression

## Factors that may contribute to male-factor infertility

In the human it takes **64 days** to produce fully functional, mature sperm. Although many of the factors that can affect sperm production are still scientifically unknown, the following have been proven to have a negative effect upon sperm quality:

- Smoking.
- Excessive alcohol intake.
- Recreational drugs.
- Some herbal supplements.
- Prolonged exposure to chemicals, such as pesticides and heavy metal.
- Illness, such as particular fevers.
- Excessive exposure to heat, such as sitting with the laptop on the lap and being in the sun for long periods.



## Understanding the scientific terms used

When parameters fall outside the normal ranges, as mentioned in the table above, the following terms are used to define the condition:

**OLIGOZOOSPERMIA:** Reduced number of sperm present.

**TERATOZOOSPERMIA:** Reduced number of normal-shaped sperm.

**ASTHENOZOOSPERMIA:** Reduced number of motile/progressive sperm.

**AZOOSPERMIA:** No sperm present in entire ejaculate.

## Treatment options available for male-factor infertility

### Intra-Uterine Insemination (IUI)

Generally recommended when the semen result is normal or with mild parameters. Motile sperm are separated and concentrated from the seminal fluid and inseminated into the woman's uterus around the time of ovulation. A sperm-washing procedure separates the motile sperm from the seminal fluid and activates sperm motility. This can improve the chances of conception by increasing the number of motile sperm that reach the egg.

### In Vitro Fertilisation (IVF)

IVF is generally recommended when there is mild or moderate male-factor infertility. The semen sample is washed and concentrated, and by directly placing eggs and sperm together in the laboratory the chances of successful fertilisation are increased. The resulting embryos can then be transferred into the uterus of the woman carrying the pregnancy.

### Intracytoplasmic Sperm Injection (ICSI)

This is performed in conjunction with IVF and usually recommended for severe male-factor infertility. This technique maximises fertilisation rates by directly injecting a single sperm into a mature egg using micromanipulation pipettes. The introduction of this technique has revolutionised the options available in cases of severe forms of male infertility.

### Sperm Aspiration (Testicular Sperm Aspiration - TESA)

This is performed in conjunction with IVF and ICSI. In men who are diagnosed with azoospermia, sperm may be obtained directly from the epididymis or testicular tissue. There are two main reasons why the sperm may be absent from the semen:

- 1. Obstructive Azoospermia:** This is the result of a blockage in the male reproductive tract. Sperm production in the testicle is normal but the sperm are not ejaculated from the epididymis as seen in patients who have undergone a vasectomy.
- 2. Non-obstructive Azoospermia:** This is the result of severely impaired or non-existent sperm production. A diagnostic procedure is usually recommended to confirm the presence of sperm.

### PLEASE NOTE:

- **For the health and safety of our donors, surrogate and recipient, any embryos created must be quarantined for six months.**
- **People wishing to have assisted reproductive treatment in Victoria must undergo a criminal records check and child protection order check.**
- **All treatment procedures are carried out in our RTAC (Reproductive Technology Accreditation Committee) accredited fertility clinics, where gametes (eggs/sperm) and embryos are also stored.**

*Take the first step and contact our friendly team*

## Where to now?

### I WANT MORE INFORMATION

Contact our Fertility Advice Team

### I'M READY TO TAKE THE NEXT STEP

Book an appointment with us and get a referral to Rainbow Fertility from your GP

**1300 222 623**

**info@rainbowfertility.com.au**

**rainbowfertility.com.au**



## LEGAL CONSIDERATIONS

Rainbow Fertility encourages all individuals/couples to seek independent legal advice before taking part in the donor program.

An initiative of City Fertility Centre

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