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IVF/ICSI

# EMAIL ADDRESSES

acusecretarial.tayside@nhs.net for general enquiries to the secretarial team

tay-uhb.acureferrals@nhs.net for enquiries to the clinical team

# CONTACT NUMBERS

|  |  |
| --- | --- |
| Secretaries | 01382 49647501382 660111 ext 54565 or 54566 |
| Nursing station | 01382 633835 |
| Lab team secretary | 01382 740298 |

 The phones all have voicemail. If staff are busy they may be unable to answer your call. Please leave a message including your name, date of birth and contact telephone number, and they will get back to you as soon as possible. You can also leave a message when the Unit is closed (outwith 8.00 am – 5 pm). These messages will be dealt with the following day (or on a Monday if left over the weekend).

**In an emergency out of hours, you can contact on call medical staff**

**Dr KINI / Dr KAY / Dr MARTINS DA SILVA /DR RAMALINGAM**

**Mobile 07774 694765**

**If there is no reply from this number, you should contact the NHS Tayside switchboard 01382 660111. They will contact one of the consultant staff for you.**

# OPENING HOURS

|  |  |
| --- | --- |
| Monday to Friday  | 0800 - 1700 |
| Saturday and Sunday | 0800 - 1200 |

There may be staff in the Unit (e.g in the lab) at other times, but the front door of the Unit will be locked.

# INTRODUCTION

In vitro fertilisation has been provided at Ninewells since 1984. The Assisted Conception Unit (Ward 35) was opened in August 1994. An extension and extensive refurbishment was completed in February 2012, providing our current purpose built modern Unit. The Unit has its own medical, nursing, scientific and administrative staff.

# IVF

A sperm and egg join together in a complex process known as fertilisation to create an embryo. This process normally takes place in a woman’s fallopian tube. The embryo that results may then implant in the womb (uterus) and go on to develop into a baby. In vitro fertilisation (IVF), describes fertilisation that occurs following mixing eggs with a number of prepared sperm in a laboratory setting. Once fertilisation has occurred, the resulting embryo(s) is transferred to the woman’s uterus. Any good quality embryos not transferred can be frozen and stored for use, either if your treatment has been unsuccessful or if you wish to try for a brother or sister at a later date.

# ICSI

Intracytoplasmic sperm injection (ICSI) is a type of IVF that allows us to treat patients where the sperm count is low, or where there is fault in the way the sperm works – either where the sperm do not swim properly or have difficulty in binding to the egg. Occasionally couples will be found to have a problem with fertilisation at their first attempt at IVF. If the number of eggs fertilised (the fertilisation rate) is very low or none fertilise (**failed fertilisation**) then further attempts at IVF may also fail. ICSI is a technique that involves the injection of a single sperm into an egg and so bypasses many of the normal steps in fertilisation. In reality, there are no significant differences for couples undertaking ICSI rather than IVF. The drugs, ultrasound scans and egg recovery procedure are identical, and men are asked to produce a sample by masturbation. When it is known sperm are not present in the sample, the sperm will be recovered by a surgical procedure and this will be discussed in advance. However the handling of the eggs and sperm (the gametes) by the embryologists in the laboratory is very different. Special treatment of the egg is needed before it can be injected, to remove the (cumulus) cells surrounding it. The sperm sample is prepared so that individual sperm can be selected for injecting into each egg.

|  |
| --- |
| http://www.singer.ch/images/icsi01.jpg |
|  |

**Sperm** **injection**

When compared with IVF, the number of embryos created as a result of ICSI may be lower, and therefore fewer embryos are available for transfer and freezing. There are a number of factors contributing to this

* Not all eggs are sufficiently mature to be injected.
* The injection process can damage some eggs, usually because of egg abnormalities or technical difficulties. Egg survival following the injection procedure is approximately 97%.
* Not all eggs fertilise even though a sperm has been injected into the egg. The average, **normal** fertilisation rate of injected eggs is approximately 65%.
* A number of eggs may fertilise abnormally (1.5% of injected eggs). Resulting abnormal embryos cannot be used in your treatment.

# WHAT ARE THE RISKS OF ICSI?

For the female partner, the risks of ICSI are no different than those of IVF. Even for couples where ICSI is recommended, a few patients may conceive without any form of fertility treatment, but the chance of this happening is low. As such ICSI may be the only realistic chance to create a pregnancy using the male partner’s sperm, however there are some concerns, in terms of possible effects for children born as result of this treatment.

