flindersfertility

Oncofertility

Personalised Care | Specialised Treatment

Contents

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Level 4, Flinders Medical Centre
Bedford Park, South Australia 5042

Every effort has been made to ensure that the information in this booklet is as up to date as possible.

To obtain additional copies of this booklet, either:

1. Visit www.flinders**fertility**.com.au, or
2. Contact flinders**fertility** on
   Telephone: 131 IVF (131 483)
   Facsimile: +61 8 82046299
   Email: enquire@flinders**fertility**.com.au

Introduction

This booklet is written to help you better understand the potential effect of cancer on fertility and how various treatments affect the reproductive system, as concerns about sexuality and fertility are very important to anyone diagnosed with cancer.

There is a short period of time after cancer diagnosis when the most effective fertility preservation treatment can take place, which is why it is critical that anyone diagnosed with cancer is able to access timely and accurate information about fertility preservation treatment options.

We hope that the information in this booklet will lead to a more informed decision being made prior to undertaking Oncofertility treatment, and if you require additional information, please call flinders**fertility** on 131 IVF (131 483) or visit **www.flindersfertility.com.au**

About flinders**fertility**

Established in 1977, flinders**fertility** (formerly Flinders Reproductive Medicine) was one of the first fertility clinics in the world, and helped to conceive South Australia's first IVF Baby in 1982. flinders**fertility** remains dedicated to providing personalised care and patient centred specialised treatment, while still offering the most affordable fertility treatment in South Australia.

We offer a wide range of fertility services and treatments, provided by highly qualified and very experienced Obstetricians and Gynaecologists. We also provide emotional support and guidance through professional counselling services, high quality care through our experienced nursing staff, and specialised andrology and embryology laboratory services. Our Clinic is a modern, purpose built Fertility Clinic within Flinders Medical Centre, with facilities that include consulting rooms, procedure and recovery rooms, ultrasound services and laboratories.

The flinders**fertility** team will assist you in any way possible to preserve your fertility, while you battle cancer, so that when you are ready we can help you to conceive a healthy baby.

Cancer and Fertility

Not all cancers or cancer treatments will affect your ability to have a baby, but many do. The best course of action is to ask your oncologist about the effects your cancer or treatments are likely to have on your fertility, and to meet with a fertility specialist to discuss the fertility preservation options that are available for you. Generally, the earlier you consult with a fertility specialist, the broader the range of treatment options you will be able to consider.

The type of cancer treatment you get depends on many factors and your specialist team will have taken all these in to account before deciding on a treatment plan for you.

These factors include:

- Tumour size
- Involvement of lymph nodes by the cancer
- Cancer grade (i.e. how different it looks compared to normal tissue).

Unfortunately, some of the treatments selected to help fight your cancer can also affect your ability to have children or cause infertility. The effects of these treatments may be temporary or permanent. It is, therefore, very important that you discuss any fertility issues with your specialist team before you begin your cancer treatment.

The following is a list of cancer treatments and then a short discussion of the infertility risk associated with each. Depending on the type and stage of your cancer you may have one or all of the treatments below.

- Surgery and Irradiation.
- Chemotherapy
- Hormonal therapy (e.g. for breast or prostate cancers)

Surgery and Irradiation

If your cancer does not affect your reproductive system, and if your reproductive organs can be shielded from the effects of radiation, surgery and radiation may not affect fertility. Damage caused by surgery or irradiation to the ovaries or testes, fallopian tubes or vas deferens, or to the uterus or cervix, may prevent natural conception and pregnancy. Some parts of the brain (the hypothalamus and pituitary), are also involved in fertility in men and women, and these also need to be protected from damage caused by the cancer or the treatment, to preserve fertility.

Chemotherapy

Chemotherapy is the treatment most likely to have a direct impact upon fertility.

For women, chemotherapy can cause changes in the ovaries that stop eggs from being released or reduce the number of eggs stored in the ovaries. Therefore, chemotherapy can stop ovulation, disrupt hormonal levels, and cause your periods to stop (amenorrhea). However, these effects may not be permanent.

