Fertility EAST

Assisted Conception Clinic

Patient Information

2010

(02) 9389 1177

Our success is your baby

www.fertilityeast.com.au

Fertility EAST

Assisted Conception Clinic

PATIENT INFORMATION BOOKLET

Version 13: January 2010

FERTILITY EAST
LEVEL 26, WESTFIELD TOWER 1
520 OXFORD STREET
BONDI JUNCTION 2022

Postal Address:
PO Box 345
BONDI JUNCTION 1355

Telephone: 02 9389-1177
Facsimile: 02 9387-8580

Email: coordinator@fertilityeast.com.au
Website: www.fertilityeast.com.au

ABN: 22 482 157 084

Accreditation Status: NATA/RCPA / application No 15538
RTAC

Hours of Business:
Monday to Friday: 8.00am - 4.30pm
Saturday: 9.00am- 1.00pm
Public Holidays: 9.00am- 1.00pm

Bloods/Injections:
Monday to Friday: 8.00am 9.30am
Saturday: 9.00am 9.30am

Ultrasounds:
Monday to Friday: 8.00am - 9.30am by appointment
(NB: no ultrasound services operate on Public Holidays)

EMERGENCY CONTACT:

PROCEDURE

Phone the clinic on 02 93891177

During Working Hours
Speak to the nurse co-ordinator

After Hours
The answering machine will have the contact details of the nurse coordinator on call, and please call this number (note that the machine does not take messages)

In the event of being unable to contact the nurse co-ordinator please contact your local General Practitioner, or go to the nearest accident and emergency service of your local hospital of DIAL 000

DEALING WITH MEDICAL PROBLEMS CONCERNS
During the Fertility Program, very occasionally you may experience the following severe symptoms and we advise that you contact the clinic and speak to the nurse co-ordinator.

Symptoms:
Increasing or severe abdominal pain
Nausea and vomiting
Difficulty in breathing
Abnormal and increasing vaginal bleeding
Unexplained fever
Rapid and unusual swelling of the abdomen
If you are pregnant and start to bleed or have abdominal cramps

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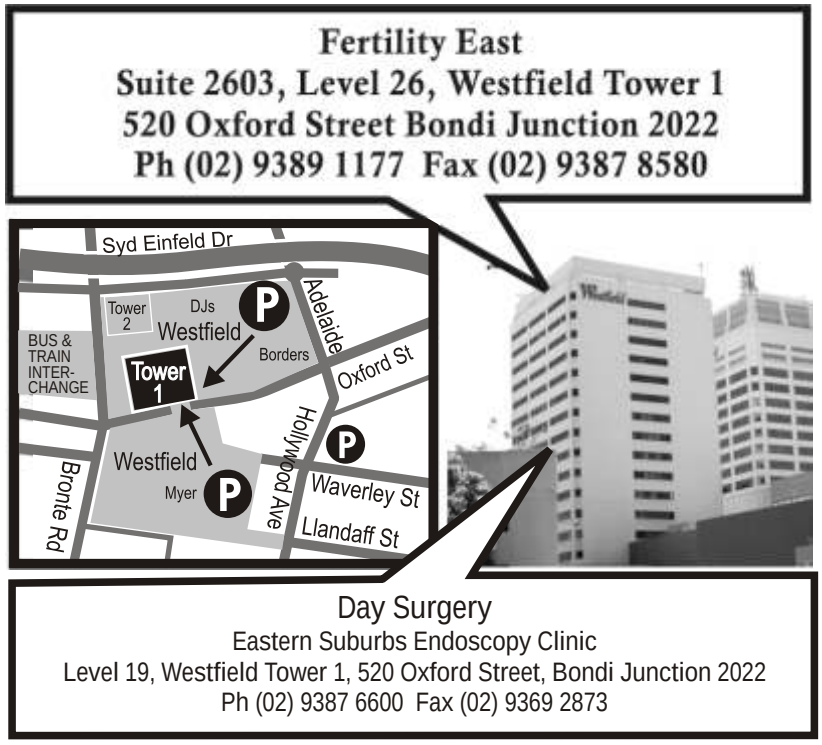
MISSION STATEMENT

Success Service Soul

Fertility East is committed to providing the most technologically advanced Assisted Reproductive Technology services in a caring, supportive environment. Our mission is to offer every patient the very best chance for a successful pregnancy and healthy baby.



Our success is your baby

INTRODUCTION

Fertility East is a special centre dedicated to the diagnosis and treatment of infertility. These services are provided by our accredited fertility specialists. For your treatment all patients need to be referred to one of our fertility specialists by either your general practitioners or other medical specialist.

You must maintain a current GP referral with this specialist gynaecologist for the duration of any treatment coordinated by Fertility East. Your fertility specialist will ensure that the necessary preliminary investigations have been completed and will then plan and supervise all of your treatment through Fertility East. Whenever possible, you will have procedures attended to by your own specialist, however for some parts of your treatment, it may be one of the other specialists who attends to your procedure on your own specialist's behalf (for example, a weekend roster of the specialists currently operates for embryo transfers).

Fertility East Specialist Gynaecologists (Infertility Specialists)

Level 26, Westfield Tower 1, BONDI JUNCTION 2022
Telephone: 02 9389-1177 Facsimile: 02 9387-8580

Dr Joel Bernstein
BSc MB ChB (Rand) FRCOG FRANZCOG
Fertility Specialist
Medical Director

Dr Julie Lukic
MBBS FRANZCOG
Fertility Specialist & Obstetrician

Dr Polly Peres
MBBS (Syd) FRANZCOG
Fertility Specialist & Obstetrician
Laparoscopic & Vaginal Surgeon

Dr Jenny Cook
MBBS (Syd) FRANZCOG
Fertility Specialist
Laparoscopic & Vaginal Surgeon

Fertility East Support Staff

Senior Clinical Co-ordinator
Carolyn Gee
RN DipEd

Nurse Co-ordinators
Vanessa Logan
RN BN

Cathy Morris
RN

Donor Co-ordinator
Estelle Kremer

Counsellors
Beverley Aronstan
B.SOC(Hons), Grad.Dip(Psych),HDE,P.Grad.Dip(Rel)

Dorianne Jacobson
B.A.Social Work, B.A.Hons (Psych.),M.A.(Clin. Psych.), MAPS

Scientific Director
Dr Chris Copeland
PhD

Laboratory Manager
Dr Lakshmi Mathiyalagan
M.Sc., PhD

Scientists
Denyse Asher
BSc Chemistry & Reproductive Biology

Asthma Chhotani
BSc (MLT) MSc (BMT) Masters of Clinical Embryology

Sarah Periyasaral
BSc (Microbiology) Masters of Clinical Embryology

Administration
Leesa Balchin

Reception
Vanessa Ferguson
Meghan Heatrick

WHO NEEDS ART?

ART (ASSISTED REPRODUCTIVE TECHNOLOGY PROCEDURES)

It is a staggering fact that up to one in ten couples find that at some time during their life they need assistance to become pregnant. Not all couples need to embark on an IVF procedure. Many simply need to establish their fertile times or have artificial insemination, or sometimes use medication to assist ovulation. Initially couples may seek the advice of their own GP, who may then refer them to the infertility specialists at Fertility East.

In a natural pregnancy the egg and the sperm meet in the fallopian tube where fertilisation takes place and the resulting embryo implants in the uterine lining. But for those women with blocked fallopian tubes or whose tubes have been damaged by infection, surgery or endometriosis, the blockage is by-passed by IVF. The IVF procedure is also used with success where the male partner's sperm quality is too low for normal fertilisation to occur.

Couples who have "idiopathic" or unexplained infertility, often find help from 'the soft options of ART such as Ovulation Induction and Intrauterine Insemination.

Fertility East provides a comprehensive range of programs for infertility including the following:

- In Vitro Fertilisation (IVF)
- Intra Cytoplasmic Sperm Injection (ICSI)
- Frozen Embryo Transfer (FET)
- Gamete Intra Fallopian Transfer (GIFT)
- PESA (Percutaneous Epididymal Sperm Aspiration)
- TESA (Testicular Sperm Aspiration)
- Surgical Sperm Collection (SSC)
- Micro Surgical Sperm Collection
- Extended Culture of Embryos (Blastocyst Culture)
- Embryo Cryopreservation (Freezing)
- Oocyte (Egg) Donation
- Sperm Donation
- Embryo Donation
- Ovulation Monitoring
- Hormone Evaluation
- Semen Analysis
- Infertility Counselling
- Intra-Uterine Sperm Insemination (AIH)
- Donor Sperm Bank
- Insemination (DI)
- Semen Storage
- Ultrasound Follicle Tracking

Patients will usually be referred to our specialists at Fertility East by either general practitioners or gynaecologists for evaluation and treatment.
During your treatment cycle you will meet a number of people who together, make up the team of professionals interested in and responsible for your welfare. They are available for your support and care whilst you are undergoing the treatment, especially when it is not always possible to contact your doctor. If you have any problem that you wish to discuss about your treatment or need reassurance about a nagging question, do not hesitate to call Fertility East and discuss it with the Nurse Coordinator.

You should not hesitate to seek advice from the counsellor in dealing with such issues. We all acknowledge that undergoing treatment and placing all your hopes on one treatment cycle can be very stressful. A phone call can minimise some of this stress and can put your mind at ease.
Infertility is a highly emotional issue and is sometimes associated with frustration, anger and guilt. Despair and a lack of self-esteem or confidence can be felt by the couple involved. To assist in coping with some of these issues and to discuss the impact the treatment will have on your life, you are welcome to meet with our counsellor before commencing or during a treatment cycle at Fertility East

There are some procedures which are physically invasive such as daily blood tests, injections, ultrasound and of course an IVF egg pick up and embryo transfer, all of which takes a physical toll. Apart from the financial cost, there is the time factor, which is often overlooked. Taking time off work for injections, tests and procedures often leaves employees in a quandary as to what to tell their employer. We can provide medical certificates (which do not mention treatment) if required. Most employers, if you feel that you can tell them, will treat your situation with sympathy and understanding.

INFORMATION

A great deal of practical information can be obtained from the website www.fertilitysydney.com.au click on the icon “yes we can have a baby” which will give you free access to my electronic e book.
Some treatments can be expensive. However, from statistical pregnancy rates particularly with IVF, a minimum of 3-4 treatments should be considered to maximise your achievement of a successful outcome.
In order for you to undertake any ART procedure, you must be fully aware of the options for treatment, the risks and side effects, the success rates and details of the procedures you are likely to undertake. Your specialist will discuss a personal conception plan for your cycle and you will also attend an information session at Fertility East to further consolidate your understanding of the process.
You will also be required to sign Consent Forms prior to each treatment cycle so that you and Fertility East concur on the procedures to be undertaken. You may place any specific conditions into these Consents as long as they are within the Policies of Fertility East. You may also vary or withdraw from these Consents at any time prior to enacting the specified procedures.
All data concerning your procedure will be kept in strict confidence. From time to time non-identifying treatment data will be made available for studies into the long-term effects of ART procedures.

PATIENT COOPERATION

Your cooperation in all aspects mentioned is vital to the success and smooth running of the program. Please do not lose this information booklet - it has been provided for instant reference. Further enquires regarding cycle management are best directed through the Nurse Coordinator.

PREPARING YOURSELVES FOR ART TREATMENT

Dramatic changes or alterations to your normal lifestyle are not recommended as they add unnecessary stress to what is already a very stressful time. However, it is recommended that you: endeavour to maintain a healthy lifestyle; maintain a sensible weight for your height and build; make modifications such as reducing your intake of alcohol to a social glass or so; and quit smoking.
Being conscious of a healthy diet and leading an active lifestyle will certainly enhance your achievement of a successful healthy pregnancy.

Ensure that you have immunity to rubella (German Measles),and varicella (Chicken Pox). This is important whether you are undertaking ART procedures or attempting to become pregnant under natural conditions. All women planning a pregnancy should be taking a folic acid supplement and pregnancy vitamins. Increasing the intake of folic acid has been shown to reduce the risk of foetal abnormalities including neural tube defects. Your GP/Specialist can advise you on the dose recommended, but usually a supplement of at least 500 micrograms of folic acid a day is advised. This supplement should be continued for at least the first three months of pregnancy, where increased folic acid is needed by both the foetus and the mother.

