



Preserving Fertility for Men with Cancer

Some cancers and their treatments can affect a man's ability to father a child (his fertility). These changes can last for a short time, or may be permanent. This fact sheet answers some common questions about this topic and suggests ways to try and preserve fertility for men with cancer. Knowing what can be done helps men make informed decisions about minimising fertility problems.

This fact sheet does not replace talking to your doctors or nurses. It aims to act as a tool to help you prepare questions you can ask your healthcare team.

Finding out your fertility might be affected

Being given a cancer diagnosis comes as a huge shock to most men. Many say they go through a roller coaster of uncomfortable emotions. Your future is uncertain; you may feel frightened about having treatment and long-term survival. You may also be grieving for how life was before your diagnosis.

Your medical team will support you through this difficult time. They will discuss your cancer and its treatment with you. Talking about how your treatment may affect your hormones/reproductive organs will be part of the discussion. The treatment may affect your fertility temporarily or more permanently. A reduction in sperm count or sperm quality can reduce the chances of creating a pregnancy.

For men who already have children or do not want them, this may not be a concern. However, for those who may want children in the future, the risk to future fertility can be a major issue. For some men, it can feel more upsetting than their actual cancer diagnosis.

When should I ask my doctor about my fertility?

Not all men having cancer treatment will end up infertile. Many will go on to conceive a child naturally, even if it takes time after cancer treatment finishes. However, it is important to ask your doctor about your risk of infertility and preservation options **before** treatment begins. If necessary,



your cancer specialist can refer you to a fertility specialist. These are doctors who have expert knowledge about how to preserve your fertility.

Some men may find it difficult to ask about infertility but your options will be more limited if you wait until after your treatment starts. Your medical team will be sensitive to your concerns and want to help. See Questions to ask your doctor at the end of this fact sheet.

How cancer and its treatment can affect a man's fertility

Cancer itself and its treatment's can damage or kill a man's sperm and cause fertility problems. Infertility may be temporary or permanent. For example, your sperm count may lower during treatment but with time recover enough to conceive a child. The types of problems affecting a man's fertility during cancer and its treatment will depend on:

- age (fertility naturally declines with age)
- existing fertility problems
- the type of cancer
- which treatment/s he has had

Cancer and its treatment may affect your sperm by:

- decreasing the amount you make or stopping sperm production
- lessening the quality of your sperm
- changing the genetic make-up of your sperm
- reducing or stopping production of semen in which your sperm uses to move from one place to another – this will change the ability of sperm to effectively travel up the woman's fallopian tubes to fertilise her eggs
- some surgical procedures for cancer treatment may damage the tubes carrying sperm from the testis to the penis, and the nerves necessary for normal ejaculation or erections

Sometimes cancer and its treatment can affect the production of the male sex hormone, testosterone. This can make a man feel very tired and reduce his sex drive (libido). Concerns about infertility and/or the effects of low



testosterone levels may cause erection difficulties. This can result in having less sex, which will further reduce the chances of infertility.

Which cancer treatments affect men's fertility?

Chemotherapy

Chemotherapy is the use of medications to kill or slow the growth of cancer cells. Some of these drugs can affect a man's fertility. But it will depend on which drugs are used as well as the dose and length of time they are given.

Sperm production may slow down or stop during and after chemotherapy but eventually return. This may happen for up to 10 years after treatment. However, most sperm production returns in the first two to three years after treatment finishes.

Your doctor will discuss with you in detail about the drugs you are having and their specific fertility related side effects.

Radiotherapy

This is treatment using high- energy waves similar to X-rays which kills or slows the growth of cancer cells. Radiation can decrease sperm production and change the sperm's ability to move quickly or freely. These effects can be permanent or less commonly the sperm may recover after treatment finishes.

Giving radiotherapy directly near or around the testes can damage sperm production. This is because as well as killing cancer cells it will also kill the stem cells that produce sperm. It may also have a harmful effect on the production of the male hormone testosterone. Some childhood blood cancers are treated with radiotherapy directly to the testes. Young men with tumours around the groin may need to have radiotherapy in this area. This will affect the remaining healthy testis.

Some types of cancer are treated with radiotherapy to the brain. The dose of radiotherapy can cause damage to the pituitary gland in the brain. This gland plays an important role in fertility. It sends messages to the testes to



make sex hormones involved in sperm production. However, it is possible to replace these hormones using medications.

Surgery

Men who need surgery to treat bladder, prostate or testicular cancer may face problems with infertility. Surgery to remove pelvic lymph nodes can also affect fertility. Lymph nodes are part of the immune system. They are found all over the body and play an important role in helping the body remove bacteria and other harmful agents such as cancer cells.

Removing lymph nodes from the pelvic area can damage nerves that are necessary to ejaculate semen out through the penis. Instead, semen is propelled back up into the bladder. Doctors call this 'retrograde ejaculation'. This type of surgery is sometimes necessary for men with testicular cancer and bowel cancer.

Removing the prostate and surrounding glands (called a radical prostatectomy) will mean sperm can no longer get into the semen. When the bladder is removed for bladder cancer the prostate and seminal vesicles are also taken out. The testes will still make sperm but there will no longer be any semen to transport/eject your sperm out through the penis. Men in this situation can still have the sensation of an orgasm but no fluid will come out through the penis.