1. Some couples requiring ICSI may be at increased risk of passing on (male factor) problems to their children. The most obvious example is for men with a very low sperm count without obvious explanation where there is a reasonable chance that some of the instructions carried within every cell (the **genes**) that control the production of sperm may be missing or defective. , It is possible that any male children may have the same type of fertility problem as their father.
2. In men where there are no sperms in the ejaculate, it is possible that this may be due to congenital absence of the vas deferens (a tube which carries the sperm from the testes). This may be associated with the presence of one copy of an altered gene, which causes cystic fibrosis, without having any other symptoms (because two faulty copies of this gene are required to actually cause Cystic Fibrosis). However, we check a blood test for a fault in this gene (Cystic Fibrosis gene mutation), to see if there is any risk of passing this on to offspring.
3. There may be links with other medical problems, but these apply only to a minority and are best discussed on an individual basis.
4. There is a theoretical possibility that the ICSI process itself may in some way harm the baby that results. Initial evidence from studies following children born following ICSI was very reassuring. No child, however it is conceived, can be guaranteed to be free of problems. About 1 in 30 of all children will be born with a minor or major problem that can affect their quality of life in some way. This can vary from simple skin blemishes through to major heart problems and original studies suggested that none of these problems were significantly increased in ICSI children. However, this data is now being challenged and it is possible that these problems **may** be increased by a further 1-2%. The intention is not in any way to frighten people off having this treatment but simply point out that the treatment **may** not be entirely risk free for the child. No two couples are the same, and you will have the opportunity for further discussion with your doctor. You may also wish to read the HFEA’s own leaflet on ICSI from the website [www.hfea.gov.uk](http://www.hfea.gov.uk)

# RESULTS

Success rates vary and can be expressed in a number of ways. These are the latest published figures from the HFEA website, under the ‘Choose a Clinic section’. You can find more information there.

This data shows live births per embryo transferred, for the period 01-July-14 to 30-jun-15.

|  |  |  |
| --- | --- | --- |
| Age group | Less than 38 years | 38 years and over |
| Ninewells | 31% | 15% |
| National Rate | 27% | 11% |

This data shows live births per egg collection

|  |  |  |
| --- | --- | --- |
| Age group | Less than 38 years | 38 years and over |
| Ninewells | 36% | 22% |
| National Rate | 39% | 20% |

Multiple birth rate

|  |  |  |
| --- | --- | --- |
| Age group | Less than 38 years | 38 years and over |
| Ninewells | 11% | 4% |
| National Rate | 14% | 13% |

Our continuing success rates for the period July – December 2018 are:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Age Group | <35 | 35-37 | 38-39 | 40+ | Overall |
| Percentage | 54.4% | 51.4% | 61.1% | 23.1% | 51.2% |
| Numbers | 31 / 57 | 19 / 37 | 11 / 18 | 3 / 13 | 64 / 125 |

These data have not been validated by the HFEA.

The numbers in each group are very small and this may skew the results.

Results do go up and down from year to year and there are many different reasons for success and failure. For those eligible for NHS treatment, purchasing health boards agree to fund up to three treatment cycles. If you have successful treatment, you will no longer be eligible for NHS-funded treatment. If treatment does not result in an embryo transfer, this cycle would not be counted towards the total number of attempts.

Individual couples may have a higher or lower chance of success depending on the reason for their infertility. Female age plays an important role in the quality of the eggs. As a result older women have lower success rates. The doctor that you see will be able to give you an estimate of your own chance of success taking these factors into account.

# CONSENT FORMS

**Before** starting your treatment, we will ask you to sign various HFEA consent forms. If seeking treatment as a couple, it is very important that you both understand the forms fully before signing.

The forms are as follows:

1. Consent to disclosure of information; this should be completed when you first attend the clinic and gives us your permission to contact your own general practitioner(s) and any other person concerned with your care. (This is explained in detail under the section on the HFEA)
2. Consent to treatment (IVF / ICSI)
3. Consent to use of eggs (and freezing of embryos, where appropriate)
4. Consent to use of sperm (and freezing of embryos, where appropriate)
5. Legal parenthood consent, where appropriate.

You may also be given written information and approached about participation in research. Any research would be carried out only after discussion with you both.

# DRUGS

We provide all necessary drugs for your NHS-funded treatment. Self-funding patients can also purchase all drugs required through the clinic. Costs are described in the tariff.