For men, chemotherapy can reduce sperm number and motility, cause changes to the normal shape of sperm, and damage sperm chromosomes. Chemotherapy can cause sperm production to stop completely, but production often returns when the treatments are finished. Sometimes sperm production only returns years after treatment though, and in some cases sperm production does not return at all.

The three most important factors influencing fertility in cancer patients are age, type of chemotherapy and dose.

Age

Women who are 40 years or older are more prone to permanent infertility from chemotherapy than younger women. The closer in age to natural menopause (average age 51) you are, prior to starting chemotherapy, the more likely you are to be menopausal following treatment.

Women who are younger than 40 years have a greater chance of regaining ovarian function and only experiencing temporary infertility after chemotherapy. However, women who resume menstruation after chemotherapy may become menopausal earlier than the average age due to the damaging effects of chemotherapy on the eggs in their ovaries.

Type of chemotherapy drugs

Many of the chemotherapy drugs used in modern practice cause infertility. The chemotherapy drugs most likely to cause infertility are a group called the "alkylating agents".

For example, cyclophosphamide is an alkylating agent commonly used in combination with other chemotherapy drugs to treat breast cancer. Adriamycin is another commonly used agent and is considered medium risk.

It is very important to discuss the infertility risk of your particular chemotherapy regimen with your Oncologist.

Dose

The higher the dose of chemotherapy the greater the risk of infertility.

Conclusion

Overall, chemotheraphy causes infertility in about 30% of men and women. It is not possible to predict which people will be affected.

Contraception

It can be a very confusing time for patients when they are told that their cancer treatment may cause infertility, but at the same time they are also advised to avoid pregnancy. The majority of chemotherapeutic agents have the potential to cause harm to sperm, eggs and to a developing foetus. Therefore, it is vital that patients use a reliable form of contraception during treatment.

Reliable contraception should be used before, during and after treatment, as women should assume that they could get pregnant unless they have not had a period for at least a year (aged 40 or over) or two years (under the age of 40) following cancer treatment. Even though a woman may not be having periods, she may still be producing eggs and could still become pregnant.

The return of periods does not mean that the ovaries are producing normal eggs which will result in a healthy pregnancy, while the absence of periods after chemotherapy does not necessarily mean a permanent loss of fertility. A fertility specialist can order blood tests to clarify a diagnosis and discuss the outcomes.

Hormone - sensitive, cancers tend to grow in the presence of certain hormones usually progesterone or estrogen, which means that women with hormone - sensitive cancers should probably avoid using contraceptive pills containing those types of hormones. Your Oncologist will provide you with advice regarding safe contraception.

Natural Pregnancy

It is advisable for women to wait two years after cancer treatment finishes before becoming pregnant, because the possibility of the cancer returning lessens over time so that the first two years after treatment is when the risk is greatest.

Irradiation and chemotherapy have the potential to cause genetic damage to sperm, so it is recommended that men wait 6 to 12 months after the end of treatment before trying to conceive naturally.

Children born to cancer survivors do not have a higher risk of birth defects or cancer, unless the cancer involved is caused by a known genetic mutation. If this is the case, it may be possible to use certain genetic screening methods (pre-natal genetic diagnosis) to help prevent passing the gene mutation on to children.

Options for preserving fertility at flindersfertility

The following information is general and is intended to provide a starting point for you to become more informed about fertility preservation options. You should discuss your own medical needs with your doctors.