Finally, the treatment programs that you may undertake will often be very confusing and you may feel, in some instances, out of control. It is essential that the period of your treatment remain as stress-free as possible for both partners. To help you and your partner cope we recommend exercise, yoga/Pilates, meditation but to mention a few. Some patients may wish to undergo acupuncture and this can be undertaken while on a programme. Our counsellor can also help you in this area.
We strongly advise that you stop any plant products or herbal medications during a treatment cycle as they can effect outcome.

Please make sure you ask, if you have any questions - we are all here to help you in any way we can.

Fertility EAST
Assisted Conception Clinic

Fertility East commenced operation in April 2007. It is one of 40 fully accredited fertility centres in Australia. Fertility East is accredited with the two registered bodies in Australia - RTAC (Reproductive Technology Accreditation Committee) and NATA (National Association of Testing Authorities). Fertility East provides a wide range of reproductive services including those listed on pages 3 and 4.

RESULTS

Fertility East was a completely new purpose-built IVF clinic in March 2007. We had our first IVF pregnancy 13th June 2007. We cannot quote any Take-Home-Baby success rates at this point in time as the latest NPSU data reports to the end of 2007 however to Dec 2009 we have recorded 238 clinical pregnancies.

Our Medical Director, Dr Joel Bernstein was one of the top performing IVF specialists at one of Sydney's largest IVF units and we can anticipate similar results in this new setting.

For National Statistics on Assisted Reproduction Technologies log on to www.npsu.unsw.edu.au and follow the links

LEGISLATION

The Assisted Reproductive Technology Bill 2007 and the Assisted Reproductive Technology Regulation 2009 is in force from 1.1.10 in NSW. Refer to the NSW Government website for explanatory brochures on these changes.

http://www.health.nsw.gov.au/hospitals/phc/art.asp

The Human Tissue Act 1983 no longer governs donated gametes.

The Status of Children Act 1996 governs the parental status of children born in New South Wales from donated gametes. Sperm and egg donors are generally not considered to be the legal parents of any child born from their donated gametes. In most cases, the birth mother will be the legal mother, and the legal father will be her husband or male de facto partner (this does not include same sex partners).

However, the legal issues associated with gamete donation are complex, and we are not qualified to provide you with legal advice. If you have any questions or concerns about legal issues arising from gamete donation, you must seek your own independent legal advice.

The Research Involving Human Embryos Act 2002 regulates the use of human reproductive material (embryos) for purposes other than generating a pregnancy in a woman.

COUNSELLING

The Fertility East counsellor provides extensive counselling services. There is compulsory counselling prior to commencing any treatment including IVF, for all gamete donors and recipients of donor gametes, and patients commencing surrogacy. Please speak to the nurse coordinator or other staff members regarding the costs of these services as some of these costs are incorporated in the cost of the procedure.

ETHICS

The clinic operates under the guidance of an ethics committee. This committee is a seven person committee constituted in accordance with National Health & Medical Research Council guidelines. Ethical approval is sought from this body before commencing any new technique or when a change in policy occurs.

WEB PAGE

Visit our web site at www.fertilityeast.com.au. In addition try www.sydneyfertility.com.au. Also an extensive range of fact sheets covering a wide range of fertility issues are available for download.

FEES AND HEALTH INSURANCE

FEES

The cost of consultations and preliminary investigations should be discussed with your fertility specialist or their reception staff. You will be provided with brochures outlining all fees associated with your ART Treatment cycle and these will be discussed at your initial information session at Fertility East. The fee brochure 'Fertility East Guide to Fees' clearly identifies the total costs, relevant Medicare and Private Health Fund rebates, and Out-of-pocket expenses. A "Pre-Payment" system operates at Fertility East where the expected Out-of-pocket cost for the treatment cycle services provided by your specialist and Fertility East is paid at the commencement of the cycle to Fertility East.

SAFETY NET

Medicare runs a Safety Net program for all Australian residents. This program has been adjusted on 1st January 2010 to have a threshold of $1126 and indexed to the CPI. Please contact Medicare on 13 2011 for further details or consult the Health Insurance Commission website www.hic.gov.au and follow the links.

HEALTH INSURANCE

The most important information about health insurance and its relation to infertility tests and treatments is that you should "shop around", and compare different costs, requirements and payments. There is considerable variation between the funds and they also tend to change their policies fairly often.

It is very important to check out the rule about pre existing conditions. Almost all private health insurance funds have a twelve month "pre-existing rule", which means that benefits will not be paid during the first year of membership for treatment for conditions which were known to have existed before joining the fund. Most of the major funds specify infertility and IVF treatment in their pre-existing conditions rules.

In addition to the pre-existing condition rule, some funds also apply waiting periods of up to three years before paying benefits for ART treatment (including antenatal treatment, confinement and neonatal services for a child born by IVF). Please be careful when taking out private health insurance for IVF treatment, that you fully understand when benefits will be payable.

For IVF treatment, there is no rebate from a private health fund for some services relating to nursing and technical services. Similarly, there is no rebate for donor sperm.

If you are not privately insured this does not preclude you from treatment. Some couples choose not to take out insurance as the cost of the insurance exceeds the annual rebate they can expect to obtain for their treatments. It is important to evaluate your long-term requirements when assessing private health insurance.

There are currently no private health fund rebates for tracking, ovulation induction, AIH/AID treatments, and for counselling services and counselling reports.

While this information is provided as a guide only, always PLEASE CHECK WITH YOUR OWN HEALTH FUND.

FERTILITY TESTS

The tests are planned and carried out under the guidance of your fertility specialist.

GENERAL BLOOD SCREENING

These blood tests are used to screen your general health, and to prepare for conception. In addition an infection screen is undertaken on both partners and any additional tests ordered to exclude genetic or familial diseases where indicated.

HORMONE ASSAY

The ability to measure levels of the hormones progesterone, oestrogen, prolactin, testosterone, follicle stimulating hormone (FSH) and luteinising hormone (LH) is a very valuable tool for investigation of infertility problems in both male and female. In addition to these primary hormonal tests secondary tests to cover thyroid, adrenal, ovarian and testicular function will be ordered where appropriate. Insulin and other specialised testing will be discussed with you.

HYSTEROSAL PINGOGRAM

This X-Ray examination is used to check the cavity of the uterus and fallopian tubes, and may give information as to whether the tubes are open or not. In order to show up the interior of the uterus and tubes, a radio-opaque dye (normally water soluble contrast medium) is injected through the cervix. A series of X-Ray pictures is then taken for later examination. The accuracy of these tests, and your result, will be discussed with you by your fertility specialist.

TRANSVAGINAL ULTRASOUND OF THE PELVIS

Using sound waves via a vaginal probe is painlessly inserted into the vagina one can see the structure of the uterine wall and the interior of the ovaries, used to diagnose fibroids and ovarian cysts and also used to track development of follicles.
Variations of ultrasound include fluid sonohysterogram and Hy Co Sy.

ENDOMETRIAL BIOPSY OR DILATATION AND CURETTAGE (D & C)

This test has very little place in the diagnosis of infertility. When performed it involves the microscopic examination of a scraping from the endometrium - the lining of the womb.

HYSTEROSCOPY

Hysteroscopy involves inserting a special telescope into the uterine cavity to directly exclude pathology and treat certain problems such as scar tissue, fibroids and polyps. It is usually performed at the same time as laparoscopy. Both are performed as day surgery procedures, in hospital and require general anaesthesia.

LAPAROSCOPY

The purpose of the test is to allow the specialist to view the outside of the ovaries, fallopian tubes and uterus. The procedure is done under a general anaesthetic. The abdomen is first distended with carbon dioxide to ensure a certain amount of space exists between the organs. The laparoscope is then passed through a small incision in the abdominal wall near the navel. Additional instruments can be inserted above the pubic bone or lateral abdominal wall. For diagnostic purposes a hysteroscopy should always performed at the same time as a laparoscopy.

SEMEN ANALYSIS

This is an in depth analysis covering physical properties and includes sperm count, structure (morphology) and both percentage and quality of movement (motility), presence of antibodies and survival rates. In addition blood tests for antisperm antibodies may be checked. Occasionally a new test Sperm DNA Fragmentation may be required.

POST-COITAL TEST (PCT)

This is the observation of sperm motility within the cervical mucus following intercourse. This test is no longer recommended.

CYCLE MONITORING THROUGH FERTILITY EAST

Your specialist doctor may refer you to have menstrual cycle monitoring through Fertility East for one of the following reasons:

- Cycle tracking
- Ovulation Induction (OI)
- Intrauterine Insemination with or without Ovulation Induction (IUI) Partner
- Intrauterine Insemination with or without Ovulation Induction (IUI) Donor

CYCLE TRACKING - DETECTING OVULATION

Ovulation is the release of a mature egg (oocyte) from the ovary. Usually only one egg is released per month. Eggs are found in the ovaries in a very immature form and are not capable of being fertilised by sperm. At the time of ovulation, they undergo a maturation process which culminates in their release from the ovary. The maturing of eggs and ovulation is stimulated by two hormones secreted by the pituitary, a gland at the base of the brain. These hormones are follicle stimulating hormone (FSH) and luteinising hormone (LH). It is important these two hormones are produced in appropriate amounts throughout the monthly cycle for normal ovulation to occur.

A number of changes in blood hormone concentrations and the appearance of the ovaries in an ultrasound picture can provide strong evidence that ovulation will or has occurred. Ovulation is usually confirmed absolutely by a subsequent positive pregnancy test.

The female sex hormone oestrogen is produced by the cells surrounding a maturing egg within the ovary. As the egg matures more oestrogen is produced, reaching a peak level about two days before ovulation. If more than one egg matures simultaneously, the oestrogen produced by the ovary is greatly increased. Oestrogen levels can be measured in blood tests and its effects on the body are usually obvious, particularly on the amount and consistency of mucus discharged from the vagina. As the oestrogen level increases, the amount of mucus increases. This mucus is stringy and has the appearance and consistency of raw egg white.

As the egg matures within a cyst called a follicle which develops in the ovary. This follicle, which can be seen and measured on an ultrasound picture of the ovaries, may grow to about 2cm in diameter just before ovulation. Serial ultrasound pictures are another way of detecting ovulation.

Ovulation is triggered by a surge of Luteinising Hormone (LH) from the pituitary gland. LH also stimulates the ovary to begin producing the hormone progesterone. Progesterone is only produced in significant amounts after ovulation has occurred and can be measured in the blood. Progesterone changes the consistency of the vaginal mucus so that it becomes tacky or sticky. This hormone also causes a slight increase in body temperature.

In summary, the changes leading up to ovulation may be detected by changes in the ultrasound measurement of follicle size, vaginal mucus, a small increase in body temperature or by changes in the amounts of oestrogen, LH and progesterone in the blood. The value of body temperature charts is limited because ovulation has already occurred by the time a temperature rise is recognised.

Ovulation usually occurs regularly, once a month from puberty until the menopause, apart from times of pregnancy and breast-feeding. In some women ovulation does not occur regularly, or may not occur spontaneously at all. This may be due to an abnormality with the ovaries, the pituitary gland or some other unrelated illness such as anorexia. A number of tests are necessary to determine the cause of this situation before appropriate treatment can be given.

OVULATION INDUCTION

If ovulation is not occurring regularly it may be necessary to give hormone tablets/injections to stimulate the ovaries. However, before these treatments are used it is important to find out why regular ovulation is not occurring, as more specialised treatment may be necessary for some women.

The most common treatments used include clomiphene citrate (trade name Clomid/ Serophene), or FSH (Follicle Stimulating Hormone). Clomiphene acts by interrupting the chain reaction of stimuli to the pituitary gland and allows more FSH and LH to be released. These hormones in turn stimulate the ovaries. Clomiphene tablets are usually given for five days commencing in the first few days of a monthly cycle and ovulation is expected to occur between five and ten days later. Some women notice they have less vaginal mucus while taking Clomiphene and may not be able to use this method to detect ovulation. There is a risk of multiple pregnancy using these drugs and this will be discussed by your fertility specialist.

