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Cancer treatments at a glance



Coming to terms with a cancer diagnosis can be very difficult. Decisions about treatment and having the treatment itself will become a big part of your daily life, at least for a while. There are some basic things that could help you to understand different cancer treatments.

In most kinds of cancer, cells start to multiply uncontrollably, forming lumps and growths. These growths are called malignant tumours or cancer. You will find more information about how cancer cells develop and spread here (URL: <http://www.informedhealthonline.org/index.587.en.html>) .

The goal of cancer treatment is to remove the malignant tumour (or, in leukaemia, remove the malignant cells) or at least stop or slow the growth and spread of the cancer. The most commonly used cancer treatments are surgery, radiotherapy and chemotherapy. There are also some newer treatments, but these cannot be used in all kinds of cancer. Depending on the kind of cancer and the stage of the disease, the different types of treatment can either be used alone or together.

## **Surgery**

Many tumours can be removed by surgery, particularly in early stages. Here the tumour, the surrounding tissue and sometimes the nearby lymph nodes are cut out to try to make sure that no cancer cells are left. In later stages of the disease, the tumour can spread to other areas of the body and form metastases. Surgery may then no longer be possible or it may be too risky, so other treatment approaches are normally used.

## **Radiotherapy**

In radiotherapy, sometimes also called radiation therapy, the malignant tissue is exposed to high-energy rays to try to destroy the cancer cells. There are different kinds of radiotherapy. In external radiotherapy the tumour is irradiated from outside the body through the skin. In internal radiotherapy, also called brachytherapy, small sources of radiation are placed inside the body. If only one particular part of the body is irradiated, it is called local irradiation. In some kinds of cancer the whole body is irradiated (whole-body irradiation). You can read more about the different types of radiotherapy here (URL: <http://www.gesundheitsinformation.de/radiotherapy.359.56.en.html>) .

## **Treatment with medication**

### *Chemotherapy*

Chemotherapy is the use of medication to treat cancer. So-called cytostatic drugs are used here. Patients usually receive them through an infusion (drip), but sometimes they take them as tablets. These drugs stop the cancer cells from multiplying uncontrollably in the body. There are many different cytostatic drugs, and they are often used together. Because they are transported in the bloodstream, they reach tissues all over the body. This is called a systemic treatment.

### *Hormone therapy*

Hormones play an important role in the body. Some act as chemical messengers and regulate things like your blood sugar levels. Others play an important role in reproduction. Certain hormones stimulate cell growth in some organs and tissues. If cancer develops in these tissues, those hormones often stimulate the growth and multiplication of the cancer cells too. This is common in breast cancer and prostate cancer, for example. If the growth of a tumour is influenced by hormones, it is called a hormone-sensitive tumour. The goal of hormone therapy is to slow the growth of cancer by either lowering the production of the hormone in question, or stopping the hormone from having a growth-enhancing effect. Because hormone therapy blocks the activity of hormones in the body, it is often also called anti-hormone therapy.

### **Blood stem cell or bone marrow transplantation**

Blood stem cell or bone marrow transplants make it possible to use a much higher dose of chemotherapy in cancer treatment. The aim is to make the therapy work better. Chemotherapy is particularly aggressive at very high doses (high-dose chemotherapy). As well as destroying cancer cells, it also destroys the stem cells in bone marrow. Stem cells are responsible for making blood and they are vital. So high-dose chemotherapy can only be used if the person has a stem cell or bone marrow transplant immediately after chemotherapy, to replace the destroyed stem cells. This approach is mainly used in the treatment of leukaemia.

### **Supportive therapy**

All cancer treatments can have adverse effects and lead to complications. The goal of supportive therapy is to avoid or reduce complications and adverse effects, and help the body to recover. For example, a lot of people take

medication against nausea (antiemetics) during chemotherapy, because nausea is a common adverse effect of this treatment. Another example is the use of antibiotics and other medications to prevent infections. This can be important because many cancer treatments weaken the body's immune system so there is a higher risk of infection.

Supportive therapy also includes the treatment of problems or symptoms that are caused by the cancer itself. For example, if there are metastases in the bones, certain medications can be used to try to reduce damage to the bone and lower the risk of fractures. The relief of pain caused by the disease or pain due to cancer treatment is a further example of supportive therapy.

## Psycho-oncological and psychosocial care

Finding out you have cancer is a big shock for most people. The diagnosis is often followed by fears and worries about their future and family. Cancer treatment itself can be a big physical and emotional burden too. Because of this, many hospitals and psychosocial support centres offer psychosocial and psycho-oncological care for people with cancer. They aim to help people cope better with their disease. Relatives can make use of these services too.

Self-help groups and self-help organisations are also very important for many people with cancer. Talking to people who are in a similar situation can make it easier to cope with negative feelings and stay positive. The people in self-help groups can also often help others with important practical matters based on their own experiences.