For Women

Fertility Treatment	Description	Medical status	Timing	Special considerations
Embryo Freezing (cryopreservation)	The first step is to harvest the women's eggs, which are then fertilised in vitro (outside the body) commonly referred to as IVF (In Vitro Fertilisation). The resulting embryos are then frozen and stored, preserving the ovaries for future use. **Embryo freezing** is an established fertility preservation method that is used routinely for IVF patients. Egg harvesting typically requires approximately 2 weeks of ovarian stimulation with daily injections of follicle-stimulating hormone from the first day of the menstrual period. The development of follicles in the ovary, and the eggs that they contain, is monitored by ultrasound and blood tests. At the appropriate time, an injection (of human chorionic gonadotrophin, hCG) is administered to trigger the follicles to ovulate, and eggs are subsequently collected by ultrasound-guided transvaginal aspiration. Eggs are fertilised in vitro, the formation of embryos is carefully monitored, and good quality embryos are cryopreserved. **Delay to Cancer Treatment** Because ovary stimulation must be started at the onset of menses and takes two weeks, a delay of 2 to 6 weeks in starting cancer treatment may be required if the fertility specialists do not see women early in their menstrual cycle. A male partner or donor sperm is required for fertilisation.	Depending on the type of cancer and the urgency of the cancer treatment, and whether or not the woman has a male partner, embryo freezing is the preferred treatment option.	Before cancer treatment. Collection of eggs takes place 10 to 14 days after the last period.	Embryo freezing may not be an option for women with highly aggressive malignancies; including leukemia, some lymphomas, and sarcomas, which warrant immediate cancer treatment. Ovarian stimulation should be avoided when patients have hormone-sensitive tumors, including breast and endometrial cancers. A partner or donor sperm is needed.
Egg Freezing (Cryopreservation)	Ovarian stimulation and egg harvesting requirements are identical to those of embryo freezing (above), but instead of fertilising with sperm, the eggs are frozen and stored, preserving the eggs for future use.	While embryo freezing is a well recognised infertility treatment, egg freezing is a relatively new, and proven, technique.	Before cancer treatment. Collection of eggs takes place 10 to 14 days after your last period.	Egg freezing may appeal to women who do not wish to create an embryo immediately. There are similar concerns with Egg Freezing regarding delays in cancer therapy and the potential risks of short-term exposure to high-serum estrogen concentrations.

Ovary Transplant	Some fertility clinics will conduct a procedure to collect and freeze portions of ovarian tissue before the cancer treatments start. When the woman has completed her cancer treatment, the tissue is re-implanted into the woman, and the eggs in the transplanted ovarian tissue will restore fertility and prevent premature menopause.	This procedure is not widely available and there have been very few confirmed live births from this procedure.	Before cancer treatment. The procedure can take place within days, and will not cause undue delays to cancer treatment.	The ovarian tissue that is surgically removed and cryopreserved insures that the woman has another option to restore fertility, in case the ovaries fail during, or after, chemotherapy.

For Men

Fertility Treatment	Description	Medical status	Timing	Special considerations
Sperm banking Or Sperm Freezing (cryopreservation)	Sperm cryopreservation is the freezing and storing of sperm after masturbation or through surgical recovery of sperm. Even men with extremely reduced sperm count and motility are candidates for sperm cryopreservation.	Sperm freezing is a proven and successful practice. Sperm cryopreservation is the preferred treatment option.	Before cancer treatment.	It is strongly recommended that sperm be collected prior to cancer treatment because sperm quality may be compromised by cancer treatment . Surgical sperm recovery can be considered if the male cannot ejaculate.
Gonadal shielding during radiation therapy	Gonadal shielding is the use of a shield to reduce the dose of radiation delivered to the gonads. Possible with selected radiation and fields.	Gonadal shielding is an established practice.	In conjunction with radiation treatments.	Does not protect against the effects of chemotherapy.
Testicular aspiration or extraction	For men with very low sperm counts before or after cancer treatment, sperm can be collected by testicular aspiration or extraction. In testicular aspiration a fine needle is passed into the testis to remove very thin pieces of testicular tissue. In testicular extraction a small incision is made in the testis and a small sample of testicular tissue is collected, and sperm are extracted from this tissue.		Before or after cancer treatment.	For men with a very low sperm count before and after cancer treatment.

Options for becoming a parent at flindersfertility after completion of cancer treatment

Cancer survivors can become parents through a number of options including natural conception.

