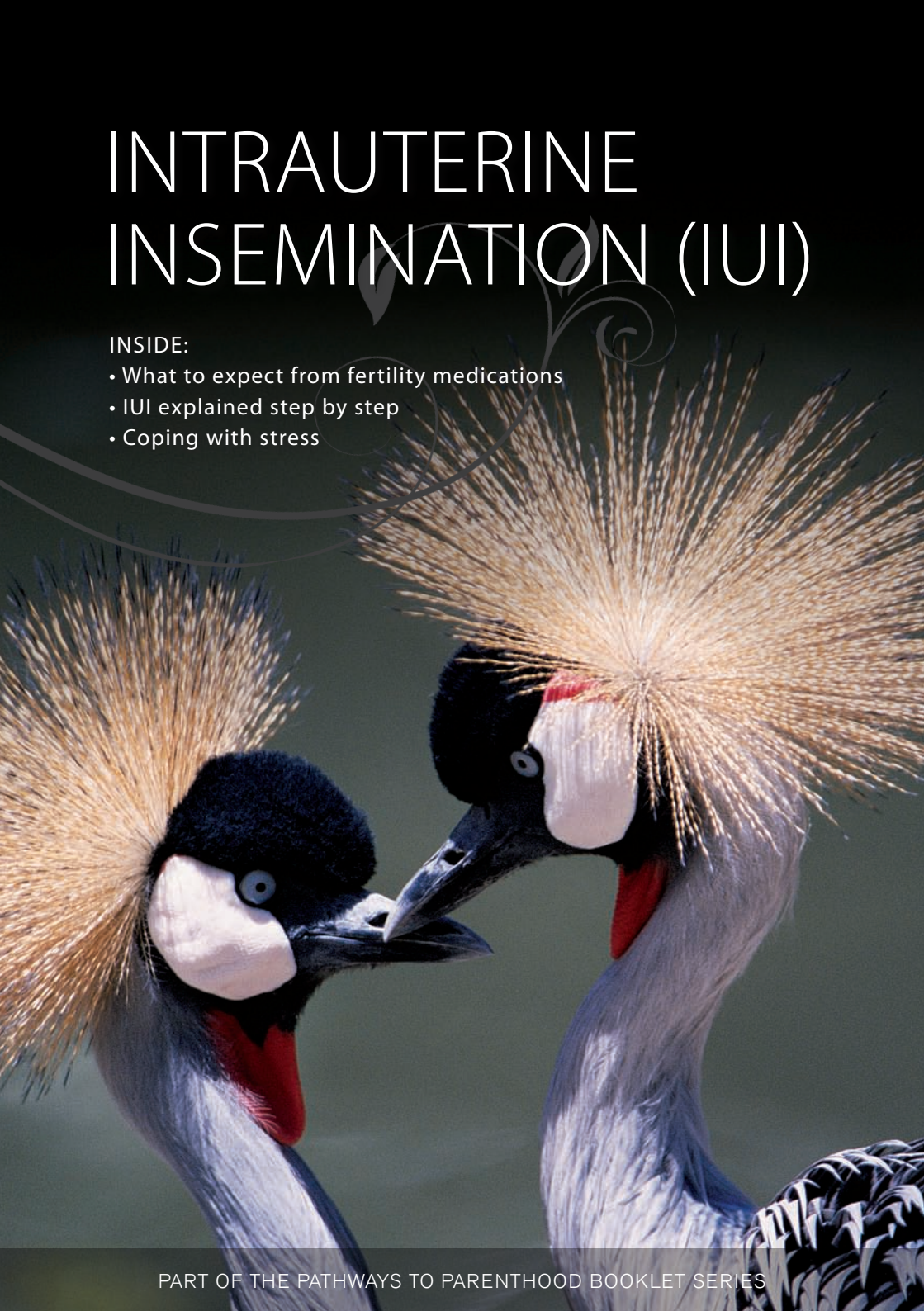
INTRAUTERINE INSEMINATION (IUI)

INSIDE:

- What to expect from fertility medications
- IUI explained step by step
- Coping with stress



PART OF THE PATHWAYS TO PARENTHOOD BOOKLET SERIES

ABOUT THIS BOOKLET

This series of booklets has been developed and written with the support of leading fertility clinics across Australia, and AccessAustralia – a national organisation that provides numerous services for people having difficulty conceiving. We also acknowledge the many people who spoke openly about their own experiences with assisted conception in order to help others experiencing a similar journey. Merck Serono thanks the many individuals, couples and Australian healthcare professionals, including fertility specialists, specialist nurses and psychologists who shared their knowledge and expertise during the production of these booklets.