The drugs most commonly used in treatment cycles are:

1. **Suprecur** **(Buserelin)** - a nasal spray (or injections) that suppresses the hormones controlling your ovaries. This is referred to as *down regulation.* A scan will be carried out to confirm this has happened before the next step in your treatment.
2. **Gonal-F/Menopur/Bemfola** – hormone injections that stimulate the ovaries. During stimulation, ultrasound monitoring is used to assess the response of the ovaries by measuring the number and size of the follicles. When the follicles reach a certain size, we know that the eggs contained inside them are ready for use in your IVF/ICSI treatment.
3. **Ovitrelle** - an injection that brings about final maturation of the eggs.
4. **Crinone** - a vaginal gel containing progesterone hormone, which is used to prepare the lining of the womb for embryo implantation following egg collection, and to support an early pregnancy.

In some patients alternative regimes may be recommended. This will be discussed on an individual basis.

# EGG RECOVERY

Egg recovery is performed under conscious sedation (similar to a light general anaesthetic). It is a scan-guided procedure, with a needle guide attached to the vaginal ultrasound probe. Each follicle is aspirated to collect the fluid and eggs. The eggs collected will be used in your IVF/ICSI treatment. You will be able to go home an hour or so later, once fully recovered.

# FERTILISATION IN THE LABORATORY

In the afternoon following egg collection, each egg will be mixed with a sample of prepared sperm (IVF) or injected with a single sperm (ICSI). Your partner will have been asked to produce a sample in the Unit earlier in the morning. Abstinence is required for 2-3 days prior to the sample being produced, but no longer than this. Occasionally, the sample is poorer than expected and we may request a second sample. The following day, the eggs will be examined to confirm whether or not fertilisation has taken place. There is no guarantee that fertilisation will occur in any treatment cycle. If there is a failure of fertilisation, the significance of this will be discussed with you.

Fertilised eggs (embryos) are usually allowed to develop in incubators with timelapse monitoring for a further 5 days in the laboratory, prior to embryo transfer.

# EMBRYO TRANSFER

We usually transfer embryos to the womb 5 days after egg recovery although occasionally this will be carried out on day 3. We normally recommend that the best one or two embryos are transferred. The HFEA state that a maximum of two embryos may be transferred in women aged less than 40. Three embryos may be transferred in exceptional circumstances in women aged 40 or over. When donor eggs are used, no more than two embryos can be transferred. The reason for restricting the number of embryos transferred is to reduce the risk of multiple pregnancy. There is still a small chance that a triplet pregnancy will occur, even when only two embryos are transferred.

Twins, and more so triplet pregnancies, carry significant risks both to mum and babies involved. There is an increased risk of miscarriage and premature labour. Largely because of prematurity and low birth weight, the babies are also atincreased risk of long term healthproblemsor serious handicap. We are therefore most likely to recommend a single embryo transfer, but there will be a chance to discuss this with the clinician/embryologist supervising your treatment. Currently, around 10% of pregnancies are twins and less than 1% are triplets.

Embryo transfer is rather like having a smear test and does not require an anaesthetic. A fine soft catheter containing the embryo(s) is passed through the neck of the womb (cervix). This is not painful and requires a full bladder. You can go home shortly afterwards and should continue the course of Crinone gel until the day of your pregnancy test – a date for this will be given to you by the nurses.

# EMBRYO FREEZING

If there are any good quality embryos not used in your treatment, we will freeze them for your use in another cycle. An embryologist will discuss this with you.

# RISKS OF DRUGS/TREATMENT

* Few forms of medical treatment are entirely without risk. Fertility drugs can occasionally lead to formation of cysts in the ovary, which are temporary. It has been suggested that fertility treatment might lead to an increase in risk of ovarian cancer, although there is currently no evidence to directly relate IVF treatment with an increased risk of ovarian or other cancers in previously healthy individuals.
* In about 5% of all cases, patients over-respond to fertility drugs resulting in a condition called Ovarian Hyperstimulation Syndrome (OHSS). This usually settles without any specific measures but does require monitoring, and may require hospital admission. Symptoms include abdominal distension, pain and bloating, nausea or shortness of breath and may indicate that you have developed this problem. OHSS can very occasionally become severe with very serious risks to your health including rare reports of fatality. It is important that you should contact us (preferable), or your own general practitioner, if you are feeling unwell.
* In the case of risk of significant OHSS, we are likely to advise that we freeze all embryos for later use, because we know that the condition can be made worse by becoming pregnant in the treatment cycle.
* The technique of egg recovery could inadvertently damage organs close to the ovaries, such as blood vessels, bowel or bladder. These complications are very rare. Bleeding or infection can also occur but are usually easily managed.
* We cannot guarantee that you will become pregnant, nor can we guarantee that any child will be perfectly normal. Previous evidence from studies of children born after IVF would suggest that the risks to the babies born are the same as occurs naturally. More recent evidence suggests a slight increase in the risk of major congenital abnormalities, particularly those related to the genital tract. However, it is unclear whether this increase maybe related to infertility itself rather than to assisted conception treatment.
* There is an increased chance of multiple pregnancy (twins). Risks involved in a triplet pregnancy are significant and there is an unacceptable likelihood of premature birth and damaged babies resulting from this. (It is possible for a triplet pregnancy to result when only two embryos are transferred). We are likely to recommend transferring only one embryo.
* There is also a risk of ectopic pregnancy, i.e. a pregnancy implanting outside the womb, the most common site being the fallopian tube. A pregnancy occurring in the tube cannot continue and most often necessitates surgery and removal of the affected tube.
* Sometimes we have to abandon an attempt at IVF after we have started treatment because the ovaries do not respond as well as expected. This is obviously disappointing for you but we cannot always guarantee that eggs will develop. In most, but not all, cases, a higher dose of injections or changing to a different treatment protocol will avoid the same problem again.
* Very rarely, something may go wrong in the course of your treatment. An example may be an incubator failure, or a dish of eggs or embryos being knocked or dropped. The first thing that we will do is to tell you that it has happened, and then to report the incident to the HFEA and to the Trust Senior Management through our incident reporting system. We then hold a meeting of senior staff, in an effort to investigate any likely cause and to reduce the risk of it happening again. You may know the outcome of this meeting, if you wish.