FSH and HCG are hormones that are given by injection. HCG is used to trigger ovulation when a mature egg has developed. It is used when it is thought that the rise in the LH has been insufficient. HCG injections are nearly always used when FSH is used. FSH stimulates the egg-maturing process and the development of the follicles on the ovaries, and is given daily from day 5 of the cycle. When the oestrogen level reaches its peak an ultrasound will be done and the HCG injection will be given as appropriate. When using FSH it is very important to monitor its effect by regular blood and ultrasound tests as this treatment is more likely to cause a multiple pregnancy. At Fertility East FSH is given as either Gonal-F or Puregon and HCG is given as Profasi or Pregnyl or Ovidrel.

PARTNER INSEMINATION

Artificial Insemination (IUI) involves the insertion of semen obtained from the male partner, which has been washed and treated, into the uterine cavity of the woman in order to achieve pregnancy. Insemination techniques are also used for couples whom have difficulties with sexual intercourse but potentially have normal sperm production, eg. anatomical problems, or if sperm penetration is considered hampered by cervical mucus (hostile mucus). It is estimated that hundreds of couples in Australia seek insemination treatment each year.

Fertility East normally combines Ovulation Induction with Intra-uterine Insemination as it is the most successful option for most couples. Please note that Fertility East protocol states that an information session and signing of consent forms must be completed prior to commencement of treatment.

The success of IUI will depend upon several factors including other causes of infertility, the age of both partners, and the sperm parameters or abnormalities. If treatment is going to be successful, most pregnancies will occur within the first 3 to 6 months of treatment. Once again the risks of multiple pregnancy needs to be discussed.

INSEMINATION TREATMENT PROCEDURE

The woman attends Fertility East for blood tests and ultrasound monitoring to ascertain the time of ovulation. Insemination is performed usually once, just prior to the time of ovulation. Normally fresh semen is used for IUI. The male partner provides a sample of sperm at Fertility East, which is prepared for treatment. A speculum is inserted into the vagina, as for a PAP smear, and a fine tube is passed into the cervix, through which the sperm is injected. Normally, the insemination procedure will be carried out by the nurse coordinator. The woman can then resume her normal activities after treatment (eg return to work). Blood tests are usually requested by her specialist to monitor the hormone changes in the second half of the cycle and to determine the outcome (of pregnancy).

If a pregnancy has not occurred within 3 cycles of IUI, the treatment may be reviewed and other options such as IVF will be considered. If the male partner is often out of town it may be useful to have some of his sperm cryopreserved (frozen) at Fertility East.

The IUI treatment can then proceed on the days when the male partner is absent. The sperm is stored in "straws" in liquid nitrogen and thawed before insemination, then inserted as if using fresh semen. There is a cost for cryopreservation and storage and consents must be signed.

DONOR INSEMINATION

Donor Insemination (IUI) Donor is the procedure whereby semen from an identifiable or known sperm donor is inserted into a woman's uterus with the intention of her becoming pregnant. Ovulation induction and Intra-uterine insemination of prepared donor sperm is normally used to maximise success rates. In certain circumstances ICSI may be needed to maximise outcome. Donor insemination may be used when the male partner is azoospermic (produces no sperm at all), or very oligospermic (very few sperm produced), or to avoid the transmission of hereditary disorders. Donor insemination treatment is also available for women without male partners. Please contact Fertility East Sperm Bank Coordinator for further information.

IN VITRO FERTILISATION (IVF)

In Vitro Fertilisation (IVF) is the process by which eggs are taken from the woman's body, fertilised in a laboratory with sperm and incubated, and the embryo thus formed is replaced into the uterus a few days later for development. The basic stages involved in the IVF procedure are detailed below, but do not be surprised if the stages are slightly different to the procedure you follow. Everyone is an individual and the stages may differ in your case. This is designed to be an overview and lists the options available. You should discuss your treatment with your Specialist and the Nurse Coordinator.

The IVF treatment involves six main stages:

- Growth and maturation of several eggs.
- Exact timing of collection of these eggs.
- The process of egg collection.
- Fertilisation of the eggs that may become embryos.
- Transfer of the embryo/s back into the uterus.
- Freezing of remaining suitable embryos.

MEDICATIONS USED IN OVARIAN STIMULATION

The normal ovulatory cycle usually produces one egg but fertility drugs are used to hyperstimulate the ovaries to develop a number of eggs in the IVF cycle. Pregnancy rates for IVF/ICSI are improved if a number of eggs can be collected. Follicle Stimulating Hormone is the most common method of stimulating follicular development. PUREGON and GONAL-F are synthetic forms of Follicle Stimulating Hormone (FSH) and your specialist will prescribe one of these medications to stimulate the ovaries to produce many eggs. Occasionally LH is added to the FSH in the form of Pregnyl (HCG) or Luveris a recombinant form of LH. Individual instructions will be given to you.

Some patients may be treated with FSH only, but most patients will also use Lucrin, Synarel, Cetrotide or Orgalutran in conjunction with the FSH injections. Lucrin and Synarel are both GnRH agonists and Cetrotide and Orgalutran are GnRH antagonists. These four medications act on the pituitary gland to stop ovulation occurring before the egg collection in an IVF or ICSI cycle.

Currently Medicare supplies the FSH and Ovidrel (r hCG) Progesterone (pessaries or gel) if you are eligible for Medicare rebate. Please discuss the cost of Cetrotide/ Orgalutran, Pregnyl and or Luveris, before commencing. Injections (Lucrin, Puregon and Gonal-F) can be conveniently self-administered at home by yourself or your partner. The nurse coordinator will give you and your partner instructions and a teaching session/s. You will be supervised at the clinic until you feel confident to self-administer at home.The Cetrotide, Orgalutran, Pregnyl and or Luveris, injections are usually administered at the clinic but may be administered at home with prior instruction. Synarel nasal spray is conveniently given at home and an instruction sheet and video are available.

OVARIAN STIMULATION PROTOCOLS

There are a number of different stimulation protocols and your specialist will select the appropriate one for you. The most common protocol used by our clinic is the Long Down Regulation Protocol and it is very similar to that used by most IVF units around Australia. Others types of protocols include Flare and GnRh antagonist protocols to mention a few.

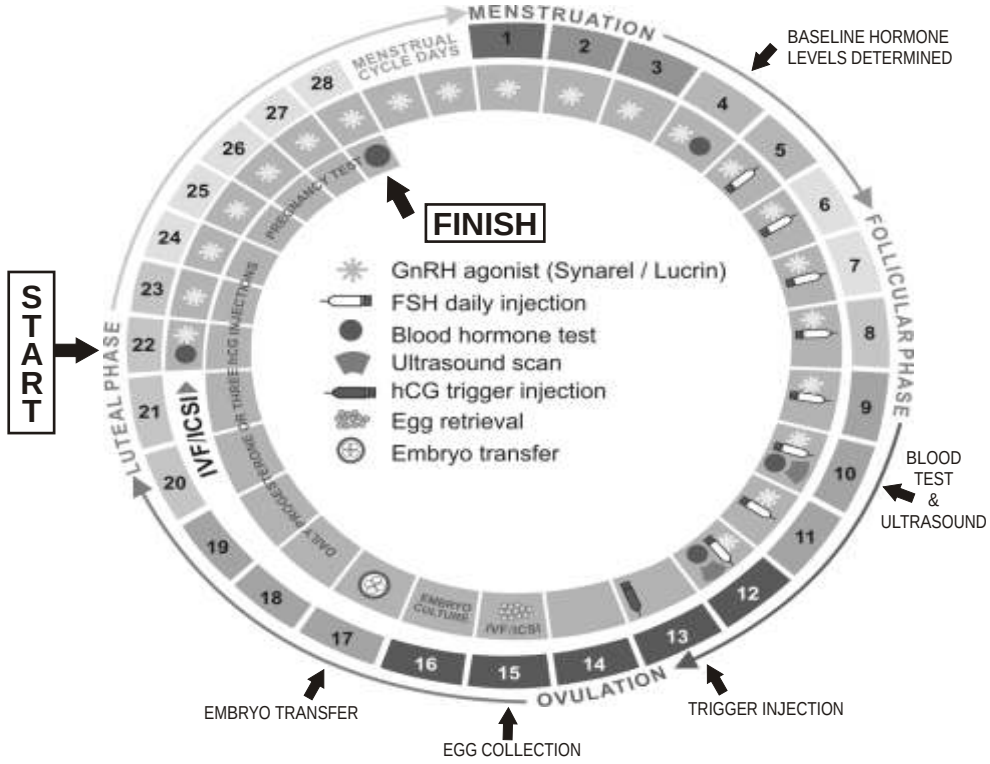
OVERVIEW OF THE LONG DOWN REGULATION PROTOCOL (see chart opposite)

In this protocol blood tests are taken, to determine the day of ovulation (as indicated by ● on the time line). Lucrin or Synarel (GnRH) is commenced 7 days after ovulation (as indicated by ✳ on the time line). Lucrin and Synarel is continued daily for 10 - 14 days then a blood test is performed to check that the hormone levels are at baseline (as indicated by ● on the time line). If a baseline has not been reached, then Lucrin or Synarel is continued for a further three to five days. A blood test is performed again to test for baseline levels. This is repeated every 3-5 days until baseline levels have been achieved. Once achieved the stimulation drug (Puregon or Gonal F) also known as the FSH injection is commenced (as indicated by 💉 on the time line) and is used concurrently with the GnRH.

MONITORING EGG DEVELOPMENT

The eggs (ova) develop inside the ovaries in follicles, which are like little cysts or fluid filled sacs. These follicles produce increasing amounts of oestradiol (an oestrogen hormone) as they grow. The size can be measured by ultrasound, although the eggs themselves are much too small to see. A blood test and ultrasound scan will be done on the sixth day after commencing FSH (as indicated on the time line). Thereafter blood tests and ultrasound scans will be carried out as required attended usually every 2-3 days (as indicated by ◥ on the time line). When you contact Fertility East that same afternoon, you will be informed when another scan or a blood test is required.

IVF START TO FINISH



● Blood Tests

Blood is taken at intervals from about Day 7 of the stimulated cycle to measure oestradiol levels. Blood samples must be taken at Fertility East between 8.00am and 9.30am so that the results are available the same day.

◥ Ultrasound Examinations

Patients will have ultrasound examinations to measure the size, number and development of follicles growing. Ultrasounds are performed trans-vaginally and an empty bladder is required. Sound waves are used to produce pictures of the growing follicles, so that they may be counted and measured. The number of eggs collected may differ from the number of follicles seen on ultrasound. These scans are done at Fertility East between 8.00am and 9.30am weekdays by appointment.

ADMISSION TO DAY SURGERY

Admission will be arranged at Eastern Suburbs Endoscopy Clinic prior to egg pick-up. You are to remain in Day Surgery for about 2-4 hours after egg pick-up for recovery from the anaesthetic/sedation used during surgery.

The clinic is situated on level 19 Westfield Tower 1, which is in the same Tower as our clinic at Fertility East.

TIMING OF EGG OOCYTE (EGG) PICK-UP

The egg pick up is performed using the transvaginal ultrasound route. The oestradiol levels (from the blood tests) and the number and the size of the follicles (from the ultrasound) are together used to assess the maturity of the eggs and the right time for egg collection. There is no "correct" oestradiol level to reach and there is enormous variation between patients. It is the whole pattern of blood and ultrasound results, which determine whether the response to treatment is optimum. In general, however, it is important that the oestradiol level rises steadily until the eggs are collected. It is very important to realise that a wide range of individual treatments are used in the program. Please do not be alarmed if your treatment is different from someone else's. The aim is to design the best individual protocol for you. For patients who are not using Lucrin, Synarel, or Cetrotide, Orgalutran the hormone that normally triggers ovulation, LH, may be present and its levels are not under your specialist's control. If it is detected, egg pick-up must be timed according to the results of the blood tests.