Blood and marrow transplants (BMT)

These terms are used to describe a treatment that happens in three steps:

- step one: collection of stem cells either from the bone marrow, peripheral blood or from umbilical cord blood
- step two: giving high doses of chemotherapy and possibly radiotherapy (known as conditioning treatment)
- step three: infusing the stem cells back into the patient to make sure the bone marrow recovers and keeps making healthy blood cells

The drugs used and the very high doses of chemotherapy and radiotherapy greatly increase a person's risk of infertility. If you need a transplant as part of your cancer treatment your doctor will talk to you in detail about it.



Hormone Therapy and other treatments

Certain cancers can alter the production or action of a man's sex hormones. This may increase the risk of infertility. Other newer cancer treatments such as immunotherapy may also do this, but more research is necessary before we know this for sure.

What fertility preservation options are available to men?

Several factors affect a man's options for preserving his fertility before and after cancer treatment. These include age, prognosis, sexual maturity and cultural and religious beliefs.

Your cancer specialist and/or fertility specialist will be able to discuss options most suitable for your situation. The effectiveness of each fertility preservation method varies and not all options will work for every man. No method can guarantee a 100% success rate. Some men find it helpful to speak with a fertility counsellor along with their specialist doctors/Andrologist to help make the right decision. They will be able to discuss any risks involved with each option.

Non-invasive methods can include trying to reduce the impact of treatment on your fertility. For example, if the cancer is in another part of the body, protecting/shielding the testes during radiotherapy.

Your doctor may recommend methods which involve detailed discussion, a lot of thought and written consent on your behalf. We discuss these briefly under the headings below. For more detailed information look in the further help and support section at the end of this fact sheet.

Sperm banking (sperm cryopreservation)

This is a well - established method of preserving fertility for men who have gone through puberty. It involves collecting sperm ejaculated by masturbation and freezing semen for future use. Sperm can be frozen indefinitely without deterioration in quality. During cancer treatment sperm quality can be impaired due to stress and being unwell. It is always best to freeze several samples if possible in order to maximise the



opportunities for future fertility. Even if the sperm count is low, future fertility is still likely with the assistance of fertility treatment.

The process of collecting the samples through masturbation may cause anxiety and embarrassment for some men. This is normal and your medical team will be used to dealing with this situation in a sensitive and professional manner. They will want to support you in any way they can. The specimen can be obtained either privately in the hospital, laboratory or sometimes at home. For more detailed information read our fact sheet [What is involved in sperm banking?](#)

Testicular biopsy

Sperm aspiration

This method is for young men and sexually mature boys who are not able to produce a masturbated sample due to stress or illness. This method can also be used for men with normal sperm production but who have a blockage due to the cancer treatment.

The procedure involves having a local or general anaesthetic and removing a small amount of testicular tissue with a needle. A doctor will examine this tissue under a microscope to find mature sperm, immature sperm or tubules.

There is a small risk of bruising, bleeding or infection with the process of testicular biopsy. There is also a very small risk associated with having a general anaesthetic. Please discuss the risks with your doctor.

Sperm stem cell storage in immature boys

In young boys, mature sperm are unlikely to be found. There is research going on into whether sperm stem cells or testicular tissue itself may be frozen and used years later to restore fertility. The hope is that mature sperm can develop either within the tissue or from the immature sperm. It can then be used to fertilise an egg later in life. This procedure is not available in many hospitals or fertility centres. You will need to ask your doctor whether this is an option for you.



After treatment is over

After treatment is over, many men will recover the ability to make sperm again. They will go on to conceive their own children either naturally or using their stored sperm. For men who have had sperm stored, these can be used for intrauterine insemination or to fertilise a woman's egg in the laboratory as part of an IVF treatment cycle. Ask your specialist to discuss these procedures with you. You may also want to have your sperm analysed to find out if you are fertile.

Questions for your doctor

Raising the topic about fertility can be difficult but it is important you do. These questions may help you begin the conversation:

- How will my cancer treatment affect my chances of having a child in the future?
- Do all chemotherapy drugs affect fertility?
- Who can I talk to about my treatment and the possible fertility side effects of treatment?
- Can you recommend a fertility specialist I can talk to?
- What options do I have to preserve my fertility?
- Do the methods used to preserve fertility guarantee I will be able to father a child in the future?
- What clinical trials are available to me?
- Where can I find support for coping with fertility issues?
- Who can I contact if I need help talking with my spouse or partner about fertility issues?
- How will I know if I am fertile after cancer treatment?

For parents of young boys you may like to read our fact sheet Preserving fertility in children with cancer. It has questions to ask when deciding the best approach to fertility preservation for your son.

Where to get further help and information

This fact sheet has only provided you with an overview of fertility issues for men with cancer. It is important you find out as much as you can so as you can make an informed decision. For more detailed information please refer to our other factsheets and the following resources:



- Other fact sheets from the Future Fertility website www.futurefertility.com.au or www.futurefertility.com.nz
- Fertility After Cancer. A guide for people with cancer, family and friends. First published June 2014. © Cancer Council Australia 2014.
- Andrologyaustralia <https://www.andrologyaustralia.org>
- The COSA wiki guidelines online at http://wiki.cancer.org.au/australia/COSA:AYA_cancer_fertility_presentation.
- Fertile Hope www.fertilehope.org
- Fertility Society of Australia (<http://www.fertilitysociety.com.au>)

You may also like to call a Cancer Helpline service:

- Australia 13 11 20
- New Zealand call 0800 226 237

Both these help lines will allow you to speak with an experienced cancer nurse.