Important notice: The information provided in this booklet does not replace any of the information or advice provided by a medical practitioner and other members of your healthcare team. If you have any further questions about IUI, please contact your doctor.

Please note that throughout this booklet, the generic name of a medication will be stated first followed by the brand name in brackets.

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INTRODUCTION

Having trouble falling pregnant comes as a surprise to most women and men. Many people assume that pregnancy will follow immediately after birth control is discontinued. In reality, up to one in six couples worldwide have difficulty conceiving in the first 12 months of trying.[1]

These days, the treatment options available to help you become pregnant are relatively simple, effective and affordable, and the success rates are very promising. **Intrauterine insemination (IUI)** is a common procedure that has been used for many years to help deliver male sperm closer to the female egg.

WHAT IS INTRAUTERINE INSEMINATION?

You may have heard the term **artificial insemination (AI)**. This is the name given to a procedure where sperm is placed into the female reproductive system by a means other than intercourse. **Intrauterine insemination (IUI)** is the most common form of AI used and involves placing sperm into the female's uterus through an assisted medical process. As it is a relatively low-tech solution to infertility problems, IUI is usually one of the first techniques used to assist a couple who is having difficulty becoming pregnant.

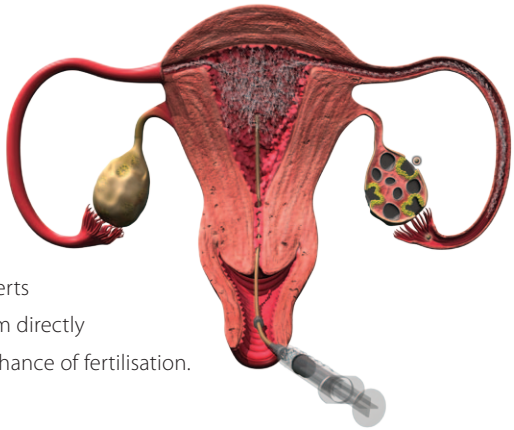
In the procedure, warmed and 'washed' (treated) sperm are introduced into the woman's uterus through a tube. Sperm can be provided by the woman's husband or partner (artificial insemination by husband – AIH) or sperm provided by a known or anonymous sperm donor (artificial insemination by donor – AID or DI). The procedure is done around the time of ovulation to give the best chance of conception. Hormonal (fertility) medications might be used in conjunction with the treatment to enhance conditions for a pregnancy.

OTHER FORMS OF ARTIFICIAL INSEMINATION

IUI is one of the most commonly used methods of AI because of its higher success rate. However, your doctor may also use the following methods.

- **Intracervical insemination (ICI)**: sperm are placed in the cervix. As 'unwashed' or raw sperm may be used, it is sometimes performed under instruction at home and referred to as intravaginal insemination or IVI.
- **Intratubal insemination (ITI)**: washed sperm are inserted into the fallopian tubes.

WHAT ARE THE BENEFITS?



During normal intercourse, only a small amount of sperm makes it to the woman's uterus and into the fallopian tubes where fertilisation takes place. IUI inserts large amounts of the best performing sperm directly into a woman's uterus thus increasing the chance of fertilisation.

WHEN IS IUI NOT SUITABLE?

IUI is not effective when there is:

- a blocked or damaged fallopian tube
- ovarian failure (menopause)
- severe male factor infertility, i.e. no sperm, very low sperm count, poor sperm motility (movement), sperm defects. In this case, donor sperm may be an option
- severe endometriosis
- a female partner over the age of 40.

REASONS FOR USING IUI

IUI is mainly used when timed intercourse or hormonal medications alone have not worked, or if there are 'mild' sperm abnormalities, such as poor motility (e.g. the ability of the sperm to move). It is also used in conjunction with donor sperm by same sex female couples or by women who don't have a partner.

In addition, IUI can be used to overcome fertility due to the following conditions:

Mild endometriosis: occurs when the tissue that normally lines the inside of the uterus grows in other places where it doesn't belong, such as on the ovaries and fallopian tubes.

Mucus 'hostility': may arise as a result of a vaginal infection or the presence of antisperm antibodies in the mucus.

Ovulation problems: including irregular or absent ovulation often caused by a deficiency in one of the controlling hormones.

Low sperm count: if sperm count is only a little low, it can still be used because of the way it will be treated in the laboratory.