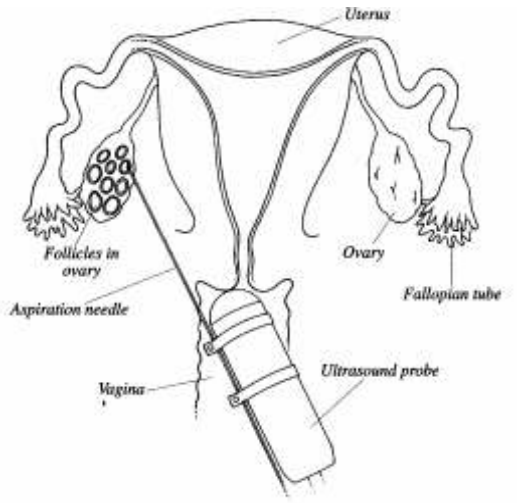
hCG INJECTIONS (Trigger Injection)

hCG (human chorionic gonadotrophin) is a hormone that performs the function of LH, triggering the final maturation of the eggs and ovulation. In an IVF cycle a single injection of hCG medication (Pregnyl or Profasi, Ovidrel) is given usually 36 hours before the operation is planned. Your operation time is determined by the oestradiol level and the ultrasound measurement. Most patients inject themselves at home at the specified time, from instructions given by one of Fertility East Nurse Coordinators. After this trigger injection the other medications (Lucrin / Synarel / Cetrotide and Puregon / Gonal-F) are normally stopped.

OVUM OOCYTE PICK-UP
(EGG COLLECTION)

Oocyte collection indicated as in time line. The egg collection is done under a “light” anaesthetic. The follicles are visualised using trans-vaginal ultrasound, and the fluid inside them is sucked through a needle and tubing into a test tube. The tube is immediately passed to the embryologist who looks for the egg under the microscope. The eggs are then put in the incubator. Most patients are sleepy, and some are nauseated for a few hours after the operation. You can be discharged 2-4 hours after the operation.

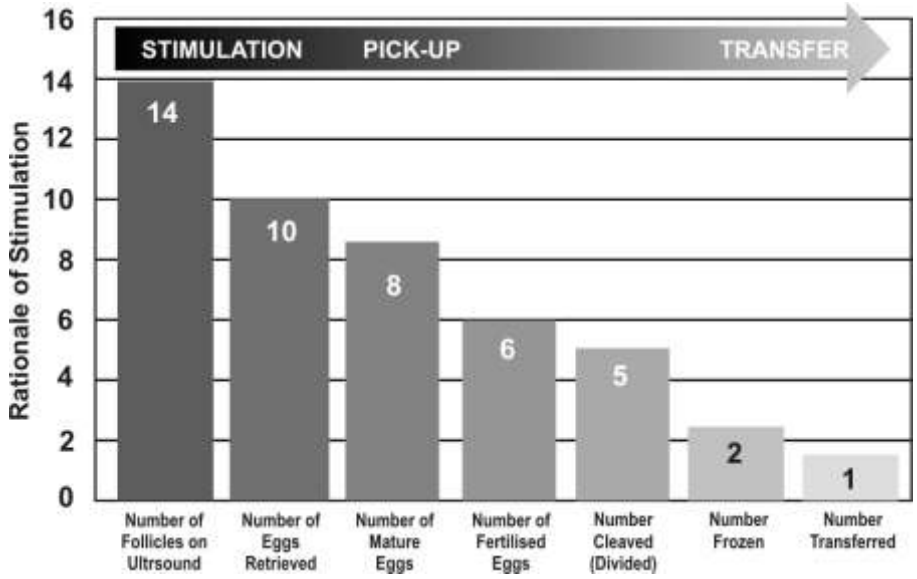
OVUM OOCYTE PICK-UP



Fate of recovered eggs

It is important to understand that not every follicle seen on ultrasound yields an egg. The following chart shows the average fate of follicles from ultrasound to embryo transfer. Only 71% of follicles yield eggs and only 28% (less than a third) of follicles finally yield usable material.

Fate Of Follicles (Averages)



No eggs collected

This occasionally happens, and can occur where there is no access to the ovary (very rare), or where ovulation has unexpectedly occurred prior to the egg collection procedure or there are no eggs obtained from the follicles. The latter is called Empty Follicle Syndrome (EFS) and is a frustrating condition in which no eggs are retrieved at pick-up, even though ultrasound and oestradiol measurements showed the presence of potential follicles. The mechanism responsible for EFS remains obscure. Many hypotheses have been put forward but none truly explain the syndrome. EFS is an infrequent event and has been estimated to occur in 2-7% of IVF cycles. However, the overall risk of recurrence in a later IVF cycle is 20% and the risk of recurrence is higher as the age of the patient increases.

If an EFS cycle does occur please make sure you discuss it thoroughly with your specialist and the clinic counsellor.

SPERM COLLECTION

We will inform you of the approximate sperm collection time once the ovum pick-up time has been arranged. It is usually 1-3 hours after before , or at the same time as the operation. Two to three days abstinence from intercourse/masturbation is preferred prior to ovum pick-up. The sperm sample is produced by masturbation at Fertility East or by other means by arrangement. There is a room for this purpose. You are asked to wash your hands beforehand to minimise the chance of contamination. Lubricants are NOT to be used. It can be very difficult for some men to produce a sperm sample on request under these conditions. If you are worried about this aspect of the program, please discuss it with us at or before the start of the treatment cycle, so that arrangements can be made to freeze some semen if necessary as freezing must be done at least a week before egg collection. Sexual activity may be continued as usual until three days before the time of the woman's egg collection whilst on injections. Sexual activity may resume after the embryos are transferred if comfort levels allow. It is ideal for the male partner to ejaculate the night of the trigger injection, to ensure a fresh ejaculate of sperm on the day of the oocyte collection.

Very rarely a male may fail to produce a sperm sample on the day of egg collection and Fertility East offers egg freezing to try and save some eggs for attempts at later fertilization. Oocyte cryopreservation (egg freezing) is still an experimental procedure and as such is not very successful but can be tried in an emergency situation. A cost will be incurred for this process.

EVENTS IN THE LABORATORY

The sperm sample is prepared and then incubated with the eggs (fertilisation), 3-6 hours after collection. The eggs and sperm are kept in an incubator until next inspected 15-20 hours later, as indicated as 'EMBRYO CULTURE' on the timeline chart. At this time they are checked under the microscope to determine whether fertilisation has occurred. You will be in contact with the Embryologist during these interim days and they will inform you of the fertilisation results and embryo progress results. At about 40-60 hours after fertilisation, the embryos will be transferred to the uterus. As indicated as ⊛ on the timeline chart.

Egg surrounded by sperm

Embryo at 2 pronuclear stage

No Fertilisation

This happens in about 5% of patients who have eggs collected. Sometimes it is because of known problems such as low sperm count, sometimes because of unpredictable problems with eggs or sperm, and sometimes occasionally there is no obvious reason. This will be discussed with you and usually an appointment will be made to further review the situation and make future plans.

EMBRYO TRANSFER

We will inform you of progress daily. Transfer usually takes place around 2-3 days after egg pick-up. Indicated as ⊛ on the timeline chart. The embryo transfer is carried out in the IVF Unit on level 26. Under normal circumstances no more than 2-3 embryos will be replaced because of the risk of multiple pregnancies. We recommend that if you are under the age of 35 and this is your first attempt at IVF, then you replace only one embryo. Please discuss this with your doctor and the coordinating sister. No anaesthetic is required and the procedure itself takes approximately 3 minutes. The Specialist will insert a speculum into the vagina, as for a Pap smear. This allows a view of the cervix. A fine tube (catheter) is passed through the cervix and up into the uterus. The embryos are then inserted using a fine inner catheter high into the uterus in a minute amount of culture medium. This technique does not normally require sedation, and may be a little uncomfortable but not painful.

You are then requested to do light duties only, and if possible, avoid strenuous work or activities until a pregnancy has been diagnosed. Menstruation does not necessarily mean that a pregnancy is not developing. You must continue blood tests until a final outcome is known.

8 cell embryo

SURPLUS EGGS / OOCTYES

Some patients will have more than two or three ova retrieved. Before the cycle commences patients will be asked what they would prefer done with excess ova / oocytes and will indicate this on their signed consent form. One option is to attempt to fertilise the excess eggs and freeze the resulting embryos and transfer them in a later cycle. Embryos that are no longer wanted can be donated or disposed of. They can remain in storage for a maximum of five years at which time a decision needs to be made. Further storage is possible.

FOLLOW-UP TESTS

Blood tests may be done at frequent intervals to monitor progesterone levels and determine the cycle outcome. To maintain your progesterone levels after IVF progesterone support is often prescribed and is routinely given as a Vaginal Pessary or gel(Crinone). The Nurse Coordinator will instruct you on their use. In some situations, absorption of the progesterone is poor, so dosage of progesterone may be changed. A blood tests for progesterone and pregnancy hormone will be carried out 14 -16 days after egg collection. If the tests do not indicate that pregnancy has occurred within this time then the progesterone support will be stopped. A menstrual period can be expected within a few days of cessation of progesterone support. For stimulated IVF cycles progesterone supplementation is provided by Medicare.

PREGNANCY

The blood tests taken 14-16 days after the egg collection will detect whether the pregnancy hormone (HCG) is present, however it is too early to know whether there is a healthy continuing pregnancy. Further blood tests and an ultrasound examination are needed. Your fertility specialist usually orders an ultrasound at approximately 7 weeks of pregnancy, and once this is normal you will need to contact your referring doctor to arrange antenatal care. Please refer to your specialist and Fertility East for instructions. Unfortunately IVF/ICSI, like natural conception, can lead to a biochemical pregnancy (a transient rise in pregnancy hormone followed by a late period), miscarriage (possibly needing curettage), or an ectopic (tubal) pregnancy (requiring surgery). So, unfortunately even a positive blood test is not the end of the waiting. Multiple pregnancy (twins or triplets) are more common with IVF/ICSI than with natural conception, because of the practice of transferring more than one embryo. If you do not want to risk having twins or triplets please discuss with your doctor the replacement of a single embryo in an attempt to reduce this risk.

FURTHER STEPS - UNSUCCESSFUL CYCLES

All patients are asked to notify us of their next period whether or not ovum pick-up and/or embryo transfer is performed. This information helps us plan future management.

REPEAT IN-VITRO FERTILISATION / ICSI ATTEMPTS

No pregnancy resulting after an embryo transfer is still the most common outcome of IVF and reflects our current state of knowledge. We are continually working to find what is different about pregnancy cycles so that the outcomes may be improved. Often, we will be unable to give a reason why the embryo transfer has failed.

If pregnancy does not occur, a cycle to transfer frozen embryos or a repeat attempt of IVF/ICSI can usually be made approximately 1-2 months later, depending on findings of the most recent treatment cycle. Make an appointment to see your fertility specialist after your period for review.

CANCELLATION OF CYCLES

Hormone levels (Oestradiol) from the blood tests and follicle numbers from the ultrasound scan will be used to assess the progress of the cycle. The aim is to collect between 6 and 10 eggs.

Causes of cycle cancellation:

- Faulty or inadequate stimulation
- Overstimulation with the risk of OHSS (Ovarian Hyperstimulation Syndrome)
- Premature elevation of LH or progesterone levels
- Ovarian cysts

Cycle cancellation occurs in about one in ten cycles. In the majority of cases, this is just a reflection of the variation in the biological system and a more satisfactory response is obtained in the next cycle attempt, possibly using a different drug dose or protocol. Costs are incurred during a cancelled cycle. Rarely an industrial dispute or other circumstances beyond our control could result in a cycle being cancelled.

Should this occur an appointment will be needed with your fertility specialist to avoid this problem from recurring if possible.

REQUIREMENTS FOR COMMENCING AN IVF CYCLE AT FERTILTY EAST IN BONDI JUNCTION

CONSENT FORMS

The first step in the IVF process is to make an appointment with your fertility specialist to plan your individualised treatment program and to sign your IVF Request/Consent forms and Hospital Admission papers . This appointment needs to be attended by both partners.