Fertility Treatment	Description	Eligibility for treatment
Surrogacy	In South Australia altruistic surrogacy was legalised on 26 November 2010. In certain strictly defined circumstances couples are now able to enter into an altruistic surrogacy arrangement after signing a Recognised Surrogacy Agreement. In general, surrogacy is an arrangement in which a woman: 1. Agrees to become pregnant, and 2. Surrenders custody of and the right to a child born as a result of the pregnancy to two other people.	Surrogacy is limited by legislation to the following:- The commissioning parents must:- 1. Be legally married (not open to same sex couples or singles); or 2. Have cohabited continuously together as defacto husband and wife for the period of 3 years immediately preceding the date of the agreement, or for the periods aggregating not less than 3 years during the period of four years immediately preceding the date of the Agreement. 3. Be domiciled (have their principal place of residence) in South Australia. 4. Have the fertilisation procedure carried out in South Australia.
Sperm donors	flinders**fertility** has two sperm donor programmes: 1. Clinic recruited donors: These donors are recruited by flinders**fertility** and are available for use by numerous recipients. 2. Known donors: These donors are known to and recruited by the recipient and are available for their use exclusively.	People intending to enter the flinders**fertility** sperm donor programme are required to see the flinders**fertility** Counsellor on at least two occasions before starting, to help with decision making and to consider the implications for you and any child that may be born. The waiting period to access the flinders**fertility** sperm donor programme depends on the couple's/person's preparation for treatment, the number of patients requesting the service and the availability of sperm. It is usual to wait for several months before treatment is available.

Egg and embryo donors	Egg donation refers to the use of eggs donated by another woman who acts as a 'donor' to assist an individual or couple who are the "recipient(s)", in their attempt to become parents. In order to donate eggs, the donor must undertake treatment in an IVF cycle. During this process, multiple eggs are collected, after which they are fertilised with the recipient partner's sperm to create embryos. The resulting embryos are placed into the recipient's uterus. Thus, any children created will be genetically related to the male partner but not to the female recipient. Any additional embryos that are likely to survive the freeze and thaw process are frozen and stored for future frozen embryo transfers. flinders**fertility**'s egg donation program helps women who, for a multitude of reasons, are unable to use their own eggs and require eggs donated from another woman to achieve a pregnancy. If you are unable to find your own donor, flinders**fertility** can provide advice and support on ways to advertise for a donor, but we cannot recruit one for you.	Despite the relatively simple medical procedure, egg donation can be an emotional and a physically demanding process that has serious implications including long term psychosocial, legal and health issues. As a consequence, flinders**fertility** follows a meticulous process of preparation for egg donation. This process involves thorough medical assessment, detailed testing and extended counselling of all parties involved in the egg donation, including the recipient (and recipient's partner), the donor and the donor's family.

Eligibility for Assisted Reproductive Treatment in South Australia

Eligibility for Assisted Reproductive Treatment procedures in South Australia is governed by the Assisted Reproductive Treatment Act 1988.

Treatment may only be provided under the following circumstances:

1. Where a man or woman, in a heterosexual relationship, appears to be infertile.
2. Where there is a risk of a genetic defect being transmitted to a child conceived naturally.
3. Where a deceased man has given prior written consent confirming posthumous use of sperm, embryo or fertilised ovum by a specified recipient.
4. Where a single woman, or a woman in a same sex relationship, appears to be infertile.
5. **Where a man or a woman, has a medical condition for which either the treatment or the condition itself may render a person infertile in the future.**

The term infertility refers to:

1. The inability, or significantly reduced capacity, of a person to conceive, or to bear or father a child, which is usually evidenced by a reasonable period of unprotected intercourse with no resulting pregnancy
2. A proven medical condition resulting in reduced fertility.

More help for managing your cancer and fertility

Your Oncologist and flinders**fertility** Specialist can help by telling you:

1. Whether your cancer and cancer treatment will affect your ability to have a baby.
2. Your options for preserving fertility given your type of cancer and the urgency of treatment.
3. Whether the fertility-preservation options will delay cancer treatment, and if so, for how long.
4. How each option may affect your health and the health of your future children

Counselling Services

Newly diagnosed cancer patients may feel significant shock and emotional distress from the "double blow" of cancer and possible infertility. Professional fertility counsellors can offer confidential guidance and assistance during this emotionally demanding time.