Ejaculation problems: due to psychological problems such as impotence (inability to get and maintain an erection), or anatomic problems of the penis, such as paraplegia.

Retrograde ejaculation: in men the semen goes backward into the bladder instead of coming out of the penis.

Unexplained infertility: defined as not being able to conceive after one year, even though the cycle is normal, semen is normal, internal examinations are normal and there is normal sperm-mucus penetration. In about 10-15% of couples, a cause for infertility may not be found even after thorough investigation of both partners.

Physical problems with sexual intercourse: vaginismus is an involuntary clamping of the vaginal muscles, which may prevent some women from having frequent intercourse.

HOW IS IUI PERFORMED?

Ovulation

There are four different ways your doctor may choose to conduct IUI depending on your individual situation:

Without hormonal medications

1. In a natural cycle

With hormonal medications

2. Clomiphene/IUI
3. Follicle stimulating hormone – FSH/IUI
4. Follicle stimulating hormone with human chorionic gonadotrophin – FSH/hCG/IUI

IUI done without hormonal medication

1. In a natural cycle

If the woman has a regular menstrual cycle, IUI will be performed about day 12 to day 15 of the cycle when ovulation – release of the egg – is taking place. It is also suitable for those who cannot have natural intercourse (e.g. spinal cord injuries). You will be asked to work out when ovulation will occur by tracking basal body temperature (your temperature increases during ovulation) and changes in vaginal mucus, or by using ovulation kits. Alternatively, you may be monitored through regular ultrasounds or blood tests administered by your medical team or clinic.

IUI done in conjunction with hormonal medications

Depending on your particular situation, your doctor may recommend that you take hormonal medication (also known as 'fertility drugs') to help stimulate ovulation. Your doctor may refer to this part of treatment as 'ovulation induction', 'ovarian stimulation' or 'stimulated cycle'.

IUI done in conjuction with hormonal medication (cont.)

At the beginning of your menstrual cycle, the hypothalamus (the part of the brain that controls a large number of bodily functions) releases a hormone called **gonadotrophin-releasing hormone (GnRH)**. GnRH in turn causes the pituitary gland (in the base of your brain) to release a hormone called **follicle stimulating hormone** (FSH) to prepare one egg for release. When the egg is mature, the pituitary gland produces another hormone called **luteinising hormone** (LH). This prompts the follicle to release this one egg into the fallopian tube in the process known as **ovulation**. Follicles are the fluid filled sacs in which eggs grow to maturity. Fertility medication (often either clomiphene citrate or a gonadotrophin – see information below) can increase the number of mature eggs and regulate ovulation timing to improve your chances of becoming pregnant.

2. Clomiphene/IUI cycle

Typically, a doctor will start you on the medication clomiphene citrate (also known as Serophene® or Clomid®). Clomiphene citrate stimulates the release of GnRH, which in turn causes the pituitary gland to release more FSH and LH causing growth of the follicles containing the eggs.

How is it taken?: Clomiphene citrate comes in an oral tablet form and is usually taken daily for five days, from day two to four of your menstrual cycle.

Side effects: Side effects may include facial flushes, headaches, breast soreness, nausea and vomiting or abdominal discomfort and bloating.[2,3]

3. Follicle stimulating hormone/IUI cycle

If Clomiphene citrate is unsuccessful, **gonadotrophins** may be used. Gonadotrophins may be in the synthetic form of the naturally occurring hormone **follicle stimulating hormone (FSH)** (Gonal-f®, Puregon® or Elonva®, or can be purified human menopausal gonadotrophin (HMG) (Menopur®)). You may hear this medication commonly referred to as 'FSH'. Another medication, Pergoveris® is a mixture of FSH and LH.

Often couples prefer to proceed directly to the stronger FSH medications without first trying clomiphene/IUI. FSH acts directly on the ovary, promoting follicular development.

How is it taken?: These medications are taken by a self-administered injection under the skin (subcutaneous), usually via an easy to use pen-type device. Injections are required for about 10 days from day four or five of the menstrual cycle but the number of days and dose will vary depending on follicle development.

Side effects: These may include mood swings, abdominal discomfort, backaches, fatigue and tender breasts.[4]

GONADOTROPHIN-RELEASING HORMONE (GnRH) AGONISTS OR GnRH ANTAGONISTS

IUI treatments can sometimes be compromised if ovulation does not occur at just the right time. When used in combination with injected FSH, **gonadotrophin-releasing hormone (GnRH) agonists** allow for more reliable timing of the egg collection and usually an increased number of eggs. They include the medications nafarelin acetate (Synarel®) and leuprorelin acetate. Synarel is given by nasal spray morning and night and leuprorelin is given by a daily subcutaneous (under the skin) injection.

