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# CHEMOTHERAPY

## Patient information



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## Important facts about chemotherapy

The purpose of this leaflet is to provide general information about cancer treatment involving chemotherapy. Any questions about the treatment involved in your particular case should be directed to the doctor responsible for your treatment.

## What is chemotherapy?

Chemotherapy is a treatment involving chemical agents or drugs used to fight and kill cancer cells. Chemotherapy can be used for different purposes:

- To cure cancer
- To reduce the size of the tumour before surgery or radiotherapy
- To kill remaining cancer cells in other parts of the body after surgery or radiotherapy
- To prevent the cancer from spreading and prevent or alleviate symptoms caused by the tumour(s).

## How does chemotherapy work?

Chemotherapy drugs are delivered to the cancer cells via the blood stream. The drugs are absorbed in the cancer cells, where they inhibit or block cell growth. The cancer cells are destroyed, and lose the ability to reproduce. A chemotherapy regime is often made up by a combination of several different chemotherapy drugs. Each drug targets the cancer cells in different ways. The choice of chemotherapy regimen for each individual patient depends on the type of cancer and its level of progress.

## How is chemotherapy administered?

- Intravenously (into a vein)
- Orally, as tablets or capsules
- Intramuscularly (into a muscle)
- Into the body's cavities (bladder, thoracic cavity etc.)
- Intrathecally (into the spine)

Chemotherapy drugs are usually administered intravenously. A nurse will insert a thin, peripheral cannula into a vein on your lower arm, or you will be scheduled for the placement of a central venous catheter. The chemotherapy is then administered through a plastic tube, usually with the help of an infusion pump. The duration of the treatment can vary from a few minutes up to several hours or days.

## Possible side effects

Chemotherapy also affects the normal cells of the body, in particular cells which reproduce rapidly (i.e. cells in the hair, bone marrow and mucous membranes). Normal cells are able to self-repair to a greater extent than cancer cells, so the side effects are transient. Different types of chemotherapy agents can cause different side effects. The severity of the side effects is prone to individual variation, and is difficult to predict in each individual case. Before you start treatment, your doctor and nurse will inform you of the possible side effects you may experience.

## Effects on the bone marrow

### The bone marrow produces:

**Red blood cells (erythrocytes)**, which deliver oxygen to the body's tissues via the blood flow. Chemotherapy can lead to a decreased production of red blood cells and may cause anaemia. You may feel weak and/or dizzy. At times a blood transfusion may be required.

**White blood cells (leukocytes)**, the body's defence against bacteria and viruses. A low count of white blood cells means the body is prone to infections. During this phase, you should avoid people who are suffering from colds or other infections.

Contact the Oncology Department if you experience any of the following:

- A fever (body temperature above 38 °C)
- Chills
- Feeling weak, lethargic

**Platelets (thrombocytes)**, whose primary function is to stop bleeding. Chemotherapy can lead to a decreased production of platelets in the bone marrow. You may experience bruising and/or bleeding, especially from your skin and mucous membranes (mouth and nose). You should use a soft tooth brush and an electric razor, and avoid bruising or damaging the skin.

The effect on the bone marrow is temporary. Usually the production of red and white blood cells and platelets reaches a low point approx. 7-12 days after chemotherapy, after which the production starts to improve again.

Hair loss Chemotherapy can damage the cells in the root of the hair. This may lead to hair loss – including body hair, eye lashes, eyebrows and facial hair. The degree of hair loss depends on the combination of drugs used. Some drugs will not result in hair loss. Your hair will grow back, but it may take a few months after the end of treatment.

Losing your hair can be difficult, because your looks change in a short period of time. The hair can come off in sections, so it's a good idea to get a shorter cut when you are beginning to experience hair loss.

If you do decide to purchase a wig, you should see a hair dresser before hair loss commences. The hair dresser can advise you on colour and cut in order to minimize the change in your appearance. Alternatively, you could use a summer hat, cap or other headwear.

### **Effects on the digestive system**

Some chemotherapy regimens can cause nausea and vomiting. Effective drugs against nausea and vomiting will be administered in connection with the chemotherapy and for some time afterwards. You may also find that relaxation exercises can alleviate the symptoms.

