

## **Cancer and fertility**

About 750 under 35-year-olds develop cancer in Finland every year. Modern cancer treatments are very effective: the treatment success rates for children and young adults is over 80 %. As treatment options are considered, it is important to take into account quality of life after treatment, and an essential part of this question is the ability to become a parent in the future.

### **Fertility after cancer**

The treatments' effect on future fertility depend on the treatment method, the overall amount of radiotherapy and chemotherapy, and the patient's baseline level of fertility. In female patients, age is a significant factor in how probable post-treatment infertility is going to be.

**Radiotherapy** that is focused on the area where sex glands (such as testes and ovaries) are located harms the production of sex cells. The level of damage depends on the amount of radiation.

**The effects of chemotherapy** on sex gland function depends on the blend of medications used. Some treatments do not affect fertility, but after a stem cell transplantation, for example, there is a very high likelihood that the production of sex cells stops.

How long the period of reduced fertility is depends on the patient's sex. In men, the sperm production may be repaired over the next years, even 10 years after treatment. In women, the damage is not repaired. As such, women should prepare for the possibility that their period of fertility might be reduced even if their menstrual cycle returns to normal. The treatment's effect on female fertility can be assessed 6 to 8 months after the treatment has been concluded at the earliest.

### **Pregnancy after cancer**

Pregnancy is usually both possible and safe after cancer has been treated. In most patients, pregnancies after cancer treatment progress completely normally and there are no specific risks to the health of the child. However, it is best to visit the hospital's maternity clinic for a pregnancy planning appointment. During the appointment, the doctor will go over what treatments have been administered and if there have been any side effects that may call for further testing before pregnancy.

### **Permission to conceive**

Usually, it is recommended that a two-year observation period is held after the treatments have ended before trying to conceive, because most cancer recurrences are diagnosed during this

period. There is, however, no definite time limits, and each case must be examined individually. Due to risks to the fetus, it is not recommended to conceive before at least six months have passed since the end of chemotherapy.

## **Pregnancy prevention**

There must be adequate pregnancy prevention at least until permission to conceive is granted. If pregnancy is not wanted, pregnancy prevention must be managed as before the cancer treatments, because post-treatment fertility is difficult to predict.

Usually, when choosing from long-term pregnancy prevention options, usual pregnancy prevention principles can be followed, apart from a few exceptions. Hormonal pregnancy prevention is not recommended after breast cancer; instead, a copper IUD is the recommended first line pregnancy prevention method. Intrauterine pregnancy prevention methods are also recommended after radiotherapy that has been administered to the chest area.

Due to an increased risk of blood clots, combination birth control (estrogen + progesterone) is not recommended during cancer treatment and for 6 months after cancer treatments have concluded. In this case, an IUD or minipills (progesterone-only pills) are a better options.

## **Safeguarding fertility**

Before the cancer treatments are started, it may be possible to take steps to ensure future possibility for parenthood. Men can freeze sperm before treatments. Before freezing, the semen is tested for hepatitis and HIV antibodies. The unit responsible for covering the costs of treatment for the underlying illness pays the freezing costs, and a temporary contract for storing the sperm is drafted.

Fertility preserving treatments for women have to be planned on case-by-case basis. For this purpose, female patients are referred to receive fertility counselling at the Department of Obstetrics and Gynecology. Options are:

- moving the ovaries away from the radiotherapy field using surgery
- suppressing ovarian function using monthly injections
- cryopreservation of egg cells or embryos
- cryopreservation of ovarian tissue

From the methods listed above, the effectiveness of cryopreservation of embryos is the best known. Cryopreservation of egg cells and embryos is possible if there is at least two weeks before the treatment is scheduled to start. Around the world, over 100 children have been born after reimplantation of frozen ovarian tissue. In Finland, first such pregnancy occurred in 2015. However, the effectiveness or safety of the procedure is not yet completely known.

## **Lifestyle and fertility**

Lifestyle factors affect fertility. To safeguard fertility, it is particularly important to avoid smoking, which affects ovaries' ability to function and decreases the quality of both egg cells and sperm. Healthy diet and normal weight are important for fertility.

## **Post treatment infertility and how it can be treated**

As in other women, fertility treatments can be used to help achieve pregnancy, if you are unable to achieve pregnancy spontaneously. Usually, fertility treatments are considered an option if pregnancy has not been achieved after one year of unprotected sex, but in case of patients who have had cancer, there is cause to consider fertility testing sooner. Involuntary childlessness is treated according to the same principles and methods as with other patients. If the patient's own sex cell production has stopped due to the treatments, fertility treatment using donor cells are an effective treatment option.

## **Cancer and sexuality**

Receiving a cancer diagnosis triggers an individual crisis reaction, which touches on all aspects of the persons' life, often including sexual self-image. You can find more information on cancer and sexuality online, at Association of Cancer Patients in Finland / patient guides (available in Finnish and Swedish).

### **Personal counsel and advice is available from:**

**Tyks Turku Oncologic Outpatient Clinic**, phone 02 313 1825 or 02 313 2870

- sexual therapist and sexual counselor, Monday to Friday from 9 AM to 3 PM

**Tyks Majkka Hospital, Gynecological outpatient clinic**, phone 02 313 1322

- Sexual health clinic, sexual therapist and sexual counselor, Monday to Friday from 9 AM to 3 PM

**Tyks Salo Gynecological outpatient clinic**, phone 02 314 4535

- sexual counselor, Monday to Thursday from 8 AM to 4 PM, and Friday from 8 AM to 2 PM

If you have questions regarding post cancer treatment fertility and wish to achieve pregnancy, request your doctor for a referral to the Tyks Department of Obstetrics and Gynecology.