GnRH antagonists are a newer class of injectable medication. GnRH antagonists – cetrorelix acetate (Cetrotide®) and ganirelix acetate (Orgalutran®) – can be given for a shorter period of time than GnRH agonists. Using this medication allows the continued stimulation of follicle growth whilst preventing the risk of premature egg release.

4. Follicle stimulating hormone with human chorionic gonadotrophin – FSH/hCG/IUI

Human chorionic gonadotrophin (hCG) – Ovidrel® or Pregnyl® – causes the final maturation and release of the egg and is usually given by injection one to two days after the last dose of FSH.

Luteinising hormone (LH) – Luveris® – is similar to the luteinising hormone found naturally in humans. This medication may be used to bring on the release of the eggs instead of hCG to minimise side effects.

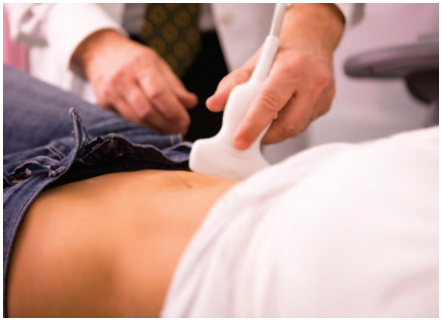
THE RISK OF MULTIPLE PREGNANCIES

Fertility medications can cause more than one follicle to develop and this is why your body will be monitored closely through blood tests and ultrasounds while you are taking them. If your doctor notices more than three maturing follicles on ultrasound prior to the procedure, the IUI may be cancelled for that treatment cycle.

For those having trouble becoming pregnant having twins may seem like a blessing, but complications, such as miscarriage and low birth weight, are much more common in twins than single pregnancies.

Monitoring ovulation

Throughout this first stage, your response to FSH will be carefully monitored for ovarian hyperstimulation syndrome (OHSS) – see box below – and to gain a clearer picture of what is happening to the follicles so the right timing and dose can be determined. This monitoring will be done through regular ultrasounds, blood tests and urine tests.



BE AWARE OF OVARIAN HYPERSTIMULATION SYNDROME

Ovarian hyperstimulation syndrome (OHSS) is a potentially life-threatening medical condition, which may occur, though rarely, when your ovaries have been overly stimulated by various fertility medications. The ovaries may increase in size and produce large amounts of fluid. It is characterised by pain and bloating in your abdomen and if severe, can cause problems with breathing or urinating. Contact a member of your healthcare team immediately if you believe you have any of these symptoms.

Semen collection

Artificial insemination by husband (AIH)

On the day of the insemination, the male partner will be required to produce a sample of semen by ejaculating into a sterile container. Two to three days abstinence from intercourse/masturbation is preferred prior to the sample collection day. Clinics often provide a room so that this sample may be produced in private, but some men prefer to collect the semen at home and deliver it to the clinic. As it is being used that day it must not be frozen or refrigerated, and it needs to arrive promptly at the clinic – within a couple of hours.

Donor insemination (DI)

IUI can also be done using donor sperm, either from an anonymous or a known sperm donor (known as DI or donor insemination). Insemination with donor sperm is used when there is no male partner or the male partner does not produce sperm, when the sperm is of very poor quality or if there is a high risk of passing on genetic diseases.

Sperm are usually frozen ahead of time and screened for sexually transmitted diseases (e.g. HIV/AIDS/Hep/Hep C) and any genetic disorders. The semen selected for a couple closely matches, as much as possible, the male partner's characteristics, e.g. eye and hair colour, height and build.

Many clinics will allow couples to reserve semen for a subsequent pregnancy, so that if they have a child from insemination, they can try for another child with the same genetic characteristics (i.e. from the same donor).

How might you feel?

Using donor sperm

Before you agree to use donor sperm, it is important for you to explore how you truly feel about it. For example, the child created will be genetically related to only one of you. For the male partner, this may result in feeling like your masculinity or even your relationship is threatened and that you are no longer part of the conception/pregnancy process. On the contrary, you will be there from the point of insemination right through to raising your child. Providing sperm does not automatically mean you will be a good father. Being a parent is about passing on your values, love, wisdom and experience.

It is a good idea to discuss your emotions and concerns with a counsellor available through your fertility clinic or as recommended by your doctor. **AccessAustralia** and the **Donor Conception Support Group** have many resources on the issues relating to donor insemination (see contact details at the back of this booklet).