ORIENTATION SESSION

Your specialist will ask you to make an appointment for both your partner and yourself to attend an orientation lecture during which our nurse co ordinator and one of our administrative staff will deal with a number of medical and administrative issues including costs. This will cover most FAQs, but any specific or personal queries can be answered by our staff who will stay on for this purpose.

BLOOD SCREENS

Blood Screens for Hepatitis B & C, HIV, VDRL and Chlamydia Antibody status are required for both partners, and these results need to be within twelve months of the expected procedure date. You will need to obtain the pathology request forms from your specialist. These tests need to be repeated every 12 months if treatment is being undertaken.

SEMEN ANALYSIS

Semen Analysis or occasionally a 'Trial Wash' for the male partner needs to be completed at least two weeks prior to the initial information session. Fertility East does an in depth analysis and even though you may have provided a semen analysis from a pathology practice it may have to be repeated at Fertility East. The reason for this is that certain additional information that our testing provides, assists us in deciding what type of treatment is most appropriate for you.

These tests are usually performed between 8am - 12 noon, Tuesday to Thursday. Please contact the clinic to make an appointment.

UTERINE CAVITY MEASUREMENT & CERVICAL SWAB

Your specialist will advise you if these tests are required.

MANAGEMENT OF THE FROZEN EMBRYO TRANSFER (FET) CYCLE

FREEZING OF EMBRYOS

There is no increase of abnormalities in children born from frozen versus fresh embryos. Embryos can be frozen after 24, 48 or 72 hours in culture and also at the blastocyst stage. Consent forms are signed relating to the "ownership" of the embryos in the event of death/divorce etc and any disputes are directed to the Commissioner of Health and/or Ethics Committee.

MANAGEMENT OF THE FET TREATMENT CYCLE

You need to make an appointment with your fertility specialist to organise a cycle plan and in the case of couples both partners have to sign the consent forms for your FET cycle. You will also need to make a booking for an FET cycle, so please check with the Nurse Coordinator in advance. A consent form must be signed for each transfer cycle. It is also necessary for you to pay the appropriate prepayment before you begin your FET cycle.

The frozen embryo transfer cycle is relatively non-invasive compared to an egg collection cycle. The embryos can be replaced either in a natural cycle or in a controlled medicated (hormone replacement) cycle. We aim to transfer the embryos into your uterus at the correct time in relation to ovulation and the thickness of the lining of your uterus (endometrium).

In a "natural" FET cycle, (where no medication is used before the embryo transfer), or where Follicle Stimulating Hormone injections or Clomiphene are used, the cycle tracking occurs using blood tests to monitor the hormone levels, and ultrasound to measure the thickness and maturity of the endometrium. If this is suitable, the embryo transfer will be performed 2-3 days after ovulation or after appropriate medication.

In a "controlled" FET cycle, Progynova (oestrogen) tablets are administered in order to prepare the endometrium for implantation. This is monitored by ultrasound scanning (approximately 1-2 scans). The first ultrasound is usually performed on day 10-12. When the endometrium is thick enough and of the right maturity, the embryos will be thawed for transfer. Progesterone pessaries are used in conjunction with Progynova to maintain the endometrium, and these medications need to be continued often for the first trimester of a pregnancy. When progesterone is ordered by your doctor in Frozen Embryo Transfer cycles or Fresh Transfers (Donor Oocyte cycles) Medicare does NOT provide the progesterone and this needs to be purchased by the patient from the clinic.

THAWING YOUR EMBYROS

The embryologist will thaw your embryos so that the age of the embryos corresponds to the maturity of your uterine lining. The exact timing will depend upon the stage at which the embryos were frozen. You are asked to ring the day before your embryo transfer to check the time that the procedure is booked for. Not all embryos survive the freezing, storage and thawing process. You will be notified by the Embryologist if there is a problem.

EMBRYO TRANSFER PROCEDURE

The embryo transfer procedure and follow-up tests are the same as for IVF embryo transfer, described previously.

THE SUCCESS RATE OF AN FET CYCLE

The success rate using frozen embryos tends to be lower than a fresh transfer especially in younger patients but is still a very worthwhile treatment . The pregnancy rate will depend on the number and quality of embryos transferred, your age and the cause(s) of infertility.

If you decide you no longer wish to have your frozen embryos kept for yourselves you have the choice of donating them or having them disposed of. A combination of these choices is also available. If they have not been used after 3- 5 years then Fertility East will contact you to ask your intentions.

OTHER TECHNIQUES THAT MAY BE ASSOCIATED WITH AN IVF CYCLE

INTRACYTOPLASMIC SPERM INJECTION (ICSI)

What is ICSI?

ICSI is a technique that has been developed to assist fertilisation when sperm quality/quantity is particularly poor. The technique involves injecting a single sperm into the centre of each egg. The treated eggs are checked the day after the ICSI procedure to see if fertilisation has occurred.

The ICSI procedure was developed several years ago by a team at the Brussels Free University Centre for Reproductive Medicine led by Prof. A Van Steirteghem

Who needs ICSI?

ICSI is used when there are problems with the sperm that would make it impossible to achieve fertilisation with conventional IVF. ICSI may be appropriate in the following cases:

- Patients with very low sperm numbers (oligospermia)
- Patients with very low motility (asthenozoospermia)
- Patients with very high numbers of abnormal sperm (teratozoospermia)
- Patients with all three OAT syndrome or oligoasthenoteratozoospermia.
- When the sperm have been taken directly from the epididymis (MESA) or testicles (TESE)
- When there is a high level of antibodies in the semen.
- When there has been previous failure to achieve fertilisation with conventional IVF, or when very few eggs have fertilised following IVF.

Fertility East does not wish couples to undertake unnecessary treatment. Therefore ICSI will not be carried out unless one of the above criteria is met. Your specialist will advise you if ICSI is recommended for your cycle.

Benefits of ICSI

ICSI has been shown to achieve fertilisation rates of about 60% - 70%. ("Normal" sperm will fertilise about 70% of mature eggs in normal IVF).

ICSI has resulted in pregnancy rates, which are similar to IVF success rates. These rates depend to a large extent on:

- The age of the woman.
- The woman's infertility status and cause.
- Sperm quality.
- The number of embryos replaced.

DISADVANTAGES OF ICSI

ICSI is a relatively new technique and while extensive trials have been completed, there may yet be unforeseen complications.

Not all eggs collected may be of suitable quality or mature enough to undergo the injection procedure. If very few eggs are collected, none may be suitable for ICSI. As ICSI is a very delicate procedure, very rarely will eggs be damaged, and therefore will not be available for transfer. There is some evidence that the incidence of certain abnormalities in foetuses and children may be greater than in the normal population after both IVF and ICSI. There appears to be no real difference in risk between IVF or ICSI.There is currently no way of diagnosing who would be at risk or of preventing these problems. Fertility East recommends that you discuss this with your treating specialist. The risk of identical twins is also greater, occurring in 1:1200 cases on average.

ICSI AND GENETIC ABNORMALITIES

(Y-chromosome defects)

Research has shown that there is an association between the defects on the Y chromosome, the chromosome that is responsible for "maleness" and male infertility or sub-fertility. Genes and groups of genes have been identified on the Y-chromosome that are involved in the production of sperm. If these genes are defective or parts of them are missing (deletions), sperm production will be reduced or non-existent. With the development of ICSI, we are now able to treat men with extremely low sperm counts. Using this technique, in conjunction with surgical methods of retrieving sperm directly from the testis, we are able to treat men who have only small areas of sperm production within the testis. It is therefore important that we understand the way in which genetic changes can affect male fertility. It is now possible to detect deletions in the Y-chromosome.

While the Y-chromosome is essential for normal male development and for fertility, it is unlikely that deletions on the Y-chromosome will have any other effect. Thus, a man who has a defect on the Y-chromosome, which affects sperm production, may have male offspring who have the same defect and will also suffer from infertility or sub-fertility, but will otherwise be normal.

Currently, at Fertility East, we do offer screening for Y-chromosome deletions to male partners of couples who are about to undergo ICSI for low sperm counts (at the discretion of your specialist). A blood sample is taken and sent to Monash IVF where the test is performed. Your Infertility Specialist will give you a referral for this test if deemed necessary. It is important to make you aware if you have such a genetic defect so that you can take this into account when making decisions about your future treatment.

Patients who conceive following ICSI should carefully consider whether to have antenatal screening tests. Further advice will be given by your specialist gynaecologist. All children born from the ICSI technique may be required to be examined by a consultant paediatrician and a follow-up study of all children born may be undertaken. Patients receiving ICSI using surgically retrieved sperm for non obstructive azoospermia have a slight increased risk of miscarriage. These miscarriages are the result of an increase in the level of the chromosomal disorder, mosaicism.

ICSI / IVF TREATMENT CYCLE

The difference between an ICSI and IVF cycle occurs in the laboratory only. Men will be required to provide a semen sample on the morning of the egg collection. When the sperm is to be collected surgically, this will normally be performed on the day of oocyte collection. The eggs are examined to ensure they are suitable for ICSI, and a single sperm is injected into each egg. The eggs are placed in culture and examined the following day to see whether they have fertilised normally. The balance of the procedure is similar to IVF. Should you require any further information please make an appointment to see your Fertility East IVF Specialist.

SURGICAL SPERM COLLECTION (SSC)

Until recently there was no treatment available in those cases where there was a complete absence of sperm in the ejaculate (azoospermia), and it has been estimated that about 10 - 15% of cases of male infertility are due to azoospermia. Azoospermia has many causes. Some of the causes are called "obstructive" meaning that there is a blockage in the sperm delivery system. One common ‘obstructive cause’ is vasectomy which can easily be by-passed with SSC. Other causes are "non obstructive" meaning that there is an absence or a very marked reduction of sperm production in the testes.

There are different methods of surgically retrieving sperm from the testis. The method decided upon will depend whether obstructive or non-obstructive azoospermia has been diagnosed as well as other factors such as accessibility or scarring to the epididymis.

PESA (PERCUTANEOUS EPIDYDIMAL SPERM ASPIRATION)

PESA is a simple technique to obtain sperm for Intra Cytoplasmic Sperm Injection (ICSI) in men who have an obstruction of the vas deferens, either due to vasectomy or other obstruction. To minimize scarring and damage, PESA usually is attempted on one side only. It is sometimes necessary to aspirate from both sides. Sufficient sperm for ICSI is obtained in 80% of attempts. In 10% of cases enough suitable sperm is found for cryopreservation.

TESA (TESTICULAR SPERM ASPIRATION)

TESA involves taking a small piece of tissue from the testis using a small aspiration needle, which again minimises scarring and isolating the sperm from the seminiferous tubules. The number of sperm isolated is often very small and as a general rule these sperm cannot be cryostored . The procedure is performed on the day of egg collection.

OPEN BIOPSY

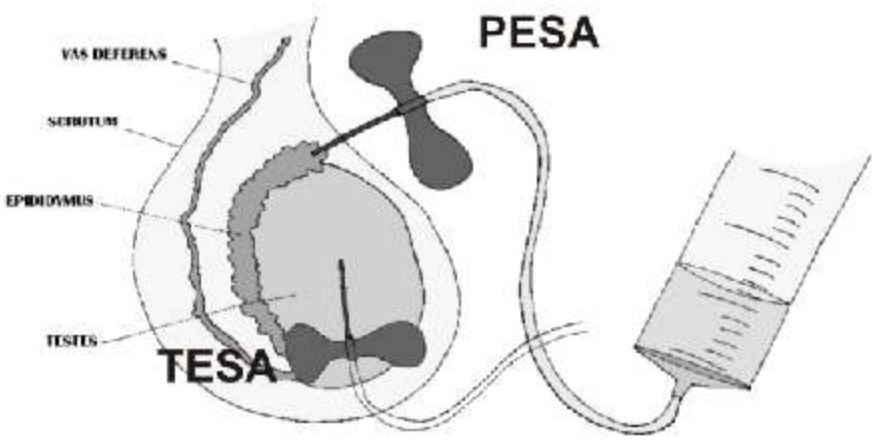
Occasionally no tubules or sperm are obtained while doing a TESA (and sometimes PESA). Under these circumstances in order to get a sample of testicular tissue a small cut has to be made in one or both testis, so that a small biopsy of testicular tissue can be obtained. The incision will need one or two stitches, which normally dissolve. Post operatively the testis may remain painful and occasionally you may require 2-3 days off work.

