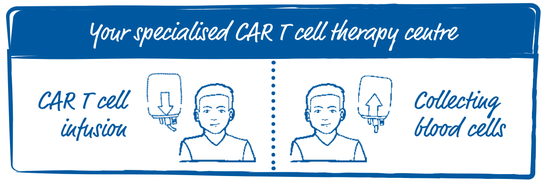
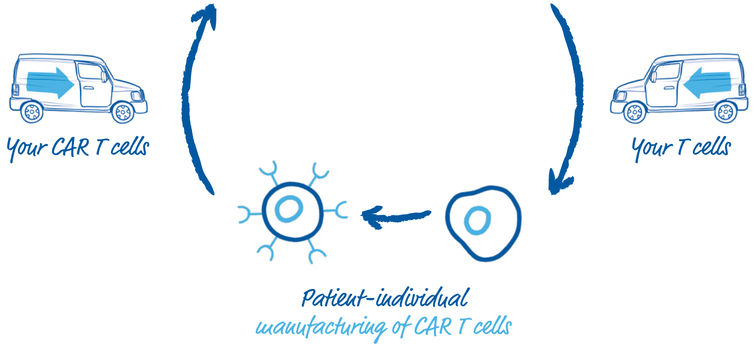
What happens in CAR T cell therapy





You can find further information about CAR T cell therapy and other treatment options at

www.onkologie-im-wandel.de

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WHAT IS CAR T CELL THERAPY?

CAR T cell therapy is what is known as immune therapy, where the patient's own immune cells are modified so that they can detect and destroy cancer cells. This approved therapy can be used to fight some aggressive forms of blood cancer.

We'd like to use this flyer to familiarise you with the most important information about CAR T cell therapy.

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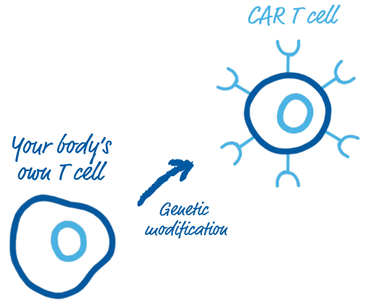
What are CAR T cells and how do they work?

T cells are an important component of your body's own immune system. They are important for defending the body against various pathogens and for fighting cancer cells. Unfortunately, some cancer cells can hide from the T cells and thus multiply unnoticed in the body. This is where CAR T cell therapy comes in.

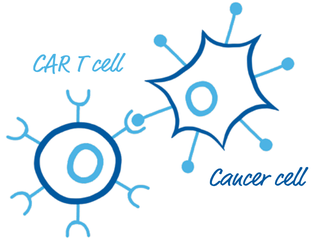
In this therapy, your own T cells are collected, genetically modified and then subsequently given back to you by a drip (infusion).

These modified T cells are now called CAR T cells, because they carry on their surface what is known as the chimeric antigen receptor* (CAR).



The CAR helps the CAR T cell to detect the cancer cells in the body, as it can recognise special structures on the surface of cancer cells and destroy the cancer cell.

This therapy for the treatment of certain blood cancers can be administered at specialised centres only. Please ask your oncologist whether this therapy can be considered for you.



* The chimera is a mythical creature which combines the traits and abilities of various animals. You can think of the chimeric antigen receptors as being similar. The antigen receptor combines the abilities of various proteins.

The CAR T cell therapy journey

Your doctor will discuss the new situation with you and explain possible treatment options. If CAR T cell therapy is an option, experts at a treatment centre for CAR T cell therapy are consulted.

Before CAR T cell therapy can start, your doctor will explain to you the mode of action and procedures involved in the treatment in detail. This also includes information about possible side effects.

Blood cell collection is also called leukapheresis. It is similar to giving blood, with the difference that only the white blood cells are collected. This also includes T cells. The remaining blood constituents are returned to your blood stream. The blood cells collected are sent to a specialised manufacturing site for manufacturing of your CAR T cells.

Preparatory chemotherapy is administered over several days before CAR T cell infusion. This reduces the number of blood cells in your body which would impair the proliferation and action of your CAR T cells. The infusion of CAR T cells that follows is comparable to a blood transfusion. Serious and life-threatening side effects may be associated with CAR T cell therapy. For these treatment steps, a hospital stay of approx. 2–3 weeks is generally necessary.

After your hospital stay, you must remain within proximity from the hospital for several weeks. This is necessary to treat any potential delayed side effects quickly and effectively and to be able to test the effectiveness of therapy.

The manufacturing of your personal CAR T cells can take a couple of weeks. If your disease progresses in this time, your doctors may recommend a bridging therapy. This may consist of chemotherapy, antibody therapy or radiotherapy, individually adapted to the course of your disease.

Further examinations such as taking blood samples, CT-scans and in some cases more punctures (e.g. bone marrow puncture) may be necessary in preparation for CAR T cell therapy. This is important in order to map the progression of your cancer and to be able to estimate the risk of possible side effects.

Collecting blood cells or leukapheresis, respectively, is in general not painful but may last between 3 and 6 hours.

A few days after the infusion, the CAR T cells become active in your body, which may cause side effects. These include excessive immune activation, which can frequently be expressed by symptoms such as high fever, circulatory changes and also neurological impairments. For this reason, the CAR T cell infusion is given on an observation ward where specialised teams of doctors and nurses can take good care of you and treat these side effects.

The CAR T cells are functional living cells which also multiply in your body. It is possible that the effects of the therapy will be somewhat delayed and effectiveness is not verified until several weeks to months after the infusion.

Please note
Because of possible neurological side effects, you must not drive for several weeks after the CAR T cell infusion.