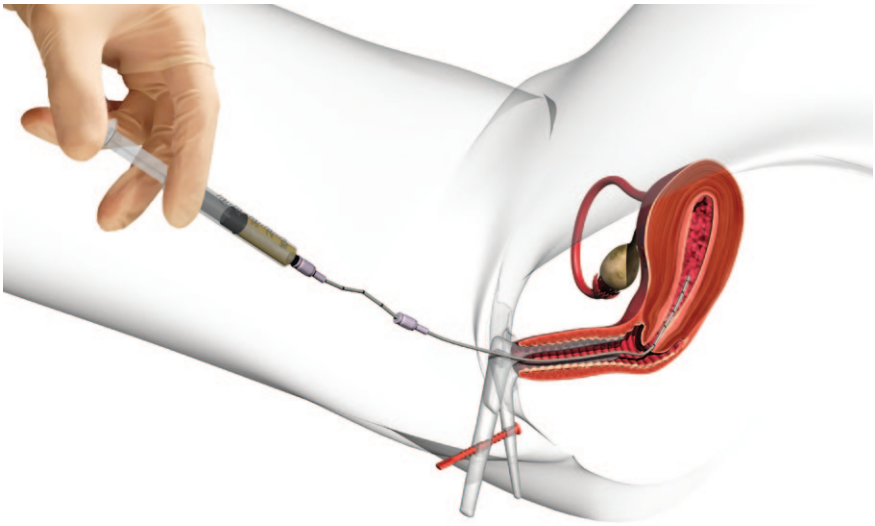
Sperm preparation

The semen is prepared in a laboratory for the next stage. In the woman's body the cervix acts as a filter for the sperm, so only the motile sperm pass through. In the same way, during the IUI procedure the semen is 'washed' and filtered removing any mucus and non-motile sperm. In other words, a concentrated solution containing the most active sperm is inserted. Unwashed sperm must not be placed in the uterus as severe allergic reactions can occur.

Donor sperm are usually screened for diseases and genetic defects before being frozen. The samples are thawed and the most active sperm separated as required. Additional 'straws' or vials of sperm can be thawed if required to give a suitable insertion sample.

Insertion

On the day of ovulation, sperm insertion will take place with fresh or thawed sperm. For those using fresh sperm, you will be asked to return to the clinic one to two hours after the delivery of the sperm sample for the insertion process. This simple and low-tech procedure is done without anaesthetic and is rather like a pap smear, with a similar level of discomfort involved. An instrument called a speculum is inserted into the vagina so the cervix (neck of the uterus) can be seen. A narrow tube attached to a syringe is gently pushed through the cervix into the uterus. Sometimes when the cervix is hard to reach a longer tube may be attached to



the end of the syringe. The sperm is then injected into the uterus. It is usually not painful but occasionally some mild cramping or discomfort may occur. You will be asked to remain lying down for around 10–20 minutes and then you will be able to resume your normal routine.

If you are on a FSH/hCG/IUI cycle, you may need a booster injection of hCG – normally done at home – around seven days after insertion.

What can help?

Surviving the two week wait

After your IUI, it takes around two weeks for pregnancy test results to be accurate. This 'two week wait' – the time before your expected period is understandably a time of high anxiety, worry, and frustration for women trying to conceive. Here are some 'survival' tips to help you get through this time:

- Try not to obsess about pregnancy symptoms – feeling pregnant does not always mean that you are. Your doctor may prescribe medication after your treatment with side effects that resemble pregnancy symptoms.
- Keep busy – this may mean working more, or planning meaningful or fun distractions.
- Allow yourself only 15 to 30 minutes a day to think about pregnancy, write down your thoughts, search information online or discuss it with your partner or supportive friends/ family members.
- Try some relaxation techniques such as breathing exercises or meditation.
- Avoid pregnancy tests – the chance of getting a positive result before your period is late is very slim. The hCG injection given to mature and release the eggs and as a booster can also give a false positive urine test.

SUCCESS RATES

The success rates for IUI vary between 5% and 15% per cycle attempt depending on a number of factors including maternal age.

In the latest statistics from the Australian Institute of Health and Welfare (AIHW), 2,390 cycles of IUI using donated sperm were undertaken at fertility centres in Australia and New Zealand.[5] Of these, 14.5% resulted in a pregnancy and 11.1% resulted in a live delivery.[5]

WHAT'S NEXT?

