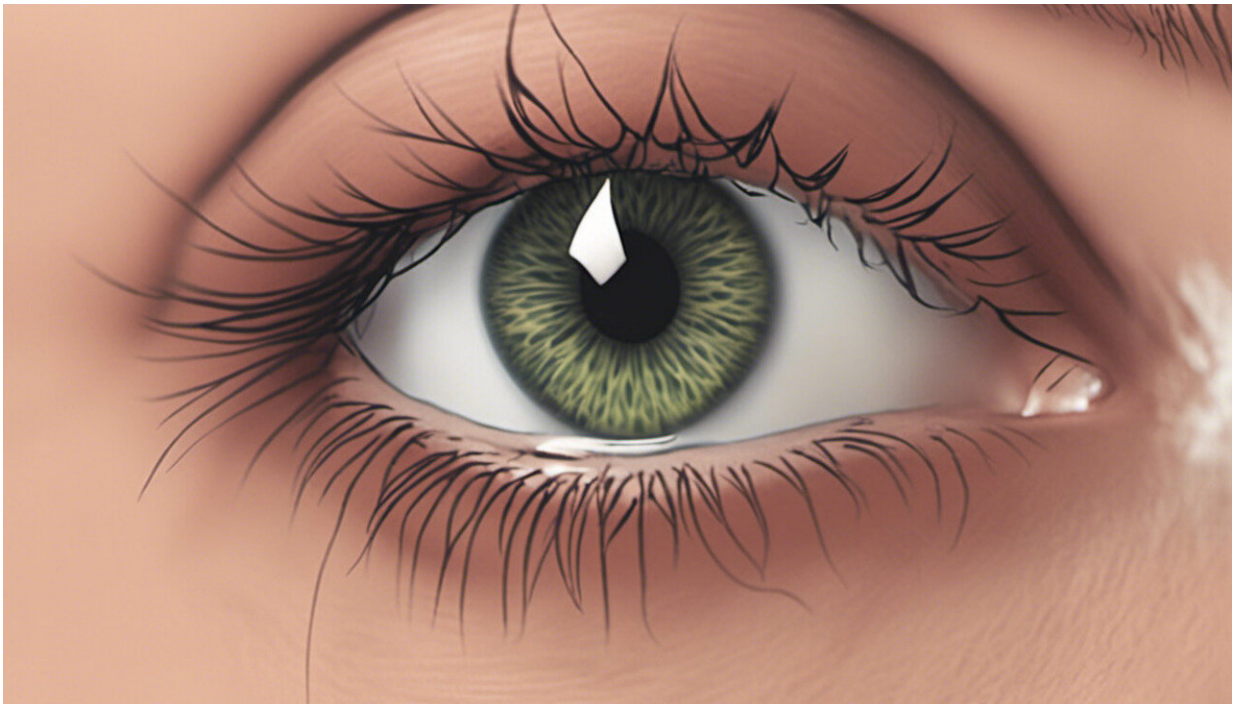


# Young people with cancer should have affordable options to preserve their fertility

August 26 2016, by Antoinette Anazodo And Brigitte Gerstl

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Credit: AI-generated image ([disclaimer](#))

Due to significant advances in diagnosis and treatment, many Australians with cancer [can expect to survive](#) and lead a normal life. For those of reproductive age this includes the chance to [have their own family](#) in the future. But fertility can be affected by both the cancer itself and the treatment received.

Chemotherapy, [radiotherapy](#), [bone marrow transplants](#) and surgery can [damage reproductive organs](#), such as ovaries and testes. And surgery on, or radiotherapy to, the brain can damage the [pituitary gland](#) that produces hormones. These act on ovaries or testes to stimulate sex hormone production, as well as [egg production](#) and sperm maturity.

One in ten [cancer patients](#) can expect to face [fertility issues](#) after their treatment. But studies from the United States show less than 50% of those at risk of infertility are [given the opportunity for referral](#) to a fertility specialist or informed about options and strategies to preserve their reproductive health.

The [documentation rate of these discussions](#) is also low, which means they could be going on more frequently than we think. Improvements need to be made in documentation and discussions themselves. And all doctors should ensure they give patients the option to preserve their fertility.