Some chemotherapy drugs can affect the digestive system and cause constipation. You can prevent this through the use of laxatives, or through dietary adjustments. Foods that prevent constipation include bran, prunes, cultured milk products and high fibre foods. Drinking sufficiently – at least 2 litres per day – is very important.

Other types of chemotherapy drugs can cause diarrhoea. Bland, low-fibre foods and plenty of fluids are important. You can also take certain medications to treat diarrhoea. If your bowel function changes during treatment, do not hesitate to bring this up with your doctor or nurse.

### **Effects on the mucous membranes**

Several chemotherapy drugs affect the mucous membranes, and you may experience a sore mouth and throat a few days after the treatment. Your sense of taste can also be altered during the treatment.

It is important to maintain good oral hygiene and to see your dentist regularly. Contact your doctor or place of treatment if eating or drinking becomes a problem. The treatment can also irritate the mucous membranes of the urinary bladder.

### **Effects on the testes and ovaries**

Chemotherapy can damage the reproductive cells of both men and women. The treatment may cause alterations to the female hormone balance, causing periods to become irregular or stop.

The production of sperm in the testicles is also affected, leading to reduced fertility in men. The effect varies depending on the chemotherapy drug in question, and can be permanent or temporary.

Pregnancy should be avoided, as chemotherapy can cause damage to the genetic material in egg cells and sperm. You should use contraceptives during the treatment and for the subsequent year.

In order to protect their partner, men should use a condom during treatment and for two days after, as some chemotherapy drugs can be present in small amounts in semen.

Men have the option of freezing and storing sperm before the start of treatment. For women, an experimental method of freezing ovarian tissue is available.

Some time after chemotherapy is completed, it is possible for some to conceive naturally. You can discuss your options and timing with the doctor responsible for your treatment.

### **Other side-effects**

Some drugs may cause a brief discomfort or a burning sensation in the vein. If this occurs, it is important that you inform your doctor immediately.

Some chemotherapy drugs can cause a transitory damage to small, peripheral nerves, causing numbness or a cold sensation in your fingers and toes. Some drugs can cause a rise in body temperature on the same day as treatment. Some drugs may affect your hearing, and others can cause pigmentation (brown spots) in your skin.

Chemotherapy can also affect your kidneys. Damage to the kidneys can be prevented by the intravenous administration of large amounts of fluids along with the chemotherapy, in order to help your kidneys flush the chemotherapy through your body quickly.

Other organs (i.e. liver, lung or heart) may also be affected by the chemotherapy treatment. It is important that you tell your doctor and nurse of any side effects you have experienced between treatments.

**Lifestyle** It is difficult for most people to find out they have cancer. Both the afflicted person and his/her family, friends and acquaintances are faced with a new, strange and unpredictable situation. We recommend that you are open about the illness and treatment. Your family and friends will probably be the most important support for you during treatment. You should continue to lead as normal a life as possible between treatments. Fresh air, physical activity and a varied, healthy diet are recommended for their beneficial effect on both mind and body. It is also important to drink plenty of fluids, to help your body eliminate waste resulting from the chemotherapy treatment.

Certain chemotherapy drugs can cause skin reactions after sun exposure. Consult your doctor for advice on which precautions to take.

After chemotherapy treatment, the by-products of chemotherapy are excreted from the body through urine and faeces. During the first 48 hours after the treatment you should take certain precautions to protect your those around you.

- If you spill vomit, urine or faeces, use paper to wipe the spillage, and then wash the area with soap and water.
- Flush twice after using the toilet.
- Wash your hands thoroughly after using the toilet.
- Seal used sanitary towels or diapers in a plastic bag.
- Wash soiled linen or clothes right away.
- Change your bed linen after 48 hours.

If you observe these precautions, you can safely socialize and have close contact with others – even children and pregnant women.

Sexual relations Chemotherapy treatment does not require sexual abstinence. Cancer is not contagious, and intimacy does not carry any risk of infection.

However, the treatment may cause tiredness and lack of energy, and as such you may experience decreased sexual desire and ability. Partners of patients who are undergoing treatment should try to be patient and understanding.

It is recommended to use a condom during intercourse for the first 48 hours after treatment.

Alternative/complementary treatment If you use complementary treatment you can usually continue to do so alongside chemotherapy treatment. Please be aware that some combinations of conventional and alternative treatments can give unpleasant or serious side-effects. Talk to your doctor about any complementary treatments you are using.