If your specialist has indicated the need for SSC please obtain the relevant information sheet from Fertility East.

The procedure is performed in the day surgery so you will need assistance to go home. After the procedure the man will be asked to wear a very tight pair of underpants to provide support to the scrotum.

PESA can be performed under local anaesthetic. This means that local anaesthetic is injected into the scrotum. When this has been achieved the doctor will swab the scrotum with a warm antiseptic. The doctor will examine the testes to locate the epididymis by gently feeling the scrotum. A small needle will be inserted into the epididymis and the doctor will instruct the nurse assisting to draw back on the plunger in order to aspirate seminal fluid. When fluid is obtained it is passed to the andrologist to be examined for motile (moving) sperm. The procedure may need to be attempted again until motile sperm have been found.

The procedure is usually performed just prior to the woman's egg collection (on the same day). If no sperm is retrieved we will proceed to TESA and if this fails proceed to Surgical Sperm Collection. Under these circumstances a general anaesthetic is preferable.



MICROSURGICAL SPERM COLLECTION

This procedure is used where other forms of surgical sperm collection have failed and as a last resort to obtain sperm. It involves opening the testis and looking for healthy tubules (site of sperm production) under an operating microscope, biopsying these tubules and checking their contents for sperm.

Sperm found will be used for a fresh ICSI cycle and usually there are not enough to freeze and store. It is performed under general anaesthetic in hospital.

Details and costs wil be discussed with your doctor.

BLASTOCYST CULTURE

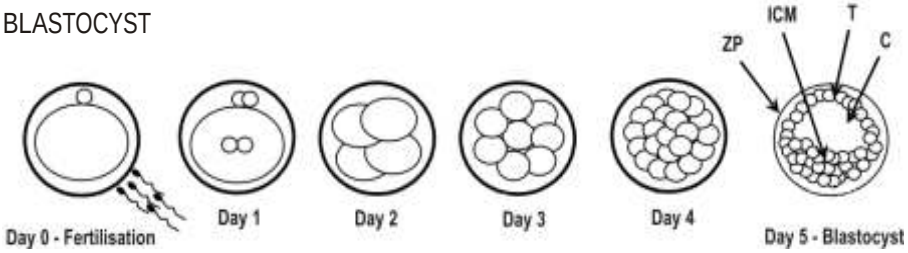
Extended culture or "Blastocyst Culture" (BC) is the culture of human embryos to Day 5 or Day 6 after fertilisation. Culture is carried out in specially formulated media that supports embryo growth to the blastocyst stage.

WHAT IS A BLASTOCYST?

A blastocyst is a multi-celled embryo that has undergone many cell divisions to reach the stage where it has two different cell types and a central fluid-filled cavity. The surface cells, the trophectoderm (T) will become the placenta, and the inner cells (ICM) will become the foetus itself. The fluid filled space, the blastocoele (C), becomes the amniotic fluid. A human embryo will normally reach this stage about 5 days after fertilisation has occurred.

A healthy blastocyst should hatch from its outer shell, the zona pellucida (ZP) by the end of the 6th day. Within about 24 hours of hatching, it should begin to implant into the lining of the uterus).

BLASTOCYST



However, BC is a new technology and has some unresolved issues. In the opinion of some scientists, insufficient testing has been carried out to determine possible long term effects.

The following issues remain unresolved:

- Freezing and thawing of excess blastocyst stage embryos has a poor outcome as embryos may not survive the process.
- There is an increased incidence of monozygotic (identical) twins. Risks to babies and mothers are increased in multiple pregnancies. Most twins born as a result of IVF are dizygotic (non-identical) twins who develop when more than one embryo is transferred.
- Following IVF, and according to some studies particularly with BC, there is also a small increased risk of single embryos dividing into two individuals to produce monozygotic (identical) twins. Identical twins have a higher risk of abnormalities and clinical problems than non-identical twins. To avoid multiple pregnancy, couples will be generally be encouraged to transfer a single embryo.
- Some research suggests that there are more male babies born after BC but this is still unconfirmed.
- Early research suggests that keeping embryos in culture for longer might cause non-inheritable changes to gene expression but this concept is still in the early stages and much research still needs to be done to determine if it is a real risk.

It is also important to note that 10-15% of patients will not have an embryo transfer as none of their embryos will progress to blastocyst stage. The most likely reason is chromosomal abnormalities in the embryos in question and this is more likely to occur in women over the age of 37. Transfer of embryos that has arrested development has a very poor pregnancy outcome. Research has shown that when there are fewer than four 8-cell embryos on day 3, there is no advantage gained by extending culture to the blastocyst stage. In this case, a day 3 embryo transfer will be recommended.

BC offers no advantage for patients who produce low numbers of embryos and those who have no 8-cell embryos on day 3 of culture.

Current research suggests that BC is beneficial for specific patient groups, in light of this information we generally recommend that day 1-2 embryos are transferred. Individual assessment will be carried out to determine whether BC may be warranted in any particular case.

GIFT (GAMETE INTRAFALLOPIAN TRANSFER)

The success that IVF has achieved has meant that GIFT is seldom if ever undertaken. One possible reason for doing it is religious. In GIFT a mixture of eggs and prepared sperm is inserted via a laparoscope into a normal Fallopian tube. This procedure will be discussed in detail by your specialist if it is needed.

RISKS, SIDE AFFECTS AND OTHER CONSEQUENCES ASSOCIATED WITH A.R.T.

A.R.T. involves some risks, potential side effects and other consequences. Detailed below are current known or potential risks. The specific possible risks and side effects of A.R.T. include, but may not be limited to, the following:

SURGERY

Oocyte (egg) collection is normally performed using either laparoscopy or transvaginal ultrasound or very rarely by laparoscopy. The following complications of surgery have been described:

Bleeding: from the ovary or from adjacent pelvic structures. Bleeding usually settles by itself but, very rarely, the "bleeding point" must be tied off, which requires additional surgery.

Pelvic Infection: There is a small risk of pelvic infection after the oocyte recovery (± 1:1000). In certain circumstances antibiotics will be ordered with your egg collection.

Anaesthesia: In general it is extremely safe. Some risks include allergic rashes, temporary paralysis, vomiting and even, in more extreme cases, death. With young, fit, healthy women these risks are lower than for general surgery patients.

Damage to internal organs: Is very rare occurring in 1:10000 cases.

MEDICATION

Synarel and Lucrin (GnRH Agonists)

These synthetic drugs are variants of a naturally occurring pituitary hormone and block the pituitaries action, so allowing the growth of multiple eggs. The reported side effects include:

- Headaches
- Local irritation inside the nose (Synarel) or injection site (Lucrin)
- Occasional hot flushes, breast tenderness and vaginal dryness.

Muscle weakness, pains and double vision have been rarely reported.

Puregon or Gonal F (Follicle Stimulating Hormone (FSH)

This is a purely synthetic recombinant hormone, resembling natural FSH that stimulates the ovaries (FSH stands for follicle stimulating hormone). The reported side effects can include:

- Headaches, tiredness and lethargy
- Irritability and tearfulness
- Breast tenderness
- Nausea
- Enlarged tender ovaries
- Excessive clear vaginal secretions
- Abdominal distension and discomfort
- Fluid retention OHSS (see following)

Profasi Pregnyl (HCG) / Ovidrel (Synthetic HCG)
Pregnyl is the pregnancy hormone that is prepared from the urine of pregnant women. Ovidrel is the synthetic recombinant equivalent. Its uses include:

- Induction of ovulation
  It is given 35 - 38 hours before IVF egg retrieval and is used to mature the follicles and to trigger ovulation. This occurs as its action mimics the natural hormone LH.
- HCG may also be prescribed during tracking of OI/AIH/AID patients to induce ovulation.
- Providing additional LH action
  Over suppression of the pituitary gland may deplete the LH hormone, which is needed for follicular growth and development.
- Luteal phase support
  Occasionally patients cannot tolerate Progesterone support in the luteal phase and HCG can be used as an alternative.

The reported side effects include:

- Breast enlargement
- Ovarian tenderness
- Abdominal distension
- Nausea, constipation
- Pain at the injection site
- OHSS (see below)

Clomid / Serophene (clomiphene citrate) (rarely used for IVF)
Clomid/Serophene is taken in tablet form and is used in the first few days of the cycle to induce follicular development. The reported side effects include:

- Nausea
- Hot flushes
- Headaches, depression
- Visual blurring
- Abdominal distension
- Hair loss
- Weight gain

Orgalutran / Cetrotide (GnRH Antagonists)
These drugs also work to switch off the pituitary gland enabling the growth of multiple eggs. They are normally used for short down regulation and their specific use will be discussed by your fertility specialist.

Luveris (Synthetic LH)
This synthetic or recombinant form of LH hormone may be used to trigger ovulation or replace LH when it has been over suppressed.

Progesterone (Pessaries / Crinone Gel)
The pessaries/gel are inserted vaginally according to instruction.
The reported side effects include:

- Local irritation in vulva/vagina which could be mistaken for thrush.
- Abdominal bloating
- Constipation
- Fluid retention or swelling
- Breast engorgement
- Headaches
- Dizziness

DO NOT STOP THIS MEDICATION BUT CONTACT THE CLINIC IF YOU ARE CONCERNED

OVARIAN HYPERSTIMULATION SYNDROME (OHSS)
In approximately 3% of women undergoing IVF there is an over response to ovarian stimulation, i.e. too many follicles develop so that the ovaries become very enlarged. If this is suspected prior to egg collection, the patient may be "coasted" (which means treatment stopped or reduced to allow the hormones to settle down) or the treatment cycle may be cancelled' and the ovaries allowed to return to normal size. Future treatment cycles will require modification. Occasionally, we may proceed with egg collection but not proceed to embryo transfer. Should this occur, any healthy embryos can be frozen and replaced later during a natural, un-stimulated cycle, and this is much safer. If the syndrome does occur, it usually becomes evident 2 -8 days after egg retrieval subsiding 2-3 weeks later if pregnancy does not occur.

However up to 50% of cases are associated with pregnancy in which case the symptoms may be more prolonged and severe. The symptoms are:

- Severe nausea and vomiting
- Increased abdominal distension
- Diarrhoea
- Shortness of breath
- Increased thirst
- Decreasing urine output

Mild OHSS, by far the most common form. It is usually adequately treated by rest, fluids (2-3 litres per day) and mild pain relief.
Moderate to severe OHSS (approx 1.5% of patients) requires hospitalisation with intravenous fluids, occasionally paracentesis (draining of abdominal fluid) and close monitoring of blood coagulation. In over 220,000 treatment cycles in Australia, there have been no recorded fatalities but the process can be life threatening and there have been some cases of significant blood clotting problems.

BLOOD TESTS
The taking of blood samples may cause discomfort and/or development of a bruise at the needle puncture site.

MISCARRIAGE

Light bleeding (or spotting) occurs in up to 55% of ART pregnancies and should not cause undue concern unless associated with increasing abdominal pain. An ultrasound is organised approximately 3-4 weeks after the positive pregnancy test to check the pregnancy. Occasionally pain will necessitate an earlier ultrasound scan. Miscarriages can still occur in up to 15 - 20% of all pregnancies. A very early miscarriage will not necessarily require curettage (D & C). Should a curettage be required, tissue analysis may occasionally give us an indication as to why the miscarriage occurred. However in most cases we cannot give a reason. Miscarriage can be emotionally devastating - counselling may be helpful at this time.