Depending on your circumstances and your doctor's advice, you might start with natural cycles and move onto three or four cycles of clomiphene/IUI. If this is not successful, your doctor may advise FSH/IUI or FSH/hCG/IUI. Usually after three to four cycles of these, ***in vitro*** fertilisation (IVF) – where the egg and sperm are fertilised outside the body and then transferred to the uterus – may be recommended.

COPING WITH STRESS

Talk to your partner

Infertility is a couple's problem not an individual's. Blaming yourself or your partner doesn't achieve anything. By asking for and relying on the support of your partner and by communicating openly with them throughout the evaluation, diagnosis and treatment phases, you may find that your relationship grows stronger.

The value of a wide support network

Discussing fertility issues may be uncomfortable, but expressing how you feel may help you release your stress. It's important that you reach out for support.

Infertility is a sensitive subject and many people may not know how to react. Guide the conversation and help them avoid topics that may be hurtful or make you feel uncomfortable. Let your friends know how they can support you.

If you feel in need of more emotional support than your partner can give, but don't want to share everything with a friend, your fertility clinic usually offers the services of a counsellor.

The website www.fertility.com has a wealth of information tailored to three different stages of a couple's journey. In addition to personal stories and frequently asked questions, it offers a number of practical 'tools' to assist you including an ovulation calculator, a questionnaire and advice on your most appropriate coping method.

SUPPORT ORGANISATIONS

AUSTRALIA

AccessAustralia

www.access.org.au Ph: (02) 9737 0158;
Email: info@access.org.au

AccessAustralia is a national organisation, which provides numerous services and resources for people having difficulty conceiving. Its services include:

- fact sheets, newsletters and personal stories
- putting you in contact by phone or email with others sharing a similar infertility experience
- a register of infertility self-help groups
- listing of infertility clinics accredited by the Reproductive Technology Accreditation Committee (RTAC).

Endometriosis Association (Qld)

www.qendo.org.au Ph: (07) 3321 4408;
Email: info@qendo.org.au

This association provides information and news relating to the latest research and treatments for endometriosis.

Donor Conception Support Group

http://www.dcsg.org.au Ph: (02) 9793 9335;
Email: dcsupport@hotmail.com

The Donor Conception Support Group of Australia is a self funding organisation run by volunteers. Its members include those who are considering or using donor sperm, egg or embryo, those who already have children conceived on donor programmes, adult donor offspring and donors. It offers a newsletter, information nights, a library of books and articles, and telephone support.

SANDS

SANDS is a self-help support group comprised of parents who have experienced the death of a baby through miscarriage, stillbirth, or shortly after birth. It provides 24-hour telephone support, information resources, monthly support meetings, name-giving certificates and other support.

Vic – www.sandsvic.org.au
Ph: (03) 9899 0218 (support) or (03) 9899 0217 (admin); Email: info@sandsvic.org.au

Qld – www.sandsqld.com
Ph: 1800 228 655 (support) or (07) 3254 3422;
Email: admin@sandsqld.com

SA – www.sandssa.org
Ph: (08) 8277 0304; Email: support@sandssa.org (quick response) or info@sandssa.org (general query)

NEW ZEALAND

FertilityNZ

www.fertilitynz.org.nz Ph: 0800 333 306;
Email: support@fertilitynz.org.nz

FertilityNZ is New Zealand's national network for those seeking support, information and news on fertility problems. It provides various services including:

- comprehensive information brochures
- a forum for confidential feedback on any issues or concerns
- a chatroom where you can seek on-line support from people in similar situations.

Endometriosis New Zealand

www.nzendo.co.nz/ Ph: 0800 733 277 (free phone support line); Email: nzendo@xtra.co.nz

Endometriosis New Zealand provides disease information specifically designed for teenagers, a support group network, regular seminars and workshops and a free phone support line.

SANDS New Zealand

www.sands.org.nz/home.html

Ph: (06) 868 9514; Email: contact@sands.org.nz

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Looking for more information?

Ask your doctor for a copy of the other booklets in the *Pathways to Parenthood* informational series.

- Your step by step guide to treating infertility
- Overcoming male infertility
- Female infertility & assisted reproductive technologies (ART)
- Endometriosis
- Polycystic ovary syndrome (PCOS)
- Ovulation induction (OI)
- *In vitro* fertilisation (IVF) & intra-cytoplasmic sperm injection (ICSI)
- Managing the stress of infertility

Fertility

Science | Partners | Life

Pictured a pair of Black crowned cranes