# GENERAL ADVICE

## Folic Acid

Folic acid supplements are recommended to reduce likelihood of abnormalities of a baby’s skull and spine. Folic acid should be taken 3 months before treatment and during the first 12 weeks of pregnancy. You can buy folic acid, or prenatal vitamin supplements containing folic acid, at any chemist. Alternatively, your GP can prescribe this for you.

## Smoking

Studies show that IVF/ICSI success rates are lower if one or both partner smokes. We cannot emphasise too strongly the advantages of stopping smoking, for fertility treatment as well as your personal health. Patients having NHS-funded cycle must be non-smokers and will have carbon monoxide testing carried out (both partners).

## Alcohol

Couples trying to conceive should drink less than 5 units of alcohol per week. You should avoid alcohol altogether once you are in treatment.

## Rubella

All patients will have a blood test to check that they are immune to rubella (German measles) prior to starting treatment. If you are not immune, we recommend vaccination in advance of treatment.

## Weight

NHS funded treatment will only be offered when the female partner’s BMI is greater than 18.5 and less than 30. We can offer support to lose weight by giving advice on healthy eating and exercise. Self-funding treatment may be offered where BMI is higher (between 30 and 35) although weight loss is recommended to reduce complications of fertility treatment, and during pregnancy.

# COSTS

If you are eligible for NHS funded treatment, then there will be no costs payable by you. If you are funding your own treatment, please see the separate leaflet on costs. Please note that there is currently no charge made for freezing embryos, but there will be a cost for subsequent frozen embryo transfer cycle(s).

# WHAT DO YOU DO NOW?

The waiting time for treatment will be discussed with you in the clinic. The waiting time for a first treatment cycle for all NHS patients is six to nine months. If you want to enquire about your place on the waiting list at any time, or if you would like to consider self-funding, please contact us. If your treatment is successful, you would not be eligible for further NHS-funded treatment, and would have to self-fund any subsequent treatment. Should you wish a review appointment with the medical or nursing staff or embryology staff, this can be arranged.

Approximately two months before your first IVF/ICSI treatment is due to start, you will receive an appointment for screening. At this appointment, a blood sample will be taken from each partner to check for Hepatitis B and C and HIV I and II. This enables treatments to be provided in a safe manner for both staff and other patients. The female partner will also have Anti-Mullerian hormone (AMH) level checked. This gives an indication of ovarian reserve and is used to decide on the most appropriate treatment protocol and drugs dose for you. You will receive notification of a patient information evening at this time. This will give you an opportunity to meet some of the staff involved in the whole process.

Once your results are back, detailed treatment instructions will be sent, with a copy of the instructions sent to your own general practitioner if you have consented to this.

# EGG DONATION

Primary or premature ovarian failure has been estimated to occur in approximately 1% of women. For such women, their only hope of a pregnancy lies in the use of eggs donated by a healthy female volunteer. The same technique may also apply to women whose ovaries have been removed or where she is at risk of passing on some genetic disorder. This treatment may also be recommended to some couples with previous failed IVF attempts. Separate information leaflets are available.

### EGG SHARING

We also carry out egg sharing, where patients can receive self-funded treatment at a significantly reduced cost in exchange for donating some of their eggs. If you are interested in this, please ask for further information.