ECTOPIC PREGNANCY

An ectopic pregnancy is one that implants outside the uterus, usually in the Fallopian tube. It occurs in approximately 3% of ART pregnancies, often when there is pre-existing fallopian damage. It is disappointing to note that ectopic pregnancies can occur even when embryos have been placed in the uterus (the embryos "float" around for a few days before implanting and sometimes float into damaged tubes and get stuck there). The signs that might indicate the possibility of an ectopic pregnancy are abnormal hormone levels, brown vaginal bleeding and abdominal pain. Such a pregnancy may be diagnosed by ultrasound and cannot continue, and therefore surgical intervention is required. Early diagnosis not only minimises tubal damage and risks of bleeding, but also means the ectopic can be removed by laparoscopy rather by an open' operation.

MULTIPLE PREGNANCY

Twins occur in up to 20% and triplets in less than 1% of successful' ART cycles. This will be influenced by a number of factors (especially age) but is mainly the result of transferring more than one embryo. We appreciate this creates a dilemma. It is well recognised that replacing more than one egg, or embryo, offers the best chance of achieving a pregnancy. We must however consider the implications of multiple pregnancy when 2 embryos are put back. Particularly of concern is the increased risk of cerebral palsy in twins and triplets.

Although a higher pregnancy rate is achievable by transferring more embryos it was the recommendation of the Reproductive Technology Accreditation Committee that a maximum of two be transferred except under exceptional circumstances'. Fertility East recommends the transfer of one (1) embryo if you are <35 years of age and in your first cycle of treatment. See the separate handout entitled “How Many Embryos Should I Have Transferred?” for greater detail of this recommendation.

For patients using FSH injections during an ovulation induction cycle, there is a chance of multiple pregnancy to occur. If the ovary produces more than one follicle (which may have an oocyte inside) in a cycle, it is possible that each egg may fertilise and become an implanted embryo, and therefore a multiple pregnancy.

There are several disadvantages of a multiple pregnancy:

- Increased risk of miscarriage
- Obstetric complications, such as high blood pressure, requiring antenatal hospitalisation.
- Premature deliveries (which may require neonatal intensive care).
- Birth complications including cerebral palsy.
- Long term defects in the children.

CONGENITAL ABNORMALITIES (BIRTH DEFECTS)

There is some evidence that the incidence of certain abnormalities in foetuses and children may be greater than in the normal population after both IVF and ICSI. There appears to be no real difference in risk between IVF or ICSI. There is currently no way of diagnosing who would be at risk or of preventing these problems. Fertility East recommends that you discuss this with your treating specialist.

LABORATORY MATERIALS (CULTURE MEDIUM)

There may be some risks associated with the culturing of embryos. These risks are associated with several products that are used in the IVF laboratory that are derived from human or animal origin, which have the potential to transmit diseases to patients undergoing ART.

HSA (Human’s Serum Albumin) is a source of proteins and amino acids for the embryos while they are in culture. The HSA is derived from pooled serum from blood donors who have been extensively screened, so the risk of contracting Hepatitis B, C or HIV is extremely low. In spite of stringent purification and sterilisation measures, one cannot eradicate with absolute certainty the possibility of transmission of known or unknown pathogens bound to serum proteins. For example, HSA used in our culture media may be contaminated with albumin donated by a person who later died of the rare disease of Creutzfeldt-Jakob Disease (CJD). However, this risk is seen as minute.

Hyaluronidase is derived from the ovine species (sheep). This is an enzyme used to strip the cumulus cells that surround the oocytes prior to ICSI. The oocytes are in contact with this enzyme for a very short period of time (usually about 30 seconds), so the risks associated with this product are thought to be very small. The risk of using this product is related to the potential presence of prions, which are the infectious agents of Bovine Spongiform Encephalopathy. Again this risk is minute.

Glycerol. This is used as a cryoprotectant when freezing blastocysts. Glycerol is derived from the bovine species (cows) and carries the same risk, which is seen as being very small.

DISAPPOINTMENT

Infertility itself creates a feeling of intense hurt and disappointment. The opportunity of an ART treatment and thus the possibility of a pregnancy offers hope. However, the intensity of effort put into undergoing ART procedures is likely to be unrewarded in every any one cycle.

It is also possible that your parents, relatives or friends will not appreciate what you have been through. They cannot really know. You may feel lonely yet become irritated by sympathy. Feelings of anger and guilt are also common. Do not be afraid or ashamed to ask for help. The Fertility East Counsellor is available for private consultations.

DISCLOSURE TO CHILDREN ABOUT THEIR METHOD OF CONCEPTION.

Most parents/potential parents of a child conceived by IVF or Donor Insemination have, at some stage, wondered whether or not to tell their child of his or her means of conception.

It is a complex and sensitive issue and touches on feelings about infertility and the emotional pain associated with it. It is also connected to whether or not you have told others about how your child was/may be conceived. These issues can be discussed at an interview with the counsellor prior to treatment. Any child born after a battle with infertility is so precious that parents obviously want to do their best for him or her. This is a very reasonable and understandable concern for any parent in this situation. Please feel free to discuss these issues with our clinic Counsellor.

OTHER SERVICES PROVIDED BY FERTILITY EAST

OOCYTE / EGG DONATION

Some women of reproductive age are unable to produce or use their own eggs (oocytes). This may be due to the woman having no ovaries, entering menopause prematurely, having hereditary disorders, or having inaccessible ovaries (unable to collect her oocytes). In consultation with their doctor they may choose the option of using donated oocytes.

Please contact the Nurse Coordinator for further information.

EMBRYO DONATION

Your specialist doctor may have suggested the use of donated embryos. Please contact Fertility East Nurse Coordinator about the availability of donated embryos. There is a waiting list that operates and a counselling session and a report is required. All costs incurred by the embryo donors need to be met by the recipients.

SPERM CRYOPRESERVATION

Occasionally male patients have to undergo chemotherapy, maybe away during the time his partner is undergoing an IVF cycle or may even be concerned about difficulties with producing a sperm sample on the day of an IVF treatment. For these situations Fertility East can freeze sperm samples as a backup.

OOCYTE CRYOPRESERVATION

This is also referred to as egg freezing which is still an experimental procedure and not part of our normal clinical service. While some children have been born there is not enough data available to be able to comment on the risks and consequences of this procedure. In addition the success rate as measured by live birth rate is still very poor. In certain rare circumstances this may be offered as an emergency backup and your specialist will discuss this in detail if required.

GLOSSARY

Amniocentesis: Insertion of a needle into the uterus through the abdominal wall to withdraw amniotic fluid for assessment of foetal health and maturity.
Andrology: Study of male sex hormones/sperm testing.
ART (Assisted Reproductive Technology): Several procedures employed to bring about conception without sexual intercourse, including AIH, AID, IVF, ICSI and GIFT.
Artificial Insemination (AIH/AID): Placing sperm into the cervix/uterus through artificial means instead of by coitus - usually injected through a catheter or cannula after being washed. This procedure is used for both donor (AID) and husband's (AIH) sperm. This technique is used to overcome sexual performance problems, to circumvent sperm-mucus interaction problems, to maximize the potential for poor semen, and for using donor sperm.
Assisted Hatching: Thinning of the zona pellucida prior to transferring the embryo into the uterus.
Asthenozoospermia: Low sperm motility.
Azoospermia: Absence of sperm in ejaculate.
Basal Body temperature charting: Monitoring of body temperature each morning to help confirm ovulation response.
Biochemical Pregnancy: Transient rise in hCG pregnancy hormone.
Biochemistry: Department of Fertility East laboratory that analyses and reports on hormone blood testing.
Blastocoele cavity: Fluid filled cavity of a blastocyst
Blastocyst Culture: Extended culture of embryos in the laboratory to Day 5 or 6 when they have two different cell types and are called blastocysts.
Cannula: A hollow tube used for insemination, and embryo transfer, and often with an inner catheter.
Catheter: A hollow flexible tube used to aspirate or inject fluids.
Cetrotide: GnRH antagonist marketed by Serono.
Cervical pH: Acidity or alkalinity of the cervical mucus.
Cervical Swab: Test of cervical environment for evidence of bacterial infection (and/or viral infection). Sent to pathology for analysis.
Cervix: Structure between the vagina and the uterus.
Chromosomal Abnormalities: A fault in the genetics of the sperm/ eggs/embryo. These may result in disruption of the maturation, fertilization, implantation and foetal processes, and may result in miscarriage or birth defects.
Chromosome Analysis: Testing of a blood/tissue sample for the pattern of genes/ chromosomes.

Clomid (Clomiphene Citrate): A fertility drug that stimulates ovulation through the release of gonadotropins from the pituitary gland.
Congenital: Present at birth.
Congenital Absence of the Vas Deferens (CAV): absence at birth of conducting pathway from testes for sperm to be ejaculated. Often caused by Cystic Fibrosis gene so screening should be performed for this gene and potential risk for offspring should be discussed.
Corpus Luteum: The yellow-pigmented glandular structure that forms from the ovarian follicle following ovulation. It produces progesterone, which is responsible for preparing and supporting the uterine lining for implantation.
Crinone Gel: Progesterone gel medication marketed by Serono.
Cryopreservation: Freezing and storing of sperm/embryos in sub-zero liquid nitrogen tanks.
Cryoprotectant: Used to limit damage during cryopreservation.
Cystic Fibrosis: Generalised An hereditary disorder, affecting a number of organs (particularly the lungs and pancreas) associated with the accumulation of excessively thick mucus and abnormal secretion of sweat and saliva.
Dilation and Curettage (D&C): A procedure used to dilate (expand) the cervical canal and scrape out the lining and contents of the uterus. The procedure can be used to diagnose or treat the cause of abnormal bleeding and to resolve a non progressive pregnancy. It is not a test of the uterine cavity.
Down Regulation Protocol: Most common protocol used for controlled ovarian hyperstimulation in IVF/GIFT cycles.
Ectopic Pregnancy: A pregnancy located outside of the uterus, usually in a Fallopian tube.
Egg Pick Up: Surgical procedure to retrieve eggs (oocytes) during IVF/ GIFT using transvaginal ultrasound or rarely laparoscopy.
Embryo Transfer (ET): Placing an embryo into a woman's uterus or fallopian tube.
Embryology: Department of Fertility East laboratory dealing with egg collection, fertilisation, embryo transfer and cryopreservation procedures.
Endometriosis: Growth of endometrial tissue outside the uterus.
Endometrium: The inner lining of the uterus, which grows and sheds in response to oestrogen and progesterone stimulation; the bed of tissue designed to nourish the implanted embryo.
Endometrial Biopsy: Sampling of the endometrium.
Epididymis: A coiled tubular organ attached to and lying on the testicle that provides for the transport, storage and maturation of sperm.
Oestrogen: see Oestrogen. Estradiol: see Oestradiol.
Fallopian Tube: Ducts through which eggs travel to the uterus once released from the ovarian follicle. Sperm normally meet the egg in the fallopian tube, the site at which fertilisation usually occurs.
Fertilisation: The combining of the genetic material carried by sperm and egg to create an embryo. Normally occurs inside the fallopian tube (in vivo) but may also occur in a Petri dish (in vitro). See also In Vitro Fertilisation.
Frozen Embryo Transfer (FET): A procedure where frozen (cryopreserved) embryos are thawed and then placed into the uterus.