## Options for females

International [clinical practice guidelines](#) recommend a number of [fertility-preservation techniques](#) for cancer patients.

In adolescent females (those who have reached puberty), there is oocyte cryopreservation (egg collection and storage) and embryo cryopreservation (fertilisation of an egg with sperm from a partner or donor). These procedures currently give female patients the best chance of a biological child in the future.

For girls who haven't reached puberty, ovarian cryopreservation is recommended. This can also be used for females who need to start cancer treatment quickly and don't have time to have an egg or embryo collected; or those for whom undergoing oocyte or embryo

cryopreservation poses safety concerns.

Ovarian cryopreservation involves a surgical operation to collect and freeze ovarian tissue for storage. This can be done on any day of the patient's menstrual cycle without the patient needing to take hormone injections. The stored tissue can be thawed and transplanted when a patient wants to get pregnant.

[Studies in this area](#) are still small, but encouraging. A [childhood transplant patient](#) has already given birth using this technique.

As paediatric patients who have had ovarian tissue collected and stored (which has been done since the 1990s) get older, we will see more survivors successfully using this tissue to get pregnant.

Researchers are also now [able to take immature eggs](#) (oocytes) out of the collected ovarian tissue in children and mature them in a test tube before storing them for later use in assisted reproductive procedures. The ability to do this is new and available in only a small number of centres, but it opens the door for increased options for child patients or those unable to have oocyte cryopreservation due to medical or time concerns.

## Options for males

In adolescent males, the collection of sperm by masturbation (sperm banking) or through surgical retrieval methods is well established with very good success.

For boys who haven't reached puberty and who can't yet produce and store sperm, testicular cryopreservation is an option. This technique of storing testicular tissue is experimental at the moment, but it is already possible to culture and preserve [sperm stem cells in-vitro](#) (in test tubes or petri dishes) in paediatric patients.

Paediatric patients who may be infertile have a good chance of being able to use this tissue to have children in the future. Some researchers and clinicians feel it is [morally right to give patients the opportunity](#) to have the tissue collected in the hope techniques for its use will be available when they need it. But this should be done in a research centre with a clear governance process.

## Cost barriers

Many patients experience [distress at the thought](#) of losing their fertility. This can significantly [affect survivors' quality of life](#). Infertility can have a devastating effect on patients' ability to maintain relationships and have a detrimental [impact on their sexual function](#).

There are many barriers to cancer patients being given an opportunity to preserve their fertility before they begin treatment. Cost is one of the most significant. All fertility preservation techniques are available in Australia, but lack of funding limits access and certain services are more common in the private health system.

The costs of fertility preservation vary around the country. According to information we've collected from fertility centres, oocyte cryopreservation costs \$A8,000 to \$A12,000 on average, of which patients get back \$A4,500 from Medicare. Ovarian and testicular cryopreservation costs \$A5,000 to \$A8,000.

We have [submitted several applications](#) to Australia's Department of Health to list seven procedures on the Medicare Benefits Scheme. These include ovarian transposition – a technique to move ovaries into the pelvis prior to radiotherapy to prevent damage – and processing and handling of semen, as well as ovarian and testicular tissue.

We have also applied for subsidy to investigate female fertility potential

with a blood test that [assesses levels of the anti-Müllerian hormone \(AMH\)](#). AMH is a protein produced by the follicle cells in the ovary and its levels are the most accurate available indicator of damage to ovarian reserves (number of follicles) from cancer [treatment](#). It costs \$A100 to \$A200 per AMH test, depending on where it's done.

Having these procedures fully subsidised will allow equitable access for all [patients](#), giving everyone the opportunity for a biological family in the future. A decision on the application for Medicare coverage is not expected until next year.

*This article was originally published on [The Conversation](#). Read the [original article](#).*

Source: The Conversation

Citation: Young people with cancer should have affordable options to preserve their fertility (2016, August 26) retrieved 2 May 2024 from <https://medicalxpress.com/news/2016-08-young-people-cancer-options-fertility.html>

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