NICE National Institute for Health and Care Excellence

NICE guidance

Removal, preservation and reimplantation of ovarian tissue for restoring fertility after gonadotoxic treatment

HealthTech guidance

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www.nice.org.uk/guidance/htg693

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG772.

1 Recommendations

1.1 Removal, preservation and reimplantation of ovarian tissue for restoring fertility after gonadotoxic treatment may be used if standard arrangements are in place for clinical governance, consent and audit. Find out what standard arrangements mean on the NICE guidance page.

1.2 Healthcare organisations should:

- Ensure systems are in place that support clinicians to collect and report data on outcomes and safety for everyone having this procedure.
- Regularly review data on outcomes and safety for this procedure.

1.3 Clinicians should enter details about everyone having removal, preservation and reimplantation of ovarian tissue for restoring fertility after gonadotoxic treatment onto a suitable register, such as the UKSTORE register.

1.4 Patient selection should be done by a multidisciplinary team experienced in the procedure, ideally using nationally agreed criteria.

Why the committee made these recommendations

For people who need treatment that is likely to damage the ovaries and cause infertility, standard techniques for preserving fertility include egg or embryo freezing. But for some people, such as those who have not reached puberty, these options are not suitable. For these people, removal, preservation and reimplantation of ovarian tissue may offer the only chance of becoming pregnant in the future.

Evidence suggests that people who have had the procedure can become pregnant and have successful live births. The evidence did not raise any major safety concerns.

2 The condition, current treatments and procedure

The condition

2.1 Some treatments for cancer or other medical conditions can damage the ovaries (gonadotoxic treatment). This can lead to early menopause and infertility.

Current treatments

2.2 There are a number of pharmacologic and surgical strategies that aim to reduce the risk of infertility after gonadotoxic treatment, including ovarian transposition, ovarian suppression and fertility-sparing surgery.

2.3 For people who are going to have treatments that may damage their ovaries, cryopreservation of oocytes or embryos before the treatment begins are options for preserving fertility. These both involve ovarian stimulation, which may lead to a delay in treatment. Embryo cryopreservation also requires sperm from a partner or donor.

The procedure

2.4 Before starting gonadotoxic treatments, ovarian tissue is removed surgically through laparoscopy, mini-laparotomy, or laparotomy. Usually, at least half of one ovary is removed and the other ovary is left in place to act as a site for future orthotopic autotransplantation. After histological examination of a portion to exclude malignancy, most of the excised ovarian tissue is frozen for future autotransplantation.

2.5 When indicated, the frozen cortical ovarian tissue is thawed and transplanted back to the same person. It can be placed into pelvic sites such as the remaining

ovary, ovarian fossa, or broad ligament (orthotopic autotransplantation) through laparoscopy or mini-laparotomy. Alternatively, it can be placed into extra-pelvic sites such as the subcutaneous space of the abdominal wall or forearm (heterotopic autotransplantation). In this case, the follicle and oocyte develop outside the usual environment, so subsequent ovarian stimulation, egg collection and in vitro fertilisation are needed to achieve pregnancy. Another technique involves the vascular grafting and anastomosis of a frozen–thawed whole ovary through mini-laparotomy or laparotomy.

2.6 Future pregnancies may require assisted reproduction technologies, although the procedure can offer the possibility of natural conception.

2.7 Ovarian stimulation is not needed before removal of ovarian tissue for autotransplantation and gonadotoxic treatment can start immediately afterwards. It may be the only fertility preservation option suitable before puberty or for people with oestrogen-sensitive malignancies.

3 Committee considerations

The evidence

3.1 NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 7 sources, which was discussed by the committee. The evidence included 4 systematic reviews, 1 retrospective cohort study, 1 multicentre case series and 1 registry analysis. It is presented in the summary of key evidence section in the overview. Other relevant literature is in table 5 of the overview.

3.2 The professional experts and the committee considered the key efficacy outcomes to be: return of endocrine function, pregnancy, live birth rate, long-term outcomes of children born using this procedure.

3.3 The professional experts and the committee considered the key safety outcomes to be: transmission of original malignancy through reimplanted ovarian tissue.

3.4 Patient commentary was sought but none was received.

Committee comments

3.5 The committee noted that preservation of ovarian tissue for this procedure is regulated by the Human Tissue Authority (HTA). Only ovarian tissue that has been stored under HTA regulations can be reimplanted.

3.6 The committee was informed that this procedure is not currently used for people with leukaemia in the UK, but there is ongoing research in this area.

3.7 The committee was informed that this procedure is not usually used when egg harvesting is an option.

3.8 This guidance covers the use of this procedure for restoring fertility and not to reduce symptoms of the menopause. NICE has produced separate guidance on removal, preservation and subsequent reimplantation of ovarian tissue to prevent symptoms from the menopause (HealthTech guidance 640).

Update information

Minor changes since publication

January 2026: Interventional procedures guidance 772 has been migrated to HealthTech guidance 693. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.