Counselling can help you in a number of important areas:

Decision making

You may have concerns about the treatment options, or about differences of opinion between you and your partner. You may want to discuss your treatment plan or how your treatment fits in with your other goals.

Counselling for change

There are times when all the waiting and trying can feel overwhelming.

Making clear what is normal stress or grief, the causes of pressure and how to deal with it all, can help in difficult times. You may not be aware of the personal resources that you possess, and counselling helps you to identify these strengths so that you can apply them.

Non-genetic parenting

People considering parenting following the use of donor sperm, donor eggs or donor embryos are required to meet with the flinders**fertility** Counsellor.

Information

You may want to gather information about support groups, adoption status or how others have dealt with different issues or decisions. If stress is a concern for you the counsellor can discuss a variety of relaxation options, planning techniques and other services available to you.

Support

You may just want to talk with someone who understands the ups and downs of cancer treatment, fertility treatment or pregnancy loss.

Costs associated with fertility preservation

A cancer patient's life may be disrupted by changes in occupational or employment status, and financial status. In recognition, flinders**fertility** offers cancer patients concessions on consultations, and treatments and services.

Eligibility and Conditions

To be eligible for a concession:

1. You must have received a cancer diagnosis.
2. You must be able to satisfy the Eligibility For Assisted Reproductive Treatment in South Australia.

Concessions apply for 5 years from the date of cancer diagnosis.

Consultations concessions apply to both the person diagnosed with cancer and partners.

Treatment concessions apply only to the person diagnosed with cancer.

Onco-fertility Concessional Fees

flinders**fertility TREATMENT FEES FOR ONCO FERTILITY PATIENTS**[1]		
Treatment	**Up Front Fees** GST included	**Estimated Out of Pocket Costs** GST included
Consultations and Scans (initial and subsequent)	Bulk Billed	NIL
IVF/ICSI Cycle	Bulk Billed	NIL
Sperm, Egg and Embryo Preparation	NIL	NIL
Sperm, Egg and Embryo Storage	Free Storage for up to 5 years	Free Storage for up to 5 years
Hospital Day Surgery and Anaesthetist		
Hospital Day Surgery	$290	$290
Anaesthetist	$175	$45

For further information regarding flinders**fertility** services and treatment costs, please contact one of our Account Managers on 131 IVF (131 483) or email enquire@flindersfertility.com.au

Referral

flinders**fertility** will use its best endeavours to arrange a consultation with one of its fertility specialists as soon as practical after referral by an oncologist. There may be occasions when a consultation will be arranged prior to the receipt of a referral.

When booking a consultation, please specify that the referral is for "fertility preservation".

Contact us

flinders**fertility**

Level 4, Flinders Medical Centre

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South Australia 5042

T: 131 IVF (131 483)

F: +61 8 8204 6299

E: enquire@flindersfertility.com.au

www.flindersfertility.com.au

Business hours

Monday to Friday, 8am to 5.00pm

Saturday, 7:30am to 11:30am

Directions

flinders**fertility** is located on Level 4, South Wing, Flinders Medical Centre.

Flinders Medical Centre is located approximately 12 kilometres south of the City of Adelaide off South Road – less than 20 minutes by car.

When visiting, please enter Flinders Medical Centre via the main hospital entrance, and proceed to the "Koala Lifts". Please take a "Koala Lift" to Level 4, where flinders**fertility** Reception is located.