Egg sharing/donation is not completely anonymous. Since 1st April 2005, the law allows people conceived through donation to find out who their donor was, once they reach the age of 18. Please refer to the information leaflet ‘What you need to know about donating sperm, eggs or embryos’, produced by the HFEA.

# HUMAN FERTILISATION AND EMBRYOLOGY AUTHORITY (HFEA)

The HFEA sets standards for Assisted Conception Units. They carry out annual inspections and license only those Units that meet their standards. We are a licensed Centre, which means;

* We are legally required to inform the HFEA of all couples undergoing assisted reproduction techniques.
* If you become pregnant as a result of treatment, we are obliged to notify the Authority of your pregnancy, and of its outcome. It is therefore important that you let us know details of the outcome of a pregnancy if your treatment is successful.
* The HFEA makes a charge for each treatment cycle and this is included in the cost of your treatment.
* Following the Human Fertilisation and Embryology Authority (Disclosure of Information

Act) 1992, we may legally disclose information about your treatment with your consent

to:

1. Any person named by you.
2. Your GP or anyone involved in providing you with medical, surgical or obstetric

services for whom it is important to know about your treatment.

1. Any person who needs to know about your treatment for purposes of medical or

financial audit.

You may also give consent to identifying information being used in research.

# WELFARE OF THE CHILD

The Human Fertilisation and Embryology Act of 1990 requires that the welfare of the child (or any existing children) must be taken into account before treatment can start. (A separate leaflet covering the HFEA statement on this is included).

# PARENTAL RESPONSIBILITY

From 6th April 2009, the law with regards to parenthood changed for couples having treatment with donated sperm. Where couples are unmarried, it is now possible for the male partner to be legally recognised and named on the child’s birth certificate, but only if both partners consent to this. We will provide you with these consent forms. Same sex couples who are not in a legal partnership can also consent to the partner who does not give birth being named as the second legal parent.

For married couples, the situation has not changed. The married partner will be the legal parent of any child born as a result of treatment (unless they do not consent to the treatment).

# COUNSELLING

We recognise that having fertility treatment can be stressful and challenging. For some people, talking can be very helpful and Anne Chien, our independent fertility counsellor, is available to give you the time and the space to explore your thoughts and feelings. You can be assured that counselling is not part of an assessment process and will not adversely affect your treatment. Any discussion with the counsellor is confidential. If you would like an appointment to see Anne, please contact the secretaries on 01382 496475 and they will arrange this. Alternatively an appointment may be made with any member of staff.

# FUNDRAISING

We have an active fundraising group (BirthTay), which has been of enormous benefit to patients. If you would like to be involved with this please contact us and ask for more information.

# COMPLAINTS

If you feel that there is any area for complaint regarding your treatment, there are various ways to deal with this;

1. Contact any member of staff at the Assisted Conception Unit.

2. Write to the Consultant in charge of your care.

3. Write to the Chief Executive of the Trust (NHS Tayside). Please be aware that any correspondence sent may be read by other members of the Complaints and Advice Department staff, and although normal rules of confidentiality apply, the special protection offered by the Human Fertilisation and Embryology Act for patients undergoing assisted conception treatment would not be followed.

# USEFUL ADDRESSES

You may find the following of help:

|  |  |
| --- | --- |
| Name | Website |
| Fertility Network Scotland (national support group) | [www.fertilitynetworkscotland.com](http://www.infertilitynetworkscotland.com) |
| ACEBABES (support for families following successful treatment) | [www.acebabes.co.uk](http://www.acebabes.co.uk) |
| Donor Conception Network | [www.dcnetwork.org](http://www.dcnetwork.org) |
| The Endometriosis Society | [www.endo.org.uk](http://www.endo.org.uk) |
| Miscarriage Association | [www.miscarriageassociation.org.uk](http://www.miscarriageassociation.org.uk) |
| DAISY network (support group for women who have suffered premature menopause) | [www.daisychain.org](http://www.daisychain.org) |
| TAMBA (twins and multiple births association) | [www.tamba.org.uk](http://www.tamba.org.uk) |
| British Agencies for Adoption and Fostering | [www.baaf.org.uk](http://www.baaf.org.uk) |
| COTS (Childlessness overcome through surrogacy) | Info@surrogacy.org.uk |
| Verity (support and information for women with polycystic ovarian syndrome) | [www.verity-pcos.org.uk](http://www.verity-pcos.org.uk) |
| Fertility friends | [www.fertilityfriends.co.uk](http://www.fertilityfriends.co.uk) |
| Baby greenhouse (information/support group) | [www.babygreenhouse.co.uk](http://www.babygreenhouse.co.uk) |