## Complementary medicine

A wide range of complementary therapies are available for people who have cancer, including homeopathy, vitamins or herbal products like mistletoe extracts. People use them for various reasons – for example, to strengthen their bodies, reduce the adverse effects of a cancer treatment, or improve their quality of life and wellbeing. Although these treatments are considered to be well tolerated, herbal products and other supposedly harmless products can have adverse effects too. For instance, good-quality trials have shown that the long-term regular use of vitamin A, E and beta-carotene supplements could reduce life expectancy. So it is important to let your doctor know if you use complementary treatments, especially because they can affect the way other medications work.

Complementary therapy is sometimes based on approaches

and theories that are different to those in conventional medicine. In our feature on complementary medicine (URL:

<http://www.gesundheitsinformation.de/complementary-medicine>.

, you can read more about what to consider when using complementary therapy and what researchers have found out about it.

## Palliative care

Even if cancer can no longer be successfully treated, there is still a lot that can be done for people who are affected. One goal of therapy may then be to slow the growth or spread of the disease. Further goals include relieving pain and other symptoms, and maintaining the best quality of life possible. This involves things like helping people to eat and drink and making sure that they remain as mobile as they can. If these are the main goals of treatment, it is called palliative care. Psychological and (sometimes) spiritual support play an important role in palliative care. What is best in palliative care will vary from person to person, depending on their individual needs.

## Choosing treatments

It is often not easy to choose which treatment to have, especially with cancer, because all of the treatments could have strong adverse effects or because it is not clear what the treatment involves. Some people find decision aids useful. These help you to think about your personal wishes, beliefs and expectations, and take these into consideration when weighing up the advantages and disadvantages of a treatment.

But there are also a lot of people who can help you choose which treatment to have. For example, you could consult your doctor and ask if you are allowed to make an audio recording of an important talk. In this way you can listen to the conversation again at home, or play it to your family and talk to them about the options. Alternatively, someone you are close to could accompany you to the doctor's appointment, or you could ask the doctor to give you written information which you can look at again later on. The German Cancer Information Service (Krebsinformationsdienst (URL: <http://www.krebsinformationsdienst.de/>) ) runs a free information hotline in German that can be reached at the number 0800 – 420 30 40.

There are, of course, a lot of other things that play a role in cancer treatment that are not mentioned here. These

include diet, follow-up care and rehabilitation. You can find further information about some of these topics and certain kinds of cancer in our feature (URL: <http://www.gesundheitsinformation.de/cancer.69.67.en.html>)

**This additional information has been provided by the U.S. National Library of Medicine:**

In the U.S., the National Cancer Institute provides cancer information specialists, Monday through Friday, 8am to 8pm, Eastern Time at 1-800-4-CANCER (1-800-422-6237).

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## Glossary

### beta-carotene

Beta-carotene (or  $\beta$ -carotene) is the colouring that makes some fruit and vegetables yellow or orange (like carrots). It is an early chemical stage of vitamin A, and this is why it is sometimes called pro-vitamin A. The food industry uses beta-carotene as a food colouring agent. It is also an ingredient in many multi-vitamin preparations.

### hormones

“Hormones” is the collective term for different types of messenger substances in the body. They are produced in different organs or tissues and released into the blood or the lymphatic system to be distributed throughout the body. Hormones only have an effect on those parts of the organism that have a corresponding docking site. This is how hormones can have such specific effects. Insulin, estrogens, vasopressin and thyroxine are some well-known hormones. Many medical ingredients imitate the effect of hormones.

### antibiotics

Antibiotics are medicines that can be used for bacterial and some fungal infections. Antibiotics do not work against viruses. Well-known antibiotics include penicillin, tetracycline and chloramphenicol.

### infection

In medicine, we speak of an infection when a person has caught a germ (an infectious agent). This germ can be a bacterium, a virus, a fungus or a worm. The germ multiplies and then either spreads throughout the body or only attacks one particular organ. As long as there are no signs of a disease, this is called an asymptomatic infection. When the body shows a reaction to the germ in the form of symptoms, this is called a symptomatic infection (an infectious disease). The period between the moment the germs enter the body and the moment the first symptoms of the disease appear, is called the incubation period. It may last a few hours or days, or even many years. An infection does not necessarily have to lead to the onset of a disease.

### immune system

The immune system is the body's defense system and its task is to protect the body against germs or degenerated

cells (like cancer cells). The immune system is very complex and has not been understood in every detail yet. There are two components: the cellular immune defense (for example “scavenger cells” and “killer cells”) and the complement system (“antibodies”, for example).

**Sources**

**The German Institute for Quality and Efficiency in Health Care (IQWiG)**

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

**Evidence basis of our health information**

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at **[www.informedhealthonline.org](http://www.informedhealthonline.org)**

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