Resources

Fertile Hope

Fertile Hope is a LIVE**STRONG** initiative dedicated to providing reproductive information, support and hope to cancer patients and survivors whose medical treatments present the risk of infertility. http://www.livestrong.org/Get-Help/Get-One-On-One-Support

Cancer Council South Australia

Cancer Council Helpline

Phone: 13 11 20

Extended hours - 8.30 am - 8.00 pm

Monday-Friday

Email: chl@cancersa.org.au

Cancer Council SA

202 Greenhill Road, Eastwood SA 5063

T: 8291 4111

F: 8291 4122

E: cc@cancersa.org.au

ABN: 31 469 615 538

Breast Cancer Network Australia

293 Camberwell Rd

Camberwell, Victoria, 3124

Australia

T: 03 9805 2500

Freecall: 1800 500 258

Glossary

ART is a common abbreviation for Assisted Reproductive Treatment or Assisted Reproductive Technology, which are collective terms for the different types of fertility treatments.

Cervix means the neck of the uterus. The cervix separates the body and cavity of the uterus from the vagina.

Conception means the act of the fertilisation of the egg by a sperm and the beginning of the growth of the embryo.

Cryopreservation means the freezing of sperm eggs or embryos in order to preserve them for future pregnancy.

DNA is a molecule made of a variable sequence of units which forms the genetic code.

Embryo is a fertilised oocyte which has begun to divide. The term is also used to describe the early stages of fetal growth from the fourth to the ninth week of pregnancy.

Fertilisation means the process in which a single sperm binds to an oocyte and combines the male chromosomes with the female chromosomes.

Human Chorionic Gonadotrophin (hCG): The detection of hCG in the blood usually provides the first sign that conception has occurred. Synthetic preparations of it are used to initiate ovulation when LH levels are inadequate.

Intracytoplasmic sperm injection (ICSI) is a method of injecting a single sperm into the egg.

In Vitro Fertilisation means "in glass" or in a test tube. It is the procedure by which the oocyte from the female partner and the sperm of the male partner are mixed in the laboratory. If fertilisation and cleavage of the fertilised oocyte occurs, the embryos formed are transferred into the uterus (womb) of the female. In natural conception, the oocyte and sperm meet in the fallopian tube and fertilisation and early development occurs there before implantation in the uterus.

IVF is a common abbreviation for In Vitro Fertilisation.

Menopause is the permanent cessation of menstruation following the permanent loss of ovarian function.

Menses means the monthly flow of blood from the female genital tract.

Oncofertility is an interdisciplinary field of oncology and reproductive medicine that expands fertility options for cancer survivors.

Oocyte means the female reproductive cell prior to fertilisation (egg).

Ovary means the female organ that produces eggs, or oocytes. The ovaries are located on either side of the uterus, and are connected by the fallopian tubes to the uterus.

Sperm is a common abbreviation for spermatozoon.

Spermatozoon means a male gamete or germ cell produced by the testis.

Sperm morphology means the anatomical structure of the spermatozoon.

Sperm motility means the percentage of spermatozoa moving actively forward. Assessed under the microscope or by computerized imaging.

Testicular Sperm Aspiration (TESA) means a fine needle is passed into the testis to remove very thin pieces of testicular tissue.

Testicular Sperm Extraction (TESE) means a small incision is made in the testis and a small sample of testicular tissue is excised.

References

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FERTILITY ASSESSMENT **IN VITRO FERTILISATION (IVF)**
OVULATION INDUCTION (OI) COUNSELLING & SUPPORT
SURROGACY **EGG, SPERM & EMBRYO STORAGE**
FERTILITY SERVICES FOR SAME SEX COUPLES AND SINGLE WOMEN
INTRAUTERINE INSEMINATION (IUI) **FERTILITY BANKING**
WELLBEING & FITNESS ENDOMETRIOSIS MANAGEMENT
TELEFERTILITY EGG & SPERM DONATION
TUBAL & UTERINE SURGERY **SURGICAL SPERM RECOVERY**
POLYCYSTIC OVARY SYNDROME (PCOS) MANAGEMENT
PRE-IMPLANTATION GENETIC DIAGNOSIS (PGD) AND PRE-IMPLANTATION GENETIC SCREENING (PGS)
INTRA CYTOPLASMIC SPERM INJECTION (ICSI)

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