Flare Protocol: Protocol used for some IVF/ICSI procedures where a "flare-up" of hormones occurs when the medications commence. More commonly the down regulation protocol is used that avoids the effect of this hormone "flare-up".
Follicle: A fluid-filled sac in the ovary that contains an egg that is released at ovulation. This follicle grows to about 25mm in size when it is ready to ovulate.
Follicle Stimulating Hormone (FSH): A pituitary hormone that stimulates spermatogenesis and follicular development. In the male, FSH stimulates the Sertoli cells in the testicles and supports sperm production. In the female, FSH stimulates the growth of the ovarian follicle. Elevated FSH levels are indicative of gonadal failure in both males and females.
Folic Acid: one of the B complex vitamins, folic acid is involved in the synthesis of amino acids and DNA. Deficiency causes megaloblastic anaemia. Requirements for folic acid are increased in early pregnancy, and supplements are advised for those planning pregnancy and during the first trimester of pregnancy.
Gamete Intrafallopian Transfer (GIFT): A technique that is rarely used in lieu of in vitro fertilisation for women with patent (clear and open) tubes. After egg collection the eggs are mixed with sperm and then immediately injected through the fimbria into the woman's fallopian tubes for in vivo (within the body) fertilisation. The GIFT procedure is done through laparoscopy.
Glycerol: A sugar alcohol - the building block of fats.
Gonads: The glands that make reproductive cells and "sex" hormones: the testicles, which make sperm and testosterone, and the ovaries, which make eggs (ova) and oestrogen.
Gonadotropins - Hormones that control reproductive function: Follicle Stimulating Hormone (FSH) and Luteinising Hormone (LH).
Gonadotropin Releasing Hormone (GnRH)The hormone which controls the production and release of gonadotropins. Secreted by the hypothalamus every ninety minutes or so, this hormone enables the pituitary to secrete LH and FSH, which stimulate the gonads.
GnRH Agonist: Medication that depletes stores of GnRH. Used to prevent premature ovulation and assist with growth of multiple follicles during IVF/ICS procedures.
GnRH Antagonist: Medication that blocks the release of GnRH. Used to prevent premature ovulation and assist with growth of multiple follicles during IVF/ICSE+I procedures.
Gonal F: FSH injection marketed by Serono.
Human Chorionic Gonadotropin (hCG/HCG): The hormone produced in early pregnancy, which keeps the corpus luteum producing progesterone. Also used via injection (Profasi/Pregnyl) to trigger ovulation after some fertility treatments.
Hormone: A substance produced by an endocrine gland that travels through the bloodstream to a specific organ.
Hyperstimulate: Promote over-response.
Hysterosalpingogram: X-Ray using contrast media injected through the cervix to examine the endometrial cavity and fallopian tubes.
Hysteroscopy: Uterus endometrial cavity examination using a telescope and fibre-optic camera.
Implantation (Embryo): The embedding of the embryo into tissue. Implantation usually occurs in the lining of the uterus 5-10 days after ovulation; however, in an ectopic pregnancy it may occur elsewhere in the body.

Intracytoplasmic Sperm Injection (ICSI): A procedure in which a single sperm is injected into the egg to enhance fertilisation with very low sperm counts or with non-motile sperm.
Intrauterine sperm insemination: see Artificial Insemination.
In Vitro maturation: Growth of an embryo that occurs outside the body.
In Vitro Fertilisation (IVF): Fertilisation of sperm and egg to form an embryo takes place outside the body in a small glass dish.
Laparoscopy: Examination of the pelvic region by using a small telescope that can be inserted into a hole in the abdominal wall for viewing the internal organs. Predominantly used for the diagnosis of infertility, Rarely used to access the fallopian tubes in GIFT and sometimes for egg retrieval from the ovaries in IVF.
Luteal Phase: Post-ovulatory phase of a woman's cycle. The corpus luteum produces progesterone, which cause the uterine lining to thicken to support the implantation and growth of the embryo.
Luteinising Hormone (LH): A pituitary hormone that stimulates the gonads. An LH surge is the spiking release of LH that causes the release of a mature egg from the follicle.
Lucrin: GnRH Agonist injection medication.
Menopause: span of time when ovaries stop functioning and therefore menstruation and childbearing ceases.
Microsurgical Sperm Collection: Using microsurgery to remove sperm from the testis for use in IVF usually with ICSI.
Miscarriage: Spontaneous loss of an embryo or fetus from the womb.
Monozygotic twins: identical twins forming from a single embryo dividing in two.
Morphology: The shape of sperm as studied in a semen analysis.
Motility: The measurement of motion and forward progression of sperm in a semen analysis.
OAT Syndrome: The combined occurrence of Oligospermia, Teratozoospermia and Athenospermia.
Oestradiol: the principal Oestrogen produced by the ovaries.
Oestrogen: The female sex hormone.
OHSS: see Ovarian Hyperstimulation Syndrome.
Oligospermia: A low number of sperm in the semen.
Oocyte (Egg): The female reproductive cell.
Oocyte Cryopreservation: Egg freezing still experimental and used as an emergency backup.
Orgalutran: The GnRH antagonist marketed by Organon.
Ovarian Cyst: A fluid-filled sac inside the ovary. May be found in conjunction with ovulation disorders, endometriosis (chocolate cyst), and tumours of the ovary.
Ovarian Hyperstimulation (Controlled): Using medications to stimulate the ovaries to produce more oocytes as in IVF treatments and ovulation induction.
Ovarian Hyperstimulation Syndrome OHSS: A severe side effect of ovulation induction with injectable fertility medications. A woman's ovaries become enlarged and produce an overabundance of eggs. Blood hormone levels rise, fluid may collect in the lungs or abdominal cavity, and ovarian cysts may rupture, causing internal bleeding. Blood clots sometimes develop. Symptoms include nausea, vomiting, diarrhoea, bloating, sudden weight gain and abdominal pain. Cycles stimulated with these drugs must be carefully monitored with blood tests and ultrasound scans. OHSS may be prevented by withholding the hCG injection when ultrasound monitoring indicates that too many follicles have matured. It is rarely life threatening.

Ovary: The female gonad; produces eggs and female hormones.
Ovidrel: Synthetic HCG injection marketed by Serono.
Ovulation: The release of the egg (ovum/oocyte) from the ovarian follicle.
Ovulation Induction: Medical treatment used to enhance and initiate ovulation. E.g.: Use of the medications Clomid, Serophene, Gonal F, and Puregon.
Ovum: The egg; the reproductive cell from the ovary; the female sex cell or oocyte.
PESA: Percutaneous Epididymal Sperm Aspiration. Is a simple technique to obtain sperm for ICSI (Intra Cytoplasmic Sperm Injection) in men who have obstruction of the vas deferens, either due to vasectomy or other obstruction.
Polar Body: The discarded genetic material resulting from female germ cell division. The presence of a polar body indicates maturity of an oocyte collected during IVF/ICSI.
Polycystic Ovarian Syndrome (PCOS): A condition found in women who don't ovulate/ ovulate infrequently, characterized by excessive production of androgens (male sex hormones) and the presence of cysts in the ovaries. Though PCOS can be without symptoms, some include excessive weight gain, acne and excessive hair growth.
Post Coital Test (PCT): A microscopic examination of the cervical mucus performed several hours after intercourse to determine compatibility between the woman's mucus and the man's semen.
Progesterone: The hormone produced by the corpus luteum during the second half of a woman's cycle. It thickens the lining of the uterus to prepare it to accept implantation of a fertilised egg. It is released in pulses, so the amount in the bloodstream is not constant.
Pituitary: An endocrine gland lying at the base of the brain that secretes a number of hormones including gonadotropins (FSH and LH), thyroid stimulating hormone and prolactin.
Pre-iImplantation Genetic Diagnosis (PGD):
sampling of cells from an embryo for chromosomal analysis prior to embryo transfer.
Pregnyl: HCG injections marketed by Organon.
Profasi: HCG injections marketed by Serono.
Progynova: Oestrogen support medication often used in FET cycles when a woman is anovulatory.
Prolactin: Hormone released by the anterior pituitary that stimulates the mammary gland and can impact on the function of the corpus luteum.
Puregon: FSH injection marketed by Organon.
Rubella: German measles.
Semen Analysis: A laboratory test used to assess semen quality: sperm quantity, concentration, morphology (form), and motility. In addition, it measures semen (fluid).
Semen Culture: A laboratory test used to analyse the bacterial levels of a semen sample.
Serophene (Clomiphene Citrate): A fertility drug that stimulates ovulation through the release of gonadotropins from the pituitary gland. Marketed by Serono.
Sperm Antibodies: Antibodies are produced by the immune system to fight off foreign substances, like bacteria. Antisperm antibodies attach themselves to sperm and inhibit movement and their ability to fertilise. Either the man or the woman may produce sperm antibodies.

Sperm Banking: Cryopreservation of semen samples for future use.
Synarel: GnRH agonist Nasal spray medication.
Testes: The two male sexual glands contained in the scrotum. They produce the male hormone testosterone and the male reproductive cells (sperm). Singular is testicle.
Testicular Sperm Aspiration (TESA)/ Testicular Biopsy/Testicular Sperm Extraction (TESE): A surgical procedure used to take a small sample of testicular tissue for microscopic examination. May be used in an attempt to obtain sperm for IVF using ICSI.
Transvaginal: Through the vagina or across its wall as in a surgical procedure
Transvaginal Ultrasound: An ultrasound examination performed by means of inserting a probe into the vagina.
Teratozoospermia: high numbers of abnormal sperm on analysis.
Testosterone: The male hormone responsible for the formation of secondary sex characteristics and for supporting the sex drive.
Thyroid: gland with two lobes either side of the trachea (Adams Apple) that secretes hormones that are concerned with regulating metabolism and essential for pregnancy.
Tubal patency: clear and well functioning fallopian tubes.
Ultrasound: technique used to evaluate internal organs using sound waves reflected from the tissues.
Ultrasound follicle tracking: Monitoring of ovarian follicles using ultrasound technique.
Ultrasound guided pick-up: Transvaginal ultrasound visualisation of the ovaries enabling access the ovarian follicles and egg collection using a transvaginal probe attachment for IVF.
Urologist: Specialist surgeon often consulted for Male Infertility issues.
Uterine Cavity Measurement: Length of uterine cavity from fundus to cervix measured using a sterile guide or estimated via ultrasound.
Uterus: The muscular female reproductive organ that houses and nourishes the fetus during pregnancy. Internal lining known as the endometrium. The womb.
Vaginal pessary: Medication designed to be absorbed through the vaginal wall.
Vas Deferens: a pair of excretory ducts that convey semen from the epididymis to the urethra.
Vasectomy: The surgical separation of both vas deferens. A procedure used for birth control/sterilization.
X-Chromosome: The genetic information in a cell that transmits the information necessary to make a female. All eggs contain one X-chromosome, and half of all sperm carry an X-chromosome. When two X-chromosomes combine, the baby will be a female.
Y-Chromosome: The genetic material that transmits the information necessary to make a male. The Y chromosome can be found in one-half of the man's sperm cells. When an X- and a Y-chromosome combine, the baby will be a male.
Zona Pellucida: The protective outer membrane surrounding the egg.

RESOURCES

Booklets & Information leaflets

- Are You Planning To Have A Baby?
- OI & IUI Intrauterine Insemination
- Sperm Donation
- Fertility Solutions for the Single Female

Web sites
General Infertility:
www.pathway-to-parenthood.com
www.sydneyfertility.com.au

IVF/ICSI
www.fertilityeast.com.au

Donor Eggs
www.donoreggsaustralia.com.au

Support
www.access.org.au

NOTES

NOTES

Fertility EAST

Assisted Conception Clinic

CLINIC HOURS

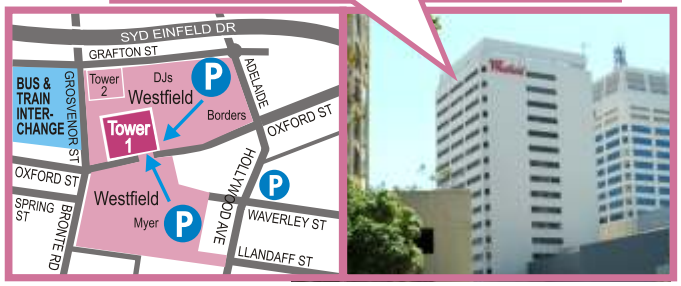
Monday to Friday - 8.00am to 4.30pm
Saturday - 9.00am to 1.00pm
All appointments

02 9389 1177

BLOOD COLLECTION HOURS

Monday to Friday - 8.00am to 9.30am
Saturday - 9.00am to 10.30am
No appointments necessary
Results Mon-Fri between 1pm and 3pm

Fertility East
Top Floor(Level 26) Westfield Tower 1,
520 Oxford Street Bondi Junction 2022
(or via lifts on level 6 of Westfield Shopping Centre)



- 1 minute walk from Bondi Junction Bus Terminal and Train Station
- 2hr free parking in Westfield

Our success is your baby

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