

# Understanding Infertility



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Infertility is defined as the inability to conceive a pregnancy after 12 months of unprotected sexual intercourse. It could be argued that the inability to successfully carry a pregnancy should be included in the definition. It is important to remember that you are not alone. 1 in 6 Australian couples experience difficulties in conceiving.

To achieve a successful pregnancy there are several prerequisites: good quality eggs and sperm, an open fallopian tube and a receptive lining of the uterus. A problem with any of these factors will reduce fertility and may cause infertility.

The number one factor affecting a couple's chance of conceiving is the woman's age.

The normal expected chance of conception in a 25 year old couple is approximately 20% in any one month – this chance decreases with age. After a woman's age, male related fertility problems are the second most common cause of a couple's infertility.

## Causes of infertility include

- Male (sperm) factor
- Ovulation disorders
- Tubal disease
- Endometriosis
- Anatomical factors such as fibroids and other uterine abnormalities
- Factors such as antibodies to sperm may also reduce the ability to conceive
- Combination of male and female factors
- In some couples no cause for infertility is able to be found. This is called **unexplained infertility**.

## Assessment plan

After a thorough history and examination, several tests can be performed to estimate a couple's chance of natural conception. These include a semen analysis for the male and blood hormone tests for the female. An important new test for women is the Anti-mullerian hormone blood test that gives a very good indication of the number of eggs a woman has left in her ovarian reserve and therefore how much time she has to conceive. Furthermore an anatomical assessment of the female's pelvis to exclude tubal disease, uterine abnormalities &/or endometriosis may be performed. For this an ultrasound, x-ray and/or keyhole surgery (laparoscopy) can be used. Once the assessment has been made, a personalised treatment plan can be formulated, beginning where possible, with the simplest, most natural options.

Treatments include	
Ovulation induction	Medications (oral or by injection) are used to stimulate egg production and often used with timed sexual intercourse or insemination.
Insemination	With this technique prepared sperm is inserted into the female's uterus at the most fertile time. This technique may use the male partner's sperm or, if required, donor sperm.
Fertility surgery	This includes the treatment of endometriosis, tubal microsurgery, the removal of fibroids and the correction of uterine abnormalities.
In vitro fertilisation (IVF)	After a course of ovarian stimulation, the eggs are collected from the ovaries using ultrasound-guided transvaginal needle aspiration. These eggs are placed in a dish with sperm allowing fertilisation to occur and some of these eggs go on to form embryos. Usually one or two embryos are then transferred back into the uterus using a small plastic tube and some can be frozen and stored for future transfer.
Intracytoplasmic Sperm Injection (ICSI)	This is a different, more sophisticated, form of IVF where the scientist injects a single sperm into the egg to assist fertilisation. This technique is an excellent treatment if the sperm is of poor quality.

## Treatments (CONT)

Blastocyst culture	This procedure involves the growth of the embryos for 5 days in the laboratory. This technique may help with embryo selection and give further information about embryo development.
Freeze storage of embryos	Some people will have excess good quality embryos following an IVF or ICSI treatment and these can be freeze stored for future transfer.
Fertility preservation	Men and women diagnosed with cancer who wish to conceive at some stage in the future may need to consider techniques to preserve their fertility as some forms of cancer therapy can affect their fertility.
Freezing mature oocytes (eggs)	Recent research into egg freezing is so far very promising. We are currently carrying out research on the Cryotop technique for freezing eggs. Egg freezing is currently offered to specific groups of patients such as those undergoing cancer therapy, but it may in the future be offered more widely to different groups such as single women.
Egg, sperm & embryo donation	We assist people who may require donor sperm, eggs or embryos in order to achieve pregnancy (both known and de-identifiable donors). We offer a comprehensive program to ensure that all legal, social and ethical issues are properly considered. See separate booklets for information on these options.
Genetics & Preimplantation Genetic Diagnosis (PGD)	We have genetic counselling available to assist couples with known or suspected genetic problems. Preimplantation Genetic Diagnosis is the earliest form of prenatal diagnostic screening which aims to prevent embryos carrying a genetic abnormality being transferred into.

## Advanced laboratory techniques

Sometimes when IVF is initially unsuccessful, a number of technological advances can be applied to give success in different cases.

### Assisted hatching

In some cases of IVF, the embryo does not implant because the shell (the zona) of the embryo is too thick to allow the embryo to hatch through it. Using micro-lasers, the scientists can carefully thin the shell of the embryo to make it easier for the embryo to implant.

### Oosight technology

The use of Oosight technology (previously known as PoIScope) gives the scientist the ability to determine if the genetic material is visible in the egg, where the genetic material is in the egg, and which eggs may have the best pregnancy potential. This approach is most useful where there have been past problems with fertilisation or implantation of the embryos.

### Digital High Magnification

In some couples with otherwise unexplained infertility, the only problem that can be identified is a higher than usual level of fragmentation of the DNA (genetic material) in the sperm. This means that the sperm may not be able to fertilise the egg. Digital High Magnification is an advanced technique enabling scientists to view and select sperm most likely to produce a viable pregnancy.

### Advanced Embryo Selection™

Advanced Embryo Selection™ preimplantation genetic diagnosis is a new technique to screen all the chromosomes in a developing embryo, with overnight results allowing selection and transfer of the embryo with the greatest likelihood of IVF success. A day 3 embryo is biopsied so that, with rapid results, a patient's cycle can continue with a fresh embryo transfer.

### Counselling services

All our team are highly experienced in helping patients cope with the emotional aspects of IVF. We also have an experienced fertility counselling team (all psychologists) to support our patients with decision making throughout the treatment process and for follow-up support.

# IVFAustralia's Network of Care

● Clinic     
 ● Consultation & Monitoring     
 Consulting Rooms

<span style="color: purple;">●</span> Bondi Jn	16th Floor Westfield Tower 2, 500 Oxford St	8305 9800
<span style="color: purple;">●</span> Burwood	Suite 18 Level 7, 74-76 Burwood	8346 6840
<span style="color: blue;">●</span> Castle Hill	Suite 4, 15-17 Terminus St	9894 4419
<span style="color: blue;">●</span> Dee Why	Level 3, 834 Pittwater Road	9950 6000
<span style="color: purple;">●</span> Gosford	Level 2 Suite 24, 207 North Albany St	4349 2000
<span style="color: purple;">●</span> Greenwich	Level 2, 176 Pacific Highway	9425 1600
<span style="color: purple;">●</span> Haymarket	Level 5 Sussex Centre 401 Sussex St	9281 3822
<span style="color: purple;">●</span> Kogarah	Level 3 St George Private Hospital South St	8567 6955
<span style="color: blue;">●</span> Liverpool	Ground Floor 16-18 Bigge St	8844 1575
<span style="color: purple;">●</span> Maroubra	Level 1, 225 Maroubra Rd	8372 3200
<span style="color: purple;">●</span> Miranda	Suite 4, 20-24 Gibbs St	8567 6980
<span style="color: purple;">●</span> Newcastle	The Heights Private Medical Centre 2 Lookout Rd New Lambton Heights	4957 8515
<span style="color: purple;">●</span> St Leonards	16 Marshall Ave	9439 3158
<span style="color: purple;">●</span> Sydney CBD	Level 1, 33 York St	8346 6800
<span style="color: blue;">●</span> Wahroonga	Suite 103 Tulloch Building Sydney Adventist Hospital 185 Fox Valley Road Wahroonga	9425 1780
<span style="color: purple;">●</span> Westmead	Level 2, 20-22 Mons Rd	8844 1550

